ATTACHMENT I: WETLAND DELINEATION REPORT

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Badger Mountain Solar Energy Project
Wetland Delineation Report

Prepared by:

TETRA TECH

Prepared for:

Aurora Solar, LLC

September 2021

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Acronyms and Abbreviations

AW Supplement	*Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West* (Version 2.0)
DNR	Washington Department of Natural Resources
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
GPS	global positioning system
LRR	Land Resource Region
NWI	National Wetlands Inventory
NWPL	National Wetland Plant List
OBL	Obligate
Project	Badger Mountain Solar Energy Project
SDAM	Streamflow Duration Assessment Methodology
Tetra Tech	Tetra Tech, Inc.
UPL	Upland
U.S.	United States
USDA	U.S. Department of Agriculture
WETS	Climate Analysis for Wetlands Tables

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1.0 Introduction

Aurora Solar, LLC, a wholly owned subsidiary of Avangrid Renewables, LLC, is proposing to construct and operate the Badger Mountain Solar Energy Project (Project). The Project is a 200-megawatt solar photovoltaic generation facility with an optional 200-megawatt battery energy storage system and associated 3.7-mile-long, 230-kilovolt overhead generation-tie transmission line corridor in unincorporated Douglas County, Washington. Wetland and other water surveys were conducted April 19 to 22, 2021, and June 23 and 24, 2021, in preparation for Project permitting.

Four staff experienced in conducting wetland delineations in the Arid West region of the United States (U.S.) were involved in the field surveys and review of the data and reporting:

- Ed Strohmaier, Senior Wetland Scientist, with 23 years of experience conducting wetland and other waters of the U.S. assessments in the Pacific Northwest and throughout the United States. Mr. Strohmaier is the senior reviewer for the field surveys and reporting.
- Jessica Taylor, Wetland and Riparian Scientist, with 15 years of experience conducting wetland and other waters of the U.S. assessments in the Pacific Northwest. Ms. Taylor is the field and report lead.
- Katie Pyne, Junior Wetland Scientist, with 5 years of experience conducting wetland delineations on various projects in Idaho, Oregon, and Washington. Ms. Pyne assisted in field efforts and reporting.
- Sara Frank, Junior Wetland Scientist, with 2 years of experience conducting wetlands delineations on various projects in Oregon. Ms. Frank assisted in field efforts and reporting.

2.0 Landscape Setting

The Project study area is located within the Level III Columbia Plateau Ecoregion, and within the further subdivided Level IV, Channeled Scablands and Loess Islands Ecoregions (Thorson et al. 2003). In addition, the Project is within U.S. Department of Agriculture (USDA) Land Resource Region (LRR) B, Northwestern Wheat and Range Region, Columbia Basin Subregion (NRCS 2006). The LRR B, Northwestern Wheat and Range Region overlaps within the Project study area with the LRR B Columbia/Snake River Plateau Region in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (USACE 2008; AW Supplement).

2.1 Project Study Area Location and Land Ownership

The 2,390-acre Project study area is in Sections 21, 22, 27, 28, 34, and 35 of Township 23 North, Range 21 East, and Section 2 of Township 22 North, Range 21 East in Douglas County (Appendix A, Figure 1). The Project study area is contained within parcels owned by private individuals as well as the Washington State Department of Natural Resources (DNR). The Project study area is

approximately 3.5 miles due north of Rock Island, Washington, and approximately 5.5 miles northeast of Wenatchee.

There were approximately 34 acres within the Project study area consisting of two areas (Appendix A, Figure 2) that were inaccessible due to a lack of landowner permission. The streams within those parcels were delineated based on aerial photography and what was visible in the field during surveys of the adjacent parcels.

2.2 Land Use

The majority of the Project study area lies on top of a plateau with a smaller portion of the Project study area within the proposed 230-kilovolt generation-tie transmission line corridor extending off the plateau down to a proposed switchyard (Appendix A, Figure 1). The land within the Project study area is primarily cropland with inclusions of shallow soils (scabland patches) and is bordered by shrub-steppe on the western side near the edge of the plateau

The land is primarily used for growing wheat in a winter wheat/chemical fallow rotation but there were signs that cattle had been grazing the wheat stubble and in the privately owned shrub-steppe habitat near the plateau's edge. Abandoned homesteads, some in good condition, were present in three places within the Project study area. These old homes had some remnant vegetation: rose bushes (*Rosa* sp.), blue elderberry (*Sambucus nigra*, FACU), and at one old homesite a patch of reed canarygrass (*Phalaris arundinacea*, FACW).

2.2.1 Vegetation

Plant species names and associated wetland indicator status ratings for the Arid West are from the National Wetland Plant List (NWPL; USACE 2018). The following wetland indicator ratings are ordered according to the percent likelihood of the plant occurring in wetlands, from most likely to least likely: Obligate (OBL), Facultative Wetland (FACW), Facultative (FAC), Facultative Upland (FACU), and Upland (UPL). Species that do not appear on the NWPL are considered to be Upland plants.

Woody vegetation commonly observed in the Project study area included big sagebrush (*Artemisia tridentata*, UPL), rubber rabbitbrush(*Ericameria nauseosa,* UPL), green rabbitbrush (*Chrysothamnus viscidiflorus*, UPL), purple sage (*Salvia dorrii*, UPL), scabland sagebrush (*Artemisia rigida,* UPL), three-tip sagebrush (*Artemisia tripartita,* UPL), and antelope bitterbrush (*Purshia tridentata,* UPL).

Herbaceous species documented in the Project study area most frequently included wheat (*Triticum aestivum*, UPL), common yarrow (*Achillea millefolium*, FACU), sulfur buckwheat (*Eriogonum umbellatum,* UPL), crested wheatgrass (*Agropyron cristatum,* UPL), cheatgrass (*Bromus tectorum,* UPL), bluebunch wheatgrass (*Pseudoroegneria spicata,* UPL), arrowleaf balsamroot (*Balsamorhiza sagittate*, UPL), Douglas' brodiaea (*Triteleia grandiflora* var. *grandiflora*, UPL), Douglas's dustymaiden (*Chaenactis douglasii*, UPL), common mullein (*Verbascum thapsus,* FACU), and smooth brome (*Bromus inermis*, FACU).

2.2.2 Priority Habitats and Species

The Washington Department of Ecology requests information on priority habitats and species from the Washington Department of Fish and Wildlife. Surveys for specialized habitats and species are being assessed as part of separate reports in support of this Project and can be made available as requested.

2.3 NWI and Natural Resources Conservation Service Soils

Prior to field work, Tetra Tech, Inc. (Tetra Tech) reviewed the National Wetlands Inventory (NWI), hydric soils data, and aerial photographs to identify potential wetlands and other waters, as described below.

2.3.1 National Wetlands Inventory Data

Desktop review of NWI data identified one freshwater emergent wetland feature (PEM1A) within the Project study area (Appendix A, Figure 3).

2.3.2 Hydric Soils Data

Thirty-eight soil map units are mapped in the Project study area (Table 1 and Appendix A, Figure 4). The dominant soil in the Project study area is Broadax-Titchenal complex, 3 to 5 percent slopes covering approximately 26 percent of the Project study area followed by Bakeoven very cobbly loam, zero to 15 percent slopes at 24 percent. No soils in the Project study area were considered hydric soils although the Haploxerolls unit had a 5 percent hydric component. Soils must have at least 33 percent hydric components to be considered "partially hydric" so this map unit is considered non-hydric.

Table 1. Soils Mapped in the Study Area

Map Symbol	Soil Unit Name and Slope	Percent Hydric Soil	Acres
100	Cheviot-Ralls-Grinrod complex, 15 to 30 percent slopes	0	2.66
101	Cheviot-Ralls-Rubble land complex, 30 to 65 percent slopes	0	52.60
16	Alstown-Cheviot complex, 30 to 65 percent slopes	0	8.41
187	Grinrod-Rock outcrop-Rubble land complex, 30 to 70 percent slopes	0	3.68
193	Haploxerolls, moderately well drained, nearly level to gently sloping	5	4.06
222	Logy cobbly sandy loam, 3 to 15 percent slopes	0	1.05
224	Logy very stony sandy loam, 3 to 15 percent slopes	0	4.22
239	Morrow silt loam, 3 to 8 percent slopes	0	200.46
240	Morrow silt loam, 8 to 15 percent slopes	0	45.40
241	Morrow-Argabak complex, 3 to 8 percent slopes	0	80.73
242	Morrow-Argabak complex, 8 to 15 percent slopes	0	20.08

Map Symbol	Soil Unit Name and Slope	Percent Hydric Soil	Acres
243	Morrow-Argabak-Badge complex, 15 to 30 percent slopes	0	40.08
28	Argabak-Morrow complex, 0 to 30 percent slopes	0	149.61
286	Renslow silt loam, 15 to 30 percent south slopes	0	3.45
287	Renslow silt loam, cemented substratum, 0 to 8 percent slopes	0	2.79
288	Renslow silt loam, cemented substratum, 8 to 15 percent slopes	0	15.70
289	Renslow silt loam, cemented substratum, 15 to 30 percent slopes	0	12.67
297	Ritzville silt loam, cemented substratum, 0 to 8 percent slopes	0	20.81
298	Ritzville silt loam, cemented substratum, 8 to 15 percent slopes	0	23.39
300	Ritzville silt loam, cemented substratum, 30 to 65 percent slopes	0	2.79
306	Rubble land-Rock outcrop complex, very steep	0	0.02
391	Terlan silt loam, 0 to 8 percent slopes	0	10.93
406	Titchenal silt loam, 3 to 8 percent slopes	0	27.92
407	Titchenal silt loam, 8 to 15 percent slopes	0	49.73
41	Bagdad silt loam, 0 to 8 percent slopes	0	1.07
42	Bagdad silt loam, cemented substratum, 0 to 8 percent slopes	0	311.74
43	Bagdad silt loam, cemented substratum, 8 to 15 percent slopes	0	13.00
447	Van Nostern silt loam, 3 to 8 percent slopes	0	32.28
448	Van Nostern silt loam, 8 to 15 percent slopes	0	52.46
449	Van Nostern silt loam, 15 to 30 percent slopes	0	0.53
452	Van Nostern-Camaspatch complex, 8 to 15 percent slopes	0	38.47
453	Van Nostern-Camaspatch complex, 15 to 30 percent slopes	0	4.67
59	Benwy-Selah-Alstown complex, 15 to 30 percent slopes	0	3.32
66	Broadax silt loam, cemented substratum, 3 to 8 percent slopes	0	151.28
67	Broadax silt loam, cemented substratum, 8 to 15 percent slopes	0	50.99
68	Broadax-Morrow-Spofford complex, 3 to 8 percent slopes	0	231.09
69	Broadax-Morrow-Spofford complex, 8 to 15 percent slopes	0	106.06
70	Broadax-Titchenal complex, 3 to 15 percent slopes	0	610.04
Total Acres			**2,390**

Source: NRCS n.d.a.

3.0 Site Alterations

Site alterations are those activities that directly or indirectly impact wetlands and other waters such that the function or area of the feature changes significantly. A significant alteration would be one that renders the feature non-functioning, or one that changes the boundaries. Land use in the Project study area is generally dominated by agriculture where the native vegetation has been removed and the soils are disturbed by both annual cropping and grazing cattle. The shrub-steppe adjacent to the crop fields also contain two-track roads in the western part of the Project study area providing access to the radio and cell towers present just outside of the Project study area.

4.0 Precipitation Data and Analysis

Precipitation data for the period preceding and during field work were collected from the National Weather Service, East Wenatchee, Washington Station (NOAA 2021). Data from the Natural Resource Conservation Service Climate Analysis for Wetlands Tables (WETS) Station, Wenatchee Pangborn Memorial Airport, were used to compare historical precipitation data with recent water records. Average historical monthly precipitation data were obtained from the WETS Table for Wenatchee Pangborn Memorial Airport (Table 2) for the period of 1971 to 2021 (NRCS n.d.b.).

4.1 April 2021 Field Surveys

Field surveys occurred in the 2021 Water Year (October 1, 2020 through September 30, 2021) (USGS 2016). During the 6-day span preceding field work on April 19–21, 2021, there was no measurable precipitation. Monthly precipitation for April 2021 was 4 percent of the average 0.52 inches that normally falls this month. For the Water Year beginning October 2020 through April 2021, precipitation was 96 percent of average due to the above-average precipitation for the months of October, November, January, and February that helped mitigate for below-average precipitation in other months. Based on the precipitation data for the Water Year for the 3 months prior to the site visits it was estimated that groundwater was average to slightly below average, for what is usually encountered at this time of year (Table 2).

4.2 June 2021 Field Surveys

During the 6-day span preceding field work on June 23-24, 2021, there was no measurable precipitation (NOAA 2021). Monthly precipitation for March, April, May, and June of 2021 was well below average, and precipitation totals from the Water Year starting on October 2020 through June 2021 were at 82 percent of average. Based on the precipitation data for the 3 months prior to the site visits, it was estimated that groundwater was below average for what is usually encountered at this time of year (Table 2). Lower than average precipitation levels for March, April, and May 2021 did not affect the delineation of other waters, as determinations of intermittent versus ephemeral streams were made using indicators described in the Streamflow Duration Assessment Method (Nadeau 2015), which relies on multiple indicators independent of the presence or absence of observed surface hydrology.

Table 2. Precipitation Data – Current and Historical (Inches)

Precipitation	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 1-24 2021	Water Year to Date 2021[3] Total
Recorded Monthly Precipitation Totals (inches); (East Wenatchee, WA)[1]	0.93	1.19	0.86	1.63	0.91	0.10	0.02	0.08	0.08	**5.80**
WETS Average Monthly Precipitation (inches); (Wenatchee Pangborn Memorial AP, WA)[2]	0.53	0.97	1.33	1.04	0.80	0.69	0.52	0.67	0.53	**7.08**
Recorded Precipitation Relative to WETS Average Monthly Precipitation	175%	123%	65%	157%	114%	14%	4%	12%	15%	**82%**

1. NOAA 2021.
2. WETS Table for Wenatchee Pangborn Memorial Airport, Washington, 1971-2021.
3. USGS 2016.

5.0 Methods

5.1 Pre-field Work

In preparation for the field work, Tetra Tech reviewed NWI, hydric soils data, and aerial photographs to identify potential wetlands and other waters, as described in the preceding sections. Tetra Tech prepared digital field maps with these data and uploaded these maps onto a Samsung Android data collection tablet to assist field staff in identifying the locations of probable wetlands and non-wetland waters within or adjacent to the Project study area.

The Washington Natural Heritage Program (WNHP 2018) data were used to determine if natural heritage features associated with wetlands exist in or near the Project study area. No wetlands associated with natural heritage features were noted as occurring in the Project study area.

The following guidance documents and procedures were reviewed:

- Arid West Supplement (USACE 2008);
- Wetlands Delineation Manual, Technical Report Y-87-1 (the Manual) (USACE 1987);
- Streamflow Duration Assessment Method for the Pacific Northwest (SDAM; Nadeau 2015);
- Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979); and
- Washington State Wetland Rating System for Eastern Washington 2014 Update (Hruby 2014).

5.2 Field Work

Field investigations for the delineation of wetlands and other waters included pedestrian surveys within the Project study area. Tetra Tech conducted the field surveys on April 19 to April 22, 2021 with follow-up visits on June 23 and 24, 2021. The desktop wetland data were used to focus the wetland delineations, whereas the desktop surface water data were used to focus the non-wetlands water evaluation as necessary.

5.2.1 Mapping Methods

Water centerlines, photograph locations, and sample plot locations were recorded using Juniper Geode series global positioning system (GPS) units, configured to differentially correct positions in real-time using the Satellite Based Augmentation System, which typically results in positional error of less than 1 meter (Juniper Systems 2018).

Water centerlines were recorded as line features using GPS units set to collect vertices every 2 seconds. The location of sample plots was recorded as a point feature consisting of the average of 30 GPS-recorded positions.

5.2.2 Wetland Delineations

Wetland presence was determined as per methods in the Manual and the AW Supplement. A field indicator of each of the three wetland parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) must be present to make a positive wetland determination. Field evaluations for potential wetlands were conducted using the following guidelines:

- Several sample plots were established in the palustrine emergent wetland identified by NWI data (USFWS 2020). The sample plots were dug across the lowest elevations of the feature where it was judged most likely to have wetland characteristics (i.e., the lowest or most green place). Photographs were taken to document conditions within the NWI boundary.

No wetlands were found at any of the sample plots recorded during field work. Data sheets describing the lack of hydric conditions can be found in Appendix B.

5.2.3 Non-wetland Waters Evaluations

Non-wetland waters were evaluated using the following criteria:

- Stream channels less than 6 feet in width were mapped along their centerline, and streams greater than 6 feet in width were mapped at their Ordinary High Water Lines for each bank.
- Streams were delineated based on the presence of a defined channel with bed scour, sediment deposition, or other evidence of regular flow.
- In locations where the National Hydrography Dataset indicated that there is a stream or orthoimagery showed a drainage feature but no bed or banks were found, stream centerlines were delineated at the lowest landscape position
- Flow duration for the stream channels was determined using criteria in SDAM (Nadeau 2015).
- Stream channels were classified following the DNR interim water typing system (WAC 222-16-031). Water type classifications are based primarily on fish use and flow regime, as well as other values including water supply use.
- Culverts were mapped in all drainages where they were found.

6.0 Description of Wetlands and Other Non-wetland Waters

All wetlands and non-wetland waters evaluated in the Project study area are depicted in the mapbook in Appendix A, Figure 5.

6.1 Wetlands

There were no wetlands within the Project study area. Several soil pits were dug in the one feature identified by the NWI. The area identified by the NWI is within the yard of an abandoned

homestead. Reed canarygrass grows across the area between the house and the outbuildings. The soils did not meet hydric criteria. Additionally, although nearby drainages showed the effects of recent snow melt run-off with freshly incised banks, there was no sign of recent water flow within the NWI designated area. The Arid West Region Wetland Determination Data Sheets showing conditions in that feature are found in Appendix B.

6.2 Non-wetland Waters

There were 44 ephemeral stream segments delineated in the field and two stream segments that were desktop delineated (ST-DT-01 and ST-DT-02) due to access issues (Table 3). ST-DT-01 is a continuation of a field delineated stream (ST-381) where it passes through a non-accessible parcel. ST-DT-02 is not connected to any field delineated streams and is listed by DNR as having untyped/unknown periodicity.

The DNR map shows that all but one of the streams within the Project study area have "non-fish" (N) habitat bearing status or "unknown" (U) periodicity and fish-bearing statuses (DNR 2021). Stream ST-329 is considered to have fish use, although only the headwaters exist within the Project study area and the drainage loses all bed and banks where it is farmed through just to the east and downslope from the delineated reach (Figure 5.10 in Appendix A and Photo Points 329a and 329b in the photolog in Appendix C). The closest named stream is Beaver Creek, approximately 1.5 linear miles from the Project at the nearest point. Beaver Creek is considered perennial by DNR and is listed on StreamNet (2021) as having migratory rainbow trout (*Oncorhynchus mykiss*) habitat.

Table 3. Summary of Water Features

Feature Name	Feature Type	Stream Segment Length (ft)	Acreage	DNR Stream Type[1]
ST-117	Ephemeral Stream	85.52	<0.01	N
ST-134	Ephemeral Stream	461.36	0.02	N
ST-148	Ephemeral Stream	103.96	<0.01	U
ST-153	Ephemeral Stream	186.91	0.01	U
ST-156	Ephemeral Stream	108.90	0.01	U
ST-160	Ephemeral Stream	1,386.50	0.06	N
ST-200	Ephemeral Stream	1,998.58	0.09	N
ST-238	Ephemeral Stream	550.97	0.03	N
ST-241	Ephemeral Stream	2879.90	0.13	N
ST-249A	Ephemeral Stream	955.27	0.04	N
ST-249B	Ephemeral Stream	1,253.54	0.06	N
ST-249C	Ephemeral Stream	1,781.90	0.08	N
ST-251	Ephemeral Stream	1,445.25	0.07	U
ST-300A	Ephemeral Stream	1,134.68	0.05	N

Feature Name	Feature Type	Stream Segment Length (ft)	Acreage	DNR Stream Type[1]
ST-300B	Ephemeral Stream	605.89	0.03	N
ST-321	Ephemeral Stream	238.02	0.01	N
ST-329	Ephemeral Stream	55.46	<0.01	F
ST-335	Ephemeral Stream	58.79	<0.01	U
ST-341	Ephemeral Stream	55.55	<0.01	U
ST-342	Ephemeral Stream	238.90	0.01	U
ST-344	Ephemeral Stream	27.42	<0.01	U
ST-345	Ephemeral Stream	184.37	0.01	U
ST-360	Ephemeral Stream	79.66	<0.01	N
ST-381	Ephemeral Stream	1,526.97	0.05	U
ST-382	Ephemeral Stream	216.51	0.01	U
ST-383	Ephemeral Stream	258.95	0.01	U
ST-390	Ephemeral Stream	20.56	<0.01	U
ST-392	Ephemeral Stream	305.18	0.01	U
ST-501	Ephemeral Stream	93.85	<0.01	N
ST-503	Ephemeral Stream	346.80	0.02	N
ST-505	Ephemeral Stream	1,595.65	0.07	U
ST-507	Ephemeral Stream	272.90	0.01	U
ST-510	Ephemeral Stream	3,489.75	0.16	N
ST-511	Ephemeral Stream	485.82	0.02	N
ST-512	Ephemeral Stream	307.68	0.01	N
ST-513	Ephemeral Stream	1,199.99	0.06	N
ST-516	Ephemeral Stream	137.13	0.01	U
ST-517	Ephemeral Stream	1,429.24	0.07	U
ST-518	Ephemeral Stream	775.91	0.04	U
ST-519	Ephemeral Stream	509.01	0.02	U
ST-520	Ephemeral Stream	928.32	0.04	U
ST-520a	Ephemeral Stream	97.67	<0.01	U
ST-521	Ephemeral Stream	307.25	0.01	U
ST-522	Ephemeral Stream	325.25	0.01	U
ST-DT-01 (continuation of ST-381)	Ephemeral Stream	219.6	0.01	U
ST-DT-02	Ephemeral Stream	266.6	0.01	U
Total Other Waters Acreage			**1.40**	

1. N = Non-fish stream; F = fish stream; U = Unknown/Unmapped

7.0 Summary

Using methods in the Manual and AW Supplement, no wetlands were determined to be within the Project study area. Using the SDAM protocol, 44 ephemeral streams were delineated and documented in the Project study area. The total area of preliminary jurisdictional waters within the study area boundary is 1.40 acres.

8.0 Disclaimer

This report documents the investigation, best professional judgment, and conclusions of the investigators. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the USACE and Washington Department of Ecology.

9.0 References

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Appendix A. Figures

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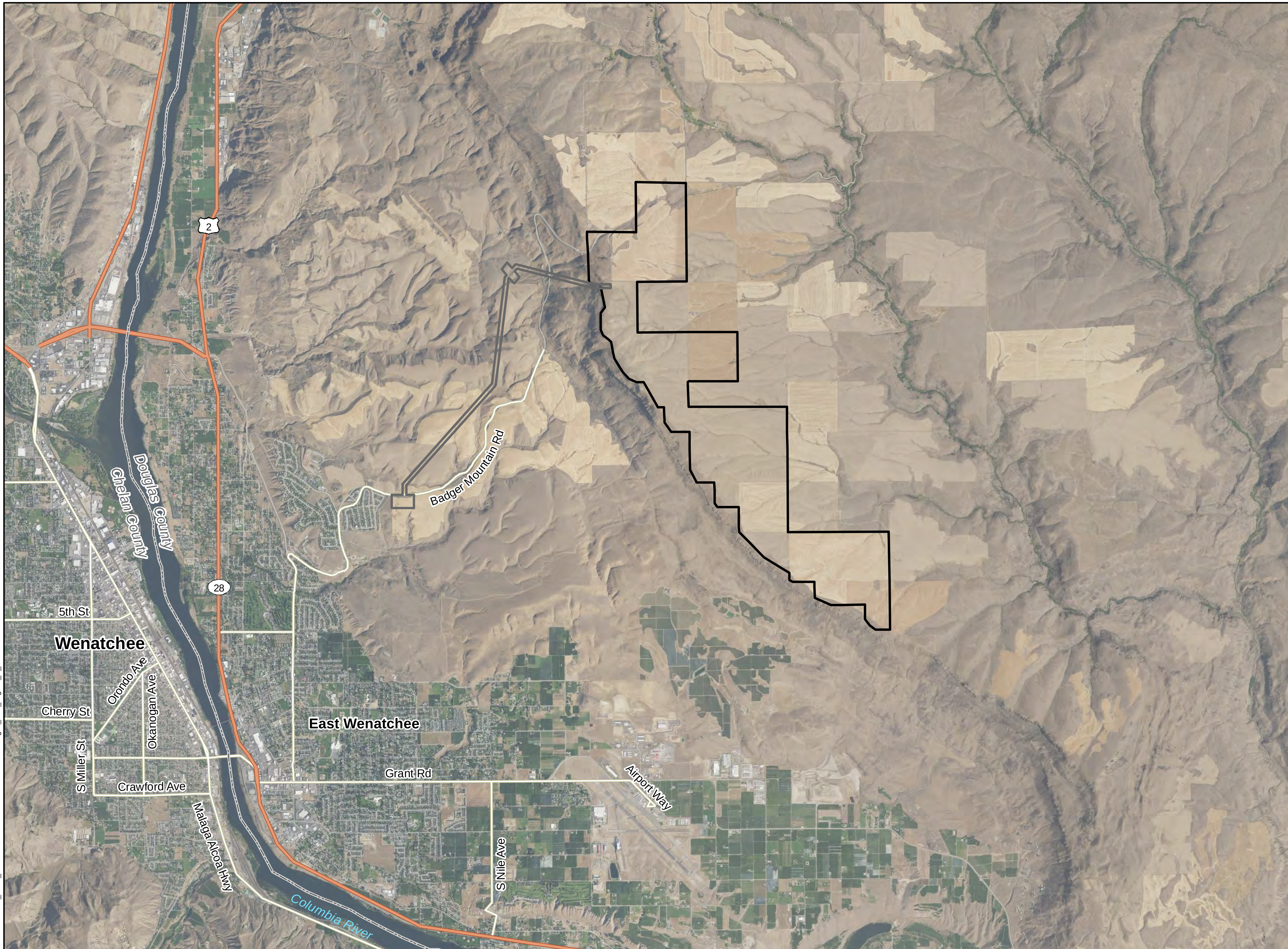
Badger Mountain Solar Energy Project

Figure 1
Project Location

DOUGLAS COUNTY, WASHINGTON



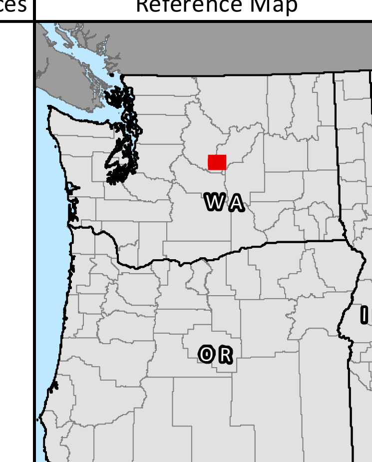
Project Area (2,390 acres)

Solar Array Micrositing Area (2,274 acres)

Gen-tie Micrositing Corridor (116 acres)

TETRA TECH

AVANGRID RENEWABLES

Data Sources	Reference Map
Avangrid-Project Boundary; USDA-NAIP Imagery	

1:60,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 0.5 1 2 Miles

NOT FOR CONSTRUCTION

R:\PROJECTS\BADGER_MTN_1018-0008564\WETLANDS\MAPS\Badger_Mtn_Figure_1_Location.mxd

Badger Mountain Solar Energy Project

Figure 2
Survey Area

DOUGLAS COUNTY, WASHINGTON

Survey Area

Area not Accessible*

* Site access was not available to approximately 34.3 acres of the Survey Area along the Gen-tie Micrositing Corridor during the 2021 survey season.
While these areas were not visited on foot in 2021, they were viewed from adjacent accessible parcels and public roads.

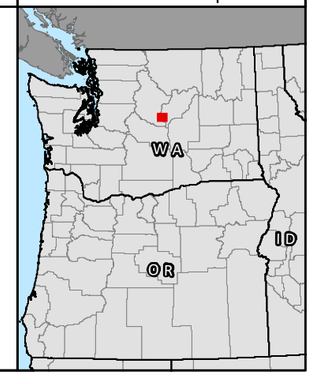
TETRA TECH

AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map



1:30,000

NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 0.5 1 2 Miles

NOT FOR CONSTRUCTION

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Badger Mountain Solar Energy Project

Figure 3
Soils

DOUGLAS COUNTY, WASHINGTON

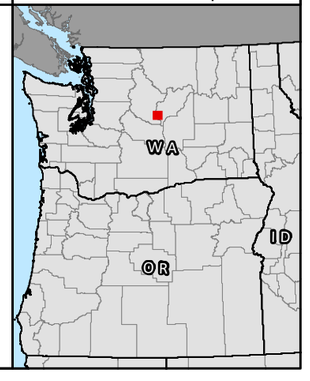
Soil Unit: Soil Name

- 100: Cheviot-Ralls-Grinrod complex, 15 to 30 percent slopes
- 101: Cheviot-Ralls-Rubble land complex, 30 to 65 percent slopes
- 16: Alstown-Cheviot complex, 30 to 65 percent slopes
- 187: Grinrod-Rock outcrop-Rubble land complex, 30 to 70 percent slopes
- 193: Haploxerolls, moderately well drained, nearly level to gently sloping
- 222: Logy cobbly sandy loam, 3 to 15 percent slopes
- 224: Logy very stony sandy loam, 3 to 15 percent slopes
- 239: Morrow silt loam, 3 to 8 percent slopes
- 240: Morrow silt loam, 8 to 15 percent slopes
- 241: Morrow-Argabak complex, 3 to 8 percent slopes
- 242: Morrow-Argabak complex, 8 to 15 percent slopes
- 243: Morrow-Argabak-Badge complex, 15 to 30 percent slopes
- 286: Renslow silt loam, 15 to 30 percent south slopes
- 287: Renslow silt loam, cemented substratum, 0 to 8 percent slopes
- 288: Renslow silt loam, cemented substratum, 8 to 15 percent slopes
- 289: Renslow silt loam, cemented substratum, 15 to 30 percent slopes
- 28: Argabak-Morrow complex, 0 to 30 percent slopes
- 297: Ritzville silt loam, cemented substratum, 0 to 8 percent slopes
- 298: Ritzville silt loam, cemented substratum, 8 to 15 percent slopes
- 300: Ritzville silt loam, cemented substratum, 30 to 65 percent slopes
- 306: Rubble land-Rock outcrop complex, very steep
- 391: Terlan silt loam, 0 to 8 percent slopes
- 406: Titchenal silt loam, 3 to 8 percent slopes
- 407: Titchenal silt loam, 8 to 15 percent slopes
- 41: Bagdad silt loam, 0 to 8 percent slopes
- 42: Bagdad silt loam, cemented substratum, 0 to 8 percent slopes
- 43: Bagdad silt loam, cemented substratum, 8 to 15 percent slopes
- 447: Van Nostern silt loam, 3 to 8 percent slopes
- 448: Van Nostern silt loam, 8 to 15 percent slopes
- 449: Van Nostern silt loam, 15 to 30 percent slopes
- 452: Van Nostern-Camaspatch complex, 8 to 15 percent slopes
- 453: Van Nostern-Camaspatch complex, 15 to 30 percent slopes
- 59: Benwy-Selah-Alstown complex, 15 to 30 percent slopes
- 66: Broadax silt loam, cemented substratum, 3 to 8 percent slopes
- 67: Broadax silt loam, cemented substratum, 8 to 15 percent slopes
- 68: Broadax-Morrow-Spofford complex, 3 to 8 percent slopes
- 69: Broadax-Morrow-Spofford complex, 8 to 15 percent slopes
- 70: Broadax-Titchenal complex, 3 to 15 percent slopes

Survey Area

TETRA TECH

AVANGRID RENEWABLES

Data Sources	Reference Map
Avangrid-Project Boundary; USDA-NAIP Imagery	

1:30,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 0.5 1 2 Miles

NOT FOR CONSTRUCTION

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Badger Mountain Solar Energy Project

Figure 4
Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

Survey Area
NHD Stream
NWI Wetland
Freshwater Emergent Wetland
Riverine

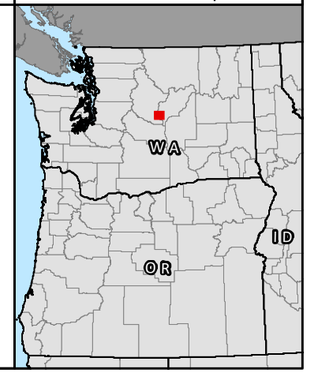
TETRA TECH

AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map



1:30,000

NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 0.5 1 2 Miles

NOT FOR CONSTRUCTION

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Badger Mountain Solar Energy Project

Figure 5.1
Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

388
XBB-388
390
389
XBB-389
ST-390
391
XBB-391
392
ST-392
ST-DT-02

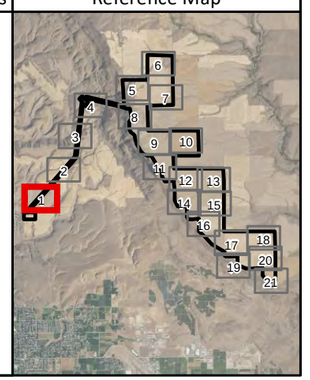
Survey Area
Photo Location and Direction
Wetland Point
XBB Point
Delineated Stream
Desktop-delineated Stream

TETRA TECH
AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map



1:3,000

NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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Badger Mountain Solar Energy Project

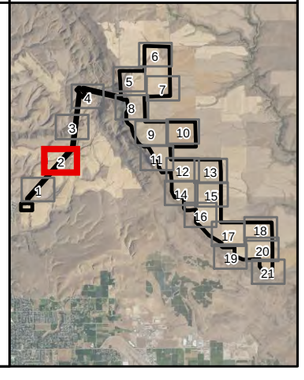
Figure 5.2 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

- Survey Area
- Photo Location and Direction
- Wetland Point
- XBB Point
- Delineated Stream
- Desktop-delineated Stream

TETRA TECH

AVANGRID RENEWABLES

Data Sources	Reference Map
Avangrid-Project Boundary; USDA-NAIP Imagery	

1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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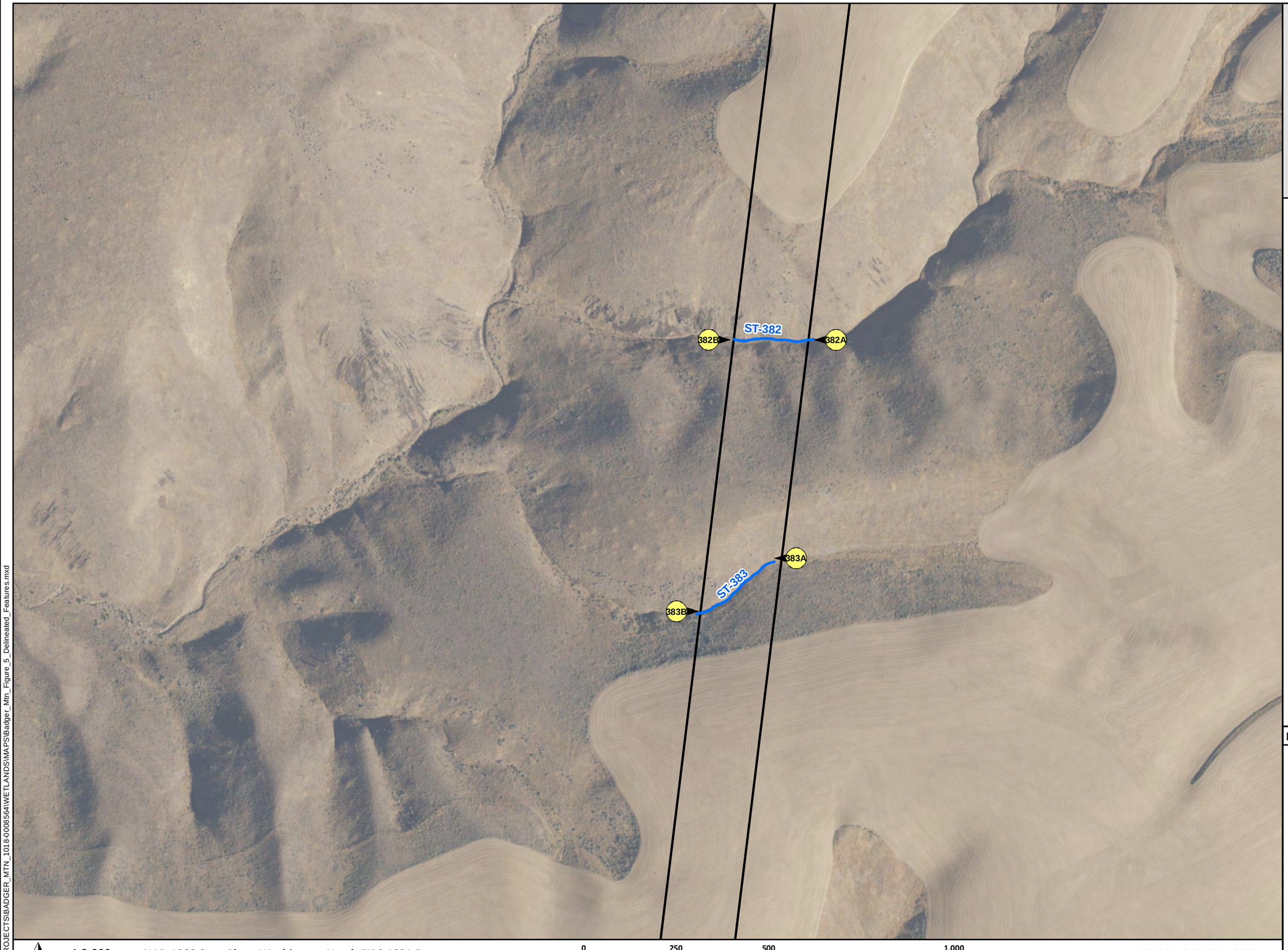


Badger Mountain Solar Energy Project

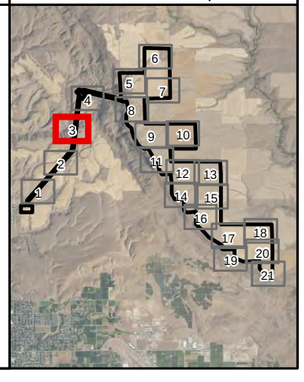
Figure 5.3 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

- Survey Area
- Photo Location and Direction
- Wetland Point
- XBB Point
- Delineated Stream
- Desktop-delineated Stream

TETRA TECH

AVANGRID RENEWABLES

Data Sources	Reference Map
Avangrid-Project Boundary; USDA-NAIP Imagery	

1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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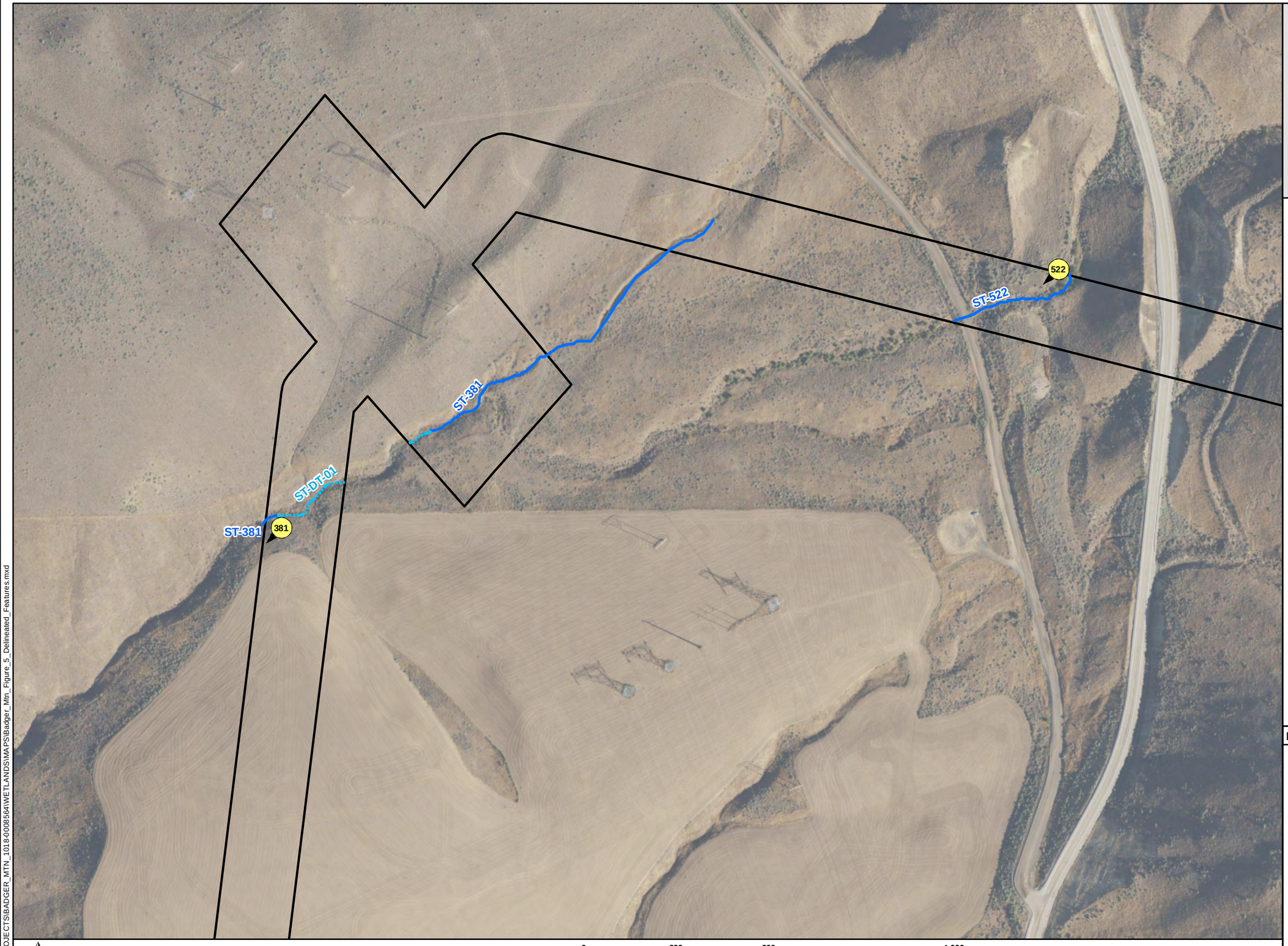
Badger Mountain Solar Energy Project

Figure 5.4 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON



- Survey Area
- Photo Location and Direction
- Wetland Point
- XBB Point
- Delineated Stream
- Desktop-delineated Stream

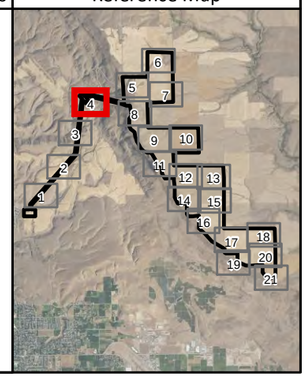
TETRA TECH

AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map



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NOT FOR CONSTRUCTION

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Badger Mountain Solar Energy Project

Figure 5.5 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

Survey Area

Photo Location and Direction

Wetland Point

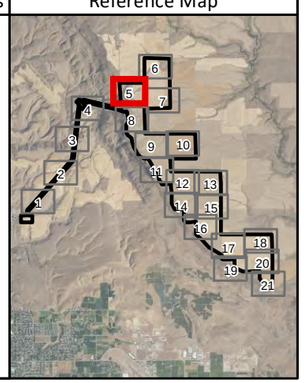
XBB Point

Delineated Stream

Desktop-delineated Stream

TETRA TECH

AVANGRID RENEWABLES

Data Sources	Reference Map
Avangrid-Project Boundary; USDA-NAIP Imagery	

1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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Badger Mountain Solar Energy Project

Figure 5.6 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

ST-513
513
513a
ST-510
510
510a
510b
512
ST-512
ST-511
511

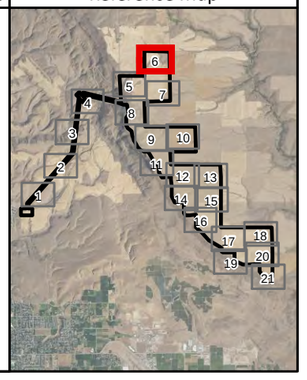
Survey Area
Photo Location and Direction
Wetland Point
XBB Point
Delineated Stream
Desktop-delineated Stream

TETRA TECH
AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map



1:3,000

NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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Badger Mountain Solar Energy Project

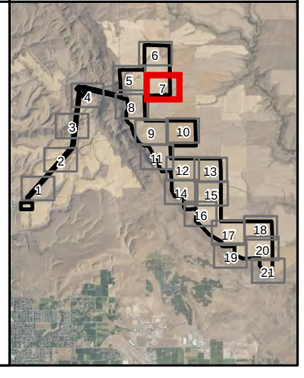
Figure 5.7 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

XBB-508
508
XBB-506
ST-507
507
505
ST-505
505a
XBB-504
ST-503
503
XBB-502
ST-501
501
500
XBB-500

Survey Area
Photo Location and Direction
Wetland Point
XBB Point
Delineated Stream
Desktop-delineated Stream

TETRA TECH
AVANGRID RENEWABLES

Data Sources	Reference Map
Avangrid-Project Boundary; USDA-NAIP Imagery	

1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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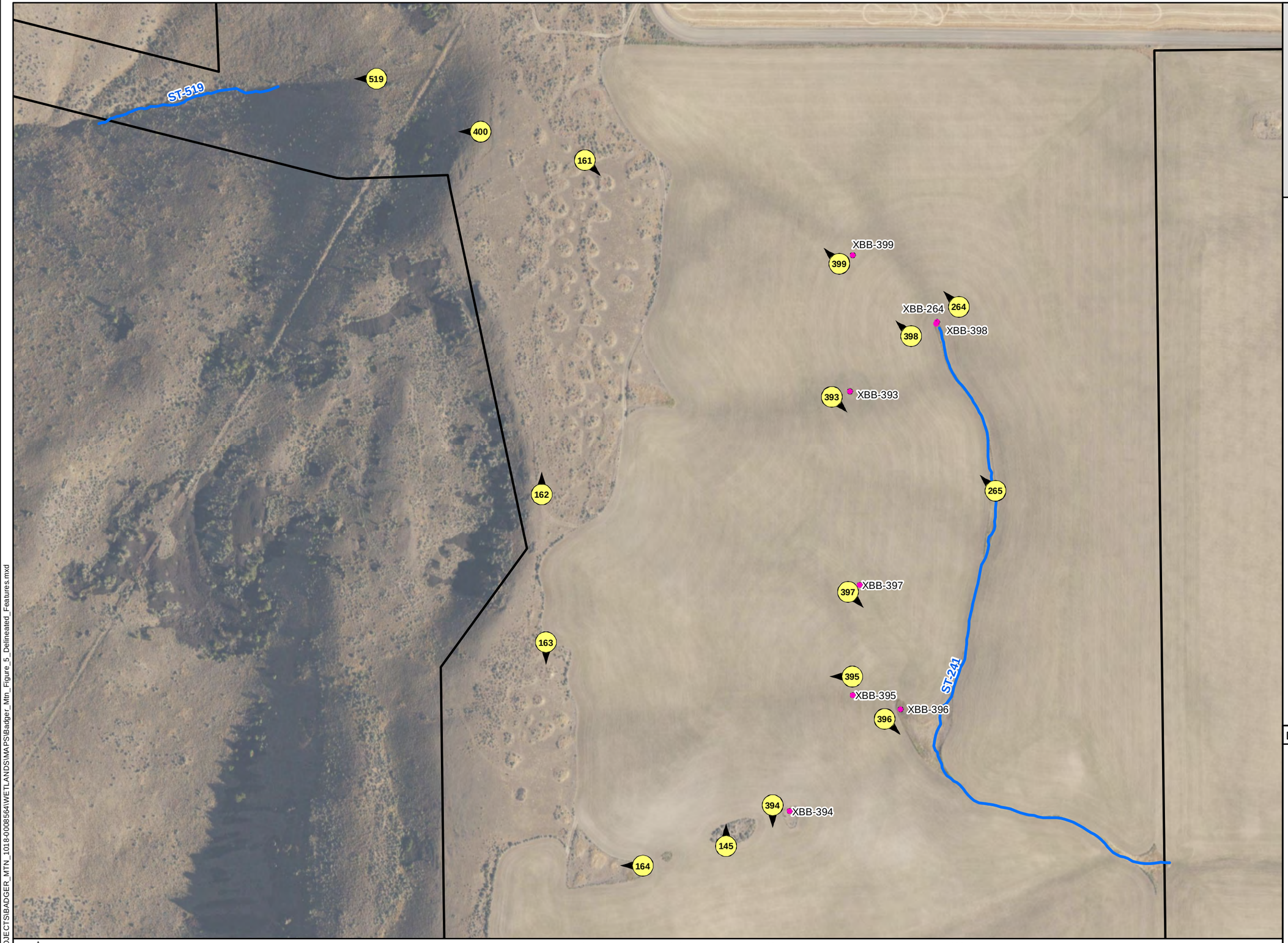
Badger Mountain Solar Energy Project

Figure 5.8 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON



Survey Area

Photo Location and Direction

Wetland Point

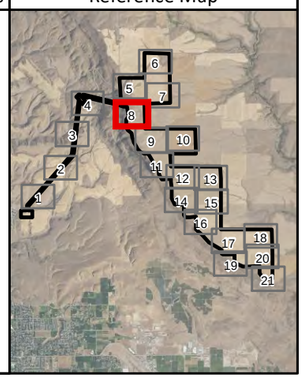
XBB Point

Delineated Stream

Desktop-delineated Stream

TETRA TECH

AVANGRID RENEWABLES

Data Sources	Reference Map
Avangrid-Project Boundary; USDA-NAIP Imagery	

1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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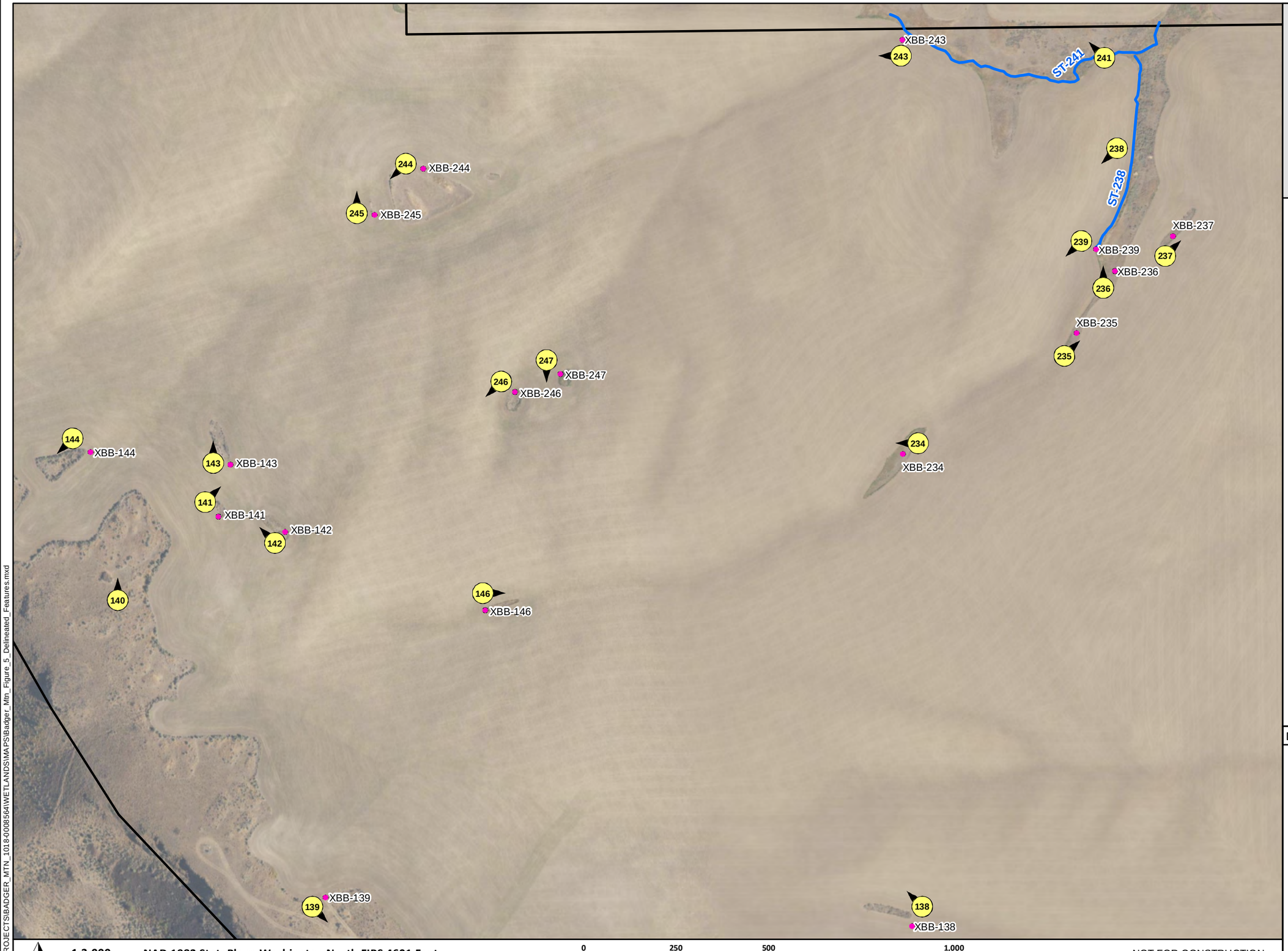


Badger Mountain Solar Energy Project

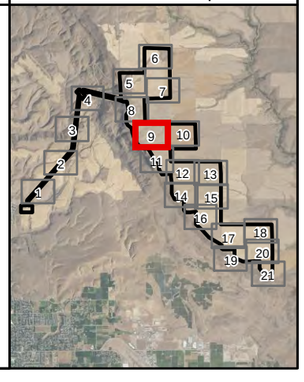
Figure 5.9 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

- Survey Area
- Photo Location and Direction
- Wetland Point
- XBB Point
- Delineated Stream
- Desktop-delineated Stream

TETRA TECH

AVANGRID RENEWABLES

Data Sources	Reference Map
Avangrid-Project Boundary; USDA-NAIP Imagery	

1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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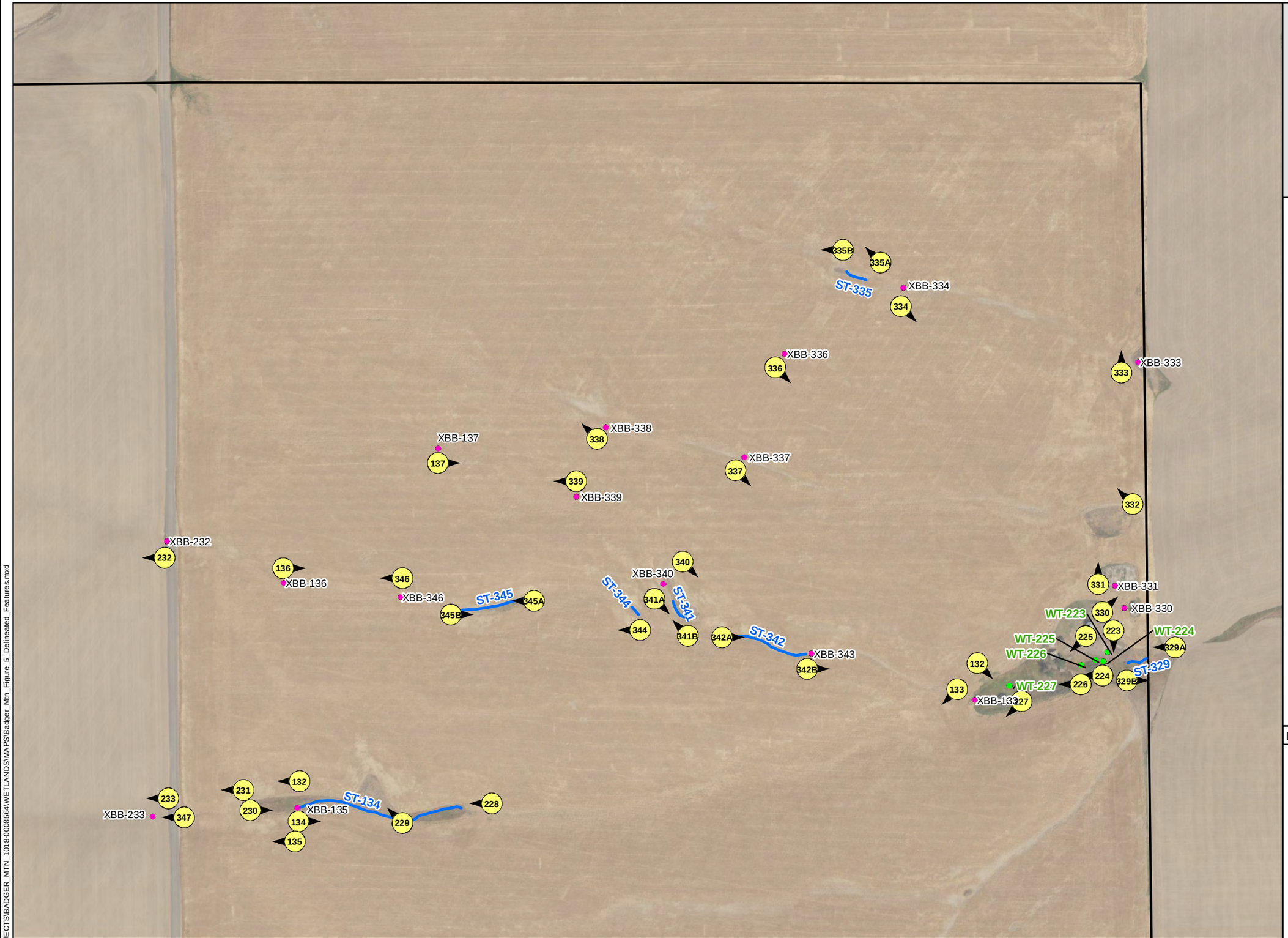
Badger Mountain Solar Energy Project

Figure 5.10 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON



1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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- Survey Area
- Photo Location and Direction
- Wetland Point
- XBB Point
- Delineated Stream
- Desktop-delineated Stream

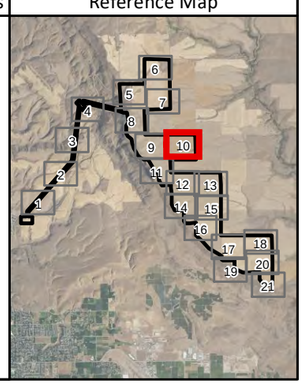
TETRA TECH

AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map



Badger Mountain Solar Energy Project

Figure 5.11 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

348
XBB-348
349
361
XBB-361
XBB-350
350
360B
360A
ST-360
XBB-359
359
XBB-351
351
358
XBB-358
357
XBB-357
352
353
XBB-353
356

Survey Area
Photo Location and Direction
Wetland Point
XBB Point
Delineated Stream
Desktop-delineated Stream

TETRA TECH
AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map

1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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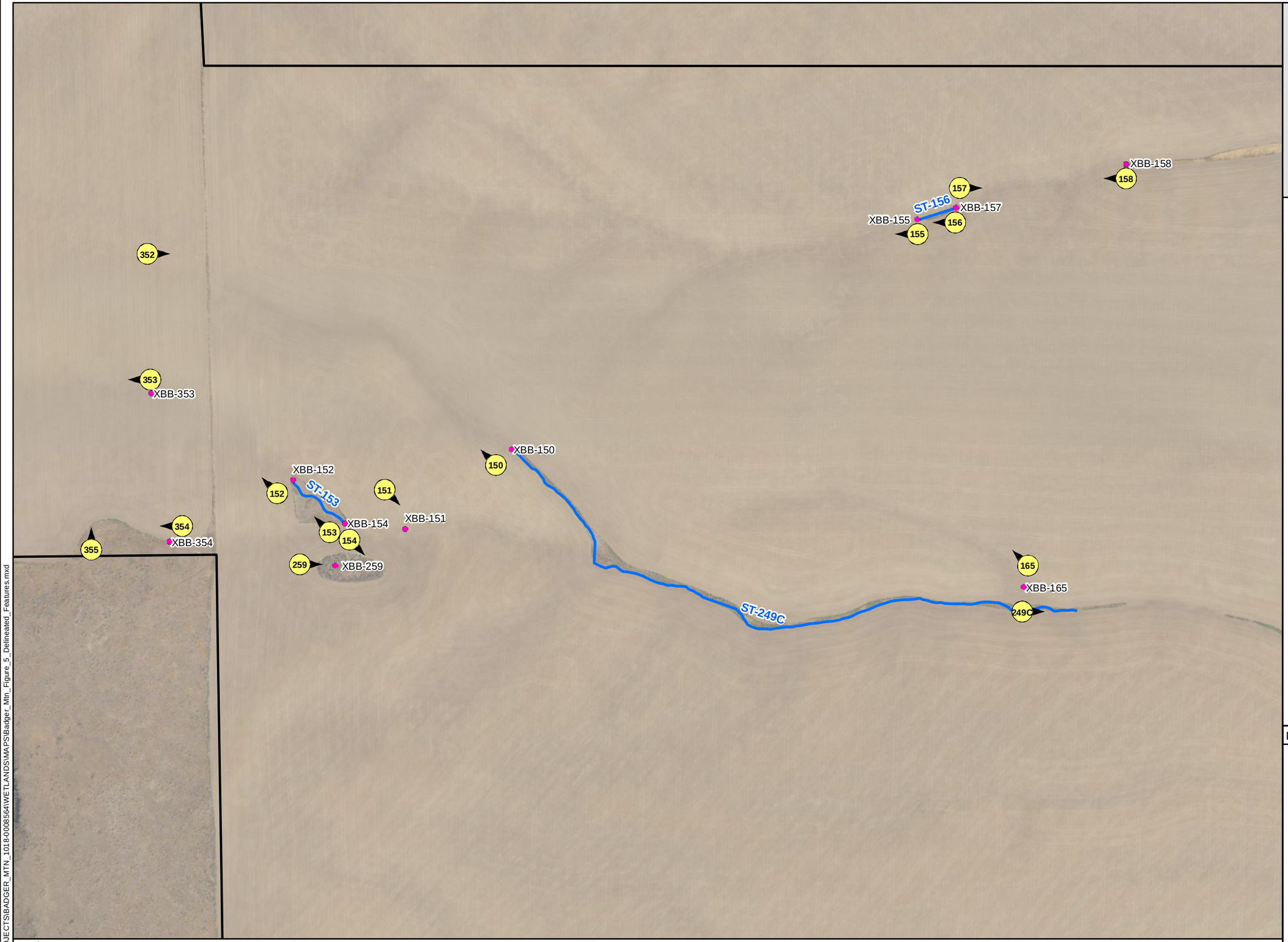
Badger Mountain Solar Energy Project

Figure 5.12 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON



Survey Area

Photo Location and Direction

Wetland Point

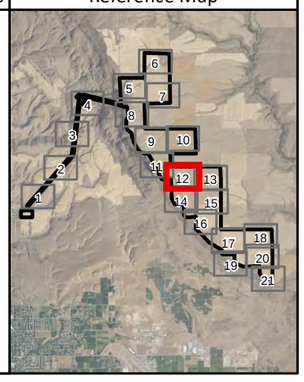
XBB Point

Delineated Stream

Desktop-delineated Stream

TETRA TECH

AVANGRID RENEWABLES

Data Sources	Reference Map
Avangrid-Project Boundary; USDA-NAIP Imagery	

1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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Badger Mountain Solar Energy Project

Figure 5.13 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

XBB-158
158
XBB-159
159
160
ST-160
260
XBB-260
261
XBB-261
262
XBB-262
263
XBB-263
XBB-248
248
149
XBB-149
249B
ST-249B
147

Survey Area
Photo Location and Direction
Wetland Point
XBB Point
Delineated Stream
Desktop-delineated Stream

TETRA TECH
AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map

1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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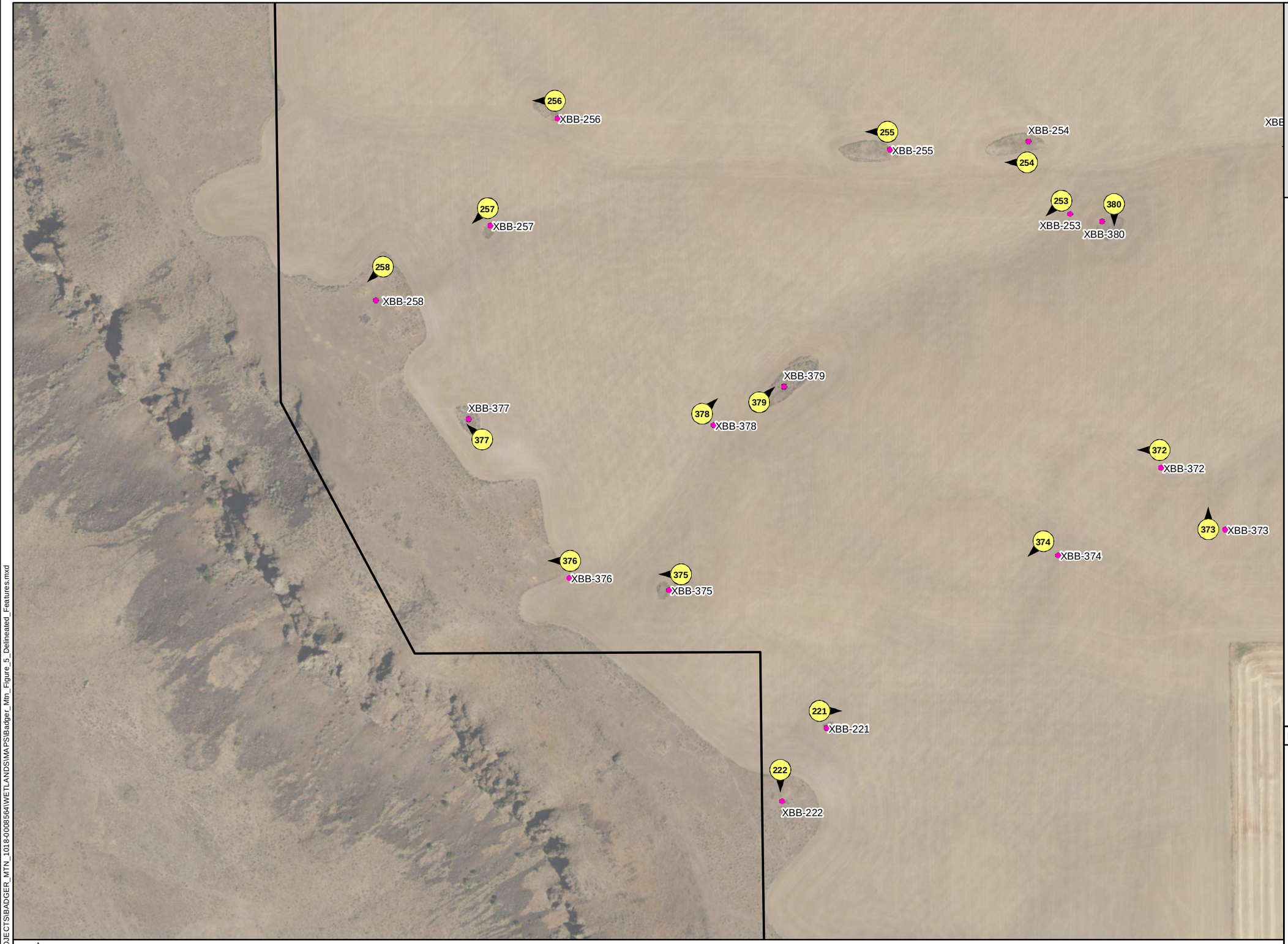
Badger Mountain Solar Energy Project

Figure 5.14 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON



Survey Area

Photo Location and Direction

Wetland Point

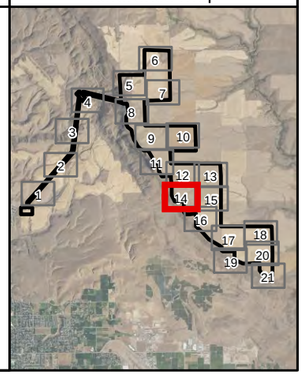
XBB Point

Delineated Stream

Desktop-delineated Stream

TETRA TECH

AVANGRID RENEWABLES

Data Sources	Reference Map
Avangrid-Project Boundary; USDA-NAIP Imagery	

1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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Badger Mountain Solar Energy Project

Figure 5.15 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

XBB-252
252
ST-251
251
250
XBB-250
147
XBB-147
148
ST-148
ST-249A
249A
363
XBB-363
364
XBB-364
365
XBB-365
366
XBB-366
367
XBB-367
362
XBB-362
371
XBB-371
370
XBB-370
369
XBB-369
368
XBB-368
373
XBB-373
325
XBB-325
324
XBB-324
323
XBB-323

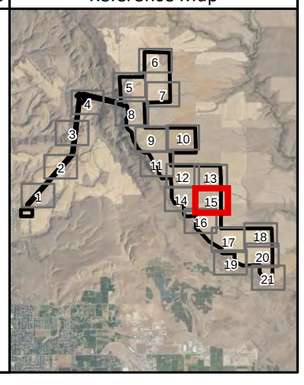
Survey Area
Photo Location and Direction
Wetland Point
XBB Point
Delineated Stream
Desktop-delineated Stream

TETRA TECH
AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map



1:3,000

NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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Badger Mountain Solar Energy Project

Figure 5.16 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

XBB-218
218
219
220
XBB-220
XBB-219
217
XBB-217
216
XBB-216
323
XBB-323
130
XBB-131
322
129
XBB-322
321
127
320
XBB-320
ST-321
319
XBB-319
318
XBB-318
215
XBB-215

Survey Area
Photo Location and Direction
Wetland Point
XBB Point
Delineated Stream
Desktop-delineated Stream

TETRA TECH
AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map

1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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Badger Mountain Solar Energy Project

Figure 5.17 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

XBB-113
XBB-111
XBB-109
112
110
108
124
XBB-125
119
123
XBB-120
ST-117
118
XBB-116
115
214
BB-214
XBB-212
212
213
XBB-213
211
XBB-211
210
XBB-210
XBB-209
209

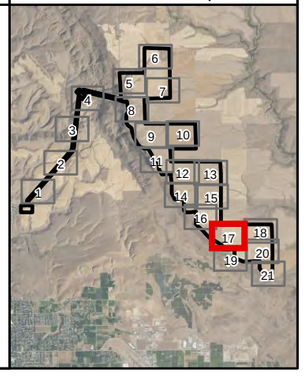
Survey Area
Photo Location and Direction
Wetland Point
XBB Point
Delineated Stream
Desktop-delineated Stream

TETRA TECH
AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map



1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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Badger Mountain Solar Energy Project

Figure 5.18 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

XBB-107
106
105
XBB-104
103
100
101
XBB-201
201
300A
200
ST-200
ST-300A
203
300B
XBB-203
202
XBB-202
303A
302
XBB-303
XBB-301
301
303B
300C
ST-300B
204
XBB-204
300D
XBB-304
304

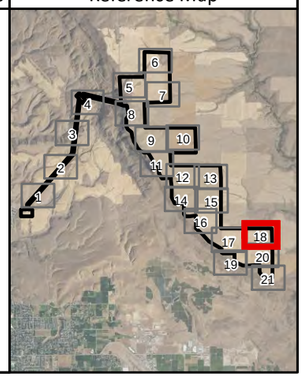
Survey Area
Photo Location and Direction
Wetland Point
XBB Point
Delineated Stream
Desktop-delineated Stream

TETRA TECH
AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map



1:3,000

NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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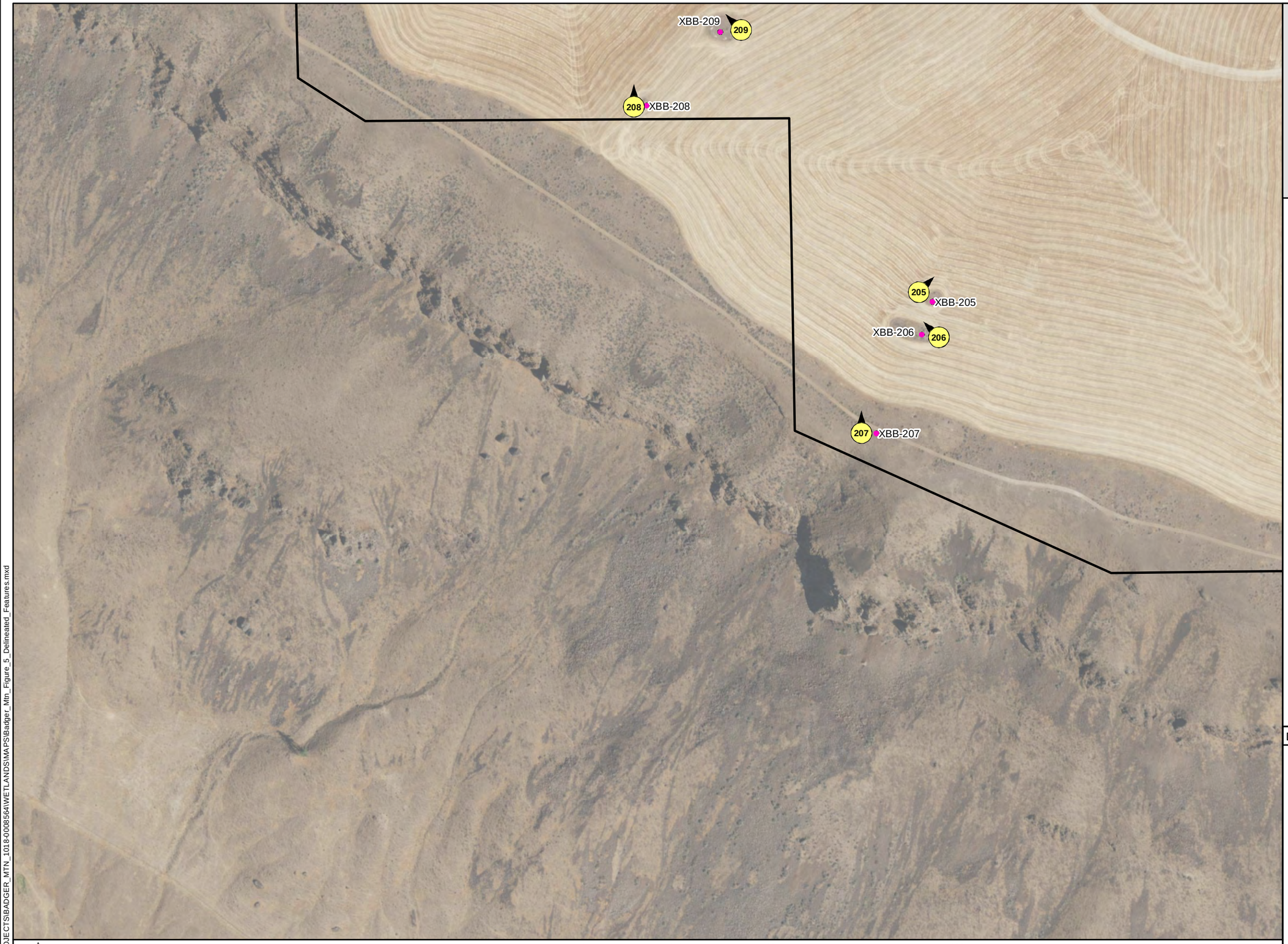


Badger Mountain Solar Energy Project

Figure 5.19 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

- Survey Area
- Photo Location and Direction
- Wetland Point
- XBB Point
- Delineated Stream
- Desktop-delineated Stream

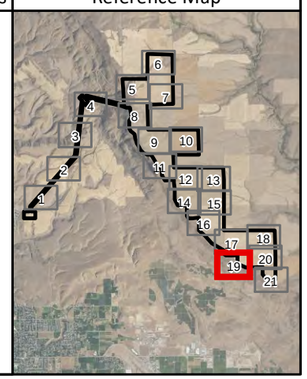
TETRA TECH

AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map



1:3,000

NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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Badger Mountain Solar Energy Project

Figure 5.20 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

XBB-304
304
305
XBB-305
327
306
326
XBB-306
307
308
XBB-308
309
XBB-309
316
XBB-316
317
XBB-317
310
XBB-310
315
XBB-315

Survey Area
Photo Location and Direction
Wetland Point
XBB Point
Delineated Stream
Desktop-delineated Stream

TETRA TECH
AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map

1:3,000 NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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315
XBB-315
311
XBB-311
314
313
312

Badger Mountain Solar Energy Project

Figure 5.21 Delineated Wetlands and Waters

DOUGLAS COUNTY, WASHINGTON

- Survey Area
- Photo Location and Direction
- Wetland Point
- XBB Point
- Delineated Stream
- Desktop-delineated Stream

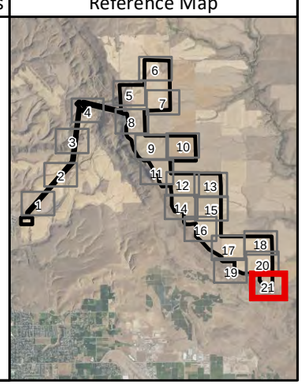
TETRA TECH

AVANGRID RENEWABLES

Data Sources

Avangrid-Project Boundary;
USDA-NAIP Imagery

Reference Map



1:3,000

NAD 1983 StatePlane Washington North FIPS 4601 Feet

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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Appendix B. Arid West Region Wetland Determination Data Sheets

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U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Badger Mountain Solar | City/County: Douglas County | Sampling Date: 4/20/2021
Applicant/Owner: Avangrid | State: WA | Sampling Point: WT-223
Investigator(s): Jessica Taylor/Katie Pyne/Sara Frank | Section, Township, Range: Section 34, 23N, 21E
Landform (hillside, terrace, etc.): swale | Local relief (concave, convex, none): gentle slope | Slope (%): 3
Subregion (LRR): LRR B | Lat: 47.466557 | Long: -120.186733 | Datum: NAD83
Soil Map Unit Name: 70 Broadax-Titchenel complex, 3 to 15 percent | NWI classification: PEM1A
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	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Site is located in slight swale between abandoned house and outbuildings. No hydrology was observed onsite despite recent spring snow storm and subsequent snow melt.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Agropyron cristatum*	50	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	50 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	50	x 5 =	250
Column Totals:	50 (A)		250 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:
____ Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: WT-223

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					silt 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: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic 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:

Soil is soft and loamy with no signs of recent saturation.

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) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Badger Mountain Solar City/County: Douglas County Sampling Date: 4/20/2021
Applicant/Owner: Avangrid State: WA Sampling Point: WT-224
Investigator(s): Jessica Taylor/Katie Pyne/Sara Frank Section, Township, Range: Section 34, 23N, 21E
Landform (hillside, terrace, etc.): swale Local relief (concave, convex, none): gentle slope Slope (%): 3
Subregion (LRR): LRR B Lat: 47.466557 Long: -120.186733 Datum: NAD83
Soil Map Unit Name: 70 Broadax-Titchenel complex, 3 to 15 percent NWI classification: PEM1A
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
Wetland Hydrology Present? Yes ____ No X

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

Remarks:
Site is located in slight swale between abandoned house and outbuildings. No hydrology was observed onsite despite recent spring snow storm and subsequent snow melt.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Agropyron cristatum*	50	Yes	UPL
2. *Phalaris arundinacea*	50	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust ____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (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	0	x 4 =	0
UPL species	50	x 5 =	250
Column Totals:	100 (A)		350 (B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: WT-224

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					silt 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: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic 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) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Badger Mountain Solar City/County: Douglas County Sampling Date: 4/20/2021
Applicant/Owner: Avangrid State: WA Sampling Point: WT-225
Investigator(s): Jessica Taylor/Katie Pyne/Sara Frank Section, Township, Range: Section 34, 23N, 21E
Landform (hillside, terrace, etc.): Swale on gentle slope Local relief (concave, convex, none): Concave Slope (%): 5
Subregion (LRR): LRR B Lat: 47.458279 Long: 120.197609 Datum: NAD83
Soil Map Unit Name: 70 Broadax-Titchenel complex, 3 to 15 percent NWI classification: PEM1A
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
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** x

Remarks:
Site is located in slight swale between abandoned house and outbuildings. No hydrology was observed onsite despite recent spring snow storm and subsequent snow melt.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Agropyron cristatum*	40	Yes	UPL
2. *Phalaris arundinacea*	40	Yes	FACW
3. *Rosa woodsii*	10	No	FACU
4.			
5.			
6.			
7.			
8.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (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	10	x 4 =	40
UPL species	40	x 5 =	200
Column Totals:	90 (A)		320 (B)

Prevalence Index = B/A = 3.56

Hydrophytic Vegetation Indicators:
____ Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: WT-225

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silt 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: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic 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) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Badger Mountain Solar City/County: Douglas County Sampling Date: 4/20/2021
Applicant/Owner: Avangrid State: WA Sampling Point: WT-226
Investigator(s): Jessica Taylor/Katie Pyne/Sara Frank Section, Township, Range: Section 34, 23N, 21E
Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope (%): 3
Subregion (LRR): LRR B Lat: 47.458279 Long: 120.197609 Datum: NAD83
Soil Map Unit Name: 68 Broadax-Morrow-Spofford complex, 3 to 8 percent slopes NWI classification: PEM1A
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
Wetland Hydrology Present? Yes ____ No X

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

Remarks:
Site is located in slight swale between abandoned house and outbuildings. No hydrology was observed onsite despite recent spring snow storm and subsequent snow melt.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Agropyron cristatum*	50	Yes	UPL
2. *Phalaris arundinacea*	50	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust ____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (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	0	x 4 =	0
UPL species	50	x 5 =	250
Column Totals:	100 (A)		350 (B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: WT-226

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Loamy/Clayey	Silt 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: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic 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) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Badger Mountain Solar City/County: Douglas County Sampling Date: 4/20/2021
Applicant/Owner: Avangrid State: WA Sampling Point: WT-227
Investigator(s): Jessica Taylor/Katie Pyne/Sara Frank Section, Township, Range: 23N, 21E, 34
Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope (%): 3
Subregion (LRR): LRR B Lat: 47.458279 Long: 120.197609 Datum: NAD83
Soil Map Unit Name: 68 Broadax-Morrow-Spofford complex, 3 to 8 percent slopes NWI classification: PEM1A
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:
Site is located in slight swale between abandoned house and outbuildings. No hydrology was observed onsite despite recent spring snow storm and subsequent snow melt.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	95	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	95 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust ____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (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 = 2.00

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (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: WT-227

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silt 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: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic 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) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain	Assessor Jessica Taylor, Sara Frank, and Katie Pyne
Address East Wenatchee, WA	Date 4/19/2021
Waterway Name ST-200	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries Study area width.	Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 2-foot
☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants NONE (and indicator status):

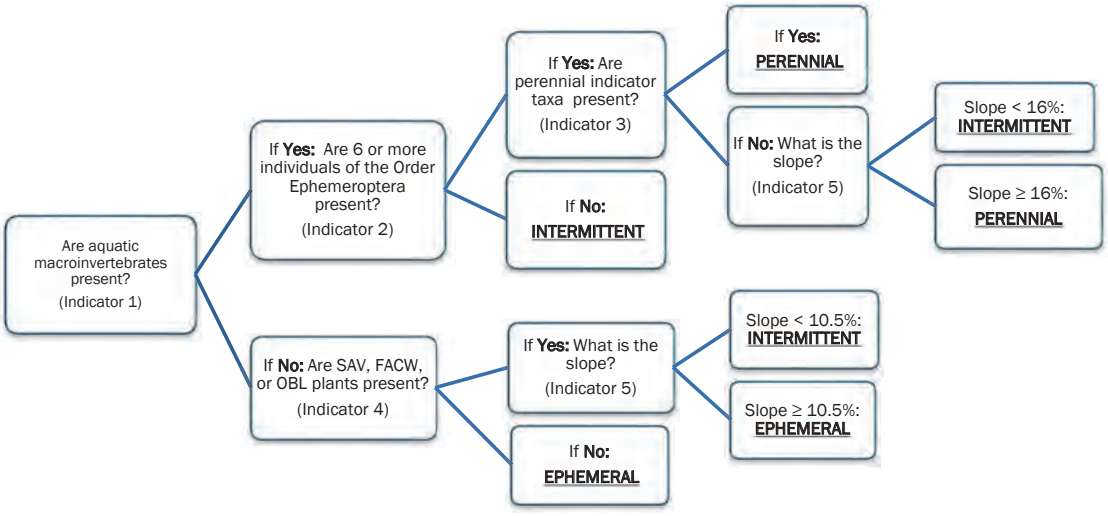
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
NONE			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☒ Ephemeral
☐ Intermittent
☐ Perennial

Notes: (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo #

Predominant vegetation is winter wheat.

Ephemeral drainage, turns into crop field, bottom between two fields.

Ancillary Information:

☐ Riparian Corridor

☐ Erosion and Deposition

☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain	Assessor Jessica Taylor, Sara Frank, and Katie Pyne
Address East Wenatchee, WA	Date 4/20/2021
Waterway Name ST-238	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries Study area width.	Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 2-foot
☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants NONE (and indicator status):

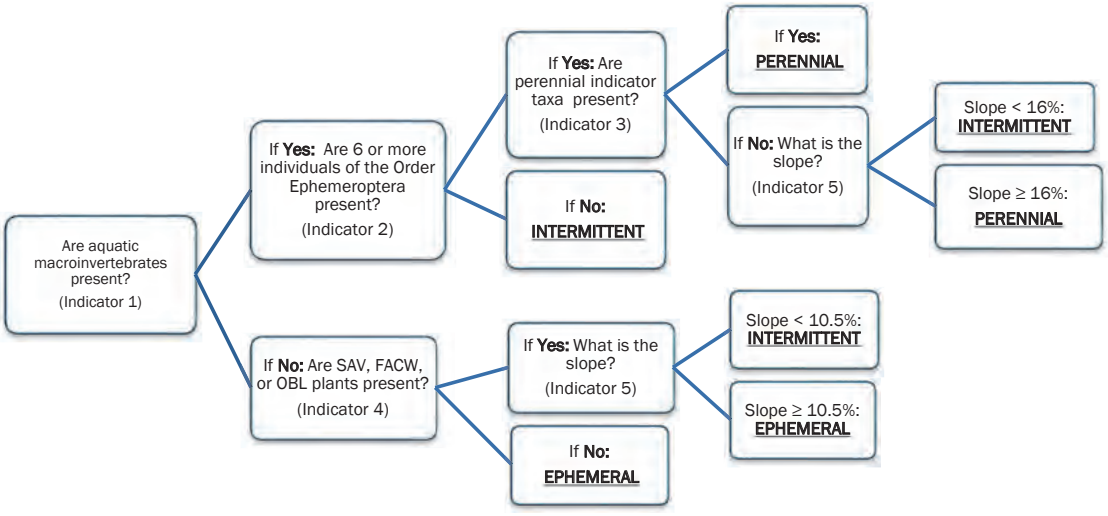
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
NONE			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☒ Ephemeral
☐ Intermittent
☐ Perennial

Notes: (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo #

Predominant vegetation is sagebrush, mullein, and gray rabbitbrush.

Ancillary Information:

☐ Riparian Corridor

☐ Erosion and Deposition

☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain Solar	Assessor Jessica Taylor, Sara Frank, and Katie Pyne
Address East Wenatchee, WA	Date 4/20/2021
Waterway Name ST-241	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries Study area width.	Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 3-feet
☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants NONE (and indicator status):

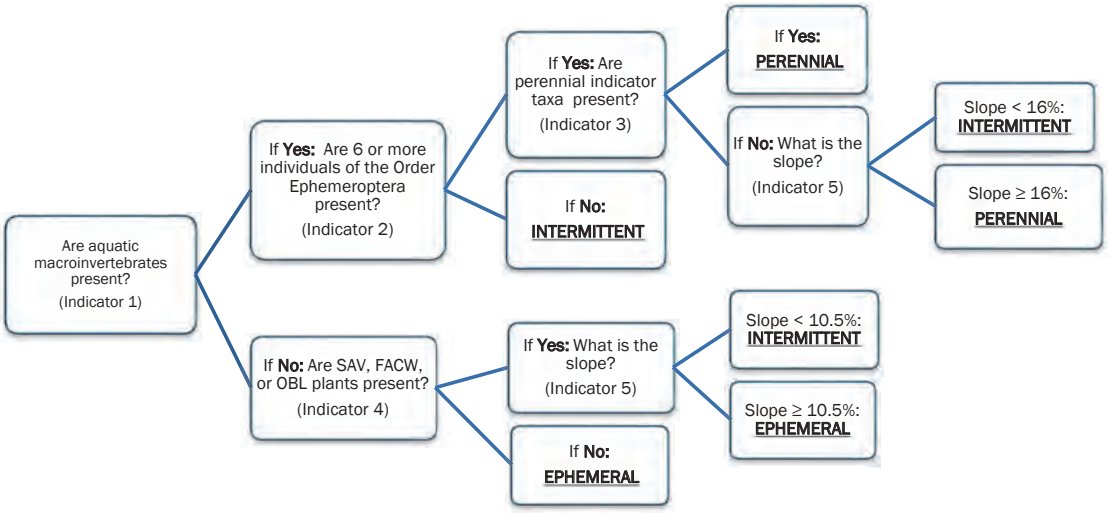
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
NONE			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	■ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	■ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	■ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	■ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
■ Ephemeral
☐ Intermittent
☐ Perennial

Notes: (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo #

Predominant vegetation is sagebrush, mullein, and gray rabbitbrush.

Ephemeral drainage, with rocks in channel bottom and outside of stream bed. There are areas with damp soil, and some standing water, as rock restriction prevents water from seeping into the soil.

Ancillary Information:

☐ Riparian Corridor

☐ Erosion and Deposition

☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain Solar	Assessor Jessica Taylor, Sara Frank, and Katie Pyne
Address East Wenatchee, WA	Date 4/21/2021
Waterway Name ST-249	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries Study area width.	Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 3-feet
	☐ Disturbed Site / Difficult Situation (Describe in "Notes")

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants NONE (and indicator status):

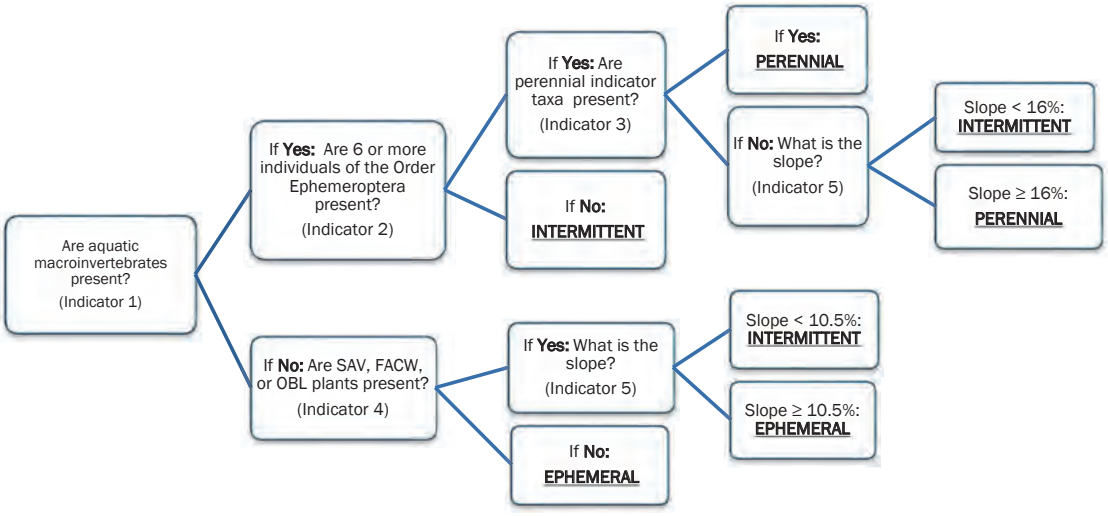
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
NONE			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☒ Ephemeral
☐ Intermittent
☐ Perennial

Notes: (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo #

Predominant vegetation is russian thistle and basin wild rye.

Ephemeral drainage, with some rocks in channel bottom, but substrate mostly consists of dirt or dried up vegetation.

Ancillary Information:

☐ Riparian Corridor

☐ Erosion and Deposition

☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain Solar	Assessor Jessica Taylor, Sara Frank, and Katie Pyne
Address East Wenatchee, WA	Date 4/21/2021
Waterway Name ST-251	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries Study area width.	Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 2-feet
☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants NONE (and indicator status):

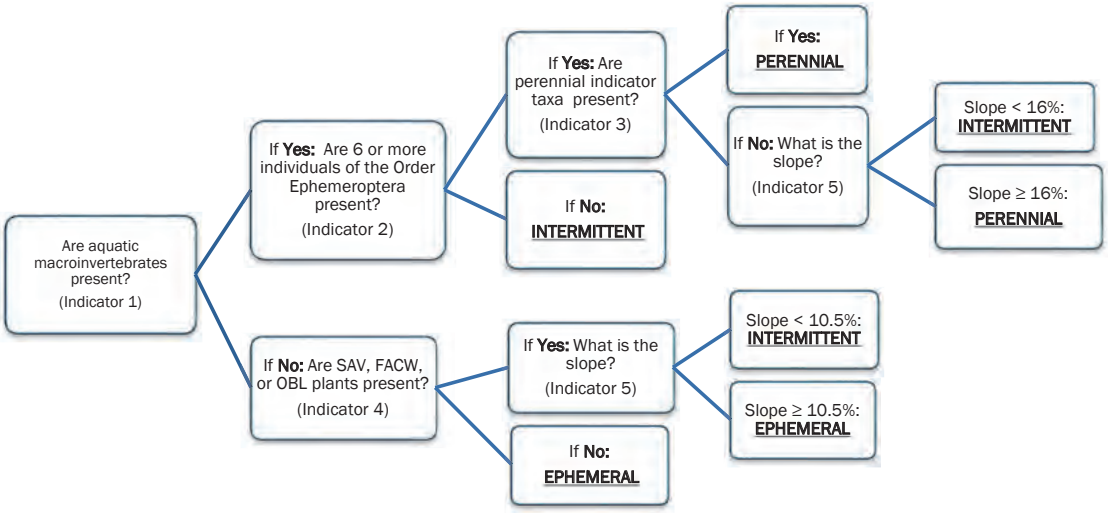
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
NONE			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☒ Ephemeral
☐ Intermittent
☐ Perennial

Notes: (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo #

Predominant vegetation is russian thistle, and cheat grass.

Ephemeral drainage, and bottom between two crop fields.

Ancillary Information:

☐ Riparian Corridor

☐ Erosion and Deposition

☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain	Assessor Sara Frank
Address	Date 4/19/2021
Waterway Name ST-300	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries	Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 1-2 ft
☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

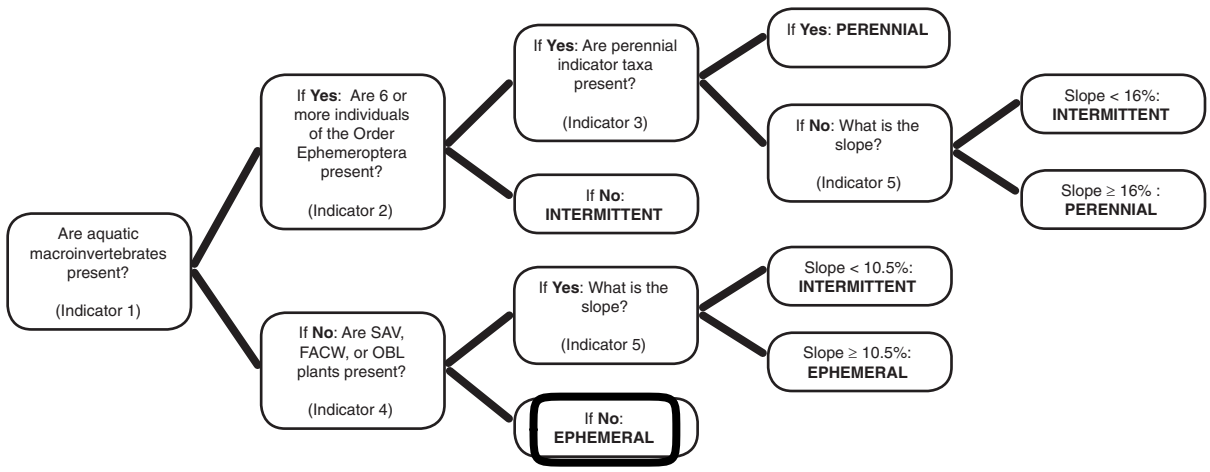
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Low point between two wheat fields. Mostly planted with winter wheat. Stream likely formed with recent snowmelt.

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name: Badger Mountain	Assessor: Sara Frank
Address	Date: 4/19/2021
Waterway Name: ST-321	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries	Long. W
Precipitation w/in 48 hours (cm): 0	Channel Width (m): 1 ft
☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow: 0

% of reach w/any flow (surface or hyporheic): 0

# of pools observed: 0

Observations

Observed Wetland Plants (and indicator status): N/A

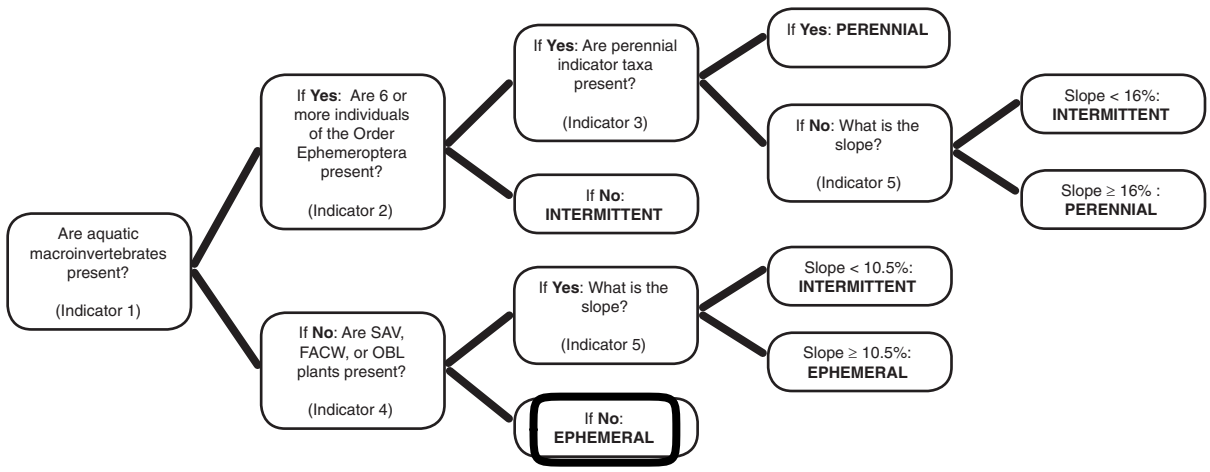
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	5 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Drainage full of sagebrush and russian thistle.

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain	Assessor Sara Frank
Address	Date 4/20/2021
Waterway Name ST-321	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries	Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 1 ft
☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

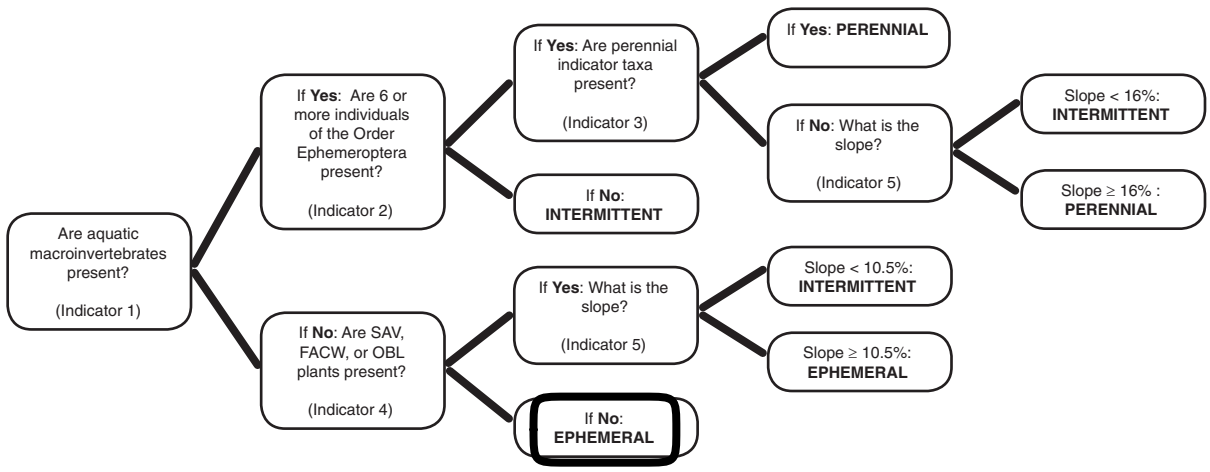
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Drainage between old farm equipment. Rocky bare ground.

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain	Assessor Sara Frank
Address	Date 4/20/2021
Waterway Name ST-321	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries	Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 1 ft
☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

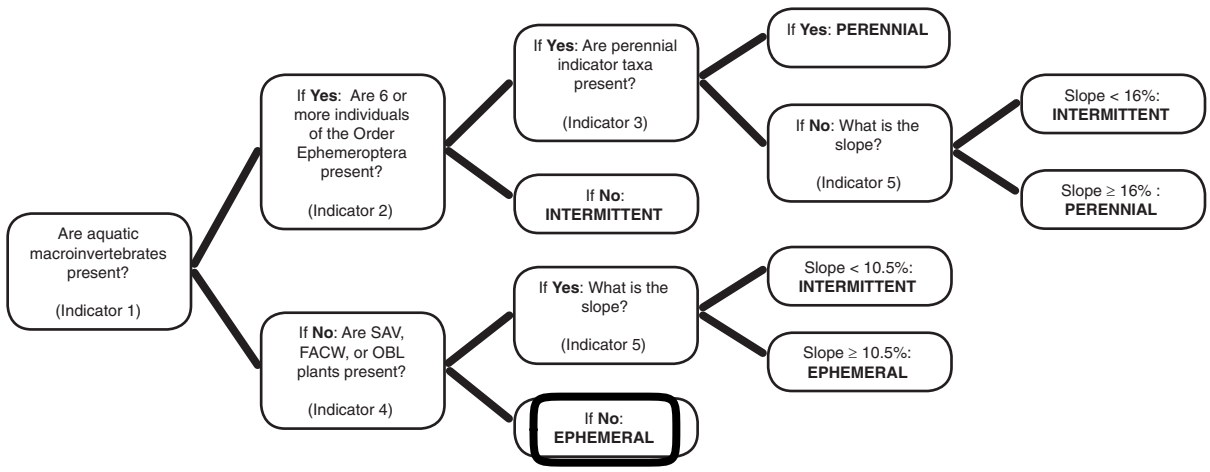
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Drainage between old farm equipment. Rocky bare ground.

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain	Assessor Sara Frank
Address	Date 4/20/2021
Waterway Name ST-321	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries	Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 1 ft
☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

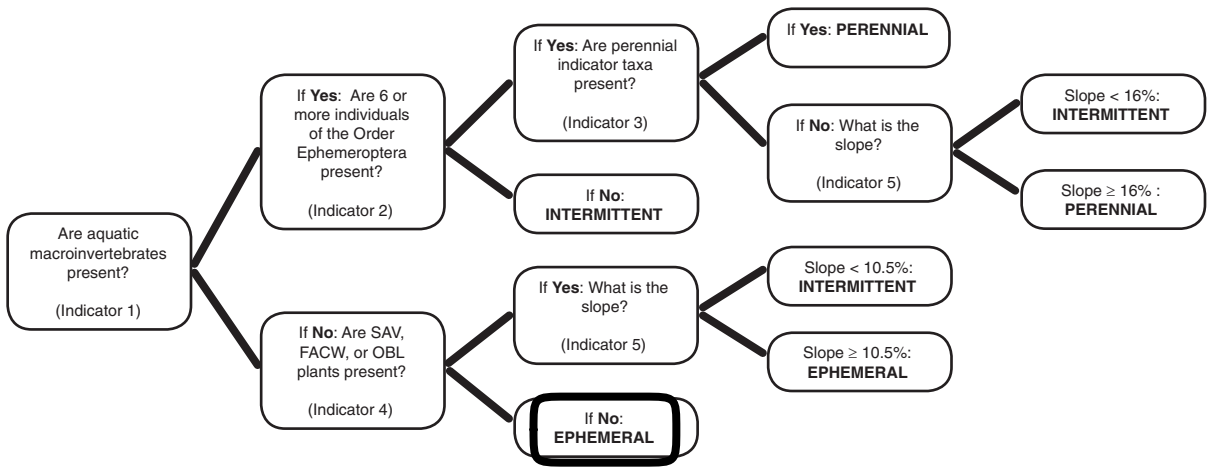
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Drainage around rock piles. Full of common mullein.

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain		Assessor Sara Frank	
Address		Date 4/20/2021	
Waterway Name ST-342		Coordinates at downstream end (ddd.mm.ss)	Lat. N
Reach Boundaries			Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 1 ft	☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

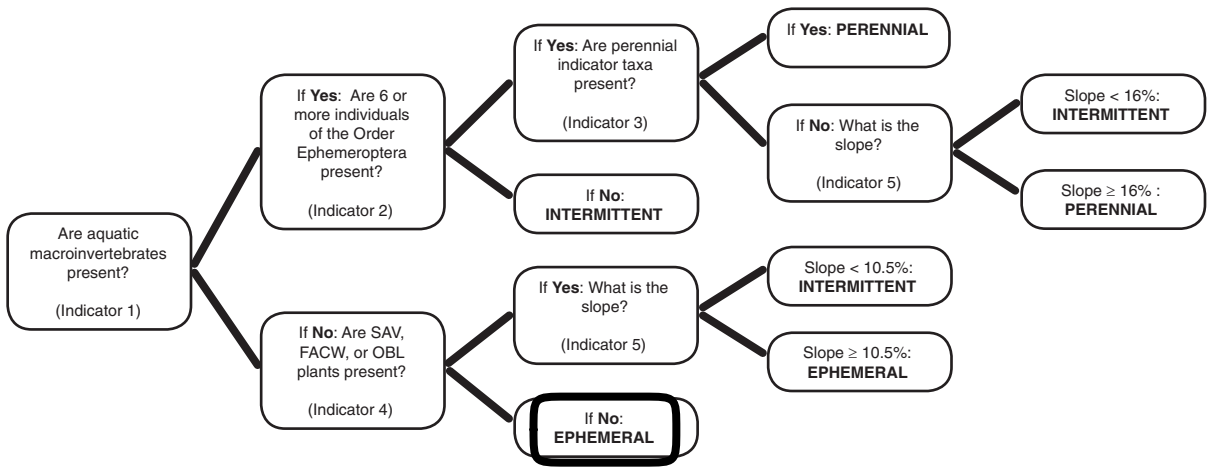
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	5 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Drainage around scattered rocks. Full of common mullein and russian thistle.

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain		Assessor Sara Frank	
Address			Date 4/20/2021
Waterway Name ST-344		Coordinates at downstream end (ddd.mm.ss)	Lat. N
Reach Boundaries			Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 3 ft	☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

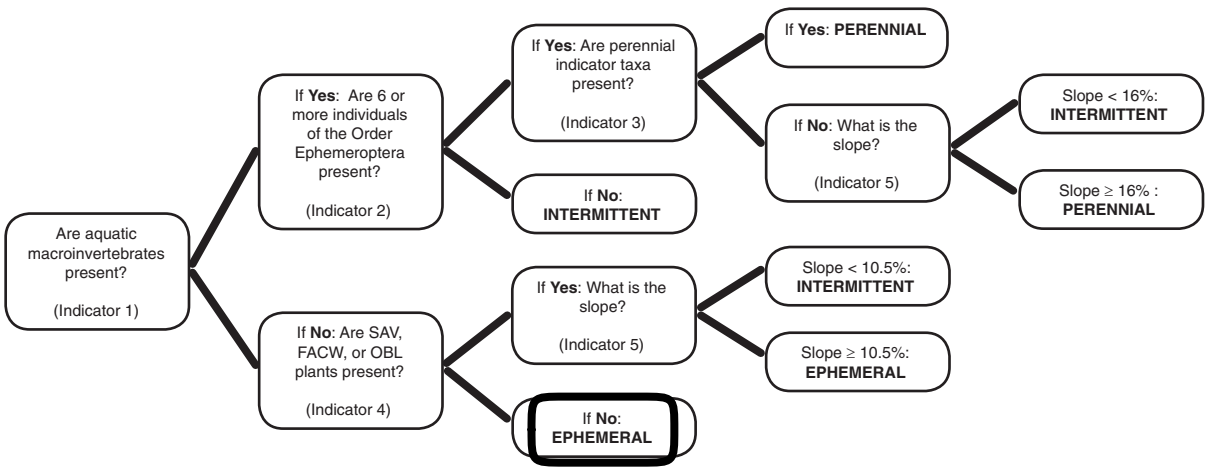
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	2 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Very short drainage filled with rocks and scattered russian thistle.

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain	Assessor Sara Frank	
Address	Date 4/20/2021	
Waterway Name ST-345	Coordinates at downstream end (ddd.mm.ss) Lat. N	
Reach Boundaries	Long. W	
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 1 ft	☐ Disturbed Site / Difficult Situation (Describe in "Notes")

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

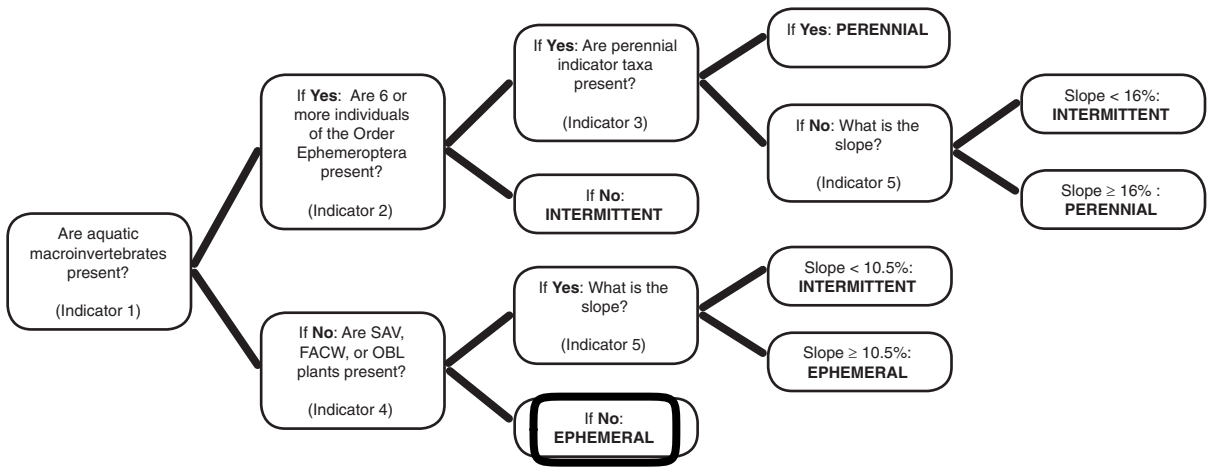
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	____5_ %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Low point between two wheat fields, full of rocks and common mullein

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain		Assessor Sara Frank	
Address		Date 4/20/2021	
Waterway Name ST-360		Coordinates at downstream end (ddd.mm.ss)	Lat. N
Reach Boundaries			Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 2 ft	☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

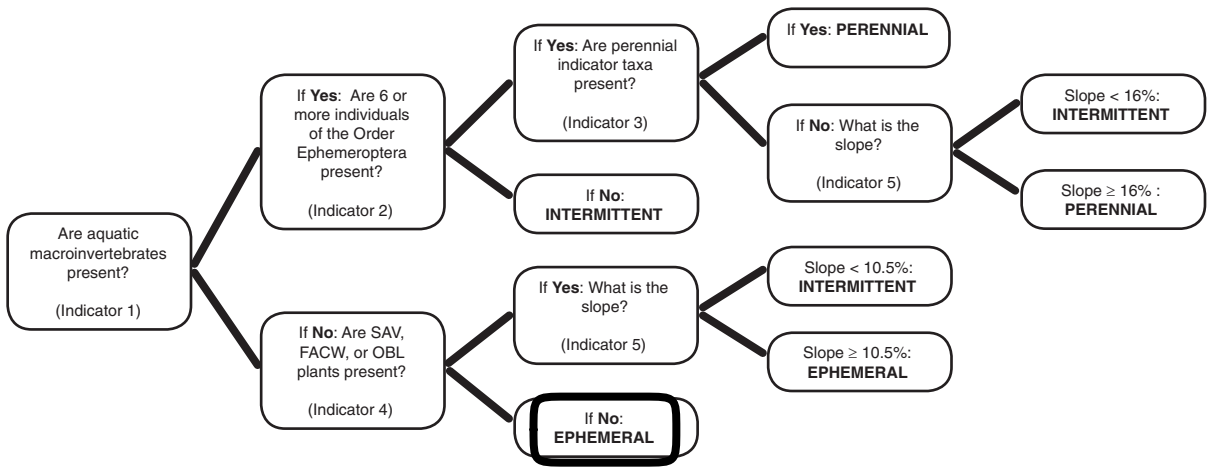
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	7 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Likely the result of recent snowmelt. Rocks, disturbed sagebrush and russian thistle in drainage

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain	Assessor Sara Frank	
Address	Date 4/21/2021	
Waterway Name ST-381	Coordinates at downstream end (ddd.mm.ss) Lat. N	
Reach Boundaries	Long. W	
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 1.5 ft	☐ Disturbed Site / Difficult Situation (Describe in "Notes")

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

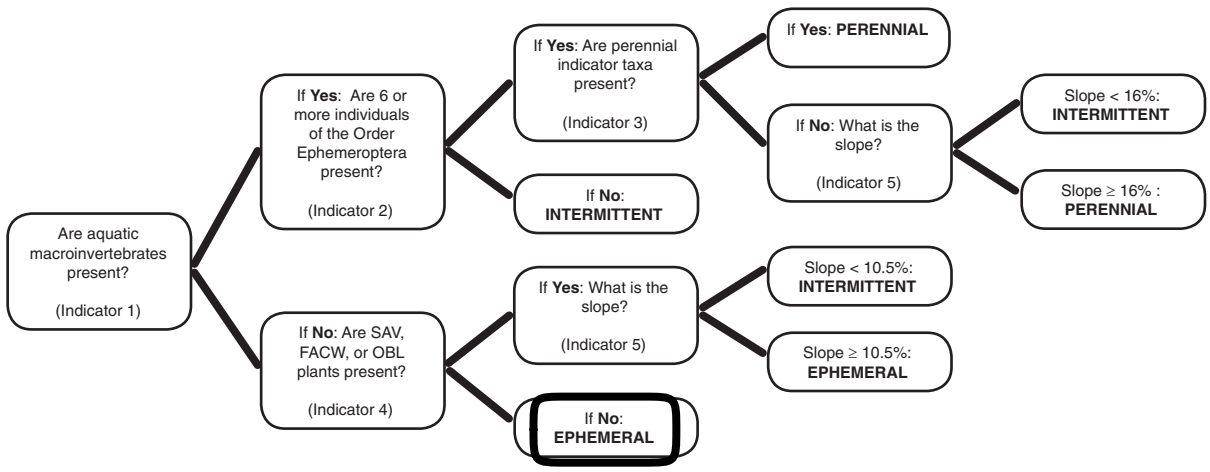
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	5 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Sagebrush grown in drainage

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain	Assessor Sara Frank
Address	Date 4/21/2021
Waterway Name ST-382	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries	Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 4.5 ft
☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

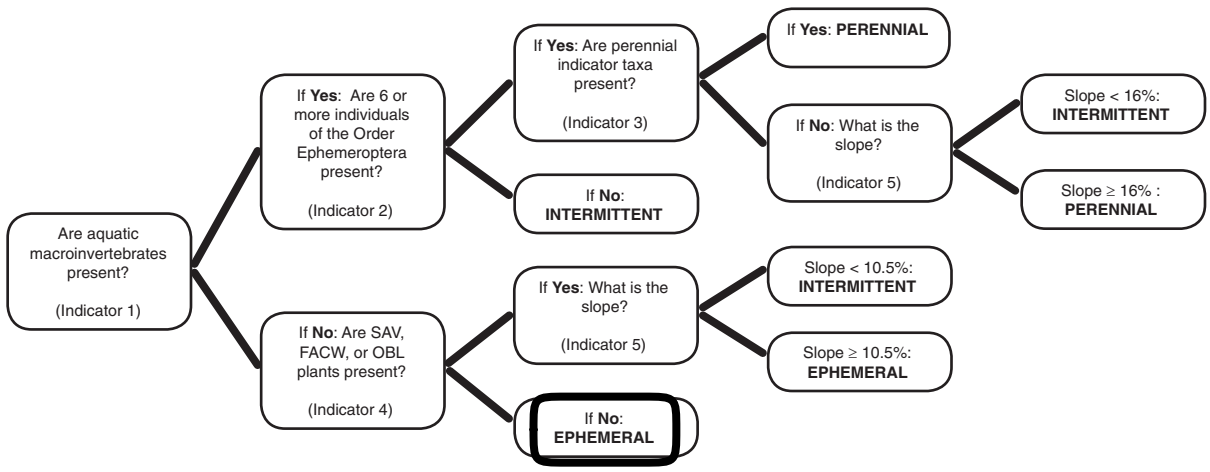
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	____5_ %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Rocky streambed with high exposed walls. Filled with large rocks and primarily cheatgrass. 4.5 ft at widest, 2 ft at narrowest part within project area.

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain	Assessor Sara Frank
Address	Date 4/21/2021
Waterway Name ST-383	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries	Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 1.5 ft
☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

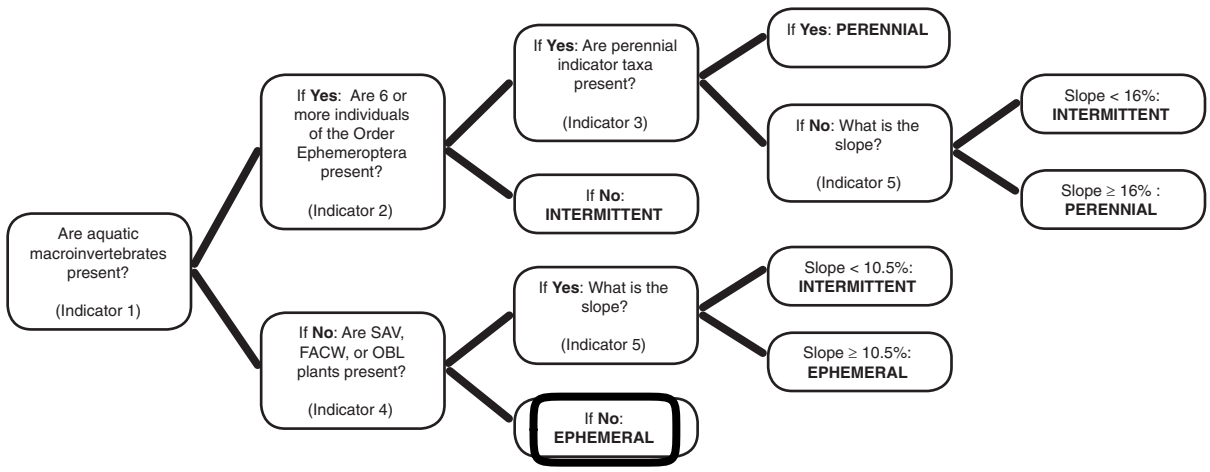
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	10 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Drainage barely discernible as it enters project area from the east and widens as it continues west.

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name: Badger Mountain	Assessor: Sara Frank
Address	Date: 4/21/2021
Waterway Name: ST-384	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries	Long. W
Precipitation w/in 48 hours (cm): 0	Channel Width (m): 3 ft
☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow: 0

% of reach w/any flow (surface or hyporheic): 0

# of pools observed: 0

Observations

Observed Wetland Plants (and indicator status): N/A

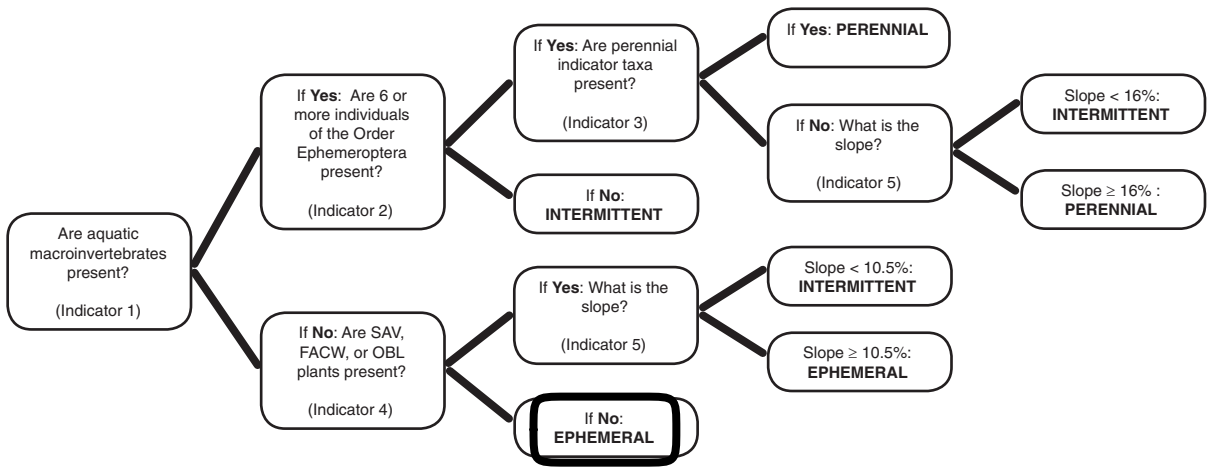
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	12 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Steep swale. Stream mapped because water could potentially flow here during heavy rainfall or with lots of snowmelt. No sign of streambed.

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain		Assessor Sara Frank	
Address		Date 4/21/2021	
Waterway Name ST-386		Coordinates at downstream end (ddd.mm.ss)	Lat. N
Reach Boundaries			Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 4 in	☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

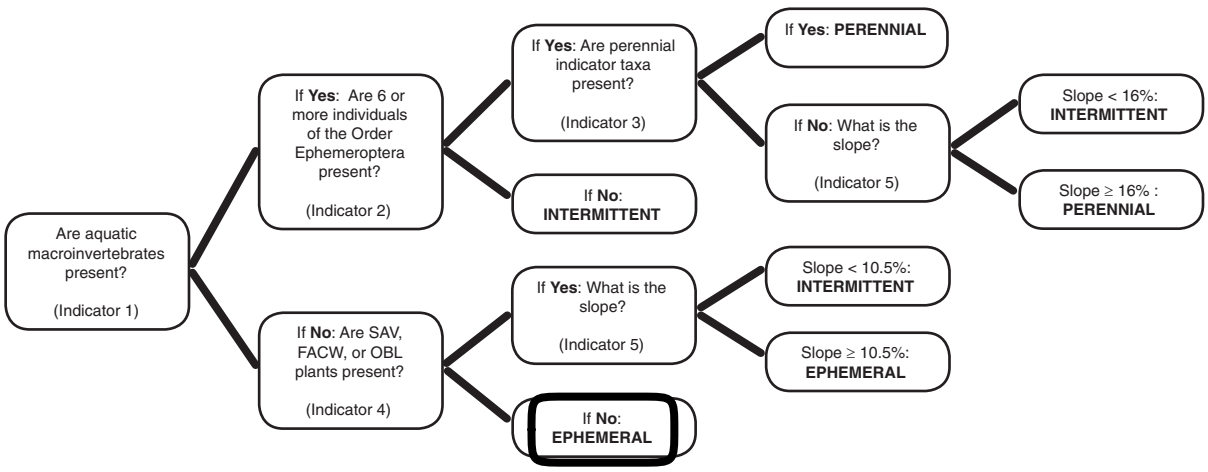
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	4 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Slight cracking between rows of planted winter wheat, likely due to recent snowmelt. 4 inches wide at most.

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name: Badger Mountain	Assessor: Sara Frank
Address	Date: 4/21/2021
Waterway Name: ST-387	Coordinates at downstream end (ddd.mm.ss) Lat. N
Reach Boundaries	Long. W
Precipitation w/in 48 hours (cm): 0	Channel Width (m): 4 in
☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow: 0

% of reach w/any flow (surface or hyporheic): 0

# of pools observed: 0

Observations

Observed Wetland Plants (and indicator status): N/A

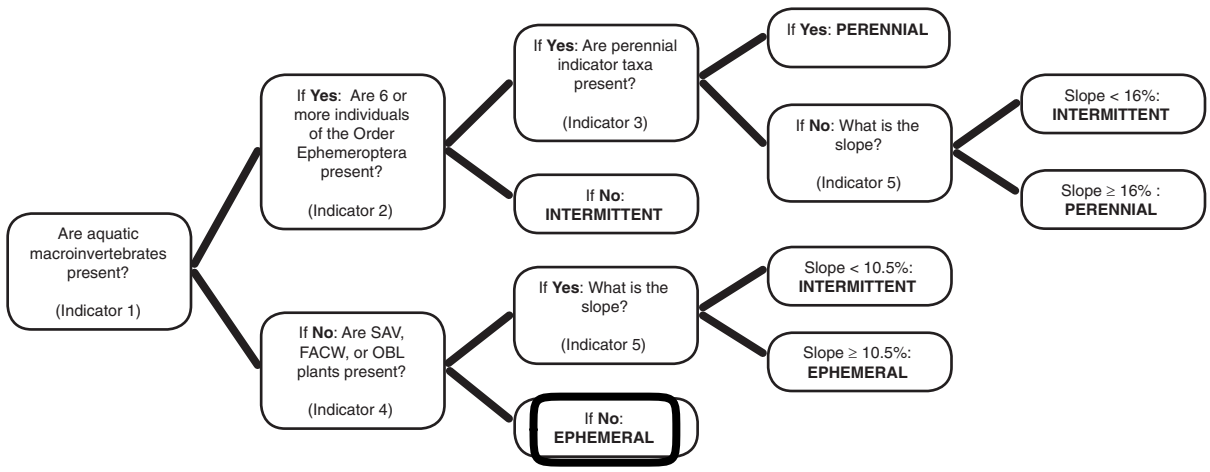
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	4 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Slight cracking between rows of planted winter wheat, likely due to recent snowmelt. 4 inches wide at most.

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain	Assessor Sara Frank	
Address	Date 4/21/2021	
Waterway Name ST-390	Coordinates at downstream end (ddd.mm.ss) Lat. N	
Reach Boundaries	Long. W	
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 1 ft	☐ Disturbed Site / Difficult Situation (Describe in "Notes")

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

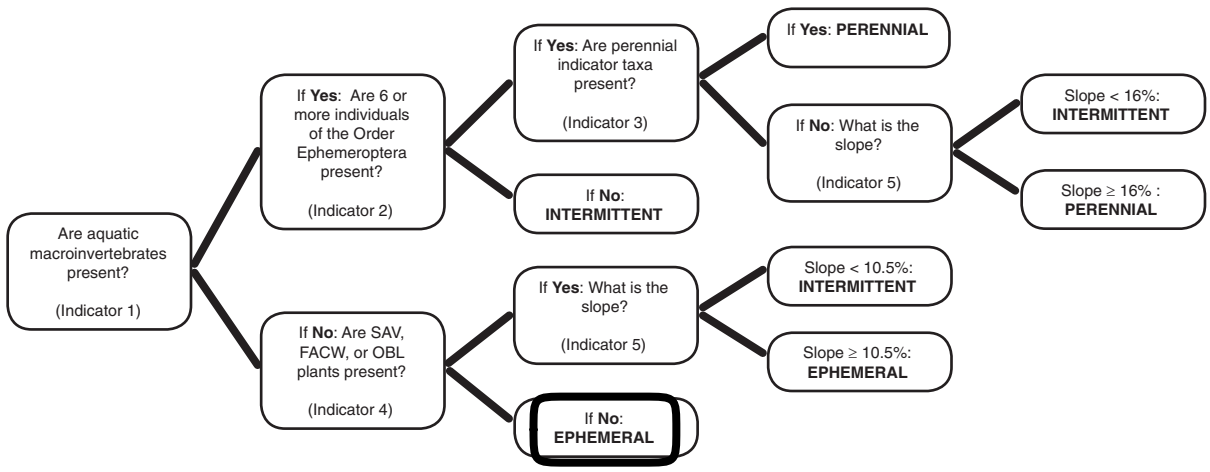
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	5 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Drainage full of russian thistle begins and runs outside of project area

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name Badger Mountain		Assessor Sara Frank	
Address		Date 4/21/2021	
Waterway Name ST-392		Coordinates at downstream end (ddd.mm.ss)	Lat. N
Reach Boundaries			Long. W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 1 ft	☐ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): N/A

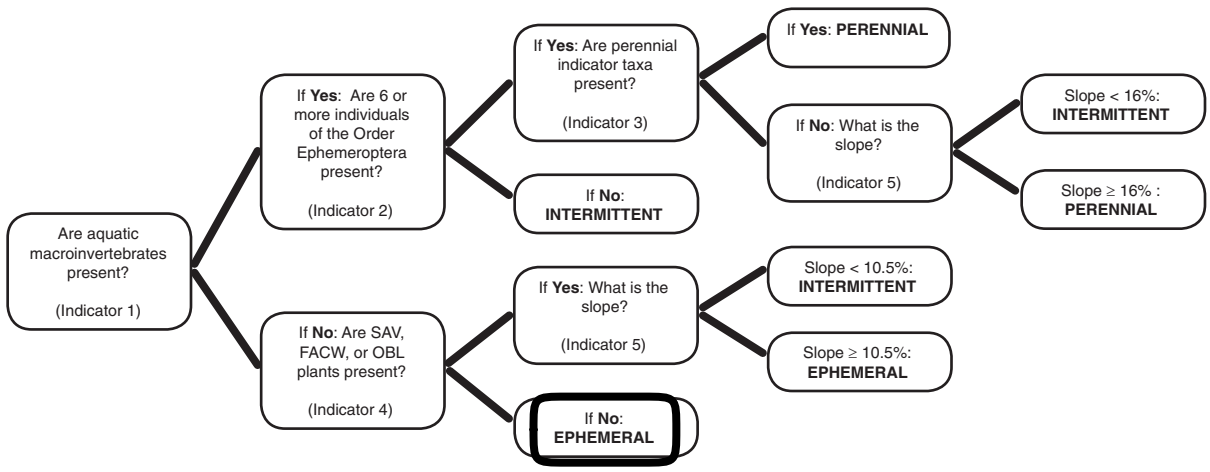
Observed Macroinvertebrates: N/A

Taxon	Indicator Status	Ephemer-optera?	# of Individuals

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☑ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☑ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☑ No
5. What is the slope? (In percent, measured for the valley, not the stream)	8 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☑ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- ☐ Prolonged Abnormal Rainfall / Snowpack
  - ☐ Below Average
  - ☐ Above Average
- ☐ Natural or Anthropogenic Disturbance
- ☐ Other: _____

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Bed and banks barely discernible, full of invasives. Drains into no access area

Ancillary Information:

- ☐ Riparian Corridor
- ☐ Erosion and Deposition
- ☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Appendix C. Wetlands and Waters Photolog

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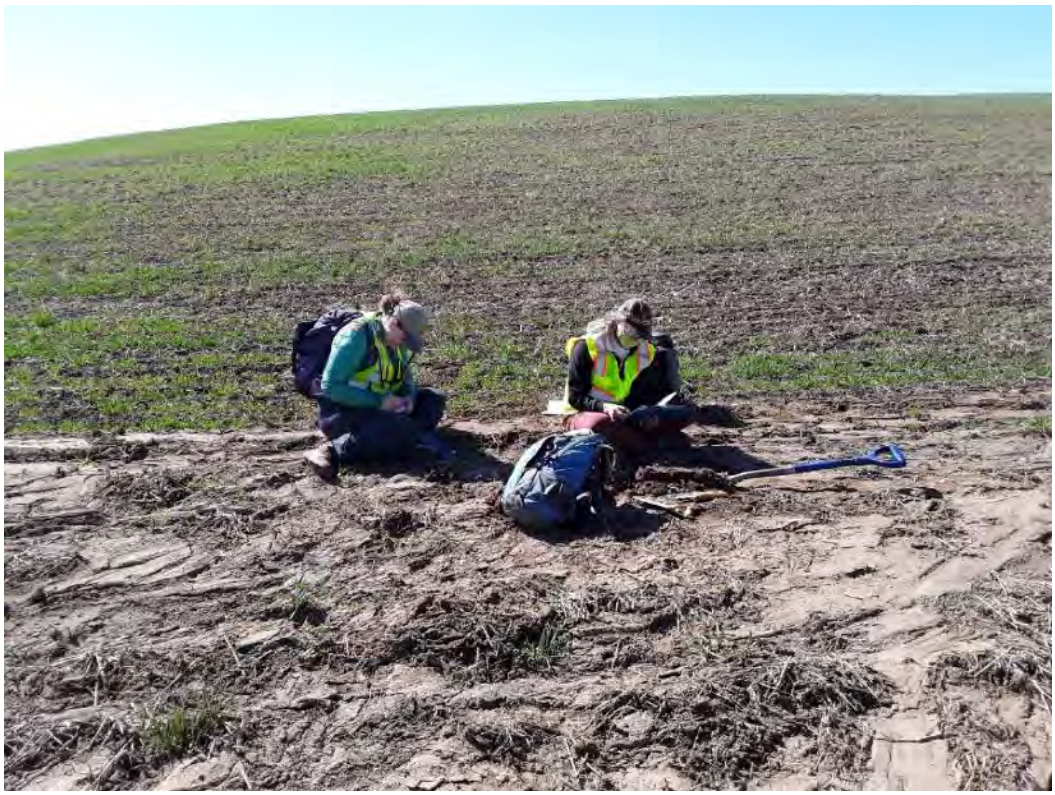


Photopoint 100. Sample site WT-100. Facing south.

Photopoint 101. Sample site WT-101. Facing southeast.

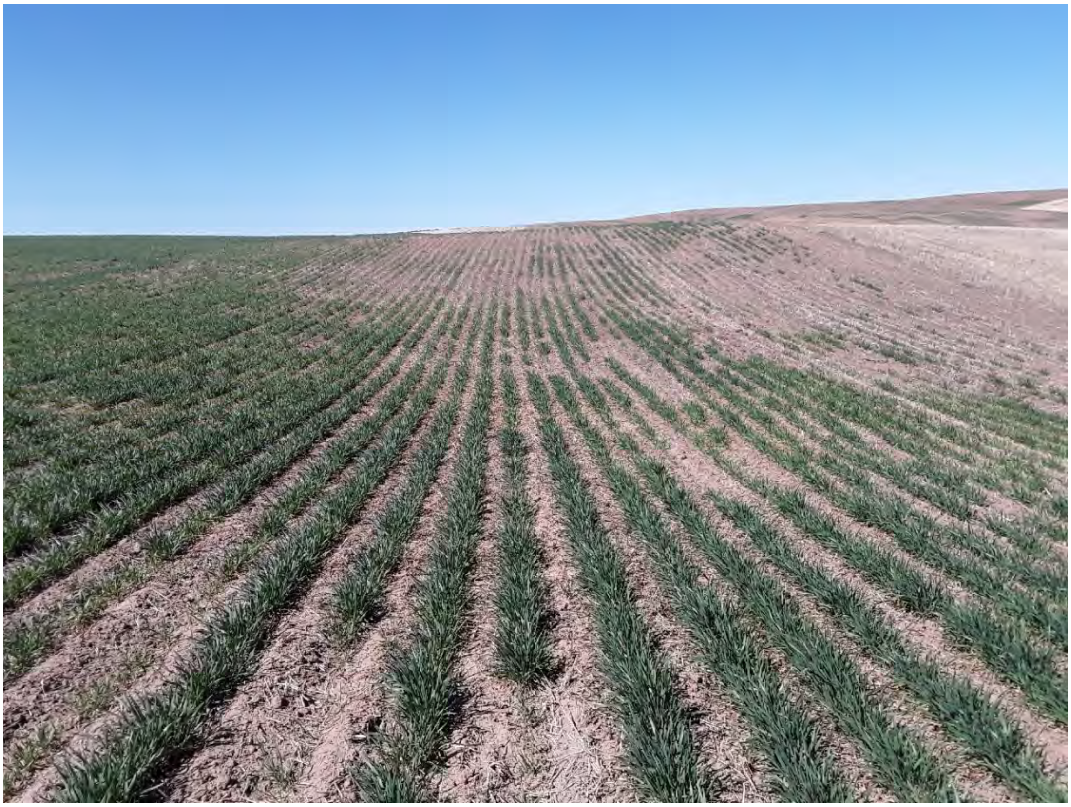
Photopoint 103. Overview of confluence of ST-200 and ST-300A. Facing southeast.

Photopoint 105. No bed or banks. XBB-104. Facing west.

Photopoint 106. No bed or banks. XBB-107. Facing southwest.

Photopoint 108. No bed or banks. XBB-109. Facing west.

Photopoint 110. No bed or banks. XBB-111. Facing west.



Photopoint 112. No bed or banks. XBB-113. Facing west.

Photopoint 115. No bed or banks. XBB-116. Facing southwest.

Photopoint 118. Ephemeral drainage ST-117. Facing south.

Photopoint 119. No bed or banks downhill from ST-117. XBB-120. Facing north.

Photopoint 123. Rock pile, no hydric features in low spot. Facing east.

Photopoint 124. No bed or banks. XBB-125. Facing northeast.

Photopoint 127. Runoff in low spot between two fields. Facing southwest.

Photopoint 129. No hydric features in swale. Facing southwest.

Photopoint 130. No bed or banks. XBB-131. Facing west.

Photopoint 132a. Grassed area between two fields. Facing west.

Photopoint 132b. Overview of grassy area indicated as wetland by NWI, no hydric conditions. Facing southeast.

Photopoint 133. No bed or banks. XBB-133. Facing southwest.

Photopoint 134. Ephemeral drainage ST-134. Facing east.

Photopoint 135. No bed or banks. XBB-135. Facing west.

Photopoint 136. No bed or banks. XBB-136. Facing east.

Photopoint 137. No bed or banks. XBB-137. Facing east.

Photopoint 138. No bed or banks. Sagebrush in rocky area. Facing northwest.

Photopoint 139. No bed or banks. Sagebrush in rocky area. Facing southeast.

Photopoint 140. No bed or banks. Scabland, typical conditions. Facing north.

Photopoint 141. No bed or banks. XBB-141. Facing north.

Photopoint 142. No bed or banks. Sagebrush in rocky area. Facing northwest.

Photopoint 143. No bed or banks. XBB-143. Facing north.

Photopoint 144. No bed or banks. Sagebrush in rocky area. Facing southwest.

Photopoint 145. No bed or banks. Sagebrush in rocky area. Facing north.

Photopoint 146. No bed or banks. XBB-146. Facing east.

Photopoint 147. No bed or banks. XBB-147. Facing northwest.

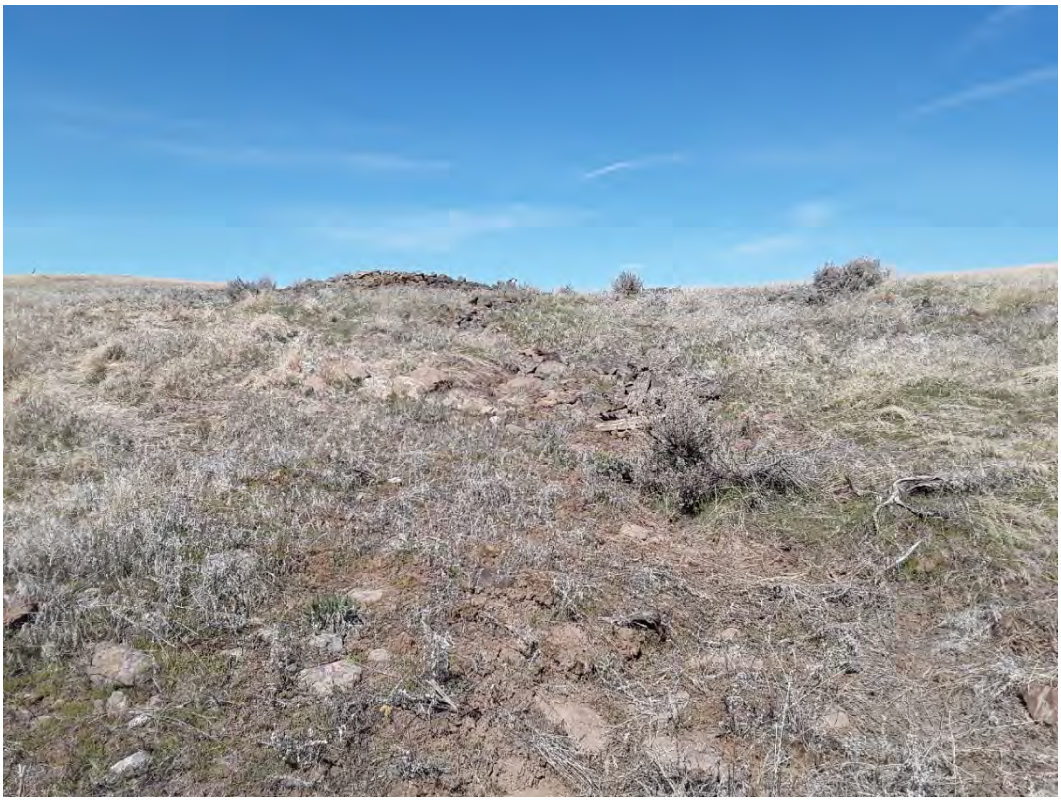
Photopoint 148. ST- 148. Ephemeral feature drains towards ST-249A. Facing south.

Photopoint 149. No bed or banks. ST-249 does not continue beyond here. Facing west.

Photopoint 150. No bed or banks. XBB-150. No visible drainage uphill from here. Facing northwest.

Photopoint 151. No bed or banks. XBB-151. Facing southeast.

Photopoint 152. No bed or banks. XBB-152. Facing northwest.



Photopoint 153. Ephemeral drainage. ST-153. Facing northwest.

Photopoint 154. No bed or banks. XBB-154. Facing southeast.

Photopoint 155. No bed or banks. XBB-155. Facing west.

Photopoint 156. Erosional feature ST-156. Facing west.

Photopoint 157. No bed or banks. XBB-157. Facing east.

Photopoint 158. No bed or banks. XBB-158. Facing west.

Photopoint 159. No bed or banks. XBB-159. Facing east.

Photopoint 160. ST-160. Highly eroded section. Facing northeast.

Photopoint 161. Scabland patch. Facing southeast.

Photopoint 162. Scabland patch. Facing north.

Photopoint 163. Scabland patch. Facing south.

Photopoint 164. Scabland patch. Facing west.

Photopoint 165. No bed or banks. XBB-165. Facing northwest.

Photopoint 200. Ephemeral drainage. ST-200. Facing southwest.

Photopoint 201. No bed or banks. XBB-201. Facing south.

Photopoint 202. No bed or banks. XBB-202. Facing southwest.

Photopoint 203. No bed or banks. XBB-203. Facing southwest.

Photopoint 204. No bed or banks. XBB-204. Facing west.

Photopoint 205. No bed or banks. XBB-205. Facing northeast.

Photopoint 206. No bed or banks. XBB-206. Facing northwest.

Photopoint 207. No bed or banks. XBB-207. Facing north.

Photopoint 208. No bed or banks. XBB-208. Facing north.

Photopoint 209. No bed or banks. XBB-209. Facing northwest.

Photopoint 210. No bed or banks. XBB-210. Facing northwest.

Photopoint 211. No bed or banks. XBB-211. Facing north.

Photopoint 212. No bed or banks. XBB-212. Facing northwest.

Photopoint 213. No bed or banks. XBB-213. Facing southwest.

Photopoint 214. No bed or banks. XBB-214. Facing west.

Photopoint 215. No bed or banks. XBB-215. Facing northwest.

Photopoint 216. No bed or banks. XBB-216. Facing northwest.

Photopoint 217. No bed or banks. XBB-217. Facing southeast.

Photopoint 218. No bed or banks. XBB-218. Facing north.

Photopoint 219. No bed or banks. XBB-219. Facing south.

Photopoint 220. No bed or banks. XBB-220. Facing west.

Photopoint 221. No bed or banks. XBB-221. Facing east.

Photopoint 222. No bed or banks. XBB-222. Facing south.

Photopoint 223. Overview from WT-223. Sample site. Facing south.

Photopoint 224. Overview from WT-224. Sample site. Facing west.

Photopoint 225. Overview from WT-225. Sample site. Facing southwest.

Photopoint 226. Overview from WT-226. Sample site. Facing west.

Photopoint 227. Overview from WT-227. Sample site. Facing southwest.

Photopoint 228. Grassy area between two fields, shallow soils. Facing west.

Photopoint 229. Overview of ST-134. Facing northwest.

Photopoint 230. Overview of ST-134. Facing east.

Photopoint 231. Overview of site conditions, ST-134 originates downhill from this point. Facing west.

Photopoint 232. No bed or banks. XBB-232. Facing west.

Photopoint 233. No bed or banks. XBB-233. Facing west.

Photopoint 234. No bed or banks. XBB-234. Facing west.

Photopoint 235. No bed or banks. XBB-235. Facing northeast.

Photopoint 236. No bed or banks. XBB-236. Facing north.

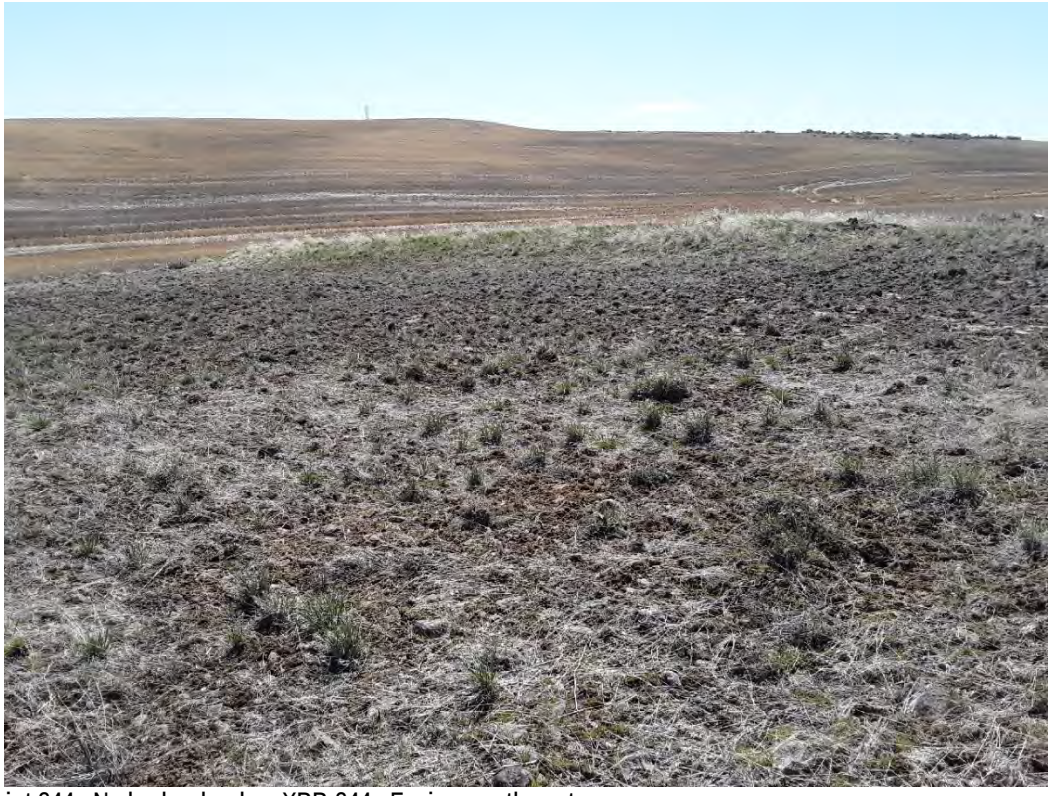
Photopoint 237. No bed or banks. XBB-237. Facing northeast.

Photopoint 238. Ephemeral drainage. ST-238. Facing southwest.

Photopoint 239. No bed or banks. XBB-239. Facing southwest.

Photopoint 241. Ephemeral drainage. ST-241. Facing northwest.

Photopoint 243. No bed or banks. XBB-243. Facing west.



Photopoint 244. No bed or banks. XBB-244. Facing southwest.

Photopoint 245. No bed or banks. XBB-245. Facing north.

Photopoint 246. No bed or banks. XBB-246. Facing southwest.

Photopoint 248. No bed or banks. XBB-248. Facing west.

Photopoint 249a. Ephemeral drainage. ST-249. Facing east.

Photopoint 249b. Ephemeral drainage. ST-249. Facing east.

Photopoint 249c. Ephemeral drainage. ST-249. Facing east.

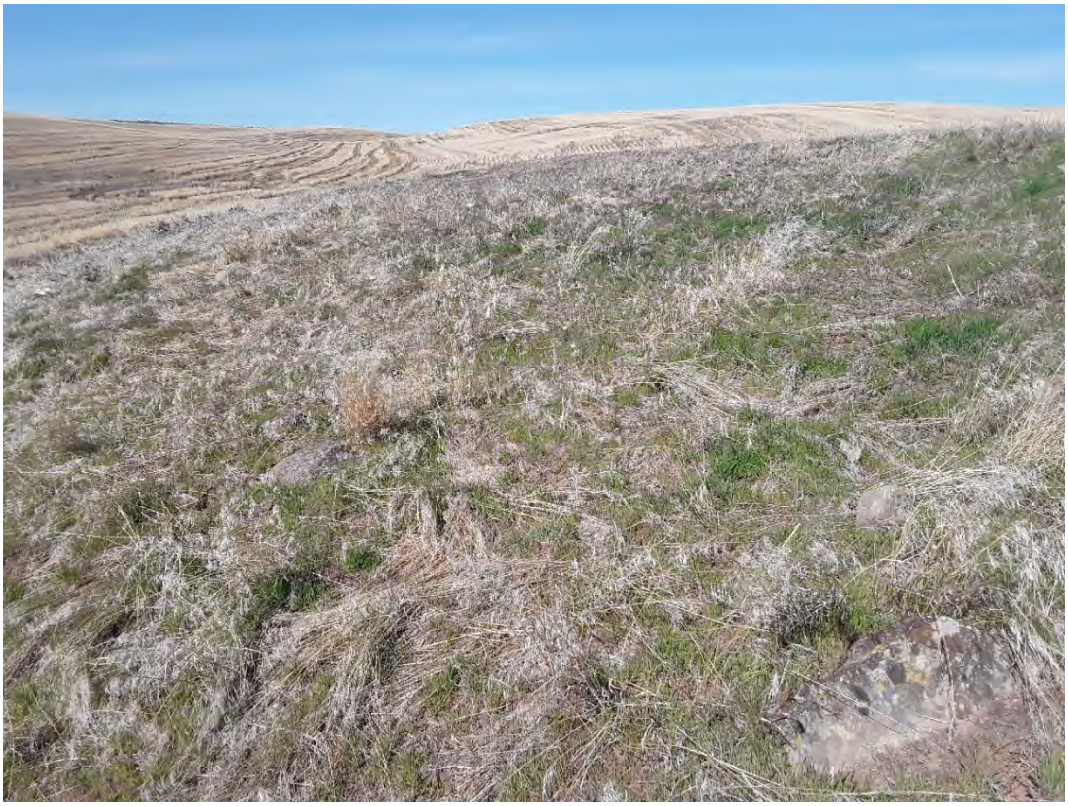
Photopoint 250. No bed or banks. XBB-250. Facing west.

Photopoint 251. Ephemeral drainage. ST-251. Facing west.

Photopoint 252. End of ST-251. XBB-252. Facing west.

Photopoint 253. No bed or banks. XBB-253. Facing southwest.

Photopoint 254. No bed or banks. XBB-254. Facing west.



Photopoint 255. No bed or banks. XBB-255. Facing west.

Photopoint 256. No bed or banks. XBB-256. Facing west.

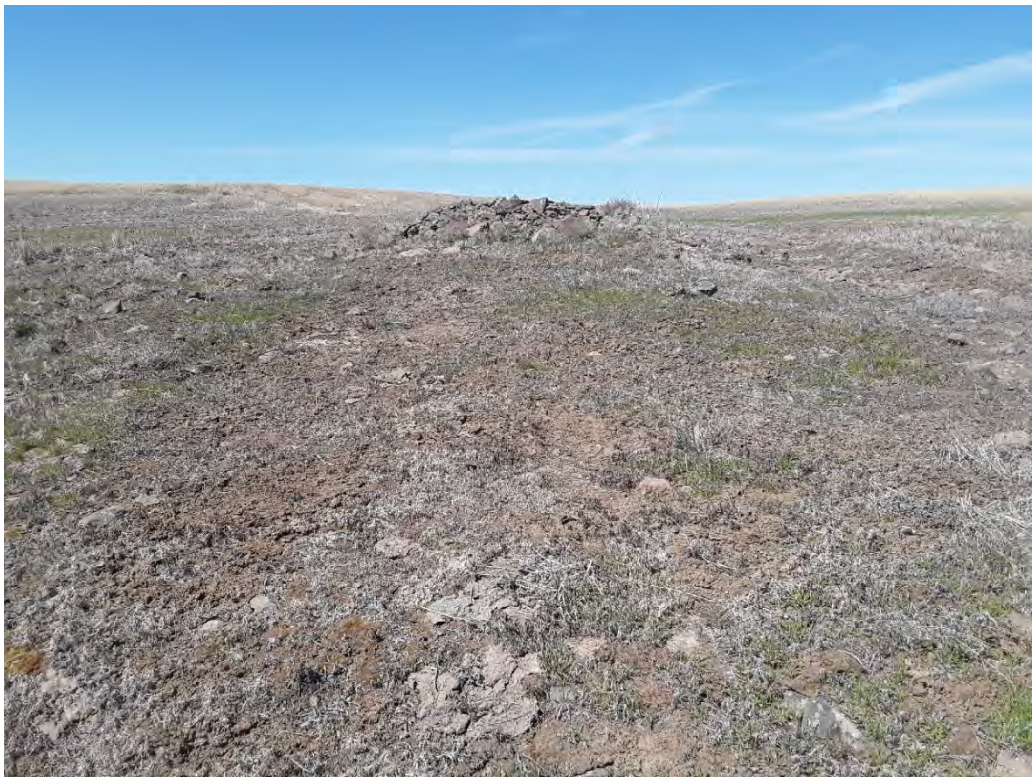
Photopoint 257. No bed or banks. XBB-257. Facing southwest.

Photopoint 258. No bed or banks. XBB-258. Facing southwest.

Photopoint 259. No bed or banks. XBB-259. Facing east.

Photopoint 260. No bed or banks. XBB-260. Facing west.

Photopoint 261. No bed or banks. XBB-261. Facing west.



Photopoint 262. No bed or banks. XBB-262. Facing northwest.

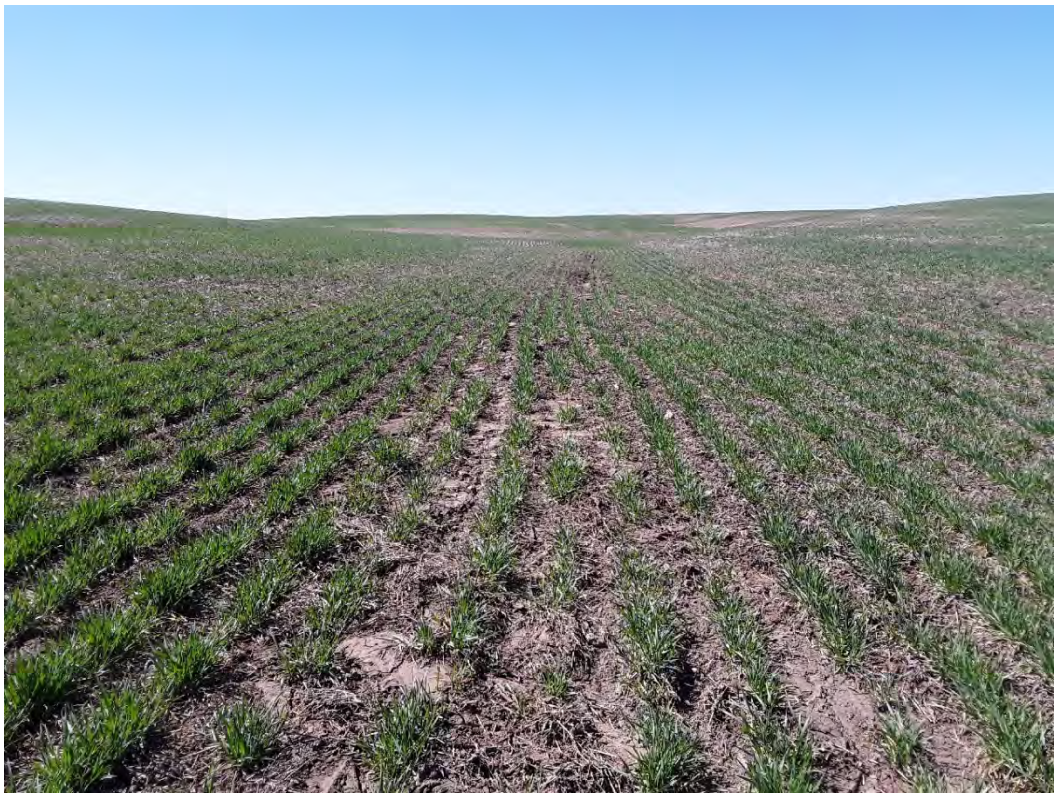
Photopoint 263. No bed or banks. XBB-263. Facing east.

Photopoint 264. No bed or banks. XBB-264. Facing northwest.

Photopoint 265. Ephemeral drainage. ST-241. Facing northwest.

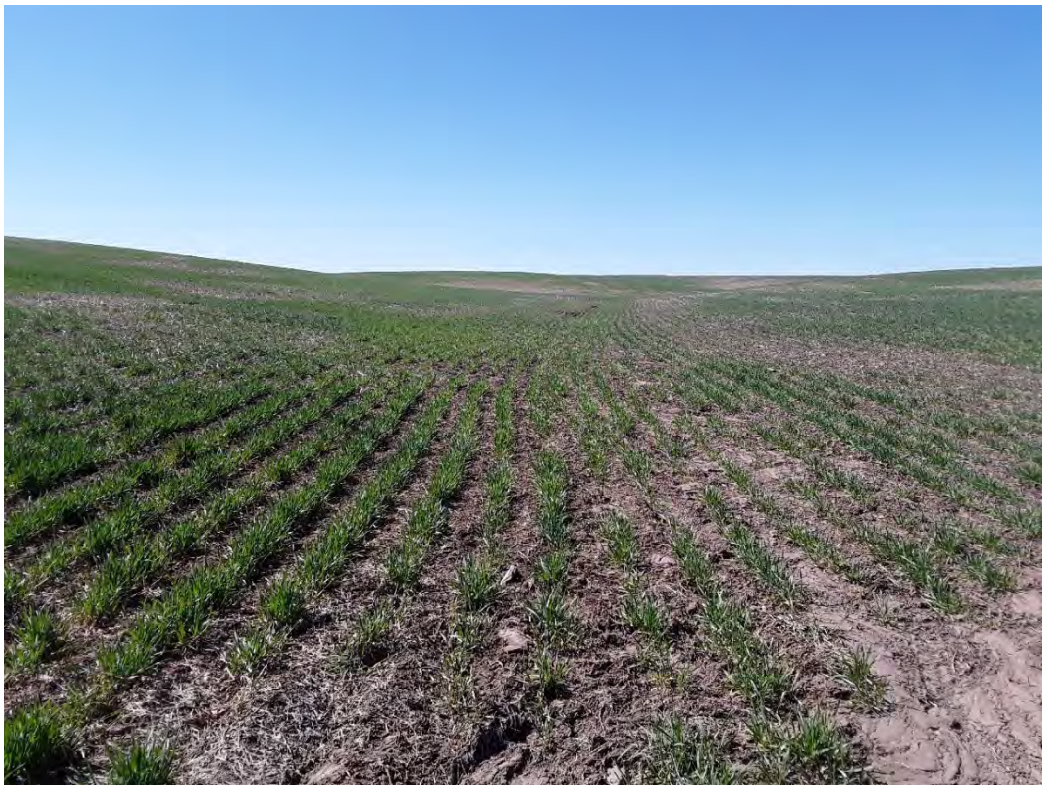
Photopoint 300a. Ephemeral drainage. ST-300. Facing south.

Photopoint 300b. Ephemeral drainage. ST-300. Facing south.



Photopoint 300c. Facing south.

Photopoint 300d. Facing south.



Photopoint 301. No bed or banks. XBB-301. Facing south.

Photopoint 302. No bed or banks. Facing west.

Photopoint 303a. No bed or banks. XBB-303. Facing southeast.

Photopoint 303b. No bed or banks. XBB-303. Facing west.

Photopoint 304. Rock pile with some snow melt runoff. XBB-304. Facing southeast.

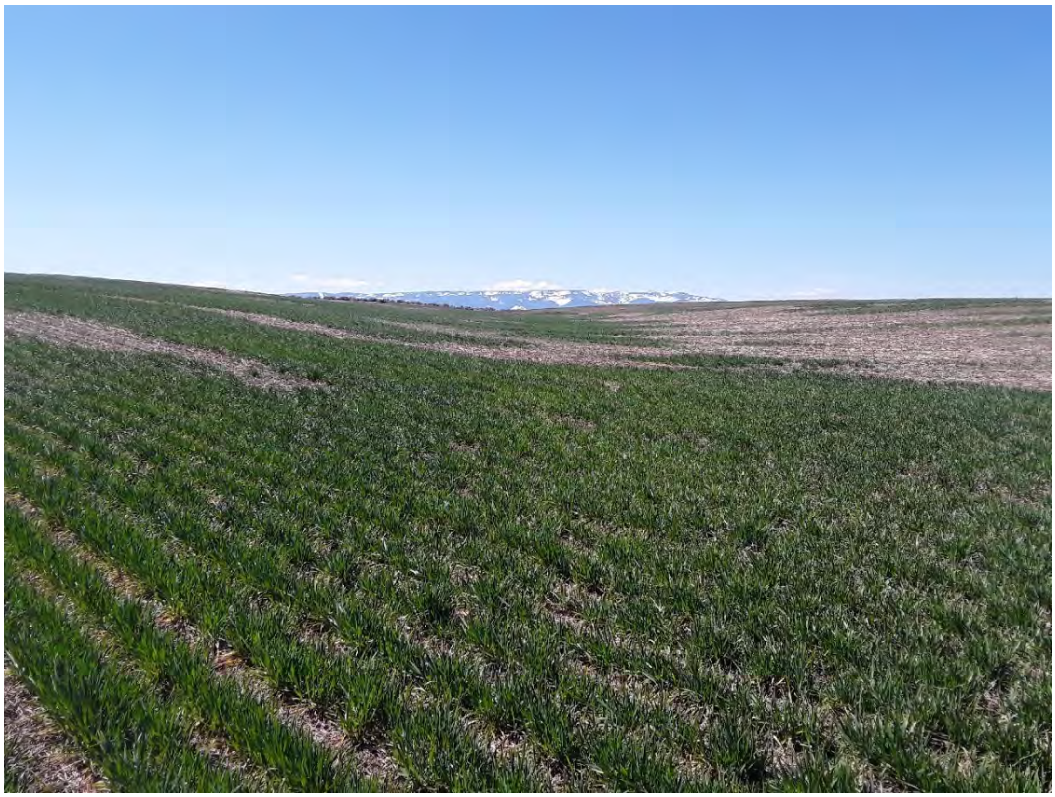
Photopoint 305. No bed or banks. XBB-305. Facing southwest.

Photopoint 306. No bed or banks. XBB-306. Facing west.

Photopoint 307. No bed or banks. XBB-307. Facing south.

Photopoint 308. No bed or banks. XBB-308. Facing east.

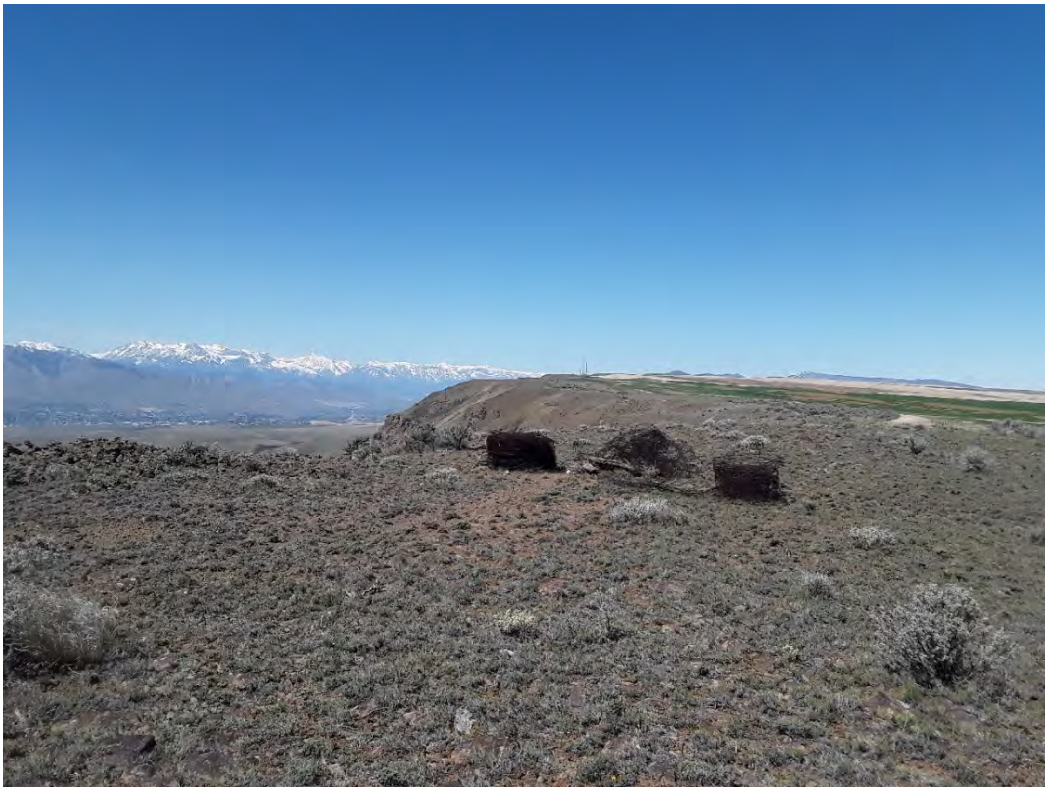
Photopoint 309. No bed or banks. XBB-309. Facing southwest.



Photopoint 310. No bed or banks. XBB- 310. Facing southwest.

Photopoint 311. No bed or banks. XBB-311. Facing east.

Photopoint 312. Two track road. Facing west.



Photopoint 313. Old barbed wire. Facing west.

Photopoint 314. Rock piles. Facing northeast.

Photopoint 315. No bed or banks. XBB-315. Facing west.

Photopoint 316. No bed or banks. XBB-316. Facing northeast.

Photopoint 317. Rock pile. XBB-317. Facing southwest.

Photopoint 318. No bed or banks. XBB-318. Facing east.

Photopoint 319. No bed or banks. XBB-319. Facing east.

Photopoint 320. No bed or banks. XBB-320. Facing southwest.

Photopoint 321. Ephemeral drainage. ST-321. Facing southwest.

Photopoint 322. No bed or banks. XBB-322. Facing northeast.

Photopoint 323. No bed or banks. Facing east.

Photopoint 324. No bed or banks. XBB-324. Facing northeast.

Photopoint 325. No bed or banks. XBB-325. Facing northeast.

Photopoint 326. No bed or banks. XBB-326. Facing east.

Photopoint 327. Old structures. Facing southwest.

Photopoint 329a. Overview of ST-329 within project area, looking from outside the project to the headwaters. Facing west.

Photopoint 329b. Headwaters of ST-329. Facing east.

Photopoint 330. No bed or banks. XBB-330. Facing northeast.

Photopoint 331. No bed or banks. XBB-331. Facing north.

Photopoint 332. Sample site. WT-332. Facing northwest.

Photopoint 333. No bed or banks. XBB-333. Facing north.

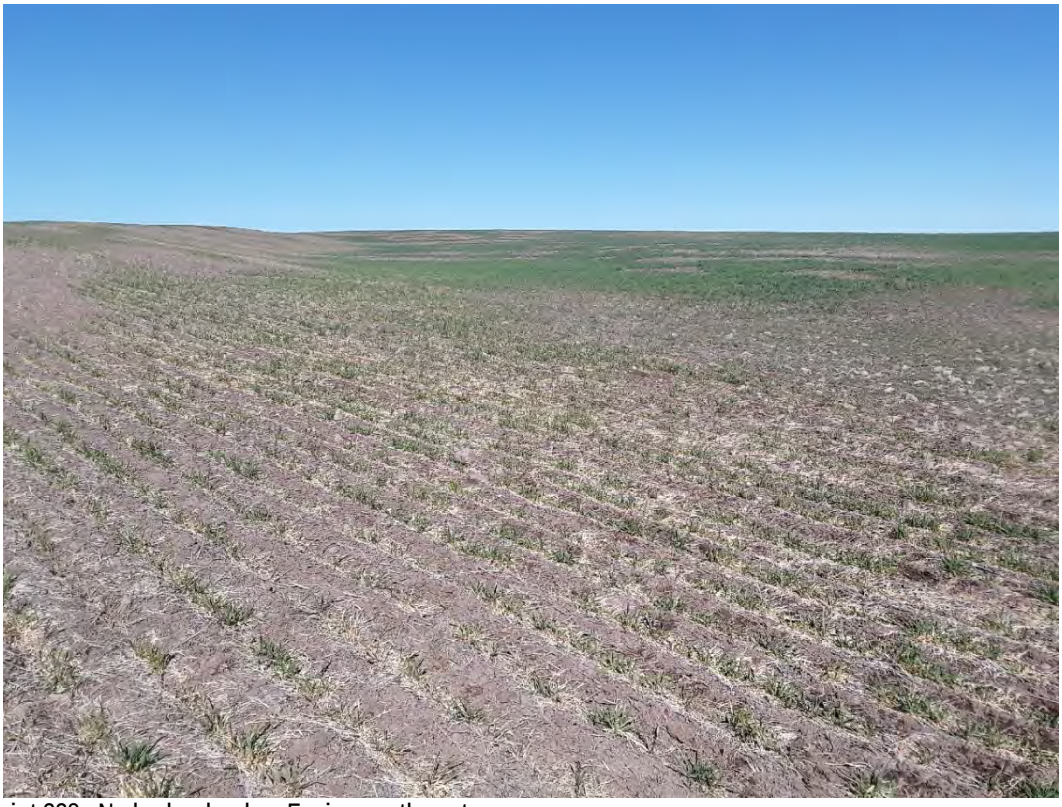
Photopoint 334. No bed or banks. XBB-334. Facing southeast.

Photopoint 335a. Ephemeral drainage. ST-335. Facing northwest.

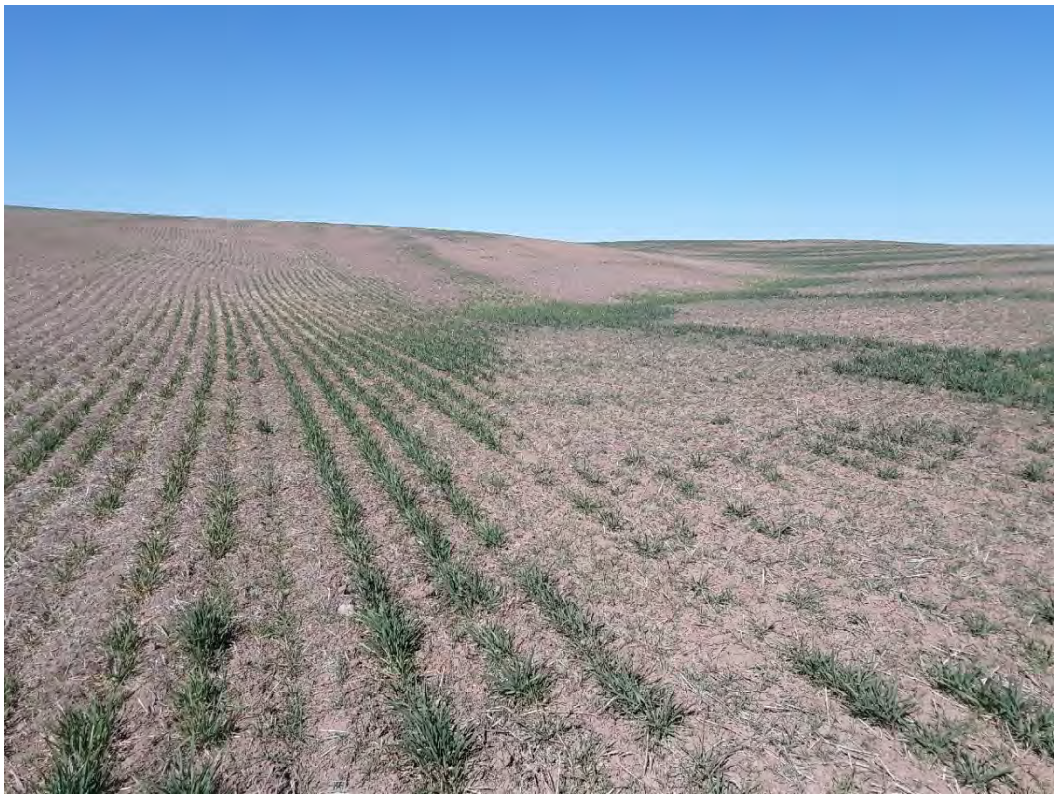
Photopoint 335b. Beginning of ST-335. Facing west.

Photopoint 336. No bed or banks. XBB-336. Facing southeast.

Photopoint 337. No bed or banks. XBB-337. Facing southeast.



Photopoint 338. No bed or banks. Facing northwest.



Photopoint 339. No bed or banks. Facing west.

Photopoint 340. Mullein and rock piles, no bed or banks. Facing southeast.

Photopoint 341a. Ephemeral drainage. ST-341. Facing southeast.

Photopoint 341b. Ephemeral drainage. End of ST-341. Facing northwest.

Photopoint 342a. Ephemeral drainage. Beginning of ST-342. Facing east.

Photopoint 342b. Ephemeral drainage. End of ST-342. Facing east.

Photopoint 344. Rock pile. Facing west.

Photopoint 345a. Ephemeral drainage. ST-345. Facing west.

Photopoint 345b. Ephemeral drainage. ST-345. Facing east.

Photopoint 346. No bed or banks. XBB-346. Facing west.

Photopoint 347. Eroded spot where culvert should be, culvert is present on opposite side of road. Facing west.

Photopoint 348. No bed or banks. XBB-348. Facing west.

Photopoint 349. Rock pile. Facing east.

Photopoint 350. No bed or banks. XBB-350. Facing west.

Photopoint 351. No bed or banks. XBB-351. Facing west.

Photopoint 352. No bed or banks. XBB-352. Facing east.

Photopoint 353. No bed or banks. XBB-353. Facing west.

Photopoint 354. Sagebrush, Russian thistle area. Facing west.

Photopoint 355. Rock pile. Facing north.

Photopoint 356. Cliffside. Facing northwest.

Photopoint 357. No bed or banks. XBB-357. Facing northeast.

Photopoint 358. No bed or banks. XBB-358. Facing northeast.

Photopoint 359. No bed or banks. XBB-359. Facing east.

Photopoint 360a. Ephemeral drainage. ST-360. Facing northwest.

Photopoint 360b. Ephemeral drainage. ST-360. Facing southeast.

Photopoint 361. No bed or banks. XBB-361. Facing west.

Photopoint 362. No bed or banks. XBB-362. Facing southwest.

Photopoint 363. No bed or banks. XBB-363. Facing west.

Photopoint 364. No bed or banks. XBB-364. Facing south.

Photopoint 365. No bed or banks. XBB-365. Facing south.

Photopoint 366. No bed or banks. XBB-366. Facing south.

Photopoint 367. No bed or banks. XBB-367. Facing south.

Photopoint 368. No bed or banks. XBB-368. Facing south.

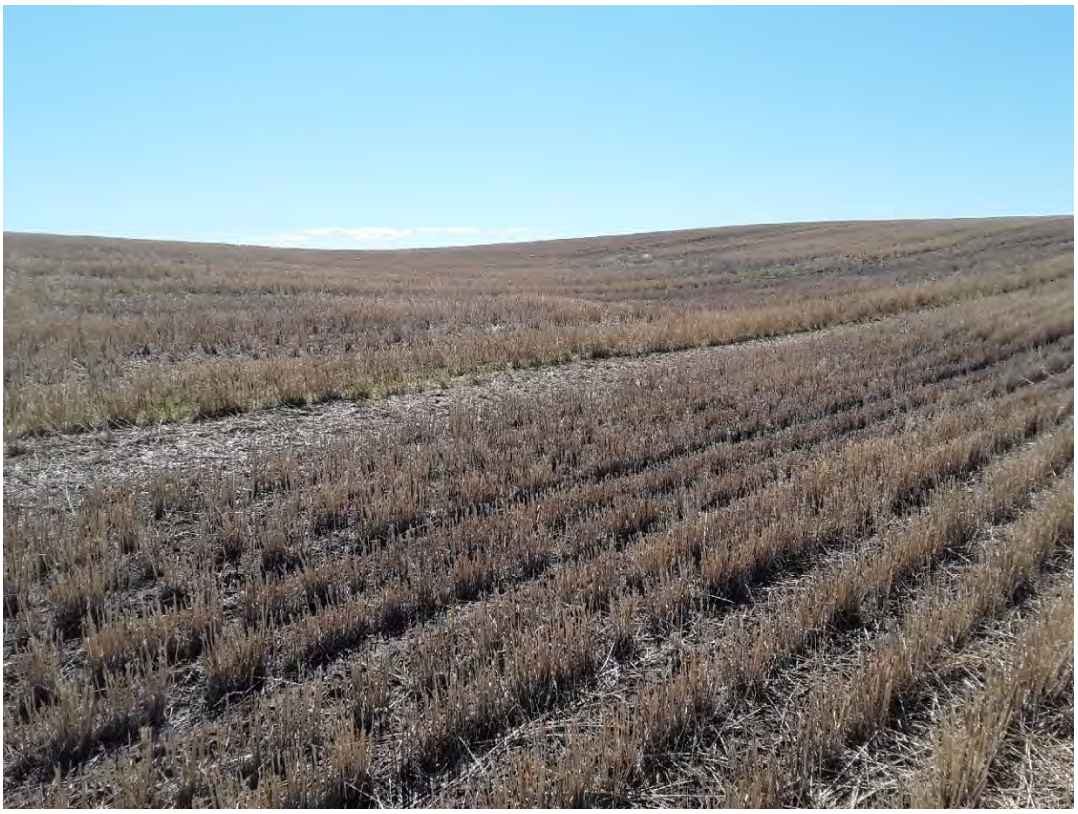
Photopoint 369. No bed or banks. XBB-369. Facing southwest.

Photopoint 370. No bed or banks. XBB-370. Facing north.

Photopoint 371. No bed or banks. XBB-371. Facing northeast.

Photopoint 372. No bed or banks. XBB-372. Facing west.

Photopoint 373. No bed or banks. XBB-373. Facing north.



Photopoint 374. No bed or banks. XBB-374. Facing southwest.

Photopoint 375. Rocky area. Facing west.

Photopoint 376. Edge of field. Facing west.

Photopoint 377. Sagebrush. Facing northwest.

Photopoint 378. No bed or banks. XBB-378. Facing northeast.

Photopoint 379. Sagebrush and rocky patch. Facing northeast.

Photopoint 380. Sagebrush and rocky patch. Facing south.

Photopoint 381. Ephemeral drainage. ST-381. Facing southwest.

Photopoint 382a. Ephemeral drainage. ST-382. Facing west.

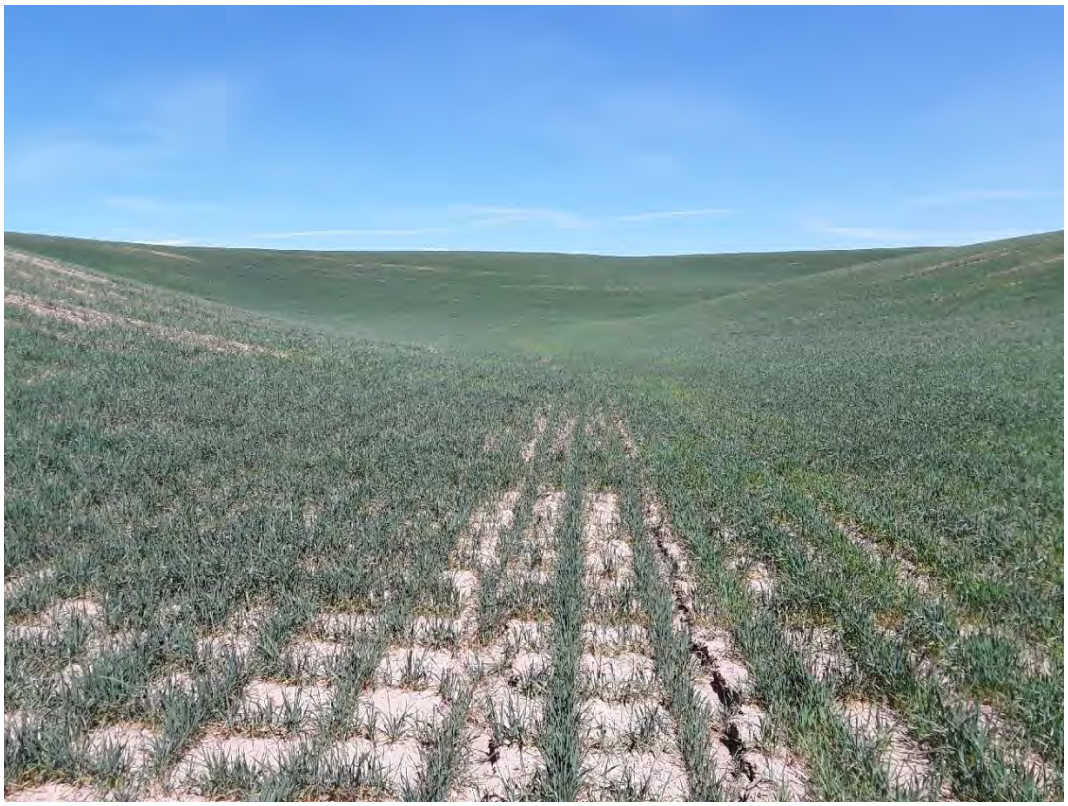
Photopoint 382b. Ephemeral drainage. ST-382. Facing east.

Photopoint 383a. Headwaters of ephemeral drainage ST-383. Facing west.

Photopoint 383b. Ephemeral drainage. ST-383. Facing east.

Photopoint 384. No bed or banks. XBB-384. Facing northwest.

Photopoint 385. No bed or banks. XBB-385. Facing northwest.



Photopoint 386. No bed or banks. XBB-386. Facing north.

Photopoint 387. No bed or banks. XBB-387. Facing southeast.

Photopoint 388. No bed or banks. XBB-388. Facing west.

Photopoint 389. No bed or banks. XBB-389. Facing northeast.

Photopoint 390. Ephemeral drainage. ST-390. Facing west.

Photopoint 391. No bed or banks. XBB-391. Facing west.

Photopoint 392. Ephemeral drainage. ST-392. Facing north.

Photopoint 393. No bed or banks. XBB-393. Facing southeast.

Photopoint 394. No bed or banks. XBB-394. Facing south.

Photopoint 395. No bed or banks. XBB-395. Facing west.

Photopoint 396. No bed or banks. XBB-396. Facing southeast.

Photopoint 397. No bed or banks. XBB-397. Facing southeast.

Photopoint 398. No bed or banks. XBB-398. Facing northwest.

Photopoint 399. No bed or banks. XBB-399. Facing northwest.

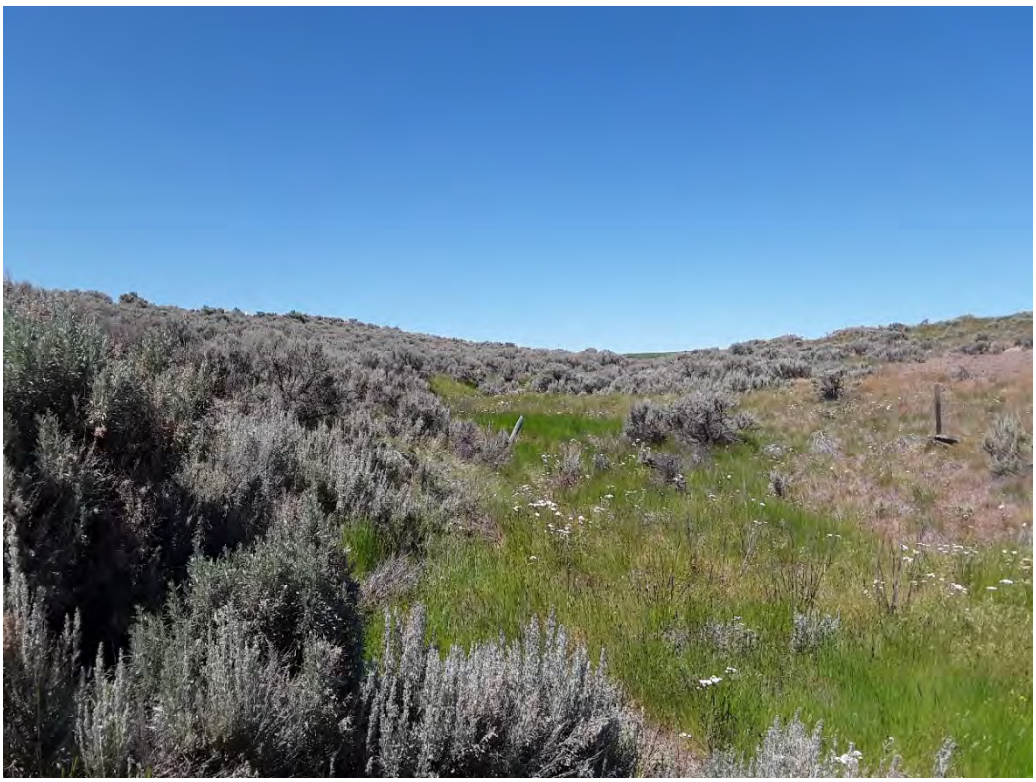
Photopoint 400. Steep hillside. Facing west.

Photopoint 500. No bed or banks. XBB-500. Facing northwest.

Photopoint 501. Overview of ST-501. Facing northeast.

Photopoint 503. Overview of ST-503. Facing northeast.

Photopoint 505. Overview of ST-505 at top of reach. Facing southeast.



Photopoint 505a. Downstream end of ST-505, no bed or banks. Crested wheatgrass, yarrow. Facing southwest.

Photopoint 507. ST-507. Barely discernible channel, one foot wide. Facing northwest.

Photopoint 508. No bed or banks on NHD line. Facing west.

Photopoint 509. No bed or banks in swale. Facing west.

Photopoint 510. ST-510, three feet wide, incised, upland plants, no macroinvertebrates. Facing northeast.

Photopoint 510a. ST-510, three feet wide, incised, upland plants. Facing southeast.

Photopoint 510b. ST-510, three feet wide, incised, upland plants, no macroinvertebrates. Facing west.

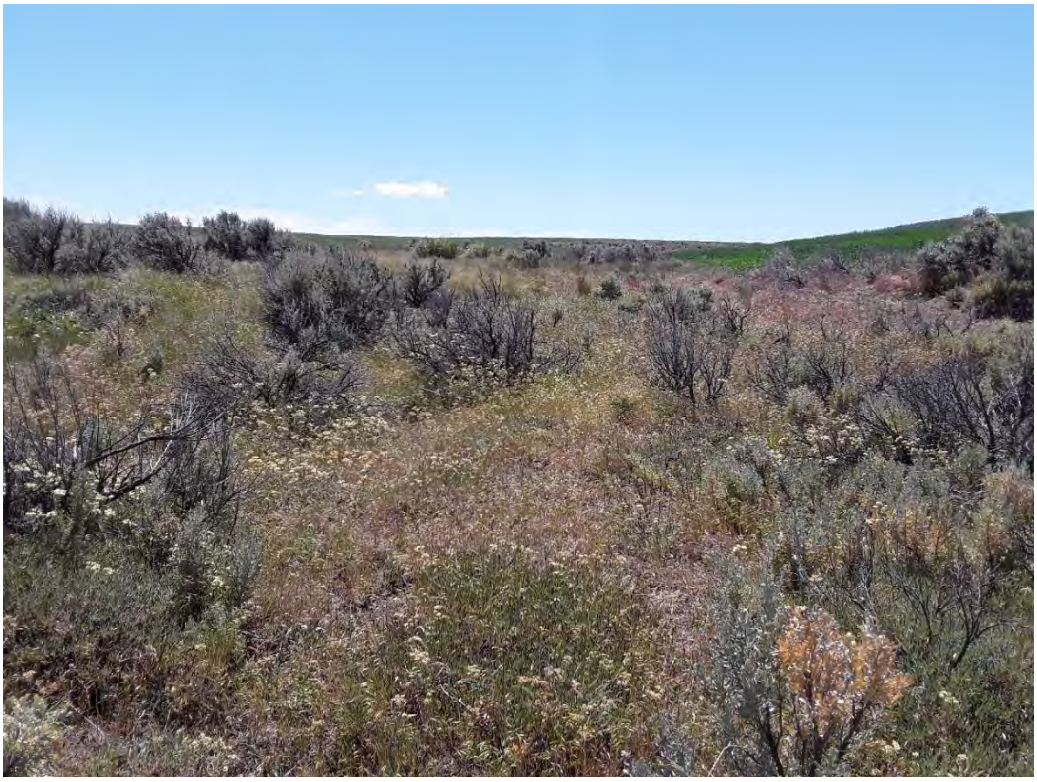
Photopoint 511. ST-511, two feet wide, incised, upland plants. Facing west.

Photopoint 512. Overview of ST-512. Facing southeast.

Photopoint 513. ST-513, no bed or banks, culvert underneath road. Facing north.

Photopoint 513a. ST-513, south side of culvert, one foot wide. Facing southwest.

Photopoint 514. No bed or banks. XBB-514. Facing southwest.



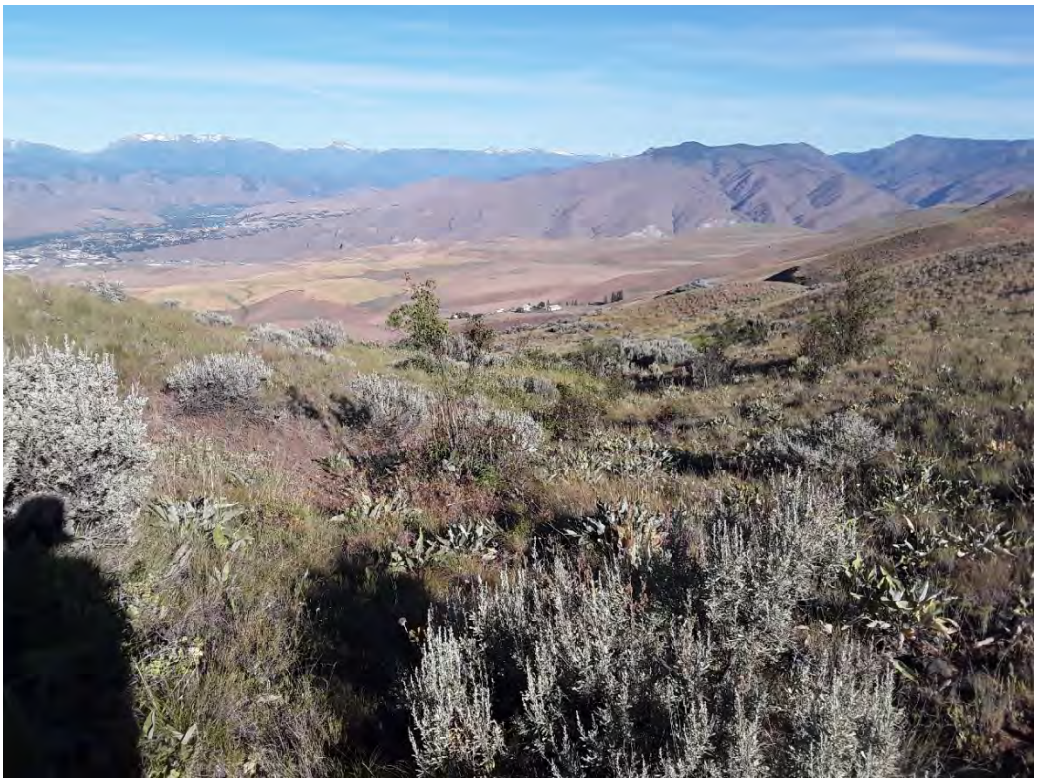
Photopoint 515. No bed or banks. XBB-515. Facing southwest.

Photopoint 517. No bed or banks. XBB-517. Facing northeast.

Photopoint 517a. ST-517, heavily vegetated, no bed or banks. Facing northwest.

Photopoint 517b. Overview of ST-517, no bed or banks. Facing west.

Photopoint 518. No bed or banks. XBB-518. Facing south.



Photopoint 518a. Head of drainage, ST-518. Facing northwest.

Photopoint 518b. No bed or banks, centerline taken at lowest elevation. Facing northwest.

Photopoint 519. Overview of ST-519, no bed or banks, centerline taken at lowest elevation. Facing west.

Photopoint 520. Overview of ST-520. Facing southwest.

Photopoint 520a. Overview of ST-520. Facing east.

Photopoint 520b. Culvert. Facing southwest.

Photopoint 521. Overview of ST-521. Facing southwest.

Photopoint 522. No bed or banks, but built up topography from rock slide creates drainage. Looking SW.