Montana Department of Transportation Wetland Mitigation Monitoring Report SILICON MOUNTAIN MITIGATION SITE

Project Overview

MDT Project Number: STPX 47 (024) 56 UPN# 6044

Watershed: Watershed #2 – Upper Clark Fork of the Columbia River

Monitoring Year: 2023

Years Monitored: 9th year of monitoring

Corps Permit Number: NWO-2012-01822-MTH

Stream Protection Act (SPA) Number: MDT-R2-74-2012

Monitoring Conducted By: Confluence Consulting Inc

Dates Monitoring Was Conducted: July 6th-7th, 2023

Purpose of the Approved Project:

The Silicon Mountain wetland mitigation project was developed cooperatively by the Montana Department of Transportation (MDT) and Butte - Silver Bow County (BSBC). The project was intended to provide MDT with 11.45 acres of compensatory wetland mitigation credits and 12,369 stream mitigation credits. The credits generated by the project will be used to offset wetland and stream impacts associated with Butte Silver Bow County's Silicon Tech Park, the Port bridge/road realignment project, and impacts associated with future Montana Department of Transportation (MDT) project-related wetland and stream impacts in Watershed #2 – Upper Clark Fork River. The Silicon Mountain mitigation site was designed to: (a) create 7.84 acres of emergent and scrub/shrub wetland by excavating six wetland cells; (b) protect 10.06 acres of existing emergent and scrub/shrub wetland; (c) restore upland, wetland, and riparian areas that were impacted by the Port bridge/road realignment project by seeding and planting graminoids, shrubs, and trees; (d) restore and reconstruct approximately 3,250 linear feet of the Sand Creek channel to its historic natural condition; and (e) relocate and restore approximately 650 linear feet of the Sand Creek channel on 2.04 acres of privately owned property south of the MDT bridge/road realignment project. The project was anticipated to generate 11.45 wetland mitigation credit acres, 4.33 of which would be credited to BSBC, and the remaining 7.12 credits would be held in reserve by MDT for transportation projects in the Butte area.

Site Location:

Latitude: 45.998489 Longitude: -112.662948

County: Butte Silver Bow Nearest Town: Rocker, MT

Map Included: Figure 1 on page #10

Mitigation Site Construction Started: 2013 Construction Ended: 2015

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

Activity: NA Date: NA Specific recommendations for any additional corrective actions: Weed treatment occurred in the Fall of 2023 and will continue into the future. There is a need to assess the structural integrity of the outlet for Cell #1..

Anticipated Wetland Credit Acres: 11.45 total, 4.33 assigned to BSBC, 7.12 assigned to MDT Wetland Credit Acres Generated to Date: 14.36 total, 4.33 assigned to BSBC 10.03 assigned

MDT

Anticipated Stream Credits: 12,369.50

Stream Credits Generated to Date: 12,369.50

Previous Monitoring Reports:

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

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, or Department of Army (DA) permit conditions)

Performance Standards: A summary of performance standards, associated success criteria, and 2023 achievement status for the Silicon Mountain site is provided in Table 1.

 Table 1. Summary of Performance Standards

Performance Standards	Success Criteria	Criteria Achieved Y/N	Discussion
Wetland Characteristics	Criteria for the three wetland parameters (hydrology, vegetation, and soils) are met as outlined in the 1987 Wetland Manual and 2010 Regional Supplement.	Y	Areas that are identified as wetland within the mitigation site meet the criteria for all three parameters.
Wetland Hydrology	Soil saturation is present for at least 12.5 percent of the growing season.	Y	Areas identified as wetland within the mitigation site exhibit soil saturation for at least 12.5 percent of the growing season.
	Hydric soil conditions are present or appear to be forming.	Υ	Hydric soil characteristics have developed throughout all constructed wetlands.
Hydric Soil	Soil is sufficiently stable to prevent erosion.	Υ	Disturbed soil is stable and generally does not exhibit signs of erosion.
	Soil is able to support plant cover.	Υ	Plant cover is establishing well within developed wetlands.
Hydrophytic	Success is achieved where combined absolute cover of facultative or wetter species is ≥ 70 percent.	Y	Established wetland cells support 70 percent or greater cover of hydrophytic vegetation (OBL, FACW, and FAC).
Vegetation	State-listed noxious weeds do not exceed 10 percent absolute cover.	Y	Montana state-listed noxious weeds were estimated at 4 percent absolute cover within wetland areas in 2023.
Channel- Restoration	Revegetation along the new Sand Creek channel corridor will be considered successful when banks are vegetated with a majority of deep- rooting riparian and wetland herbaceous and woody plant species.	Y	The majority of stream bank vegetation along the constructed Sand Creek channel corridor is dominated by vegetation communities with stability ratings greater than or equal to 6.
Success	The intent of the stream restoration is to allow for the stream to naturally migrate within the floodplain and to allow it to freely move and stabilize itself within the site.	Y	The stream has plenty of space within the floodplain for natural migration and channel evolution. The stream is dynamically stable with evidence of natural sediment redistribution.
Stream Bank Vegetation	Banks are vegetated with a majority of deep-rooting riparian plant species that have root-stability indexes ≥ 6.	Y	The majority of stream bank vegetation along the constructed Sand Creek channel corridor is dominated by vegetation communities with stability ratings greater than or equal to 6.

Performance Standards	Success Criteria	Criteria Achieved Y/N	Discussion
Open Water	The project is intended to provide seasonal open water during the spring and early summer within excavated depressions. As the growing season progresses and the groundwater levels recede, vegetation is expected to germinate within the majority of the depressions. Open water with submerged and/or floating vegetation will, therefore, be considered successful and creditable.	Y	In 2023, wetland Cells 2, 3, and portions of cells 4, 5, and wetland 13 exhibited rooted hydrophytic vegetation in inundated areas and these areas were included in the wetland acreage. Wetland Cells 1, 5, wetland 13, and a small portion of cell 4 appear to support perennial inundation and exhibited open water and aquatic macrophytes. These areas were delineated as open water.
	Noxious weeds do not exceed 10 percent cover within upland buffer area.	Υ	Noxious weed cover is approximately 3 percent within the upland buffer.
Upland Buffer	Any area that was disturbed within the creditable buffer zone must have at least 50 percent aerial cover of nonweed species by the end of the monitoring period.	Y	Disturbed areas have established greater than 50 percent cover by non-weed species.
Weed Control	Control measures will be based on annual monitoring of the site to determine weed species and the degree of infestation within the site; control measures will be implemented by MDT to minimize and/or eliminate the intrusion of state-listed noxious weed species within the site.	Y	MDT has implemented weed-control efforts based upon annual monitoring efforts. Absolute cover from Montana state-listed noxious weeds was estimated at 7 percent across the entire site (wetlands & uplands).

Summary Data

Wetland Delineation – A total of 18.59 wetland acres were delineated within the Silicon Mountain project area in 2023 which is an increase of 0.66 acres since the 2022 monitoring event. Of the 18.59 wetland acres delineated, 9.31 acres are pre-existing wetlands that have been preserved and 9.28 acres are wetlands established since construction. Open water, as defined by recent USACE guidance (N. Green - personal communication, May 6, 2020), accounted for 3.07 acres of the mitigation site in 2023, which is a decrease of 0.45 acres since 2022. The decrease in open water is a result of increased emergent vegetation in Wetland Cells 1 and 4, and preservation Wetland Cell 13. Of the open water, 0.66 acres are associated with preservation Wetland cell 13, and 2.41 acres are associated with created wetlands (Table 2; Appendix A). Uplands accounted for approximately 26.92 acres of the mitigation site and 1.52 acres are represented by the restored Sand Creek channel (Figure A-3, Appendix A). In 2023, the Sand Creek stream channel acreage decreased as a result of channel narrowing from aggradation, wetland expansion, and precise mapping which removed some areas of upland from the stream channel corridor. No mudflats were observed at this site in 2023. Wetland delineation data forms can be found in Appendix B, and photos for data points in Appendix C.

Table 2. Upland, Wetland & Aquatic Habitat Acreage Delineated at the Silicon Mountain Site from 2016 to 2023.

Habitat Type	2016 Acreage	2017 Acreage	2018 Acreage	2019 Acreage	2020 Acreage	2021 Acreage	2022 Acreage	2023 Acreage
Uplands	31.80	31.30	30.50	30.10	28.95	26.84	26.95	26.92
Establishment (Creation) Wetland	6.30	6.30	7.10	7.50	6.04	8.42	8.62	9.28
Establishment Open Water ^(a)	NA	NA	NA	NA	2.92	2.65	2.86	2.41
Preservation Wetland	10.30	10.80	10.80	10.80	9.65	9.65	9.31	9.31
Preservation Open Water ^(a)	NA	NA	NA	NA	0.84	0.60	0.66	0.66
Mudflat ^(a)	NA	NA	NA	NA	0.00	0.24	0.00	0.00
Stream Channel	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.52
Total Wetland & Aquatic Habitat	18.30	18.80	19.60	20.00	21.15	23.02	23.15	23.18

⁽a) Open water and mudflats were only mapped separately from wetlands beginning in 2020.

Vegetation – A total of 181 plant species have been identified at the site from 2015 through 2023, with three new species reported at the site in 2023. The following 8 wetland and 7 upland community types were identified and mapped at the mitigation site in 2023 based on species composition and dominance:

- Upland Type 2 Descurainia sophia/Thlaspi arvense
- Upland Type 3 Bromus inermis/Poa pratensis
- Upland Type 5 *Elymus repens/Bromus inermis*
- Upland Type 9 Juncus balticus/Elymus repens
- Upland Type 10 Artemisia tridentata/Poa spp.
- Upland Type 13 Leymus cinereus/Elymus trachycaulus
- Upland Type 15 Poa pratensis/Elymus repens
- Wetland Type 4 Carex spp./Juncus balticus
- Wetland Type 7 Open Water/Aquatic Macrophytes
- Wetland Type 8 Salix exigua/Juncus balticus
- Wetland Type 11 Typha latifolia
- Wetland Type 14 Eleocharis palustris/Deschampsia caespitosa
- Wetland Type 16 Juncus balticus/Eleocharis palustris
- Wetland Type 17 Salix spp.
- Wetland Type 18 Alopecurus arundinaceus/Juncus balticus

Dominant vegetation community types and their boundaries remained very similar to those mapped in 2023 except that WT 11 expanded in all locations and the vegetation in wetland Cell 3 was reclassified from WT 16 to WT 18, which is a new community type added in 2023. This transition signifies a shift in dominance to more facultative species, which may indicate that the wetland hydrology in this cell has become somewhat diminished.

The plant composition for each dominant vegetation community type is provided in full detail on the Wetland Mitigation Site Monitoring form (Appendix B), and the community boundaries shown on Figure A-3 (Appendix A). Vegetation cover was estimated along two belt transects (T-1 and T-2) in 2023 (Figure A-2, Appendix A). T-1 is 564 feet long and intersects UT3, WT11, UT13, WT16, and WT18. The number of hydrophytic communities along the transect increased by 1 due to the vegetation community in cell 3 transitioning from WT 16 to WT 18. The total number of species observed along the transect increased by two to total 48. However, the number of upland species increased from 10 in 2022 to 22 in 2023, while the number of hydrophytic species decreased from 36 to 26. Overall, the percent of the transect comprised by wetland habitat remained relatively consistent at 85 percent, a one percent decrease from the previous year. The estimated total vegetative cover along the transect remained consistent with observations since 2019.

Table 3. Data Summary for T-1 From 2016 Through 2023 at the Silicon Mountain Site.

Monitoring Year	2016	2017	2018	2019	2020	2021	2022	2023
Vegetation Community Transitions Along Transect	6	6	6	6	6	6	6	6
Vegetation Communities Along Transect	4	4	5	5	4	4	4	5
Hydrophytic Vegetation Communities Along Transect	2	2	2	2	2	2	2	3
Total Vegetative Species	48	54	42	43	47	46	46	48
Total Hydrophytic Species	26	33	28	31	35	35	36	26
Total Upland Species	22	21	14	12	12	11	10	22
Estimated % Total Vegetative Cover	90	90	90	93	93	93	93	93
Estimated % Unvegetated	10	10	10	7	7	7	7	7
% Transect Length Comprising Hydrophytic Vegetation Communities	81.3	86	86	86	86	86	86	85
% Transect Length Comprising Upland Vegetation Communities	18.7	14	14	14	14	14	14	15
% Transect Length Comprising Open Water	0	0	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0	0	0

T-2 is 219 feet long and intersects vegetation communities UT15, WT14, WT11, and UT3. Consistent with findings since 2019, T-2 intersects four vegetation communities, two of which are hydrophytic. Additionally, the proportion of the transect comprised of hydrophytic vegetation communities remains static at 90%. In 2023, a total of 35 species were observed along the transect. The number of upland species increased by 8, which reflects the diversifying upland around the wetland cell. The number of hydrophytic species decreased by 7, which may be related to the expansion of cattails (Typha latifolia), which tend to inhabit dense stands with low diversity. The estimated total vegetative cover remains consistent with observations in 2022 at 93%.

The site is currently achieving the success criteria established for noxious weed cover within both the wetland and upland buffer areas (Table 1). Priority 2B noxious weeds identified within the Silicon Mountain mitigation site included spotted knapweed (*Centaurea stoebe*), leafy spurge (*Euphorbia esula*), yellow toadflax (*Linaria vulgaris*), whitetop (*Cardaria draba*), and Canada thistle (*Cirsium arvense*) (See locations in Figure A-3 on page A-2).

- Canada thistle patches previously mapped remained mostly the same between 2022 and 2023, but several new occurrences were recorded across the site in 2023.
- Leafy spurge patches increased in the southern and central portions of the site, and the north side of wetland cell 5.
- Spotted knapweed patches remained more consistent between 2022 and 2023: a new patch was mapped to the west of wetland cell 6, while several existing patches continued to exist to the west of cell 6.

- Yellow toadflax, observed only as isolated individuals in previous years, increased in density and distribution in 2023, where one moderate-sized patch was found to the west of wetland cell 3, and three more patches at the west end of wetland cell 13
- Whitetop (*Cardaria draba*) was mapped in the northwestern portion of the project area, just south of the bike path.
- Black henbane (*Hyoscyamus niger*) was mapped for the 1st time in 2023, to the east of wetland cell 4. Black henbane is on the noxious weed lists for neighboring Beaverhead and Deer Lodge counties (Pokorny, 2017), but is not listed in Silver Bow County.

MDT planted an estimated 30,000 willow cuttings and 350 containerized shrubs and trees along the stream banks of the Sand Creek channel, in riparian areas, and in small clusters around the perimeter of the excavated wetland cells. An estimated 17 percent of the containerized woody plantings have survived through the 2023 survey, consistent with that observed in 2022. An estimated 85 percent of the installed willow cuttings have survived; young shoots arising from the installed cuttings ranged from 12 to 96 inches in length. The willow cuttings and other woody species are healthy and are becoming increasingly dense. Volunteer willows continue to establish along the stream channel and total shrub cover from the willow-dominated community types increased again in 2023.

Table 4. Data Summary for T-2 From 2016 Through 2023 at the Silicon Mountain Site.

Monitoring Year	2016	2017	2018	2019	2020	2021	2022	2023
Vegetation Community Transitions Along Transect	2	2	2	3	3	3	3	3
Vegetation Communities Along Transect	3	3	3	4	4	4	4	4
Hydrophytic Vegetation Communities Along Transect	1	1	1	2	2	2	2	2
Total Vegetative Species	21	47	27	35	37	35	34	35
Total Hydrophytic Species	10	24	17	19	26	26	26	19
Total Upland Species	11	23	10	16	11	9	8	16
Estimated % Total Vegetative Cover	45	55	72	87.5	85	87	89	87
Estimated % Unvegetated	55	45	28	12.5	15	13	11	13
% Transect Length Comprising Hydrophytic Vegetation Communities	88	88	91	90	90	90	90	90
% Transect Length Comprising Upland Vegetation Communities	12	12	9	10	10	10	10	10
% Transect Length Comprising Open Water	0	0	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0	0	0

Hydrology – Wetland hydrology was observed in numerous places across the Silicon Mountain mitigation site in 2023. Approximately 3.07 acres of surface water were observed in constructed wetland Cells 1, 2, 4, and 5 and preservation wetland cell 13 (0.66 acres). The estimated average surface water depth was 0.5 feet with depths ranging 0.1-4 feet. Flowing water was present in the entire length of the Sand Creek channel, with a few areas that exhibited ponded water on the downstream end of the channel. Indicators of wetland hydrology observed at the various wetland sample points included: surface water, high water table, saturation, algal mats, hydrogen sulfide odor, iron deposits, water-stained leaves, watermarks, and oxidized rhizospheres (Appendix B – Corps Data Forms). The only constructed wetland that showed a reduction in wetland hydrology over previous years was Cell 6.

US Geological Survey (USGS) groundwater monitoring data indicates that groundwater levels at this site experienced intra-annual fluctuations in 2023. From 2016 to 2020, groundwater levels gradually increased with the highest water levels recorded May 2019 and 2020 (0.63-ft and 0.85-ft below land surface respectively). Since 2021 groundwater elevations have slowly decreased, with with the shallowest measurements having been 1.01 and 1.55 feet below ground surface in 2021

and 2022 respectively Groundwater monitoring data from 2023 indicates that groundwater levels in a portion of the site varied between 1.5-2.8 feet below the land surface elevation of 5,347 feet from May through September (Table 5; USGS, 2023).

Table 5. 2023 USGS Groundwater Well Data for the Silicon Mountain Mitigation Site.

Date	Water Table Depth (feet below land surface)
5/6/2023	1.49
7/26/2023	2.82
9/13/2023	2.41

Soils – Soil pits were excavated at 22 sample points (11 sets of paired points) to comply with US Army Corps of Engineers wetland delineation requirements to determine the extent of hydric and upland soil development across the site in 2023 (Appendices A and B). Soil textures within wetland test pits ranged from coarse sand to mucky peat to clay. Hydric soil indicators were observed in all but one wetland test pit and included histic epipedon, depleted matrix, loamy mucky mineral, hydrogen sulfide odor, and redox dark surface. The wetland test pit (i.e. DP06W) lacked a hydric soil indicator, exhibited evidence of wetland hydrology and supported a hydrophytic vegetation community. Based on this evidence of a hydric moisture regime, this area is classified as wetland.

Soil textures within upland test pits ranged from loamy sand to sandy clay. No hydric soil indicators were observed in any of the upland test pits. Comprehensive field observations for data points are provided in the USACE wetland determination data forms in Appendix B for both wetland and upland points.

Wildlife – Eleven bird species were identified in 2023 at the Silicon Mountain site and included several wetland-dependent species. In addition to avian observations, a muskrat (*Ondatra zibethicus*) and common garter snake (*Thamnophis sirtalis*) were also observed (Appendix B).

Stream Channel Monitoring – The annual survey of the reconstructed channel indicates that the Sand Creek channel is continuing to evolve (Appendix D). The majority of the changes within Sand Creek channel are related to the bed surface elevation. This statement is especially applicable for cross sections 1-3, which have displayed very little evidence of lateral migration over the monitoring period. In 2023 cross section 1 (XS1) appeared to have very similar dimensions as it did in 2015, even though previous year's survey data indicated that it has both downcut and re-filled by approximately 1 foot throughout the monitoring period. The thalweg at cross section 2 (XS2) was approximately 0.5 feet deeper in 2023 than it was in 2015 and it has shifted toward the right bank. The channel showed minor amounts of aggradation on the left side of XS2. Cross section 3 (XS3) has gradually aggraded by 1-2.5 feet since 2015 and the deepest parts of the channel have become narrower. Additionally, sediment was deposited along XS3 between 2022 and 2023.

Cross sections 4-7, all located in the middle of the project area, have displayed the most evidence of lateral migration over the monitoring period. The deepest part of the channel has become deeper at cross section 4 (XS4) and the thalweg has shifted slightly toward the left bank as the right side of the channel has aggraded by 1-2 feet. Over the last few years, the right bank at XS4 has been gradually eroding and the slope is becoming more gradual. The deepest part of the channel at cross section 5 (XS5) has also downcut by approximately 1 foot, while both the right and left sides of the channel have aggraded by approximately 0.5 feet. In 2023, the upper portion of the right bank at XS5 appeared to have migrated laterally by 2-3 feet. Cross section 6 (XS6) has been relatively dynamic over the monitoring period, periodically exhibiting cut-and-fill cycles, a shifting thalweg, and aggradation on the right side of the channel. Between the 2022 and 2023

monitoring events, nearly 0.8 feet of sediment were deposited on the right side of the channel. The channel form at cross section 7 (XS7) has also been dynamic over the last several years, with the thalweg shifting from the center to the right side of the channel and sediment deposition has been observed in different locations in different monitoring years. Finally, the channel form at cross section 8 (XS8) has remained relatively stable across all monitoring years.

Although several of the monitored cross sections have exhibited changes in channel form over time, none of these observations are concerning. Almost all observed channel form evolution has occurred between the constructed streambanks, and the top of bank locations have remained mostly static. The re-distribution of sediment within the stream channel and migration of the thalweg are natural processes and indicate that the stream is functioning appropriately as designed.

Riparian Vegetation Monitoring - In 2023, all 16 belt transects monitored along Sand Creek exhibited vegetation communities with stability ratings of 6 or greater, which meets the site's performance criterion. Willow species, including yellow willow (Salix lutea), narrow-leaf willow (Salix exigua), and Pacific willow (Salix lasiandra), represent the dominant community type identified along the stream bank transects. Dominant herbaceous species observed within the willow dominated communities included red-tinge bulrush (Scirpus microcarpus), Nebraska sedge (Carex nebrascensis), and Northwest Territory sedge (Carex utriculata). The willows continue to increase in height and abundance along the stream banks with minor shifts in species dominance.

Photographs – Seven wetland and ten stream repeat photo points were established in the project area in 2015 (PP-1 to PP-17; Figure A-2, Appendix A). Photographs of all surveyed channel cross sections, wetland determination data points, and vegetation transect endpoints (T-1 and T-2) are provided in Appendix C, with comparison between 2023 and the first year of monitoring. The locations of these photographs are illustrated on Figure A-2 (Appendix A). Refer to previous years' monitoring reports for all previous annual photographs: https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx.

Functional Assessment – The 2008 Montana Wetland Assessment Method (MWAM; Berglund and McEldowney, 2008) was used to evaluate the functionality of the site in 2023. Five distinct Assessment Areas (AA) were evaluated at the site in 2023; AA1 – Established Wetland Cells 2, 3, and 4; AA2 – Established Wetland Cells 1 and 5; AA3 – Preservation Wetlands; AA4 – Established Wetland Cell 6; and AA5 – Establishment wetlands adjacent to Sand Creek and Preservation Wetlands (Table 6; Appendix B).

- AA1 Established Wetland Cells 2, 3, and 4 are classified as Category II wetlands and received high ratings for General Wildlife Habitat, Sediment/Nutrient/Toxicant Removal, Production Export/Food Chain Support, and Recreation/Education Potential.
- AA2 Established Wetland Cells 1 and 5 are classified as Category II wetlands and received a high rating for General Wildlife Habitat, Short- and Long-Term Surface Water Storage, Sediment/Shoreline Stabilization, Production Export/Food Chain Support, Groundwater Discharge/Recharge, and Recreation/Education Potential.
- AA3 Preservation Wetlands were also classified as Category II wetlands and received high ratings for General Wildlife Habitat, Short- and Long-Term Surface Water Storage, Sediment/Shoreline Stabilization, Production Export/Food Chain Support, Groundwater Discharge/Recharge, and Recreation/Education Potential.

- AA4 The ecological function provided by AA4 is generally lower than the other AAs due
 the man-made nature of the site in the footprint of the old roadway/bridge fill, and it was
 rated as a Category III wetland.
- AA5 encompasses a few different habitat types that were classified as Category II
 wetlands and received high ratings for General Wildlife Habitat, Sediment and Shoreline
 Stabilization, Production Export/Food Chain Support, Groundwater Discharge/Recharge,
 and Recreation/Education Potential.

Table 6. Montana Wetland Assessment Method Summary for the Silicon Mountain Site

Function and Value Parameters From the 2008 Montana Wetland Assessment Method	2023 AA1 (Established Wetland Cells 2, 3, and 4)	2023 AA2 (Established Wetland Cells 1 and 5)	2023 AA3 (Preservation Wetlands: Preservation Wetland Cells 5, 7, 12, & 13))	2023 AA4 (Established Wetland Cell 6)	2023 AA5 (Wetlands Established along Sand Creek and adjacent to preservation wetlands)
Listed/Proposed Threatened & Endangered (T&E) Species Habitat	L (0.0)	L (0.0)	L (0.0)	L (0.0)	L (0.0)
Montana Natural Heritage Program Species (MTNHP) Habitat	M (0.5)	M (0.5)	M (0.5)	M (0.5)	M (0.7)
General Wildlife Habitat	H (0.9)	H (0.9)	H (0.9)	M (0.4)	H (0.9)
General Fish/Aquatic Habitat	N/A	N/A	N/A	N/A	M (0.6)
Flood Attenuation	N/A	N/A	N/A	N/A	M (0.7)
Short- and Long-Term, Surface-Water Storage	M (0.6)	H (0.8)	H (1.0)	L (0.2)	M (0.7)
Sediment/Nutrient/Toxicant Removal	H (1.0)	M (0.7)	H (1.0)	M (0.5)	M (0.7)
Sediment/Shoreline Stabilization	M (0.6)	H (1.0)	H (1.0)	N/A	H (1.0)
Production Export/Food Chain Support	H (0.9)	H (1.0)	H (0.8)	L (0.3)	H (1.0)
Groundwater Discharge/Recharge	M (0.7)	H (1.0)	H (1.0)	M (0.7)	H (1.0)
Uniqueness	M (0.5)	M (0.6)	M (0.6)	L (0.3)	M (0.6)
Recreation/Education Potential (bonus points)	H (0.2)	H (0.2)	H (0.2)	N/A	H (0.2)
Actual Points/Possible Points	5.9/9.0	6.7/9.0	7.0/9.0	2.9/8.0	8.1/11.0
% of Possible Score Achieved	66%	74%	78%	36%	74%
Overall Category	II	II	II	III	II

Credit Summary:

Stream Mitigation Credits

The stream mitigation component of the Silicon Mountain project included restoring approximately 4,300 linear feet of Sand Creek, with 3,900 linear feet considered creditable based on location and design. The project is expected to generate a total of 12,369.50 stream mitigation credits (Table 7).

Table 7. Stream Mitigation Credits^a for the Silicon Mountain Site.

Mitigation Reach	Linear Feet	Sum of Mitigation Factors ^(a)	Mitigation Credits
Reach 1	3,250	3.20	10,400.00
Reach 2	650	3.03	1,969.50
Total	3,900		12,369.50

⁽a) From Silicon Mountain Aquatic Resource Mitigation Plan, Watershed #2 – Upper Clark Fork of the Columbia River, Butte-Silver Bow County, MT (Confluence Consulting, Inc., 2013).

Wetland Mitigation Credits

In 2023, 18.59 acres of wetland were delineated at the Silicon Mountain site, all of which can be applied toward mitigation credits. The total wetland acreage delineated is comprised of 9.28 establishment wetland acres, and 9.31 acres of preservation wetlands. Additionally, 3.07 acres of open water habitat were delineated across the mitigation site, and the 50-foot upland buffer surrounding the wetland habitats provided an additional 13.74 acres toward the mitigation crediting. Applying the USACE-approved ratios to these acreage results in a total of 14.36 wetland mitigation credit acres generated in 2023, given that mitigation ratios for the 3.07 acres of open water have yet to be determined by the USACE (Tables 8 and 9). Of these 14.36 credit acres, 4.33 credits are allocated to Butte-Siver Bow County and the remaining 10.03 credit acres are allocated to MDT.

Functional Unit Credits

Silicon Mountain Mitigation site generated a total of 42.96 functional unit credits for MDT in 2023. (Table 9). Functional credits are based on the MWAM scores associated with specific wetland polygons (Table 6; Appendix B). Note that upland areas are not evaluated in MWAM assessments and thus the credit acres associated with the upland buffer do not contribute to the functional unit credits.

Table 8. Summary of Mitigation Credits at the Silicon Mountain Site from 2015 (1st year of monitoring) compared to monitoring from 2021 through 2023*

Compensatory Mitigation Type	Mitigation Area Description	Wetland Type ^(b)	Anticipated Mitigation Surface Area Acres	` *	Anticipated Mitigation Credit Acres		2015 Mitigation Credit Acres	2021 Delineated Acres	2021	2022 Delineated Acres	2022 Mitigation Credit Acres	2023 Delineated Acres	2023 Mitigation Credit Acres
Establishment (Creation)	Wetland Cells 1, 2, 3, 4, 5 & 6	Palustrine Emergent, Aquatic Bed	7.84	1:1	7.84	6.19	6.19	8.42	8.42	6.36	6.36	6.84	6.84
Establishment (Creation)	Additional wetlands that have established surrounding preservation and riparian zone	Palustrine Emergent, Palustrine Scrub-shrub	0.00	1:1	0.00	-	-	-	-	2.26	2.26	2.44	2.44
Preservation	Existing Wetland Areas: Preservation Wetland Cells 5, 7, 12, and 13	Palustrine Emergent, Scrub-Shrub	10.06	4:1	2.52	10.24	2.56	9.65	2.41	9.31	2.33	9.31	2.33
Upland Buffer (c)	50-Foot-Wide Upland Buffer	N/A	10.80	5:1	2.16	10.80	2.16	10.80	2.16	16.72	3.34	13.74	2.75
Open Water ^(a)	Wetland Cells 1, 4, 5, & 13	Lacustrine/ Palustrine Aquatic Bed	TBD	TBD	TBD	N/A	N/A	3.24	TBD	3.51	TBD	3.07	TBD
Mudflat ^(a)	Preserved Wetland 13	Palustrine Aquatic Bed	TBD	TBD	TBD	N/A	N/A	0.24	TBD	0.00	N/A	0.00	N/A
	Total Acreage		28.70	NA	11.45	27.23	10.91	32.35	12.99	38.16	14.29	35.40	14.36
Butte Si	Iver Bow County Credit A	cres	2.16	2:1	4.33		4.33		4.33		4.33		4.33
	dit Acres Assigned to MDT		26.54		7.12	A	6.83		8.66		9.96		10.03

⁽a) Mitigation ratios and crediting for Open Water and Mudflat are To Be Determined (TBD) by the US Army Corps of Engineers.

⁽b) FGDC, 2013

⁽c) In years prior to 2022, upland buffer credits have been reported for the anticipated delineated acres. In 2022, the reporting method switched to actual upland buffer acreages delineated.

^{*} Additional year's monitoring reports can be found at the MDT website

Table 9. 2023 MDT Wetland Functional Credits at the Silicon Mountain Site.

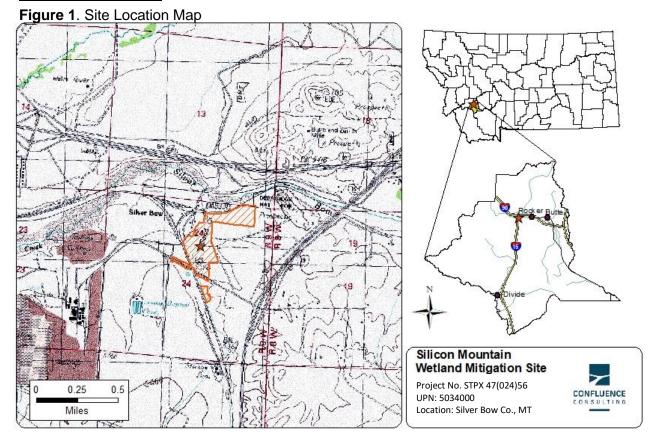
Mitigation Area Description	2023 Delineated Acres	Ratio	2023 Mitigation Credit Acres	MWAM Actual Points (see Table 8)	Functional Credits (Mitigation Credit Acres × Actual Points)
Wetland Cell 3 (Establishment)	0.68	1:1	0.68	5.9	4.01
Wetland Cell 4 (Establishment)	1.42	1:1	1.42	5.9	8.38
Wetland Cell 5 (Establishment)	0.48	1:1	0.48	6.7	3.22
Riparian Wetlands (Establishment)	1.96	1:1	1.96	8.1	15.88
Wetland Cells 12 and 13 (Preservation)	6.55	4:1	1.64	7.0	11.48
Total	11.09		6.18	33.6	42.96

^{*}Does not include Open Water Areas

Conclusions

The Silicon Mountain Mitigation site is continuing to develop into a diverse stream and wetland ecosystem. The site met all established performance criteria and has exceeded the planned mitigation credit acreage. All wetland cells, except Cell 6, are functioning as intended and wetland acreage continues to increase with each successive monitoring event. The Sand Creek channel morphology continues to evolve, though the location of the channel has remained static. Willow cuttings installed along the banks of Sand Creek continue to mature, and streambanks are stable with thriving woody vegetation communities. At this time, no remedial actions are necessary within the stream and wetland areas because the site has continued to develop as intended and the mitigation targets are being achieved. Weed control efforts will continue in 2024 to ensure that the site maintains the performance criteria related to noxious weed cover.

Maps, Plans, Photos



Project Area Maps/Figures: See Appendix A (Figure A-2 – 2023 Monitoring Activity Locations; Figure A-3 – 2023 Mapped Site Features; Figure A-4 – 2023 Wetland Credit Areas; and Figure A-5 – 2023 Wetland Delineation)

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

Plant List: See Appendix B (Table B-1)

Photos: See Appendix C

Channel Cross Sections: See Appendix D

Plans: See Appendix D of 2015 Monitoring Report

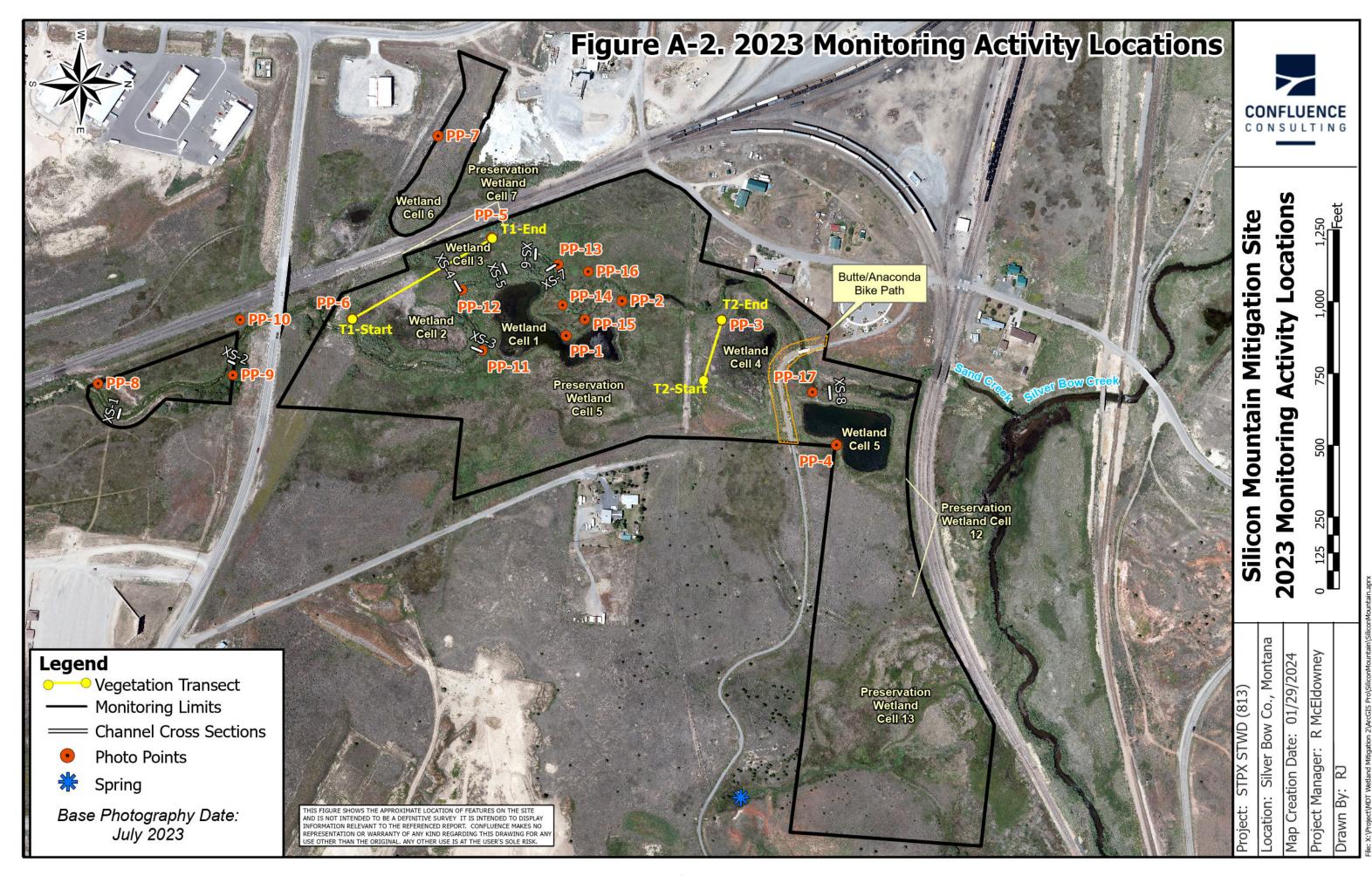
https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx

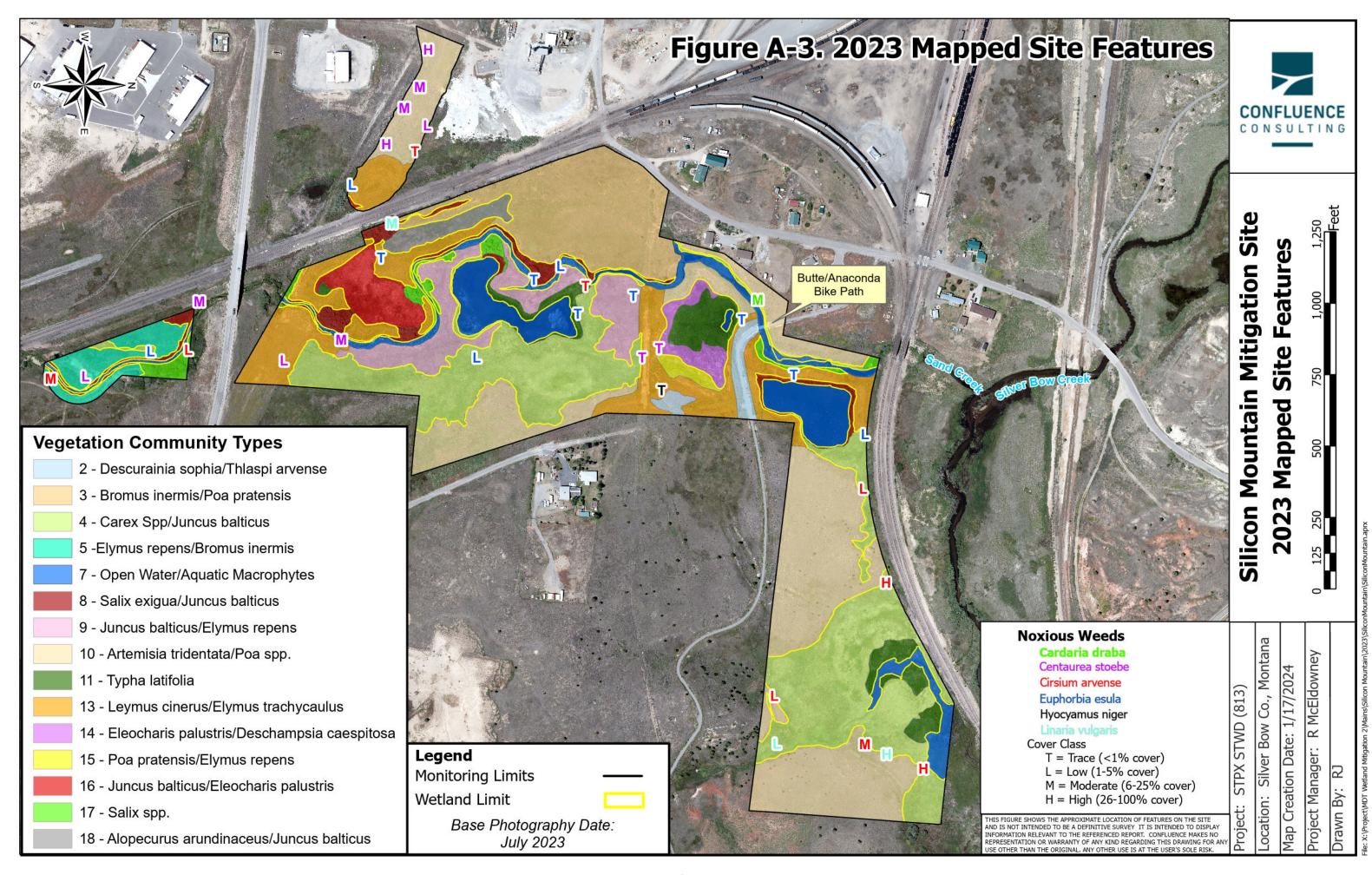
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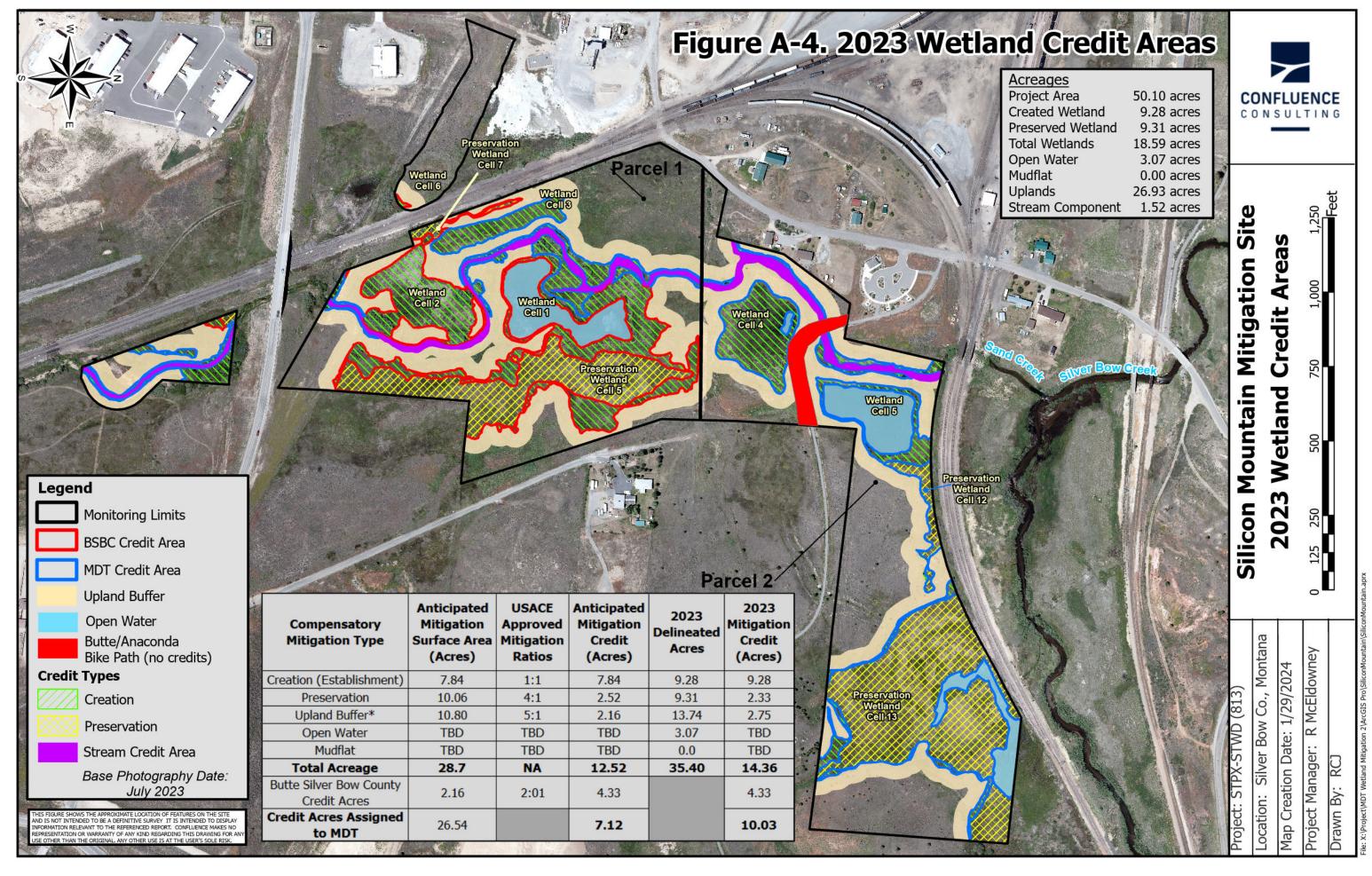
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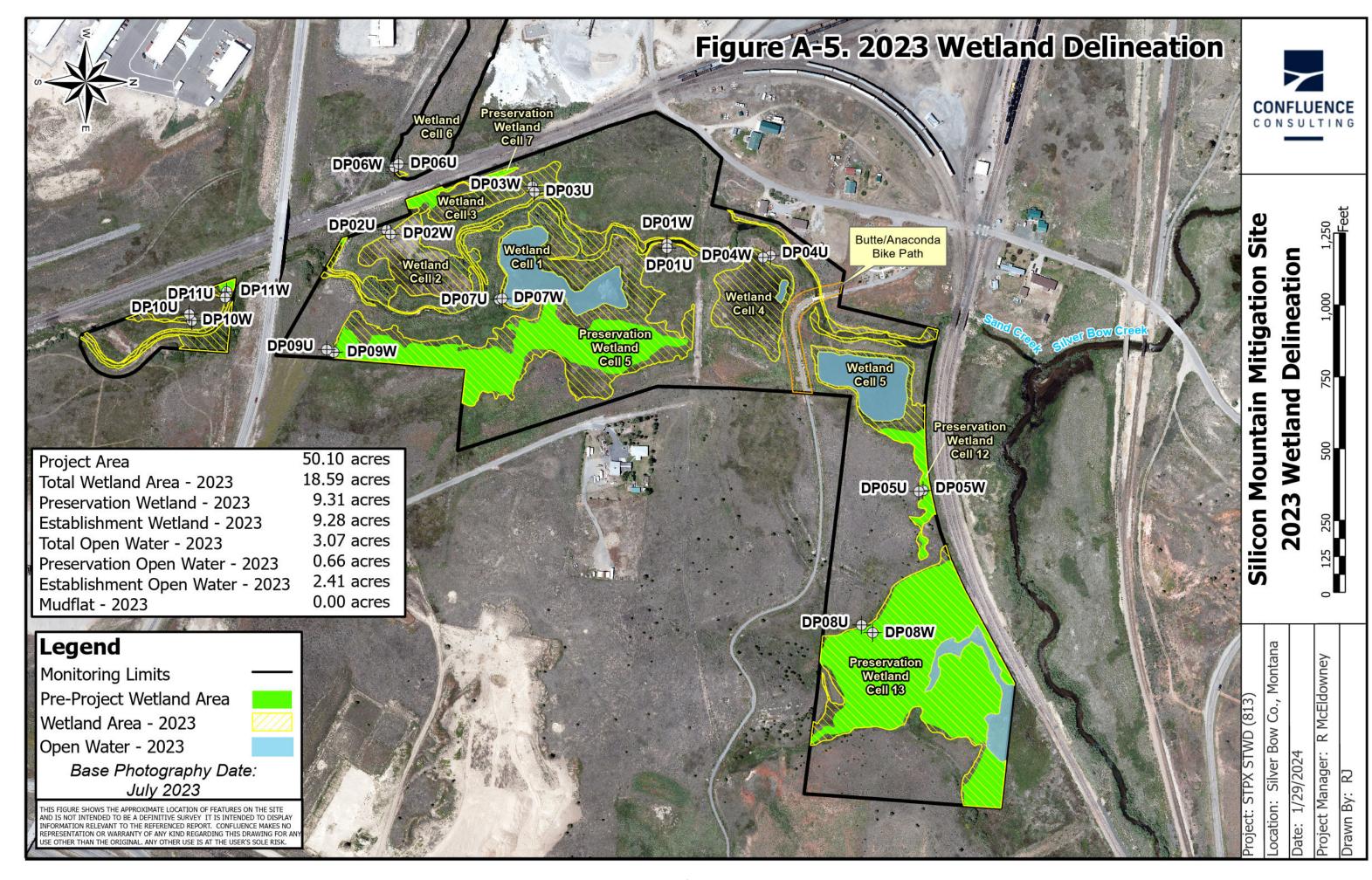
APPENDIX A PROJECT AREA MAPS

MDT Wetland Mitigation Monitoring Silicon Mountain Butte Silver Bow County, Montana









APPENDIX B MONITORING FORMS

MDT Wetland Mitigation Monitoring Silicon Mountain Butte Silver Bow County, Montana

MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: Silico	n Mountain	Assessment Date/Time	7/6/2023
Person(s) conducti	ng the assessment: R	Jones, S Weyant, K Kane	
Weather: 50 degre	es, breezy, overcast	Location: 5 miles west of Butte	
		Milepost: MP 119 on I-15	
Legal Description:	T 3N R 9E Sectio	n(s) 24	
Initial Evaluation D	ate <u>: 6/23/2015</u> Mo	onitoring Year: <u>9</u> #Visits in Year: <u>1</u>	
Size of Evaluation	Area: 50.1 (acres)		
Land use surround	ing wetland:		
Mix of commercia	ıl (railroad), residential	l, and parkland (bike path)	
	!	HYDROLOGY	
Surface Water Source:	Sand Creek and a w	vell defined spring.	
Inundation: 🔽	Average Depth:	1 (ft) Range of Depths: 0.1-4 (f	<u>t)</u>
Percent of assessment	area under inundation:	9 %	
Depth at emergent veg	etation-open water bou	ndary: 0.5 (ft)	
	·	he soils saturated within 12 inches of surface:	Yes
		drift lines, erosion, stained vegetation, etc:	
	•••	nitigation site includes high water table, saturat	ion to
		surface soil cracks, a positive FAC-Neutral test,	
geomorphic position,	inundation on aerial in	nagery and saturation on aerial imagery.	
Groundwater Moni	toring Wells		
	ter surface below grou	und surface, in feet.	
Well ID			
455959112394201	• •	•	
455959112394201			
455959112394201			
400000112004201	1.40		
Additional Activities Checklist:			
	ion-open water boundary on a	· · · · · · · · · · · · · · · · · · ·	
	_	it and look for evidence of past surface water	
elevations (drift lines, erosion,	- ,	-	
	oundwater monitoring well loca	ations, if present.	
lydrology Notes:			

Two groundwater monitoring wells remained on site after construction and are now monitored by USGS. Open water covered ~80% of wetland cells 1 and 5. Shallow ponded water was present in ~10% of Cell 4, and ~10% of wetland 13. Flowing water was present in the entire length of the Sand Creek channel.

Cell 6 lost wetland area, presumably from a lack of hydrology. It appears that in addition to surface runoff during storm events, one of the water sources for cell 6 is a spring-fed wetland located north and upgradient of cell 6 (outside project area). Little of that water was ending up in cell 6 in 2023, leaving the cell's hydrology dependent on overland flow.

VEGETATION COMMUNITIES

Site Silicon Mountain

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

Community # 2 Community Type: Descurainia sophia / Thlaspi arvense Acres: 0.61

Species	Cover class	Species	Cover class
Agropyron cristatum	1	Artemisia tridentata	1
Bare Ground	2	Bassia scoparia	1
Bromus tectorum	4	Camelina microcarpa	2
Descurainia sophia	1	Elymus trachycaulus	1
Lepidium perfoliatum	1	Leymus cinereus	1
Pascopyrum smithii	1	Thlaspi arvense	2

Comments:

Upland community composed of mostly early successional, non-native species commonly found on disturbed landscapes. In 2021 this community type was mapped along the Butte/Anaconda bike path and a second patch of was added in 2023 in the central portion of the site along the eastern boundary of the project area. As a result, this CT increased by 0.16 acres in 2023.

Community # 3 Community Type: Bromus inermis / Poa pratensis Acres: 4.93

Species	Cover class	Species	Cover class
Achillea millefolium	1	Agrostis stolonifera	1
Alopecurus arundinaceus	0	Artemisia tridentata	1
Astragalus cicer	1	Bare Ground	1
Bromus inermis	4	Centaurea stoebe	0
Cirsium arvense	0	Deschampsia caespitosa	0
Elymus repens	3	Elymus trachycaulus	2
Euphorbia esula	0	Juncus balticus	0
Koeleria macrantha	1	Lactuca serriola	0
Leymus cinereus	2	Linaria vulgaris	0
Melilotus officinalis	1	Phalaris arundinacea	0
Poa palustris	1	Poa pratensis	3
Poa secunda	1	Potentilla anserina	0
Schedonorus pratensis	1	Solidago gigantea	0
Sonchus arvensis	1	Thlaspi arvense	1
Trifolium hybridum	1		

Comments:

Upland community. Slight increase in acreage of this CT (0.10 ac) in 2023 due to minor wetland contraction along the western portion of the project area.

Community # 4 Community Type: Carex spp. / Juncus balticus Acres: 11.42

		Species	Cover class
Calamagrostis canadensis	1	Carex aquatilis	1
Carex nebrascensis	2	Carex praegracilis	1
Carex praticola	1	Carex utriculata	2
Cirsium arvense	1	Deschampsia caespitosa	2
Euphorbia esula	1	Juncus balticus	4
Leymus cinereus	0	Mentha arvensis	1
Poa palustris	1	Poa pratensis	2
Potentilla anserina	2	Sisymbrium altissimum	1
Typha latifolia	1		

Comments:

PEM wetland community. Total acreage of this CT decreased by 0.24 acres between 2022 and 2023, though this CT expanded in the central portion of the site. The CT acreage decrease is due to wetland contraction in the northeastern portion of the site.

Community # 5 Community Type: Elymus repens / Bromus inermis Acres: 1.29

Species	Cover class	Species	Cover class
Astragalus cicer	1	Bromus inermis	3
Bromus tectorum	1	Cirsium arvense	0
Descurainia sophia	1	Elymus repens	4
Elymus trachycaulus	1	Juncus balticus	3
Leymus cinereus	0	Pascopyrum smithii	2
Poa pratensis	1	Potentilla anserina	0
Salix exigua	1		

Comments:

Upland community south of the road alignment and overpass. No significant changes were observed in this CT in 2023.

Community # 7 Community Type: Open Water / Aquatic macrophytes Acres: 4.6

Species	Cover class	Species	Cover class
Algae, green	3	Beckmannia syzigachne	1
Eleocharis palustris	1	Glyceria grandis	0
Juncus balticus	1	Lemna minor	1
Mudflat	1	Open Water	5
Typha latifolia	2		

Comments:

Open water areas within created wetland cells 1, 4, 5, preserved wetland cell 13, and the stream channel. In 2023, open water areas decreased by approximately 0.81 acres, with a dramatic decrease observed in Cell 4 and preservation wetland 13, and to a lesser extent cell 1due to an increase in Typha latifolia. Open water also decreased in cell 5 due to shallower water depths creating a contraction of the open water cell.

Community # 8 Community Type	Salix exigua / Juncus balticus	Acres:	<u>1.17</u>
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Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus arundinaceus	2
Calamagrostis canadensis	2	Carex aquatilis	1
Carex nebrascensis	1	Carex pellita	2
Carex utriculata	2	Cicuta douglasii	1
Eleocharis palustris	2	Glyceria striata	1
Hordeum jubatum	1	Juncus balticus	3
Mentha arvensis	1	Salix exigua	5
Salix geyeriana	1	Salix lasiandra	1
Salix lutea	1	Scirpus microcarpus	1
Comments:			

Existing wetland east and west of wetland cell 2, along the restored Sand Creek stream channel, and surrounding cell 5.

Community # 9 Community Type: Juncus balticus / Elymus repens Acres: 2.83

Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus arundinaceus	1
Bromus inermis	1	Calamagrostis canadensis	0
Cirsium arvense	1	Elymus repens	3
Elymus trachycaulus	1	Epilobium ciliatum	0
Euphorbia esula	1	Geum macrophyllum	0
Hordeum jubatum	1	Juncus balticus	3
Leymus cinereus	1	Poa palustris	1
Poa pratensis	3	Potentilla anserina	1
Rumex crispus	0	Salix exigua	1
Solidago gigantea	1	Symphyotrichum lanceolatur	n 1
Thlaspi arvense	1		

Comments:

The acreage of this wetland community decreased by approximately 0.2 acres between 2022 and 2023 due to the expansion of willows along the creek. In 2021 and 2022, this WT replaced upland UT 3 in several different areas.

Community # 10 Community Type: Artemisia tridentata / Poa spp. Acres: 11.86

Species	Cover class	Species	Cover class
Artemisia tridentata	3	Astragalus agrestis	1
Bromus inermis	1	Centaurea stoebe	1
Ericameria nauseosa	1	Hesperostipa comata	1
Juniperus scopulorum	2	Koeleria macrantha	1
Leymus cinereus	1	Pascopyrum smithii	2
Poa pratensis	2	Poa secunda	3
Pseudoroegneria spicata	0	Symphyotrichum falcatum	2
Comments:			

Upland shrubland. This CT expanded in 2023 by 0.22 acres due to the contraction of the wetlands in the northeastern portion of the site.

Community # 11 Community Type: Typha latifolia / Acres: 1.89

Species	Cover class	Species	Cover class
Alisma plantago-aquatica	0	Alopecurus aequalis	0
Bare Ground	0	Beckmannia syzigachne	0
Calamagrostis canadensis	0	Carex nebrascensis	1
Carex pellita	0	Carex rosea	0
Cyrtorhyncha cymbalaria	1	Deschampsia caespitosa	1
Eleocharis palustris	2	Glyceria grandis	1
Juncus balticus	1	Juncus bufonius	0
Juncus effusus	0	Mentha arvensis	1
Mud Flats	0	Open Water	2
Poa palustris	0	Potentilla anserina	1
Ranunculus sceleratus	0	Salix lasiandra	0
Salix lutea	1	Schoenoplectus tabernaemon	ita 1
Scirpus microcarpus	2	Typha latifolia	5

Comments:

Typha latifolia continues to expand around cell 1 and in cell 4. The acreage of this CT increased by 0.57 acres between 2022 and 2023.

Community #	13	Community	Type:	Leymus cinereus	/ Elymus trach	ycaulus	Acres:	5.66
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Species	Cover class	Species	Cover class
Astragalus cicer	1	Bare Ground	1
Bromus inermis	1	Camelina microcarpa	0
Cirsium arvense	1	Elymus repens	1
Elymus trachycaulus	3	Epilobium ciliatum	0
Euphorbia esula	1	Festuca ovina	1
Hordeum jubatum	1	Juncus balticus	1
Lepidium draba	0	Leymus cinereus	4
Linaria vulgaris	0	Melilotus officinalis	1
Poa palustris	1	Poa pratensis	2
Poa secunda	1	Potentilla anserina	0
Silene latifolia	0	Sonchus arvensis	0
Thlaspi arvense	1	Trifolium longipes	1
Comments:			

Community dominated by FAC graminoids, located in upland areas around wetland cells 4 and 5. This CT has become dominant within the area previously delineated as wetland in cell 6. The acreage of this CT decreased by 0.46 between 2022 and 2023 due to a CT change in the central-eastern portion of the site.

Community # 14 Community Type: Eleocharis palustris / Deschampsia caespitosa Acres: 0.64

Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus aequalis	1
Bare Ground	0	Beckmannia syzigachne	1
Carex nebrascensis	1	Carex pellita	1
Carex rosea	0	Carex utriculata	1
Deschampsia caespitosa	2	Eleocharis palustris	3
Epilobium ciliatum	1	Hordeum jubatum	1
Juncus balticus	3	Mentha arvensis	1
Open Water	1	Persicaria amphibia	1
Poa palustris	1	Potentilla anserina	2
Sonchus arvensis	0	Typha latifolia	1

Comments:

Located along the eastern, southern, and western edges of wetland cell 4. This CT increased by 0.03 acres in 2023.

Community # 15	Communit	y Type:	Poa pratensis / Elymus repens	Acres:	0.25
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Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Astragalus cicer	1
Bare Ground	2	Bromus inermis	2
Cirsium arvense	0	Elymus repens	3
Elymus trachycaulus	2	Epilobium ciliatum	0
Euphorbia esula	0	Festuca ovina	1
Hordeum jubatum	0	Leymus cinereus	2
Linum lewisii	1	Poa palustris	1
Poa pratensis	4	Potentilla anserina	0
Puccinellia nuttalliana	1	Thlaspi arvense	1
Trifolium hybridum	1		

Comments:

Located east of wetland cell 4, on the upland slope above the cell. This CT decreased by 0.04 acres between 2022 and 2023.

Community # 16 Community Type: Juncus balticus / Eleocharis palustris Acres: 1.21

Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus aequalis	0
Alopecurus arundinaceus	2	Alopecurus pratensis	0
Bare Ground	3	Beckmannia syzigachne	0
Carex aquatilis	1	Carex nebrascensis	1
Carex pellita	0	Carex utriculata	0
Cicuta douglasii	1	Cyrtorhyncha cymbalaria	1
Deschampsia caespitosa	1	Eleocharis palustris	1
Elymus repens	1	Epilobium ciliatum	0
Glyceria grandis	0	Glyceria striata	1
Hordeum jubatum	1	Juncus balticus	2
Juncus bufonius	1	Juncus effusus	0
Mentha arvensis	0	Open Water	0
Phalaris arundinacea	0	Plantago major	0
Poa palustris	1	Poa pratensis	1
Potentilla anserina	1	Salix bebbiana	0
Salix exigua	1	Salix lasiandra	1
Scirpus microcarpus	0	Sonchus arvensis	0
Symphyotrichum ciliatum	1	Trifolium longipes	1
Typha latifolia	1		

Comments:

Located in wetland cell 2 and cell 3. Large patch of bare ground in the NE corner of cell 2, likely due to a large snow drift or possibly some sort of contamination from the railroad. Due to increased bare ground, the total cover for this CT decreased in 2023.

Community # 17 Community Type: Salix spp. / Acres: 0.77

Species	Cover class	Species	Cover class
Alnus incana	1	Carex pellita	1
Carex utriculata	1	Juncus balticus	2
Salix bebbiana	2	Salix boothii	2
Salix exigua	5	Salix geyeriana	2
Salix lutea	2	Veronica americana	1
Comments:			

CT expanded by 0.32 acres in the areas surrounding the creek between 2022 and 2023.

Community # 18 Community Type: Alopecurus arundinaceus / Juncus balticus Acres: 0.66

Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus arundinaceus	4
Bare Ground	0	Bromus inermis	1
Carex aquatilis	0	Carex nebrascensis	2
Carex utriculata	1	Cicuta douglasii	2
Cirsium arvense	1	Cyrtorhyncha cymbalaria	1
Deschampsia caespitosa	1	Eleocharis palustris	0
Elymus repens	1	Epilobium ciliatum	0
Euphorbia esula	1	Glyceria striata	0
Hordeum jubatum	0	Iris missouriensis	0
Juncus balticus	4	Leymus cinereus	0
Mentha arvensis	0	Phalaris arundinacea	1
Poa palustris	0	Poa pratensis	3
Potentilla anserina	2	Salix bebbiana	0
Salix exigua	2	Salix lutea	0
Scirpus microcarpus	0	Sonchus arvensis	1
Symphyotrichum ciliatum	0	Typha latifolia	0

Comments:

New wetland community type created in 2023 to document the vegetation in wetland cell 3 previously documented as WT16. The vegetation community is now dominated by creeping meadow-foxtail.

Total Vegetation Community Acreage

49.79

VEGETATION TRANSECTS

Silicon Mountain	Da	ate: 7/6/2023			
Transect Number:1 Compass Direction from Start:322_					
Interval Data:					
Ending Station	13 Community Type:	Leymus cinereus / Elymus tr	rachycaulus		
Species	Cover class	Species	Cover class		
Astragalus cicer	2	Bare Ground	1		
Cirsium arvense	1	Elymus repens	1		
Elymus trachycaulus	2	Festuca ovina	3		
Juncus balticus	1	Leymus cinereus	4		
Linaria vulgaris	0	Poa pratensis	2		
Poa secunda	2	Silene latifolia	0		
Sonchus arvensis	2				
Ending Station	35 Community Type:	Juncus balticus / Eleocharis	palustris		
Species	Cover class	Species	Cover class		
Alopecurus arundinaceus	0	Bare Ground	1		
Cyrtorhyncha cymbalaria	0	Deschampsia caespitosa	0		
Eleocharis palustris	3	Juncus balticus	4		
Juncus bufonius	0	Juncus effusus	0		
Mentha arvensis	0	Poa palustris	1		
Potentilla anserina	0	Salix bebbiana	0		
Sonchus arvensis	0	Typha latifolia	0		
Ending Station	59 Community Type:	Typha latifolia /			
Species	Cover class	Species	Cover class		
Beckmannia syzigachne	0	Deschampsia caespitosa	0		
Eleocharis palustris	2	Glyceria grandis	0		
Juncus balticus	2	Juncus bufonius	0		
Juncus effusus	1	Open Water	1		
Poa palustris	1	Salix lasiandra	0		
Scirpus microcarpus	1	Typha latifolia	3		

Ending Station	264	Community Type:	Juncus balticus / Eleocharis p	palustris
Species		Cover class	Species	Cover class
Alopecurus arundinaceus		2	Alopecurus pratensis	1
Bare Ground		4	Beckmannia syzigachne	0
Carex nebrascensis		0	Carex pellita	0
Carex utriculata		0	Deschampsia caespitosa	0
Eleocharis palustris		2	Elymus repens	0
Glyceria grandis		1	Hordeum jubatum	1
Juncus balticus		3	Juncus effusus	0
Phalaris arundinacea		0	Plantago major	0
Poa palustris		1	Potentilla anserina	1
Salix bebbiana		0	Salix lasiandra	0
Typha latifolia		1		
Ending Station	306	Community Type:	Leymus cinereus / Elymus tra	chycaulus
Species		Cover class	Species	Cover class
Astragalus cicer		1	Bare Ground	0
Bromus inermis		3	Camelina microcarpa	0
Elymus repens		2	Elymus trachycaulus	1
Euphorbia esula		0	Juncus balticus	2
Lepidium draba		0	Leymus cinereus	4
Linaria vulgaris		1	Poa pratensis	2
Thlaspi arvense		1	Trifolium longipes	1
Ending Station	537	Community Type:	Alopecurus arundinaceus / Ju	ıncus balticus
Species		Cover class	Species	Cover class
Agrostis stolonifera		1	Alopecurus arundinaceus	3
Bare Ground		0	Carex aquatilis	2
Carex nebrascensis		1	Cicuta douglasii	1
Cyrtorhyncha cymbalaria		1	Deschampsia caespitosa	1
Eleocharis palustris		2	Epilobium ciliatum	0
Glyceria striata		1	Hordeum jubatum	1
Juncus balticus		3	Mentha arvensis	0
Phalaris arundinacea		1	Poa palustris	1
Poa pratensis		1	Potentilla anserina	1
Salix exigua		0	Scirpus microcarpus	1
Symphyotrichum ciliatum		1	Typha latifolia	0

Ending Station	564 Community Type:	Bromus inermis / Poa pratensis	
Species	Cover class	Species	Cover class
Agrostis stolonifera	2	Alopecurus arundinaceus	1
Bare Ground	1	Bromus inermis	4
Cirsium arvense	0	Elymus repens	1
Elymus trachycaulus	1	Euphorbia esula	1
Juncus balticus	1	Leymus cinereus	0
Linaria vulgaris	0	Phalaris arundinacea	0
Poa palustris	1	Poa pratensis	2
Potentilla anserina	1	Sonchus arvensis	1
Thlaspi arvense	0	Trifolium hybridum	2

Transect Notes:

Very little standing water along the trasect in 2023. Minimal change in species presence since 2022 but cover was reduced for the majority of species and bare ground increased.

288 **Compass Direction from Start:** Transect Number: **Interval Data: Ending Station** Poa pratensis / Elymus repens 8 Community Type: **Cover class Cover class Species Species** Agrostis stolonifera 2 2 Astragalus cicer Bare Ground 2 Bromus inermis 2 Cirsium arvense 1 Elymus repens 1 1 0 Elymus trachycaulus Euphorbia esula Festuca ovina 2 Hordeum jubatum 1 Leymus cinereus 0 Poa palustris 2 2 0 Poa pratensis Potentilla anserina Puccinellia nuttalliana 0 Trifolium hybridum 1 **Ending Station** Eleocharis palustris / Deschampsia caespitosa 42 Community Type: **Species Cover class Species Cover class** Agrostis stolonifera 1 Alopecurus aequalis 0 Bare Ground 2 Beckmannia syzigachne 0 Carex rosea 1 Deschampsia caespitosa 0 Eleocharis palustris 1 Epilobium ciliatum 0 Hordeum iubatum Juncus balticus 4 1 Mentha arvensis 0 Persicaria amphibia 0 Poa palustris 2 Potentilla anserina 2 Sonchus arvensis Typha latifolia 0 **Ending Station** 206 Community Type: Typha latifolia / Cover class **Species Cover class Species** Alopecurus aequalis 0 Bare Ground 1 0 Calamagrostis canadensis Carex nebrascensis 0 Carex pellita 0 Carex rosea 0 Deschampsia caespitosa 1 Eleocharis palustris 2 Juncus balticus 3 Mentha arvensis 0

1

1

3

Potentilla anserina

Salix lutea

Typha latifolia

Ranunculus sceleratus

Schoenoplectus tabernaem

1

1

Ending Station	219 Community Type:	Bromus inermis / Poa pratensis
----------------	---------------------	--------------------------------

Species	Cover class	Species	Cover class
Agrostis stolonifera	0	Bare Ground	1
Bromus inermis	2	Deschampsia caespitosa	0
Elymus repens	1	Euphorbia esula	0
Juncus balticus	1	Lactuca serriola	1
Leymus cinereus	2	Poa pratensis	2
Poa secunda	1	Sonchus arvensis	0
Thlaspi arvense	1		

Transect Notes:

No open water observed along transect in 2023, as emergent vegetation now dominates the cell. Otherwise, minimal changes in species presence and cover since 2022.

PLANTED WOODY VEGETATION SURVIVAL

Silicon Mountain

Planting Type	#Planted #Alive Notes	
Alnus incana	5	
Salix eriocephala	14	
Salix exigua	16	
Salix geyeriana	13	
Sheperdia argentea	10	

Comments

An estimated 350 containerized trees and shrubs were part of the original planting. During the 2015 monitoring a total of 47 live shrubs were noted; in 2016, 2017 and 2018 a total of 44 live shrubs were identified. During the July 2019 through June 2022 monitoring events an additional 14 trees and shrubs were counted, increasing the total to 58 live containerized plants. Volunteer willows and alders were observed in and around excavated wetland cells across the site. In 2023 woody plant density had increased enough that it was difficult to identify the planted individual.

Silicon Mountain

WILDLIFE

Were man-made nesting structures installed?	Yes	
If yes, type of structure: Cylinder		
How many?3		
Are the nesting structures being used?	Yes	
Do the nesting structures need repairs?	No	

Nesting Structure Comments:

Nesting structures at the migitation site were installed by the local conservation group Montana Wetland and Waterfowl. Two abandoned duck nests were observed on the installed platforms.

Species	#Observed	Behavior	Habitat
American Coot	6	L	
American Robin	2	L	
Canada Goose	1	FO	
Cinnamon Teal	1	L	
Common Goldeneye	5	L	
Killdeer	7	L, F	
Magpie	5	L	
Mourning Dove	2	L	
Red-winged Blackbird	17	L	
Ruddy Duck	3	L	
Sandhill Crane	2	FO	
Tree Swallow	1	FO	
Western Meadowlark	1	L	
Yellow-headed Blackbird	d 12	L	

Bird Comments

Female ruddy duck with 6 ducklings observed in the Sand Creek channel within the site. American Coot also observed observed with 5 young.

BEHAVIOR CODES

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

HABITAT CODES

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

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

Mammals and Herptiles

Species # Observed Tracks Scat Burrows Comments

Garter Snake 1 No No No Muskrat 2 No No No

Wildlife Comments:

Site is used by a diversity of bird and wildlife species.

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 $\frac{1}{2}$ 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.

One photograph from each end of the vegetation transect, showing the transect.						
Photo #	Latitude	Longitude	Bearing	Description		
DP01u						
DP01w						
DP02u						
DP02w						
DP03u						
DP03w						
DP04u						
DP04w						
DP05u						
DP05w						
DP06u						
DP06w						
DP07u						
DP07w PP01				West side of wetland cell 1		
				Outside wetland cell 1		
PP02						
PP03				West side of wetland cell 4		
PP04				East side of constructed wetland cell 5		
PP05				North end of T-1, constructed wetland cell 3		
PP06				South end of T-1, constructed wetland cell 3		
PP07				Cell 6, west side of tracks, south of overpass		
PP08				Southern edge of cell 6 - upstream end		
PP09				Northern edge of cell 6 - downstream end		
PP10				West side of wetland cell 3		
PP11				Sand Creek		
PP12				Sand Creek		

PP13 Sand Creek Headcut PP14 Headcut PP15 PP16 Headcut PP17 Northern end of Sand Creek West side of cell 2 T-1-E T-1-S South end of wetland cell 2 T-2-E West side of cell 4 T-2-S East side of wetland cell 4

Comments:

contribute to AA acreage.

ADDITIONAL ITEMS CHECKLIST

	Hydrology					
□ ✓ lines	Map emergent vegetation/open water boundary on aerial photos. Observe extent of surface water. Look for evidence of past surface water elevations (e.g. drift, vegetation staining, erosion, etc).					
	Photos					
	One photo from the wetland toward each of the four cardinal directions One photo showing upland use surrounding the wetland. One photo showing the buffer around the wetland One photo from each end of each vegetation transect, toward the transect					
	Vegetation					
✓ Ma	ap vegetation community boundaries					
✓ Co	omplete Vegetation Transects					
	Soils					
✓ As	ssess soils					
	Wetland Delineations					
✓	Delineate wetlands according to applicable USACE protocol (1987 form or					
Supp ⊻	lement) Delineate wetland – upland boundary onto aerial photograph.					
Wetla	and Delineation Comments					
	ne total wetland acreage delineated in 2023, including pre-existing wetland areas, was 18.59 acres, nich is an increase of 0.66 acres since 2022.					
	Functional Assessments					
✓ forms	Complete and attach full MDT Montana Wetland Assessment Method field					
Funct	tional Assessment Comments:					
Cr	Created Wetland Cells 1 and 5; Cells 2, 3, and 4; and Preservation Wetlands were classified as					

Functional assessment completed on created cells and preservation wetlands. Open water areas

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Were man-made nesting structure installed at this site? Yes
If yes, do they need to be repaired? No
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? No
If yes, are the structures in need of repair?
If yes, describe the problems below.
The outlet to wetland cell 1 looks as though it has experienced some degree of erosion in the last year.

Project/Site: Silicon Mountain	(City/County	y: Silver Bo	w County	Sampling Date:	2023-07-06
Applicant/Owner: MDT				Mantana		
Investigator(s): S Weyant		Section, To	ownship, Rar	nge: S24 T3N R9W		
				convex, none): Linear	Slo	ppe (%): 2
Subregion (LRR): E 44	Lat: 46.	00034		Long: -112.662608	 Datı	ım: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixlee				=		
Are climatic / hydrologic conditions on the site typical for this	time of vea	ar? Yes	No	(If no. explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology sig						No 🗸
Are Vegetation, Soil, or Hydrology na				eded, explain any answe		
SUMMARY OF FINDINGS – Attach site map s						eatures, etc.
Hydrophytic Vegetation Present? Yes No						
Hydric Soil Present? Yes No			he Sampled hin a Wetlan		No_	
Wetland Hydrology Present? Yes No		With	IIII a Wellali	id: 165		_
Remarks: Upland sample point located at north end of wetland cel	II 1 Althou	iah a hydr	ronhytic yoc	uotation indicator is mot	the data is not	supported by
wetland hydrology and has not developed hydric soils (-			, the data is not	supported by
VEGETATION – Use scientific names of plants	s.					
20 ft v	Absolute		t Indicator	Dominance Test work	sheet:	
1	% Cover		Status	Number of Dominant Sp That Are OBL, FACW, of		(A)
2.						(7)
3.				Total Number of Domin Species Across All Stra	ant ta: 2	(B)
4.						
E ft r	0	= Total Co	over	Percent of Dominant Sp That Are OBL, FACW, of		(A/B)
Sapling/Shrub Stratum (Plot size: 5 ft r 1. Artemisia tridentata	15	/	UPL	Prevalence Index wor	ksheet:	
	15		OI L	Total % Cover of:		ly by:
2 3		•	-	-	x 1 = 0	
4				FACW species 65	x 2 = 130	
5.				·	x 3 = 0	
	15	= Total Co	over		x 4 = <u>0</u>	
Herb Stratum (Plot size: 5 ft r)				UPL species 35 Column Totals: 100	x 5 = <u>175</u> (A) 30	_
1. Juncus balticus	65		FACW	Column Totals: 100	(A) <u>30</u>	5 (B)
2. Bromus inermis 3. Euphorbia esula	<u>15</u>		UPL UPL	Prevalence Index		
		-		Hydrophytic Vegetation		
4. 5.				1 - Rapid Test for H		tation
6				2 - Dominance Tes 3 - Prevalence Inde		
7.				4 - Morphological A		vide supporting
8.					s or on a separate	
9.				5 - Wetland Non-Va	ascular Plants ¹	
10				Problematic Hydro	ohytic Vegetation	¹ (Explain)
11				¹ Indicators of hydric soi		
20 ft r	85	= Total Co	over	be present, unless distu	irbed or problema	ATIC.
Woody Vine Stratum (Plot size: 30 ft r)						
1				Hydrophytic Vegetation		
2		= Total Co	over		s No_	<u> </u>
% Bare Ground in Herb Stratum 15.0		10tal 00	.,,,,,			
Remarks:						
This data point is located in a sagebrush shrubland and does no species at this sample point, it is a resilient, rhizomatous grass t						

SOIL Sampling Point: DP01U

Profile Des	cription: (Descri	be to the de	pth needed to docu	ment the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redo	x Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0 - 4	10YR 3/4	100					Loam	Fine roots
4 - 7	10YR 5/3	100					Loamy Sand	
7 - 16	7.5YR 4/2	100					Loam	
-								
_	-							
			-					
	-							
1							. 2.	
			I=Reduced Matrix, CS I LRRs, unless othe			ed Sand Gr		cation: PL=Pore Lining, M=Matrix.
		nicable to al			ea.)			ors for Problematic Hydric Soils ³ :
Histoso	, ,		Sandy Redox (·	n Muck (A10)
l '	pipedon (A2)		Stripped Matrix		1) /	MIDAA		Parent Material (TF2)
_	istic (A3)		Loamy Mucky I			(MLKA 1)		y Shallow Dark Surface (TF12)
	en Sulfide (A4)	food (A11)	Loamy Gleyed		(1)		Otne	er (Explain in Remarks)
. —	d Below Dark Sur	, ,	Depleted Matrix				3Indicate	are of hydrophytic vocatetion and
	ark Surface (A12) Mucky Mineral (S1		Redox Dark Su	, ,				ors of hydrophytic vegetation and nd hydrology must be present,
	Gleyed Matrix (S4	•	Depleted Dark Redox Depress		7)			es disturbed or problematic.
	Layer (if present		Redox Depress	510113 (1 0)			T	is disturbed or problematic.
Type:		,.						
	iches):						Hydric Soil	Present? Yes No
Remarks:							11,4	
N - 11								
No nyar	ic soil indic	ators on	servea.					
HYDROLO	ACV							
_	drology Indicato		ed; check all that appl	lv)			Secon	ndary Indicators (2 or more required)
	-	one require			aa (DO) (a	vaant		
	Water (A1)		Water-Sta			xcept		Vater-Stained Leaves (B9) (MLRA 1, 2,
_	ater Table (A2)			1, 2, 4A, a	ana 4B)		5	4A, and 4B)
Saturati	` ,		Salt Crust	` '	.=			rainage Patterns (B10)
	/larks (B1)		Aquatic In		, ,			ry-Season Water Table (C2)
	nt Deposits (B2)		Hydrogen					aturation Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Oxidized F	Rhizosphe	res along	Living Roc	ots (C3) G	Seomorphic Position (D2)
Algal M	at or Crust (B4)		Presence	of Reduce	ed Iron (C4	1)	s	hallow Aquitard (D3)
Iron De	posits (B5)		Recent Iro	n Reducti	on in Tille	d Soils (C6	S) F.	AC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stunted or	r Stressed	Plants (D	1) (LRR A) R	aised Ant Mounds (D6) (LRR A)
Inundat	ion Vis ble on Aeri	ial Imagery (E	37) Other (Ex	plain in Re	emarks)		F	rost-Heave Hummocks (D7)
Sparsel	y Vegetated Cond	ave Surface	(B8)					
Field Obser	rvations:							
Surface Wat	ter Present?	Yes	No Depth (in	ches):				
Water Table	Present?		No Depth (in					
Saturation F	Present?		No Pepth (in				and Hydrology	y Present? Yes No
	pillary fringe)							
Describe Re	ecorded Data (stre	am gauge, m	onitoring well, aerial	pnotos, pr	evious ins	pections),	ıт avaılable:	
Remarks:								
No evide	ence of we	tland hy	drology obse	rved.				
		•						

Project/Site: Silicon Mountain	c	City/Cou	nty: Silver Bo	ow County Sampling Date: 2023-07-06
Applicant/Owner: MDT				State: Montana Sampling Point: DP01W
Investigator(s): S Weyant	S	Section,	Township, Rar	nge: S24 T3N R9W
Landform (hillslope, terrace, etc.): Fringe				
				Long: -112.662664 Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mann				
•				
Are climatic / hydrologic conditions on the site typical for t	-			
Are Vegetation, Soil, or Hydrology				'Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology	naturally prob	lematic	:? (If ne	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing:	sampl	ling point lo	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No			
Hydric Soil Present? Yes			s the Sampled vithin a Wetlan	
Wetland Hydrology Present? Yes	No	W	illilli a vveliali	id: 165 NO
Remarks:				
data point.	nd cell 1 along	the str	ream channel	fringe approximately 3' lower than the paired upland
VEGETATION – Use scientific names of pla	ınts.			
Tree Stratum (Plot size: 30 ft r			ant Indicator	Dominance Test worksheet:
1			s? Status	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
2				Total Number of Dominant
3				Species Across All Strata: 1 (B)
4	0	= Total	Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)
Sapling/Shrub Stratum (Plot size: 5 ft r)				Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species 60 x 1 = 60
3				FACW species 16 x 2 = 32
4				FAC species 10 x 3 = 30
5				FACU species <u>7</u> x 4 = <u>28</u>
Herb Stratum (Plot size: 5 ft r	0	= I otal	Cover	UPL species <u>3</u> x 5 = <u>15</u>
1. Carex lasiocarpa	60	~	OBL	Column Totals: <u>96</u> (A) <u>165</u> (B)
2. Juncus balticus	 15		FACW	Prevalence Index = B/A = 1.72
3. Poa pratensis	10		FAC	Hydrophytic Vegetation Indicators:
4. Elymus lanceolatus	5		FACU	✓ 1 - Rapid Test for Hydrophytic Vegetation
5. Thlaspi arvense	3		UPL	✓ 2 - Dominance Test is >50%
6. Lactuca serriola	2		FACU	✓ 3 - Prevalence Index is ≤3.0 ¹
7. Mentha arvensis	_ 1		FACW	4 - Morphological Adaptations ¹ (Provide supporting
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants ¹
10.				Problematic Hydrophytic Vegetation ¹ (Explain)
11				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 30 ft r	<u>96 </u>	= Total (Cover	be present, amess distarbed of problematic.
, , , , , , , , , , , , , , , , , , , ,				
1				Hydrophytic Vegetation
٤.	_	= Total (Cover	Present? Yes No
% Bare Ground in Herb Stratum 4		Total	00101	
Remarks:				
Evidence of hydrophytic vegetation in	cludes a p	ositiv	e rapid te	est, a positive dominance test, and a
prevalence index score less than 3.		- -		, ,

B-25

SOIL Sampling Point: DP01W

Profile Description: (Describe to the de	pth needed to docu	ment the	indicator	or confirn	n the absenc	e of indicato	rs.)	
Depth	Matrix	Red	ox Feature	es.					
(inches) Color	(moist) %	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	_	Remarks	
0 - 16 10YR 4	/2 98	7.5YR 5/6	2	С	М	Sandy Clay Loam	ı		
-		•		-			-		
									
		-		-					
_									
		-				-			
						-			
¹ Type: C=Concentration					ed Sand Gr	rains. ² Lo	ocation: PL=I	Pore Lining, M=	Matrix.
Hydric Soil Indicators	: (Applicable to al	I LRRs, unless other	erwise not	ed.)		Indicat	tors for Prob	lematic Hydric	Soils ³ :
Histosol (A1)		Sandy Redox	(S5)			20	cm Muck (A10))	
Histic Epipedon (A	2)	Stripped Matrix					ed Parent Mat	, ,	
Black Histic (A3)		Loamy Mucky	•		t MLRA 1)		•	ark Surface (TF	12)
Hydrogen Sulfide (Loamy Gleyed		2)		Ot	her (Explain i	n Remarks)	
Depleted Below Da		<u>✓</u> Depleted Matri	` '			3, ,,			
Thick Dark Surface	` '	Redox Dark Si	•					hytic vegetation	
Sandy Mucky MineSandy Gleyed Mat		Depleted Dark Redox Depres						y must be prese or problematic.	ziii,
Restrictive Layer (if p		Nedox Deples	310113 (1 0)				533 GISTUI DEG	or problematic.	
Type:	icocity.								
						Hydria Ca	il Present?	Voc. V	No
Depth (inches):						Hyuric 30	III FIESCIII:	165	NO
Remarks:									
Prominent redo	ximorphic c	oncentration	s com	mon w	ithin th	he deple	ted mati	ix.	
	•					•			
HYDROLOGY									
	diantaus.								
Wetland Hydrology In			1. ()			0		to (2 or	· · · · · d \
Primary Indicators (min	-			(5.6) (•	tors (2 or more	
Surface Water (A1	,		ained Leav	, , ,	except			d Leaves (B9) (MLRA 1, 2,
High Water Table (A2)		1, 2, 4A,	and 4B)			4A, and 4		
✓ Saturation (A3)		Salt Crus	` '			·	Drainage Pat	, ,	
Water Marks (B1)		Aquatic Ir						Water Table (C2	
Sediment Deposits	(B2)	Hydroger						sible on Aerial I	magery (C9)
Drift Deposits (B3)				-	Living Roo	· · · —	Geomorphic		
Algal Mat or Crust	(B4)	Presence					Shallow Aqui		
Iron Deposits (B5)		Recent In			•		FAC-Neutral		
Surface Soil Crack		Stunted of			01) (LRR A			lounds (D6) (LF	
<u>✓</u> Inundation Vis ble			plain in Re	emarks)			Frost-Heave	Hummocks (D7)
Sparsely Vegetate	d Concave Surface	(B8)							
Field Observations:									
Surface Water Present		No Depth (in							
Water Table Present?	Yes	No Depth (in	nches): 0						
Saturation Present?	Yes	No Depth (ir	nches): 0		Wetl	and Hydrolo	gy Present?	Yes 🔽	No
(includes capillary fring									
Describe Recorded Date	a (stream gauge, m	ionitoring well, aerial	priotos, p	revious in	spections),	if available:			
Remarks:									
Adjacent channe	el is six inche	s deep. Evider	nce of v	vetland	d hydro	logy inclu	ıdes satu	ration, sur	face
water, high water	er table, inund	dation visible o	on aeria	al imag	ery, ged	omorphic	position	a positive	FAC-
neutral test, and	saturation vi	isible on aerial	image	ry.					

Project/Site: Silicon Mountain		City/Co	ounty:	Silver Bo	ow County Sampling Date: 2023-07-06
		-			State: Montana Sampling Point: DP02U
•					nge: S24 T3N R9W
Landform (hillslope, terrace, etc.): Hillslope			•		,
					Long: -112.662697 Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle					
Are climatic / hydrologic conditions on the site typical for this	time of year	ar? Ye	es	No	(If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologys	ignificantly	disturb	ed?	Are "	'Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrologyn	aturally pro	blemat	tic?	(If ne	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samı	pling	point le	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	o <u>′</u>				
Hydric Soil Present? Yes No	·			Sampled a Wetlar	
Wetland Hydrology Present? Yes No			WILIIII	a wellai	id: TesNO
Remarks:					
Upland data point near railroad track	s and a	adjac	cent	to we	tland cell 2.
VEGETATION – Use scientific names of plant	ts.				
Tree Stratum (Plot size: 30 ft r	Absolute % Cover				Dominance Test worksheet:
1					Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
2					Total Number of Dominant
3					Species Across All Strata: 2 (B)
4					Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 15 ft r	0	_ = Tota	al Cove	er	That Are OBL, FACW, or FAC: 50.00 (A/B)
1					Prevalence Index worksheet:
2					Total % Cover of: Multiply by:
3					OBL species $\frac{0}{2}$ $\times 1 = \frac{0}{2}$
4.					FACW species 0 $x 2 = 0$
5					FAC species 50 $x = 150$
- 0	0	_ = Tota	al Cove	er	FACU species $\frac{5}{25}$ $x 4 = \frac{20}{125}$ UPL species $\frac{25}{x 5}$ $x 5 = \frac{125}{x 5}$
Herb Stratum (Plot size: 5 ft r)	0.5		,	- 4 0	Column Totals: 80 (A) 295 (B)
1. Leymus cinereus 2. Festuca ovina	35 20			FAC UPL	
3. Elymus repens	10			FAC	Prevalence Index = B/A = 3.69
4 Pascopyrum smithii	5			FACU	Hydrophytic Vegetation Indicators:
5 Thlaspi arvense	5			UPL	1 - Rapid Test for Hydrophytic Vegetation
6. Poa pratensis	5			FAC	2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹
7					4 - Morphological Adaptations ¹ (Provide supporting
8					data in Remarks or on a separate sheet)
9.					5 - Wetland Non-Vascular Plants ¹
10					Problematic Hydrophytic Vegetation ¹ (Explain)
11.					¹ Indicators of hydric soil and wetland hydrology must
	80	= Tota	I Cove	r	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)					
1					Hydrophytic
2	_	- ·			Vegetation Present? Yes No
% Bare Ground in Herb Stratum 20	0	_= Tota	ıı Cove	r	
Remarks:					1
Data point is dominated by upland pa	asturo 4	arae	SES		
Data point to dominated by upland pe	astare (g. u.s.	JUJ.		

SOIL Sampling Point: DP02U

OIL Profile Desc	ription: (Describe	to the depth	needed to document the indicator or	confirm t	the absence	of indicators.)
Depth	Matrix		Redox Features			,
(inches)	Color (moist)	%	Color (moist) % Type ¹	Loc ²	Texture	Remarks
0 - 6	10YR 4/3	100			Loam	Gravelly
6 - 14	10YR 4/2	100			Sandy Clay Loam	
0 17						
-						
-						
_						
						-
-						
7 1			Reduced Matrix, CS=Covered or Coated	Sand Grai	ins. ² Loc	cation: PL=Pore Lining, M=Matrix.
ydric Soil I	Indicators: (Applic	cable to all Li	RRs, unless otherwise noted.)		Indicato	rs for Problematic Hydric Soils ³ :
_ Histosol	(A1)	_	Sandy Redox (S5)		2 cn	n Muck (A10)
	oipedon (A2)	_	Stripped Matrix (S6)			Parent Material (TF2)
_ Black Hi		_	Loamy Mucky Mineral (F1) (except N	ILRA 1)		Shallow Dark Surface (TF12)
	n Sulfide (A4)	_	Loamy Gleyed Matrix (F2)		Othe	er (Explain in Remarks)
	d Below Dark Surfac	ce (A11)	Depleted Matrix (F3)		3	
	ark Surface (A12)	_	Redox Dark Surface (F6)			ors of hydrophytic vegetation and
	Mucky Mineral (S1)	_	Depleted Dark Surface (F7)			nd hydrology must be present, s disturbed or problematic.
	Bleyed Matrix (S4) Layer (if present):	_	Redox Depressions (F8)	1	unies	s disturbed of problematic.
Type: Ha						
· · ·						5 10 V
	ches): 14		<u></u>		Hydric Soil	Present? Yes No
lo hydri xcavati	c soil indica on of the so		erved. Hard pan encount	ered a		
emarks: o hydri xcavati YDROLO	c soil indica on of the so	il pit.	erved. Hard pan encounte	ered a		
emarks: o hydri xcavati /DROLO	c soil indication of the so	il pit.	erved. Hard pan encounte	ered a	t 14" pro	
emarks: o hydri xcavati /DROLO Vetland Hydrimary Indice	c soil indication of the so	il pit.	·		t 14" pro	phibited further
demarks: Io hydri xcavati YDROLO Vetland Hydrimary Indic Surface	c soil indication of the so	il pit.	check all that apply)		t 14" pro	phibited further
demarks: Io hydri xcavati YDROLO Vetland Hydrimary Indic Surface	c soil indication on of the so GY drology Indicators cators (minimum of water (A1) ater Table (A2)	il pit.	check all that apply) Water-Stained Leaves (B9) (exc		t 14" pro	hibited further adary Indicators (2 or more required) //ater-Stained Leaves (B9) (MLRA 1, 2)
o hydri xcavati CDROLO Vetland Hydrimary Indic Surface High Wa Saturatio	c soil indication on of the so GY drology Indicators cators (minimum of water (A1) ater Table (A2)	il pit.	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B)		t 14" pro	ndary Indicators (2 or more required) //ater-Stained Leaves (B9) (MLRA 1, 2
o hydri xcavati /DROLO /etland Hydrimary Indic Surface _ High Wa _ Saturatic _ Water M	c soil indication of the so GY drology Indicators eators (minimum of water (A1) ater Table (A2) on (A3)	il pit.	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11)		Secor W D	ndary Indicators (2 or more required) //ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rrainage Patterns (B10)
o hydri xcavati /DROLO /etland Hydrimary Indic Surface High Wa Saturatic Water M Sedimer	c soil indication of the so GY drology Indicators eators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1)	il pit.	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	ept	Secon D D S	ndary Indicators (2 or more required) //ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C
cemarks: O hydri XCAVATI /DROLO Vetland Hydrimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep	c soil indication of the so GY drology Indicators cators (minimum of water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2)	il pit.	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	ept	Secor — Secor — W — D — D — S	ndary Indicators (2 or more required) //ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C
Remarks: Io hydri XCaVati YDROLO Vetland Hydrimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma	c soil indication on of the so GY drology Indicators cators (minimum of of the the theorem of	il pit.	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv	ept ving Roots	Secor — W — D — D — S S (C3) — G	ndary Indicators (2 or more required) //ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10) rry-Season Water Table (C2) aturation Visible on Aerial Imagery (Caleomorphic Position (D2)
Remarks: Io hydri XCaVati YDROLO Vetland Hyd Timary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep	c soil indication on of the so GY drology Indicators eators (minimum of an	il pit.	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4)	ept ving Roots Soils (C6)	Secor Secor W D S (C3) G S F	ndary Indicators (2 or more required) //ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10) rry-Season Water Table (C2) aturation Visible on Aerial Imagery (Caeomorphic Position (D2) hallow Aquitard (D3)
Remarks: IO hydri XCAVATI YDROLO Vetland Hydrimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	c soil indication on of the so GY drology Indicators eators (minimum of an	il pit.	check all that apply) Water-Stained Leaves (B9) (exc. MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1)	ept ving Roots Soils (C6)	Secor — W — D — D — S — S — S — F — R	Indary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2) 4A, and 4B) Irainage Patterns (B10) Iray-Season Water Table (C2) Iraitration Visible on Aerial Imagery (Called March 1) Irainage Patterns (D2) Irainage Patterns (D3) AC-Neutral Test (D5)
Cemarks: O hydri XCAVATI YDROLO Vetland Hydrimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic	C soil indication on of the so GY drology Indicators eators (minimum of the trable (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	il pit. : one required;	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) Other (Explain in Remarks)	ept ving Roots Soils (C6)	Secor — W — D — D — S — S — S — F — R	Indary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2) 4A, and 4B) Irainage Patterns (B10) Iray-Season Water Table (C2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation (D3) AC-Neutral Test (D5) Iraitation (D6) (LRR A)
Remarks: IO hydri XCaVati YDROLO Vetland Hydrimary Indice Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely	C soil indication on of the so GY drology Indicators cators (minimum of the soil of the	il pit. : one required;	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) Other (Explain in Remarks)	ept ving Roots Soils (C6)	Secor — W — D — D — S — S — S — F — R	Indary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2) 4A, and 4B) Irainage Patterns (B10) Iray-Season Water Table (C2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation (D3) AC-Neutral Test (D5) Iraitation (D6) (LRR A)
Remarks: Io hydri XCaVati YDROLO Vetland Hydrimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Observir	C soil indication on of the so GY drology Indicators cators (minimum of or	il pit. : one required; Imagery (B7) re Surface (B8	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) Other (Explain in Remarks)	ept /ing Roots Soils (C6) (LRR A)	Secor — W — D — D — S — S — S — F — R	Indary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2) 4A, and 4B) Irainage Patterns (B10) Iray-Season Water Table (C2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation (D3) AC-Neutral Test (D5) Iraitation (D6) (LRR A)
Remarks: Io hydri XCaVati YDROLO Vetland Hydri Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Observi	C soil indication on of the so GY drology Indicators cators (minimum of the soil of the	il pit. : cone required; Imagery (B7) re Surface (B8	check all that apply) Water-Stained Leaves (B9) (exc. MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) Other (Explain in Remarks)	ept ving Roots Soils (C6) (LRR A)	Secor — W — D — D — S — S — S — F — R	Indary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2) 4A, and 4B) Irainage Patterns (B10) Iray-Season Water Table (C2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation (D3) AC-Neutral Test (D5) Iraitation (D6) (LRR A)
Remarks: IO hydri XCaVati YDROLO Vetland Hydri Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Gurface Water Vater Table	C soil indication on of the so GY drology Indicators eators (minimum of all water (A1) ater Table (A2) on (A3) larks (B1) on Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Vis ble on Aerial ater Vegetated Concave vations: er Present?	Imagery (B7) 'e Surface (B8 'Yes No	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Line Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Section (Explain in Remarks) Depth (inches): Depth (inches):	ept ving Roots Soils (C6) (LRR A)	Secor — W — D — S — S — S — F — F	ndary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10) rry-Season Water Table (C2) aturation Visible on Aerial Imagery (Caleomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
Remarks: IO hydri XCaVati YDROLO Vetland Hyd Primary Indic Surface High Wa Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Observice Vater Table Saturation Princludes cap	c soil indication on of the so GY drology Indicators eators (minimum of the soil of the	Imagery (B7) Yes No Yes No Yes No	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) Other (Explain in Remarks) Depth (inches): Depth (inches):	ept ving Roots Soils (C6) (LRR A)	Secor — W — D — S — S — F — F	Indary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2) 4A, and 4B) Irainage Patterns (B10) Iray-Season Water Table (C2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation Visible on Aerial Imagery (Cateomorphic Position (D2) Iraitation (D3) AC-Neutral Test (D5) Iraitation (D6) (LRR A)
Remarks: IO hydri XCaVati YDROLO Vetland Hydrimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Observicutiface Water Table Staturation Princludes cap	c soil indication on of the so GY drology Indicators eators (minimum of the soil of the	Imagery (B7) Yes No Yes No Yes No	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Line Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Section (Explain in Remarks) Depth (inches): Depth (inches):	ept ving Roots Soils (C6) (LRR A)	Secor — W — D — S — S — F — F	ndary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10) rry-Season Water Table (C2) aturation Visible on Aerial Imagery (Caleomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
Remarks: IO hydri XCAVAti YDROLO Vetland Hydrimary Indic Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Geld Observation Princludes cap Describe Rec	c soil indication on of the so GY drology Indicators eators (minimum of the soil of the	Imagery (B7) Yes No Yes No Yes No	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) Other (Explain in Remarks) Depth (inches): Depth (inches):	ept ving Roots Soils (C6) (LRR A)	Secor — W — D — S — S — F — F	ndary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10) rry-Season Water Table (C2) aturation Visible on Aerial Imagery (Caleomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
Remarks: IO hydri XCaVati YDROLO Vetland Hydri Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Observicus Surface Water Vater Table Saturation Princludes cap Describe Rec	C soil indication on of the so GY drology Indicators cators (minimum of all water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Vis ble on Aerial ater Vegetated Concavivations: er Present? Present? Present? present? corded Data (stream	Imagery (B7) re Surface (B8 Yes No Yes No	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches):	ept ving Roots Soils (C6) (LRR A)	Secor — W — D — S — S — S — F — F	ndary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10) rry-Season Water Table (C2) aturation Visible on Aerial Imagery (Caleomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
Remarks: Io hydri XCaVati YDROLO Vetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Observ Surface Water Vater Table Saturation Princludes cap Describe Rec	C soil indication on of the so GY drology Indicators cators (minimum of all water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Vis ble on Aerial ater Vegetated Concavivations: er Present? Present? Present? present? corded Data (stream	Imagery (B7) re Surface (B8 Yes No Yes No	check all that apply) Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) Other (Explain in Remarks) Depth (inches): Depth (inches):	ept ving Roots Soils (C6) (LRR A)	Secor — W — D — S — S — S — F — F	ndary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Patterns (B10) rry-Season Water Table (C2) aturation Visible on Aerial Imagery (Caleomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)

Project/Site: Silicon Mountain	(City/Cour	nty: Silver Bo	ow County Sampling Date: 2023-07-06
Applicant/Owner: MDT				State: Montana Sampling Point: DP02W
Investigator(s): R Jones	;	Section,	Township, Rai	nge: S24 T3N R9W
Landform (hillslope, terrace, etc.): Floodplain			•	
				Long: -112.662644 Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Manni:				
Are climatic / hydrologic conditions on the site typical for th				<u> </u>
Are Vegetation, Soil, or Hydrology	-			
Are Vegetation, Soil, or Hydrology				eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map				, ,
Hydrophytic Vegetation Present? Yes I	No			
Hydric Soil Present? Yes I			the Sampled	
Wetland Hydrology Present? Yes I	No	W	ithin a Wetlan	nd? Yes No
Remarks:				
Wetland sample point located within wetland cell 2. A were present, soils in the profile were observed to be				
VEGETATION – Use scientific names of plan	nts.			
Tree Stratum (Plot size: 30 ft r	Absolute		ant Indicator	Dominance Test worksheet:
1			s? Status	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
2.				
3.				Total Number of Dominant Species Across All Strata: 3 (B)
4.				
Sapling/Shrub Stratum (Plot size: 15 ft r	0	= Total	Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)
				Prevalence Index worksheet:
1 2				Total % Cover of: Multiply by:
3.				OBL species $\frac{20}{100}$ x 1 = $\frac{20}{100}$
4				FACW species $\frac{18}{17}$ x 2 = $\frac{36}{51}$
5.				FAC species $\frac{17}{22}$ $\times 3 = \frac{51}{22}$
	0	= Total	Cover	FACU species 22 x 4 = 88
Herb Stratum (Plot size: 5 ft r)				UPL species 20 $x = 100$ (B)
1. Euphorbia esula	_ 20		UPL	Column Totals: <u>97</u> (A) <u>295</u> (B)
2. Sonchus arvensis 3 Juncus balticus	<u>20</u> 15		FACU	Prevalence Index = B/A = 3.04
4 Carex pellita	10		<u>FACW</u> OBL	Hydrophytic Vegetation Indicators:
5. Potentilla anserina	10		OBL	1 - Rapid Test for Hydrophytic Vegetation
6. Elymus repens	10		FAC	2 - Dominance Test is >50%
7 Hordeum jubatum	5		FAC	3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting
8. Mentha arvensis	3		FACW	data in Remarks or on a separate sheet)
9. Plantago major	2		FAC	5 - Wetland Non-Vascular Plants ¹
10. Polygonum douglasii	2		FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
11				¹ Indicators of hydric soil and wetland hydrology must
	97	= Total C	Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)				
1			_	Hydrophytic Vegetation
2		- Total C	Cover	Present? Yes No
% Bare Ground in Herb Stratum 3	<u> </u>	= Total C	Juvei	
Remarks:				ı
Vegetation at the data point is dominated by weedy upland s				· · · · · · · · · · · · · · · · · · ·
indicators. Additionally, the dominant species Sonchus arven (Lesica 2012).	sis is reported	ın Monta	ana to grow in v	wet meadows, marsnes, ditch banks, and irrigated fields

B-29

SOIL Sampling Point: DP02W

Profile Desc	ription: (Describe	to the dep	oth needed to docum	nent the i	indicator	or confirm	the absence	of indicators.)
Depth	Matrix			K Feature	s			·
(inches)	Color (moist)	<u> %</u>	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	10YR 4/1	100			·		Sandy Clay Loam	
4 - 10	10YR 4/2	100					Sandy Clay	
10 - 16	10YR 4/2	97	N 2.5/0	3	С	М	Clay	Slight sulfidic odor
-								
-								
_				_				
-		-				-		<u> </u>
17			Dadward Matrix 00				-: 21 -	antina Di Dan Linia M Matria
			=Reduced Matrix, CS LRRs, unless other			ed Sand Gr		cation: PL=Pore Lining, M=Matrix. prs for Problematic Hydric Soils ³ :
Histosol		Jubio to un	Sandy Redox (S		ou.,			m Muck (A10)
l ''	oipedon (A2)		Stripped Matrix					I Parent Material (TF2)
Black H	stic (A3)		Loamy Mucky M		1) (excep	MLRA 1)		y Shallow Dark Surface (TF12)
	en Sulfide (A4)		Loamy Gleyed N		2)		Oth	er (Explain in Remarks)
	d Below Dark Surfac	e (A11)	<u>✓</u> Depleted Matrix				31	
	ark Surface (A12) Mucky Mineral (S1)		Redox Dark Sur Depleted Dark S	, ,				ors of hydrophytic vegetation and and hydrology must be present,
-	Gleyed Matrix (S4)		Redox Depressi		.,			es disturbed or problematic.
-	Layer (if present):		<u> </u>	- , ,				·
Type:								
Depth (in	ches):						Hydric Soil	Present? Yes No
Remarks:							II.	
Distinct	radovimornh	nic con	centrations co	ammo	n with	in the	hatalaah	matrix. Sulfidic odor
		iic com		31111110	VII VVICI		acpicted	matrix. Sumaic each
observe	a.							
HYDROLO	GY							
Wetland Hy	drology Indicators							
_			ed; check all that apply	()			Seco	ndary Indicators (2 or more required)
Surface	Water (A1)		Water-Stai	ned Leav	es (B9) (e	xcept	V	Vater-Stained Leaves (B9) (MLRA 1, 2,
High Wa	ater Table (A2)		·	I, 2, 4A, a		-	<u> </u>	4A, and 4B)
✓ Saturation	on (A3)		Salt Crust	(B11)			0	Prainage Patterns (B10)
Water M	larks (B1)		Aquatic Inv				0	ry-Season Water Table (C2)
Sedime	nt Deposits (B2)		Hydrogen S					saturation Visible on Aerial Imagery (C9)
	posits (B3)		Oxidized R		_	_		Geomorphic Position (D2)
_	at or Crust (B4)		Presence o		•	,		Shallow Aquitard (D3)
	oosits (B5)		Recent Iron					AC-Neutral Test (D5)
	Soil Cracks (B6) on Vis ble on Aerial	Imageny (B	Stunted or Other (Exp			i) (LKK A)		Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
	Vegetated Concav			iaiii iii ixe	anaiks)		'	rost-fleave fluillinocks (D1)
Field Obser			(20)					
Surface Wat		⁄es	No Depth (inc	hes):				
Water Table			No Pepth (inc					
Saturation P			No Depth (inc				and Hydrolog	y Present? Yes V No No
(includes ca	oillary fringe)							<u> </u>
Describe Re	corded Data (strean	n gauge, m	onitoring well, aerial p	notos, pr	evious ins	spections), i	if available:	
Domanica								
Remarks:	_	_			_	_		
Evidenc	e of wetland	hydrol	logy includes	sulfid	ic odo	r, algal	mats, ge	eomorphic position, and
1								
saturation	on to the soil	surfac	e.					

Project/Site: Silicon Mountain		Citv/Co	ountv: Silve	er Bow County	Sampling Date: 2023-07-06
Applicant/Owner: MDT					Sampling Point: DP03U
		Section	n Townshin	, Range: S24 T3N R9W	
				ave, convex, none): Linear	Slone (%): 0
					Datum: NAD 83
• ,					
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannin					
Are climatic / hydrologic conditions on the site typical for the					
Are Vegetation, Soil, or Hydrology	significantly	disturb	ed?	Are "Normal Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hydrology	naturally pro	blemat	ic?	(If needed, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samı	pling poi	nt locations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes	No				
Hydric Soil Present? Yes N	No		Is the Sam		/
Wetland Hydrology Present? Yes 1	No		within a W	etiand? Yes	No
Remarks:					
Sample point located near the northeast end of cell 3. wetland hydrology and has not developed hydric soils	•	•		•	data is not supported by
VEGETATION – Use scientific names of plai	nts.				
20 ft r	Absolute		nant Indica		sheet:
Tree Stratum (Plot size: 30 ft r)	% Cover	Speci	ies? Statu	Number of Dominant S That Are OBL, FACW,	
2.				<u> </u>	
3.				Total Number of Domin Species Across All Stra	4
4.				·	
Sapling/Shrub Stratum (Plot size: 15 ft r)	0	= Tota	al Cover	Percent of Dominant Sp That Are OBL, FACW,	
1				Prevalence Index wor	ksheet:
2.				Total % Cover of:	
3.					x 1 = 0
4.				FACW species 0	x 2 = 0
5.				FAC species 60	
	0	= Tota	al Cover	FACU species 5	
Herb Stratum (Plot size: 5 ft r)			00101		x 5 = 100
1. Leymus cinereus	60		<u>FAC</u>	Column Totals: 85	(A) <u>300</u> (B)
2. Thlaspi arvense	15		UPL	— Prevalence Index	= B/A = 3.53
3. Descurainia sophia	5		UPL	Hydrophytic Vegetation	
4. Sisymbrium altissimum	5		FAC	U 1 - Rapid Test for I	Hydrophytic Vegetation
5				2 - Dominance Tes	t is >50%
6				3 - Prevalence Inde	ex is ≤3.0 ¹
7				4 - Morphological A	Adaptations ¹ (Provide supporting
8					s or on a separate sheet)
9				5 - Wetland Non-V	
10				 .	ohytic Vegetation ¹ (Explain)
11				Indicators of hydric soi be present, unless distu	l and wetland hydrology must
	85	= Tota	l Cover	be present, unless dist	inded of problematic.
Woody Vine Stratum (Plot size:)					
1				— Hydrophytic	
2				Vegetation Present? Ye	s No
% Bare Ground in Herb Stratum 15	0	= Tota	l Cover		<u> </u>
Remarks:					
Leymus cinereus is the dominant sp	ecies at	this	data p	oint.	

SOIL Sampling Point: DP03U

Profile Des	cription: (Descri	be to the de	pth needed to docu	ment the i	ndicator	or confirm	n the absence	of indicators	s.)	
Depth	Matri			x Feature						
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>		Remarks	
0 - 8	10YR 4/3	100					Sandy Clay Loam			
8 - 16	10YR 4/3	100					Sandy Loam			
-										
			-	-						
	-	-	-	_						
			<u> </u>	· ·				-		
-										
¹Type: C=C	oncentration, D=I	Depletion, RN	M=Reduced Matrix, C	S=Covered	d or Coate	d Sand Gr	rains. ² Lo	cation: PL=P	ore Lining, M=N	Matrix.
			II LRRs, unless othe						ematic Hydric	
Histosol	I (A1)		Sandy Redox (S5)			2 cı	n Muck (A10)	-	
l '	pipedon (A2)		Stripped Matrix				· 	d Parent Mate		
Black H	istic (A3)		Loamy Mucky	Mineral (F	1) (except	MLRA 1)	Ver	y Shallow Dar	k Surface (TF1	2)
Hydroge	en Sulfide (A4)		Loamy Gleyed	Matrix (F2	.)		Oth	er (Explain in	Remarks)	
	d Below Dark Sur	` '	Depleted Matri				2			
	ark Surface (A12)		Redox Dark Su	` ,	· - \				ytic vegetation	
	Mucky Mineral (S1	•	Depleted Dark		.7)				must be prese	nt,
	Gleyed Matrix (S4 Layer (if present		Redox Depress	SIONS (FO)			unie	ss disturbed o	i problematic.	
	Layer (ii present	.).								
Type:	abaa):						Usalvia Cai	Dragant?	Vee	No V
	ches):						Hydric Soi	riesenti	Yes	No
Remarks:										
Soil is ex	xtremely dr	y. No hy	dric soil indic	cators	observ	ved.				
HYDROLO	GY									
Wetland Hy	drology Indicato	rs:								
Primary Indi	cators (minimum	of one require	ed; check all that app	y)			Seco	ndary Indicato	ors (2 or more r	equired)
Surface	Water (A1)		Water-Sta	ined Leav	es (B9) (e	xcept	V	Vater-Stained	Leaves (B9) (N	/ILRA 1, 2,
_	ater Table (A2)			1, 2, 4A, a	and 4B)			4A, and 4B		
Saturati	on (A3)		Salt Crust	(B11)			[Prainage Patte	erns (B10)	
·	/larks (B1)		Aquatic In		. ,			•	ater Table (C2)	
	nt Deposits (B2)		Hydrogen						ble on Aerial In	nagery (C9)
	posits (B3)				_	-	ots (C3) (
_	at or Crust (B4)		Presence		•	,		Shallow Aquita		
	posits (B5)					d Soils (C6	· —	AC-Neutral T	, ,	
	Soil Cracks (B6)					1) (LRR A	· —		unds (D6) (LRI	R A)
	ion Vis ble on Aer			plain in Re	marks)		F	rost-Heave H	ummocks (D7)	
	y Vegetated Cond	ave Surface	(B8)							
Field Obser			.,							
Surface Wat	ter Present?		No Pepth (in							
Water Table	Present?		No V Depth (in							à
Saturation P		Yes	No Pepth (in	ches):		Wetla	and Hydrolog	y Present?	Yes	No
	pillary fringe) corded Data (stre	am dalide n	nonitoring well, aerial	photos pr	evious ins	nections)	if available.			
Describe No	oorded Data (offe	am gaage, n	iorniornig wen, deridi	priotos, pr	CVIOUS IIIO	pections),	ii avaliabic.			
Remarks:										
	_			_						
No evid	ence of we	tland hy	drology obse	rved.						

Section Applicant/Owner MOT	Project/Site: Silicon Mountain	(City/Co	ounty:	Silver Bo	ow County Sampling Date: 2023-07-10
Autocomposition Record R	Applicant/Owner: MDT		-			
Landform (hillislope, terrace, etc.) Floodplain Last 35,99074 Last 35,99074 Long: 1112.663356 Datum: NAD 83	-					
Sub-transport E44 Lag: 45.999074 Lag: 45.999074 Lag: -112.663356 Datum: NAD 83	• , , -					
Soil Map Unit Name: 122- Riverrus, eccasionally florader Amenidate, frequently flooded complex, 0 to 4 persons siopes. NWI classification: PEMTA	, , ,			,		
Are climatic / hydrologic conditions on the site hybical for this time of year? Yes No (If no. explain in Remarks.) Are Vegetation Soil or Hydrology naturally problematic?						-
Are VegetationSoil or Hydrology	•					
Are Vegetation Soll or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present?		-				
SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes V No Is the Sampled Area within a Wetland Hydrodyp Present? Yes V No Wetland Hydrodyp Present? Yes V No Wetland Hydrodyp Present? Yes V No						
Hydriophytic Vegetation Present? Yes V No No No within a Wetland Prototopy Present? Yes V No No No Wetland Hydrotopy Present? Yes V No						, ,
Is the Sampled Area within a Wetland Hydrology Present? Yes			<u> </u>	<u>. </u>	<u>. </u>	<u> </u>
VEGETATION – Use scientific names of plants. Tree Stratum (Plot size: 30 ft r					-	l Area
VEGETATION – Use scientific names of plants. Tree Stratum (Plot size: 30 ft r	Wetland Hydrology Present? Yes	No		withir	a Wetlar	nd? Yes No
Tree Stratum (Plot size: 30 ft r						
Dominant Indicator Species Status Status Number of Dominant Species Number of Dominant Spec	PEM, depressional wetland at the northeast end of c	ell 3. Data po	int is 2	2' lowe	er in eleva	ation than paired upland point, DP03U.
Number of Dominant Species Status Status Species Status Status Species Status Status Species Status Sta	VEGETATION – Use scientific names of pla	ants.				
That Are OBL, FACW, or FAC: 5	- 2 30 ft r					Dominance Test worksheet:
2						Number of Dominant Species
3.						That Are OBL, FACW, or FAC: (A)
Percent of Dominant Species That Are OBL, FACW, or FAC; 100.00 (A/B)						Total Number of Dominant
Sapling/Shrub Stratum (Plot size: 15 ft r						
1			= Tota	al Cove	er	
2.						Prevalence Index worksheet:
3.						Total % Cover of: Multiply by:
4						OBL species <u>25</u> x 1 = <u>25</u>
5.						
Herb Stratum (Plot size: 5 ft r	4					FAC species 35 x 3 = 105
Herb Stratum (Plot size: 5 ft r 1. Alopecurus arundinaceus 25 v FAC 2. Potentilla anserina 15 v OBL 3. Erigeron peregrinus 10 v FACW 4. Juncus balticus 10 v FACW 5. Carex nebrascensis 10 v OBL 7. Deschampsia caespitosa 5 FACW 6. Elymus repens 7 FAC 7. Deschampsia caespitosa 5 FACW 8. Cirsium arvense 3 FAC 9.	J		= Tota	al Cove	<u> </u>	
2. Potentilla anserina 3. Erigeron peregrinus 4. Juncus balticus 5. Carex nebrascensis 6. Elymus repens 7. Deschampsia caespitosa 8. Cirsium arvense 9. 10.	Herb Stratum (Plot size: 5 ft r)	-		a cov	5 1	6. 2 species x s
Erigeron peregrinus 10	-	<u>25</u>			FAC	Column Totals: <u>85</u> (A) <u>180</u> (B)
4. Juncus balticus 5. Carex nebrascensis 10						Prevalence Index = B/A = 2.12
5. Carex nebrascensis 6. Elymus repens 7						Hydrophytic Vegetation Indicators:
6. Elymus repens 7 FAC 7. Deschampsia caespitosa 5 FACW 8. Cirsium arvense 3 FAC 9.	**					1 - Rapid Test for Hydrophytic Vegetation
7. Deschampsia caespitosa 8. Cirsium arvense 9.						✓ 2 - Dominance Test is >50%
Cirsium arvense 3						
9						
10 Problematic Hydrophytic Vegetation¹ (Explain) 11						·
11			-			
85			-			1 . · · · · · · · · · · · · · · · · · ·
Woody Vine Stratum (Plot size:) 1		85	= Tota	al Cove	r	
2	Woody Vine Stratum (Plot size:)					
8 Bare Ground in Herb Stratum 15 Remarks: Alopecurus arundinaceus and Potentilla anserina are the most prevalent hydrophytic species at this						
% Bare Ground in Herb Stratum 15 Remarks: Alopecurus arundinaceus and Potentilla anserina are the most prevalent hydrophytic species at this	2					Vegetation Present? Yes No
Remarks: Alopecurus arundinaceus and Potentilla anserina are the most prevalent hydrophytic species at this	% Bare Ground in Herb Stratum 15	U	= Tota	al Cove	r	
						<u>I</u>
	Alonecurus arundinaceus and Potontil	la ancarin	a ar	a tha	moet	nrevalent hydrophytic species at this
0313 00101	data point.		a ui (S (110	111030	provident injuroprijuo species at tilis

B-33

SOIL Sampling Point: DP03W

Profile Desc	ription: (Describ	e to the de	pth needed to docur	nent the	indicator	or confirm	the absence	of indicators.)		
Depth	Matrix			x Feature	es					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks		
0-5	10YR 2/1	100					Sandy Clay	1		
5 - 11	10YR 4/2	95	10YR 4/4	5	<u>C</u>	<u>M</u>	Silty Clay Loam	Moist		
11 - 16	10YR 4/3	97	7.5YR 4/4	3	<u>C</u>	M	Clay Loam	Moist		
-										
_										
	-		-							
			-							
										
			1=Reduced Matrix, CS			d Sand Gr		cation: PL=Pore Lining, M=Matrix. ors for Problematic Hydric Soils ³ :		
-		ilicable to a	I LRRs, unless other		tea.)					
Histosol	oipedon (A2)		Sandy Redox (Some Stripped Matrix					n Muck (A10) Parent Material (TF2)		
-	istic (A3)		Loamy Mucky N		1) (except	MLRA 1)		y Shallow Dark Surface (TF12)		
	en Sulfide (A4)		Loamy Gleyed			,		er (Explain in Remarks)		
	d Below Dark Surf	ace (A11)	<u>✓</u> Depleted Matrix							
	ark Surface (A12)		Redox Dark Su	rface (F6)		³ Indicato	ors of hydrophytic vegetation and		
	Mucky Mineral (S1)	1	Depleted Dark					nd hydrology must be present,		
	Gleyed Matrix (S4)		Redox Depress	ions (F8)			unles	s disturbed or problematic.		
	Layer (if present)	:								
Type:	-l \ .						Usalaia Cail	Present? Yes No		
	ches):						nyaric Soil	Present? Yes No No		
Remarks:										
Distinct	redoximorp	hic con	centrations c	ommo	n with	in the	depleted	matrix. Soil is very moist.		
	•						•	-		
HYDROLO	GY									
Wetland Hy	drology Indicator	s:								
Primary India	cators (minimum o	f one require	ed; check all that appl				Seco	ndary Indicators (2 or more required)		
Surface	Water (A1)		Water-Sta			xcept	v	Vater-Stained Leaves (B9) (MLRA 1, 2,		
High Wa	ater Table (A2)		MLRA	1, 2, 4A,	and 4B)			4A, and 4B)		
Saturation	on (A3)		Salt Crust	(B11)			Drainage Patterns (B10)			
	larks (B1)		Aquatic In				Dry-Season Water Table (C2)			
· ——	nt Deposits (B2)		Hydrogen					aturation Visible on Aerial Imagery (C9)		
-	posits (B3)		Oxidized F		•	-		Seomorphic Position (D2)		
_	at or Crust (B4)		Presence		•	•	·	hallow Aquitard (D3)		
-	posits (B5)		Recent Iro					AC-Neutral Test (D5)		
	Soil Cracks (B6)		Stunted or			1) (LRR A)	· ——	aised Ant Mounds (D6) (LRR A)		
· ——	on Vis ble on Aeria		, , ,	olain in R	emarks)		[_]	rost-Heave Hummocks (D7)		
	Vegetated Conca	ave Surrace	(B8)			1				
Field Obser		V	No. V Donath (in	-l\·						
Surface Wat			No Depth (in							
Water Table			No Depth (inc							
Saturation P (includes car		Yes	No Depth (in	cnes):		Wetla	and Hydrolog	y Present? Yes No		
		ım gauge, m	nonitoring well, aerial p	ohotos, p	revious ins	pections),	if available:			
Remarks:										
Evidence	e of wetland	d hydro	logy includes	aeom	orphic	nositi	on and a	positive FAC-neutral		
			9,	35511	. J. Pine	P 30101	a.i.a u	positive in the modernia		
iest. 501	l is very mo	ist.								

Project/Site: Silicon Mountain		City/Co	untv.	Silver Bo	ow County Sampling Date: 2023-07-06
		-	-		State: Montana Sampling Point: DP04U
• •					nge: S24 T3N R9W
• , , —					
					convex, none): Linear Slope (%): 5
					Long: -112.662564 Datum: NAD 83
Soil Map Unit Name: <u>58B - Varney-Anaconda loams</u> , 0					<u> </u>
Are climatic / hydrologic conditions on the site typical for th	is time of yea	ar? Ye	s	No	(If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology	significantly	disturb	ed?	Are "	'Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology	naturally pro	blemat	ic?	(If ne	eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing	samı	pling	g point le	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes N	10 <u>′</u>				
Hydric Soil Present? Yes N	10			Sampled	l Area nd?
Wetland Hydrology Present? Yes N	10		WILIII	ii a vvetiai	IU: 165 NO
Remarks: Low terrace approximately 5' higher in elevation	than nair	od wo	tland	data no	int. I acated pear the west and of call 4
Low terrace approximately 3 higher in elevation	i tilali palit	eu we	шан	i data po	int. Located fiear the west end of cell 4.
VEGETATION – Use scientific names of plan	nts.				
Tree Stratum (Plot size: 30 ft r	Absolute				Dominance Test worksheet:
1	% Cover				Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
2					Total Number of Dominant
3.					Species Across All Strata: 3 (B)
4					Percent of Dominant Species
Capling/Chruh Stratum (Diet size, 5 ft r	0	_ = Tota	al Cov	/er	That Are OBL, FACW, or FAC: 0.00 (A/B)
Sapling/Shrub Stratum (Plot size: 5 ft r 1. Artemisia tridentata	4	~	,	UPL	Prevalence Index worksheet:
2. Ericameria nauseosa				UPL	Total % Cover of: Multiply by:
3					OBL species $0 \times 1 = 0$
4					FACW species $\frac{5}{2}$ $\times 2 = \frac{10}{2}$
5.					FAC species $\frac{0}{x}$ $x = \frac{0}{x}$
	5	= Tota	al Cov	/er	FACU species $\frac{5}{75}$ $\times 4 = \frac{20}{275}$
Herb Stratum (Plot size: 5 ft r)					UPL species $\frac{75}{25}$ $\times 5 = \frac{375}{405}$
1. Bromus tectorum	<u>55</u>			UPL	Column Totals: <u>85</u> (A) <u>405</u> (B)
2. Bromus inermis	_ <u>15</u>			UPL	Prevalence Index = B/A = 4.76
3. Juncus balticus	_ 5			FACW	Hydrophytic Vegetation Indicators:
4. Poa secunda	_ 3			FACU	1 - Rapid Test for Hydrophytic Vegetation
5. Pascopyrum smithii	_ 2			FACU	2 - Dominance Test is >50%
6					3 - Prevalence Index is ≤3.0 ¹
7.					4 - Morphological Adaptations ¹ (Provide supporting
8					data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹
9					Problematic Hydrophytic Vegetation¹ (Explain)
10.					¹Indicators of hydric soil and wetland hydrology must
11	80				be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 30 ft r)		_= Tota	I COV	er	
1.					Hydrophytic
2					Vegetation
	_	= Tota	I Cov	er	Present? Yes No
% Bare Ground in Herb Stratum 20.0					<u> </u>
Remarks:					
Data point is dominated by Bromus	tectorur	n.			

SOIL Sampling Point: DP04U

Profile Desc	cription: (Describe	e to the depth	needed to docui	nent the i	ndicator	or confirm	the absence of indicators.)
Depth	Matrix		Redo	x Feature:			
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture Remarks
0 - 5	10YR 3/2	100					Sandy Loam
5 - 16	10YR 4/3	100					Sand
-							
	-			-			·
l ———	-						
_				_			
-							
¹ Type: C=C	oncentration, D=De	pletion, RM=Re	educed Matrix, CS	S=Covered	d or Coate	ed Sand Gr	rains. ² Location: PL=Pore Lining, M=Matrix.
	Indicators: (Appli	•					Indicators for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy Redox (S5)			2 cm Muck (A10)
Histic Epipedon (A2) Stripped Matrix (S6)							Red Parent Material (TF2)
Black Histic (A3) Loamy Mucky Mineral (F1) (except MLF					MLRA 1)		
	en Sulfide (A4)		Loamy Gleyed		()		Other (Explain in Remarks)
	d Below Dark Surfa	ce (A11)	_ Depleted Matrix	. ,			3
	ark Surface (A12) Mucky Mineral (S1)		Redox Dark Su Depleted Dark	. ,			³ Indicators of hydrophytic vegetation and wetland hydrology must be present,
	Gleyed Matrix (S4)		Redox Depress		1)		unless disturbed or problematic.
	Layer (if present):			(. 0)			
Type:	, , ,						
	ches):		_				Hydric Soil Present? Yes No
Remarks:			_				
			_				
No hydr	ic soil indica	tors obse	rved.				
	-04						
HYDROLO							
_	drology Indicators						
	cators (minimum of	one required; c					Secondary Indicators (2 or more required)
l —	Water (A1)		Water-Sta			xcept	Water-Stained Leaves (B9) (MLRA 1, 2,
_	ater Table (A2)			1, 2, 4A, a	and 4B)		4A, and 4B)
Saturati	` ,		Salt Crust	` '			Drainage Patterns (B10)
	Marks (B1)		Aquatic In		, ,		Dry-Season Water Table (C2)
	nt Deposits (B2)		Hydrogen		. ,	5	Saturation Visible on Aerial Imagery (C9)
	posits (B3)				_	_	ots (C3) Geomorphic Position (D2)
	at or Crust (B4)		Presence				Shallow Aquitard (D3)
	posits (B5)					d Soils (C6	
	Soil Cracks (B6)	Imagany (P7)	Stunted or			I) (LKK A)	· · · · · · · · · · · · · · · · · · ·
	ion Vis ble on Aerial y Vegetated Concav		Other (Exp	Jiaiii iii Re	illaiks)		Frost-Heave Hummocks (D7)
Field Obser		ve Surface (Bo)					
Surface Wat		Voc. No.	Depth (in	ohoo):			
			Depth (in				
Water Table							and Undralage Present? Ves No V
Saturation P (includes ca	riesent? pillary fringe)	res No	Depth (in	cnes):		wetia	and Hydrology Present? Yes No
	corded Data (strear	m gauge, monit	oring well, aerial	photos, pr	evious ins	pections),	if available:
Remarks:							
No evid	ence of wetl	and hydro	ology obsa	rvad 9	Soile d	r\/	
INO EVIU	CITCE OF WELL	ana nyun	nogy obse	ı v o u. C	JUIIS U	ı y ·	
1							

Project/Site: Silicon Mountain	(City/County	_{y:} Silver Bo	ow County	Sampling	Date: 202	23-07-06
Applicant/Owner: MDT				State: Montan	na Sampling	Point: DP	04W
				nge: S24 T3N R9W		, <u>—</u>	
Landform (hillslope, terrace, etc.): Depression						Slone (%)· 5
Subregion (LRR): E 44			•	• •			
				-			
Soil Map Unit Name: <u>58B - Varney-Anaconda Ioams, 0 t</u>				<u>-</u>	·	паррец	
Are climatic / hydrologic conditions on the site typical for this	_					,	
Are Vegetation, Soil, or Hydrologys	ignificantly of	disturbed?	Are "	Normal Circumstances	s" present?	Yes	No
Are Vegetation, Soil, or Hydrology n	aturally pro	blematic?	(If ne	eded, explain any ans	wers in Rem	arks.)	
SUMMARY OF FINDINGS – Attach site map	showing	samplir	ng point le	ocations, transec	ts, impor	tant featu	res, etc.
Hydrophytic Vegetation Present? Yes N	o						
Hydric Soil Present? Yes N	0		he Sampled		v		
Wetland Hydrology Present? Yes N	0	with	nin a Wetlan	id? Yes	No.		
Remarks:							
PEM, depressional wetland. Sample	point is	locate	d at we	st end of wetl	and cell	4.	
VEGETATION – Use scientific names of plan	ts.						
20 ft r	Absolute		t Indicator	Dominance Test wo	orksheet:		
Tree Stratum (Plot size: 30 ft r	% Cover			Number of Dominan		2	
1				That Are OBL, FACV	N, or FAC:	2	(A)
2				Total Number of Dor		2	
3		-	· ——	Species Across All S	Strata:	2	(B)
4.	0	= Total Co	over	Percent of Dominant		100.00	(A/B)
Sapling/Shrub Stratum (Plot size: 5 ft r)	_			Prevalence Index w			
1. Salix exigua	5		FACW	Total % Cover o		Multiply by:	:
2	-				x 1		
3			. ———	FACW species 10			
4			-	FAC species 8	x3		
5			-	FACU species 0			
Herb Stratum (Plot size: 5 ft r	5	= Total Co	over		x 5		
1. Eleocharis palustris	35	~	OBL	Column Totals: 70			(B)
2. Typha latifolia	12		OBL				
3. Elymus repens	8	-	FAC	Prevalence Ind			
4. Juncus balticus	5		FACW	✓ 1 - Rapid Test for			
5. Alisma plantago-aquatica	3		OBL	✓ 1 - Rapid Test Id		•	1
6. Euphorbia esula	2		UPL	✓ 3 - Prevalence I			
7.				4 - Morphologica			supporting
8.				data in Rema	arks or on a s	separate she	et)
9.				5 - Wetland Non	n-Vascular Pl	ants ¹	
10				Problematic Hyd	drophytic Veç	getation¹ (Ex	plain)
11.				¹ Indicators of hydric			gy must
	0.5	= Total Co	ver	be present, unless d	isturbed or p	roblematic.	
Woody Vine Stratum (Plot size: 30 ft r		•					
1				Hydrophytic			
2				Vegetation Present?	Yes_	No	
0/ Dans Convend in Heat Objections 35.0	0	= Total Co	ver	i ieseiit!	169	NO	_
% Bare Ground in Herb Stratum 35.0 Remarks:							
					_		_
Evidence of hydrophytic vegetation incl	udes a p	ositive	rapid te	st, a positive d	ominanc	e test, aı	nd a

prevalence index less than 3.0.

SOIL Sampling Point: DP04W

D (1	eeded to document the malcator or comm	m the absence of indicators.)
Depth Matrix	Redox Features	•
	Color (moist) % Type ¹ Loc ²	Texture Remarks
0 - 5 2.5Y 2.5/1 100		Mucky Loam/Clay Hemic/mineral
<u>5 - 16</u> <u>2.5Y 2.5/1</u> <u>100</u>		Mucky Peat Hemic/mineral
-		
		-
		·
¹ Type: C=Concentration, D=Depletion, RM=Rec		
Hydric Soil Indicators: (Applicable to all LRF		Indicators for Problematic Hydric Soils ³ :
	Sandy Redox (S5)	2 cm Muck (A10)
Histic Epipedon (A2) Black Histic (A3) ✓	Stripped Matrix (S6) Loamy Mucky Mineral (F1) (except MLRA 1	Red Parent Material (TF2))
✓ Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)	<u> </u>
Thick Dark Surface (A12)	Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if present):		
Type:	-	
Depth (inches):	_	Hydric Soil Present? Yes No
Loamy mucky mineral observe		
HYDROLOGY		
HYDROLOGY Wetland Hydrology Indicators:		
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; ch	neck all that apply)	Secondary Indicators (2 or more required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; ch		
Wetland Hydrology Indicators:	neck all that apply) <u> ✓</u> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; ch	✓ Water-Stained Leaves (B9) (except)	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; ch V Surface Water (A1) V High Water Table (A2)	✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check the surface Water (A1) Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check the surface water (A2) Wetland Hydrology Indicators: Primary Indicators: Primary Indicators: Surface Water (A1) Saturation (A3)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check of the surface Water (A1) Wetland Hydrology Indicators: Water Water (A1) Water Table (A2) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	 ✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) _ Salt Crust (B11) _ Aquatic Invertebrates (B13) ✓ Hydrogen Sulfide Odor (C1) _ Oxidized Rhizospheres along Living Ro 	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) oots (C3)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check of the street of t	 ✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) ✓ Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) 	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; ch. V Surface Water (A1) V High Water Table (A2) V Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) V Iron Deposits (B5)	 ✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) ✓ Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (Control of the control of the c	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) ✓ FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check of the surface Water (A1) V High Water Table (A2) V Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) V Iron Deposits (B5) Surface Soil Cracks (B6)	 ✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) ✓ Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (Call Stunted or Stressed Plants (D1) (LRR A) 	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Shallow Aquitard (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) A) □ Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; chr ✓ 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) — Surface Soil Cracks (B6) — Inundation Vis ble on Aerial Imagery (B7)	 ✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) ✓ Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (Control of the control of the c	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) ✓ FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; chr ✓ 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) — Surface Soil Cracks (B6) — Inundation Vis ble on Aerial Imagery (B7) — Sparsely Vegetated Concave Surface (B8)	 ✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) ✓ Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (Call Stunted or Stressed Plants (D1) (LRR A) 	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Shallow Aquitard (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) A) □ Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check of the surface Water (A1) ✓ 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) — Surface Soil Cracks (B6) — Inundation Vis ble on Aerial Imagery (B7) — Sparsely Vegetated Concave Surface (B8) Field Observations:	✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) ✓ Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C4) Stunted or Stressed Plants (D1) (LRR 4) Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Shallow Aquitard (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) A) □ Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check of the surface Water (A1) ✓ 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) — Surface Soil Cracks (B6) — Inundation Vis ble on Aerial Imagery (B7) — Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ✓ No	✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) ✓ Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C4) Stunted or Stressed Plants (D1) (LRR 1) Other (Explain in Remarks) Depth (inches): 2	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Shallow Aquitard (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) A) □ Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; chr ✓ 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) — Surface Soil Cracks (B6) — Inundation Vis ble on Aerial Imagery (B7) — Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ✓ No Water Table Present? Yes ✓ No	✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) ✓ Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (Called Stunted or Stressed Plants (D1) (LRR Alled Other (Explain in Remarks) Depth (inches): 2 Depth (inches): 0	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Oots (C3) □ Geomorphic Position (D2) Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; chr ✓ 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) — Surface Soil Cracks (B6) — Inundation Vis ble on Aerial Imagery (B7) — Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ✓ No Saturation Present? Yes ✓ No	✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) ✓ Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Shallow Aquitard (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) A) □ Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; chr ✓ 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) — Surface Soil Cracks (B6) — Inundation Vis ble on Aerial Imagery (B7) — Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ✓ No Water Table Present? Yes ✓ No	✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) ✓ Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (Canada Stunted or Stressed Plants (D1) (LRR And Other (Explain in Remarks) Depth (inches): 2 Depth (inches): 0 Depth (inches): 0 Weter	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; chr ✓ 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) — Surface Soil Cracks (B6) — Inundation Vis ble on Aerial Imagery (B7) — Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ✓ No Water Table Present? Yes ✓ No Saturation Present? Yes ✓ No (includes capillary fringe)	✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) ✓ Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (Canada Stunted or Stressed Plants (D1) (LRR And Other (Explain in Remarks) Depth (inches): 2 Depth (inches): 0 Depth (inches): 0 Weter	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check of 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) — Surface Soil Cracks (B6) — Inundation Vis ble on Aerial Imagery (B7) — Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ✓ No Water Table Present? Yes ✓ No Saturation Present? Yes ✓ No (includes capillary fringe) Describe Recorded Data (stream gauge, monitor) Remarks: Evidence of wetland hydrology in	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) ✓ Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C4) Stunted or Stressed Plants (D1) (LRR 10) Other (Explain in Remarks) Depth (inches): 2 Depth (inches): 0 Depth (inches): 0 Were pring well, aerial photos, previous inspections) Cludes surface water, high was not provided the principle of the	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7) tland Hydrology Present? Yes Ves No □ If available:

Project/Site: Silicon Mountain		City/Co	ounty:	Silver Bo	ow County Sampling Date: 2023-07-06
Applicant/Owner: MDT					State: Montana Sampling Point: DP05U
Investigator(s): S Weyant					nge: S24 T3N R9W
Landform (hillslope, terrace, etc.): Riser					
					Long: -112.659508 Datum: NAD 83
Soil Map Unit Name: 114B - Varney loam, 0 to 4 per					
•					-
Are climatic / hydrologic conditions on the site typical for the					_
Are Vegetation, Soil, or Hydrology	significantly	disturt	ped?	Are "	Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology	naturally pro	blema	tic?	(If ne	eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing	sam	pling	point lo	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No 🔽				
Hydric Soil Present? Yes	No			Sampled	
Wetland Hydrology Present? Yes	No		witnii	n a Wetlan	nd? Yes No
Remarks:					
Data point is located approximately	3' highe	er in	elev	ation 1	than paired wetland point.
VEGETATION – Use scientific names of pla	nts.				
Tree Stratum (Plot size: 30 ft r	Absolute				Dominance Test worksheet:
1	% Cover				Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
2					Total Number of Dominant
3					Species Across All Strata: 2 (B)
4					Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 5 ft r	0	_= Tot	al Cov	er	That Are OBL, FACW, or FAC: 50.00 (A/B)
1. Artemisia tridentata	10		/		Prevalence Index worksheet:
2. Juniperus communis	2			UPL	Total % Cover of: Multiply by:
3		-			OBL species $0 \times 1 = 0$
4				_	FACW species $\frac{31}{2}$ x 2 = $\frac{62}{2}$
5.					FAC species $\frac{2}{37}$ x 3 = $\frac{6}{100}$
	12	= Tot	al Cov	er	FACU species $\frac{27}{45}$ x 4 = $\frac{108}{25}$
Herb Stratum (Plot size: 5 ft r					UPL species 15 x 5 = 75
1. Juncus balticus				FACW	Column Totals: <u>75</u> (A) <u>251</u> (B)
2. Symphyotrichum falcatum	20			FACU	Prevalence Index = B/A = 3.35
3. Centaurea stoebe	_ 5			UPL	Hydrophytic Vegetation Indicators:
4. Alyssum alyssoides	_ 3			UPL	1 - Rapid Test for Hydrophytic Vegetation
5. Schedonorus pratensis	_ 3			FACU	2 - Dominance Test is >50%
6. Thlaspi arvense Comandra umbellata	$-\frac{3}{2}$			UPL FACU	3 - Prevalence Index is ≤3.0 ¹
1 to 1 to the	$-\frac{2}{2}$			UPL	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
D	$-\frac{2}{2}$			FACU	5 - Wetland Non-Vascular Plants ¹
9. Pascopyrum smitnii 10. Poa pratensis				FAC	Problematic Hydrophytic Vegetation¹ (Explain)
11. Equisetum laevigatum	_ _			FACW	¹Indicators of hydric soil and wetland hydrology must
TI		- Tota	al Cove		be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 30 ft r		1018	ai Cove	2 1	
1					Hydrophytic
2					Vegetation
27	0	= Tota	al Cove	er	Present? Yes No
% Bare Ground in Herb Stratum 27					
Remarks:				_	
Juncus balticus and Symphyotrichum f	alcatum	are t	the c	Iominar	nt vegetation at this upland sample
point.					

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SOIL Sampling Point: DP05U

Profile Des	cription: (Descri	be to the de	pth needed to docu	ment the i	indicator	or confirm	n the absence	of indicators.)		
Depth	Matri			x Feature						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks		
0-2	7.5YR 2.5/1	100					Loam	Fine roots		
2 - 16	7.5YR 2/2	100					Sandy Clay Loam			
-	•									
				-				-		
				- -						
-										
_										
¹Type: C=C	oncentration D=0	Depletion RN	- ∕/=Reduced Matrix, C	S=Covered	d or Coate	ed Sand Gr	rains ² l oc	cation: PL=Pore Lining, M=Matrix.		
			II LRRs, unless othe			d Carla Ci		ors for Problematic Hydric Soils ³ :		
Histoso			Sandy Redox (,			n Muck (A10)		
	pipedon (A2)		Stripped Matrix				·	Parent Material (TF2)		
	istic (A3)		Loamy Mucky I		1) (except	MLRA 1)		y Shallow Dark Surface (TF12)		
Hydroge	en Sulfide (A4)		Loamy Gleyed	Matrix (F2	2)		Othe	er (Explain in Remarks)		
Deplete	d Below Dark Sur	face (A11)	Depleted Matrix	x (F3)						
	ark Surface (A12)		Redox Dark Su	, ,				ors of hydrophytic vegetation and		
	Mucky Mineral (S1	•	Depleted Dark		7)			nd hydrology must be present,		
	Gleyed Matrix (S4		Redox Depress	sions (F8)			unles	s disturbed or problematic.		
	Layer (if present):								
Type:										
	ches):						Hydric Soil	Present? Yes No		
Remarks:										
No hvdr	ic soil indic	ators of	served.							
HYDROLO	GY									
Wetland Hy	drology Indicato	rs:								
_			ed; check all that appl	ly)			Secor	ndary Indicators (2 or more required)		
	Water (A1)	•	Water-Sta		es (B9) (e	xcept		Vater-Stained Leaves (B9) (MLRA 1, 2,		
	ater Table (A2)			1, 2, 4A, a		жеер		4A, and 4B)		
Saturati			Salt Crust				D	rainage Patterns (B10)		
	/larks (B1)		Aquatic In	` '	s (B13)			ry-Season Water Table (C2)		
	nt Deposits (B2)		Hydrogen		` '		Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)			
	posits (B3)					Livina Roc	·	Geomorphic Position (D2)		
	at or Crust (B4)		Presence		_	_		hallow Aquitard (D3)		
	posits (B5)		Recent Iro					AC-Neutral Test (D5)		
	Soil Cracks (B6)		Stunted or				· —	taised Ant Mounds (D6) (LRR A)		
	ion Vis ble on Aer	ial Imagery (, \	-	rost-Heave Hummocks (D7)		
	y Vegetated Cond			'	,			,		
Field Obser			(- /							
Surface Wat	ter Present?	Yes	No Depth (in	ches):						
Water Table			No Pepth (in							
Saturation F			No V Depth (in				and Hydrolog	y Present? Yes No		
	pillary fringe)	100	. 40 Deptil (III	onco)			ana myarolog	y 1 1036111: 163 NU		
		am gauge, n	nonitoring well, aerial	photos, pr	evious ins	pections),	if available:			
Remarks:										
No ovid	onco of wo	tland by	drology obse	ryod 9	Soil dr	.,				
INO EVIU	citice of we	danu ny	arology obse	ı v e u. 3		у.				

Project/Site: Silicon Mountain	(City/Co	ounty: Silver Bo	ow County Sampling Date: 2023-07-06
Applicant/Owner: MDT				State: Montana Sampling Point: DP05W
Investigator(s): S Weyant		Section	n, Township, Ra	nge: S24 T3N R9W
Landform (hillslope, terrace, etc.): Ditch				
			•	Long: -112.659523 Datum: NAD 83
Soil Map Unit Name: 11A - Mannixlee-Bonebasin compl				
Are climatic / hydrologic conditions on the site typical for the				<u>-</u>
	-			
Are Vegetation, Soil, or Hydrology				"Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology	naturally prol	blemat	tic? (If ne	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing	sam	pling point l	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No			
	No		Is the Sampled within a Wetlar	. /
Wetland Hydrology Present? Yes	No		within a wetiar	id? fesNo
Remarks:				
PEM, riverine wetland. Data point is located in o	ditch/depre	ssion	south of railr	oad track at the south end of cell 5.
VEGETATION – Use scientific names of pla	nts.			
20.4			inant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft r)			ies? Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2.				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4	0	= Tota	al Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)
Sapling/Shrub Stratum (Plot size: 5 ft r				Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species 30
3				FACW species 42 x 2 = 84
4				FAC species 2 x 3 = 6
5				FACU species 0 $x 4 = 0$
Herb Stratum (Plot size: 5 ft r	0	= I ota	al Cover	UPL species <u>0</u> x 5 = <u>0</u>
1. Carex utriculata	25	•	OBL_	Column Totals: <u>74</u> (A) <u>120</u> (B)
2. Juncus balticus	20	~		Prevalence Index = B/A = 1.62
3. Calamagrostis stricta	10		FACW	Hydrophytic Vegetation Indicators:
4. Mentha arvensis	5		FACW	✓ 1 - Rapid Test for Hydrophytic Vegetation
5. Potentilla anserina	5		OBL	✓ 2 - Dominance Test is >50%
6. Rumex occidentalis	5		FACW	✓ 3 - Prevalence Index is ≤3.0 ¹
7. Alopecurus arundinaceus	_ 2		FAC	4 - Morphological Adaptations ¹ (Provide supporting
8. Equisetum laevigatum	_ 1		FACW	data in Remarks or on a separate sheet)
9. Sisyrinchium idahoense	_ 1		FACW	5 - Wetland Non-Vascular Plants ¹
10				Problematic Hydrophytic Vegetation ¹ (Explain)
11				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 30 ft r	74	= Tota	l Cover	be present, amess distarbed of problematic.
1 2				Hydrophytic Vegetation
Z	_	- Tota	Il Cover	Present? Yes No
% Bare Ground in Herb Stratum 26		- 10la	ii OUV C I	
Remarks:				
Evidence of hydrophytic vegetation inc	cludes a r	osit	ive rapid te	est, a positive dominance test, and a
prevalence index less than 3.0.	P	. 3.4		, , , , , , , , , , , , , , , , , , , ,

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US Army Corps of Engineers

SOIL Sampling Point: DP05W

Danth			epth needed to docu	ment the n	idicator	or confirm	i the absence	or indicators.)	
Depth	Matrix			x Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks	
0 - 11	10YR 2/2	95	7.5YR 5/6	5	<u>C</u>	PL / M	Mucky Loam/Clay	Organic and mineral	
11 - 14	N 4/0	40	5YR 4/6	7	С	PL	Clay	Mixed matrix. Clay pockets	
11 - 14	7.5YR 4/2	43	7.5YR 5/8	10	CS	M	Sand	Course sand. Mixed matrix.	
-									
-									
_	· -	_			-				
¹Type: C=C	Concentration D=De	nletion RI	M=Reduced Matrix, C	S=Covered	or Coate	d Sand Gr	rains ² l o	cation: PL=Pore Lining, M=Matrix.	
						u oana oi		ors for Problematic Hydric Soils ³ :	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Sandy Redox (S5) 2 cm Muck (A10)									
	pipedon (A2)		Stripped Matrix					Parent Material (TF2)	
	listic (A3)		Loamy Mucky I) (excep	MLRA 1)		y Shallow Dark Surface (TF12)	
Hydroge	en Sulfide (A4)		Loamy Gleyed	Matrix (F2)		Oth	er (Explain in Remarks)	
Deplete	ed Below Dark Surface	ce (A11)	Depleted Matrix	k (F3)					
	ark Surface (A12)		Redox Dark Su	, ,				ors of hydrophytic vegetation and	
-	Mucky Mineral (S1)		Depleted Dark		7)			and hydrology must be present,	
	Gleyed Matrix (S4)		Redox Depress	sions (F8)			unles	ss disturbed or problematic.	
	Layer (if present):								
Type:	\ .						Harabala Oali	B	
Remarks:	nches):						Hydric Soil	Present? Yes No	
Loamy mucky mineral observed.									
	<u>-</u>	ai obse	erved.						
HYDROLO	OGY		erved.						
Wetland Hy	DGY rdrology Indicators	:							
Wetland Hy Primary Indi	OGY rdrology Indicators cators (minimum of	:	ed; check all that app	•				ndary Indicators (2 or more required)	
Wetland Hy Primary Indi V Surface	OGY rdrology Indicators cators (minimum of	:	ed; check all that appl	ined Leave		xcept		Vater-Stained Leaves (B9) (MLRA 1, 2,	
Wetland Hy Primary Indi Surface High Wa	oddy rdrology Indicators cators (minimum of Water (A1) ater Table (A2)	:	red; check all that appi ✓ Water-Sta MLRA	ined Leave 1, 2, 4A, a		xcept	v	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
Wetland Hy Primary Indi ✓ Surface ✓ High Wa ✓ Saturati	ody rdrology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3)	:	red; check all that appl <u>✓</u> Water-Sta MLRA Salt Crust	ined Leave 1, 2, 4A, a (B11)	nd 4B)	xcept	v	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10)	
Wetland Hy Primary Indi Surface High Wa Saturati Water M	ody rdrology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1)	:	red; check all that appl V Water-Sta MLRA Salt Crust Aquatic In	ined Leave 1, 2, 4A, a (B11) vertebrates	nd 4B)	xcept	v c	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2)	
Wetland Hy Primary Indi ✓ Surface ✓ High Wa ✓ Saturati — Water M — Sedime	ordrology Indicators icators (minimum of a Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2)	:	red; check all that appl www.water-Sta MLRA Salt Crust Aquatic In Hydrogen	ined Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc	nd 4B) s (B13) for (C1)		V C S	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9)	
Wetland Hy Primary Indi ✓ Surface ✓ High Wa ✓ Saturati — Water M — Sedime — Drift De	ordrology Indicators icators (minimum of water (A1) ater Table (A2) ion (A3) Marks (B1) and Deposits (B2) posits (B3)	:	red; check all that appi Water-Sta MLRA — Salt Crust — Aquatic In — Hydrogen — Oxidized F	ined Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher	nd 4B) s (B13) for (C1) res along	Living Roc	V C S ots (C3) <u>v</u> G	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)	
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma	order of the control	:	red; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence	ined Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce	nd 4B) s (B13) for (C1) res along d Iron (C4)	Living Roc	V C S ots (C3) <u>v</u> G	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9) Secomorphic Position (D2) Shallow Aquitard (D3)	
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma	rdrology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	:	red; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	ined Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce on Reduction	ond 4B) s (B13) lor (C1) res along d Iron (C4) on in Tille	Living Roc I) d Soils (C6	V C S ots (C3)	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5)	
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron Dep Surface	rdrology Indicators icators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6)	: one requir	red; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Ird Stunted o	ined Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce on Reduction	nd 4B) s (B13) for (C1) res along d Iron (Con) on in Tille Plants (D	Living Roc I) d Soils (C6	V C S ots (C3)	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Staised Ant Mounds (D6) (LRR A)	
Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime Drift De Algal Ma Iron De Surface Inundati	rdrology Indicators cators (minimum of e Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Vis ble on Aerial	: one requir	red; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Ird Stunted on B7) Other (Ex	ined Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce on Reduction	nd 4B) s (B13) for (C1) res along d Iron (Con) on in Tille Plants (D	Living Roc I) d Soils (C6	V C S ots (C3)	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5)	
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron De Inundati Sparsel	ordrology Indicators icators (minimum of extra trable (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Vis ble on Aerial by Vegetated Concav	: one requir	red; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Ird Stunted on B7) Other (Ex	ined Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce on Reduction	nd 4B) s (B13) for (C1) res along d Iron (Con) on in Tille Plants (D	Living Roc I) d Soils (C6	V C S ots (C3)	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Staised Ant Mounds (D6) (LRR A)	
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron De Surface Inundati Sparsel	rdrology Indicators icators (minimum of exactors (m	: one requir Imagery (ve Surface	red; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted on B7) (B8)	ined Leave 1, 2, 4A, a (B11) vertebrate: Sulfide Oc Rhizospher of Reduce on Reduction Stressed plain in Re	nd 4B) s (B13) for (C1) res along d Iron (Con) on in Tille Plants (D	Living Roc I) d Soils (C6	V C S ots (C3)	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Staised Ant Mounds (D6) (LRR A)	
Wetland Hy Primary Indi Surface High Wa Saturati Sedime Drift De Algal Ma Iron Dep Surface Inundati Sparsel Field Obser Surface Wat	order vertical services of the content of the conte	: one requir Imagery (ve Surface	red; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or B7) (B8) No Depth (in	ined Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce on Reduction Stressed clain in Re ches): 6	nd 4B) s (B13) for (C1) res along d Iron (Con) on in Tille Plants (D	Living Roc I) d Soils (C6	V C S ots (C3)	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Staised Ant Mounds (D6) (LRR A)	
Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime Drift De Algal Ma Iron De Surface Inundati Sparsel Field Obser Surface Wat Water Table	rdrology Indicators cators (minimum of e Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Vis ble on Aerial by Vegetated Concaveryations: ter Present?	: one requir Imagery (ve Surface Yes	red; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Ird Stunted on B7) (B8) No Depth (in No Depth (in	ined Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce on Reduction Stressed blain in Re ches): 6 ches): 0	nd 4B) s (B13) for (C1) res along d Iron (Con) on in Tille Plants (D	Living Roo I) d Soils (C6 1) (LRR A	V C S ots (C3)	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Saised Ant Mounds (D6) (LRR A) Trost-Heave Hummocks (D7)	
Wetland Hy Primary Indi Surface High Wa Saturati Sedime Drift De Algal Ma Iron Dep Surface Inundati Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca	rdrology Indicators cators (minimum of exter (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Vis ble on Aerial by Vegetated Concavery rvations: ter Present? Present?	Imagery (ve Surface Yes Yes	red; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or B7) (B8) No Depth (in	ined Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce on Reduction Stressed plain in Re ches): 6 ches): 0 ches): 0	nd 4B) s (B13) or (C1) es along d Iron (C- on in Tille Plants (D marks)	Living Root d Soils (C6 1) (LRR A	V C S ots (C3) S S) F and Hydrolog	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Staised Ant Mounds (D6) (LRR A)	

Remarks:

Surface water and iron deposits observed in the wetland around the data point at the same elevation. Evidence of wetland hydrology at the data point includes saturation, high water table, water stained leaves, geomorphic position, and a positive FAC-neutral test.

Project/Site: Silicon Mountain	(Citv/County	: Silver Bo	ow County Sampling Date: 2023-07-07				
		State: Montana Sampling Point: DP06U						
				nge: S24 T3N R9W				
Landform (hillslope, terrace, etc.): Hillside								
Subregion (LRR): E 44 Lat: 45.997827 Long: -112.663582 Datum: NAD 83								
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle								
Are climatic / hydrologic conditions on the site typical for this								
	-			· · · · · · · · · · · · · · · · · · ·				
Are Vegetation, Soil, or Hydrologysi				Normal Circumstances" present? Yes No				
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.								
Hydrophytic Vegetation Present? Yes No		Jampini	g point it	soutions, transcots, important reatures, etc.				
Hydric Soil Present? Yes No		Is th	ne Sampled					
Wetland Hydrology Present? Yes No	· ·	with	in a Wetlan	nd? Yes No				
Remarks:		I						
Upland sample point adjacent to cell	6.							
,								
VEGETATION – Use scientific names of plant								
Tree Stratum (Plot size: 30 ft r	Absolute % Cover		Indicator Status	Dominance Test worksheet:				
1				Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)				
2				Total Number of Dominant				
3				Species Across All Strata: 1 (B)				
4		-		Percent of Dominant Species				
Sapling/Shrub Stratum (Plot size: 5 ft r	0	= Total Co	over	That Are OBL, FACW, or FAC: 100.00 (A/B)				
1				Prevalence Index worksheet:				
2.				Total % Cover of: Multiply by:				
3.				OBL species 0 x 1 = 0				
4.				FACW species $\frac{1}{48}$ $\times 2 = \frac{2}{144}$				
5				FAC species 48				
	0	= Total Co	over	UPL species 0				
Herb Stratum (Plot size: 5 ft r) 1. Leymus cinereus	40	V	EAC	Column Totals: 66 (A) 214 (B)				
2 Sonchus arvensis	10		FACU					
3. Elymus trachycaulus	5		FAC	Prevalence Index = B/A = 3.24				
4 Melilotus officinalis	5		FACU	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation				
5. Poa pratensis	3		FAC	✓ 2 - Dominance Test is >50%				
6. Pascopyrum smithii	2		FACU	3 - Prevalence Index is ≤3.0¹				
7. Puccinellia nuttalliana	1		FACW	4 - Morphological Adaptations ¹ (Provide supporting				
8				data in Remarks or on a separate sheet)				
9				5 - Wetland Non-Vascular Plants ¹				
10				Problematic Hydrophytic Vegetation¹ (Explain)				
11				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Woody Vine Stratum (Plot size: 30 ft r	66	= Total Co	ver	be present, amess distances of presidentation				
1				Thirdren hadio				
2.				Hydrophytic Vegetation				
	^	= Total Co	ver	Present? Yes No				
% Bare Ground in Herb Stratum 34								
Remarks:								
Leymus cinereus is the dominant spe	ecies at	this d	ata poin	t.				

SOIL Sampling Point: DP06U

Profile Desc	cription: (Descri	be to the dep	th needed to docu	ment the i	ndicator	or confirm	the absence o	f indicators.)		
Depth	Matri		Redo	ox Feature						
(inches)	Color (moist)		Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Remarks		
0 - 16	10YR 4/3	100					Sandy Clay Loam			
-										
										
	-									
			,							
-										
-										
1Type: C=C	oncentration D=I	Denletion PM=	Reduced Matrix, C	S=Covered	d or Coate	nd Sand Gr	raine ² l oca	tion: PL=Pore Lining, M=Matrix.		
			LRRs, unless othe			d Sand Oi		s for Problematic Hydric Soils ³ :		
Histosol			Sandy Redox (,			Muck (A10)		
	pipedon (A2)		Stripped Matrix					Parent Material (TF2)		
	istic (A3)		Loamy Mucky		1) (except	MLRA 1)		Shallow Dark Surface (TF12)		
	en Sulfide (A4)		Loamy Gleyed			,		(Explain in Remarks)		
Deplete	d Below Dark Sur	face (A11)	Depleted Matri	x (F3)						
	ark Surface (A12)		Redox Dark St	, ,				s of hydrophytic vegetation and		
	Mucky Mineral (S	•	Depleted Dark		7)			d hydrology must be present,		
	Gleyed Matrix (S4		Redox Depres	sions (F8)			unless	disturbed or problematic.		
_	Layer (if present	:):								
Type:							1			
	ches):						Hydric Soil P	resent? Yes No		
Remarks:										
No hvdri	ic soil indic	ators obs	served.							
HYDROLO	GY									
Wetland Hy	drology Indicato	ors:								
Primary Indi	cators (minimum	of one required	d; check all that app	ly)			Second	lary Indicators (2 or more required)		
Surface	Water (A1)	•	Water-Sta	ained Leav	es (B9) (e	xcept	Wa	ter-Stained Leaves (B9) (MLRA 1, 2,		
	ater Table (A2)			1, 2, 4A, a		•		4A, and 4B)		
Saturati			Salt Crus	(B11)	,			ainage Patterns (B10)		
Water M	/larks (B1)			vertebrate	s (B13)		Drainage Patterns (B10) Dry-Season Water Table (C2)			
	nt Deposits (B2)			Sulfide O	. ,			turation Visible on Aerial Imagery (C9)		
Drift De	posits (B3)					Living Roc	ots (C3) Ge	omorphic Position (D2)		
	at or Crust (B4)			of Reduce	_	_		allow Aquitard (D3)		
Iron De	posits (B5)		Recent Ire	on Reducti	on in Tille	d Soils (C6	B) FA	C-Neutral Test (D5)		
Surface	Soil Cracks (B6)		Stunted o	r Stressed	Plants (D	1) (LRR A) Rai	ised Ant Mounds (D6) (LRR A)		
Inundati	ion Vis ble on Aer	ial Imagery (B	7) Other (Ex	plain in Re	marks)		Fro	st-Heave Hummocks (D7)		
Sparsel	y Vegetated Cond	ave Surface (I	38)							
Field Obser	vations:	<u>-</u>								
Surface Wat	ter Present?	Yes	No <u> </u>	nches):						
Water Table	Present?		No Depth (ir							
Saturation P			No <u>V</u> Depth (ir				and Hydrology	Present? Yes No		
(includes ca	pillary fringe)									
Describe Re	corded Data (stre	am gauge, mo	onitoring well, aerial	photos, pr	evious ins	pections),	if available:			
Remarks:										
No evide	ence of we	tland hvo	Irology obse	rved 9	Soile d	rv				
1.40 CVIU	CITOC OF WE	adila liye	ii ology obse	v.c.a. c	Jons u	. у.				

Project/Site: Silicon Mountain	(City/Co	ounty:	Silver Bo	ow County Sampling Date: 2023-07-07			
Applicant/Owner: MDT					State: Montana Sampling Point: DP06W			
Investigator(s): S Weyant	;	Section	n, Tov	nship, Rar	nge: S24 T3N R9W			
Landform (hillslope, terrace, etc.): Toe Local relief (concave, convex, none): None Slope (%): 1								
Subregion (LRR): <u>E 44</u> Lat: <u>45.997769</u> Long: <u>-112.663534</u> Datum: <u>NAD 83</u>								
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixlee, frequently flooded complex, 0 to 4 percent 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 Hydrologys					Normal Circumstances" present? Yes No			
Are Vegetation, Soil, or Hydrology r	naturally pro	blemat	tic?	(If ne	eded, explain any answers in Remarks.)			
SUMMARY OF FINDINGS - Attach site map	showing	sam	pling	j point l	ocations, transects, important features, etc.			
Hydrophytic Vegetation Present? Yes N	lo							
	lo			Sampled				
Wetland Hydrology Present? Yes N	lo		withii	n a Wetlan	nd? Yes V No No			
Remarks:								
PEM, depressional wetland. Data poi	int is lo	cate	d in	cell 6.				
VEGETATION – Use scientific names of plan	its.							
Tree Stratum (Plot size: 30 ft r	Absolute				Dominance Test worksheet:			
1	% Cover				Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)			
2					Total Number of Dominant			
3					Species Across All Strata: 3 (B)			
4	0	= Tota	al Cov	er	Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)			
Sapling/Shrub Stratum (Plot size: 5 ft r)		•			Prevalence Index worksheet:			
1. Salix exigua	15			FACW	Total % Cover of: Multiply by:			
2					OBL species $\frac{1}{x} = \frac{1}{x}$			
3					FACW species $\overline{55}$ $\times 2 = \overline{110}$			
4			 .		FAC species 22 x 3 = 66			
5	15				FACU species 1 x 4 = 4			
Herb Stratum (Plot size: 5 ft r)	15	_= 1 Ota	ai Cov	er	UPL species <u>7</u> x 5 = <u>35</u>			
1. Juncus balticus	40	V	/	FACW	Column Totals: <u>86</u> (A) <u>216</u> (B)			
2. Leymus cinereus	15	~		FAC	Prevalence Index = B/A = 2.51			
3. Cirsium arvense	5			FAC	Hydrophytic Vegetation Indicators:			
4. Thlaspi arvense	5			UPL	1 - Rapid Test for Hydrophytic Vegetation			
5. Elymus trachycaulus	2			FAC	✓ 2 - Dominance Test is >50%			
6. Euphorbea esula	2			UPL	✓ 3 - Prevalence Index is ≤3.0 ¹			
7. Potentilla anserina	_ 1			OBL	4 - Morphological Adaptations ¹ (Provide supporting			
8. Sisymbrium altissimum	_ 1			FACU	data in Remarks or on a separate sheet)			
9					5 - Wetland Non-Vascular Plants ¹			
10					Problematic Hydrophytic Vegetation¹ (Explain)			
11					¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Woody Vine Stratum (Plot size: 30 ft r	71	= Tota	al Cove	er	So process, amost distance or processing.			
1					Hadranbada			
2.			 ,		Hydrophytic Vegetation			
	_	= Tota	al Cove	er	Present? Yes No			
% Bare Ground in Herb Stratum 29			5570					
Remarks:								
Evidence of hydrophytic vegetation incl	udes a p	oosit	ive	domina	nce test and a prevalence index less			
than 3.0.	•				·			

B-45

SOIL Sampling Point: DP06W

SOIL								Sampling Point: Di GOW	
Profile Desc	cription: (Describe	to the dep	oth needed to docu	ment the	indicator	or confirr	n the absence	of indicators.)	
Depth	Matrix			x Feature					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks	
0-5	10YR 2/2	98	7.5YR 4/6	2	<u>C</u>	PL	Sandy Clay Loam	Dense fine roots.	
5 - 15	10R 4/6	15		_			Sand	Coarse sand grains	
5 - 15	10YR 4/2	18	10YR 5/6	2	С	М	Sandy Loam		
5 - 15	5YR 5/3	63	10YR 6/6	2	cs	М	Sand	Coarse sand	
	011(0/0		10111 0/0			141	Garia	Course suriu	
							-		
				_					
-									
¹Type: C=C	oncentration. D=Der	oletion. RM	=Reduced Matrix, C	S=Covere	ed or Coate	ed Sand G	rains. ² Loc	cation: PL=Pore Lining, M=Matrix.	
,,			LRRs, unless othe					ors for Problematic Hydric Soils ³ :	
Histosol	I (A1)		Sandy Redox (S5)			2 cr	m Muck (A10)	
	pipedon (A2)		Stripped Matrix	•			Red	Parent Material (TF2)	
Black H	istic (A3)		Loamy Mucky I	Mineral (F	1) (excep	t MLRA 1)) Ver	y Shallow Dark Surface (TF12)	
	en Sulfide (A4)		Loamy Gleyed		2)		<u>✓</u> Oth	er (Explain in Remarks)	
-	d Below Dark Surfac	ce (A11)	Depleted Matrix				3		
	ark Surface (A12)		Redox Dark Su	`	,			ors of hydrophytic vegetation and	
	Mucky Mineral (S1) Gleyed Matrix (S4)		Depleted Dark Redox Depress					and hydrology must be present, ss disturbed or problematic.	
	Layer (if present):		Nedox Depless	510113 (1 0)	1		unies	as disturbed of problematic.	
Type:	_ayor (p. 0001.t).								
Depth (inches): No									
Remarks:									
	ant species were h							d, wetland hydrology was present, all Wetland Delineation Manual).	
	drology Indicators:	•							
1			d; check all that appl	lv)			Seco	ndary Indicators (2 or more required)	
	Water (A1)		Water-Sta	•	/es (B9) (e	excent			
l '	ater Table (A2)			1, 2, 4A,		жеер.	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)		
✓ Saturati			Salt Crust				Drainage Patterns (B10)		
Water N			Aquatic In					Ory-Season Water Table (C2)	
·	nt Deposits (B2)		Hydrogen		, ,			Saturation Visible on Aerial Imagery (C9)	
Drift De	posits (B3)		Oxidized F	Rhizosphe	eres along	Living Ro	ots (C3) G	Geomorphic Position (D2)	
Algal Ma	at or Crust (B4)		Presence	of Reduc	ed Iron (C	4)	S	Shallow Aquitard (D3)	
Iron De	posits (B5)		Recent Iro	n Reduct	ion in Tille	d Soils (C	6) <u>•</u> F	AC-Neutral Test (D5)	
Surface	Soil Cracks (B6)		Stunted or	r Stressed	d Plants (D	1) (LRR A	A) R	Raised Ant Mounds (D6) (LRR A)	
Inundati	ion Vis ble on Aerial	Imagery (B	7) Other (Ex	plain in R	emarks)		F	rost-Heave Hummocks (D7)	
Sparsel	y Vegetated Concav	e Surface ([B8)						
Field Obser	vations:								
Surface Wat	ter Present?	/es	No Depth (in	ches):					
Water Table			No Depth (in						
Saturation P		es 🔽	No Depth (in	ches): 10)	Wet	land Hydrolog	y Present? Yes No	
	pillary fringe) corded Data (stream	n daude m	onitoring well, aerial	photos p	revious ins	spections)	if available:		
2000001.10	20.000	. 90090,	ormormig from a contact	p, p		,,	,		
Remarks:									
Evidenc	e of wetland	hydrol	oay includes	eatur	ation	and a n	nositiva E	AC-neutral test.	
LVIGETIC	e or wetianu	riyardı	ogy miciades	Satul	auon	ли а р	JOSILIVE F/	ao neutrar test.	

Project/Site: Silicon Mountain	(City/County	: Silver Bo	ow County	Sampling Date:	2023-07-07
Applicant/Owner: MDT				State: Montana	Sampling Point:	DP07U
Investigator(s): R Jones, K Kane	;	Section, To	wnship, Rar	nge: S24 T3N R9W		
Landform (hillslope, terrace, etc.): Hillslope					Slo	ne (%): 20
Subregion (LRR): E 44						
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle						III. <u></u>
•					·	
Are climatic / hydrologic conditions on the site typical for this	-					
Are Vegetation, Soil, or Hydrologysi				Normal Circumstances" p	resent? Yes	<u>′ </u>
Are Vegetation, Soil, or Hydrology na	aturally prol	blematic?	(If ne	eded, explain any answei	rs in Remarks.)	
SUMMARY OF FINDINGS - Attach site map s	showing	samplin	g point lo	ocations, transects	, important fe	atures, etc.
Hydrophytic Vegetation Present? Yes No		1. 4	0 1 - 1	A		
Hydric Soil Present? Yes No			ne Sampled nin a Wetlan		No	
Wetland Hydrology Present? Yes No		With	iii a vvetiaii	id: 165		-
Remarks:						
Upland data point located approximately	/ 3' high	er in el	evation t	than paired wetla	nd data poir	nt.
VEGETATION – Use scientific names of plant	s.					
30 ft r	Absolute		Indicator	Dominance Test works	sheet:	
Tree Stratum (Plot size: 30 ft r) 1.	% Cover			Number of Dominant Sp That Are OBL, FACW, o		(A)
2			,	Total Number of Domina	ant	
3		-		Species Across All Stra	^	(B)
4		-		Percent of Dominant Sp	necies	
Carling/Charle Charles (Diet sings 15 ft r	0	= Total Co	over	That Are OBL, FACW, of		(A/B)
Sapling/Shrub Stratum (Plot size: 15 ft r)				Prevalence Index worl	ksheet:	
1		•		Total % Cover of:	Multipl	ly by:
2				OBL species 0	x 1 = <u>0</u>	
3					x 2 = 4	
4		(<u> </u>		FAC species 13	x 3 = <u>39</u>	
5		= Total Co		FACU species 5		
Herb Stratum (Plot size: 5 ft r)		- Total Oc	/VCI		x 5 = <u>275</u>	
1. Bromus inermis	30		UPL	Column Totals: 75	(A) <u>338</u>	8 (B)
2. Astragalus cicer	20		UPL	Prevalence Index	= B/A = 4.51	
3. Cirsium arvense	10		FAC	Hydrophytic Vegetation		
4. Taraxacum officinale	5		FACU	1 - Rapid Test for H	lydrophytic Veget	ation
5. Euphorbia esula	5	-	UPL	2 - Dominance Tes	t is >50%	
6. Poa pratensis	3		FAC	3 - Prevalence Inde	ex is ≤3.0 ¹	
7. Juncus balticus	2		FACW	4 - Morphological A		
8					s or on a separate	sheet)
9		-		5 - Wetland Non-Va		
10			·	Problematic Hydrop		
11				¹ Indicators of hydric soil be present, unless distu		
Woody Vine Stratum (Plot size:)	75	= Total Co	ver	то ресоин, интере		
1				Herden about a		
2.				Hydrophytic Vegetation		
	_	= Total Co	ver		s No	<u></u>
% Bare Ground in Herb Stratum 25						
Remarks:						
No evidence of hydrophytic vegetation	on obse	erved.				

SOIL Sampling Point: DP07U

								Camping Form.	
		to the de	pth needed to docum			or confirm	the absence	e of indicators.)	
Depth (inches)	Matrix Color (moist)	%	Redox Color (moist)	K Feature	Type ¹	Loc ²	Texture	Remarks	
0 - 7	10YR 3/2	100					Sandy Clay Loam		
7 - 17	10YR 4/3	95	10YR 5/8	3	С	М	Sandy Clay		
7 - 17			N 2.5/0	2	С	М		Mn concentration	
		-			- ——				
	-				- ——			· ———	
		-					-		
	-								
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :									
Histosol		abic to ai			.cu.,			m Muck (A10)	
	oipedon (A2)		Sandy Redox (S Stripped Matrix					d Parent Material (TF2)	
Black His			Loamy Mucky M	. ,	1) (except	MLRA 1)		ry Shallow Dark Surface (TF12)	
	n Sulfide (A4)		Loamy Gleyed N			,		ner (Explain in Remarks)	
	l Below Dark Surfac	e (A11)	✓ Depleted Matrix		,			,	
Thick Da	ark Surface (A12)		Redox Dark Sur	face (F6))		³ Indicat	ors of hydrophytic vegetation and	
-	lucky Mineral (S1)		Depleted Dark S					and hydrology must be present,	
	leyed Matrix (S4)		Redox Depressi	ons (F8)			unle	ss disturbed or problematic.	
Type:	_ayer (if present):								
	rhes).						Hydric Soi	Il Present? Yes No	
Depth (inches): Hydric Soil Present? Yes No V									
	noontrations we	ro obco	ruad the sail profi	lo doos	not moo	t the rea	uiromonto t	to qualify as a hydric soil indicator.	
_			-			-		d vegetation community.	
Additionally	, the data point	is flot su	pported by Wetlan	u nyun	ology and	a support	is an uplan	a vegetation community.	
HYDROLO	GV.								
-	drology Indicators:						0		
	•	ne require	ed; check all that apply					ondary Indicators (2 or more required)	
	Water (A1)		Water-Stair			xcept	\	Water-Stained Leaves (B9) (MLRA 1, 2,	
_	ter Table (A2)			l, 2, 4A,	and 4B)			4A, and 4B)	
Saturatio			Salt Crust ((D.40)			Drainage Patterns (B10)	
	arks (B1)		Aquatic Inv				· · · · · · · · · · · · · · · · · · ·	Dry-Season Water Table (C2)	
	t Deposits (B2)		Hydrogen S			Linda a Dani		Saturation Visible on Aerial Imagery (C9)	
	oosits (B3)				_	_		Geomorphic Position (D2)	
_	t or Crust (B4)		Presence o				· 	Shallow Aquitard (D3)	
	osits (B5) Soil Cracks (B6)		Recent Iror Stunted or					FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)	
	on Vis ble on Aerial I	lmagery (F				1) (LIXIX A)		Frost-Heave Hummocks (D7)	
	Vegetated Concave			iaiii iii i k	omanto)			Tost-ficave fluminocks (D1)	
Field Observ			(50)						
Surface Water		'es	No Depth (inc	hes).					
Water Table			No Depth (inc						
Saturation Pr			No Depth (inc				and Hydrolog	gy Present? Yes No	
(includes cap	oillary fringe)							gy i resent: res No	
Describe Red	corded Data (stream	gauge, m	onitoring well, aerial p	hotos, pr	revious ins	pections), i	if available:		
Remarks:									
No evide	ence of wetla	and hy	drology obser	ved.					
		-							

Project/Site: Silicon Mountain	(City/Cour	nty: Silver Bo	ow County	Sampling Date: 2023-07-07
Applicant/Owner: MDT			-		Sampling Point: DP07W
••				nge: S24 T3N R9W	
Landform (hillslope, terrace, etc.): Toeslope					Slone (%): 5
Subregion (LRR): E 44					
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixl				-	<u> </u>
•					
Are climatic / hydrologic conditions on the site typical for this	-				
Are Vegetation, Soil, or Hydrologys	ignificantly of	disturbed	l? Are "	Normal Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hydrology n	aturally pro	blematic'	? (If ne	eded, explain any answer	s in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	sampl	ing point lo	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No.	0			_	
Hydric Soil Present? Yes No	Area	No			
Wetland Hydrology Present? Yes No	0	W	ithin a Wetlan	iu? res	NO
Remarks:					
Wetland sample point located at sou	thern e	dge o	of open w	ater in cell 1.	
VEGETATION – Use scientific names of plan	ts.				
30 ft r	Absolute		ant Indicator	Dominance Test works	sheet:
Tree Stratum (Plot size: 30 ft r			s? Status	Number of Dominant Sp	pecies 2
1				That Are OBL, FACW, o	or FAC: 2 (A)
2				Total Number of Domina	
3				Species Across All Stra	ta: <u>2</u> (B)
O = Total Cover		Cover	Percent of Dominant Sp That Are OBL, FACW, o		
Sapling/Shrub Stratum (Plot size: 15 ft r)				Prevalence Index worl	sheet:
1				Total % Cover of:	
3.					x 1 = <u>17</u>
4.					x 2 = 90
5.				FAC species 10	x 3 = 30
	0	= Total	Cover	FACU species 10	
Herb Stratum (Plot size: 5 ft r)					x 5 = 15
1. Juncus balticus			FACW	Column Totals: 85	(A) <u>192</u> (B)
2. Salix geyeriana	15		FACW	Prevalence Index	= B/A = <u>2.26</u>
3. Cirsium arvense	10		FAC	Hydrophytic Vegetation	n Indicators:
4. Sonchus arvensis 5. Potentilla anserina	<u>10</u> 5		FACU	✓ 1 - Rapid Test for F	, , ,
6. Veronica americana	5		OBL OBL	<u>✓</u> 2 - Dominance Tes	
7. Nasturtium microphyllum	5		OBL OBL	✓ 3 - Prevalence Inde	
8. Linaria vulgaris	3		UPL	4 - Morphological A	daptations ¹ (Provide supporting s or on a separate sheet)
g Carex pellita	2		OBL	5 - Wetland Non-Va	
10					phytic Vegetation ¹ (Explain)
11.			-		and wetland hydrology must
	85	= Total C	Cover	be present, unless distu	
Woody Vine Stratum (Plot size:)		_ rotar c	JOVCI		
1				Hydrophytic	
2				Vegetation	s No
W.B. G. J. H. J. G. J. 15	0	= Total C	Cover	Present? Yes	s No
% Bare Ground in Herb Stratum 15 Remarks:					
			_		
Evidence of hydrophytic vegetation incl	udes a p	ositiv	e rapid te	est, a positive don	ninance test, and a

prevalence index less than 3.0.

SOIL Sampling Point: DP07W

Profile Desc	cription: (Describe	to the depth	needed to docur	nent the i	ndicator o	or confirm	the absen	ce of indicators.)		
Depth Matrix			x Feature	1						
(inches)	Color (moist)		Color (moist)		Type'	Loc ²	<u>Texture</u>	Remarks		
0 - 5	10YR 2/2	100					Silt Loan	n High content of organic matter		
5 - 10	10YR 3/3	100					Sand			
10 - 16	2.5Y 5/1	100					Loamy San	d		
-										
_										
	_	- <u> </u>		·						
								_		
1Typo: C=C	oncentration, D=Dep	Notion DM-D	oducod Matrix, CS	S=Covered	d or Coato	d Sand Gr	nine ² I			
	Indicators: (Applic					a Saliu Gia		ators for Problematic Hydric Soils ³ :		
Histosol			_ Sandy Redox (S		,			cm Muck (A10)		
_	pipedon (A2)		Stripped Matrix	•				ted Parent Material (TF2)		
	istic (A3)	<u></u>	Loamy Mucky N		1) (except	MLRA 1)				
	en Sulfide (A4)	<u></u>	_ Loamy Gleyed I	•		,		other (Explain in Remarks)		
	d Below Dark Surfac	ce (A11)	_ Depleted Matrix		,			,		
	ark Surface (A12)	`	Redox Dark Su	rface (F6)			³ Indica	ators of hydrophytic vegetation and		
Sandy N	Mucky Mineral (S1)		_ Depleted Dark S	Surface (F	7)		wetland hydrology must be present,			
Sandy G	Gleyed Matrix (S4)		_ Redox Depress	ions (F8)			un	less disturbed or problematic.		
Restrictive	Layer (if present):									
Type:			<u></u>							
Depth (in	ches):						Hydric S	oil Present? Yes No		
Remarks:										
HYDROLO	GY									
Wetland Hy	drology Indicators:									
Primary India	cators (minimum of	one required; o	check all that apply	y)			Sec	condary Indicators (2 or more required)		
Surface	Water (A1)	•	Water-Stai	ned Leav	es (B9) (e x	cept		Water-Stained Leaves (B9) (MLRA 1, 2,		
	ater Table (A2)					•	4A, and 4B)			
_	High Water Table (A2) Saturation (A3) MLRA 1, 2, 4A, and 4B) Salt Crust (B11)					Drainage Patterns (B10)				
· 	Water Marks (B1) — Aquatic Invertebrates (B13)						Dry-Season Water Table (C2)			
· · ·	Value Marke (B1) Addate invertebrates (B1e) Hydrogen Sulfide Odor (C1)						~	Saturation Visible on Aerial Imagery (C9)		
		Oxidized Rhizospheres along Living Roo					ts (C3)	Geomorphic Position (D2)		
	Drift Deposits (B3) Oxidized Rhizospheres along Living Roo Algal Mat or Crust (B4) Presence of Reduced Iron (C4)						(00)	Shallow Aquitard (D3)		
_	ron Deposits (B5) — Recent Iron Reduction in Tilled Soils (C6						·	FAC-Neutral Test (D5)		
	urface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A)							Raised Ant Mounds (D6) (LRR A)		
	✓ Inundation Vis ble on Aerial Imagery (B7) — Other (Explain in Remarks)							Frost-Heave Hummocks (D7)		
· · · · · · · · · · · · · · · · · · ·	y Vegetated Concav	,								
Field Obser	-		,							
Surface Wat	er Present?	′es No	Depth (inc	ches):						
Water Table			Depth (inc							
·						and Hydrol	ogy Present? Yes No			
(includes cap					ovious inc		-			
Describe Re	corded Data (Stream	i gauge, monii	toring well, aerial p	onotos, pr	evious insp	pections), i	ir available:			
Remarks:										
Remarks:	of watland b	vdrology:	includes bis	h wata	r table	caturo	tion in:	indation visible on social		
Evidence			_		•		•	Indation visible on aerial		

Project/Site: Silicon Mountain	(City/Coun	_{itv:} Silver Bo	ow County	Sampling Date: 2023-07-06
Applicant/Owner: MDT		-			Sampling Point: DP08U
	:	Section, 7	 Γownship, Rar	nge: S24 T3N R9W	
Landform (hillslope, terrace, etc.): Riser				-	Slope (%): 5
Subregion (LRR): E 44			•		
Soil Map Unit Name: 11A - Mannixlee-Bonebasin complex,					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sig					
Are Vegetation, Soil, or Hydrology na SUMMARY OF FINDINGS - Attach site map s				eded, explain any answer	
Hydrophytic Vegetation Present? Yes <u>✓</u> No					<u> </u>
Hydric Soil Present? Yes No			the Sampled		V
Wetland Hydrology Present? Yes No	, <u> </u>	Wit	thin a Wetlan	id? Yes	No
Remarks:	_	_	_		
Upland sample point near preservation w	vetland/	/cell 13	3 in the no	ortheast leg of the	e mitigation site.
VEGETATION – Use scientific names of plant	s.				
			nt Indicator ? Status	Dominance Test work	
1				Number of Dominant Sp That Are OBL, FACW, of	
2.					
3.				Total Number of Domina Species Across All Stra	^
4.				·	
S in (O) I O I I I I I I I I I I I I I I I I I	0	= Total C	Cover	Percent of Dominant Sp That Are OBL, FACW, of	
Sapling/Shrub Stratum (Plot size: 5 ft r 1. Artemisia tridentata	5	~	UPL	Prevalence Index worl	ksheet:
			_ OFL	Total % Cover of:	
2. 3.					x 1 = 0
4					x 2 = 84
5		-		FAC species 40	x 3 = 120
0	5	= Total C	Cover	FACU species 1	
Herb Stratum (Plot size: 5 ft r)				UPL species 12	x = 60
1. Juncus balticus			FACW	Column Totals: 95	(A) <u>268</u> (B)
2. Leymus cinereus	18		FAC	Prevalence Index	= B/A = <u>2.82</u>
3. Poa pratensis	15		FAC	Hydrophytic Vegetation	n Indicators:
4. Schedonorus arundinaceus	7 3		FAC	1 - Rapid Test for H	
5. Koeleria macrantha	2		UPL	✓ 2 - Dominance Tes	4
6. Descurainia sophia 7. Iris missouriensis	2		<u>UPL</u>	3 - Prevalence Inde	
8. Thlaspi arvense	2		UPL	4 - Morphological A	Adaptations ¹ (Provide supporting s or on a separate sheet)
g. Lactuca serriola	1		FACU	5 - Wetland Non-Va	' '
	<u> </u>				ohytic Vegetation¹ (Explain)
10 11.					I and wetland hydrology must
· · ·	90 :	= Total Co	over	be present, unless distu	
Woody Vine Stratum (Plot size: 30 ft r)		- 10	0101		
1				Hydrophytic	
2				Vegetation Present? Yes	s <u> /</u> No
0/ Barra Commedia Harb Obrobina 10.0	0 :	= Total Co	over	Present 16	3 NU
% Bare Ground in Herb Stratum 10.0 Remarks:					
Although Juncus balticus is the dominant species at the data po	oint. it is a re	esilient, rh	iizomatous gra	ss-like species that easily	creeps out of wetlands and
persists in adjacent uplands. The data point is not supported by					

B-51

SOIL Sampling Point: DP08U

Profile Desc	ription: (Describe	to the dep	th neede	d to docum	ent the ir	ndicator or	r confirm	the absence	of indicators.)	
Depth (inches)	Matrix Color (moist)	%	Color	Redox (moist)	Features %	Type ¹	Loc ²	Texture	Remarks	
0 - 5	7.5YR 2.5/1	100		(moist)	70	турс _	LOC	Sandy Clay Loam	Many fine roots.	
5 - 14	10YR 2/2	100						Clay Loam	Clay increases with de	nth
14 - 16	7.5YR 4/6	40	-					Sandy Clay	Oldy moredoes with de	Pari
									Missad manterise	
14 - 16	10YR 2/2	60						Sandy Clay	Mixed matrix	
	oncentration, D=Dep						Sand Gra		cation: PL=Pore Lining, M=Ma	
Hydric Soil I	ndicators: (Applic	cable to all				d.)			rs for Problematic Hydric S	oils³:
Histosol	` '			dy Redox (S	•				n Muck (A10)	
Histic Ep Black Hi	nipedon (A2)			ped Matrix (my Mucky M		\ (avaant II	MI DA 1\		Parent Material (TF2) / Shallow Dark Surface (TF12))\
	n Sulfide (A4)			ny Gleyed M			WILKA I)		er (Explain in Remarks)	,
-	Below Dark Surfac	ce (A11)		leted Matrix					(=/p/a toao)	
Thick Da	ark Surface (A12)			ox Dark Surf					rs of hydrophytic vegetation a	
	lucky Mineral (S1)			leted Dark S	•	7)			nd hydrology must be present	! ,
	leyed Matrix (S4)		Red	ox Depression	ons (F8)			unles	s disturbed or problematic.	
	_ayer (if present):									
Type: Depth (ind	shae):							Hydric Soil	Present? Yes N	lo 🗸
Remarks:								Tiyuno oon	11030111: 103 14	
No hydri	c soil indicat	tors obs	serve	d.						
	CV									
HYDROLO										
-	drology Indicators		di abaali a	all that annu	`			Cooor	odan (Indicatora (2 or more re-	auirod)
-	ators (minimum of o Water (A1)	one required	u, check a	Water-Stair		s (B0) (ov	cont	· · · · · · · · · · · · · · · · · · ·	ndary Indicators (2 or more red /ater-Stained Leaves (B9) (MI	
	ter Table (A2)				, 2, 4A, a		сері	^_	4A, and 4B)	-NA 1, 2,
Saturation				Salt Crust (11a 4b)		D	rainage Patterns (B10)	
	arks (B1)			Aquatic Inv		(B13)			ry-Season Water Table (C2)	
	it Deposits (B2)			Hydrogen S				·	aturation Visible on Aerial Ima	agery (C9)
Drift Dep	oosits (B3)			Oxidized RI	nizospher	es along Li	iving Root	ts (C3) G	eomorphic Position (D2)	
Algal Ma	t or Crust (B4)			Presence o	f Reduced	d Iron (C4)		s	hallow Aquitard (D3)	
Iron Dep	osits (B5)			Recent Iron	Reduction	n in Tilled	Soils (C6)) F.	AC-Neutral Test (D5)	
·	Soil Cracks (B6)			Stunted or s) (LRR A)		aised Ant Mounds (D6) (LRR	A)
·	on Vis ble on Aerial		. —	Other (Expl	ain in Rer	narks)		F	rost-Heave Hummocks (D7)	
	Vegetated Concav	e Surface (I	B8)							
Field Observ				D " "						
Surface Wate				Depth (inc						
Water Table				Depth (inc					. Dunnanto Van	. <i>V</i>
Saturation Proceed (includes cap		res	NO	Depth (inc	nes):		_ wetia	ına Hyarolog	y Present? Yes N	No
	corded Data (strean	n gauge, mo	onitoring v	well, aerial p	hotos, pre	vious insp	ections), i	f available:		
Remarks:										
No evide	ence of wetla	and hvo	iroloa	y obser	ved. S	oils ve	ry drv	and con	npact.	
		,	- 3	•		_	, ,		•	

Project/Site: Silicon Mountain	(City/Co	_{untv:} Silv	er Bow	County	5	Sampling Date:	2023-	07-06
Applicant/Owner: MDT		,	, <u></u>				Sampling Point:		
	;	Section	ı, Townshij	ip, Range	s24 T3N				
Landform (hillslope, terrace, etc.): Valley Floor							SI	ope (%):	5
Subregion (LRR): E 44			•						
Soil Map Unit Name: 11A - Mannixlee-Bonebasin complex									
Are climatic / hydrologic conditions on the site typical for this									
Are Vegetation, Soil, or Hydrologys	_							✓ N/	2
Are Vegetation, Soil, or Hydrology n								140	,
SUMMARY OF FINDINGS – Attach site map					ed, explain any ations, tran			eature	s, etc.
Hydrophytic Vegetation Present? Yes N	0								
Hydric Soil Present? Yes N			Is the San	-	rea	~			
Wetland Hydrology Present? Yes N	o	'	within a W	Netland'	? Ye	es	No	_	
Remarks:									
PEM, riverine/depressional wetland. Data point is locat	ed in prese	ervation	n wetland	d approx	imately 3-4' lo	wer thar	ı paired uplan	d data p	oint.
VECETATION . Hop opiontific names of plan	40								
VEGETATION – Use scientific names of plan	Absolute	Domir	oont India	ootor [Dominance Te	et workel	hoot:		
Tree Stratum (Plot size: 30 ft r	% Cover			tuo	Number of Dom				
1					hat Are OBL, F		FAC: 1		(A)
2				¬	otal Number o	f Dominar	nt		
3					Species Across				(B)
4				_	Percent of Dom	inant Sne	ncies		
Continue/Charle Charters (Diet since 5 ft r	0	= Tota	l Cover		hat Are OBL, F			00	(A/B)
Sapling/Shrub Stratum (Plot size: 5 ft r)				F	Prevalence Ind	lex works	heet:		
1					Total % Co			ply by:	_
2					OBL species		x 1 = 20		_
4.				F	ACW species	60	x 2 = 12		_
5.					AC species	3	x 3 = 9		_
	0	= Tota	I Cover		ACU species	_	x 4 = 0		_
Herb Stratum (Plot size: 5 ft r)		•			JPL species	1			- (5)
1. Juncus balticus	50		FAC		Column Totals:	04	(A) <u>15</u>	4	_ (B)
2. Potentilla anserina	15		OBL	0)4/			= B/A = <u>1.83</u>		_
3. Epilobium ciliatum 4 Carex utriculata	- 7 5		FAC		lydrophytic Vo	_			
Danahamania annanitana	2		OBL FAC	OVA/	_		drophytic Vege	etation	
Descriampsia caespitosa Poa pratensis	2		FAC	_ -	2 - Domina				
7. Ribes oxyacanthoides	1		FAC		✓ 3 - Prevalei				
8. Schedonorus arundinaceus	1		FAC				laptations ¹ (Pro or on a separat		porting
g. Thlaspi arvense	1	-	UPL		5 - Wetland			,	
10.							nytic Vegetation	า¹ (Explai	n)
11.							and wetland hy		nust
	84	= Total	Cover	_ t	e present, unle	ess disturb	bed or problem	atic.	
Woody Vine Stratum (Plot size: 30 ft r)	·	•							
1					lydrophytic				
2					/egetation Present?	Yes	No_		
% Bare Ground in Herb Stratum 16	0	= Total	Cover						
Remarks:									
Ribes oxyacanthoides contributes less t	han 5%	0010	ar and i	ic thar	afora incli	ıded in	the borb	etratu	m
nibes oxyacantholdes continuates less t		COVE	and i	is tile!	eiore ilicit	au c u II	i tile Helb	อแสเน	111.

SOIL Sampling Point: DP08W

Depth	Matrix	0/	Redo		T 1	Loc ²	Taut	Damadia
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc	<u>Texture</u>	Remarks
0 - 8	10YR 2/2	100					Peat	Decomposing root material presen
8 - 18	10YR 2/1	65					Clay Loam	Mixed matrix
8 - 18	10YR 5/3	30	10YR 5/8	5	<u> </u>	PL	Clay Loam	Mixed matrix.
-			· -		_			
-								
-								
			-					
				-	-			
							. 2	
• •			I=Reduced Matrix, CS I LRRs, unless othe			ed Sand Gr		cation: PL=Pore Lining, M=Matrix. prs for Problematic Hydric Soils ³ :
•		icable to al			ieu.)			•
Histosol Histosol	oipedon (A2)		Sandy Redox (Stripped Matrix	,				m Muck (A10) d Parent Material (TF2)
Black Hi			Loamy Mucky I		1) (excep	t MLRA 1)		y Shallow Dark Surface (TF12)
	n Sulfide (A4)		Loamy Gleyed			,		er (Explain in Remarks)
	d Below Dark Surfa	ice (A11)	Depleted Matrix		,			,
Thick Da	ark Surface (A12)	,	Redox Dark Su)			ors of hydrophytic vegetation and
_	lucky Mineral (S1)		Depleted Dark					and hydrology must be present,
	Sleyed Matrix (S4)		Redox Depress	sions (F8)	1		unles	ss disturbed or problematic.
	Layer (if present):							
Type:								.,
							Hydric Soil	Present? Yes No
Depth (independent of the position of the posi	oipedon obs							
Depth (included)	ipedon obs	erved.						
Depth (included listic epotential) Output Depth (included listing included listing includ	oipedon obs GY drology Indicator	erved.	ed; check all that appl	y)				ndary Indicators (2 or more required)
Depth (included in the control of th	oipedon obs GY drology Indicator	erved.			ves (B9) (e	except	Seco	
Depth (income marks: istic ep /DROLO /etland Hydrimary Indic_ Surface	oipedon obs GY drology Indicator cators (minimum of	erved.	ed; check all that appl Water-Sta			except	Seco	<u> </u>
Depth (incomercial contents) istic ep /DROLO /etland Hydrimary Indicomercial contents Surface / High Wa	GY drology Indicators eators (minimum of Water (A1) ater Table (A2)	erved.	ed; check all that appl Water-Sta	ined Leav		except	Seco	Vater-Stained Leaves (B9) (MLRA 1, 2
Depth (incomercial property) DROLO Outline Hydromary Indicomercial Property High War Saturation	GY drology Indicator eators (minimum of Water (A1) ater Table (A2) on (A3)	erved.	ed; check all that app Water-Sta MLRA	ined Leav 1, 2, 4A, (B11)	and 4B)	except	Secoi	Vater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B)
Depth (incommends) istic ep /DROLO /etland Hydrimary Indicommends Surface / High Water Mater M	GY drology Indicator eators (minimum of Water (A1) ater Table (A2) on (A3)	erved.	ed; check all that appi Water-Sta MLRA Salt Crust	ined Leav 1, 2, 4A, (B11) vertebrate	and 4B) es (B13)	except	Secol V C	Vater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2)
Depth (incomercial contents) istic ep /DROLO /etland Hydrimary Indicomercial contents Surface High Water M Sedimer	GY drology Indicator eators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1)	erved.	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen	ined Leaven 1, 2, 4A, (B11) vertebrate Sulfide O	es (B13)	except Living Roo	Secoi V C C	Vater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2)
Depth (indicates) Depth (indica	GY drology Indicators eators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2)	erved.	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen	ined Leaven 1, 2, 4A, (B11) vertebrate Sulfide O	and 4B) es (B13) dor (C1) eres along	Living Roo	Seco V C S ts (C3) <u>v</u> G	Vater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (CS
Depth (independent of the property of the prop	drology Indicator (water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3)	erved.	ed; check all that appl — Water-Sta MLRA — Salt Crust — Aquatic In — Hydrogen — Oxidized F — Presence	ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduce	es (B13) dor (C1) eres along ed Iron (C	Living Roo	Secon V C C S ats (C3) <u>v</u> G	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Depth (incontroller) Permarks: Depth (incontroller) Permarks: Permary Indicontroller Surface High Water Manager Sedimer Drift Depth (incontroller) Algal Manager Iron Depth (incontroller) Depth (incontroller) Permarks: Depth (incontroller) Permarks: Depth (incontroller) Permarks:	GY drology Indicator eators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4)	erved.	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted o	ined Leaven 1, 2, 4A, (B11) vertebrate Sulfide ORhizosphe of Reducton Reductor Stressed	es (B13) dor (C1) eres along ed Iron (C- tion in Tille d Plants (D	Living Roo 4) d Soils (C6	Secon V L S ts (C3) F F F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Depth (incomercial contents) Depth	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Vis ble on Aeria	erved. s: one require	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted on	ined Leaven 1, 2, 4A, (B11) vertebrate Sulfide ORhizosphe of Reducton Reductor Stressed	es (B13) dor (C1) eres along ed Iron (C- tion in Tille d Plants (D	Living Roo 4) d Soils (C6	Secon V L S ts (C3) F F F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Depth (independent of the content of	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Vis ble on Aeria of Vegetated Concar	erved. s: one require	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted on	ined Leaven 1, 2, 4A, (B11) vertebrate Sulfide ORhizosphe of Reducton Reductor Stressed	es (B13) dor (C1) eres along ed Iron (C- tion in Tille d Plants (D	Living Roo 4) d Soils (C6	Secon V L S ts (C3) F F F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Depth (indicemarks: istic ep /DROLO /etland Hydrimary Indice Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely ield Observire	drology Indicators cators (minimum of water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Vis ble on Aeria of Vegetated Concavations:	erved. s: one require	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or 37) Other (Exp	ined Leaven 1, 2, 4A, (B11) vertebrate Sulfide ORhizosphe of Reducton Reductor Stressed blain in Reductor Stressed	es (B13) dor (C1) eres along ed Iron (C- tion in Tille d Plants (D	Living Roo 4) d Soils (C6	Secon V L S ts (C3) F F F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
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Project/Site: Silicon Mountain	(City/Count	ty: Silver Bo	ow County	Sampling Date: <u>2023-07-07</u>
Applicant/Owner: MDT				State: Montana	Sampling Point: DP09U
Investigator(s): R Jones, K Kane	;	Section, T	ownship, Rar	nge: S24 T3N R9W	
					Slope (%): 10
Subregion (LRR): E 44			•		
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle					
•					<u> </u>
Are climatic / hydrologic conditions on the site typical for this	•			 · .	
Are Vegetation, Soil, or Hydrologysi	-			Normal Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hydrologyn	aturally pro	blematic?	(If ne	eded, explain any answer	rs in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing	sampli	ng point l	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No	· · ·		tha Cammiad	A	
Hydric Soil Present? Yes No			the Sampled thin a Wetlan		No
Wetland Hydrology Present? Yes No		Wit		163	
Remarks:					
Sample point is 3 feet higher in eleva	tion th	an pai	red wetl	and data point.	
VEGETATION – Use scientific names of plant	s.				
Tree Stratum (Plot size: 30 ft r	Absolute		nt Indicator	Dominance Test works	sheet:
1	% Cover			Number of Dominant Sp That Are OBL, FACW, o	
2				Total Number of Domina	
3				Species Across All Stra	ta: <u>5</u> (B)
4		-		Percent of Dominant Sp	pecies
Sapling/Shrub Stratum (Plot size: 15 ft r)	0	= Total C	Cover	That Are OBL, FACW, o	or FAC: 40.00 (A/B)
1.				Prevalence Index worl	ksheet:
2.	-			Total % Cover of:	
3.					x 1 = 0
4					x 2 = 0
5.					x 3 = <u>75</u>
	•	= Total C	over	FACU species 0	
Herb Stratum (Plot size: 5 ft r)				· ·	x = 5 = 250
1. Festuca ovina				Column Totals: 75	(A) <u>325</u> (B)
2. Festuca ovina	10		UPL	Prevalence Index	= B/A = 4.33
3. Elymus trachycaulus	10		FAC	Hydrophytic Vegetation	on Indicators:
4. Elymus canadensis 5. Bromus inermis	10		FAC	1 - Rapid Test for H	lydrophytic Vegetation
	5		UPL	2 - Dominance Tes	
6. Leymus cinereus 7 Unidentified grass	5	-	FAC	3 - Prevalence Inde	
					Adaptations ¹ (Provide supporting s or on a separate sheet)
8				5 - Wetland Non-Va	· · · · · · · · · · · · · · · · · · ·
9					ohytic Vegetation¹ (Explain)
10.				l 	I and wetland hydrology must
11.	~~	= Total Co	over	be present, unless distu	
Woody Vine Stratum (Plot size:)		- Total O	OVCI		
1				Hydrophytic	
2				Vegetation	s No
W.D. 0 11 11 1 21 1 20	0	= Total Co	over	Present? Yes	s No
% Bare Ground in Herb Stratum 20					
Remarks:					
No evidence of hydrophytic vegetati	on obs	erved.			

SOIL Sampling Point: DP09U

Depth inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	
	10YR 3/4	100					Sandy Loam			
	101110,1									
<u> </u>										
-										
-										
-										
vpe: C=Cor	ncentration, D=De	pletion. RM=R	Reduced Matrix, CS	S=Covered	d or Coate	d Sand G	rains. ² Loc	ation: PL=Po	ore Lining, M=N	/latrix.
•			RRs, unless other						matic Hydric	
Histosol (Sandy Redox (S					n Muck (A10)	-	
	pedon (A2)	_	Stripped Matrix	•				Parent Mater	ial (TF2)	
Black His		<u> </u>	Loamy Mucky N	` '	1) (except	MLRA 1)			k Surface (TF1	2)
	Sulfide (A4)	_	_ Loamy Gleyed I				-	er (Explain in		
Depleted	Below Dark Surfa	ce (A11) _	_ Depleted Matrix	(F3)						
_	k Surface (A12)	_	_ Redox Dark Su	rface (F6)					ytic vegetation	
	ucky Mineral (S1)	_	_ Depleted Dark S		7)				must be prese	nt,
	eyed Matrix (S4)	_	_ Redox Depress	ions (F8)			unles	s disturbed or	problematic.	
	ayer (if present):									
Type: Har	_									,
Depth (inch	, Ω						Hudria Cail	Procent?	Yes	No 🗸
evider	nce of hydr esence of a		bserved. So	oil pit o	could r	not be	Hydric Soil reasonab			
emarks: Devider the pre	nce of hydr esence of a	hard par		oil pit d	could r	not be				
emarks: D evider the pre DROLOG etland Hydr	nce of hydresence of a	hard par	n layer.		could r	not be	reasonab	ly excav	ated furt	her d
emarks: Devider the pre DROLOG etland Hydi imary Indica	nce of hydresence of a SY rology Indicators stors (minimum of	hard par	n layer.	, y)			reasonab	ly excav	ated furt	her d
emarks: D evider the pre DROLOG etland Hydr imary Indica _ Surface V	nce of hydresence of a BY rology Indicators ators (minimum of Water (A1)	hard par	check all that appl	y) ined Leav	es (B9) (e		reasonab	ly excav	ated furt	her d
emarks: D evider the pre DROLOG etland Hydr imary Indica _ Surface W _ High Wate	nce of hydresence of a SY rology Indicators ators (minimum of Vater (A1) er Table (A2)	hard par	check all that apple Water-Stai	y) ined Leavo 1, 2, 4 A , a	es (B9) (e		reasonab Secon	ly excav	rs (2 or more r Leaves (B9) (M	her d
DROLOG etland Hydinary Indica Surface W High Water Saturation	nce of hydresence of a GY rology Indicators stors (minimum of Vater (A1) er Table (A2) n (A3)	hard par	check all that apple Water-Stai MLRA Salt Crust	y) ined Leav 1, 2, 4A , <i>a</i> (B11)	es (B9) (e and 4B)		reasonab Secon	Iy excav	rs (2 or more ro Leaves (B9) (M	her di
DROLOG etland Hydrimary Indica Surface W High Water Saturation	rology Indicators (minimum of Vater (A1) er Table (A2) (A3) erks (B1)	hard par	check all that apple Water-Stai MLRA Salt Crust Aquatic Inv	y) ined Leave 1, 2, 4A, a (B11) vertebrate	es (B9) (e and 4B) s (B13)		reasonab Secor U D D	ndary Indicato Vater-Stained 4A, and 4B) rainage Patte ry-Season Wa	rs (2 or more r Leaves (B9) (N) rns (B10) ater Table (C2)	her d
emarks: D evider the pre DROLOG etland Hydrimary Indica Surface W High Wate Saturation Water Ma Sediment	esence of a esence of a esence of a rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2)	hard par	check all that apple Water-Stai MLRA Salt Crust Aquatic Inv	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc	es (B9) (e and 4B) ss (B13) dor (C1)	xcept	reasonab Seconal D D S	ndary Indicato /ater-Stained 4A, and 4B/ rainage Patte ry-Season Wa aturation Visit	rs (2 or more r Leaves (B9) (M) rns (B10) ater Table (C2)	her d
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emarks: D evider The pre DROLOG etland Hydridia Surface W High Water Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely weld Observated	esence of hydresence of a cology Indicators (minimum of Vater (A1) er Table (A2) er (A3) er (B1) Deposits (B2) er (B4) er (B4) er (B4) er (B5)	hard par : one required; Imagery (B7) /e Surface (B8)	check all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce n Reducti Stressed blain in Re	es (B9) (e and 4B) s (B13) dor (C1) res along ed Iron (C4 on in Tille Plants (D emarks)	xcept Living Roo) d Soils (C6 1) (LRR A	Secon Percentage	Iy excav	rs (2 or more releaves (B9) (Mars (B10)) ater Table (C2) ble on Aerial In cosition (D2) rd (D3) est (D5) unds (D6) (LR	equired) ILRA 1,
DROLOG etland Hydrimary Indica Surface Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely eld Observa	rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) Deposits (B2) asits (B3) or Crust (B4) asits (B5) asits (B5) and Vater (B6) an	hard par : one required; Imagery (B7) //e Surface (B8) Yes No	check all that apple Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence G Recent Iro Stunted or Other (Exp	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce n Reducti Stressed blain in Re	es (B9) (e and 4B) s (B13) dor (C1) res along ed Iron (C4 on in Tille Plants (D	xcept Living Roo l) d Soils (C6 1) (LRR A	Secon Percentage	Iy excav	rs (2 or more releaves (B9) (Mars (B10)) ater Table (C2) ble on Aerial In cosition (D2) rd (D3) est (D5) unds (D6) (LR	equired) ILRA 1,
emarks: Devider The pre The p	rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) Deposits (B2) asits (B3) or Crust (B4) asits (B5) and Cracks (B6) n Vis ble on Aerial Vegetated Concavations: ar Present?	Imagery (B7) ve Surface (B8 Yes No Yes No	check all that apply Water-Stain MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reducti Stressed olain in Re ches):	es (B9) (eand 4B) es (B13) dor (C1) res along ed Iron (C4) on in Tille Plants (Demarks)	xcept Living Roo I) d Soils (Ce 1) (LRR A	Secon W Secon Secon	Iy excav	rs (2 or more r Leaves (B9) (N) rns (B10) ater Table (C2) pole on Aerial In position (D2) rd (D3) est (D5) unds (D6) (LRI ummocks (D7)	equired) MLRA 1,
emarks: D evider The pre The pre	rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5) soil Cracks (B6) n Vis ble on Aerial Vegetated Concavations: r Present?	Imagery (B7) ve Surface (B8 Yes No Yes No	check all that apple Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence G Recent Iro Stunted or Other (Exp	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reducti Stressed olain in Re ches):	es (B9) (eand 4B) es (B13) dor (C1) res along ed Iron (C4) on in Tille Plants (Demarks)	xcept Living Roo I) d Soils (Ce 1) (LRR A	Secon Percentage	Iy excav	rs (2 or more r Leaves (B9) (N) rns (B10) ater Table (C2) pole on Aerial In position (D2) rd (D3) est (D5) unds (D6) (LRI ummocks (D7)	equired) ILRA 1,
emarks: D evider The pre The pre	rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) rrks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5) n Vis ble on Aerial Vegetated Concavations: r Present? ersent?	Imagery (B7) ve Surface (B8 Yes No Yes No	check all that apply Water-Stain MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reducti Stressed olain in Re ches): ches): ches):	es (B9) (eand 4B) es (B13) dor (C1) res along ed Iron (C4) on in Tille Plants (Demarks)	Living Root I) d Soils (Ce 1) (LRR A	Secon W Secon Secon	Iy excav	rs (2 or more r Leaves (B9) (N) rns (B10) ater Table (C2) pole on Aerial In position (D2) rd (D3) est (D5) unds (D6) (LRI ummocks (D7)	equired) ILRA 1,
Devider The pre DROLOG etland Hydrimary Indica Surface Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely eld Observationater Table Featuration Pre Includes capil	rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) rrks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5) n Vis ble on Aerial Vegetated Concavations: r Present? ersent?	Imagery (B7) ve Surface (B8 Yes No Yes No	check all that apply Water-Stain MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reducti Stressed olain in Re ches): ches): ches):	es (B9) (eand 4B) es (B13) dor (C1) res along ed Iron (C4) on in Tille Plants (Demarks)	Living Root I) d Soils (Ce 1) (LRR A	Secon W Secon Secon	Iy excav	rs (2 or more r Leaves (B9) (N) rns (B10) ater Table (C2) pole on Aerial In position (D2) rd (D3) est (D5) unds (D6) (LRI ummocks (D7)	equired) ILRA 1,
Devider The pre DROLOG etland Hydrimary Indica Surface Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely eld Observationater Table Featuration Pre Includes capil	rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) rrks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5) n Vis ble on Aerial Vegetated Concavations: r Present? ersent?	Imagery (B7) ve Surface (B8 Yes No Yes No	check all that apply Water-Stain MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reducti Stressed olain in Re ches): ches): ches):	es (B9) (eand 4B) es (B13) dor (C1) res along ed Iron (C4) on in Tille Plants (Demarks)	Living Root I) d Soils (Ce 1) (LRR A	Secon W Secon Secon	Iy excav	rs (2 or more r Leaves (B9) (N) rns (B10) ater Table (C2) pole on Aerial In position (D2) rd (D3) est (D5) unds (D6) (LRI ummocks (D7)	equired) ILRA 1,
Properties of the presentation of the presenta	rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5) soil Cracks (B6) n Vis ble on Aerial Vegetated Concavations: r Present? esent? elary fringe) orded Data (strear	Imagery (B7) ve Surface (B8 Yes No Yes No Yes No	check all that apply Water-Stain MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce n Reductic Stressed olain in Re ches): ches): ches):	es (B9) (e and 4B) s (B13) dor (C1) res along ed Iron (C4 on in Tille Plants (Demarks)	Living Roo I) d Soils (C6 1) (LRR A	reasonab Secon W D Sots (C3) — G So) — F And Hydrology if available:	Iy excav	rs (2 or more r Leaves (B9) (N) rns (B10) ater Table (C2) ole on Aerial In osition (D2) rd (D3) est (D5) unds (D6) (LRI ummocks (D7)	equired) ILRA 1,

Project/Site: Silicon Mountain	(City/Count	_{y:} Silver Bo	ow County	Sampling Date:	2023-07-07
Applicant/Owner: MDT		-				
• •				nge: S24 T3N R9W	. 0	
Landform (hillslope, terrace, etc.): Toeslope					Sic	one (%)· 3
Subregion (LRR): E 44						
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle						IIII. 14712 00
•					·	
Are climatic / hydrologic conditions on the site typical for this	•	· <u></u>			•	
Are Vegetation, Soil, or Hydrology si	gnificantly	disturbed?	Are "	Normal Circumstances" p	resent? Yes	No
Are Vegetation, Soil, or Hydrology no	aturally pro	blematic?	(If ne	eded, explain any answer	s in Remarks.)	
SUMMARY OF FINDINGS - Attach site map	showing	samplir	ng point lo	ocations, transects	, important fe	atures, etc.
Hydrophytic Vegetation Present? Yes No						
Hydric Soil Present? Yes No			he Sampled hin a Wetlan		No	
Wetland Hydrology Present? Yes No		WILI	illi a vvetiali	iu: 165	NO	_
Remarks:						
PEM, depressional/riverine wetland.	Data po	oint loc	cated at	southern end of	f cell 1.	
VEGETATION – Use scientific names of plant	s.					
7 30 ft r	Absolute		t Indicator	Dominance Test works	sheet:	
Tree Stratum (Plot size: 30 ft r) 1.	% Cover			Number of Dominant Sp That Are OBL, FACW, o	pecies or FAC: 2	(A)
2				Total Number of Domina	ant	
3				Species Across All Strat	^	(B)
4				Percent of Dominant Sp	necies	
Sapling/Shrub Stratum (Plot size: 15 ft r)	0	= Total Co	over	That Are OBL, FACW, of		0 (A/B)
				Prevalence Index work	rsheet:	
1				Total % Cover of:	Multip	ly by:
2.					x 1 = <u>3</u>	
3					x 2 = 158	3
4 5.					x 3 = <u>3</u>	
	_	= Total Co	over	FACU species 0		
Herb Stratum (Plot size: 5 ft r)					x 5 = 10	
1. Carex praegracilis	40		FACW	Column Totals: 85	(A) <u>174</u>	4 (B)
2. Juncus balticus	20		FACW	Prevalence Index	= B/A = 2.05	
3. Erigeron peregrinus	15		FACW	Hydrophytic Vegetation	n Indicators:	
4. Deschampsia caespitosa	4	-	FACW	<u>✓</u> 1 - Rapid Test for H	lydrophytic Veget	tation
5. Potentilla anserina	3		OBL	✓ 2 - Dominance Test	t is >50%	
6. Euphorbia eusla	2		UPL	✓ 3 - Prevalence Inde	x is ≤3.0 ¹	
7. Equisetum arvense	-		FAC	4 - Morphological A		
8				5 - Wetland Non-Va	s or on a separate	sneet)
9				9 - Welland Non-va		¹ (Evolain)
10				Indicators of hydric soil		
11	0.5	T-4-1 O-		be present, unless distu		
Woody Vine Stratum (Plot size:)	00	= Total Co	over			
1				Hydrophytic		
2				Vegetation	4	
	^	= Total Co	ver	Present? Yes	s No	—
% Bare Ground in Herb Stratum 15						
Remarks:						
Vegetation at the data point is domin	ated by	y hydr	ophytic	species.		

SOIL Sampling Point: DP09W

Profile Desc	cription: (Describe	to the de	pth needed to docui	ment the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix	•		x Feature				•
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 - 2	10YR 2/2	100					Peat	Fibric
2-5	10YR 3/2	95	10YR 3/6	5	С	PL / M	Clay Loam	Mn concentrations
5 - 10	2.5Y 2.5/1	100					Sandy Clay	
10 - 16	10YR 4/2	80	7.5YR 3/4	20	С	M	Sandy Clay	
	-							
				-				
¹Type: C=C	oncentration D=De	nletion RM	l=Reduced Matrix, C	S=Covere	ed or Coate	d Sand Gr	rains ² l o	cation: PL=Pore Lining, M=Matrix.
			I LRRs, unless othe			a cana ci		ors for Problematic Hydric Soils ³ :
Histosol			Sandy Redox (,			m Muck (A10)
	pipedon (A2)		Stripped Matrix					Parent Material (TF2)
	istic (A3)		Loamy Mucky N		1) (except	MLRA 1)		y Shallow Dark Surface (TF12)
Hydroge	en Sulfide (A4)		Loamy Gleyed	Matrix (F	2)		Oth	er (Explain in Remarks)
Deplete	d Below Dark Surfac	ce (A11)	✓ Depleted Matrix	x (F3)				
Thick Da	ark Surface (A12)		Redox Dark Su	•			³ Indicato	ors of hydrophytic vegetation and
-	Mucky Mineral (S1)		Depleted Dark					and hydrology must be present,
	Gleyed Matrix (S4)		Redox Depress	sions (F8)			unles	ss disturbed or problematic.
Restrictive	Layer (if present):							
Type:								.,
	ches):						Hydric Soil	Present? Yes No
Remarks:								
Promine	nt redoximo	rphic c	oncentration	s com	mon w	ithin th	ne deplet	ed matrix
	iic i odoxiiiio			0 00111			io dopiot	od matrix.
HYDROLO	GY							
	drology Indicators	:						
-			ed; check all that appl	v)			Seco	ndary Indicators (2 or more required)
-	Water (A1)				ves (B9) (e	xcent		Vater-Stained Leaves (B9) (MLRA 1, 2,
<u> </u>	ater Table (A2)			1, 2, 4A,		Accpt	'	4A, and 4B)
Saturati	, ,		Salt Crust		anu 40)		-	Orainage Patterns (B10)
	` ,		· 	` '	oo (D12)			o
	Marks (B1)		Aquatic In		` ,			Ory-Season Water Table (C2)
	nt Deposits (B2)		Hydrogen			Listaa Daa		Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Drift De					eres along	_	· · · —	
_	at or Crust (B4)				ed Iron (C4	•		Shallow Aquitard (D3)
Iron Dep					tion in Tille			AC-Neutral Test (D5)
	Soil Cracks (B6)		Stunted or			1) (LRR A		Raised Ant Mounds (D6) (LRR A)
	ion Vis ble on Aerial			plain in R	emarks)		F	rost-Heave Hummocks (D7)
	y Vegetated Concav	e Surface	(B8)					
Field Obser								
Surface Wat			No Depth (in					
Water Table			No Depth (in					
Saturation P	resent? pillary fringe)	Yes	No Depth (in	ches):		Wetla	and Hydrolog	y Present? Yes V No No
		n gauge, m	onitoring well, aerial	photos, p	revious ins	pections),	if available:	
Remarks:								
Evidenc	e of wetland	hvdro	laav includes	deon	ornhic	nociti	on and a	positive FAC-neutral
		IIIVAIO	iogy illiciaacs	GCOII	יוו וע וטו	, positi	on and a	positive i AC-lieutiai
	0 01 1101101101	iliyaro	logy includes	gcon	iorpriic	positi	on and a	positive i AC-fleutiai
test.		ny ar o	logy illelades	gcon	iorpriic	, positi	on and a	positive i AC-neutral

Project/Site: Silicon Mountain	(City/County	Silver Bo	ow County	Sampling Date:	2023-07-07
Applicant/Owner: MDT				State: Montana	Sampling Point:	DP10U
Investigator(s): S Weyant, K Kane	;	Section, To	wnship, Rar	nge: S24 T3N R9W		
Landform (hillslope, terrace, etc.): Valley Floor					Slo	pe (%): 0
Subregion (LRR): E 44						
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle						III. <u></u>
•					<u>-</u>	
Are climatic / hydrologic conditions on the site typical for this	-					
Are Vegetation, Soil, or Hydrologys				Normal Circumstances" p	resent? Yes	<u>′ </u>
Are Vegetation, Soil, or Hydrologyn	aturally prol	blematic?	(If ne	eded, explain any answer	rs in Remarks.)	
SUMMARY OF FINDINGS - Attach site map	showing	samplin	g point lo	ocations, transects	, important fe	atures, etc.
Hydrophytic Vegetation Present? Yes No	o <u> </u>	1- 4	. 011	A		
Hydric Soil Present? Yes No	o <u> </u>		e Sampled in a Wetlan		No	
Wetland Hydrology Present? Yes No	<u> </u>	With	III a Wellali	iu: 165		-
Remarks:						
Upland data point located on bench	approxi	mately	1' high	er in elevation tl	nan DP10W	1.
VEGETATION – Use scientific names of plant	ts.					
7 0 4 (D) 4 30 ft r	Absolute	Dominant		Dominance Test work	sheet:	
Tree Stratum (Plot size: 30 ft r) 1.	% Cover			Number of Dominant Sp That Are OBL, FACW, o		(A)
2				Total Number of Domina	ant	
3				Species Across All Stra	4	(B)
4				Percent of Dominant Sp	necies	
Cooling/Chruh Ctratum / Diet size: 5 ft r	0	= Total Co	ver	That Are OBL, FACW, o		(A/B)
Sapling/Shrub Stratum (Plot size: 5 ft r)				Prevalence Index worl	ksheet:	
1	. ———			Total % Cover of:	Multipl	ly by:
2					x 1 = 0	
3				FACW species 15	x 2 = <u>30</u>	
4 5.				FAC species 0	x 3 = 0	
- O		= Total Co	ver	FACU species 0		
Herb Stratum (Plot size: 5 ft r)	-	10101 00	VOI		x 5 = 42	
1. Bromus inermis	60		UPL	Column Totals: 100	(A) <u>45</u>	5 (B)
2. Descurainia sophia	15		UPL	Prevalence Index	= B/A = 4.55	
3. Juncus balticus	15		FACW	Hydrophytic Vegetation		
4. Euphorbia esula	5		UPL	1 - Rapid Test for H	lydrophytic Veget	ation
5. Thlaspi arvense	5		UPL	2 - Dominance Tes	t is >50%	
6	·			3 - Prevalence Inde	x is ≤3.0 ¹	
7				4 - Morphological A		
8					s or on a separate	: sheet)
9				5 - Wetland Non-Va		1 (= 1 - 1 - 1
10				Problematic Hydrop		
11	400			¹ Indicators of hydric soil be present, unless distu		
Woody Vine Stratum (Plot size: 30 ft r	100	= Total Cov	er		·	
1				Hydrophytic		
2.				Vegetation		
	_	= Total Cov	/er	Present? Yes	s No _	
% Bare Ground in Herb Stratum 0						
Remarks:						
Data point is dominated by Bromus in	nermis.					

SOIL Sampling Point: DP10U

Profile Desc	cription: (Descri	be to the dep	th needed to docu	ment the i	ndicator	or confirm	n the absence	of indicators.)
Depth	Matrix			x Feature	4			
(inches)	Color (moist)		Color (moist)	%	Type'	Loc ²	<u>Texture</u>	Remarks
0-6	10YR 4/2	100					Loam	
6 - 16	10YR 4/2	100					Sandy Loam	
-								
_								
				-				
	-			_				
-								
¹ Type: C=C	oncentration, D=D	epletion, RM=	Reduced Matrix, C	S=Covered	d or Coate	d Sand Gr	rains. ² Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to all	LRRs, unless othe	rwise not	ed.)		Indicato	ors for Problematic Hydric Soils ³ :
Histosol	` '		Sandy Redox (m Muck (A10)
	pipedon (A2)		Stripped Matrix	` '			·	d Parent Material (TF2)
	istic (A3)		Loamy Mucky	•		MLRA 1)	· · · · · · · · · · · · · · · · · · ·	ry Shallow Dark Surface (TF12)
	en Sulfide (A4) d Below Dark Surf	faco (A11)	Loamy Gleyed Depleted Matri		(1)		Oth	er (Explain in Remarks)
	ark Surface (A12)		Depleted Matri	. ,			3Indicate	ors of hydrophytic vegetation and
	Jucky Mineral (S1		Depleted Dark	, ,				and hydrology must be present,
-	Sleyed Matrix (S4)		Redox Depres	,	,			ss disturbed or problematic.
Restrictive	Layer (if present)):	-					
Type:								
Depth (in	ches):						Hydric Soil	I Present? Yes No
Remarks:								
No hydri	ic soil indic	ators obs	served.					
HYDROLO	GY							
	drology Indicato	rs:						
_			l; check all that app	lv)			Seco	ndary Indicators (2 or more required)
	Water (A1)	-		ined Leav	es (B9) (e :	xcept		Vater-Stained Leaves (B9) (MLRA 1, 2,
<u> </u>	ater Table (A2)			1, 2, 4A, a				4A, and 4B)
Saturati			Salt Crust		,			Orainage Patterns (B10)
Water M	, ,		Aquatic Ir	' '	s (B13)		·	Dry-Season Water Table (C2)
	nt Deposits (B2)		Hydrogen					Saturation Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Oxidized	Rhizosphe	res along	Living Roc	ots (C3) C	Geomorphic Position (D2)
Algal Ma	at or Crust (B4)		Presence	of Reduce	ed Iron (C4	1)	s	Shallow Aquitard (D3)
Iron Der	oosits (B5)		Recent Iro	on Reducti	on in Tilled	d Soils (C6	6) <u> </u>	FAC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stunted o	r Stressed	Plants (D	1) (LRR A	.) F	Raised Ant Mounds (D6) (LRR A)
Inundati	on Vis ble on Aeri	al Imagery (B	7) Other (Ex	plain in Re	emarks)		F	Frost-Heave Hummocks (D7)
Sparsely	y Vegetated Conc	ave Surface (I	38)					
Field Obser	vations:							
Surface Wat	er Present?		No Depth (ir					
Water Table	Present?	Yes I	No <u> </u>	iches):				
Saturation P		Yes I	No <u> </u>	iches):		Wetl	and Hydrolog	y Present? Yes No
	oillary fringe) corded Data (stre	am gauge mo	nitoring well, aerial	nhotos nr	evious ins	nections)	if available:	
Describe rec	oorded Data (offer	am gaage, me	mitoring wen, dend	priotos, pr	CVIOGO IIIO	peotiono),	ii avaliabic.	
Remarks:								
No evida	ence of wet	tland hvo	Irology obse	rved				
140 SVIG	SINCE OF WE	iana nye	nology obse	ı vcu.				

Project/Site: Silicon Mountain		City/Co	ounty: Silver	Bow County Sampling Date: 2023-07-07
Applicant/Owner: MDT			-	State: Montana Sampling Point: DP10W
Investigator(s): S Weyant, K Kane				Range: S24 T3N R9W
Landform (hillslope, terrace, etc.): Closed Depression				
			•	Long: -112.661387 Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannix				
Are climatic / hydrologic conditions on the site typical for thi				· · · · · · · · · · · · · · · · · · ·
				e "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology r				needed, explain any answers in Remarks.)
				locations, transects, important features, etc.
	lo	<u> </u>		, , ,
	lo		Is the Sample	ed Area
Wetland Hydrology Present? Yes N	lo		within a Wetl	and? Yes V No
Remarks:		•		
PEM, riverine wetland.				
VEGETATION – Use scientific names of plan	ıts.			
	Absolute	Domi	nant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft r			ies? Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: $\frac{2}{}$ (A)
2				Total Number of Dominant
3				_ Species Across All Strata: 2 (B)
4	0	= Tota	al Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)
Sapling/Shrub Stratum (Plot size: 5 ft r)		_		Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species 50 x 1 = 50
3				FACW species 20 x 2 = 40
4				FAC species 10 x 3 = 30
5	0	T-4-	-1.0	FACU species <u>0</u> x 4 = <u>0</u>
Herb Stratum (Plot size: 5 ft r)	<u> </u>	_ = 1018	al Cover	UPL species 10 x 5 = 50
1. Carex aquatilis	50		OBL	Column Totals: <u>90</u> (A) <u>170</u> (B)
2. Juncus balticus	20		FACW	Prevalence Index = B/A = 1.89
3. Leymus cinereus	10		FAC	Hydrophytic Vegetation Indicators:
4. Euphorbia esula	5		UPL	_
5. Thlaspi arvense	5		UPL	_ <u>✓</u> 2 - Dominance Test is >50%
6	_			$\underline{\checkmark}$ 3 - Prevalence Index is ≤3.0 ¹
7				4 - Morphological Adaptations (Provide supporting
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants Problematic Hydrophytic Vegetation (Explain)
10				Indicators of hydric soil and wetland hydrology must
11	90		L Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 30 ft r		_= 10ta	l Cover	
1				Hydrophytic
2.				Vegetation
	0		l Cover	Present? Yes No No
% Bare Ground in Herb Stratum 10.0				
Remarks:		_		
Evidence of hydrophytic vegetation incl	ludes a	posit	ive domin	ance test, a positive rapid test, and a
prevalence index less 3.0.				

B-61

SOIL Sampling Point: DP10W

Profile Desc	ription: (Describ	e to the de	oth needed to docur	nent the	indicator	or confirm	the absence	e of indicators.)
Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	7.5YR 4/2	100					Loam	Many roots
6 - 12	10YR 4/2	95	10YR 5/8	5	С	PL / M	Loam	C along living roots
12 - 16	10YR 3/2	90	7.5YR 4/6	10	С	PL / M	Loam	
	-	<u> </u>						
	-			-			-	
	-				<u> </u>			
					· ——			
							-	
¹ Type: C=Ce	oncentration, D=D	epletion, RM	=Reduced Matrix, CS	S=Covere	d or Coate	d Sand Gr	ains. ² Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to all	LRRs, unless other	rwise not	ed.)		Indicate	ors for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy Redox (S5)			2 c	m Muck (A10)
Histic Ep	oipedon (A2)		Stripped Matrix	(S6)			Re	d Parent Material (TF2)
Black Hi	stic (A3)		Loamy Mucky N			MLRA 1)		ry Shallow Dark Surface (TF12)
	n Sulfide (A4)		Loamy Gleyed	•	2)		Oth	ner (Explain in Remarks)
	d Below Dark Surf	ace (A11)	✓ Depleted Matrix				2	
	ark Surface (A12)		Redox Dark Su	` '				ors of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted Dark	•	•			and hydrology must be present,
	Gleyed Matrix (S4)		Redox Depress	sions (F8)			unie	ss disturbed or problematic.
_	Layer (if present)	•						
Type:								
	ches):						Hydric Soi	I Present? Yes No
Remarks:								
Promine	nt redoxima	orphic c	oncentrations	s com	mon w	ithin th	ne denlet	ted matrix
		J. p 0						
HYDROLO	GY							
	drology Indicator	c·						
			d; check all that appl	v)			Seco	andary Indicators (2 or more required)
	•	i one require			(00 (DO) (0	waant		<u> </u>
·	Water (A1)		Water-Sta		, , ,	xcept	— '	Water-Stained Leaves (B9) (MLRA 1, 2,
_	ater Table (A2)			1, 2, 4A,	and 4B)		_	4A, and 4B)
Saturation	` '		Salt Crust	` ,	(5.40)			Orainage Patterns (B10)
·	larks (B1)		Aquatic In					Ory-Season Water Table (C2)
· ——	nt Deposits (B2)		Hydrogen					Saturation Visible on Aerial Imagery (C9)
-	posits (B3)		Oxidized F		_	_		Geomorphic Position (D2)
_	at or Crust (B4)		Presence					Shallow Aquitard (D3)
-	osits (B5)					d Soils (C6		FAC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stunted or	Stressec	l Plants (D	1) (LRR A)		Raised Ant Mounds (D6) (LRR A)
Inundati	on Vis ble on Aeria	al Imagery (E	37) Other (Exp	olain in Re	emarks)		F	Frost-Heave Hummocks (D7)
Sparsely	/ Vegetated Conca	ave Surface	(B8)					
Field Obser	vations:							
Surface Wat	er Present?	Yes	No Pepth (in	ches):		_		
Water Table	Present?	Yes	No Depth (in	ches):		_		
Saturation P	resent?	Yes	No V Depth (in	ches):		Wetla	and Hydrolog	yy Present? Yes No
(includes cap	oillary fringe)						if a callable.	
Describe Re	corded Data (strea	ını gauge, m	onitoring well, aerial	pnotos, pi	evious ins	pections),	ıı avallable:	
Remarks:								
Evidence	e of wetland	d hydrol	ogy includes	oxidiz	zed rhi	zopher	res along	living roots, geomorphic
		_	neutral test.			=		
Pooldon	, and poole			JUI 111	3131.			
İ								

Project/Site: Silicon Mountain		City/Co	ounty: Si	ilver Bo	ow County	Sampling Date: 2023-07-	07
Applicant/Owner: MDT	_	•			State: Montana	Sampling Point: DP11U	
• •					nge: S24 T3N R9W	. •	
						Slope (%): 0	
Subregion (LRR): E 44							3
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannix					=		
Are climatic / hydrologic conditions on the site typical for thi					<u></u>		
Are Vegetation, Soil, or Hydrology						resent? Yes No	
Are Vegetation, Soil, or Hydrology i	-						
SUMMARY OF FINDINGS – Attach site map					eeded, explain any answer	,	tc.
Hydrophytic Vegetation Present? Yes N			. 31				
Hydric Soil Present? Yes N	10 V		Is the S				
Wetland Hydrology Present? Yes N	10		within a	a Wetlar	nd? Yes	No	
Remarks:							
Sample point is located approximate	ely 1' foc	ot hi	gher i	in ele	vation than pair	ed wetland point.	
VEGETATION – Use scientific names of plar	nte.						
VEGETATION - Ose scientific flames of plan	Absolute	Domi	inant Inc	dicator	Dominance Test works	sheet:	
Tree Stratum (Plot size: 30 ft r	% Cover				Number of Dominant Sp		
1					That Are OBL, FACW, o		
2					Total Number of Domina	ant	
3					Species Across All Strat	^	
4					Percent of Dominant Sp	necies	
Continue/Charle Charles (Districe 15 ft r	0	_ = Tota	al Cover		That Are OBL, FACW, o		3)
Sapling/Shrub Stratum (Plot size: 15 ft r)					Prevalence Index work	sheet:	
1					Total % Cover of:	Multiply by:	
2.					OBL species 1	x 1 = 1	
3					FACW species 15	x 2 = <u>30</u>	
45.		-			FAC species 40	x 3 = 120	
J	0	= Tota	al Cover		FACU species 6		
Herb Stratum (Plot size: 5 ft r)	<u> </u>	1018	ai Covei			x 5 = <u>50</u>	
1. Elymus trachycaulus	20		<u> </u>	AC	Column Totals: 72	(A) <u>225</u> (B)
2. Poa pratensis	20		<u> </u>	AC	Prevalence Index	= R/A = 3.13	
3. Juncus balticus	15		<u> </u>	ACW	Hydrophytic Vegetatio		
4. Thlaspi arvense	10		<u>U</u>	PL	1 - Rapid Test for H	lydrophytic Vegetation	
5. Sisymbrium altissimum	_ <u>5</u>		F/	ACU	✓ 2 - Dominance Test	t is >50%	
6. Veronica americana	_ 1			<u>BL</u>	3 - Prevalence Inde	ex is ≤3.0 ¹	
7. Taraxacum officinale	_ 1		F	ACU		daptations ¹ (Provide supportin	ng
8						s or on a separate sheet)	
9					5 - Wetland Non-Va		
10					1 	ohytic Vegetation ¹ (Explain)	
11					'Indicators of hydric soil be present, unless distu	and wetland hydrology must urbed or problematic.	
Woody Vine Stratum (Plot size:)	72	_= Tota	al Cover		p		
1					Livednombyes:		
2.					Hydrophytic Vegetation		
1 <u></u>	_	= Tota	al Cover		Present? Yes	s No	
% Bare Ground in Herb Stratum 28							
Remarks:							

Vegetation at the data point is dominated by facultative species and Juncus balticus, a rhizomatous grass-like plant that often creeps out of adjacent wetlands to persist in non-wetland areas.

SOIL Sampling Point: DP11U

Profile Desc	ription: (Describe	to the de	oth needed to docur	nent the	indicator	or confirm	m the absence of indicators.)
Depth	Matrix			x Feature			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0 - 9	10YR 3/2	100					Sandy Loam
9 - 17	10YR 3/2	98	10YR 5/8	2	С	M	Loam
-							
_							
					•		·
							·
		- ——			· -		
							·
	_						
¹ Type: C=Co	oncentration, D=Dep	letion, RM	=Reduced Matrix, CS	S=Covere	d or Coat	ed Sand Gr	Frains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators: (Applic	able to all	LRRs, unless other	rwise not	ed.)		Indicators for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy Redox (S5)			2 cm Muck (A10)
	ipedon (A2)		Stripped Matrix				Red Parent Material (TF2)
Black His	` '		Loamy Mucky N			t MLRA 1)	
	n Sulfide (A4)		Loamy Gleyed		2)		Other (Explain in Remarks)
	Below Dark Surfac	e (A11)	Depleted Matrix	` '			3
	rk Surface (A12)		Redox Dark Su	, ,			³ Indicators of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted Dark				wetland hydrology must be present,
	leyed Matrix (S4) Layer (if present):		Redox Depress	ions (F8)			unless disturbed or problematic.
	ayer (ii present).						
Type:	ches):						Hydric Soil Present? Yes No
Remarks:	<u> </u>						Hydric Soil Present? Yes No
Remarks.							
No hydri	c soil indicat	ors ob	served.				
•							
HYDROLO	GY						
Wetland Hyd	drology Indicators:						
			ed; check all that appl	v)			Secondary Indicators (2 or more required)
	Water (A1)	no require	Water-Sta		os (B0) (4	ovcont	Water-Stained Leaves (B9) (MLRA 1, 2,
	` ,				. , ,	except	
_	ter Table (A2)			1, 2, 4A,	and 4B)		4A, and 4B)
Saturatio	` '		Salt Crust	, ,	(D.40)		Drainage Patterns (B10)
Water M			Aquatic In				Dry-Season Water Table (C2)
	t Deposits (B2)		Hydrogen		, ,		Saturation Visible on Aerial Imagery (C9)
	osits (B3)				_	-	ots (C3) Geomorphic Position (D2)
	t or Crust (B4)		Presence		•	,	Shallow Aquitard (D3)
	osits (B5)		Recent Iro				
	Soil Cracks (B6)		Stunted or			01) (LRR A)	
Inundation	on Vis ble on Aerial I	magery (E	37) Other (Exp	olain in Re	emarks)		Frost-Heave Hummocks (D7)
Sparsely	Vegetated Concave	e Surface	(B8)				
Field Observ							
Surface Water			No Depth (in				
Water Table	Present? Y	es	No Depth (in	ches):			
Saturation Pr		es	No Depth (in	ches):		Wetla	land Hydrology Present? Yes No
(includes cap		aguag m	onitoring well, aerial	ohotoo ni	ovious in	onoctions)	if available:
Describe Nec	Colueu Dala (Sileali)	gauge, III	oriitoring well, aeriai į	priotos, pr	evious iii	speciions),	, ii avaliabie.
Damada							
Remarks:							
No evide	ence of wetla	nd hv	drology obse	rved.	Soil ex	ctremel	ly dry.
		- 7	3, 22.20				•

Project/Site: Silicon Mountain	(City/Co	ounty: 5	Silver Bo	ow County	Sampling Date:	2023-07-07
Applicant/Owner: MDT		•	, -		State: Montana		
Investigator(s): R Jones					nge: S24 T3N R9W	. 0	
Landform (hillslope, terrace, etc.): Terrace						Slo	pe (%): 2
Subregion (LRR): E 44							
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannix							
Are climatic / hydrologic conditions on the site typical for th							
Are Vegetation, Soil, or Hydrology	-						No
Are Vegetation, Soil, or Hydrology					eded, explain any answe		
SUMMARY OF FINDINGS – Attach site map							eatures, etc.
Hydrophytic Vegetation Present?	No						
	No			Sampled		No	
	No		WILIIII	a Wetlan	iu! Tes	NO	<u>-</u>
Remarks:							
Data point is located in the southern	most ce	ell of	f the	mitiga	ation project are	a.	
VEGETATION – Use scientific names of plan							
Tree Stratum (Plot size: 30 ft r	Absolute % Cover				Dominance Test work		
1					Number of Dominant Sp That Are OBL, FACW, of	or FAC: 1	(A)
2					Total Number of Domin	ant	
3					Species Across All Stra		(B)
4					Percent of Dominant Sp	pecies	
Sapling/Shrub Stratum (Plot size: 15 ft r)	0	= Tota	al Cove	er	That Are OBL, FACW, o	or FAC: 100.0	(A/B)
1					Prevalence Index work		
2					Total % Cover of:		ly by:
3						x 1 = 0	
4					FAC species 10	$\frac{1}{x3} = \frac{130}{30}$	
5					FAC species 10 FACU species 0	x = 0 $x = 0$	
	0	= Tota	al Cove	er	UPL species 5	x 4 = <u>0</u> x 5 = <u>25</u>	
Herb Stratum (Plot size: 5 ft r 1. Juncus balticus	75	v	, ,	FACW	Column Totals: 90	(A) 20	
2. Poa pratensis	10			FAC			(
3 Erysimum inconspicuum	- 10 - 5			UPL	Prevalence Index		
4					Hydrophytic Vegetation ✓ 1 - Rapid Test for H		tation
5					✓ 2 - Dominance Tes		lation
6.					✓ 3 - Prevalence Inde		
7.					4 - Morphological A		vide supportina
8					data in Remarks	s or on a separate	
9					5 - Wetland Non-Va		
10					Problematic Hydron		` ' '
11.					¹ Indicators of hydric soil be present, unless distu		
Woody Vine Stratum (Plot size:)	90	= Tota	I Cove	r	be present, unless diste	Toca of probleme	100.
1							
2.					Hydrophytic Vegetation		
	_		I Cove			s No	
% Bare Ground in Herb Stratum 10		. 0.0					
Remarks:	· <u> </u>						
Juncus balticus is the dominant spe	cies at t	he c	data	point.			

SOIL Sampling Point: DP11W

Depth	cription: (Descri Matri		pth needed to docur Redo	nent the x Featui		or confirm	the absence of	or indicators.)
(inches)	Color (moist)		Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	Remarks
0 - 4	10YR 4/2	100					Silt Loam	
4 - 10	10YR 3/2	88	7.5YR 3/6	7	С	PL / M	Clay Loam	
4 - 10			7.5YR 2.5/1	5	_ <u>_</u>	PL / M		
10 - 16	10YR 4/2	95	7.5YR 5/8	5	_ <u>_</u>	PL / M	Silty Clay Loam	
	10111 4/2		7.511(5/6			1 1 7 1 1 1	Only Olay Loans	
						. ———		
	-		·			·	·-	
			M=Reduced Matrix, CS			ed Sand Gra		ation: PL=Pore Lining, M=Matrix.
-		plicable to al	I LRRs, unless other		oted.)			s for Problematic Hydric Soils ³ :
Histosol			Sandy Redox (S	,				Muck (A10)
	pipedon (A2)		Stripped Matrix		T4) /	(MI D A 4)		Parent Material (TF2)
	istic (A3)		Loamy Mucky N			t MLRA 1)		Shallow Dark Surface (TF12)
	en Sulfide (A4) d Below Dark Sui	rface (A11)	Loamy Gleyed ☐ ✓ Depleted Matrix		-2)		Otner	r (Explain in Remarks)
	ark Surface (A12)		Redox Dark Su		6)		3Indicators	s of hydrophytic vegetation and
	Mucky Mineral (S		Depleted Dark					d hydrology must be present,
Sandy C	Gleyed Matrix (S4	·)	Redox Depress				unless	disturbed or problematic.
Restrictive	Layer (if present	t):						
Type:								
Depth (in	ches):						Hydric Soil F	Present? Yes V No No
•	drology Indicato							
-	-	of one require	ed; check all that appl	•	(50) (dary Indicators (2 or more required)
· 	Water (A1)				aves (B9) (e	except		ater-Stained Leaves (B9) (MLRA 1, 2,
	ater Table (A2)				, and 4B)			4A, and 4B)
Saturation	on (A3) 1arks (B1)		Salt Crust Aquatic In	. ,	too (P12)			ainage Patterns (B10) y-Season Water Table (C2)
	nt Deposits (B2)		Aquatic III					turation Visible on Aerial Imagery (C9
·	posits (B3)		✓ Oxidized F		, ,	Living Root		eomorphic Position (D2)
	at or Crust (B4)			•	ced Iron (C	Ū	· / —	allow Aquitard (D3)
	posits (B5)					d Soils (C6)		C-Neutral Test (D5)
	Soil Cracks (B6))1) (LRR A)		nised Ant Mounds (D6) (LRR A)
Inundati	on Vis ble on Aer	rial Imagery (E	B7) Other (Exp	olain in F	Remarks)		Fro	ost-Heave Hummocks (D7)
Sparsely	y Vegetated Cond	cave Surface	(B8)					
Field Obser	vations:		_					
Surface Wat			No Depth (in					
Water Table	Present?		No Pepth (in					,
	pillary fringe)		No Depth (in					Present? Yes No
Describe Re	corded Data (stre	eam gauge, n	nonitoring well, aerial p	photos, I	previous ins	spections), i	f available:	
Remarks:								
Evidence	e of wetlar	nd hvdro	logy includes	oxid	ized rhi	izosphe	eres on liv	ing roots and a positive
		nd hydro	logy includes	oxid	ized rhi	izosphe	eres on liv	ing roots and a positive
	e of wetlar utral test.	nd hydro	logy includes	oxid	ized rhi	izosphe	eres on liv	ring roots and a positive

MDT Montana Wetland Assessment Form (revised March 2008)

8. Wetland size:

9. Assessment area (AA):

1. Project Name: Silicon Mountain Wetland Mitigation Site 2. MDT Project #: STPX 47(024)56 Control #: 50340000

3. Evaluation Date: 11/30/2023 4. Evaluator(s): R Jones, S Weyant, K Kane 5. Wetlands/Site #(s): AA1 - Created Cells 2,3,4

6. Wetland Location(s): i. Legal: T3N,R9W,24 Latitude/Longitude: 45.998062, -112.662144 : Centroid of Cell 2 ii. Approx. Stationing or Mileposts: NA 45.998721, -112.663225 : Centroid of Cell 3

iii. Watershed: 2

Watershed Name, County: Upper Clark Fork, Silver Bow

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

1. Wetlands potentially affected by MDT project

2. Mitigation wetlands; pre-construction

3. X Mitigation wetlands; post-construction

4. Other:

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
D	AB	E	PP	3.00
D	EM	E	SI	92.00
D	SS	E	SI	4.00
D	UB	E	PP	1.00

Abbreviations: (see manual for definitions)

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

46.001174, -112.661948: Centroid of Cell 4

5.210 acres (measured)

5.210 acres (measured)

Modifiers: Excavated (E), Impounded (I), Diked (D), Partly Drained (PD), Farmed (F), Artificial (A)

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

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

12. General condition of AA:

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

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

Comments: (types of disturbance, intensity, season, etc.): The site is stable since construction in 2015. Wetland habitat is well developed and continues to expand. The area surrounding the site is primarily rural with railroad tracks adjacent to cells 2 and 3. Cell 4 is adjacent to the bike path, a home, and a public access parking area.

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Euphorbia esula, Centaurea stoebe, Cirsium arvense, and Linaria vulgaris.

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The AA consists of three constructed wetland cells that are supported by groundwater. Cell 4 contained 0.04-acre of perennial open water/aquatic bed habitat in 2023. Sand Creek is excluded from this AA due to the berms surrounding the wetland cells prohibiting the creek from accessing the wetlands. The surrounding area is comprised of low rolling hills dominated by a sagebrush ecosystem.

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

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

Comments: Palustrine Emergent, Palustrine Scrub-Shrub, Palustrine Aquatic Bed (less than 5% vegetation cover)

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

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

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions): No usable habitat Primary or critical habitat (list species) Secondary habitat (list species) Incidental habitat (list species)

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

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

Sources for documented use (e.g. observations, records, etc): No threatened or endangered species have been reported in the assessment area or the mitigation site (USFWS 2023; MTNHP 2023).

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

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

Primary or critical habitat (list species)

Secondary habitat (list species)

Incidental habitat (list species)

Hoary bat (S3), Preble's shrew (S3),

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

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

Sources for documented use (e.g. observations, records, etc): Observation of the Preble's shrew was confirmed in the vicinity of the mitigation site in 2018. Observations of the additional S3 species have been confirmed in the vicinity of 14C. General Wildlife Habitat Rating: the mitigation site in 2023 (MTNHP 2023).

Cultatantial (based on any of the following Jabaseld).

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

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

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

Structural diversity (see #13)		High						Moderate							Low					
Class cover distribution (all vegetated classes)		Εν	en .			Une	even			Ev	en			Une	even			Ev	en	
Duration of surface water in >=10% of AA	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	А	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α
Low disturbance at AA (see #12i)	Е	Е	Е	Н	Е	E	Н	Н	Е	Н	Н	М	Е	Н	М	М	Е	Н	М	М
Moderate disturbance at AA (see #12i)	Н	Н	Н	Н	Н	Н	Н	М	Н	Н	М	М	Н	М	М	L	Н	М	L	L
High disturbance at AA (see #12i)	М	М	М	L	М	М	L	L	М	М	L	L	М	L	L	L	L	L	L	L

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

Training (about the definition in the in above and the matrix below to arrive at [circle] the fariotional points and rating)											
Fuidance of wildlife use (i)	Wildlife habitat features rating (ii)										
Evidence of wildlife use (i)	Exceptional	High	Moderate	Moderate							
Substantial	1E	.9H	.8H	.7M							
Moderate	.9Н	.7M	.5M	.3L							
Minimal	.6M	.4M	.2L	.1L							

The site demonstrates moderate wildlife use and exceptional wildlife habitat features ratings. Comments:

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

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

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

Duration of surface water in AA		Peri	manent	/ Perei	nnial			Sea	sonal /	Intermi	ttent			Tem	porary	/ Epher	neral	
Aquatic hiding / resting / escape cover	Opt	imal	Adeo	quate	Po	oor	Opt	imal	Adeo	quate	Po	oor	Opt	imal	Adeo	quate	Po	oor
Thermal cover optimal / suboptimal	0	S	0	S	0	S	0	s	0	S	0	S	0	S	0	S	0	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.2L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

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

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

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

If yes, reduce score in i above by 0.1.

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

iii. Final Score and Rating: NA Comments: No fish habitat within AA. Cell 4 has open water but no inlet or outlet.

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

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

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	0 ,	entrenche stream typ			ely entrend stream type		Entrench	ned-A, F, 0 types	3 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

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

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

2 x Bankfull Depth

Bankfull Depth

Bankfull Depth

Slightly Entrenched ER = >2.2			Moderately Entrenched ER = 1.41 – 2.2	Entrenched ER = 1.0 – 1.4				
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type		
	****	1		•		•		

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)?

Comments: The AA is less than 10 acres and berms act as barriers around the wetland cells preventing flooding via in-channel or overbank flow.

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

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

Comments: The wetland cells intercept groundwater seasonally and demonstrate between 1.1 and 5 acres of periodic flooding. Additionally, wetland cell 4 contains 0.04-acre of perennial ponded water.

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

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

Sediment, nutrient, and toxicant input levels within AA	potential to or compour are n sedimentat	deliver levels nds at levels ot substantia ion, sources	unding land of sof sediment such that oth lly impaired. of nutrients contication pres	er functions Minor or toxicants,	developmen nutrients, or t use with po nutrients, o substantially	t for "probable of coxicants or AA otential to delive r compounds so impaired. Majo	waterbodies in recauses" related receives or sure high levels of uch that other for sedimentations of eutrophical	to sediment, rounding land sediments, unctions are n, sources of
% cover of wetland vegetation in AA	>= 7	70%	< 7	0%	>= 7	70%	< 7	0%
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	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: Cells have the potential to receive compounds from the adjacent railroad, roads, and residential area through groundwater and overland flow

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

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

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

Comments: Wave action is possible during seasonal flooding events and in the perennial open water habitat in cell 4. Shoreline vegetation includes species with root stability ratings of 6 or greater. Dominant species includes Juncus balticus, Typha latifolia, Eleocharis palustris, and Salix spp.

14l. Production Export/Food Chain Support:

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

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

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

Α		Vegetat	ed com	onent >	5 acres		Vegetated component 1-5 acres						Vegeta	ted com	ponent <	< 1 acre		
В	Hi	gh	Mod	erate	Lo)W	Hi	gh	Mode	erate	Lo)W	Hi	gh	Mode	erate	Lo	W
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

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

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

X If yes, add 0.1 to the score in ii

iv. Final Score and Rating: 0.90H Comments: Wetland cells contain a subsurface outlet and have vegetated buffers.

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 Wetland cocurs at the toe of a natural slope AA permanently flooded during drought periods Wetland contains an outlet, but no inlet X 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 [circle] 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 T None Groundwater Discharge or Recharge 1H 7M 4M 1L Insufficient Data/Information N/A Comments: Mitigation cells are designed to intercept a shallow groundwater aquifer. 14K. Uniqueness: i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating) AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "S2" by the MTNHP AA does not contain previously cited rare types and structural diversity (#13) is high or contains plant associations and structural diversity (#13) is low-moderate	i. Discharge Indicators				i	i. Recharge	Indicators			
Vegetation growing during dormant season/drought Stream is a known "losing' stream; discharge volume decrease Wetland occurs at the toe of a natural slope Other:	The AA is a slope wetland					_		ent without u	nderlying imp	eding layer
Wetland occurs at the toe of a natural slope	Springs or seeps are known	or observed							, , ,	
AA permanently flooded during drought periods Wetland contains an outlet, but no inlet X 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 [circle] the functional points and rating) Duration of saturation at AA Wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER STIEM P/P S/I T None Groundwater Discharge or Recharge 11H 7M 4M 11L Insufficient Data/Information Comments: Mitigation cells are designed to intercept a shallow groundwater aquifer. 14K. Uniqueness: Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating) AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "S'2" by the MTH-PP Estimated relative abundance (#11) rare common abundant rare common abundant association listed as "S'2" by the Moderate disturbance at AA (#12) 1H 9H 8H 7M 7M 5M 5M 5M 3M 3L 12 11L High disturbance at AA (#12) 8H 7M 6M 6M 4M 3L 3L 12 11L Comments: The relative abundance of these wetland types in the watershed basin is abundant (>50 %). Structural diversity at the site is high. 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: (circle) X (iff "Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summany and rating page) III. Rating: Known or Potential Recreation or Education Area Fiviate ownership or public access (no permission required) 2H 1.5H 1.5H Private ownership with general public access (no permission required) 1.15H 1.15H Private ownership with general public access (no permission required) 2.15H 1.5H Private ownership with general public access (no permission required) 2.15H 1.5H Private ownership with general public access (no permission required) 2.15H 1.5H Private ownership with general public access (no permis	Vegetation growing during do	rmant seas	on/drought			Stream is a kr	nown 'losing'	stream; disc	harge volume	e decreases
Wetland contains an outlet, but no inlet	Wetland occurs at the toe of	a natural slo	ре			Other:				
X Shallow water table and the site is saturated to the surface Other:			eriods							
Criteria Duration of saturation at AA Wetlands FROM GROUNDWATER DISCHARGE OF RECIPION AND INCIDENT ASSETTION OF SET O	Wetland contains an outlet, b	ut no inlet								
III. Rating (use the information from i and ii above and the table below to arrive at [circle] the functional points and rating) Duration of saturation at AA Wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM P/P	X Shallow water table and the s	site is satura	ited to the sur	face						
Duration of saturation at AA Wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM P/P S/I T None Groundwater Discharge or Recharge 1H - TM - M - M - I.L Insufficient Data/Information N/A Comments: Mitigation cells are designed to intercept a shallow groundwater aquifer. 14K. Uniqueness: 1. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating) AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "S2" by the MTNHP or pla	Other:									
DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM T	iii. Rating (use the information from i a	and ii above	and the table	below to arr	ive at [circle]	the functiona	al points and	rating)		
P/P S/I T None									7	
Criteria P/P S/I T None Groundwater Discharge or Recharge 1H 7M AW 1L Insufficient Data/Information N/A Comments: Miligation cells are designed to intercept a shallow groundwater aquifer. 14K. Uniqueness: Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating) AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "S2" by the MTNHP which association listed as "S2" by the MTNHP which association listed as "S2" by the MTNHP which association is and a sociation listed as "S2" by the MTNHP which association is and association and association is and association is and association is and association and association is and association is and association is and association association is and association and association is association association is and association is and association and association is and association is and association association is and association is and association is and association is association association association is association association association association association is association and association association association association association and association ass			<u>DISCHA</u>					THE		
Groundwater Discharge or Recharge 1H 7M .4M .1L Insufficient Data/Information N/A Comments: Mitigation cells are designed to intercept a shallow groundwater aquifer. 14K. Uniqueness: A contains fen, bog, warm springs or mature (>80 yr-old) forested welland or plant association listed as "S2" by the MTNHP With 131 is high or contains plant association listed as "S2" by the MTNHP With 131 is high or contains plant association listed as "S2" by the MTNHP With 131 is high or contains plant association listed as "S2" by the MTNHP With 131 is high or contains plant association listed as "S2" by the MTNHP With 131 is high or contains plant association listed as "S2" by the MTNHP With 131 is high or mature (>80 yr-old) forested welland or plant association listed as "S2" by the MTNHP With 131 is high or contains plant association listed as "S2" by the MTNHP With 131 is high or contains plant association listed as "S2" by the MTNHP With 131 is high or contains plant association listed as "S2" by the MTNHP With 131 is high or contains plant association listed as "S2" by the MTNHP With 131 is high or contains plant association listed as "S2" by the MTNHP With 131 is high or contains plant association listed as "S2" by the MTNHP With 131 is high or contains plant association listed as "S2" by the MTNHP With 131 is high structural diversity (#13) is low-moderate. Low disturbance at AA (#12i) 1H 9.H 9.H 8.H 8.H 8.H 8.H 6.M 5M 5M 5M 5M 4.M 3.L 3.L 2.L 1.L 1.L Comments: The relative abundance of these wetland types in the watershed basin is abundant (>50M 5M 4M 3.L 3.L 2.L 1.L 1.L Comments: The relative abundance of these wetland types in the watershed basin is abundant (>50M 5M 5M 4M 3.L 3.L 2.L 1.L 1.L 1.L 1.L 1.L 1.L 1.L 1.L 1.L 1				<u>G</u>	ROUNDWA	ER SYSTEM	<u>I</u>			
Insufficient Data/Information N/A Insufficient N/A Insufficient Data/Information N/A Insufficient N/A Insufficient Data/Information N/A Insufficient	Criteria		P/P		S/I	Т		None	<u> </u>	
AA contains fen, bog, warm springs or mature (-80 yr-old) forested wetland or plant association listed as "S1" by the MTNHP Estimated relative abundance (#11) rare common abundant rare common abundant sociation sold sisturbance at AA (#12i) 9H 8H .7M .7M .5M .4M .3L .3L .2L .1L High disturbance at AA (#12i) .8H .7M .6M .6M .4M .3L .3L .2L .1L Comments: The relative abundance of these wetland types in the watershed basin is abundant rec./ded. site: (circle) X (if "Yes" continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) i. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; Consumptive rec.; Consumptive rec.; Consumptive rec.; Single AB .15H .15H .15H Private overall site as used for educational studies by students at Montana State University and Montana Tech. General Site Notes	Groundwater Discharge or Rechar	ge	1H		.7M	.4M		.1L]	
AA contains fen, bog, warm springs or mature (>80 yr-old) forested welland or plant association listed as "S1" by the MTNHP Estimated relative abundance (#11)				-		A]	
Replacement potential AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "\$1" by the MTNHP Estimated relative abundance (#11) rare common abundant light for situation disturbance at AA (#12i) 1H 9H 8H 8H 8H 6M 5M 4M 3L 3L 2L 1High disturbance at AA (#12i) 8H 7M 1AM 3L 3L 2L 1High disturbance at AA (#12i) 8H 7M 1AM 3L 3L 2L 1L 3L 3L 2L 1L 3L 3L 3L 2L 1L 3L	Comments: Mitigation cells are designated	gned to inter	cept a shallow	v groundwat	er aquifer.				_	
Replacement potential AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "51" by the MTNHP Estimated relative abundance (#11) rare common abundant MK Uniqueness										
AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "S1" by the MTNHP Estimated relative abundance (#11)		use the mat	riv below to a	rrive at [circle	al the functio	nal pointe an	d rating)			
Replacement potential Restimated relative abundance (#11) Restimated relati	. Kating (working from top to bottom,	use the mat	inx below to al	inve at [circi						
Replacement potential Of inflating (280 yf-30t) lorested wetland or plant association listed as "S2" by the without or plant association listed as "S2" by the MTNHP Estimated relative abundance (#11) rare common abundant rare										
## Association listed as "S2" by the MTNHP association abundant association listed as "S2" by the MTNHP association abundant are common abundant rare common abundant association listed as "S2" by the MTNHP association abundant association listed as "S2" by the MTNHP association abundant are common abundant rare common abundant association listed as "S2" by the MTNHP association abundant association listed as "S2" by the MTNHP association abundant are common abundant rare common abundant rare common abundant solution abundant set with moderate common abundant association listed as "S2" by the MTNHP association abundant association listed as "S2" by the MTNHP association abundant association listed as "S2" by the MTNHP association abundant association listed as "S2" by the MTNHP association abundant rare common abundant rare common abundant rare common abundant set with a solution abundant as sociation abundant association abundant are common abundant rare common abundant rare common abundant association abundant association abundant association abundant association abundant association abundant are common abundant are common abundant are commo	Replacement potential									
Estimated relative abundance (#11) rare common abundant common abun	, , , , , , , , , , , , , , , , , , ,							structura		3) is low-
Low disturbance at AA (#12i) 1H 9H 8H 8H 8H 6M 5M .5M .4M .4M .3L Moderate disturbance at AA (#12i) 9H 8H .7M .7M .5M .5M .4M .4M .3L .2L High disturbance at AA (#12i) 8H .7M .6M .6M .6M .4M .3L .3L .2L .1L Comments: The relative abundance of these wetland types in the watershed basin is abundant (>50%). Structural diversity at the site is high. 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: (circle) X (if 'Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) iii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; Non-consumptive rec.; Other: Consumptive rec.; X Non-consumptive rec.; IIII. Rating:		as		INIT		MTNHP			moderate	
Moderate disturbance at AA (#12i) 9H .8H .7M .7M .5M .4M .4M .3L .2L .1L .1D .2D .8H .7M .6M .6M .6M .4M .3L .3L .2L .1L .2D .1L .2D .3L .3L .2L .1L .2D .3L .3L .2L .1L .2D .3L .3L .3L .2L .1L .2D .3L	Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
High disturbance at AA (#12i) 8.H .7M .6M .6M .4M .3L .3L .2L .1L Comments: The relative abundance of these wetland types in the watershed basin is abundant (>50%). Structural diversity at the site is high. 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: (circle) X (if 'Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) ii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: Known or Potential Recreation or Education Area Known or Potential Recreation or Education Area Public ownership or public easement with general public access (no permission required) Private ownership with general public access (no permission for public access 1.1M .05L Comments: This AA is at a mitigation site that has potential to be used for educational purposes, has public ownership, and allows general public access. The site is used for educational studies by students at Montana State University and Montana Tech.	Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L
Comments: The relative abundance of these wetland types in the watershed basin is abundant (>50%). Structural diversity at the site is high. 14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity) 1. Is the AA a known or potential rec./ed. site: (circle) X (if 'Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) 16. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: 16. Rating: 17. Known or Potential Recreation or Education Area Known or Potential Recreation or Education Area Public ownership or public easement with general public access (no permission required) 17. Private ownership with general public access (no permission for public access 1.1 M 0.5 L 18. Comments: This AA is at a mitigation site that has potential to be used for educational purposes, has public ownership, and allows general public access. The site is used for educational studies by students at Montana State University and Montana Tech.	Madarata disturbance at AA (#10)	9H	.8H	.7M	.7M	.5M	4M	.4M	31	.2L
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: (circle) X (if 'Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) ii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: Known or Potential Recreation or Education Area Known Potential Public ownership or public easement with general public access (no permission required) .15H .1M Private ownership with general public access, or requiring permission for public access .1M .05L Comments: This AA is at a mitigation site that has potential to be used for educational purposes, has public ownership, and allows general public access. The site is used for educational studies by students at Montana State University and Montana Tech. General Site Notes	woderate disturbance at AA (#121)								.0=	
ii. Is the AA a known or potential rec./ed. site: (circle) X (if 'Yes' continue with the evaluation; if 'No' then mark overall summary and rating page) iii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: Consumptive rec. X Non-consumptive rec	High disturbance at AA (#12i)	.8H	.7M				.3L	.3L	.2L	
i. Is the AA a known or potential rec./ed. site: (circle) X (if 'Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) ii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: Known or Potential Recreation or Education Area	High disturbance at AA (#12i)	.8H	.7M				.3L	.3L	.2L	
overall summary and rating page) ii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: Consumptive rec.; X Non-consumptive rec.;	High disturbance at AA (#12i) Comments: The relative abundance	.8H of these we	.7M tland types in	the watersh	ed basin is a	bundant (>50	.3L %). Structura	.3L	.2L	
ii. Rating: Consumptive rec.; X Non-consumptive rec.; X Non-consu	High disturbance at AA (#12i) Comments: The relative abundance 14L. Recreation/Education Potentia	.8H of these we	.7M tland types in onus" points i	the watersho	ed basin is a srecreation	bundant (>50 or education	.3L %). Structura opportunity)	.3L al diversity at	.2L t the site is hi	gh.
Other: Comments: This AA is at a mitigation site that has potential to be used for educational studies by students at Montana State University and Montana Tech. Comment	High disturbance at AA (#12i) Comments: The relative abundance 14L. Recreation/Education Potential i. Is the AA a known or potential rec	.8H of these we l: (affords "b	.7M tland types in onus" points i	the watersho	ed basin is a srecreation	bundant (>50 or education	.3L %). Structura opportunity)	.3L al diversity at	.2L t the site is hi	gh.
Known or Potential Recreation or Education Area Public ownership or public easement with general public access (no permission required) Private ownership with general public access (no permission required) Private or public ownership without general public access, or requiring permission for public access 1M 05L Comments: This AA is at a mitigation site that has potential to be used for educational purposes, has public ownership, and allows general public access. The site is used for educational studies by students at Montana State University and Montana Tech.	High disturbance at AA (#12i) Comments: The relative abundance 14L. Recreation/Education Potential i. Is the AA a known or potential rec overall summary and rating pa	.8H of these we I: (affords "b ./ed. site: (dage)	.7M tland types in onus" points it	the watershot f AA provide f 'Yes' contin	ed basin is a s recreation ue with the e	bundant (>50 or education evaluation; if '	.3L %). Structura opportunity) No' then man	.3L al diversity at k NA a	.2L the site is high	gh.
Known or Potential Recreation or Education AreaKnownPotentialPublic ownership or public easement with general public access (no permission required).2H.15HPrivate ownership with general public access (no permission required).15H.1MPrivate or public ownership without general public access, or requiring permission for public access.1M.05LComments: This AA is at a mitigation site that has potential to be used for educational purposes, has public ownership, and allows general public access. The site is used for educational studies by students at Montana State University and Montana Tech.General Site Notes	High disturbance at AA (#12i) Comments: The relative abundance 14L. Recreation/Education Potential i. Is the AA a known or potential rec overall summary and rating pa	.8H of these we I: (affords "b ./ed. site: (dage)	.7M tland types in onus" points it circle) X (if	the watershot f AA provide f 'Yes' contin	ed basin is a s recreation ue with the e	bundant (>50 or education evaluation; if '	.3L %). Structura opportunity) No' then man	.3L al diversity at k NA a	.2L the site is high	gh.
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Private ownership with general public access (no permission required) Private or public ownership without general public access, or requiring permission for public access 1M 05L Comments: This AA is at a mitigation site that has potential to be used for educational purposes, has public ownership, and allows general public access. The site is used for educational studies by students at Montana State University and Montana Tech. General Site Notes	High disturbance at AA (#12i) Comments: The relative abundance 14L. Recreation/Education Potential i. Is the AA a known or potential rec overall summary and rating pa ii. Check categories that apply to the	.8H of these we I: (affords "b ./ed. site: (dage)	.7M tland types in onus" points it circle) X (if	the watershot f AA provide f 'Yes' contin	ed basin is a s recreation ue with the e	bundant (>50 or education evaluation; if '	.3L %). Structura opportunity) No' then man	.3L al diversity at k NA a	.2L the site is high	gh.
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AA-1 includes 5.17 acres of wetland habitat and 0.04 acre of aquatic bed/open water habitat in 2025.	High disturbance at AA (#12i) Comments: The relative abundance 14L. Recreation/Education Potential i. Is the AA a known or potential rec overall summary and rating pa iii. Check categories that apply to the iii. Rating: Known or Potential Recreation or Ed Public ownership or public easem Private ownership with general pu Private or public ownership without comments: This AA is at a mitigation access. The site is used	.8H of these we l: (affords "b ./ed. site: (c age) ne AA: X //// //// //// //// //// //// ////	.7M tland types in onus" points in circle) X (if Educational/s Other: a neral public a c (no permiss as public access as potential to	the watership f AA provide f 'Yes' continue scientific stud access (no ion require s, or requiring be used for	ed basin is a s recreation ue with the e dy;Con permission d) ng permission educational	bundant (>50 or education evaluation; if ' sumptive rec. required) on for public purposes, has	.3L %). Structura opportunity) No' then man .; X Non-c access s public owner	.3L al diversity at the last onsumptive Known .2H .15H .1M ership, and a	.2L the site is high nd proceed to rec.; Potential .15H .1M .05L	gh.
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Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0.00	1	0.00	
B. MT Natural Heritage Program Species Habitat	М	0.50	1	2.61	
C. General Wildlife Habitat	Н	0.90	1	4.69	*
D. General Fish Habitat	NA				
E. Flood Attenuation	NA				
F. Short and Long Term Surface Water Storage	М	0.60	1	3.13	
G. Sediment/Nutrient/Toxicant Removal	Н	1.00	1	5.21	*
H. Sediment/Shoreline Stabilization	М	0.60	1	3.13	
I. Production Export/Food Chain Support	Н	0.90	1	4.69	*
J. Groundwater Discharge/Recharge	М	0.70	1	3.65	*
K. Uniqueness	М	0.50	1	2.61	
L. Recreation/Education Potential (bonus points)	Н	0.20	1	1.04	
Totals:		5.90	9.00	30.76	
Percent of Possible Score			66%		

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
X Score of .9 or 1 functional point for General Wildlife Habitat; or
Score of .9 or 1 functional point for General Fish Habitat; or
"High" to "Exceptional" ratings for both General Wildlife Habitat and General Fish/Aquatic Habitat; or
Score of .9 functional point for Uniqueness; or
X Percent of possible score > 65% (round to nearest whole #).
Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)
Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)
"Low" rating for Uniqueness; and
Vegetated wetland component 1 acre (do not include upland vegetated buffer); and
Percent of possible score 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: II

Summary Comments: AA-1 is comprised of excavated wetland cells which rate as Category II.

MDT Montana Wetland Assessment Form (revised March 2008)

Silicon Mountain Wetland Mitigation Site 2. MDT Project #: 1. Project Name: STPX 47(024)56 Control #: 50340000

3. Evaluation Date: 10/01/2021 4. Evaluator(s): R Jones, S Weyant, K Kane 5. Wetlands/Site #(s): AA2 - Created Cells 1 and 5

6. Wetland Location(s): i. Legal: T3N,R9W,24 Latitude/Longitude: 45.999417, -112.661816 : Centroid of Cell 1 46.00231. -112.660885 : Centroid of Cell 5 ii. Approx. Stationing or Mileposts:

iii. Watershed:

Watershed Name, County: Upper Clark Fork, Silver Bow

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

Wetlands potentially affected by MDT project

8. Wetland size: Mitigation wetlands; pre-construction 9. Assessment area (AA):

3. X Mitigation wetlands; post-construction

Other:

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
D	AB	E	PP	5.00
D	EM	E	SI	15.00
D	SS	E	SI	5.00
D	UB	E	PP	75.00

Abbreviations: (see manual for definitions)

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

3.920 acres (measured)

3.920 acres (measured)

Modifiers: Excavated (E), Impounded (I), Diked (D), Partly Drained (PD), Farmed (F), Artificial (A)

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

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

12. General condition of AA:

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

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

Comments: (types of disturbance, intensity, season, etc.): In year 9 post-construction, wetland cells 1 and 5 have established desirable perennial grass, forb, and shrub cover with minimal weeds present. The level of disturbance has declined and the site has stabilized with increasing cover provided by

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Linaria vulgaris, Euphorbia esula, Cirsium arvense, and Centaurea stoebe

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The AA is composed of wetland cells 1 and 5 which are designed to intercept groundwater and include 2.37 acres of open water habitat. The cells have no surface connection to one another. Cell 1 drains into Sand Creek, but is upslope/outside of Sand Creek's active floodplain area. Neither cell is subject to overbank flooding. The AA also includes the emergent and scrubshrub wetland that has developed around the excavated cells.

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

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

Comments: Palustrine Aquatic Bed (w/ less than 5% emergent vegetation), Palustrine emergent, Palustrine scrub-shrub.

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

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

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions): No usable habitat Primary or critical habitat (list species) Secondary habitat (list species) Incidental habitat (list species)

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

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

Sources for documented use (e.g. observations, records, etc): No threatened or endangered species have been reported in the assessment area or the mitigation site (USFWS 2023; MTNHP 2023).

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

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

Primary or critical habitat (list species)

Secondary habitat (list species)

Incidental habitat (list species)

Hoary bat (S3), Preble's shrew (S3),

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

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

Sources for documented use (e.g. observations, records, etc): Observation of the Preble's shrew was confirmed in the vicinity of the mitigation site in 2018. Observations of the additional species have been confirmed in the vicinity of the mitigation site in 2023 (MTNHP 2023).

14C. General Wildlife Habitat Rating:

interviews with local biologists with knowledge of the AA

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

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

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

Structural diversity (see #13)		High						Moderate						Low						
Class cover distribution (all vegetated classes)		Εν	en .			Une	even			Ev	en			Une	even			Ev	en	
Duration of surface water in >=10% of AA	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	А	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α
Low disturbance at AA (see #12i)	E	Е	Е	Н	E	Е	Н	Н	Е	Н	Н	М	E	Н	М	М	E	Н	М	М
Moderate disturbance at AA (see #12i)	Н	Н	Н	Н	Н	Н	Н	М	Н	Н	М	М	Н	М	М	L	Н	М	L	L
High disturbance at AA (see #12i)	М	М	М	L	М	М	L	L	М	М	L	L	М	L	L	L	L	L	L	L

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

in: rating (doc the conclusions no	in rana ii above ana the mat	in below to arrive at [oriole] t	ine tanodonal pointo ana tatil	197							
Evidence of wildlife use (i)	Wildlife habitat features rating (ii)										
Evidence of whalle use (i)	Exceptional	High	Moderate	Moderate							
Substantial	1E	.9H	.8H	.7M							
Moderate	.9Н	.7M	.5M	.3L							
Minimal	.6M	.4M	.2L	.1L							

The site demonstrates moderate wildlife use and exceptional wildlife habitat features. Comments:

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

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

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

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

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

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

a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat? If yes, reduce score in i above by 0.1.

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

iii. Final Score and Rating: NA

Comments: Fish have not been observed in and are not suspected in the AA; Cell 1 drains to Sand Creek, but is upslope and outside of Sand Creek's active floodplain.

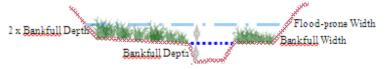
14E. Flood Attenuation: (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, mark **X NA** and proceed to 14F.)

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

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

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

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



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

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)?

Comments: Cells 1 and 5 are upslope/outside of Sand Creek's active floodplain area and not subject to overbank flooding. Cell 1 allows groundwater to outlet to Sand Creek and perpetuate flows in the stream during low water years.

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

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

Comments: Cell 1 and cell 5 support 2.37 acres of open water habitat with an estimated average depth of 1.5 feet. (2.37-acres x 1.5 ft = 3.55 acre feet).

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

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

Sediment, nutrient, and toxicant input levels within AA	potential to or compour are n sedimentat	deliver levels nds at levels ot substantia ion, sources	unding land of sof sediment such that oth lly impaired. of nutrients contication pres	s, nutrients, er functions Minor or toxicants,	developmen nutrients, or t use with po nutrients, o substantially	t for "probable of coxicants or AA otential to delive r compounds so impaired. Majo	waterbodies in recauses" related receives or surrer high levels of uch that other fuor sedimentations of eutrophical	to sediment, rounding land sediments, unctions are n, sources of		
% cover of wetland vegetation in AA	>= 7	70%	< 7	0%	>= 70% < 70%					
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No		
AA contains no or restricted outlet	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L		
AA contains unrestricted outlet	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L		

Comments: Does not achieve 70% wetland vegetation threshold due to the majority of the AA comprising of aquatic bed/open water habitat.

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

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

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

Comments: Vegetation with a rating of 6 or greater include Typha latifolia, Juncus balticus, Eleocharis palustris, Carex nebrascensis, and Salix spp., which surrounds aquatic beds as emergent/scrub-shrub wetland.

14I. Production Export/Food Chain Support:

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

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

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

Α		Vegetat	ed comp	onent >	5 acres		,	Vegetated component 1-5 acres				Vegetated component < 1 acre						
В	Hi	gh	Mode	erate	Lo	w	Hi	gh	Mode	erate	Lo	w	Hi	gh	Mode	erate	Lo	w
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

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

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

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

iv. Final Score and Rating: 1.00H Comments: The AA is surrounded by a 50 foot-wide vegetated upland buffer.

14J. Groundwater Discharge/Recha	rge: (check	the appropria	ite indicators	in i & ii belov	v)					
i. Discharge Indicators The AA is a slope wetland Springs or seeps are known Vegetation growing during do Wetland occurs at the toe of X AA permanently flooded duri Wetland contains an outlet, b X Shallow water table and the	face	ii. Recharge Indicators Permeable substrate present without underlying impeding layer Wetland contains inlet but no outlet Stream is a known 'losing' stream; discharge volume decreases Other:								
Other:										
iii. Rating (use the information from i	and ii above	and the table	below to arr	rive at [circle]	the functiona	al points and	rating)			
			ARGE OR V	on at AA We VITH WATER ROUNDWAT	THAT IS RE	CHARGING				
Criteria		P/P		S/I	T		None]		
Groundwater Discharge or Recha	rge	1H		.7M	.4M		.1L	_		
Insufficient Data/Information				N//	4					
Comments: Wetland cells 1 and 5 and 14K. Uniqueness: i. Rating (working from top to bottom,	use the mate	rix below to a	rrive at [circle	Ť T	nal points an		^	-4 4i		
Replacement potential	or matur wetland o i	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "S1" by the MTNHP			rare types and structural diversity (#13) is high or contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations and structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant	
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L	
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L	
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	.2L	.1L	
14L. Recreation/Education Potential i. Is the AA a known or potential recoverall summary and rating partial. Check categories that apply to the iii. Rating:	Comments: The relative abundance of these wetland types in the watershed basin is common and structural diversity is high. 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: (circle) X (if 'Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) ii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other:								o the	
Known or Potential Recreation or Ed							Known	Potential	_	
Public ownership or public easem					required)		.2H	.15H	-	
Private ownership with general purivate or public ownership without				•	n for nublic	200000	.15H .1M	.1M .05L	-	
Comments: This AA is at a mitigation access. The site is used attracts a variety of water	n site that ha	s potential to nal studies b	be used for y students at	educational p t Montana Sta	ourposed, ha ate University	s public owner and Montar	ership, and a a Tech. The	allows genera e open water l		
AA-2 includes 3.11 acres of wetland habitat and 2.37 acres of aquatic bed/open water habitat in 2023.										
			•							

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0.00	1	0.00	
B. MT Natural Heritage Program Species Habitat	М	0.50	1	1.96	
C. General Wildlife Habitat	Н	0.90	1	3.53	*
D. General Fish Habitat	NA				
E. Flood Attenuation	NA				
F. Short and Long Term Surface Water Storage	Н	0.80	1	3.14	
G. Sediment/Nutrient/Toxicant Removal	M	0.70	1	2.74	
H. Sediment/Shoreline Stabilization	Н	1.00	1	3.92	*
I. Production Export/Food Chain Support	Н	1.00	1	3.92	*
J. Groundwater Discharge/Recharge	Н	1.00	1	3.92	*
K. Uniqueness	М	0.60	1	2.35	
L. Recreation/Education Potential (bonus points)	Н	0.20	1	0.78	
Totals:		6.70	9.00	26.26	
Percent of Possible Score	74%				

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
X Score of .9 or 1 functional point for General Wildlife Habitat; or
Score of .9 or 1 functional point for General Fish Habitat; or
"High" to "Exceptional" ratings for both General Wildlife Habitat and General Fish/Aquatic Habitat; or
Score of .9 functional point for Uniqueness; or
X Percent of possible score > 65% (round to nearest whole #).
Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)
Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)
"Low" rating for Uniqueness; and
Vegetated wetland component 1 acre (do not include upland vegetated buffer); and
Percent of possible score 35% (round to nearest whole #).
·

OVERALL ANALYSIS AREA RATING: II

Summary Comments: AA-2 is comprised of excavated wetland cells which rate as Category II.

MDT Montana Wetland Assessment Form (revised March 2008)

Silicon Mountain Wetland Mitigation Site 2. MDT Project #: 1. Project Name: STPX 47(024)56 Control #: 50340000

3. Evaluation Date: 11/30/2023 4. Evaluator(s): R Jones, S Weyant, K Kane 5. Wetlands/Site #(s): AA3 - Preservation

Latitude/Longitude: 45.999026, -112.661162 : Centroid of 6. Wetland Location(s): i. Legal: T3N,R9W,24

45.998304. -112.663249: Centroid of ii. Approx. Stationing or Mileposts: 46.002752, -112.659714: Centroid of iii. Watershed:

46.002921, -112.657097: Centroid of Watershed Name, County: Upper Clark Fork, Silver Bow

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

Wetlands potentially affected by MDT project 8. Wetland size: 10.380 acres (measured)

Mitigation wetlands; pre-construction 3. X Mitigation wetlands; post-construction 9. Assessment area (AA): 10.380 acres (measured)

Other:

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
D	AB	NA	PP	4.00
D	EM	NA	SI	35.00
D	EM	NA	PP	52.00
D	SS	NA	SI	3.00
D	UB	NA	PP	6.00

Abbreviations: (see manual for definitions)

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

Modifiers: Excavated (E), Impounded (I), Diked (D), Partly Drained (PD), Farmed (F), Artificial (A)

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

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

12. General condition of AA:

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

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

Comments: (types of disturbance, intensity, season, etc.): Construction of the wetland mitigation site in 2014 included substantial excavation to create new wetlands as well as channel realignment/restoration. In 2016, the area surrounding the preserved wetlands was disturbed as a result of the new trail and bridge. Disturbed areas surrounding the preserved wetland areas are stable and well vegetated with desirable species in 2023.

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Cirsium arvense, Centaurea stoebe, Linaria vulgaris, and Euphorbia

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The AA includes pre-existing depressional wetlands adjacent to Sand Creek and south of Silver Bow Creek, and 0.66 acre of open water habitat. Land use surrounding the AA includes commercial developments, agriculture (grazing/pasture), transportation (railroad and highway) and private residences.

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

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

Comments: Palustrine Emergent, Palustrine Scrub-Shrub, Palustrine Aquatic Bed (less than 5% vegetation cover)

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

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

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions): No usable habitat Primary or critical habitat (list species) Secondary habitat (list species) Incidental habitat (list species)

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

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

Sources for documented use (e.g. observations, records, etc): No threatened or endangered species have been reported in the assessment area or the mitigation site (USFWS 2023; MTNHP 2023).

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

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

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

Incidental habitat (list species)

Hoary bat (S3), Preble's shrew (S3),

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

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

Sources for documented use (e.g. observations, records, etc): Observation of the Preble's shrew was confirmed in the vicinity of the mitigation site in 2018. Observations of the additional S3 species have been confirmed in the vicinity of the mitigation site in 2023 (MTNHP 2023).

14C. General Wildlife Habitat Rating:

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

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

X adequate adjacent upland food sources

interviews with local biologists with knowledge of the AA

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

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

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

iii. Itating (use the conclusions not	in rand ir above and the mati	ix below to arrive at [circle] t	ne functional points and fath	19)
Evidence of wildlife use (i)		Wildlife habitat f	eatures rating (ii)	
Evidence of wildlife use (i)	Exceptional	High	Moderate	Moderate
Substantial	1E	.9H	.8H	.7M
Moderate	.9Н	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	.1L

Comments: The site demonstrates moderate use by wildlife.

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

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

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

Duration of surface water in AA		Permanent / Perennial						Seasonal / Intermittent							Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Opt	Optimal		quate	Poor		Optimal		Adequate		Poor		Opt	imal	Adequate		Po	oor		
Thermal cover optimal / suboptimal	0	S	0	S	0	S	0	s	0	S	0	S	0	S	0	S	0	S		
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.2L		
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L		
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L		
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L		

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

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

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

If yes, reduce score in i above by 0.1.

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

iii. Final Score and Rating: NA Comments: No fish habitat within AA.

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

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

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	,	entrenche stream typ			ely entrend stream type		Entrench	ned-A, F, 0 types	3 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

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

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

2 x Bankfull Depth
Bankfull Depth
Bankfull Depth

SI	ightly Entrenche ER = >2.2	d	Moderately Entrenched ER = 1.41 – 2.2		Entrenched ER = 1.0 - 1.4	
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type
	****			4		

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)?
 Comments: The AA is not subject to flooding via in-channel or overbank flow.

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

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

Comments: A majority of the preservation wetlands in this AA have a permanent/perennial water regime and demonstrate an estimated average depth of 1 foot of water during high water events.

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

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

Sediment, nutrient, and toxicant input levels within AA	potential to or compour are no sedimentat	deliver levels ds at levels ot substantia ion, sources	unding land of sof sediment such that oth lly impaired. of nutrients oth cation pres	s, nutrients, er functions Minor or toxicants,	developmen nutrients, or t use with po nutrients, o substantially	t for "probable of coxicants or AA otential to delive r compounds so impaired. Majo	waterbodies in reauses" related receives or surrer high levels of uch that other fuor sedimentations of eutrophical	to sediment, rounding land sediments, unctions are n, sources of
% cover of wetland vegetation in AA	>= 7	70%	< 7	0%	>= 7	0%		
Evidence of flooding / ponding in AA	Yes No		Yes	No	Yes	No	Yes	No
AA contains no or restricted outlet	1H .8H		.7M	.5M	.5M	.4M	.3L	.2L
AA contains unrestricted outlet	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: Evidence of flooding and ponding is present in the preservation wetlands.

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

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

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

Comments: Preservation wetlands in the far eastern portion of the site include a shoreline with standing water. Vegetation includes a mix of Typha latifolia, Carex utriculata and Juncus balticus.

14I. Production Export/Food Chain Support:

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

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

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

Α		Vegetat	ed comp	onent >	5 acres		,	Vegetat	ed comp	onent 1	-5 acres	}	Vegetated component < 1 acre						
В	Hi	gh	Mode	erate	Lo	w	Hi	gh	Mode	erate	Lo	w	Hi	gh	Mode	erate	Lo	w	
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L	
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L	
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L	

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

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

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

iv. Final Score and Rating: 0.80H Comments: Well-vegetated upland buffer around greater than 75 percent of the AA's perimeter.

The AA is a slope wetland X Springs or seeps are known or observed Wetland contains inlet but no outlet X Vegetation growing during dormant season/drought Wetland occurs at the toe of a natural slope Wetland occurs in a known 'losing' stream; discharge volume decreas Other: Wetland occurs at the toe of a natural slope Wetland occurs at the toe of a natural slope Wetland occurs at the toe of a natural slope Wetland occurs at the toe of a natural slope Wetland occurs at the toe of a natural slope Wetland occurs at the formation Interest a substrate present without under occurs at the search of the functional points and rating) At wetlands FROM GROUNDWATER BISCHARGING THE GROUNDWATER SYSTEM PIP Sil T Non A decreased and rating of a subsurface aquifer. 14K. Uniqueness: I. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating) At does not contain previously cited rare types and structural diversity occurs at the types and structural diversity occurs at the types and structural diversity occurs at the types and structural diversity and the types and structural diversity an	i. Discharge Indicators				ii	i. Recharge	Indicators			
X Vegetation growing during dormant season/drought Stream is a known 'losing' stream; discharge volume decreas Wetland occurs at the toe of a natural slope Other:	The AA is a slope wetland							ent without u	nderlying imp	eding layer
Wetland occurs at the loe of a natural slope A permanently flooded during drought periods Wetland contains an outlet, but no inlet X Shallow water table and the site is saturated to the surface Other:	X Springs or seeps are known	or observed			V	Vetland conta	ains inlet but	no outlet		
X AA permanently flooded during drought periods Wetland contains an outlet, but no inlet X Shallow water table and the site is saturated to the surface Other:			-		S	Stream is a kr	nown 'losing'	stream; disc	harge volume	e decreases
Wetland contains an outlet, but no inlet X Shallow water table and the site is saturated to the surface Other:						Other:				
Shallow water table and the site is saturated to the surface Other:			eriods							
Other: Criteria				-f						
Duration of saturation at AA Wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM P/P SA1 T None Groundwater Discharge or Recharge 1H .7M .4M .1L Insufficient Data/Information Comments: Most of the preserved wetlands intercept shallow subsurface groundwater; the large wetland in the NE corner intercepts shallow groundwater and is fed by surface water from a spring that flows out of a subsurface aquifer. 4K. Uniqueness: I. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating) AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "S1" by the MTNHP AA does not contain previously cited rare types and structural diversity (#13) is high or contains plant association listed as "S2" by the MTNHP Estimated relative abundance (#11) rare common abundant rare common abundant Low disturbance at AA (#12) 9H 8H .9H .8H .8H .6M .5M .5M .4M .3L .2L .1H .1Hgh disturbance at AA (#12) .8H .7M .6M .6M .4M .3L .3L .2L .1L Comments: The relative abundance of these wetland types in the watershed basin is common. Structural diversity at the site is high. 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: (circle) X (if "Yes" continue with the evaluation; if 'No' then mark overall summary and rating page) ii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: iii. Rating: Known or Potential Recreation or Education Area Known Potential Private ownership or public access (no permission required) .15H .1M		site is satura	tea to the sur	пасе						
Duration of saturation at AA Wetlands EROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM P/P	Other.									
DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM T None	iii. Rating (use the information from i	and ii above	and the table	below to arr	ive at [circle]	the functiona	al points and	rating)		
Criteria									7	
Criteria P/P S/I T None Groundwater Discharge or Recharge 1H .7M .4M .1L Insufficient Data/Information			DISCH					THE		
Groundwater Discharge or Recharge		<u> </u>	D/D	<u> </u>			<u>. </u>		_	
Insufficient Data/Information Comments: Most of the preserved wetlands intercept shallow subsurface groundwater; the large wetland in the NE corner intercepts shallow groundwater and is fed by surface water from a spring that flows out of a subsurface aquifer. 14K. Uniqueness: i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating) AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "S2" by the MTNHP AA does not contain previously cited rare types and structural diversity (#13) is high or contains plant association listed as "S2" by the MTNHP Estimated relative abundance (#11) rare common abundant rare common abundant rare common abundant common abundant rare common abundant. Low disturbance at AA (#12i) .9H .8H .7M .7M .5M .4M .3L .3L .3L .2L .1L Moderate disturbance at AA (#12i) .8H .7M .6M .6M .4M .3L .3L .3L .2L .1L Comments: The relative abundance of these wetland types in the watershed basin is common. Structural diversity at the site is high. 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: (circle) X (if 'Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) ii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: iii. Rating: Known or Potential Recreation or Education Area Public ownership or public easement with general public access (no permission required) .15H .1M									4	
Comments: Most of the preserved wetlands intercept shallow subsurface groundwater; the large wetland in the NE corner intercepts shallow groundwater and is fed by surface water from a spring that flows out of a subsurface aquifer. 14K. Uniqueness: 1. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating) 1. AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "S1" by the MTNHP 1. AA does not contain previously cited rare types and structural diversity (#13) is high or contains plant association listed as "S2" by the MTNHP 1. BH 9H 8H		rge	1П					.IL	4	
groundwater and is fed by surface water from a spring that flows out of a subsurface aquifer. 14K. Uniqueness: i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating) AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "S2" by the MTNHP AA does not contain previously cited rare types and structural diversity (#13) is high or contains plant association listed as "S2" by the MTNHP Estimated relative abundance (#11) rare common abundant association listed as "S2" by the MTNHP Estimated relative abundance (#11) 1H 9H 8H 8H .6M 5M 5M 5M .4M .3L Moderate disturbance at AA (#12i) .9H .8H .7M .7M .5M .4M .4M .3L .2L High disturbance at AA (#12i) .9H .8H .7M .6M .6M .4M .3L .3L .3L .2L .1L Comments: The relative abundance of these wetland types in the watershed basin is common. Structural diversity at the site is high. 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: (circle) X (if "Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) ii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: Known or Potential Recreation or Education Area Fublic ownership or public easement with general public access (no permission required) 15H .15H .1M	Insufficient Data/Information Comments: Most of the preserved w	etlands inter	cent shallow	subsurface o		-	tland in the N	IF corner int	_ ercents shall	2)//
Replacement potential AA Contains fen, bog, warm springs or mature (>80 yr-old) forested wetland or plant association listed as "S1" by the MTNHP Estimated relative abundance (#11)	14K Uniquanass:									
Low disturbance at AA (#12i)	•	use the mati	rix below to a	ırrive at [circle	1	•		i		
Low disturbance at AA (#12i)	i. Rating (working from top to bottom,	AA contain or matur wetland or	s fen, bog, w e (>80 yr-old plant associ	arm springs) forested iation listed	AA does no rare types (#13) is	ot contain pre and structur high or conta on listed as "	viously cited al diversity ains plant	rare typ	es or associa al diversity (#	tions and
High disturbance at AA (#12i) 8H 7M 6M 6M 4M 3L 3L 2L 1L Comments: The relative abundance of these wetland types in the watershed basin is common. Structural diversity at the site is high. 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: (circle) X (if 'Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) ii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: iii. Rating: Known or Potential Recreation or Education Area Public ownership or public easement with general public access (no permission required) 7.2H 7.5H 7.5H 7.15H 7.15H 7.15H 7.15H 7.15H 7.15H	i. Rating (working from top to bottom, Replacement potential	AA contain or mature wetland or as "S	s fen, bog, w e (>80 yr-old plant associ 61" by the MT	arm springs) forested iation listed ΓΝΗΡ	AA does no rare types (#13) is association	ot contain pre and structur high or conta on listed as "s MTNHP	viously cited ral diversity ains plant S2" by the	rare type structura	es or associa al diversity (# [*] moderate	tions and 13) is low-
Comments: The relative abundance of these wetland types in the watershed basin is common. Structural diversity at the site is high. 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: (circle) X (if 'Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) ii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: iii. Rating: Known or Potential Recreation or Education Area Known Potential Public ownership or public easement with general public access (no permission required) .2H .15H Private ownership with general public access (no permission required) .15H .1M	i. Rating (working from top to bottom, Replacement potential Estimated relative abundance (#11)	AA contain or mature wetland or as "S	s fen, bog, we (>80 yr-old r plant associ61" by the MT common	arm springs) forested iation listed FNHP abundant	AA does no rare types (#13) is association	t contain pre and structur high or conta on listed as " MTNHP common	viously cited ral diversity ains plant S2" by the	rare type structura rare	es or associa al diversity (# moderate common	tions and 13) is low- abundant
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: (circle) X (if 'Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) ii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: Known or Potential Recreation or Education Area Known Potential Public ownership or public easement with general public access (no permission required) .2H .15H Private ownership with general public access (no permission required) .15H .1M	i. Rating (working from top to bottom, Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i)	AA contain or mature wetland or as "S rare	s fen, bog, w e (>80 yr-old plant associ 1" by the MT common .9H	arm springs) forested iation listed FNHP abundant .8H	AA does no rare types (#13) is association rare	t contain pre and structur high or conta on listed as " MTNHP common .6M	viously cited all diversity ains plant S2" by the abundant .5M	rare type structura rare .5M	es or associa al diversity (# moderate common .4M	tions and (3) is low- abundant .3L
i. Is the AA a known or potential rec./ed. site: (circle) X (if 'Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) ii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: Known or Potential Recreation or Education Area Known Potential Public ownership or public easement with general public access (no permission required) .2H .15H Private ownership with general public access (no permission required) .15H .1M	i. Rating (working from top to bottom, Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i)	AA contain or mature wetland or as "S rare 1H .9H .8H	s fen, bog, we (>80 yr-old r plant associat" by the MT common .9H .8H	arm springs) forested iation listed FNHP abundant .8H .7M	AA does no rare types (#13) is associated rare .8H .7M	t contain pre and structur high or conta on listed as " MTNHP common .6M .5M	viously cited al diversity ains plant S2" by the abundant .5M .4M .3L	rare type structura rare .5M .4M	es or associa al diversity (# moderate common .4M .3L .2L	tions and (3) is low- abundant .3L .2L
Known or Potential Recreation or Education Area Known Potential Public ownership or public easement with general public access (no permission required) .2H .15H Private ownership with general public access (no permission required) .15H .1M	i. Rating (working from top to bottom, Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i)	AA contain or mature wetland or as "S rare 1H .9H .8H	s fen, bog, we (>80 yr-old r plant associat" by the MT common .9H .8H	arm springs) forested iation listed FNHP abundant .8H .7M	AA does no rare types (#13) is associated rare .8H .7M	t contain pre and structur high or conta on listed as " MTNHP common .6M .5M	viously cited al diversity ains plant S2" by the abundant .5M .4M .3L	rare type structura rare .5M .4M	es or associa al diversity (# moderate common .4M .3L .2L	tions and (3) is low- abundant .3L .2L
Public ownership or public easement with general public access (no permission required) 2H .15H Private ownership with general public access (no permission required) .15H .1M	Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) Comments: The relative abundance 14L. Recreation/Education Potential i. Is the AA a known or potential rec overall summary and rating pa	AA contains or mature wetland or as "S rare 1H .9H .8H of these wet .! (affords "be/ed. site: (cage) ne AA: X	s fen, bog, we (>80 yr-old plant associated plant associa	arm springs) forested iation listed FNHP abundant .8H .7M .6M the watershe if AA provide if 'Yes' contin	AA does no rare types (#13) is association rare .8H .7M .6M .ed basin is consumer with the entertain the consumer with the entertain the same state of the consumer with the entertain the constant with the entertain the con	and structur high or contain on listed as "(MTNHP common .6M .5M .4M ommon. Structur evaluation; if "	viously cited ral diversity ains plant S2" by the abundant .5M .4M .3L ctural diversit opportunity) 'No' then man	rare typestructura rare .5M .4M .3L y at the site	es or associa al diversity (# moderate common .4M .3L .2L is high.	abundant .3L .2L .1L
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	i. Rating (working from top to bottom, Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) Comments: The relative abundance 14L. Recreation/Education Potential i. Is the AA a known or potential rec overall summary and rating pa ii. Check categories that apply to the iii. Rating: Known or Potential Recreation or Ed	AA contain or mature wetland or as "S rare 1H .9H .8H of these wet st./ed. site: (cage) ne AA: X	s fen, bog, we (>80 yr-old r plant associat" by the MT common .9H .8H .7M land types in conus" points ircle) X (intermediate in the control of the control o	arm springs) forested iation listed fNHP abundant .8H .7M .6M the watershe if AA provide if 'Yes' continuscientific stud	AA does no rare types (#13) is associated rare .8H .7M .6M led basin is constructed by the construction of the with the eddy;Construction of the construction of	and structure and structure and structure tight or contain present as "STATE AND ADDRESS A	viously cited ral diversity ains plant S2" by the abundant .5M .4M .3L ctural diversit opportunity) 'No' then man	rare type structura rare .5M .4M .3L y at the site k NA a consumptive	es or associa al diversity (# moderate common .4M .3L .2L is high. nd proceed to rec.;	abundant .3L .2L .1L
Private or public ownership without general public access, or requiring permission for public access 1M 05L 05L	Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) Comments: The relative abundance 14L. Recreation/Education Potential i. Is the AA a known or potential recreation summary and rating partial. Check categories that apply to the summary or Potential Recreation or Education or Potential Recreation or Education or Public easem	AA contain or mature wetland or as "S rare 1H .9H .8H of these wet st./ed. site: (cage) ne AA: X	s fen, bog, we (>80 yr-old replant association by the MT common .9H .8H .7M land types in conus" points ircle) X (incled to the control of th	arm springs) forested iation listed FNHP abundant .8H .7M .6M the watershe if AA provide if 'Yes' continuscientific stud	AA does no rare types (#13) is associated rare .8H .7M .6M led basin is constructed with the eddy;Construction of the construction of the co	and structure and structure and structure tight or contain present as "STATE AND ADDRESS A	viously cited ral diversity ains plant S2" by the abundant .5M .4M .3L ctural diversit opportunity) 'No' then man	rare typestructural rare .5M .4M .3L ry at the site rk NA a consumptive Known .2H	es or associa al diversity (# moderate common .4M .3L .2L is high. nd proceed to rec.; Potential .15H	abundant .3L .2L .1L
Comments: This AA is at a mitigation site that has potential to be used for educational purposes, has public ownership, and allows general public	i. Rating (working from top to bottom, Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) Comments: The relative abundance 14L. Recreation/Education Potential i. Is the AA a known or potential rec overall summary and rating pa iii. Check categories that apply to the iiii. Rating: Known or Potential Recreation or Ed Public ownership or public easem Private ownership with general pu	AA contains or mature wetland or as "S rare 1H .9H .8H of these wet. /ed. site: (cage) ne AA: X	s fen, bog, we (>80 yr-old plant associated by the MT common .9H .8H .7M land types in ponus" points ircle) X (included by the meral public (no permiss	arm springs) forested iation listed FNHP abundant .8H .7M .6M the watershe if AA provide if 'Yes' contin scientific stud access (no	AA does no rare types (#13) is associated. rare .8H .7M .6M ed basin is constructed by: Const	and structur high or contain n listed as " MTNHP common .6M .5M .4M ornmon. Structor evaluation; if ' sumptive rec	viously cited ral diversity ains plant S2" by the abundant .5M .4M .3L ctural diversit opportunity) 'No' then man .; X Non-co	rare typestructural rare .5M .4M .3L ry at the site rk NA a consumptive Known .2H	es or associa al diversity (# moderate common .4M .3L .2L is high. nd proceed to rec.; Potential .15H	abundant .3L .2L .1L

access. The site is used for educational studies by students at Montana otate only and Montana reon.
General Site Notes
AAO: 11 074

General Site Notes	
AA-3 includes 9.71 acres of wetland habitat and 0.66 acre of aquatic bed/open water habitat in 2023.	

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): AA3 - Preservation

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0.00	1	0.00	
B. MT Natural Heritage Program Species Habitat	М	0.50	1	5.19	
C. General Wildlife Habitat	Н	0.90	1	9.34	
D. General Fish Habitat	NA				
E. Flood Attenuation	NA				
F. Short and Long Term Surface Water Storage	Н	1.00	1	10.38	*
G. Sediment/Nutrient/Toxicant Removal	Н	1.00	1	10.38	*
H. Sediment/Shoreline Stabilization	Н	1.00	1	10.38	
I. Production Export/Food Chain Support	Н	0.80	1	8.30	
J. Groundwater Discharge/Recharge	Н	1.00	1	10.38	*
K. Uniqueness	М	0.60	1	6.23	*
L. Recreation/Education Potential (bonus points)	Н	0.20	1	2.08	
Totals: Percent of Possible Score		7.00	9.00 78%	72.66	

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
X Score of .9 or 1 functional point for General Wildlife Habitat; or
Score of .9 or 1 functional point for General Fish Habitat; or
"High" to "Exceptional" ratings for both General Wildlife Habitat and General Fish/Aquatic Habitat; or
Score of .9 functional point for Uniqueness; or
X Percent of possible score > 65% (round to nearest whole #).
Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)
Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)
"Low" rating for Uniqueness; and
Vegetated wetland component 1 acre (do not include upland vegetated buffer); and
Percent of possible score 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: II

Summary Comments: AA-3 is comprised of preservation wetlands across the mitigation site.

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: Silicon Mountain Wetland Mitigation Site 2. MDT Project #: STPX 47(024)56 Control #: 50340000

3. Evaluation Date: 11/30/2023 4. Evaluator(s): R Jones, S Weyant, K Kane 5. Wetlands/Site #(s): AA4 - Created Cell 6

6. Wetland Location(s): i. Legal: T3N,R9W,24 Latitude/Longitude:

ii. Approx. Stationing or Mileposts: NA

iii. Watershed: 2

Watershed Name, County: Upper Clark Fork, Silver Bow

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

Wetlands potentially affected by MDT project

2. Mitigation wetlands; pre-construction

8. Wetland size:

0.017 acres (measured)

9. Assessment area (AA):

0.017 acres (measured)

4. Other:

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
D	EM	Е	SI	100.00

Abbreviations: (see manual for definitions)

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

Modifiers: Excavated (E), Impounded (I), Diked (D), Partly Drained (PD), Farmed (F), Artificial (A)

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

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

12. General condition of AA:

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

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

Comments: (types of disturbance, intensity, season, etc.): Wetland Cell 6 is within the old road alignment. Construction of the wetland included excavation, regrading, and revegetation. Water has not been observed in the excavated portion of the wetland cell during monitoring events since 2020. ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Cirsium arvense, Euphorbia esula, and Centaurea stoebe. iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The AA consists of a depressional wetland and upland buffer at the bottom of a gentle hillslope. Land use surrounding the AA includes commercial developments and transportation (railroad tracks and highway).

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

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

Comments: Palustrine emergent wetland

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

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

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions): No usable habitat Primary or critical habitat (list species) Secondary habitat (list species) Incidental habitat (list species)

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

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

Sources for documented use (e.g. observations, records, etc): No threatened or endangered species have been reported in the assessment area or the mitigation area (USFWS 2023; MTNHP 2023).

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

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

Primary or critical habitat (list species)

Secondary habitat (list species)

Incidental habitat (list species)

Minimal (based on any of the following [check]):

Preble's shrew (S3), Hoary bat (S3),

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

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

Sources for documented use (e.g. observations, records, etc): Observation of the Preble's shrew was confirmed in the vicinity of the mitigation site in 2018. Observations of the additional S3 species have been confirmed in the vicinity of 14C. General Wildlife Habitat Rating: the mitigation site in 2023 (MTNHP 2023).

Substantial (based on any of the following [check]):

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

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

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

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

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

in. Nating (use the condusions from rail in above and the matrix below to arrive at [circle] the functional points and rating)										
Fuldance of wildlife use (i)	Wildlife habitat features rating (ii)									
Evidence of wildlife use (i)	Exceptional	High	Moderate	Moderate						
Substantial	1E	.9H	.8H	.7M						
Moderate	.9H	.7M	.5M	.3L						
Minimal	.6M	.4M	.2L	.1L						

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

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

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

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

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

- ii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1)
- a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat? ____ If yes, reduce score in i above by 0.1.
- b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? If yes, add 0.1 to the adjusted score in i or iia.
- iii. Final Score and Rating: NA Comments: No fish habitat within AA.

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

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

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

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

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

2 x Bankfull Depth
Bankfull Depth
Bankfull Depth

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

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)? ___ Comments: Depressional wetland restricts discharge or drainage to the east toward the railroad tracks.

- **14F. Short and Long Term Surface Water Storage:** (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, mark

 NA and proceed to 14G.)
- i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.11	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	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond < 5 out of 10 years	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: This wetland is subject to ephemeral ponding from precipitation, and overland surface flow.

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

NA and proceed to 14H.)

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

						• •		
Sediment, nutrient, and toxicant input levels within AA	potential to or compour are n sedimentat	deliver levels nds at levels ot substantia ion, sources	unding land of sof sediment such that oth lly impaired. of nutrients contication pres	s, nutrients, er functions Minor or toxicants,	developmen nutrients, or t use with po nutrients, o substantially	t for "probable of toxicants or AA otential to deliver r compounds so impaired. Major	waterbodies in r causes" related receives or surrer high levels of uch that other fu or sedimentation ns of eutrophica	to sediment, rounding land sediments, unctions are n, sources of
% cover of wetland vegetation in AA	>= 7	70%	< 7	0%	>= 7	70%	< 7	0%
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains no or restricted outlet	1H	1H .8H		.5M	.5M	.4M	.3L	.2L
AA contains unrestricted outlet	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: No evidence of flooding or ponding was observed in the wetland cell during the monitoring event.

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

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

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

Comments: This section is no longer applicable due to the lack of evidence or observations of surface water retention.

14I. Production Export/Food Chain Support:

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

General Fish Habitat	General V	Vildlife Habitat Rating	j (14C.iii.)
Rating (14D.iii.)	E/H	M	L
E/H	Н	Н	M
M	Н	M	M
L	M	M	Ĺ
N/A	Н	M	L

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

Α		Vegetat	ed com	onent >	5 acres		Vegetated component 1-5 acres						Vegetated component < 1 acre					
В	B High Moderate Low		W	High Mode		erate	Low		High		Moderate		Low					
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

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

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

X If yes, add 0.1 to the score in ii

iv. Final Score and Rating: 0.30L Comments: There is a 50-foot buffer around the wetland.

i. Discharge Indicators				ii	i. Recharge I	ndicators			
The AA is a slope wetland				F	Permeable su	bstrate prese	ent without u	nderlying imp	eding layer
Springs or seeps are known	or observed	t		V	Vetland conta	ains inlet but	no outlet		
Vegetation growing during do	ormant seas	son/drought		s	Stream is a kr	nown 'losing'	stream; disc	harge volume	e decreases
Wetland occurs at the toe of	a natural sl	ope			Other:				
AA permanently flooded duri	ng drought	periods							
Wetland contains an outlet, b	out no inlet								
Shallow water table and the	site is satur	ated to the sur	face						
X Other: Seasonally high grou	ndwater								
ii. Rating (use the information from i	and ii above	e and the table	below to arr	ive at [circle]	the functions	al points and	rating)		
	1				tlands <i>FROI</i>	•		1	
		<u>DISCH</u>			THAT IS RE		THE		
			GI	<u>ROUNDWA1</u>	ER SYSTEM	<u>1</u>			
Criteria	Ī	P/P		S/I	T		None	1	
Groundwater Discharge or Recha	rge	1H		.7M	.4M		.1L	1	
Insufficient Data/Information				N/A					
Comments: Wetland with seasonal s	surface water	er supported b	y runoff and	precipitation.	•			_	
14K. Uniqueness:									
. Rating (working from top to bottom,	use the ma	trix below to a	rrive at [circle	el the function	nal points an	d rating)			
3 (3 3 4 5				 	t contain pre				
	AA contai	ns fen, bog, w	arm springs		and structur			ot contain pre	
Replacement potential		or mature (>80 yr-old) forested etland or plant association listed			high or conta		rare types or associations an structural diversity (#13) is lov		
		S1" by the MT	association listed as "S2" by the			moderate		13) IS 10W-	
Estimated valetice about days (#441)		_	1		MTNHP	-bd4			
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant .3L
Low disturbance at AA (#12i) Moderate disturbance at AA (#12i)	1H .9H	.9H .8H	.8H .7M	.8H .7M	.6M .5M	.5M .4M	.5M .4M	.4M .3L	.2L
High disturbance at AA (#12i)	.9H	.on	.7 IVI	.7 IVI	.5IVI	.4IVI	.4IVI	.3L .2L	.2L .1L
Comments: Wetlands of this type are			.OIVI	.OIVI	.4101	.JL	.JL	.ZL	. 16
vending of the type and	c abandant	iii tiic arca.							
4L. Recreation/Education Potentia									
. Is the AA a known or potential red	:./ed. site: (circle) (i	f 'Yes' contin	ue with the e	evaluation; if '	No' then mar	rk X NA a	nd proceed to	o the
overall summary and rating pa	age)								
i. Check categories that apply to th	e AA:	_Educational/s	scientific stud	ly;Cons	sumptive rec	.;Non-c	onsumptive	rec.;	
		Other :							
ii. Rating:									
Known or Potential Recreation or Ed	lucation Are	ea					Known	Potential	7
Public ownership or public easem	ent with ge	eneral public	access (no p	permission i	required)		.2H	.15H	7
Private ownership with general pu	ıblic acces	s (no permiss	sion required	d)			.15H	.1M	
	ut general	public access					.1M	.05L	
Private or public ownership witho							. l	regrestion	r education
		oad tracks and	difficult to ac	ccess. This s	site has limite	ed potential to	be used for	recreation of	euucalion.
Comments: The site is very close to		oad tracks and	difficult to ac	ccess. This s	site has limite	ed potential to	be used for	recreation of	- education.
	active railro					•			

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0.00	1	0.00	
B. MT Natural Heritage Program Species Habitat	М	0.50	1	0.01	*
C. General Wildlife Habitat	М	0.40	1	0.01	*
D. General Fish Habitat	NA				
E. Flood Attenuation	NA				
F. Short and Long Term Surface Water Storage	L	0.20	1	0.00	
G. Sediment/Nutrient/Toxicant Removal	М	0.50	1	0.01	*
H. Sediment/Shoreline Stabilization	NA				
I. Production Export/Food Chain Support	L	0.30	1	0.01	
J. Groundwater Discharge/Recharge	М	0.70	1	0.01	*
K. Uniqueness	L	0.30	1	0.01	
L. Recreation/Education Potential (bonus points)	NA				
Totals:		2.90	8.00	0.06	
Percent of Possible Score			36%		

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)
X "Low" rating for Uniqueness; and
X 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: III

Summary Comments: AA-4 is comprised of a small excavated wetland cell.

MDT Montana Wetland Assessment Form (revised March 2008)

Silicon Mountain Wetland Mitigation Site 1. Project Name: 2. MDT Project #: STPX 47(024)56 Control #: 50340000

3. Evaluation Date: 07/06/2023 4. Evaluator(s): R Jones, S Weyant 5. Wetlands/Site #(s): AA5 - Establishment along

Sand Creek 6. Wetland Location(s): i. Legal: T3N,R9W,24

Latitude/Longitude:

45.994964, -112.661128: Upstream Sand ii. Approx. Stationing or Mileposts:

45.996343, -112.661762 : Downstream Sand iii. Watershed: 45.997197, -112.662137 : Upstream Sand Watershed Name, County: Upper Clark Fork, Silver Bow 46.002869, -112.661537 : Downstream Sand

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

___ Wetlands potentially affected by MDT project

Mitigation wetlands; pre-construction 8. Wetland size: 1.960 acres (measured) 3. X Mitigation wetlands; post-construction 9. Assessment area (AA): 1.960 acres (measured)

Other:

10. Classification of Wetland and Aquatic Habitats in AA

	HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
	D	EM	NA	PP	5.00
	R	SS	NA	PP	20.00
Ĭ	R	UB	NA	PP	75.00

Abbreviations: (see manual for definitions)

HGM Classes: Riverine (R), Depressional (D), Slope (S), Mineral Soil Flats (MSF), Organic Soil Flats (OSF), Lacustrine Fringe (LF);

Cowardin Classes: Rock Bottom (RB), Unconsolidated bottom (UB), Aquatic Bed (AB), Unconsolidated Shore (US), Moss-lichen Wetland (ML), Emergent Wetland (EM), Scrub-Shrub Wetland (SS), Forested

Modifiers: Excavated (E), Impounded (I), Diked (D), Partly Drained (PD), Farmed (F), Artificial (A)

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

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

COMMON

12. General condition of AA:

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

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

Comments: (types of disturbance, intensity, season, etc.): Railroad, bike path, roadways and driveways, parking area. Sand Creek comprises approximately 75% of the AA (1.47 acres).

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Centaurea stoebe

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: Land use surrounding the AA includes commercial developments, agriculture (grazing/pasture), transportation (railroad and highway) and private residences.

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

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	Is current management existence of 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	М	< NO	YES>	L
1 class, monoculture (1 species comprises >= 90% of total cover)	L	NA	NA	NA

Comments: AA includes Sand Creek, PEM, and scrub-shrub (willow dominated) wetlands

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

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

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions): No usable habitat

Primary or critical habitat (list species)

Secondary habitat (list species)

Incidental habitat (list species)

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

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

Sources for documented use (e.g. observations, records, etc): USFWS IPaC

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

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

Primary or critical habitat (list species) Westslope cuthroat trout (S2)(S) - S2S3 Secondary habitat (list species)

Hoary bat (S3)(S) - S2S3

Incidental habitat (list species)

Hoary bat (S3)(S) - S2S3

Large flowered beardtongue (S1)(S) - S1

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

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

Sources for documented use (e.g. observations, records, etc): MTNHP Environmental Summary

14C. General Wildlife Habitat Rating:

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

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

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

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

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

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

Comments: Excellent neotropical migrant habitat

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

NA and proceed to 14E.)

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

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

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

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

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

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

If yes, reduce score in i above by 0.1.

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

iii. Final Score and Rating: 0.6M Comments: Potential habitat for Westslope Cutthroat Trout

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

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

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

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

 17 /
 12 =
 1.42

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



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

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)?
 Comments: The Sand Creek channel is more entrenched in some places than in others.

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

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

Comments: Overbankflow more likely at the upstream end of Sand Creek.

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

NA and proceed to 14H.)

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

Sediment, nutrient, and toxicant input levels within AA	potential to or compour are no sedimentat	deliver levels ids at levels ot substantia ion, sources	unding land s of sediment such that oth lly impaired. of nutrients o phication pres	s, nutrients, er functions Minor or toxicants,	developmen nutrients, or t use with po nutrients, o substantially	t for "probable of toxicants or AA otential to delive r compounds so impaired. Majo	waterbodies in r causes" related receives or surrer high levels of uch that other fu or sedimentation ns of eutrophica	to sediment, rounding land sediments, unctions are n, sources of	
% cover of wetland vegetation in AA	>= 7	70%	< 7	0%	>= 7	70%	< 70%		
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No	
AA contains no or restricted outlet	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L	
AA contains unrestricted outlet	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L	

Comments: Railroad and roadways have high potential to contribute contaminants

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

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

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

Comments: AA dominated by Salix, Juncus, and Carex species with high stability index ratings.

14I. Production Export/Food Chain Support:

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

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

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

Α		Vegetat	ed com	onent >	·5 acres		Vegetated component 1-5 acres				Vegetated component < 1 acre							
В	Hi	gh	Mod	erate	Lo	W	Hi	gh	Mod	erate	Lo	W	Hi	gh	Mode	erate	Lo	W
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

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

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

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

iv. Final Score and Rating: 1.00H

Comments: AA contains surface outlet, and the upland buffer contains high amounts of non-noxious weed vegetation cover.

i. Discharge Indicators	i	ii. Recharge Indicators							
The AA is a slope wetland				F	Permeable su	bstrate pres	ent without u	nderlying imp	eding layer
Springs or seeps are known	Springs or seeps are known or observed						no outlet		
Vegetation growing during de			Stream is a kr	nown 'losing'	stream; disc	charge volume	e decreases		
Wetland occurs at the toe of		Other:							
X AA permanently flooded duri		eriods							
X Wetland contains an outlet, t			_						
X Shallow water table and the	site is satura	ted to the sur	tace						
Other:									
i. Rating (use the information from i	and ii above	and the table	below to arri	ive at [circle]	the functiona	al points and	rating)		
					tlands <i>FROI</i>	-		7	
		<u>DISCH</u>			R THAT IS RE		THE		
			GI	ROUNDWA	TER SYSTEM	<u> </u>			
Criteria		P/P		S/I	T		None		
Groundwater Discharge or Recha	rge	1H		.7M	.4M		.1L	4	
Insufficient Data/Information				N/	Α				
omments: high water table presen	τ								
4K. Uniqueness:									
Rating (working from top to bottom,	use the mat	rix below to a	rrive at [circle	e] the functio	nal points an	d rating)	_		
	AA contain	s fen, bog, w	arm enringe	AA does no	ot contain pre	viously cited	AA doos n	ot contain pro	viouely citod
		e (>80 yr-old)			and structur		AA does not contain previously cited rare types or associations and		
Replacement potential	wetland o	r plant associ	ation listed	(#13) is high or contains plant association listed as "S2" by the			structural diversity (#13) is low-		
	as "S	S1" by the MT	NHP	associati	MTNHP	32 by the		moderate	
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	.2L	.1L
comments: Habitat types range from	n an a peren	nial lotic syst	em to emerge	ent wetlands	to shrub-don	ninated wetla	ands.		
4L. Recreation/Education Potentia	l· (affords "b	onus" noints i	if AA provide:	s recreation	or education	opportunity)			
Is the AA a known or potential red								ind proceed to	o the
overall summary and rating p					,		_		
. Check categories that apply to tl	• ,	Educational/s	scientific stud	dy: Con	sumptive rec	.; X Non-o	consumptive	rec.;	
		Other :		· —	•	<i>'</i> —	•	,	
ii. Rating:									
Known or Potential Recreation or Ed	ducation Area	7				i	Known	Potential	7
Public ownership or public easem			access (no i	permission	required)		.2H	.15H	7
Private ownership with general pu					- 1		.15H	.1M	7
Private or public ownership witho					on for public	access	.1M	.05L	7
omments: Mitigation site with publi			s, and poten	tial for educa	ational use. S	ite is being ι	sed for educ	cational studie	es by
students at MSU and M	ontana Tech								
General Site Notes									
This AA was added in 2022 to captu	re several w	etland areas	delineated ac	djacent to the	e stream char	nnel and in a	reas where p	ore-project we	etlands

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): AA5 - Establishment along Sand Creek

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0.00	1	0.00	
B. MT Natural Heritage Program Species Habitat	М	0.70	1	1.37	
C. General Wildlife Habitat	Н	0.90	1	1.76	*
D. General Fish Habitat	М	0.60	1	1.18	
E. Flood Attenuation	М	0.70	1	1.37	*
F. Short and Long Term Surface Water Storage	М	0.70	1	1.37	
G. Sediment/Nutrient/Toxicant Removal	М	0.70	1	1.37	
H. Sediment/Shoreline Stabilization	Н	1.00	1	1.96	
I. Production Export/Food Chain Support	Н	1.00	1	1.96	*
J. Groundwater Discharge/Recharge	Н	1.00	1	1.96	*
K. Uniqueness	М	0.60	1	1.18	
L. Recreation/Education Potential (bonus points)	Н	0.20	1	0.39	
Totals: Percent of Possible Score		8.10	11.00 74%	15.87	

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

OVERALL ANALYSIS AREA RATING: II

Summary Comments: Healthy, robust riparian zone with dense willow cover in many places. Evidence of large flood observed within the AA during the 2023 site visit. The AA includes comprises 1.96 acres of wetland habitat and 1.47 acres of the active Sand Creek channel.

Table B-1. Silicon Mountain Wetland Mitigation Site. Comprehensive vegetation species list 2015-2023.

Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾
Achillea millefolium	Common Yarrow	FACU
Agoseria glauca	Pale Goat Chicory	FAC
Agropyron cristatum	Crested Wheatgrass	UPL
Agrostis stolonifera	Spreading Bent	FAC
Algae, green	Algae, green	N/A
Alisma plantago-aquatica	Eurpean Water-Plantain	OBL
Alllium cernuum	Nodding Onion	FACU
Alnus incana	Speckled Alder	FACW
Alopecurus aequalis	Short-Awn Meadow-Foxtail	OBL
Alopecurus arundinaceus	Creeping Meadow-Foxtail	FAC
Alopecurus pratensis	Field Meadow Foxtail	FAC
Alyssum alyssoides	Pale or Yellow Alyssum	UPL
Alyssum desestorum	Dwarf Alyssum	UPL
Antennaria neglecta	Field Pussytoes	FACU
Artemisia campestris	Pacific Wormwood	FACU
Artemisia frigida	Fringed Sage	UPL
Artemisia ludovicinana	White Sagebrush	FACU
Artemisia tridentata	Big Sagebrush	UPL
Astragalus agrestis	Cock's-Head/Purple Milkvetch	FACW
Astragalus bisulcatus	Two-Grooved Milkvetch	UPL
Astragalus cicer	Chickpea Milkvetch	UPL
Astragalus miser	Milkvetch	UPL
Bassia scoparia	Mexican-Fireweed	FAC
Beckmannia syzigachne	American Slough Grass	OBL
Bidens cernua	Nodding Burr-Marigold	OBL
Bromus inermis	Smooth Brome	UPL
Bromus japonicus	Japanese Brome	UPL
Bromus tectorum	Cheatgrass	UPL
Calamagrostis canadensis	Bluejoint	FACW
Camelina microcarpa	Little-Pod False Flax	FACU
Cardaria draba	Whitetop	UPL
Carex aquatilis	Leafy Tussock Sedge	OBL
Carex filifolia	Thread-leaved Sedge	UPL
Carex nebrascensis	Nebraska Sedge	OBL
Carex pellita	Woolly Sedge	OBL
Carex praegracilis	Clustered Field Sedge	FACW
Carex praticola	Northern Meadow Sedge	FACW
Carex simulata	Analogue Sedge	OBL
Carex utriculata	Northwest Territory Sedge	OBL
Catabrosa aquatica	Water Whorl Grass	OBL
Centaurea stoebe	Spotted Knapweed	UPL

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Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾
Chaenactis douglasii	Douglas's Dustymaiden	UPL
Chenopodium album	Lamb's-Quarters	FACU
Cicuta douglasii	Western Water-Hemlock	OBL
Cirsium arvense	Canadian Thistle	FAC
Cirsium foliosum	Elk Thistle	FAC
Cirsium scariosum	Meadow Thistle	FAC
Collomia linearis	Narrow-Leaf Mountain-Trumpet	FACU
Crepis runcinata	Fiddleleaf Hawk's Beard	FACU
Crepis tectorum	Narrowleaf Hawksbeard	UPL
Cyrtorhyncha cymbalaria	Alkali Buttercup	OBL
Dasiphora fruticosa	Golden-Hardhack	FAC
Deschampsia caespitosa	Tufted Hair Grass	FACW
Descurainia richardsonii	Western Tansy Mustard	UPL
Descurainia sophia	Herb Sophia	UPL
Distichlis spicata	Coastal/Inland Saltgrass	FACW
Eleocharis palustris	Common Spike-Rush	OBL
Elymus canadensis	Nodding Wild Rye	FAC
Elymus lanceolatus	Streamside Wild Rye	FACU
Elymus repens	Creeping Wild Rye	FAC
Elymus trachycaulus	Slender Wild Rye	FAC
Epilobium ciliatum	Fringed Willowherb	FACW
Equisetum arvense	Field Horsetail	FAC
Equisetum laevigatum	Smooth Scouring-Rush	FACW
Ericameria nauseosa	Rubber Rabbitbrush	UPL
Erigeron sp.	Fleabane	N/A
Erysimum inconspicuum	Small-flowered Wallflower	UPL
Euphorbia esula	Leafy Spurge	UPL
Festuca ovina	Sheep Fescue	UPL
Filago arvenvis	Field Cudweed	UPL
Geum macrophyllum	Large-Leaf Avens	FAC
Glyceria grandis	American Manna Grass	OBL
Glyceria striata	Fowl Manna Grass	OBL
Grindelia squarrosa	Curly-Cup Gumweed	FACU
Gutierrezia sarothrae	Matchbrush	UPL
Hesperostipa comata	Needle-and-Thread	UPL
Heterotheca villosa	Hairy Golden Aster	UPL
Hordeum brachyantherum	Meadow Barley	FACW
Hordeum jubatum	Fox-Tail Barley	FAC
Hyoscyamus niger	Black Henbane	UPL
Ionactis alpina	Crag Aster	UPL
Iris missouriensis	Rocky Mountain Iris	FACW

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Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾
Juncus balticus	Baltic Rush	FACW
Juncus bufonius	Toad Rush	FACW
Juncus effusus	Lamp Rush	FACW
Juncus longistylis	Long-Style Rush	FACW
Juncus mertensianus	Mertens' Rush	OBL
Juniperus scopulorum	Rocky Mountain Juniper	UPL
Koeleria macrantha	Prairie Junegrass	UPL
Lemna minor	Common Duckweed	OBL
Lepidium campestre	Field Pepper-grass	UPL
Lepidium perfoliatum	Clasping Pepperwort	FACU
Leymus cinereus	Great Basin Wild Rye	FAC
Linaria vulgaris	Butter-and-Eggs	UPL
Linum lewisii	Prairie Flax	UPL
Lupinus sericeus	Silky Lupine	UPL
Madia glomerata	Mountain Tarplant	FACU
Medicago lupulina	Black Medic	FACU
Melilotus officinalis	Yellow Sweet-Clover	FACU
Mentha arvensis	American Wild Mint	FACW
Mimulus guttatus	Seep Monkey-Flower	OBL
Myosotis laxa	Bay Forget-Me-Not	OBL
Nasturtium officinale	Watercress	OBL
Orthocarpus tenuifolius	Thin-leaved Owl's-clover	UPL
Oxytropis deflexa	Pendant-pod Locoweed	FACU
Pascopyrum smithii	Western-Wheat Grass	FACU
Penstemon eriantherus	Fuzzy-Tongue Penstemon	UPL
Penstemon nitidus	Wax-leaf Beardtongue	UPL
Penstemon procerus	Pincushion Beardtongue	FAC
Penstemon strictus	Rocky Mountain Penstemon	UPL
Peritoma serrulata	Rocky Mountain Beeplant	FACU
Persicaria amphibia	Water Smartweed	OBL
Phacelia hastata	Silverleaf Scorpion-weed	UPL
Phalaris arundinacea	Reed Canary Grass	FACW
Phleum pratense	Common Timothy	FAC
Phlox longifolia	Longleaf Phlox	UPL
Phlox muscoides	Moss Phlox	UPL
Plantago eriopoda	Red-Wooly or Redwool Plantain	FACW
Plantago major	Great Plantain	FAC
Poa ampla (= P. secunda, P. junicifolia)	Big Bluegrass	FACU
Poa compressa	Flat-stem Bluegrass	FACU
Poa palustris	Fowl Blue Grass	FAC
Poa pratensis	Kentucky Blue Grass	FAC

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Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾
Poa secunda	Curly Blue Grass	FACU
Polemonium pulcherrimum	Showy Jacob's-ladder	UPL
Polygonum aviculare	Yard Knotweed	FAC
Polypogon monspeliensis	Annual Rabbit's Foot Grass	FACW
Potentilla anserina	Silverweed	OBL
Potentilla gracilis	Graceful Cinquefoil	FAC
Pseudoroegneria spicata	Bluebunch Wheatgrass	UPL
Puccinellia distans	Spreading Alkali Grass	FACW
Puccinellia nuttalliana	Nuttall's Alkali Grass	FACW
Pyrrocoma integrifolia	Goldenweed	UPL
Ranunculus sceleratus	Cursed Buttercup	OBL
Ranunculus sp.	Buttercup	N/A
Ribes aureum	Golden Currant	FAC
Ribes irriguum	Idaho Gooseberry	UPL
Rorippa palustris	Bog Yellow Cress	OBL
Rumex crispus	Curly Dock	FAC
Rumex salicifolius	Willow Dock	FACW
Salix bebbiana	Gray Willow	FACW
Salix boothii	Booth's Willow	FACW
Salix exigua	Narrow-Leaf Willow	FACW
Salix geyerianna	Geyer Willow	FACW
Salix lasiandra	Pacific Willow	FACW
Salix lutea (=S. eriocephala)	Yellow Willow	OBL
Schedonorus pratensis	Meadow False Rye Grass	FACU
Schoenocrambe linifolia	Plains Mustard	UPL
Schoenoplectus pungens	Three-Square	OBL
Schoenoplectus tabernaernaemontani	Soft-Stem Club-Rush	OBL
Scirpus microcarpus	Red-Tinge Bulrush	OBL
Shephardia argentea	Silver Buffalo-Berry	FACU
Silene latifolia	White Cockle/Campion	UPL
Sisymbrium altissimum	Tall Hedge-Mustard	FACU
Sisymbrium loeselii	Smallpod Tumble Mustard	UPL
Sisyrinchium montanum	Strict Blue-eyed Grass	FAC
Solidago canadensis	Canadian Goldenrod	FACU
Solidago gigantea	Late Goldenrod	FACW
Sonchus arvensis	Field Sow-Thistle	FACU
Sphaeralcea coccinea	Scarlet Globemallow	UPL
Stachys pilosa	Hairy Hedge-Nettle	FACW
Stellaria longipes	Long-Stalk Starwort	FACW
Symphyotrichum ascendens	Western American-Aster	FACU
Symphyotrichum ciliatum	Alkali American-Aster	FACW

Table B-1. Silicon Mountain Wetland Mitigation Site. Comprehensive vegetation species list 2015-2023.

Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾
Symphyotrichum falcatum	Rough White Prairie American-Aster	FACU
Symphyotrichum lanceolatum	White Panicled American-Aster	OBL
Tanacetum vulgare	Common Tansy	FACU
Taraxacum officinale	Common Dandelion	FACU
Thlaspi arvense	Field Pennycress	UPL
Tragopogon dubius	Meadow Goat's-beard	UPL
Trifolium aureum	Golden Clover	UPL
Trifolium hybridum	Alsike Clover	FAC
Trifolium longipes	Long-Stalk Clover	FAC
Trifolium pratense	Red Clover	FACU
Trifolium repens	White Clover	FAC
Typha latifolia	Broad-Leaf Cat-Tail	OBL
Valeriana edulis	Tobacco-Root	FAC
Verbascum thapsus	Great Mullein	FACU
Veronica americana	American Brooklime or Speedwell	OBL
Veronica anagallis-aquatica	Blue Water Speedwell	OBL
Veronica arvensis	Corm Speedwell	FACU

¹2020 NWPL (USACE 2020) New species identified in 2023 are **bolded**.

APPENDIX C PROJECT AREA PHOTOGRAPHS

MDT Wetland Mitigation Monitoring Silicon Mountain Butte Silver Bow County, Montana



Photo Point: 1. Photo 1: View of western edge of cell 1 looking NW. Bearing: 333 degrees Year: 2015



Photo Point: 1. Photo 1: View of western edge of cell 1 looking NW. Bearing: 333 degrees Year: 2023



Photo Point: 1. Photo 2: View of central portion of cell 1 looking NE. Bearing: 26 degrees Year: 2015



Photo Point: 1. Photo 2: View of central portion of cell 1 looking NE. Bearing: 26 degrees Year: 2023



Photo Point: 1. Photo 3: View of central portion of cell 1 looking E. Bearing: 86 degrees Year: 2015



Photo Point: 1. Photo 3: View of central portion of cell 1 looking E. Bearing: 86 degrees Year: 2023



Photo Point: 1. Photo 4: View of southern end of cell 1 looking SE. Bearing: 166 degrees Year: 2015



Photo Point: 1. Photo 4: View of southern end of cell 1 looking SE. Bearing: 166 degrees Year: 2023



Photo Point: 1. Photo 5: View of western side of cell 1 looking SW. Bearing: 202 degrees Year: 2015



Photo Point: 1. Photo 5: View of western side of cell 1 looking SW. Bearing: 202 degrees Year: 2023



Photo Point: 2. looking NE.

Photo 1: View of Sand Creek channel Bearing: 40 degrees Year: 2015



Photo Point: 2. Flooking NE. Bear

Photo 1: View of Sand Creek channel Bearing: 40 degrees Year: 2023



Photo Point: 2. east.

Photo 2: View outside cell 1 looking Bearing: 86 degrees Year: 2015



Photo Point: 2. east.

Photo 2: View outside cell 1 looking Bearing: 86 degrees Year: 2023



Photo Point: 2. 1 looking SE.

Photo 3: View of eastern portion of cell Bearing: 113 degrees Year: 2015



Photo Point: 2. 1 looking SE.

Photo 3: View of eastern portion of cell Bearing: 113 degrees Year: 2023



Photo Point: 3. looking NW.

Photo 1: View of western edge of cell 4 Bearing: 314 degrees Year: 2015



Photo Point: 3. looking NW.

Photo 1: View of western edge of cell 4 Bearing: 314 degrees Year: 2023



Photo Point: 3. Photo 2: View of western side of cell 4 looking N. Bearing: 343 degrees Year: 2015



Photo Point: 3. Photo 2: View of western side of cell 4 looking N. Bearing: 343 degrees Year: 2023



Photo Point: 3. Photo 3: View across center of cell 4 looking NW. Bearing: 66 degrees Year: 2015



Photo Point: 3. Photo 3: View across center of cell 4 looking NW. Bearing: 66 degrees Year: 2023

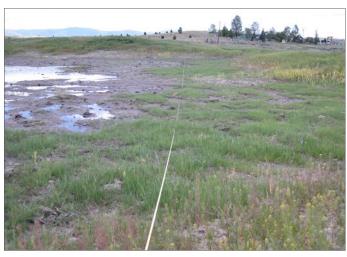


Photo Point: 3. Flooking SE. Bear

Photo 4: View of southern side of cell 4
Bearing: 114 degrees Year: 2015



Photo Point: 3. looking SE.

Photo 4: View of southern side of cell 4
Bearing: 114 degrees Year: 2023



Photo Point: 4. looking SW.

Photo 1: View of southern side of cell 5 Bearing: 220 degrees Year: 2015



Photo Point: 4. looking SW.

Photo 1: View of southern side of cell 5
Bearing: 220 degrees Year: 2023



Photo Point: 4. 5 looking W.

Photo 2: View across SE portion of cell Bearing: 268 degrees Year: 2015



Photo Point: 4. 5 looking W.

Photo 2: View across SE portion of cell Bearing: 268 degrees Year: 2023



Photo Point: 4. looking NW.

Photo 3: View across center of cell 5 Bearing: 321 degrees Year: 2015



Photo Point: 4. looking NW.

Photo 3: View across center of cell 5 Bearing: 321 degrees Year: 2023



Photo Point: 4. Photo 4: View of eastern side of cell 5 looking N. Bearing: 24 degrees Year: 2015



Photo Point: 4. Photo 4: View of eastern side of cell 5 looking N. Bearing: 24 degrees Year: 2023



Photo Point: 4. Photo 5: View of eastern side of cell 5 looking NE. Bearing: 56 degrees Year: 2015



Photo Point: 4. Photo 5: View of eastern side of cell 5 looking NE. Bearing: 56 degrees Year: 2023



Photo Point: 5. Photo 1: View of north end of cell 3 looking SE. Bearing: 145 degrees Year: 2015



Photo Point: 5. Photo 1: View of north end of cell 3 looking SE. Bearing: 145 degrees Year: 2023



Photo Point: 5. Photo 2: View of north end of cell 3 looking NW. Bearing: 345 degrees Year: 2015



Photo Point: 5. Photo 2: View of north end of cell 3 looking NW. Bearing: 345 degrees Year: 2023



Photo Point: 6. Photo 1: View of south end of cell 2 looking NW. Bearing: 326 degrees Year: 2015



Photo Point: 6. Photo 1: View of south end of cell 2 looking NW. Bearing: 326 degrees Year: 2023



Photo Point: 6. Photo 2: View of southeast side of cell 2 looking N. Bearing: 352 degrees Year: 2015



Photo Point: 6. Photo 2: View of southeast side of cell 2 looking N. Bearing: 352 degrees Year: 2023

Silicon Mountain: Photo Point and Stream Photographs



Photo Point: 7. Photo 1: View of cell 6 looking east. Bearing: 95 degrees Year: 2015



Photo Point: 7. Photo 1: View of cell 6 looking east. Bearing: 95 degrees Year: 2023



Photo Point: 8. Photo 1: View of the south end of Sand Creek looking SW. Bearing: 213 degrees Year: 2015



Photo Point: 8. Photo 1: View of the south end of Sand Creek looking SW. Bearing: 213 degrees Year: 2023



Photo Point: 8. Photo 2: View across southern portion of Sand Creek looking NE. Bearing: 28 degrees Year: 2015



Photo Point: 8. Photo 2: View across southern portion of Sand Creek looking NE. Bearing: 28 degrees Year: 2023



Photo Point: 9. Photo 1: View of Sand Creek downstream of PP-8 looking SE. Bearing: 148 degrees Year: 2015



Photo Point: 9. Photo 1: View of Sand Creek downstream of PP-8 looking SE. Bearing: 148 degrees Year: 2023



Photo Point: 9. Photo 2: View of Sand Creek downstream of PP-9 looking N. Bearing: 220 degrees Year: 2015



Photo Point: 9. Photo 2: View of Sand Creek downstream of PP-9 looking N. Bearing: 220 degrees Year: 2023



Photo Point: 10. Photo 1: View of the channel/slopes under overpass looking NW. Bearing: 312 degrees Year: 2015



Photo Point: 10. Photo 1: View of the channel/slopes under overpass looking NW. Bearing: 312 degrees Year: 2023



Photo Point: 10. NE

Photo 2: View of Sand Creek looking Bearing: 66 degrees Year: 2015



Photo Point: 10. Photo 2: View of Sand Creek looking NE Bearing: 66 degrees Year: 2023



Photo Point: 11. Photo 1: View of Sand Creek looking SE. Bearing: 144 degrees Year: 2015



Photo Point: 11. Photo 1: View of Sand Creek looking SE. Bearing: 144 degrees Year: 2023



Photo Point: 11. Photo 2: View of stream x-section 3 looking S. Bearing: 178 degrees Year: 2015



Photo Point: 11. Photo 2: View of stream x-section 3 looking S. Bearing: 178 degrees Year: 2023



Photo Point: 11. Photo 3: View downstream of stream x-section 3 looking NW. Bearing: 300 degrees Year: 2015



Photo Point: 11. Photo 3: View downstream of stream x-section 3 looking NW. Bearing: 300 degrees Year: 2023



Photo Point: 12. Photo 1: View SW across stream x-section 4. Bearing: 216 degrees Year: 2015



Photo Point: 12. Photo 1: View SW across stream x-section 4. Bearing: 216 degrees Year: 2023



Photo Point: 12. section 4.

Photo 2: View W across stream x-Bearing: 284 degrees Year: 2015



Photo Point: 12. section 4

Photo 2: View W across stream x-Bearing: 284 degrees Year: 2023



Photo Point: 12. Creek channel.

Photo 3: View west across Sand Bearing: 270 degrees Year: 2015



Photo Point: 12. channel.

Photo 3: View west across Sand Creek Bearing: 270 degrees Year: 2023



Photo Point: 12. Photo 4: View NW of stream x-section 4. Bearing: 348 degrees Year: 2015



Photo Point: 12. Photo 4: View NW of stream x-section 4. Bearing: 348 degrees Year: 2023



Photo Point: 13. Photo 1: View SE of stream x-section 7. Bearing: 153 degrees Year: 2015



Photo Point: 13. Photo 1: View SE of stream x-section 7. Bearing: 153 degrees Year: 2023



Photo Point: 13. Photo 2: View NE of stream x-section 7. Bearing: 341 degrees Year: 2015



Photo Point: 13. Photo 2: View NE of stream x-section 7. Bearing: 341 degrees Year: 2023



Photo Point: 14. looking south.

Photo 1: View of middle headcut Bearing: 178 degrees Year: 2015



Photo Point: 14. looking south.

Photo 1: View of middle headcut Bearing: 178 degrees Year: 2023



Photo Point: 15. looking S.

Photo 1: View of the eastern headcut Bearing: 189 degrees Year: 2015



Photo Point: 15. looking S.

Photo 1: View of the eastern headcut Bearing: 189 degrees Year: 2023



Photo Point: 16. looking west.

Photo 1: View of western headcut Bearing: 210 degrees Year: 2015



Photo Point: 16. looking west.

Photo 1: View of western headcut Bearing: 210 degrees Year: 2023



Photo Point: 17. looking W.

Photo 1: View of Sand Creek channel Year: 2015 Bearing: 157 degrees



Photo Point: 17. looking W.

Photo 1: View of Sand Creek channel Year: 2023 Bearing: 157 degrees



Photo Point: 17. looking N.

Photo 2: View of Sand Creek channel Bearing: 356 degrees

Year: 2015



Photo Point: 17. looking N.

Photo 2: View of Sand Creek channel Bearing: 356 degrees

Year: 2023

Silicon Mountain: Transect Photographs



Transect 1: Start Bearing: 305 degrees



Transect 1: Start Bearing: 305 degrees

Location: South end cell 2 Year: 2023



Transect 1: End looking S/SE Bearing: 177 degrees

Location: North end of cell 3

Location: South end cell 2

Year: 2015

Year: 2015

looking S/SE Bearing: 177 degrees



Location: North end of cell 3

Year: 2023

Silicon Mountain: Transect Photographs



Transect 2: Start Bearing: 285 degrees

Location: E side of cell 4, look west Year: 2015



Transect 2: Start Location: East side of cell 4, look west Bearing: 285 degrees Year: 2023



Transect 2: End looking east/southeast Bearing:106 degrees

Location: W/NW side of cell 4,

Year: 2015



Transect 2: End looking east/southeast Bearing: 106 degrees

Location: W/NW side of cell 4,

Year: 2023

Silicon Mountain: Data Points



Data Point: DP01w Sand Creek channel.



Data Point: DP01u Sand Creek channel.

Location: Veg Comm. 8 along Year 2023



Data Point: DP02w Year: 2023



Year: 2023



Data Point: DP02u Year: 2023

Location: Veg Comm. 13



Data Point: DP03w Year: 2023

Location: Wetland Cell 3



Data Point: DP03u Year: 2023

Location: Veg Comm. 16

Silicon Mountain: Data Points



Data Point: DP04w cell 4.



Location: Constructed wetland Year: 2023



Data Point: DP04u Location: Veg Comm. 13. Year: 2023



Data Point: DP05w cell 5.



Location: Constructed wetland Year: 2023



Data Point: DP05u Year: 2023

Location: Veg Comm. 13.

Silicon Mountain: Data Points



Data Point: DP06w cell 6.

Location: Constructed wetland Year: 2023

Data Point: DP06u Year: 2023

Location: Veg Comm. 13.



Data Point: DP07w Year: 2023

Location: Wetland cell 1.



Data Point: DP07u Year: 2023

Location: Veg Comm. 9.

Silicon Mountain: Data Points



Data Point: DP08w cell 13.



Location: Constructed wetland Year: 2023



Data Point: DP08u Year: 2023

Location: Veg Comm. 10.



Data Point: DP09w wetland cell 1.



Location: South of constructed Year: 2023



Data Point: DP09u Year: 2023

Location: Veg Comm 10.



Data Point: DP10w Channel, at south end of project area.

Year: 2023

Location: Along Sand Creek

Data Point: DP10u Year: 2023



Location: Veg Comm. 5.

Silicon Mountain: Data Points



Data Point: DP011w wetland cell 13.



Year: 2023

Year: 2023

Location: Veg Comm. 10. Location: Constructed Data Point: DP011u



Cross-section 1: At center looking upstream. Year: 2017



Cross-section 1: At center looking downstream. Year: 2017



Cross-section 2: At center looking upstream. Year: 2017



Cross-section 1: At center looking upstream. Year: 2023



Cross-section 1: At center looking downstream. Year: 2023



Cross-section 2: At center looking upstream. Year: 2023



Cross-section 2: At center looking downstream. Year: 2017



Year: 2023



Cross-section 3: At center looking upstream. Year: 2017



Cross-section 3: At center looking upstream. Year: 2023



Cross-section 3: At center looking downstream. Year: 2017



Cross-section 3: At center looking downstream. Year: 2023



Cross-section 4: At center looking upstream. Year: 2017



Cross-section 4: At center looking upstream. Year: 2023



Cross-section 4: At center looking downstream. Year: 2017



Cross-section 4: At center looking downstream. Year: 2023



Cross-section 5: At center looking upstream. Year: 2017



Cross-section 5: At center looking upstream. Year: 2023



Cross-section 5: At center looking downstream. Year: 2017



Cross-section 6: At center looking upstream. Year: 2017



Cross-section 6: At center looking downstream. Year: 2017



Cross-section 5: At center looking downstream. Year: 2023



Cross-section 6: At center looking upstream. Year: 2023



Cross-section 6: At center looking downstream. Year: 2023



Cross-section 7: At center looking upstream. Year: 2017



Cross-section 7: At center looking upstream. Year: 2023



Cross-section 7: At center looking downstream. Year: 2017



Cross-section 7: At center looking downstream. Year: 2023



Cross-section 8: At center looking upstream. Year: 2017



Cross-section 8: At center looking upstream. Year: 2023



Cross-section 8: At center looking downstream. Year: 2017



Cross-section 8: At center looking downstream. Year: 2023

APPENDIX D Surveyed Stream Cross Sections

MDT Wetland Mitigation Monitoring Silicon Mountain Butte Silver Bow County, Montana

