Aquatic Resources Inventory Report

I-25/I-80 Interchange

Aquatic Resources Inventory Report

Wyoming Department of Transportation

February 2020

Aquatic Resources Inventory Report

For the

I-25/I-80 Interchange Project
Laramie County

WYDOT Project Number I806212
FHWA—WYDOT—EA-20-01

Prepared for:

Wyoming Department of Transportation
and
U.S. Department of Transportation
Federal Highway Administration

Prepared by:
Jacobs Engineering Group Inc.

February 2020

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1.0 Introduction

The Wyoming Department of Transportation (WYDOT) and the Federal Highway Administration (FHWA) are proposing to replace the existing Interstate (I) 25/I-80 and I-25/U. S. Highway 30 (Lincolnway) interchanges (project) at the southwestern corporate limits of the City of Cheyenne in Laramie County, Wyoming (Figure 1). The I-25/I-80 interchange is one of two system-level interchanges in Wyoming and is the most heavily trafficked interchange in the state, serving as a critical transportation hub facilitating the local, regional, and national movement of people and goods. Also included in the project and located approximately 0.5 mile north of the I-25/I-80 interchange, the I-25/Lincolnway interchange would be replaced. Lincolnway is the main arterial roadway directly connecting Cheyenne to the interstate system. The need for the project is driven by crashes, increasing travel demands, and the support of Cheyenne's future development goals.

The project is in the Moderate Relief Rangeland Level IV Ecoregion of the High Plains Level III-Ecoregion (Chapman et al. 2004).

The U.S. Army Corps of Engineers (USACE) is authorized under Section 404 of the Clean Water Act (33 U.S.Code 1344) to regulate the placement of dredged and fill material into wetlands and other waters of the United States. The term "waters of the United States" includes all waters that were, are, or could be used in interstate commerce such as rivers, streams (including ephemeral streams), reservoirs, lakes, and wetlands adjacent to those areas.

2.0 Methods

2.1: Pre-field Investigation

General information on vegetation, soils, hydrology, and existing wetlands were reviewed before the field survey. Data sources included U.S. Geological Survey topographic maps, National Wetland Inventory (USFWS 2019), National Hydrography Database (USGS 2019), U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey (2019), and satellite imagery (Google Earth Pro 2019).

2.2: Field Survey

Jacobs Engineering Group Inc. (Jacobs) biologists Rachel Newton and Dan Soucy conducted the aquatic resources delineation on July 30 through August 1, 2019. The field survey was limited to the 615.17-acre study area, which includes all potential areas of project disturbance. The survey methodology followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the ordinary high water mark (OHWM) regulatory guidance letter No. 05-05 (USACE 2005), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region Version 2.0* (USACE 2010). Wetland indicator statuses for plants were taken from *The National Wetland Plant List: 2016 Wetland Ratings*

(Lichvar et al. 2016). Wetlands were classified using *Wetlands of the United States* (Shaw and Fredine 1971).

The field delineation identified and delineated all aquatic resources, including wetlands and other waters. Where aquatic resources were identified, feature boundaries were mapped using a handheld global position system (GPS) unit with submeter accuracy. Data were collected in North American Datum of 1983 Wyoming State Plane Zone East in U.S. survey feet. Geographic information system (GIS) data were post-processed using ArcGIS 10.4. The field sampling procedures and methods used to delineate and map aquatic resources followed protocol as detailed in the references cited in this section.

3.0 Results

The field delineation identified a total of approximately 31.432 acres of wetland (27 palustrine emergent and 4 palustrine scrub-shrub), 0.815 acre of open water, and 0.117 acre (330 linear feet) of other waters in the study area, consisting of one perennial channel.

Table 1 summarizes the types and amounts of possible waters of the U.S. identified in the study area, and includes descriptions of the delineated features. Figure 3 shows mapped locations of aquatic resources. USACE wetland and OHWM datasheets are presented in Appendix A. Representative photographs are presented in Appendix B.

4.0 Functions and Quality

Wetlands within the study area provide several functions, including sediment, nutrient, toxicant retention and removal, short- and long-term surface water storage, and groundwater recharge. These wetlands also provide forage and cover for wildlife, including birds and small mammals. Wetlands in on/off-ramp islands and immediately adjacent to interstates are more likely to contain garbage, lowering overall quality. Other wetlands in less developed areas have greater plant and animal species diversity.

5.0 References

Chapman, S.S., S.A. Bryce, J.M. Omernik, D.G. Despain, J. ZumBerge, and M. Conrad. 2004. *Ecoregions of Wyoming* (color poster with map, descriptive text, summary tables, and photographs). Reston, Virginia, U.S. Geological Survey (map scale 1:1,400,000).

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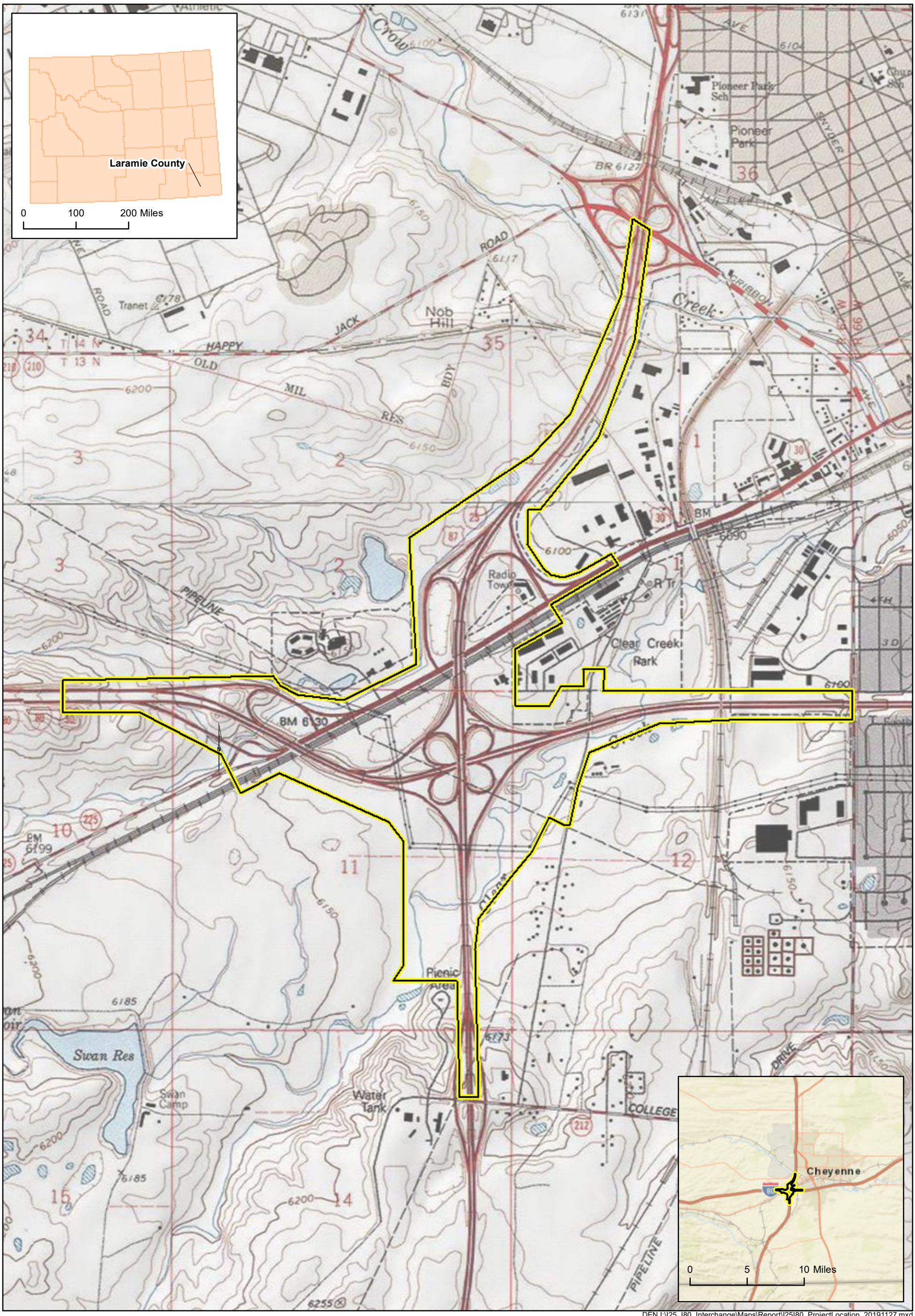
U.S. Fish and Wildlife Service (USFWS). 2019. National Wetlands Inventory (NWI) Data Download. http://www.fws.gov/wetlands/Data/Data-Download.html

U.S. Geological Survey (USGS). 2019. *National Hydrography Data Set.* https://www.usgs.gov/core-science-systems/ngp/national-hydrography/national-hydrography-dataset.

Figures



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Legend

Aquatic Resources Study Area (615.17 acres)

0 700 1,400 Feet
1 in = 1,400 ft

N

IMAGE SOURCE: ESRI, World Topographic Map
Figure created by Jill Rosenberger, revised 12/19/2019

NAD_1983_2011_WyDOT_I-80_MSP_Ft_US
WKID: 6612 Authority: EPSG
Projection: Transverse_Mercator
False_Easting: 656394.1432
False_Northing: 0.0
Central_Meridian: -105.1666666666667
Scale_Factor: 1.000284153332813
Latitude_Of_Origin: 40.5
Linear Unit: Foot_US (0.3048006096012192)
USGS Quads: Cheyenne North, Cheyenne South

Figure 1
Regional Vicinity Map
Aquatic Resources Inventory Report
I-25/I-80 Interchange
Wyoming Department of Transportation
Laramie County, WY

DEN I:\I25_I80_Interchange\Maps\Report\I25I80_NWI_NHD_ARDR.mxd

Legend

- Aquatic Resources Study Area (615.17 acres)

NWI Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine
- NHD Streams
- NHD Waterbodies

0 700 1,400 Feet
1 in = 1,400 ft

N

IMAGE SOURCE: NAIP, USA Imagery, 2018
Source : USFWS, National Wetlands Mapper, 2018;
USGS National Hydrography Dataset, 2018
Figure created by Jill Rosenberger, revised 12/19/2019

Figure 2
National Wetlands Inventory and National Hydrography Dataset
Aquatic Resources Inventory Report
I-25/I-80 Interchange
Wyoming Department of Transportation
Laramie County, WY

Soil Type

- Evanston loam, 0 to 6 percent slopes
- Ipson-Evanston complex, 6 to 30 percent slopes
- Merden silty clay loam, 0 to 3 percent slopes
- Poposhia-Trimad complex, 3 to 15 percent slopes
- Urban land-Evanston complex, 0 to 6 percent slopes
- Urban land-Merden complex, 0 to 3 percent slopes
- Urban land-Poposhia complex, 0 to 6 percent slopes
- Urban land-Poposhia-Trimad complex, 3 to 15 perce*

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Legend

Aquatic Resources Study Area (615.17 acres)

0 700 1,400 Feet

1 in = 1,400 ft

N

IMAGE SOURCE: ESRI, World Topographic Map
Source: NRCS Soils, 2017
Figure created by Jill Rosenberger, revised 12/19/2019

Figure 3
NRCS Soils Map
Aquatic Resources Inventory Report
I-25/I-80 Interchange
Wyoming Department of Transportation
Laramie County, WY

H
25
G
I
F
80
M
L
K
J
D
E
80
C
B
A
25

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Legend

- Aquatic Resources Study Area (615.17 acres)
- Sample Point
- Photo Points

Delineated Features

- PEM Wetland
- PSS Wetland
- Open Water
- Channel

N

0 1,500 Feet

1 inch = 1,500 feet

Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through
August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

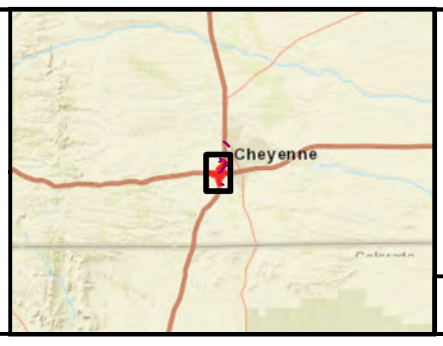

Figure 4
Possible Wetlands and Waters of the U.S. Index
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 1/13/2020

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Legend

- Aquatic Resources Study Area (615.17 acres)
- Sample Point
- Photo Point

Delineated Features

- PEM Wetland
- PSS Wetland
- Open Water
- Channel

N

0 200 Feet

1 inch = 200 feet

Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through
August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

Figure 4A
Possible Wetlands and Waters of the U.S.
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 12/19/2019

PEM-6B (0.485 acre)
Photo #18B
PEM-6A (0.016 acre)
Photo #19
S-19
Photo #18A
Photo #17
S-18
S-17
PEM 1-B (6.604 acre)
PEM-5 (1.995 acre)
Photo #8
S-8
Photo #9
S-9
PEM-3 (0.066 acre)
S-15
S-16
Photo #15
Photo #16
PEM-2F (0.006 acre)
PEM-2E (0.03 acre)
Photo #7
S-7
PEM-4 (0.144 acre)
S-12
PEM-2D (0.104 acre)
Photo #5D
Photo #12
Photo #13
S-13
PEM-2C (0.423 acre)
S-5B
Photo #6
Photo #5C
Photo #5A
S-6
S-5A
PEM-2B (0.174 acre)
PEM-2A (0.05 acre)
Photo #5B
OW-1 (0.039 acre)
S-4
Photo #4
Photo #1A-3
PEM-1A (3.245 acre)
S-3
Photo #3
Photo #1A-2
S-1A
Photo #2A
S-2A

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Legend

- Aquatic Resources Study Area (615.17 acres)
- Sample Point
- Photo Point

Delineated Features

- PEM Wetland
- PSS Wetland
- Open Water
- Channel

N

0 200 Feet

1 inch = 200 feet

Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

Figure 4B
Possible Wetlands and Waters of the U.S.
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 12/19/2019

Photo #1E-1
S-1E
Photo #1D-2
PEM-1C (0.718 acre)
Photo #1D-1
Photo #2D
S-2D
S-1D
PSS-1 (0.062 acre)
S-39
Photo #39
Photo #26
S-26
S-22
Photo #22
Photo #27
S-27
PEM-1B (6.604 acre)
Photo #21
S-21
Photo #20
S-20
PEM-7 (0.105 acre)
Photo #25
S-25
Photo #24
S-24
Photo #23A
S-23
PEM-8C (0.161 acre)
Photo #2C
Photo #1C-1
S-2C
S-1C
Photo #1C-2
OW-2 (0.124 acre)
Photo #23C
PEM-8A (0.775 acre)
Photo #23B
PEM-8B (0.013 acre)
PEM-1B (6.604 acre)
S-1B
Photo #2B
S-2B
Photo #1B
Photo #14
S-14
Photo #11
PEM-5 (3.245 acre)
S-11
S-10
Photo #10
Photo #1A-4

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Legend

- Aquatic Resources Study Area (615.17 acres)
- Sample Point
- Photo Point

Delineated Features

- PEM Wetland
- PSS Wetland
- Open Water
- Channel

N

0 200 Feet

1 inch = 200 feet

Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through
August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

Figure 4C
Possible Wetlands and Waters of the U.S.
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 12/19/2019

PEM-11

PEM-1D (0.343 acre)

PEM-11 (0.161 acre)

S-35

Photo #35

PEM-9B (0.159 acre)

Photo #30

S-30

S-1F

PSS-2B (0.008 acre)

Photo #32

Photo #1F

S-32

Photo #31

PSS-2A (0.016 acre)

S-31

Photo #1E-2

PEM-9A (0.393 acre)

PEM-1C (0.718 acre)

Photo #28

S-28

S-29

OW-3 (0.206 acre)

Photo #29

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Legend

- Aquatic Resources Study Area (615.17 acres)
- Sample Point
- Photo Point

Delineated Features

- PEM Wetland
- PSS Wetland
- Open Water
- Channel

N

0 200 Feet

1 inch = 200 feet

Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through
August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

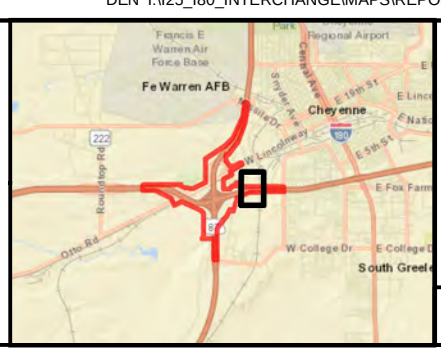

Figure 4D
Possible Wetlands and Waters of the U.S.
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 12/19/2019

PEM-10 (0.585 acre)
S-34
S-33
Photo #34
Photo #33

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Legend

Aquatic Resources Study Area (615.17 acres)
Sample Point
Photo Point

Delineated Features

PEM Wetland
PSS Wetland
Open Water
Channel

N

0 200 Feet

1 inch = 200 feet

Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through
August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

Figure 4E
Possible Wetlands and Waters of the U.S.
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 12/19/2019

Photo #44
S-44
PEM-14 (0.301 acre)
PEM-15B (0.362 acre)
Photo #46
S-46
S-45
PEM-13 (0.059 acre)
Photo #45
PEM-15A (0.053 acre)
S-42
S-41
Photo #42
Photo #48
Photo #47A
S-47A
Photo #41
S-48
PEM-12 (0.547 acre)
S-36
Photo #36
S-38
Photo #38
Photo #37
S-37
Photo #1E-1
S-1E
Photo #1D-2

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Legend

- Aquatic Resources Study Area (615.17 acres)
- Sample Point
- Photo Point

Delineated Features

- PEM Wetland
- PSS Wetland
- Open Water
- Channel

N

0 200 Feet

1 inch = 200 feet

Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through
August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

Figure 4F
Possible Wetlands and Waters of the U.S.
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 12/19/2019

PEM-27F (2.376 acre)
OW-4 (0.446 acres)
PEM-18 (0.199 acre)
S-57
S-56
Photo #56/Photo #57
Photo #58
S-58
PEM-20 (0.259 acre)
PEM-19 (0.061 acre)
S-59
Photo #59
S-60
Photo #60
Photo #81F
PEM-27G (0.038 acre)
Photo #81E
PEM-27E (2.619 acre)
PEM-15B (0.362 acre)
Photo #47B
S-47B
PEM-15C (0.246 acre)

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Legend

- Aquatic Resources Study Area (615.17 acres)
- Sample Point
- Photo Point

Delineated Features

- PEM Wetland
- PSS Wetland
- Open Water
- Channel

N

0 200 Feet

1 inch = 200 feet

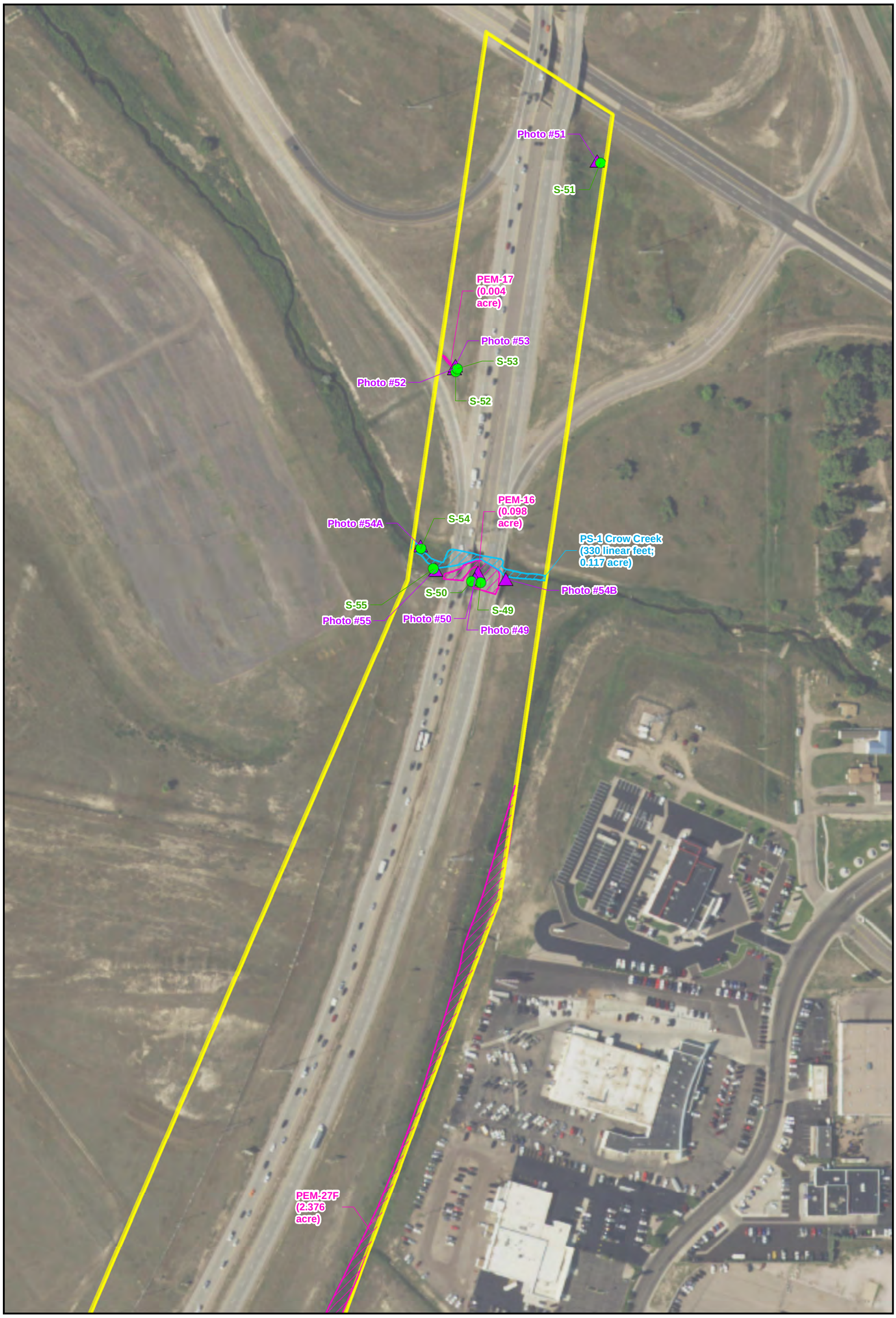
Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through
August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

Figure 4G
Possible Wetlands and Waters of the U.S.
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 12/19/2019



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Legend

- Aquatic Resources Study Area (615.17 acres)
- Sample Point
- Photo Point

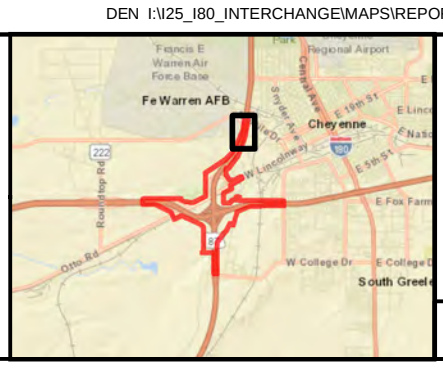
Delineated Features

- PEM Wetland
- PSS Wetland
- Open Water
- Channel

N

0 200 Feet

1 inch = 200 feet



Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through
August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

Figure 4H
Possible Wetlands and Waters of the U.S.
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 12/19/2019

Photo #62
S-62
Photo #61
S-61
PEM-20 (0.259 acre)
Photo #63
S-63
PEM-27E (2.619 acre)
PEM-21 (0.13 acre)
Photo #43
S-43
Photo #65
S-65
Photo #66
S-66
S-64
Photo #64

DEN I:\I25_I80_INTERCHANGE\MAPS\REPORT\WDR\I25_I80_WETLANDDELINEATION_SERIES.MXD

Legend

- Aquatic Resources Study Area (615.17 acres)
- Sample Point
- Photo Point

Delineated Features

- PEM Wetland
- PSS Wetland
- Open Water
- Channel

N

0 200 Feet

1 inch = 200 feet

Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through
August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

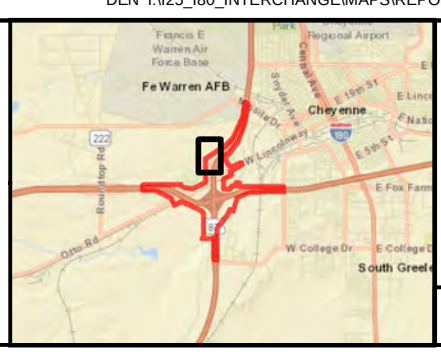


Figure 4I
Possible Wetlands and Waters of the U.S.
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 12/19/2019

PEM-27E (2.619 acre)
S-69
Photo #69
Photo #71
S-70
S-71
Photo #70
PEM-24 (0.014 acre)
Photo #81D
PEM-23 (0.003 acre)
Photo #73
S-72
S-73
Photo #72
PEM-25 (5.433 acre)
S-76
S-77
PSS-3 (0.07 acre)
S-75
S-74
Photo #77
Photo #76
Photo #74
Photo #75
PEM-22 (0.393 acre)
Photo #67
S-68
Photo #68
S-67
S-40
Photo #40
PEM-26 (0.042 acre)
Photo #78
S-78
Photo #79
S-79
PEM-6B (0.485 acre)
PEM-6B (0.485 acre)
Photo #18B

DEN I:\I25_I80_INTERCHANGE\MAPS\REPORT\WDR\I25_I80_WETLANDDELINEATION_SERIES.MXD

Legend

- Aquatic Resources Study Area (615.17 acres)
- Sample Point
- Photo Point

Delineated Features

- PEM Wetland
- PSS Wetland
- Open Water
- Channel

N

0 200 Feet

1 inch = 200 feet

Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

Figure 4J
Possible Wetlands and Waters of the U.S.
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 12/19/2019

PEM-27D (0.629 acre)
PEM-27C (0.19 acre)
PSS-4B (0.011 acre)
S-82
Photo #82
Photo #81C
PSS-4A (0.006 acre)
S-81
Photo #84
Photo #83B
Photo #83A
S-83
S-84
S-80
Photo #80
PEM-27B (0.274 acre)
S-85
Photo #86
PEM-28A (0.053 acre)
Photo #85A
S-86
PEM-28B (0.002 acre)
Photo #85B

DEN I:\I25_I80_INTERCHANGE\MAPS\REPORT\WDR\I25_I80_WETLANDDELINEATION_SERIES.MXD

Legend

- Aquatic Resources Study Area (615.17 acres)
- Sample Point
- Photo Point

Delineated Features

- PEM Wetland
- PSS Wetland
- Open Water
- Channel

N

0 200 Feet

1 inch = 200 feet

Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through
August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

Figure 4K
Possible Wetlands and Waters of the U.S.
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 12/19/2019

Photo #87

S-87

PEM-27B (0.274 acre)

Photo #81B

PEM-27A (0.121 acre)

Photo #81A

DEN I:\I25_I80_INTERCHANGE\MAPS\REPORT\WDR\I25_I80_WETLANDDELINEATION_SERIES.MXD

Legend

- Aquatic Resources Study Area (615.17 acres)
- Sample Point
- Photo Point

Delineated Features

- PEM Wetland
- PSS Wetland
- Open Water
- Channel

N

0 200 Feet

1 inch = 200 feet

Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through
August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

Figure 4L
Possible Wetlands and Waters of the U.S.
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 12/19/2019

DEN I:\I25_I80_INTERCHANGE\MAPS\REPORT\WDR\I25_I80_WETLANDDELINEATION_SERIES.MXD

Legend

Aquatic Resources Study Area (615.17 acres)
Sample Point
Photo Point

Delineated Features

PEM Wetland
PSS Wetland
Open Water
Channel

N

0 200 Feet

1 inch = 200 feet

Aerial Imagery: NAIP, 2018
Delineation completed on July 30 through
August 1, 2019, by Rachel Newton/Jacobs and Dan Soucy/Jacobs.
Prepared by Jill Rosenberger/Jacobs on November 4, 2019.

Figure 4M
Possible Wetlands and Waters of the U.S.
Aquatic Resources Delineation Report
I-25 / I-80 Interchange
Laramie County, Wyoming

I-25/I-80 Interchange Project

JACOBS

Date: 12/19/2019

Table

Table 1. Aquatic Resources Identified in the I-25/I-80 Interchange Study Area

Aquatic Resource	Sample Point	UTM (Northing/ Easting)	Flow or Wetland Classification[a]	Acreage within the Study Area	Remarks	Figure	Photos
Wetlands							
PEM-1A	1A, 1B	221517 / 742952	PEM1C	3.245	Type 3 - Inland shallow fresh marsh. Wetland includes remnant Clear Creek channel and floodplains. Dominated by *Schoenoplectus pungens* and *S. tabernaemontani*. Possibly jurisdictional - flows into Crow Creek.	4A, 4B	1A-1, 1A-2, 1A-3, 1A-4, 1B
PEM-1B	1C, 1D	223586 / 744378	PEM1C	6.604	Type 3 - Inland shallow fresh marsh. Wetland includes remnant Clear Creek channel and floodplains. Dominated by *Carex utriculata*, *Eleocharis palustris*, and *Juncus balticus*. Possibly jurisdictional - flows into Crow Creek.	4B, 4C, 4F	1C-1, 1C-2, 1D-1, 1D-2
PEM-1C	1E	224336 / 745598	PEM1C	0.716	Type 3 - Inland shallow fresh marsh. Wetland includes remnant Clear Creek channel and floodplains. Dominated by *Phalaris arundinacea*. Possibly jurisdictional - flows into Crow Creek.	4C, 4D, 4F	1E-1, 1E-2
PEM-1D	1F	224798 / 745994	PEM1C	0.343	Type 3 - Inland shallow fresh marsh. Wetland includes remnant Clear Creek channel and floodplains. Dominated by *Phalaris arundinacea*. Possibly jurisdictional - flows into Crow Creek.	4D	1F
PEM-2A	S-5A	221932 / 742885	PEM1C	0.05	Type 9 - Inland saline flat. Wetland in depressional area dominated by *Hordeum jubatum* and *Eleocharis palustris*. Possibly isolated.	4B	5A
PEM-2B	S-5A	221896 / 743019	PEM1C	0.174	Type 9 - Inland saline flat. Wetland in depressional area dominated by *Hordeum jubatum*. Possibly isolated.	4B	5B

Table 1. Aquatic Resources Identified in the I-25/I-80 Interchange Study Area

Aquatic Resource	Sample Point	UTM (Northing/ Easting)	Flow or Wetland Classification[a]	Acreage within the Study Area	Remarks	Figure	Photos
PEM-2C	S-5B	222109 / 743000	PEM1C	0.423	Type 9 - Inland saline flat. Wetland in depressional area dominated by *Hordeum jubatum*. Possibly isolated.	4B	5C
PEM-2D	S-5B	222292 / 743019	PEM1C	0.104	Type 9 - Inland saline flat. Wetland in depressional area dominated by *Eleocharis palustris*. Possibly isolated.	4B	5D
PEM-2E	S-5B	222339 / 743085	PEM1C	0.03	Type 9 - Inland saline flat. Wetland in depressional area dominated by *Eleocharis palustris* and *Distichlis spicata*. Possibly isolated.	4B	-
PEM-2F	S-5B	222373 / 743050	PEM1C	0.006	Type 9 - Inland saline flat. Wetland in depressional area dominated by *Eleocharis palustris* and *Distichlis spicata*. Possibly isolated.	4B	-
PEM-3	S-8	222603 / 742419	PEM1C	0.066	Type 9 - Inland saline flat. Wetland in depressional area dominated by *Eleocharis quinqueflora*. Possibly isolated.	4B	8
PEM-4	S-12	222285 / 743470	PEM1C	0.144	Type 9 - Inland saline flat. Dominated by *Juncus balticus*. Possibly jurisdictional: connected via overland flow to PEM-1B, which flows into Crow Creek.	4B	12
PEM-5	S-15	222598 / 743552	PEM1C	1.995	Type 9 - Inland saline flat. Dominated by *Distichlis spicata*. Possibly jurisdictional - connected via overland flow to PEM-1B, which flows into Crow Creek.	4B, 4C	15
PEM-6A	S-18	223303 / 743575	PEM1C	0.016	Type 9 - Inland saline flat. Wetland within on/off-ramp islands. Dominated by *Schoenoplectus pungens*. Possibly isolated.	4B	18A

Table 1. Aquatic Resources Identified in the I-25/I-80 Interchange Study Area

Aquatic Resource	Sample Point	UTM (Northing/ Easting)	Flow or Wetland Classification[a]	Acreage within the Study Area	Remarks	Figure	Photos
PEM-6B	S-18	223589 / 743451	PEM1C	0.485	Type 9 - Inland saline flat. Wetland within on/off-ramp islands. Dominated by *Schoenoplectus pungens*. Possibly isolated.	4B, 4J	18B
PEM-7	S-20	223784 / 743822	PEM1C	0.105	Type 9 - Inland saline flat. Wetland within on/off-ramp island. Dominated by *Poa pratensis*. Possibly isolated.	4C	20
PEM-8A	S-23	223533 / 744671	PEM1C	0.775	Type 9 - Inland saline flat. Dominated by *Schoenoplectus pungens* and *Distichlis spicata*. Possibly jurisdictional - connected via overland flow to PEM-1B, which flows into Crow Creek.	4C	23A, 23B
PEM-8B	S-23	223346 / 744284	PEM1C	0.013	Type 9 - Inland saline flat. Dominated by *Schoenoplectus pungens* and *Distichlis spicata*. Possibly jurisdictional - connected via overland flow to PEM-1B, which flows into Crow Creek.	4C	-
PEM-8C	S-23	223515 / 744433	PEM1C	0.161	Type 9 - Inland saline flat. Dominated by *Schoenoplectus pungens* and *Distichlis spicata*. Possibly jurisdictional - connected via overland flow to PEM-1B, which flows into Crow Creek.	4C	23C
PSS-1	S-26	223986 / 744552	PSS1C	0.062	Type 6 - shrub swamp. Shrub wetland within PEM-1B. Dominated by *Salix exigua* and *Juncus balticus*. Possibly jurisdictional - flows into Crow Creek.	4C	26
PEM-9A	S-28	224488 / 746558	PEM1C	0.393	Type 2 - Inland fresh meadow. Depressional/fringe wetland surrounding stock pond. Dominated by *Juncus balticus* and *Alopecurus pratensis*. Possibly isolated.	4D	28

Table 1. Aquatic Resources Identified in the I-25/I-80 Interchange Study Area

Aquatic Resource	Sample Point	UTM (Northing/ Easting)	Flow or Wetland Classification[a]	Acreage within the Study Area	Remarks	Figure	Photos
PEM-9B	S-28	224575 / 746714	PEM1C	0.159	Type 2 - Inland fresh meadow. Depressional/fringe wetland surrounding stock pond. Dominated by *Juncus balticus* and *Alopecurus pratensis*. Possibly isolated.	4D	-
PSS-2A	S-31	224516 / 746561	PSS1C	0.016	Type 6 - shrub swamp. Fringe wetland at stock pond. Dominated by *Salix melanopsis*. Possibly isolated.	4D	31
PSS-2B	S-31	224520 / 746625	PSS1C	0.008	Type 6 - shrub swamp. Fringe wetland at stock pond. Dominated by *Salix melanopsis*. Possibly isolated.	4D	-
PEM-10	S-33	224556 / 748882	PEM1C	0.585	Type 2 - Inland fresh meadow. Dominated by *Distichlis spicata* and *Elymus riparius*. Possibly isolated.	4E	33
PEM-11	S-35	224878 / 746765	PEM1C	0.161	Type 2 - Inland fresh meadow. Dominated by *Typha angustifolia*. Possibly isolated.	4D	35
PEM-12	S-37	224413 / 744763	PEM1C	0.547	Type 2 - Inland fresh meadow. Dominated by *Poa palustris* and *Carex praegracilis*. Possibly isolated	4F	37
PEM-13	S-41	226554 / 743918	PEM1C	0.059	Type 4 - Inland deep fresh marsh. Deep depressional wetland adjacent to parking lot. Dominated by *Eleocharis palustris*. Possibly isolated.	4F	41
PEM-14	S-45	226704 / 744172	PEM1C	0.301	Type 2 - Inland fresh meadow. Depressional wetland adjacent to parking lot. Dominated by *Carex utriculata*. Possibly isolated.	4F	45
PEM-15A	S-47A	226529 / 744470	PEM1C	0.053	Type 9 - Inland saline flat. Depressional wetland in on/off-ramp island connected via culvert. Dominated by *Hordeum jubatum*. Possibly jurisdictional - flows into PEM-27F, which flows into PS-1 Crow Creek.	4F	47A

Table 1. Aquatic Resources Identified in the I-25/I-80 Interchange Study Area

Aquatic Resource	Sample Point	UTM (Northing/ Easting)	Flow or Wetland Classification[a]	Acreage within the Study Area	Remarks	Figure	Photos
PEM-15B	S-47A	227131 / 744186	PEM1C	0.362	Type 9 - Inland saline flat. Depressional wetland in on/off-ramp island connected via culvert. Dominated by *Hordeum jubatum*. Possibly jurisdictional - flows into PEM-27F, which flows into PS-1 Crow Creek.	4F, 4G	-
PEM-15C	S-47B	227304 / 743887	PEM1C	0.246	Type 9 - Inland saline flat. Depressional wetland in on/off-ramp island connected via culvert. Dominated by *Hordeum jubatum*. Possibly jurisdictional - flows into PEM-27F, which flows into PS-1 Crow Creek.	4G	47B
PEM-16	S-49	231076 / 745826	PEM1C	0.098	Type 3 - Inland shallow fresh marsh. Depressional/ fringe wetland to Crow Creek under I-25 bridges. Dominated by *Phalaris arundinacea*. Possibly jurisdictional.	4H	49
PEM-17	S-52	231541 / 745764	PEM1C	0.004	Type 9 - Inland saline flat. Wetland in on/off-ramp island. Dominated by *Hordeum jubatum*. Possibly isolated.	4H	52
PEM-18	S-56	228280 / 743941	PEM1C	0.199	Type 2 - Inland fresh meadow. Depressional/fringe wetland around stock pond. Dominated by *Alopecurus pratensis*. Possibly isolated.	4G	56
PEM-19	S-59	228004 / 743965	PEM1C	0.061	Type 2 - Inland fresh meadow. Dominated by *Eleocharis palustris*. Possibly jurisdictional - connected via overland flow to PEM-27E, which flows into Crow Creek.	4G	59

Table 1. Aquatic Resources Identified in the I-25/I-80 Interchange Study Area

Aquatic Resource	Sample Point	UTM (Northing/ Easting)	Flow or Wetland Classification[a]	Acreage within the Study Area	Remarks	Figure	Photos
PEM-20	S-61	227912 / 743746	PEM1C	0.259	Type 2 - Inland fresh meadow. Dominated by *Alopecurus pratensis*. Possibly jurisdictional - connected via overland flow to PEM-27E, which flows into Crow Creek.	4G, 4I	61
PEM-21	S-64	226901 / 743157	PEM1C	0.13	Type 9 - Inland saline flat. Wetland in on/off-ramp island. Dominated by *Distichlis spicata*. Possibly isolated.	4I	64
PEM-22	S-67	223918 / 742887	PEM1C	0.393	Type 9 - Inland saline flat. Wetland in on/off-ramp island. Dominated by *Distichlis spicata*. Possibly isolated.	4J	67
PEM-23	S-70	225126 / 742393	PEM1C	0.003	Type 2 - Inland fresh meadow. Wetland receiving road run-off from flume. Dominated by *Hordeum jubatum*. Possibly isolated.	4J	70
PEM-24	S-72	224899 / 741967	PEM1C	0.014	Type 3 - Inland shallow fresh marsh. Wetland receiving road run-off from flume. Dominated by *Schoenoplectus pungens* and *Typha angustifolia*. Possibly isolated.	4J	72
PSS-3	S-74	223899 / 742035	PSS1C	0.07	Type 6 - Shrub swamp. Wetland in on/off-ramp island. Dominated by *Salix exigua*. Abuts PEM-25. Possibly isolated.	4J	74
PEM-25	S-76	224400 / 742450	PEM1C	5.433	Type 3 - Inland shallow fresh marsh. Wetland in on/off-ramp island. Dominated by *Juncus torreyi* and *Agrostis stolonifera*. Abuts PSS-3. Possibly isolated.	4J	76
PEM-26	S-78	223665 / 742066	PEM1C	0.042	Type 3 - Inland shallow fresh marsh. Wetland in on/off-ramp island. Dominated by *Carex aquatilis* and *Typha angustifolia*. Possibly isolated.	4J	78

Table 1. Aquatic Resources Identified in the I-25/I-80 Interchange Study Area

Aquatic Resource	Sample Point	UTM (Northing/ Easting)	Flow or Wetland Classification[a]	Acreage within the Study Area	Remarks	Figure	Photos
PEM-27A	S-81	223916 / 739560	PEM1C	0.121	Type 4 - Inland deep fresh marsh. Wetland appears to be in remnant stream channel, connected via a series of culverts. Dominated by *Typha angustifolia* and *Carex utriculata*. Possibly jurisdictional - flows into Crow Creek.	4L	81A
PEM-27B	S-81	224214 / 739786	PEM1C	0.274	Type 4 - Inland deep fresh marsh. Wetland appears to be in remnant stream channel, connected via a series of culverts. Dominated by *Typha angustifolia* and *Carex utriculata*. Possibly jurisdictional - flows into Crow Creek.	4K, 4L	81B
PEM-27C	S-81	224596 / 740353	PEM1C	0.19	Type 4 - Inland deep fresh marsh. Wetland appears to be in remnant stream channel, connected via a series of culverts. Dominated by *Typha angustifolia* and *Carex utriculata*. Possibly jurisdictional - flows into Crow Creek.	4K	81C
PEM-27D	S-81	224740 / 741282	PEM1C	0.629	Type 4 - Inland deep fresh marsh. Wetland appears to be in remnant stream channel, connected via a series of culverts. Dominated by *Typha angustifolia* and *Carex utriculata*. Possibly jurisdictional - flows into Crow Creek.	4K	81D
PEM-27E	S-81	226436 / 742786	PEM1C	2.619	Type 4 - Inland deep fresh marsh. Wetland appears to be in remnant stream channel, connected via a series of culverts. Dominated by *Typha angustifolia* and *Carex utriculata*. Possibly jurisdictional - flows into Crow Creek.	4G, 4I, 4J	81E

Table 1. Aquatic Resources Identified in the I-25/I-80 Interchange Study Area

Aquatic Resource	Sample Point	UTM (Northing/ Easting)	Flow or Wetland Classification[a]	Acreage within the Study Area	Remarks	Figure	Photos
PEM-27F	S-81	228984 / 745127	PEM1C	2.376	Type 4 - Inland deep fresh marsh. Wetland appears to be in remnant stream channel, connected via a series of culverts. Dominated by *Typha angustifolia* and *Carex utriculata*. Possibly jurisdictional - flows into Crow Creek.	4G, 4H	81F
PEM-27G	S-81	227883 / 744479	PEM1C	0.038	Type 4 - Inland deep fresh marsh. Wetland appears to be in remnant stream channel, connected via a series of culverts. Dominated by *Typha angustifolia* and *Carex utriculata*. Possibly jurisdictional - flows into Crow Creek.	4G	-
PSS-4A	S-83	224487 / 740211	PSS1C	0.011	Type 6 - Shrub swamp. Shrub wetland within PEM-27C. Dominated by *Salix exigua* and *Typha angustfolia*. Possibly jurisdictional - flows into Crow Creek.	4K	83A, 83B
PSS-4B	S-83	224542 / 740254	PSS1C	0.006	Type 6 - Shrub swamp. Shrub wetland within PEM-27C. Dominated by *Salix exigua* and *Typha angustfolia*. Possibly jurisdictional - flows into Crow Creek.	4K	83A, 83B
PEM-28A	S-85	224021 / 739976	PEM1C	0.053	Type 3 - Inland shallow fresh marsh. Wetland in on/off-ramp island. Dominated by *Juncus balticus*. Possibly isolated.	4K	85A
PEM-28B	S-85	223771 / 740010	PEM1C	0.002	Type 3 - Inland shallow fresh marsh. Wetland connected via culvert to wetland in on/off-ramp island. Dominated by *Juncus balticus*. Possibly isolated.	4K	85B

Table 1. Aquatic Resources Identified in the I-25/I-80 Interchange Study Area

Aquatic Resource	Sample Point	UTM (Northing/ Easting)	Flow or Wetland Classification[a]	Acreage within the Study Area	Remarks	Figure	Photos
Natural Watercourses							
PS-1	S-54	223918 / 742904	R2UBH	0.117 (330 linear feet)	OHWM width average 13 feet. Indicators: defined bed/bank, change in plant community.	4H	54A, 54B
Other Waters							
OW-1	S-4	221660 / 742770	PUBH	0.039	Type 5 - Inland open fresh water. Open water area within PEM-1A. Possibly jurisdictional - flows into Crow Creek.	4B	4
OW-2	S-25	223609 / 744745	PUBH	0.124	Type 11 - Inland open saline water. Open water area with PEM-8A. Possibly jurisdictional - connected via overland flow to PEM-1B, which flows into Crow Creek.	4C	25
OW-3	S-30	224471 / 746566	PUBH	0.206	Type 5 - Inland open fresh water. Stock pond. Possibly isolated.	4D	30
OW-4	S-57	224071 / 743815	PUBH	0.446	Type 5 - Inland open fresh water. Stock pond. Possibly isolated.	4G	57

[a] Cowardin, et al. 1979

OHWM = ordinary high water mark
UTM = Universal Transverse Mercator

Appendix A: USACE Wetland and Ordinary High Water Mark Datasheets

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-1A**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: Depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 220871.6784 Long: 742553.8031 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

NWI-mapped depressional palustrine emergent wetland PEM-1A. Area also includes NHD-mapped Clear Creek, but no channel features are present.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Schoenoplectus tabernaemontani*	25	Y	OBL
2. *Schoenoplectus pungens*	48	Y	OBL
3. *Mentha arvensis*	15	N	FACW
4. *Calamagrostis stricta*	12	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	73	x 1 =	73
FACW	species	27	x 2 =	54
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		100 (A)		127 (B)

Prevalence Index = B/A = 1.3

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-1A**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-1	10 YR 3/1	100					muck	
1-3	10 YR 2/1	100					Sandy Loam	fine roots throughout
3-7	10 YR 2/1	100					organic - peat	fine roots throughout
7-18	10 YR 3/1	100					Sandy Clay Loan	fine roots throughout

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- X 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*		**Wetland Hydrology Present?**
Water Table Present?	Yes ___	No X	Depth *(inches)*		
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-2A**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: Terrace Local Relief *(concave, convex, none)*: convex Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 221286.4087 Long: 742960.468 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-1A, Sample Point 1A.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Euphorbia esula*	55	Y	NI
2. *Juncus balticus*	10	N	FACW
3. *Mentha arvensis*	5	N	FACW
4. *Cirsium arvense*	15	N	FACU
5. *Elymus repens*	12	N	FACU
6.			
7.			
8.			
9.			
10.			
	97 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 3 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	0	x 1 =	0
FACW	species	15	x 2 =	30
FAC	species	0	x 3 =	0
FACU	species	27	x 4 =	108
UPL	species	55	x 5 =	275
Column Totals:		97 (A)		413 (B)

Prevalence Index = B/A = 4.3

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-2A**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10 YR 3/2	100					Sandy Clay	
6-18	10 YR 4/4	100					Sand	50% gravel

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-1B**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression/swale Local Relief *(concave, convex, none)*: minor concave Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 224701.4371 Long: 746009.0014 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Additional sample point for NWI-mapped depressional palustrine emergent wetland PEM-1A. Area also includes NHD-mapped Clear Creek, but no channel features are present.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Carex utriculata*	88	Y	OBL
2. *Cirsium arvense*	4	N	FACU
3. *Hordeum jubatum*	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	97 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 3 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	88	x 1 =	88
FACW	species	5	x 2 =	10
FAC	species	0	x 3 =	0
FACU	species	4	x 4 =	16
UPL	species	0	x 5 =	0
Column Totals:		97 (A)		114 (B)

Prevalence Index = B/A = 1.2

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-1B**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-3	10 YR 3/2	100					sandy clay	
3-7	10 YR 5/2	97	7.5 YR 4/4	3	C	PL	sandy clay	
7-10	10 YR 2/2	100					sandy clay	
10-15	10 YR 4/2	100					sandy clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*		**Wetland Hydrology Present?**
Water Table Present?	Yes ___	No X	Depth *(inches)*		
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-2B**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor terrace Local Relief *(concave, convex, none)*: minor concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 221629.7977 Long: 742842.2627 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-1A, Sample Point 1B.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Bromus inermis*	25	Y	UPL
2. *Thinopyrum ponticum*	40	Y	NI
3. *Cirsium arvense*	18	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	83 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 17 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	0	x 1 =	0
FACW	species	0	x 2 =	0
FAC	species	0	x 3 =	0
FACU	species	18	x 4 =	72
UPL	species	65	x 5 =	325
Column Totals:		83 (A)		397 (B)

Prevalence Index = B/A = 4.8

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-2B**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-7	10 YR 3/2	100					sandy clay	
7-18	10 YR 6/3	100					sandy clay	30% rock/cobble

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-1C**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-3

Subregion (LRR): G - Western Great Plains Lat. 223813.6541 Long: 743819.0328 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

NWI-mapped depressional palustrine emergent wetland PEM-1B. Area also includes NHD-mapped Clear Creek, but no channel features are present.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Eleocharis palustris*	89	Y	OBL
2. *Mentha arvensis*	4	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	93 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 7 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	89	x 1 =	89
FACW	species	4	x 2 =	8
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		93 (A)		97 (B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-1C**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	5Y 2.5/1	100					muck	
2-7	10 YR 3/2	100					silty clay	
7-11	10 YR 3/2	95	7.5 YR 4/6	5	C	M	silty clay	
11-15	10 YR 5/2	100					sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- X 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*		**Wetland Hydrology Present?**
Water Table Present?	Yes X	No ___	Depth *(inches)*	12	
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-2C**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: bank slope Local Relief *(concave, convex, none)*: none Slope (%): 0-3

Subregion (LRR): G - Western Great Plains Lat. 222118.7961 Long: 743889.9121 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-1B, Sample Point 1C.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Euphorbia esula*	8	N	NI
2. *Asclepias speciosa*	12	N	FAC
3. *Juncus balticus*	20	Y	FACW
4. *Cirsium arvense*	10	N	FACU
5. *Glycyrrhiza lepidota*	5	N	FACU
6. *Carex nebrascensis*	40	Y	OBL
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	40	x 1 =	40
FACW	species	20	x 2 =	40
FAC	species	12	x 3 =	36
FACU	species	15	x 4 =	60
UPL	species	8	x 5 =	40
Column Totals:		95 (A)		216 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-2C**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-7	10 YR 2/2	100					clay loam	
7-18	10 YR 5/3	100					sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-1D**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 223822.386 Long: 743811.491 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Additional sample point for NWI-mapped depressional palustrine emergent wetland PEM-1B. Area also includes NHD-mapped Clear Creek, but no channel features are present.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Calamagrostis stricta*	10	N	FACW
2. *Juncus balticus*	60	Y	FACW
3. *Mentha arvensis*	12	N	FACW
4. *Cirsium arvense*	8	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	82	x 2 =	164
FAC species	0	x 3 =	0
FACU species	8	x 4 =	32
UPL species	0	x 5 =	0
Column Totals:	90 (A)		196 (B)

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-1D**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	10 YR 2/1	100					Silty Clay	
4-16	10 YR 4/2	95	2.5 YR 4/6	5	C	M	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	___
Water Table Present?	Yes ___	No X	Depth *(inches)*	___
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-2D**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor terrace Local Relief *(concave, convex, none)*: minor concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 222199.8536 Long: 743721.5407 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-1B, Sample Point 1D.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Juncus balticus*	25	Y	FACW
2. *Cirsium arvense*	40	Y	FACU
3. *Calamagrostis stricta*	15	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	80 (A)		240 (B)

Prevalence Index = B/A = 3.0

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation
____ 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-2D**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	10 YR 2/1	100					Silty Clay	
4-18	10 YR 4/2	100					Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*		**Wetland Hydrology Present?**
Water Table Present?	Yes ___	No X	Depth *(inches)*		
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-1E**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 223906.2813 Long: 743867.5796 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

NWI-mapped depressional palustrine emergent wetland PEM-1C. Area also includes NHD-mapped Clear Creek, but no channel features are present.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Phalaris arundinacea*	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 100	x 2 =	200
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-1E**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-5	10 YR 2/1	100					Silty Clay	
5-16	10 YR 4/2	95	2.5 YR 4/6	5	C	M	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	___
Water Table Present?	Yes ___	No X	Depth *(inches)*	___
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-1F**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: minor concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223633.1128 Long: 744801.2537 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

NWI-mapped depressional palustrine emergent wetland PEM-1D. Area also includes NHD-mapped Clear Creek, but no channel features are present.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Phalaris arundinacea*	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 100	x 2 =	200
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-1F**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-5	10 YR 2/1	100					Silty Clay	
5-16	10 YR 4/2	97	2.5 YR 4/6	3	C	M	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____	**Wetland Hydrology Present?**
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____	
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-3**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 222261.9957 Long: 743534.4349 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Distichlis spicata*	80	Y	FACW
2. *Hordeum jubatum*	17	N	FACW
3. *Bromus hordeaceus*	3	N	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	0	x 1 =	0
FACW	species	97	x 2 =	194
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	3	x 5 =	15
Column Totals:		100 (A)		209 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-3**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-3	10 YR 2/1	97					Sandy Clay	
	10 YR 4/4	3					Sand	
3-7	10 YR 3/3	97	10 YR 5/8	3	C	M	Sand	
7-18	10 YR 5/2	100					Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-4**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: pond Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 222264.1156 Long: 743541.9372 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No ____ Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Area of open water (OW-1) within NWI-mapped PEM-1A.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Schoenoplectus tabernaemontani*	4	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	4 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 96 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	4	x 1 =	4
FACW	species	0	x 2 =	0
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		4 (A)		4 (B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-4**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No ___

Remarks:

Soils not investigated.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth *(inches)*	12	**Wetland Hydrology Present?**
Water Table Present?	Yes ___	No ___	Depth *(inches)*	___	
Saturation Present? *(includes capillary fringe)*	Yes ___	No ___	Depth *(inches)*	___	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-5A**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 221957.4546 Long: 742860.6615 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-2A.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Alopecurus pratensis*	12	N	FACW
2. *Hordeum jubatum*	35	Y	FACW
3. *Juncus balticus*	10	N	FACW
4. *Eleocharis palustris*	40	Y	OBL
5.			
6.			
7.			
8.			
9.			
10.			
	97 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 3 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	40	x 1 =	40
FACW	species	57	x 2 =	114
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		97 (A)		154 (B)

Prevalence Index = B/A = 1.6

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-5A**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10 YR 2/1	100					Clay	
6-15	10 YR 7/1	100					Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: ___

Depth *(inches)*: ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- X Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	___	**Wetland Hydrology Present?**
Water Table Present?	Yes ___	No X	Depth *(inches)*	___	
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-5B**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 222042.883 Long: 742982.0346 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-2B, including an NWI-mapped PEM wetland.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Hordeum jubatum*	70	Y	FACW
2. *Distichlis spicata*	12	N	FACW
3. *Sporobolus airoides*	5	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	87 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 13 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 82	x 2 =	164
FAC	species 5	x 3 =	15
FACU	species 0	x 4 =	0
UPL	species 0	x 5 =	0
Column Totals:	87 (A)		179 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-5B**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	10 YR 5/3	100					Silty Clay Loam	
2-17	10 YR 2/2	90					Clay	
	10 YR 5/3	10					Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- X Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

Dominant hydrophytic vegetation and wetland hydrology indicators present. Similiar landscape position as S-5A. Soil pH 8.02 (strongly alkaline) - redox features likely masked, per Great Plains Regional Supplement.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- X Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-6**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor terrace Local Relief *(concave, convex, none)*: none Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 221964.0318 Long: 742865.0514 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-2.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Sporobolus airoides*	50	Y	FAC
2. *Bromus hordeaceus*	25	Y	UPL
3. *Tragopogon dubius*	5	N	NI
4. *Hordeum jubatum*	8	N	FACW
5. *Thlaspi arvense*	10	N	FACU
6.			
7.			
8.			
9.			
10.			
	98 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 2 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	8	x 2 =	16
FAC species	50	x 3 =	150
FACU species	10	x 4 =	40
UPL species	30	x 5 =	150
Column Totals:	98 (A)		356 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-6**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-18	10 YR 3/2	100					Clay Loam	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-7**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: swale Local Relief *(concave, convex, none)*: concave Slope (%): 0-3

Subregion (LRR): G - Western Great Plains Lat. 222316.4934 Long: 742867.3368 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No ____ Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Vegetated swale appearing dark on aerial imagery but lacking wetland indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Agropyron cristatum*	30	Y	NI
2. *Bromus tectorum*	8	N	NI
3. *Mirabilis hirsuta*	10	N	NI
4. *Poa pratensis*	50	Y	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	98 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 2 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	48	x 5 =	240
Column Totals:	98 (A)		440 (B)

Prevalence Index = B/A = 4.5

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-7**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No ___

Remarks:

Soils not investigated. No wetland hydrology or dominant hydrophytic vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	___
Water Table Present?	Yes ___	No X	Depth *(inches)*	___
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	___

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-8**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 222628.1851 Long: 742414.9502 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-3.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Hordeum jubatum*	5	N	FACW
2. *Poa palustris*	15	N	FACW
3. *Elymus riparius*	10	N	FAC
4. *Eleocharis quinqueflora*	65	Y	OBL
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	65	x 1 =	65
FACW	species	20	x 2 =	40
FAC	species	10	x 3 =	30
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		95 (A)		135 (B)

Prevalence Index = B/A = 1.4

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-8**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	10 YR 3/2	100					Clay Loam	
2-16	10 YR 5/3	80	7.5 YR 4/6	20	C	PL	Sandy Loam	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-9**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor slope Local Relief *(concave, convex, none)*: none Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 222639.3463 Long: 742416.6928 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-3.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Bromus tectorum*	75	Y	NI
2. *Plantago patagonica*	2	N	NI
3. *Sphaeralcea ambigua*	6	N	NI
4. *Agropyron cristatum*	7	N	NI
5. *Tragopogon dubius*	5	N	NI
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 0	x 2 =	0
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 95	x 5 =	475
Column Totals:	95 (A)		475 (B)

Prevalence Index = B/A = 5.0

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-9**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-18	10 YR 3/2	100					Clay Loam	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-10**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: minor concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 222364.1248 Long: 744110.0081 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Hordeum jubatum*	85	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 85	x 2 =	170
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 0	x 5 =	0
Column Totals:	85 (A)		170 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-10**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	10 YR 2/2	100					sandy clay loam	
2-8	10 YR 5/3	80					Sand	
	10 YR 2/2	20					sandy clay loam	
8-18	10 YR 5/2	100					sandy clay loam	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-11**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor terrace Local Relief *(concave, convex, none)*: none Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 222537.0475 Long: 743441.1377 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ___ *(If no, explain in Remarks)*

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ___ No ___ Is the Sampled Area within a Wetland? Yes ___ No X

Wetland Hydrology Present? Yes ___ No X

Remarks:

Area mapped by NWI as palustrine emergent wetland but lacking wetland indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Euphorbia esula*	25	Y	NI
2. *Bromus inermis*	40	Y	UPL
3. *Elymus repens*	30	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	65	x 5 =	325
Column Totals:	95 (A)		445 (B)

Prevalence Index = B/A = 4.7

Hydrophytic Vegetation Indicators:

___ 1. Rapid Test for Hydrophytic Vegetation
___ 2. Dominance Test is >50%.
___ 3. Prevalence Index is ≤3.0[1]
___ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ___ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-11**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No ___

Remarks:

Soils not investigated - no dominant hydrophytic vegetatation or wetland hydrology indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-12**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 222540.5001 Long: 743436.1994 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-4.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Juncus balticus*	35	Y	FACW
2. *Mentha arvensis*	15	Y	FACW
3. *Alopecurus pratensis*	7	N	FACW
4. *Euphorbia esula*	5	N	NI
5. *Elymus riparius*	12	N	FAC
6. *Asclepias speciosa*	12	N	FAC
7.			
8.			
9.			
10.			
	86 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 14 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	0	x 1 =	0
FACW	species	57	x 2 =	114
FAC	species	24	x 3 =	72
FACU	species	0	x 4 =	0
UPL	species	5	x 5 =	25
Column Totals:		86 (A)		211 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL Sampling Point: **S-12**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	10 YR 2/2	100					clay loam	
4-16	10 YR 4/2	95	7.5 YR 4/4	5	C	M	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-13**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor terrace Local Relief *(concave, convex, none)*: none Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 223183.7781 Long: 743476.4361 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-4.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Bromus inermis*	4	N	UPL
2. *Euphorbia esula*	4	N	NI
3. *Cirsium arvense*	55	Y	FACU
4. *Juncus balticus*	20	Y	FACW
5. *Poa pratensis*	5	N	FACU
6.			
7.			
8.			
9.			
10.			
	88 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 12 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	0	x 1 =	0
FACW	species	20	x 2 =	40
FAC	species	0	x 3 =	0
FACU	species	60	x 4 =	240
UPL	species	8	x 5 =	40
Column Totals:		88 (A)		320 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-13**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-18	10 YR 3/3	100					sandy clay loam	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-14**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223294.596 Long: 743570.1626 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Distichlis spicata*	75	Y	FACW
2. *Hordeum jubatum*	4	N	FACW
3. *Elymus repens*	10	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	89 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 11 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	79	x 2 =	158
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	89 (A)		198 (B)

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-14**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10 YR 4/2	100					clay loam	
6								shovel refusal

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-15**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 223288.1983 Long: 743570.0458 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-5, including an area mapped by NWI as PEM.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Distichlis spicata*	65	Y	FACW
2. *Puccinellia nuttalliana*	8	N	OBL
3. *Hordeum jubatum*	5	N	FACW
4. *Juncus balticus*	18	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	96 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 4 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	8	x 1 =	8
FACW	species	88	x 2 =	176
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		96 (A)		184 (B)

Prevalence Index = B/A = 1.9

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-15**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-3	10 YR 3/2	100					Clay	
3-7	10 YR 4/2	100					Clay	
7-15	10 YR 7/1	100					Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- X Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-16**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: knoll Local Relief *(concave, convex, none)*: none Slope (%): 0-3

Subregion (LRR): G - Western Great Plains Lat. 222671.8173 Long: 743966.99 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:

Paired upland point for PEM-5.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Juncus balticus*	45	Y	FACW
2. *Cirsium arvense*	15	N	FACU
3. *Euphorbia esula*	12	N	NI
4. *Hordeum jubatum*	5	N	FACW
5. *Thlaspi arvense*	4	N	FACU
6. *Poa pratensis*	5	N	FACU
7.			
8.			
9.			
10.			
	86 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 14 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	0	x 1 =	0
FACW	species	50	x 2 =	100
FAC	species	0	x 3 =	0
FACU	species	24	x 4 =	96
UPL	species	12	x 5 =	60
Column Totals:		86 (A)		256 (B)

Prevalence Index = B/A = 3.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-16**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	10 YR 3/2	100					sandy clay loam	
2-18	10 YR 4/4	100					Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-17**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: minor concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223467.9961 Long: 744181.9343 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Juncus balticus*	75	Y	FACW
2. *Euphorbia esula*	5	N	NI
3. *Cirsium arvense*	8	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	88 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 12 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	0	x 3 =	0
FACU species	8	x 4 =	32
UPL species	5	x 5 =	25
Column Totals:	88 (A)		207 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-17**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-12	10 YR 3/2	100					Sandy Clay Loam	
12-18								road fill

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-18**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 224002.021 Long: 744598.4009 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-6 in on/off-ramp islands connected via culvert.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Schoenoplectus pungens*	40	Y	OBL
2. *Juncus balticus*	15	Y	FACW
3. *Cirsium arvense*	2	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	57 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 43 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	40	x 1 =	40
FACW	species	15	x 2 =	30
FAC	species	0	x 3 =	0
FACU	species	2	x 4 =	8
UPL	species	0	x 5 =	0
Column Totals:		57 (A)		78 (B)

Prevalence Index = B/A = 1.4

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-18**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-1.5	10 YR 3/2	100					muck	
1.5-4	10 YR 3/2	100					Sandy Clay Loan	
4-12	10 YR 5/2	100					Sand	some road fill
12								shovel refusal

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- X 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: ___

Depth *(inches)*: ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth *(inches)*	1/2	**Wetland Hydrology Present?**
Water Table Present?	Yes X	No ___	Depth *(inches)*	surface	
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-19**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: terrace Local Relief *(concave, convex, none)*: none Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 224234.55 Long: 745187.4398 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-6.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Euphorbia esula*	7	N	NI
2. *Cirsium arvense*	10	N	FACU
3. *Juncus balticus*	15	N	FACW
4. *Schoenoplectus pungens*	8	N	OBL
5. *Agropyron cristatum*	45	Y	NI
6.			
7.			
8.			
9.			
10.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	8	x 1 =	8
FACW	species	15	x 2 =	30
FAC	species	0	x 3 =	0
FACU	species	10	x 4 =	40
UPL	species	52	x 5 =	260
Column Totals:		85 (A)		338 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-19**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	10 YR 3/2	100					Clay	
2-6	10 YR 4/2	100					Sand	
6+								road fill

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-20**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: minor concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223633.3218 Long: 744811.1202 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

NWI-mapped depressional palustrine emergent wetland PEM-7 in on/off-ramp island.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Distichlis spicata*	90	Y	FACW
2. *Alopecurus pratensis*	5	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 95	x 2 =	190
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 0	x 5 =	0
Column Totals:	95 (A)		190 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-20**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	10 YR 2/1	100					Sandy Clay Loam	
4-16	10 YR 6/2	96	7.5 YR 5/6	4	C	M	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- X Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-21**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor terrace Local Relief *(concave, convex, none)*: minor convex Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223653.3305 Long: 744789.472 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-7.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Juncus balticus*	20	Y	FACW
2. *Distichlis spicata*	10	N	FACW
3. *Poa pratensis*	60	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	90 (A)		300 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

SOIL

Sampling Point: **S-21**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10 YR 3/2	100					Sandy Clay Loam	50% road fill
6-18	10 YR 5/3	100					Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-22**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223963.496 Long: 744576.4639 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional area at culvert mouth with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Juncus balticus*	25	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	25 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 75 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	25 (A)		50 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-22**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-3	10 YR 3/2	100					Sandy Clay Loam	with some road fill
3-5	10 YR 5/2	100					Sandy Clay	
5-18	10 YR 8/1	100					Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-23**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression/fringe Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223959.9388 Long: 744591.6483 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

NWI-mapped depressional/fringe palustrine emergent wetland PEM-8 around open water OW-2.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Schoenoplectus pungens*	45	Y	OBL
2. *Triglochin maritima*	4	N	OBL
3. *Hordeum jubatum*	3	N	FACW
4. *Distichlis spicata*	40	Y	FACW
5. *Sporobolus airoides*	2	N	FAC
6.			
7.			
8.			
9.			
10.			
	94 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 6 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	49	x 1 =	49
FACW	species	43	x 2 =	86
FAC	species	2	x 3 =	6
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		94 (A)		141 (B)

Prevalence Index = B/A = 1.5

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-23**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10 YR 3/1	80	10 YR 4/2	20	C	PL	Clay loam	
6-16	10 YR 5/1	100					loamy sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth *(inches)*	3	**Wetland Hydrology Present?**
Water Table Present?	Yes X	No ___	Depth *(inches)*	14	
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-24**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor slope Local Relief *(concave, convex, none)*: none Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 224469.3888 Long: 746439.1011 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-8.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Euphorbia esula*	70	Y	NI
2. *Cirsium arvense*	8	N	FACU
3. *Juncus balticus*	13	N	FACW
4. *Distichlis spicata*	3	N	FACW
5. *Chenopodium album*	4	N	FACU
6. *Hordeum jubatum*	2	N	FACW
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 18	x 2 =	36
FAC	species 0	x 3 =	0
FACU	species 12	x 4 =	48
UPL	species 70	x 5 =	350
Column Totals:	100 (A)		434 (B)

Prevalence Index = B/A = 4.3

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-24**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	10 YR 3/3	100					sandy loam	
8-18	10 YR 5/3	100					sandy clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-25**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 224459.3737 Long: 746441.3568 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: Open Water

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No ____ Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

NHD-mapped open water OW-2

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Schoenoplectus pungens*	4	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	4 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 96 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: *(excluding FAC-)*: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 4	x 1 =	4
FACW	species 0	x 2 =	0
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 0	x 5 =	0
Column Totals:	4 (A)		4 (B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-25**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No ___

Remarks:

Soils not investigated.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth *(inches)*	10	**Wetland Hydrology Present?**
Water Table Present?	Yes ___	No ___	Depth *(inches)*	___	
Saturation Present? *(includes capillary fringe)*	Yes ___	No ___	Depth *(inches)*	___	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-26**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 220851.0461 Long: 742558.744 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine scrub-shrub wetland PSS-1 in area mapped by NWI as PEM. PSS-1 abuts PEM-1B.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1. *Salix exigua*	55	Y	FACW
2.			
3.			
4.			
5.			
	55 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Cirsium arvense*	12	N	FACU
2. *Juncus balticus*	45	Y	FACW
3. *Calamagrostis stricta*	10	N	FACW
4. *Sonchus arvensis*	10	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	77 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 23 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	110	x 2 =	220
FAC species	10	x 3 =	30
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column Totals:	132 (A)		298 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-26**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	10 YR 2/1	100					Silty Clay	
4-16	10 YR 4/2	95	2.5 YR 4/6	5	C	M	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	___
Water Table Present?	Yes ___	No X	Depth *(inches)*	___
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-27**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor terrace Local Relief *(concave, convex, none)*: none Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 222666.3514 Long: 743969.4988 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland for PSS-1.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Cirsium arvense*	60	Y	FACU
2. *Gaura parviflora*	3	N	NI
3. *Chenopodium album*	5	N	FACU
4. *Sonchus arvensis*	15	N	FAC
5. *Euphorbia esula*	5	N	NI
6. *Juncus balticus*	12	N	FACW
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	0	x 1 =	0
FACW	species	12	x 2 =	24
FAC	species	15	x 3 =	45
FACU	species	65	x 4 =	260
UPL	species	8	x 5 =	40
Column Totals:		100 (A)		369 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation
____ 2. Dominance Test is >50%.
____ 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-27**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	10 YR 2/1	100					Silty Clay	
4-18	10 YR 4/2	100					Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-28**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression/fringe Local Relief *(concave, convex, none)*: concave Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 223474.8939 Long: 744171.6553 Datum: WY E

Soil Map Unit Name: Evanston loam, 0 to 6 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

NWI-mapped depressional/fringe palustrine emergent wetland PEM-9 surrounding OW-3.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Cirsium arvense*	4	N	FACU
2. *Triglochin maritima*	3	N	OBL
3. *Alopecurus pratensis*	25	Y	FACW
4. *Juncus balticus*	40	Y	FACW
5. *Schoenoplectus pungens*	15	N	OBL
6. *Glycyrrhiza lepidota*	5	N	FACU
7. *Hordeum jubatum*	8	N	FACW
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	18	x 1 =	18
FACW	species	73	x 2 =	146
FAC	species	0	x 3 =	0
FACU	species	9	x 4 =	36
UPL	species	0	x 5 =	0
Column Totals:		100 (A)		200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-28**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-3	10 YR 3/2	100					Silty Clay	dense fine roots
3-16	10 YR 3/2	97	7.5 YR 4/6	3	C	PL	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-29**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor terrace Local Relief *(concave, convex, none)*: none Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 224003.0706 Long: 744608.4763 Datum: WY E

Soil Map Unit Name: Evanston loam, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-9.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Glycyrrhiza lepidota*	8	N	FACU
2. *Plantago major*	24	Y	FAC
3. *Cirsium arvense*	8	N	FACU
4. *Elymus repens*	50	Y	FACU
5. *Juncus balticus*	10	N	FACW
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 10	x 2 =	20
FAC	species 24	x 3 =	72
FACU	species 66	x 4 =	264
UPL	species 0	x 5 =	0
Column Totals:	100 (A)		356 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation
____ 2. Dominance Test is >50%.
____ 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

SOIL

Sampling Point: **S-29**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	10 YR 3/2	100					Clay	
2-18	10 YR 3/2	100					Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-30**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: pond Local Relief *(concave, convex, none)*: concave Slope (%): 0-3

Subregion (LRR): G - Western Great Plains Lat. 224503.6949 Long: 746591.6428 Datum: WY E

Soil Map Unit Name: Evanston loam, 0 to 6 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No ____ Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

NHD-mapped stock pond OW-3. Area also mapped by NWI as PEM.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Eleocharis palustris*	3	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	3 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 97 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 3	x 1 =	3
FACW	species 0	x 2 =	0
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 0	x 5 =	0
Column Totals:	3 (A)		3 (B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-30**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No ___

Remarks:

Soils not investigated.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth *(inches)*	> 36	**Wetland Hydrology Present?**
Water Table Present?	Yes ___	No ___	Depth *(inches)*	___	
Saturation Present? *(includes capillary fringe)*	Yes ___	No ___	Depth *(inches)*	___	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-31**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: pond fringe Local Relief *(concave, convex, none)*: concave Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 224514.9917 Long: 746564.1097 Datum: WY E

Soil Map Unit Name: Evanston loam, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Fringe palustrine scrub-shrub wetland PSS-2 abutting PEM-9 and OW-3.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1. *Salix melanopsis*	60	Y	FACW
2. *Elaeagnus angustifolia*	12	N	FACU
3.			
4.			
5.			
	72 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Eleocharis palustris*	35	Y	OBL
2. *Elymus repens*	15	Y	FACU
3. *Hordeum jubatum*	12	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	62 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 38 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index Worksheet:

		Total % Cover of:		Multiply by:
OBL	species	35	x 1 =	35
FACW	species	72	x 2 =	144
FAC	species	0	x 3 =	0
FACU	species	27	x 4 =	108
UPL	species	0	x 5 =	0
Column Totals:		134 (A)		287 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-31**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	10 YR 3/3	100					muck	
2-8	2.5 Y 2.5/1	100					sand	
8								shovel refusal

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- X 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth *(inches)*	8	**Wetland Hydrology Present?**
Water Table Present?	Yes X	No ___	Depth *(inches)*	4	
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-32**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: terrace Local Relief *(concave, convex, none)*: convex Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 224523.5126 Long: 746574.8401 Datum: WY E

Soil Map Unit Name: Evanston loam, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ___ *(If no, explain in Remarks)*

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ___ No X Is the Sampled Area within a Wetland? Yes ___ No X

Wetland Hydrology Present? Yes ___ No X

Remarks:

Paired upland point for PSS-2.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1. *Elaeagnus angustifolia*	20	Y	FACU
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Bromus inermis*	12	N	UPL
2. *Plantago major*	15	N	FAC
3. *Hordeum jubatum*	10	N	FACW
4. *Glycyrrhiza lepidota*	20	Y	FACU
5. *Elymus repens*	35	Y	FACU
6.			
7.			
8.			
9.			
10.			
	92 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 8 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	0	x 1 =	0
FACW	species	10	x 2 =	20
FAC	species	15	x 3 =	45
FACU	species	75	x 4 =	300
UPL	species	12	x 5 =	60
Column Totals:		112 (A)		425 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

___ 1. Rapid Test for Hydrophytic Vegetation

___ 2. Dominance Test is >50%.

___ 3. Prevalence Index is ≤3.0[1]

___ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ___ Yes X No

Remarks:

SOIL

Sampling Point: **S-32**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-3	10 YR 3/2	100					Clay	
3-18	10 YR 3/2	100					Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-33**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 224596.2283 Long: 748815.098 Datum: WY E

Soil Map Unit Name: Evanston loam, 0 to 6 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

NWI-mapped depressional palustrine emergent wetland PEM-10.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Eleocharis microcarpa*	15	N	OBL
2. *Carex praegracilis*	20	Y	FACW
3. *Alopecurus pratensis*	5	N	FACW
4. *Distichlis spicata*	35	Y	FACW
5. *Elymus riparius*	23	Y	FAC
6.			
7.			
8.			
9.			
10.			
	98 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 2 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	15	x 1 =	15
FACW	species	60	x 2 =	120
FAC	species	23	x 3 =	69
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		98 (A)		204 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-33**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10 YR 3/2	100					Silty Clay	
6-16	10 YR 6/2	95	7.5 YR 6/8	5	C	M	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-34**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor slope Local Relief *(concave, convex, none)*: none Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 224606.3702 Long: 748817.3358 Datum: WY E

Soil Map Unit Name: Evanston loam, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-10.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Elymus riparius*	50	Y	FAC
2. *Distichlis spicata*	10	N	FACW
3. *Poa pratensis*	40	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 10	x 2 =	20
FAC	species 50	x 3 =	150
FACU	species 40	x 4 =	160
UPL	species 0	x 5 =	0
Column Totals:	100 (A)		330 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation
____ 2. Dominance Test is >50%.
____ 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

SOIL

Sampling Point: **S-34**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10 YR 3/2	100					Clay Loam	
6-18	10 YR 5/3	100					Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-35**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 224841.4713 Long: 746746.6771 Datum: WY E

Soil Map Unit Name: Evanston loam, 0 to 6 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

NWI-mapped depressional palustrine emergent wetland PEM-11. No right-of-entry for site; hydric soils assumed in presence of dominant hydrophytic vegetation and wetland hydrology.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Typha angustifolia*	100	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	100	x 1 =	100
FACW	species	0	x 2 =	0
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		100 (A)		100 (B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-35**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- X Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

No right-of-entry for this wetland; no soil pit dug. Hydric soils assumed in presence of dominant hydrophytic vegetation and wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth *(inches)*	_____
Water Table Present?	Yes ___	No ___	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No ___	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Because investigators had no right-of-entry, no observations of other hydrologic indicators aside from geomorphic position and FAC-Neutral test were possible.

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-36**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: roadside ditch Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 224579.5319 Long: 745203.7592 Datum: WY E

Soil Map Unit Name: Merden silty clay loam, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Phalaris arundinacea*	88	Y	FACW
2. *Juncus balticus*	12	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species	0	x 1 = 0
FACW	species	100	x 2 = 200
FAC	species	0	x 3 = 0
FACU	species	0	x 4 = 0
UPL	species	0	x 5 = 0
Column Totals:		100 (A)	200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-36**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	10 YR 3/1	100					Clay Loam	
8								shovel refusal

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-37**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 224354.274 Long: 744368.3054 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-12.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Hordeum jubatum*	8	N	FACW
2. *Distichlis spicata*	12	N	FACW
3. *Poa palustris*	45	Y	FACW
4. *Carex praegracilis*	30	Y	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		190 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-37**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-7	10 YR 2/2	100					Sandy Clay Loam	
7-16	10 YR 6/2	97	7.5 YR 5/6	3	C	M	Sandy Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-38**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S12 T13N R67W**

Landform *(hillslope, terrace, etc.)*: road slope Local Relief *(concave, convex, none)*: none Slope (%): 0-3

Subregion (LRR): G - Western Great Plains Lat. 224363.1718 Long: 744366.3306 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-12.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Euphorbia esula*	65	Y	NI
2. *Juncus balticus*	30	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	65	x 5 =	325
Column Totals:	95 (A)		385 (B)

Prevalence Index = B/A = 4.1

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL Sampling Point: **S-38**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-13	10 YR 2/2	100					clay	
13-18	10 YR 6/2	97	7.5 YR 5/6	3	C	M	sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-39**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 224071.7792 Long: 743814.9568 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Eleocharis palustris*	87	Y	OBL
2. *Hordeum jubatum*	4	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	91 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 9 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	87	x 1 =	87
FACW	species	4	x 2 =	8
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		91 (A)		95 (B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-39**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-3	10 YR 3/2	100					Sandy Clay Loam	some road fill
3-5	10 YR 5/2	100					Sandy Clay	
5-18	10 YR 8/1	100					Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-40**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: minor concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223977.5752 Long: 743424.317 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Juncus compressus*	25	Y	FACW
2. *Elymus repens*	20	Y	FACU
3. *Puccinellia nuttalliana*	15	Y	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 40 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	15	x 1 =	15
FACW	species	25	x 2 =	50
FAC	species	0	x 3 =	0
FACU	species	20	x 4 =	80
UPL	species	0	x 5 =	0
Column Totals:		60 (A)		145 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-40**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10 YR 2/1	67					Clay Loam	25% road fill
	10 YR 3/1	33					Clay Loam	
6-18	10 YR 6/3	100					Sandy Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- X Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-41**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-3

Subregion (LRR): G - Western Great Plains Lat. 226545.3917 Long: 743906.1199 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-13.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Eleocharis palustris*	75	Y	OBL
2. *Typha latifolia*	10	N	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	85	x 1 =	85
FACW	species	0	x 2 =	0
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		85 (A)		85 (B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-41**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-0.5	10 YR 2/1	100					muck	
0.5-2	10YR 3/1	100					sand	
2-8	10 YR 2/1	100					clay	
8-12	10 YR 3/2	100					clay	
12-16	10 YR 3/1	100					clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- X 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- X Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-42**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor slope Local Relief *(concave, convex, none)*: none Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 226546.0379 Long: 743900.1836 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-13.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Bromus inermis*	12	N	UPL
2. *Poa pratensis*	78	Y	FACU
3. *Cirsium arvense*	10	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 0	x 2 =	0
FAC	species 0	x 3 =	0
FACU	species 88	x 4 =	352
UPL	species 12	x 5 =	60
Column Totals:	100 (A)		412 (B)

Prevalence Index = B/A = 4.1

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation
____ 2. Dominance Test is >50%.
____ 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

SOIL

Sampling Point: **S-42**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-18	10 YR 2/1	100					Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-43**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 226990.9914 Long: 743767.5194 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Hordeum jubatum*	86	Y	FACW
2. *Distichlis spicata*	14	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species	0	x 1 = 0
FACW	species	100	x 2 = 200
FAC	species	0	x 3 = 0
FACU	species	0	x 4 = 0
UPL	species	0	x 5 = 0
Column Totals:		100 (A)	200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-43**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-12	10 YR 3/2	100					Clay	
12-14	10 YR 7/3	97	7.5 YR 4/6	3	C	M	Sandy Clay	
14-18	10 YR 2/1	100					Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-44**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S1 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 226818.526 Long: 744082.0723 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Alopecurus pratensis*	20	Y	FACW
2. *Eleocharis palustris*	70	Y	OBL
3. *Hordeum jubatum*	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	70	x 1 =	70
FACW species	25	x 2 =	50
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		120 (B)

Prevalence Index = B/A = 1.3

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-44**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	10 YR 3/2	100					Sandy Clay Loam	
4-18	10 YR 2/1	100					Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-45**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S1 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 226674.3428 Long: 744223.2503 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-14.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Carex utriculata*	89	Y	OBL
2. *Juncus balticus*	6	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	89	x 1 =	89
FACW	species	6	x 2 =	12
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		95 (A)		101 (B)

Prevalence Index = B/A = 1.1

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-45**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-16	10 YR 2/1	97	7.5 YR 5/8	3	C	M	Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*		**Wetland Hydrology Present?**
Water Table Present?	Yes ___	No X	Depth *(inches)*		
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-46**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S1 T13N R67W**

Landform *(hillslope, terrace, etc.)*: roadslope Local Relief *(concave, convex, none)*: none Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 226680.7916 Long: 744230.7508 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-14.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Alopecurus pratensis*	5	N	FACW
2. *Agropyron cristatum*	65	Y	NI
3. *Poa pratensis*	30	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 5	x 2 =	10
FAC	species 0	x 3 =	0
FACU	species 30	x 4 =	120
UPL	species 65	x 5 =	325
Column Totals:	100 (A)		455 (B)

Prevalence Index = B/A = 4.6

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-46**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-10	10 YR 2/2	100					Sandy Clay Loam	
10								shovel refusal - road fill

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-47A**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S1 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 226479.6867 Long: 744503.7225 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-15A in on/off-ramps connected via culverts.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Hordeum jubatum*	25	Y	FACW
2. *Alopecurus pratensis*	6	N	FACW
3. *Puccinellia nuttalliana*	10	Y	OBL
4. *Phalaris arundinacea*	5	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	46 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 54 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	10	x 1 =	10
FACW	species	36	x 2 =	72
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		46 (A)		82 (B)

Prevalence Index = B/A = 1.8

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

Bare ground is algal mat.

SOIL

Sampling Point: **S-47A**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-1	10 YR 2/1	100					muck	
1-5	10 YR 3/2	100					Sand	
5								restricted layer - asphalt?

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- X 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	___
Water Table Present?	Yes ___	No X	Depth *(inches)*	___
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-47B**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 227331.4587 Long: 743882.1057 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-15C in on/off-ramps connected via culverts to PEM-15A and PEM-15B.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Hordeum jubatum*	85	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 85	x 2 =	170
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 0	x 5 =	0
Column Totals:	85 (A)		170 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-47B**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	10 YR 3/1	100					clay	
8-16	10 YR 6/2	80	2.5 Y 5/6	20	C	M	Sandy Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*		**Wetland Hydrology Present?**
Water Table Present?	Yes ___	No X	Depth *(inches)*		
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-48**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S1 T13N R67W**

Landform *(hillslope, terrace, etc.)*: ditch slope Local Relief *(concave, convex, none)*: none Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 226479.3027 Long: 744498.6668 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-15A.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Bromus inermis*	70	Y	UPL
2. *Phalaris arundinacea*	15	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	70	x 5 =	350
Column Totals:	85 (A)		380 (B)

Prevalence Index = B/A = 4.5

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation
____ 2. Dominance Test is >50%.
____ 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

SOIL

Sampling Point: **S-48**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-18	10 YR 3/2	100					sand	50% road fill

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-49**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S36 T14N R67W**

Landform *(hillslope, terrace, etc.)*: depression/fringe Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 231059.9227 Long: 745833.7288 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: Riverine

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional/fringe palustrine emergent wetland PEM-16 along PS-1 Crow Creek. Located under I-25 bridges.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Phalaris arundinacea*	30	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 70 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	30 (A)		60 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-49**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	10 YR 3/2	100					clay	
2-3	10 YR 3/2	100					sand	
3-8	10 YR 5/2	97	7.5 YR 4/6	3	C	M	Clay	
8-16	10 YR 5/2	80	7.5 YR 4/6	20	C	M	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- X Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*		**Wetland Hydrology Present?**
Water Table Present?	Yes ___	No X	Depth *(inches)*		
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-50**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S36 T14N R67W**

Landform *(hillslope, terrace, etc.)*: terrace Local Relief *(concave, convex, none)*: convex Slope (%): 0-3

Subregion (LRR): G - Western Great Plains Lat. 231062.501 Long: 745813.8199 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-16.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Bromus inermis*	20	Y	UPL
2. *Euphorbia esula*	18	Y	NI
3. *Alopecurus pratensis*	7	N	FACW
4. *Elymus repens*	45	Y	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	7	x 2 =	14
FAC species	0	x 3 =	0
FACU species	45	x 4 =	180
UPL species	38	x 5 =	190
Column Totals:	90 (A)		384 (B)

Prevalence Index = B/A = 4.3

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation
____ 2. Dominance Test is >50%.
____ 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-50**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-18	10 YR 4/3	100					sand	some cobbles

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-51**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S36 T14N R67W**

Landform *(hillslope, terrace, etc.)*: plain Local Relief *(concave, convex, none)*: none Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 231981.3265 Long: 746097.1749 Datum: WY E

Soil Map Unit Name: Urban land-Poposhia complex, 0 to 6 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No ____ Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Area mapped by NWI as palustrine emergent wetland but lacks wetland indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Elymus repens*	75	Y	FACU
2. *Bromus inermis*	20	Y	UPL
3. *Dactylis glomerata*	5	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	0	x 1 =	0
FACW	species	0	x 2 =	0
FAC	species	0	x 3 =	0
FACU	species	80	x 4 =	320
UPL	species	20	x 5 =	100
Column Totals:		100 (A)		420 (B)

Prevalence Index = B/A = 4.2

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

SOIL

Sampling Point: **S-51**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No ___

Remarks:

Soils not investigated - no dominant hydrophytic vegetation or wetland hydrology indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-52**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S36 T14N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 231523.4732 Long: 745779.0086 Datum: WY E

Soil Map Unit Name: Urban land-Poposhia complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-17 at culvert mouth.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Hordeum jubatum*	35	Y	FACW
2. *Portulaca oleracea*	5	N	FAC
3. *Puccinellia nuttalliana*	12	Y	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	52 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 48 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	12	x 1 =	12
FACW	species	35	x 2 =	70
FAC	species	5	x 3 =	15
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		52 (A)		97 (B)

Prevalence Index = B/A = 1.9

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-52**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-1	10 YR 2/1	100					muck	
1-5	10 YR 4/1	100					clay	
5-12	10 YR 4/1	50					clay	some road fill
	10 YR 3/2	50					clay	some road fill

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- X 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth *(inches)*	4	**Wetland Hydrology Present?**
Water Table Present?	Yes X	No ___	Depth *(inches)*	14	
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-53**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S36 T14N R67W**

Landform *(hillslope, terrace, etc.)*: minor terrace Local Relief *(concave, convex, none)*: none Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 231529.4303 Long: 745782.4563 Datum: WY E

Soil Map Unit Name: Urban land-Poposhia complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-17.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Bromus inermis*	10	N	UPL
2. *Festuca ovina*	75	Y	NI
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	85	x 5 =	425
Column Totals:	85 (A)		425 (B)

Prevalence Index = B/A = 5.0

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-53**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-18	10 YR 4/2	100					Clay Loam	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

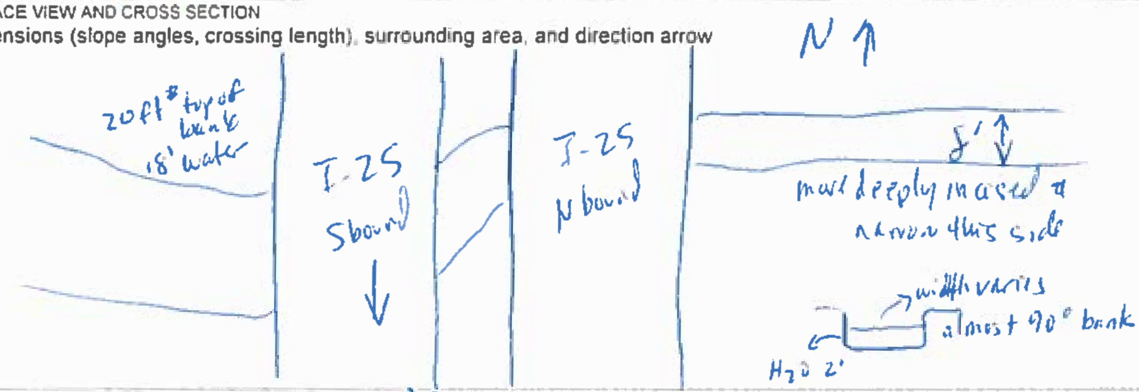
Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Ordinary High Water Mark Data Form

Stream Name: Crow Creek	Stream No: S-54 PS-1	
Assoc Wetland No: N/A	Date: 7/31/19	County/State: Laramie / WY
Investigator: R. Newton, D. Soucy	Team No.:	Landowner/Tract No.:

STREAM PLANS - SURFACE VIEW AND CROSS SECTION
Show estimated dimensions (slope angles, crossing length), surrounding area, and direction arrow



Stream Flow	Fast ___	Moderate X	Slow ___	Very Slow ___	None ___				
	Perennial ___	Intermittent ___	Ephemeral ___						
Stream Depth (in.)	0-3 ___	3-6 ___	6-12 ___	12-18 ___	18-24 X	24-36 ___	36-48 ___	48-60 ___	60+ ___
Stream Width (ft.)	Top of Banks: ~20'		Water Surface: ~18						
Stream Substrate %	Bedrock ___	Gravel 90	Sand ___	Silt/Clay 10	Organic ___				
Bank Height (ft.)	Left 0-2 ___	2-4 X	4-6 ___	6-8 ___	8+ ___				
	Right 0-2 ___	2-4 X	4-6 ___	6-8 ___	8+ ___				
Bank Slope (°)	Left 0-20 ___	20-40 ___	40-60 ___	60-80 ___	80+ X				
	Right 0-20 ___	20-40 ___	40-60 ___	60-80 ___	80+ X				
Water Clarity	Clear X	Slightly Turbid ___	Turbid ___	Very Turbid ___	Color:				
Aquatic Habitat	Sand Bar ___	Gravel Bar ___	Mud Bar ___	Gravel Riffles ___	Deep Pools X				
	Overhanging trees/shrubs ___	In-stream emergent plants ___	In-stream submergent plants X	Bank root systems ___	Fringing Wetlands ___				
Aquatic Organisms	Waterfowl ___	Fish (adult) X	Fish (juvenile) X	Frogs X	Turtles ___				
	Snakes ___	Invertebrates X	Other:						

T/E SPECIES / SUITABLE HABITAT (briefly describe potential/occurrence)

RIPARIAN VEGETATION DESCRIPTION

Phalaris arundinacea, Salix exigua

COMMENTS (construction constraints, erosion potential, existing disturbances, and meanders)

Flows under I-25 - 2 bridges

STREAM QUALITY (indicate) High ___ Moderate ___ Low X

Rationale for selected rank (explain): Stream channel appears to be modified to channel flow w/ preferred bed/bank underneath I-25

High Quality – no indication of stress or disturbance in stream or adjacent area – diverse and mature fringing shrub-dominated cover - diverse and stable fish & wildlife habitat – gravel beds, submerged logs, undercut banks, riffles and pools – no channelization

Moderate Quality – mild to moderate disturbances result in minor recognizable alterations – pipeline, road, railroad, other ROWs – provides fair fish and wildlife habitat – some erosion potential – some habitat diversity – fine sediment deposition predominate – flow and depth variation restricted – some channelization – trees, grass, or forbes dominate bank vegetation

Low quality – disturbances cause significant changes affecting plant species – mechanical alteration of plant species and/or soils – intense grazing activities – stream course channelization or ditching – exotic, nuisance, or invasive species – habitat diversity lacking – high erosion potential – flow and depth variation lacking - does not provide suitable wildlife habitat – grass or forbes dominate bank vegetation

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-55**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S36 T14N R67W**

Landform *(hillslope, terrace, etc.)*: streamside fringe Local Relief *(concave, convex, none)*: minor concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 231089.6224 Long: 745729.7912 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: Riverine

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Riparian area mapped by NWI as riverine. Area has dominant hydrophtic vegetation and wetland hydrology but lacks hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1. *Salix exigua*	50	Y	FACW
2.			
3.			
4.			
5.			
	50 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Phalaris arundinacea*	75	Y	FACW
2. *Agrostis stolonifera*	5	N	FACW
3. *Euphorbia esula*	5	N	NI
4. *Alopecurus pratensis*	8	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	93 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	0	x 1 =	0
FACW	species	138	x 2 =	276
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	5	x 5 =	25
Column Totals:		143 (A)		301 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-55**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-18	10 YR 4/3	100					Sandy Clay Loam	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-56**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S1 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor depression Local Relief *(concave, convex, none)*: minor concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 228303.2821 Long: 744066.7128 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

NWI-mapped depressional/fringe palustrine emergent wetland PEM-18 around OW-4. No right-of-entry for site; hydric soils assumed in presence of dominant hydrophytic vegetation and wetland hydrology.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Alopecurus pratensis*	65	Y	FACW
2. *Eleocharis palustris*	8	N	OBL
3. *Hordeum jubatum*	22	Y	FACW
4. *Elymus repens*	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	8	x 1 =	8
FACW	species	87	x 2 =	174
FAC	species	0	x 3 =	0
FACU	species	5	x 4 =	20
UPL	species	0	x 5 =	0
Column Totals:		100 (A)		202 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-56**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- X Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

No right of entry for this site; no soil pit dug. Hydric soils assumed in presence of dominant hydrophytic vegetation and wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth *(inches)*	_____
Water Table Present?	Yes ___	No ___	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No ___	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Because investigators had no right-of-entry, no observations of other hydrologic indicators aside from geomorphic position and FAC-Neutral test were possible.

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-57**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S1 T13N R67W**

Landform *(hillslope, terrace, etc.)*: pond Local Relief *(concave, convex, none)*: concave Slope (%): 0-3

Subregion (LRR): G - Western Great Plains Lat. 228323.8633 Long: 744058.5092 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No ____ Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

NHD-mapped stock pond OW-4.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Eleocharis palustris*	8	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	8 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 92 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 8	x 1 =	8
FACW	species 0	x 2 =	0
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 0	x 5 =	0
Column Totals:	8 (A)		8 (B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-57**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No ___

Remarks:

Soils not investigated.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth *(inches)*	>36	**Wetland Hydrology Present?**
Water Table Present?	Yes ___	No ___	Depth *(inches)*	___	
Saturation Present? *(includes capillary fringe)*	Yes ___	No ___	Depth *(inches)*	___	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-58**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S1 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor depression Local Relief *(concave, convex, none)*: minor concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 228229.6525 Long: 744061.81 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Area mapped by NWI as PEM and NHD as waterbody lacking indicators of both.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5x5 ft)			
1. *Alopecurus pratensis*	65	Y	FACW
2. *Eleocharis palustris*	8	N	OBL
3. *Hordeum jubatum*	22	Y	FACW
4. *Elymus repens*	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	8	x 1 =	8
FACW	species	87	x 2 =	174
FAC	species	0	x 3 =	0
FACU	species	5	x 4 =	20
UPL	species	0	x 5 =	0
Column Totals:		100 (A)		202 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-58**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-5	10 YR 4/2	100					Clay Loam	
5-18	2.5 Y 6/3	100					Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- X Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-59**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 227941.8682 Long: 743930.2093 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-19.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Eleocharis palustris*	80	Y	OBL
2. *Alopecurus pratensis*	15	N	FACW
3. *Elymus repens*	3	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	98 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 2 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	80	x 1 =	80
FACW	species	15	x 2 =	30
FAC	species	0	x 3 =	0
FACU	species	3	x 4 =	12
UPL	species	0	x 5 =	0
Column Totals:		98 (A)		122 (B)

Prevalence Index = B/A = 1.2

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-59**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	10 YR 4/2	100					Clay Loam	
4-11	10 YR 3/2	95	7.5 YR 4/6	5	C	M	Clay	
11-16	10 YR 5/3	100						

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-60**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: toe of slope Local Relief *(concave, convex, none)*: none Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 227936.4126 Long: 743937.3139 Datum: WY E

Soil Map Unit Name: Poposhia-Trimad complex, 3 to 15 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-19.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Bromus inermis*	35	Y	UPL
2. *Alopecurus pratensis*	25	Y	FACW
3. *Agrostis stolonifera*	5	N	FACW
4. *Elymus trachycaulus*	15	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 30	x 2 =	60
FAC	species 0	x 3 =	0
FACU	species 15	x 4 =	60
UPL	species 35	x 5 =	175
Column Totals:	80 (A)		295 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

SOIL

Sampling Point: **S-60**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-7	10 YR 4/2	100					clay loam	
7-18	10 YR 5/3	80	7.5 YR 4/6	20	C	M	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-61**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 227918.5193 Long: 743685.8075 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-20.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Alopecurus pratensis*	75	Y	FACW
2. *Eleocharis palustris*	12	N	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	87 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 13 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	12	x 1 =	12
FACW	species	75	x 2 =	150
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		87 (A)		162 (B)

Prevalence Index = B/A = 1.9

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-61**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-3	10 YR 3/1	100					Clay Loam	
3-5	10 YR 5/4	100					Clay Loam	
5-16	2.5 Y 6/2	95	7.5 YR 5/6	5	C	M	Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-62**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor slope Local Relief *(concave, convex, none)*: none Slope (%): 0-3

Subregion (LRR): G - Western Great Plains Lat. 227936.5925 Long: 743684.4618 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-20.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Bromus inermis*	20	Y	UPL
2. *Achillea millefolium*	25	Y	FACU
3. *Melilotus officinalis*	15	N	FACU
4. *Poa pratensis*	20	Y	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	20	x 5 =	100
Column Totals:	80 (A)		340 (B)

Prevalence Index = B/A = 4.3

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

SOIL Sampling Point: **S-62**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0 - 2.5	10 YR 4/2	100					Clay Loam	
2.5 - 9	2.5 Y 6/3	90	7.5 YR 4/6	10	C	M	Clay	
9 - 16	10 YR 7/1	97	7.5 YR 4/6	3	C	M	Sandy Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-63**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: plain Local Relief *(concave, convex, none)*: none Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 227724.382 Long: 743533.9523 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Area with dominant hydrophytic vegetation but lacking hydric soils and wetland hydrology.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Juncus balticus*	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 100	x 2 =	200
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-63**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	10 YR 3/2	100					Clay Loam	
8-18	10 YR 5/3	98	7.5 YR 5/8	2	C	M	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-64**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 226871.8601 Long: 743110.1468 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-21 in on/off-ramp island.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Hordeum jubatum*	18	N	FACW
2. *Bromus inermis*	5	N	UPL
3. *Iva axillaris*	12	N	FAC
4. *Distichlis spicata*	65	Y	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	0	x 1 =	0
FACW	species	83	x 2 =	166
FAC	species	12	x 3 =	36
FACU	species	0	x 4 =	0
UPL	species	5	x 5 =	25
Column Totals:		100 (A)		227 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-64**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10 YR 2/2	100					Clay Loam	
6-8	10 YR 6/3	100					Sand	
8-14	10 YR 2/1	97	7.5 YR 4/6	3	C	M	Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-65**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor slope Local Relief *(concave, convex, none)*: none Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 226875.5449 Long: 743102.7482 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-21.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Bromus inermis*	50	Y	UPL
2. *Hordeum jubatum*	30	Y	FACW
3. *Distichlis spicata*	15	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	0	x 1 =	0
FACW	species	45	x 2 =	90
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	50	x 5 =	250
Column Totals:		95 (A)		340 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

SOIL

Sampling Point: **S-65**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	10 YR 3/2	100					Clay Loam	
8-16	10 YR 5/2	96	5 YR 5/8	4	C	M	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/31/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-66**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: hillslope Local Relief *(concave, convex, none)*: concave Slope (%): 0-4

Subregion (LRR): G - Western Great Plains Lat. 226770.6918 Long: 742860.9136 Datum: WY E

Soil Map Unit Name: Urban land-Evanston complex, 0 to 6 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Area with dominant hydrophytic vegetation but lacking wetland hydrology and hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Juncus balticus*	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 100	x 2 =	200
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-66**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	10 YR 3/2	100					Clay Loam	
8-18	10 YR 5/3	100					Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-67**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223918.3768 Long: 742904.2519 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

NWI-mapped palustrine emergent wetland PEM-22 in on/off-ramp island.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Schoenoplectus pungens*	18	N	OBL
2. *Hordeum jubatum*	12	N	FACW
3. *Distichlis spicata*	55	Y	FACW
4. *Juncus balticus*	8	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	93 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 7 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	18	x 1 =	18
FACW	species	75	x 2 =	150
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		93 (A)		168 (B)

Prevalence Index = B/A = 1.8

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-67**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	10 YR 3/2	100					Sandy Clay Loam	20% road fill/gravels
4-16	10 YR 7/2	90	7.5 YR 5/6	10	C	M	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-68**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor terrace Local Relief *(concave, convex, none)*: none Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 223914.0626 Long: 742897.2912 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-22.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Bromus inermis*	65	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 35 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 0	x 2 =	0
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 65	x 5 =	325
Column Totals:	65 (A)		325 (B)

Prevalence Index = B/A = 5.0

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

SOIL Sampling Point: **S-68**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	10 YR 2/2	100					Clay Loam	
8-18	10 YR 7/3	97	7.5 YR 5/6	3	C	M	Sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-69**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 225237.3487 Long: 742604.1637 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5x5 ft)			
1. *Hordeum jubatum*	10	N	FACW
2. *Puccinellia nuttalliana*	30	Y	OBL
3. *Distichlis spicata*	45	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 15 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	30	x 1 =	30
FACW	species	55	x 2 =	110
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		85 (A)		140 (B)

Prevalence Index = B/A = 1.6

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-69**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-18	10 YR 2/1	100					Clay Loam	30% road fill

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-70**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: swale Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 225122.2602 Long: 742395.0791 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-23 receiving run-off via road flume.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5x5 ft)			
1. *Hordeum jubatum*	80	Y	FACW
2. *Puccinellia nuttalliana*	10	N	OBL
3. *Elymus riparius*	8	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	98	= Total Cover	
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 2 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	10	x 1 =	10
FACW	species	80	x 2 =	160
FAC	species	8	x 3 =	24
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		98 (A)		194 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-70**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-3	10 YR 3/2	100					sandy clay	
3-16	10 YR 6/2	80	7.5 YR 5/8	20	C	M	sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-71**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S2 T13N R67W**

Landform *(hillslope, terrace, etc.)*: roadslope Local Relief *(concave, convex, none)*: none Slope (%): 0-3

Subregion (LRR): G - Western Great Plains Lat. 225120.2458 Long: 742399.3624 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-23.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30x30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Agropyron cristatum*	20	Y	NI
2. *Melilotus officinalis*	15	Y	FACU
3. *Linaria dalmatica*	10	N	NI
4. *Cirsium arvense*	5	N	FACU
5. *Hordeum jubatum*	5	N	FACW
6.			
7.			
8.			
9.			
10.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 45 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 5	x 2 =	10
FAC	species 0	x 3 =	0
FACU	species 20	x 4 =	80
UPL	species 30	x 5 =	150
Column Totals:	55 (A)		240 (B)

Prevalence Index = B/A = 4.4

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation
____ 2. Dominance Test is >50%.
____ 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-71**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-3	10 YR 3/2	100					clay loam	
3-18	2.5 Y 7/3	85	7.5 YR 5/8	15	C	M	sandy clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-72**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: swale Local Relief *(concave, convex, none)*: concave Slope (%): 0-3

Subregion (LRR): G - Western Great Plains Lat. 224882.4396 Long: 741978.0813 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-24 receiving run-off via flume.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Typha angustifolia*	35	Y	OBL
2. *Schoenoplectus pungens*	40	Y	OBL
3. *Juncus compressus*	14	N	FACW
4. *Epilobium ciliatum*	5	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	94 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 6 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	75	x 1 =	75
FACW	species	19	x 2 =	38
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		94 (A)		113 (B)

Prevalence Index = B/A = 1.2

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-72**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	10 YR 6/2	85	2.5 Y 6/6	15	C	M	Clay	
4-6	10 YR 2/1	100					Clay	
6-16	2.5 Y 6/2	95	2.5 Y 6/8	5	C	M	Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*		**Wetland Hydrology Present?**
Water Table Present?	Yes ___	No X	Depth *(inches)*		
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-73**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: roadslope Local Relief *(concave, convex, none)*: none Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 224884.0235 Long: 741983.4982 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-24.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Cirsium arvense*	20	Y	FACU
2. *Hordeum jubatum*	5	N	FACW
3. *Elymus repens*	30	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 45 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	55 (A)		210 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

SOIL Sampling Point: **S-73**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	10 YR 3/2	100					Clay loam	
2-18	2.5 Y 7/3	85	7.5 YR 5/8	15	C	M	Sandy clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-74**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223887.6331 Long: 742056.931 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine scrub-shrub wetland PSS-3 in on/off-ramp island.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1. *Salix exigua*	80	Y	FACW
2.			
3.			
4.			
5.			
	80 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Juncus balticus*	85	Y	FACW
2. *Carex hystericina*	15	N	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	15	x 1 =	15
FACW species	165	x 2 =	330
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	180 (A)		345 (B)

Prevalence Index = B/A = 1.9

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-74**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-11	10 YR 2/1	100					sandy clay	
11-16	10 YR 5/2	85	10 YR 5/8	15	C	M	clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-75**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor terrace Local Relief *(concave, convex, none)*: none Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223896.6568 Long: 742073.2764 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PSS-3.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Euphorbia esula*	68	Y	NI
2. *Juncus balticus*	15	N	FACW
3. *Elymus repens*	17	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species	0	x 1 = 0
FACW	species	15	x 2 = 30
FAC	species	0	x 3 = 0
FACU	species	17	x 4 = 68
UPL	species	68	x 5 = 340
Column Totals:		100 (A)	438 (B)

Prevalence Index = B/A = 4.4

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-75**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-7	10 YR 2/1	100					sandy clay	
7-18	10 YR 7/4	100					clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-76**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223900.5793 Long: 742108.028 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-25 in on/off-ramp island.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Agrostis stolonifera*	25	Y	FACW
2. *Juncus torreyi*	40	Y	FACW
3. *Juncus nodosus*	10	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 25 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	10	x 1 =	10
FACW	species	65	x 2 =	130
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		75 (A)		140 (B)

Prevalence Index = B/A = 1.9

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-76**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	10 YR 3/1	100					clay	
2-16	10 YR 6/2	97	7.5 YR 5/8	3	C	M	clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- X Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-77**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor terrace Local Relief *(concave, convex, none)*: none Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223911.6247 Long: 742096.9543 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-25.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Juncus balticus*	12	N	FACW
2. *Euphorbia esula*	83	Y	NI
3. *Agrostis stolonifera*	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	0	x 1 =	0
FACW	species	17	x 2 =	34
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	83	x 5 =	415
Column Totals:		100 (A)		449 (B)

Prevalence Index = B/A = 4.5

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-77**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	10 YR 2/1	100					sandy clay	
8-18	10 YR 7/4	100					clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-78**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: swale Local Relief *(concave, convex, none)*: concave Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 223651.7195 Long: 742063.1863 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-26 in on/off-ramp island.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Typha angustifolia*	30	Y	OBL
2. *Carex aquatilis*	65	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	95	x 1 =	95
FACW	species	0	x 2 =	0
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		95 (A)		95 (B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-78**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	10 YR 2/1	100					Sandy Clay	gravels throughout
4-6	10 YR 3/2	100					Sand	
6-8	10 YR 5/3	100					Sandy Clay	
8-14	10 YR 5/2	95	7.5 YR 4/6	5	C	M	Sandy Clay	
14-16	10 YR 5/2	100					Sandy Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	___
Water Table Present?	Yes ___	No X	Depth *(inches)*	___
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **8/1/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-79**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: roadside slope Local Relief *(concave, convex, none)*: none Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 223644.2151 Long: 742067.2256 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-26.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Festuca ovina*	80	Y	NI
2. *Cirsium arvense*	14	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	94 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 6 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 0	x 2 =	0
FAC	species 0	x 3 =	0
FACU	species 14	x 4 =	56
UPL	species 80	x 5 =	400
Column Totals:	94 (A)		456 (B)

Prevalence Index = B/A = 4.9

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-79**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	10 YR 4/3	100					Clay	
4-18	10 YR 5/3	100					Sandy Clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-80**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: Minor Concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 224445.8037 Long: 741109.1031 Datum: WY E

Soil Map Unit Name: Urban land-Merden complex, 0 to 3 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Juncus balticus*	25	Y	FACW
2. *Alopecurus pratensis*	30	Y	FACW
3. *Agrostis stolonifera*	42	Y	FACW
4. *Hordeum jubatum*	3	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species	0	x 1 = 0
FACW	species	100	x 2 = 200
FAC	species	0	x 3 = 0
FACU	species	0	x 4 = 0
UPL	species	0	x 5 = 0
Column Totals:		100 (A)	200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-80**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	10 YR 2/2	100					Clay Loam	
2-18	10 YR 5/3	98	7.5 YR 5/6	2	C	M	sandy clay	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- X Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-81**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: swale Local Relief *(concave, convex, none)*: concave Slope (%): 0-1

Subregion (LRR): G - Western Great Plains Lat. 224557.5532 Long: 740264.2865 Datum: WY E

Soil Map Unit Name: Ipson-Evanston complex, 6 to 30 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

NWI-mapped depressional palustrine emergent wetland PEM-27 connected via series of culverts. Area also mapped by NHD as a channel, but no channel features are present.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Typha angustifolia*	60	Y	OBL
2. *Carex utriculata*	20	Y	OBL
3. *Juncus balticus*	10	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC *(excluding FAC-)*: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	80	x 1 =	80
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		100 (B)

Prevalence Index = B/A = 1.1

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-81**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-1	10 YR 3/1	100					muck	
1-15	10 YR 3/1	100					Clay Loam	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- X 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth *(inches)*	1	**Wetland Hydrology Present?**
Water Table Present?	Yes X	No ___	Depth *(inches)*	surface	
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-82**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: ditch slope Local Relief *(concave, convex, none)*: none Slope (%): 45

Subregion (LRR): G - Western Great Plains Lat. 224565.8867 Long: 740257.3844 Datum: WY E

Soil Map Unit Name: Ipson-Evanston complex, 6 to 30 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-27.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Gaura parviflora*	8	N	NI
2. *Juncus balticus*	10	N	FACW
3. *Muhlenbergia asperifolia*	15	N	FACW
4. *Euphorbia esula*	12	N	NI
5. *Distichlis spicata*	45	Y	FACW
6.			
7.			
8.			
9.			
10.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	20	x 5 =	100
Column Totals:	90 (A)		240 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation
X 2. Dominance Test is >50%.
X 3. Prevalence Index is ≤3.0[1]
____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-82**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10 YR 3/2	100					Clay	
6-16								road fill

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-83**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: swale Local Relief *(concave, convex, none)*: concave Slope (%): 0-3

Subregion (LRR): G - Western Great Plains Lat. 224520.4531 Long: 740244.8865 Datum: WY E

Soil Map Unit Name: Ipson-Evanston complex, 6 to 30 percent slopes NWI Classification: PEMA/PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine scrub-shrub wetland PSS-4 within PEM-27.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1. *Salix exigua*	25	Y	FACW
2. *Salix melanopsis*	8	N	FACW
3.			
4.			
5.			
	33 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Typha angustifolia*	75	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	75	x 1 =	75
FACW	species	33	x 2 =	66
FAC	species	0	x 3 =	0
FACU	species	0	x 4 =	0
UPL	species	0	x 5 =	0
Column Totals:		108 (A)		141 (B)

Prevalence Index = B/A = 1.3

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL

Sampling Point: **S-83**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-1	10 YR 3/1	100					muck	
1-15	10 YR 3/1	100					Clay Loam	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- X 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth *(inches)*	1	**Wetland Hydrology Present?**
Water Table Present?	Yes X	No ___	Depth *(inches)*	surface	
Saturation Present? *(includes capillary fringe)*	Yes X	No ___	Depth *(inches)*	surface	X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-84**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: ditch slope Local Relief *(concave, convex, none)*: none Slope (%): 45

Subregion (LRR): G - Western Great Plains Lat. 224519.7799 Long: 740249.9278 Datum: WY E

Soil Map Unit Name: Ipson-Evanston complex, 6 to 30 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PSS-4.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Euphorbia esula*	85	Y	NI
2. *Agrostis stolonifera*	7	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	92 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 8 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 7	x 2 =	14
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 85	x 5 =	425
Column Totals:	92 (A)		439 (B)

Prevalence Index = B/A = 4.8

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-84**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10 YR 3/2	100					Clay	
6-16								road fill

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-85**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0

Subregion (LRR): G - Western Great Plains Lat. 224035.7547 Long: 739940.1808 Datum: WY E

Soil Map Unit Name: Ipson-Evanston complex, 6 to 30 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes X No ____ Is the Sampled Area within a Wetland? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Remarks:

Depressional palustrine emergent wetland PEM-28 connected via culvert.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Juncus balticus*	98	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	98 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 2 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
(excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL	species 0	x 1 =	0
FACW	species 98	x 2 =	196
FAC	species 0	x 3 =	0
FACU	species 0	x 4 =	0
UPL	species 0	x 5 =	0
Column Totals:	98 (A)		196 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

SOIL Sampling Point: **S-85**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-1	10 YR 2/1	100					muck	
1-6	10 YR 4/4	100					Sand	
6-8	10 YR 2/1	100					Clay	
8-15	10 YR 3/2	100					Sandy Clay Loan	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- X 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-86**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: minor slope Local Relief *(concave, convex, none)*: none Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 224028.3919 Long: 739940.1463 Datum: WY E

Soil Map Unit Name: Ipson-Evanston complex, 6 to 30 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Remarks:

Paired upland point for PEM-28.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Bromus inermis*	65	Y	UPL
2. *Cirsium arvense*	12	N	FACU
3. *Euphorbia esula*	8	N	NI
4. *Elymus trachycaulus*	10	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	22	x 4 =	88
UPL species	73	x 5 =	365
Column Totals:	95 (A)		453 (B)

Prevalence Index = B/A = 4.8

Hydrophytic Vegetation Indicators:

____ 1. Rapid Test for Hydrophytic Vegetation

____ 2. Dominance Test is >50%.

____ 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ____ Yes X No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-86**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	10 YR 3/2	100					clay loam	
2-6	10 YR 4/4	100					sand	
6-18	10 YR 4/4	100					sand	

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? ___ **Yes** X **No**

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: **I-25/I-80 Interchange** City/County: **Cheyenne/Laramie** Sampling Date: **7/30/2019**

Applicant/Owner: **Wyoming Dept. of Transportation** State: **WY** Sampling Point: **S-87**

Investigator(s): **R. Newton, D. Soucy** Section, Township, Range: **S11 T13N R67W**

Landform *(hillslope, terrace, etc.)*: depression Local Relief *(concave, convex, none)*: concave Slope (%): 0-2

Subregion (LRR): G - Western Great Plains Lat. 224570.4734 Long: 739076.6939 Datum: WY E

Soil Map Unit Name: Ipson-Evanston complex, 6 to 30 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ *(If no, explain in Remarks)*

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____

Hydric Soil Present? Yes ____ No X Is the Sampled Area within a Wetland? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Remarks:

Area mapped by NWI as PEM and NHD as channel. Area has dominant hydrophytic vegetation and wetland hydrology but lacks hydric soils. No channel features present.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15x15 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. *Agropyron cristatum*	8	N	NI
2. *Lactuca serriola*	3	N	FAC
3. *Thlaspi arvense*	5	N	FACU
4. *Carex lenticularis*	20	Y	OBL
5. *Juncus balticus*	60	Y	FACW
6.			
7.			
8.			
9.			
10.			
	96 = Total Cover		
Woody Vine Stratum (Plot size: 30x30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 4 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) *(excluding FAC-)*:

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL	species	20	x 1 =	20
FACW	species	60	x 2 =	120
FAC	species	3	x 3 =	9
FACU	species	5	x 4 =	20
UPL	species	8	x 5 =	40
Column Totals:		96 (A)		209 (B)

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

X 1. Rapid Test for Hydrophytic Vegetation

X 2. Dominance Test is >50%.

X 3. Prevalence Index is ≤3.0[1]

____ 4. Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes ____ No

Remarks:

Species with no indicator (NI) are treated as UPL for this analysis.

SOIL

Sampling Point: **S-87**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	10 YR 3/3	100					Sandy Clay	
8-18	10 YR 3/3	100					Sandy Clay	40% gravels

[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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer: *(if observed)*

Type: _____

Depth *(inches)*: _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators *(minimum of one is required; check all that apply)*

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators *(minimum of two required)*

- ___ Surface Soil Cracks (B6)
- ___ Sparsley Vegetated Concave Surf. (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth *(inches)*	_____
Water Table Present?	Yes ___	No X	Depth *(inches)*	_____
Saturation Present? *(includes capillary fringe)*	Yes ___	No X	Depth *(inches)*	_____

Wetland Hydrology Present? X **Yes** ___ **No**

Remarks:

Appendix B: Representative Photographs

Photo #1A-1: View to the north of **PEM-1A,** an NWI-mapped depressional palustrine emergent wetland. NHD-mapped Clear Creek here, but no channel features are present.

Photo #1A-2: View to the south of **Sample Point 1A.** Photo shows wetland sample point for NWI-mapped depressional palustrine emergent wetland **PEM-1A.** NHD-mapped Clear Creek here, but no channel features are present.

Photo #1A-3: View to the northwest of **PEM-1A,** an NWI-mapped depressional palustrine emergent wetland. NHD-mapped Clear Creek here, but no channel features are present.

Photo #1A-4: View to the southwest of **PEM-1A,** an NWI-mapped depressional palustrine emergent wetland. NHD-mapped Clear Creek here, but no channel features are present.

Photo #2A: View to the southeast of **Sample Point 2A.** Photo shows paired upland point for PEM-1A.

Photo #1B: View to the north of **Sample Point 1B.** Photo shows additional wetland sample point for NWI-mapped palustrine emergent wetland **PEM-1A.**

Photo #2B: View to the southwest of **Sample Point 2B.** Photo shows paired upland point for Sample Point 1B, PEM-1A.

Photo #1C-1: View to the southwest of **Sample Point 1C.** Photo shows wetland sample point for NWI-mapped palustrine emergent wetland **PEM-1B**.

Photo #1C-2: View to the southwest of **PEM-1B**, a palustrine emergent wetland including areas mapped by NWI.

Photo #2C: View to the southwest of **Sample Point 2C.** Photo shows the paired upland point for Sample Point 1C, PEM-1B.

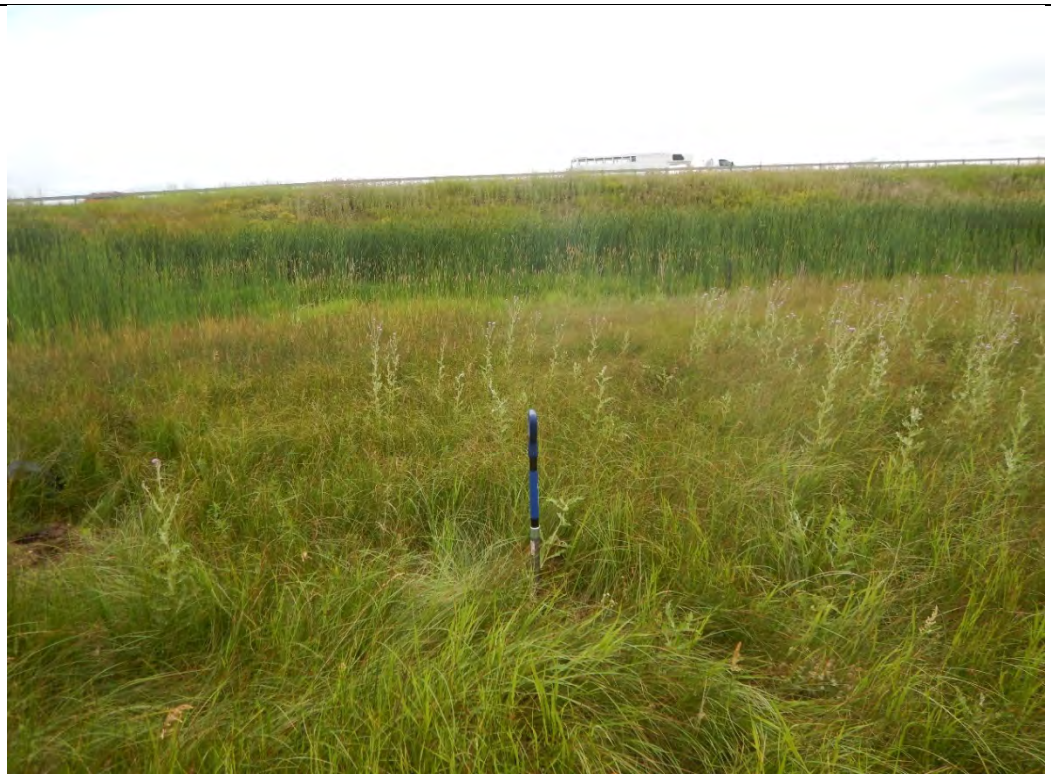


Photo #1D-1: View to the north of **Sample Point 1D.** Photo shows additional wetland sample point for **PEM-1B**, an NWI-mapped depressional palustrine emergent wetland. Area includes NHD-mapped Clear Creek, but no channel features present.

Photo #1D-2: View to the west of **PEM-1B**, an NWI-mapped depressional palustrine emergent wetland. NHD-mapped Clear Creek here, but no channel features are present.

Photo #2D: View to the southeast of **Sample Point 2D.** Photo shows paired upland point for Sample Point 1D.

Photo #1E-1: View to the east of **Sample Point 1E. Photo shows PEM-1C**, an NWI-mapped depressional palustrine emergent wetland.

Photo #1E-2: View to the west of **PEM-1C**, an NWI-mapped depressional palustrine emergent wetland. NHD-mapped Clear Creek here, but no channel features are present.

Photo #1F: View to the north of **PEM-1D**, an NWI-mapped depressional palustrine emergent wetland. NHD-mapped Clear Creek here, but no channel features are present.

Photo #3: View to the southwest of **Sample Point 3.** Photo shows depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

Photo #4: View to the northwest of **Sample Point 4.** Photo shows area of open water **OW-1** surrounded by PEM-1A.

Photo #5A: View to the south of **Sample Point 5A**. Photo shows wetland sample point for palustrine emergent wetland **PEM-2A**.

Photo #5B: View to the north of palustrine emergent wetland **PEM-2B.**

Photo #5C: View to the west of **Sample Point 5B.** Photo shows additional wetland point for palustrine emergent wetland **PEM-2C**, which includes an NWI-mapped PEM wetland.

Photo #5D: View to the northwest of palustrine emergent wetland **PEM-2D.**

Photo #6: View to the southwest of **Sample Point 6.** Photo shows paired upland point for PEM-2.

Photo #7: View to the southwest of **Sample Point 7.** Photo shows vegetated swale appearing dark on aerial imagery but lacking wetland indicators.

Photo #8: View to the southeast of **Sample Point 8.** Photo shows palustrine emergent wetland **PEM-3**.

Photo #9: View to the southwest of **Sample Point 9.** Photo shows paired upland point for PEM-3.

Photo #10: View to the northeast of **Sample Point 10.** Photo shows depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

Photo #11: View to the southwest of **Sample Point 11.** Photo shows area mapped by NWI as an palustrine emergent wetland but lacking wetland indicators.

Photo #12: View to the southeast of **Sample Point 12.** Photo shows palustrine emergent wetland **PEM-4**.

Photo #13: View to the northeast of **Sample Point 13.** Photo shows paired upland point for PEM-4.

Photo #14: View to the west of **Sample Point 14.** Photo shows depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking wetland indicators.

Photo #15: View to the north of **Sample Point 15.** Photo shows palustrine emergent wetland **PEM-5**, including an area mapped by NWI as PEM.

Photo #16: View to the north of **Sample Point 16.** Photo shows paired upland point for PEM-5.

Photo #17: View to the northeast of **Sample Point 17.** Photo shows depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

Photo #18A: View to the east of **Sample Point 18.** Photo shows palustrine emergent wetland **PEM-6A** at a culvert mouth.

Photo #18B: View to the southwest of palustrine emergent wetland **PEM-6B** connected via a culvert to PEM-6A.

Photo #19: View to the southeast of **Sample Point 19.** Photo shows paired upland point for PEM-6.

Photo #20: View to the southwest of **Sample Point 20.** Photo shows NWI-mapped palustrine emergent wetland **PEM-7**.

Photo #21: View to the southwest of **Sample Point 21.** Photo shows paired upland point for PEM-7.

Photo #22: View to the north of **Sample Point 22.** Photo shows depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

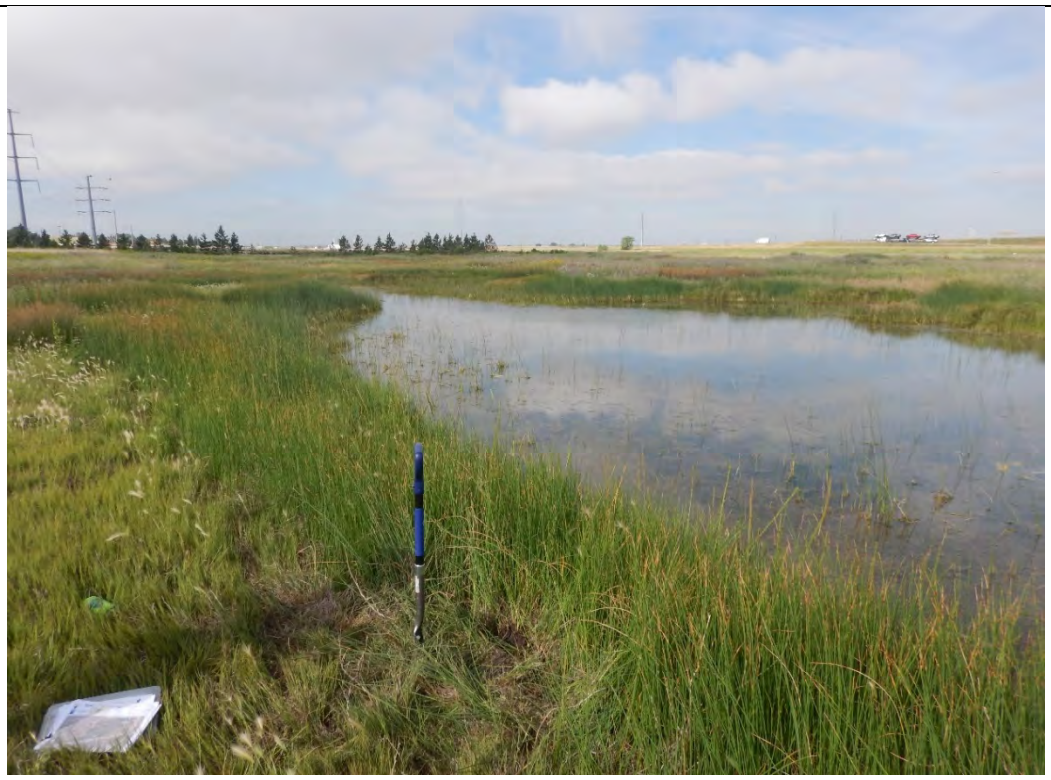


Photo #23A: View to the southwest of **Sample Point 23.** Photo shows NWI-mapped depressional/fringe palustrine emergent wetland **PEM-8A** around OW-2.

Photo #23B: View to the northeast of depressional palustrine emergent wetland **PEM-8A**.

Photo #23C: View to the northeast of depressional palustrine emergent wetland **PEM-8C**.

Photo #24: View to the south of **Sample Point 24.** Photo shows paired upland point for PEM-8.

Photo #25: View to the south of **Sample Point 25.** Photo shows open water feature **OW-2** surrounded by fringe/depressional PEM-8A.

Photo #26: View to the west of **Sample Point 26.** Photo shows palustrine scrub-shrub wetland **PSS-1** abutting PEM-1B in area mapped by NWI as PEM.

Photo #27: View to the east of **Sample Point 27.** Photo shows paired upland point for PSS-1.

Photo #28: View to the northeast of **Sample Point 28.** Photo shows NWI-mapped depressional/fringe palustrine emergent wetland **PEM-9** around OW-3.

Photo #29: View to the northwest of **Sample Point 29.** Photo shows paired upland point for PEM-9.

Photo #30: View to the southwest of **Sample Point 30.** Photo shows NHD-mapped stock pond **OW-3.** Area is also mapped by NWI as PEM.

Photo #31: View to the south of **Sample Point 31.** Photo shows palustrine scrub-shrub wetland **PSS-2** abutting PEM-9 and OW-3.

Photo #32: View to the west of **Sample Point 32.** Photo shows paired upland point for PSS-2.

Photo #33: View to the east of **Sample Point 33.** Photo shows NWI-mapped depressional palustrine emergent wetland **PEM-10**.

Photo #34: View to the west of **Sample Point 34.** Photo shows paired upland point for PEM-10.

Photo #35: View to the north of **Sample Point 35.** Photo shows NWI-mapped palustrine emergent wetland **PEM-11.** No right-of-entry for site; hydric soils assumed in presence of dominant hydrophytic vegetation and wetland hydrology.

Photo #36: View to the northeast of **Sample Point 36.** Photo shows depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

Photo #37: View to the east of **Sample Point 37.** Photo shows depressional palustrine emergent wetland **PEM-12.**

Photo #38: View to the west of **Sample Point 38.** Phot shows paired upland point for PEM-12.

Photo #39: View to the southeast of **Sample Point 39.** Photo shows depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

Photo #40: View to the eats of **Sample Point 40.** Photo shows depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

Photo #41: View to the northeast of **Sample Point 41.** Photo shows depressional palustrine emergent wetland **PEM-13.**

Photo #42: View to the north of **Sample Point 42.** Photo shows paired upland point for PEM-13.

Photo #43: View to the southwest of **Sample Point 43.** Photo shows depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

Photo #44: View to the southwest of **Sample Point 44.** Photo shows depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

Photo #45: View to the northwest of **Sample Point 45.** Photo shows depressional palustrine emergent wetland **PEM-14.**

Photo #46: View to the south of **Sample Point 46.** Photo shows paired upland point for PEM-14.

Photo #47A: View to the south of **Sample Point 47A.** Photo shows wetland sample point for palustrine emergent wetland **PEM-15A.**

Photo #47B: View to the southwest of **Sample Point 47B.** Photo shows palustrine emergent wetland **PEM-15C,** connected to PEM-23A via culverts.

Photo #48: View to the south of **Sample Point 48.** Photo shows paired upland point for PEM-15A.

Photo #49: View to the east of **Sample Point 49.** Photo shows depressional/fringe palustrine emergent wetland **PEM-16** under I-25 bridges.

Photo #50: View to the southwest of **Sample Point 50.** Photo shows paired upland point for PEM-16.

Photo #51: View to the southeast of **Sample Point 51.** Photo shows area mapped by NWI as palustrine emergent wetland but lacking wetland indicators.

Photo #52: View to the southeast of **Sample Point 52.** Photo shows depressional palustrine emergent wetland **PEM-17** at culvert mouth.

Photo #53: View to the southeast of **Sample Point 53.** Photo shows paired upland point for PEM-17.

Photo #54A: View to the southeast of **Sample Point 54.** Photo shows NHD-mapped perennial stream **PS-1**, Crow Creek, flowing west to east under I-25.

Photo #54B: View to the east of NHD-mapped natural watercourse **PS-1**, Crow Creek, flowing west to east under I-25.

Photo #55: View to the northwest of **Sample Point 55.** Photo shows fringe along PS-1 with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

Photo #56/Photo #57: View to the southwest of **Sample Points 56 and 57.** Google Earth photo shows depressional/fringe palutstrine emergent wetland **PEM-18** and stock pond **OW-4**. Photo not taken during field survey due to staff oversight.

Photo #58: View to the south of **Sample Point 58.** Photo shows area mapped by NWI as a palustrine emergent wetland and by NHD as a waterbody, but lacking indicators of both.

Photo #59: View to the northwest of **Photo Point 59.** Photo shows depressional palustrine emergent wetland **PEM-19.**

Photo #60: View to the northwest of **Sample Point 60.** Photo shows paired upland point for PEM-19.

Photo #61: View to the east of **Sample Point 61.** Photo shows depressional palustrine emergent wetland **PEM-20.**

Photo #62: View to the west of **Sample Point 62.** Photo shows paired upland point for PEM-20.

Photo #63: View to the south of **Sample Point 63.** Photo shows area with dominant hydrophytic vegetation but lacking hydric soils and wetland hydrology.

Photo #64: View to the northeast of **Sample Point 64.** Photo shows depressional palustrine emergent wetland **PEM-21.**

Photo #65: View to the south of **Sample Point 65.** Photo shows paired upland point for PEM-21.

Photo #66: View to the south of **Sample Point 66.** Photo shows area with dominant hydrophytic vegetation but lacking wetland hydrology and hydric soils.

Photo #67: View to the south of **Sample Point 67.** Photo shows NWI-mapped depressional palustrine emergent wetland **PEM-22.**

Photo #68: View to the west of **Sample Point 68.** Photo shows paired upland point for PEM-22.

Photo #69: View to the east of **Sample Point 69.** Photo shows depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

Photo #70: View to the north of **Sample Point 70.** Photo shows depressional palustrine emergent wetland **PEM-23.**

Photo #71: View to the south of **Sample Point 71.** Photo shows paired upland point for PEM-23.

Photo #72: View to the northwest of **Sample Point 72.** Photo shows depressional palustrine emergent wetland **PEM-24**.

Photo #73: View to the south of **Sample Point 73.** Photo shows paired upland point for PEM-24.

Photo #74: View to the northwest of **Sample Point 74.** Photo shows depressional palustrine scrub-shrub wetland **PSS-3**.

Photo #75: View to the northeast of **Sample Point 75.** Photo shows paired upland point for PSS-3.

Photo #76 View to the east of **Sample Point 76.** Photo shows depressional palustrine emergent wetland **PEM-25.**

Photo #77: View to the west of **Sample Point 77.** Photo shows paired upland point for PEM-25.

Photo #78: View to the east of **Sample Point 78.** Photo shows depressional palustrine emergent wetland **PEM-26**.

Photo #79: View to the east of **Sample Point 79.** Photo shows paired upland point for PEM-26.

Photo #80: View to the east of **Sample Point 80.** Photo shows depressional area with dominant hydrophytic vegetation and wetland hydrology but lacking hydric soils.

Photo #81A: View to the southwest of **PEM-27A.** Photo shows NWI-mapped depressional palustrine emergent wetland. Area mapped by NHD as a channel, but no features present.

Photo #81B: View to the northeast of **PEM-27B.** Photo shows NWI-mapped depressional palustrine emergent wetland. Area mapped by NHD as a channel, but no features present.

Photo #81C: View to the east of **Sample Point 81** and **PEM-27C.** Photo shows sample point for NWI-mapped depressional palustrine emergent wetland **PEM-27.** Area mapped by NHD as a channel, but no features are present.

Photo #81D: View to the east of **PEM-27D.** Photo shows NWI-mapped depressional palustrine emergent wetlan. Area mapped by NHD as a channel, but no features present.

Photo #81E: View to the southwest of **PEM-27E.** Photo shows NWI-mapped depressional palustrine emergent wetland. Area mapped by NHD as a channel, but no features present.

Photo #81F: View to the east of **PEM-27F.** Photo shows NWI-mapped depressional palustrine emergent wetland. Area mapped by NHD as a channel, but no features present.

Photo #82: View to the east of **Sample Point 82.** Photo shows paired upland point for PEM-27.

Photo #83A: View to the west of **Sample Point 83.** Photo shows depressional palustrine scrub-shrub **PSS-4** within PEM-27C.

Photo #83B: View to the northeast of depressional palustrine scrub-shrub wetland **PSS-4** within PEM-27C.

Photo #84: View to the west of **Sample Point 84.** Photo shows paired upland point for PSS-4.

Photo #85A: View to the northwest of **Sample Point 85.** Photo shows depressional palustrine emergent wetland **PEM-28A**.

Photo #85B: View to the southwest of **PEM-28B.** Photo shows depressional palustrine emergent wetland connected via culvert to PEM-28A.

Photo #86: View to the west of **Sample Point 86.** Photo shows paired upland point for PEM-28.

Photo #87: View to the southeast of **Sample Point 87.** Photo shows area mapped by NWI as PEM and by NHD as a channel. Area has dominant hydrophytic vegetation and wetland hydrology but lacks hydric soils. No channel features present.