#### 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: 2022** 

Years Monitored: 10<sup>th</sup> year of monitoring

Corps Permit Number: NWO-2006-90851-MTB

Monitoring Conducted By: Confluence Consulting Inc. Dates Monitoring Was Conducted: June 27, 2022

#### **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 should continue

in 2023 so that the site may continue to meet this performance criteria.

**Anticipated Wetland Credit Acres: 27.4** 

Wetland Credit Acres Generated to Date: 30.57

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

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

**Requirements** (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 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 2022.
Wetland Hydrology	Soil saturation is present for at least 12.5 percent of the growing season.	Y	Irrigation water was diverted into the site on May 11th and turned off on May 15, 2022. During the site monitoring event in June, precipitation provided overland flow that flooded the site, including nonwetland areas. This criterion is met in 2022.
Hydric Soil	Hydric soil conditions are present or appear to be forming.	Y	The constructed wetland complex is beginning to develop hydric soils in areas that were identified as nonhydric prior to construction. Hydric soil characteristics remain present in areas that were identified as wetland prior to construction.
	Soil is sufficiently stable to prevent erosion.	Υ	Disturbed soil is stable and does not exhibit signs of erosion.
	Soil is able to support plant cover.	Υ	Plant cover has developed and remains stable across previously disturbed soils.
Hydrophytic	Combined absolute cover of facultative or wetter species is greater than or equal to 70 percent.	Y	Wetland areas within the mitigation site contain greater than 70% absolute cover from hydrophytic vegetation (OBL, FACW, and FAC).
Vegetation	Noxious weeds do not exceed 5 percent cover.	Y	Weed treatment has been effective, and noxious weed cover is estimated to be approximately 2% across the mitigation site.
Woody Plants	Plantings exceed 50 percent survival after 5 years.	Y	Woody plant survival was estimated at 50 percent in 2022 for all plantings, meeting the 50 percent survival rate. Woody volunteers continue to establish around planting zones.
Open-Water Areas	Open water that is established within the designated wetland cells will be considered successful and creditable if open water does not exceed 10 percent of the total wetland acreage.	Y	In 2022, no open water was observed at the mitigation site. Inundated areas of ponding related to recent events were ephemeral not identified as open water habitat. This criterion is met.
Upland Buffer	Success will be achieved when noxious weeds do not exceed 5 percent cover within the buffer areas on the site.	Y	Noxious weed cover was well below the 5% threshold within the upland buffer areas.

Performance Standards	Success Criteria	Criteria Achieved Y/N	Discussion
Upland Buffer	Any area that was disturbed within creditable buffer zone must have at least 50 percent aerial cover of desirable upland plant species by the end of the monitoring period.	Y	Upland buffers that surround wetland areas within the site exhibited greater than 50 percent aerial cover of non-weed species in 2022.
Weed Control	Weed-control measures are implemented to minimize and/or eliminate infestations of state-listed noxious weed species within the site.	Υ	Noxious weed treatment has been effective at managing noxious weed cover. Statelisted noxious weed species across the site were estimated at 2 percent absolute cover in 2022.
Fencing	Wildlife-friendly fencing is installed along the easement boundaries.	Υ	Wildlife-friendly fencing was installed with the construction of this site around the easement boundaries and remains in functional condition.

#### **Summary Data**

**Wetland Delineation** – The total wetland acreage delineated in 2022 was 29.48 acres, which included preexisting wetlands (see maps in Appendix A). This is a 0.55-acre increase in wetland acreage from 2021. The adaptive management strategies implemented in 2017 increased the amount of inundation in some places on the site and has supplied hydrology to support the development of wetlands in areas previously identified as upland. Some of the newly inundated and saturated areas are beginning to transition to include more hydrophytic species, and soils are developing hydric features. With sustained hydrology in upcoming years, wetlands are likely to continue to develop and expand across the mitigation site.

**Vegetation** – A total of 93 plant species were identified on the site from 2013 through 2022, with three new species identified at the site in 2022. A comprehensive species list can be found in Appendix B (Table B-1). Vegetation communities were identified and mapped by plant composition and dominance. Community composition has shifted across the site, with a noticeable change in *Alopecurus pratensis* replacing *Phalaris arundinaceus* as a dominant species. This shift was reflected in the creation of Wetland Type (WT) 14 (*Alopecurus pratensis/Eleocharis palustris*) to replace WT 12 (*Phalaris arundinaceus/Eleocharis palustris*). Similarly, WT 15 (*Typha latifolia*) was created to replace WT 5 (*Typha latifolia/Glyceria grandis*). A new wetland community, WT 16 (*Carex praegracilis/Poa pratensis*) was identified in 2022 north of the berm at T-4 start. This area was previously mapped as Upland Type (UT) 8 (*Bromus inermis*) and has shifted to include a dominance of hydrophytic species related to supplemental hydrology in this area resultant of the adaptive management strategies implemented in 2017. The following vegetation community types were identified in 2022:

- Upland Type 8 Bromus inermis
- Upland Type 11 Elymus trachycaulus/Pascopyrum smithii
- Wetland Type 2 Juncus balticus/Carex nebrascensis
- Wetland Type 3 Salix exigua
- Wetland Type 7 Phalaris arundinacea
- Wetland Type 10 *Alopecurus pratensis*
- Wetland Type 14 Alopecurus pratensis/Eleocharis palustris
- Wetland Type 15 Typha latifolia

#### • Wetland Type 16 – Carex praegracilis/Poa pratensis

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

Absolute cover of state-listed noxious weeds was estimated at two percent across the entire site. Canada thistle (*Cirsium arvense*) was observed in nine locations with patch sizes ranging from trace to high. Weed management for Canada thistle should focus on the infestations in the southwest portion of the site to be most effective at reducing noxious weed cover and controlling spread. Spotted knapweed (*Centaurea stoebe*) was observed at four locations in trace patch sizes, as well as one trace patch of houndstongue (*Cynoglossum officinale*). Weed locations are identified in Figure A-3, Appendix A.

Vegetation cover was measured along four transects in 2022 (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 and UT 11, and WT 7, WT 14, and WT 15. Wetland habitat along the transect increased five percent from 61% in 2021 to 66% in 2022, and the total number of species observed along the transect increased by two, one upland species and one hydrophytic species. Total vegetative cover has increased slightly from 2021 to 2022.

Table 2. Data Summary for T-1 From 2017 Through 2022 at the Rostad Ranch Wetland Mitigation Site

Monitoring Year	2017	2018	2019	2020	2021	2022
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	5	6	6	5
Hydrophytic Vegetation Communities Along Transect	4	4	4	4	4	3
Total Vegetative Species	23	26	23	22	23	25
Total Hydrophytic Species	10	11	10	8	10	11
Total Upland Species	13	15	13	14	13	14
Estimated % Total Vegetative Cover	95	95	95	95	95	96
Estimated % Unvegetated	5	5	5	5	5	4
% Transect Length Comprising Hydrophytic Vegetation Communities	56	62	62	61	61	66
% Transect Length Comprising Upland Vegetation Communities	44	38	38	39	39	34
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0	0
% Transect Length Comprising of Mud Flat	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 and WT 2 and WT 10. Ninety-two percent of the transect crossed wetland habitat in 2022, which is a one percent decrease from 2021. Total vegetative cover has remained constant at 95 percent from 2016 to 2022.

Table 3. Data Summary for T-2 From 2017 Through 2022 at the Rostad Ranch Wetland Mitigation Site

Monitoring Year	2017	2018	2019	2020	2021	2022
Transect Length (feet)	453	453	453	453	453	453
Vegetation Community Transitions Along Transect	2	3	3	4	4	5
Vegetation Communities Along Transect	2	3	3	3	3	3
Hydrophytic Vegetation Communities Along Transect	1	2	2	2	2	2
Total Vegetative Species	17	16	16	16	19	21
Total Hydrophytic Species	6	7	9	6	8	8
Total Upland Species	11	9	7	10	11	13
Estimated % Total Vegetative Cover	95	95	95	95	95	95
Estimated % Unvegetated	5	5	5	5	5	5
% Transect Length Comprising Hydrophytic Vegetation Communities	76	76	78	82	93	92
% Transect Length Comprising Upland Vegetation Communities	24	24	22	18	7	8
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0	0
% Transect Length Comprising of Mud Flat	0	0	0	0	0	0

Data collected on T-3 are summarized in Table 4. T-3 is 320 feet long and intersects WT 2, WT 10, and WT 15. The transect is completely comprised of wetland habitat, which is consistent with findings from 2018-2022. The total number of species observed in 2022 increased by one from the previous year, and the number of hydrophytic species remained consistent at twelve. Total vegetative cover is increased by two percent from 2021 to 2022.

Table 4. Data Summary for T-3 From 2017 Through 2022 at the Rostad Ranch Wetland Mitigation Site

Monitoring Year	2017	2018	2019	2020	2021	2022
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	2	3	3	3	3	3
Total Vegetative Species	23	23	21	22	19	20
Total Hydrophytic Species	15	16	16	16	12	12
Total Upland Species	8	7	5	6	7	8
Estimated % Total Vegetative Cover	80	85	85	90	90	92
Estimated % Unvegetated	20	15	15	10	10	8
% Transect Length Comprising Hydrophytic Vegetation Communities	91	100	100	100	100	100
% Transect Length Comprising Upland Vegetation Communities	9	0	0	0	0	0
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0	0
% Transect Length Comprising of Mud Flat	0	0	0	0	0	0

Data collected on T-4 (Wetland Mitigation Site Monitoring form, Appendix B) are summarized in Table 5. T-4 was established in 2017 following adaptive management actions at the site and is 412 feet long. T-4 intersects UT 8, and new wetland WT 16. The percent of the transect that crosses wetland increased from 2021 to 2022 by 13 percent as a result of the wetland expanding north of the berm where T-4 starts. Total vegetative cover increased slightly from eighty-five to eighty-seven percent in 2022.

Table 5. Data Summary for T-4 From 2017 Through 2022 at the Rostad Ranch Wetland Mitigation Site

Monitoring Year	2017	2018	2019	2020	2021	2022
Transect Length (feet)	412	412	412	412	412	412
Vegetation Community Transitions Along Transect	4	3	3	4	2	2
Vegetation Communities Along Transect	3	2	2	3	2	2
Hydrophytic Vegetation Communities Along Transect	1	1	1	1	1	1
Total Vegetative Species	10	16	14	17	15	17
Total Hydrophytic Species	1	3	5	4	3	5
Total Upland Species	10	13	9	13	12	12
Estimated % Total Vegetative Cover	70	80	80	80	85	87
Estimated % Unvegetated	30	20	20	20	15	13
% Transect Length Comprising Hydrophytic Vegetation Communities	12	12	21	8	10	23
% Transect Length Comprising Upland Vegetation Communities	88	88	79	80	90	77
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0	0
% Transect Length Comprising of Mud Flat	0	0	0	0	0	0

**Woody Plant Survival** — Woody plant survival was estimated at 50 percent in 2022 for all plantings. Approximately 2,000 willow cuttings were planted throughout the excavated areas when the site was constructed in 2012. Willow cuttings appeared healthy and vigorous with minimal signs of browse. 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, and survival of these containerized, 5-gallon plant materials was also estimated at 50 percent in 2022. Willow dominance continues to increase via natural recruitment in the southern portion of the site within WT 3 – *Salix exigua*. An additional volunteer *Salix exigua* community has been developing in the north portion of the site, west of the excavated wetland cell (Appendix A, Figure A-3).

**Hydrology** — The hydrology for the 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 (*Salix exigua*) 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 11, 2022 and was turned off on May 15, 2021. The site was irrigated earlier and for a shorter duration than in previous years due to calls from downstream senior water right users within the Musselshell River basin, similar to 2021. However, during the monitoring event in June, up to 1.25 feet of surface water was observed across in the site in both wetland and upland areas. This precipitation accumulated from a large rain event one week prior to monitoring, and the precipitation was retained and dispersed at the mitigation site demonstrating the success and effectiveness of the adaptive management actions taken in the spring of 2017 (See Figure A-2 for berm locations). One groundwater monitoring well remains at the site and is monitored monthly by the US Geological Survey (USGS). On June 27, 2022 the well measured 4.71 feet to the water table below land surface.

**Photographs** – Photographs taken in 2022 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. <a href="https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx">https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx</a>

**Soils** – Soil test pits were excavated at twenty-two locations across the sixty-acre 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 2022). Wetland soil pits exhibited the hydric soil indicators redox dark surface and depleted matrix. No hydric soil indicators were observed in upland sample pits, except at DP09u, which demonstrated redox dark surface. This soil pit is located on an upland berm and is surround by wetland. Although concentrations were observed, the three concurrent parameters of hydric soils, evidence of wetland hydrology,

and a hydrophytic vegetation community were not met, and the sample point is therefore considered upland. Soil textures within the wetland plots ranged from sandy clay loam to clay. Gravels and cobbles were common in the soil matrices, and a hard pan layer was observed at 10 inches in DP03u, which limited excavation at this soil pit.

**Wildlife** — Nine bird species were observed at the site during the 2022 monitoring, and 39 have been reported historically. Many bobolinks (*Dolichonyx oryzivorus*) were observed foraging, nesting, and loafing along the fence line and throughout the site. Six of the seven bird boxes installed at the site are intact. Tree swallows were observed around two bird boxes at the southeast corner of the site, although the rest of the bird boxes appeared vacant and out of use. In addition to avian observations, frogs and a white-tailed deer and fawn were observed at the site, indicating a diversity of wildlife use by amphibians, mammals, and birds.

**Functional Assessment** — Overall, the site MWAM functional rating improved from a Category III to a Category III wetland in 2022. This increase comes from both an increase in the wetland acreage and the MWAM rating of general wildlife habitat increasing from low to moderate, as the site was not haved prior to monitoring in 2022 as it was in 2021. The 2022 functional assessment results for the Rostad Ranch Mitigation Site are summarized in Table 6. Completed Montana Wetland Assessment Method (MWAM) forms for the site are provided in Appendix B.

Table 6. Montana Wetland Assessment Method Summary for the Rostad Ranch Wetland Mitigation Site

Function and Value Parameters from the Montana Wetland Assessment Method	2014 <sup>(a)</sup>	2015 <sup>(a)</sup>	2016 <sup>(a)</sup>	2017 <sup>(a)</sup>	2018 <sup>(a)</sup>	2019 <sup>(a)</sup>	2020 <sup>(a)</sup>	2021 <sup>(b)</sup>	2022 <sup>(b)</sup>
Listed/Proposed T&E Species	Low	Low (0)	Low						
Habitat	(0)	(0)	(0)	(0)	(0)	(0)	(0)	` '	(0.1)
MTNHP Species Habitat	High (0.9)								
General Wildlife Habitat	Low (0.3)	Mod (0.5)	Mod (0.5)	Mod (0.5)	Mod (0.5)	Mod (0.5)	Mod (0.5)	Low (0.3)	Mod (0.5)
General Fish/Aquatic Habitat	NA								
Flood Attenuation	NA								
Short- and Long-Term	Mod	Mod	Mod	Mod	Mod	Mod	High	High	High
Surface Water Storage	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.9)	(0.9)	(0.9)
Sediment/Nutrient/Toxicant	Mod	High							
Removal	(0.7)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)
Sediment/Shoreline	Mod	High							
Stabilization	(0.6)	(0.9)	(0.9)	(0.9)	(0.9)	(0.9)	(0.9)	(0.9)	(0.9)
Production Export/Food	Mod	High	High	High	High	High	High	Mod	Mod
Chain Support	(0.6)	(0.8)	(0.8)	(0.8)	(0.8)	(0.8)	(0.8)	(0.6)	(8.0)
Groundwater	Mod								
Discharge/Recharge	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)
Uniqueness	Low								
Offiqueness	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.2)	(0.3)
Recreation/Education	Low								
Potential (bonus points)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Actual Points/Possible Points	4.65/9	5.75/9	5.75/9	5.75/9	5.75/9	5.75/9	6.05/9	5.55/9	6.15/9
% of Possible Score Achieved	51.7%	63.9%	63.9%	63.9%	63.9%	63.9%	67.2%	61.7%	68.33%
Overall Category	III	Ш	Ш	Ш	Ш	Ш	Ш	III	II

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

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

#### **Credit Summary**

**Wetland Credits** - Table 7 summarizes the estimated wetland credits based on the USACE-approved credit ratios and the wetland delineations completed in 2020-2022. Proposed mitigation credits from the Rostad Ranch Mitigation Plan (Montana Department of Transportation 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. The mitigation credits estimated in 2022, including the upland buffer credits, totaled 30.57 credit acres which is an increase of 0.37 credits from 2021.

**Functional Credits** — Table 8 summarizes the functional units generated at the Rostad Ranch mitigation site in 2022. The 2007 Rostad Ranch Mitigation Plan, Meagher County, Montana (MDT 2007) anticipates increasing functional points at the site from 3.2 of 9 possible points pre-construction to 6.4 of 9 possible points post-construction. The associated increase in functional points would result in increasing the wetland from Category II to Category III, and the planned development of 39.84 acres of wetland would generate 254.91 units after the completed monitoring period. In 2022, the Rostad Ranch site achieved 6.15 of 9 possible points and has generated a total of 173.03 Functional Units to date. This is 81.88 Functional Units short of the anticipated goal established in the 2007 Mitigation Plan, but an increase of 18.72 units from 2021.

Table 7. Wetland Mitigation Credits Estimated for the Rostad Ranch Site (2020–2022)

Compensatory Mitigation Type	Wetland Type (FGDC 2013)	Approved Mitigation Ratios <sup>(a)</sup>	Anticipated Mitigation Area (acres)	Anticipated Mitigation Credit (acres)	2020 Delineated Mitigation Areas (acres)	2020 Estimated Mitigation Credit (acres)	2021 Delineated Mitigation Areas (acres)	2021 Estimated Mitigation Credit (acres)	2022 Delineated Mitigation Areas (acres)	2022 Estimated Mitigation Credit (acres)
Restoration (Re-establishment)	Palustrine Emergent	1:1	27.11	27.11 <sup>(d)</sup>	18.46	18.46	19.30	19.30	19.37	19.37
Establishment (Creation)	Palustrine Emergent	1:1	9.84	9.84 <sup>(d)</sup>	7.5	7.5	7.32	7.32	7.80	7.80
Restoration (Rehabilitation)	Palustrine Emergent	1.5:1	2.63	1.75 <sup>(d)</sup>	2.06	1.37	2.06	1.37	2.06	1.37
Preservation	Palustrine, Scrub/shrub	4:1	0.25	0.06	0.25	0.06	0.25	0.06	0.25	0.06
Upland Buffer	N/A	5:1	6.76 <sup>(b)</sup>	1.35 <sup>(b)</sup>	6.76 <sup>(b)</sup>	1.35 <sup>(b)</sup>	12.79 <sup>(c)</sup>	2.56 <sup>(c)</sup>	11.90 <sup>(c)</sup>	2.38 <sup>(c)</sup>
Permanent Wetland Impact	N/A	1:1	N/A	-0.41	N/A	-0.41	N/A	-0.41	N/A	-0.41
		Totals	46.59	39.70	35.03	28.34	41.72	30.20	41.38	30.57

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

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

Compensatory Mitigation Type	2022 Delineated Acres	Mitigation Ratio	2022 Mitigation Credit Acres	MWAM Actual Points	2022 Functional Units Generated	
Restoration (Reestablishment)	19.37	1:1	19.37	6.05	117.19	
Establishment (Creation)	7.80	1:1	7.80	6.05	47.19	
Restoration (Rehabilitation)	2.06	1.5:1	1.37	6.05	8.29	
Preservation	0.25	4:1	0.06	6.05	0.36	
Upland Buffer	11.90	5:1	2.38	N/A	N/A	
	(Mitigation Credit Acres × Actual Points)					

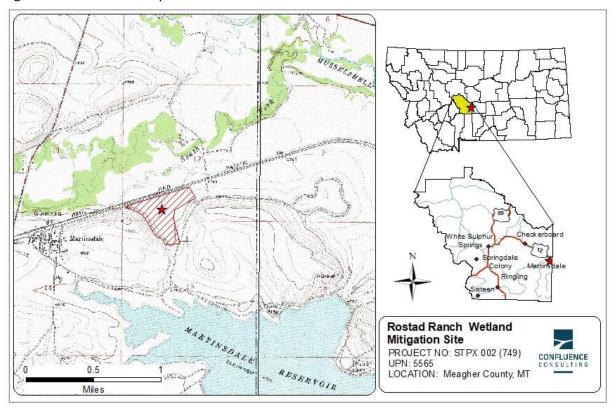
<sup>(</sup>b) Anticipated upland buffer credits were used for the first several years of the project.

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

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

#### Maps, Plans, Photos

Figure 1: Site Location Map



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

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

Photos: See Appendix C.

Plans: See Appendix D of 2018 Monitoring Report

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

#### **Conclusions**

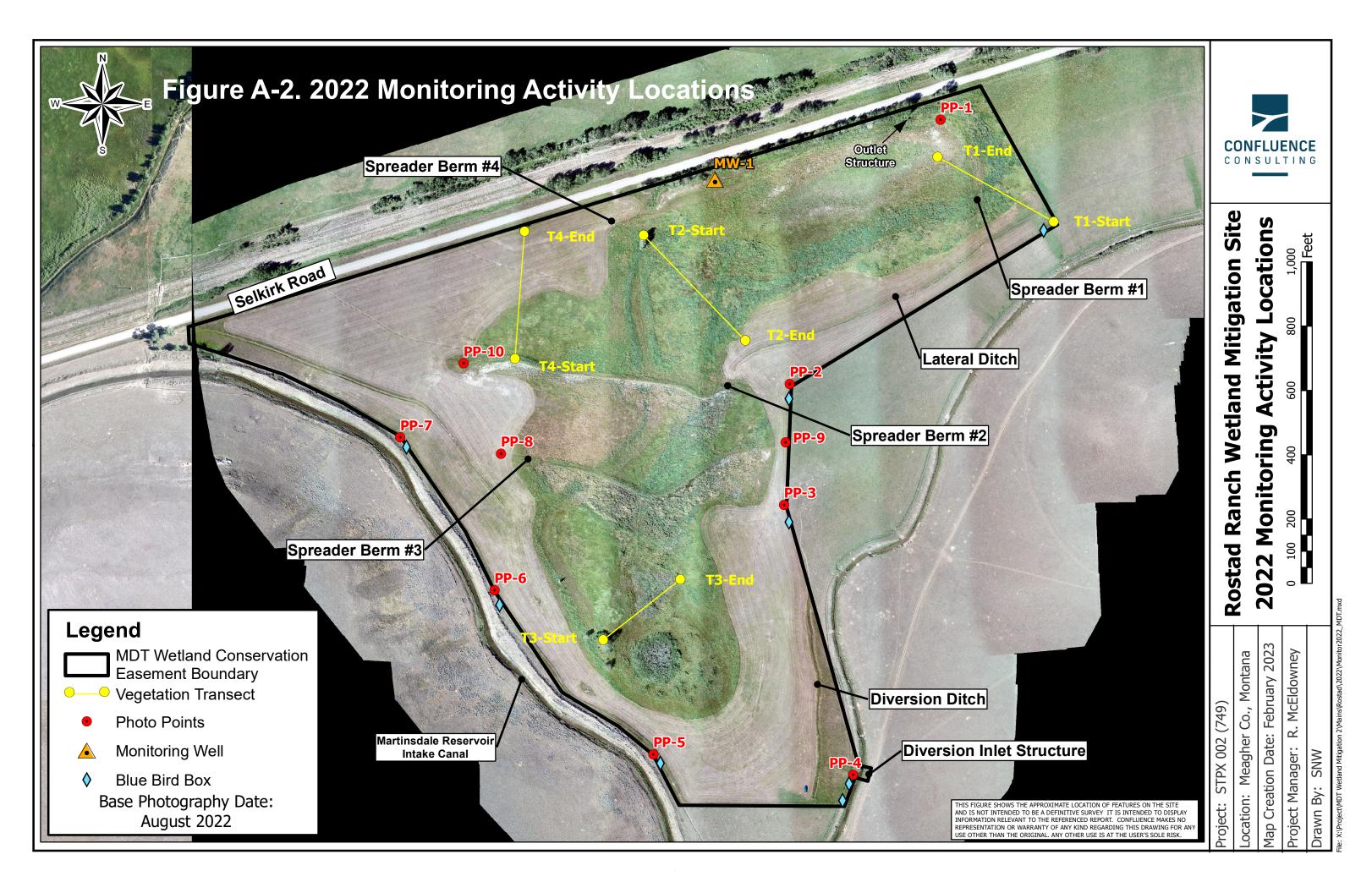
In 2022, the Rostad Ranch Mitigation Site again met all the established performance standards. Wetland habitat is expanding and developing into a diverse system with volunteer woody species, which contributes to a diversity of habitat types. Since adaptive management actions were implemented in 2017 to more effectively spread water across the site, the wetland areas on the site have gradually expanded. Effects of the management actions were especially evident during the 2022 monitoring event, as water from precipitation prior to monitoring was effectively retained and distributed across the site by berms and feeder ditches. The results of the 2022 monitoring event estimate the generation of 30.57 mitigation credit acres, which exceeds the target number of 27.4-acres by 3.18 acres. Based on the success of the adaptive management plan and continued wetland expansion observed in 2021-2022, despite drier than normal years (Hartman 2022), the site has the potential to provide additional wetland credits going forward.

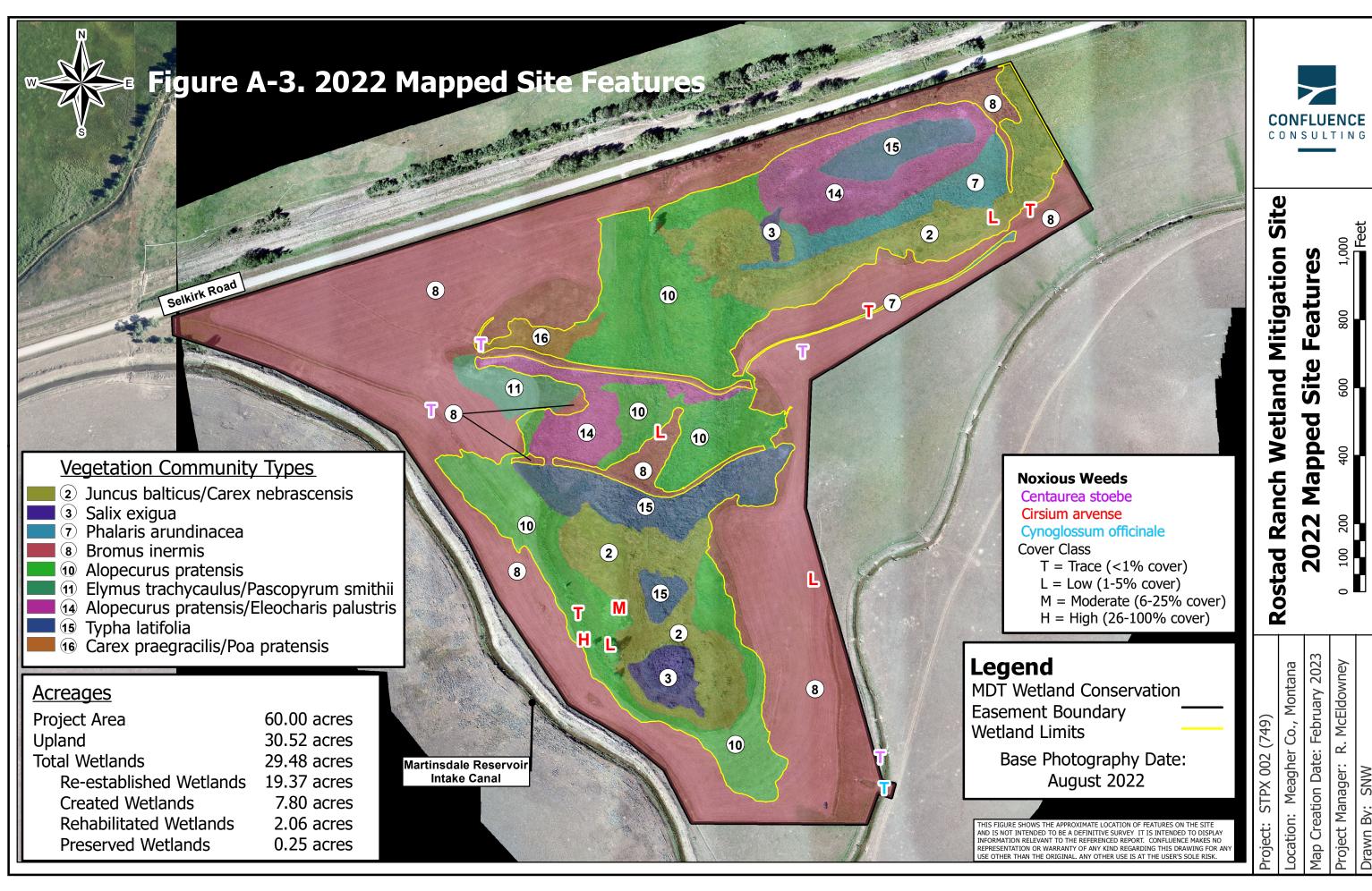
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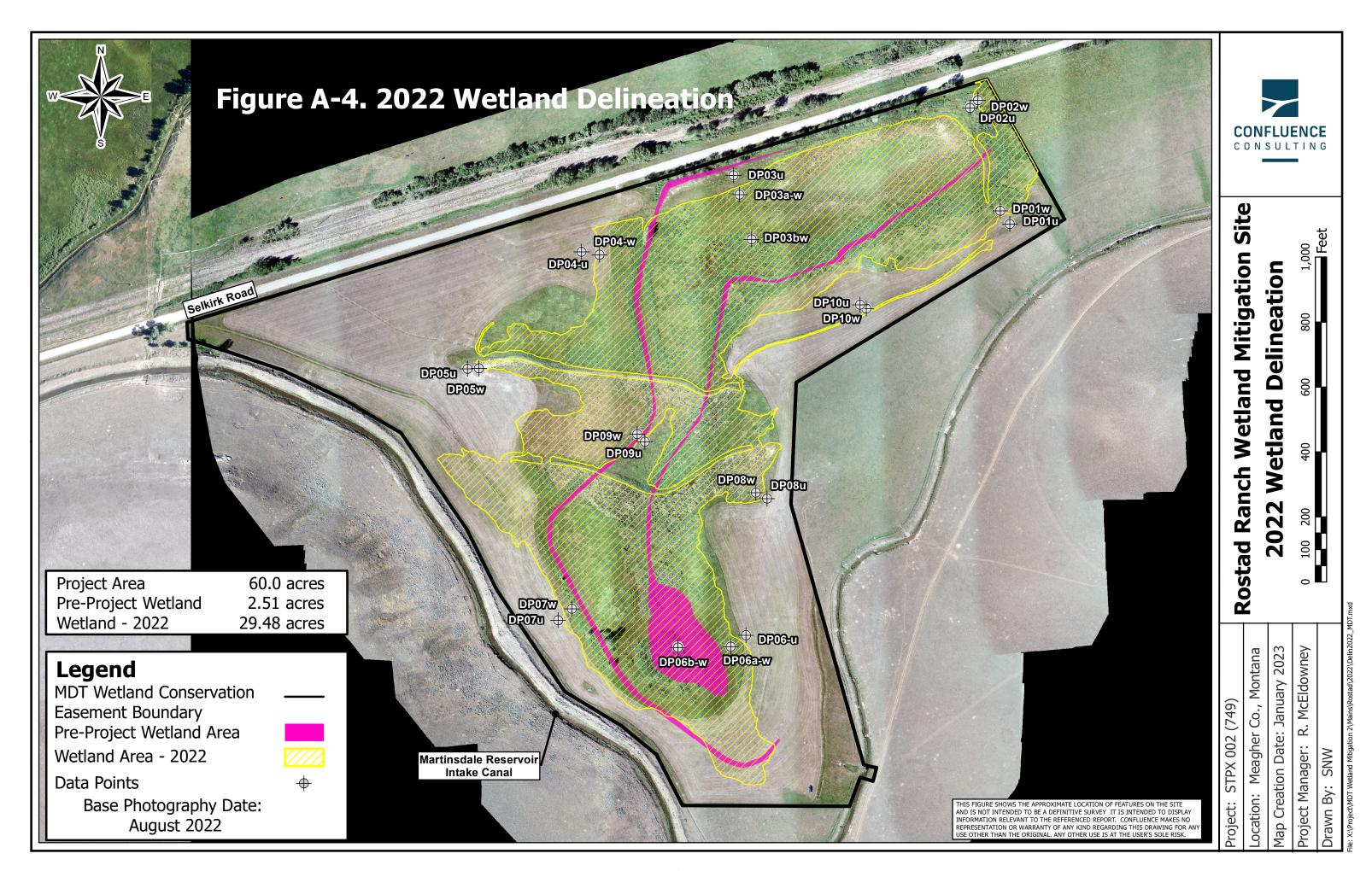
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## APPENDIX A PROJECT AREA MAPS

MDT Wetland Mitigation Monitoring Rostad Ranch Meagher County, Montana







# APPENDIX B MONITORING FORMS

MDT Wetland Mitigation Monitoring Rostad Ranch Meagher County, Montana

## MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: Ros	stad Ranch	Assessment Date/Time	6/27/2022
Person(s) conduc	cting the assessmer	nt: S Weyant, W Fouts, M Hickey	
Weather: Sunny,	90 degrees	Location: Martinsdale, MT	
MDT District: Billi	ings	Milepost:	<del>_</del>
Legal Description	ı: T <u>8N</u> R <u>11E</u> S	Section(s) 12 and 13	
Initial Evaluation	Date <u>: 8/21/2013</u>	Monitoring Year: <u>10</u> #Visits in Year: <u>1</u>	
Size of Evaluation	n Area:60 (ad	cres)	
Land use surroun	ıding wetland:		
Agriculture			
		HYDROLOGY	
Surface Water Source	<sub>e:</sub> Groundwater, s	supplemental hydrology from ditch/headgate, surfa	ce runoff
Inundation: 🔻 🔽	Αverage Dε	epth: <u>0.25 <b>(ft)</b></u> Range of Depths: <u>0-2</u>	<u>(ft)</u>
Percent of assessmer	nt area under inund	ation:0 <u>%</u>	
Depth at emergent ve	getation-open wate	r boundary: <u>0.25 <b>(ft)</b></u>	
If assessment area is	not inundated then	are the soils saturated within 12 inches of surface:	Yes
		ex. – drift lines, erosion, stained vegetation, etc <u>:</u>	
	soil saturation, wate	er marks, geomorphic position, FAC-neutral test, s	oil surface
Groundwater Mor	-		
	•		
Record depth of w	ater surface below	ground surface, in feet.	
Well ID	Water Surface De	epth (ft)	
MW-1	4.71		
Additional Activities Checklis	st:		
Map emergent vegeta	ation-open water bounda	ary on aerial photograph.	
Observe extent of sur	rface water during each ៖	site visit and look for evidence of past surface water	
elevations (drift lines, erosio	-	·	
	roundwater monitoring w	vell locations, if present.	
lydrology Notes:			
nundation from abno	ormally high and fla	by USGS. Depths are Below Land Surface (BLS) ashy overland flow was observed across the site, itation communities lacking hydric soils and/or sust	ncluding

#### **VEGETATION COMMUNITIES**

## Site Rostad Ranch

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

Community # 2 Community Type: Juncus balticus / Carex nebrascensis Acres: 7.66

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

#### **Comments:**

Wet meadow community type. Revegetation successful since 2013. 0-14 inches of surface water observed within this community type, as well as an increase in cover of Carex praegracilis and Eleocharis palustris in 2022.

Community # 3 Community Type: Salix exigua /	Acres:	8.0
--	--------	-----

Species	Cover class	Species	Cover class
Agrostis gigantea	0	Alopecurus pratensis	2
Beckmannia syzigachne	0	Carex bebbii	0
Carex nebrascensis	1	Carex pellita	1
Carex praegracilis	1	Deschampsia caespitosa	1
Eleocharis palustris	2	Juncus balticus	1
Poa palustris	1	Salix exigua	5
Salix lutea	1	Schedonorus pratensis	1
Typha latifolia	0	Veronica peregrina	0
Comments:			

#### Comments:

Undisturbed Salix community near southern extent of monitoring boundary. A volunteer Salix community is establishing in the middle of the site as well.

<u>1.53</u> <u>7</u> Community Type: <u>Phalaris arundinacea /</u> Community # Acres:

Species	Cover class	Species	Cover class
Agrostis gigantea	1	Alopecurus arundinaceus	2
Alopecurus pratensis	2	Amaranthus retroflexus	0
Bromus inermis	0	Carex nebrascensis	1
Carex praegracilis	2	Cirsium arvense	0
Deschampsia caespitosa	0	Eleocharis palustris	1
Elymus repens	3	Elymus trachycaulus	1
luncus balticus	1	Medicago sativa	0
Phalaris arundinacea	4	Phleum pratense	1
Poa palustris	0	Poa pratensis	2
Populus balsamifera	1	Rumex crispus	0
Salix exigua	0	Thlaspi arvense	0
Trifolium pratense	1	Typha latifolia	0

#### **Comments:**

This community has expanded and contracted over the last several years and greatly diminished in 2022. Observable in areas transitioning from non-wetland to more hydrophytic vegetation communities.

Community # 8 Community Type: Bromus inermis / Acres: 29.36

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

#### Comments:

Graminoid dominated upland community observed in non-wetland areas across the site. Previously recorded as UT1 with a prevalence of Phleum pratense, which has increased in cover from 2021.

Community # 10 Community Type: Alopecurus pratensis / Acres: 11.22

Species	Cover class	Species	Cover class
Agrostis gigantea	1	Alopecurus arundinaceus	1
Alopecurus pratensis	5	Bromus inermis	0
Carex nebrascensis	1	Carex pellita	1
Cirsium arvense	0	Eleocharis palustris	0
Elymus repens	1	Elymus trachycaulus	1
Hordeum jubatum	0	Juncus balticus	3
Phalaris arundinacea	2	Poa palustris	0
Poa pratensis	0	Populus balsamifera	1
Rumex crispus	0	Salix exigua	0
Typha latifolia	1		

#### **Comments:**

This community has replaced WT 7 (Phalaris arundinaceus) and is the dominant wetland community type observed across the site. Aggressive, introduced species Alopecurus pratensis occurs in monocultures and outcompetes most other species in the area.

Community #	11	<b>Community Type:</b>	Elymus trachycaulus / Pascopyrum smithii	Acres:	0.83

Species	Cover class	Species	Cover class
Agrostis gigantea	1	Bare Ground	3
Bromus inermis	1	Chenopodium album	0
Cirsium arvense	0	Elymus repens	2
Elymus trachycaulus	3	Melilotus officinalis	0
Pascopyrum smithii	3	Phalaris arundinacea	0
Poa pratensis	0	Sinapis arvensis	0
Symphyotrichum ascendens	0	Symphyotrichum ericoides	0
Trifolium hybridum	0		

#### **Comments:**

This community type was found in areas that were revegetated following the 2017 constuction and has since largely been replaced by UT 8, and is present only south of the berm near T-4 end.

Community # 14 Community Type: Alopecurus pratensis / Eleocharis palustris Acres: 4.22

Species	Cover class	Species	Cover class
Alopecurus pratensis	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 maritimus	1
Typha angustifolia	1	Typha latifolia	1

#### **Comments:**

New community type created in 2022, previously recorded as Phalarus arundinacea/Eleocharis palustris. This wetland community is found around the boundaries of wetter communities that exhibited surface water in 2022.

Community # 15 Community Type: Typha latifolia / Acres: 3.55

Species	Cover class	Species	Cover class
Alopecurus pratensis	2	Bare Ground	1
Beckmannia syzigachne	1	Carex nebrascensis	1
Carex pellita	1	Carex utriculata	1
Eleocharis palustris	3	Elymus trachycaulus	1
Glyceria grandis	0	Glyceria striata	0
Hippuris vulgaris	1	Open Water	2
Phalaris arundinacea	1	Rumex crispus	1
Salix exigua	1	Schoenoplectus maritimus	1
Typha latifolia	4		

#### **Comments:**

Cattail wetland community type which has evolved in 2022 to replace WT 5 (Glyceria grandis/Typha latifolia). Inundation within cattail marshes ranged from 0-1.5 feet.

The open water area previous mapped as WT 13 in 2021 was inundated with 1-1.5' of water during the June 2022 monitoring event, and emergent grasses were observed on the bed of the excavated area. The aerial drone imagery flown in August 2022 shows vegetation growing and no surface water. Upland areas of the site were also inundated in June from recent high runoff related to recent precipitation events. Therefore, the community was mapped as WT 15, which is most representative of the ongoing conditions observed at this location.

Community # 16 Community Type: Carex praegracilis / Poa pratensis Acres: 0.5

Species	Cover class	Species	Cover class
Alopecurus pratensis	2	Bare Ground	5
Bromus inermis	1	Carex praegracilis	4
Chenopodium album	0	Chenopodium rubrum	0
Distichlis spicata	0	Eleocharis palustris	1
Eleocharis palustris	2	Elymus repens	1
Phalaris arundinacea	1	Phleum pratense	2
Poa palustris	0	Poa pratensis	4
Potentilla gracilis	0	Rumex crispus	0
Salicornia rubra	0	Schedonorus pratensis	1
Schoenoplectus maritimus	1	Typha latifolia	0

#### Comments:

New vegetation community created in 2022 to document the transitional species observed along transect 4 where the wetland boundary is expanding. Community is a mix of hydrophytic and upland species.

Total Vegetation Community Acreage

60.0

## **VEGETATION TRANSECTS**

Rostad Ranch	Da		ate:6/27/202	
Transect Numbe	r: <u>1</u>	Compa	ss Direction from Star	<b>t</b> : 290
Interval Data: Ending Station	122 <b>Comn</b>	nunity Type:	Bromus inermis /	
Species	Cover	class	Species	Cover class
Alopecurus pratensis		1	Bromus inermis	5
Carex praegracilis		1	Carum carvi	1
Cirsium arvense		0	Elymus repens	2
Elymus trachycaulus		1	Juncus balticus	0
Phleum pratense		2	Poa pratensis	3
Schedonorus arundinac	eus	0	Symphyotrichum ascendens	0
Taraxacum officinale		0		
<b>Ending Station</b>	261 <b>Comn</b>	nunity Type:	Phalaris arundinacea /	
Species	Cover	class	Species	Cover class
Agrostis gigantea		1	Alopecurus pratensis	2
Bromus inermis		0	Carex nebrascensis	2
Carex praegracilis		1	Elymus repens	1
Juncus balticus		1	Phalaris arundinacea	4
Poa palustris		2		
<b>Ending Station</b>	282 Comn	nunity Type:	Elymus trachycaulus / Pascop	yrum smithii
Species	Cover	class	Species	Cover class
Agrostis gigantea		1	Bare Ground	3
Elymus repens		2	Elymus trachycaulus	3
Pascopyrum smithii		1	Phalaris arundinacea	2
Poa pratensis		1		
Ending Station	358 Comn	nunity Type:	Phalaris arundinacea /	
Species	Cover	class	Species	Cover class
Agrostis gigantea		0	Alopecurus pratensis	2
Carex nebrascensis		0	Cirsium arvense	0
Elymus trachycaulus		1	Phalaris arundinacea	5
Phleum pratense		0	Rumex crispus	1

Ending Station	386 Community Type:	Alopecurus pratensis / El	eocharis palustris
Species	Cover class	Species	Cover class
Alopecurus pratensis	2	Bare Ground	0
Carex pellita	1	Eleocharis palustris	1
Elymus trachycaulus	0	Glyceria grandis	5
Phalaris arundinacea	2	Rumex crispus	1
Typha latifolia	0		
Ending Station	422 Community Type:	Typha latifolia /	

## Ending Station 422 Community Type: Typha latifolia /

Species	Cover class	Species	Cover class
Bare Ground	1	Beckmannia syzigachne	1
Eleocharis palustris	2	Glyceria grandis	2
Open Water	0	Phalaris arundinacea	4
Rumex Crispus	0	Schoenoplectus maritimus	0
Typha latifolia	1		

#### **Transect Notes:**

Phalaris arundinacea, Alopecurus pratensis, and Glyceria grandis have greatly increased in cover, reducing bare ground from a cover class of 3 to 1. Open water along the transect ranged from 0-4 inches deep.

Transect Number:	2 Compas	s Direction from Sta	rt: <u>120</u>
Interval Data:	30. Community Trans	Alopecurus pratensis /	
	30 Community Type:	· · · · · · · · · · · · · · · · · · ·	
Species	Cover class	Species	Cover class
Agrostis gigantea	1	Alopecurus pratensis	5
Bromus inermis	0	Carex nebrascensis	1
Carex pellita	2	Elymus repens	1
Elymus trachycaulus	3	Juncus balticus	1
Phalaris arundinacea	1	Poa palustris	1
Populus balsamifera	0	Rumex crispus	0
Ending Station 2	234 Community Type:	Juncus balticus / Carex nebra	ascensis
Species	Cover class	Species	Cover class
Alopecurus pratensis	2	Bare Ground	3
Bare Ground	3	Bromus tectorum	4
Bromus tectorum	4	Carex nebrascensis	1
Carex pellita	1	Eleocharis palustris	2
Elymus repens	0	Juncus balticus	5
Pascopyrum smithii	3	Pascopyrum smithii	3
Poa palustris	1	Poa pratensis	1
Poa pratensis	1		
Ending Station 2	256 Community Type:	Alopecurus pratensis /	
Species	Cover class	Species	Cover class
Alopecurus pratensis	3	Juncus balticus	1
Open Water	5	Open Water	5
District and a second district and			
Phalaris arundinacea	5	Poa palustris	1
	5 285 <b>Community Type:</b>	Poa palustris  Juncus balticus / Carex nebra	·
			·
Ending Station 2	285 Community Type:	Juncus balticus / Carex nebra	ascensis
Ending Station 2 Species	Cover class	Juncus balticus / Carex nebra	ascensis  Cover class
Ending Station 2 Species Alopecurus pratensis	Cover class	Juncus balticus / Carex nebra  Species  Bare Ground	Cover class
Ending Station 2 Species Alopecurus pratensis Bare Ground	Cover class  2 5	Juncus balticus / Carex nebra  Species  Bare Ground  Carex nebrascensis	Cover class  5 0

Ending Station	418 Community Type:	Alopecurus pratensis /
----------------	---------------------	------------------------

Species	Cover class	Species	Cover class
Alopecurus pratensis	5	Bare Ground	3
Bare Ground	3	Chenopodium album	2
Chenopodium album	2	Elymus trachycaulus	2
Elymus trachycaulus	2	Hordeum jubatum	3
Hordeum jubatum	3	Phalaris arundinacea	2
Poa palustris	1	Poa pratensis	1
Salix exigua	0	Schoenoplectus maritimus	4
Schoenoplectus maritimus	4		

## Ending Station 453 Community Type: Bromus inermis /

		· · · · · · · · · · · · · · · · · · ·	
Species	Cover class	Species	Cover class
Bare Ground	2	Bare Ground	2
Bromus arvensis	1	Bromus arvensis	1
Bromus inermis	4	Bromus tectorum	2
Bromus tectorum	2	Chenopodium album	2
Chenopodium album	2	Elymus lanceolatus	1
Elymus lanceolatus	1	Hordeum jubatum	2
Hordeum jubatum	2	Lepidium perfoliatum	1
Lepidium perfoliatum	1	Medicago sativa	0
Melilotus officinalis	1	Melilotus officinalis	1
Pascopyrum smithii	3	Pascopyrum smithii	3
Phleum pratense	1	Poa pratensis	2
Schedonorus pratensis	1	Symphyotrichum ascendens	0
Taraxacum officinale	1		

## **Transect Notes:**

WT 2 has expanded and comprises the majority of this transect. Phalaris arundinaceus has been replaced by Alopecurus pratensis, and the vegetation types along this transect are becoming more hydrophytic, consistent with observations in 2021.

Transect Number:	Compas	ss Direction from Sta	rt: <u>30</u>
Interval Data: Ending Station	<sup>10</sup> Community Type:	Alopecurus pratensis /	
Species	Cover class	Species	Cover class
Agrostis gigantea	1	Alopecurus arundinaceus	4
Cirsium arvense	0	Eleocharis palustris	0
Juncus balticus	3	Phalaris arundinacea	1
Poa pratensis	1	Populus balsamifera	4
Ending Station	123 Community Type:	Juncus balticus / Carex nebi	rascensis
Species	Cover class	Species	Cover class
Agrostis gigantea	1	Alopecurus pratensis	3
Carex nebrascensis	1	Carex pellita	2
Cirsium arvense	0	Eleocharis palustris	2
Juncus balticus	4	Phalaris arundinacea	1
Salix exigua	1	Schedonorus pratensis	0
Sonchus arvensis	2	Taraxacum officinale	1
Triglochin maritima	1	Typha latifolia	1
<b>Ending Station</b>	288 Community Type:	Typha latifolia /	
Species	Cover class	Species	Cover class
Alopecurus pratensis	1	Bare Ground	1
Carex nebrascensis	2	Carex pellita	1
Carex utriculata	2	Eleocharis palustris	3
Glyceria grandis	0	Open Water	1
Phalaris arundinacea	0	Salix exigua	1
Typha latifolia	5		
Ending Station	306 Community Type:	Juncus balticus / Carex nebi	rascensis
Species	Cover class	Species	Cover class
Agrostis gigantea	1	Alopecurus pratensis	2
Carex nebrascensis	2	Carex utriculata	2
Eleocharis palustris	3	Juncus balticus	3
Open Water	1	Salix exigua	2
Schoenoplectus maritimus	s 1	Typha latifolia	1

## Transect Notes:

Transect composed entirely of wetland community types. Open water along the transect ranged from 0-5 inches deep.

Transect Number	: <u>4</u> Compas	s Direction from Star	<b>t</b> :0
Interval Data: Ending Station	17 Community Type:	Bromus inermis /	
Species	Cover class	Species	Cover class
Bromus inermis	2	Elymus repens	2
Phalaris arundinacea	4		
Ending Station	110 Community Type:	Carex praegracilis / Poa prate	nsis
Species	Cover class	Species	Cover class
Alopecurus pratensis	1	Bromus inermis	2
Carex praegracilis	5	Eleocharis palustris	1
Elymus repens	1	Phalaris arundinacea	1
Phleum pratense	2	Poa palustris	2
Poa pratensis	3	Potentilla gracilis	0
Schedonorus pratensis	1	Typha latifolia	0
Ending Station	412 Community Type:	Bromus inermis /	
Species	Cover class	Species	Cover class
Bromus inermis	5	Cirsium arvense	0
Elymus repens	2	Elymus trachycaulus	2
Pascopyrum smithii	2	Phleum pratense	1
Poa pratensis	4	Symphyotrichum ascendens	1

## **Transect Notes:**

Taraxacum officinale

The second interval along T-4 is a new community type created in 2022 to document the transitional community from upland to hydrophytic species where the wetland boundary is expanding.

0

#### PLANTED WOODY VEGETATION SURVIVAL

#### Rostad Ranch

Planting Type	#Planted	#Alive Notes
Populus balsamifera	100	Estimated 50% survival
Populus tremuloides	100	Estimated 50% survival
Salix sp.	2000	Estimated 50% survival

#### Comments

Willow stakes were planted in spring 2013. Due to tall herbaceous vegetation, locating all plantings was difficult during the site visit, especially locating stems that had died. Live plants observed looked healthy. Survival in 2022 was estimated at 50% based on the number of live stems observed. Willows are naturally expanding around vegetation community 3 in the southern area of the site. Volunteer Salix exigua and Populus balsamifera are appearing around the edges of WT 3 and WT 2 in the south eastern area of the site, and a new Salix community is establishing in the middle of the site.

#### Rostad Ranch

#### **WILDLIFE**

Were man-made nesting structures installed? If yes, type of structure: Blue Bird Boxes	Yes
if yes, type of structure: Dide Bird Boxes	
How many?7	
Are the nesting structures being used?	No
Do the nesting structures need repairs?	Yes

## **Nesting Structure Comments:**

One bird box, originally located near the start of T-1, in the NE corner of the site was reported missing in 2021 and was not replaced in 2022. All other bird boxes appear in good condition with little evidence of use, except two bird boxes along the SE boundary of the site where Tree Swallows were observed and appeared to be nesting.

Species	#Observed	Behavior	Habitat				
Bobolink	2	FO, F, L					
Brown-headed Cowbird	5	FO					
Dusky Flycatcher	1	FO, L					
Killdeer	1	F, L					
Mallard	3	L					
Red-winged Blackbird	5	FO, L					
Sandhill Crane	2	FO, F, L					
Swallow sp.	8	FO					
Wilson's Snipe	3	L, FO					
Bird Comments							
Nine bird species observed in 2022.							

#### **BEHAVIOR CODES**

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

#### **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

Frog sp. 2 No No No White-tailed Deer 2 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-10	o i		

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 4	46.463576102426	-110.2927263717
Transect 1 Start 4	46.463029103021	-110.291276
Transect 2 End 4	46.461978946056	-110.295094
Transect 2 Start 4	46.462875830304	-110.29637
Transect 3 End 4	46.459923761462	-110.2958697392
Transect 3 Start 4	46.459397471592	-110.296821
Transect 4 End	46.4629	-110.297851
Transect 4 Start 4	46.461803077753	-110.297953

#### Comments:

#### **ADDITIONAL ITEMS CHECKLIST**

	Hydrology
□ ✓ lines,	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
	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	p vegetation community boundaries
✓ Co	mplete Vegetation Transects
	Soils
<b>✓</b> As	sess soils
	Wetland Delineations
<b>✓</b> Suppl	Delineate wetlands according to applicable USACE protocol (1987 form or
	ement) Delineate wetland – upland boundary onto aerial photograph.
Wetla	nd Delineation Comments
29	.48 acres of wetland delineated in 2022.
	Functional Assessments
<b>⊻</b> forms	Complete and attach full MDT Montana Wetland Assessment Method field .
Funct	ional Assessment Comments:
Ca	tegory 2 wetland. Actual functional units increased from 5.55 in 2021 to 6.15 in 2022.

#### Maintenance

Project/Site: Rostad Ranch	City/County: Meagher	Samplin	g Date: 6/27/2022
		State: Montana Sampling	
Investigator(s): W Fouts, S Weyant			
Landform (hillslope, terrace, etc.): Footslope			
Subregion (LRR): LRR E Lat:			
Soil Map Unit Name: Delpoint variant-Mamarth-Cabart Loams			
Are climatic / hydrologic conditions on the site typical for this time of			
Are Vegetation, Soil, or Hydrology signification	ntly disturbed? Are "N	Iormal Circumstances" present?	Yes _ <u>V</u> No
Are Vegetation, Soil, or Hydrology naturally	/ problematic? (If nee	ded, explain any answers in Rem	arks.)
SUMMARY OF FINDINGS – Attach site map show	ing sampling point lo	cations, transects, impor	tant features, etc.
Hydrophytic Vegetation Present? Yes ☐ No ✔  Hydric Soil Present? Yes ☐ No ✔  Wetland Hydrology Present? Yes ☐ No ✔  Remarks: Upland sample point located slighly upslope from	within a Wetland	Area d? Yes No	<u> </u>
VEGETATION - Use scientific names of plants			
	niant Indicator	Dominance Test worksheet	
, % Cover. Spe	cies? Status	Number of Dominant Species that are OBL, FACW or FAC:	0 (A)
		Total Number of Dominant Species Across All Strata:	3 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 % (A/B)
<u></u>		Prevalence Index worksheet	
		Total % Cover of:	Multiply by:
		OBL species 0 X 1 FACW species 0 X 2	0
		FAC species 0 X 2	0
Harting and Christian Distance (5 Foot Doding)		FACU species 65 X 4	260
Herbaceous Stratum Plot size ( 5 Foot Radius)  Bromus inermis 30 ▼	1 UPL	UPL species 30 X 5	150
Elymus repens 40		Column Totals 95 (A	A) 410 (B)
Elymus trachycaulus 20		Prevalence Index = B/A =	4.32
Poa pratensis 5	FACU		
		Hydrophytic Vegetation Indicated 1 - Rapid Test for Hydro	
		2 - Dominance Test is >	
		3 - Prevalence Index is	
		4 - Morphological Adapt supporting data in rema sheet.	
		5 - Wetland Non-Vascul	ar Plants
		☐ Problematic Hydrophytic	: Vegetation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)		Indicators of hydric sil and wetlan present, unless disturbed or prob	nd hydrology must be
Percent Bare Ground 5		Hydrophytic Vegetation	∕es □ NO 🗹
Remarks:			
Data point is dominated by upland vegetation.			

SOIL					Sampling Point: DP01u
Profile Des	cription: (	Describe	to the depth	needed to document the indicator or o	confirm the absence of indicators.)
Depth		Matrix		Redox Features	
(inches)	Color	(moist)	%	Color (moist) % Type <sup>1</sup> L	<u>_oc² Texture</u> <u>Remarks</u>
0-03	10YR	3/2	100		Silty Clay Loam Fine roots
03-16	10YR	3/2	100		Silty Clay Loam
	_				
¹Type: C=C	Concentratio	n D=Der	letion RM=Re	educed Matrix, CS=Covered or Coated S	Eand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
				Rs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
Histoso				Sandy Gleyed Matrix (S4)	1 cm Muck (A9) (LRR I, J)
Histic E	Epipedon (A	.2)		Sandy Redox (S5)	Coast Prairie Redox (A16) (LRR F, G, H)
Black H	Histic (A3)			Stripped Matrix (S6)	Dark Surface (S7) (LRR G)
	jen Sulfide (			Loamy Mucky Mineral (F1)	High Plains Depressions (F16)
	ed Layers (A		•	Loamy Gleyed Matrix (F2)	(LRR H outside of MLRA 72 & 73)
	luck (A9) (L		-	□ Depleted Matrix (F3)     □ Redox Dark Surface (F6)	Reduced Vertic (F18)
	ed Below Da Dark Surface		e (ATT)	Depleted Dark Surface (F7)	☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12)
	Mucky Mine			Redox Depressions (F8)	Other (Explain in Remarks)
	-		(S2) ( <b>LRR G, I</b>		
	lucky Peat o			(MLRA 72 & 73 of LRR H)	
					unless disturbed or problematic.
Restrictive	Layer (if p	resent):			
Туре:				_	
Depth (ir	nches):			<u> </u>	Hydric Soil Present? Yes No
Remarks: N	No hydric s	soil indica	ators observe	ed.	
HYDROLO	OGY				
Wetland Hy	ydrology In	ndicators:			
_				check all that apply)	Secondary Indicators (minimum of two required)
	e Water (A1		•	Salt Crust (B11)	Surface Soil Cracks (B6)
	/ater Table (	•		Aquatic Invertebrates (B13)	Sparsely Vegetated Concave Surface (B8)
	tion (A3)	,		Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Water I	Marks (B1)			Dry-Season Water Table (C2)	Oxidized Rhizospheres on Living Roots (C3)
Sedime	ent Deposits	s (B2)		Oxidized Rhizospheres on Living	Roots (C3) (where tilled)
Drift De	eposits (B3)			(where not tilled)	Crayfish Burrows (C8)
Algal M	lat or Crust	(B4)		Presence of Reduced Iron (C4)	Saturation Visible on Aerial Imagery (C9)
Iron De	posits (B5)			Thin Muck Surface (C7)	Geomorphic Position (D2)
Inundat	tion Visible	on Aerial	Imagery (B7)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
☐ Water-S	Stained Lea	aves (B9)			Frost-Heave Hummocks (D7) (LRR F)
Field Obse	rvations:				
Surface Wa	iter Present	? Y	′es 🖳 No		
Water Table	e Present?	Υ	'es 🔲 No	Depth (inches):	
Saturation F			'es No	Depth (inches):	Wetland Hydrology Present? Yes No
(includes ca			n dauge monit	oring well, aerial photos, previous inspec	
Describe K	coolugu Da	ia (sucan	ı gauge, mom	oning wen, aenai photos, previous inspec	onono,, ii avaliabie.
Remarks					
veillaivs. M	io evidenc	e or wetla	and hydrolog	y observed.	

Project/Site: Rostad Ranch	_ City/County: Meagher		_ Sampling Date:	6/27/2022
Applicant/Owner: MDT		State: Montana		
Investigator(s): W Fouts, S Weyant			N 11E	
Landform (hillslope, terrace, etc.): Valley bottom, toeslope			Slc	ope (%):1
Subregion (LRR): LRR E	46.46307 լ	Long: -1	110.292021 <sub>Datu</sub>	<sub>um:</sub> NAD 83
Soil Map Unit Name: Delpoint variant-Mamarth-Cabart Loams,	2-8% slopes	NWI classif	lication: Not mapp	ed
Are climatic / hydrologic conditions on the site typical for this time of y				
Are Vegetation, Soil, or Hydrology significant				<b>Z</b> No □
Are Vegetation, Soil, or Hydrology naturally p	problematic? (If need	ded, explain any answ	vers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showin				eatures, etc.
Hydrophytic Vegetation Present? Yes ✓ No ☐ Hydric Soil Present? Yes ✓ No ☐ Wetland Hydrology Present? Yes ✓ No ☐  Remarks: PEM, slope wetland. Sample point located in south	Is the Sampled A within a Wetland	irea ? Yes	<u>✓</u> No	
VEGETATION - Use scientific names of plants				
Tree Stratum Plot size (30 Foot Radius) Absolute Domia % Cover: Specie		Dominance Test wo	orksheet	
, % COVEL. Specie	es? Status	Number of Dominant that are OBL, FACW		2 (A)
		Total Number of Dor Species Across All S		2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant That Are OBL, FAC		0.0 % (A/B)
, (.c.		Total % Cover OBL species FACW species FAC species	of: M 25 X1 35 X2 0 X3	lultiply by: 25 70 0
Herbaceous Stratum Plot size ( 5 Foot Radius)		FACU species UPL species	<del></del>	132
Bromus inermis 5	UPL	•		35
Carex nebrascensis 25	OBL	Column Totals	100 (A)	262 (B)
Carum carvi 1	UPL	Prevalence Inde	ex = B/A =	2.62
Elymus trachycaulus 15  Phalaris arundinacea 35	FACU FACW	Hydrophytic Vegeta		
Poa pratensis 18	FACU	_	st for Hydrophytic V	/egetation
			ce Test is >50%	
		✓ 3 - Prevalenc	ce Index is <= 3.0	
			gical Adaptations (I ata in remarks or o	
		5 - Wetland N	Non-Vascular Plant	s
		Problematic I	Hydrophytic Vegeta	ation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)		ndicators of hydric sil present, unless disturb		
Percent Bare Ground 0		Hydrophytic Vegeta Present?	ation Yes 🗸	NO $\square$
Remarks:				
Evidence of hydrophytic vegetation includes a positive domi	nance test and a prevale	ence index less that	n or equal to 3.0.	

SOIL										Sampling Point: DP01w
Profile Desc	cription: (	(Describe	to the de	oth neede	d to docur	nent the i	ndicator	or conf	irm the absenc	e of indicators.)
Depth		Matrix		<u></u>	Redo	x Feature:	s			
(inches)	Color	(moist)	%	Color	(moist)	%	_Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0-06	10YR	3/2	100						Silty Clay Lo	am
06-16	10YR	5/2	95	7.5YR	4/6	5	С	M	Clay	
							,			
<sup>1</sup> Type: C=Co	oncentration	on, D=Der	oletion, RM	I=Reduce	d Matrix, CS	S=Covered	d or Coat	ed Sand	Grains. <sup>2</sup> Lo	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil										s for Problematic Hydric Soils <sup>3</sup> :
Histosol				]	_	Gleyed Ma				Muck (A9) ( <b>LRR I, J</b> )
	pipedon (A	(2)		]	_	Redox (S5				t Prairie Redox (A16) (LRR F, G, H)
	istic (A3) en Sulfide	/A <b>/</b> \				d Matrix (S Mucky Mir				Surface (S7) ( <b>LRR G</b> ) Plains Depressions (F16)
	d Layers ( <i>i</i>		F)			Gleyed Ma		,		RR H outside of MLRA 72 & 73)
	uck (A9) ( <b>L</b>					d Matrix (I				ced Vertic (F18)
	d Below D			<u>.</u> 		Dark Surfa			_	Parent Material (TF2)
Thick Da	ark Surfac	e (A12)		]		d Dark Su		<b>'</b> )	☐ Very	Shallow Dark Surface (TF12)
	/lucky Mine			]		Depressio				r (Explain in Remarks)
	Mucky Pea					ains Depre				s of hydrophytic vegetation and
<u>                                   </u>	icky Peat	or Peat (S	3) (LRR F	)	(ML	RA 72 & 7	73 of LR	R H)		nd hydrology must be present,
Restrictive I	Lavor (if n	rocont):							unles	s disturbed or problematic.
Type:	Layer (II p	nesentj.								
Depth (in	ches):								Hydric So	il Present? Yes V No No
Remarks: Pi		rodovima	arabia aa		no comm	on within	the der	olotod m		
	ioninient	TEGOXIIII	Jipine co	icentialic	JIIS COITIIII	OII WILIIII	i tile del	neteu II	iauix.	
LIVEROLO	OV									
HYDROLO										
Wetland Hyd				باممطم بام	المحمد فمطا الد				Coord	
Primary India			ne require	ed, check a		•				dary Indicators (minimum of two required)
	Water (A1	•		片	Salt Crust		o (D12)			rface Soil Cracks (B6)
	ater Table	(AZ)		片	Aquatic In					arsely Vegetated Concave Surface (B8) ainage Patterns (B10)
Saturation	larks (B1)			남	Dry-Seaso		٠,	`	=	idized Rhizospheres on Living Roots (C3)
_	nt Deposits	s (B2)			Oxidized F		•	•		where tilled)
	posits (B3)					not tilled)	ies on Li	villig 1100		ayfish Burrows (C8)
	at or Crust				Presence		ed Iron (C	(4)		turation Visible on Aerial Imagery (C9)
	osits (B5)			Ħ	Thin Muck		-	' ')		comorphic Position (D2)
	on Visible		lmagery (E	37)	Other (Exp	,				.C-Neutral Test (D5)
	tained Lea			,						ost-Heave Hummocks (D7) ( <b>LRR F</b> )
Field Obser		(								(= ., (= ,
Surface Wate	er Present	t? Y	′es □	No 🗸	Depth (in	ches):				
Water Table			es 🔽	No $\Box$	Depth (in		12			
Saturation P			′es ✓	No	Depth (in		9	_   w	etland Hydrolo	gy Present? Yes No
(includes car	oillary fring	je)				-				
Describe Re	corded Da	ιτα (stream	ı gauge, m	onitoring v	veii, aerial į	pnotos, pr	evious in	spection	s), if available:	
Dewrond										
		f wetland	hydrolog	y include	s high wa	ter table,	saturat	ion with	in 9" of the soi	I surface, and positive FAC-Neutral
tes	δι.									

Project/Site: Rostad Ranch City/Cour	nty: Meagher Sampling Date: 6/27/2022
Applicant/Owner: MDT	State: Montana Sampling Point: DP02u
Investigator(s): W Fouts, S Weyant, M Hickey Section,	Township, Range: 12 8N 11E
Landform (hillslope, terrace, etc.): Berm Local re	
	46.463946 Long: -110.292406 Datum: NAD 83
Soil Map Unit Name: Varney-Notter Cobbly Loams, 2-4% slopes	NWI classification. Not mapped
Are climatic / hydrologic conditions on the site typical for this time of year? Yes	No. (If no. explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed	
Are Vegetation, Soil, or Hydrology naturally problematic	Are Normal Circumstances presents res No
SUMMARY OF FINDINGS – Attach site map showing sample	
	ing point locations, transects, important leatures, etc.
	the Sampled Area
Hydric Soil Present?  Wetland Hydrology Present?  Yes No W	ithin a Wetland? Yes No _ <del>✓</del>
Remarks: Upland sample point located on a berm upslope from DP02v	v.
VEGETATION - Use scientific names of plants	
Tree Stratum Plot size (30 Foot Radius) Absolute Domiant Indic % Cover: Species? Statu	i Dominance rest worksneet
% Coron. Openio. Cian	Number of Dominant Species that are OBL, FACW or FAC:
	Total Number of Dominant Species Across All Strata:  (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)	Percent of Dominant Species That Are OBL, FACW, or FAC:  0.0 % (A/B)
	Prevalence Index worksheet
	Total % Cover of: Multiply by:
	OBL species 0 X 1 0 FACW species 10 X 2 20
	FAC species 0 X3 0
District (5 Foot Bodies)	FACU species 60 X 4 240
Herbaceous Stratum Plot size ( 5 Foot Radius)  Bromus inermis 30 ✓ UPL	UPL species 30 X 5 150
Bromus inermis 30 ✓ UPL Elymus repens 35 ✓ FACU	Column Totals 100 (A) 410 (B)
Elymus trachycaulus 25 FACU	Prevalence Index = B/A = 4.10
Phalaris arundinacea 10 FACW	1 Tevalence mack - BIA -
	<ul> <li>Hydrophytic Vegetation Indicators</li> <li>1 - Rapid Test for Hydrophytic Vegetation</li> </ul>
	2 - Dominance Test is >50%
	3 - Prevalence Index is <= 3.0
	4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
	5 - Wetland Non-Vascular Plants
	Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)	Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Persont Pers Crown 1 0	Hydrophytic Vegetation Present?  Yes NO
Percent Bare Ground 0 Remarks:	. 1000.11.
Data point is dominated by upland vegetation.	

SOIL Sampling Point: DP02u Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features % Loc<sup>2</sup> Color (moist) Type<sup>1</sup> Texture Color (moist) (inches) 0-05 4/2 100 10YR Sandy Clay Loam 05-17 2.5Y 100 4/2 Sandy Clay Loam <sup>2</sup>Location: PL=Pore Lining, M=Matrix. <sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils<sup>3</sup>: Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (**LRR I, J**) Coast Prairie Redox (A16) (LRR F, G, H) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Loamy Mucky Mineral (F1) Hydrogen Sulfide (A4) High Plains Depressions (F16) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73) Stratified Layers (A5) (LRR F)  $\perp$  1 cm Muck (A9) (LRR F, G, H) Depleted Matrix (F3) Reduced Vertic (F18) Redox Dark Surface (F6) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) High Plains Depressions (F16) <sup>3</sup>Indicators of hydrophytic vegetation and 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) 5 cm Mucky Peat or Peat (S3) (LRR F) wetland hydrology must be present. (MLRA 72 & 73 of LRR H) unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Depth (inches): Remarks: No hydric soil indicators observed. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Hydrogen Sulfide Odor (C1) Saturation (A3) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) (where tilled) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Other (Explain in Remarks) Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F) Field Observations: Yes \_\_\_\_ No \_\_\_ Depth (inches): \_\_\_\_\_ Surface Water Present? Yes \_\_\_\_ No \_\_\_ Depth (inches): \_\_\_ Water Table Present? Wetland Hydrology Present? Yes \_\_\_\_ No Yes \_\_\_\_ No \_\_\_\_ Depth (inches): \_\_\_\_\_ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No evidence of wetland hydrology observed.

Project/Site: Rostad Ranch	City/County: Meagher		Sampling Date: _	6/27/2022
	Section, Township, Rar		11E	
Landform (hillslope, terrace, etc.): Toeslope				
Subregion (LRR): LRR E Lat:	46.464009	) <sub>Long</sub> 1	10.29231 Datu	m. NAD 83
Soil Map Unit Name: Varney-Notter Cobbly Loams, 2-4% slop	es	NI/A/I classific	ation: Not mappe	ed
Are climatic / hydrologic conditions on the site typical for this time o	Fyogra Vos 🗸 No	(If no explain in Br	omarka)	
				No 🗆
Are Vegetation, Soil, or Hydrology significal Are Vegetation, Soil, or Hydrology naturally	illy disturbed? Are i	normal Circumstances p	resent? Tes	NO
SUMMARY OF FINDINGS – Attach site map showi				aturas ata
		cauons, transects,	, important le	atures, etc.
Hydrophytic Vegetation Present? Yes   W No   Hydric Soil Present? Yes   No   No   No   No   No   No   No   N	Is the Sampled		_	
Hydric Soil Present?       Yes       ✓       No          Wetland Hydrology Present?       Yes       ✓       No	within a Wetlan	d? Yes	No L	_
Remarks: PEM, slope wetland. Sample point located in lowl	and in the northeast-mo	st corner of the mitigat	tion site.	
VEGETATION - Use scientific names of plants				
Tree Stratum Plot size (30 Foot Radius) Absolute Domi Spec		Dominance Test work	ksheet	
л обуст. Срос	ico. Ciatas	Number of Dominant S that are OBL, FACW of		1 (A)
		Total Number of Domin Species Across All Str		1 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant S That Are OBL, FACW,		.0 % (A/B)
<u> </u>		Prevalence Index wo	rksheet	
		Total % Cover of		ultiply by:
		OBL species	0 X1 95 X2	0
		FACW species FAC species	0 X3	190 0
		FACU species	5 X 4	20
Herbaceous Stratum Plot size ( 5 Foot Radius)  Agrostis stolonifera 5	FACW	UPL species	0 X 5	0
Alopecurus arundinaceus 10	FACW	Column Totals 10	00 (A)	210 (B)
Glycyrrhiza lepidota 5	FACU	Prevalence Index		2.10
Phalaris arundinacea 80 🔽	FACW	Hydrophytic Vegetati		
		✓ 1 - Rapid Test		egetation
		✓ 2 - Dominance		Ü
			Index is <= 3.0	
				Duna di din
			cal Adaptations (F a in remarks or on	
		☐ 5 - Wetland No	n-Vascular Plants	3
		☐ Problematic Hy	drophytic Vegeta	tion (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)		Indicators of hydric sil ar present, unless disturbe		
Percent Bare Ground 0		Hydrophytic Vegetati Present?	on Yes 🗸	NO $\square$
Remarks:		1		
Evidence of hydrophytic vegetation includes a positive rapi equal to 3.0.	d test, a positive domina	ance test, and a preval	ence index less	than or

SOIL									Sam	pling Point: DP02w
Profile Des	cription: (	Describe	to the de	oth neede	d to docur	ment the i	ndicato	r or conf	irm the absence of indicators	.)
Depth		Matrix			Redo	x Features	3		_	
(inches)	Color	(moist)	%	Color	(moist)	%	Type <sup>1</sup>	_ Loc <sup>2</sup>	Texture	Remarks
0-04	10YR	4/2	100						Silty Clay Loam	
04-16	10YR	4/2	98	7.5YR	4/6	2	С	М	Silty Clay Loam	
								_		
										_
								_		
<sup>1</sup> Type: C=C	oncentratio	on, D=Dep	letion, RM	=Reduce	d Matrix, CS	S=Covered	or Coa	ted Sand	Grains. <sup>2</sup> Location: PL=Po	re Lining, M=Matrix.
Hydric Soil									Indicators for Problema	
Histoso	. ,			]		Gleyed Ma			1 cm Muck (A9) ( <b>LR</b> l	
	pipedon (A	(2)		_		Redox (S5)			Coast Prairie Redox	
	listic (A3)			_		d Matrix (S			Dark Surface (S7) (I	
	en Sulfide (		<del>-</del> \	<u> </u> 		Mucky Min		•	High Plains Depress	
	d Layers ( <i>F</i> uck (A9) ( <b>L</b>					Gleyed Ma d Matrix (F			(LRR H outside o	of MLRA 72 & 73)
	d Below Da		•	<u>_l</u> [		Dark Surfa	-		Red Parent Material	
	ark Surface		C (A11)	_ <u></u> ]	=	d Dark Su	, ,	7)	☐ Very Shallow Dark S	
_	Mucky Mine					Depression	-	' /	Other (Explain in Re	
	Mucky Pea		S2) (LRR	G, H)	_	ains Depre		F16)	<sup>3</sup> Indicators of hydrophytic	
	ucky Peat o					.RA 72 & 7			wetland hydrology m	-
									unless disturbed or p	problematic.
Restrictive	Layer (if p	resent):								
Type:										
Depth (in	iches):								Hydric Soil Present?	res No
Remarks: P	rominent	redoximo	orphic fea	itures coi	mmon with	nin the de	pleted	matrix.		
HYDROLO	)GY									
Wetland Hy	drology In	ndicators:								
Primary Indi	cators (min	nimum of o	ne require	d; check a	all that appl	y)			Secondary Indicators (	(minimum of two required)
Surface	Water (A1	)			Salt Crust	(B11)			Surface Soil Cracl	ks (B6)
✓ High Wa	ater Table	(A2)			Aquatic In	vertebrates	s (B13)		Sparsely Vegetate	ed Concave Surface (B8)
✓ Saturati	ion (A3)				Hydrogen	Sulfide Od	lor (C1)		Drainage Patterns	(B10)
Water N	/larks (B1)				Dry-Seaso	on Water T	able (C2	2)	Oxidized Rhizospl	heres on Living Roots (C3)
Sedime	nt Deposits	s (B2)			Oxidized F	Rhizospher	es on Li	iving Roo	ts (C3) (where tilled)	
Drift De	posits (B3)	i			(where i	not tilled)			Crayfish Burrows	(C8)
Algal Ma	at or Crust	(B4)			Presence	of Reduce	d Iron (C	24)	Saturation Visible	on Aerial Imagery (C9)
Iron De	posits (B5)				Thin Muck	Surface (	C7)		Geomorphic Posit	ion (D2)
Inundati	ion Visible	on Aerial I	magery (E	37)	Other (Exp	olain in Rei	marks)		FAC-Neutral Test	(D5)
☐ Water-S	Stained Lea	aves (B9)							Frost-Heave Hum	mocks (D7) (LRR F)
Field Obser	rvations:									
Surface Wat	ter Present	? Y	es 🔲	No	_ Depth (in	ches):				
Water Table	Present?	Υ	es 🔽	No 🔲	_ Depth (in	ches):	7			
Saturation P			es 🗸	No	_ Depth (in	ches):	4	w	etland Hydrology Present?	Yes No
(includes ca			nauge m	onitoring	well aerial	nhotos pre	vious in		s), if available:	
Describe No	coraca Da	ita (Stream	gaage, II	omiomig (	won, acriai	priotos, pro	, vious ii	ispection:	oj, ii avaliabio.	
Remarks: -	uidonaa a	fwotlond	hydrole -	ny includ	o bigh wa	tor toble	ootura	tion with	in 4" of the soil surface.	morphic position, and
	vidence of positive F			iy include	s nign wa	iter table,	salura	uon with	in 4" of the soil surface, geo	morphic position, and

Applicant/Owner: MDT  Investigator(s): W Fouts, S Weyant  Landform (hillslope, terrace, etc.): Valley bottom		State: Montana Sampling Point: DP03a-w
Investigator(s): W Fouts, S Weyant  Landform (hillslope, terrace, etc.): Valley bottom	Section, Township, Ra	
Landform (hillslope, terrace, etc.); Valley bottom		inge: 12 8N 11E
Subragian (I BB): I RR F		
	46 46318	66 Long: -110.295234 Datum: NAD 83
Subregion (LRR): LRR E  Soil Map Unit Name: Varney-Notter cobbly loams, 2-4%		Not mapped
Are climatic / hydrologic conditions on the site typical for this time		NVVI classification.
Are Vegetation, Soil, or Hydrology signific	cantly disturbed? Are	"Normal Circumstances" present? Yes _ <u> </u>
Are Vegetation, Soil, or Hydrology natura	lly problematic? (If ne	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map show	wing sampling point l	ocations, transects, important features, etc
Hydrophytic Vegetation Present? Yes ✓ No ☐ Hydric Soil Present? Yes ✓ No ☐ Wetland Hydrology Present? Yes ✓ No ☐	within a Wetlan	nd? Yes V No No
Remarks: PEM, slope wetland. Sample point is approxima	ately 1.5' lower in elevatio	n than DP03u.
VEGETATION - Use scientific names of plants		
Tree Stratum Plot size (30 Foot Radius) Absolute Do % Cover: Sp	miant Indicator ecies? Status	Dominance Test worksheet
		Number of Dominant Species that are OBL, FACW or FAC:  4 (A)
		Total Number of Dominant Species Across All Strata:  4 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)
Capinigram as Ottatum 1 fot size (15 1 oot reading)		Prevalence Index worksheet
		Total % Cover of: Multiply by:
		OBL species 50 X 1 50
		FACW species 45 X 2 90
		FAC species 0 X 3 0 FACU species 0 X 4 0
Herbaceous Stratum Plot size ( 5 Foot Radius)		UPL species 0 X 5 0
	<b>▼</b> FACW	
·	✓ OBL	
	✓ OBL	Prevalence Index = B/A = 1.47
Eleocharis palustris 10 [ Juncus balticus 10	OBL FACW	Hydrophytic Vegetation Indicators
	FACW FACW	✓ 1 - Rapid Test for Hydrophytic Vegetation
Thatana arananasea	171011	✓ 2 - Dominance Test is >50%
		✓ 3 - Prevalence Index is <= 3.0
		4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
		5 - Wetland Non-Vascular Plants
Woody Vine Stratum Plot size ( 30 Foot Radius)		Problematic Hydrophytic Vegetation (Explain) Indicators of hydric sil and wetland hydrology must be
		present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 10		Hydrophytic Vegetation Present? Yes ✓ NO
Remarks:		

SOIL Sampling Point: DP03a-w Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Matrix Redox Features % Color (moist) Loc<sup>2</sup> Texture 1 Color (moist) Remarks (inches) 0-02 4/1 100 **10YR** Clay Many roots 100 02-16 10YR 5/1 Clay <sup>2</sup>Location: PL=Pore Lining, M=Matrix. <sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils<sup>3</sup>: Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (**LRR I, J**) Histic Epipedon (A2) Sandy Redox (S5) Coast Prairie Redox (A16) (LRR F, G, H) Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) High Plains Depressions (F16) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73) Stratified Layers (A5) (LRR F) ✓ Depleted Matrix (F3)  $\perp$  1 cm Muck (A9) (**LRR F, G, H**) Reduced Vertic (F18) Redox Dark Surface (F6) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) High Plains Depressions (F16) <sup>3</sup>Indicators of hydrophytic vegetation and 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present. unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Depth (inches): Remarks: Depleted matrix observed. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) ✓ Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) ✓ High Water Table (A2) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Hydrogen Sulfide Odor (C1) ✓ Saturation (A3) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) (where tilled) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Iron Deposits (B5) Thin Muck Surface (C7) ✓ Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Other (Explain in Remarks) Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F) Field Observations: Yes No Depth (inches): Surface Water Present? Yes ✓ No □ Depth (inches): Water Table Present? Wetland Hydrology Present? Yes \_\_\_\_\_ No \_\_\_ Yes V No Depth (inches): Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Evidence of wetland hydrology includes surface water, high water table, saturation to the soil surface, geomorphic position, and a positive FAC-Neutral test.

Project/Site: Rostad Ranch	City/County: Meagher	Sampling D	vate:6/27/2022
Applicant/Owner: MDT			
Investigator(s): W Fouts			
Landform (hillslope, terrace, etc.): Valley bottom			
Subregion (LRR): LRR E La			
Soil Map Unit Name: Varney-Notter Cobbly Loam, 2-4% slop	i	orig. Not r	nanned
Soil Map Unit Name: Valley Notes Cossiy 20011, 2 170 old		NVVI classification: (NVVI)	парроч
Are climatic / hydrologic conditions on the site typical for this time			
Are Vegetation, Soil, or Hydrology signific	cantly disturbed? Are "No	rmal Circumstances" present? Ye	s No L
Are Vegetation, Soil, or Hydrology natura	lly problematic? (If need	ed, explain any answers in Remark	(s.)
SUMMARY OF FINDINGS – Attach site map show	wing sampling point loc	ations, transects, importa	nt features, etc
Hydrophytic Vegetation Present? Yes No	Is the Sampled A	•••	
Hydric Soil Present? Yes <u>✓</u> No _	Is the Sampled Al	Yes <u>V</u> No _	٦
Wetland Hydrology Present? Yes No	Within a Wetland	163 <u> </u>	
Remarks: PSS, slope wetland. Sample point is located in mitigation site.  VEGETATION - Use scientific names of plants	the volunteer Salix exigua c	ommunity developing in the nor	th portion of the
Absolute Do	miant Indicator	Dominance Test worksheet	
Tree Stratum Plot size (30 Foot Radius) % Cover: Sp	ecies? Status	Number of Dominant Species that are OBL, FACW or FAC:	2 (A)
		Total Number of Dominant Species Across All Strata:	2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 % (A/B)
	FACW	Prevalence Index worksheet	
		Total % Cover of:	Multiply by:
		OBL species 5 X 1	5
		FACW species 95 X 2 FAC species 0 X 3	0
		FACU species 2 X 4	8
Herbaceous Stratum Plot size ( 5 Foot Radius)	- FA 0)4/	UPL species 0 X 5	0
	FACW	Column Totals 102 (A)	203 (B)
Carex praegracilis 10 [ Eleocharis palustris 5	FACW OBL		
Juncus balticus 10	FACW	Prevalence Index = B/A =	1.99
Poa palustris 5	FACW	Hydrophytic Vegetation Indicato	
Taraxacum officinale 2	FACU	✓ 1 - Rapid Test for Hydrophy	
		✓ 2 - Dominance Test is >50°	
		✓ 3 - Prevalence Index is <=	3.0
		<ul> <li>4 - Morphological Adaptation</li> <li>supporting data in remarks</li> <li>sheet.</li> </ul>	`
		5 - Wetland Non-Vascular F	Plants
Woody Vine Stratum Plot size ( 30 Foot Radius)		☐ Problematic Hydrophytic Ve	,
		ndicators of hydric sil and wetland h resent, unless disturbed or problem	
Percent Bare Ground 15		Hydrophytic Vegetation Yes	✓ NO
Remarks:			
Evidence of hydrophytic vegetation includes a positive ra			
equal to 3.0. Approximately 15% of the vegetation cover	within the herbaceous plot is	s occupied by shrub cover (Sali	ix exigua).

SOIL Sampling Point: DP03b-w Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Matrix Redox Features Loc<sup>2</sup> Color (moist) Color (moist) Type Texture Remarks (inches) 0-08 4/2 90 2 С **10YR** 2.5/0 M Clay Loam Mn concentrations 0-08 4/4 С 10YR 4/2 7.5YR 8 90 М Clay Loam С 08-18 2.5Y 5/2 90 7.5YR 4/6 10 M Clay <sup>2</sup>Location: PL=Pore Lining, M=Matrix. <sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils<sup>3</sup>: Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (**LRR I, J**) Coast Prairie Redox (A16) (LRR F, G, H) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) High Plains Depressions (F16) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73) Stratified Layers (A5) (LRR F) ✓ Depleted Matrix (F3)  $\perp$  1 cm Muck (A9) (LRR F, G, H) Reduced Vertic (F18) Redox Dark Surface (F6) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) High Plains Depressions (F16) <sup>3</sup>Indicators of hydrophytic vegetation and 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present. unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Depth (inches): Remarks: Distinct and prominent redoximorphic concentrations common within the depleted matrix. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) ✓ High Water Table (A2) Aguatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) ✓ Saturation (A3) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) (where tilled) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Iron Deposits (B5) Thin Muck Surface (C7) ✓ Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Other (Explain in Remarks) Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F) Field Observations: Yes No Depth (inches): Surface Water Present? Yes No Depth (inches): Water Table Present? Wetland Hydrology Present? Yes \_\_\_\_\_ No \_\_\_ Yes \_ No \_ Depth (inches): \_\_\_ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Evidence of wetland hydrology includes high water table, saturation to the soil surface, geomorphic position, and a positive FAC-Neutral test.

Project/Site: Rostad Ranch	City/County: Meaghe	er	Sampling Date: 6/27/202	22
		State: Montana		
Investigator(s): W Fouts			11E	
Landform (hillslope, terrace, etc.): Berm				10
Subregion (LRR): LRR E Lat:				
				_
Soil Map Unit Name: Varney-Notter Cobbly Loams, 2-4% slopes		NVVI classifica	ition: 140t mapped	_
Are climatic / hydrologic conditions on the site typical for this time of ye				_
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are	"Normal Circumstances" pr	resent? Yes 🔽 No 🗀	_
Are Vegetation, Soil, or Hydrology naturally pro	oblematic? (If n	eeded, explain any answer	s in Remarks.)	
SUMMARY OF FINDINGS - Attach site map showing	sampling point	locations, transects,	important features, et	C.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Yes No V  No V	is the Sample	d Area and? Yes	No <u> </u>	
Remarks: Upland sample point located near preexisting wetlar by upland species and the soil is extremely compact  VEGETATION - Use scientific names of plants	ıd, no longer identifi :ed.	ed as wetland. The cons	tructed berm is vegetated	_
Absolute Demiser	t Indicator	Dominance Test work	rehoot	_
Tree Stratum Plot size (30 Foot Radius) Absolute Domiani % Cover: Species	? Status	Number of Dominant S that are OBL, FACW or	Species	
		Total Number of Domir Species Across All Stra	nant	
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant S That Are OBL, FACW,		
Japhing/Officia Stratum 1 for Size (15 1 oor Nadius)		Prevalence Index wor	ksheet	_
		Total % Cover of:		_
		· ·	0 X1 0	
		'	0 X 2 0 0	
			30 X 4 320	
Herbaceous Stratum Plot size ( 5 Foot Radius)	LIDI		20 X 5 100	
Bromus inermis 20	UPL	Column Totals 10	00 (A) 420 (B	٤١
Elymus repens 72  Elymus trachycaulus 5	FACU FACU		4.00	')
Poa pratensis 3	FACU	Prevalence Index	= B/A = 4.20	
1 od prateriois	17.00	Hydrophytic Vegetation		
			for Hydrophytic Vegetation	
		2 - Dominance		
		☐ 3 - Prevalence	Index is <= 3.0	
			cal Adaptations (Provide a in remarks or on separate	
			n-Vascular Plants	
Woody Vine Stratum Plot size ( 30 Foot Radius)		□ □ Problematic Hy	drophytic Vegetation (Explain)	)
1 lot 5/25 ( 30 1 oot radias)		present, unless disturbed	nd wetland hydrology must be d or problematic for #3, 4, 5.	
Percent Bare Ground 0		Hydrophytic Vegetation Present?	Yes NO	
Remarks:				
Data point is dominated by upland vegetation.				

SOIL				Sampling Point: DP03u
Profile Desc	cription: (Descr	ibe to the depth	needed to document the indicator or c	onfirm the absence of indicators.)
Depth	Matri		Redox Features	
(inches)	Color (moist)	) %	Color (moist) % Type <sup>1</sup> L	oc² Texture Remarks
0-04	10YR 3/2	100		Silty Clay Loam
04-10	10YR 4/1	100		Clay
10+				Hardpan <b>Refusal</b>
	-			
-	-			
			educed Matrix, CS=Covered or Coated S	
		plicable to all LR	Rs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1) pipedon (A2)		Sandy Gleyed Matrix (S4) Sandy Redox (S5)	☐ 1 cm Muck (A9) (LRR I, J) ☐ Coast Prairie Redox (A16) (LRR F, G, H)
	istic (A3)		Stripped Matrix (S6)	Dark Surface (S7) (LRR G)
	en Sulfide (A4)		Loamy Mucky Mineral (F1)	High Plains Depressions (F16)
	d Layers (A5) ( <b>LF</b>	RR F)	Loamy Gleyed Matrix (F2)	(LRR H outside of MLRA 72 & 73)
	uck (A9) (LRR F,		Depleted Matrix (F3)	Reduced Vertic (F18)
	d Below Dark Sui		Redox Dark Surface (F6)	Red Parent Material (TF2)
Thick Da	ark Surface (A12)	)	Depleted Dark Surface (F7)	
	/lucky Mineral (S		Redox Depressions (F8)	Other (Explain in Remarks)
		at (S2) ( <b>LRR G, I</b>		
5 cm Mu	ucky Peat or Peat	t (S3) ( <b>LRR F</b> )	(MLRA 72 & 73 of LRR H)	wetland hydrology must be present,
Dantaintina	/:£			unless disturbed or problematic.
	Layer (if present	-		
Type:				
				Hydric Soil Present? Yes No
Remarks: N	o hydric soil inc	dicators observe	ed. Soil is too compacted to dig beyo	ond 10 inches.
HYDROLO	GY			
	drology Indicate	ors:		
_			heck all that apply)	Secondary Indicators (minimum of two required)
	Water (A1)	<u> </u>	Salt Crust (B11)	Surface Soil Cracks (B6)
	ater Table (A2)		Aquatic Invertebrates (B13)	Sparsely Vegetated Concave Surface (B8)
Saturation			Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
	larks (B1)		Dry-Season Water Table (C2)	Oxidized Rhizospheres on Living Roots (C3)
	nt Deposits (B2)		Oxidized Rhizospheres on Living	
	posits (B3)		(where not tilled)	Crayfish Burrows (C8)
	at or Crust (B4)		Presence of Reduced Iron (C4)	Saturation Visible on Aerial Imagery (C9)
	posits (B5)		Thin Muck Surface (C7)	Geomorphic Position (D2)
	on Visible on Aer	ial Imagery (B7)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
	tained Leaves (B	• • • • • • • • • • • • • • • • • • • •		Frost-Heave Hummocks (D7) (LRR F)
Field Obser		-,		
Surface Water		Yes No	Depth (inches):	
Water Table			Depth (inches):	
Saturation P			Depth (inches):	Wetland Hydrology Present? Yes No
(includes car	pillary fringe)			
		eam gauge, monit	oring well, aerial photos, previous inspec	tions), if available:
Remarks: No	evidence of w	etland hydrolog	y observed.	
		, -3	•	

Project/Site: Rostad Ranch	City/County: Meagher	Sampli	ng Date: <u>6/27/2022</u>
Applicant/Owner: MDT		State: Montana_ Samplir	ng Point: DP04u
Investigator(s): W Fouts	Section, Township, Rang	je: 12 8N	11E
Landform (hillslope, terrace, etc.): Valley bottom			
Subregion (LRR): LRR E Lat:			
Soil Map Unit Name: Varney-Notter Cobbly Loams, 2-4%			
Are climatic / hydrologic conditions on the site typical for this time of ye		INVVI classification	
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "N	ormal Circumstances" present?	Yes _ <u> </u>
Are Vegetation, Soil, or Hydrology naturally pro	blematic? (If need	ded, explain any answers in Rer	narks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point lo	cations, transects, impo	rtant features, etc.
Hydrophytic Vegetation Present? Yes No	Is the Sampled A	ırea	
Hydric Soil Present? Yes No		? Yes No	. 🗸
Wetland Hydrology Present? Yes No 🔽	Within a vvettand	: Tes NO	<u>, —                                     </u>
Remarks: Upland sample point located approximately 6" higher	er in elevation than DP	04w.	
VEGETATION - Use scientific names of plants			
<u>Tree Stratum</u> Plot size (30 Foot Radius) Absolute Domiant Species'		Dominance Test worksheet	
<u>Iree Stratum</u> Plot size (30 Foot Radius) % Cover: Species	? Status	Number of Dominant Species that are OBL, FACW or FAC:	0 (A)
		Total Number of Dominant Species Across All Strata:	2 (B)
		Percent of Dominant Species That Are OBL, FACW, or FAC	0.0 % (A/D)
Sapling/Shrub Stratum Plot size (15 Foot Radius)	-	Prevalence Index worksheet	
		Total % Cover of:	Multiply by:
		OBL species 0 X 1	
		FACW species 5 X 2	10
		FAC species 0 X 3	
Herbaceous Stratum Plot size ( 5 Foot Radius)		FACU species 82 X 4	0_0
Alopecurus pratensis 5	FACW	UPL species 3 X 5	15
Elymus repens 15	FACU	Column Totals 90	(A) 353 (B)
Elymus trachycaulus 35	FACU	Prevalence Index = B/A =	3.92
Phleum pratense 2	FACU	Hydrophytic Vegetation Indi	
Poa pratensis 30 🗸	FACU	1 - Rapid Test for Hydr	
		2 - Dominance Test is	>50%
		3 - Prevalence Index is	s <= 3.0
		4 - Morphological Adap supporting data in rem sheet.	
		5 - Wetland Non-Vascu	ular Plants
		☐ Problematic Hydrophyt	ic Vegetation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)			
		Indicators of hydric sil and wetla present, unless disturbed or pro	
Percent Bare Ground 10		Hydrophytic Vegetation Present?	Yes □ NO 🗹
Remarks:			
Data point is dominated by upland vegetation.			

Sampling Point: DP04u Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features % Color (moist) Color (moist) Loc<sup>2</sup> Texture (inches) 0-07 100 **10YR** 3/2 Clay 07-16 10YR С 10YR 4/1 99 4/4 M Clay Loam <sup>2</sup>Location: PL=Pore Lining, M=Matrix. <sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils<sup>3</sup>: Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (**LRR I, J**) Coast Prairie Redox (A16) (LRR F, G, H) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Loamy Mucky Mineral (F1) Hydrogen Sulfide (A4) High Plains Depressions (F16) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73) Stratified Layers (A5) (LRR F)  $\perp$  1 cm Muck (A9) (**LRR F, G, H**) Depleted Matrix (F3) Reduced Vertic (F18) Redox Dark Surface (F6) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) High Plains Depressions (F16) <sup>3</sup>Indicators of hydrophytic vegetation and 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present. unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Depth (inches): Remarks: No hydric soil indicators observed. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Hydrogen Sulfide Odor (C1) Saturation (A3) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) (where tilled) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Other (Explain in Remarks) Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F) Field Observations: Yes No Depth (inches): Surface Water Present? Yes \_\_\_\_ No \_\_\_ Depth (inches): \_ Water Table Present? Wetland Hydrology Present? Yes \_\_\_\_ No Yes \_\_\_\_ No \_\_\_ Depth (inches): \_\_\_\_\_ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No evidence of wetland hydrology observed.

SOIL

Project/Site: Rostad Ranch	City/County: Meagher		_ Sampling Date:	6/27/2022
Applicant/Owner: MDT				
Investigator(s): W Fouts			N 11E	
Landform (hillslope, terrace, etc.); Valley bottom	Local relief (concave, conv	vex. none); flat	Slo	pe (%):0
Subregion (LRR): LRR E Lat:	46.462662 Lo	ong:	-110.29695 Datu	ım: NAD 83
Soil Map Unit Name: Varney-Notter Cobbly Loams, 2-4% slopes		NWI classifi	ication: Not mapp	ed
Are climatic / hydrologic conditions on the site typical for this time of ye	ar? Yes 🔽 No 🔲	(If no, explain in i	Remarks.)	
Are Vegetation, Soil, or Hydrology significantly				<u> </u>
Are Vegetation, Soil, or Hydrology naturally pro	blematic? (If neede	ed, explain any answ	ers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing				eatures, etc.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks: PEM, slope wetland. This data point is located in an	Is the Sampled Are within a Wetland?	ea Yes	<b>✓</b> No □	_
hydrophytic - Phalaris arundinacea is increasing in the VEGETATION - Use scientific names of plants	area where the vegetalinis area.	on community is the	ransilioning to be	come more
Absolute Domiant		Dominance Test wo		
Tree Stratum Plot size (30 Foot Radius) % Cover: Species	? Status	Number of Dominant		
		that are OBL, FACW		1 (A)
		Total Number of Don Species Across All S		3 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant That Are OBL, FACV	V, or FAC:	% (A/B)
	F	Prevalence Index w		مراطات المراء
	<del>-</del>	Total % Cover of OBL species	0 X 1	ultiply by:
		FACW species	_	170
		FAC species	0 X3	0
Herbaceous Stratum Plot size ( 5 Foot Radius)		FACU species	50 X 4	200
Carex praegracilis 30	FACW	UPL species		0
Elymus repens 20 🔽		Column Totals	135 (A)	370 (B)
Elymus trachycaulus 30 🔽	FACU	Prevalence Inde	ex = B/A =	2.74
Phalaris arundinacea 5	FACW	Hydrophytic Vegeta	tion Indicators	
		1 - Rapid Tes	st for Hydrophytic V	/egetation
		2 - Dominano	ce Test is >50%	
		✓ 3 - Prevalenc	ce Index is <= 3.0	
			gical Adaptations (F ata in remarks or or	
		5 - Wetland N	Non-Vascular Plant	s
		☐ Problematic F	Hydrophytic Vegeta	ation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)		dicators of hydric sil esent, unless disturb	and wetland hydrol	logy must be
Percent Bare Ground 15		Hydrophytic Vegeta Present?	ation Yes 🗹	NO 🗆
Remarks:				
Evidence of hydrophytic vegetation includes a prevalence inde	ex less than or equal to	3.0.		

Sampling Point: DP04w Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Matrix Redox Features Loc<sup>2</sup> Color (moist) Color (moist) Texture Type (inches) 0-06 4/2 5 С PL2.5Y 95 7.5YR 4/4 Clay Loam С 06-16 10YR 4/2 7.5YR 5/6 8 M Clay Loam 92 <sup>2</sup>Location: PL=Pore Lining, M=Matrix. <sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils<sup>3</sup>: Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (**LRR I, J**) Coast Prairie Redox (A16) (LRR F, G, H) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) High Plains Depressions (F16) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73) Stratified Layers (A5) (LRR F) ✓ Depleted Matrix (F3)  $\perp$  1 cm Muck (A9) (LRR F, G, H) Reduced Vertic (F18) Redox Dark Surface (F6) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) High Plains Depressions (F16) <sup>3</sup>Indicators of hydrophytic vegetation and 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present. unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Depth (inches): Remarks: Prominent redoximorphic concentrations common along pore linings and within the depleted matrix. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) ✓ Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) ✓ High Water Table (A2) Aguatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Hydrogen Sulfide Odor (C1) ✓ Saturation (A3) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) (where tilled) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Other (Explain in Remarks) Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F) Field Observations: Yes No Depth (inches): Surface Water Present? Yes ✓ No □ Depth (inches): Water Table Present? Wetland Hydrology Present? Yes \_\_\_\_\_ No \_\_\_ Yes \_ No \_ Depth (inches): \_\_\_\_ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Evidence of wetland hydrology includes surface water, high water table, and saturation to the soil surface.

SOIL

Project/Site: Rostad Ranch	City/County: Meagher		Sampling Date	e:6/27	7/2022
Applicant/Owner: MDT					
Investigator(s): W Fouts	Section, Township, Range	12 8N	l 1 <sup>-</sup>	1E	
Landform (hillslope, terrace, etc.): Toeslope				Slope (%):	2
Subregion (LRR): LRR E Lat:	46.46168 Lo	ong:	46.46335 Da	atum: NAI	D 83
Soil Map Unit Name: Varney-Notter Cobbly Loams, 2-4%		NWI classific	<sub>sation:</sub> Not map	oped	
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes 🗹 No 🔲	(If no, explain in R	temarks.)		
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Nor	mal Circumstances" բ	oresent? Yes_	✓ No	, <u> </u>
Are Vegetation, Soil, or Hydrology naturally pro	oblematic? (If neede	d, explain any answe	rs in Remarks.)	ı	
SUMMARY OF FINDINGS – Attach site map showing	sampling point loca	tions, transects	, important	features	s, etc.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Yes No W  No W		Yes	No <b>_</b>		
Remarks: Upland sample point located south of berm in the ce	inter or the miligation site	-			
Absolute Domian		Dominance Test wor	rksheet		
Tree Stratum Plot size (30 Foot Radius) % Cover: Species	? Status	Number of Dominant hat are OBL, FACW	Species	0 <sub>(A)</sub>	
		Fotal Number of Dom Species Across All St		1 (B)	
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant S That Are OBL, FACW		0.0 % (A	A/B)
,	ı	Prevalence Index wo		N. A. aldian Inc. Inc.	
	<del>-</del>	Total % Cover of OBL species	or: 0 X 1	Multiply by 0	<u>/:</u>
		FACW species	0 X2	0	
		AC species	0 X3	0	
Herbaceous Stratum Plot size ( 5 Foot Radius)		•	60 X 4 10 X 5	240 50	$\dashv$
Bromus inermis 10	UPL				(B)
Elymus repens 60 🔽	FACU		70 (A)	290 <b>4.1</b>	(B)
		Prevalence Inde		4.1	14
	'	Hydrophytic Vegetat	tion Indicators t for Hydrophytic	: Vegetatic	าท
			e Test is >50%	, rogotatio	
			e Index is <= 3.0	)	
		4 - Morphologi	ical Adaptations	: (Provide	
			ta in remarks or		ıte
		5 - Wetland No	on-Vascular Pla	ınts	
		☐ Problematic H	ydrophytic Vege	etation (Ex	plain)
Woody Vine Stratum Plot size ( 30 Foot Radius)		dicators of hydric sil a esent, unless disturbe			
Percent Bare Ground 30		Hydrophytic Vegetat Present?	ion Yes	NO	✓
Remarks:  Data point is dominated by upland vegetation.					

SOIL Sampling Point: DP05u Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features % Loc<sup>2</sup> Color (moist) Texture Color (moist) (inches) Remarks 0-02 4/2 100 10YR Silty Clay Loam Roots 02-16 100 10YR 5/3 Clay Cobbly. Shale fragments <sup>2</sup>Location: PL=Pore Lining, M=Matrix. <sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils<sup>3</sup>: Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (**LRR I, J**) Coast Prairie Redox (A16) (LRR F, G, H) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Loamy Mucky Mineral (F1) Hydrogen Sulfide (A4) High Plains Depressions (F16) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73) Stratified Layers (A5) (LRR F)  $\perp$  1 cm Muck (A9) (**LRR F, G, H**) Depleted Matrix (F3) Reduced Vertic (F18) Redox Dark Surface (F6) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) High Plains Depressions (F16) <sup>3</sup>Indicators of hydrophytic vegetation and 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present. unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Depth (inches): Remarks: No hydric soil indicators observed. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Hydrogen Sulfide Odor (C1) Saturation (A3) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) (where tilled) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Other (Explain in Remarks) Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F) Field Observations: Yes No Depth (inches): Surface Water Present? Yes \_\_\_\_ No \_\_\_ Depth (inches): \_ Water Table Present? Wetland Hydrology Present? Yes \_\_\_\_ No Yes \_\_\_\_ No \_\_\_ Depth (inches): \_\_\_\_\_ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No evidence of wetland hydrology observed.

Project/Site: Rostad Ranch	City/County: Meagher	Sampling D	oate:6/27/2022
		State: Montana Sampling P	
Investigator(s): W Fouts			
Landform (hillslope, terrace, etc.): Toeslope			
Subregion (LRR): LRR E Lat:	46.461684 L	ona: -110.29842	Datum: NAD 83
Soil Map Unit Name: Varney-Notter Cobbly Loams, 2-4% slopes		NWI classification. Not n	napped
Are climatic / hydrologic conditions on the site typical for this time of ye	ar? Yes 🗸 No 🗆	(If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly			s V No
Are Vegetation, Soil, or Hydrology naturally pro	hlematic?	ad explain any answers in Demark	(s )
SUMMARY OF FINDINGS – Attach site map showing	sampling point loc	ations, transects, importa	nt features, etc.
Hydrophytic Vegetation Present? Yes No	Is the Sampled Ar	ea	
Hydric Soil Present? Yes No		Yes No	
Wetland Hydrology Present? Yes V No			
Remarks: PEM, slope wetland. Sample point located south of l	erm in the central porti	on of the mitigation site.	
VEGETATION - Use scientific names of plants			
Tree Stratum Plot size (30 Foot Radius) Absolute Domiant Species		Dominance Test worksheet	
		Number of Dominant Species that are OBL, FACW or FAC:	1 (A)
		Total Number of Dominant Species Across All Strata:	2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC:	50.0 % (A/B)
(10		Prevalence Index worksheet	
		Total % Cover of:	Multiply by:
		OBL species 35 X 1 FACW species 15 X 2	35
		FAC species 0 X 3	0
Harbassass Christian Diet size ( 5 Foot Dedivis)		FACU species 30 X 4	120
Herbaceous Stratum Plot size ( 5 Foot Radius)  Alopecurus arundinaceus 15	FACW	UPL species 0 X 5	0
Eleocharis palustris 35		Column Totals 80 (A)	185 (B)
Elymus repens 25	FACU	Prevalence Index = B/A =	2.31
Poa pratensis 5	FACII		
		Hydrophytic Vegetation Indicato  1 - Rapid Test for Hydroph	
		2 - Dominance Test is >50	
		✓ 3 - Prevalence Index is <=	
		<ul> <li>4 - Morphological Adaptation</li> <li>supporting data in remarks</li> </ul>	`
		sheet.	
		5 - Wetland Non-Vascular I	Plants
		Problematic Hydrophytic V	egetation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)		dicators of hydric sil and wetland hesent, unless disturbed or problem	
Percent Bare Ground 20		Hydrophytic Vegetation Present?  Yes	✓ NO □
Remarks:	<u> </u>		
Evidence of hydrophytic vegetation includes a prevalence ind	ex less than or equal to	3.0.	

SOIL							Sampling Point: DP05w
Profile Des	cription: (	Describe	to the depth	needed to document the indicator or c	confirm the a	bsence	of indicators.)
Depth		Matrix		Redox Features			
(inches)	Color	(moist)	%	Color (moist) % Type <sup>1</sup> L	_oc <sup>2</sup> Tex	xture	Remarks
0-09	10YR	5/1	100		С	Clay	
09-14	10YR	5/1	100		С	Clay	Hardpan/shale at bottom
	<u> </u>						
-							
				educed Matrix, CS=Covered or Coated S			ation: PL=Pore Lining, M=Matrix.
_		: (Applic	able to all LF	RRs, unless otherwise noted.)	Ind		for Problematic Hydric Soils <sup>3</sup> :
Histoso	` '	2)		Sandy Gleyed Matrix (S4)			luck (A9) (LRR I, J)
	Epipedon (A Histic (A3)	.2)		Sandy Redox (S5) Stripped Matrix (S6)			Prairie Redox (A16) ( <b>LRR F, G, H</b> ) urface (S7) ( <b>LRR G</b> )
	en Sulfide (	(A4)		Loamy Mucky Mineral (F1)			ains Depressions (F16)
	ed Layers (A	. ,	F)	Loamy Gleyed Matrix (F2)		_	R H outside of MLRA 72 & 73)
	luck (A9) ( <b>L</b>			Depleted Matrix (F3)			ed Vertic (F18)
	ed Below Da		•	Redox Dark Surface (F6)		-	rent Material (TF2)
Thick D	ark Surface	e (A12)		Depleted Dark Surface (F7)		Very S	nallow Dark Surface (TF12)
Sandy	Mucky Mine	eral (S1)		Redox Depressions (F8)		Other (	Explain in Remarks)
			(S2) ( <b>LRR G,</b> l	H) High Plains Depressions (F16)	<sup>3</sup> lnc	dicators	of hydrophytic vegetation and
5 cm M	lucky Peat o	or Peat (S	3) ( <b>LRR F</b> )	(MLRA 72 & 73 of LRR H)			l hydrology must be present,
						unless	disturbed or problematic.
Restrictive	Layer (if p	resent):					
Type:				_			
	nches):			<del>_</del>	Hyd	ric Soil	Present? Yes No
Remarks: [	Depleted m	natrix obs	served.				
HYDROLO	OGY						
Wetland Hy							
Primary Ind	<u>icators (min</u>	imum of c	one required; o	check all that apply)		<u>Seconda</u>	ry Indicators (minimum of two required)
✓ Surface	e Water (A1	)		Salt Crust (B11)		Surfa	ace Soil Cracks (B6)
✓ High W	/ater Table (	(A2)		Aquatic Invertebrates (B13)		Spar	sely Vegetated Concave Surface (B8)
✓ Saturat	ion (A3)			Hydrogen Sulfide Odor (C1)	[	Draii	nage Patterns (B10)
Water N	Marks (B1)			Dry-Season Water Table (C2)		Oxid	ized Rhizospheres on Living Roots (C3)
Sedime	ent Deposits	s (B2)		Oxidized Rhizospheres on Living	Roots (C3)	(w	here tilled)
Drift De	posits (B3)			(where not tilled)	[	Cray	fish Burrows (C8)
Algal M	lat or Crust	(B4)		Presence of Reduced Iron (C4)		Satu	ration Visible on Aerial Imagery (C9)
Iron De	posits (B5)			Thin Muck Surface (C7)	[•	<b>✓</b> Geo	morphic Position (D2)
Inundat	tion Visible	on Aerial l	Imagery (B7)	Other (Explain in Remarks)	[	FAC	-Neutral Test (D5)
☐ Water-S	Stained Lea	ives (B9)				Fros	t-Heave Hummocks (D7) ( <b>LRR F</b> )
Field Obse	rvations:						
Surface Wa	ter Present	? Y	′es 🔽 No				
Water Table	e Present?	Υ	′es 🔽 No	Depth (inches):0			
Saturation F			es 🔽 No	Depth (inches):0	Wetland Hy	/drology	Present? Yes No No
(includes ca			naugo moni	toring well gerial photos provious incres			
Describe Re	ecorded Da	ıa (siream	ı yauye, moni	toring well, aerial photos, previous inspec	Juons), it avail	able:	
Demarks							
		f wetland	hydrology ii	ncludes surface water, high water tab	ble, saturatio	on to the	e soil surface, and geomorphic
po	osition.						

Project/Site: Rostad Ranch	City/Co	<sub>unty:</sub> Meagher	Sampling Date:6/28/202
			State: Montana Sampling Point: DP06a-w
Investigator(s): W Fouts			
Landform (hillslope, terrace, etc.): Valley bottom			
			g: 3lope (%) g:110.295285 Datum: NAD 83
Subregion (LRR): Dolpoint variant Mamarth Cabart	Lat:	40.43934 Long	Not manned
Soil Map Unit Name: Delpoint variant-Mamarth-Cabart	LUairis, 2-0 /0		NWI classification: NOT mapped
Are climatic / hydrologic conditions on the site typical for th			
Are Vegetation, Soil, or Hydrology	significantly disturbe	ed? Are "Norma	ıl Circumstances" present? Yes 🗹 No 🔽
Are Vegetation, Soil, or Hydrology	naturally problemati	c? (If needed,	explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing samp	oling point locati	ons, transects, important features, et
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Yes   Yes   Yes   N	No		Yes No
Remarks: PEM, slope wetland. Sample point located		t portion or the mine	auton site.
VEGETATION - Use scientific names of plan  Absolute Absolute	Danaiant Indi	icator <b>Do</b>	minance Test worksheet
<u>Tree Stratum</u> Plot size (30 Foot Radius) Absolute % Cover	r: Species? Sta	Nui	mber of Dominant Species t are OBL, FACW or FAC:  (A)
			al Number of Dominant ecies Across All Strata:
Sapling/Shrub Stratum Plot size (15 Foot Radius)	1		rcent of Dominant Species at Are OBL, FACW, or FAC: 100.0 % (A/B)
Saping/Sirub Stratum 1 lot size (15 1 oot Nadius)	)	Pre	evalence Index worksheet
			Total % Cover of: Multiply by:
			L species 25 X 1 25
		FA	CW species         56 X 2         112           C species         0 X 3         0
			CU species 19 X 4 76
Herbaceous Stratum Plot size ( 5 Foot Radius)		UP	L species 0 X 5 0
Alopecurus arundinaceus 15		/V	
Carex nebrascensis 10			lumn Totals 100 (A) 213 (B
Cirsium arvense		<u> </u>	Prevalence Index = B/A = 2.13
Eleocharis palustris		Λ/	drophytic Vegetation Indicators
Juncus balticus 25 Juncus longistylis 1			✓ 1 - Rapid Test for Hydrophytic Vegetation
			✓ 2 - Dominance Test is >50%
			✓ 3 - Prevalence Index is <= 3.0
Phleum pratense 1 Poa palustris 10			4 - Morphological Adaptations (Provide
Taraxacum officinale			supporting data in remarks or on separate
Trifolium hybridum 14			sheet.
The same of the sa	,,,,,,,		5 - Wetland Non-Vascular Plants
			Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)	)		ators of hydric sil and wetland hydrology must be ent, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 0			drophytic Vegetation Yes V NO
Remarks: Evidence of hydrophytic vegetation includes a posi equal to 3.0.	tive rapid test, a p	positive dominance	test, and a prevalence index less than or

SOIL Sampling Point: DP06a-w Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Color (moist) Color (moist) Loc<sup>2</sup> Texture (inches) Remarks 0-02 **10YR** 3/2 100 Clay 02-08 7.5YR С M,PL 10YR 4/1 5/4 10 Clay 90 C - living roots 08-16 2.5Y 6/2 98 10YR 6/6 2 C M,PL Sandy Clay Loam <sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils<sup>3</sup>: Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (**LRR I, J**) Coast Prairie Redox (A16) (LRR F, G, H) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Loamy Mucky Mineral (F1) Hydrogen Sulfide (A4) High Plains Depressions (F16) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73) Stratified Layers (A5) (LRR F) ✓ Depleted Matrix (F3)  $\perp$  1 cm Muck (A9) (LRR F, G, H) Reduced Vertic (F18) Redox Dark Surface (F6) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) ☐ High Plains Depressions (F16) <sup>3</sup>Indicators of hydrophytic vegetation and 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present. unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Depth (inches): Remarks: Prominent redoximorphic concentrations common within the matrix and along pore linings. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) High Water Table (A2) Aguatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Saturation (A3) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) ✓ Oxidized Rhizospheres on Living Roots (C3) (where tilled) Sediment Deposits (B2) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Iron Deposits (B5) Thin Muck Surface (C7) ✓ Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Other (Explain in Remarks) Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F) Field Observations: Yes No 🔽 Depth (inches): \_\_ Surface Water Present? Yes \_\_\_\_ No \_\_\_ Depth (inches): \_\_\_ Water Table Present? Wetland Hydrology Present? Yes \_\_\_\_\_ No \_\_\_ Yes \_\_\_\_ No \_\_\_ Depth (inches): \_\_\_\_ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Evidence of wetland hydrology includes oxidized rhizospheres on living roots, geomorphic position, and a positive FAC-Neutral test. High water table observed at 16".

Project/Site: Rostad Ranch		City/County: N	/leagher	Sampling Date:6/28/2022
				State: Montana Sampling Point: DP06b-w
Investigator(s): S Weyant, W Fouts, M Hickey				
Landform (hillslope, terrace, etc.): Valley bottom				
				g:110.295935 Datum: NAD 83
Soil Map Unit Name: Delpoint variant-Mamarth-Cabart L	oams, 2	-8% slopes		NWI classification: Not mapped
Are climatic / hydrologic conditions on the site typical for this				
Are Vegetation, Soil, or Hydrology sig				
Are Vegetation, Soil, or Hydrology na	turally pr	oblematic?	(If needed	, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map s				
Hydric Soil Present? Yes ✓ No Wetland Hydrology Present? Yes ✓ No		within		Yes No
Remarks: PSS, slope wetland. Sample point located in VEGETATION - Use scientific names of plant		e-existing scr	ib sillub well	and in the south portion of the miligation site.
Absolute	Domian		Do	ominance Test worksheet
Tree Stratum Plot size (30 Foot Radius) % Cover:	Species	s? Status	Nu	umber of Dominant Species at are OBL, FACW or FAC:
				otal Number of Dominant pecies Across All Strata:
Sapling/Shrub Stratum Plot size (15 Foot Radius)				ercent of Dominant Species at Are OBL, FACW, or FAC: 100.0 % (A/B)
Salix exigua 40	<b>✓</b>	FACW		revalence Index worksheet
				Total % Cover of: Multiply by:  BL species 0 X 1 0
				ACW species 121 X 2 242
				AC species 0 X 3 0
Herbaceous Stratum Plot size ( 5 Foot Radius)				ACU species 0 X 4 0
Alopecurus arundinaceus 10		FACW	Ui	PL species 0 X 5 0
Juncus balticus 1		FACW	Co	olumn Totals 121 (A) 242 (B)
Phalaris arundinacea 70	✓	FACW		Prevalence Index = B/A = 2.00
			Hy	drophytic Vegetation Indicators
				1 - Rapid Test for Hydrophytic Vegetation
				✓ 2 - Dominance Test is >50%
				✓ 3 - Prevalence Index is <= 3.0
				4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
				5 - Wetland Non-Vascular Plants
				Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)				cators of hydric sil and wetland hydrology must be sent, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 20			Ну	/drophytic Vegetation Yes ✓ NO
Remarks:				
Evidence of hydrophytic vegetation includes a positive equal to 3.0.	e rapid t	test, a positiv	e dominance	test, and a prevalence index less than or

SOIL Sampling Point: DP06b-w Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Matrix Redox Features Loc<sup>2</sup> Texture Color (moist) Color (moist) (inches) 0-05 7.5YR 2.5/1 100 Clay Loam 7.5YR С 05-17 2.5Y 4/1 80 4/6 20 Sandy Clay Loam M <sup>2</sup>Location: PL=Pore Lining, M=Matrix. <sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils<sup>3</sup>: Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (**LRR I, J**) Histic Epipedon (A2) Sandy Redox (S5) Coast Prairie Redox (A16) (LRR F, G, H) Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Loamy Mucky Mineral (F1) Hydrogen Sulfide (A4) High Plains Depressions (F16) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73) Stratified Layers (A5) (LRR F) ✓ Depleted Matrix (F3)  $\perp$  1 cm Muck (A9) (LRR F, G, H) Reduced Vertic (F18) Redox Dark Surface (F6) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) High Plains Depressions (F16) <sup>3</sup>Indicators of hydrophytic vegetation and 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present. unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Depth (inches): Remarks: Prominent redoximorphic concentrations common within the depleted matrix. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) ✓ Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) ✓ High Water Table (A2) Aguatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Hydrogen Sulfide Odor (C1) ✓ Saturation (A3) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) (where tilled) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) ✓ Iron Deposits (B5) Thin Muck Surface (C7) ✓ Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Other (Explain in Remarks) Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F) Field Observations: Yes No Depth (inches): Surface Water Present? Yes ✓ No □ Depth (inches): Water Table Present? Wetland Hydrology Present? Yes \_\_\_\_\_ No \_\_\_ Yes \_ No \_ Depth (inches): \_\_\_\_ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Evidence of wetland hydrology includes surface water, high water table, saturation to the soil surface, iron deposits, geomorphic position, and a positive FAC-Neutral test.

Project/Site: Rostad Ranch	(	City/County: Meag	her Sampling Date: 6/28/2022
Applicant/Owner: MDT			State: Montana Sampling Point: DP06u
Investigator(s): S Weyant, W Fouts, M Hickey			
			ve, convex, none): undulating, convex Slope (%):
			9437 Long:
Soil Map Unit Name: Delpoint variant-Mamarth-Cabar			
Are climatic / hydrologic conditions on the site typical for the			
Are Vegetation, Soil, or Hydrology	significantly	disturbed? A	Are "Normal Circumstances" present? Yes 🔽 No 🔲
Are Vegetation, Soil, or Hydrology	naturally pro	blematic? (	If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing	sampling poi	nt locations, transects, important features, etc
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks: Upland sample point located on gentle him.	No 🗸		etland? Yes No _ <del>V</del>
VEGETATION - Use scientific names of pla	ınts		
Tree Stratum Plot size (30 Foot Radius) Absolut			Dominance Test worksheet
Tree Stratum Piot size (30 Foot Radius) % Cove	er: Species?	9 Status	Number of Dominant Species that are OBL, FACW or FAC: 0 (A)
			Total Number of Dominant Species Across All Strata:  2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius	-1		Percent of Dominant Species That Are OBL, FACW, or FAC:  0.0 % (A/B)
Sapinig/Siriub Stratum 1 lot size (15 1 oot Madius	?)		Prevalence Index worksheet
			Total % Cover of: Multiply by:
			OBL species 0 X 1 0
			FACW species         0 X 2         0           FAC species         0 X 3         0
			FACU species 85 X 4 340
Herbaceous Stratum Plot size ( 5 Foot Radius	<u> </u>		UPL species 10 X 5 50
	0 🔲	UPL	
-	3 🔲	FACU	Column Totals 95 (A) 390 (B)
	0 🗍	FACU	Prevalence Index = B/A = 4.11
Phleum pratense 2 Poa pratensis 1		FACU FACU	Hydrophytic Vegetation Indicators
Schedonorus arundinaceus 2		FACU	1 - Rapid Test for Hydrophytic Vegetation
	2 $\square$	FACU	2 - Dominance Test is >50%
	2	FACU	☐ 3 - Prevalence Index is <= 3.0
			<ul> <li>4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.</li> <li>5 - Wetland Non-Vascular Plants</li> </ul>
Woody Vine Stratum Plot size ( 30 Foot Radius	2)		☐ Problematic Hydrophytic Vegetation (Explain)
woody vine Stratum Plot Size ( 30 Poot Radius	5)		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 5			Hydrophytic Vegetation Yes ☐ NO ✓
Remarks:			
Data point is dominated by upland vegetation.			

SOIL					Sampling Point: DP06u
Profile Desc	cription: (Describ	e to the depth ne	eeded to document the indicator or	confirm the absence of	findicators.)
Depth	Matrix	<u> </u>	Redox Features	<u></u>	
(inches)	Color (moist)	<u>%</u> C	Color (moist) % Type <sup>1</sup>	Loc <sup>2</sup> <u>Texture</u> _	Remarks
0-04	10YR 3/2	100		Clay Loam	
04-18	10YR 5/3	100		Clay Loam	
	_				
			uced Matrix, CS=Covered or Coated S		ion: PL=Pore Lining, M=Matrix.
		licable to all LRR	s, unless otherwise noted.)		or Problematic Hydric Soils <sup>3</sup> :
Histosol	` '		Sandy Gleyed Matrix (S4)		ck (A9) (LRR I, J)
	pipedon (A2)		Sandy Redox (S5)		rairie Redox (A16) (LRR F, G, H)
	istic (A3)		<ul><li></li></ul>		face (S7) ( <b>LRR G</b> ) ins Depressions (F16)
	en Sulfide (A4) d Layers (A5) ( <b>LRI</b>	) <b>[</b> \	Loamy Gleyed Matrix (F2)		H outside of MLRA 72 & 73)
	uck (A9) ( <b>LRR F, G</b>		Depleted Matrix (F3)		Vertic (F18)
	d Below Dark Surf	-	Redox Dark Surface (F6)	_	ent Material (TF2)
	ark Surface (A12)	400 (/ (1 1)	Depleted Dark Surface (F7)		allow Dark Surface (TF12)
_	/lucky Mineral (S1)	)	Redox Depressions (F8)		xplain in Remarks)
	Mucky Peat or Pea				hydrophytic vegetation and
	ucky Peat or Peat (		(MLRA 72 & 73 of LRR H		nydrology must be present,
	•		`		sturbed or problematic.
44.45	Layer (if present)	:			
Type:					
Depth (in	ches):			Hydric Soil Pi	resent? Yes No
Remarks: N	o hydric soil indi	cators observed	l.		
HYDROLO	GY				
	drology Indicator	s:			
Primary India	cators (minimum o	f one required; che	eck all that apply)	<u>Secondary</u>	Indicators (minimum of two required)
Surface	Water (A1)		Salt Crust (B11)	Surfac	e Soil Cracks (B6)
	ater Table (A2)		Aquatic Invertebrates (B13)	=	ely Vegetated Concave Surface (B8)
Saturation			Hydrogen Sulfide Odor (C1)		age Patterns (B10)
	larks (B1)		Dry-Season Water Table (C2)	=	ed Rhizospheres on Living Roots (C3)
	nt Deposits (B2)		Oxidized Rhizospheres on Living		ere tilled)
	posits (B3)		(where not tilled)	`	sh Burrows (C8)
	at or Crust (B4)		Presence of Reduced Iron (C4)		ation Visible on Aerial Imagery (C9)
	posits (B5)		Thin Muck Surface (C7)		orphic Position (D2)
	on Visible on Aeria	al Imageny (B7)	Other (Explain in Remarks)		Veutral Test (D5)
	stained Leaves (B9	• • • •	Other (Explain in Kemarks)		Heave Hummocks (D7) ( <b>LRR F</b> )
	•	')		F105t-1	Heave Hullillocks (D7) (ERR F)
Field Obser		Yes No	V Donth (inches):		
Surface Wat					
Water Table			Depth (inches):		Present? Yes No
Saturation P (includes car		Yes No _	✓ Depth (inches):	Wetland Hydrology F	Present? Yes No
		am gauge, monitor	ing well, aerial photos, previous inspe	ctions), if available:	
Remarks: No	o evidence of we	tland hydrology	observed.		
		. 07			

Project/Site: Rostad Ranch	City/County: Meagher	Sampli	ng Date: 6/28/2022
		State: Montana Samplii	
Investigator(s): S Weyant, W Fouts, M Hickey			
Landform (hillslope, terrace, etc.): Valley bottom, low bench	Local relief (concave, co	nvex none):flat	
Subregion (LRR): LRR E Lat:	46 459547 ı	-110 2974	Slope (%) .11
Delpoint variant-Mamarth-Cabart Loams 2-		.ong N	ot manned
Soil Map Unit Name: Delpoint variant-Mamarth-Cabart Loams, 2-	<u> </u>	NVVI classification: 🔼	от тарреч
Are climatic / hydrologic conditions on the site typical for this time of year			
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "No	ormal Circumstances" present?	Yes No L
Are Vegetation, Soil, or Hydrology naturally pro	blematic? (If need	led, explain any answers in Rei	narks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point loc	ations, transects, impo	rtant features, etc.
Hydrophytic Vegetation Present? Yes No	Is the Sampled A	rea	
Hydric Soil Present? Yes No		? Yes 🔲 No	· 🗸
Wetland Hydrology Present? Yes No 🗸			<u> </u>
Remarks: Upland sample point located on low bench in the sou	th west portion of the	mitigation site.	
VEGETATION - Use scientific names of plants			
Tree Stratum Plot size (30 Foot Radius) Absolute Domiant Species?		Dominance Test worksheet	
<u>Iree Stratum</u> Plot size (30 Foot Radius) % Cover: Species?	<sup>o</sup> Status	Number of Dominant Species that are OBL, FACW or FAC:	0 (A)
		Total Number of Dominant Species Across All Strata:	1 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC	0.0 % (A/B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Prevalence Index worksheet	
		Total % Cover of:	Multiply by:
		OBL species 0 X 1	
		FACW species 0 X 2	
		FAC species 0 X 3 FACU species 25 X 4	
Herbaceous Stratum Plot size ( 5 Foot Radius)		UPL species 55 X 5	
Bromus inermis 55	UPL		
Elymus repens 10	FACU	Column Totals 80	(A) <u>375</u> (B)
Poa pratensis 15	FACU	Prevalence Index = B/A =	_ 4.69
		Hydrophytic Vegetation Indi	
		1 - Rapid Test for Hydi	. , ,
		2 - Dominance Test is	>50%
		3 - Prevalence Index is	; <= 3.0
		4 - Morphological Adap	
		sheet.	·
		5 - Wetland Non-Vascu	ılar Plants
		☐ Problematic Hydrophyt	ic Vegetation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)		ndicators of hydric sil and wetla	
Paragraph Para Organization 20	j	Hydrophytic Vegetation Present?	Yes NO
Percent Bare Ground 20 Remarks:			
Data point is dominated by upland vegetation.			
, and a summary of the summary of th			

SOIL		Sampling Point: DP07u
Profile Description: (Describe to the o	depth needed to document the indicator or c	onfirm the absence of indicators.)
Depth <u>Matrix</u>	Redox Features	
(inches) Color (moist) %	Color (moist) % Type <sup>1</sup> L	oc² Texture Remarks
0-16 2.5Y 3/2 100	)	Sandy Loam
	RM=Reduced Matrix, CS=Covered or Coated S	
Hydric Soil Indicators: (Applicable to		Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)	Sandy Gleyed Matrix (S4)	1 cm Muck (A9) ( <b>LRR I, J</b> )
Histic Epipedon (A2)	Sandy Redox (S5)	Coast Prairie Redox (A16) (LRR F, G, H)
Black Histic (A3)	Stripped Matrix (S6)	Dark Surface (S7) (LRR G)
☐ Hydrogen Sulfide (A4)☐ Stratified Layers (A5) (LRR F)	<ul><li>Loamy Mucky Mineral (F1)</li><li>Loamy Gleyed Matrix (F2)</li></ul>	☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
1 cm Muck (A9) (LRR F, G, H)	Depleted Matrix (F3)	Reduced Vertic (F18)
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	Red Parent Material (TF2)
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	Very Shallow Dark Surface (TF12)
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	Other (Explain in Remarks)
2.5 cm Mucky Peat or Peat (S2) (LR		<sup>3</sup> Indicators of hydrophytic vegetation and
5 cm Mucky Peat or Peat (S3) (LRR	(MLRA 72 & 73 of LRR H)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if present):		diffess disturbed of problematic.
Type:		
Depth (inches):		Hydric Soil Present? Yes No
Remarks: No hydric soil indicators of		135 <u> </u>
No flydric soil indicators of	oserved.	
HYDROLOGY		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one requ	ired; check all that apply)	Secondary Indicators (minimum of two required)
Surface Water (A1)	Salt Crust (B11)	Surface Soil Cracks (B6)
☐ High Water Table (A2)	Aquatic Invertebrates (B13)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
☐ Water Marks (B1)	Dry-Season Water Table (C2)	Oxidized Rhizospheres on Living Roots (C3)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living	· / _ ·
Drift Deposits (B3)	(where not tilled)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery	(B7) Uther (Explain in Remarks)	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)		Frost-Heave Hummocks (D7) (LRR F)
Field Observations:	Na Parth (Sachas)	
Surface Water Present? Yes	No Depth (inches):	
Water Table Present? Yes	No Depth (inches):	Wetland Hydrology Present? Yes No V
Saturation Present? Yes (includes capillary fringe)	No Depth (inches):	Wetland Hydrology Present? Yes No
	monitoring well, aerial photos, previous inspec	tions), if available:
Remarks: No evidence of wetland hyd	drology observed. Soil drv.	
	5,	

Applicant/Owner; MDT   State; Montana   Sampling Point   DPG/W   Investigator(s): SWeyant, W Fouts   Section, Township, Range:   13 8N   11E   Intendem (hillstope, terrace, etc.): Valley bottom   Local relief (concave, convex, none): flat   Slope (%)   Slope (%)   Subregion (LRR): LRR E   Latt   46.459646   Long:   -110.297244   Datum: NAD 83   Soli Map Uni Name: Delipoint variant-Mamarth-Cabart Loants, 2-8%   NWI classification: Not mapped   Are Vice classification: Not mapped   Are	Project/Site: Rostad Ranch		City/County: Me	eagher		Sampling D	ate:6/28/20
Investigator(s)   S Weyant, W Fouts							
Landform (fillslope, terrace, etc.): Valley bottom	• •						
Solf Map Unit Name: Delpoint variant-Mamarth-Cabart Loams, 2-3% NW destilication, Not mapped Not make: Delpoint variant-Mamarth-Cabart Loams, 2-3% NW destilication, Not mapped Not mapped Not destilication (Not mapped Not							
No mapped   Note   No	Subspice (LBB): LRR F	Lati	46.4	159646 Lange	11011c). <u></u>	-110 297244	NAD 83
Are elimatic / hydrologic conditions on the site typical for this time of year? Yes  No  (fin o, explain in Remarks.)  Are Vegetation  Soil  or Hydrology  significantly disturbed?  Are Normal Circumstances' present? Yes  No  Are Normal Circumstances' present? Yes  No  No  No  Northydrology  No  Northydrology  No  Northydrology  Northy	Delpoint variant-Mamarth-C	Lat Sahart Loams -2	-8%	toooto Long.		······································	nanned
Are Vegetation	Soil Map Unit Name: Delpoint Variant Mariantin			🗆 .	NVVI clas	sification:	арроч
Summary   Soil							
SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc.  Hydrophytic Vegetation Present? Yes	Are Vegetation, Soil, or Hydrology	<u>└</u> significantly	disturbed?	Are "Normal	Circumstance	s" present? Yes	s No L
Hydrophytic Vegetation Present? Yes	Are Vegetation, Soil, or Hydrology	naturally pr	oblematic?	(If needed, e	xplain any an	swers in Remark	s.)
Hydrocology Present? Yes	SUMMARY OF FINDINGS - Attach site	map showing	sampling p	oint locatio	ns, transe	cts, importar	nt features, et
Hydrocology Present? Yes	Hydrophytic Vegetation Present?	No 🗆					
No	Hydric Soil Present? Yes ✓	No			V	<b>✓</b> N. [	٦
VEGETATION - Use scientific names of plants   Absolute   Cover:   Should   Cover:			within a	vvetland?	Yes _	_ <u> </u>	
Absolute   March   M	Remarks: PEM, slope wetland. Sample point lo	ocated near pre	existing wetlan	nd in the south	n west portic	on of the mitiga	tion site.
Absolute   March   M							
Absolute   March   M							
Sapling/Shrub Stratum   Plot size (30 Foot Radius) % Cover: Species? Status   Number of Dominant Species that are OBL, FACW or FAC:	<b>VEGETATION</b> - Use scientific names o	f plants					
Number of Dominant Species that are OBL, FACW or FAC:				Dom	inance Test	worksheet	
Sapling/Shrub Stratum Plot size (15 Foot Radius)  Herbaceous Stratum Plot size (5 Foot Radius)  Herbaceous Stratum Plot size (5 Foot Radius)  Alopecurus arundinaceus Carex nebrascensis 15 OBL Cirsium arvense 1 FACU Juncus balticus Phalaris arundinacea Pac palustris  FACW Pac poa palustris  District (30 Foot Radius)  Woody Vine Stratum Plot size (30 Foot Radius)  Modey Vine Stratum Plot size (30 Foot Radius)  Percent Bare Ground  Remarks:	Tiee Stratum Tiot 3/20 (30 Toot Nadids) %	Cover: Species	? Status				2 (A)
Sapling/Shrub Stratum Plot size (15 Foot Radius)  Herbaceous Stratum Plot size (5 Foot Radius)  Herbaceous Stratum Plot size (5 Foot Radius)  Alopecurus arundinaceus 32 ▼ FACW Carex nebrascensis 15 ○ OBL Juncus balticus Phalaris arundinacea Poa palustris  FACW Poa palustris  Pot size (30 Foot Radius)  Woody Vine Stratum Plot size (30 Foot Radius)  Percent Bare Ground 5  Percent Stratum Plot size (15 Foot Radius)  Prevalence Index worksheet Total % Cover of: OBL species 15 X 1 15 FACW species 79 X 2 158 FAC species 0 X 3 0 FACU PL species 0 X 5 0 Column Totals 95 (A) 177 (B Prevalence Index = B/A = 1.86  Hydrophytic Vegetation Indicators  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%  3 - Prevalence Index is <= 3.0  4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.  5 - Wetland Non-Vascular Plants Problematic Hydrophytic Vegetation (Explain) Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.  Hydrophytic Vegetation Present?  Remarks:				Total	Number of D	Dominant	
Herbaceous Stratum Plot size ( 5 Foot Radius)  Alopecurus arundinaceus 32 ▼ FACW Carex nebrascensis 15 □ OBL Cirsium arvense 1 □ FACU Juncus balticus 10 □ FACW Phalaris arundinacea 32 ▼ FACW Poa palustris 5 □ FACW Poa palustris 5 □ FACW  Poa palustris Plot size ( 30 Foot Radius)  Woody Vine Stratum Plot size ( 30 Foot Radius)  Percent Bare Ground 5  Percent Bare Ground 5  Prevalence Index worksheet Total % Cover of: Multiply by: OBL Species 15 X 1 □ 15 FACW Species 79 X 2 □ 158 FACW species 0 X 3 □ 0 FACW UPL species 0 X 5 □ 0 Column Totals 95 □ A) □ 177 □ (B Prevalence Index = B/A = □ 1.86  Hydrophytic Vegetation Indicators    □ 1 - Rapid Test for Hydrophytic Vegetation   □ 2 - Dominance Test is >50%   □ 3 - Prevalence Index is <= 3.0   □ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.   □ 5 - Wetland Non-Vascular Plants   □ Problematic Hydrophytic Vegetation (Explain) Indicators of hydric Sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.  Hydrophytic Vegetation Present? Yes № No □		- · · · ·		Perc	ent of Domina	ant Species	100.0 % (A/B)
Herbaceous Stratum Plot size ( 5 Foot Radius)  Alopecurus arundinaceus 32	Sapling/Shrub Stratum Plot size (15 Foot F	Radius)		Prev	alence Index	worksheet	
Herbaceous Stratum  Plot size ( 5 Foot Radius)  Alopecurus arundinaceus  32					Total % Cov	er of:	Multiply by:
Herbaceous Stratum  Plot size ( 5 Foot Radius)  Alopecurus arundinaceus  32				OBL	species	15 X 1	15
Herbaceous Stratum Plot size ( 5 Foot Radius)  Alopecurus arundinaceus 32							158
Alopecurus arundinaceus 32						•	
Alopecurus arundinaceus  Carex nebrascensis  15	<u>Herbaceous Stratum</u> Plot size ( 5 Foot F	Radius)					
Cirsium arvense  Juncus balticus  Phalaris arundinacea  Poa palustris  The part of the provided supporting data in remarks or on separate sheet.  Woody Vine Stratum  Possible Ground  Percent Bare Ground  Prevalence Index = B/A = 1.86  Hydrophytic Vegetation Indicators  1 - Rapid Test for Hydrophytic Vegetation  2 - Dominance Test is >50%  3 - Prevalence Index is <= 3.0  4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.  5 - Wetland Non-Vascular Plants  Problematic Hydrophytic Vegetation (Explain)  Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.  Hydrophytic Vegetation  Present?  NO  Remarks:	Alopecurus arundinaceus	32	FACW		•		
Juncus balticus	Carex nebrascensis	15	OBL	Colu	mn Totals	95 (A)	177 (E
Phalaris arundinacea  32  ▼ FACW  Poa palustris  5  □ FACW  1 - Rapid Test for Hydrophytic Vegetation  2 - Dominance Test is >50%  3 - Prevalence Index is <= 3.0  4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.  5 - Wetland Non-Vascular Plants  Problematic Hydrophytic Vegetation (Explain)  Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.  Hydrophytic Vegetation  Percent Bare Ground 5  Remarks:	Cirsium arvense	1 🗌	FACU		revalence Ir	ndex = B/A =	1.86
Poa palustris  5				Hydr	ophytic Veg	etation Indicator	rs
Woody Vine Stratum Plot size ( 30 Foot Radius)  Woody Vine Stratum Percent Bare Ground 5  Percent Bare Ground 5  Prevalence Index is <= 3.0  4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.  5 - Wetland Non-Vascular Plants  Problematic Hydrophytic Vegetation (Explain)  Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.  Hydrophytic Vegetation Present?  Yes ✓ NO □					¹ 1 - Rapid 1	Γest for Hydrophy	tic Vegetation
## A - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.  ## S - Wetland Non-Vascular Plants  ## Problematic Hydrophytic Vegetation (Explain)  ## Percent Bare Ground 5  ## Percent Bare Ground 5  ## Present?  ## NO  ## Present?  ## NO  ## NO  ## Present?	Poa palustris	5	FACW		🖸 2 - Domina	ance Test is >50%	%
Supporting data in remarks or on separate sheet.  □ 5 - Wetland Non-Vascular Plants □ Problematic Hydrophytic Vegetation (Explain)    Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.   Hydrophytic Vegetation Present?   Yes ✓ NO □					3 - Prevale	ence Index is <= :	3.0
Supporting data in remarks or on separate sheet.  □ 5 - Wetland Non-Vascular Plants □ Problematic Hydrophytic Vegetation (Explain)    Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.   Hydrophytic Vegetation Present?   Yes ✓ NO □					7 4 Maraba	ological Adaptatic	na (Dravida
Woody Vine Stratum Plot size ( 30 Foot Radius)  Problematic Hydrophytic Vegetation (Explain)  Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.  Hydrophytic Vegetation Present? NO □  Remarks:					supporting		
Woody Vine Stratum Plot size ( 30 Foot Radius) Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.  Hydrophytic Vegetation Present?  Remarks:  Percent Bare Ground 5					ີ່ 5 - Wetlan⊲	d Non-Vascular F	Plants
Woody Vine Stratum Plot size ( 30 Foot Radius) Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.  Hydrophytic Vegetation Present?  Remarks:  Percent Bare Ground 5					Problemati	ic Hydrophytic Ve	egetation (Explain
Percent Bare Ground 5  Remarks:  Hydrophytic Vegetation Present?  Yes V NO   One of the property of the present	Woody Vine Stratum Plot size ( 30 Foot F		tors of hydric	sil and wetland h	ydrology must be		
Remarks:	Boroont Boro Ground 5			Hydr	ophytic Veg	otation	
				1			
		a positive rapid t	est, a positive	dominance te	st, and a pr	evalence index	less than or

SOIL									Sampling Point: <u>D</u>	P07w	
Profile Desc	cription: (	Describe	to the de	oth neede	d to docur	ment the ii	ndicator	or con	firm the absence of indicators.)		
Depth		Matrix			Redo	x Features	5				
(inches)	Color	(moist)	%	Color	(moist)	%	Type <sup>1</sup>	Loc			
0-03	10YR	4/2	100						Sandy Clay Loam		
03-16	10YR	4/2	98	7.5YR	6/8	2	С	M,PL	Sandy Clay Loam		
	-										
				-							
<sup>1</sup> Type: C=C	oncentratio	on, D=Dep	letion, RM	=Reduced	Matrix, C	S=Covered	or Coat	ed Sand	d Grains. <sup>2</sup> Location: PL=Pore Lining, M=I	Matrix.	
Hydric Soil	Indicators	s: (Applic	able to al	l LRRs, uı	nless othe	rwise note	ed.)		Indicators for Problematic Hydric Sc	oils³:	
Histosol	, ,					Gleyed Ma			1 cm Muck (A9) ( <b>LRR I, J</b> )		
	pipedon (A	(2)		_	_	Redox (S5)			Coast Prairie Redox (A16) ( <b>LRR F</b>	, <b>G</b> , H)	
	istic (A3)			1		d Matrix (S			Dark Surface (S7) (LRR G)		
	en Sulfide (		<b>-</b> \	<u> </u>	_	Mucky Min			High Plains Depressions (F16)	. 70)	
	d Layers (A			<u> </u>	_	Gleyed Ma			(LRR H outside of MLRA 72 8	ι <b>73</b> )	
	uck (A9) (L			<u>_l'</u>		d Matrix (F Dark Surfa	-		<ul><li>☐ Reduced Vertic (F18)</li><li>☐ Red Parent Material (TF2)</li></ul>		
	d Below Da ark Surface		e (ATT)		=	ed Dark Suna	, ,	'\	☐ Very Shallow Dark Surface (TF12)		
	Jucky Mine			1		Depression		,	Other (Explain in Remarks)		
	Mucky Pea		S2) (I RR	GH) ∏		ains Depre		<del>-</del> 16)	<sup>3</sup> Indicators of hydrophytic vegetation ar	nd	
	ucky Peat o					.RA 72 & 7			wetland hydrology must be present		
	,		-, (,		(			,	unless disturbed or problematic.	7	
Restrictive	Layer (if p	resent):									
Туре:											
Depth (in	ches):								Hydric Soil Present? Yes	No	
Remarks: p	rominent	redoximo	rphic cor	ncentratio	ns comm	on along	pore lin	ings ar	nd within the depleted matrix.		
·		1000,11110	i prii o ooi	100mmatic	7110 00111111	ion along	po. 0	iiigo ai	na mami are aepietea maan.		
	-0V										
HYDROLO											
Wetland Hy			no roquire	d: abook a	ull that anal				Secondary Indicators (minimum of ty	uo roquirod)	
Primary India	•		ne require	u, check a		• •			<u> </u>	<u>vo required)</u>	
	Surface Water (A1)							Surface Soil Cracks (B6)			
	ater Table	(A2)		片					Sparsely Vegetated Concave Si	лцасе (ва)	
	Saturation (A3)							- D1- (OO)			
_	flarks (B1)	(DO)		片	-				Oxidized Rhizospheres on Living	g Roots (C3)	
	nt Deposits					Rhizospher	es on Liv	ving Roo	, ,		
	posits (B3)					not tilled)			Crayfish Burrows (C8)		
	at or Crust					of Reduce		4)	Saturation Visible on Aerial Imag	gery (C9)	
	oosits (B5)			_		Surface (			✓ Geomorphic Position (D2)		
	ion Visible		magery (E	37)	Other (Exp	olain in Rei	marks)		FAC-Neutral Test (D5)		
	Stained Lea	aves (B9)							Frost-Heave Hummocks (D7) (I	∟RR F) 	
Field Obser	vations:										
Surface Wat	ter Present	!? Y	es <u> </u>		Depth (in						
Water Table	Present?	Υ	es	No	Depth (in	ches):		_			
Saturation P			es	No	Depth (in	ches):		v	Vetland Hydrology Present? Yes	No	
(includes cap Describe Re			gauge, m	onitorina v	vell, aerial	photos, pre	evious in:	spection	ns), if available:		
		(- 2	J		,	, ,		,	,		
Remarks: -	idon	f wattara -	bydests -	u in al···al -		mbio = = = :	tion ===	l a r = -	itive EAC Neutral test		
r.omarks.E\	viaence of	ı wetiand	nyarolog	у іпсіцає	s geomor	huic bosi	uon and	a pos	itive FAC-Neutral test.		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rostad Ranch	City/County: Meagher	Sampling D	ate: 6/27/2022
		State: Montana Sampling Po	
Investigator(s): W Fouts, S Weyant			-
Landform (hillslope, terrace, etc.): Hillside			
Subregion (LRR): LRR E Lat:			
Soil Map Unit Name: Delpoint variant-Mamarth-Cabart Loams, 2			арреч
Are climatic / hydrologic conditions on the site typical for this time of year			
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "N	ormal Circumstances" present? Yes	3 <u>V</u> No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If need	ded, explain any answers in Remark	s.)
SUMMARY OF FINDINGS - Attach site map showing	sampling point lo	cations, transects, importar	nt features, etc.
Hydrophytic Vegetation Present? Yes No W  Hydric Soil Present? Yes No W  Wetland Hydrology Present? Yes No W  Remarks: Upland sample point located approximately 3' higher	within a Wetland	1? Yes No _ <del>_</del>	<u>]</u>
VEGETATION - Use scientific names of plants			
Tree Stratum Plot size (30 Foot Radius) Absolute Domian Species		Dominance Test worksheet	
// // Cover. Species	! Status	Number of Dominant Species that are OBL, FACW or FAC:	0 (A)
		Total Number of Dominant Species Across All Strata:	2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 % (A/B)
<u></u> (10		Prevalence Index worksheet	
		Total % Cover of:	Multiply by:
		OBL species 0 X 1 FACW species 0 X 2	0
		FAC species 0 X 3	0
		FACU species 40 X 4	160
Herbaceous Stratum Plot size ( 5 Foot Radius)	UPL	UPL species 60 X 5	300
Bromus inermis 60   Elymus repens 20   ✓	FACU	Column Totals 100 (A)	460 (B)
Elymus trachycaulus 15	FACU		4.60
Poa pratensis 5	FACU	Prevalence Index = B/A =	
		Hydrophytic Vegetation Indicator  1 - Rapid Test for Hydrophy	
		_	-
		2 - Dominance Test is >50%	
		☐ 3 - Prevalence Index is <= 3	3.0
		<ul> <li>4 - Morphological Adaptatio supporting data in remarks sheet.</li> </ul>	
		5 - Wetland Non-Vascular F	Plants
Woody Vine Stratum Plot size ( 30 Foot Radius)		☐ Problematic Hydrophytic Ve	,
		Indicators of hydric sil and wetland hy present, unless disturbed or problem	
Percent Bare Ground 0		Hydrophytic Vegetation Yes	□ NO 🗹
Remarks:			
Data point is dominated by upland vegetation.			

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Sampling Point: DP08u Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features % <u>L</u>oc<sup>2</sup> Color (moist) Color (moist) Type<sup>1</sup> Texture (inches) Remarks 0-03 3/2 100 **10YR** Silty Clay Loam Roots 03-16 10YR 100 3/2 Silty Clay Loam <sup>2</sup>Location: PL=Pore Lining, M=Matrix. <sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils<sup>3</sup>: Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (**LRR I, J**) Coast Prairie Redox (A16) (LRR F, G, H) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Loamy Mucky Mineral (F1) Hydrogen Sulfide (A4) High Plains Depressions (F16) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73) Stratified Layers (A5) (LRR F)  $\perp$  1 cm Muck (A9) (LRR F, G, H) Depleted Matrix (F3) Reduced Vertic (F18) Redox Dark Surface (F6) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) High Plains Depressions (F16) <sup>3</sup>Indicators of hydrophytic vegetation and 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present. unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Depth (inches): Remarks: No hydric soil indicators observed. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Hydrogen Sulfide Odor (C1) Saturation (A3) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) (where tilled) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Other (Explain in Remarks) Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F) Field Observations: Yes \_\_\_\_ No \_\_\_ Depth (inches): \_\_\_\_\_ Surface Water Present? Yes \_\_\_\_ No \_\_\_ Depth (inches): \_\_ Water Table Present? Wetland Hydrology Present? Yes \_\_\_\_ No Yes \_\_\_\_ No \_\_\_\_ Depth (inches): \_\_\_\_\_ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No evidence of wetland hydrology observed.

SOIL

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rostad Ranch		City/C	ounty: Meagher		Sam	oling Date: _	6/27/2022
Applicant/Owner: MDT					ontana <sub>Samp</sub>		
Investigator(s): W Fouts, S Weyant		Section	on. Township, Rar			11E	
Landform (hillslope, terrace, etc.): Lowland	l, toeslope	Local	relief (concave, c	convex, none): <u>ul</u>	ndulating/con		
	Lat: _						
Soil Map Unit Name: Delpoint variant-Ma	marth-Cabart Loams	, 2-8%		NWI	classification:	Not mapp	ed
Are climatic / hydrologic conditions on the s							
Are Vegetation, Soil, or Hyd							No 🗆
Are Vegetation, Soil, or Hyd	rology naturally	nrohlems	otic? (If ne	eded evolain an	w anewers in R	emarks)	
							-turos oto
SUMMARY OF FINDINGS – Attac			ipling point ic	OCATIONS, II a	nsects, imp	ortanı ie	atures, etc.
Hydric Soil Present? Wetland Hydrology Present?	Yes V No VYes V No No	_	Is the Sampled within a Wetlan	d? Y	es	No 🔲	-
Remarks: PEM, slope wetland. Sample		the easi	Central boundar	ry or the miliga	ition site.		
VEGETATION - Use scientific na	ames of plants  Absolute Dom	iont In	dicator	Τ			
<u>Tree Stratum</u> Plot size (30 Foot Rad	ius) % Cover: Spec		tatus		Test workshee		
					ominant Specie FACW or FAC		2 (A)
				Total Number Species Acro			3 <sub>(B)</sub>
Sapling/Shrub Stratum Plot size (15	5 Foot Radius)				ominant Specie ., FACW, or FA		.7 % (A/B)
<u> </u>	1 001 (				ndex workshe Cover of:		ultiply by:
				OBL species			5
				FACW specie			80
				FAC species		3	3
Herbaceous Stratum Plot size ( 5	Foot Radius)			FACU specie			104
Alopecurus arundinaceus	15	FAC	CW	UPL species	7 X	5	35
Carex praegracilis	5	FAC		Column Total	s 79	(A)	227 (B)
Cirsium arvense	1 🗆	FAC			ce Index = B/A		2.87
Eleocharis palustris	5 🗌	] OBL					
Elymus repens	20 🗸	] FAC	CU		Vegetation Inc pid Test for Hy		enetation
Juncus balticus	5	FAC	CW		minance Test		ogoldilo.i
Medicago sativa	5	UPL					
Phalaris arundinacea	15 🗸	] FAC	CW	<b>✓</b> 3 - Pro	evalence Index	is <= 3.0	
Phleum pratense	2 🗌	] FAC	CU		orphological Ad		
Rumex crispus	1 🗌	] FAC		suppo sheet	orting data in re	marks or or	ı separate
Symphyotrichum ascendens	2	] FAC	CU		etland Non-Vas	oular Plante	
Taraxacum officinale	3	] FAC	CU				
Woody Vine Stratum Plot size ( 3)	0 Foot Radius)			Indicators of hy		tland hydrol	ogy must be
				Hydrophytic		Yes 🗹	
Percent Bare Ground 20				Present?		103	
Remarks: Evidence of hydrophytic vegetation in	cludes a positive don	ninance t	test and a preva	alence index le	ss than or eq	ual to 3.0.	
							ŀ

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Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)	SOIL							Sampling Point: DP08w	
Color (mois)	Profile Desc	ription: (Describe	to the depth ne	eded to docun	nent the in	ndicator	or confi	rm the absence of indicators.)	
0-16 10YR 4/2 98 N 2.570 2 C M. PL Silty Clay Loam  Type: C-Concentration, D-Depletion, RM-Reduced Matrix, CS-Covered or Coated Sand Grains	Depth	Matrix		Redox	c Features	;		_	
Type: C=Concentration, D=Depletion, Rid=Reduced Matrix, CS=Covered or Coated Sand Grains.  **ILocation: PL=Pore Lining, M=Matrix.** Hydric Soil Indicators: (Applicable to all LRRe, unless otherwise noted.)	(inches)	Color (moist)	%Co	olor (moist)	%	_Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks	_
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Histocal (A1)	0-16	10YR 4/2	98 N	2.5/0	2	C	M, PL	Silty Clay Loam	_
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Histosci (A1)									
Histosol (A1)   Sandy Gieyed Matrix (S4)   1 cm Muck (A9) (LRR I, J)     Histo Epipedon (A2)   Sandy Redox (S5)   Coast Prairie Redox (A16) (LRR F, G, H)     Histo Epipedon (A2)   Sandy Redox (S5)   Coast Prairie Redox (A16) (LRR F, G, H)     High Ordinary Straffied Layers (A5) (LRR F)   Loamy Mucky Mineral (F1)     Straffied Layers (A5) (LRR F, G, H)   Depleted Matrix (F2)     On Muck (A9) (LRR F, G, H)   Depleted Matrix (F2)     Thick Dark Surface (A12)   Depleted Matrix (F3)   Reduced Vertic (F18)     Sandy Mucky Mineral (S1)   Redox Dark Surface (F7)   Redox Dark Surface (A12)   Depleted Dark Surface (F7)   Other (Explain in Remarks)     Sandy Mucky Peat or Peat (S2) (LRR G, H)   High Plains Depressions (F8)   Other (Explain in Remarks)     6 cm Mucky Peat or Peat (S3) (LRR F)   MILRA 72 & 73 of LRR H)   MILRA 72 & 73 of LRR H)     6 cm Mucky Peat or Peat (S3) (LRR F)   MILRA 72 & 73 of LRR H)   MILRA 72 & 73 of LRR H)     7 cm Mucky Peat or Peat (S3) (LRR F)   MILRA 72 & 73 of LRR H)	<sup>1</sup> Type: C=Co	oncentration, D=Dep	etion, RM=Redu	ced Matrix, CS	=Covered	or Coate	ed Sand (	Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
Type:	Histosol Histic Ep Black Hi Hydroge Stratified Thick Da Sandy M 2.5 cm Mu	(A1) sipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5) (LRR F ck (A9) (LRR F, G, H Below Dark Surface ark Surface (A12) lucky Mineral (S1) Mucky Peat or Peat (S3) cky Peat or Peat (S3)	5) H) ⊕ (A11) S2) ( <b>LRR G, H</b> )	Sandy G Sandy R Stripped Loamy M Loamy C V Depleted Redox D Redox D High Pla	Bleyed Markedox (S5) Matrix (S) Mucky Min Bleyed Mad Matrix (F) Dark Surfad Dark Surfad Depression Lins Depre	trix (S4)  6) eral (F1) trix (F2)  73) ce (F6) rface (F7 ns (F8) ssions (F	16)	□ 1 cm Muck (A9) (LRR I, J) □ Coast Prairie Redox (A16) (LRR F, G, H) □ Dark Surface (S7) (LRR G) □ High Plains Depressions (F16)         (LRR H outside of MLRA 72 & 73) □ Reduced Vertic (F18) □ Red Parent Material (TF2) □ Very Shallow Dark Surface (TF12) □ Other (Explain in Remarks) ³Indicators of hydrophytic vegetation and wetland hydrology must be present,	
Remarks: Distinct redoximorphic concentrations common along pore linings and within the depleted matrix.    AyDROLOGY	Restrictive L	_ayer (if present):							
Remarks: Distinct redoximorphic concentrations common along pore linings and within the depleted matrix.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one required; check all that apply)  Surface Water (A1)  Sult Crust (B11)  Surface Soil Cracks (B6)  Hydrogen Sulfide Odor (C1)  Parlange Patterns (B10)  Sediment Deposits (B2)  Drift Deposits (B2)  Oxidized Rhizospheres on Living Roots (C3)  Righlands or Crust (B4)  Presence of Reduced Iron (C4)  Saturation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Field Observations:  Surface Water Macks (B1)  Very Depth (inches):  Under ot tilled (Inches):  Water Macks (B1)  Oxidized Rhizospheres on Living Roots (C3)  Where not tilled (Inches):  Water Macks (B1)  Depth (inches):  Wetland Hydrology Present? Yes No Depth (inches): No Depth (	Type:								
HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of two required)  Surface Water (A1)  High Water Table (A2)  Aquatic Invertebrates (B13)  Sparsely Vegetated Concave Surface (B8)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Drainage Patterns (B10)  Water Marks (B1)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots (C3)  (where not tilled)  Crayfish Burrows (C8)  Algal Mat or Crust (B4)  Presence of Reduced Iron (C4)  Saturation Visible on Aerial Imagery (B7)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Field Observations:  Surface Water Present?  Yes ✓ No ◯ Depth (inches):  Water Table (Present?  Yes ✓ No ◯ Depth (inches):  Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches):  Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches):  Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches):  Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches):  Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches):  Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches):  Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches):  Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches):  Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Present? Yes ✓ No ◯ Wetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Present? Yes ✓ No ◯ Depth (inches): Owetland Hydrology Pr	Depth (inc	ches):						Hydric Soil Present? Yes No	_
Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (minimum of two required)         □ Surface Water (A1)       □ Salt Crust (B11)       □ Surface Soil Cracks (B6)         ☑ High Water Table (A2)       □ Aquatic Invertebrates (B13)       □ Sparsely Vegetated Concave Surface (B8)         ☑ Saturation (A3)       □ Hydrogen Sulfide Odor (C1)       □ Drainage Patterns (B10)         □ Water Marks (B1)       □ Dry-Season Water Table (C2)       □ Oxidized Rhizospheres on Living Roots (C3)         □ Sediment Deposits (B2)       □ Oxidized Rhizospheres on Living Roots (C3)       (where tilled)         □ Drift Deposits (B3)       (where not tilled)       □ Crayfish Burrows (C8)         □ Algal Mat or Crust (B4)       □ Presence of Reduced Iron (C4)       □ Saturation Visible on Aerial Imagery (C9)         □ Inon Deposits (B5)       □ Thin Muck Surface (C7)       ☑ Geomorphic Position (D2)         □ Inundation Visible on Aerial Imagery (B7)       □ Other (Explain in Remarks)       ☑ FAC-Neutral Test (D5)         □ Water-Stained Leaves (B9)       □ Depth (inches):       □ Wetland Hydrology Present?       Yes ☑ No ☐ Depth (inches):         □ Water Table Present?       Yes ☑ No ☐ Depth (inches):       □ Owe Wetland Hydrology Present?       Yes ☑ No ☐ No			ic concentration	ons common	along po	re lining	s and w	rithin the depleted matrix.	
Primary Indicators (minimum of one required; check all that apply)  Surface Water (A1)  Surface Water (A2)  High Water Table (A2)  Aquatic Invertebrates (B13)  Sparsely Vegetated Concave Surface (B8)  Aquatic Invertebrates (B13)  Sparsely Vegetated Concave Surface (B8)  Presence of Reduced Iron (C4)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Frield Observations:  Surface Water Present?  Yes ✓ No ◯ Depth (inches):  Water Marks (B1)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots (C3)  (where tilled)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (B7)  Other (Explain in Remarks)  Frost-Heave Hummocks (D7) (LRR F)  Water-Table Present?  Yes ✓ No ◯ Depth (inches):  Uncludes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Surface Water (A1)	_								
✓ High Water Table (A2) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8)   ✓ Saturation (A3) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10)   ✓ Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3)   ✓ Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) (where tilled)   ✓ Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8)   ✓ Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9)   ✓ Iron Deposits (B5) Thin Muck Surface (C7) ✓ Geomorphic Position (D2)   ✓ Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) ✓ FAC-Neutral Test (D5)   ✓ Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F)    Field Observations:  Surface Water Present?  Yes ✓ No ✓ Depth (inches):			<u>ne required; che</u>						<u>d)</u>
✓ Saturation (A3)       Hydrogen Sulfide Odor (C1)       Drainage Patterns (B10)         Water Marks (B1)       Dry-Season Water Table (C2)       Oxidized Rhizospheres on Living Roots (C3)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       (where tilled)         Drift Deposits (B3)       (where not tilled)       Crayfish Burrows (C8)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)         Inon Deposits (B5)       Thin Muck Surface (C7)       ✓ Geomorphic Position (D2)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       ✓ FAC-Neutral Test (D5)         Water-Stained Leaves (B9)       Frost-Heave Hummocks (D7) (LRR F)         Field Observations:         Surface Water Present?       Yes ✓ No ✓ Depth (inches):       Depth (inches):         Water Table Present?       Yes ✓ No ✓ Depth (inches):       Wetland Hydrology Present? Yes ✓ No ✓ Only Only Only Only Only Only Only Only					` '			` '	
Water Marks (B1) □ Dry-Season Water Table (C2) □ Oxidized Rhizospheres on Living Roots (C3)   □ Sediment Deposits (B2) □ Oxidized Rhizospheres on Living Roots (C3) (where tilled)   □ Drift Deposits (B3) (where not tilled) □ Crayfish Burrows (C8)   □ Algal Mat or Crust (B4) □ Presence of Reduced Iron (C4) □ Saturation Visible on Aerial Imagery (C9)   □ Iron Deposits (B5) □ Thin Muck Surface (C7) ☑ Geomorphic Position (D2)   □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) ☑ FAC-Neutral Test (D5)   □ Water-Stained Leaves (B9) □ Frost-Heave Hummocks (D7) (LRR F)    Field Observations:  Surface Water Present?  Yes ☑ No ☐ Depth (inches): ☐ User (inches): ☐ User (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:    Oxidized Rhizospheres on Living Roots (C3) (where tilled)		, ,							;)
Sediment Deposits (B2) ☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled)   ☐ Drift Deposits (B3) ☐ (where not tilled) ☐ Crayfish Burrows (C8)   ☐ Algal Mat or Crust (B4) ☐ Presence of Reduced Iron (C4) ☐ Saturation Visible on Aerial Imagery (C9)   ☐ Iron Deposits (B5) ☐ Thin Muck Surface (C7) ☑ Geomorphic Position (D2)   ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☑ FAC-Neutral Test (D5)   ☐ Water-Stained Leaves (B9) ☐ Frost-Heave Hummocks (D7) (LRR F)    Field Observations:  Surface Water Present?  Yes ☑ No ☐ Depth (inches): ☐ Wetland Hydrology Present? Yes ☑ No ☐ Depth (inches): ☐ Owerland Hydrology Present? Yes ☑ No ☐ Depth (includes capillary fringe)    Wetland Hydrology Present? Yes ☑ No ☐ Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			Į						
Drift Deposits (B3) (where not tilled) ☐ Crayfish Burrows (C8) ☐ Algal Mat or Crust (B4) ☐ Presence of Reduced Iron (C4) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Iron Deposits (B5) ☐ Thin Muck Surface (C7) ☑ Geomorphic Position (D2) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☑ FAC-Neutral Test (D5) ☐ Water-Stained Leaves (B9) ☐ Frost-Heave Hummocks (D7) (LRR F)  Field Observations: Surface Water Present? Yes ☑ No ☑ Depth (inches): ☐ Water Table Present? Yes ☑ No ☐ Depth (inches): ☐ Wetland Hydrology Present? Yes ☑ No ☐ Depth (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			l	_ •		` '			23)
Algal Mat or Crust (B4)			Į			es on Liv	ing Root		
□ Iron Deposits (B5) □ Thin Muck Surface (C7) ☑ Geomorphic Position (D2) □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) ☑ FAC-Neutral Test (D5) □ Water-Stained Leaves (B9) □ Frost-Heave Hummocks (D7) (LRR F)  Field Observations: Surface Water Present? Yes ☑ No ☑ Depth (inches): ☐ User Table Present? Yes ☑ No ☐ User Table Pres			,						
☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ FAC-Neutral Test (D5) ☐ Frost-Heave Hummocks (D7) (LRR F)  Field Observations:  Surface Water Present? Yes ☑ No ☑ Depth (inches): ☐ Wetland Hydrology Present? Yes ☑ No ☐ Depth (inches): ☐ Other (Explain in Remarks) ☑ FAC-Neutral Test (D5) ☐ Frost-Heave Hummocks (D7) (LRR F)  Field Observations:  Water Table Present? Yes ☑ No ☐ Depth (inches): ☐ Other (Explain in Remarks) ☑ FAC-Neutral Test (D5) ☐ Frost-Heave Hummocks (D7) (LRR F)  Water Table Present? Yes ☑ No ☐ Depth (inches): ☐ Other (Explain in Remarks) ☑ FAC-Neutral Test (D5) ☐ Frost-Heave Hummocks (D7) (LRR F)  Water Table Present? Yes ☑ No ☐ Depth (inches): ☐ Other (Explain in Remarks) ☑ Frost-Heave Hummocks (D7) (LRR F)  Water Table Present? Yes ☑ No ☐ Depth (inches): ☐ Other (Explain in Remarks) ☑ Frost-Heave Hummocks (D7) (LRR F)							4)	Saturation Visible on Aerial Imagery (C9)	
Water-Stained Leaves (B9) ☐ Frost-Heave Hummocks (D7) (LRR F)  Field Observations:  Surface Water Present? Yes ☐ No ☐ Depth (inches): ☐ User Table Present? Yes ☑ No ☐ Depth (inches):			l						
Field Observations:  Surface Water Present? Yes No Depth (inches):  Water Table Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			magery (B7)	Other (Exp	lain in Rei	marks)		FAC-Neutral Test (D5)	
Surface Water Present? Yes No Depth (inches):	Water-St	tained Leaves (B9)						Frost-Heave Hummocks (D7) ( <b>LRR F</b> )	
Water Table Present? Yes V No Depth (inches): 10 Saturation Present? Yes No Depth (inches): 0 Wetland Hydrology Present? Yes No Depth (inches): No Depth (inches): 10 Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Field Observ	vations:							
Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Surface Water	er Present? You	es <u> </u>	Depth (included)	:hes):				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Water Table	Present? Ye	es 🗹 No	Depth (inc	:hes):	10			
	(includes cap	oillary fringe)							_
Remarks:	Describe Red	corded Data (stream	gauge, monitorii	ıg well, aerial p	motos, pre	evious ins	spections	s), ir avalladie:	
Remarks' Tuiting a found and body a find a bight out a bight out a bight of the big									
Remarks: Evidence of wetland hydrology includes high water table, saturation to the soil surface, geomorphic position, and a positive			hydrology inclu	udes high wat	er table,	saturati	on to the	e soil surface, geomorphic position, and a positi	ve
FAC-Neutral test.	ΓA	io-inculiai lest.							

SOIL

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rostad Ranch	City/County: Meagher		Sampling Date:	6/27/2022
Applicant/Owner: MDT	, , , , , , , , , , , , , , , , , , , ,			
•••			' 0 BN 11E	
Landform (hillslope, terrace, etc.): Berm	Local relief (concave, cor	nvex, none): flat	 SI	lope (%):0
Subregion (LRR): LRR E Lat:	46.461073 <sub>1</sub>	_ong:	110.296365 <sub>Dat</sub>	tum: NAD 83
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes 🔽 No 🗀	 If no, explain in	Remarks.)	
Are Vegetation, Soil, or Hydrology significantly				<b>✓</b> No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If need	led explain any ansv	wers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing				features etc.
		-auono, aunoso	o, important i	
Hydrophytic Vegetation Present?  Yes No	Is the Sampled A			
Hydric Soil Present? Yes No V	within a Wetland	? Yes	□ No <u>✓</u>	<u> </u>
Wetland Hydrology Present?  Remarks: Unland complement leasted on unland population	"tan af the mitigu	Cara aita. The unic	-1 is oppre	:4-l-: 4 El
Remarks: Upland sample point located on upland peninsula in higher than the surrounding wetland.	the center of the miliga	ation site. The upia	and area is appro	oximately 1.5
5				
VEGETATION - Use scientific names of plants				
Absolute Domian		Dominance Test w		
Tree Stratum Plot size (30 Foot Radius) % Cover: Species	s? Status	Number of Dominar		
		that are OBL, FACV	V or FAC:	0 (A)
		Total Number of Do Species Across All		1 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominan That Are OBL, FAC		0.0 % (A/B)
		Prevalence Index v		
		Total % Cover OBL species	r of: N 0 X 1	Multiply by:
		FACW species	_	0
		FAC species	0 X2	0
District / 5 Foot Doding)		FACU species	_	100
Herbaceous Stratum Plot size ( 5 Foot Radius)  Bromus inermis 75 ✓	UPL	UPL species	_	375
Bromus inermis 75 Cirsium arvense 2	FACU	Column Totals	100 (A)	475 (B)
Elymus repens 15	FACU			4.75
Poa pratensis 3	FACU	Prevalence Ind		7.10
Taraxacum officinale 5	FACU	Hydrophytic Veget	ation Indicators est for Hydrophytic	Vegetation
		_	nce Test is >50%	Vogotation.
			ce Index is <= 3.0	
		_		
			ogical Adaptations ( lata in remarks or c	
		5 - Wetland	Non-Vascular Plan	nts
			Hydrophytic Veget	
Woody Vine Stratum Plot size ( 30 Foot Radius)		ndicators of hydric si present, unless distur	I and wetland hydro	ology must be
	<u>"</u>	Hydrophytic Veget	· · · · · · · · · · · · · · · · · · ·	NO ✓
Percent Bare Ground 20 Remarks:		Present?		
Data point is dominated by upland vegetation. No hydrophytic	c plant species observe	d		
Data politicio dominatod by apiana rogotation. No nys. opinys.	o piant opooloo oboc c	u.		

US Army Corps of Engineers Great Plains - Version 2.0

Sampling Point: DP09u Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Loc<sup>2</sup> Color (moist) Color (moist) Texture (inches) 0-04 3/2 100 **10YR** Sandy Clay Loam Roots 7.5YR 8 04-16 10YR 3/2 92 3/4 Clay Loam <sup>2</sup>Location: PL=Pore Lining, M=Matrix. <sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils<sup>3</sup>: Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (**LRR I, J**) Coast Prairie Redox (A16) (LRR F, G, H) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) High Plains Depressions (F16) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73) Stratified Layers (A5) (LRR F)  $\perp$  1 cm Muck (A9) (LRR F, G, H) Depleted Matrix (F3) Reduced Vertic (F18) Redox Dark Surface (F6) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) High Plains Depressions (F16) <sup>3</sup>Indicators of hydrophytic vegetation and 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present. unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Depth (inches): Remarks: No hydric soil indicators observed. Although redoximorphic concentrations were observed, they may be relict. The sample point lacked a hydrophytic vegetation community and evidence of wetland hydrology and is therefore considered nonwetland. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) High Water Table (A2) Aguatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Saturation (A3) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) (where tilled) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Other (Explain in Remarks) Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F) Field Observations: Yes No Depth (inches): Surface Water Present? Yes No <u>V</u> Depth (inches): \_\_\_ Water Table Present? Wetland Hydrology Present? Yes \_\_\_\_ No Yes \_\_\_\_ No \_\_\_ Depth (inches): \_\_\_\_\_ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No evidence of wetland hydrology observed.

SOIL

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rostad Ranch City/	County: Meagher Sampling Date: 6/27/2022
Applicant/Owner: MDT	State: Montana Sampling Point: DP09w
Investigator(s): W Fouts Section Secti	
	al relief (concave, convex, none): undulating Slope (%):
	46.461141 Long:110.296461 Datum: NAD 83
Soil Map Unit Name: Varney-Notter Cobbly Loams, 2-4% slopes	NWI classification: Not mapped
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly distu	urbed? Are "Normal Circumstances" present? Yes 🔽 No 🗌
Are Vegetation $\Box$ , Soil $\Box$ , or Hydrology $\Box$ naturally problen	natic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sa	mpling point locations, transects, important features, etc
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks: PEM, slope wetland. Sample point located near pre-exis	Is the Sampled Area within a Wetland? Yes No
VEGETATION - Use scientific names of plants	
Tues Ctuetuus Dist size (OO Feet Dedius)	Indicator Dominance Test worksheet
ree Stratum Piot size (30 Poot Radius) % Cover: Species?	Number of Dominant Species that are OBL, FACW or FAC:  1 (A)
	Total Number of Dominant Species Across All Strata:
Sapling/Shrub Stratum Plot size (15 Foot Radius)	Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)
, (.c	Prevalence Index worksheet
	Total % Cover of: Multiply by:  OBL species 0 X 1 0
	FACW species 100 X 2 200
	FAC species 0 X 3 0
Herbaceous Stratum Plot size ( 5 Foot Radius)	FACU species 0 X 4 0
	ACW UPL species 0 X 5 0
	Column Totals 100 (A) 200 (B)
	Prevalence Index = B/A = 2.00
	Hydrophytic Vegetation Indicators
	✓ 1 - Rapid Test for Hydrophytic Vegetation
	✓ 2 - Dominance Test is >50%
	✓ 3 - Prevalence Index is <= 3.0
	<ul> <li>4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.</li> </ul>
	5 - Wetland Non-Vascular Plants
	Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)	Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 0	Hydrophytic Vegetation Yes V NO
Remarks:	
Evidence of hydrophytic vegetation includes a positive rapid test, equal to 3.0.	a positive dominance test, and a prevalence index less than or

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Sampling Point: DP09w Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features % Color (moist) Loc<sup>2</sup> Color (moist) Type Texture Remarks (inches) 0-01 3/1 100 **10YR** Silty Clay Loam 01-16 10YR 2.5/0 С 4/2 97 Ν M Clay 2 С 01-16 7.5YR 4/6 NΛ Clay <sup>2</sup>Location: PL=Pore Lining, M=Matrix. <sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils<sup>3</sup>: Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (**LRR I, J**) Coast Prairie Redox (A16) (LRR F, G, H) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Loamy Mucky Mineral (F1) Hydrogen Sulfide (A4) High Plains Depressions (F16) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73) Stratified Layers (A5) (LRR F) ✓ Depleted Matrix (F3)  $\perp$  1 cm Muck (A9) (**LRR F, G, H**) Reduced Vertic (F18) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Red Parent Material (TF2) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) High Plains Depressions (F16) <sup>3</sup>Indicators of hydrophytic vegetation and 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) 5 cm Mucky Peat or Peat (S3) (LRR F) wetland hydrology must be present. (MLRA 72 & 73 of LRR H) unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Depth (inches): Remarks: Prominent redoximorphic concentrations common within the depleted matrix. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Hydrogen Sulfide Odor (C1) Saturation (A3) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) (where tilled) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Iron Deposits (B5) Thin Muck Surface (C7) ✓ Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Other (Explain in Remarks) Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F) Field Observations: Yes No Depth (inches): Surface Water Present? Yes \_\_\_\_ No \_\_\_ Depth (inches): \_\_ Water Table Present? Wetland Hydrology Present? Yes No Yes \_\_\_\_ No \_\_\_ Depth (inches): \_\_\_\_ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Evidence of wetland hydrology includes geomorphic position and a positive FAC-Neutral test. Soil moist.

SOIL

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rostad Ranch	City/County: Meagher	Sampling D	ate: 6/27/2022
Applicant/Owner: MDT		_ State: Montana_ Sampling Po	oint: DP10u
Investigator(s): S Weyant, W Fouts, M Hickey			
Landform (hillslope, terrace, etc.): Hillside			Slope (%): 5
Subregion (LRR): LRR E Lat:			
Soil Map Unit Name: Varney-Notter Cobbly Loams, 2-4%		NAV planeisiantian. Not m	apped
Are climatic / hydrologic conditions on the site typical for this time of ye	0 V	NVVI classification.	
			<b>,</b>
Are Vegetation, Soil, or Hydrology significantly			
Are Vegetation, Soil, or Hydrology naturally pro	blematic? (If needed	, explain any answers in Remark	s.)
SUMMARY OF FINDINGS – Attach site map showing		ions, transects, importar	nt features, etc.
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area	1	
Hydric Soil Present? Yes No		Yes No <u>▼</u>	•
Wetland Hydrology Present? Yes V No No			
Remarks: This point is located between an irrigation ditch and	a large wetland cell, and	is currently receiving overland	d flow.
VEGETATION - Use scientific names of plants			
Tree Stratum Plot size (30 Foot Radius) Absolute Domiant % Cover: Species		ominance Test worksheet	
% cover. Species	Ni	umber of Dominant Species at are OBL, FACW or FAC:	0 (A)
		otal Number of Dominant pecies Across All Strata:	1 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		ercent of Dominant Species nat Are OBL, FACW, or FAC:	0.0 % (A/B)
<u>oupmigronius stratum</u>	Pr	revalence Index worksheet	
	<del>-</del>	Total % Cover of:	Multiply by:
		BL species 0 X 1 ACW species 0 X 2	0
		ACW species 0 X 2 AC species 0 X 3	0
		ACU species 20 X 4	80
Herbaceous Stratum Plot size ( 5 Foot Radius)  Bromus inermis 75 ✓	UPL	PL species 76 X 5	380
Bromus inermis 75  Medicago sativa 1		olumn Totals 96 (A)	460 (B)
Phleum pratense 5	FACU	. ,	4.79
Poa pratensis 15	FACII	Prevalence Index = B/A =	
		ydrophytic Vegetation Indicator  1 - Rapid Test for Hydrophy	
		2 - Dominance Test is >50%	
		3 - Prevalence Index is <= 3	
		_	
		<ul> <li>4 - Morphological Adaptatio supporting data in remarks sheet.</li> </ul>	
		5 - Wetland Non-Vascular F	Plants
Woody Vine Stratum Plot size ( 30 Foot Radius)		☐ Problematic Hydrophytic Ve	,
,	pres	cators of hydric sil and wetland his sent, unless disturbed or problem	
Percent Bare Ground 10		ydrophytic Vegetation Yes	□ NO 🗹
Remarks:			
Data point is dominated by upland vegetation.			

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SOIL					Sampling Point: DP10u
Profile Des	scription: (E	escribe	to the depth	needed to document the indicator or	confirm the absence of indicators.)
Depth		Matrix		Redox Features	
(inches)	Color (	moist)	%	Color (moist)	_oc <sup>2</sup> Texture Remarks
0-04	10YR	3/1	100		Sandy Clay Loam
04-17	10YR	4/2	100		Sandy Clay Loam
¹Type: C=C	 Concentration	n, D=Dep	oletion, RM=Re	educed Matrix, CS=Covered or Coated S	Eand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil	l Indicators:	(Applic	able to all LR	Rs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
Histoso	` '			Sandy Gleyed Matrix (S4)	☐ 1 cm Muck (A9) ( <b>LRR I, J</b> )
	Epipedon (A2	2)		Sandy Redox (S5)	Coast Prairie Redox (A16) (LRR F, G, H)
	Histic (A3)	. 4)		Stripped Matrix (S6)	☐ Dark Surface (S7) (LRR G)
	gen Sulfide ( <i>F</i> ed Layers (A		<b>E</b> \	<ul><li>Loamy Mucky Mineral (F1)</li><li>Loamy Gleyed Matrix (F2)</li></ul>	☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
	luck (A9) ( <b>LF</b>		•	Depleted Matrix (F2)	Reduced Vertic (F18)
	ed Below Da		•	Redox Dark Surface (F6)	Red Parent Material (TF2)
	Dark Surface		(,	Depleted Dark Surface (F7)	✓ Very Shallow Dark Surface (TF12)
	Mucky Miner			Redox Depressions (F8)	Other (Explain in Remarks)
	-		(S2) ( <b>LRR G, F</b>	H) 📗 High Plains Depressions (F16)	<sup>3</sup> Indicators of hydrophytic vegetation and
5 cm M	lucky Peat o	r Peat (S	3) ( <b>LRR F</b> )	(MLRA 72 & 73 of LRR H)	
<b>D</b> 4 : 4:					unless disturbed or problematic.
44.50	Layer (if pr	esent):			
Type:	nohoo):			_	Hydric Soil Present? Yes No
. `					Hydric Soil Present? Tes No
Remarks: N	No hydric so	oil indica	ators observe	ed.	
HYDROLO					
_	ydrology Ind				
			one required; c	heck all that apply)	Secondary Indicators (minimum of two required)
	e Water (A1)			Salt Crust (B11)	Surface Soil Cracks (B6)
	/ater Table (/	42)		Aquatic Invertebrates (B13)	<ul><li>Sparsely Vegetated Concave Surface (B8)</li><li>Drainage Patterns (B10)</li></ul>
	tion (A3) Marks (B1)			<ul><li>Hydrogen Sulfide Odor (C1)</li><li>Dry-Season Water Table (C2)</li></ul>	Oxidized Rhizospheres on Living Roots (C3)
	ent Deposits	(B2)		Oxidized Rhizospheres on Living	
	eposits (B3)	(02)		(where not tilled)	Crayfish Burrows (C8)
	fat or Crust (	B4)		Presence of Reduced Iron (C4)	Saturation Visible on Aerial Imagery (C9)
	eposits (B5)	<i>D</i> 1,		Thin Muck Surface (C7)	Geomorphic Position (D2)
		n Aerial	Imagery (B7)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
	Stained Leav		<b>3 7</b> (- )		Frost-Heave Hummocks (D7) (LRR F)
Field Obse					
Surface Wa	ater Present?	Y	es 🔽 No	Depth (inches): 3	
Water Table	e Present?		'es 🔽 No		
Saturation F	Present?			Depth (inches): 0	Wetland Hydrology Present? Yes No
	apillary fringe				
Describe Re	ecorded Data	a (stream	ı gauge, monıt	oring well, aerial photos, previous inspec	ctions), it available:
Domonde		_			
veurauxs: O	Observation	s of surf	ace water ar	nd saturation were related to recent	above average precipitation events, and are not f hydric soil conditions or to support a hydrophytic
	egetation c			sason to support the development of	in Tryano son conditions of to support a frydrophytic
	5		•		

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rostad Ranch	City/County: Meagher	Sampling Da	ite: 6/27/2022
		State: Montana Sampling Po	
Investigator(s): W Fouts	Section, Township, Ra	nge:12 8N 1	11E
Landform (hillslope, terrace, etc.): Channel (active)			Slope (%):
Subregion (LRR): LRR E Lat:			
Soil Man Unit Name Varney-Notter Cobbly Loams, 2-4% slope	 es	NWI classification. Not ma	apped
Soil Map Unit Name: Varney-Notter Cobbly Loams, 2-4% slope Are climatic / hydrologic conditions on the site typical for this time of	vear? Ves No	(If no explain in Remarks )	
Are Vegetation, Soil, or Hydrology significan	thy disturbed? Are "	'Normal Circumstances' present? Ves	No 🗸
Are Vegetation, Soil, or Hydrology naturally	nroblematic?	and a cyplain any anguers in Pomarka	100
SUMMARY OF FINDINGS – Attach site map showing			
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks: PEM, slope wetland. Sample point is located in the	— Witimi a vvetiai	nd? Yes <u>V</u> No <u></u>	<u> </u>
VEGETATION - Use scientific names of plants	e leeder ditch in the no	Tur east arm or the miligation site.	
Tree Stratum Plot size (30 Foot Radius) Absolute Domis		Dominance Test worksheet	
Tree Stratum Plot size (30 Foot Radius) % Cover: Speci	es? Status	Number of Dominant Species that are OBL, FACW or FAC:	2 (A)
		Total Number of Dominant Species Across All Strata:	2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 % (A/B)
Salix exigua 1	FACW	Prevalence Index worksheet	
		Total % Cover of:	Multiply by:
		OBL species 19 X 1 FACW species 56 X 2	112
		FAC species 0 X 3	0
Herbaceous Stratum Plot size ( 5 Foot Radius)		FACU species 10 X 4	40
Eleocharis palustris 14	OBL	UPL species 0 X 5	0
Elymus repens 10	FACU	Column Totals 85 (A)	171 (B)
Phalaris arundinacea 55	FACW	Prevalence Index = B/A =	2.01
Rumex occidentalis 5	OBL	Hydrophytic Vegetation Indicators	<u> </u>
		✓ 1 - Rapid Test for Hydrophyt	
		✓ 2 - Dominance Test is >50%	, 0
		✓ 3 - Prevalence Index is <= 3	
		4 - Morphological Adaptation	
		supporting data in remarks of sheet.	
		☐ 5 - Wetland Non-Vascular Pl	lants
		☐ Problematic Hydrophytic Veg	getation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)		Indicators of hydric sil and wetland hy present, unless disturbed or problema	
Percent Bare Ground 25		Hydrophytic Vegetation Yes	✓ NO □
Remarks:			
Evidence of hydrophytic vegetation includes a positive rapid equal to 3.0.	d test, a positive domin	ance test, and a prevalence index	less than or

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Sampling Point: DP10w Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Matrix Redox Features % Loc<sup>2</sup> Color (moist) Texture Color (moist) (inches) Remarks 0-03 4/1 100 **10YR** Silty Clay Loam Roots 100 03 - 1610YR 5/1 Silty Clay Loam <sup>2</sup>Location: PL=Pore Lining, M=Matrix. <sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils<sup>3</sup>: Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (**LRR I, J**) Histic Epipedon (A2) Sandy Redox (S5) Coast Prairie Redox (A16) (LRR F, G, H) Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) High Plains Depressions (F16) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73) Stratified Layers (A5) (LRR F) ✓ Depleted Matrix (F3)  $\perp$  1 cm Muck (A9) (LRR F, G, H) Reduced Vertic (F18) Redox Dark Surface (F6) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) High Plains Depressions (F16) <sup>3</sup>Indicators of hydrophytic vegetation and 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present. unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Depth (inches): Remarks: Depleted matrix observed. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) ✓ Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) ✓ High Water Table (A2) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Hydrogen Sulfide Odor (C1) ✓ Saturation (A3) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) (where tilled) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Iron Deposits (B5) Thin Muck Surface (C7) ✓ Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Other (Explain in Remarks) Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F) Field Observations: Yes \_\_\_\_ No \_\_\_ Depth (inches): \_\_\_ Surface Water Present? Yes ✓ No □ Depth (inches): Water Table Present? Wetland Hydrology Present? Yes \_\_\_\_ No Yes \_ No \_ Depth (inches): \_\_\_\_ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Evidence of wetland hydrology includes surface water, high water table, saturation to the soil surface, geomorphic position, and positive FAC-Neutral test.

SOIL

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

1. Project name Rostad	d Ranc	:h			2. MDT į	oroject	#	ST	PX 002	(749)		Con	trol#	9680000
3. Evaluation Date 6/27/2	022	4. Eval	uators	S. Wey	/ant		5.	Wetl	and/Sit	e# (s)	Rostad N	Mitigation	Site	
6. Wetland Location(s): T Approx Stationing or Milepo	sts	8 N	R	11 E	Sec1	12		Т	8 N	R	11 E	Sec2	13	
Vatershed 10 - Mussels	hell		W	atershe	ed/Count	у Ме	eagh	er						
7. Evaluating Agency	CCI fo	or MDT							8. We	tland	size acres	<b>.</b>		29.48
Purpose of Evaluation									How a	ssess	ed:	Measur	ed e.g.	by GPS
☐ Wetlands potentially aff	ected	by MDT	oroject								nent area			29.48
☐ Mitigation Wetlands: pr	e-cons	struction								ize (ad Issess	•	Magaure	.d . a .l	NV CDS
✓ Mitigation Wetlands: po	st con	nstructio	n						now a	issess	eu:	Measure	ea e.g. i	by GPS
Other														
10. Classification of Wetlan	nd and	Aguatic	Habitat	s in AA										
HGM Class (Brinson)		ss (Cowa			Modifie	r (Cow	ardi	n)	W	ater Re	egime		% of A	A
Slope	Emer	gent Wet	land		Excavat	ed			Seas	onal/In	termittent			77
Slope	Scrub	o-Shrub V	Vetland						Seas	onal/In	termittent			3
Depressional	Emer	gent Wet	land		Excavat	ed			Seas	onal/In	termittent			6
Depressional	Emer	gent Wet	land		Excavat	ed			Seas	onal/In	termittent			14
11. Estimated Relative Abun	dance	) C	ommon					1						
12. General Condition of AA i. Disturbance: (use matrix be aquatic nuisance vegetation)	elow to			appropria	ate respon	se – see	e insti	ructio	ns for Mo	ontana-l	isted noxiou	us weed ai	nd	
	-		<u> </u>	Manag			Predoi				t to (within 50			ha a vilve anama d
Conditions wit	hin AA			natura hayed conver	ged in predor I state; is no , logged, or or ted; does no or buildings; or ANVS cov	t grazed, otherwise ot contain and noxid	ous	mode select subject few i	I not cultiverately gractively logged to minor or ads or both or ANVS	azed or haged; or ha or clearing uildings;	ayed or as been g; contains noxious	or logge placeme hydrolog building	d; subject ent, gradin gical altera	heavily grazed to substantial fill g, clearing, or ation; high road or or noxious weed >=30%.
AA occurs and is managed in predomir grazed, hayed, logged, or otherwise co roads or occupied buildings; and noxic <=15%.	nverted;	does not co	ntain	lo	w disturt	oance			low di	sturba	ince	mod	erate d	listurbance
AA not cultivated, but may be moderate selectively logged; or has been subject placement, or hydrological alteration; c noxious weed or ANVS cover is <=30%	to relativ	vely minor cl	earing, fill		modera disturba			m	oderat	e distu	ırbance	hi	gh dist	urbance
AA cultivated or heavily grazed or logg substantial fill placement, grading, clea high road or building density; or noxiou >=30%.	ring, or h	nydrological	alteration;	hig	ıh distur	bance			high d	isturba	ance	hi	gh dist	urbance
Comments: (types of disturb Rangeland surrounds the site t					nd is bord	dered b	y a l	ightly	used c	ounty r	oad to the	North.		
ii. Prominent noxious, aqua Centaurea stoebe, Cirsium a														

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 Initial Is current management preventing (passive) Modified Existing # of "Cowardin" Vegetated Classes in AA Rating existence of additional vegetated classes? Rating >=3 (or 2 if 1 is forested) classes NA NΑ Н 2 (or 1 if forested) classes NA NΑ NA Μ 1 dass, but not a monoculture М YES> <NO L 1 class, monoculture (1 species comprises>=90% of total cover) NA NΑ NΑ 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 (check one based on definitions contained in instructions): Primary or critical habitat (list species)  $\bigcirc$  D  $\bigcirc$  S  $\bigcirc$  D  $\bigcirc$  S Secondary habitat (list Species) Incidental habitat (list species) ○ D • S Grizzly bear S No usable habitat ii. Rating (use the condusions from i above and the matrix below to arrive at [check] the functional points and rating) Highest Habitat Level doc/primary sus/primary doc/secondary sus/secondary doc/incidental sus/incidental None Functional Points and 1H .9H .8H .7M .3L 0L .1L Rating USFWS IPaC Report (Project Code 2022-0090125), MTNHP Environmental Summary Report for Lat 46.44560 and Sources for Long -110.26057 documented use 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 (check one based on definitions contained in instructions): Primary or critical habitat (list species) D Os Downingia laeta (S2S3), Bobolink (S3B)

Primary or critical habitat (list species)

Secondary habitat (list Species)

Incidental habitat (list species)

No usable habitat

Downingia laeta (S2S3), Bobolink (S3B)

Long-billed curlew (S3B); Mountain plover (S2B)

S

No usable habitat

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

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

Sources for documented use

Observations of *Downingia laeta* in wetland during 2013-15 site visits. Long-billed curlews and upland sandpipers were observed by MDT staff in 2019-20. Bobolinks observed at the site in 2022.

observations of																		Mode	erate			
observations of	d on any	of the f	followin	g [che	ck]):					Minimal (based on any of the following [check]): riod) few or no wildlife observations during peak use periods								_				
							• •	•		l)	_			vations	during	peak u	ise per	iods				
abundant wild	-						-				little to no wildlife sign sparse adjacent upland food sources											
presence of ex		· ·	•				le in the	surro	unding	area	sparse adjacent upland food sources interviews with local biologists with knowledge of the AA											
interviews with	1 locai d	iologist	s with K	.nowie	dge ot u	1е АА					inter	views witr	i locai did	ologists	with Kn	iowleag	ge or tr	ie AA				
<b>loderate</b> (based o	n any o	f the fol	lowing	[check	]):																	
observations of				•				•		•		ds										
common occu			-		s scat, t	racks,	nest stru	uctures	s, game	trails, etc	C.											
dequate adja																						
interviews with	ı locai b	iologist	s with K	.nowle	dge of tr	ne AA																
ii. Wildlife habi from #13. For co other in terms o permanent/pere terms])	class co	over to percer	be control	onside positi	ered even	enly d he AA	istribute (see #	ed, th	ne mos Abbrev	t and le	ast prev	alent <b>ve</b> ace wate	<b>getated</b> r duration	l classons are	es mu e as fo	st be v	within P/P =	20% of	f each	e		
Structural diversity (see				Hig	gh					_	-	Moderate .	_	_			Lo	ow				
#13) Class cover distribution (all vegetated classes)		Eve	n			Unev	ven			Even	ı		Une	/en			Ev	/en				
Duration of surface water in ≥ 10% of AA	P/P	S/I	T/E	А	P/P	S/I	T/E	Α	P/P	S/I	T/E	A P/P	S/I	T/E	А	P/P	S/I	T/E	А			
L <b>ow</b> disturbance at AA (see #12i)	Е	Е	E	н	Е	Е	Н	Н	Е	Н	н	и E	Н	М	М	Е	Н	М	м			
Moderate disturbance at AA (see #12i)	н	Н	н	н	Н	н	Н	М	Н	Н	М	и 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	ь м	L	L	L	L	L	L	L			
				ns fro	om i ar	nd ii a	bove a	and t	the ma	atrix be			:[check			onal p	point	s and r	rating)			
	vII dlife	use (	"	Е	xcept	ional					ildlife h	abriai re		Mod	derate	,				Low		
	vII dlife	use (	"	E	Except 1E	1				Wi High .9H		abrial re			lerate 8H					Low .7M	1	_
Evidence of w	vII dlife	use (		E						High		abitat is										_
	vıl dlife	use (		E	1E	1				High .9H		abital re			8H					.7M		
Substantial Moderate	Site i	is beir	ng use	ed by	1E .9H .6M	i I	various gain in			High .9H .7M		andhill C	crane n		8H 5M 2L		in we	etlands	s in 20	.7M .3L .1L	18, and	t
Evidence of was Substantial Moderate Minimal	Site i 2019 Fish H by fish to hab	is beir (obse labitat [i.e.,	ng use erved It Rati fish u onstra d to 14	ed by by M ng: ( se is ints, 1E.)	1E .9H .6M deer IDT), a (Asses preclu	and wand against this uded I hot de	gain in functi by pero sired f	ion if	the A culve a mar	.9H .7M .4M dies. Ac	ed by the bar	ish or the rier, etc	ne exis c.]. If the [such	esting sine AA as fis	8H 5M 2L obse tuation is no h entr	erved on is "ot used	∞rre d by f ed in a	ctable'	" such sh use	.7M .3L .1L 16, 20	e AA	t
Substantial Moderate Minimal Comments  4D. General Fould be used bestorable due to the NA here a	Site i 2019 Fish H by fish to hab and pro	is beir (obse labitat [i.e.,	ng use erved It Rati fish u onstra d to 14	ed by M  ng: ( sse is ints, 4E.)	.9H .6M deer IDT), a (Asses preclu or is n	and vand ag	gain in s functi by pero sired f	ion if	the A culve a mar	.9H .7M .4M dies. Ac	ed by the barent pen	ish or the rier, etc	ne exist	esting sine AA as fis	8H 5M 2L obse tuation is no h entr	erved on is "ot used	∞rre d by f ed in a	ctable' ïsh, fis a cana	" such th use I], ther	.7M .3L .1L 16, 20	e AA	E
Substantial Moderate Minimal Comments  4D. General Fould be used bestorable due to the standard of the substantial of the subst	Site i 2019 Fish H by fish to hab and pro ality an	is beir (obse labitat [i.e.,	ng use erved It Rati fish u onstra d to 14	ed by M  ng: ( see is sints, 4E.)  Suspe	1E .9H .6M / deer IDT), a // Asses precluor is n	and vand ag	gain in	ion if	the Ad culve a man	.9H .7M .4M dies. Ac	ed by ther barent per	indhill C	ne exist	esting sine AA as fis	8H 5M 2L obse tuation is no h entr	erved on is "ot used	∞rre d by f ed in a	ctable' ïsh, fis a cana	" such sh use I], ther	.7M .3L .1L 16, 20	e AA	d
Substantial Moderate Minimal Comments  4D. General Fould be used bestorable due to the sectorable due to the s	Site i 2019 Fish Hoby fish to hab and properties ality and ewater sting /	is beir (obse	ng useerved  tt Ratii fish u  ponstra 1 to 14	ed by M  ng: ( see is sints, 4E.)  Suspe	1E .9H .6M / deer IDT), a // Asses precluor is n	and vand ag	gain in	ion if	the Ad culve a man	.9H .7M .4M dies. Ac	ed by ther barent per	indhill C	ne existal.]. If the [such	esting sine AA as fis	SH SM 2L observed truation is no h entre openints	erved on is "o	corred by fed in a	ctable' ïsh, fis a cana	" such sh use I], ther	.7M .3L .1L 16, 20 that th is not n check	e AA	
Substantial Moderate Minimal  Comments  4D. General Fould be used to estorable due in MA here a  Duration of surface in AA Aquatic hiding / resessape cover Thermal cover options	Site i 2019 Fish H by fish to hab and properties at the string / trimal /	is beir (obse	ng useerved  t Rati fish u ponstra Optim	ed by M  ng: ( see is sints, 14E.)	1E .9H .6M deer IDT), a	and valued I and decision of the special speci	gain in	ion if ched from	the Ad culve a man	.9H .7M .4M dies. Ac	ed by the barent per	rish or the rier, etc. spectives t [check assonal / Adec	ne exist	esting sime AA as fis	5M  2L  obset  tuation is no h entre  poor  s	on is "c	corred by fed in a sting)	ctable' ïsh, fis a cana Tem	" such th use I], ther porary/	.7M .3L .1L .16, 20	e AA	por
Substantial Moderate Minimal Comments  4D. General Fould be used bestorable due to the sectorable due to the s	Site i 2019 Fish Hoby fish to hab and properties sting /	is beir (obsetable) (obsetable) (obsetable) (i.e., objectable) (objectable) (objectable)	ng useerved  t Rati fish u ponstra Optim	ed by M  ng: ( see is ints, 4E.)  Per second	1E .9H .6M	and \( \)	gain in s functi by pero sired f  pecies i	ion if in AA	the Ad culve a mar	High .9H .7M .4M dies. Ac	ed by the barent per	ish or the rier, etc. spective t [check to Adecond / O	ne existal and a second a second and a second a second and a second and a second and a second and a second an	esting sime AA as fis	sooints	on is "o	corred by fed in a string)  Optim	ctable'ish, fisa cana	" such th use I], ther	.7M .3L .1L 16, 20	ral Pc	oor

.5M

FWP Non-Game Tier IV

or No fish species

.5M

.5M

.4M

.4M

.3L

.4M

.4M

.4M

B-67				

.3L

.2L

.2L

.2L

.2L

.1L

.1L

.1L

.3L

Sources used for identifying fish sp. potentially for	und in AA:									
ii. Modified Rating (NOTE: Modified score car a) Is fish use of the AA significantly reduced by a current final MDEQ list of waterbodies in need of fishery or aquatic life support, or do aquatic nuisa, yes, reduce score in i above by 0.1: Modified I	culvert, dil TMDL deve nce plant d	ke, or other m elopment with	an-made s listed "Pro	bable Imp	paired Úses'	including	cold or v	varm water	he If	
b) Does the AA contain a documented spawning a comments) for native fish or introduced game fish	_	er critical hab	If yes, a	-	he adjusted					
iii. Final Score and Rating: 0 NA	Commen	nts: AA does	s not sup	port per	rennial wa	iter to p	rovide f	ish habit	at.	
14E. Flood Attenuation: (Applies only to wetlan channel or overbank flow, click  NA here			ia in-chanr	el or over	bank flow. I	f wetland	s in AA aı	re not floode	ed from in-	
i. Rating (working from top to bottom, use the m  Estimated or Calculated Entrenchment (Rosgen 1994, 1996)		w to arrive at j entrenched - stream types	C, D, E	Moderat	I points and ely entrench stream type		Entrenc	hed-A, F, G	stream	
% 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	
Slightly Entrenched ER = >2.2		Moderately E ER = 1.4					ntrenched = 1.0 – 1.4	<u> </u>		
C stream type D stream type E stream	type	B stream		A	stream type		stream ty		stream type	
	5									
Flood-prone Width  Bankfull Depth    Bankfull Width   Bankfull Width										
14F. Short and Long Term Surface Water upland surface flow, or groundwater flow. I 14G.)	fnowetla	ands in the A	VA are sub	oject to fl	ood or ponc ooding or p	I from over	dick [	<b>NA</b> her	nel flow, prece e and procee	
<ul> <li>i. Rating (Working from top to bottom, us water durations are as follows: P/P = perma</li> </ul>				-11 7 9		-1 1 - 1			.: _ 1:	<b>e</b>
further definitions of these terms].)										

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 1H .9H .8H .8H .6M .5M .4M .3L .2L Wetlands in AA flood or pond ≥ 5 out of 10 years .1L .9H .8H .7M .7M .5M .4M .3L .2L

Comments:

Wetlands in AA flood or pond < 5 out of 10 years

Depressional area and portions of slope wetlands maintain water seasonally/intermittently. Adaptive management in 2017 resulted in an increased score for this function.

to 14H.)	nd water or d	irect input.	If no wetland	ds in the AA a	are subject to su	to receive sedir uch input, click	NA he	re and proceed
<ul><li>i. Rating (working from top to b = low])</li></ul>	ottom, use ti	ne matrix b	eiow to arrive	e at [cneck] tr	ne functional poi	nts and rating [i	⊣ = nign, ivi =	moderate, or L
Sediment, nutrient, and toxicant input levels within AA	AA receito de compour	eliver levels of ands at levels ostantially imposes of nutrier	unding land use of sediments, no such that othe paired. Minor se nts or toxicants, nication present	utrients, or r functions are edimentation, or signs of	developm nutrients, or with potentia compounds si	on MDEQ list of vent for "probable of toxicants or AA relified library in the deliver high leuch that other function, sources of eutrophical	causes" related ceives or surro vels of sedimer tions are subst	tosediment, unding land use nts, nutrients, or antially impaired.
% cover of wetland vegetation in AA Evidence of flooding / ponding in AA	≥ 7	70%	<	70%	≥	70%		< 70%
	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	.4M	.3L	.2L	.1L
Comments: More than 80 percoverflow channel.  14H Sediment/Shoreline Stabilizati drainage, or on the shoreline of a sta proceed to 14l.)	on: (Applies	only if AA oo	ccurs on or with	hin the banks o	r a river, stream,	or other natural o		constructed
i. Rating (working from top to bottom	m, use the ma	trix below to						
% Cover of <u>wetland</u> streambank or shoreline by species with stability ratings				<u> </u>	nt to rooted vegetation			
of ≥6 (see Appendix F).	Permane	ent / Perennial	\$	Seasonal / Interm	ittent	Temporary / Ephen	neral	
≥ 65%		1H		.9H		.7M		
35-64%		.7M		.6M		.5M		
< 35%		.3L		.2L		.1L		
Ponded water was Phalaris arundinad					unded by a veg	etation commur	nity dominate	d by
Phalaris arundinae  14l. Production Export/Food Ch  i. Level of Biological Activity (s)	cea, which ha	as a stabili	ty rating of 9.	s [check])	unded by a veg	etation commur	nity dominate	d by
Phalaris arundinae  14l. Production Export/Food Ch  i. Level of Biological Activity (s)	cea, which had a support:  on the sis of wild general Wild wild wild be seen a support of the sis of wild general wild be seen as the sis of th	as a stabili	ty rating of 9.	s [check])	unded by a veg	etation commur	nity dominate	d by
14l. Production Export/Food Ch  i. Level of Biological Activity (s)  General Fish Habitat	cea, which had a support:  In thesis of wild General Wild	as a stabili dlife and fish	ty rating of 9.	s [check])	unded by a veg	etation commur	nity dominate	d by
14l. Production Export/Food Ch  i. Level of Biological Activity (s)  General Fish Habitat  Rating (14D.iii.)	rain Support:	as a stabili dlife and fish dlife Habitat M	ty rating of 9.	s [check])	unded by a veg	etation commur	nity dominate	d by
14I. Production Export/Food Ch  i. Level of Biological Activity (s)  General Fish Habitat Rating (14D.iii.)  E/H	nain Support:	dlife and fish  M  H	ty rating of 9.	s [check]) iii.) L	unded by a veg	etation commur	nity dominate	d by
14I. Production Export/Food Ch  i. Level of Biological Activity (s)  General Fish Habitat Rating (14D.iii.)  E/H  M	rain Support:	as a stabili	ty rating of 9.	s [check]) iii.) L M M	unded by a veg	etation commur	nity dominate	d by
14I. Production Export/Food Ch  i. Level of Biological Activity (s)  General Fish Habitat Rating (14D.iii.)  E/H  M  L  N/A  ii. Rating (Working from top to bottom wetland component in the AA; Factor subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component B High Moderate	main Support:  Inthesis of wild General Wild Harmon, use the mark B = level of b s pertain to du s of these term 5 acres	dlife and fish dlife Habitat M H M M onatrix below to biological act ration of sur	to arrive at [cheivity rating from face water in the vegetated codings of the vegetated codings	s [check])  iii.)  L  M  L  L  eck] the function above (14I.i.) he AA, where F	nal points and rat ; Factor C = whet P/P, S/I, and T/E a	ing. Factor A = a her or not the AA are as previously o Vegetated or High M	creage of vege contains a sur defined, and A omponent <1 acre oderate	etated face or = "absent"
A Vegetated components:  Phalaris arundinate  Phalaris arundinate  I. Level of Biological Activity (s)  General Fish Habitat Rating (14D.iii.)  E/H  M  L  M  N/A  II. Rating (Working from top to bottom wetland component in the AA; Factor subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in B High Moderate C Yes No Yes No	main Support:  Inthesis of wild General Wild Harmon, use the mark B = level of b s pertain to du s of these term 5 acres	dlife and fish	ty rating of 9.  h habitat ratings Rating (14C.i	s [check])  iii.)  L  M  L  L  eck] the function above (14I.i.) he AA, where F	nal points and rat ; Factor C = whet P/P, S/I, and T/E a	ing. Factor A = a her or not the AA are as previously o Vegetated or High M	creage of vege contains a sur defined, and A omponent <1 acre	etated face or = "absent"
14I. Production Export/Food Ch  i. Level of Biological Activity (s)  General Fish Habitat Rating (14D.iii.)  E/H  M  L  N/A  ii. Rating (Working from top to bottom wetland component in the AA; Factor subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component B High Moderate	om, use the me is a level of be septrain to due of these term is a cres	dlife and fish dlife Habitat M H M M onatrix below to biological act ration of sur	to arrive at [cheivity rating from face water in the vegetated codings of the vegetated codings	s [check])  iii.)  L  M  M  L  L  eck] the function on above (141.i.) he AA, where F  component 1-5 acres Moderate  is No Ye	nal points and rat ; Factor C = whet P/P, S/I, and T/E a	ing. Factor A = a her or not the AA are as previously of  Vegetated or  High Mr s No Yes	creage of vege contains a sur defined, and A omponent <1 acre oderate	etated face or = "absent"
A Vegetated component s  Phalaris arundinate  Phalaris arundinate  I. Level of Biological Activity (s)  General Fish Habitat Rating (14D.iii.)  E/H  M  L  M  N/A  II. Rating (Working from top to bottowetland component in the AA; Factor subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor Subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor Subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor Subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor Subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor Subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor Subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor Subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor Subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor Subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor Subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor Subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor Subsurface outlet; the final three rows [see instructions for further definitions A Vegetated componen	om, use the me is a level of be septrain to due of these term is a cres.	dlife and fish dlife Habitat M H M M onatrix below to biological acturation of surns].)	to arrive at [cheivity rating from face water in the light water in the light water from face water in the light water in the l	s [check])  iii.)  L  M  M  L  L  ceck] the function on above (141.i.) he AA, where F  component 1-5 acres Moderate  No Ye	nal points and rat ; Factor C = whet P/P, S/I, and T/E a	ing. Factor A = a her or not the AA are as previously of  Vegetated or  High Mr s No Yes  H .6M .6M	creage of vege contains a sur defined, and A omponent <1 acre oderate No Ye	etated face or = "absent"
A Vegetated component in the AA; Factor subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AA; Factor subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AA; Factor subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor subsurface outlet; the final three rows [see instructions for further definitions A Vegetated component in the AB; Factor See instructions for further definitions A Vegetated component in the AB; Factor See instructions for further definitions A Vegetated component in the AB; Factor See instructions for further definitions A Vegetated component in the AB; Factor See instructions for further definitions A See Instructions for further	cea, which have a support:  which have a supp	dlife and fish dlife Habitat M H M M M M N H No Yes M 9H	to arrive at [cheivity rating from face water in the light with th	s [check])  iii.)  L  M  M  L  L  eck] the function above (141.i.) he AA, where F  omponent 1-5 acres hoderate  No  4M  3L  4M  3L  4M  4M  4M  4M  4M  4M  4M  4M  4M  4	nal points and rat; Factor C = whet P/P, S/I, and T/E a	ing. Factor A = a her or not the AA are as previously of Vegetated or High Ms No Yes H .6M .6M	creage of vege contains a sur defined, and A omponent <1 acre oderate No Ye .4M .3	etated face or = "absent"

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below) i. Discharge Indicators ii. Recharge Indicators Permeable substrate present without underlying impeding layer The AA is a slope wetland Wetland contains inlet but no outlet Springs or seeps are known or observed Vegetation growing during dormant season/drought Stream is a known 'losing' stream; discharge volume decreases ✓ Wetland occurs at the toe of a natural slope Other: Seeps are present at the wetland edge AA permanently flooded during drought periods Wetland contains an outlet, but no inlet Shallow water table and the site is saturated to the surface Other: iii. Rating (use the information from i and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AA Wetlands <u>FROM GROUNDWATER</u> <u>DISCHARGE OR WITH WATER</u> THAT IS RECHARGING THE GROUNDWATER SYSTEM Criteria P/P S/I None Groundwater Discharge or Recharge .1L 1H .7M .4M Insufficient Data/Information NA **Comments:** Seasonal/intermittent water regime within the AA. 14K. Uniqueness: i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating) AA does not contain previously AA contains fen, bog, warm springs cited rare types and structural AA does not contain previously Replacement potential or mature (>80 yr-old) forested diversity (#13) is high or contains cited rare types or associations wetland or plant association listed and structural diversity (#13) is plant association listed as "S2" by as "S1" by the MTNHP the MTNHP low-moderate Estimated relative abundant abundant abundant commo rare rare common rare common abundance (#11) Low disturbance at AA .6M .5M 1H .9H .8H .8H .5M .4M .3L (#12i) Moderate disturbance at .7M .9H H8. .2L .7M .5M .4M .4M .3L AA (#12i) High disturbance at AA .8H .7H .6M .6M .3L .3L .1L .4M .2L (#12i) Comments: PEM & PSS wetlands are common in the area. Structural diversity and disturbance are moderate. 14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity) (if 'Yes' continue with the evaluation; if 'No' then click NA i. Is the AA a known or potential rec./ed. site: (check) Y  $N\bigcirc$ here and proceed to the overall summary and rating page) Check categories that apply to the AA: Educational/scientific study; Consumptive rec.; Non-consumptive rec.; \_\_\_Other iii. Rating (use the matrix below to arrive at [check] the functional points and rating) Known or Potential Recreation or Education Area Known Potential Public ownership or public easement with general public access (no permission required) 2H 15H Private ownership with general public access (no permission required) .15H .1M Private or public ownership without general public access, or requiring permission for public access .1M .05L Comments: Currently no recreation/education occurs at the site. **General Site Notes** 

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

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	.1	1	2.95	
B. MT Natural Heritage Program Species Habitat	Н	.9	1	26.53	<b>✓</b>
C. General Wildlife Habitat	М	.5	1	14.74	<b>~</b>
D. General Fish Habitat	NA	0	0	0.00	
E. Flood Attenuation	NA	0	0	0.00	
F. Short and Long Term Surface Water Storage	Н	.9	1	26.53	<b>V</b>
G. Sediment/Nutrient/Toxicant Removal	Н	1	1	29.48	
H. Sediment/Shoreline Stabilization	Н	.9	1	26.53	
Production Export/Food Chain Support	Н	.8	1	23.58	
J. Groundwater Discharge/Recharge	М	.7	1	20.64	<b>✓</b>
K. Uniqueness	L	.3	1	8.84	
L. Recreation/Education Potential (bonus points)	L	.05	NA	1.47	
Totals:		6.15	9	181.30	
Percent of Possible Score			68.33 %		

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  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)  "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:** (check appropriate category based on the criteria outlined above)

	п	III	IV
•	l II	111	

**Table B-1.** Rostad Ranch Wetland Mitigation Site. Comprehensive Plant Species List 2013-2022.

Scientific Names	Common Names	GP Indicator Status <sup>(1)</sup>
Achillea millefolium	Common Yarrow	FACU
Agropyron cristatum	Crested Wheatgrass	UPL
Agrostis gigantea	Black 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
<i>Aster</i> 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
Cardaria draba	Whitetop	UPL
Carex bebbii	Bebb's Sedge	OBL
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
<i>Chenopodium</i> 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 acicularis	Needle Spike-Rush	OBL
Eleocharis palustris	Common Spike-Rush	OBL
Elymus hispidus	Intermediate Wheatgrass	UPL

**Table B-1.** Rostad Ranch Wetland Mitigation Site. Comprehensive Plant Species List 2013-2022.

Scientific Names	Common Names	GP Indicator Status <sup>(1)</sup>
Elymus repens	Creeping Wild Rye	FACU
Elymus trachycaulus	Slender Wild Rye	FACU
Epilobium ciliatum	Fringed Willowherb	FACW
Equisetum arvense	Field Horsetail	FAC
Equisetum laevigatum	Smooth Scouring-Rush	FAC
Glyceria grandis	American Manna Grass	OBL
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
Rumex crispus	Curly Dock	FAC
Rumex occidentalis	Western Dock	OBL
Salix exigua	Narrow-Leaf Willow	FACW
Schedonorus pratensis	Meadow False Rye Grass	FACU
Schoenoplectus maritimus	Saltmarsh Club-Rush	OBL
Sinapis arvensis	Wild Mustard	UPL

**Table B-1.** Rostad Ranch Wetland Mitigation Site. Comprehensive Plant Species List 2013-2022.

Scientific Names	Common Names	GP Indicator Status <sup>(1)</sup>
Sonchus arvensis	Field Sow-Thistle	FAC
Symphyotrichum ascendens	Western American-Aster	FACU
Symphyotrichum ericoides	White Heath American- Aster	FACU
Tanacetum vulgare	Common Tansy	FACU
Taraxacum officinale	Common Dandelion	FACU
Thlaspi arvense	Field Pennycress	FACU
Tragopogon dubius	Meadow Goat's-beard	UPL
Trifolium arvense	Rabbit-foot Clover	UPL
Trifolium hybridum	Aslsike Clover	FACU
Trifolium pratense	Red Clover	FACU
Trifolium repens	White Clover	FACU
Triglochin maritima	Seaside Arrow-Grass	OBL
Typha angustifolia	Narrow-Leaf Cat-tail	OBL
Typha latifolia	Broad-Leaf Cat-Tail	OBL
Veronica peregrina	Neckweed	FACW

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

New species identified in 2022 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 2022



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 2022



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 2022



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 2022



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 2022



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 2022



Photo Point 6
Bearing: 30 degrees

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



Photo Point 6
Bearing: 30 degrees

Location: West Fence Line Year: 2022



Photo Point 6
Bearing: 100 degrees

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



Photo Point 6
Bearing: 100 degrees

**Location**: West Fence Line **Year**: 2022



Photo Point 8
Bearing: 90 degrees

**Location:** West Central

**Year**: 2017



Photo Point 8

**Location:** West Central

Bearing: 90 degrees Year: 2022



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

Location: East Fence Line



**Photo Point 9** Bearing: 240 degrees

Location: East Fence Line

Year: 2022



**Photo Point 10** Bearing: 80 degrees

Location: West Central

Year: 2017



**Photo Point 10** Bearing: 80 degrees

Location: West Central

#### **Rostad Ranch: Transect Photographs**



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



Year: 2013



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



Year: 2022



Transect 1: End Bearing: 110 degrees



Year: 2013



Transect 1: End Bearing: 110 degrees



Location: NE Branch of site Year: 2022



**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



Year: 2013



**Transect 2: End** Location: North Central Bearing: 310 degrees Year: 2022



**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: 2022



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



Location: South Portion of site Year: 2013





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: 2022



Transect 4: End Bearing: 180 degrees

**Location:** Northwest Portion

Transect 4: End Year: 2017



Bearing: 180 degrees

Location: Northwest Portion Year: 2022

Year: 2022



Data Point: DP01w

Location: NE corner of site. Veg CT 2.



Data Point: DP01u

**Location:** NE corner of site. Veg CT 8. **Year:** 2022



Data Point: DP02w

**Location:** NE corner of site. Veg CT 2. **Year:** 2022



Data Point: DP02u

**Location:** NE corner of site. Veg CT 8. Year: 2022



Data Point: DP03a-w

Location: Near N boundary of site. Veg CT 10. Year: 2022



Data Point: DP03b-w

Location: Near N boundary of site. Veg CT 3. Year: 2022



Data Point: DP03-u

Location: Near N boundary of site. Veg CT 8. Year: 2022



Data Point: DP04w

Location: Near N boundary of site. Veg CT 10. Year: 2022



Data Point: DP05w

Location: NW corner of site. Veg CT 14.



Data Point: DP04u

Location: Near N boundary of site. Veg CT 8. Year: 2022



Data Point: DP05u

**Location:** NW corner of site. Veg CT 11. **Year:** 2022

Year: 2022



Data Point: DP06a-w

Location: S central project area. Veg CT 3.



Year: 2022

Data Point: DP06b-w

Location: SE project area. Veg CT 10.



Data Point: DP06u

**Location:** SE project area. Veg CT 8. Year: 2022



Data Point: DP07w

Location: SW project area. Veg CT 10.



Data Point: DP07u

**Location:** SW project area. Veg CT 8. Year: 2022



Data Point: DP08w

Location: E-central project area. Veg CT 15. Year: 2022



Data Point: DP08u

Location: E-central project area. Veg CT 8. Year: 2022



Data Point: DP09w

Location: Center of project area. Veg CT 10. Year: 2022



Data Point: DP09u

Location: Center of project area. Veg CT 8. Year: 2022



**Data Point:** DP10w project area. Veg CT 7.

**Location:** Feeder ditch in NE **Year:** 2022



**Data Point:** DP10u project area. Veg CT 8.

**Location:** N of Feeder ditch in NE **Year:** 2022