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

#### KINDSFATER MITIGATION SITE

#### **Project Overview**

MDT Project Number: STPX 56 (56) UPN # 5034

Watershed: Watershed #13 – Upper Yellowstone River Basin

**Monitoring Year: 2021** 

Years Monitored: 9th year of monitoring

Corps Permit Number: NWO-2007-00824-MTB

Monitoring Conducted By: Confluence Consulting Inc Dates Monitoring Was Conducted: June 15-16, 2021

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

The site is intended to provide 32.7 acres of wetland mitigation credits to assist Montana Department of Transportation (MDT) in meeting compensatory mitigation requirements for proposed construction projects in Watershed #13 – Upper Yellowstone. The objectives of this project include creation, restoration, enhancement, and preservation of wetland habitat within the historic Kindsfater gravel pit. Construction included excavating 14 wetland cells to shallow groundwater elevation that range in size from 0.24 to 1.39 acres.

#### Site Location:

Latitude: 45.693478 Longitude: -108.693517 County: Yellowstone Nearest Town: Laurel, MT

Map Included: See Figure 1, page 10

Mitigation Site Construction Started: 2012 Construction Ended: 2012

Dates of Any Recent Corrective or Maintenance Activities (since previous report):

**Activity:** Weed spraying was delayed to October 2021 due to Stage 2 fire restrictions across all areas of Montana from June through September 2021. **Date:** October 2021

**Specific recommendations for additional corrective actions:** Confluence recommends that MDT assess the need for additional woody plantings.

**Anticipated Wetland Credit Acres: 32.7** 

Wetland Credit Acres Generated to Date: 23.0

**Previous Monitoring Reports:** 

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

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

<u>Requirements</u> (from approved mitigation plan, banking instrument, and US Army Corps of Engineers (USACE) permit conditions)

**Performance Standards:** A summary of performance standards established for the Kindsfater site and discussion of achievement status for each criterion is provided in Table 1. In 2021, the site achieved 13 of the 14 success criteria.

**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 are met as outlined in the 1987 Wetland Manual and 2010 Regional Supplement.	Υ	Areas identified as wetland habitat within the mitigation site meet the three-parameter criteria, as documented in the USACE wetland determination data forms (Appendix B).
Wetland Hydrology	Soil saturation present for at least 12.5 percent of the growing season.	Υ	Areas identified as wetland habitat within the mitigation site exhibit soil saturation for a minimum 12.5 percent of the growing season, as documented by areas of inundation shown in aerial imagery and in the USACE wetland determination data forms (Appendix A and B).
	Hydric soil conditions present or appear to be forming.	Υ	The constructed wetland complex exhibits hydric soil development, with redoximorphic features and the presence of other prominent hydric soil indicators observed within many of the excavated depressions.
Hydric Soil	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 continued to develop and expand across disturbed soils.
	Achieved when hydrophytic vegetation is dominant, per technical guidelines outlined in the 1987 Wetland Manual and 2010 Regional Supplement.	Υ	Areas identified as wetland habitat within the mitigation site support a prevalence of hydrophytic vegetation (OBL, FACW, and FAC) as documented in the USACE wetland determination data forms (Appendix B).
Hydrophytic Vegetation	Noxious weeds do not exceed 5 percent cover.	Y	Although several noxious weed infestations have been mapped across the site, these infestations are generally located outside of excavated wetlands. Overall, the estimated noxious weed cover within delineated wetlands is less than 5 percent.
	Hydrophytic vegetation success will include achieving a minimum overall vegetation cover of 80 percent in created wetland areas within 5 years following site construction.	Υ	The majority of created wetlands exhibited 80 percent hydrophytic vegetation cover during the 2021 monitoring event. All wetlands that were designed to provide 80 percent vegetative cover are currently achieving that performance standard.
Woody Plants	Plantings will be considered successful where they exceed 50 percent survival after 5 years.	N	Approximately 14 percent of the woody plantings observed were alive in 2021, which does not meet the 50 percent survival criteria. However, volunteer woody cover within wetland cells 13 and 14 exhibited a cover class of 5 (>50 percent), and within wetland cell 9 a cover class of 4 (21-50 percent).
Open-Water Areas	Open water that is established within the designated wetland cells will be considered successful and creditable.	Υ	Open water areas, with less than 5 percent vegetative cover, were mapped within cells 1 and 2. Shallow ponded water areas, with greater than 5 percent vegetative cover were also observed on site within many of the other wetland cells. Overall water depths ranged from 1 to 24 inches deep. A variety of herbaceous and woody hydrophytic species comprised the vegetated areas.
Upland Buffer	Success will be achieved when noxious weeds do not exceed 5 percent cover within the buffer areas on site.	Υ	Noxious weed cover was less than 5 percent cover within upland buffer areas, which included infestations of field bindweed, leafy spurge, and Canada thistle. MDT will continue to implement weed-control measures to maintain this criterion.

Performance Standards	Success Criteria	Criteria Achieved Y/N	Discussion
Upland Buffer	Any area disturbed within creditable buffer zones must have at least 50 percent aerial cover of non-weed species by the end of the monitoring period.	Y	Upland buffers surrounding wetland areas exhibited greater than 50 percent aerial cover of non-weed species.
Weed Control	Success will be achieved where <5 percent absolute cover of noxious weed species occurs across the site.	Υ	The absolute cover of state-listed noxious weed species across the entire site was estimated at approximately 5 percent in 2021. Field bindweed infestations were the most prevalent noxious weed occurrences observed during the 2021 monitoring event.
Fencing	Install wildlife-friendly fencing along the easement boundaries.	Υ	Wildlife-friendly fencing has been installed around the easement boundaries and is in good condition.

#### **Summary Data**

Wetland Delineation — The total wetland acreage delineated in 2021 (including preexisting wetland areas) was 37.6 acres, which is a 2.9-acre increase from the 2020 acreage (34.7 acres). The greatest increase in wetland acreage occurred within the reestablishment (restoration) areas, with an additional 1.9 acres delineated in 2021. The delineation confirmed 18.8 acres in preservation areas, 10.4 acres in the restoration areas (reestablishment and rehabilitation), 3.0 acres in the enhancement area, and 5.3 acres of created wetland in the excavated cells (Table 2). In 2020, the USACE (N. Green, personal communication, May 6, 2020) provided guidance on open water, defining it as "areas of open water of any depth with less than 5% rooted emergent vegetation, no vegetation, submerged non-rooted vegetation, and/or submerged vegetation rooted in the substrate that does not extend above the water surface." In accordance with this recent USACE guidance, open water accounted for 0.5-acre of the mitigation site in 2021 (Table 2). Uplands accounted for the remaining 77.7 acres of the mitigation site. USACE wetland determination data forms [USACE, 2010] are provided in Appendix B.

Table 2. Wetland & Aquatic Habitat Acreage Delineated From 2015 Through 2021 at the Kindsfater Site

Habitat Type	2015 Acreage	2016 Acreage	2017 Acreage	2018 Acreage	2019 Acreage	2020 Acreage	2021 Acreage
Preservation	21.3	20.3	20.5	17.6	17.4	18.4	18.8
Reestablishment (Restoration)	7.9	7.8	6.8	6.1	7.3	7.4	9.3
Rehabilitation (Restoration)	0.9	0.9	1.0	1.0	1.0	1.1	1.1
Enhancement	3.0	3.4	3.0	3.0	2.9	2.9	3.0
Establishment (Creation)	1.8	2.0	2.2	4.7	4.7	4.9	5.3
Open Water						0.4	0.5
Total Wetland & Aquatic Habitat	34.9	34.4	33.4	32.4	33.3	35.1	38.0

**Vegetation** — A total of 147 plant species were identified on the site from 2013 through 2021, including three new upland species in 2021 - choke cherry (*Prunus virginiana*), golden currant (*Ribes aureum*), and field fluffweed (*Filago arvensis*) (see plant list in Appendix B). Vegetation communities were identified by species composition and dominance. The following vegetation community types were identified in 2021:

- Upland Type 4 Elaeagnus angustifolia
- Upland Type 6 *Elymus trachycaulus/Bromus* spp.
- Upland Type 12 Alopecurus arundinaceus/Poa pratensis
- Upland Type 14 *Elymus* spp./*Bromus* spp.
- Upland Type 15 Bromus spp./Nassella viridula
- Upland Type 17 Bromus spp./Poa pratensis
- Wetland Type 2 *Eleocharis palustris/Schoenoplectus* spp.
- Wetland Type 3 Alopecurus arundinaceus/Poa palustris
- Wetland Type 5 Typha latifolia
- Wetland Type 8 *Populus deltoides*
- Wetland Type 9 Salix exigua
- Wetland Type 10 Poa palustris
- Wetland Type 11 Phalaris arundinacea
- Wetland Type 16 *Juncus* spp./*Carex* spp.

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

Vegetation cover was measured along three transects in 2021 (Figure A-2, Appendix A). Details of each transect are provided in the Wetland Mitigation Site Monitoring form (Appendix B). Photographs of the transect end points are provided in Appendix C. Table 3 summarizes the data for T-1. T-1 is 300 feet long and intersected upland community Type 15 and wetland community Types 8 and 9. Wetland habitat was consistent with that observed in 2020, representing 53 percent of the transect. Total vegetative cover along this transect was 85 percent in 2021. The total number of plant species observed along the transect decreased by one upland species from 2020 to 2021. Annual shifts in species dominance and general presence/absence of species are normal and expected within plant communities.

Table 3. Data Summary for T-1 From 2017 Through 2021 at the Kindsfater Site

Monitoring Year	2017	2018	2019	2020	2021
Transect Length (feet)	300	300	300	300	300
Vegetation Community Transitions Along Transect	4	4	4	4	4
Vegetation Communities Along Transect	4	5	3	3	3
Hydrophytic Vegetation Communities Along Transect	2	2	2	2	2
Total Vegetative Species	38	35	40	35	34
Total Hydrophytic Species	13	12	12	8	8
Total Upland Species	25	23	28	27	26
Estimated % Total Vegetative Cover	75	85	84	85	85
Estimated % Unvegetated	25	15	16	15	15

Monitoring Year	2017	2018	2019	2020	2021
% Transect Length Comprising Hydrophytic Vegetation Communities	40.3	49.3	55	53	53
% Transect Length Comprising Upland Vegetation Communities	59.7	50.7	45	47	47
% Transect Length Comprising Unvegetated Open Water	0.0	0.0	0.0	0.0	0.0
% Transect Length Comprising Mudflat	0.0	0.0	0.0	0.0	0.0

Data collected on T-2 (Wetland Mitigation Site Monitoring form, Appendix B) are summarized in Table 4. T-2 is 388 feet long and intersects wetland community Types 2 and 3; 100 percent of the transect crossed wetland habitat in 2021, which has remained constant since monitoring began in 2013. Total vegetative cover along this transect was 92 percent in 2021, representing a 2 percent increase since 2020. The total number of hydrophytic and upland plant species observed along the transect remained constant from 2020 to 2021.

Table 4. Data Summary for T-2 From 2017 Through 2021 at the Kindsfater Site

Monitoring Year	2017	2018	2019	2020	2021
Transect Length (feet)	388	388	388	388	388
Vegetation Community Transitions Along Transect	2	2	2	2	2
Vegetation Communities Along Transect	2	2	3	2	2
Hydrophytic Vegetation Communities Along Transect	2	2	2	2	2
Total Vegetative Species	39	26	27	21	21
Total Hydrophytic Species	23	20	20	12	12
Total Upland Species	16	6	7	9	9
Estimated % Total Vegetative Cover	65	75	88	90	92
Estimated % Unvegetated	35	25	12	10	8
% Transect Length Comprising Hydrophytic Vegetation Communities	100	100	100	100	100
% Transect Length Comprising Upland Vegetation Communities	0.0	0.0	0.0	0.0	0.0
% Transect Length Comprising Unvegetated Open Water	0.0	0.0	0.0	0.0	0.0
% Transect Length Comprising Mudflat	0.0	0.0	0.0	0.0	0.0

Data collected on T-3 (Wetland Mitigation Site Monitoring form, Appendix B) are summarized in Table 5. T-3 is 292 feet long and intersected wetland community Types 3 and 5. Wetland habitat represented 100 percent of the transect in 2021, representing an 8 percent increase since 2020. The northwestern end of T3, previously identified as upland community Type 14, was delineated as wetland in 2021 and included in wetland community Type 3 due to a shift in dominance to creeping meadow-foxtail (*Alopecurus arundinaceus*). Total vegetative cover along this transect was 92 percent in 2021, representing an increase of 2 percent since 2020. The total number of hydrophytic and upland plant species observed along the transect remained constant from 2020 to 2021.

Table 5. Data Summary for T-3 From 2017 Through 2021 at the Kindsfater Site

Monitoring Year	2017	2018	2019	2020	2021
Transect Length (feet)	292	292	292	292	292
Vegetation Community Transitions Along Transect	1	1	2	2	2
Vegetation Communities Along Transect	2	2	3	3	2
Hydrophytic Vegetation Communities Along Transect	1	1	2	2	2

Monitoring Year	2017	2018	2019	2020	2021
Total Vegetative Species	31	23	24	27	27
Total Hydrophytic Species	19	11	15	14	14
Total Upland Species	12	12	9	13	13
Estimated % Total Vegetative Cover	75	85	88	90	92
Estimated % Unvegetated	25	15	12	10	8
% Transect Length Comprising Hydrophytic Vegetation Communities	89.7	91.8	91.8	91.8	100
% Transect Length Comprising Upland Vegetation Communities	10.3	8.2	8.2	8.2	0
% Transect Length Comprising Unvegetated Open Water	0.0	0.0	0.0	0.0	0.0
% Transect Length Comprising Mudflat	0.0	0.0	0.0	0.0	0.0

Montana State-Listed Priority 2B noxious weeds identified within the Kindsfater mitigation site in 2021 included spotted knapweed (*Centaurea stoebe*), Canada thistle (*Cirsium arvense*), leafy spurge (*Euphorbia esula*), field bindweed (*Convolvulus arvensis*), salt cedar (*Tamarix chinensis*), and gypsyflower (*Cynoglossum officinale*). Infestation areas, with the exception of isolated occurrences, were mapped in 2021 and are shown on Figure A-3 in Appendix A. MDT has an ongoing weed-control program for their mitigation sites that includes an annual assessment of identified weed populations and application of herbicide treatment for the specific weed species and location. MDT's weed contractor was unable to complete noxious weed spraying at the Kindsfater site prior to the June 2021 monitoring event due to Stage 2 fire restrictions across the state that limited access to MDT properties. The absolute cover of state-listed noxious weed species across the entire site was estimated at 5 percent in 2021, which narrowly meets the achievement threshold for this performance standard. However, noxious weed treatment occurred in October 2021, following the monitoring event.

Cuttings and containerized materials were planted in approximately 27 clusters (Figure A-2, Appendix A) around the Kindsfater site following construction completion. The woody planting zones were generally located around the excavated wetland cells. Each individual cluster was monitored in 2021 with the number of live plants counted and recorded by species. Approximately 14 percent of the observed plantings were alive during the 2021 evaluations, which is consistent with that observed in 2020. Low survival is likely a result of insufficient moisture availability when the plantings were initially installed. A few additional volunteer *Juniperus scopulorum*, *Rosa woodsii*, and *Shepherdia argentea* plants were observed during the June 2020 and 2021 monitoring events. Volunteer cover by species such as *Populus deltoides*, *Salix exigua*, and *Salix lutea* within wetland cells 13 and 14 exhibited a cover class of 5 (>50 percent), and within wetland cell 9 a cover class of 4 (21-50 percent). The planted and surviving species are listed on the Wetland Mitigation Site Monitoring form (Appendix B).

**Hydrology** – The hydrology for the site is supplied from multiple sources, including a shallow seasonal groundwater table, direct precipitation, and surface runoff. During the June 2021 monitoring, all areas that had been defined as wetlands across the site were inundated, saturated, or exhibited signs of periodic saturation within 12 inches (1 foot) of the ground surface. Shallow surface water was documented in nearly all cells, with the exception of 13 and 14, and ranged in depth from 1-20 inches. Constructed cells 1 and 2 were identified as open water areas in 2021, surrounded by an emergent wetland fringe. Constructed cells 7, 9, 13, and 14 represented isolated wetland depressions surrounded by upland habitat. The remaining constructed cells were situated within a contiguous wetland mosaic with frequent surface drainages between cells. Shallow groundwater flows through the cells that were constructed along the upper terrace, then discharges into the natural slope wetlands to recharge the depressional wetlands along the lower terrace.

Long-term groundwater monitoring conducted by the US Geological Survey (USGS) at the Kindsfater site indicates that groundwater levels steadily declined through 2015, potentially a result of prolonged

drought conditions in the region. According the USGS, groundwater elevations in some areas of the site are also influenced by the active gravel mining operation north of the site, and to a lesser extent from a large irrigation canal just south of the site [USGS, 2020]. Groundwater levels within the site have steadily increased since 2015, which may be a result of higher-than-average precipitation in the region in 2017 through 2019, a change in irrigation discharge, and/or dewatering practices from the nearby gravel operation. Precipitation accumulation for this area in 2021 reported 9.16 inches from January through November, which is slightly lower than the accumulation reported in 2020 (12.81 inches), and substantially lower than the historic accumulation average of 14.23 inches. Monitoring efforts completed by the USGS in 2021 shows groundwater levels in a portion of site 3.07 to 3.53 feet below the land surface elevation of 3,285 feet from April through September (Table 6) [USGS, 2021]. The 2021 data indicate groundwater levels in some areas of the site, between April and September, were on average higher than 2015 through 2019, and similar to groundwater levels observed in 2020.

Table 6. 2021 USGS Groundwater Well Data for the Kindsfater Site

2021 Discrete water-level measurements								
Date	Time Mountain Time	Depth to water level, feet below land surface						
4/12/2021	12:03 pm	3.24						
6/17/2021	9:20 am	3.81						
8/24/2021	2:20 pm	3.07						
9/24/2021	9:45 am	3.53						

**Soils** – The Yellowstone County Soil Survey [NRCS, 2021] indicates that five soil series were mapped within the monitoring area and include the Bew silty clay loam, Shorey gravelly loam, Wanetta clay loam, Larim gravelly loam, and alluvial land (wet). In the 1970's much of the site was excavated for gravel and borrow material, therefore the original soil mapping may not necessarily represent existing conditions at the site. Paired soil pits were excavated at 12 locations (24 pits) across the site (Figure A-2, Appendix A). Soil textures within wetland test pits ranged from sandy loam to clay. Hydric soil indicators, observed in all but one wetland test pit, DP01w, included depleted matrix, redox dark surface, loamy gleyed matrix, and hydrogen sulfide. Wetland test pit, DP01w, lacked hydric soil indicators; however, it exhibited the hydrologic indicators oxidized rhizospheres on living roots, geomorphic position, and passing the FAC-neutral test; all dominant plant species were FACW, and the wetland boundary had an abrupt edge.

Soil textures within upland test pits ranged from loamy sand to silty clay. One upland test pit, DP04u, exhibited a depleted matrix, but no additional indicators of hydrology or hydrophytic vegetation were observed. There were no hydric soil indicators observed in any of the other upland test pits. Additional field observations for the 24 data points are provided in the wetland determination data forms in Appendix B.

**Photographs** – Photographs were taken at photo points 1–12 (PP1 to PP12), transect endpoints, and data points and are provided in Appendix C with comparisons between 2021 and the first year of monitoring. Please refer to previous years' monitoring reports for all previous annual photographs (https://www.mdt.mt.gov/publications/brochures/wetland mitigation.shtml).

**Functional Assessment** – The 2021 results of the functional assessments are summarized in the Table 7. A completed Montana Wetland Assessment Method (MWAM) form [Berglund and McEldowney, 2008] for the Kindsfater Site is provided in Appendix B. Overall, the existing and created wetlands rate as Category III wetlands and the site has generated 195.52 Functional Units.

Table 7. Montana Wetland Assessment Method Summary for the Kindsfater Site

Function and Value Parameters From the 2008 Montana Wetland Assessment Method	2021 AA1 (Existing Wetlands)	2021 AA2 (Established (Created) Wetlands)
Listed/Proposed Threatened & Endangered (T&E) Species Habitat	Low (0)	Low (0)
Montana Natural Heritage Program Species (MTNHP) Habitat	High (0.9)	High (0.9)
General Wildlife Habitat	Mod (0.5)	Mod (0.7)
General Fish/Aquatic Habitat	N/A	N/A
Flood Attenuation	N/A	N/A
Short- and Long-Term, Surface-Water Storage	High (0.9)	Mod (0.6)
Sediment/Nutrient/Toxicant Removal	High (0.9)	High (1.0)
Sediment/Shoreline Stabilization	NA	NA
Production Export/Food Chain Support	High (0.8)	High (0.8)
Groundwater Discharge/Recharge	Mod (0.7)	Mod (0.7)
Uniqueness	Low (0.3)	Low (0.3)
Recreation/Education Potential (bonus points)	High (0.2)	High (0.2)
Actual Points/Possible Points	5.2/8	5.2/8
% of Possible Score Achieved	65%	65%
Overall Category	III	III
Total Acreage of Assessed Wetlands Within Site Boundaries	32.3	5.3
Functional Units (acreage × actual points)	167.96	27.56

<sup>\*</sup>AA1 – 'Existing Wetlands' includes Preserved, Restored, and Enhanced Wetland Areas

**Wildlife** – Nineteen bird species were identified in 2021 across the site. In addition to the bird species, chorus frogs were observed in wetlands across the site, white-tailed deer and a vole species were observed.

Credit Summary – Table 8 summarizes the current estimated wetland credits based on the USACE-approved credit ratios [USACE, 2005] and the wetland delineation that was completed in June 2021. A total of 37.6 acres of wetland habitat were delineated at the Kindsfater site in 2021, including 5.3 acres of creation, 9.3 acres of reestablishment, 1.1 acre of rehabilitation, 3.0 acres of enhancement, and 18.8 acres of wetland preservation. A total of 45.3 acres, including 7.3 acres of upland buffer and 0.5-acre of open water, were used to calculate the mitigation credit acres. After applying the USACE-approved ratios to these values, a total of 23.0 acres of mitigation credits have been estimated in 2021, which is 9.7 acres below the targeted 32.7 credit acres that were anticipated at this site. Wetland and aquatic habitat acreage has increased over the last three years and is expected to continue if groundwater elevations remain high across the site.

Table 8. Wetland Mitigation Credits Estimated for the Kindsfater Ranch Site (2019–2021)

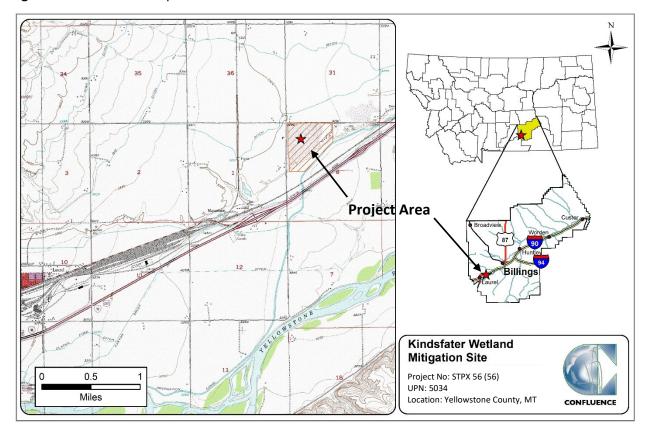
Compensatory Mitigation Type	Mitigation Area Description	Wetland Type <sup>(a)</sup>	Anticipated Mitigation Surface Area (acres)	USACE- Approved Mitigation Ratios	Anticipated Mitigation Credit (acres)	2019 Delineated Acres	2019 Mitigation Credit (acres)	2020 Delineated Acres	2020 Mitigation Credit (acres)	2021 Delineated Acres	2021 Mitigation Credit (acres)
Creation (Establishment)	Wetland Cells 7, 9, 13, & 14	Lacustrine emergent	4.6	1:1	4.6	4.7	4.7	4.9	4.9	5.3	5.3
Restoration (Reestablishment)	Wetland Cells 1–6 and partial Cell 18	Lacustrine emergent and Palustrine emergent, scrub- shrub	14.0	1:1	14.0	7.3	7.3	7.4	7.4	9.3	9.3
Restoration (Rehabilitation)	Areas adjacent to Wetland Cells 1–12	Palustrine emergent, scrub- shrub	9.2	1.5:1	6.1	1.0	0.7	1.1	0.7	1.1	0.8
Enhancement	Wetland Cells 10– 12 & Partial Cell 8	Palustrine emergent, scrub- shrub	3.1	3:1	1.0	2.9	0.9	2.9	1.0	3.0	1.0
Preservation	Existing Wetland Areas	Palustrine emergent, scrub- shrub	21.9	4:1	5.5	17.4	4.4	18.4	4.6	18.8	4.7
Upland Buffer	50-foot-wide upland perimeter around the site boundary	N/A	7.3	5:1	1.5	7.3	1.5	7.3	1.5	7.3	1.5
Open Water	Wetland Cells 1 & 2	Palustrine emergent, aquatic bed	N/A	1:1	N/A	N/A	N/A	0.4	0.4	0.5	0.5
	Total		60.1		32.7	40.6	19.5	42.4	20.5	45.3	23.0

<sup>(</sup>a) FGDC 2013.

<sup>(</sup>b) Mitigation crediting for Open Water was approved by the USACE in permit # NWO-2007-00824-MTB for this project.

#### Maps, Plans, Photos

Figure 1. Site Location Map



**Project Area Maps/Figures:** See Appendix A (Figure A-2 – 2021 Monitoring Activity Locations; Figure A-3 – 2021 Mapped Site Features; and Figure A-4 – 2021 Wetland Delineation)

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

Plant List: See Table B-1 in Appendix B

Photos: See Appendix C

Plans: See Appendix D of 2018 Monitoring Report

https://www.mdt.mt.gov/other/webdata/external/planning/wetlands/2018-REPORTS/2018-FINAL-Rostad-Ranch.PDF

#### **Conclusions**

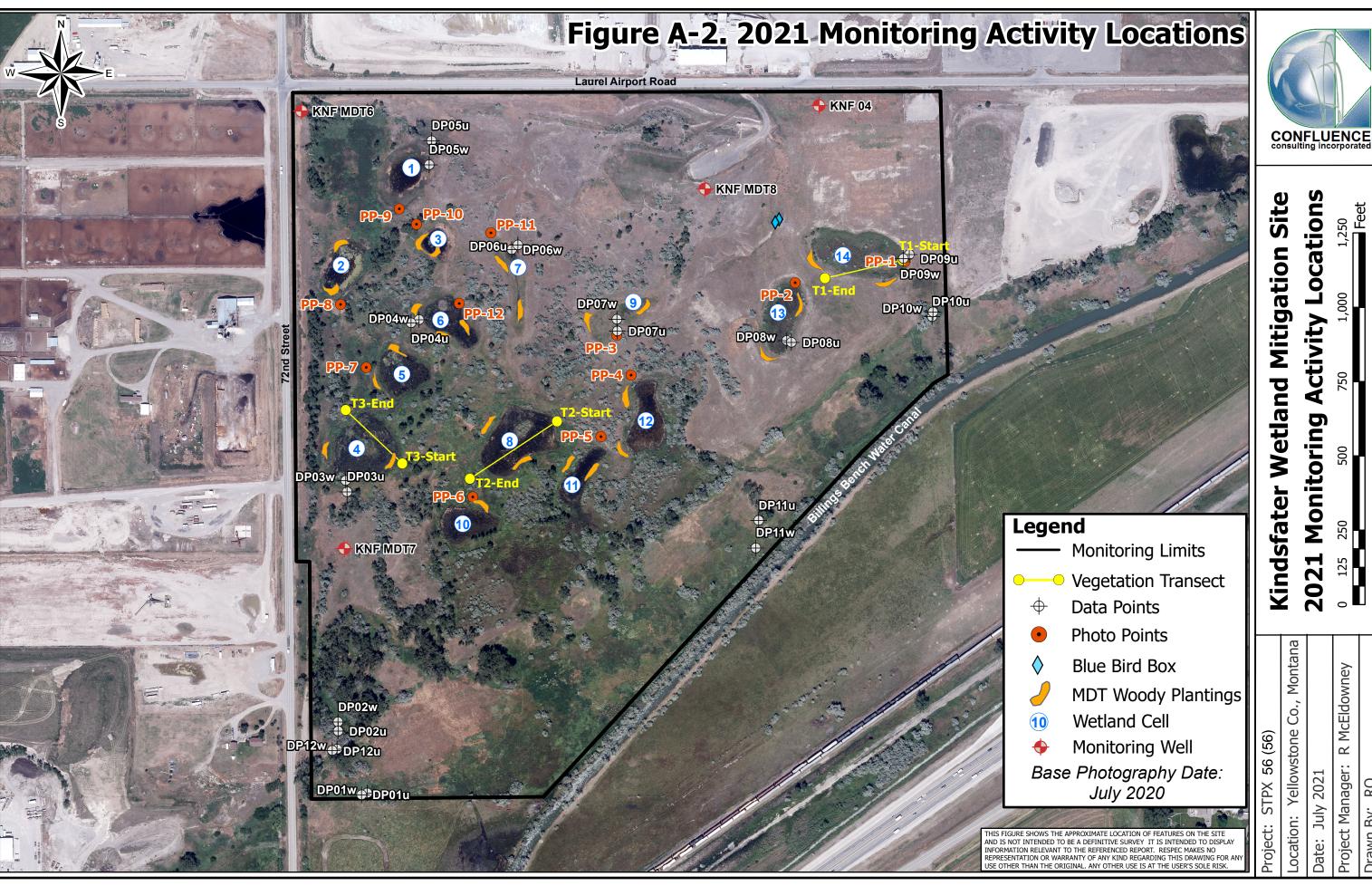
Based on the results of the ninth year of monitoring, the Kindsfater mitigation site is developing into a diverse wetland ecosystem. The site is meeting all but one of the project's performance standards. Woody planting survival was estimated at 14 percent in 2021. However, volunteer cover by species such as *Populus deltoides, Salix exigua*, and *Salix lutea* within wetland cells 13 and 14 exhibited a cover class of 5 (>50 percent), and within wetland cell 9 a cover class of 4 (21-50 percent). The site is slowly trending positively toward anticipated mitigation credit goals but may need adaptive management intervention to meet these goals.

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- U.S. Geological Survey (USGS). 2020. Annual Summary of Data Collected at Mitigation Areas, April September 2020. Prepared for Montana Department of Transportation by Sean Lawlor and August Schultz, U.S. Geological Survey, Wyoming-Montana Water Science Center, October 22, 2020

# APPENDIX A PROJECT AREA MAPS

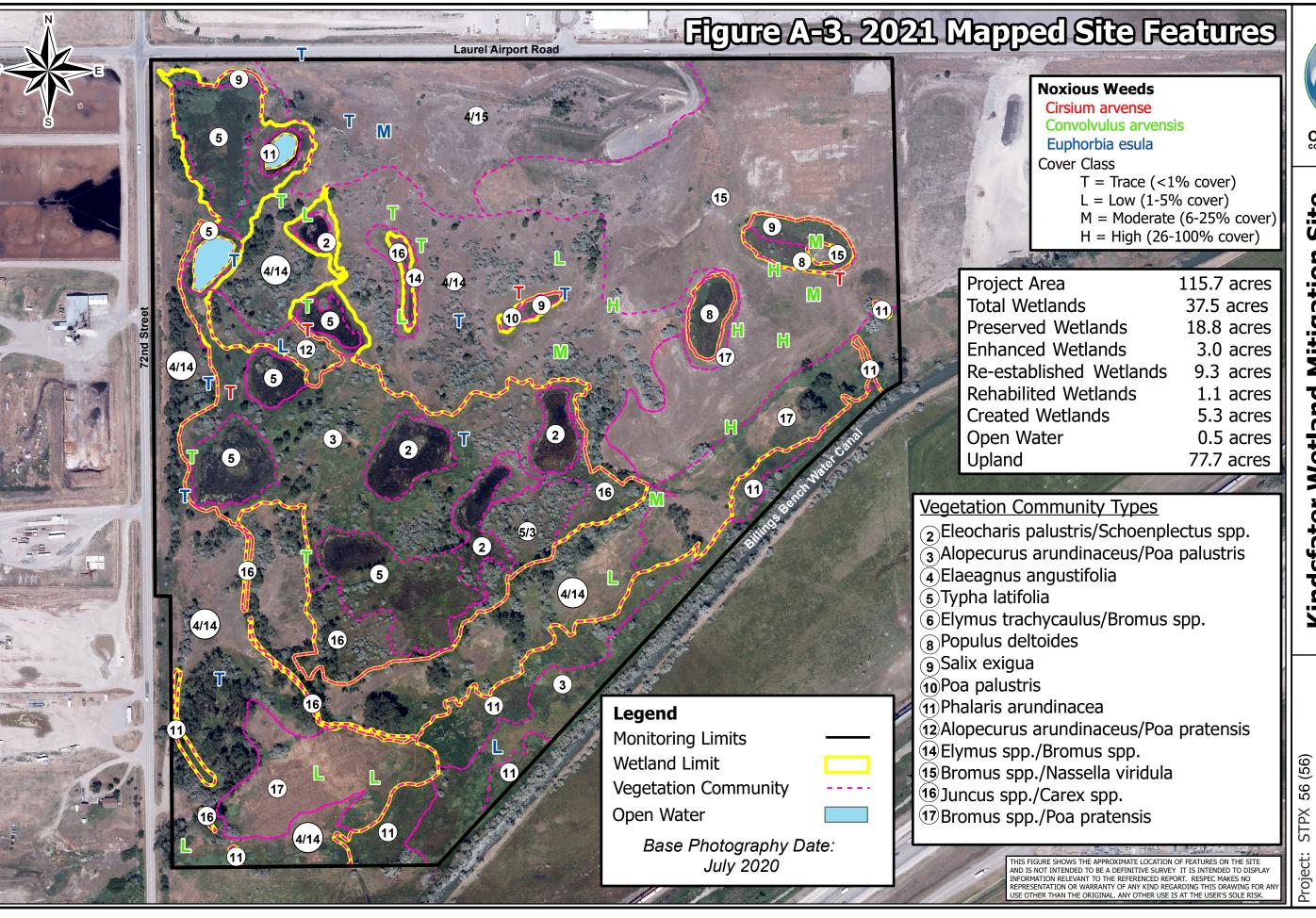
MDT Wetland Mitigation Monitoring Kindsfater Yellowstone County, Montana



**Activity Locations** 

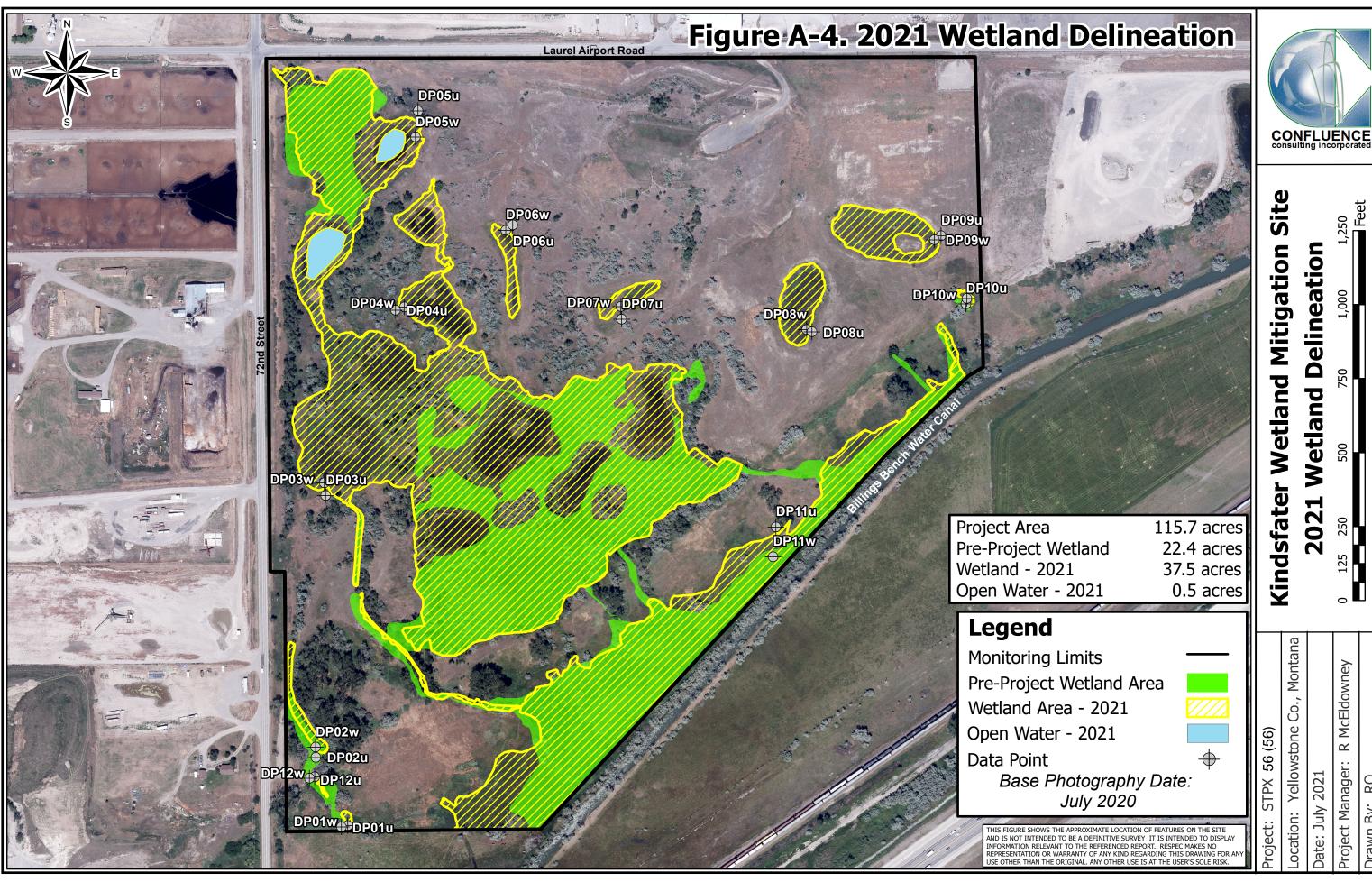
Monitoring

R McEldowney



# Site **Site Features** Kindsfater Wetland Mitigation Mapped 2021

McEldowney Yellowstone Co.,



**Delineation** 

Wetland

# APPENDIX B MONITORING FORMS

MDT Wetland Mitigation Monitoring Kindsfater Yellowstone County, Montana

## MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: <u>Kir</u>	ndsfaterAssessment Date/Time6/15/202
Person(s) condu	icting the assessment: R Quire, S Weyant, J Trilling
Weather: 102 de	egrees, partly cloudy Location: Laurel, MT
MDT District: Bi	llings Milepost: NA
Legal Descriptio	n: T <u>2S</u> R <u>25E</u> Section(s) 6
Initial Evaluation	Date: 8/22/2013Monitoring Year: 9_#Visits in Year: 1
Size of Evaluation	on Area: 115.69 (acres)
Land use surrou	
Commercial an	d agriculture including a gravel mining operation to the north and hay fields to the NV
	HYDROLOGY
	IIIDROLOGI
Surface Water Sourc	ce: Groundwater
nundation: 🔽	Average Depth: <u>0.4 (ft)</u> Range of Depths: <u>0.1-2 (ft)</u>
Percent of assessme	ent area under inundation: <u>15 %</u>
Depth at emergent v	egetation-open water boundary:0.4 <b>(ft)</b>
f assessment area i	s not inundated then are the soils saturated within 12 inches of surface:Yes_
	drology on the site (ex. – drift lines, erosion, stained vegetation, etc:
<b>.</b>	n aerial imagery, saturation to surface, shallow ponded water/recent ponding in
several of the wetla	and cells, sulfidic odor, water marks, geomorphic position, and drainage patterns.
Groundwater Mo	onitoring Wells
Record depth of v	vater surface below ground surface, in feet.
Well ID	Water Surface Depth (ft)
KNF 04	18.7
KNF MDT 8 KNF MDT6	11 10.8
KNF MDT7	3.65
KINF MIDIT	3.00
dditional Activities Check	list:
Map emergent vege	etation-open water boundary on aerial photograph.
	urface water during each site visit and look for evidence of past surface water
•	on, vegetation staining, etc.)
lydrology Notes:	groundwater monitoring well locations, if present.
.,	

There are several wells within this site that are monitored by the USGS and are included on Figure A-2. Depths are Below Land Surface (BLS) and measurements were taken by the USGS on 7/20/2021.

#### **VEGETATION COMMUNITIES**

Site Kindsfater

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

Community # 2 Community Type: Eleocharis palustris / Schoenoplectus spp. Acres: 3.06

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	1	Bare Ground	2
Carex pellita	2	Eleocharis palustris	2
Juncus balticus	1	Juncus gerardii	1
Open Water	4	Phalaris arundinacea	2
Populus deltoides	1	Salix exigua	2
Salix lutea	1	Schoenoplectus acutus	2
Schoenoplectus pungens	2	Scirpus microcarpus	1
Typha latifolia	1	Veronica anagallis-aquatica	1
Comments:			

#### Comments:

PEM wetland community.

Community # 3 Community Type: Alopecurus arundinaceus / Poa palustris Acres: 13.29

Species	Cover class	Species	Cover class
Agrostis stolonifera	0	Alopecurus arundinaceus	4
Bare Ground	1	Bromus inermis	0
Bromus tectorum	2	Carex aquatilis	1
Carex nebrascensis	1	Carex pellita	0
Carex utriculata	1	Convolvulus arvensis	0
Elaeagnus angustifolia	1	Eleocharis palustris	0
Elymus repens	2	Elymus trachycaulus	2
Juncus balticus	0	Lycopus asper	1
Mentha arvensis	0	Pascopyrum smithii	1
Persicaria amphibia	0	Phalaris arundinacea	1
Poa palustris	3	Poa pratensis	3
Populus deltoides	2	Salix lutea	0
Schedonorus pratensis	0	Schoenoplectus acutus	1
Schoenoplectus pungens	1	Sisymbrium loeselii	0
Sonchus arvensis	1	Thlaspi arvense	0
Tragopogon dubius	0	Typha latifolia	0

#### **Comments:**

Existing wetland community. Many other species were recorded representing 1 percent or less. Noted young Populus deltoides seedlings along the western boundary. This CT expanded in 2021, in areas newly delineated as wetland, along the western boundary, replacing portions of upaInd CTs 4/14 and 12.

Community # 4 Community Type: Elaeagnus angustifolia / Acres: 0

Species	Cover class	Species	Cover class
Bromus inermis	1	Bromus tectorum	2
Elaeagnus angustifolia	5	Elaeagnus commutata	1
Elymus repens	1	Elymus trachycaulus	1
Populus balsamifera	1	Populus deltoides	2

#### Comments:

Scrub-shrub and forested community interspersed throughout upland community types 14 and 15. Acreages for 4/14 and 4/15 mixed communities are 37.96 acres and 10.90 acres, respectively. Acreages for community types 4, 14, and 15 were not calculated for each individual community type.

Community # 5 Community Type: Typha latifolia / Acres: 7.42

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	2	Bare Ground	1
Carex aquatilis	1	Carex pellita	1
Carex utriculata	1	Eleocharis palustris	1
luncus balticus	1	Marrubium vulgare	1
Open Water	2	Persicaria amphibia	1
halaris arundinacea	1	Poa palustris	0
olypogon monspeliensis	1	Populus deltoides	1
alix exigua	1	Salix lutea	1
Schoenoplectus acutus	3	Schoenoplectus pungens	1
Solanum dulcamara	1	Typha latifolia	5

#### **Comments:**

Pre-construction existing wetland community but has expanded from 2018 to 2021. This community is also interspersed throughout wetland community Type 3, in a 1.70-acre area, which is not included in the 7.42 acre area provided above.

Community # 8 Community Type: Populus deltoides / Acres: 1.09

Species	Cover class	Species	Cover class
Bare Ground	2	Bromus inermis	0
Carex praegracilis	1	Cirsium arvense	0
Convolvulus arvensis	1	Elaeagnus angustifolia	1
Eleocharis palustris	2	Elymus trachycaulus	1
Juncus balticus	1	Juncus gerardii	1
Medicago lupulina	0	Poa palustris	2
Polypogon monspeliensis	1	Populus deltoides	4
Salix exigua	3	Salix lutea	1
Schoenoplectus pungens	2	Sonchus arvensis	0

#### Comments:

Natural encroachment of young Populus deltoides seedlings and saplings were the dominant species across several of the depressional wetlands. In 2019 through 2021, a few cells transitioned from a dominance of Populus deltoides to Schoenoplectus spp./Eleocharis palustris or Typha latifolia due to standing water.

Community # 9 Community Type: Salix exigua / Acres: 0.88

Species	Cover class	Species	Cover class
Bare Ground	1	Bromus inermis	0
Cirsium arvense	0	Eleocharis palustris	1
Elymus trachycaulus	1	Epilobium ciliatum	1
Juncus balticus	2	Juncus gerardii	1
epeta cataria	0	Poa palustris	2
opulus deltoides	2	Salix exigua	4
alix lutea	1	Schoenoplectus acutus	2
choenoplectus pungens	2	Scirpus microcarpus	1
ypha latifolia	1		

#### **Comments:**

Wetland CT first classified in 2016. Since 2016, it has continued to expand slowly across portions of the depressional wetlands, including NW of Cell 1 near N site boundary, Cell 9, and Cell 14.

Community # 10 Community Type: Poa palustris / Acres: 0.06

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	2	Bromus japonicus	2
Carex nebrascensis	1	Cirsium arvense	0
Eleocharis palustris	1	Elymus trachycaulus	2
Lactuca serriola	0	Phalaris arundinacea	0
Poa palustris	4	Poa pratensis	2
Polypogon monspeliensis	0	Salix exigua	1

#### **Comments:**

In 2020 and 2021 only observed in cell 9.

Community # 11 Community Type: Phalaris arundinacea / Acres: 5.01

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	2	Elymus repens	1
Phalaris arundinacea	5		

#### **Comments:**

Noted an increase in this community type in 2018 thru 2021, especially along the lower bench and the in the northwest corner of the project area.

Community #	12	Community Type	pe:	Alopecurus arundinaceus / Poa pratensis	Acres:	0.99
-------------	----	----------------	-----	---	--------	------

Species	Cover class	Species	Cover class
Agropyron cristatum	1	Agrostis stolonifera	1
Alopecurus arundinaceus	4	Bare Ground	1
Bromus inermis	1	Bromus tectorum	2
Carex pellita	0	Cirsium arvense	0
Elaeagnus angustifolia	2	Eleocharis palustris	1
ymus repens	2	Elymus trachycaulus	2
ıncus balticus	1	Phalaris arundinacea	0
oa palustris	1	Poa pratensis	3
opulus deltoides	2	Salix lutea	0
choenoplectus pungens	0	Typha latifolia	0

#### Comments:

Upland CT first classified in 2017, located near the western project boundary. This CT contracted in 2021, replaced by ~0.19 acre of newly delineated wetland and wetland CT 3.

Community # 14 Community Type: Elymus spp. / Bromus spp. Acres: 0.71

Species	Cover class	Species	Cover class
Agropyron cristatum	1	Alopecurus arundinaceus	0
Artemisia frigida	1	Bare Ground	1
Bromus inermis	2	Bromus japonicus	2
Bromus tectorum	3	Convolvulus arvensis	1
Elaeagnus angustifolia	1	Elymus lanceolatus	1
Elymus repens	4	Elymus trachycaulus	1
Melilotus officinalis	0	Nassella viridula	1
Pascopyrum smithii	1	Phalaris arundinacea	0
Poa pratensis	1	Schedonorus pratensis	1
Sisymbrium loeselii	1	Thlaspi arvense	1
Tragopogon dubius	1		

#### Comments:

Upland CT first classified in 2018 that has continued to expand across upland areas at the site in 2021, due in part to the expansion and increase in cover by creeping wild rye and cheat grass. This community is primarily interspersed throughout upland community Type 4, in a 37.96-acre area, which is not included in the 0.71 acre area provided above.

Community # 15 Community Type: Bromus spp. / Nassella viridula Acres: 20.44

Species	Cover class	Species	Cover class
Agropyron cristatum	2	Agrostis stolonifera	1
Artemisia dracunculus	1	Artemisia frigida	1
Bare Ground	3	Bromus inermis	2
Bromus japonicus	1	Bromus tectorum	5
Cirsium arvense	0	Convolvulus arvensis	1
Elymus repens	1	Elymus trachycaulus	1
Erodium cicutarium	1	Heterotheca villosa	1
Lactuca serriola	1	Marrubium vulgare	1
Medicago lupulina	1	Medicago sativa	1
Melilotus officinalis	1	Nassella viridula	3
Opuntia polyacantha	0	Poa compressa	1
Poa palustris	1	Poa pratensis	1
Salix exigua	0	Sisymbrium altissimum	1
Sporobolus cryptandrus	1	Taraxacum officinale	1
Tragopogon dubius	1	Verbena bracteata	1

#### **Comments:**

Upland CT first classified in 2018, due to the increase in Nassella viridula and decrease of Agropyron cristatum (CT 7). This community is also interspersed throughout upland community Type 4, in a 10.90-acre area, which is not included in the 20.44 acre area provided above. In 2021, cheatgrass abundance and distribution expanded across this CT, with its cover increasing from a cover class of 4 in 2020 to 5 in 2021. This is likely due in part to the abnormally dry to moderate drought conditions experienced at this site in 2020 and 2021, elevated winter temperatures, earlier onset of warmer spring temperatures, and increased CO2 in the atmosphere - all conditions that promote the success of this non-native winter annual grass.

Community # 16 Community Type: Juncus spp. / Carex spp. Acres: 3.18

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	1	Carex aquatilis	2
Carex nebrascensis	2	Carex pellita	2
Carex utriculata	1	Eleocharis palustris	1
Juncus balticus	3	Juncus gerardii	1
Juncus torreyi	1	Persicaria amphibia	1
Phalaris arundinacea	2	Typha latifolia	2

#### **Comments:**

Wetland CT first classified in 2018 where Juncus spp. had replaced small areas of CT 5 and CT 2. In 2019 Carex spp. was added as a codominant, which was confirmed in 2020 and 2021. In 2021, wetland acreage and acreage within this CT expanded along a ditch within the southwestern portion of the project area.

Community # 17	<b>Community Type:</b>	Bromus spp. / Poa pratensis	Acres:	8.7
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Species	Cover class	Species	Cover class
Alopecurus arundinaceus	1	Bare Ground	1
Bromus inermis	3	Bromus tectorum	3
Cirsium arvense	1	Convolvulus arvensis	1
Elymus repens	1	Elymus trachycaulus	1
Lactuca serriola	1	Pascopyrum smithii	2
Poa compressa	1	Poa pratensis	3

#### **Comments:**

An upland community type observed 2018-2021, identified along portions of the the lower slope and terrace in the southern portion of the project, formerly upland CT 6 (Elymus trachycaulus/Bromus spp.).

# Total Vegetation Community Acreage

115.7

(Note: some area within the project bounds may be open water or other non-vegetative ground cover.)

# **VEGETATION TRANSECTS**

: Kindsfater	Da	te:	6/15/2021
Transect Number: 1	Compass Di	irection from Start:	240
Interval Data:			
<b>Ending Station</b>	10 Community Type:	Bromus spp. / Nassella vir	idula
Species	Cover class	Species	Cover class
Agropyron cristatum	0	Bare Ground	3
Bromus inermis	2	Bromus tectorum	5
Convolvulus arvensis	0	Melilotus officinalis	0
Nassella viridula	1	Sporobolus cryptandrus	1
Taraxacum officinale	0	Tragopogon dubius	0
Ending Station	60 Community Type:	Salix exigua /	
Species	Cover class	Species	Cover class
Bare Ground	1	Bromus inermis	1
Cirsium arvense	1	Juncus balticus	2
Juncus gerardii	1	Nepeta cataria	0
Poa palustris	1	Populus deltoides	3
Salix exigua	4	Salix lutea	1
Schoenoplectus pungens	2		
<b>Ending Station</b>	145 Community Type:	Bromus spp. / Nassella vir	idula
Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Artemisia frigida	1
Bare Ground	3	Bromus inermis	1
Bromus japonicus	2	Bromus tectorum	4
Cirsium arvense	1	Elymus repens	1
Elymus trachycaulus	1	Heterotheca villosa	1
Lactuca serriola	1	Marrubium vulgare	1
Melilotus officinalis	0	Nassella viridula	3
Sisymbrium altissimum	1	Sporobolus cryptandrus	2
Ending Station	253 Community Type:	Populus deltoides /	
Species	Cover class	Species	Cover class
Bare Ground	1	Bromus inermis	1
Cirsium arvense	1	Convolvulus arvensis	1
Elaeagnus angustifolia	1	Elymus trachycaulus	1
Juncus balticus	2	Medicago lupulina	0
Poa palustris	1	Populus deltoides	4
Salix exigua	4	Salix lutea	3
Schoenoplectus pungens	1	Sonchus arvensis	1

Ending Station	300 Community Type:	Bromus spp. / Nassella viridula
----------------	---------------------	---------------------------------

Species	Cover class	Species	Cover class
Agropyron cristatum	0	Bare Ground	3
Bromus inermis	2	Bromus japonicus	4
Bromus tectorum	4	Cirsium arvense	1
Convolvulus arvensis	0	Erodium cicutarium	1
Lactuca serriola	0	Medicago lupulina	0
Nassella viridula	3	Poa compressa	1
Poa palustris	1	Poa pratensis	1
Salix exigua	1	Sporobolus cryptandrus	1
Tragopogon dubius	1		

## Transect Notes:

Minimal change observed in interval length, species presence, and their associated cover class between 2020 and 2021.

Transect Number: 2 Compass Direction from Start: 225

**Interval Data:** 

Ending Station	18 Community Type:	/pe: Alopecurus arundinaceus / Poa palustris		
Species	Cover class	Species	Cover class	
Agrostis stolonifera	1	Alopecurus arundinaceus	4	
Bromus inermis	1	Elaeagnus angustifolia	1	
Eleocharis palustris	1	Elymus repens	1	
Phalaris arundinacea	1	Poa palustris	1	
Populus deltoides	0	Salix lutea	0	
Schoenoplectus pungens	1			

**Ending Station** 320 **Community Type:** Eleocharis palustris / Schoenoplectus spp.

	<u> </u>		
Species	Cover class	Species	Cover class
Alopecurus arundinaceus	1	Bare Ground	2
Carex pellita	1	Eleocharis palustris	3
Juncus balticus	1	Juncus gerardii	1
Open Water	4	Salix exigua	2
Salix lutea	2	Schoenoplectus acutus	3
Schoenoplectus pungens	2	Typha latifolia	1
Veronica anagallis-aguatica	1		

**Ending Station** 388 **Community Type:** Alopecurus arundinaceus / Poa palustris

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	5	Bare Ground	2
Carex pellita	1	Elaeagnus angustifolia	1
Juncus balticus	1	Phalaris arundinacea	0
Poa palustris	2	Poa pratensis	3
Populus deltoides	1	Schoenoplectus pungens	1
Typha latifolia	1		

#### Transect Notes:

Minimal change observed in interval length, species presence, and their associated cover class between 2020 and 2021.

Transect Number: 3 Compass Direction from Start: 290

**Interval Data:** 

Ending Station	40 Community Type:	Alopecurus arundinaceus / Poa palustris

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	5	Bare Ground	2
Carex aquatilis	1	Carex nebrascensis	1
Carex utriculata	1	Elaeagnus angustifolia	0
Lycopus asper	1	Persicaria amphibia	1
Phalaris arundinacea	1	Poa palustris	2
Poa pratensis	1	Populus deltoides	1
Schoenoplectus acutus	1	Sonchus arvensis	0
Typha latifolia	1		

Ending Station 265 Community Type: Typha latifolia /

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	2	Bare Ground	2
Carex aquatilis	2	Carex pellita	1
Carex utriculata	2	Eleocharis palustris	1
Juncus balticus	1	Open Water	2
Persicaria amphibia	1	Phalaris arundinacea	2
Poa palustris	1	Populus deltoides	1
Salix exigua	1	Schoenoplectus acutus	3
Typha latifolia	4		

Ending Station 292 Community Type: Alopecurus arundinaceus / Poa palustris

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	3	Bare Ground	2
Bromus tectorum	0	Convolvulus arvensis	1
Elaeagnus angustifolia	1	Elymus repens	4
Phalaris arundinacea	2	Poa pratensis	1
Schedonorus pratensis	2	Sisymbrium loeselii	1
Thlaspi arvense	0	Tragopogon dubius	0

#### Transect Notes:

Noted several dead and dying Russian olive shrubs in wetland cell, likely from prolonged inundation. Minimal change observed in interval length, species presence, and their associated cover class between 2020 and 2021.

#### PLANTED WOODY VEGETATION SURVIVAL

#### Kindsfater

Planting Type	#Planted	#Alive Notes
Cornus alba	130	0
Crataegus douglasii	50	0
Juniperus scopulorum	50	7
Populus spp.	140	45
Prunus virginiana	50	0
Rosa woodsii	50	2
Salix spp.	2800	415 Salix exigua best survival
Shepherdia argentea	50	2
TOTAL	3320	472 ~14% survival

#### Comments

Approximately 27 woody planting areas were mapped by MDT in 2013, generally located around the excavated basins. Locations for the planted vegetation are shown on Figure A-2. During the 2021 monitoring, each individual planting group was monitored and live woody plants were counted by species. Approximately 14% of the planted woody plants were alive in 2021. Salix spp. and Populus spp. volunteers are filling in around several wetland cells.

# Kindsfater

#### **WILDLIFE**

Birds
-------

Were man-made nesting structures installed?	<u>No</u>
If yes, type of structure:	
How many?	
Are the nesting structures being used?	No
Do the nesting structures need repairs?	No
Nesting Structure Comments:	

Species	#Observed	Behavior	Habitat
American Robin	1	L	
American White Pelican	9	FO	
Blue-winged Teal	7		
Brewer's Blackbird	2	FO, L	
Common Grackle	2		
Common Yellowthroat	7		
Eastern Kingbird	1		
European Starling	6	FO	
Great Blue Heron	3	L	
House Wren	1		
Killdeer	6		
Mallard	18		
Mourning Dove	7		
Red-tailed Hawk	2		
Red-winged Blackbird	25	F, FO, L	
Ring-necked Pheasant	5	FO, L	
Western Meadowlark	1		
Yellow Warbler	1		
Yellow-headed Blackbird	d 11	F, FO, L	
Bird Comments			

Blue-winged Teal female observed with four ducklings. Mallards observed with many ducklings.

#### **BEHAVIOR CODES**

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

#### **HABITAT CODES**

 ${f AB}$  = Aquatic bed  ${f SS}$  = Scrub/Shrub  ${f FO}$  = Forested  ${f UP}$  = Upland buffer  ${f I}$  = Island

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

# **Mammals and Herptiles**

# Species # Observed Tracks Scat Burrows Comments

Chorus Frogs	2	No	No	No
vole sp.	3	No	No	No
White-tailed Deer	5	No	No	No

# Wildlife Comments:

This site provides a diversity of habitat features for bird and other wildlife.

#### Kindsfater

#### **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	45.689949	-108.698262			_
DP01w	45.689962	-108.698178			
DP02u	45.690596	-108.69859			
DP02w	45.690689	-108.698593			
DP03u	45.693026	-108.698427			
DP03w	45.693142	-108.698444			
DP04u	45.694734	-108.697475			
DP04w	45.694765	-108.697358			
DP05u	45.696582	-108.69715			
DP05w	45.696337	-108.697189			
DP06u	45.695514	-108.695913			
DP06w	45.695467	-108.696004			
DP07u	45.694629	-108.694484			
DP07w	45.694749	-108.694491			
DP08u	45.694495	-108.691964			
DP08w	45.694515	-108.692032			
DP09u	45.695375	-108.690242			
DP09w	45.695335	-108.69033			
DP10u	45.694743	-108.689922			
DP10w	45.694789	-108.689909			
DP11u	45.69269	-108.692467			
DP11w	45.692414	-108.692512			
DP12u	45.690402	-108.69868			
DP12w	45.690414	-108.698608			
PP-1	45.69342	-108.690247	280	Wetland cell 14	
PP-10	45.694847	-108.698418	140	Wetland cell 3	
PP-11	45.695892	-108.697601	350 B-1	Wetland cell 7	

PP-12	45.694939	-108.696663	230	Wetland cell 6
PP-2	45.695136	-108.691839	280	Wetland cell 13
PP-3	45.694612	-108.69443	0	Wetland cell 9
PP-4	45.694935	-108.691902	200	Wetland cell 12
PP-5	45.694748	-108.694458	10	Wetland cell 11
PP-6	45.694084	-108.694321	150	Wetland cell 10
PP-7	45.698065	-108.698065	90	Wetland cell 5
PP-8	45.694939	-108.698429	315	Wetland cell 2
PP-9	45.694302	-108.698044	90	Wetland cell 1
T-1-E	45.695072	-108.691437	50	Transect 1 end
T-1-S	45.695357	-108.690285	240	Transect 1 start
T-2-E	45.693184	-208.696573	40	Transect 2 end
T-2-S	45.693763	-108.695288	225	Transect 2 start
T-3-E	45.693317	-108.698486	110	Transect 3 end
T-3-S	45.693317	-108.697517	290	Transect 3 start

## **Comments:**

### Kindsfater

## **ADDITIONAL ITEMS CHECKLIST**

	Hydrology
✓ ✓ Iines,	Map emergent vegetation/open water boundary on aerial photos.  Observe extent of surface water. Look for evidence of past surface water elevations (e.g. drift vegetation staining, erosion, etc).
	Photos
	One photo from the wetland toward each of the four cardinal directions One photo showing upland use surrounding the wetland. One photo showing the buffer around the wetland One photo from each end of each vegetation transect, toward the transect
	Vegetation
<b>☑</b> Ma	p vegetation community boundaries
✓ Cor	mplete Vegetation Transects
	Soils
✓ Ass	sess soils
	Wetland Delineations
<b>V</b>	Delineate wetlands according to applicable USACE protocol (1987 form or
Suppi ☑	ement) Delineate wetland – upland boundary onto aerial photograph.
Wetlaı	nd Delineation Comments
	total wetland acreage delineated in 2021 (including preexisting wetland areas) was 37.6 acres, which is a 2.9-acre increase from the 0 acreage (34.7 acres).
	Functional Assessments
<b>✓</b> forms.	Complete and attach full MDT Montana Wetland Assessment Method field
Functi	onal Assessment Comments:
Ove	rall the existing and created wetlands rate as Category 3 wetlands.

Were man-made nesting structure installed at this site? No
If yes, do they need to be repaired?
If yes, describe the problems below and indicate if any actions were taken to remedy the problems
Were man-made structures built or installed to impound water or control water flow
into or out of the wetland? Yes
If yes, are the structures in need of repair? Yes
If yes, describe the problems below.
Fence near the MDT green entrance gate along the southwest boundary needs repair.

Project/Site: Kindsfater	City/County: Yellowstone	•	Sampling Date:	6/15/2021
Applicant/Owner: MDT		<sub>State:</sub> Montana_	Sampling Point	. DP01u
Investigator(s): R Quire, S Weyant	Section, Township, Range	6 2S	251	E
Landform (hillslope, terrace, etc.): Footslope			SI	lope (%):
Subregion (LRR): LRR F	45.689949 լ.	ona: -10	08.698262 <sub>Dat</sub>	tum: NAD 83
Soil Map Unit Name: Ll: Larim gravelly loam, 15-35% slopes	_	NWI classific	 <sub>ation:</sub> Not Mapp	ped
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes 🔽 No 🗆	   (If no. explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology significantly				✓ No □
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needs	ed explain any answe	rs in Remarks)	
SUMMARY OF FINDINGS – Attach site map showing				eatures, etc
Hydrophytic Vegetation Present? Yes No W Hydric Soil Present? Yes No W Wetland Hydrology Present? Yes No W Remarks: Upland sample point located upslope of DP01w.	Is the Sampled Ar within a Wetland?		No	_
VEGETATION - Use scientific names of plants				
Tree Stratum Plot size (30 Foot Radius) Absolute Domian % Cover Species		Dominance Test wor	ksheet	
Iree Stratum Plot size (30 Foot Radius) % Cover: Species		Number of Dominant Sthat are OBL, FACW		0 (A)
		Total Number of Domi 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/B)
, , , , , , , , , , , , , , , , , , ,		Prevalence Index wo		
		<u>Total % Cover o</u> OBL species	f: N 0 X1	Multiply by:  0
		FACW species	1 X2	2
		FAC species	1 X3	3
Herbaceous Stratum Plot size ( 5 Foot Radius)		•	63 X4	252
Asclepias speciosa 1	FAC	UPL species	0 X5	0
Conium maculatum 1	FACW	Column Totals (	65 (A)	257 (B)
Elymus repens 63	FACU	Prevalence Index	κ = B/A =	3.95
		Hydrophytic Vegetat	ion Indicators	
		☐ 1 - Rapid Test	for Hydrophytic	Vegetation
		2 - Dominance	Test is >50%	
		3 - Prevalence	Index is <= 3.0	
			cal Adaptations ( a in remarks or c	
			on-Vascular Plan	ıte.
Woody Vine Stratum Plot size ( 30 Foot Radius)		dicators of hydric sil a esent, unless disturbe		ology must be
Percent Bare Ground 35		Hydrophytic Vegetat Present?		NO 🔽
Remarks:				
BG/litter=35%. Data point is dominated by upland vegetation				

SOIL Sampling Point: <u>DP01u</u>

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.   Coation: PL=Pore Lining, N	
Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains.	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Histic Epipedin (A2)	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Histosol (A1)	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	
Histosol (A1)	
Mydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	
Histosol (A1)	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	
Histosol (A1)	
Histic Epipedon (A2)	Jolis .
Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (Loamy Mucky Mineral (F1) (LRR H) High Plains Depressions (F16) (LRR G) Reduced Vertic (F18) Reduced F19 Indicators (MINERA F18) Reduced Vertic (F18) Reduced F19 Indicators (MINERA F18) Reduced F19 Indicators (F18) Reduced F19 Indicators (F18) Reduced F19 Indicators	F, G, H)
Stratified Layers (A5) (LRR F)	, , ,
1 cm Muck (A9) (LRR F, G, H)	
Depleted Below Dark Surface (A11)	<b>&amp; 73</b> )
Thick Dark Surface (A12)	
Sandy Mucky Mineral (S1)	2)
2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	۷)
5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be pres unless disturbed or problematic   Restrictive Layer (if present):   Type:	and
Restrictive Layer (if present): Type:	
Type:	
Depth (inches):	
Propositic (B2)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Presence of Reduced Iron (C4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Water-Stained Leaves (B9)  Presence of Reduced Vinches):  Secondary Indicators (minimum of minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply  Secondary Indicators (minimum of one required; check all that apply  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators	
YDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (minimum of one required; check all that apply)         Surface Water (A1)       Salt Crust (B11)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Invertebrates (B13)       Sparsely Vegetated Concave (B10)         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 Iron Deposits (B5)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       FAC-Neutral Test (D5)         Water-Stained Leaves (B9)       Frost-Heave Hummocks (D7)         Field Observations:       Depth (inches):	No 🔽
Wetland Hydrology Indicators:  Primary Indicators (minimum of one required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Dry-Season Water Table (C2)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Field Observations:  Surface Water (A1)  Saturation (B1)  Surface Soil Cracks (B6)  Surface Soil Cracks (B1)  Surface So	
Wetland Hydrology Indicators:  Primary Indicators (minimum of one required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Dry-Season Water Table (C2)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Field Observations:  Surface Water (A1)  Salt Crust (B11)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Surface Water (B13)  Sparsely Vegetated Concave (B10)  Drainage Patterns (B10)  Drainage Patterns (B10)  Oxidized Rhizospheres on Living Roots (C3)  (where tilled)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C7)  Geomorphic Position (D2)  Frost-Heave Hummocks (D7)  Frost-Heave Hummocks (D7)  Frost-Heave Hummocks (D7)	
Wetland Hydrology Indicators:  Primary Indicators (minimum of one required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Aquatic Invertebrates (B13)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Sediment Deposits (B2)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots (C3)  (where not tilled)  Algal Mat or Crust (B4)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B5)  Thin Muck Surface (C7)  Mater Stained Leaves (B9)  Field Observations:  Surface Water (A1)  Secondary Indicators (minimum of Cecondary Indicators (B10)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots (C3)  (where tilled)  Crayfish Burrows (C8)  Saturation Visible on Aerial Indicators (minimum of Cecondary Indicators (B10)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots	
Primary Indicators (minimum of one required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Dry-Season Water Table (C2)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of one required; check all that apply)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Drainage Patterns (B10)  Drainage Patterns (B10)  Oxidized Rhizospheres on Living Roots (C3)  (where tilled)  Crayfish Burrows (C8)  Saturation Visible on Aerial In Saturation Visible on Aerial In Muck Surface (C7)  Geomorphic Position (D2)  Thin Muck Surface (C7)  Water-Stained Leaves (B9)  Frost-Heave Hummocks (D7)  Field Observations:  Surface Water Present?  Yes No Depth (inches):	
Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots (C3)  Prift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water Surface Water Present?  Surface Water (B11)  Aquatic Invertebrates (B13)  Aquatic Invertebrates (B13)  Aquatic Invertebrates (B13)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots (C3)  (where tilled)  Crayfish Burrows (C8)  Crayfish Burrows (C8)  Saturation Visible on Aerial Info Muck Surface (C7)  Geomorphic Position (D2)  FAC-Neutral Test (D5)  Frost-Heave Hummocks (D7)  Field Observations:	
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots (C3)  Presence of Reduced Iron (C4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Aquatic Invertebrates (B13)  Aquatic Invertebrates (B13)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots (C3)  (where tilled)  Crayfish Burrows (C8)  Saturation Visible on Aerial Iragery (B7)  Other (Explain in Remarks)  FAC-Neutral Test (D5)  Frost-Heave Hummocks (D7)  Field Observations:	two required
Saturation (A3)	
Water Marks (B1)	Surface (B8)
Sediment Deposits (B2)  Oxidized Rhizospheres on Living Roots (C3)  (where tilled)  Crayfish Burrows (C8)  Algal Mat or Crust (B4)  Presence of Reduced Iron (C4)  Iron Deposits (B5)  Thin Muck Surface (C7)  Cher (Explain in Remarks)  FAC-Neutral Test (D5)  Water-Stained Leaves (B9)  Frost-Heave Hummocks (D7)  Gendrophic Position (D2)  Frost-Heave Hummocks (D7)  Field Observations:	
Drift Deposits (B3) (where not tilled) ☐ Crayfish Burrows (C8)  Algal Mat or Crust (B4) ☐ Presence of Reduced Iron (C4) ☐ Saturation Visible on Aerial 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)  Field Observations:  Surface Water Present? Yes ☐ No ☑ Depth (inches): ☐	ing Roots (C
Algal Mat or Crust (B4)  Presence of Reduced Iron (C4)  Iron Deposits (B5)  Thin Muck Surface (C7)  Geomorphic Position (D2)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Frost-Heave Hummocks (D7)  Gield Observations:  Surface Water Present?  Yes No Depth (inches):	
Iron Deposits (B5)	(00)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) FAC-Neutral Test (D5)  Water-Stained Leaves (B9) Frost-Heave Hummocks (D7)  Field Observations:  Surface Water Present? Yes No Pepth (inches):	agery (C9)
Water-Stained Leaves (B9) ☐ Frost-Heave Hummocks (D7)  Field Observations:  Surface Water Present? Yes ☐ No ☑ Depth (inches):	
Field Observations: Surface Water Present?  Yes No Depth (inches):	(I DD E)
Surface Water Present? Yes No Depth (inches):	(LKK F)
Water Table Present? Yes No <b>У</b> _ Depth (inches):	
Saturation Present?  Yes No V Depth (inches): Wetland Hydrology Present? Yes includes capillary fringe)	No <u></u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: No evidence of wetland hydrology observed.	

Project/Site: Kindsfater	City/County: Yellowston	e	Sampling Date:	6/15/2021
Investigator(s): R Quire, S Weyant			25E	
Landform (hillslope, terrace, etc.): Footslope			Slo	pe (%):5
Subregion (LRR): LRR F Lat:	45.689962	Long:10	8.698178 <sub>Datu</sub>	m: NAD 83
Soil Map Unit Name: LI: Larim gravelly loam, 15-35% slopes		NWI classifica	ation: Not Mappe	ed
Are climatic / hydrologic conditions on the site typical for this time of ye	ar? Yes 🔽 No 🔼	(If no, explain in Re	emarks.)	
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "No	ormal Circumstances" p	resent? Yes 💆	<u>'</u> No
Are Vegetation, Soil, or Hydrology naturally pro	blematic? (If need	ded, explain any answer	rs in Remarks.)	
SUMMARY OF FINDINGS - Attach site map showing	sampling point lo	cations, transects,	, important fe	atures, etc.
Hydrophytic Vegetation Present? Yes ✓ No ☐  Hydric Soil Present? Yes ✓ No ☐  Wetland Hydrology Present? Yes ✓ No ☐	Is the Sampled A	rea ? Yes <u></u> ✓	No	_
Remarks: PEM depressional wetland in SW corner of site.  VEGETATION - Use scientific names of plants				
_ Absolute Domiant		Dominance Test worl	ksheet	
Tree Stratum Plot size (30 Foot Radius) % Cover: Species	? Status	Number of Dominant S that are OBL, FACW of	Species	1 <sub>(A)</sub>
		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,	or FAC:	.0 % (A/B)
		Prevalence Index wor		ultim by have
		Total % Cover of OBL species	0 X 1	ultiply by:
			85 X2	170
		FAC species	0 X3	0
Herbaceous Stratum Plot size ( 5 Foot Radius)		FACU species	5 X 4	20
Elymus repens 5	FACU	UPL species	0 X 5	0
Phalaris arundinacea 85	FACW	Column Totals 9	00 (A)	190 (B)
		Prevalence Index	: = B/A =	2.11
		Hydrophytic Vegetati		
		✓ 1 - Rapid Test		egetation
		✓ 2 - Dominance		
		✓ 3 - Prevalence		
			cal Adaptations (F a in remarks or or	
		5 - Wetland No	n-Vascular Plants	3
		☐ Problematic Hy	drophytic Vegeta	tion (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)		ndicators of hydric sil ar present, unless disturbe		
Percent Bare Ground 10		Hydrophytic Vegetati Present?	on Yes 🗸	NO 🗆
Remarks:	,			
BG/litter=10%. Evidence of hydrophytic vegetation includes a less than or equal to 3.0.	positive rapid test, a p	ositive dominance te	st, and a preval	ence index

US Army Corps of Engineers B-23 Great Plains - Version 2.0

SOIL Sampling Point: DP01w

Depth			ptn neede		nent the ii x Features		or confir	m the absence of indi	cators.)
(inches)	Matrix Color (moist)	%	Color	Redo (moist)	<u>x reatures</u> %	Type <sup>1</sup>	Loc <sup>2</sup>	- Texture	Remarks
0-10	10YR 3/1	100						Silt Loam	
10-16	10YR 3/1	98	7.5YR	4/6	2	C F	PL	Silt Loam	
	- <u></u>				·		-		
	· -								
¹Tvpe: C=C	Concentration, D=D	epletion. RN	/I=Reduced	Matrix. CS	S=Covered	or Coat	ed Sand C	Grains. <sup>2</sup> Location:	PL=Pore Lining, M=Matrix.
	Indicators: (App								blematic Hydric Soils <sup>3</sup> :
Histoso	l (A1)			☐ Sandy C	Sleyed Ma	trix (S4)		1 cm Muck (A	9) (LRR I, J)
Histic E	pipedon (A2)			📘 Sandy F	Redox (S5)	)		Coast Prairie I	Redox (A16) ( <b>LRR F, G, H</b> )
Black H	listic (A3)			Stripped	d Matrix (S	6)		Dark Surface	(S7) ( <b>LRR G</b> )
Hydrog	en Sulfide (A4)			Loamy I	Mucky Min	eral (F1)	)	High Plains De	epressions (F16)
	d Layers (A5) ( <b>LR</b>			=	Gleyed Ma			_ `	tside of MLRA 72 & 73)
	uck (A9) ( <b>LRR F, </b> 0		_		d Matrix (F	-		Reduced Verti	
	ed Below Dark Sur	ace (A11)		=	Dark Surfa	, ,		Red Parent M	` '
_	ark Surface (A12)	`	<u> </u>		d Dark Su		<b>(</b> )		Dark Surface (TF12)
_	Mucky Mineral (S1	•	C II) _		Depression		T46\	Other (Explain	in Remarks) ophytic vegetation and
	Mucky Peat or Peat ucky Peat or Peat				ains Depre RA 72 & 7			•	ogy must be present,
5 CIII W	ucky real of real	(33) (LKK F	)	(IVIL	NA 12 04 1	3 OI LKI	ΧП)		ed or problematic.
Restrictive	Layer (if present	):							
Type:									
Depth (in								Hydric Soil Presen	ıt? Yes ✓ No 🗆
s	pecies, multiple invironmental La	indicators	of hydrolc	gy were p	oresent, a	and the	wetland-ı	nonwetland boundary	was dominated by FACW was abrupt (1987
Wetland Hy	drology Indicato	rs:							
Primary Indi	icators (minimum d	of one require	ed; check a	II that appl	y)			Secondary Indic	ators (minimum of two required)
Surface	Water (A1)			Salt Crust	(B11)			Surface Soi	l Cracks (B6)
	ater Table (A2)			Aquatic Inv		s (B13)			egetated Concave Surface (B8)
	ion (A3)			Hydrogen	Sulfide Oc	dor (C1)			atterns (B10)
	Marks (B1)		Ħ	Dry-Seaso			)		nizospheres on Living Roots (C3
	ent Deposits (B2)		<b>~</b>	Oxidized F	Rhizospher	res on Li	, ving Roots		
	posits (B3)				not tilled)		Ü	Crayfish Bu	•
	at or Crust (B4)			Presence		d Iron (C	(4)	= -	/isible on Aerial Imagery (C9)
	posits (B5)			Thin Muck		-	,		Position (D2)
	ion Visible on Aeri	al Imagery (		Other (Exp	,			FAC-Neutra	
	Stained Leaves (B		<i>'</i> —			,			Hummocks (D7) (LRR F)
Field Obser	rvations:								
Surface Wa	ter Present?	Yes	No 🔽	Depth (in	ches):				
Water Table	Present?	Yes 🔲		Depth (in					
Saturation F	Present?	Yes	No				We	tland Hydrology Prese	nt? Yes No
	pillary fringe)								
Describe Re	ecorded Data (stre	am gauge, n	ionitoring w	veii, aerial p	onotos, pre	evious in	spections)	), іт avallable:	
Daming									
			and hydro	logy inclu	des oxidi	zed rhiz	zosperes	on living roots, geom	orphic position, and a
ро	ositive FAC-Neu	ıraı test.							

Section, Township, Ranges   6 2S 25E	Project/Site: Kindsfater	City/County: Yellowstor	ne Sampling Date:	6/15/2021				
Landform (hilistope, terrace, etc.): Terrace	Applicant/Owner: MDT		State: Montana_ Sampling Point	DP02u				
Landform (hilistope, terrace, etc.): Terrace	Investigator(s): R Quire, S Weyant	_ Section, Township, Ran	ge:6 2S 25I	E				
Subregion (LRR): LERF								
Soil Map Unit Name  Li: Larim gravelly loan, 15-35% slopes   NWI classification: Not Mapped Are climatic / hydrologic conditions on the site typical for this time of year? Yes								
Are clientatic / hydrologic conditions on the site typical for this time of year? Yes	Soil Man Unit Name: LI: Larim gravelly loam, 15-35% slopes		NIM/ classification: Not Mapp	ped				
Are Vegetation	Are alimetic / hydrologic conditions on the cite typical for this time of	voor2 Voo 🔽 No	(If no explain in Pemarks )					
Are Vegetation				<b>7</b> $\square$				
SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc.  Hydrophytic Vegelation Present? Yes	Are vegetation, Soil, or Hydrology significant	y disturbed? Are "N	formal Circumstances present? Yes	<u>-</u> No				
Hydrophytic Vegetation Present? Yes No V within a Wetland? Yes No V Wetland Hydrology Present? Yes No V Wetland Hydrology Present? Yes No V Wetland Hydrology must be present, unless disturbed or problematic Indicator Species? Status Number of Dominant Species that are OBL, FACW or FAC: O(A) Total Number of Dominant Species All Statas: Percent of Dominant Species All Statas: Percent of Dominant Species All Statas: Percent of Dominant Species Over Species Across All Statas: Percent of Dominant Species Over Species Across All Statas: Percent of Dominant Species Over Species Across All Statas: Percent of Dominant Species Over Species Across All Statas: Percent of Dominant Species Over Species Across All Statas: Percent of Dominant Species Over Species Across All Statas: Percent of Dominant Species Over Species Across All Statas: Percent of Dominant Species Over Species Across All Statas: Percent of Dominant Species Over Species Across All Statas: Percent of Dominant Species Over Species Across All Statas: Percent of Dominant Species Over Species Across All Statas: Percent of Dominant Species Over Species All Statas: Percent Obeninant Species Over Species Across All Statas:								
Hydroc Soil Present? Yes  No  within a Wetland? Yes  No  Yes  No  No  No  No  No  No  No  No  No  N	SUMMARY OF FINDINGS – Attach site map showing	g sampling point lo	cations, transects, important f	eatures, etc.				
Hydric Soil Present?       Yes       No       ✓         Welland Hydrology Present?       Yes       No       ✓         Remarks: Upland sample point located upslope of DP02w and wetland boundary.         VEGETATION - Use scientific names of plants         Tree Stratum       Plot size (30 Foot Radius)       Absolute Domiant Species Status         Elaeagnus angustifolia       45       Aspecies       FACU         Sapling/Shrub Stratum       Plot size (15 Foot Radius)         Elaeagnus angustifolia       5       FACU         Frevalence Index worksheet         Total Number of Dominant Species that are OBL, FACW or FAC: Unmber of Dominant Species Across All Strata: 4 (B)         Percent of Dominant Species Across All Strata: 4 (B)       Percent of Dominant Species That Governor of The Across All Strata: 4 (B)         Percent of Dominant Species Across All Strata: 4 (B)       Percent of Dominant Species That Governor of The Across All Strata: 4 (B)         Percent of Dominant Species Across All Strata: 4 (B)         Percent of Dominant Species That Governor of The Across All Strata: 4 (B)         Asserting Across All Strata: 4 (B)         Percent of Dominant Species That Governor of The Across All Strata: 4 (B)         Asserting Across All Strata: 4 (B) <td <="" colspan="4" th=""><th></th><th></th><th>Δrea</th><th></th></td>	<th></th> <th></th> <th>Δrea</th> <th></th>						Δrea	
Vegetation	Hydric Soil Present? Yes No							
VEGETATION - Use scientific names of plants           Tree Stratum         Plot size (30 Foot Radius)         Absolute McCover. Species? Status         Dominant End worksheet           Elaeagnus angustifolia         45 ✓ FACU         Indicator Status         Number of Dominant Species that are OBL, FACW or FAC: 0 (A)           Sapling/Shrub Stratum         Plot size (15 Foot Radius)         FACU         Percent of Dominant Species that are OBL, FACW, or FAC: 0.0 % (A/B)           Herbaceous Stratum         Plot size (15 Foot Radius)         FACU         Prevalence Index worksheet           Total % Cover of: Dominant Species That Are OBL, FACW, or FAC: 1 That Are OBL, FACW, or FAC: 2 That Are OBL, FACW, or FAC: 1 That Are OBL, FACW, or FAC: 1 That Are OBL, FACW, or FAC: 2 That Are OBL, FACW, or FAC: 2 That Are OBL, FACW, or FAC: 1 That Are OBL, FACW, or FAC: 1 That Are OBL, FACW, or FAC: 2 That Are OBL, FACW, or FAC: 1 That Are OBL, FACW, or FAC: 2 That Are OBL, FACW, or FAC: 1		-	···	_				
Dominance Test worksheet   Number of Dominant Species that are OBL, FACW or FAC:   O (A)	Remarks: Upland sample point located upslope of DP02w an	d wetland boundary.						
Dominance Test worksheet   Number of Dominant Species that are OBL, FACW or FAC:   O (A)								
Dominance Test worksheet   Number of Dominant Species that are OBL, FACW or FAC:   O   (A)								
Tree Stratum   Plot size (30   Foot Radius)   % Cover:   Species?   Status	VEGETATION - Use scientific names of plants							
Elaeagnus angustifolia	Tree Stratum Plot size (30 Foot Radius) Absolute Domia Specie							
Sapling/Shrub Stratum  Plot size (15 Foot Radius)  Elaeagnus angustifolia  5 FACU  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 57 X 4 228 UPL species 57 X 4 228	Elaeagnus angustifolia 45	FACU		0 (A)				
Sapling/Shrub Stratum   Plot size (15 Foot Radius)				4 (B)				
Prevalence Index worksheet   Total % Cover of: Multiply by: OBL species 0 × x 1 0   FACU   FACU   Species 0 × x 2 0   FACU   FACU   Species 0 × x 3 0   FACU   FACU   Species 0 × x 3 0   FACU   Species 0 × x 4   Speci	Oct line (Obserts Otto Const.)			0.0 % (A/B)				
Total % Cover of: Multiply by:   OBL species 0 X 1 0     FACW species 0 X 2 0     FACW species 0 X 3 0     FACW species 57 X 4 228     UPL species 53 X 5 265     FACW species 57 X 4 228     UPL species 53 X 5 265     Column Totals 110 (A) 493 (B)     Prevalence Index = B/A = 4.48     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.		FACII	Prevalence Index worksheet					
Herbaceous Stratum  Plot size ( 5 Foot Radius)  Asperugo procumbens	Liacagnus angustiiolia 5	1700	Total % Cover of:	Multiply by:				
Herbaceous Stratum  Plot size ( 5 Foot Radius)  Asperugo procumbens				0				
Herbaceous Stratum			FACW species 0 X 2					
Asperugo procumbens 40 V UPL Bromus racemosus 13 V NL Galium aparine 1 FACU Marrubium vulgare 1 FACU Schedonorus pratensis 5 FACU  Morphytic 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.			FACUS pecies 0 X 3					
Asperugo procumbens Bromus racemosus 13 V NL Galium aparine 1 FACU Marrubium vulgare 1 FACU Schedonorus pratensis 5 FACU  Woody Vine Stratum Plot size ( 30 Foot Radius)  Column Totals 110 (A) 493 (B) Prevalence Index = B/A = 4.48  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.	Herbaceous Stratum Plot size ( 5 Foot Radius)							
Prevalence Index = B/A = 4.48								
Marrubium vulgare  Schedonorus pratensis  Tevalente mex = Dia  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)  Moody Vine Stratum  Plot size ( 30 Foot Radius)			Column Lotals 110 (A)					
Schedonorus pratensis  5 FACU  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.	3		Prevalence Index = B/A =	4.48				
			Hydrophytic Vegetation Indicators					
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.	Schedonorus pratensis 5	FACU	1 - Rapid Test for Hydrophytic	Vegetation				
			2 - Dominance 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.			3 - Prevalence Index is <= 3.0					
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.								
Problematic Hydrophytic Vegetation (Explain)  Moody 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.				on separate				
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.			5 - Wetland Non-Vascular Plan	its				
present, unless disturbed or problematic for #3, 4, 5.			Problematic Hydrophytic Veget	ation (Explain)				
Hydronhytic Vegetation	Woody Vine Stratum Plot size ( 30 Foot Radius)							
l proceed Yes □ NO ▼	Percent Perc Cround 40		Hydrophytic Vegetation Present?  Yes	NO ✓				
Percent Bare Ground 40  Remarks:								
BG/litter=40%. Data point is dominated by upland vegetation.		1.						

SOIL Sampling Point: DP02u

Depth <u>Matrix</u>				
(inches) Color (moist)	Redox Feat   Color (moist) %	1 1	 Texture	Remarks
0-13 10YR 3/2 1	100		Loamy Sand	
13+			Cobbles	Cobble bottom.
1				
<sup>1</sup> Type: C=Concentration, D=Depletion  Hydric Soil Indicators: (Applicable				ation: PL=Pore Lining, M=Matrix.  for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)	Sandy Gleyed	•		uck (A9) (LRR I, J)
Histic Epipedon (A2)	Sandy Gleyed  Sandy Redox			Prairie Redox (A16) (LRR F, G, H)
Black Histic (A3)	Stripped Matri			urface (S7) (LRR G)
Hydrogen Sulfide (A4)	Loamy Mucky	· ,		ains Depressions (F16)
Stratified Layers (A5) (LRR F)	Loamy Gleyed			R H outside of MLRA 72 & 73)
1 cm Muck (A9) ( <b>LRR F, G, H</b> )	Depleted Matr	ix (F3)	Reduce	ed Vertic (F18)
Depleted Below Dark Surface (A1	_		_	rent Material (TF2)
Thick Dark Surface (A12)	Depleted Dark			nallow Dark Surface (TF12)
Sandy Mucky Mineral (S1)	Redox Depres			Explain in Remarks)
2.5 cm Mucky Peat or Peat (S2) (	· · · · — •	epressions (F16)		of hydrophytic vegetation and
5 cm Mucky Peat or Peat (S3) (LI	RRF) (WLRA 72	& 73 of LRR H)		hydrology must be present, disturbed or problematic.
Restrictive Layer (if present):				
Туре:				
Depth (inches):			Hydric Soil	Present? Yes 🔲 No 🗹
Remarks: No evidence of hydric so				
HYDROLOGY				
Wetland Hydrology Indicators:			0	
Wetland Hydrology Indicators: Primary Indicators (minimum of one re				ry Indicators (minimum of two required)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one re  Surface Water (A1)	Salt Crust (B11)		Surfa	ace Soil Cracks (B6)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one re  Surface Water (A1)  High Water Table (A2)	Salt Crust (B11) Aquatic Inverteb	, ,	Surfa	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one re  Surface Water (A1)  High Water Table (A2)  Saturation (A3)	Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide	e Odor (C1)	Surfa	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Dry-Season Wat	e Odor (C1) er Table (C2)	Surfa	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one recognition of the primary Indicators (Minimum of one recognition of the primary Indicators (Male Indicators (Minimum of One recognition of Male Indicators (Male Indicators (Minimum of One recognition	Salt Crust (B11) Aquatic Invertebi Hydrogen Sulfide Dry-Season Wat Oxidized Rhizos	e Odor (C1) er Table (C2) pheres on Living Roc	Surfa Surfa Span Drain Oxid ots (C3)	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3) here tilled)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one recognition of the primary Indicators (Minimum of one recognition of the primary Indicators (Male Indicators (Minimum of Indic	Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Dry-Season Wat Oxidized Rhizos (where not till	e Odor (C1) er Table (C2) pheres on Living Roc ed)	Surfa Surfa Span Drain Oxid ots (C3) Cray	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3) here tilled) fish Burrows (C8)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one recognition of the primary Indicators (Minimum of one recognition of the primary Indicators (Management (Man	Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Dry-Season Wat Oxidized Rhizos (where not till	e Odor (C1) er Table (C2) pheres on Living Roc ed) luced Iron (C4)	Surfa Surfa Spar Drain Oxid ts (C3) (w Cray Satu	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3) here tilled) fish Burrows (C8) ration Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one recognition of the primary Indicators (Minimum of one recognition of the primary Indicators (Male Indicators (Minimum of one recognition of the primary Indicators (Male Indicators (Minimum of the primary Indicators (Minimum of the primary Indicators (Male Indicators (Minimum of the primary Indicator	Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Dry-Season Wat Oxidized Rhizos (where not till Presence of Red Thin Muck Surfa	e Odor (C1) er Table (C2) pheres on Living Roc ed) luced Iron (C4) ce (C7)	Surfa Spar Spar Drain Oxid ots (C3) (w Cray Satu Geo	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3) here tilled) fish Burrows (C8) ration Visible on Aerial Imagery (C9) morphic Position (D2)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one recognition of the primary Indicators (Minimum of one recognition of the primary Indicators (Management Primary Indicators)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagement	Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Dry-Season Wat Oxidized Rhizos (where not till Presence of Red Thin Muck Surfa	e Odor (C1) er Table (C2) pheres on Living Roc ed) luced Iron (C4) ce (C7)	Surfa   Surfa   Spar   Spar   Oxid   Oxid   Cray   Cray   Satu   Geo   FAC	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3) here tilled) fish Burrows (C8) ration Visible on Aerial Imagery (C9) morphic Position (D2) -Neutral Test (D5)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one reconstruction of the primary Indicators (minimum of one reconstruction of the primary Indicators (Management Capacity)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagement Capacity (Mater-Stained Leaves (B9)	Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Dry-Season Wat Oxidized Rhizos (where not till Presence of Red Thin Muck Surfa	e Odor (C1) er Table (C2) pheres on Living Roc ed) luced Iron (C4) ce (C7)	Surfa   Surfa   Spar   Spar   Oxid   Oxid   Cray   Cray   Satu   Geo   FAC	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3) here tilled) fish Burrows (C8) ration Visible on Aerial Imagery (C9) morphic Position (D2)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one recognition of the primary Indicators (minimum of one recognition of the primary Indicators (Management Capacitan)  Water Marks (Mathematical of the primary Indicators (Mathematica	Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Dry-Season Wat Oxidized Rhizos (where not till Presence of Red Thin Muck Surfaery (B7) Other (Explain in	e Odor (C1) er Table (C2) pheres on Living Roc ed) luced Iron (C4) ce (C7) Remarks)	Surfa   Surfa   Spar   Spar   Oxid   Oxid   Cray   Cray   Satu   Geo   FAC	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3) here tilled) fish Burrows (C8) ration Visible on Aerial Imagery (C9) morphic Position (D2) -Neutral Test (D5)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one recognition of the primary Indicators (minimum of one recognition of the primary Indicators (Management Primary Indicators)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagement Primary (B9)  Field Observations:  Surface Water Present?  Yes	Salt Crust (B11) Aquatic Inverteber Hydrogen Sulfider Dry-Season Wate Oxidized Rhizos (where not till Presence of Red Thin Muck Surfarery (B7)  No Depth (inches):	e Odor (C1) er Table (C2) pheres on Living Roc ed) luced Iron (C4) ce (C7) Remarks)	Surfa   Surfa   Spar   Spar   Oxid   Oxid   Cray   Cray   Satu   Geo   FAC	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3) here tilled) fish Burrows (C8) ration Visible on Aerial Imagery (C9) morphic Position (D2) -Neutral Test (D5)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one reconstruction of the primary Indicators (minimum of one reconstruction of the primary Indicators (minimum of one reconstruction of the primary Indicators (Malance Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Image Water-Stained Leaves (B9)  Field Observations:  Surface Water Present?  Yes  Water Table Present?  Yes  Saturation Present?	Salt Crust (B11) Aquatic Invertebre Hydrogen Sulfider Dry-Season Wate Oxidized Rhizos (where not till Presence of Red Thin Muck Surfarery (B7)  No Depth (inches): Depth (inches):	e Odor (C1) er Table (C2) pheres on Living Roc ed) luced Iron (C4) ce (C7) Remarks)	Surfa	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3) here tilled) fish Burrows (C8) ration Visible on Aerial Imagery (C9) morphic Position (D2) -Neutral Test (D5)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one reconstruction of the primary Indicators (minimum of one reconstruction of the primary Indicators (minimum of one reconstruction of the primary Indicators (Malance Water Marks (Malance Water Marks (Malance Water Marks (Malance Water Marks (Malance Water Malance Water Mala	Salt Crust (B11) Aquatic Invertebre Hydrogen Sulfider Dry-Season Water Oxidized Rhizos (where not till) Presence of Redering Thin Muck Surfarery (B7)  No Depth (inches): No Depth (inches): Depth (inches):	e Odor (C1) er Table (C2) pheres on Living Roc ed) luced Iron (C4) ce (C7) Remarks)	Surfa Surfa Spar Drain Oxid ots (C3) (w Satu Satu FAC Fros	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3) here tilled) fish Burrows (C8) ration Visible on Aerial Imagery (C9) morphic Position (D2) -Neutral Test (D5) t-Heave Hummocks (D7) (LRR F)
Primary Indicators (minimum of one results)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Image  Water-Stained Leaves (B9)  Field Observations:  Surface Water Present?  Water Table Present?  Yes  Saturation Present?  Yes  (includes capillary fringe)	Salt Crust (B11) Aquatic Invertebre Hydrogen Sulfider Dry-Season Water Oxidized Rhizos (where not till) Presence of Redering Thin Muck Surfarery (B7)  No Depth (inches): No Depth (inches): Depth (inches):	e Odor (C1) er Table (C2) pheres on Living Roc ed) luced Iron (C4) ce (C7) Remarks)	Surfa Surfa Spar Drain Oxid ots (C3) (w Satu Satu FAC Fros	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3) here tilled) fish Burrows (C8) ration Visible on Aerial Imagery (C9) morphic Position (D2) -Neutral Test (D5) t-Heave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one recognition of the primary Indicators (minimum of one recognition of the primary Indicators (minimum of one recognition of the primary Indicators (Material Presents (Material Indicators)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Image (Mater-Stained Leaves (B9))  Field Observations:  Surface Water Present?  Water Table Present?  Yes Saturation Present?  Yes (includes capillary fringe)	Salt Crust (B11) Aquatic Inverteber Hydrogen Sulfider Dry-Season Wate Oxidized Rhizos (where not till Presence of Red Thin Muck Surfamery (B7)  No Depth (inches): No Depth (inches): No Depth (inches): Depth (inches): Depth (inches):	e Odor (C1) er Table (C2) pheres on Living Roc ed) luced Iron (C4) ce (C7) Remarks)	Surfa Surfa Spar Drain Oxid ots (C3) (w Satu Satu FAC Fros	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3) here tilled) fish Burrows (C8) ration Visible on Aerial Imagery (C9) morphic Position (D2) -Neutral Test (D5) t-Heave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one reconstruction of the primary Indicators (minimum of one reconstruction of the primary Indicators (minimum of one reconstruction of the primary Indicators (Marker (	Salt Crust (B11) Aquatic Inverteber Hydrogen Sulfider Dry-Season Wate Oxidized Rhizos (where not till Presence of Red Thin Muck Surfamery (B7)  No Depth (inches): No Depth (inches): No Depth (inches): Depth (inches): Depth (inches):	e Odor (C1) er Table (C2) pheres on Living Roc ed) luced Iron (C4) ce (C7) Remarks)	Surfa Surfa Spar Drain Oxid ots (C3) (w Satu Satu FAC Fros	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) ized Rhizospheres on Living Roots (C3) here tilled) fish Burrows (C8) ration Visible on Aerial Imagery (C9) morphic Position (D2) -Neutral Test (D5) t-Heave Hummocks (D7) (LRR F)

	Project/Site: Kindsfater	City/0	County: Yellowston	е	Sampling Date	e: 6/15/2021
Section, Township, Range: 6 ZS Z5E	Applicant/Owner: MDT					
Landborn (hillslope, thrace, etc.): Depression Local reliaf (concave, convex, none): COnCave Slope (%):	Investigator(s): R Quire, S Weyant					
Subregion (RRR). LRR F						Slope (%):
Are cligated in providing conditions on the site typical for this time of year? Yes	Subregion (LRR): LRR F	_ Lat:	45.690689	Long:10	08.698593 <sub>Da</sub>	atum: NAD 83
Are cligated in providing conditions on the site typical for this time of year? Yes	Soil Map Unit Name: LI: Larim gravelly loam, 15-35% slo	opes		NWI classific	ation: Not Map	oped
Are Vegetation	Are climatic / hydrologic conditions on the site typical for this	time of year?	∕es <u></u> No	(If no, explain in R	emarks.)	
Are Vegetation	Are Vegetation, Soil, or Hydrology si	gnificantly distu	rbed? Are "N	ormal Circumstances" p	resent? Yes_	✓ No □
Hydrophytic Vegetation Present? Yes	Are Vegetation, Soil, or Hydrology na	aturally problem	atic? (If need	ded, explain any answe	rs in Remarks.)	i
Wetland Hydrology Present?   Yes	SUMMARY OF FINDINGS - Attach site map s	showing san	npling point lo	cations, transects	, important	features, etc
VEGETATION - Use scientific names of plants	Hydric Soil Present? Yes ✓ No Wetland Hydrology Present? Yes ✓ No				] No	_
Tree Stratum   Plot size (30   Foot Radius)   Absolute   Mc Cover:   Species?   Status     Dominant   Species   Status   Number of Dominant   Species   Number of Dominant   Nu						
Number of Dominant Species that are OBL, FACW or FAC:	Absolute	Domiant In	ndicator	Dominance Test wor	ksheet	
Sapling/Shrub Stratum Plot size (15 Foot Radius)  Herbaceous Stratum Phalaris arundinacea Phalaris arundinacea Phalaris arundinacea Phalaris arundinacea Phalaris arundinacea Phalaris arundinacea  Go ▼ FACW  FA	Iree Stratum Piol size (30 Fool Radius) % Cover:	Species? S	Status	Number of Dominant S	Species	1 (A)
Plot size (15 Foot Radius)   Prevalence Index worksheet   Total % Cover of:						1 (B)
Herbaceous Stratum Plot size ( 5 Foot Radius)  Phalaris arundinacea 60 ▼ FACW    UPL species 0 × 4 0 UPL species 0 × 5 0 UPL species 0 ×	Sapling/Shrub Stratum Plot size (15 Foot Radius)			That Are OBL, FACW	, or FAC:	00.0 % (A/B)
Herbaceous Stratum Plot size ( 5 Foot Radius)  Phalaris arundinacea 60 ▼ FACW  Phalaris arundinacea 60 ▼ FACW  Column Totals 60 (A) 120 (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  Hydrophytic Vegetation Indicators  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:  BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index						Multiply by
Herbaceous Stratum Plot size ( 5 Foot Radius)  Phalaris arundinacea 60 ▼ FACW  Column Totals 60 (A) 120 (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  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:  BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index						
Herbaceous Stratum Plot size ( 5 Foot Radius) Phalaris arundinacea  60 ▼ FACW  Column Totals 60 (A) 120 (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  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?  Percent Bare Ground 40  Remarks:  BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index					-	
Phalaris arundinacea  Phalaris arundinacea  60					_	
Phalaris arundinacea  60 ▼ FACW  Column Totals 60 (A) 120 (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  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 40  Remarks:  BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index	Herbaceous Stratum Plot size ( 5 Foot Radius)			•	-	
Prevalence Index = B/A = 2.00  Hydrophytic Vegetation Indicators	Phalaris arundinacea 60	<b>✓</b> FA	CW			
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 Percent Bare Ground 40  Remarks:  BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index						
Woody Vine Stratum  Plot size ( 30 Foot Radius)  Woody Vine Stratum  Precent Bare Ground 40  Percent Bare Ground 40  Percent Bare Ground 40  Percent Bare Ground 40  Percent Bare Ground 40  Present?  1 - Rapid Test for Hydrophytic Vegetation  2 - Dominance Test is >50%  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 □  Remarks:  BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index			-			2.00
Woody Vine Stratum  Plot size ( 30 Foot Radius)  Percent Bare Ground 40  Woody Vine Stratum  Plot size ( 30 Foot Radius)  Percent Bare Ground 40  Remarks:  BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index  2 - Dominance Test is >50%  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 □						: Vegetation
Woody Vine Stratum  Plot size ( 30 Foot Radius)  Percent Bare Ground 40  Percent Bare Ground 40  Percent Bare Ground 40  Percent Bare Ground 40  Remarks:  BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index				_		, rogotation
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:  BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index						)
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:  BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index				4 - Morphologi	cal Adaptations	s (Provide
Problematic Hydrophytic Vegetation (Explain)    Moody Vine Stratum				supporting data	•	`
Plot size ( 30 Foot Radius)  Percent Bare Ground 40  Remarks:  BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index				5 - Wetland No	n-Vascular Pla	nts
Percent Bare Ground 40  Remarks:  BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index	Was da Was Official Co. Foot Builting			Problematic Hy	/drophytic Vege	etation (Explain)
Percent Bare Ground 40  Remarks:  BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index	woody vine Stratum Plot size ( 30 Foot Radius)					
Remarks: BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index	Persont Pers Crowd 40				on Yes	<b>✓</b> NO □
BG/litter=40%. Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index						
	BG/litter=40%. Evidence of hydrophytic vegetation in	ıcludes a posi	tive rapid test, a p	ositive dominance te	st, and a prev	valence index

SOIL Sampling Point: DP02w

Depth	cription: (Describ Matrix	e to the de	pui neede		x Features		i or co	א ווווווווו (וו	ie auselice	or mulcators.)
(inches)	Color (moist)	%	Color	(moist)	%	Type <sup>1</sup>	Lo	oc <sup>2</sup>	Texture	Remarks
0-12	10YR 3/1	98	7.5YR	4/6	2		PL	Sandy	Clay Loa	m
				., 0						
12+								C	obbles	Cobble bottom.
			-							
						-				
-							_			
		_								
<sup>1</sup> Type: C=C	concentration, D=De	epletion. RN	/I=Reduce	d Matrix. CS	S=Covered	d or Coa	ted Sa	nd Grain	s. <sup>2</sup> Loc	cation: PL=Pore Lining, M=Matrix.
	Indicators: (Appl	•								for Problematic Hydric Soils <sup>3</sup> :
Histoso	I (A1)		]	Sandy G	Sleyed Ma	ıtrix (S4)			1 cm N	Muck (A9) ( <b>LRR I, J</b> )
Histic E	pipedon (A2)		]	Sandy F	Redox (S5	)			Coast	Prairie Redox (A16) (LRR F, G, H)
Black H	listic (A3)				l Matrix (S				Dark S	Surface (S7) (LRR G)
	en Sulfide (A4)		_		Mucky Min					Plains Depressions (F16)
	d Layers (A5) ( <b>LRR</b>				Gleyed Ma		!			RR H outside of MLRA 72 & 73)
	uck (A9) ( <b>LRR F, G</b>		_	_	d Matrix (F	-				ed Vertic (F18)
	d Below Dark Surfa	ice (A11)		✓ Redox D			<b>-</b> \			arent Material (TF2)
_	ark Surface (A12)		-		d Dark Su	•	/)			Shallow Dark Surface (TF12)
= -	Mucky Mineral (S1)	· (S2) /I DD	.с п/	_	Depressior ains Depre		E16\			(Explain in Remarks) of hydrophytic vegetation and
	Mucky Peat or Peat ucky Peat or Peat (				RA 72 & 7					d hydrology must be present,
0 0111101	doky r car or r car (	oo) (Litit i	,	(IVIL	14 12 4 1	J OI LIX				disturbed or problematic.
Restrictive	Layer (if present):									
Type:										
Depth (in									Hydric Soil	Present? Yes No
Remarks: p	rominent redoxim	norphic co	ncentratio	ons commo	on along	nore lir	ninas	I		
·		.с.р.ше се			ag	p 0.0	951			
HYDROLC										
_	drology Indicators									
	cators (minimum of	one requir	ed; check a							ary Indicators (minimum of two require
Surface	Water (A1)			Salt Crust	(B11)				Sur	face Soil Cracks (B6)
High W	ater Table (A2)			Aquatic Inv	/ertebrate	s (B13)			Spa	rsely Vegetated Concave Surface (B
Saturati	ion (A3)			Hydrogen	Sulfide Od	dor (C1)			Dra	inage Patterns (B10)
Water N	/larks (B1)			Dry-Seaso	n Water T	able (C2	2)		Oxid	dized Rhizospheres on Living Roots (
Sedime	nt Deposits (B2)		<b>✓</b>	Oxidized R	Rhizosphei	res on Li	iving R	Roots (C3	6) (w	vhere tilled)
	posits (B3)			(where r	not tilled)				Cra	yfish Burrows (C8)
Algal M	at or Crust (B4)			Presence of	of Reduce	d Iron (C	C4)		Satı	uration Visible on Aerial Imagery (C9)
Iron De	posits (B5)			Thin Muck	Surface (	C7)			<b>✓</b> Geo	omorphic Position (D2)
Inundat	ion Visible on Aeria	l Imagery (	B7) 🔲	Other (Exp	lain in Re	marks)			<b>✓</b> FAC	C-Neutral Test (D5)
Water-S	Stained Leaves (B9)	)							Fros	st-Heave Hummocks (D7) ( <b>LRR F</b> )
Field Obser										
Surface Wat	ter Present?	Yes <u> </u>		_ Depth (ind						
Water Table	Present?	Yes 🔲	No 🔽	_ Depth (ind	ches):					
Saturation F		Yes	No <b>✓</b>	_ Depth (ind	ches):		[	Wetland	d Hydrolog	y Present? Yes No
	pillary fringe)	m acuss	oonitori	المخدم المب	shotos ==	ovice:				
Describe Re	ecorded Data (strea	m gauge, n	nonitoring	weii, aerial p	onotos, pre	evious ir	ispecti	ions), if a	valiable:	
D										
			and hydro	ology inclu	des oxidi	ized rhi	zospe	eres on I	iving roots	s, geomorphic position, and a
рс	ositive FAC-Neutr	aı test.								

Project/Site: Kindsfater	City/County: Yellowsto	ne Sampling Date	e: 6/15/2021
Applicant/Owner: MDT		State: Montana_ Sampling Poir	<sub>nt:</sub> DP03u
Investigator(s): R Quire, S Weyant	Section, Township, Ran	ge: 6 2S 25	5E
Landform (hillslope, terrace, etc.): Undulating			
Subregion (LRR): LRR F Lat:			
Soil Map Unit Name: So: Shorey gravelly loam, 1-4% slopes		NWI classification. Not Maj	pped
Are climatic / hydrologic conditions on the site typical for this time of ye	ar? Ves V No	(If no, explain in Remarks.)	-
Are Vegetation, Soil, or Hydrology significantly			✓ No □
Are Vegetation, Soil, or Hydrology naturally pr	ablamatica (If and	adad avalais any anguar in Danada	NO
SUMMARY OF FINDINGS – Attach site map showing			
Hydrophytic Vegetation Present? Yes No	Is the Sampled		
Hydric Soil Present?       Yes ☐ No ✓         Wetland Hydrology Present?       Yes ☐ No ✓	within a Wetland	d? Yes No	
Remarks: Upland sample point located upslope of DP03w and	wetland boundary.		
VEGETATION - Use scientific names of plants			
Tree Stratum Plot size (30 Foot Radius) Absolute Domian Species		Dominance Test worksheet	
Elaeagnus angustifolia 1	FACU	Number of Dominant Species that are OBL, FACW or FAC:	1 (A)
Populus deltoides 10	FAC	Total Number of Dominant	
		Species Across All Strata:	3 (B)
		Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3 % (A/B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)	FACIL	Prevalence Index worksheet	
Elaeagnus angustifolia 10 🔽	FACU	Total % Cover of:	Multiply by:
		OBL species 0 X 1	0
		FACW species 0 X 2	0
		FAC species 10 X 3 FACU species 81 X 4	30
Herbaceous Stratum Plot size ( 5 Foot Radius)		FACU species 81 X 4 UPL species 6 X 5	324
Bromus tectorum 5	NL		
Convolvulus arvensis 1	NL	Column Totals 97 (A)	384 (B)
Elymus repens 10	FACU	Prevalence Index = B/A =	3.96
Poa pratensis 60 🗸	FACU	Hydrophytic Vegetation Indicators	
		1 - Rapid Test for Hydrophytic	c Vegetation
		2 - Dominance Test is >50%	
		3 - Prevalence Index is <= 3.0	0
		4 - Morphological Adaptations	s (Provide
		supporting data in remarks or sheet.	r on separate
		☐ 5 - Wetland Non-Vascular Pla	ants
		Problematic Hydrophytic Vege	etation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)		Indicators of hydric sil and wetland hyd present, unless disturbed or problemat	drology must be
		Hydrophytic Vegetation	□ NO 🔽
Percent Bare Ground 24		Present?	
Remarks: BG/litter=24%. Data point is dominated by upland vegetation.			

SOIL Sampling Point: DP03u

Depth (inches)	Color	(moist)	%	Red Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-12	10YR	4/2	100					Loamy Sand	
								•	0 11 11 11
2+								Gravel	Gravel bottom.
	-								
Type: C=C	oncentratio	n D=Denl	etion RM=Re	duced Matrix, C	 S=Covered o	r Coate	d Sand (	 Grains <sup>2</sup> Loc	cation: PL=Pore Lining, M=Matrix.
				Rs, unless oth			<del>u ounu i</del>		for Problematic Hydric Soils <sup>3</sup> :
Histoso				Sandy	Gleyed Matri	x (S4)		1 cm N	/luck (A9) ( <b>LRR I, J</b> )
	pipedon (A	2)			Redox (S5)				Prairie Redox (A16) (LRR F, G, H)
	istic (A3)				ed Matrix (S6)				Surface (S7) (LRR G)
	en Sulfide ( d Layers ( <i>l</i>		·)		Mucky Miner Gleyed Matri				Plains Depressions (F16)
	uck (A9) ( <b>L</b>				ed Matrix (F3)				ed Vertic (F18)
	d Below Da		-		Dark Surface			=	arent Material (TF2)
	ark Surface		()		ed Dark Surfa				hallow Dark Surface (TF12)
Sandy l	Mucky Mine	eral (S1)			Depressions				(Explain in Remarks)
			S2) ( <b>LRR G, F</b>		lains Depress				of hydrophytic vegetation and
5 cm Mucky Peat or Peat (S3) (LRR F)			(M	LRA 72 & 73	of LRR	H)		d hydrology must be present,	
								unless	disturbed or problematic.
Octrictivo	Lavor /if n	rocont):							
		-							
Туре:		-		_				Hydric Soil	Present? Yes ☐ No ☑
Type: Depth (in	ches):			_ 				Hydric Soil	Present? Yes No
Type: Depth (in	ches):			- - tors observed				Hydric Soil	Present? Yes No
Type: Depth (in	ches):			_ 				Hydric Soil	Present? Yes No
Type: Depth (in Remarks: N	ches):			_ 				Hydric Soil	Present? Yes No
Type: Depth (in Remarks: N	ches): o evidend	e of hydr		_ 				Hydric Soil	Present? Yes No
Type: Depth (in Remarks: N YDROLO Vetland Hy	ches): o evidend	e of hydr	ic soil indica	tors observed					
Type: Depth (in Remarks: N YDROLO Vetland Hy Primary Indi	ches): o evidend OGY drology Incators (mir	e of hydr	ic soil indica	tors observed	oly)			Seconda	ary Indicators (minimum of two require
Type: Depth (in emarks: N Pemarks: N Pe	ches): o evidence  OGY  drology Ir cators (mir Water (A1	ee of hydrodicators:	ic soil indica	tors observed	oly) t (B11)			Seconda	ary Indicators (minimum of two require face Soil Cracks (B6)
Type: Depth (in emarks: N  CPROLO  Vetland Hy rimary Indi  Surface  High W	o evidence  OGY  drology Ir  cators (mir  Water (A1 ater Table	ee of hydrodicators:	ic soil indica	tors observed  heck all that app Salt Crus Aquatic I	oly) t (B11) nvertebrates (	,		Seconda	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8
Type: Depth (in Remarks: N Perpendicular   Perpendicular	o evidence  OGY  drology Incators (mir  Water (A1 ater Table on (A3)	ee of hydrodicators:	ic soil indica	tors observed  heck all that app Salt Crus Aquatic I Hydroger	oly) t (B11) nvertebrates ( n Sulfide Odor	r (C1)		Seconda Surf	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10)
Type: Depth (in Remarks: N  YDROLO  Vetland Hy  Inimary Indi Surface High Wa Saturati Water N	o evidence  OGY  drology Incators (mir  Water (A1 ater Table on (A3)  Marks (B1)	dicators:	ic soil indica	heck all that app \( \subseteq \text{ Salt Crus} \) \( \subseteq \text{ Aquatic I} \) \( \subseteq \text{ Hydroger} \) \( \subseteq  Dry-Seas	oly) t (B11) nvertebrates ( n Sulfide Odor on Water Tab	r (C1) ole (C2)		Seconda  Surf	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (G
Type: Depth (in Remarks: N  YDROLO  Vetland Hy Primary Indi Surface High W: Saturati Water M Sedime	o evidence of evidence of value (A1 ater Table on (A3) Marks (B1) nt Deposits	e of hydrodicators: imum of or (A2)	ic soil indica	heck all that app Salt Crus Aquatic I Hydroger Dry-Seas	oly) t (B11) nvertebrates ( n Sulfide Odor con Water Tab Rhizospheres	r (C1) ole (C2)	ng Root	Seconda Surf Spa Drai Drai Coxics	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Where tilled)
Type:	o evidence of evid	ee of hydrodicators: himum of or (A2)	ic soil indica	neck all that app Salt Crus Aquatic I Hydroger Dry-Seas Oxidized (where	oly) t (B11) nvertebrates ( n Sulfide Odor on Water Tab Rhizospheres not tilled)	r (C1) ble (C2) s on Livi	•	Seconda Surl Spa Drai Doxid S (C3)	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Where tilled) yfish Burrows (C8)
Type:	o evidence of evidence of evidence of evidence of cators (min Water (A1 ater Table on (A3) Marks (B1) nt Deposits posits (B3) at or Crust	ee of hydrodicators: himum of or (A2)	ic soil indica	neck all that app Salt Crus Aquatic I Hydroger Dry-Seas Oxidized (where	oly) t (B11) nvertebrates ( n Sulfide Odor on Water Tab Rhizospheres not tilled)	r (C1) ble (C2) s on Livi	•	Seconda Surf Spa Drai Oxio s (C3) (w	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Contract tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9)
Type: Depth (in Remarks: N  YDROLC  Vetland Hy Primary Indi Surface High W. Saturati Water N Sedime Drift De Algal M Iron De	ches): o evidence  OGY  drology Ir cators (mir Water (A1 ater Table on (A3) Marks (B1) nt Deposits posits (B3) at or Crust posits (B5)	ee of hydrodicators: imum of or (A2) (B2) (B4)	ic soil indica	heck all that app Salt Crus Aquatic I Hydrogei Dry-Seas Oxidized (where	oly) t (B11) nvertebrates ( n Sulfide Odor on Water Tab Rhizospheres not tilled) e of Reduced I k Surface (C7	(C1)  color (C2)  color (C2)  color (C4)	•	Seconda Surf Spa Drai Oxio s (C3) (w Satu	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Control of the control of the co
Type: Depth (in Remarks: N  YDROLO  Yetland Hy Inimary Indi Surface High W. Saturati Water N Sedime Drift De Algal M Iron De Inundat	ches): o evidence  OGY  drology Ir cators (mir Water (A1 ater Table on (A3) Marks (B1) nt Deposits posits (B3) at or Crust cosits (B5) ion Visible	dicators: imum of or (A2) (B2) (B4) on Aerial II	ic soil indica	heck all that app Salt Crus Aquatic I Hydrogei Dry-Seas Oxidized (where	oly) t (B11) nvertebrates ( n Sulfide Odor on Water Tab Rhizospheres not tilled)	(C1)  color (C2)  color (C2)  color (C4)	•	Seconda Surl Spa Drai Oxio s (C3) (w Cray Geo	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Continuo) where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) emorphic Position (D2) C-Neutral Test (D5)
Type:	ches): o evidence of evidence of a control of the control o	dicators: imum of or (A2) (B2) (B4) on Aerial II	ic soil indica	heck all that app Salt Crus Aquatic I Hydrogei Dry-Seas Oxidized (where	oly) t (B11) nvertebrates ( n Sulfide Odor on Water Tab Rhizospheres not tilled) e of Reduced I k Surface (C7	(C1)  color (C2)  color (C2)  color (C4)	•	Seconda Surl Spa Drai Oxio s (C3) (w Cray Geo	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Control of the control of the co
Type:	ches): o evidence of evidence of evidence of cators (min water (A1 ater Table on (A3) Marks (B1) nt Deposits posits (B3) at or Crust posits (B5) ion Visible stained Leavations:	dicators: himum of or (A2) (B4) on Aerial In	ne required; co	neck all that app Salt Crus Aquatic I Hydroger Dry-Seas Oxidized (where Presence Thin Muc	oly) t (B11) nvertebrates ( n Sulfide Odor on Water Tab Rhizospheres not tilled) e of Reduced I k Surface (C7	r (C1) c) (C2) s on Livi lron (C4 r) arks)	)	Seconda Surl Spa Drai Oxio s (C3) (w Cray Geo	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Continuo) where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) emorphic Position (D2) C-Neutral Test (D5)
Type:	ches): o evidence of ev	ce of hydrodicators: imum of or ) (A2) (B4) on Aerial Inves (B9)	magery (B7)	tors observed  heck all that app Salt Crus Aquatic I Hydrogei Dry-Seas Oxidized (where Presence Thin Muc	oly) t (B11) nvertebrates ( n Sulfide Odor on Water Tab Rhizospheres not tilled) e of Reduced I k Surface (C7 xplain in Rema	r (C1)  ole (C2)  s on Livi  lron (C4  )  arks)	_	Seconda Surl Spa Drai Oxio s (C3) (w Cray Geo	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Continuous) where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) promorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
YDROLO  YDROLO  Wetland Hy Primary Indi Surface High Wi Saturati Water M Sedime Drift De Algal M Iron De Inundat	ches):o evidence  OGY  drology Incators (minwater (A1 ater Table on (A3))  Marks (B1) Int Deposits (B3) at or Crust posits (B5) ion Visible stained Leavations:  ter Present?	e of hydrodicators: himum of on himum of o	magery (B7)	heck all that app Salt Crus Aquatic I Hydroger Dry-Seas Oxidized (where Presence Thin Muc Other (E:	oly) t (B11) nvertebrates ( n Sulfide Odor con Water Tab Rhizospheres not tilled) e of Reduced I k Surface (C7 kplain in Rema	r (C1) cle (C2) s on Livi lron (C4 7) arks)		Seconda Surd Spa Spa Cray Satu Geo	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Continuous) where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) promorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Type:	ches):o evidence  of evidence  of evidence  of evidence  drology in  cators (min  Water (A1  ater Table on (A3)  Marks (B1) int Deposits posits (B3) at or Crust posits (B5) ion Visible stained Lea  evations: der Present? Present? pillary fring	ce of hydrodicators: imum of or ) (A2) (B4) on Aerial II ives (B9) ? You	magery (B7)  es No es No	heck all that approximate and the second served    Salt Crus	oly) t (B11) nvertebrates ( n Sulfide Odor on Water Tab Rhizospheres not tilled) e of Reduced I k Surface (C7 kplain in Rema	r (C1)  ole (C2)  s on Livi  lron (C4  r)  arks)	)  We	Seconda Surf Spa Spa Cray Satu Seconda	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Continuo) where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) emorphic Position (D2) C-Neutral Test (D5)
Type:	ches):o evidence  of evidence  of evidence  of evidence  drology in  cators (min  Water (A1  ater Table on (A3)  Marks (B1) int Deposits posits (B3) at or Crust posits (B5) ion Visible stained Lea  evations: der Present? Present? pillary fring	ce of hydrodicators: imum of or ) (A2) (B4) on Aerial II ives (B9) ? You	magery (B7)  es No es No	heck all that app Salt Crus Aquatic I Hydroger Dry-Seas Oxidized (where Presence Thin Muc Other (E:	oly) t (B11) nvertebrates ( n Sulfide Odor on Water Tab Rhizospheres not tilled) e of Reduced I k Surface (C7 kplain in Rema	r (C1)  ole (C2)  s on Livi  lron (C4  r)  arks)	)  We	Seconda Surf Spa Spa Cray Satu Seconda	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Continuous) where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) promorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Type:	ches):o evidence of evidence of evidence of evidence of evidence of cators (mirror of cators (mirror of cators (mirror of cators (B1)) of cator (A3) Marks (B1) of control of cators (B3) of control of cators (B5) of cators (Mirror of cators (B5)) of cators (Mirror of cat	ce of hydrodicators: himum of or (A2) (B4) on Aerial In lives (B9) ? Yo Yo e) ta (stream	magery (B7) es No es No gauge, monito	neck all that app Salt Crus Aquatic I Hydroger Dry-Seas Oxidized (where Presence Thin Muc Other (Ex	oly) t (B11) nvertebrates ( n Sulfide Odor on Water Tab Rhizospheres not tilled) e of Reduced I k Surface (C7 kplain in Rema	r (C1)  ole (C2)  s on Livi  lron (C4  r)  arks)	)  We	Seconda Surf Spa Spa Cray Satu Seconda	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Continuous) where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) promorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Type:	ches):o evidence of evidence of evidence of evidence of evidence of cators (mirror of cators (mirror of cators (mirror of cators (B1)) of cator (A3) Marks (B1) of control of cators (B3) of control of cators (B5) of cators (Mirror of cators (B5)) of cators (Mirror of cat	ce of hydrodicators: himum of or (A2) (B4) on Aerial In lives (B9) ? Yo Yo e) ta (stream	magery (B7)  es No es No	neck all that app Salt Crus Aquatic I Hydroger Dry-Seas Oxidized (where Presence Thin Muc Other (Ex	oly) t (B11) nvertebrates ( n Sulfide Odor on Water Tab Rhizospheres not tilled) e of Reduced I k Surface (C7 kplain in Rema	r (C1)  ole (C2)  s on Livi  lron (C4  r)  arks)	)  We	Seconda Surf Spa Spa Cray Satu Seconda	ary Indicators (minimum of two require face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Continuous) where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) promorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)

Project/Site: Kindsfater		City/County	Yellowstor	ne		Sampling Date	6/15/2021
Applicant/Owner: MDT						Sampling Poin	
Investigator(s): R Quire, S Weyant	5						
Landform (hillslope, terrace, etc.): Depression							
Subregion (LRR): LRR F	l at·	2004. 10.10.	45.693142	Long:	-10	 )8.698444	stum: NAD 83
Subregion (LRR): LRR F  Soil Map Unit Name: So: Shorey gravelly loam, 1-4% slop	oes			NIVA/	oloogifia	ation: Not Man	pped
Are climatic / hydrologic conditions on the site typical for this ti			<b>/</b> N- [		Classilic	auon	
							<b>.</b>
Are Vegetation, Soil, or Hydrology sign	nificantly o	disturbed?	Are "N	Iormal Circums	.ances" p	resent? Yes _	No
Are Vegetation, Soil, or Hydrology nat	urally prob	blematic?	(If nee	ded, explain ar	y answe	rs in Remarks.)	
SUMMARY OF FINDINGS - Attach site map sh	nowing	samplin	g point lo	cations, tra	nsects	, important	features, etc
Hydrophytic Vegetation Present?  Yes   ✓ No  Hydric Soil Present?  Yes  ✓ No			e Sampled <i>I</i> in a Wetland		es	No	
Wetland Hydrology Present? Yes   ✓ No  Remarks: PEM depressional wetland near western project.							
VEGETATION - Use scientific names of plants	<u> </u>						
	Domiant	Indicato	or	Dominance <sup>-</sup>	Test wor	ksheet	
Tree Stratum Plot size (30 Foot Radius) % Cover:	Species?	Status		Number of Do			2 (A)
				Total Number Species Acro			2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)				Percent of Do That Are OBL			00.0 % (A/B)
<u>oupmigroni ab ou atam</u>				Prevalence I	ndex wo	rksheet	
					Cover of		Multiply by:
				OBL species		13 X 1 27 X 2	13
				FACW species		0 X3	54 0
				FACU specie		_	0
Herbaceous Stratum Plot size ( 5 Foot Radius)		EA OVA/		UPL species		_	0
Alopecurus arundinaceus 25		FACW	_	Column Total	s	10 (A)	67 (B)
Carex nebrascensis 1 Phalaris arundinacea 2		OBL FACW	_				
Schoenoplectus acutus 2		OBL	_	Prevalen			1.68
Typha latifolia 10	<b>V</b>	OBL	=		-	ion Indicators for Hydrophytic	. V
- 7,5	· ·		_	_	•		vegetation
						Test is >50%	
				<b>⊻</b> 3 - Pr	evalence	Index is <= 3.0	1
					rting data	cal Adaptations a in remarks or	
				☐ 5 - We	etland No	n-Vascular Plai	nts
				Proble	matic Hy	ydrophytic Vege	etation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)						nd wetland hydred or problemati	
Percent Bare Ground 60				Hydrophytic Present?			
Remarks:							
BG/litter/shallow ponded water=60%. Evidence of hyd and a prevalence index less than or equal to 3.0.	rophytic	vegetatio	n includes a	a positive rapi	d test, a	positive domi	inance test,

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

SOIL Sampling Point: DP03w

Profile Desc	cription: (Describe	to the depth ne			icator or	confirm	the absence	of indicators.)
Depth	Matrix			Features	Tune 1	1 a s 2	Ta	Damanda
(inches)	Color (moist)		olor (moist)	<u> </u>	Type <sup>1</sup> _	Loc <sup>2</sup>	Texture	Remarks
0-12	10YR 2/1	100				San	dy Clay Loar	n
12+							Cobbles	Cobble bottom.
	_							
			_					
	-		_					
	-							
	oncentration, D=Dep	· · · · · · · · · · · · · · · · · · ·				Sand Gr		cation: PL=Pore Lining, M=Matrix.
	Indicators: (Applic	able to all LRRs						for Problematic Hydric Soils <sup>3</sup> :
Histosol			= '	eyed Matrix	k (S4)			fluck (A9) ( <b>LRR I, J</b> )
	pipedon (A2)		_	edox (S5)				Prairie Redox (A16) (LRR F, G, H)
	istic (A3)			Matrix (S6)			_	Surface (S7) (LRR G)
	en Sulfide (A4) d Layers (A5) ( <b>LRR</b> I	E)		ucky Minera leyed Matri				lains Depressions (F16)
_	uck (A9) ( <b>LRR</b> i	•		Matrix (F3)	` '			ed Vertic (F18)
	d Below Dark Surfac			ark Surface			_	arent Material (TF2)
	ark Surface (A12)	· · · · /		Dark Surfa				hallow Dark Surface (TF12)
	Mucky Mineral (S1)			epressions				(Explain in Remarks)
2.5 cm M	Mucky Peat or Peat (	(S2) ( <b>LRR G, H</b> )	High Plai	ns Depress	ions (F16	)	<sup>3</sup> Indicators	of hydrophytic vegetation and
5 cm Μι	ucky Peat or Peat (S	3) ( <b>LRR F</b> )	(MLR	A 72 & 73	of LRR H	)	wetland	d hydrology must be present,
							unless	disturbed or problematic.
Restrictive I	Layer (if present):							
Type:								
Depth (in	ches):						Hydric Soil	Present? Yes No
Remarks: Si	ulfidic odor observ	red.						
HYDROLO	ocv							
_	drology Indicators:						0 1	
	cators (minimum of c	one required; che						ary Indicators (minimum of two required)
<b>✓</b> Surface	` '		Salt Crust (I		<b>5.46</b> \			ace Soil Cracks (B6)
	ater Table (A2)		Aquatic Inve	,	,			rsely Vegetated Concave Surface (B8)
✓ Saturation			✓ Hydrogen S					nage Patterns (B10)
_	farks (B1)		Dry-Season			. Da -4- /	<del></del>	dized Rhizospheres on Living Roots (C3)
	nt Deposits (B2)		Oxidized Rh		on Living	Roots (		rhere tilled)
	posits (B3)		(where no		ron (C4)			yfish Burrows (C8)
	at or Crust (B4)		Presence of					uration Visible on Aerial Imagery (C9)
	oosits (B5)	Imagas: (P7)	Thin Muck S	,	•			morphic Position (D2)
	on Visible on Aerial   Stained Leaves (B9)	imagery (B7)	Other (Expl	aiii in Kema	aiks)		_	C-Neutral Test (D5)
Field Obser							FIOS	st-Heave Hummocks (D7) (LRR F)
		′es ☑ No _	Donth /im-l	20c).	3			
Surface Wat			Depth (incl					
Water Table		′es 🔽 No _	Depth (incl		_			<b>.</b>
Saturation P		′es 🔽 No _	Depth (incl	nes):	0	Wetla	and Hydrology	y Present? Yes No
(includes car Describe Re	corded Data (stream	n gauge, monitori	ng well, aerial pl	notos, previ	ous inspe	ctions). i	if available:	
	(	5 5 ,	,	7 1	-1	-/,		
Remarks: -	idonos sturitiri. I	budgete en tier t	udo O imali	.f a.uf a	t-= - !	hiab ···	tontoble - '	lo poturotod to surface a sufficie
	ridence of wetland lor, geomorphic po				water, a l	nign wa	ner ladie, soi	ls saturated to surface, sulfidic
Ju	ioi, goomorpino po	Jonath and a po	2011/0 1 / 10-110	103t.				

			County: Yellowstone				)21
Applicant/Owner: MDT							
Investigator(s): R Quire, S Weyant							
Landform (hillslope, terrace, etc.): Mound		Loca	l relief (concave, conv	ex, none): concave	Slo	ope (%):	5
Subregion (LRR): LRR F	Lat:		45.694734 Lo	ng:10	)8.697475 <sub>Dat</sub>	<sub>um:</sub> NAD 83	3
Subregion (LRR): LRR F Soil Map Unit Name: Bm: Bew silty clay loam	, 0-1% slopes			NWI classific	ation: Not Mapp	ed	
Are climatic / hydrologic conditions on the site ty	pical for this time	of year? Y	′es 🔽 No 🔲	(If no, explain in R	emarks.)		
Are Vegetation, Soil, or Hydrolog	_					<b>∠</b> No _[	
Are Vegetation, Soil, or Hydrolog	gy natural	ly problem	atic? (If neede	d, explain any answe	rs in Remarks.)		
SUMMARY OF FINDINGS - Attach						eatures, e	tc.
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes Remarks: Upland sample point located up:	No <u></u>			a Yes	] No_ <b>☑</b>		
VEGETATION - Use scientific name	s of plants		odinator				
<u>Tree Stratum</u> Plot size (30 Foot Radius)			tatus	Oominance Test wor			
Populus deltoides	5	<b>/</b> F	AC th	lumber of Dominant S nat are OBL, FACW o	or FAC:	2 (A)	
			S	otal Number of Domi Species Across All Str	rata:	5 (B)	
Sapling/Shrub Stratum Plot size (15 Fo	oot Radius)		Т	Percent of Dominant S That Are OBL, FACW,	, or FAC:	0.0 % (A/B)	
Elaeagnus angustifolia	10	<b>/</b> FA	.CU P	revalence Index wo			
Populus deltoides	5	<b>/</b> FA	ic _	Total % Cover of OBL species	t: <u>IV</u> 0 X1	Multiply by:  0	_
				ACW species	0 X 1	0	
				·	11 X3	33	
Herbaceous Stratum Plot size ( 5 Fo	oot Radius)			•	57 X4	228	
Convolvulus arvensis	1 [	□ NL	\ \	JPL species	1 X 5	5	
Elymus repens	15	FA(	CU C	Column Totals 6	69 (A)	266 (I	B)
Equisetum arvense	1 [	FA	C	Prevalence Index	x = B/A =	3.86	
Poa pratensis	30	<b>/</b> FAC	CU	lydrophytic Vegetati			
Taraxacum officinale	2	FA	CU		for Hydrophytic \	Vegetation	
				2 - Dominance	Test is >50%		
				3 - Prevalence	Index is <= 3.0		
				1 Morphologi	cal Adaptations (	(Provido	
					a in remarks or o		
				5 - Wetland No	on-Vascular Plant	ts	
				☐ Problematic H	ydrophytic Vegeta	ation (Explair	n)
Woody Vine Stratum Plot size ( 30 Fo	oot Radius)			licators of hydric sil a esent, unless disturbe	nd wetland hydro	ology must be	•
Percent Bare Ground 51			Н	lydrophytic Vegetati Present?	•	NO 🗹	
Remarks:							
BG/litter=51%. Data point is dominated by	/ upland vegeta	tion.					

SOIL Sampling Point: DP04u

(inches)	Color (m	noist) %	Color	(moist)	Features %	Type <sup>1</sup>	Loc <sup>2</sup>	_ Texture	Remarks
0-12			05 7.5YR	4/6	5	C N		Silty Clay	
	10111	172 0	7.011	170	- O	0 10			
2+								Cobbles	Cobble bottom.
				_					
								_	
		D=Depletion,					ed Sand		cation: PL=Pore Lining, M=Matrix.
		(Applicable to	o all LRRs, u						for Problematic Hydric Soils <sup>3</sup> :
Histoso			<u> </u>	_	leyed Mat				Muck (A9) (LRR I, J)
	pipedon (A2) listic (A3)		<u> </u> 	_	edox (S5) Matrix (S6				Prairie Redox (A16) (LRR F, G, H) Surface (S7) (LRR G)
	en Sulfide (A	1)			lucky Mine				Plains Depressions (F16)
	d Layers (A5				leyed Mat				RR H outside of MLRA 72 & 73)
_					-				ced Vertic (F18)
☐ 1 cm Muck (A9) (LRR F, G, H) ☐ Depleted Below Dark Surface (A11) ☐ Redox Dark Surface (F6)							_	arent Material (TF2)	
Thick Dark Surface (A12)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)						)	☐ Very S	Shallow Dark Surface (TF12)	
Sandy Mucky Mineral (S1)  Redox Depressions (F8)								(Explain in Remarks)	
2.5 cm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16)								of hydrophytic vegetation and	
5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of L						3 of LR	RH)		d hydrology must be present,
) o o tri o tivo	Lavor (if pro	cont).						unless	disturbed or problematic.
	Layer (if pre								
Type: Depth (in	iches).							Hydric Soil	Present? Yes V No D
	1-0		· · · · · · · · · · · · · · · · · · ·		4 - 4 - 14 4	l			
			ix was obsei	rvea in soil					
• • •		regetation or					is cons	sidered upland.	. The data point did not exhibit
	yaropriyao v	egetation or	wetland hyd				is cons	sidered upland.	. The data point did not exhibit
		egetation or					is cons	sidered upland.	. The data point did not exhibit
	OGY						is cons	sidered upland.	. The data point did not exhibit
Vetland Hy	OGY vdrology Indi	cators:	wetland hyd	drology duri	ng site v		is cons		
Vetland Hy Primary Indi	OGY vdrology Indi	cators: num of one req	wetland hyd	drology duri	ng site v		is cons	_ <u>Seconda</u>	ary Indicators (minimum of two require
Vetland Hy rimary Indi	OGY rdrology Indi icators (minim s Water (A1)	cators: num of one req	wetland hyd	drology duri	ng site v	isit.	is cons	Seconda	ary Indicators (minimum of two required face Soil Cracks (B6)
Vetland Hy Primary Indi Surface High Wa	OGY  rdrology Indi ficators (minim  Water (A1) fater Table (A	cators: num of one req	wetland hyd	all that apply Salt Crust (I Aquatic Inve	ng site v	(B13)	a is cons	<u>Seconda</u> □ Sur □ Spa	ary Indicators (minimum of two require face Soil Cracks (B6) arsely Vegetated Concave Surface (B8
Vetland Hy Primary Indi Surface High Wa	ody odrology Indi ocators (minim owater (A1) ater Table (A. ion (A3)	cators: num of one req	wetland hyd	all that apply Salt Crust (I Aquatic Inve	ng site v  1  B11)  ertebrates sulfide Odd	(B13) or (C1)		<u>Seconda</u> Sur Spa Dra	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8 inage Patterns (B10)
Vetland Hy Primary Indi Surface High Wa Saturati Water M	ody vdrology Indi icators (minim water (A1) later Table (Al ion (A3) Marks (B1)	cators: num of one req 2)	wetland hyd	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season	ng site v  B11) ertebrates sulfide Ode	(B13) or (C1) able (C2		Seconda Sur Spa Dra Dra	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C
Vetland Hy Primary Indi Surface High Wall Saturati Water M	ody rdrology Indi icators (minim water (A1) ater Table (A ion (A3) Marks (B1) nt Deposits (	cators: num of one req 2)	wetland hyd	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Rh	ng site v  B11) ertebrates sulfide Odo Water Ta	(B13) or (C1) able (C2		Seconda Sur Spa Dra Dra Oxides (C3)	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C where tilled)
Vetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De	ody vdrology Indi icators (minim wdater (A1) ater Table (A) ion (A3) Marks (B1) int Deposits (B3)	cators: num of one req 2)	wetland hyd	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Rh (where ne	ng site v  B11) ertebrates sulfide Ode Water Ta nizosphere of tilled)	(B13) or (C1) able (C2	) ving Roo	Seconda Sur Spa Dra Oxidas (C3) Cra	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C where tilled) yfish Burrows (C8)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De	ody vdrology Indicators (minimal water (A1) ater Table (A1) ion (A3) Marks (B1) int Deposits (B3) at or Crust (B3)	cators: num of one req 2)	wetland hyd	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Rh (where ne	ng site v  B11) ertebrates sulfide Ode Water Ta nizosphere ot tilled) f Reduced	(B13) or (C1) able (C2 es on Liv	) ving Roo	Seconda Sur Spa Spa Dra Oxides (C3) (M	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Country tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9)
Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma	order (Marks (B1)) at Deposits (B3) at or Crust (B5)	cators: num of one req 2) B2)	uired; check a	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Ri (where ne Presence of	ng site v  B11) ertebrates sulfide Ode Water Ta nizosphere of tilled) f Reduced Gurface (C	(B13) or (C1) able (C2 es on Liv	) ving Roo	SecondsSurSpaDraOxides (C3) (wCraSati	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (County) vyfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2)
Vetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron De	order (Marks (B1) at or Crust (B5) ion Visible on	cators: num of one req 2) B2) 4) Aerial Imager	uired; check a	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Rh (where ne	ng site v  B11) ertebrates sulfide Ode Water Ta nizosphere of tilled) f Reduced Gurface (C	(B13) or (C1) able (C2 es on Liv	) ving Roo	Seconda	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Covhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2) C-Neutral Test (D5)
Vetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron De Inundati Water-S	order of the control	cators: num of one req 2) B2) 4) Aerial Imager	uired; check a	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Ri (where ne Presence of	ng site v  B11) ertebrates sulfide Ode Water Ta nizosphere of tilled) f Reduced Gurface (C	(B13) or (C1) able (C2 es on Liv	) ving Roo	Seconda	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (County) vyfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2)
Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron De Inundat Water-S Field Obser	order violate of the control of the	cators: num of one req 2) B2) 4) Aerial Imager es (B9)	uired; check a	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Rt (where no Presence of Thin Muck S Other (Expl	ng site v  B11) ertebrates sulfide Ode Water Ta nizosphere ot tilled) f Reduced Surface (C	(B13) or (C1) able (C2 es on Liv I Iron (C	ring Root	Seconda	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Covhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2) C-Neutral Test (D5)
Primary Indi Surface High Wa Saturati Vater M Sedime Drift De Iron De Inundat Water-S Field Obser Surface Wat	order of the property of the p	cators: num of one req  2)  B2)  4)  Aerial Imager es (B9)  Yes	y (B7)	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Rh (where ne Presence of Thin Muck S Other (Expl	ng site v  B11) ertebrates sulfide Ode Water Ta nizosphere of tilled) f Reduced Surface (Cain in Ren	(B13) or (C1) able (C2 es on Liv I Iron (C	ring Root	Seconda	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Covhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2) C-Neutral Test (D5)
Primary Indi Surface High Wa Saturati Vater N Sedime Drift De Algal Ma Iron De Inundat Water-S Field Obser Surface Water Table	order of the present?  Part of the present?	cators: num of one req  2)  B2)  4) Aerial Imager es (B9)  Yes  Yes	y (B7)  No V	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Rh (where ne Presence of Thin Muck S Other (Expl	ng site v  B11) ertebrates sulfide Odo Water Ta nizosphere of tilled) f Reduced Surface (Cain in Ren	(B13) or (C1) able (C2 es on Liv H Iron (C	) ving Root	Seconda Sur Spa Dra Oxides (C3) (w Cra Sate Geo	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Covhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) comorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Primary Indi Surface High Wa Saturati Vater M Algal Ma Iron De Inundati Water-S Field Obser Surface Water Table Saturation P includes ca	order of the property of the p	cators: num of one req  2)  B2)  4)  Aerial Imager es (B9)  Yes  Yes  Yes  Yes  Yes	y (B7)  No  No  No  No	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Rh (where ne Presence o Thin Muck S Other (Expl	ng site v  B11) ertebrates sulfide Ode Water Ta nizosphere of tilled) f Reduced Surface (Cain in Ren nes): nes):	(B13) or (C1) able (C2 es on Liv I Iron (C	oring Root 4)	Seconda Sur Spa Dra Oxides (C3) (w Sate FAC Fros	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Covhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2) C-Neutral Test (D5)
Primary Indi  Surface  High Water Male Sedime  Drift De  Algal Male Inundati Water-Seled Obser  Surface Water Table  Saturation Perincludes ca	order of the property of the p	cators: num of one req  2)  B2)  4) Aerial Imager es (B9)  Yes  Yes	y (B7)  No  No  No  No	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Rh (where ne Presence o Thin Muck S Other (Expl	ng site v  B11) ertebrates sulfide Ode Water Ta nizosphere of tilled) f Reduced Surface (Cain in Ren nes): nes):	(B13) or (C1) able (C2 es on Liv I Iron (C	oring Root 4)	Seconda Sur Spa Dra Oxides (C3) (w Sate FAC Fros	ary Indicators (minimum of two require face Soil Cracks (B6) arsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Content of the tilled) byfish Burrows (C8) curation Visible on Aerial Imagery (C9) comorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Primary Indi Surface High Wa Saturati Vater M Sedime Drift De Inundati Water-S Field Obser Surface Water Table Saturation Peincludes ca	order of the property of the p	cators: num of one req  2)  B2)  4)  Aerial Imager es (B9)  Yes  Yes  Yes  Yes  Yes	y (B7)  No  No  No  No	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Rh (where ne Presence o Thin Muck S Other (Expl	ng site v  B11) ertebrates sulfide Ode Water Ta nizosphere of tilled) f Reduced Surface (Cain in Ren nes): nes):	(B13) or (C1) able (C2 es on Liv I Iron (C	oring Root 4)	Seconda Sur Spa Dra Oxides (C3) (w Sate FAC Fros	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Covhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) comorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Primary Indi Surface High Water M Sedime Difft De Inundate Water-S Field Obser Surface Water Table Saturation Princludes car Describe Re	order viology Indicators (minimal service (A1) ater Table (A1) ater Table (A2) ater Table (B1) ater Table (B3) at or Crust (B3) at or Crust (B4) at or Crust (B5) at or Crust (B	cators: num of one req  2)  B2)  4)  Aerial Imager es (B9)  Yes  Yes  Yes  Yes  Yes	y (B7)  No	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Rh (where no Presence or Thin Muck S Other (Expl	ng site v  B11) ertebrates culfide Ode Water Ta nizosphere ot tilled) f Reduced Surface (Cain in Ren  nes):	(B13) or (C1) able (C2 es on Liv I Iron (C 7) narks)	oring Root 4)	Seconda Sur Spa Dra Oxides (C3) (w Sate FAC Fros	ary Indicators (minimum of two require face Soil Cracks (B6) arsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Content of the tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) comorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Vetland Hy rimary Indi  Surface  High Water M Sedime Drift De Algal Mater Sedime Inundate Water Sedime Water Sedime water Sedime water Sedime water Table saturation Pencludes calescribe Red	order viology Indicators (minimal service (A1) ater Table (A1) ater Table (A2) ater Table (B1) ater Table (B3) at or Crust (B3) at or Crust (B4) at or Crust (B5) at or Crust (B	cators: num of one req  2)  B2)  4)  Aerial Imager es (B9)  Yes Yes Yes (stream gauge	y (B7)  No	all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Rh (where no Presence or Thin Muck S Other (Expl	ng site v  B11) ertebrates culfide Ode Water Ta nizosphere ot tilled) f Reduced Surface (Cain in Ren  nes):	(B13) or (C1) able (C2 es on Liv I Iron (C 7) narks)	oring Root 4)	Seconda Sur Spa Dra Oxides (C3) (w Sate FAC Fros	ary Indicators (minimum of two require face Soil Cracks (B6) arsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Concave tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) comorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)

Project/Site: Kindsfater	City/County: Yellowstone	Sampling Da	te: 6/15/2021
		State: Montana Sampling Poi	
Investigator(s): R Quire, S Weyant			
Landform (hillslope, terrace, etc.): Depression			
Subregion (LRR): LRR F Lat:	45.694765 Lor	ng: -108.697358 <sub>[</sub>	Datum: NAD 83
Soil Map Unit Name: Bm: Bew silty clay loam, 0-1% slopes			
Are climatic / hydrologic conditions on the site typical for this time of ye			
Are Vegetation, Soil, or Hydrology significantly			✓ No □
Are Vegetation , Soil , or Hydrology naturally pro	oblematic? (If needed	d, explain any answers in Remarks	 .)
SUMMARY OF FINDINGS – Attach site map showing	sampling point loca	tions, transects, importan	t features, etc
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Yes   No   No   No   No   No   No   No   N	Is the Sampled Area within a Wetland?	a Yes <u>V</u> No □	
Remarks: PEM depressional wetland in wetland cell 6. Vegetat dominance of FACU species to more hydrophytic sp	ion is still transitioning in ecies.	this recently inundated wetlan	d area from a
VEGETATION - Use scientific names of plants  Absolute Domiant	Indicator		
Tree Stratum Plot size (30 Foot Radius) % Cover: Species	? Status N	ominance Test worksheet umber of Dominant Species at are OBL, FACW or FAC:	1 (A)
	Т	otal Number of Dominant pecies Across All Strata:	2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		ercent of Dominant Species hat Are OBL, FACW, or FAC:	50.0 % (A/B)
Tierose (10 1 oct radias)		revalence Index worksheet	
	· · · · · · · · · · · · · · · · · · ·	Total % Cover of:  BL species 0 X 1	Multiply by:
	l F	ACW species 25 X 2	50
	F	AC species 0 X 3	0
Herbaceous Stratum Plot size ( 5 Foot Radius)	F	ACU species 60 X 4	240
Alopecurus arundinaceus 25	FACW	PL species 0 X 5	0
Elymus repens 45 🗸	17100	olumn Totals 85 (A)	290 (B)
Poa pratensis 15	FACU	Prevalence Index = B/A =	3.41
	Н	ydrophytic Vegetation Indicators	
		1 - Rapid Test for Hydrophyt	-
		2 - Dominance Test is >50%	
		☐ 3 - Prevalence Index is <= 3.	.0
		<ul> <li>4 - Morphological Adaptation supporting data in remarks o sheet.</li> </ul>	
		5 - Wetland Non-Vascular Pl	ants
		✓ Problematic Hydrophytic Veg	getation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)		icators of hydric sil and wetland hydric sent, unless disturbed or problema	drology must be
Percent Bare Ground 15		ydrophytic Vegetation resent? Yes	✓ NO □
Remarks:			
BG/litter/shallow ponded water=15%. Vegetation is still transit FACU species to more hydrophytic species.	ioning in this recently inu	ndated wetland area from a do	minance of

US Army Corps of Engineers B-35 Great Plains - Version 2.0

SOIL Sampling Point: DP04w

"Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.  "Location: PHydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Histosol (A1)	Remarks
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.  Phydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)  Histosol (A2)  Histosol (A2)  Sandy Redox (S5)  Black Histic (A3)  Hydrogen Sulfide (A4)  Loamy Mucky Mineral (F1)  Loamy Gleyed Matrix (F2)  Loamy Mucky Mineral (F1)  Loamy Mucky Mineral (F1)  Loamy Mucky Mineral (F1)  Loamy Mucky Mineral (F2)  Loamy Mucky Mineral (F3)  Reduced Vertic  Redox Dark Surface (F6)  Red Parent Ma  Redox Dark Surface (F6)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Some Mucky Peat or Peat (S2) (LRR G, H)  Loamy Mucky Depleted Dark Surface (F6)  Red Parent Ma  Redox Depressions (F8)  Other (Explain  Thick Dark Surface (R2)  Sandy Mucky Mineral (S1)  Some Mucky Peat or Peat (S2) (LRR G, H)  Loamy Mucky Mineral (F1)  Pept Matrix (F2)  Redox Depressions (F8)  Other (Explain  Type:  Depth (inches):  Remarks: Prominent redoximorphic concentrations common within the depleted matrix.  Phypric Soil Present  Promary Indicators (minimum of one required: check all that apply)  Surface Water (A1)  Water Marks (B1)  Dy-Season Water Table (C2)  Drainage Pa  Now Hydrogen Sulfide Odor (C1)  Drainage Pa  Now Hydrogen Sulfide Odor (C1)  Drainage Pa  Sediment Deposits (B2)  Oxidized Rhis  Now Surface (C7)  Geomorphic  Indicators:  Frost-Heave  Field Observations:  Surface Water Present?  Yes W No Depth (inches):  1	romano
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    Phydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)   Indicators for Prof.	le bottom.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)  Histosol (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Coast Prairie R  Black Histic (A3)  Hydrogen Sulfide (A4)  Coard Matrix (S6)  Hydrogen Sulfide (A4)  Coard Matrix (S6)  Hydrogen Sulfide (A4)  Coard Matrix (F1)  Stratified Layers (A5) (LRR F)  Coast Prairie R  Reduced Vertic Reduced Vertic R  Red Parent Ma  Cother (Explain  Cother (Explain	ie bottom.
Histosol (A1)   Sandy Gleyed Matrix (S4)   1 cm Muck (A9   Histosol (A1)   Sandy Gleyed Matrix (S6)   Dark Surface (S6)   Red Dark Surface (S6)   Red Dark Surface (S6)   Red Parent Ma   Dark Dark Surface (A12)   Depleted Matrix (F3)   Redox Dark Surface (F7)   Very Shallow Dark Surface (A12)   Depleted Dark Surface (F7)   Very Shallow Dark Surface (A12)   Depleted Dark Surface (F7)   Very Shallow Dark Surface (F6)   Red Parent Ma   Dark Surface (F7)   Sandy Mucky Mineral (S1)   Redox Dark Surface (F7)   Very Shallow Dark Surface (F6)   Red Parent Ma   Dark Surface (F7)   Very Shallow Dark Surface (F6)   Red Parent Ma   Dark Surface (F7)   Very Shallow Dark Sur	
Histosol (A1)   Sandy Gleyed Matrix (S4)   1 cm Muck (A9   Histosol (A1)   Sandy Gleyed Matrix (S6)   Dark Surface (S6)   Dark Surface (S6)   Dark Surface (S6)   Dark Surface (S6)   Hydrogen Sulfide (A4)   Loamy Mucky Mineral (F1)   High Plains Depleted Below Dark Surface (A11)   Redox Dark Surface (F6)   Red Parent Ma   Depleted Below Dark Surface (A12)   Depleted Dark Surface (F7)   Very Shallow D   Other (Explain Depth (Inches):   Type:   Depth (Inches):   Hydrogen Sulfide (A2)   Caray (Back A11)   Redox Dark Surface (F6)   Red Parent Ma   Depleted Below Dark Surface (A12)   Depleted Dark Surface (F7)   Very Shallow D   Other (Explain Depth (Inches):   Hydric Soil Presents (S2) (LRR G, H)   High Plains Depressions (F16)   Sem Mucky Peat or Peat (S2) (LRR G, H)   High Plains Depressions (F16)   Wetland Hydrology Indicators of hydrogen wetland hydrology (Indicators (Inches):   Hydric Soil Presents (Inches):   Hydric Soil Presents (Inches):   Hydric Soil Presents (Inches):   Surface Water (A1)   Surface Soil   Salt Crust (B11)   Surface Soil   Sparsely Very (Indicator (Inches):   Surface Water (A2)   Aquatic Invertebrates (B13)   Sparsely Very (Indicator (Inches):   Surface Water (A2)   Aquatic Invertebrates (B13)   Sparsely Very (Inches):   Surface Water (A1)   Dry-Season Water Table (C2)   Oxidized Rhizospheres on Living Roots (C3)   Oxidized Rhizospheres on Living Roots (C3)   (where till   Drift Deposits (B2)   Oxidized Rhizospheres on Living Roots (C3)   Geomorphic Inches (Inches):   Indicator (Inches):   FAC-Neutral   Water-Stained Leaves (B9)   Other (Explain in Remarks)   FAC-Neutral   Water-Stained Leaves (B9)   Depth (inches):   1	
Histosol (A1)   Sandy Gleyed Matrix (S4)   1 cm Muck (A9   Black Histic (A3)   Sandy Redox (S5)   Coast Prairie R   Black Histic (A3)   Stripped Matrix (S6)   Dark Surface (S6)   Hydrogen Sulfide (A4)   Loamy Mucky Mineral (F1)   High Plains Depteted Below Dark Surface (A11)   Redox Dark Surface (F6)   Red Parent Ma   Depleted Below Dark Surface (A12)   Depleted Dark Surface (F7)   Very Shallow D   Other (Explain Deptetic Layer (If present):    Tom Muck (A9) (LRR F, G, H)   Depleted Dark Surface (F7)   Very Shallow D   Other (Explain Depteted Dark Surface (A12)   Depleted Dark Surface (F7)   Very Shallow D   Other (Explain Depteted Dark Surface (A13)   Redox Depressions (F16)   Sem Mucky Peat or Peat (S2) (LRR G, H)   High Plains Depressions (F16)   Sem Mucky Peat or Peat (S3) (LRR F)   (MLRA 72 & 73 of LRR H)   Wetland Hydrole unless disturbe (eterrictive Layer (if present):    Type:	
Histosol (A1)   Sandy Gleyed Matrix (S4)   1 cm Muck (A9   Histosol (A1)   Sandy Gleyed Matrix (S6)   Dark Surface (S6)   Dark Surface (S6)   Dark Surface (S6)   Dark Surface (S6)   Hydrogen Sulfide (A4)   Loamy Mucky Mineral (F1)   High Plains Depleted Below Dark Surface (A11)   Redox Dark Surface (F6)   Red Parent Ma   Depleted Below Dark Surface (A12)   Depleted Dark Surface (F7)   Very Shallow D   Other (Explain Depth (Inches):   Type:   Depth (Inches):   Hydrogen Sulfide (A2)   Caray (Back A11)   Redox Dark Surface (F6)   Red Parent Ma   Depleted Below Dark Surface (A12)   Depleted Dark Surface (F7)   Very Shallow D   Other (Explain Depth (Inches):   Hydric Soil Presents (S2) (LRR G, H)   High Plains Depressions (F16)   Sem Mucky Peat or Peat (S2) (LRR G, H)   High Plains Depressions (F16)   Wetland Hydrology Indicators of hydrogen wetland hydrology (Indicators (Inches):   Hydric Soil Presents (Inches):   Hydric Soil Presents (Inches):   Hydric Soil Presents (Inches):   Surface Water (A1)   Surface Soil   Salt Crust (B11)   Surface Soil   Sparsely Very (Indicator (Inches):   Surface Water (A2)   Aquatic Invertebrates (B13)   Sparsely Very (Indicator (Inches):   Surface Water (A2)   Aquatic Invertebrates (B13)   Sparsely Very (Inches):   Surface Water (A1)   Dry-Season Water Table (C2)   Oxidized Rhizospheres on Living Roots (C3)   Oxidized Rhizospheres on Living Roots (C3)   (where till   Drift Deposits (B2)   Oxidized Rhizospheres on Living Roots (C3)   Geomorphic Inches (Inches):   Indicator (Inches):   FAC-Neutral   Water-Stained Leaves (B9)   Other (Explain in Remarks)   FAC-Neutral   Water-Stained Leaves (B9)   Depth (inches):   1	L David Lidas M Madd
Histic Epipedon (A2)	L=Pore Lining, M=Matrix.  lematic Hydric Soils <sup>3</sup> :
Black Histic (A3)	(LRR I, J)
Hydrogen Sulfide (A4)	edox (A16) ( <b>LRR F, G, H</b> )
Stratified Layers (A5) (LRR F)	7) (LRR G)
1 cm Muck (A9) (LRR F, G, H)	ressions (F16)
Depleted Below Dark Surface (A11)	side of MLRA 72 & 73)
Thick Dark Surface (A12)	
Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16) wetland hydrology unless disturbed to the set of the	
2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	ark Surface (TF12)
5 cm Mucky Peat or Peat (S3) (LRR F)	
terstrictive Layer (if present):  Type: Depth (inches): Hydric Soil Present  termarks: Prominent redoximorphic concentrations common within the depleted matrix.  **Prominent redoximo	
estrictive Layer (if present):  Type:	gy must be present, d or problematic.
Depth (inches):	
Prominent redoximorphic concentrations common within the depleted matrix.  Proportion of the prost of the pro	
	? Yes <u>V</u> No <u> </u>
Primary Indicators (minimum of one required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Dry-Season Water Table (C2)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water Surface Water (B9)  Secondary Indicators (B11)  Secondary Indicators (B11)  Surface Soil  Aquatic Invertebrates (B13)  Sparsely Veg  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots (C3)  (where not tilled)  Crayfish Burn  Saturation Vi  Geomorphic  FAC-Neutral  Water-Stained Leaves (B9)  Frost-Heave  Surface Water Present?  Yes  No  Depth (inches):  1	
Secondary Indicators (minimum of one required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots (C3)  Drift Deposits (B2)  Oxidized Rhizospheres on Living Roots (C3)  Mere not tilled  Crayfish Bun  Algal Mat or Crust (B4)  Presence of Reduced Iron (C4)  Iron Deposits (B5)  Thin Muck Surface (C7)  Water-Stained Leaves (B9)  FAC-Neutral  Water-Stained Leaves (B9)  Figure Again and Remarks (B1)  Secondary Indicators  Surface Water (B1)  Surface Soil  Aquatic Invertebrates (B13)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots (C3)  (where tilled)  Crayfish Bun  Crayfish Bun  Crayfish Bun  Crayfish Bun  Depth (inches):  FAC-Neutral  FAC-Neutral  Frost-Heave  Frost-Heave	
Surface Water (A1)  High Water Table (A2)  Aquatic Invertebrates (B13)  Sparsely Veg  Aquatic Invertebrates (B13)  Sparsely Veg  Hydrogen Sulfide Odor (C1)  Drainage Pa  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots (C3)  Where not tilled)  Presence of Reduced Iron (C4)  Iron Deposits (B5)  Thin Muck Surface (C7)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Inufface Water Present?  Yes  No  Depth (inches):  1	tors (minimum of two require
Aquatic Invertebrates (B13) Sparsely Veg Saturation (A3) Hydrogen Sulfide Odor (C1) Drainage Pa Water Marks (B1) Dry-Season Water Table (C2) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Vi Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)  Sparsely Veg Whydrogen Sulfide Odor (C1) Drainage Pa Oxidized Rhizospheres on Living Roots (C3) (where not tilled) Presence of Reduced Iron (C4) Saturation Vi Geomorphic FAC-Neutral FAC-Neutral Frost-Heave Surface Water Present?  Depth (inches):  1	•
Mater Marks (B1)	jetated Concave Surface (B8
Water Marks (B1)	
Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Diff Deposits (B2)  Oxidized Rhizospheres on Living Roots (C3)  (where tilled)  Presence of Reduced Iron (C4)  Saturation Visible on Aerial Imagery (B7)  Other (Explain in Remarks)  FAC-Neutral  Frost-Heave  Field Observations:  Surface Water Present?  Yes  No  Depth (inches):  1	zospheres on Living Roots (
Drift Deposits (B3) (where not tilled) □ Crayfish Burn □ Algal Mat or Crust (B4) □ Presence of Reduced Iron (C4) □ Saturation Vince Iron Deposits (B5) □ Thin Muck Surface (C7) □ Geomorphic □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ FAC-Neutral □ Water-Stained Leaves (B9) □ Frost-Heave Steld Observations:    Surface Water Present? Yes □ No □ Depth (inches): 1	,
Algal Mat or Crust (B4)	
☐ Iron Deposits (B5) ☐ Thin Muck Surface (C7) ☐ Geomorphic ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ FAC-Neutral ☐ Water-Stained Leaves (B9) ☐ Frost-Heave ☐ Frost-Heave ☐ Surface Water Present? Yes ☑ No ☐ Depth (inches): ☐ 1	
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) FAC-Neutral Water-Stained Leaves (B9) Frost-Heave Field Observations:  Surface Water Present? Yes Very No Depth (inches): 1	sible on Aerial Imagery (C9)
Water-Stained Leaves (B9) Frost-Heave   Field Observations: No Depth (inches): 1	
Field Observations:  Surface Water Present? Yes No Depth (inches): 1	
Surface Water Present? Yes No Depth (inches): 1	Hummocks (D7) (LRR F)
Vater Table Present? Yes ❤️ No │ Depth (inches): U │	
Saturation Present? Yes 🔽 No 🔲 Depth (inches): 0 Wetland Hydrology Preser (includes capillary fringe)	t? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Domarks:	
Remarks: Area surrounding wetland edge is transitioning to wetland. This wetland area is expected to incommonitoring years if precipitation levels increase and shallow groundwater persists. Evidence of	ease in size in future

Project/Site: Kindsfater		City/C	County: Yellowstor	ne	Sampling Da	te:6/15/2021
Applicant/Owner: MDT			-			
Investigator(s): R Quire, S Weyant					2S 2	
Landform (hillslope, terrace, etc.): Terrace						
Subregion (LRR): LRR F						
Soil Map Unit Name: Bm: Bew silty clay loam,						
Are climatic / hydrologic conditions on the site typi						·PP
Are Vegetation, Soil, or Hydrology	significa	ntly distui	rbed? Are "N	ormal Circumstance	s" present? Yes	No
Are Vegetation, Soil, or Hydrology	naturally	/ problem	atic? (If nee	ded, explain any an	swers in Remarks.	.)
SUMMARY OF FINDINGS - Attach sit	te map show	ing san	npling point lo	cations, transe	cts, important	t features, etc
Hydrophytic Vegetation Present? Yes			Is the Sampled A	\rea		
Hydric Soil Present? Yes	No <u></u>			l? Yes_	□ No ✓	
Wetland Hydrology Present? Yes				103_		
Remarks: Upland sample point located upsk	ope of DP05w a	and wetla	and boundary.			
VEGETATION - Use scientific names	of plants					
<u>Tree Stratum</u> Plot size (30 Foot Radius)	Absolute Dom % Cover: Spec		ndicator Status	Dominance Test	worksheet	
Populus deltoides	10 🗸	] F	AC	Number of Dominathat are OBL, FAC		1 (A)
				Total Number of D Species Across A		4 (B)
				Percent of Domina		25.0 % (A/B)
Sapling/Shrub Stratum Plot size (15 Foo				Prevalence Index	, , , , , , , , , , , , , , , , , , ,	
Elaeagnus angustifolia	5	] FA	ACU_	Total % Cov		Multiply by:
				OBL species		0
				FACW species	0 X2	0
				FAC species	10 X3	30
Herbaceous Stratum Plot size ( 5 Foo	t Radius)			FACU species		140
Bromus tectorum	43	NL		UPL species	55 X 5	275
Convolvulus arvensis	2	] NL	,	Column Totals	100 (A)	445 (B)
Descurainia sophia	10	] NL		Prevalence In	ndex = B/A =	4.45
Elymus repens	30	FA	CU	Hydrophytic Veg	etation Indicators	 S
					Test for Hydrophyti	
				2 - Domina	ance Test is >50%	
					ence Index is <= 3.	
					ological Adaptation data in remarks o	
					d Non-Vascular Pl	ants
Woody Vine Stratum Plot size ( 30 Foo	t Radius)				ic Hydrophytic Veg	,
				Indicators of hydric present, unless dist		
Percent Bare Ground 15				Hydrophytic Vege Present?	etation Yes	□ NO 🗹
Remarks:						
BG/litter=15%. Data point is dominated by เ	upland vegetati	on.				

SOIL Sampling Point: DP05u

(inches)	Color (moist)	<u></u> %	Color (moist)	<u>x Features</u> % Type <sup>1</sup>	Loc <sup>2</sup>	- Texture	Remarks
0-14	10YR 4/3	100				Clay Loam	Cobbly.
	-						
	-						
	oncentration, D=De Indicators: (Appl			S=Covered or Coate	d Sand C		cation: PL=Pore Lining, M=Matrix.  for Problematic Hydric Soils <sup>3</sup> :
Histosol		ilcable to all LN		Gleyed Matrix (S4)			fluck (A9) (LRR I, J)
	pipedon (A2)			Redox (S5)			Prairie Redox (A16) (LRR F, G, H)
_	istic (A3)			l Matrix (S6)			Surface (S7) (LRR G)
🗌 Hydroge	en Sulfide (A4)		Loamy I	Mucky Mineral (F1)		High P	lains Depressions (F16)
	d Layers (A5) ( <b>LRF</b>			Gleyed Matrix (F2)			RR H outside of MLRA 72 & 73)
_	uck (A9) (LRR F, G	-	= '	d Matrix (F3)		_	ed Vertic (F18)
	d Below Dark Surfa ark Surface (A12)	ace (ATT)		Dark Surface (F6) d Dark Surface (F7)			arent Material (TF2) hallow Dark Surface (TF12)
=	Mucky Mineral (S1)			Depressions (F8)		= '	(Explain in Remarks)
_	Mucky Peat or Pea			ins Depressions (F	16)		of hydrophytic vegetation and
5 cm Mı	ucky Peat or Peat (	(S3) ( <b>LRR F</b> )	(ML	RA 72 & 73 of LRR	H)		d hydrology must be present,
						unless	disturbed or problematic.
	Layer (if present):						
Type:	-h ).		_			Hardela Oall	Present? Yes No
Depth (in						Hydric Soil	Present? Yes No
remarks: N	o evidence of hy	dric soil indica	itors observed.				
YDROLO	o <b>G</b> Y						
	GY drology Indicator	s:					
Vetland Hy	drology Indicator	f one required; c					ary Indicators (minimum of two required
/etland Hy rimary Indio	drology Indicator cators (minimum of Water (A1)	f one required; c	Salt Crust	(B11)		Surf	ace Soil Cracks (B6)
<b>/etland Hy</b> rimary Indio Surface High Wa	drology Indicator cators (minimum of Water (A1) ater Table (A2)	f one required; c	Salt Crust Aquatic Inv	(B11) vertebrates (B13)		Surl	race Soil Cracks (B6) rsely Vegetated Concave Surface (B8)
Vetland Hyrrimary India  Surface  High Wa  Saturation	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3)	f one required; c	Salt Crust Aquatic Inv	(B11) vertebrates (B13) Sulfide Odor (C1)		Surl	race Soil Cracks (B6) rsely Vegetated Concave Surface (B8) mage Patterns (B10)
rimary Indio Timary Indio Surface High Wa Saturatio Water M	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1)	f one required; c	Salt Crust Aquatic Inv Hydrogen	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2)	ng Poet	Surl Spa Drai	race Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C3
vetland Hy rimary India Surface High Wa Saturatia Water M Sedimen	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2)	f one required; c	Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized R	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2) khizospheres on Liv	ng Roots	Surf	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C3 rhere tilled)
Vetland Hy rimary India Surface High Wa Saturatia Water M Sedimei	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3)	f one required; c	Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized R	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2) Rhizospheres on Liv	•	Surfi Surfi Spa Drai Doxid S (C3) (w	Face Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C3 where tilled) which Burrows (C8)
Vetland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	f one required; c	Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized R (where r	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2) Rhizospheres on Liv not tilled) of Reduced Iron (C4	•	Surl Spa Drai Oxio s (C3) Crai Satu	Face Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C3 rhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9)
Vetland Hy rimary India Surface High Wa Saturati Water M Sedimer Drift Dep Algal Ma	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3)	f one required; c	Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized R (where r	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2) Rhizospheres on Liv	•	Surf	Face Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C3 where tilled) which Burrows (C8)
Vetland Hy rimary India Surface High Wa Saturatia Water M Sedimer Drift Der Algal Ma Iron Der	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	f one required; c	Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized R (where r	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2) Rhizospheres on Liv not tilled) of Reduced Iron (C4 Surface (C7)	•	Surf Spa Spa Drai Oxio S (C3) (w Cray Satu Geo	Face Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C3 rhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) imorphic Position (D2)
Vetland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Der Algal Ma Iron Der Inundati Water-S	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria stained Leaves (B9	f one required; c	Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized R (where r	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2) Rhizospheres on Liv not tilled) of Reduced Iron (C4 Surface (C7)	•	Surf Spa Spa Drai Oxio S (C3) (w Cray Satu Geo	race Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C3 where tilled) offish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2) C-Neutral Test (D5)
Primary India Surface High Wa Saturatia Water M Sedimer Drift Der Algal Ma Iron Der Inundatia Water-S Field Obser	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria stained Leaves (B9	f one required; c	Salt Crust Aquatic Inv Hydrogen S Dry-Seaso Oxidized R (where r Presence of Thin Muck Other (Exp	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2) Rhizospheres on Liv not tilled) of Reduced Iron (C4 Surface (C7)	)	Surf Spa Spa Drai Oxio S (C3) (w Cray Satu Geo	race Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C3 where tilled) offish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2) C-Neutral Test (D5)
Primary India  Surface  High Wa  Saturatia  Water M  Sedimer  Drift Der  Iron Der  Inundatia  Water-S  Gurface Water	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria stained Leaves (B9 rvations: er Present?	f one required; o	Salt Crust Aquatic Inv Hydrogen : Dry-Seaso Oxidized R (where r Presence of Thin Muck Other (Exp	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2) Rhizospheres on Liv not tilled) of Reduced Iron (C4 Surface (C7) plain in Remarks)		Surficients Surficient Surficient Surficient Surficient Surficient Surficient Surficient Surficient Su	Face Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C3 where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) imorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Vetland Hy Primary India Surface High Wa Saturatia Vater M Sedimer Drift Der Iron Der Inundati Water-S Geld Obser Surface Water Vater Table Saturation Pencludes cap	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria stained Leaves (B9 rvations: per Present? Present? present?	al Imagery (B7) )  Yes No Yes No Yes No	Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized R (where r Presence of Thin Muck Other (Exp	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2) Rhizospheres on Liv not tilled) of Reduced Iron (C4 Surface (C7) olain in Remarks)  ches):		Surficients Surficient Surficient Surficie	race Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C3 where tilled) offish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2) C-Neutral Test (D5)
Primary Indice Surface High Wa Saturation Water M Sedimen Drift Den Algal Ma Iron Den Inundatin Water-S Field Obser Surface Water Table Saturation P includes cal	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria stained Leaves (B9 rvations: per Present? Present? present?	al Imagery (B7) )  Yes No Yes No Yes No	Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized R (where r Presence of Thin Muck Other (Exp	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2) thizospheres on Liv not tilled) of Reduced Iron (C4 Surface (C7) olain in Remarks)  ches):		Surficients Surficient Surficient Surficie	Face Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C3 where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) imorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Primary India Surface High Wa Saturatia Vater M Sedimer Drift Der Iron Der Inundati Water-S Field Obser Surface Water Table Saturation Per	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria stained Leaves (B9 rvations: per Present? Present? present?	al Imagery (B7) )  Yes No Yes No Yes No	Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized R (where r Presence of Thin Muck Other (Exp	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2) Rhizospheres on Liv not tilled) of Reduced Iron (C4 Surface (C7) olain in Remarks)  ches):		Surficients Surficient Surficient Surficie	Face Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C3 where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) imorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Vetland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Der Algal Ma Iron Der Inundatia Water-S Gield Obser Surface Water Table Saturation P Includes cap Describe Re	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria stained Leaves (B9 rvations: per Present? Present? present?	al Imagery (B7) )  Yes No Yes No Yes No win gauge, monit	Salt Crust Aquatic Inv Hydrogen in Dry-Seaso Oxidized R (where r Presence of Thin Muck Other (Exp  Depth (inc Depth (inc oring well, aerial p	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2) Rhizospheres on Liv not tilled) of Reduced Iron (C4 Surface (C7) olain in Remarks)  ches): ches): chotos, previous ins		Surficients Surficient Surficient Surficie	Face Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C3 where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) imorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Vetland Hy rimary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati Water-S ield Obser urface Wat Vater Table aturation P ncludes cap vescribe Re	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria stained Leaves (B9 rvations: are Present? Present? pillary fringe) corded Data (strea	al Imagery (B7) )  Yes No Yes No Yes No win gauge, monit	Salt Crust Aquatic Inv Hydrogen in Dry-Seaso Oxidized R (where r Presence of Thin Muck Other (Exp  Depth (inc Depth (inc oring well, aerial p	(B11) vertebrates (B13) Sulfide Odor (C1) n Water Table (C2) Rhizospheres on Liv not tilled) of Reduced Iron (C4 Surface (C7) olain in Remarks)  ches): ches): chotos, previous ins		Surficients Surficient Surficient Surficie	race Soil Cracks (B6) rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Carlere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) imorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)

Project/Site: Kindsfater City/County: Yellows	stone Sampling Date: 6/15/2021
Applicant/Owner: MDT	State: Montana Sampling Point: DP05w
Investigator(s): R Quire, S Weyant Section, Township, R	Range: 6 2S 25E
Landform (hillslope, terrace, etc.): depression Local relief (concave	e, convex, none): concave Slope (%):
Subregion (LRR):         LRR F         Lat:         45.6963	337 Long:108.697189 Datum: NAD 83
Soil Map Unit Name: Bm: Bew silty clay loam, 0-1% 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	e "Normal Circumstances" present? Yes 🔽 No 🔲
Are Vegetation , Soil , or Hydrology naturally problematic? (If	needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling point	locations, transects, important features, etc
Wetland Hydrology Present? Yes No	and? Yes V No No
Remarks: PEM depressional wetland near northwestern corner of site. Vegetation wetland area from a dominance of FACU species to more hydrophytic site.  VEGETATION - Use scientific names of plants	n is still transitioning in this recently inundated species.
Absolute Domiant Indicator	Dominance Test worksheet
Tree Stratum Plot size (30 Foot Radius) % Cover: Species? Status	Number of Dominant Species that are OBL, FACW or FAC:
	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)
,	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
Herbaceous Stratum Plot size ( 5 Foot Radius)	FACU species 70 X 4 280
Elymus repens 68 FACU	UPL species 0 X 5 0
Thlaspi arvense 2 FACU	Column Totals 70 (A) 280 (B)
	Prevalence Index = B/A = 4.00
	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)
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 30	Hydrophytic Vegetation Yes V NO
Remarks:	1
BG/litter=30%. Vegetation is still transitioning in this recently inundated wetland a hydrophytic species.	area from a dominance of FACU species to more

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SOIL Sampling Point: DP05w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix			k Features	3		_			
(inches)	Color (moist)	%	Color (moist)	%	_Type <sup>1</sup> _	Loc <sup>2</sup>	Texture	Remarks		
0-12	10YR 4/1	100				San	dy Clay Loan	1		
12+							Cobbles	Cobble bottom.		
1Typo: C=Co	ncentration, D=De	nlotion PM-Poo	lucod Matrix CS			d Sand Gr	oins <sup>2</sup> Loc	ation: PL=Pore Lining, M=Matrix.		
	ndicators: (Appli					a Sand Gr		for Problematic Hydric Soils <sup>3</sup> :		
Histosol				Sleyed Ma				uck (A9) ( <b>LRR I, J</b> )		
	ipedon (A2)			ledox (S5)				Prairie Redox (A16) (LRR F, G, H)		
Black His			_	Matrix (S				urface (S7) (LRR G)		
	n Sulfide (A4)			/lucky Min	,			ains Depressions (F16)		
Stratified	Layers (A5) (LRR	F)	Loamy (	∃leyed Ma	atrix (F2)		(LRI	R H outside of MLRA 72 & 73)		
	ck (A9) ( <b>LRR F, G</b> ,			d Matrix (F			_	ed Vertic (F18)		
	l Below Dark Surfa	ce (A11)		ark Surfa				rent Material (TF2)		
	rk Surface (A12)				rface (F7)			nallow Dark Surface (TF12)		
=	ucky Mineral (S1)	(C2) /LDD C LI)		epression		6)		Explain in Remarks)		
_	lucky Peat or Peat cky Peat or Peat (\$	. , ,			ssions (F1 '3 of LRR			of hydrophytic vegetation and hydrology must be present,		
5 cm wa	cky real or real (c	oo) (LIKIT)	(IVILI	VA 12 0.1	J OI LIXIX	•••		disturbed or problematic.		
Restrictive L	ayer (if present):							alstanza et prozioniatio.		
Type:										
• • • • • • • • • • • • • • • • • • • •	ches):		•				Hydric Soil I	Present? Yes <u>V</u> No		
. ,	ılfidic odor obser		-				1			
	illidic odol obsel	veu.								
HYDROLO										
=	Irology Indicators									
	ators (minimum of	one required; ch		,			•	ry Indicators (minimum of two required)		
✓ Surface \	Water (A1)		Salt Crust	(B11)				ace Soil Cracks (B6)		
•	ter Table (A2)		Aquatic Inv		` '			sely Vegetated Concave Surface (B8)		
✓ Saturatio			✓ Hydrogen :					nage Patterns (B10)		
Water Ma	` ,		Dry-Seaso			_		ized Rhizospheres on Living Roots (C3)		
	t Deposits (B2)		Oxidized R		res on Livir	ng Roots (		here tilled)		
_	osits (B3)			ot tilled)				fish Burrows (C8)		
	t or Crust (B4)		Presence of			)	_	ration Visible on Aerial Imagery (C9)		
	osits (B5)	(5-)	Thin Muck	,				morphic Position (D2)		
	on Visible on Aerial	Imagery (B7)	Other (Exp	lain in Re	marks)		_	-Neutral Test (D5)		
	ained Leaves (B9)						Frost	t-Heave Hummocks (D7) (LRR F)		
Field Observ		Voc V	Don'th /:	hoc):	2					
Surface Wate		Yes 🔽 No _				- [				
Water Table		Yes V No _				-		- · · · ·		
Saturation Pr (includes cap		Yes 🔽 No _	Depth (inc	hes):	0	_   Wetla	and Hydrology	Present? Yes No		
	corded Data (strear	n gauge, monitoi	ring well, aerial p	hotos, pre	evious insp	pections), i	if available:			
	`	- ·		, ,	<b>-</b>	,,				
Remarks: ⊏	idence of wetlers	hydrology inc	lude 2 inches	of surfac	e water o	a high wa	ter table soil	s saturated to surface, water		
	ined leaves, sulf				o water, c	a ingii wa	itoi tabio, sull	o catalated to sulface, water		
	•									

Project/Site: Kindsfater		City/C	ounty: Yellowsto	ne	Sampling D	ate:6/1	15/2021
Applicant/Owner: MDT				State: Montar			
Investigator(s): R Quire, S Weyant					2S		
Landform (hillslope, terrace, etc.): Hillside				=			: 27
Subregion (LRR): LRR F	Lat:		45.695514	Lona:	-108.695913	Datum: NA	D 83
Soil Map Unit Name: Bm: Bew silty clay loam, 0-1% slop							
Are climatic / hydrologic conditions on the site typical for this	time of ve	ar? Y	es 🗸 No	(If no explain	in Remarks )		
Are Vegetation, Soil, or Hydrology si						e 🗸 N	lo 🗆
Are Vegetation, Soil, or Hydrology na	aturally pr	oblema	otic? (If no	adad avalain any an	swers in Demark	s	
SUMMARY OF FINDINGS – Attach site map s	snowing	g sam	ipling point ic	cations, transe	cts, importai	nt reature	es, etc.
Hydrophytic Vegetation Present? Yes No	·		Is the Sampled	Area			
Hydric Soil Present? Yes No				d? Yes _	□ No ¥		
Wetland Hydrology Present? Yes No				_			
Remarks: Upland sample point located upslope of DP	06w and	l wetla	nd boundary.				
VEGETATION - Use scientific names of plant				•			
<u>Tree Stratum</u> Plot size (30 Foot Radius) Absolute % Cover:	Domian Species		dicator atus	Dominance Test	worksheet		
	- P			Number of Domina that are OBL, FAC		0 (A)	
				Total Number of D Species Across Al		1 (B)	
Sapling/Shrub Stratum Plot size (15 Foot Radius)				Percent of Domina That Are OBL, FA		0.0 %	(A/B)
<u>Saping on as Statum</u>				Prevalence Index	worksheet		
				Total % Cov		Multiply b	oy:
				OBL species FACW species	0 X1 0 X2	0	
				FAC species		0	
District (5 Foot Bodiso)				FACU species		24	
Herbaceous Stratum Plot size ( 5 Foot Radius)  Bromus tectorum 80		NL		UPL species	83 X5	415	
Convolvulus arvensis 1	<b>V</b>	NL		Column Totals	89 (A)	439	(B)
Descurainia sophia 2		NL	,				.93
Sporobolus cryptandrus 5		FAC	CU	Prevalence Ir			
Thlaspi arvense 1		FAC	-	Hydrophytic Vege	etation Indicator Test for Hydrophy		ion
					ance Test is >50°	•	
					ence Index is <= :		
				supporting	ological Adaptatic data in remarks		
				sheet.			
				5 - Wetland	d Non-Vascular F	Plants	
				Problemati	c Hydrophytic Ve	egetation (E	xplain)
Woody Vine Stratum Plot size ( 30 Foot Radius)				Indicators of hydric s present, unless dist			
				Hydrophytic Vege Present?	etation Yes	□ NO	<b>✓</b>
Percent Bare Ground 11 Remarks:				11636111:			
BG/litter=11%. Data point is dominated by upland ve	egetation.						

SOIL Sampling Point: DP06u

Profile Desc	ription: (Describe	to the depth ne	eded to docun	nent the i	indicator o	r confir	m the absence	of indicators.)
Depth	Matrix			x Feature		12	T	Para de
(inches)	Color (moist)		olor (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-12	10YR 3/1	100					Clay Loam	
12+							Gravel	Gravel bottom.
							<u> </u>	
	oncentration, D=De					Sand G		ation: PL=Pore Lining, M=Matrix.
Hydric Soil I	Indicators: (Appli	cable to all LRR	s, unless other	wise not	ed.)		Indicators	for Problematic Hydric Soils <sup>3</sup> :
Histosol				Bleyed Ma				uck (A9) ( <b>LRR I, J</b> )
	oipedon (A2)			Redox (S5	•			Prairie Redox (A16) (LRR F, G, H)
Black Hi	, ,		=	Matrix (S	,		_	urface (S7) (LRR G)
	n Sulfide (A4)	<b>-</b> \	_	-	neral (F1)			ains Depressions (F16)
_	d Layers (A5) ( <b>LRR</b> ick (A9) ( <b>LRR F, G,</b>	•	_	કleyed Ma d Matrix (I				R H outside of MLRA 72 & 73) ed Vertic (F18)
	d Below Dark Surfa			a Matrix (i Dark Surfa			=	rent Material (TF2)
	ark Surface (A12)	00 (////)	=		ırface (F7)			nallow Dark Surface (TF12)
	lucky Mineral (S1)			epressio	. ,			Explain in Remarks)
2.5 cm N	Mucky Peat or Peat	(S2) (LRR G, H)			essions (F1	6)	3Indicators	of hydrophytic vegetation and
5 cm Mu	icky Peat or Peat (S	3) ( <b>LRR F</b> )	(MLI	RA 72 & 7	73 of LRR I	<b>-</b> I)	wetland	hydrology must be present,
							unless	disturbed or problematic.
Restrictive L	_ayer (if present):							
Type:								
Depth (inches): No No								Present? Yes _ U No _ V
Remarks: No	o evidence of hyd	lric soil indicato	ors observed.					
HYDROLO	GV.							
_	drology Indicators		and all that analy	۸			Cananda	o Indicators (minimum of two required)
	cators (minimum of	one required, che		•				ry Indicators (minimum of two required)
	Water (A1)		Salt Crust		- (D40)			ace Soil Cracks (B6)
	iter Table (A2)		Aquatic Inv		, ,			sely Vegetated Concave Surface (B8)
Saturation	` '		Hydrogen :					nage Patterns (B10)
	arks (B1)		Dry-Seaso			a Posts		ized Rhizospheres on Living Roots (C3)
	nt Deposits (B2)				res on Livin	ig Roots		here tilled)
	oosits (B3)			ot tilled)	ed Iron (C4)			fish Burrows (C8) ration Visible on Aerial Imagery (C9)
	at or Crust (B4)		Thin Muck					morphic Position (D2)
	oosits (B5) on Visible on Aerial	Imagani (P7)			. ,			, , ,
		imagery (b/)	Other (Exp	iaiii iii Re	illaiks)			-Neutral Test (D5)
Field Observ	tained Leaves (B9)						F105	t-Heave Hummocks (D7) (LRR F)
Surface Water		Yes No _	Ponth (inc	shoe):				
Water Table			Depth (ind					Present? Yes No
Saturation Pr (includes cap		Yes No _	✓ Depth (inc	ches):		_   Wet	land Hydrology	Present? Yes No
	corded Data (strear	n gauge, monitor	ing well, aerial p	hotos, pr	evious insp	ections)	, if available:	
			•					
Remarks: No	evidence of wet	and hydrology	observed					
.,,	27,43,130 01 1101	and injuriology	22001104.					
I .								

Project/Site: Kindsfater City/Cou	inty: Yellowstone Sampling Date: 6/15/2021
•	State: Montana Sampling Point: DP06w
Investigator(s): R Quire, S Weyant Section,	
Landform (hillslope, terrace, etc.): Depression Local re	
	45.695467 Long: -108.696004 Datum: NAD 83
Soil Map Unit Name: Bm: Bew silty clay loam, 0-1% slopes	
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 disturbe	
Are Vegetation, Soil, or Hydrology naturally problematic	
SUMMARY OF FINDINGS – Attach site map showing samp	
	s the Sampled Area vithin a Wetland? Yes <u>V</u> No
VEGETATION - Use scientific names of plants	
Tue Structure Plateire (00 Feet Redire) Absolute Domiant India	cator Dominance Test worksheet
Tree Stratum Plot size (30 Foot Radius) % Cover: Species? Stat	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)
<u> </u>	Prevalence Index worksheet  Total % Cover of: Multiply by:
	OBL species         1 X 1         1           FACW species         35 X 2         70
	FACW species         35 X 2         70           FAC species         0 X 3         0
District Control Charles Control Contr	FACU species 15 X 4 60
Herbaceous Stratum       Plot size ( 5 Foot Radius)         Elymus repens       15 ✓ FACU	UPL species 0 X 5 0
Juncus balticus 35 ✓ FACW	
Persicaria lapathifolia 1 OBL	Prevalence Index = B/A = 2.57
·	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)
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 49	Hydrophytic Vegetation Yes ✓ NO □
Remarks:	
BG/litter/shallow ponded water=49%. Evidence of hydrophytic vegeta	ition includes a prevalence index less than or equal to 3.0.

SOIL Sampling Point: DP06w

	cription: (Describe	to the de	oth needed			dicator or o	confirm t	he absence	of indicators.)
Depth (inches)	Matrix Color (moist)	<u></u> %	Color (		Features %	Type <sup>1</sup> L	_oc²	Texture	Remarks
0-16	10Y 4/1	95	7.5YR	4/6	5	C M, P	L	Clay	Gleyed matrix.
					_				
	,								
	oncentration, D=Dep						Sand Grai		cation: PL=Pore Lining, M=Matrix.
	Indicators: (Applic	able to all	ı LKKS, uni	-					for Problematic Hydric Soils <sup>3</sup> :
Histosol	• •		<u> </u>	Sandy Gle	•	` '			Muck (A9) (LRR I, J)
	oipedon (A2) istic (A3)			│ Sandy Re │ Stripped N					Prairie Redox (A16) ( <b>LRR F, G, H</b> ) Surface (S7) ( <b>LRR G</b> )
	en Sulfide (A4)			_ Suipped it ☐ Loamy Mu	•	•		_	Plains Depressions (F16)
$=$ $\cdot$	d Layers (A5) ( <b>LRR</b> I	F)		Loamy Gl	-				RR H outside of MLRA 72 & 73)
	uck (A9) ( <b>LRR F, G</b> ,			Depleted	•	` '			ed Vertic (F18)
	d Below Dark Surfac			Redox Da	rk Surfac	e (F6)			arent Material (TF2)
	ark Surface (A12)			Depleted		. ,			shallow Dark Surface (TF12)
	lucky Mineral (S1)		_	Redox De					(Explain in Remarks)
	Mucky Peat or Peat (				-	ssions (F16)			of hydrophytic vegetation and
<u> </u> 5 cm Mi	ıcky Peat or Peat (S	3) (LRR F)	)	(MLRA	4 /2 & /3	3 of LRR H)			d hydrology must be present,
Restrictive I	Layer (if present):							uniess	disturbed or problematic.
Type:	Layer (ii present).								
Depth (inc								Hydric Soil	Present? Yes Vo No
						UII			
Nemana. Pr	rominent redoximo	orpnic cor	icentration	is commor	ı witnin	ine gieyed	maırıx a	ind along p	ore linings.
HYDROLO	GY								
Wetland Hy	drology Indicators:								
Primary India	cators (minimum of c	one require	d; check all	l that apply)				Seconda	ary Indicators (minimum of two required)
✓ Surface	Water (A1)		8	Salt Crust (B	311)			Surf	face Soil Cracks (B6)
✓ High Wa	ater Table (A2)		$\Box$ $\vdash$	Aquatic Inve	rtebrates	(B13)		Spa	rsely Vegetated Concave Surface (B8)
✓ Saturation	on (A3)		<b>✓</b> _ H	Hydrogen St	ulfide Ode	or (C1)		Drai	inage Patterns (B10)
	larks (B1)			Dry-Season					dized Rhizospheres on Living Roots (C3)
	nt Deposits (B2)			Oxidized Rh	· ·	es on Living	Roots (C		here tilled)
	posits (B3)			(where no					yfish Burrows (C8)
	at or Crust (B4)			Presence of					uration Visible on Aerial Imagery (C9)
	posits (B5)			Thin Muck S	,				omorphic Position (D2)
	on Visible on Aerial	Imagery (E	37) 📙 (	Other (Expla	in in Ren	narks)		_	C-Neutral Test (D5)
	tained Leaves (B9)						1	<u> </u>	st-Heave Hummocks (D7) (LRR F)
Field Obser		, ,		<b>.</b>	,	6			
Surface Water		es 🔽		Depth (inch					
Water Table		′es <u></u>		Depth (inch		_			
Saturation P		es 🗸	No	Depth (inch	es):	0	Wetlar	d Hydrolog	y Present? Yes No
(includes car Describe Re	oillary fringe) corded Data (stream	n gauge, m	onitorina we	ell, aerial ph	otos, pre	vious inspec	tions). if	available:	
	,	5 5 ,	<b>J</b>	, , , , , ,	,,		,,		
Remarks: ⊏	vidence of wotland	hydrolog	v include (	6 inches of	i curfoca	water oh	nigh wat	ar table sei	ils saturated to surface, sulfidic
	lor, and geomorph			o inches of	Suriace	water, a f	ngn wal	ы table, 80I	no oaturateu to ourrace, sumuic
	, 5								

Project/Site: Kindsfater	City/County: Yellowsto	ne Samplin	g Date:6/15/2021				
Applicant/Owner: MDT		State: Montana_ Sampling	g Point: DP07u				
Investigator(s): R Quire, S Weyant	Section, Township, Ran	ge: 6 2S	25E				
	Local relief (concave, convex, none): flat Slope (%):						
Subregion (LRR): LRR F Lat:							
Soil Map Unit Name: Wf: Wanetta clay loam, 0-1% slopes							
Are climatic / hydrologic conditions on the site typical for this time of ye							
Are Vegetation, Soil, or Hydrology significantly							
Are Vegetation, Soil, or Hydrology naturally pro	alsturbed? Are r	adad avalais and anavara in Dan	res No				
SUMMARY OF FINDINGS – Attach site map showing							
Hydrophytic Vegetation Present? Yes No	Is the Sampled	Area					
Hydric Soil Present?       Yes	within a Wetland	d? Yes 🔲 No					
Remarks: Upland sample point located upslope of DP07w and	wotland boundary						
VEGETATION - Use scientific names of plants							
Tree Stratum Plot size (30 Foot Radius) Absolute Domian Species		Dominance Test worksheet					
Elaeagnus angustifolia 15 🗸	FACU	Number of Dominant Species that are OBL, FACW or FAC:	0 (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:	0.0 % (A/B)				
Elaeagnus angustifolia 15	FACU	Prevalence Index worksheet					
		Total % Cover of:  OBL species  0 X 1	Multiply by:				
		FACW species 0 X 2	0				
		FAC species 0 X3	0				
Herbaceous Stratum Plot size ( 5 Foot Radius)		FACU species 110 X 4	440				
Bromus tectorum 5	NL	UPL species 5 X 5	25				
Elymus repens 40	FACU	Column Totals 115 (A	A) 465 (B)				
Poa pratensis 40	FACU	Prevalence Index = B/A =	4.04				
		Hydrophytic Vegetation Indica  1 - Rapid Test for Hydro					
		2 - Dominance Test is >					
		3 - Prevalence Index is	ξ= 3.0				
		4 - Morphological Adapta supporting data in remain sheet.					
		5 - Wetland Non-Vascula	ar Plants				
		Problematic Hydrophytic	Vegetation (Explain)				
Woody Vine Stratum Plot size ( 30 Foot Radius)		Indicators of hydric sil and wetlan present, unless disturbed or probl	d hydrology must be				
Percent Para Ground 15		Hydrophytic Vegetation	'es □ NO 🗹				
Percent Bare Ground 15 Remarks:							
BG/litter=15%. Data point is dominated by upland vegetation.							

SOIL Sampling Point: DP07u

Profile Desc	ription: (Descr	ibe to the depth	needed to docur	nent the	indicator	or confir	m the absence	of indicators.)
Depth	Matri			x Feature		. ^		
(inches)	Color (moist	) %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-12	10YR 4/2	100					Clay Loam	
12+							Gravel	Gravel bottom.
							_	
<sup>1</sup> Type: C=Co	oncentration, D=	Depletion, RM=F	Reduced Matrix, CS	S=Covere	d or Coate	d Sand (	- ————— Grains.	ation: PL=Pore Lining, M=Matrix.
			RRs, unless other					for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy C	Sleyed Ma	atrix (S4)		1 cm N	luck (A9) ( <b>LRR I, J</b> )
	pipedon (A2)			Redox (S				Prairie Redox (A16) ( <b>LRR F, G, H</b> )
Black His	, ,			l Matrix (	•			urface (S7) (LRR G)
	n Sulfide (A4)	D E'	= .	-	neral (F1)			lains Depressions (F16)
	Layers (A5) ( <b>LF</b>			-	atrix (F2)			R H outside of MLRA 72 & 73)
	ck (A9) ( <b>LRR F,</b> I Below Dark Su			d Matrix ( Dark Surf				ed Vertic (F18) arent Material (TF2)
	irk Surface (A12)	` '			urface (F7)			hallow Dark Surface (TF12)
	lucky Mineral (S			Depressio				Explain in Remarks)
_	•	eat (S2) ( <b>LRR G</b> ,	<del></del>	•	essions (F	16)		of hydrophytic vegetation and
	cky Peat or Pea			-	73 of LRR			hydrology must be present,
							unless	disturbed or problematic.
Restrictive L	ayer (if present	t):						
Type:								
Depth (inc	ches):						Hydric Soil	Present? Yes No
Remarks: No	evidence of h	ydric soil indic	ators observed.					
HYDROLO	GY							
Wetland Hyd	drology Indicate	ors:						
Primary Indic	ators (minimum	of one required;	check all that appl	y)			Seconda	ry Indicators (minimum of two required)
Surface '	Water (A1)	•	Salt Crust	(B11)			Surf	ace Soil Cracks (B6)
	ter Table (A2)		Aquatic Inv		es (B13)			rsely Vegetated Concave Surface (B8)
Saturation	, ,		Hydrogen		, ,			nage Patterns (B10)
☐ Water M	arks (B1)		Dry-Seaso				=	lized Rhizospheres on Living Roots (C3)
_	t Deposits (B2)		Oxidized F			ng Roots	s (C3) (w	here tilled)
	osits (B3)		(where r	not tilled	)			rfish Burrows (C8)
	t or Crust (B4)		Presence			.)		ration Visible on Aerial Imagery (C9)
	osits (B5)		Thin Muck			,		morphic Position (D2)
		rial Imagery (B7)	Other (Exp					-Neutral Test (D5)
Water-St	tained Leaves (B	9)					Fros	t-Heave Hummocks (D7) (LRR F)
Field Observ								
Surface Wate	er Present?	Yes No	Depth (inc	ches):				
Water Table	Present?		Depth (inc					
Saturation Pr			Depth (inc				tland Hvdrology	Present? Yes No
(includes cap	illary fringe)							100
Describe Rec	corded Data (stre	eam gauge, mon	itoring well, aerial p	ohotos, p	revious ins	pections	), if available:	
Remarks: No	evidence of w	etland hydrolo	gy observed.					

Project/Site: Kindsfater		City/County: `	ellowstone		Sampling Da	ate: 6/15/2021
Applicant/Owner: MDT				State: Montana		
Investigator(s): R Quire, S Weyant					:	
Landform (hillslope, terrace, etc.): Depression						
Subregion (LRR): LRR F						
Soil Map Unit Name: Wf: Wanetta clay loam, 0-1% slop						
Are climatic / hydrologic conditions on the site typical for this	time of w	aar2 Vas 🗸	No $\square$	(If no explain in P	emarke	
Are Vegetation, Soil, or Hydrology si						No 🗆
Are Vegetation , Soil , or Hydrology na	gillicarity	oblemetic?	/If mooded	ar Circumstances p	re in Demonstr	, <u> </u>
SUMMARY OF FINDINGS – Attach site map s						
			pome loode		, importan	
Hydrophytic Vegetation Present? Yes <u>✓</u> No Hydric Soil Present? Yes <u>✓</u> No		is the	Sampled Area		. –	-
Hydric Soil Present?    Yes ✓    No      Wetland Hydrology Present?    Yes ✓    No	,	within	a Wetland?	Yes	No	
Remarks: PEM/PSS depressional wetland in wetland		or contar of a	vito			
VEGETATION - Use scientific names of plant	ts					
Tree Stratum Plot size (30 Foot Radius) Absolute	Domian		Do	ominance Test worl	ksheet	
Iree Stratum Piot size (30 Foot Radius) % Cover:	Species	s? Status		umber of Dominant S at are OBL, FACW o		3 (A)
				otal Number of Domi oecies Across All Str		3 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)				ercent of Dominant S at Are OBL, FACW,		100.0 % (A/B)
Salix exigua 30	<b>✓</b>	FACW		evalence Index wo		
			<del></del>	Total % Cover of		Multiply by:
				BL species ACW species	-	140
			FA	•	0 X3	0
Herbaceous Stratum Plot size ( 5 Foot Radius)			FA	ACU species	15 X4	60
Elymus repens 10		FACU	- UF	PL species	0 X5	0
Juncus balticus 20	<b>✓</b>	FACW	Co	olumn Totals 8	35 (A)	200 (B)
Poa compressa 5		FACU		Prevalence Index	c = B/A =	2.35
Poa palustris 20	<b>✓</b>	FACW	Hy	drophytic Vegetati		
				✓ 1 - Rapid Test		
				✓ 2 - Dominance	Test is >50%	6
				✓ 3 - Prevalence	Index is <= 3	3.0
				4 - Morphologic	cal Adaptatio	ns (Provide
				supporting data sheet.		
				5 - Wetland No	n-Vascular P	lants
				☐ Problematic Hy	/drophytic Ve	getation (Explain)
Woody Vine Stratum Plot size ( 30 Foot Radius)				cators of hydric sil ar sent, unless disturbe		
Percent Bare Ground 45			-	drophytic Vegetati	ion Yes	✓ NO □
Remarks:			-			
BG/litter=45%. Evidence of hydrophytic vegetation in less than or equal to 3.0.	ıcludes a	a positive rap	d test, a posi	tive dominance te	st, and a pr	evalence index

SOIL Sampling Point: DP07w

			pth neede				r or confir	m the absence	of indicators.)
Depth (inches)	Color (moi	trix st) %	Color	Redo: (moist)	<u>x Features</u> %	Type <sup>1</sup>	Loc <sup>2</sup>	- Texture	Remarks
0-14	10Y 3/			(ITIOIOL)				Clay	Gleyed; mixed matrix
			7 CVD	4.10	40	0	MDI	· · · · · · · · · · · · · · · · · · ·	•
0-14	10YR 4/2	2 60	7.5YR	4/6	10	С	M,PL	Clay	Mixed matrix
-			-				_		
							_		
							_	_	
1T./201 C=C			1-Daduas	d Matrix, CC			tod Cand (		estion: DI - Days Lining M-Matrix
	oncentration, D Indicators: (A						ted Sand (		cation: PL=Pore Lining, M=Matrix.  for Problematic Hydric Soils <sup>3</sup> :
Histosol	-	ppiicable to a	ii Likiks, u		Sleyed Ma				Muck (A9) (LRR I, J)
_	oipedon (A2)		<u> </u>		Redox (S5	, ,			Prairie Redox (A16) ( <b>LRR F, G, H</b> )
	istic (A3)		4		l Matrix (S				Surface (S7) (LRR G)
	en Sulfide (A4)		_		Mucky Min		)		Plains Depressions (F16)
	d Layers (A5) ( <b>I</b>	LRR F)	_	=	Gleyed Ma		•		RR H outside of MLRA 72 & 73)
	ıck (A9) ( <b>LRR F</b>		_	_	d Matrix (F			Reduc	ced Vertic (F18)
	d Below Dark S		_		Dark Surfa				arent Material (TF2)
	ark Surface (A1	•	-		d Dark Su		7)		Shallow Dark Surface (TF12)
	Mucky Mineral (	*			Depression	. ,	(=40)		(Explain in Remarks)
	Mucky Peat or F				ins Depre				of hydrophytic vegetation and
D S CM IVIL	icky Peat or Pe	eat (SS) (LRR F	)	(IVIL	RA 72 & 7	3 Of LR	(K H)		d hydrology must be present, s disturbed or problematic.
Restrictive I	Layer (if prese	int):						unless	s disturbed of problematic.
Type:									
Depth (inc								Hydric Soil	Present? Yes V No
	rominent redo 0% gleyed.	eximorphic co	ncentration	ons comm	on within	the mi	xed matri	x and along po	ore linings. Matrix 60% depleted,
30	770 gleyeu.								
HYDROLO	GY								
Wetland Hy	drology Indica	itors:							
Primary Indic	cators (minimur	m of one requir	ed; check	all that apply	/)			Seconda	ary Indicators (minimum of two required)
Surface	Water (A1)			Salt Crust	(B11)			Sur	face Soil Cracks (B6)
High Wa	ater Table (A2)			Aquatic Inv		s (B13)			arsely Vegetated Concave Surface (B8)
<b>✓</b> Saturation			$\Box$	Hydrogen	Sulfide Oc	lor (C1)		Dra	inage Patterns (B10)
	larks (B1)			Dry-Seaso				=	dized Rhizospheres on Living Roots (C3)
Sedimer	nt Deposits (B2	)		Oxidized R	hizosphei	res on L	iving Roots	s (C3) (v	vhere tilled)
	posits (B3)				ot tilled)		-		yfish Burrows (C8)
Algal Ma	at or Crust (B4)			Presence of	of Reduce	d Iron (	C4)	☐ Sat	uration Visible on Aerial Imagery (C9)
Iron Dep	oosits (B5)			Thin Muck	Surface (	C7)		<b>✓</b> Ged	omorphic Position (D2)
Inundation	on Visible on A	erial Imagery (	37)	Other (Exp	lain in Re	marks)		<b>✓</b> FAC	C-Neutral Test (D5)
☐ Water-S	tained Leaves	(B9)						Fro:	st-Heave Hummocks (D7) ( <b>LRR F</b> )
Field Obser	vations:								
Surface Wate	er Present?	Yes 🔲	No	_ Depth (ind	ches):				
Water Table	Present?	Yes 🔽	No 🔲	_ Depth (ind		11			
Saturation P		Yes 🗸		_ Depth (ind		_	We	tland Hvdrolog	y Present? Yes No
(includes car	oillary fringe)								
Describe Re	corded Data (st	tream gauge, n	nonitoring	well, aerial p	photos, pre	evious ii	rspections	), if available:	
Remarks: Ev	ridence of wet	tland hydrolog	gy include	a high wa	ter table	, soils	saturated	to surface, ge	omorphic position and a positive
	C-Neutral tes			•				. 3	•

Project/Site: Kindsfater		_ City/Co	ounty: Yellowsto	ne	Sampling Da	ate:6/1	5/2021
Applicant/Owner: MDT				State: Montan			
		Section	n, Township, Ran	ge: 6	2S 2	25E	
Landform (hillslope, terrace, etc.): Terrace						Slope (%):	ç
Subregion (LRR): LRR F	l at:	_	45.694495	Long:	-108.691964 <sub>г</sub>	Datum: NAI	D 83
Soil Map Unit Name: Wf: Wanetta clay loam,				NWI class			
Are climatic / hydrologic conditions on the site type		vear2 Ve	s V No	(If no, explain it	n Pemarks )		
						. 🗸 N.	
Are Vegetation, Soil, or Hydrolog  Are Vegetation, Soil, or Hydrolog	significanti	iy disturb	ied? Are i	normal Circumstances	s present? res	INC	D_ <u></u>
SUMMARY OF FINDINGS – Attach s	ite map showin	ıg sam	pling point lo	ocations, transec	ts, importan	t feature:	s, etc.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Yes  Yes	No <b>V</b>	_		Area d? Yes	No_ <u>✓</u>	<u> </u>	
Remarks: Upland sample point located ups  VEGETATION - Use scientific names		- Would	ia boundary.				
	Absolute Domia		dicator	Dominance Test w	vorkshoot		
Tree Stratum Plot size (30 Foot Radius)	% Cover: Specie	es? Sta	atus	Number of Domina that are OBL, FAC	nt Species	0 <sub>(A)</sub>	
				Total Number of Do Species Across All		2 (B)	
Sapling/Shrub Stratum Plot size (15 Fo	ot Radius)			Percent of Dominar That Are OBL, FAC		0.0 % (	A/B)
				Prevalence Index  Total % Cove		Multiply by	y:
				OBL species	0 X1	0	
				FACW species FAC species		0	
				FACU species		140	=
Herbaceous Stratum Plot size ( 5 Fo	,	LIDI		UPL species		150	
Bromus inermis Bromus tectorum	25 <b>2</b>	UPL NL		Column Totals	65 (A)	290	(B)
Cirsium arvense	5 🗆	FAC	U				\- / 46
Convolvulus arvensis	2 🗆	NL		Prevalence Inc			
Elymus repens	30	FAC	U	Hydrophytic Vege	tation Indicators est for Hydrophyt		on
Tragopogon dubius	1 🔲	NL			nce Test is >50%	•	J11
					nce Index is <= 3	-	
					ogical Adaptatior data in remarks c	,	ate
				sheet.		•	
				☐ 5 - Wetland	Non-Vascular Pl	lants	
				☐ Problemation	Hydrophytic Ve	getation (Ex	φlain)
Woody Vine Stratum Plot size ( 30 Fo	ot Radius)			Indicators of hydric s present, unless distu			
Percent Bare Ground 35				Hydrophytic Vege Present?	tation Yes	□ NO	<b>✓</b>
Remarks:				1			
BG/litter=35%. Data point is dominated by	upland vegetation	n.					

SOIL Sampling Point: DP08u

Profile Desc	cription: (De	scribe to th	ne depth ne	eded to docu	ment the i	ndicator o	r confirm	the absence of in	dicators.)
Depth		//atrix			x Feature	1			B
(inches)	Color (m			olor (moist)	%	_Type'_	Loc <sup>2</sup>	Texture	Remarks
0-15	10YR 4	4/2	100					Clay	
						-			
	-								
				uced Matrix, C			d Sand Gr		: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:	(Applicable	to all LRRs	s, unless othe	rwise not	ed.)		Indicators for P	Problematic Hydric Soils <sup>3</sup> :
Histosol	` '				Gleyed Ma	, ,			(A9) ( <b>LRR I, J</b> )
	pipedon (A2)				Redox (S5	•			e Redox (A16) (LRR F, G, H)
=	istic (A3)				d Matrix (S	,		=	e (S7) (LRR G)
	en Sulfide (A4 d Layers (A5)				Mucky Mir Gleyed Ma				Depressions (F16) outside of MLRA 72 & 73)
_	u Layers (A5) uck (A9) ( <b>LRF</b>	` '		_	ed Matrix (l			Reduced Ve	
	d Below Dark		11)		Dark Surfa			_	Material (TF2)
	ark Surface (			=	ed Dark Su	,			w Dark Surface (TF12)
	/lucky Minera				Depressio				ain in Remarks)
2.5 cm M	Mucky Peat o	r Peat (S2)	(LRR G, H)	High PI	ains Depre	essions (F	16)	<sup>3</sup> Indicators of hy	drophytic vegetation and
5 cm Mu	icky Peat or l	Peat (S3) (L	RR F)	(ML	RA 72 & 7	3 of LRR	H)		rology must be present,
								unless distu	rbed or problematic.
Restrictive I	Layer (if pre	sent):							
Туре:									
Depth (in	ches):							Hydric Soil Pres	ent? Yes No V
Remarks: N	o evidence	of hydric s	oil indicato	rs observed.					
HYDROLO	GY								
	drology Indi	cators:							
_			equired: che	ck all that app	lv)			Secondary Inc	dicators (minimum of two required)
	Water (A1)	idili oi oilo i	oquirou, orio	Salt Crust	•				Boil Cracks (B6)
	ater Table (A2	2)		Aguatic In	• •	e (B13)		=	Vegetated Concave Surface (B8)
Saturation	,	-)			Sulfide O	,			Patterns (B10)
	larks (B1)				on Water T			= -	Rhizospheres on Living Roots (C3)
_	nt Deposits (E	32)				res on Livi	na Roots (		
	posits (B3)	,		<del></del>	not tilled)			· / `	Burrows (C8)
= :	at or Crust (B	4)				d Iron (C4	)		n Visible on Aerial Imagery (C9)
_	oosits (B5)	,			Surface (	•	,	=	hic Position (D2)
	on Visible on	Aerial Imag	ery (B7)		plain in Re			FAC-Neu	tral Test (D5)
Water-S	tained Leave	s (B9)		_ `		,		Frost-Hea	ave Hummocks (D7) (LRR F)
Field Obser	vations:								
Surface Wat	er Present?	Yes	No	Depth (in	ches):				
Water Table		Yes [		✓ Depth (in					
Saturation P		Yes [		✓ Depth (in				and Hydrology Pre	sent? Yes No
(includes car	pillary fringe)	_							
Describe Re	corded Data	(stream gau	ge, monitori	ng well, aerial	photos, pr	evious ins	pections),	if available:	
Remarks: No	evidence o	of wetland	hydrology	observed.					

Project/Site: Kindsfater	City/County: Yellowsto	one Sampling Date: 6/15/2021
		State: Montana Sampling Point: DP08w
Investigator(s): R Quire, S Weyant		
Landform (hillslope, terrace, etc.): Depression		
		5 Long:
Soil Map Unit Name: Wf: Wanetta clay loam, 0-1% slopes		
Are climatic / hydrologic conditions on the site typical for this time		
Are Vegetation, Soil, or Hydrology signific	cantly disturbed? Are "l	Normal Circumstances" present? Yes 🔽 No 🖳
Are Vegetation, Soil, or Hydrology natura	illy problematic? (If ne	eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map show	wing sampling point lo	ocations, transects, important features, etc
Hydrophytic Vegetation Present? Yes ✓ No ☐ Hydric Soil Present? Yes ✓ No ☐ Wetland Hydrology Present? Yes ✓ No ☐ Remarks: PSS depressional wetland in wetland cell 13.		Area ad? Yes <u>✔</u> No □
VEGETATION - Use scientific names of plants		
	miant Indicator	Dominance Test worksheet
Iree Stratum Plot size (30 Foot Radius) % Cover: Sp	ecies? Status	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)
Elaeagnus angustifolia 5	FACU	Prevalence Index worksheet
	<b>✓</b> FAC	Total % Cover of: Multiply by:
	▼ FACW	OBL species 20 X 1 20
Salix lutea 5	FACW	FACW species 80 X 2 160
		FAC species 10 X 3 30 FACU species 10 X 4 40
Herbaceous Stratum Plot size ( 5 Foot Radius)		FACU species 10 X 4 40  UPL species 0 X 5 0
	<b>✓</b> OBL	
Juncus balticus 50	<b>✓</b> FACW	Column Totals 120 (A) 250 (B)
Poa compressa 5	FACU	Prevalence Index = B/A = 2.08
Schoenoplectus acutus 5	OBL	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
Weeds Vine Ottoburg - Plat vine ( 22 5 4 7 7 )		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 25		Hydrophytic Vegetation Yes ✓ NO □
Remarks:		
BG/litter=25%. Evidence of hydrophytic vegetation includes 3.0.	des a positive dominance t	est and a prevalence index less than or equal to

US Army Corps of Engineers B-51 Great Plains - Version 2.0

SOIL Sampling Point: DP08w

	cription: (		to the de	pth neede				tor or conf	irm the absence	of indicators.)			
Depth (inches)	Color	Matrix (moist)	%	Color	Redo: (moist)	<u>x Features</u> %	Typ	e <sup>1</sup> Loc <sup>2</sup>	 Texture	Remarks			
0-9	10YR	4/1	30		(1110101)				Clay	Mixed matrix			
0-9	N	4/0	60	7.5YR	4/6	10	С	M, PL	Clay	Gleyed; mixed matrix			
9+								,	Cobbles	Cobble bottom.			
9+										Cobble bottom.			
¹Type: C=Co	oncentrati	on, D=Dep	oletion, RN	/I=Reduced	d Matrix, CS	S=Covered	or Co	oated Sand	Grains. <sup>2</sup> Lo	cation: PL=Pore Lining, M=Matrix.			
Hydric Soil	Indicators	s: (Applic	able to a	I LRRs, u	nless other	wise note	ed.)		Indicators	for Problematic Hydric Soils <sup>3</sup> :			
Histosol	. ,			<u>[</u>		Sleyed Ma		4)		Muck (A9) (LRR I, J)			
	pipedon (A	(2)		1		Redox (S5				Prairie Redox (A16) (LRR F, G, H)			
	istic (A3)	(A 4)				l Matrix (S	,	<b>-</b> 4\	_	Surface (S7) (LRR G)			
$=$ $\cdot$	en Sulfide	` ,	E)	<u> </u> 		Mucky Min	,			Plains Depressions (F16)			
	d Layers ( <i>i</i> uck (A9) ( <b>L</b>	, ,			_	Gleyed Ma d Matrix (F		(2)		RR H outside of MLRA 72 & 73) ced Vertic (F18)			
	d Below D			<u> </u>		o Matrix (r Dark Surfa		3)	_	errent Material (TF2)			
	ark Surfac		- (****)			d Dark Su				Shallow Dark Surface (TF12)			
	lucky Min					Depression		. ,	Other (Explain in Remarks)				
2.5 cm N	Mucky Pea	at or Peat (	(S2) ( <b>LRR</b>	G, H) _	High Pla	ains Depre	ssion	s (F16)	<sup>3</sup> Indicators of hydrophytic vegetation and				
5 cm Ми	icky Peat	or Peat (S	3) ( <b>LRR F</b>	)	(ML	RA 72 & 7	'3 of L	RR H)	wetlan	d hydrology must be present,			
									unless	disturbed or problematic.			
Restrictive I		-											
Type:													
Depth (in										Present? Yes No			
	epleted.	redoximo	лрпіс со	ncentratio	ons comm	on within	ine g	neyeu ma	unx and along p	ore linings. Matrix 60% gleyed, 30%			
HYDROLO													
Wetland Hy													
Primary India			ne require	ed; check a						ary Indicators (minimum of two required)			
	Water (A1			$\sqcup$	Salt Crust					face Soil Cracks (B6)			
_	ater Table	(A2)		브	Aquatic Inv		•	•		arsely Vegetated Concave Surface (B8)			
✓ Saturation				<b>_</b>	Hydrogen			-	=	inage Patterns (B10)			
	larks (B1)	(D2)			Dry-Seaso					dized Rhizospheres on Living Roots (C3)			
	nt Deposit				Oxidized F		res on	Living Roc		vhere tilled)			
	posits (B3)					not tilled)	الد	(04)		yfish Burrows (C8)			
	at or Crust				Presence of			(C4)		uration Visible on Aerial Imagery (C9)			
	oosits (B5)			DZ\	Thin Muck			`		omorphic Position (D2)			
	on Visible		ımagery (I	o <i>()</i>	Other (Exp	nain in Ke	marks	)	=	C-Neutral Test (D5)			
Field Obser	tained Lea	aves (D9)						<u> </u>	Fro:	st-Heave Hummocks (D7) (LRR F)			
Surface Water		12 \	es 🗆	No 🗸	Depth (inc	ches).							
Water Table			'es <u> </u>		_ Depth (ind								
Saturation P									otland Uuduala	y Present? Yes No			
(includes cap			es 🗸	INO	Depth (ind	Jiles):		<u> </u>	enanu mydrolog	y riesemir resNO			
			n gauge, n	nonitoring	vell, aerial p	ohotos, pre	evious	inspection	s), if available:				
Remarks: Ev	vidence o	f wetland	hydrolog	gy include	s soils sat	turated to	surf	ace, sulfid	lic odor, geomo	rphic position and a positive FAC-			
	eutral tes		- \					*					

Project/Site: Kindsfater				
Applicant/Owner: MDT		State: Montana	Sampling Point:	DP09u
Investigator(s): R Quire, S Weyant	_ Section, Township, Rang	<sub>je:</sub> 6 2S	25E	
Landform (hillslope, terrace, etc.): Terrace	Local relief (concave, co	nvex, none):flat	Slo	pe (%):
Subregion (LRR): LRR F Lat:	45.695375	Long:10	)8.690242 <sub>Datu</sub>	m: NAD 83
Subregion (LRR): LRR F Lat: Lat: Soil Map Unit Name: Ll: Larim gravelly loam, 15-35% slopes		NWI classific	ation: Not Mappe	ed
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes 🔽 No 🔼	(If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology significan				No 🗆
Are Vegetation, Soil, or Hydrology naturally	oroblematic? (If need	ded. explain anv answei	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing				atures, etc.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks: Upland sample point located upslope of DP09w ar	within a Wetland	rea ? Yes	No <u>✓</u>	-
VEGETATION - Use scientific names of plants	,			
Tree Streeture Plot pize (20 Feet Redius) Absolute Domis		Dominance Test wor	ksheet	
Iree Stratum Plot size (30 Foot Radius) % Cover: Specie	es? Status	Number of Dominant S that are OBL, FACW of	Species	0 (A)
		Total Number of Domi Species Across All Str		2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant S That Are OBL, FACW,		.0 % (A/B)
, , ,		Prevalence Index wo		
		Total % Cover of OBL species	1: ML 0 X1	ultiply by:
		FACW species	0 X 2	0
		FAC species	0 X3	0
Herbaceous Stratum Plot size ( 5 Foot Radius)			10 X4	40
Bromus tectorum 40	NL	UPL species	42 X 5	210
Nassella virdula 2	NL	Column Totals 5	52 (A)	250 (B)
Sporobolus cryptandrus 10	FACU	Prevalence Index	c = B/A =	4.81
		Hydrophytic Vegetati	on Indicators	
		1 - Rapid Test	for Hydrophytic V	egetation
		2 - Dominance	Test is >50%	
		3 - Prevalence	Index is <= 3.0	
			cal Adaptations (F a in remarks or on	
			n-Vascular Plants	
Woody Vine Stratum Plot size ( 30 Foot Radius)		ndicators of hydric sil and present, unless disturbe		ogy must be
Percent Bare Ground 48	<u> </u>	Hydrophytic Vegetati Present?		NO 🔽
Remarks:				
BG/litter=48%. Data point is dominated by upland vegetation	n.			

SOIL Sampling Point: DP09u

Depth	scription: (Describe Matrix	to the depth ii		x Features	or commit	the absence of IIIC	iivatoi 5.j
(inches)	Color (moist)	——————————————————————————————————————	Color (moist)	<u>x reatures</u> %Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-12	10YR 4/2	100			San	dy Clay Loam	
12+						Gravel	
	_						
				·			
	Concentration, D=De il Indicators: (Appli				ed Sand Gra		PL=Pore Lining, M=Matrix.  roblematic Hydric Soils <sup>3</sup> :
Histos		cable to all LRP		Gleyed Matrix (S4)			49) (LRR I, J)
=	Epipedon (A2)			Redox (S5)			Redox (A16) ( <b>LRR F, G, H</b> )
	Histic (A3)		= '	Matrix (S6)			e (S7) ( <b>LRR G</b> )
	gen Sulfide (A4)			Mucky Mineral (F1)	)		Depressions (F16)
Stratific	ed Layers (A5) ( <b>LRR</b>	<b>F</b> )	Loamy	Gleyed Matrix (F2)		(LRR H o	utside of MLRA 72 & 73)
	luck (A9) ( <b>LRR F, G</b>		= :	d Matrix (F3)		Reduced Ve	-
	ed Below Dark Surfa	ce (A11)		Dark Surface (F6)			Material (TF2)
=	Dark Surface (A12)			d Dark Surface (F7	<b>'</b> )		/ Dark Surface (TF12)
	Mucky Mineral (S1)	(S2) (I DD C H		Depressions (F8) ains Depressions (	E16)		in in Remarks) rophytic vegetation and
	/lucky Peat or Peat (			RA 72 & 73 of LR		-	ology must be present,
	musity i suit si i suit (	20) (=)	(		,		bed or problematic.
Restrictive	Layer (if present):						
Туре:			-				
Depth (i	nches):		_			Hydric Soil Prese	ent? Yes 🔲 No 🔽
IYDROL	OGY						
Wetland H	ydrology Indicators	<b>:</b> :					
Primary Inc	dicators (minimum of	one required; ch	eck all that appl	y)		Secondary Ind	<u>icators (minimum of two required</u>
Surface	e Water (A1)		Salt Crust	(B11)		Surface S	oil Cracks (B6)
	Vater Table (A2)			vertebrates (B13)			/egetated Concave Surface (B8)
	tion (A3)			Sulfide Odor (C1)		= •	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)							
	eposits (B3)		`	not tilled)	. 0		urrows (C8)
= -	Mat or Crust (B4)			of Reduced Iron (C	(4)	=	Visible on Aerial Imagery (C9)
	eposits (B5)	(57)		Surface (C7)			nic Position (D2)
	tion Visible on Aeria		Other (Exp	olain in Remarks)		=	ral Test (D5)
Field Obse	Stained Leaves (B9)					FIOSI-Hea	ve Hummocks (D7) (LRR F)
		Yes No	✓ Depth (in	ches):			
Water Table				ches):			
Saturation				ches):		and Hydrology Pres	ent? Yes No _ <del></del>
(includes ca	apillary fringe)						
Describe R	lecorded Data (strea	n gauge, monito	rıng weii, aerial i	onotos, previous in	spections), i	it available:	
Remarks: •	No evidence of wet	land budgeter	oboom to d				
	NO EVIUENCE OF WEL	ianu nyurology	observed.				

#### WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Kindsfater		City/County:	Yellowstone		_ Sampling D	ate: 6/15/2021
Applicant/Owner: MDT				State: Montana	_ Sampling P	oint: DP09w
Investigator(s): R Quire, S Weyant		Section, Tow	/nship, Range: _	6 25	S	25E
Landform (hillslope, terrace, etc.): Depression						
Subregion (LRR): LRR F Soil Map Unit Name: Wf: Wanetta clay loam, 0-	1% slopes			NWI classif	ication: Not M	lapped
Are climatic / hydrologic conditions on the site typic	al for this time of y	ear? Yes	No 🗆	(If no, explain in	Remarks.)	
Are Vegetation, Soil, or Hydrology _						s V No
Are Vegetation, Soil, or Hydrology _	naturally pr	oblematic?	(If needed.	explain any answ	, ers in Remark	(s.)
SUMMARY OF FINDINGS - Attach site						
Hydric Soil Present? Yes  Wetland Hydrology Present? Yes	No No No No	within		Yes	✓ No _	<u> </u>
Remarks: PSS depressional wetland in wetland		eastern proje	ect boundary.			
VEGETATION - Use scientific names	Absolute Domian	nt Indicator				
	Cover: Species		100	minance Test wo		
				mber of Dominant t are OBL, FACW		2 (A)
				al Number of Don ecies Across All S		3 (B)
Sapling/Shrub Stratum Plot size (15 Foot	Padius)			cent of Dominant at Are OBL, FACV		66.7 % (A/B)
Elaeagnus angustifolia	5	FACU	Pre	evalence Index w	orksheet	
Salix exigua	55 🗸	FACW	-	Total % Cover		Multiply by:
				L species	0 X1	0
				CW species C species	69 X2 0 X3	0
Harbara and Otractions - Diet sine / 5 - Fact	Dadius)			CU species	11 X4	44
Herbaceous Stratum Plot size ( 5 Foot Carex praegracilis	14 🗸	FACW	UP	L species	0 X5	0
Elymus repens	5 🗸	FACU	- Col	umn Totals	80 (A)	182 (B)
Marrubium vulgare	1 🗍	FACU	-	Prevalence Inde	ex = R/A =	2.28
				drophytic Vegeta  1 - Rapid Tes  2 - Dominanc  3 - Prevalenc  4 - Morpholog supporting da sheet.  5 - Wetland N	ation Indicators st for Hydrophy ce Test is >509 ce Index is <= 3 gical Adaptatic ata in remarks Non-Vascular F	ytic Vegetation  % 3.0 ons (Provide or on separate
Woody Vine Stratum Plot size ( 30 Foot	Radius)			ators of hydric sil	and wetland h	ydrology must be
Percent Bare Ground 35			Hye	ent, unless disturb drophytic Vegeta esent?		
Remarks:			. =			

BG/litter=35%. Salix exigua accounts for much of the cover observed within 5' herb plot. Evidence of hydrophytic vegetation includes a positive dominance test and a prevalence index less than or equal to 3.0.

SOIL Sampling Point: DP09w

Profile Desci	ription: (Describ	e to the de	oth neede	d to docun	nent the i	ndicator or o	confirm	the absence	of indicators.)
Depth	Matrix				x Features	<u> </u>			
(inches)	Color (moist)	%	Color	(moist)	%	_Type <sup>1</sup> _ l	_oc <sup>2</sup>	<u>Texture</u>	Remarks
0-10	10YR 4/2	95	10YR	5/8	5	C PL		Clay	
10+								Cobbles	Cobble bottom.
1Typo: C=Co	ncentration, D=De	nlotion DM	-Poducos	Matrix CS	S-Coveres		and Gra		ation: PL=Pore Lining, M=Matrix.
	ndicators: (Appl	•					anu Gra		for Problematic Hydric Soils <sup>3</sup> :
Histosol			Γ	_	Sleyed Ma				uck (A9) ( <b>LRR I, J</b> )
	ipedon (A2)		Ī	_	Redox (S5)				Prairie Redox (A16) (LRR F, G, H)
Black His			Ī		Matrix (S				urface (S7) (LRR G)
	n Sulfide (A4)				Mucky Min	,			ains Depressions (F16)
Stratified	Layers (A5) (LRF	? <b>F</b> )		Loamy	Gleyed Ma	trix (F2)		(LRI	R H outside of MLRA 72 & 73)
1 cm Mu	ck (A9) ( <b>LRR F, G</b>	, H)	_	Deplete	d Matrix (F	<sup>-</sup> 3)		Reduce	ed Vertic (F18)
	Below Dark Surfa	ice (A11)	_		Dark Surfa	. ,			rent Material (TF2)
	rk Surface (A12)		1		d Dark Su				nallow Dark Surface (TF12)
_	ucky Mineral (S1)	(00) (1.00			Depression				Explain in Remarks)
	lucky Peat or Peat					ssions (F16)			of hydrophytic vegetation and
5 cm wu	cky Peat or Peat (	55) ( <b>LRR F</b>	)	(IVIL	KA 12 & 1	3 of LRR H)			l hydrology must be present, disturbed or problematic.
Restrictive L	ayer (if present):							4111000	distance of problematic.
Type:									
Depth (inc								Hydric Soil	Present? Yes <u>V</u> No
Remarks: pr	ominent redoxin	orphic co	ncentratio	ne comm	on along	nore lining			
1 1	omment redoxin	iorpriio coi	locilialic	ilis commi	on along	porc ining	J.		
HYDROLOG									
-	rology Indicators								
	ators (minimum of	one require	d; check a		.,				ry Indicators (minimum of two required)
	Water (A1)		$\Box$	Salt Crust				=	ace Soil Cracks (B6)
•	ter Table (A2)			Aquatic Inv		, ,			sely Vegetated Concave Surface (B8)
✓ Saturatio				Hydrogen				=	nage Patterns (B10)
Water Ma	, ,		$\perp$	Dry-Seaso				<del></del>	ized Rhizospheres on Living Roots (C3)
	t Deposits (B2)					es on Living	Roots (		here tilled)
	osits (B3)				not tilled)	d last (C.1)			fish Burrows (C8)
	t or Crust (B4)		$\vdash$	Presence					ration Visible on Aerial Imagery (C9)
Iron Depo	` '		, <u>,</u> ,	Thin Muck					morphic Position (D2)
	on Visible on Aeria		37)	Other (Exp	olain in Re	marks)		_	-Neutral Test (D5)
Field Observ	ained Leaves (B9)						1	FIOS	t-Heave Hummocks (D7) (LRR F)
Surface Wate		Yes 🗆	No.	Depth (inc	chas):				
Water Table F		Yes $\Box$		Depth (inc					
							10/-41-	سمالاسمام	Present? Yes No
Saturation Pro (includes cap		Yes 🗸	INO	Depth (Inc	ines):	<u> </u>	vvetia	na myarology	Present? Yes No No
	orded Data (strea	m gauge, m	onitoring v	vell, aerial p	ohotos, pre	evious inspec	ctions), it	f available:	
Remarks: Evi	dence of wetlan	d hydrolog	y include	saturatio	n within 6	inches of t	he soil	surface, geo	morphic position, and a positive
	C-Neutral test.								

#### WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Kindsfater	City/Co	ounty: Yellov	wstone			Sampling Da	ate:	6/15/2021
Applicant/Owner: MDT								
Investigator(s): R Quire, S Weyant								
Landform (hillslope, terrace, etc.); Terrace	Local	relief (conca	ve, convex	, none); cor	ıvex		Slope (	(%):7(
Subregion (LRR): LRR F		45.694	4743 Long	:	-10	8.689922	Datum:	NAD 83
Subregion (LRR): LRR F Lat:				NWI c	lassifica	tion: Not M	apped	
Are climatic / hydrologic conditions on the site typical for this time of	year? Ye	es 🔽 N	lo	(If no, expla	in in Re	marks.)		
Are Vegetation, Soil, or Hydrology significan	ntly disturb	ed? A	Are "Norma	l Circumsta	nces" pr	esent? Yes	; <u>v</u>	_ No
Are Vegetation, Soil, or Hydrology naturally	problema	tic? (I	If needed, e	explain any	answer	s in Remarks	s.)	
SUMMARY OF FINDINGS – Attach site map showing	ng sam	pling poir	nt locatio	ons, trans	sects,	importan	ıt featı	ures, etc
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Yes No  Wetland Hydrology Present?	_	Is the Samp	etland?	Ye	s	No_ <b>_</b>	]	
Remarks: Upland sample point located upslope of DP10w at VEGETATION - Use scientific names of plants	nu wellal	iu boundar	у.					
Tree Stratum Plot size (30 Foot Radius) Absolute Domic & Cover: Speci		dicator	Don	ninance Te	st work	sheet		
Iree Stratum       Plot size (30 Foot Radius)       % Cover: Speci         Elaeagnus angustifolia       25		ACU_		nber of Don are OBL, F			0	(A)
				al Number o			3	(B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)				cent of Dom t Are OBL,			0.0	% (A/B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)			OBI FAC	Total % C species CW species Species	Cover of:		Multip 0	)
Herbaceous Stratum Plot size ( 5 Foot Radius)			FAC	CU species	4		16	88
Bromus inermis 20	UPL		UPL	species	7	70 X 5	35	50
Convolvulus arvensis 50	NL	<del></del>	Colu	umn Totals	11	2 (A)	51	(B)
Poa pratensis 15	FAC	U		Prevalence	e Index	= B/A =		4.63
Symphyotrichum falcatum 2	FAC	U	Hyd [	1 - Rapi 2 - Dom 3 - Prev 4 - Morr support sheet. 5 - Wetl	id Test fainance valence obhological ing data	on Indicator or Hydrophy Test is >50% Index is <= 3 al Adaptatio in remarks on-Vascular P	rtic Vege 6 3.0 ns (Prov or on se	ride parate
Woody Vine Stratum Plot size ( 30 Foot Radius)				ators of hydi	ric sil an	d wetland hy d or problem	ydrology	must be
Percent Bare Ground 13				lrophytic V sent?	egetatio	yes		0
Remarks: BG/litter=13%. Data point is dominated by upland vegetation	on.		•					

SOIL Sampling Point: DP10u

Profile Description: (Describ	e to the depth nee			onfirm the absenc	e of indicators.)
Depth Matrix (inches) Color (moist)	% Co	Redox Featu plor (moist) %		oc <sup>2</sup> Texture	Remarks
0-12 10YR 3/2	100			Clay Loam	
12+				Gravel	Gravel bottom.
					-
<sup>1</sup> Type: C=Concentration, D=De Hydric Soil Indicators: (Appl	'				s for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)		Sandy Gleyed	•		Muck (A9) (LRR I, J)
Histic Epipedon (A2)		Sandy Redox (			t Prairie Redox (A16) (LRR F, G, H)
Black Histic (A3)		Stripped Matrix			Surface (S7) (LRR G)
Hydrogen Sulfide (A4)		Loamy Mucky	Mineral (F1)	High	Plains Depressions (F16)
Stratified Layers (A5) (LRF	₹ <b>F</b> )	Loamy Gleyed	Matrix (F2)	(L	RR H outside of MLRA 72 & 73)
1 cm Muck (A9) (LRR F, G		Depleted Matri		=	iced Vertic (F18)
Depleted Below Dark Surfa	ice (A11)	Redox Dark Su			Parent Material (TF2)
Thick Dark Surface (A12)		Depleted Dark		$=$ $\cdot$	Shallow Dark Surface (TF12)
Sandy Mucky Mineral (S1)  2.5 cm Mucky Peat or Pea		Redox Depres	pressions (F16)		r (Explain in Remarks) s of hydrophytic vegetation and
5 cm Mucky Peat or Peat (			& 73 of LRR H)		nd hydrology must be present,
		(=	<u> </u>		s disturbed or problematic.
Restrictive Layer (if present):					
Type:					
Depth (inches):				Hydric So	il Present? Yes No
Remarks: No evidence of hy	dric soil indicator	s observed.			
HYDROLOGY					
Wetland Hydrology Indicator	 s:				
Primary Indicators (minimum of		ck all that apply)		Second	dary Indicators (minimum of two required)
Surface Water (A1)		Salt Crust (B11)		☐ Su	rface Soil Cracks (B6)
High Water Table (A2)		Aquatic Invertebr	ates (B13)		arsely Vegetated Concave Surface (B8)
Saturation (A3)		Hydrogen Sulfide	Odor (C1)	Dra	ainage Patterns (B10)
─ Water Marks (B1)	Ī	 Dry-Season Wate	er Table (C2)	☐ Ox	idized Rhizospheres on Living Roots (C3)
Sediment Deposits (B2)	[	Oxidized Rhizosp	heres on Living I	Roots (C3) (	where tilled)
Drift Deposits (B3)		(where not tille	ed)	Cra	ayfish Burrows (C8)
Algal Mat or Crust (B4)		Presence of Redu	uced Iron (C4)	☐ Sa	turation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Thin Muck Surfac	e (C7)	☐ Ge	eomorphic Position (D2)
Inundation Visible on Aeria	l Imagery (B7)	Other (Explain in	Remarks)	☐ FA	.C-Neutral Test (D5)
Water-Stained Leaves (B9	)			Fro	ost-Heave Hummocks (D7) ( <b>LRR F</b> )
Field Observations:					
Surface Water Present?		Depth (inches): _			
Water Table Present?		✓ Depth (inches): ַ			
Saturation Present? (includes capillary fringe)	Yes No	✓ Depth (inches):		Wetland Hydrolog	gy Present? Yes No
Describe Recorded Data (strea	m gauge, monitorir	ng well, aerial photos,	previous inspec	tions), if available:	
Damada					
Remarks: No evidence of we	land hydrology o	bserved.			

#### WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Kindsfater		City/County: Yellows	stone	Sampling Date:6/15/2021
Applicant/Owner: MDT			State: Montana	
Investigator(s): R Quire, S Weyant				25E
Landform (hillslope, terrace, etc.): Hillsic				
Subregion (LRR): LRR F				
Soil Map Unit Name: LI: Larim gravelly				
Are climatic / hydrologic conditions on th				
Are Vegetation, Soil, or F	lydrology significar	ntly disturbed? Ar	e "Normal Circumstances" p	resent? Yes <u> </u>
Are Vegetation, Soil, or F	lydrology <u> </u>	problematic? (If	needed, explain any answer	's in Remarks.)
SUMMARY OF FINDINGS – At	tach site map showi	ng sampling point	locations, transects	, important features, etc
Hydrophytic Vegetation Present?			ed Area	
Hydric Soil Present?	Yes _ No		land? Yes <u> </u>	<u></u> No □
Wetland Hydrology Present?  Remarks: PEM slope wetland near 6				
VEGETATION - Use scientific	names of plants			
Tree Stratum Plot size (30 Foot R	adius) Absolute Domi		Dominance Test worl	ksheet
	7 % Cover. Spec	ies! Status	Number of Dominant S that are OBL, FACW of	
			Total Number of Domin Species Across All Str	
Sapling/Shrub Stratum Plot size (	15 Foot Radius)		Percent of Dominant S That Are OBL, FACW,	
	,		Prevalence Index wo	
			Total % Cover of	
			•	35 X 1 35 15 X 2 30
			FAC species	0 X3 0
Harbana va Stratura Diet size /	F Foot Radius)		FACU species	15 X 4 60
Herbaceous Stratum Plot size ( Alopecurus arundinaceus	5 Foot Radius) 10 ✓	FACW	UPL species	5 X 5 25
Bromus inermis	5	UPL	Column Totals 7	70 (A) 150 (B)
Carex pellita	5 🗆	OBL	Prevalence Index	$r = R/\Delta = 2.14$
Elymus repens	10 🔽	FACU	Hydrophytic Vegetati	
Mentha arvensis	5 🗌	FACW		for Hydrophytic Vegetation
Solanum dulcamara	5	FACU	✓ 2 - Dominance	
Typha latifolia	30	OBL	✓ 3 - Prevalence	
				cal Adaptations (Provide a in remarks or on separate
			☐ 5 - Wetland No	n-Vascular Plants
			Problematic Hy	drophytic Vegetation (Explain)
Woody Vine Stratum Plot size (	30 Foot Radius)		Indicators of hydric sil ar	nd wetland hydrology must be d or problematic for #3, 4, 5.
Percent Bare Ground 30			Hydrophytic Vegetati Present?	•
Remarks:				
BG/litter=30%. Evidence of hydrop 3.0.	nytic vegetation includes	s a positive dominanc	e test and a prevalence i	ndex less than or equal to

SOIL Sampling Point: DP10w

	ription: (Describe	to the dep	th needed				confir	rm the absence of indicators.)
Depth (inches)	Matrix Color (moist)	——————————————————————————————————————	Color (n		<u>eatures</u> %		Loc <sup>2</sup>	
0-14	10YR 3/1	93	7.5YR	4/6	7	C M, F	²L	Clay Loam
14+								cobbles
-								- <del> </del>
	oncentration, D=Dep						Sand C	
	Indicators: (Applic	able to all	LKKS, UNIE					Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol	• •		片	Sandy Gle	•	` '		1 cm Muck (A9) (LRR I, J)
Black Hi	oipedon (A2)		片	Sandy Re-	, ,			<ul><li>☐ Coast Prairie Redox (A16) (LRR F, G, H)</li><li>☐ Dark Surface (S7) (LRR G)</li></ul>
$\equiv$	en Sulfide (A4)		$\vdash$	Loamy Mu	,	,		High Plains Depressions (F16)
	d Layers (A5) ( <b>LRR</b> l	F)	$\vdash$	Loamy Gle	-	, ,		(LRR H outside of MLRA 72 & 73)
_	ıck (A9) ( <b>LRR F, G</b> ,	•		Depleted I	-			Reduced Vertic (F18)
	d Below Dark Surfac		<u></u>	Redox Da	rk Surfac	e (F6)		Red Parent Material (TF2)
_	ark Surface (A12)			Depleted I				
	lucky Mineral (S1)			Redox De		. ,		Other (Explain in Remarks)
	Mucky Peat or Peat (			-		ssions (F16		<sup>3</sup> Indicators of hydrophytic vegetation and
5 cm Mu	icky Peat or Peat (S	3) ( <b>LRR F</b> )		(MLRA	A /2 & /3	3 of LRR H	1)	wetland hydrology must be present,
Restrictive I	Layer (if present):							unless disturbed or problematic.
Type:								
Depth (inc								Hydric Soil Present? Yes <u>✓</u> No
. ,					:41- :	41		
Kemana. Pr	rominent redoximo	orpnic con	centration	s commor	within	ine mairix	and a	along pore linings.
HYDROLO	GY							
Wetland Hyd	drology Indicators:							
Primary India	cators (minimum of o	ne require	d; check all	that apply)				Secondary Indicators (minimum of two required)
Surface	Water (A1)		□ s	alt Crust (B	11)			Surface Soil Cracks (B6)
High Wa	iter Table (A2)		A	quatic Inve	tebrates	(B13)		Sparsely Vegetated Concave Surface (B8)
✓ Saturation	on (A3)		□ н	lydrogen Su	ılfide Od	or (C1)		✓ Drainage Patterns (B10)
Water M	larks (B1)		D	ry-Season	Water Ta	able (C2)		Oxidized Rhizospheres on Living Roots (C3)
Sedimer	nt Deposits (B2)		o	xidized Rhi	zosphere	es on Living	g Roots	s (C3) (where tilled)
Drift Dep	oosits (B3)			(where no	t tilled)			Crayfish Burrows (C8)
Algal Ma	at or Crust (B4)		P	resence of	Reduced	l Iron (C4)		Saturation Visible on Aerial Imagery (C9)
Iron Dep	oosits (B5)			hin Muck S				✓ Geomorphic Position (D2)
	on Visible on Aerial	lmagery (B	7) 🗌 0	ther (Expla	in in Ren	narks)		FAC-Neutral Test (D5)
	tained Leaves (B9)							Frost-Heave Hummocks (D7) (LRR F)
Field Observ								
Surface Water				Depth (inch				
Water Table	Present? Y		No <u> </u>					
Saturation P		es 🗸	No [	Depth (inch	es):	0	We	tland Hydrology Present? Yes No
(includes cap	oillary fringe) corded Data (stream	n dalide m	nitoring we	ll aerial ph	ntos nre	vious inspe		
Describe IVE	co. aca Data (streati	, gaage, iil		, aonai pii	5103, pro	Tions ilispe	,500113,	,, ii avaliabio.
Remarks: -	.,							, , , , , , , , , , , , , , , , , , ,
	ridence of wetland outral test.	hydrolog	/ include s	oils satura	ited to s	surtace, dr	raın pa	atter, geomorphic position and a positive FAC-
INC	Janai 1031.							

#### WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Kindsfater	City/County: Yellowsto	one Sampling	Date: 6/15/2021
		State: Montana Sampling	
Investigator(s): R Quire, S Weyant			
Landform (hillslope, terrace, etc.): Hillslope			
Subregion (LRR): LRR F Lat:			
Soil Map Unit Name: LI: Larim gravelly loam, 15-35% slopes	.0.0020	NIVA/I place:Fraction: NO1	Mapped
Are climatic / hydrologic conditions on the site typical for this time of		INVVI classification.	
Are Vegetation, Soil, or Hydrology significar	itly disturbed? Are "	Normal Circumstances" present?	res <u> </u>
Are Vegetation, Soil, or Hydrology naturally	problematic? (If ne	eded, explain any answers in Rema	arks.)
SUMMARY OF FINDINGS – Attach site map showi	ng sampling point l	ocations, transects, import	ant features, etc.
Hydrophytic Vegetation Present? Yes No	─ Is the Sampled	ΙΔτορ	
Hydric Soil Present? Yes No		nd? Yes No	<b>✓</b>
Wetland Hydrology Present? Yes No	_	100100	
Remarks: Upland sample point located upslope of DP11w a	nd wetland boundary.		
VEGETATION - Use scientific names of plants			
Tree Stratum Plot size (30 Foot Radius) Absolute Domi Spec		Dominance Test worksheet	
Populus deltoides 45 🗸	FAC	Number of Dominant Species that are OBL, FACW or FAC:	1 (A)
		Total Number of Dominant Species Across All Strata:	3 (B)
		Percent of Dominant Species	33.3 % (A/B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		That Are OBL, FACW, or FAC:	78 (A/B)
		Prevalence Index worksheet	NA delete be been
		Total % Cover of:  OBL species 0 X 1	Multiply by:
		FACW species 0 X 2	0
		FAC species 45 X 3	135
Herbaceous Stratum Plot size ( 5 Foot Radius)		FACU species 25 X 4	100
Bromus inermis 20	UPL	UPL species 25 X 5	125
Convolvulus arvensis 5	NL	Column Totals 95 (A	360 (B)
Pascopyrum smithii 25	FACU	Prevalence Index = B/A =	3.79
		Hydrophytic Vegetation Indica	tors
		1 - Rapid Test for Hydro	
		2 - Dominance Test is >	50%
		3 - Prevalence Index is <	<b>= 3 0</b>
		4 - Morphological Adapta supporting data in remar sheet.	
		5 - Wetland Non-Vascula	ar Plants
		Problematic Hydrophytic	
Woody Vine Stratum Plot size ( 30 Foot Radius)			
		Indicators of hydric sil and wetland present, unless disturbed or problem.	
Percent Bare Ground 50		Hydrophytic Vegetation Yesent?	es 🗌 NO 🔽
Remarks:			
BG/litter=50%. Data point is dominated by upland vegetation	on.		

SOIL Sampling Point: DP11u

(inches) 0-12	Color (m	ioist)	% (	Color (moist)	x Features %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
		3/2	100					Clay Loam	Cobbly
								-	-
12+								Cobbles	Cobble bottom.
							-		
								<del></del>	-
Type: C=Ca	ncentration	D=Depletion	on. RM=Red	duced Matrix, C	S=Covered	or Coate	d Sand C	- ————— Brains.	cation: PL=Pore Lining, M=Matrix.
				Rs, unless othe			<u> </u>		for Problematic Hydric Soils <sup>3</sup> :
Histosol (				Sandy 0	Gleyed Matr	ix (S4)			Muck (A9) ( <b>LRR I, J</b> )
	ipedon (A2)				Redox (S5)				Prairie Redox (A16) (LRR F, G, H)
Black His		()			d Matrix (S6				Surface (S7) (LRR G)
	n Sulfide (A4 Layers (A5)	*			Mucky Mine Gleyed Matı				Plains Depressions (F16) RR H outside of MLRA 72 & 73)
	ck (A9) ( <b>LR</b> F				d Matrix (F3				red Vertic (F18)
	Below Dark		<b>\11</b> )	= :	Dark Surfac	•		=	arent Material (TF2)
	rk Surface (		,	_	d Dark Surf				Shallow Dark Surface (TF12)
Sandy M	ucky Minera	l (S1)		Redox	Depressions	(F8)		Other	(Explain in Remarks)
	lucky Peat o				ains Depres				of hydrophytic vegetation and
5 cm Mu	cky Peat or	Peat (S3) (I	LRR F)	(ML	.RA 72 & 73	of LRR	H)		d hydrology must be present,
Postriotivo I	aver lif pro	cont):						unless	disturbed or problematic.
Restrictive L Type:		-							
Depth (inc				-				Hydric Soil	Present? Yes No
		of budrio	ooil indicat	ors observed.				1,	
torrianto. MO	eviderice	or riyuric s	son mulcat	ors observed.					
·									
Vetland Hyd	Irology Indi							0	
Vetland Hyd Primary Indica	Irology Indi ators (minim	num of one	•	eck all that appl	•				ary Indicators (minimum of two require
Vetland Hyd	Irology Indi ators (minim Water (A1)	num of one	•	Salt Crust	(B11)	(D40)		Suri	face Soil Cracks (B6)
Vetland Hyd Primary Indica Surface V	Irology Indi ators (minim Water (A1) ter Table (A2	num of one	•	Salt Crust Aquatic In	(B11) vertebrates	,		Suri	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8
Vetland Hyd Primary Indica Surface N High Wat Saturatio	Irology Indi ators (minim Water (A1) ter Table (A2 nn (A3)	num of one	•	Salt Crust Aquatic In Hydrogen	(B11) vertebrates Sulfide Odo	r (C1)		Spa	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10)
Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma	Irology Indi ators (minim Water (A1) ter Table (A2 on (A3) arks (B1)	num of one	•	Salt Crust Aquatic In Hydrogen Dry-Seaso	(B11) vertebrates Sulfide Odo on Water Ta	or (C1) ble (C2)	ng Poets	Surl Spa Dra Oxid	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C
Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sedimen	Irology Indi ators (minim Water (A1) ter Table (A2 on (A3) arks (B1) t Deposits (I	num of one	•	Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized F	(B11) vertebrates Sulfide Odo on Water Ta Rhizosphere	or (C1) ble (C2)	ng Roots	Surfice Surfic	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C r/here tilled)
Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sedimen	Arology Indiators (minimal Water (A1) ter Table (A2) arks (B1) t Deposits (B3)	2) 32)	•	Salt Crust Aquatic In Hydrogen Dry-Seasc Oxidized F	(B11) vertebrates Sulfide Odo on Water Ta Rhizosphere not tilled)	or (C1) ble (C2) s on Livi		Suri Suri Spa Dra Dra Oxid (W) Cra	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C /here tilled) yfish Burrows (C8)
Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sedimen Drift Depo	Arology Indiators (minimer (A1)) ter Table (A2) on (A3) arks (B1) t Deposits (B3) t or Crust (B	2) 32)	•	Salt Crust Aquatic In Hydrogen Dry-Seasc Oxidized F (where Presence	(B11) vertebrates Sulfide Odo on Water Ta Rhizosphere not tilled) of Reduced	or (C1) ble (C2) s on Livi		Suri Suri Spa Dra Oxic (C3) (w	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C /here tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9)
Primary Indicate Surface Notes High Water Mace Mace Mace Mace Mace Mace Mace Mace	Arology Indiators (minimer (A1) Aroter (A3) Arotes (B1) Arotes (B3) Arotes (B3) Arotes (B3) Arotes (B5)	2) 32) 4)		Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized F (where Presence Thin Muck	(B11) vertebrates Sulfide Odo on Water Ta Rhizosphere not tilled) of Reduced c Surface (C	or (C1) ble (C2) s on Livi lron (C4		Surf   Spa   Dra   Oxio   Cra   Satu   Geo	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C /here tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2)
Primary Indication  Surface Note that the second in the se	Arology Indiators (minimer (A1) Arole (A3) Arole (B1) Arole (B3) Arole (B3) Arole (B3) Arole (B5)	num of one  2)  32)  4)  Aerial Ima		Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized F (where Presence Thin Muck	(B11) vertebrates Sulfide Odo on Water Ta Rhizosphere not tilled) of Reduced	or (C1) ble (C2) s on Livi lron (C4		Suri Spa Spa Dra Oxio (C3) (w Cra Satu	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C /here tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2) C-Neutral Test (D5)
Primary Indication  Surface Note that I have a second or	Arology Indiators (minimal Water (A1) ter Table (A2) arks (B1) t Deposits (B3) tor Crust (B3) on Visible on tained Leave	num of one  2)  32)  4)  Aerial Ima		Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized F (where Presence Thin Muck	(B11) vertebrates Sulfide Odo on Water Ta Rhizosphere not tilled) of Reduced c Surface (C	or (C1) ble (C2) s on Livi lron (C4		Suri Spa Spa Dra Oxio (C3) (w Cra Satu	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C /here tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2)
Wetland Hyd Primary Indica Surface N High Wat Saturatio Water Ma Sedimen Drift Depo Algal Mat Iron Depo Inundatio Water-St	Arology Indiators (minimer Water (A1) ter Table (A2) arks (B1) ter Deposits (B3) ter Crust (B3) ter Crust (B4) osits (B5) on Visible on tained Leave vations:	num of one  2)  32)  4)  Aerial Ima	gery (B7)	Salt Crust Aquatic In Hydrogen Dry-Seasc Oxidized F (where Presence Thin Muck Other (Ex	(B11) vertebrates Sulfide Odo on Water Ta Rhizosphere not tilled) of Reduced a Surface (C	or (C1) ble (C2) s on Livi Iron (C4 7) parks)	)	Suri Spa Spa Dra Oxio (C3) (w Cra Satu	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C /here tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2) C-Neutral Test (D5)
Surface N High Wat Saturatio Water Ma Sedimen Drift Depo Algal Mat Iron Depo Inundatio Water-St Field Observ Surface Water	Arology Indiators (minimal Water (A1) ter Table (A2) arks (B1) t Deposits (B3) t or Crust (B3) on Visible on tained Leave vations:	2) 32) 4) Aerial Imaes (B9)	gery (B7)	Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized F (where Presence Thin Muck Other (Exp	(B11) vertebrates Sulfide Odo on Water Ta Rhizosphere not tilled) of Reduced c Surface (C plain in Rem	or (C1) ble (C2) s on Livi Iron (C4 7) arks)	_	Suri Spa Spa Dra Oxio (C3) (w Cra Satu	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C //here tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) morphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Wetland Hyde Primary Indica Surface N High Wate Saturatio Water Ma Sediment Drift Depo Algal Mate Iron Depo Inundatio Water-St Field Observ Surface Water Water Table F Saturation Pro	Arology Indiators (minimal Water (A1) ter Table (A2) arks (B1) t Deposits (B3) t or Crust (B3) on Visible on ained Leave vations:  Present?  Present?	num of one  2)  32)  4)  Aerial Ima	gery (B7)	Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized F (where Presence Thin Muck Other (Exp	(B11) vertebrates Sulfide Odo on Water Ta Rhizosphere not tilled) of Reduced a Surface (C colain in Rem ches):	or (C1) ble (C2) s on Livi Iron (C4 7) narks)	) 	Surfice Surfic	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C /here tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2) C-Neutral Test (D5)
Wetland Hyderimary Indicate Surface Notes High Water Marker Marker Marker Marker Marker Marker Marker Marker Marker Mater Table Football Marker Marke	Arology Indiators (minimal Water (A1) ter Table (A2) arks (B1) t Deposits (B3) t or Crust (B3) tor Crust (B5) on Visible on tained Leave vations:  Present?  Present?  esent?	2) 32) 4) Aerial Imaes (B9) Yes Yes Yes	gery (B7)  No _ No _ No _	Salt Crust Aquatic In Hydrogen Dry-Seasc Oxidized F (where Presence Thin Muck Other (Exp	(B11) vertebrates Sulfide Odo on Water Ta Rhizosphere not tilled) of Reduced a Surface (C colain in Rem ches): ches): ches):	or (C1) ble (C2) s on Livi Iron (C4 7) aarks)	) 	Surficients Surficient Surficient Surficient Surficient Surficient Surficient Surficient Surficient Su	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C //here tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) morphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Wetland Hyderimary Indicate Surface Notes High Water Marker Marker Marker Marker Marker Marker Marker Marker Marker Mater Table Football Marker Marke	Arology Indiators (minimal Water (A1) ter Table (A2) arks (B1) t Deposits (B3) t or Crust (B3) tor Crust (B5) on Visible on tained Leave vations:  Present?  Present?  esent?	2) 32) 4) Aerial Imaes (B9) Yes Yes Yes	gery (B7)  No _ No _ No _	Salt Crust Aquatic In Hydrogen Dry-Seasc Oxidized F (where Presence Thin Muck Other (Exp	(B11) vertebrates Sulfide Odo on Water Ta Rhizosphere not tilled) of Reduced a Surface (C colain in Rem ches): ches): ches):	or (C1) ble (C2) s on Livi Iron (C4 7) aarks)	) 	Surficients Surficient Surficient Surficient Surficient Surficient Surficient Surficient Surficient Su	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C //here tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) morphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Primary Indicate Surface Notes Indicate Surface Notes Indicate Surface Notes Indicate Surface Manager Indicate Surface Mater Surface Water Table Formulation Professional Professional Indicates Capital Indicates Capital Indicates Capital Indicates	Arology Indiators (minimal Water (A1) ter Table (A2) ter Table (A2) ter Table (B3) to Crust (B3) to Crust (B4) to Crust (B5) to Visible on Visi	2) 32) 4) Aerial Imass (B9) Yes Yes Yes Yes (stream ga	gery (B7)  No _ No _ No _ uge, monito	Salt Crust Aquatic In Hydrogen Dry-Seasc Oxidized F (where Presence Thin Muck Other (Exp	(B11) vertebrates Sulfide Odo on Water Ta Rhizosphere not tilled) of Reduced a Surface (C colain in Rem ches): ches): ches):	or (C1) ble (C2) s on Livi Iron (C4 7) aarks)	) 	Surficients Surficient Surficient Surficient Surficient Surficient Surficient Surficient Surficient Su	face Soil Cracks (B6) rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (C //here tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) morphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)

#### WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Kindsfater		City/County: Yellov	vstone	Sampling Date:	6/15/2021
Applicant/Owner: MDT			State: Montana		
Investigator(s): R Quire, S Weyant					
Landform (hillslope, terrace, etc.): Toeslope		Local relief (concav	ve. convex. none): concave	Slo	ope (%):
Subregion (LRR): LRR F	Lat:	- 45.692	2414 Long:10	 )8.692512 <sub>Dati</sub>	<sub>um:</sub> NAD 83
Soil Map Unit Name: An: Alluvial land, wet			NWI classific	ation: PEM1Cx:	Freshwater E
Are climatic / hydrologic conditions on the site typical	al for this time of v	ear? Yes 🗸 N	o	emarks )	
Are Vegetation, Soil, or Hydrology _					/ No 🗆
Are Vegetation, Soil, or Hydrology _	significantly	y disturbed? A			<u> </u>
			f needed, explain any answe	, and the second	
SUMMARY OF FINDINGS – Attach site	map showing	g sampling poin	it locations, transects	, important fe	eatures, etc
	No No	Is the Samp			
Wetland Hydrology Present?		within a We	tland? Yes	No <u></u>	_
Remarks: PEM depressional wetland along ea		oundary.			
,	' '	,			
VEGETATION - Use scientific names of	of plants				
	bsolute Domiar		Dominance Test wor	ksheet	
	6 Cover: Species	s? Status	Number of Dominant S that are OBL, FACW of		2 (A)
			Total Number of Domi Species Across All St		3 (B)
Sapling/Shrub Stratum Plot size (15 Foot	Padius)		Percent of Dominant S That Are OBL, FACW		6.7 % (A/B)
Elaeagnus angustifolia	5 🗸	FACU	Prevalence Index wo	rksheet	
	•		Total % Cover o		lultiply by:
			OBL species	0 X1	0
			FACW species FAC species	55 X 2 1 X 3	110 3
				13 X4	52
Herbaceous Stratum Plot size ( 5 Foot			UPL species		5
Alopecurus arundinaceus	15	FACW	Column Totals	70 (Δ)	170 (B)
Asclepias speciosa Juncus balticus	1 <u> </u>	FACW			
Lepidium campestre	40 <b>v</b>	NL	Prevalence Index		2.43
Poa pratensis	7	FACU	Hydrophytic Vegetat		/ 4 - 4!
Sisymbrium altissimum	1 🗆	FACU		for Hydrophytic \	/egetation
			✓ 2 - Dominance		
			✓ 3 - Prevalence	Index is <= 3.0	
				cal Adaptations ( a in remarks or o	
				on-Vascular Plant	to.
Woody Vine Stratum Plot size ( 30 Foot	Radius)			ydrophytic Vegeta	
	(33.35)		Indicators of hydric sil a present, unless disturbe	ed or problematic	
Percent Bare Ground 35			Hydrophytic Vegetat Present?	ion Yes	NO $\square$
Remarks:					
BG/litter=35%. Evidence of hydrophytic vege 3.0.	tation includes a	a positive dominan	ce test and a prevalence	index less than	or equal to

SOIL Sampling Point: DP11w

	ription: (Describe	to the dep	th neede				r confir	m the absence	of indicators.)
Depth (inches)	Matrix Color (moist)	0/	Calar		x Features		1.002	- Taydura	Domestre
(inches)		%		(moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-15	10YR 2/2	85	7.5YR	4/6	15	C M		Clay Loam	
15+								Rock	Rock bottom.
			-		· ——				
	oncentration, D=Dep						Sand C		ation: PL=Pore Lining, M=Matrix.
	Indicators: (Applic	able to all	LRRs, ur	_					for Problematic Hydric Soils <sup>3</sup> :
Histosol	• •		Ļ	_ ′	Sleyed Ma	` ,			fluck (A9) (LRR I, J)
	oipedon (A2)		<u> </u>		Redox (S5)				Prairie Redox (A16) (LRR F, G, H)
Black Hi	stic (A3) n Sulfide (A4)		L	=	l Matrix (S Mucky Min	,			urface (S7) ( <b>LRR G</b> ) lains Depressions (F16)
	d Layers (A5) ( <b>LRR</b>	F)	<u> </u>	=	olucky iviili Gleyed Ma	, ,			R H outside of MLRA 72 & 73)
	ick (A9) (LRR F, G,		Ť	_	d Matrix (F				ed Vertic (F18)
	d Below Dark Surfac				Dark Surfa				arent Material (TF2)
Thick Da	ark Surface (A12)			Deplete	d Dark Su	rface (F7)		☐ Very S	hallow Dark Surface (TF12)
Sandy IV	lucky Mineral (S1)			_	Depression				Explain in Remarks)
	lucky Peat or Peat					ssions (F1			of hydrophytic vegetation and
5 cm Mu	icky Peat or Peat (S	3) ( <b>LRR F</b> )		(ML	RA 72 & 7	3 of LRR I	<b>-</b> I)		d hydrology must be present,
Doctrictive I	_ayer (if present):							uniess	disturbed or problematic.
Type:								Hudaia Cail	Present? Yes V No No
Depth (inc	, <del>-</del>							Hydric Soil	Present? Yes No
Remarks: Pr	rominent redoximo	orphic cor	ncentratio	ns many	within the	e matrix.			
HYDROLO	GY								
Wetland Hyd	drology Indicators:	<u> </u>							
_	cators (minimum of		d; check a	ill that appl	y)			Seconda	ry Indicators (minimum of two required)
	Water (A1)	•		Salt Crust					ace Soil Cracks (B6)
	iter Table (A2)			Aquatic In		s (B13)			rsely Vegetated Concave Surface (B8)
✓ Saturation				Hydrogen		,			nage Patterns (B10)
	arks (B1)			Dry-Seaso				=	lized Rhizospheres on Living Roots (C3)
_	nt Deposits (B2)			-		res on Livin	g Roots		here tilled)
	posits (B3)				not tilled)		_		rfish Burrows (C8)
	at or Crust (B4)					d Iron (C4)			ration Visible on Aerial Imagery (C9)
	oosits (B5)			Thin Muck					morphic Position (D2)
	on Visible on Aerial	Imagery (B	_	Other (Exp	,	•		· <del></del>	-Neutral Test (D5)
	tained Leaves (B9)	'				•		=	t-Heave Hummocks (D7) ( <b>LRR F</b> )
Field Observ	vations:								
Surface Wate	er Present? Y	′es	No	Depth (in	ches):		_		
Water Table	Present?	es 🔲		Depth (inc			_		
Saturation Pr				Depth (in			We	tland Hydrolog	y Present? Yes No
(includes cap	oillary fringe)								
Describe Red	corded Data (stream	n gauge, m	onitoring w	vell, aerial p	photos, pre	evious insp	ections)	), if available:	
		l hydrolog	y include	s saturatio	on within	6 inches	of the s	soil surface, ge	omorphic position, and a positive
FA	C-Neutral test.								

#### WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Kindsfater		City/C	county: Yellowston	ne	Sampling D	ate:6/16/202
Applicant/Owner: MDT				State: Mont	ana Sampling Po	oint: DP12u
Investigator(s): R Quire, S Weyant		Section	on, Township, Ran	ge: 6	2S	25E
Landform (hillslope, terrace, etc.): Hillside						
	Lat: _					
Soil Map Unit Name: LI: Larim gravelly load	m. 15-35% slopes			NIM/Lal	assification: Not M	lapped
Are climatic / hydrologic conditions on the site						
						<b>.</b>
Are Vegetation, Soil, or Hydro	ology significar	ntly distur	bed? Are "N	lormal Circumstan	ces" present? Yes	s <u> </u>
Are Vegetation, Soil, or Hydro	ology naturally	problema	atic? (If nee	eded, explain any a	inswers in Remark	s.)
SUMMARY OF FINDINGS – Attacl	n site map showi	ing sam	npling point lo	cations, trans	ects, importar	nt features, etc
Hydrophytic Vegetation Present? Ye			Is the Sampled	Δrea		
Hydric Soil Present? Ye	es No 🔽				No_	•
Wetland Hydrology Present?						
Remarks: Upland sample point located u	upslope of DP12w a	ind wetla	and boundary.			
VECETATION. Has a significance						
VEGETATION - Use scientific nan	Absolute Demi	iant In	dicator	Dominance Tes	et workshoot	
<u>Tree Stratum</u> Plot size (30 Foot Radiu	s) % Cover: Spec	ies? St	tatus	Number of Domi		
Populus deltoides	40 🗸	F	AC	that are OBL, FA	ACW or FAC:	1 (A)
				Total Number of Species Across		6 (B)
				Percent of Domi That Are OBL, F		16.7 % (A/B)
Sapling/Shrub Stratum Plot size (15				Prevalence Inde		
Elaeagnus angustifolia	5 🗸		CU	Total % Co		Multiply by:
Prunus virginiana	10 🗸		CU	OBL species		0
Rosa woodsii	5	FA	CU	FACW species	3 X2	6
				FAC species	40 X3	120
Herbaceous Stratum Plot size ( 5	Foot Radius)			FACU species		188
Bromus inermis	60 🗸	UPL	_	UPL species	60 X5	300
Conium maculatum	3 🗌	FAC	CW	Column Totals	150 (A)	614 (B)
Elymus repens	27	FAC	CU	Prevalence	Index = B/A =	4.09
				Hydrophytic Ve	getation Indicator	rs
				☐ 1 - Rapid	d Test for Hydrophy	tic Vegetation
				2 - Domi	nance Test is >50%	%
				3 - Preva	alence Index is <= 3	3.0
				4 - Morp	hological Adaptatio	ons (Provide
					ng data in remarks	
				5 - Wetla	and Non-Vascular F	Plants
				☐ Problema	atic Hydrophytic Ve	egetation (Explain)
Woody Vine Stratum Plot size ( 30	Foot Radius)			Indicators of hydri	c sil and wetland hy sturbed or problem	ydrology must be
				Hydrophytic Ve	•	
Percent Bare Ground 10				Present?		
Remarks:	by unload veretet	on				
BG/litter=10%. Data point is dominated	by upland vegetation	UII.				

SOIL Sampling Point: DP12u

(inches)	Color (moist	rix t) %	Redox Fea	% Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	10YR 3/2		,			Clay Loam	Cobbly.
	10111 0/2	100				-	-
4+						Cobbles	Cobble bottom.
			duced Matrix, CS=Co		Sand G		cation: PL=Pore Lining, M=Matrix.
		plicable to all LRI	Rs, unless otherwise				for Problematic Hydric Soils <sup>3</sup> :
Histosol (A	pedon (A2)		Sandy Gleye	d Matrix (S4)			Muck (A9) ( <b>LRR I, J</b> ) Prairie Redox (A16) ( <b>LRR F, G, H</b> )
Black Hist			Stripped Mat				Surface (S7) (LRR G)
	Sulfide (A4)			y Mineral (F1)			Plains Depressions (F16)
	Layers (A5) (LI	RR F)		ed Matrix (F2)			RR H outside of MLRA 72 & 73)
	k (A9) ( <b>LRR F</b> ,		Depleted Ma				ed Vertic (F18)
Depleted [	Below Dark Su	ırface (A11)	Redox Dark S	Surface (F6)		Red P	arent Material (TF2)
_	k Surface (A12	,		rk Surface (F7)			Shallow Dark Surface (TF12)
	ucky Mineral (S	•	Redox Depre				(Explain in Remarks)
		eat (S2) (LRR G, H		Depressions (F1			of hydrophytic vegetation and
5 cm Muci	ky Peat or Pea	at (S3) ( <b>LRR F</b> )	(MLRA 7	2 & 73 of LRR I	<b>1</b> )		d hydrology must be present, disturbed or problematic.
Restrictive La	ayer (if presen	ıt):					additional of problematic.
Туре:			_				
Depth (inch	nes):		_			Hydric Soil	Present? Yes 🔲 No 🔽
Remarks: No	evidence of l	hydric soil indicat	ors observed.			1	
YDROLOG	SY Y						
	rology Indicat	ors:					
Vetland Hydr	lology illulcat						
-		of one required; ch	neck all that apply)			Seconda	ary Indicators (minimum of two required
rimary Indica	ators (minimum	of one required; ch	neck all that apply)	)			ary Indicators (minimum of two required face Soil Cracks (B6)
Primary Indica	ators (minimum	•	• • • • •			Sur	face Soil Cracks (B6)
Primary Indica	ators (minimum Vater (A1) er Table (A2)	•	Salt Crust (B11)	brates (B13)		Sur	face Soil Cracks (B6)
Primary Indica Surface W  High Wate	ators (minimum Vater (A1) er Table (A2) n (A3)	•	Salt Crust (B11) Aquatic Inverteb	brates (B13) de Odor (C1)		Sur	face Soil Cracks (B6) ursely Vegetated Concave Surface (B8) inage Patterns (B10)
Primary Indica Surface W High Wate Saturation Water Mai	ators (minimum Vater (A1) er Table (A2) n (A3)	•	Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfic	brates (B13) de Odor (C1) ater Table (C2)	g Roots	Sur Spa	face Soil Cracks (B6) ursely Vegetated Concave Surface (B8) inage Patterns (B10)
Primary Indica Surface W High Wate Saturation Water Mai	ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2)	•	Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Dry-Season Wa	brates (B13) de Odor (C1) ater Table (C2) spheres on Livin	g Roots	Sur Spa Spa Dra Oxid	face Soil Cracks (B6) Irsely Vegetated Concave Surface (B8 Inage Patterns (B10) dized Rhizospheres on Living Roots (C
Primary Indica  Surface W  High Wate  Saturation  Water Mai  Sediment  Drift Depo	ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2)	•	Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Dry-Season Wa Oxidized Rhizos (where not til	brates (B13) de Odor (C1) ater Table (C2) spheres on Livin	-	Sur Spa Dra Dra C(C3) (V	face Soil Cracks (B6) ursely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C where tilled)
Primary Indica  Surface W  High Wate  Saturation  Water Mai  Sediment  Drift Depo	ators (minimum Vater (A1) er Table (A2) n (A3) arks (B1) Deposits (B2) or Crust (B4)	•	Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Dry-Season Wa Oxidized Rhizos (where not til	brates (B13) de Odor (C1) ater Table (C2) spheres on Livin lled) educed Iron (C4)	-	Sur   Spa   Spa   Dra   Oxio   (C3)	face Soil Cracks (B6)  Irsely Vegetated Concave Surface (B8)  Inage Patterns (B10)  Idized Rhizospheres on Living Roots (County)  If the county (C8)  If the county (C8)
Primary Indica Surface W High Wate Saturation Water Man Sediment Drift Depo Algal Mat	etors (minimum Vater (A1) er Table (A2) n (A3) erks (B1) Deposits (B2) or Crust (B4) esits (B5)	•	Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Dry-Season Wa Oxidized Rhizos (where not til	brates (B13) de Odor (C1) ater Table (C2) spheres on Livin lled) duced Iron (C4) ace (C7)	-	Sur Spa Spa Oxio (C3) (v Cra Sat	face Soil Cracks (B6) ursely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Counter tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9)
Primary Indica  Surface W  High Wate  Saturation  Water Man  Sediment  Drift Depo  Algal Mat  Iron Depo  Inundation	etors (minimum Vater (A1) er Table (A2) n (A3) erks (B1) Deposits (B2) or Crust (B4) esits (B5)	rial Imagery (B7)	Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Dry-Season Wa Oxidized Rhizos (where not til Presence of Re Thin Muck Surfa	brates (B13) de Odor (C1) ater Table (C2) spheres on Livin lled) duced Iron (C4) ace (C7)	-	Sur Spa Dra Oxi (C3) (v C3) Sati	face Soil Cracks (B6) Irsely Vegetated Concave Surface (B8) Inage Patterns (B10) dized Rhizospheres on Living Roots (Concave tilled) Tyfish Burrows (C8) Uration Visible on Aerial Imagery (C9) Typionorphic Position (D2)
Primary Indica  Surface W  High Wate  Saturation  Water Man  Sediment  Drift Depo  Algal Mat  Iron Depo:  Inundation  Water-Sta	etors (minimum Vater (A1) er Table (A2) n (A3) rrks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5) n Visible on Ae	rial Imagery (B7)	Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Dry-Season Wa Oxidized Rhizos (where not til Presence of Re Thin Muck Surfa	brates (B13) de Odor (C1) ater Table (C2) spheres on Livin lled) duced Iron (C4) ace (C7)	-	Sur Spa Dra Oxi (C3) (v C3) Sati	face Soil Cracks (B6) Irsely Vegetated Concave Surface (B8) Inage Patterns (B10) dized Rhizospheres on Living Roots (Concave tilled) Tyfish Burrows (C8) Ination Visible on Aerial Imagery (C9) Typish Position (D2) C-Neutral Test (D5)
Primary Indica  Surface W  High Water  Saturation  Water Man  Sediment  Drift Depo  Algal Mat  Iron Depo  Inundation  Water-Sta	ators (minimum Vater (A1) er Table (A2) n (A3) irks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5) n Visible on Ae ained Leaves (Bations:	rial Imagery (B7)	Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Dry-Season Wa Oxidized Rhizos (where not til Presence of Re Thin Muck Surfa Other (Explain i	brates (B13) de Odor (C1) ater Table (C2) spheres on Livin lled) duced Iron (C4) ace (C7)		Sur Spa Dra Oxi (C3) (v C3) Sati	face Soil Cracks (B6) Irsely Vegetated Concave Surface (B8) Inage Patterns (B10) dized Rhizospheres on Living Roots (Concave tilled) Tyfish Burrows (C8) Ination Visible on Aerial Imagery (C9) Typish Position (D2) C-Neutral Test (D5)
Primary Indica Surface W High Wate Saturation Water Man Sediment Drift Depo Algal Mat Iron Depo: Inundation Water-Sta Field Observa	etors (minimum Vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Ae ained Leaves (B ations: r Present?	rial Imagery (B7) 39)	Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Dry-Season Wa Oxidized Rhizos (where not til Presence of Re Thin Muck Surfa Other (Explain i	brates (B13) de Odor (C1) ater Table (C2) spheres on Livin lled) duced Iron (C4) ace (C7) in Remarks)	_	Sur Spa Dra Oxi (C3) (v C3) Sati	face Soil Cracks (B6) ursely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Concave tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) promorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Primary Indication Surface Water Man Sediment Drift Depo Algal Mat Iron Depoi Inundation Water-Sta Field Observa Surface Water Water Table P Saturation Pre	etors (minimum Vater (A1) er Table (A2) n (A3) nrks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5) n Visible on Ae ained Leaves (B ations: r Present? esent?	rial Imagery (B7) 39) Yes	Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Dry-Season Wa Oxidized Rhizos (where not til Presence of Re Thin Muck Surfa Other (Explain i	brates (B13) de Odor (C1) ater Table (C2) spheres on Livin lled) duced Iron (C4) ace (C7) in Remarks)	- -	Sur Spa Dra Oxi (C3) (v Cra Sat Gec Froc	face Soil Cracks (B6) Irsely Vegetated Concave Surface (B8) Inage Patterns (B10) dized Rhizospheres on Living Roots (Concave tilled) Tyfish Burrows (C8) Invariant Visible on Aerial Imagery (C9) Typinorphic Position (D2) C-Neutral Test (D5)
Surface W High Water Saturation Water Man Sediment Drift Depo Algal Mat Iron Depo: Inundation Water-Sta Field Observa Surface Water Water Table P Saturation Pre Sincludes capill	etors (minimum Vater (A1) er Table (A2) n (A3) links (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Ae ained Leaves (B ations: r Present? Present? Resent?	rial Imagery (B7) 39)  Yes	Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Dry-Season Wa Oxidized Rhizos (where not til Presence of Re Thin Muck Surfa Other (Explain i	brates (B13) de Odor (C1) ater Table (C2) spheres on Livin lled) duced Iron (C4) ace (C7) in Remarks)	- - - - Wetl	Sur Spa Dra Oxi (C3) (v Cra Sat FAC Fro:	face Soil Cracks (B6) ursely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Concave tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) promorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Primary Indica Surface W High Water Saturation Water Man Sediment Drift Depo Algal Mat Iron Depoi Inundation Water-Sta Field Observa Surface Water Water Table P Saturation Pre includes capill Describe Reco	ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Ae ained Leaves (Bations: r Present? Present? Present? Ellary fringe) porded Data (str	rial Imagery (B7) 39)  Yes No _ Yes No _ Yes No _ eam gauge, monito	Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Dry-Season Wa Oxidized Rhizos (where not til Presence of Re Thin Muck Surfa Other (Explain i	brates (B13) de Odor (C1) ater Table (C2) spheres on Livin lled) duced Iron (C4) ace (C7) in Remarks)	- - - - Wetl	Sur Spa Dra Oxi (C3) (v Cra Sat FAC Fro:	face Soil Cracks (B6) ursely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Concave tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) promorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Primary Indica Surface W High Water Saturation Water Man Sediment Drift Depo Algal Mat Iron Depo Inundation Water-Sta Field Observa Surface Water Vater Table P Saturation Pre includes capill Describe Reco	ators (minimum Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Ae ained Leaves (Bations: r Present? Present? Present? Ellary fringe) porded Data (str	rial Imagery (B7) 39)  Yes	Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Dry-Season Wa Oxidized Rhizos (where not til Presence of Re Thin Muck Surfa Other (Explain i	brates (B13) de Odor (C1) ater Table (C2) spheres on Livin lled) duced Iron (C4) ace (C7) in Remarks)	- - - - Wetl	Sur Spa Dra Oxi (C3) (v Cra Sat FAC Fro:	face Soil Cracks (B6) ursely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Concave tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) promorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)

#### WETLAND DETERMINATION DATA FORM – Great Plains Region

				Sampling Date:6/16/2021
			State: Montana	
Investigator(s): R Quire, S Weyant		Section, Township,	Range: 6 2S	25E
Landform (hillslope, terrace, etc.): Hillside		Local relief (conca	ve, convex, none): concave	Slope (%):27
Subregion (LRR): LRR F	Lat:	45.690	)414 <sub>Long:</sub> -108	3.698608 <sub>Datum:</sub> NAD 83
Soil Map Unit Name: LI: Larim gravelly lo	am, 15-35% slopes		NWI classifica	tion: Not Mapped
Are climatic / hydrologic conditions on the s	ite typical for this time of	vear? Yes 🗸 N	o (If no explain in Re	marks )
Are Vegetation, Soil, or Hyd				
Are Vegetation, Soil, or Hyd	Irology significat	problematic?	f reeded explain any answer	in Domarka
SUMMARY OF FINDINGS – Atta				
	Yes No No Yes No No	is the Samp	oled Area etland? Yes <u>V</u>	No
VEGETATION - Use scientific na				
Tree Stratum Plot size (30 Foot Rad	Absolute Domi		Dominance Test work	sheet
Tree Stratum - Flot 3/20 (50 - Flot Flat	ius) % Cover: Spec	ies? Status	Number of Dominant Sp that are OBL, FACW or	
			Total Number of Domin Species Across All Stra	
Sapling/Shrub Stratum Plot size (15	5 Foot Radius)		Percent of Dominant Sp That Are OBL, FACW,	
Prunus virginiana	2	FACU	Prevalence Index wor	ksheet
Ribes aureum	5 🗸	FACU	Total % Cover of:	
				0 X 1 10 12 X 2 84
				3 X3 9
			· ·	22 X 4 88
	Foot Radius)	FACW		0 X 5 0
Carex praegracilis Juncus balticus	40 <b>v</b>	FACW	Column Totals 77	7 (A) 191 (B)
Nasturtium officinale	10	OBL		0.40
Rumex crispus	3 🗆	FAC	Prevalence Index	- biA -
Schedonorus arundinaceus	15	FACU	Hydrophytic Vegetation	on Indicators or Hydrophytic Vegetation
			2 - Dominance	
			✓ 3 - Prevalence I	ndex is <= 3.0
				al Adaptations (Provide in remarks or on separate
			5 - Wetland Nor	n-Vascular Plants
				drophytic Vegetation (Explain)
Woody Vine Stratum Plot size ( 3	0 Foot Radius)		Indicators of hydric sil an	d wetland hydrology must be I or problematic for #3, 4, 5.
Percent Bare Ground 30			Hydrophytic Vegetation Present?	
Remarks:				
BG/litter=30%. Evidence of hydrophy	tic vegetation includes	s a prevalence index	less than or equal to 3.0.	

SOIL Sampling Point: DP12w

(inches)	Matrix			<u>Features</u>	- 1		
	Color (moist)	<u> </u>	Color (moist)		Type <sup>1</sup> L	oc <sup>2</sup> Texture	Remarks
)-11	10YR 4/2	98 7.5Y	′R 4/6	2	C M	Sandy Clay Loai	m Cobbly.
11+						Cobbles	Cobble bottom.
	<u> </u>						
	-						
Typo: C=C	Concentration, D=Depl	lotion DM-Doc	Hugod Matrix CS	-Covered a	r Coatod S	and Grains <sup>2</sup> l or	ention: PL -Poro Lining M-Matrix
	Indicators: (Applica						cation: PL=Pore Lining, M=Matrix.  for Problematic Hydric Soils <sup>3</sup> :
Histoso				leyed Matrix			fluck (A9) (LRR I, J)
<del></del>	Epipedon (A2)			edox (S5)	(01)		Prairie Redox (A16) ( <b>LRR F, G, H</b> )
	listic (A3)			Matrix (S6)			Surface (S7) (LRR G)
	en Sulfide (A4)		=	/lucky Miner		_	Plains Depressions (F16)
Stratifie	ed Layers (A5) ( <b>LRR</b> F	•)	Loamy G	eleyed Matri	x (F2)	(LR	RR H outside of MLRA 72 & 73)
1 cm M	luck (A9) ( <b>LRR F, G, F</b>	1)	✓ Depleted	d Matrix (F3)	)	Reduc	ed Vertic (F18)
	ed Below Dark Surface	) (A11)		ark Surface		Red P	arent Material (TF2)
_	Park Surface (A12)			d Dark Surfa			hallow Dark Surface (TF12)
	Mucky Mineral (S1)			epressions			(Explain in Remarks)
	Mucky Peat or Peat (\$			ins Depress			of hydrophytic vegetation and
5 CM IVI	lucky Peat or Peat (S3	,) (LRR F)	(IVILF	RA 72 & 73	OT LKK H)		d hydrology must be present, disturbed or problematic.
Restrictive	Layer (if present):					dilicoo	distance of problematic.
Type:							
Depth (in						Hydric Soil	Present? Yes No
Remarks: E	Prominent redoximo	rphic conconf	trations commo	n within th	o donloto	d matrix	
YDROLC							
-	ydrology Indicators:						
<u>Primary In</u> di	icators (minimum of or	ne required; ch		,		Seconda	ary Indicators (minimum of two required
	e Water (A1)		Salt Crust (	R11)		_	
✓ Surface							ace Soil Cracks (B6)
✓ Surface	/ater Table (A2)		Aquatic Inv	ertebrates (	,	Spa	rsely Vegetated Concave Surface (B8)
✓ Surface ☐ High War ✓ Saturati	ion (A3)		Aquatic Inv	ertebrates ( Sulfide Odor	· (C1)	☐ Spa ☐ Drai	rsely Vegetated Concave Surface (B8) inage Patterns (B10)
✓ Surface ☐ High Ward ✓ Saturati ☐ Water M	ion (A3) Marks (B1)		Aquatic Inv. Hydrogen S Dry-Seasor	ertebrates ( Sulfide Odor n Water Tab	(C1) le (C2)	☐ Spa ☐ Drai ☐ Oxid	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C
Surface High War Saturati Water M	ion (A3) Marks (B1) ent Deposits (B2)		Aquatic Inv Hydrogen S Dry-Seasor Oxidized R	ertebrates ( Sulfide Odor n Water Tab hizospheres	(C1) le (C2)	☐ Spa ☐ Drai ☐ Oxio Roots (C3) (w	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C rhere tilled)
Surface High War Saturati Water N Sedime Drift De	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		Aquatic Inv Hydrogen S Dry-Seasor Oxidized RI (where n	ertebrates (l Sulfide Odor n Water Tab hizospheres ot tilled)	(C1) le (C2) on Living	Spa	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C where tilled) yfish Burrows (C8)
Surface High W Saturati Water N Sedime Drift De Algal M	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4)		Aquatic Inv Hydrogen S Dry-Seasor Oxidized R (where n Presence o	ertebrates (I Sulfide Odor n Water Tab hizospheres ot tilled) of Reduced I	(C1) son Living ron (C4)	☐ Spa ☐ Drai ☐ Oxid Roots (C3) (w ☐ Crai ☐ Satu	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C rhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9)
Surface High W. Saturati Water N Sedime Drift De Algal M Iron De	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5)		Aquatic Inv Hydrogen S Dry-Seasor Oxidized RI (where n Presence o Thin Muck	ertebrates (I Sulfide Odor n Water Tab hizospheres ot tilled) of Reduced I Surface (C7	ron (C4)	☐ Spa☐ Drai ☐ Oxid Roots (C3) (w☐ Cray ☐ Satu ☑ Geo	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Contere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) whorphic Position (D2)
Surface High W Saturati Water N Sedime Drift De Algal M Iron De Inundat	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial Ir	nagery (B7)	Aquatic Inv Hydrogen S Dry-Seasor Oxidized RI (where n Presence o Thin Muck	ertebrates (I Sulfide Odor n Water Tab hizospheres ot tilled) of Reduced I	ron (C4)	☐ Spa☐ Drai ☐ Oxid Roots (C3) (w☐ Cray ☐ Satu ☑ Geo	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Contere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) emorphic Position (D2) C-Neutral Test (D5)
Surface High Wi Saturati Water N Sedime Drift De Algal M Iron De Inundat Water-S	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial In Stained Leaves (B9)	nagery (B7)	Aquatic Inv Hydrogen S Dry-Seasor Oxidized RI (where n Presence o Thin Muck	ertebrates (I Sulfide Odor n Water Tab hizospheres ot tilled) of Reduced I Surface (C7	ron (C4)	☐ Spa☐ Drai ☐ Oxid Roots (C3) (w☐ Cray ☐ Satu ☑ Geo	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C rhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) emorphic Position (D2)
Surface High W. Saturati Water M Sedime Drift De Algal M Iron De Inundat Water-S	wion (A3) Marks (B1) Ant Deposits (B2) Apposits (B3) Ant or Crust (B4) Apposits (B5) Apposits (B5) Apposits (B5) Apposits (B9) Apposits (B9) Apposits (B9) Apposits (B9)		Aquatic Inv Hydrogen S Dry-Seasor Oxidized R (where n Presence o Thin Muck S Other (Expl	ertebrates (I Sulfide Odor n Water Tab hizospheres rot tilled) of Reduced I Surface (C7 lain in Rema	r (C1) sle (C2) s on Living ron (C4) r) arks)	☐ Spa☐ Drai ☐ Oxid Roots (C3) (w☐ Cray ☐ Satu ☑ Geo	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Contere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) there tilled (C9)
Surface High Wi Saturati Water M Sedime Drift De Algal M Iron De Inundat Water-S Field Obser Surface War	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial In Stained Leaves (B9) rvations: tter Present?	es 🔽 No _	Aquatic Inv Hydrogen S Dry-Seasor Oxidized RI (where n Presence o Thin Muck S Other (Expl	ertebrates (I Sulfide Odor n Water Tab hizospheres ot tilled) of Reduced I Surface (C7 lain in Rema	r (C1) sle (C2) s on Living ron (C4) ron (C4) rarks)	☐ Spa☐ Drai ☐ Oxid Roots (C3) (w☐ Cray ☐ Satu ☑ Geo	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C rhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) emorphic Position (D2) C-Neutral Test (D5)
Surface High Water Name Sedime Drift De Algal Malron De Inundat Water-S Field Obser Surface Water Table	with the present?	es  No _	Aquatic Inv Hydrogen S Dry-Seasor Oxidized R (where n Presence o Thin Muck Other (Expl	ertebrates (I Sulfide Odor n Water Tab hizospheres ot tilled) of Reduced I Surface (C7 lain in Rema	r (C1) sle (C2) s on Living ron (C4) r) arks)	☐ Spa☐ Drai ☐ Oxio Roots (C3) (w☐ Cray ☐ Satu ☑ Geo ☐ FAC	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Cyhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) imorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Surface High Water Males Algal Males Inundat Water-Serield Obsers Surface Water Table Saturation F	with the control of t	es  No _	Aquatic Inv Hydrogen S Dry-Seasor Oxidized RI (where n Presence o Thin Muck S Other (Expl	ertebrates (I Sulfide Odor n Water Tab hizospheres ot tilled) of Reduced I Surface (C7 lain in Rema	r (C1) sle (C2) s on Living ron (C4) r) arks)	☐ Spa☐ Drai ☐ Oxio Roots (C3) (w☐ Cray ☐ Satu ☑ Geo ☐ FAC	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C rhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) emorphic Position (D2) C-Neutral Test (D5)
Surface High Water Males Sedime Drift De Algal Males Iron De Inundat Water-S Field Obser Surface Water Table Saturation F (includes ca	with the present?	es No	Aquatic Inv Hydrogen S Dry-Seasor Oxidized R (where n Presence o Thin Muck S Other (Expl	ertebrates (I Sulfide Odor n Water Tab hizospheres ot tilled) of Reduced I Surface (C7 lain in Rema	r (C1) sle (C2) s on Living ron (C4) r) arks)	☐ Spa☐ Drai ☐ Oxio Roots (C3) (w☐ Cray ☐ Satu ☑ Geo ☐ FAC ☐ Fros  Wetland Hydrolog	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Contere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) imorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Surface High Water Maler	with the control of t	es No	Aquatic Inv Hydrogen S Dry-Seasor Oxidized R (where n Presence o Thin Muck S Other (Expl	ertebrates (I Sulfide Odor n Water Tab hizospheres ot tilled) of Reduced I Surface (C7 lain in Rema	r (C1) sle (C2) s on Living ron (C4) r) arks)	☐ Spa☐ Drai ☐ Oxio Roots (C3) (w☐ Cray ☐ Satu ☑ Geo ☐ FAC ☐ Fros  Wetland Hydrolog	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Contere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) imorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Surface High Wi Saturati Water N Sedime Drift De Algal M Iron De Inundat Water-S Field Obser Surface Wat Water Table Saturation F Includes ca	warks (B1) And Deposits (B2) Apposits (B3) And or Crust (B4) Apposits (B5) And Or Visible on Aerial In Action Visible on Aerial In Actions: Applications: Application of Aerial In Action Visible on A	es No es No No gauge, monitor	Aquatic Inv Hydrogen S Dry-Seasor Oxidized R (where n Presence o Thin Muck S Other (Expl	ertebrates (I Sulfide Odor n Water Tab hizospheres ot tilled) of Reduced I Surface (C7 lain in Rema	r (C1) sle (C2) s on Living ron (C4) r) arks)  1 0 ous inspec	☐ Spa☐ Drai☐ Oxio Roots (C3) (w☐ Cray☐ Satu☐ FAC☐ Fros  Wetland Hydrolog  tions), if available:	rsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (Content tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) imorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)
Surface High Wi Saturati Water M Sedime Drift De Algal M Iron De Inundat Water-S Field Obser Surface Wat Vater Table Saturation F Includes ca	with the present?	es No es No No gauge, monitor	Aquatic Inv Hydrogen S Dry-Seasor Oxidized R (where n Presence o Thin Muck S Other (Expl	ertebrates (I Sulfide Odor n Water Tab hizospheres ot tilled) of Reduced I Surface (C7 lain in Rema	r (C1) sle (C2) s on Living ron (C4) r) arks)  1 0 ous inspec	☐ Spa☐ Drai☐ Oxio Roots (C3) (w☐ Cray☐ Satu☐ FAC☐ Fros  Wetland Hydrolog  tions), if available:	rsely Vegetated Concave Surface (B8 inage Patterns (B10) dized Rhizospheres on Living Roots (Cyhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) emorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)

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

1. Project name Kindsf	fater		2. MDT pro	iect#	ST	PX 56(56)		Cont	t <b>rol#</b> 5	034
	1001 4 Fuelveters	D Ouis			\A/_4I		Vindofata	r araata	duction	J
3. Evaluation Date 9/14/2	4. Evaluators	R Quii	ie	5.	weti	and/Site# (s)	Kindsfate	er - create	u welland	1
6. Wetland Location(s): T	2S <b>R</b> 2	5E	Sec1 6		Т	R		Sec2		
Approx Stationing or Milepo	osts							1		
Watershed 13 - Upper Y	'ellowstone <b>W</b> a	atersh	ed/County	Yellow	stone					
7. Evaluating Agency	CCI for MDT					8. Wetland	eizo acroe			5.3
Purpose of Evaluation						How assess			ed e.g. by	
☐ Wetlands potentially aff	fected by MDT project					9. Assesssr		ivieasure	a e.g. by	5.3
						(AA) size (ac				0.0
☐ Mitigation Wetlands: pr						How assess	ed:	Measure	d e.g. by	GPS
✓ Mitigation Wetlands: po	ost construction									
<b>U</b> Other										
10. Classification of Wetlar	nd and Aquatic Habitats	in A/	4							
HGM Class (Brinson)	Class (Cowardin)		Modifier (	Coward	in)	Water Re	egime		% of AA	
Depressional	Emergent Wetland		Excavated			Seasonal/In	termittent			50
Depressional	Scrub-Shrub Wetland		Excavated			Seasonal/In	termittent			45
Depressional	Aquatic Bed		Excavated			Seasonal/In	termittent			5
	ι									
11. Estimated Relative Abur	ndance Common									
12. General Condition of A										
<ul> <li>i. Disturbance: (use matrix tagget a distribution)</li> </ul>		ppropri	iate response -	- see ins	tructior	ns for Montana-l	isted noxiou	s weed an	d	
						conditions adjacen				
			iged in predomina al state; is not gra	-		I not cultivated, but erately grazed or ha	•		ivated or he l; subject to	avily grazed substantial fill
Conditions wit	thin AA	hayed	d, logged, or othe	rwise	selec	ctively logged; or ha	as been		nt, grading, o	elearing, or n; high road or
		roads	or buildings; and	noxious	few r	oads or buildings;	noxious	building o	density; or n	oxious weed
		weed	or ANVS cover is	s <=15%.	weed	d or ANVS cover is	<=30%.	or ANVS	cover is >=3	i0%.
AA occurs and is managed in predomin										
grazed, hayed, logged, or otherwise co roads or occupied buildings; and noxio	· ·	lo	ow disturbar	nce		low disturba	ince	mode	erate dis	turbance
<=15%.	also assessed as harvard as	_			_					
AA not cultivated, but may be moderate selectively logged; or has been subject	t to relatively minor clearing, fill		moderate	1	l			bio	ub diatur	hanaa
placement, or hydrological alteration; or noxious weed or ANVS cover is <=30%			disturbance	e	II mo	oderate distu	irbance	nig	h distur	bance
AA cultivated or heavily grazed or logg				1						1
substantial fill placement, grading, clear high road or building density; or noxion		hiç	gh disturbai	nce		high disturba	ance	hig	ıh disturl	pance
>=30%.							-			
Comments: (types of disturb The wetland mitigation site wa				hatantia	l avag	wation madif	iootion/rob	abilitation	to evietin	a watlanda
and revegetation.	s constructed in 2012/20	is and	u iriciuueu su	DStarilla	пехса	ivation, moun	ication/rem	abilitation	to existii	ig wellanus,
ii. Prominent noxious, aquat	ic nuisance, other exot	ic spe	ecies:							
Euphorbia esula, Cirsium arve	ense, Convolvusus arven	sis								
iii. Provide brief descriptive	•									
The AA consists of excavated in 2013 and 2021 is the ninth r										
agriculture (grazing), transport										

13. Structural Diversity: (based on number of "Cowardin" vegetated classes present [do not include unvegetated classes], see #10 above)

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating		ent management nce of additional	 	Modified Rating
>=3 (or 2 if 1 is forested) classes	Н	NA		NA	NA
2 (or 1 if forested) classes	М	NA		NA	NA
1 class, but not a monoculture	M	<no< td=""><td></td><td>YES&gt;</td><td>L</td></no<>		YES>	L
1 class, monoculture (1 species comprises>=90% of total cover)	L	NA		NA	NA

Comments: P	alustrine e	mergent vegeta	tion, aquatic be	ed and young palus	trine scrub-shrub c	ommunities develo	oping.	
		SECTIO	N PERTAINI	NG to FUNCTI	ONS VALUES	ASSESSMEN	IT	
4A. Habitat fo	r Federally	/ Listed or Pro	posed Threate	ned or Endangere	ed Plants or Anima	als:		
i. AA is Doo	umented	(D) or Suspect	ed (S) to conta	in (check one bas	sed on definitions	contained in inst	tructions):	
rimary or criti	cal habitat	t (list species)	() D ()	) <b>s</b>				
econdary hab	itat (list S <sub>l</sub>	pecies)	□ D    □	) <b>S</b>				
Secondary hab		,						
-	tat (list sp	,	□ D    □					
ncidental habi lo usable habi	tat (list sp	ecies)	○ D ○ ○ D ○ ✓ S	) S	e at [check] the fun	ctional points and	rating)	
ncidental habi lo usable habi	tat (list sp tat e the cond	ecies)	○ D ○ ○ D ○ ✓ S	) S	e at [check] the fun sus/secondary	ctional points and	rating)	None

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    S    Plains spadefoot (S3)	
Secondary habitat (list Species)	□ D    □ S    □	
Incidental habitat (list species)	□ D    □ S	
No usable habitat	s ·	

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

ii. Italing (use the cone	iusions nonnia	bove and the n	I I I DCIOW LO AITIV	c at [check] the full	ctional points and	raung)	
Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
S1 Species: Functional Points and Rating	1H	.8H	.7M	.6M	.2L	1L	OL
S2 and S3 Species: Functional Points and Rating	.9Н	.7M	.6M	.5M	.2L	1L	OL

Sources for documented use

Observed approximately 40 plains spadefoot during the 2013 site visit and MDT identified this species during a 2019 site visit; none observed in 2014-2018 or 2020-21.

																			Mode	erate			
ubstantial (base	d on any	of the	followin	g [che	ck]):						Minin	n <b>al</b> (b	ased or	n any of	the follo	owing	[check])	):					
observations	of abund	lant wild	dlife #s	or hig	h specie	es diver	sity (dur	ing an	y period	d)	fe	w or n	o wildlif	e obser	vations	during	j peak u	se per	iods				
abundant wild	llife sign	such a	s scat, t	tracks	, nest st	ructure	s, game	trails,	etc.		litt	le to r	no wildli	fe sign									
presence of e	xtremely	/ limiting	g habita	t featu	ıres not	availab	ole in the	surro	unding	area	sp	arse a	adjacen	t upland	food s	ources	;						
interviews wit	h local b	iologist	s with k	nowle	dge of t	he AA					int	terviev	vs with	local bid	ologists	with k	nowledo	ge of th	ie AA				
o <b>derate</b> (based o	on any o	f the fol	lowing l	[check	-1\-																		
observations	-					uals or	relativel	v few	snecies	during	neak ne	rinds											
common occi																							
adequate adja					o oout,	,			o, gao	, 0													
interviews wit					dae of t	he AA																	
]		.o.og.ot			ago o																		
i. Wildlife hab from #13. For other in terms o permanent/pere terms])	class c of their	over to percer	be con	nside positi	ered ev	enly d	listribut (see #	ed, th	ne mos Abbrev	t and le	east pr for su	evale rface	ent <b>veg</b> water	<b>etateo</b> durati	l class ons are	es mi e as f	ust be ollows:	within P/P =	20% of	f each	e		
Structural diversity (see #13)				Hi	gh							Mode	erate					Lo	ow				
Class cover distribution (all vegetated classes)		Eve	n			Une	ven			Eve	n			Une	ven			Εν	/en				
Duration of surface water in ≥ 10% of AA	P/P	S/I	T/E	А	P/P	S/I	T/E	А	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α			
Low disturbance at AA (see #12i)	Е	Е	E	Н	Е	Е	Н	Н	Е	Н	Н	М	Е	Н	М	М	Е	Н	М	М			
Moderate disturbance at AA (see #12i)	Н	Н	н	н	Н	Н	Н	М	Н	Н	М	М	н	М	М	L	Ξ	М	L	L			
High disturbance				4 1																			
	M	M	М	L	M	M	L	L	М	М	L	L	М	L	L	L	L	L	L	L			
at AA (see #12i)	use the	e cond	clusio	ns fro	om i a	nd ii a				atrix be	elow to	o arri	ve at	checl	L (] the	func	tional	points	s and r				_
iii. Rating (u	use the	e cond	clusio	ns fro		nd ii a				atrix be И High	elow to	o arri	ve at	checl	rating	func		L points	s and r		Low	1	
iii. Rating (i Evidence of v Substantial	use the	e cond	clusio	ns fro	om i a	nd ii a				atrix be	elow to	o arri	ve at	checl	rating Mod	funct		points	s and r		Low .7M	<u> </u>	
iii. Rating (u Evidence of v Substantial	use the	e cond	clusio	ns fro	om i a	nd ii a				atrix be И High	elow to	o arri	ve at	checl	Mod Mod	fun c g (ii) derat		points	s and r		Low		
iii. Rating (u Evidence of v Substantial	use the	e cond	clusio	ns fro	om i a Except	nd ii a				atrix be И High .9F	elow to	o arri	ve at	checl	Mod	funci g (ii) derat 8H		points	s and r		Low .7M		
iii. Rating (u Evidence of v Substantial Moderate Minimal	use the	e cond use (	clusion	ns fro	Except 1E .9H	nd ii a		and t	the ma	High	elow to	o arri	ve at	checl	Mod	function (ii) derat 8H 5M		L	s and r		.7M .3L		
iii. Rating (u Evidence of v Substantial Moderate Minimal omments  I.D. General I ould be used storable due	wildlife Wildlife	e concuse (i	t Rati	expo	1Except 1E .9H .6M	nd ii a	rease	and t	the ma	High .9h .7l .4M uent m	elow to	arriing y	ve at itat fer itat f	e exis	Moo	funci g (ii) derat 8H 5M 2L	e on is "	corre	ctable'	ating)	.7M .3L .1L		
iii. Rating (u Evidence of v Substantial Moderate Minimal omments  4D. General I ould be used storable due	Wildlife Wildlife Fish H by fish to hab	e concuse (ife rational interest in the concustor) abitation [i.e., itat conceeds in the conce	t Rati	expo	1E .9H .6M Asses	nd ii a	rease	in su	the ma	High .9I .7I .4I uent m	onitor	o arriing y	ve at itat fee	e exis	Model	funci g (ii) derat 8H 5M 2L	e on is " ot used trappe	∞rre d by f d d in a	ctable'	ating)	.7M .3L .1L		
iii. Rating (u Evidence of v Substantial Moderate Minimal omments Duld be used storable due NA here: Habitat Qu	Wildlife Wildlife Wildlife by fish Hoto hab	e concuse (ife rational interest in the concustor) abitation [i.e., itat conceeds in the conce	t Rati	expo	1E .9H .6M Asses precidents or is r	nd ii a ional ito inc to inc ss this uded not de	rease s functiby persired to	in su	the ma	High .9I .7I .4I uent m	onitor	o arriing y	ve at itat feetitat feetita feetitat fe	e exis	Moderating sites and the second secon	funci g (ii) derat 8H 5M 2L	e on is " ot used trappe	∞rre d by f d d in a	ctable'	' such h use	.7M .3L .1L	<b>(</b>	
iii. Rating (u Evidence of v Substantial Moderate Minimal omments  4D. General I ould be used storable due NA here: Habitat Qu Duration of surface in AA Aquatic hiding / re	wildlife Wildlife Wildlife Wildlife by fish H by fish to hab and pr	e concuse (ife rational interest in the concustor) abitation [i.e., itat conceeds in the conce	t Rati	expo	1E .9H .6N .Asses	nd ii a ional ito inc to inc ss this uded not de	rease s funct by per sired f	in su	bsequitible maintains the Main	A is usert or conagem	onitor	o arriing y	ve at itat fee	e exis	rating Mod	funci g (ii) derat 8H 5M 2L	e on is " ot used trappe	∞rre d by f d d in a	ctable' ish, fis a cana	' such h use	.7M .3L .1L	ral	000
iii. Rating (u Evidence of v Substantial Moderate Minimal Comments  4D. General I Comments  AD. Habitat Qu Duration of surface in AA Aquatic hiding / re escape cover	Wildlife Wildlife Wildlife with the by fish to hab and price water sting /	ife rat	t Ratii	expo	1E .9H .6N .Asses	nd ii a	rease s functi by per sired f	in su	bsequitible maintains the Main	A is usert or conagem	elow to	o arriing y	ve at itat fee vears.	e exis	rating Mod	function (ii) derate 8H 5M 2L tuation is not hender 1	e on is " ot used trappe	∞rred by f	ctable' ish, fis a cana	' such h use	.7M .3L .1L	ral	
iii. Rating ( Evidence of v Substantial Moderate Minimal Comments  4D. General I Substantial AD. General I Substantial	Wildle Wildlife Wildlife Wildle Wildl	ife rat	t Rati fish u postra I to 14	expo	Domia  Exception  1E 99 .6M  Assess precling or is record or is record.	nd ii a	rease s funct by per sired t	and to the control of	bsequitine Maintenance in the All culve a maintenance in the All culve in	High .9h .7l .4N uent m	elow to	o arri habi	ve at test feet or the control or th	e exis  I ful  I such	rating si	funci g (ii) derat 8H 5M 2L tuati is no h ent	on is " ot usee	corred by for a string)	ctable'ish, fisa cana	ating)  'such h use porary/ Ade	.7M .3L .1L .that the is not in check	ral Po	000

.4M

.3L

.4M

.3L

.3L

.2L

.5M

.2L

.4M

.2L

.3L

.2L

.2L

.1L

.2L

.1L

.1L

.1L

.7M

.4M

.6M

.4M

.5M

.4M

Game fish species
FWP Tier III or
Introduced Game fish

FWP Non-Game Tier IV

or No fish species

.8H

.5M

.7M

.5M

.6M

.5M

.5M

.4M

.4M

.3L

.5M

.4M

Sources used for	identifying fish sp.	potentially fou	und in AA:									
a) Is fish use of the current final MDE fishery or aquatic	ng (NOTE: Modi ne AA significantly Q list of waterbodi life support, <b>or</b> do in <b>i</b> above by 0.1:	reduced by a ces in need of a cestin aquatic nuisal	culvert, dil TMDL dev nce plant o	ke, or other m elopment witl	nan-made <sup>°</sup> h listed "Pl	structure o	paired Úses	" includin	g cold or v	varm water		
,	ontain a document tive fish or introduc	, .	_	er critical hab Y • N		add 0.1 to	ctuary pool, the adjusted d Rating	, .	•	, ,	1	
iii. Final Score a	ınd Rating: ONA	<u> </u>	Commer	nts: No fish	habitat	within m	itigation s	ite; no p	perennia	ıl water.		
14E. Flood Atte	enuation: (Applies pank flow, click	only to wetlar	nds subjec and proce	et to flooding ved to 14F.)	via in-char	nel or ove	rbank flow.	lf wetland	ls in AA aı	e not floode	ed from in-	
	ng from top to bott Iculated Entrenchr			w to arrive at			al points and tely entrenc		Entropo	hed-A, F, G	etroom	
1994, 1996)			Silgritiy	stream types		II .	stream type		Entrenc	types	Sueam	
% of flooded we and/or scrub/shr	tland classified as rub	forested	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%	
AA contains no	outlet or restricte	ed outlet	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L	
AA contains unr	restricted outlet		.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L	
	Slightly Entrench	ed	T	Moderately		ı			ntrenched			
C stream type	ER = >2.2  D stream type	E stream t	type	ER = 1.4 B strea		Α	stream type		R = 1.0 – 1.4 F stream ty		stream type	<u> </u>
	•		5									
Floodprone	2 x	s Bankfull Dep	th W	Bankfull D	Cheffical College	The state of the s	F W Bank	l∞d-proi dull Widt Entrend	th			
	of wetland in the A		width	1	nade featı	ıres which		ratio		by floods loo	cated	
Comments: Flo	ooding does no annel or overb	ot occur on			water is	the prim	ary hyrdo	logy so	urce; no	flooding	occurs f	rom in
<b>14F. Short ar</b> upland surface 14G.)	nd Long Term S e flow, or ground	Surface Wate water flow. I	er Storaç f no wetta	ge: (Applies ands in the <i>i</i>	to wetlar AA are su	ids that floot bject to f	ood or pono looding or p	d from o oonding,	verbank o dick [	or in-chanr NA here		
water duration	orking from top to s are as follows: ons of these term	P/P = perma										
Estimated maximur	m acre feet of water co AA that are subject t	ontained in		>5 acre feet			1.1 to 5	acre feet			≤1 acre fo	ot

turtner definitions of these terms].)									
Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding		>5 acre feet		1.	1 to 5 acre feet			≤1 acre foot	
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond ≥ <b>5 out of 10 years</b>	1H	.9H	.8H	.8Н	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond < 5 out of 10 years	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: Estimated that AA ponds greater than 5 out of 10 years with approximately 5.3 acres inundated to approximately 0.5 feet (5.3\*0.5=2.65 acre feet).

<ul><li>i. Rating (working from top to bot = low])</li></ul>	tom, use t	he matrix b	elow to arrive	e at [check] the				
Sediment, nutrient, and toxicant input levels within AA	to de compou not sub	eliver levels on ands at levels ostantially imposes of nutrien	of sediments, n	er functions are edimentation, , or signs of	developmen nutrients, or to with potential t compounds suc	on MDEQ list of wont for "probable ca xicants or AA rec to deliver high levelsh that other funct tation, sources of of eutrophicat	auses" related t eives or surrou els of sediment ions are substa nutrients or tox	osediment, nding land us s, nutrients, c ntially impaire
% cover of wetland vegetation in AA Evidence of flooding / ponding in AA	≥ 7	70%	<	70%	≥ 7	0%	<	70%
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains <b>no or restricted outlet</b>	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
۸ ۸								
Comments: Isolated depression within the majority of the Major	n: (Applies	only if AA oc	curs on or wit	hin the banks or	a river, stream, or	r other <u>na</u> tural or	man-made	.1L r than 70%
Isolated depression within the majority of the	al wetland of wetland on: (Applies ling water b	cells do no cells. only if AA oc ody which is	t have outlet	s. Percent cove	er of wetland ve a river, stream, or does not apply, o	getation increa	sed to greate	
Isolated depression within the majority of within the majority of the majority	al wetland of wetland on: (Applies ling water buse the ma	cells do no cells. only if AA oc ody which is	t have outlet	s. Percent cove	a river, stream, or does not apply, or points and rating to rooted vegetation	getation increa	sed to greate	
Isolated depression within the majority of the	al wetland of wetland on: (Applies ling water buse the ma	cells do no cells. only if AA oc ody which is	t have outlet	s. Percent cover the banks or very action. If 14H	a river, stream, or does not apply, or points and rating to rooted vegetation	getation increa	sed to greate	
Isolated depression within the majority of within the majority of the stabilization drainage, or on the shoreline of a standard coroceed to 14l.)  Rating (working from top to bottom, the Cover of wetland streambank or shoreline by species with stability ratings of ≥6 (see Appendix F).	al wetland of wetland on: (Applies ling water buse the ma	cells do no cells.  only if AA oc ody which is  atrix below to	t have outlet	s. Percent cover the banks or the action. If 14H ck] the functional face water adjacent Seasonal / Intermitt	a river, stream, or does not apply, or points and rating to rooted vegetation	getation increa	sed to greate	
	al wetland of wetland on: (Applies ling water buse the ma	cells do no cells.  only if AA ocody which is atrix below to ent / Perennial	t have outlet	s. Percent cover the banks or the action. If 14H ck] the functional face water adjacent seasonal / Intermitt .9H	a river, stream, or does not apply, or points and rating to rooted vegetation	getation increa	sed to greate	

General Fish Habitat	Gen	eral Wildlife Habitat Ratii	ng (14C.iii.)
Rating (14D.iii.)	E/H	M	L
E/H	н	н	м
М	Н	М	м
L	М	М	L
N/A	Н	М	L

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

Α		Vege	etated comp	onent >5	acres		Vegetated component 1-5 acres							Veg	etated com	ponent <1	acre	
В	Hi	gh	Mode	erate	١	ow	Н	igh	Mod	erate	Lo	ow	Hi	gh	Mode	erate	Lo	ow
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1E	.7H	.8H	.5M	.6M	.4M	.9Н	.6M	.7H	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7Н	.4M	.5M	.3L	.8Н	.5M	.6M	.3L	.4M	.2L	.7H	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7H	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

control). a) Is there an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference? Y • N · If yes, add 0.1 to the score in ii above and adjust rating accordingly: Modified Rating .8H	iii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1.) Vegetated Upland plant cover, ≤ 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowi					
to the score in ii above and adjust rating accordingly: Modified Rating .8H	control). a) Is there an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference?	Υ	$\odot$	$_{N}$ $\bigcirc$	If yes, add 0.1	
	to the score in ii above and adjust rating accordingly: Modified Rating 8H					

Comments: Adjacent upland buffer with greater than 30% plant cover. 5.3 acres primarily vegetated of wetland within AA

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below) i. Discharge Indicators ii. Recharge Indicators The AA is a slope wetland Permeable substrate present without underlying impeding layer Springs or seeps are known or observed Wetland contains inlet but no outlet Vegetation growing during domant 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 1H .4M .1L .7M Insufficient Data/Information Comments: All wetland cells with shallow surface water or cells saturated to surface; gravel substrate in created depressional wetland 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 plant association listed as "S2" by and structural diversity (#13) is as "S1" by the MTNHP the MTNHP low-moderate Estimated relative abundant abundant abundant commo rare common rare common rare abundance (#11) Low disturbance at AA 1H .9H .8H .8H .6M .5M .5M .4M .3L (#12i) Moderate disturbance at .9H H8. .7M .2L .7M .5M .4M .4M .3L AA (#12i) High disturbance at AA .8H .7H .6M .6M .4M .3L .3L .2L .1L (#12i) Comments: Wetlands are considered common, site has moderate disturbance, and structural diversity is moderate. 14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity) i. Is the AA a known or potential rec./ed. site: (check) Y  $N\bigcirc$ (if 'Yes' continue with the evaluation; if 'No' then click NA 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) 15H .2H 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: Access is permitted without permission with the exception of the police shooting range. **General Site Notes** Anticipate higher wildlife ratings in subsequent monitoring years. Wetland acreage increased by 0.4 acres since 2020.

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	0	1	0.00	
B. MT Natural Heritage Program Species Habitat	Н	.9	1	4.77	<b>✓</b>
C. General Wildlife Habitat	М	.7	1	3.71	✓
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	М	.6	1	3.18	
G. Sediment/Nutrient/Toxicant Removal	Н	1	1	5.30	<b>~</b>
H. Sediment/Shoreline Stabilization	NA	0	0	0.00	
Production Export/Food Chain Support	Н	.8	1	4.24	<b>✓</b>
J. Groundwater Discharge/Recharge	М	.7	1	3.71	
K. Uniqueness	L	.3	1	1.59	
L. Recreation/Education Potential (bonus points)	Н	.2	NA	1.06	
Totals:		5.2	8	27.56	
Percent of Possible Score			65 %		

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

	I	II	III	IV
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#### MDT Montana Wetland Assessment Form (revised March 2008

I. Project name Kinds	sfater		2. MDT project#	STI	PX 56(56)		Cor	ntrol#	5034
3. Evaluation Date 6/16/2	2021 4. Evaluators	R Quire	5.	Wetla	and/Site# (s	Kindsfate	er - existi	ng wetla	and
. Wetland Location(s): T	2S <b>R</b> 2	25E	Sec1 6	Т		R	Sec2		
Approx Stationing or Milep	osts								
atershed 13 - Upper `	Yellowstone <b>W</b>	atershe	ed/County Yellow	stone					
<b>Evaluating Agency</b>	CCI for MDT				8. Wetlan	d size acres	,		32.3
Purpose of Evaluation					How asses	ssed:			
Wetlands potentially a	ffected by MDT project					sment area			32.3
☐ Mitigation Wetlands: p	re-construction				(AA) size ( How asses	•	Measur	od o a l	W CDS
✓ Mitigation Wetlands: p	ost construction				now asses	sseu.	ivieasui	eu e.g. i	by GPS
☐ Other									
10. Classification of Wetla	und and Δαμatic Hahitat	s in ΔΔ							
HGM Class (Brinson)	Class (Cowardin)	5 111 744	Modifier (Coward	lin)	Water	Regime		% of A	Δ
lope	Emergent Wetland		Partly Drained	,		Intermittent		70 017	80
Slope	Scrub-Shrub Wetland		Partly Drained			Intermittent			20
Юрс	Gords-Gillus Welland		r artty Dramed		Ocasonan	memmen			20
1. Estimated Relative Abu	ndance Common								
12. General Condition of A	MA .								
12. General Condition of A	AA below to determine [circle] a		te response – see ins	truction	as for Montana	a-listed noxiou	is weed a	nd	
12. General Condition of A i. Disturbance: (use matrix	AA below to determine [circle] a	appropria	Pred	ominant	conditions adjac	ent to (within 50	0 feet of) A	4	
12. General Condition of A i. Disturbance: (use matrix	AA below to determine [circle] a	appropria Manag natural	Preded in predominantly state; is not grazed,	Land mode	conditions adjace not cultivated, le erately grazed o	ent to (within 50) out may be r hayed or	D feet of) And Land cu	A ultivated or ed; subject	to substantial
12. General Condition of A i. Disturbance: (use matrix	below to determine [circle] an species (ANVS) lists)	Manag natural hayed,	Predied in predominantly	Land mode selec	conditions adjact	ent to (within 50) but may be r hayed or r has been	Land cu or logge	A ultivated or ed; subject ent, gradin	to substantial g, clearing, or
<ol> <li>General Condition of A         <ol> <li>Disturbance: (use matrix aquatic nuisance vegetation</li> </ol> </li> </ol>	below to determine [circle] an species (ANVS) lists)	Manag natural hayed, conver	Prediction of the prediction of the predominantly state; is not grazed, logged, or otherwise	Land mode select subjet	conditions adjace not cultivated, le erately grazed o ctively logged; o	pent to (within 500 but may be r hayed or r has been ring; contains s; noxious	Land cu or logge placement	A ultivated or ed; subject ent, gradin gical altera	ition; high road r noxious weed
12. General Condition of A i. Disturbance: (use matrix aquatic nuisance vegetation  Conditions w	below to determine [circle] an apecies (ANVS) lists)	Manag natural hayed, conver	Prediction of the control of the con	Land mode select subjet	conditions adjace not cultivated, I erately grazed o ctively logged; ou ct to minor clea oads or building	pent to (within 500 but may be r hayed or r has been ring; contains s; noxious	Land cu or logge placement	Aultivated or ed; subject ent, gradin gical altera density; o	to substantial t g, clearing, or ation; high road r noxious weed
12. General Condition of A i. Disturbance: (use matrix aquatic nuisance vegetation  Conditions w  AA occurs and is managed in predom grazed, hayed, logged, or otherwise of the conditions of the condition of the conditions of th	below to determine [circle] and a species (ANVS) lists)  within AA  binantly natural state; is not converted; does not contain	Manag natural hayed, conver roads of weed of	Prediction of the control of the con	Land mode select subjet	conditions adjac not cultivated, I prately grazed o tively logged; o ct to minor clea pads or building I or ANVS cover	pent to (within 50) but may be r hayed or r has been ring; contains is; noxious is <=30%.	Land cu or logge placem hydrolo building or ANV	A ultivated or ed; subject ent, gradin gical altera density; o S cover is	to substantial tg, clearing, or stion; high road r noxious weed >=30%.
12. General Condition of A i. Disturbance: (use matrix aquatic nuisance vegetation  Conditions w  AA occurs and is managed in predom grazed, hayed, logged, or otherwise croads or occupied buildings; and noxi <=15%.	below to determine [circle] and species (ANVS) lists)  within AA  minantly natural state; is not converted; does not contain you weed or ANVS cover is	Manag natural hayed, conver roads of weed of	Prediction of the control of the con	Land mode select subjet	conditions adjace not cultivated, I erately grazed o ctively logged; ou ct to minor clea oads or building	pent to (within 50) but may be r hayed or r has been ring; contains is; noxious is <=30%.	Land cu or logge placem hydrolo building or ANV	A ultivated or ed; subject ent, gradin gical altera density; o S cover is	to substantial tg, clearing, or stion; high road r noxious weed >=30%.
AA occurs and is managed in predom grazed, hayed, logged, or otherwise c roads or occupied buildings; and noxi <=15%.  AA not cultivated, but may be modera selectively logged; or has been subjectively logged; or has been subjective	below to determine [circle] an species (ANVS) lists)  within AA  minantly natural state; is not converted; does not contain oous weed or ANVS cover is stely grazed or hayed or ct to relatively minor clearing, fill	Manag natural hayed, conver roads of weed of	ed in predominantly state; is not grazed, logged, or otherwise ted; does not contain or buildings; and noxious or ANVS cover is <=15%.	Land Mode select subjet few n weed	not cultivated, I prately grazed o titvely logged; o titvely logged; o tot to minor clea pads or building or ANVS cover	pent to (within 500 put may be r hayed or r has been ring; contains s; noxious is <=30%.	Land cu or logge placem hydrolo building or ANV:	alltivated or ad; subject ent, gradin gical altera density; o S cover is	to substantial to g, clearing, or tition; high road r noxious weed >=30%.
12. General Condition of A i. Disturbance: (use matrix aquatic nuisance vegetation  Conditions w  AA occurs and is managed in predom grazed, hayed, logged, or otherwise or roads or occupied buildings; and noxi <=15%.  AA not cultivated, but may be modera	below to determine [circle] and species (ANVS) lists)  within AA  minantly natural state; is not converted; does not contain ous weed or ANVS cover is stely grazed or hayed or ct to relatively minor clearing, fill contains few roads or buildings;	Manag natural hayed, conver roads of weed of	Prediction of the control of the con	Land Mode select subjet few n weed	conditions adjac not cultivated, I prately grazed o tively logged; o ct to minor clea pads or building I or ANVS cover	pent to (within 500 put may be r hayed or r has been ring; contains s; noxious is <=30%.	Land cu or logge placem hydrolo building or ANV:	alltivated or ad; subject ent, gradin gical altera density; o S cover is	to substantial f g, clearing, or ation; high road r noxious weed
AA occurs and is managed in predom grazed, hayed, logged, or otherwise croads or occupied buildings; and noxi <=15%.  AA not cultivated, but may be modera selectively logged; or has been subjer placement, or hydrological alteration; noxious weed or ANVS cover is <=30  AA cultivated or heavily grazed or log	below to determine [circle] and a species (ANVS) lists)  within AA  minantly natural state; is not converted; does not contain our weed or ANVS cover is stelly grazed or hayed or ct to relatively minor clearing, fill contains few roads or buildings; %.	Manag natural hayed, conver roads o weed o	ed in predominantly state; is not grazed, logged, or otherwise ted; does not contain or buildings; and noxious or ANVS cover is <=15%.  W disturbance	Land mode selec subje few n weed	not cultivated, I rately grazed o titvely logged; oi ct to minor clea bads or building or ANVS cover	ent to (within 50 put may be r hayed or r has been ring; contains s; noxious is <=30%.	Difect of) Av Land cu or logge placem hydrolo building or ANV	alltivated or ad; subject ed; subject ed; gradin git; gradin git; alltier; density; o S cover is	to substantial fig. clearing, or ition; high road r noxious weed >=30%.
AA occurs and is managed in predom grazed, hayed, logged, or otherwise croads or occupied buildings; and noxi <=15%.  AA not cultivated, but may be modera selectively logged; or has been subjerplacement, or hydrological alteration; noxious weed or ANVS cover is <=30	below to determine [circle] and species (ANVS) lists)  within AA  binantly natural state; is not converted; does not contain lous weed or ANVS cover is lately grazed or hayed or cot to relatively minor clearing, fill contains few roads or buildings; %.  ged; subject to relatively earing, or hydrological alteration;	Manag natural hayed, conver roads o weed o	ed in predominantly state; is not grazed, logged, or otherwise ted; does not contain or buildings; and noxious or ANVS cover is <=15%.	Land mode selec subje few n weed	not cultivated, I prately grazed o titvely logged; o titvely logged; o tot to minor clea pads or building or ANVS cover	ent to (within 50 put may be r hayed or r has been ring; contains s; noxious is <=30%.	Difect of) Av Land cu or logge placem hydrolo building or ANV	alltivated or ad; subject ed; subject ed; gradin git; gradin git; alltier; density; o S cover is	to substantial fig. clearing, or ittion; high road r noxious weed >=30%.

#### ii. Prominent noxious, aquatic nuisance, other exotic species:

Euphorbia esula, Cirsium arvense, Convolvulus arvensis, Cynoglossum officinale

#### iii. Provide brief descriptive summary of AA and surrounding land use/habitat

The AA consists of pre-existing slope/depressional wetland areas located within a historic gravel pit/wetland site. Wetland mitigation constructed was completed in early spring 2013 and 2021 is the ninth monitoring year for the expanded wetland site. Land use surrounding the AA includes commercial developments, agriculture (grazing), transportation (railroad and interstate), and a shooting range within the site.

13. Structural Diversity: (based on number of "Cowardin" vegetated classes present [do not include unvegetated classes], see #10

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	_	nt preventing (passive) al vegetated classes?	Modified Rating
>=3 (or 2 if 1 is forested) dasses	Н	NA	NA	NA
2 (or 1 if forested) classes	М	NA	NA	NA
1 dass, but not a monoculture	М	<no< td=""><td>YES&gt;</td><td>L</td></no<>	YES>	L
1 class, monoculture (1 species comprises>=90% of total cover)	L	NA	NA	NA

1 da	ass, but not a monoc	ulture	M	<no< th=""><th></th><th>YES&gt;</th><th>L</th></no<>		YES>	L
1 class, monoculture	(1 species comprises	s>=90% of total cove	r) L	NA		NA	NA
Comments: Emergent w	etland commun	nity is dominant	with areas of scrul	o-shrub wetland.			
	0_0110			IONS VALUES	7.00_00	ΙΤ	
I4A. Habitat for Federall	y Listed or Pro	posed Threate	ned or Endanger	ed Plants or Anim	als:		
i. AA is Documented	(D) or Suspect	ed (S) to conta	in (check one ba	sed on definitions	contained in inst	tructions):	
Primary or critical habita	t (list species)	□ D	) <b>S</b>				
Secondary habitat (list S	pecies)	( D (	) <b>S</b>				
Incidental habitat (list sp	pecies)	( D (	) <b>S</b>				
No usable habitat		<b>√</b> S					
ii. Rating (use the cond	dusions from i a	bove and the m	atrix below to arriv	e at [check] the fur	octional points and	rating)	
Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
Functional Points and Rating	1H	.9H	8H	.7M	.3L	.1L	0L
Sources for documented use	SFWS list for sp	pecies in Yellow	stone County				

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 
 S Plains spadefoot (S3) D S Secondary habitat (list Species) Incidental habitat (list species)  $\bigcirc$  D  $\bigcirc$  S No usable habitat

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

ii. Italing (use the conc	iusions nonn a	bove and the n	IALI IX DELOW LO AITIV	e at [check] the full	ctional points and	rauriy)	
Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
S1 Species: Functional Points and Rating	1H	.8H	.7M	.6M	.2L	1L	_OL_
<b>S2 and S3 Species:</b> Functional Points and Rating	.9Н	.7M	6M	.5M	.2L	1L	OL

Sources for documented use

Observed approximately 40 plains spadefoot during the 2013 site visit and MDT identified this species during a 2019 site visit; none observed in 2014-2018 or 2020-21.

							(checl			,		,					9	,	Mode	erate			
ubstantial (based	d on any	of the t	followin	g [che	ck]):						Minin	nal (b	ased or	any of	the follo	owing	[check]	):					
observations	of abun	dant wild	dlife #s	or higi	n specie	es diver	sity (dur	ing an	y period	d)	fe	w or n	o wildlif	e obser	vations	during	peak u	ıse per	iods				
abundant wild	life sign such as scat, tracks, nest structures, game trails, etc.																						
presence of e	xtremel	emely limiting habitat features not available in the surrounding area  sparse adjacent upland food sources																					
interviews with	h local b	iologist	s with k	nowle	dge of t	he AA					in	terviev	ws with	local bid	ologists	with k	nowledg	ge of th	ie AA				
					Ü										Ü		`						
oderate (based o	-																						
observations	of scatte	ered wild	dlife gro	ups o	rindivid	uals or	relativel	y few	species	during	peak pe	riods											
common occu	ırrence	of wildlit	fe sign s	such a	s scat, t	racks,	nest stru	ucture	s, game	trails, e	tc.												
adequate adja	acent up	land foo	od sour	ces																			
interviews with	h local b	iologist	s with k	nowle	dge of t	ne AA																	
i. Wildlife hab from #13. For o other in terms o permanent/pere	class c of their	over to percer	be con	nside positi	ered ev ion of tl	enly d	listribut (see #	ed, th	ne mos Abbrev	t and le	east pr s for su	evale ırface	ent <b>veg</b> water	<b>etateo</b> durati	l class ons are	es mi e as f	ust be ollows:	within : P/P	20% o	f each	e		
Structural diversity (see				Hi	gh							Mode	erate					L	ow				
#13) Class cover distribution (all vegetated		Eve	n			Une	ven			Eve	n			Une	/en			E	/en				
classes)  Duration of surface water in ≥ 10% of AA	P/P	S/I	T/E	Α	P/P	S/I	T/E	А	P/P	S/I	T/E	A	P/P	S/I	T/E	Α	P/P	S/I	T/E	A			
Low disturbance at AA (see #12i)	Е	Е	E	н	Е	Е	Н	н	Е	Н	Н	М	Е	Н	M	М	Е	Н	М	М			
Moderate disturbance at AA (see #12i)	н	Н	н	Н	Н	Н	Н	М	Н	Н	М	М	Н	М	М	L	I	М	L	L			
disturbance at AA (see #12i) <b>High</b> disturbance	М	М	М	H L	М	М	H	L	М	М	M L	L	М	L	L	L	L	L	L	L			
disturbance at AA see #12i) High disturbance at AA (see #12i) at AA (see #12i)	M use th	M e cond	M	L L	м om i aı	м nd ii a	L above a	L	M	M atrix be	L elow to	L	M	L [checl	L () the	L l	L	L	L	L			
disturbance at AA (see #12i) High disturbance at AA (see #12i) at AA (see #12i) iii. Rating (u	M use th	M e cond	M	L L	M	м nd ii a	L above a	L	M	M atrix be V High	elow to	L	M ve at	L [checl	L () the	L l	L	L	L	L	Low	1	
disturbance at AA see #12i) High disturbance at AA (see #12i) di AA (see #12i)  iii. Rating (u Evidence of v Substantial	M use th	M e cond	M	L L	om i aı Except	nd ii a	L above a	L	M	M Atrix be VI High	elow to	L	M ve at	L [checl	L the rating	L func	L	L	L	L	Low .7M		
disturbance at AA see #12i) High disturbance at AA (see #12i) High disturbance at AA (see #12i) Hilling Milling Millin	M use th	M e cond	M	L L	om i ai	nd ii a	L above a	L	M	M atrix be V High	elow to	L	M ve at	L [checl	the rating Moo	function (iii)	L	L	L	L	Low		
disturbance at AA see #12i) High disturbance at AA (see #12i) High disturbance at AA (see #12i) Hilling Milling Millin	M use th	M e cond	M	L L	om i aı Except	nd ii a	L above a	L	M	M Atrix be VI High	elow to	L	M ve at	L [checl	the rating Moo	function (ii) derat	L	L	L	L	Low .7M		
disturbance at AA see #12i) digh disturbance at AA (see #12i) digh disturbance at AA (see #12i) digh disturbance at AA (see #12i) dight and the first and th	use th	e conduse (	clusion(i)	ns fro	m i ar Except 1E .9I-	nd ii a	L above a	and t	M the ma	M Atrix be High .91	elow to	o arri	M ive at	L [checl	the rating Moo	function (ii) derate 8H	L	L	L	L	.7M .3L		
disturbance at AA see #12i) High disturbance at AA (see #12i) High disturbance at AA (see #12i)  iii. Rating (u  Evidence of v  Substantial  Moderate  Minimal  omments  4D. General I ould be used a storable due	Expe	ect wild	dlife u	ns fro	om i au  Except  1E  .9H  .6M  ating to	nd ii a	ease in	and t	m dithe ma	M High .9H .7N .4N A is u	elow to fill the leave to the l	ng ye	M ive at titat fee	L (check chartures	L () the rating Moo	function (ii) derate 8H 2L tuation is not	e e on is " ot used	point corred by the correct of the c	s and r	rating)	.7M .3L .1L		
iii. Rating (u Evidence of v Substantial Moderate Minimal omments  D. General I Suld be used NA here: Habitat Qu	Expe	M eect wild use (i.e., ital cooceec	dlife u	ns fro	m i au  Except  1E  .6M  ating to  (Asses precluor is r	nd ii a	ease in	and t	m seequive the A	M High .9H .4N A is u	elow to the seed by there is the seed by t	ng ye	m ive at itat fea	checl ch checl che	ting si	funci g (ii) derat 8H 5M 2L	e e e e e e e e e e e e e e e e e e e	point corred by the din a	s and r	rating)	.7M .3L .1L		
iii. Rating (u Evidence of v Substantial Moderate Minimal omments  BD. General I ould be used storable due NA here: Habitat Qu Duration of surface	Expe	M eect wild use (i.e., ital cooceec	dlife u	ns fro	om i au  Except  1E  .9H  .6M  ating to  (Assess precluor is recently automated to the content of the content o	nd ii a	ease in s funct by persired to be cies	and t	m seequive the A	M High .9H .4N A is u	elow to the seed by there is the seed by t	ng ye	m ive at itat fea	e exis	L () the rating Moo	funci g (ii) derat 8H 5M 2L	e e e e e e e e e e e e e e e e e e e	point corred by the din a	ctable' ish, fisa cana	'such h use	.7M .3L .1L	<b>(</b>	
iii. Rating (u Evidence of v Substantial Moderate Minimal  Dulld be used a storable due NA here a habitat Qu Duration of surface In AA Aquatic hiding / re	Expe	M eect wild use (i.e., ital cooceec	dlife u	ns from section in the section in th	m i au  Except  1E .9I .6M  ating to or is r	nd ii a	ease in section of the section of th	and t	M sthe ma	M High .9h .7h .4h A is u	elow to the seed by there is the seed by t	ng ye	m ive at itat fea	L (checle check check) check c	Moo	funci g (ii) derat 8H 5M 2L	e e e e e e e e e e e e e e e e e e e	point corred by the din a	ctable'ish, fisa cana	'such h use	.7M .3L .1L	<b>(</b>	
iii. Rating (u Evidence of v  Substantial Moderate Minimal  Moderate Minimal  Omments  4D. General I ould be used Estorable due NA here a  Habitat Qu Duration of surfac in AA Aquatic hiding / re escape cover Thermal cover opi	Expe	M eect wild with a second control of the sec	dlife u	ns from section in the section in th	m i au  Except  1E .9I .6M  ating to or is r	md ii a	ease in section of the section of th	and t	M sthe ma	M High .9h .7h .4h A is u	L lelow to fildlife	ng ye	M ive at itat fee	L (checle check check) check c	Moo	functorial	e e e e e e e e e e e e e e e e e e e	point  corred d by the d in a	ctable'ish, fisa cana	'such h use	.7M .3L .1L	ral	
disturbance at AA (see #12i) High disturbance at AA (see #12i) High disturbance at AA (see #12i)  iii. Rating (u Evidence of v  Substantial Moderate  Minimal Comments  4D. General I ould be used storable due NA here a	Expe	ect wild	dlife u  t Ratifish usonstrad to 14	ns fro	om i ai  1E .9H .6M ating to	md ii a	ease in sequences function by per esired to be compared to be comp	and to an and to a substitute of the control of the	m because the manner of the A culve a main	M High .9h .7h .4h A is u art or c nagem	elow to fill different points of arrives to arrive to the second of the	ng ye	m ive at itat fee	L [checl] checle e existence fundamental e f	L () the rating Moo	functorial function of the fun	e on is "of used trappe	corred by the din a stating)	ctable' ish, fisa cana	' such h use	.7M .3L .1L .that the is not in check	( eral Po	

R-	7	R
$\mathbf{D}^{-}$		v

.7M

.4M

.6M

.4M

.5M

.4M

.4M

.3L

.4M

.3L

.3L

.2L

.5M

.2L

.4M

.2L

.3L

.2L

.2L

.1L

.2L

.1L

.1L

.1L

.5M

.4M

.4M

.3L

.5M

.4M

Game fish species FWP Tier III or Introduced Game fish

FWP Non-Game Tier IV

or No fish species

.7M

.5M

.6M

.5M

.8H

.5M

Sources used for identifying fish sp. potentially four	nd in AA:									
ii. Modified Rating (NOTE: Modified score canna) Is fish use of the AA significantly reduced by a current final MDEQ list of waterbodies in need of T fishery or aquatic life support, or do aquatic nuisanyes, reduce score in i above by 0.1: Modified R	ulvert, dik MDL deve nce plant o	e, or other melopment with	an-made <sup>′</sup> s i listed "Pro	bable Imp	paired Úses'	' including	g cold or w	varm water	ne If	
b) Does the AA contain a documented spawning at comments) for native fish or introduced game fish?	_	er critical hab	If yes, a		the adjusted					
iii. Final Score and Rating: O NA	Commen	ts: No fish	habitat v	vithin mi	itigation si	te.				
14E. Flood Attenuation: (Applies only to wetlan channel or overbank flow, click NA here a	ds subject and procee	to flooding ved to 14F.)	ria in-chanr	nel or over	bank flow. I	f wetland	s in AA ar	e not floode	ed from in-	
i. Rating (working from top to bottom, use the m							I =			
Estimated or Calculated Entrenchment (Rosgen 1994, 1996)		entrenched - stream types	, ,		tely entrench stream type	ned – B	Entrenc	ned-A, F, G types	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		Moderately I					ntrenched = 1.0 – 1.4			
ER = >2.2  C stream type D stream type E stream ty	/ре	ER = 1.4 B stream		A	stream type					
						£				
Flood-prone Width  Bankfull Depth  Bankfull Width  Bankfull Width    Bankfull Width   Bankf										
Comments: Wetlands are not subject to			nnel or c	overbanl	k flow as t	here ar	e no wa	terways o	on site.	
<ul> <li>14F. Short and Long Term Surface Wate upland surface flow, or groundwater flow. If 14G.)</li> <li>i. Rating (Working from top to bottom, use water durations are as follows: P/P = perma</li> </ul>	no wetla	nds in the A	A are sul arrive at [	bject to fl [check] th	looding or p	oonding, al points	dick [	NA here	e and proceed to iations for surfac	e
further definitions of these terms].)  Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or populing.		>5 acre feet		П	1.1 to 5	acre feet			≤1 acre foot	

difficit definitions of these terms.)									
Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding		>5 acre feet		1.	1 to 5 acre feet			≤1 acre foot	
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond ≥ 5 out of 10 years	1H	.9Н	.8Н	.8Н	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond < 5 out of 10 years	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

**Comments:** Estimated that AA ponds greater than 5 out of 10 years with approximately 27 acres inundated to approximately 0.5 feet.

14G. Sediment/Nutrient/Toxicant through influx of surface or ground v to 14H.)	Retention and Remova water or direct input. If no	al: (Applies to wetlands on wetlands on wetlands in the AA are	with potential to receive sedi e subject to such input, click	ments, nutrients, or toxicants  NA here and proceed			
<ul><li>i. Rating (working from top to botto = low])</li></ul>	om, use the matrix below	to arrive at [check] the	functional points and rating [	H = high, M = moderate, or L			
Sediment, nutrient, and toxicant input levels within AA  % cover of wetland vegetation in AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.   Waterbody on MDEQ list of waterbodies in need of TMDI development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.						
Evidence of flooding / ponding in AA		17070	2 1 0 70	17070			
	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: Unrestricted drainage	e from the bench down to	meadow below.					
14H Sediment/Shoreline Stabilization: drainage, or on the shoreline of a standin proceed to 14I.)  i. Rating (working from top to bottom, to % Cover of wetland streambank or	ng water body which is subje use the matrix below to arriv	ect to wave action. If 14H	does not apply, click    NA l  points and rating)				
shoreline by species with stability ratings	Permanent / Perennial	Seasonal / Intermitte	1	meral			
of ≥6 (see Appendix F). ≥ 65%	1H	.9H	.7M	neral			
35-64%	.7M	.6M	.5M				
< 35%	.3L	.2L	.1L				
14I. Production Export/Food Chain  i. Level of Biological Activity (synth	nesis of wildlife and fish habi						
	eneral Wildlife Habitat Rati	, , , , , , , , , , , , , , , , , , ,					
	M	L					
E/H H	Н	M					
M M	M	L					
N/A H	М	L					
ii. Rating (Working from top to bottom, use the matrix below to arrive at [check] the functional points and rating. Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14l.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as previously defined, and A = "absent" [see instructions for further definitions of these terms].)							
A Vegetated component >5 ac  B High Moderate	Low High		Low High M	omponent <1 acre loderate Low			
C Yes No Yes No	Yes No Yes No	o Yes No Yes	No Yes No Yes	No Yes No			
P/P 1E .7H .8H .5M	.6M .4M .9H .6N	.7H .4M .5M	.3L .8H .6M .6N	.4M .3L .2L			
S/I .9H .6M .7H .4M	.5M .3L .8H .5N	и .6M .3L .4M	.2L .7H .5M .5M	.3L .3L .2L			
T/E/A .8H .5M .6M .3L	.4M .2L .7H .4N	.5M .2L .3L	.1L .6M .4M .4N	.2L .1L			
iii. Modified Rating (NOTE: Modified s plant cover, ≤ 15% noxious weed or ANVS control).  a) Is there an average ≥ 50 foot-wide vege to the score in ii above and adjust rating a Comments:  Adjacent upland buffe	S cover, and that is not subject	ected to periodic mechanic ≥ 75% of the AA circumfer sting .8H	al mowing or clearing (unless for				

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 Springs or seeps are known or observed Wetland contains inlet but no outlet 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 FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM Criteria P/P S/I None Groundwater Discharge or Recharge 1H .4M .1L .7M Insufficient Data/Information Comments: PEM/PSS wetland present at the toe of slope; receives groundwater from terrace above. 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 plant association listed as "S2" by and structural diversity (#13) is as "S1" by the MTNHP the MTNHP low-moderate Estimated relative commo abundant abundant common abundant rare rare common rare abundance (#11) n Low disturbance at AA .9H 1H .8H .8H .6M .5M .5M .4M .3L (#12i) Moderate disturbance at .9H .8H .7M .7M .2L .5M .4M .4M .3L AA (#12i) High disturbance at AA .8H .7H .6M .6M .4M .3L .3L .2L .1L (#12i) Comments: Site is not unique for this area. 14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity) i. Is the AA a known or potential rec./ed. site: (check) Y  $N\bigcirc$ (if 'Yes' continue with the evaluation; if 'No' then click NA 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) 15H .2H 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: Access is permitted without permission with the exception of the police shooting range. **General Site Notes** Wetland acreage within this AA increased in 2021 as compared to 2020, which was unexpected when considering the extreme drought conditions present across most of MT during the 2021 growing season.

# FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): Kindsfater - existing wetland

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	0	1	0.00	
B. MT Natural Heritage Program Species Habitat	Н	.9	1	29.07	<b>✓</b>
C. General Wildlife Habitat	М	.5	1	16.15	
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	29.07	<b>✓</b>
G. Sediment/Nutrient/Toxicant Removal	Н	.9	1	29.07	<b>~</b>
H. Sediment/Shoreline Stabilization	NA	0	0	0.00	
Production Export/Food Chain Support	Н	.8	1	25.84	<b>~</b>
J. Groundwater Discharge/Recharge	М	.7	1	22.61	
K. Uniqueness	L	.3	1	9.69	
L. Recreation/Education Potential (bonus points)	Н	.2	NA	6.46	
Totals:		5.2	8	167.96	
Percent of Possible Score		T-	65 %		

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

#### **OVERALL ANALYSIS AREA RATING:** (check appropriate category based on the criteria outlined

I II III IV
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**Table B-1**. Kindsfater Wetland Mitigation Site. Comprehensive Vegetation Species List 2013-2021

Scientific Names	Common Names	GP Indicator Status(a)
Achillea millefolium	Common Yarrow	FACU
Agropyron cristatum	Crested Wheatgrass	UPL
Agrostis stolonifera	Spreading Bent	FACW
Alopecurus arundinaceus	Creeping Meadow-Foxtail	FACW
Alyssum alyssoides	Pale or Yellow Alyssum	UPL
Alyssum desertorum	Dwarf Alyssum	UPL
Amaranthus retroflexus	Red-Root	FACU
Artemisia absinthium	Common Sagewort	UPL
Artemisia dracunculus	Wild Tarragon	UPL
Artemisia frigida	Fringed Sage	UPL
Artemisia michauxiana	Michaux Sagewort	FAC
Asclepias speciosa	Showy Milkweed	FAC
Atriplex suckleyi	Suckley's Saltbush	UPL
Bassia scoparia (Kochia scoparia)	Mexican-Fireweed	FACU
Berteroa incana	Hoary False Alyssum	UPL
Brassica nigra	Black Mustard	UPL
Bromus arvensis	Field Brome	FACU
Bromus inermis	Smooth Brome	UPL
Bromus japonicus	Japanese Brome	UPL
Bromus tectorum	Cheatgrass	UPL
Calamagrostis canadensis	Bluejoint	FACW
Carduus nutans	Musk Thistle	UPL
Carex aquatilis	Leafy Tussock Sedge	OBL
Carex nebrascensis	Nebraska Sedge	OBL
Carex pellita	Wooly Sedge	OBL
Carex praegracilis	Clustered Field Sedge	FACW
Carex utriculata	Northwest Territory Sedge	OBL
Centaurea stoebe	Spotted Knapweed	UPL
Centaurium exaltatum	Centaury	UPL
Ceratophyllum demersum	Coon's-Tail	OBL
Chenopodium album	Lamb's-Quarters	FACU
Chenopodium sp.	Goosefoot	NA
Cirsium arvense	Canadian Thistle	FACU
Cirsium vulgare	Bull Thistle	UPL
Conium maculatum	Poison-Hemlock	FACW
Convolvulus arvensis	Field Bindweed	UPL
Cornus alba	Red Osier	FACW
Crepis atribarba	Hawksbeard	UPL
Cynoglossum officinale	Gypsy-Flower	FACU
Deschampsia caespitosa	Tufted Hair Grass	FACW
Descurainia sophia	Flixweed Tansymustard	UPL
Elaeagnus angustifolia	Russian-Olive	FACU

**Table B-1**. Kindsfater Wetland Mitigation Site. Comprehensive Vegetation Species List 2013-2021

Scientific Names	Common Names	GP Indicator Status(a)
Elaeagnus commutata	American Silver-Berry	UPL
Eleocharis palustris	Common Spike-Rush	OBL
Elymus lanceolatus	Streamside Wild Rye	FACU
Elymus repens	Creeping Wild Rye	FACU
Elymus trachycaulus	Slender Wild Rye	FACU
Epilobium ciliatum	Fringed Willowherb	FACW
Equisetum hyemale	Tall Scouring-Rush	FACW
Equisetum laevigatum	Smooth Scouring Rush	FACW
Erigeron caespitosus	Tufted Fleabane	UPL
Erigeron canadensis	Canada Horseweed	FACU
Erodium cicutarium	Stork's bill	UPL
Euphorbia esula	Leafy Spurge	UPL
Filago arvensis	Field Fluffweed	UPL
Fraxinus pennsylvanica	Green Ash	FAC
Fumaria vaillantii	Fumitory	UPL
Galium aparine	Sticky-Willy	FACU
Gaura parviflora	Butterfly Weed	UPL
Glycyrrhiza lepidota	American Licorice	FACU
Grindelia squarrosa	Curly-Cup Gumweed	FACU
Helianthus annuus	Common Sunflower	FACU
Hesperostipa comata	Needle-and-Thread	UPL
Heterotheca villosa	Golden-Aster	UPL
Hordeum jubatum	Fox-Tail Barley	FACW
Hyoscyamus niger	Black Henbane	UPL
Juncus articulatus	Joint-Leaf Rush	OBL
Juncus balticus	Baltic Rush	FACW
Juncus ensifolius	Dagger-Leaf Rush	FACW
Juncus gerardii	Saltmarsh Rush	FACW
Juncus longistylis	Long-style Rush	FACW
Juncus torreyi	Torrey's Rush	FACW
Juniperus scopulorum	Rocky Mountain Juniper	UPL
Koeleria macrantha	Prairie Junegrass	UPL
Lactuca serriola	Prickly Lettuce	FAC
Lemna minor	Common Duckweed	OBL
Lepidium campestre	Field Pepperweed	UPL
Lepidium perfoliatum	Clasping Pepperwort	FACU
Logfia arvensis	Fluffweed	UPL
Lycopus asper	Rough Water-Horehound	OBL
Marrubium vulgare	White Horehound	FACU
Medicago lupulina	Black Medick	FACU
Medicago sativa	Alfalfa	UPL
Melilotus albus	White Sweetclover	FACU

**Table B-1**. Kindsfater Wetland Mitigation Site. Comprehensive Vegetation Species List 2013-2021

Scientific Names	Common Names	GP Indicator Status(a)
Melilotus officinalis	Yellow Sweet-Clover	FACU
Mentha arvensis	American Wild Mint	FACW
Muhlenbergia asperiflora	Alkali Muhly	FACW
Nassella viridula	Green Needlegrass	UPL
Nasturium officinale	Water Cress	OBL
Nepeta cataria	Catnip	FACU
Oenothera villosa	Hairly Evening-Primrose	FACU
Onopordum acanthium	Scotch Thistle	UPL
Opuntia polyacantha	Plains Pricklypear	UPL
Panicum capillare	Common Panic Grass	FAC
Pascopyrum smithii	Western-Wheat Grass	FACU
Persicaria amphibia	Water Smartweed	OBL
Persicaria lapathifolia	Dock-Leaf Smartweed	OBL
Phalaris arundinacea	Reed Canary Grass	FACW
Physalis longifolia	Long-leaf Ground Cherry	UPL
Poa compressa	Flat-Stem Blue Grass	FACU
Poa palustris	Fowl Blue Grass	FACW
Poa pratensis	Kentucky Blue Grass	FACU
Polygonum aviculare	Yard Knotweed	FACU
Polypogon monspeliensis	Annual Rabbit's-Foot Grass	FACW
Populus angustifolia	Narrow-Leaf Cottonwood	FACW
Populus deltoides	Eastern Cottonwood	FAC
Potentilla pensylvanica	Pennsylvania Cinquefoil	FACU
Prunus virginiana	Choke Cherry	FACU
Ranunculus gmelinii	Lesser Yellow Water Buttercup	FACW
Ratibida columnifera	Prairie Coneflower	UPL
Ribes aureum	Golden Currant	FACU
Rosa woodsii	Wood's Rose	FACU
Rumex crispus	Curly Dock	FAC
Rumex salicifolius	Willow Dock	FACW
Salix exigua	Narrow-Leaf Willow	FACW
Salix lutea (S. eriocephala)	Yellow Willow	FACW
Salix sp.	Willow	NA
Salsola tragus	Prickly Russian-Thistle	FACU
Schedonorus arundinaceus	Tall False Rye Grass	FAC
Schedonorus pratensis	False Meadow Rye	FACU
Schoenocrambe linifolia	Flax-leaf Plains Mustard	UPL
Schoenoplectus acutus	Hard-Stem Club-Rush	OBL
Schoenoplectus pungens	Three-Square	OBL
Scirpus microcarpus	Red-Tinge Bulrush	OBL
Silene latifolia	White Cockle	UPL
Sisymbrium altissimum	Tall Hedge-Mustard	FACU
Sisymbrium loeselii	Smallpod Tumble Mustard	UPL

**Table B-1.** Kindsfater Wetland Mitigation Site. Comprehensive Vegetation Species List 2013-2021

Scientific Names	Common Names	GP Indicator Status(a)
Solanum dulcamara	Climbing Nightshade	FACU
Solidago canadensis	Canadian Goldenrod	FACU
Sonchus arvensis	Field Sow-Thistle	FAC
Sphaeralcea coccinea	Scarlet Globemallow	UPL
Sporobolus cryptandrus	Sand Dropseed	FACU
Tanacetum vulgare	Common Tansy	FACU
Taraxacum officinale	Common Dandelion	FACU
Thlaspi arvense	Field Pennycress	FACU
Tragopogon dubius	Meadow Goat's-beard	UPL
Typha angustifolia	Narrow-Leaf Cat-Tail	OBL
Typha latifolia	Broad-Leaf Cat-Tail	OBL
Ulmus americana	American Elm	FAC
Verbascum thapsus	Great Mullein	UPL
Verbena bracteata	Carpet Vervain	FACU
Veronica anagallis-aquatica	Blue Water Speedwell	OBL
Veronica peregrina	Neckweed	FACW
Vicia americana	American Purple Vetch	FACU
Vicia sativa	Garden Vetch	FACU
Xanthium strumarium	Rough Cockleburr	FAC
Zeltnera exaltata	Desert Mountain-pink	FACW

<sup>(</sup>a) 2018 NWPL (USACE 2018)

New species identified in 2021 are **bolded**.

# APPENDIX C PROJECT AREA PHOTOGRAPHS

MDT Wetland Mitigation Monitoring Kindsfater Yellowstone County, Montana



Photo Point: 1. View of eastern edge of Cell 14 looking W Bearing: 280 degrees Year: 2013



Photo Point: 1. View of eastern edge of Cell 14 looking W Bearing: 280 degrees Year: 2021



Photo Point: 2. View of western side of Cell 13 looking SW Bearing: 280 degrees Year: 2013



Photo Point: 2. View of western side of Cell 13 looking SW Bearing: 280 degrees Year: 2021



Photo Point: 3. View of southern edge of Cell 9 looking NE Bearing: 0 degrees Year: 2013



Photo Point: 3. View of southern edge of Cell 9 looking NE Bearing: 0 degrees Year: 2021



Photo Point: 4. View of Cell 12 looking S Bearing: 200 degrees Year: 2013



Photo Point: 4. View of Cell 12 looking S Bearing: 200 degrees Year: 2021



Photo Point: 5. View of Cell 11 looking SW Bearing: 10 degrees Year: 2013



Photo Point: 5. View of Cell 11 looking SW Bearing: 10 degrees Year: 2021



Photo Point: 6. View of western side of Cell 10 looking SW Bearing: 150 degrees Year: 2013



Photo Point: 6. View of western side of Cell 10 looking SW Bearing: 150 degrees Year: 2021



Photo Point: 7. View of western side of Cell 5 looking east Bearing: 90 degrees Year: 2013



Photo Point: 7. View of western side of Cell 5 looking east Bearing: 90 degrees Year: 2021



Photo Point: 8. View of western edge of Cell 2 looking NW Bearing: 315 degrees Year: 2013



Photo Point: 8. View of western edge of Cell 2 looking NW Bearing: 315 degrees Year: 2021



Photo Point: 9. View of Cell 1 looking N Bearing: 90 degrees Year: 2013



Photo Point: 9. View of Cell 1 looking N Bearing: 90 degrees Year: 2021



Photo Point: 10. View of northern portion of Cell 3 looking SE Bearing: 140 degrees Year: 2013



Photo Point: 10. View of northern portion of Cell 3 looking SE Bearing: 140 degrees Year: 2021



Photo Point: 11. View of Cell 7 looking SE Bearing: 150 degrees Year: 2013



Photo Point: 11. View of Cell 7 looking SE Bearing: 150 degrees Year: 2021



Photo Point: 12. View of Cell 6 looking W Bearing: 230 degrees Year: 2013



Photo Point: 12. View of Cell 6 looking W Bearing: 230 degrees Year: 2021

#### **Kindsfater: Transect Photographs**



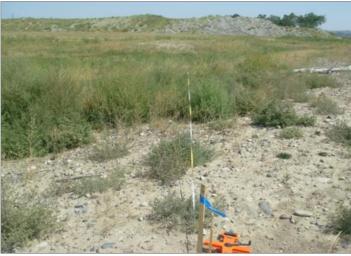
Transect 1: Start Bearing: 240 degrees

Location: Wetland Cell 14 Year: 2013



Transect 1: Start Bearing: 240 degrees

Location: Wetland Cell 14 Year: 2021



Transect 1: End Bearing: 50 degrees

Location: Wetland Cell 14 Year: 2013



Transect 1: End Bearing: 50 degrees

Location: Wetland Cell 14 Year: 2021



Transect 2: Start Bearing: 225 degrees

Location: Wetland Cell 8 Year 2013



Transect 2: Start Bearing: 225 degrees

Location: Wetland Cell 8 Year 2021

# **Kindsfater: Transect Photographs**



Transect 2: End Bearing: 40 degrees

Location: Wetland Cell 8 Year 2013



Transect 2: End Bearing: 40 degrees

Location: Wetland Cell 8 Year 2021



Transect 3: Start Bearing: 290 degrees

Location: Wetland Cell 4 Year 2013



Transect 3: Start Bearing: 290 degrees

Location: Wetland Cell 4 Year 2021



Transect 3: End Bearing: 290 degrees

Location: Wetland Cell 4 Year 2013



Transect 3: End Bearing: 290 degrees

Location: Wetland Cell 4 Year 2021



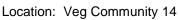
Data Point: DP01w Year 2021



Location: Veg Community 11



Data Point: DP01u Year 2021





Data Point: DP02w Year 2021



Location: Veg Community 11

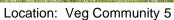


Data Point: DP02u Year 2021

Location: Veg Community 14



Data Point: DP03w Year 2021





Data Point: DP03u Year 2021

Location: Veg Community 14



Data Point: DP04w Year 2021



Data Point: DP04u Year 2021



Location: Veg Community 12



Data Point: DP05w Year 2021



Location: Veg Community 14

Location: Veg Community 5



Data Point: DP05u Year 2021





Data Point: DP06w Year 2021

Location: Veg Community 16



Data Point: DP06u Year 2021

Location: Veg Community 4/14



Data Point: DP07w Year 2021



Data Point: DP07u Year 2021



Location: Veg Community 10



Data Point: DP08w Year 2021



Location: Veg Community 8

Location: Veg Community 9







Data Point: DP09w Year 2021

Location: Veg Community 9



Data Point: DP09u Year 2021

Location: Veg Community 17



Data Point: DP10w Year 2021



Data Point: DP10u Year 2021

Location: Veg Community 17



Data Point: DP11w Year 2021



Location: Veg Community 11

Location: Veg Community 3



Data Point: DP11u Year 2021

Location: Veg Community 17



Data Point: DP12w Year 2021

Location: Veg Community 16



Data Point: DP12u Year 2021

Location: Veg Community 14