PIKE SOLAR LLC

Appendix K- USACE Correspondence

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, ALBUQUERQUE DISTRICT
4101 JEFFERSON PLAZA NE
ALBUQUERQUE, NM 87109-3435

April 7, 2021

Regulatory Division

SUBJECT: Jurisdictional Determination – Action No. SPA-2020-00253, JSI Construction Group LLC/Pike Solar Project

Brian Vickers & Claire Gerrish
Juwi Inc.
1710 29th Street, Suite 1068
Boulder, CO 80301

Dear Mr. Vickers and Ms. Gerrish:

This letter responds to your request for a jurisdictional determination (JD) for the site located at latitude 38.645793, longitude -104.618385, in El Paso County, Colorado. We have assigned Action No. SPA-2020-00253 to your request. Please reference this number in all future correspondence concerning the site.

Based on the information provided, we have determined that the site does not contain waters of the United States that are subject to regulation under Section 404 of the Clean Water Act. The attached JD form describes the area that was evaluated and determined to contain no waters of the United States. If you intend to conduct work that could result in a discharge of dredged or fill material into waters of the United States, please contact this office for a determination of Department of the Army permit requirements and refer to Action No. SPA-2020-00253-SCO.

The project site contains waters that lack a significant nexus to a traditionally navigable water, isolated wetlands, and upland stock ponds. These waters are not waters of the United States. A copy of this JD is attached and is also available at http://www.spa.usace.army.mil/reg/JD. This approved JD is valid for five years unless new information warrants revision of the determination before the expiration date.

You may accept or appeal this approved JD or provide new information in accordance with the attached Notification of Administration Appeal Options and Process and Request for Appeal (NAAOP-RFA). If you elect to appeal this approved JD, you must complete Section II of the form and return it to the Army Engineer Division, South Pacific, CESPD-PDS-O, Attn: Tom Cavanaugh, Administrative Appeal Review Officer, P.O. Box 36023, 450 Golden Gate Ave, San Francisco, CA 94102 within 60 days of the date of this notice. Failure to notify the Corps within 60 days of the date of this notice

means that you accept the approved JD in its entirety and waive all rights to appeal the approved JD.

If you have any questions, please contact Daniel Delgado at (505) 342-3220 or by e-mail at Daniel.i.Delgado@usace.army.mil. At your convenience, please complete a Customer Service Survey on-line available at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0.

Sincerely,

Kara Hellige
Chief, Southern Colorado Branch
Regulatory Division

Enclosures

Copy Furnished to:

Ms. Allison Haraminac
Pinyon Environmental Inc.
3222 S. Vince Street
Lakewood, CO 80227

NOTIFICATION OF
ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND
REQUEST FOR APPEAL

Applicant: Claire Gerrish & Brian Vickers	File Number: SPA-2020-00253	Date: April 7, 2021
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of Permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of Permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the DISTRICT ENGINEER for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the DISTRICT ENGINEER within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the DISTRICT ENGINEER will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the DISTRICT ENGINEER will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the DISTRICT ENGINEER for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the DIVISION (not district) ENGINEER (address on reverse). This form must be received by the DIVISION ENGINEER within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the DIVISION (not district) ENGINEER. This form must be received by the DIVISION (not district) ENGINEER within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the DIVISION (not district) ENGINEER (address on reverse). This form must be received by the DIVISION ENGINEER within 60 days of the date of this notice. Exception: JD appeals based on new information must be submitted to the DISTRICT ENGINEER within 60 days of the date of this notice.

EXCEPTION: Appeals of Approved Jurisdictional Determinations based on new information must be submitted to the District engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: DISTRICT ENGINEER Albuquerque District, Corps of Engineers Attn: Kelly Allen, Regulatory Division Chief 4101 Jefferson Plaza NE Albuquerque, New Mexico 87109-3435 Phone: 505-342-3216, Fax: 505-342-3668 Kelly.E.Allen@usace.army.mil	If you only have questions regarding the appeal process you may also contact: DIVISION ENGINEER Army Engineer Division, South Pacific, CESPD-PDS-O, 2052B Attn: Tom Cavanaugh, Administrative Appeal Review Officer P.O. Box 36023, 450 Golden Gate Ave. San Francisco, CA 94102 Phone: 415-503-6574, Fax: 415-503-6646 thomas.j.cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): April 7, 2021

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Albuquerque District, JSI Construction Group LLC/Pike Solar Project, SPA-2020-00253-SCO

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **Colorado** County/parish/borough: **El Paso County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **38.6457938980146**, Long. **-104.618385727105**
Universal Transverse Mercator: **13 533208.82 4277540.21**
Name of nearest waterbody: **Williams Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **John Martin Resevoir**
Name of watershed or Hydrologic Unit Code (HUC): **12 -Digit HUC Williams Creek (No. 110200030401)**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form: **See attached JD form.**

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): **January 12, 2021**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are no** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   ☐ TNWs, including territorial seas
   ☐ Wetlands adjacent to TNWs
   ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   ☐ Non-RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   ☐ Impoundments of jurisdictional waters
   ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: linear feet, wide, and/or acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Pick List**
   Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: **Aquatic resources (AR) Williams Creek, WL-01, WL-02, WL-03, WL-04, WL-05, WL-06, WL-07, WL-08, Unnamed Drainge-1, Unnamed Drainage-2, WL-09, WL-10, WL-11, WL-12, Unnamed Drainage-3, Unnamed Drainage-5, Unnamed Drainage-6, WL-13, WL-14, WL-15, WL-16, WL-17, WL-18, WL-19, WL-20, and WL-21 are isolated features. WL-01 through WL-08 are wetlands located within the northern portion of Williams Creek. WL-09 through WL-12 are wetlands located within Unnamed Drainage-2. WL-13 through WL-21 are wetlands located within Unnamed Drainage-6. Unnamed Drainage-1, Unnamed Drainage-5, and Unnamed Drainage-6 converge with Williams Creek outside of the review area to the east. Further downstream of the last confluence, Williams Creek**

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

re-enters the review area near the southern boundary. This section of Williams Creek transitions to sheet flow as determined by the lack of an established bed and bank. Additionally, no swale features were observed. An aquatic feature with an established bed and bank is visible, via aerial imagery, approximately 1-mile south of the transition to sheet flow. Considering the lack of a clear connection and distance to the nearest downstream feature, Williams Creek, WL-01, WL-02, WL-03, WL-04, WL-05, WL-06, WL-07, WL-08, Unnamed Drainage-1, Unnamed Drainage-5, Unnamed Drainage-6, WL-13, WL-14, WL-15, WL-16, WL-17, WL-18, WL-19, WL-20, and WL-21 are isolated features. Unnamed Drainage-2, north of the second water crossing that intersects the drainage, exhibits a discontinuous OHWM within the stream course and in between features WL-11 and WL-12. South of the second water crossing flows are composed of dispersed sheet flow prior to the series of four (4) constructed impoundments (i.e. Unnamed Drainage-2, WL-9, & WL-10) intersecting the potential flow path. A discontinuous OHWM is observable between these impoundments and an established OHWM is present downstream of the last impoundment for approximately 600 feet (ft) before transitioning to sheet flow. Unnamed Drainage-2 transitions to sheet flow within the same approximate area as Williams Creek and does not exhibit an established connection to a downstream TNW. Therefore, Unnamed Drainage-2, WL-09, WL-10, WL-11, and WL-12 are isolated features. Unnamed Drainage-3 is an isolated AR that exhibits a short expanse of established bed and bank which quickly transitions to sheet flow. Unnamed Drainage-3 does not have an established connection to a downstream TNW.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW:

Summarize rationale supporting determination:

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **Pick List**
Drainage area: **Pick List**
Average annual rainfall: inches

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Average annual snowfall: inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW[5]:
Tributary stream order, if known:

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime:
Other information on duration and volume:

Surface flow is: **Pick List.** Characteristics:

Subsurface flow: **Pick List**. Explain findings:
☐ Dye (or other) test performed:

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank
☐ changes in the character of soil
☐ shelving
☐ vegetation matted down, bent, or absent
☐ leaf litter disturbed or washed away
☐ sediment deposition
☐ water staining
☐ other (list):
☐ the presence of litter and debris
☐ destruction of terrestrial vegetation
☐ the presence of wrack line
☐ sediment sorting
☐ scour
☐ multiple observed or predicted flow events
☐ abrupt change in plant community

☐ Discontinuous OHWM.[7] Explain:

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:
- ☐ oil or scum line along shore objects
- ☐ fine shell or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gauges
- ☐ other (list):

☐ Mean High Water Mark indicated by:
- ☐ survey to available datum;
- ☐ physical markings;
- ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain:

Identify specific pollutants, if known:

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width):
☐ Wetland fringe. Characteristics:
☐ Habitat for:
- ☐ Federally Listed species. Explain findings:
- ☐ Fish/spawn areas. Explain findings:
- ☐ Other environmentally-sensitive species. Explain findings:
- ☐ Aquatic/wildlife diversity. Explain findings:

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:
- Wetland size: acres
- Wetland type. Explain:
- Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain:

Surface flow is**: Pick List**
- Characteristics:

Subsurface flow: **Pick List**. Explain findings:
- ☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting
☐ Not directly abutting
- ☐ Discrete wetland hydrologic connection. Explain:
- ☐ Ecological connection. Explain:
- ☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width):
☐ Vegetation type/percent cover. Explain:
☐ Habitat for:
- ☐ Federally Listed species. Explain findings:
- ☐ Fish/spawn areas. Explain findings:
- ☐ Other environmentally-sensitive species. Explain findings:

☐ Aquatic/wildlife diversity. Explain findings:

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet, wide, Or acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:

3. Non-RPWs[8] that flow directly or indirectly into TNWs.
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain:
☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):

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[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

☐ Tributary waters: linear feet, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
☒ Other: (explain, if not covered above): **Unnamed Pond-1 has been constructed in upland.**

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☐ Corps navigable waters' study:
☒ U.S. Geological Survey Hydrologic Atlas:
☒ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; Buttes**
☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
☐ National wetlands inventory map(s). Cite name:
☐ State/Local wetland inventory map(s):
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **ESRI (2021), Google Earth (1999-2020), Colorado University Historical Aerial Photo Collection (1937)**
or ☒ Other (Name & Date): **Onsite photos from site visit 1/12/21**
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☐ Applicable/supporting scientific literature:
☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD:

A site examination of the review area was conducted on January 12, 2021. During the site visit, Unnamed Pond-1 was examined and, as a result, it was determined that the feature was constructed entirely in uplands as there was no observable upstream or downstream connection to a tributary or TNW. The 1986 preamble to 33 CFR Part 328.3, states that the Corps generally does not consider artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which is used exclusively for such purposes as stock watering, irrigation, or settling basins to be water of the U.S. Therefore, Unnamed Pond-1 is considered non-jurisdictional. The downstream extent of Unnamed Drainage-2 and Williams Creek, which also includes the entire southern boundary of the site, was examined during the site visit. This portion of the site is the zone where both ARs transition to

sheet flow. The topography is nearly flat within this area with subtle sloping to the south-southwest. No observable bed and bank or indicators of an OWHM associated to Unnamed Drainage-2 or Williams Creek were encountered within this area.

Isolated non-wetland waters (i.e. rivers, streams, etc): (Williams Creek) 15,273 linear feet, (Unnamed Drainge-1) 2,534 linear feet, (Unnamed Drainage-2) 3,710 linear feet , (Unnamed Drainage-3) 188 linear feet, (Unnamed Drainage-5) 2,786 linear feet, and (Unnamed Drainage-6) 12,188 linear feet; (Williams Creek) 27.25-ft average width, (Unnamed Drainge-1) 17.5-ft average width, (Unnamed Drainage-2) 9.4-ft average width, (Unnamed Drainage-3) 8-ft wide, (Unnamed Drainage-5) 14.9-ft average width, and (Unnamed Drainage-6) 50-ft wide.

Isolated Wetlands: (WL-01) 0.04 acres, (WL-02) 0.27 acres, (WL-03) 0.01 acres, (WL-04) 0.01 acres, (WL-05) 1 acre, (WL-06) 1.34 acres, (WL-07) 0.06 acres, (WL-08) .11 acres, (WL-09) 0.69 acres, (WL-10) 0.99 acres, (WL-11) 0.33 acres, (WL-12) 0.41 acres, (WL-13) 0.02 acres, (WL-14) 0.01 acres, (WL-15) 0.01 acres, (WL-16) 0.02 acres, (WL-17) 0.04 acres, (WL-18) 4.01-acres, (WL-19) 0.05 acres, (WL-20) 1.73 acres, and (WL-21) 0.47 areas.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): April 7, 2021

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Albuquerque District, JSI Construction Group LLC/Pike Solar Project, SPA-2020-00253

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **Colorado** County/parish/borough: **El Paso County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **38.6457938980146**, Long. **-104.618385727105**
Universal Transverse Mercator: **13 533208.82 4277540.21**
Name of nearest waterbody: **Williams Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **John Martin Resevoir**
Name of watershed or Hydrologic Unit Code (HUC): **12 -Digit HUC Williams Creek (No. 110200030401)**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form: **See attached JD form**

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): **January 12, 2021**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are no** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   ☐ TNWs, including territorial seas
   ☐ Wetlands adjacent to TNWs
   ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   ☐ Non-RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   ☐ Impoundments of jurisdictional waters
   ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: linear feet, wide, and/or acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Not Applicable.**
   Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: **The northern reach of Unnamed Drainage-4 (UD-4) exhibits a defined bed and bank prior to the boundary of the review area. UD-4 exits the review area then re-enters at the southwest corner. This southern reach exhibits a discontinuous and marginal bed and bank, which becomes more prominent outside of the review area. South of the review area, UD-4 is bisected by three (3) artificial berms. A defined bed and bank is visible, via aerial photography, between each berm. Downstream of the third berm, UD-4 exhibits a marginal bed and bank for approximately 300-feet then transitions to sheet flow. An aquatic feature, likely a constructed ditch, becomes visible approximately 312-feet to the southwest of the sheet flow zone and appears to exhibit a discontinuous and marginal bed and bank. This**

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

feature extends approximately 1500-feet and is then bisected by an artificial berm. Aerial imagery from September of 1999 indicates the berm was in place during that time. Furthermore, aerial imagery does not depict the presence of an established bed and bank around the berm within the potential flow path of this feature or indicators of floodwater discharges into the southern portion of Williams Creek from this aquatic feature. Indicators of a bed and bank are visible along the eastern portion of the berm, but this does not appear to be related to the feature bisected by the berm. UD-4 does not appear to exhibit indicators that suggest it has the substantial capacity to contribute floodwaters into Williams Creek, a tributary to a TNW, at periodic or continuous intervals. Therefore, UD-4 does not have a significant nexus with a downstream TNW.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW:

Summarize rationale supporting determination:

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **33,383 acres**
Drainage area: **33.7 square miles**
Average annual rainfall: **13.87** inches
Average annual snowfall: **32.26** inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **30 (or more)** river miles from TNW.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Project waters are **1-2** river miles from RPW.
Project waters are **30 (or more)** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW[5]: **UD-4 has the potential to flow into a TNW by way of Williams Creek, to Fountain Creek, to the Arkansas River, which flows directly into John Martin Reservoir.**
Tributary stream order, if known:

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☒ Manipulated (man-altered). Explain: **There are various artificial structures within the potential flow path of UD-4**

Tributary properties with respect to top of bank (estimate):
Average width: **10.25** feet
Average depth: feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):
☒ Silts ☒ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: **Flashy**
Other information on duration and volume:

Surface flow is: **Discrete.** Characteristics:

Subsurface flow: **Pick List**. Explain findings:
☐ Dye (or other) test performed:

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank
☐ changes in the character of soil
☐ shelving
☐ vegetation matted down, bent, or absent
☐ leaf litter disturbed or washed away
☐ sediment deposition
☐ water staining
☐ other (list):
☐ the presence of litter and debris
☐ destruction of terrestrial vegetation
☐ the presence of wrack line
☐ sediment sorting
☐ scour
☐ multiple observed or predicted flow events
☐ abrupt change in plant community
☒ Discontinuous OHWM.[7] Explain: **See Section II B. 2.**

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by:
☐ oil or scum line along shore objects
☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ Mean High Water Mark indicated by:
☐ survey to available datum;
☐ physical markings;
☐ vegetation lines/changes in vegetation types.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

☐ other (list):

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain:
Identify specific pollutants, if known:

(iv) Biological Characteristics. Channel supports (check all that apply):
☐ Riparian corridor. Characteristics (type, average width):
☐ Wetland fringe. Characteristics:
☐ Habitat for:
- ☐ Federally Listed species. Explain findings:
- ☐ Fish/spawn areas. Explain findings:
- ☐ Other environmentally-sensitive species. Explain findings:
- ☐ Aquatic/wildlife diversity. Explain findings:

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:
(a) General Wetland Characteristics:
Properties:
Wetland size: acres
Wetland type. Explain:
Wetland quality. Explain:
Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain:

Surface flow is**: Pick List**
Characteristics:

Subsurface flow: **Pick List**. Explain findings:
☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
- ☐ Discrete wetland hydrologic connection. Explain:
- ☐ Ecological connection. Explain:
- ☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:
Identify specific pollutants, if known:

(iii) Biological Characteristics. Wetland supports (check all that apply):
☐ Riparian buffer. Characteristics (type, average width):
☐ Vegetation type/percent cover. Explain:
☐ Habitat for:
- ☐ Federally Listed species. Explain findings:
- ☐ Fish/spawn areas. Explain findings:
- ☐ Other environmentally-sensitive species. Explain findings:
- ☐ Aquatic/wildlife diversity. Explain findings:

3. Characteristics of all wetlands adjacent to the tributary (if any)
All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: **UD-4 does not appear to exhibit indicators that suggest it has the substantial capacity to contribute floodwaters into Williams Creek, a tributary to a TNW, at periodic or continuous intervals. Therefore, UD-4 does not have a significant nexus with a downstream TNW. See Section II B. 2. above for more details.**

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet, wide, Or acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   ☐ Tributary waters: linear feet wide.

☐ Other non-wetland waters: acres.
Identify type(s) of waters:

3. Non-RPWs[8] that flow directly or indirectly into TNWs.
☒ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain:
☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.

☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.

☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).

☒ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **Unnamed Drainage-4 does not have more than a speculative or insubstantial effect on the chemical physical, or biological integrity of a downstream TNW. See Section II B. 2. for more details.**

☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

☒ Non-wetland waters (i.e., rivers, streams): **(Unnamed Drainage-4) 4,147** linear feet, **average of 10.25 feet** wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

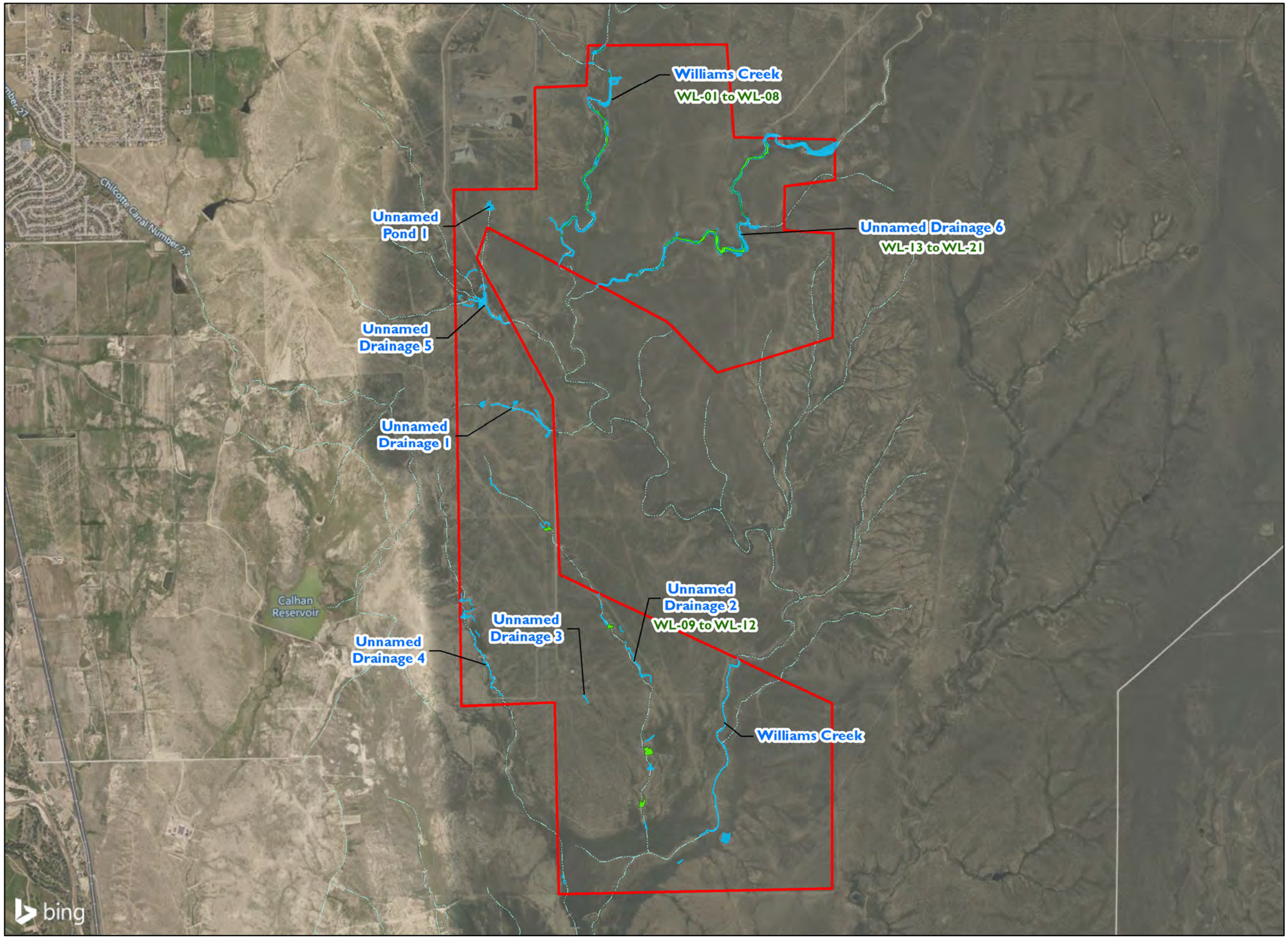
SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  ☒ Office concurs with data sheets/delineation report.
  ☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☐ Corps navigable waters' study:
☒ U.S. Geological Survey Hydrologic Atlas:
  ☒ USGS NHD data.
  ☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; Buttes**
☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
☐ National wetlands inventory map(s). Cite name:
☐ State/Local wetland inventory map(s):
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **ESRI (2021), Google Earth (1999-2020), Colorado University Historical Aerial Photo Collection (1937)**
  or ☒ Other (Name & Date): **Onsite photos from site visit 1/12/21**
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☐ Applicable/supporting scientific literature:
☒ Other information (please specify): **Colorado State University, Colorado Climate Center. Colorado Springs Municipal Airport weather station (Station ID-051778). Website. Accessed 2/26/2021.**

B. ADDITIONAL COMMENTS TO SUPPORT JD:

A site examination of the review area was conducted on January 12, 2021. During the site visit Unnamed Drainage-4 was examined. Details of the observations of the site examination can be found in Section II B. 2.



Legend

- Project Area
- Delineated Wetlands
- Non-Wetland Water (OHWM in Project Area)*
- U.S. Geological Survey National Hydrography Dataset Flowline

0 0.25 0.5 Miles

Pinyon Environmental, Inc.

DELINEATION OVERVIEW

Pike Solar Project
El Paso County, Colorado

Site Location: Multiple Sections, Township 16S, Ranges 64 and 65W, 6th Principal Meridian	Drawn By: MJS	Figure: 3
Pinyon Project Number: 1/20-1215-02	Reviewed By: PMW	Date: 11/19/2020

Document Path: Z:\PROJECTS\2020\120121502 Juwi Pike Solar Project\Figures\ArcMap\MXDs\Bio\BIO03_WUS_Overview_PikeSolar.mxd

Claire Gerrish

From: Delgado, Daniel I CIV USARMY CESPA (USA) <Daniel.I.Delgado@usace.army.mil>
Sent: Monday, March 1, 2021 2:52 PM
To: Claire Gerrish
Subject: RE: checking in

Claire,

The JD associated to your project has been submitted to USACE HQ and EPA for review. Should they agree with my determination there would be no Corps jurisdictional aquatic resources within your review area; speaking unofficially since the JD has not been issued.

Thank you,

Mr. Daniel Delgado
Regulatory Specialist
U.S. Army Corps of Engineers-Albuquerque District Regulatory Division
4101 Jefferson Plaza NE,
Albuquerque, NM 87109-3435
Office: (505) 342-3220
Work Cell: (505) 231-4187

From: Claire Gerrish <cgerrish@juwiamericas.com>
Sent: Monday, March 1, 2021 2:44 PM
To: Delgado, Daniel I CIV USARMY CESPA (USA) <Daniel.I.Delgado@usace.army.mil>
Subject: [Non-DoD Source] checking in

Daniel,

Hope you are doing well. Just wanted to check in and see if you had any new updates. I also wanted to provide an update to our Pike Solar Project. We are aiming to submit for our 1041 application next Monday or Tuesday. If we are able to, we would definitely like to add in the USACE AJD but definitely understand if it is still under review. Thank you for your time.

Claire Gerrish
Project Planner

juwi Inc. • 1710 29th Street, Suite 1068 • Boulder, Colorado 80301 • USA
+1.303.996.4154 • fax. +1.303.442.1981
cgerrish@juwiamericas.com • www.juwiamericas.com
juwi · Energy is here

Pinyon Environmental, Inc.

Corporate Headquarters
3222 South Vance Street, Suite 200, Lakewood, CO 80227
T: 303.980.5200 F: 303.980.0089
www.pinyon-env.com

October 19, 2020

Tony Martinez
U.S. Army Corps of Engineers
201 West 8th Street, Suite 350
Pueblo, CO 81003

Subject: Request for an Approved Jurisdictional Determination for the Pike Solar Project, El Paso County, Colorado

Dear Mr. Martinez:

Pinyon Environmental, Inc. (Pinyon), on behalf of JSI Construction Group, LLC, is respectfully submitting this Approved Jurisdictional Determination request for the non-wetland waters and wetlands identified in the project area of the above-referenced project. To assist you in making this determination, we have enclosed a *Non-Wetland Water Features and Wetland Report* as well as a *Request for Corps Jurisdictional Determination* form. Eight non-wetland water features and 21 wetlands were mapped in the project area and include:

- Williams Creek and associated wetlands (WL-01 thru WL-08)
- Unnamed Drainage 1
- Unnamed Drainage 2 and associated wetlands (WL-09 thru WL-12)
- Unnamed Drainage 3
- Unnamed Drainage 4
- Unnamed Drainage 5
- Unnamed Drainage 6 and associated wetlands (WL-13 thru WL-21)
- Unnamed Pond 1

If you have any questions or require additional information, do not hesitate to contact me at 303-980-5200, or by email at haraminac@pinyon-env.com. We appreciate your time in this matter and look forward to your reply.

Sincerely,

PINYON ENVIRONMENTAL, INC.,

Allison Haraminac
Energy Market Manager

Cc: Claire Gerrish, JSI Construction Group, LLC

Enclosures: Request for Corps Jurisdictional Determination
Non-Wetland Water Features and Wetland Report

Pinyon Environmental, Inc.

Corporate Headquarters
3222 South Vance Street, Lakewood, CO 80227
T: 303.980.5200 F: 303.980.0089
www.pinyon-env.com

October 2, 2020

Non-Wetland Water Features and Wetlands Report

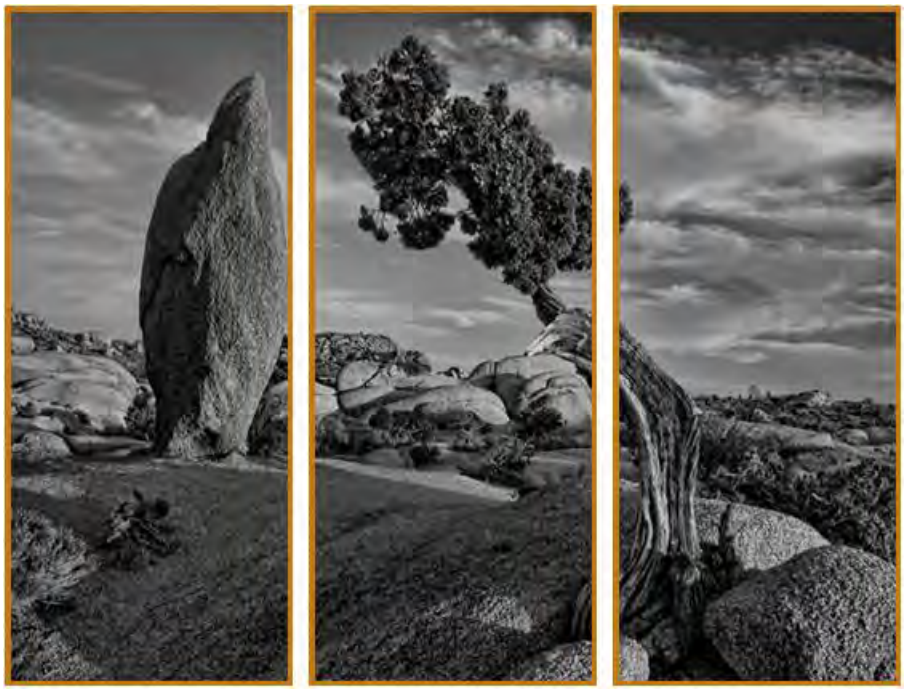
Pike Solar Project
El Paso County, Colorado

Prepared For:

JSI Construction Group, LLC
1710 29th Street, Suite 1068
Boulder, CO 80301

Pinyon Project No.:

1/20-1215-02



October 2, 2020

Non-Wetland Water Features and Wetlands Report

Pike Solar Project
El Paso County, Colorado

Prepared For:

JSI Construction Group, LLC
1710 29th Street, Suite 1068
Boulder, CO 80301

Pinyon Project No.:

1/20-1215-02

Prepared by:

Pam Wegener
Biologist

Matt Santo
Environmental Scientist

Reviewed by:

Allison Haraminac
Energy Market Manager

Table of Contents

Table of Contents (continued)

Tables

Figures

Appendices

1. Introduction

JSI Construction Group, LLC (JSI), has contracted Pinyon Environmental, Inc. (Pinyon), to conduct a delineation of potential Waters of the United States (WUS), including non-wetland water features and wetlands, for the Pike Solar Project (project) in El Paso County, Colorado. Pinyon understands that JSI is planning to develop a large-scale photovoltaic solar energy facility just east of Calhan Reservoir and about five miles southeast of the City of Fountain. JSI is seeking assistance with determining the potential jurisdictional status of non-wetland water features and wetlands present within the project area. This *Non-Wetland Water Features and Wetlands Report* (report) details the methodology and results of Pinyon's WUS delineation.

This report has been prepared to identify existing conditions in wetlands and other waters that may be considered jurisdictional WUS. Such waters are regulated by the United States Army Corps of Engineers (USACE) in accordance with Section 404 of the Clean Water Act (CWA). Jurisdictional WUS include traditional navigable waters (TNWs), their relatively permanent tributaries, other tributaries that have a "significant nexus" with a TNW, and associated wetlands. Wetlands are "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory, 1987). Impacts to WUS, including wetlands, require permitting through the USACE. The USACE typically does not take jurisdiction over wetlands or waterways that do not flow to TNWs unless these areas are considered to have a "significant nexus" to navigable waters. Only the USACE has the authority to make jurisdictional determinations; however, signs that a waterway could potentially be considered jurisdictional include representation with a "blue line" on a U.S. Geological Survey (USGS) topographic map and the presence of a well-defined bed, banks, and ordinary high water mark (OHWM).

1.1 Project Location

The project area includes approximately 3,269 acres of mostly rangeland in El Paso County, Colorado (Figure 1a and 1b). JSI provided the proposed project area to Pinyon, and solar facilities will be sited somewhere within this area. The project is centered at decimal degree coordinates (World Geodetic System [WGS] 84) latitude 38.644141°, longitude -104.631250°. The project area spans multiple sections in Township 16 South and Ranges 64 and 65 West of the Fountain, Fountain NE, Fountain SE, and Buttes Colorado, United States Geological Survey (USGS) 7.5-Minute Quadrangles (USGS, 1994a; USGS, 1994b; USGS, 1961; USGS, 1975). The elevation of the project area ranges between approximately 5,370 feet and 5,590 feet above mean sea level.

2. Methods

2.1 Desktop Assessment

Prior to the delineation, Pinyon conducted a desktop review of potential water features and wetlands in the project area from the following sources:

- Aerial imagery and ground-based photography from Google Earth Pro (Google Earth Pro, 2020)
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Data (USFWS, 2018)
- USGS National Hydrography Dataset (NHD) (USGS, 2020)
- United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA, 2020)
- USGS Topographic maps (USGS, 1994a; USGS, 1994b; USGS, 1961; USGS, 1975)

2.2 Field Survey

From July 15-19, 2019 and September 7-10, 2020, Pinyon delineated potential WUS within the project area. Wetlands were mapped and delineated in accordance with the *1987 USACE Wetland Delineation Manual* and the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)* (Environmental Laboratory, 1987; USACE, 2010). Wetlands were identified by the presence of hydrophytic vegetation (as determined by vegetation indicators specified in USACE, 2010, in which vegetation may be characterized as "obligate" [OBL], "facultative wetland" [FACW], "facultative" [FAC], or "upland" [UPL]); hydric soils (as determined by soil indicators specified in USACE, 2010); and wetland hydrology (as determined by hydrology indicators specified in USACE, 2010). Wetlands were classified using the Cowardin classification system (Cowardin, et al., 1979). Relevant information about wetlands (e.g., vegetation, hydrology) were noted and photographs were taken (Appendix A – Photographic Log). Wetland determination data forms are included in Appendix B.

Boundaries of non-wetland water features were evaluated using field indicators for the OHWM. In general, the OHWM was determined based on the presence of bed and bank, a visible impression on the shoreline, a change in substrate type or texture, or a change in vegetation (USACE, 2005). In the context of this report, non-wetland water features were defined as all non-wetland areas between the OHWM. Wetland boundaries and the OHWM were recorded in the field with sub-meter accuracy using ArcGIS Collector paired with a R1 Global Navigation Satellite System Receiver.

3. Results

The following sections describe the general site conditions, hydrology, soil types, non-wetland water features, and wetlands identified in the project area.

3.1 General Site Conditions

The project area is situated in a rural undeveloped location, which consisted of shortgrass prairie habitat and rangeland areas. Vegetation was dominated by species such as common sunflower (*Helianthus annuus*), field bindweed (*Convolvulus arvensis*), kochia (*Bassia scoparia*), lambsquarters (*Chenopodium album*), western wheatgrass (*Pascopyrum smithii*), blue grama (*Bouteloua gracilis*), buffalo grass (*Bouteloua dactyloides*), cholla (*Cylindropuntia* sp), fourwing saltbush (*Atriplex canescens*), leafy false goldenweed (*Oonopsis foliosa*), and prickly pear cactus (*Opuntia* sp.). Few isolated plains cottonwood (*Populus deltoides*) and salt cedar (*Tamarix* sp.) trees were noted near drainages within the project area.

Numerous wetlands were identified along the drainages within the project area. Wetlands were primarily palustrine emergent (PEM) and dominated by species such as alkali sacaton (*Sporobolus airoides*; FAC), common spikerush (*Eleocharis palustris*; OBL), foxtail barley (*Hordeum jubatum*; FACW), poison suckleya (*Suckleya suckleyana*; FACW), milkvetch (*Astragalus canadensis*; FAC), common sunflower (FACU), common threesquare (*Schoenoplectus pungens*; OBL), and narrowleaf cattail (*Typha angustifolia*; OBL). One palustrine scrub shrub (PSS) wetland was identified and was dominated by salt cedar (FACW). Further details on wetland vegetation be found in Appendix B.

3.1.1 General Hydrology

Hydrology in the area is dominated by intermittent and/or ephemeral drainages, portions of which have been altered by human activities such as agriculture, informal two-track roads and energy facilities infrastructure. Surface water within the project area is likely derived from stormwater runoff, and some drainages lacked a continuous OHWM. When water flows within the drainages, flow is generally to the south and into Williams Creek, the main drainage feature within the project area. Williams Creek continues south out of the project area and converges with Fountain Creek, approximately 3.5 miles from the project area. Fountain Creek flows to the Arkansas River, a TNW (USGS, 2020).

3.1.2 Soils

There are seven soil types mapped on the NRCS soil survey within and adjacent to the non-wetland waters and wetlands in the project area (NRCS, 2020). None of the soils are considered hydric. Soil series include:

- *Ascalon sandy loam, 1 to 3 percent slopes*. This soil series is described as well-drained, is not considered hydric, and is commonly associated with flats. Parent material includes mixed alluvium and eolian deposits.
- *Heldt clay loam, 0 to 3 percent slopes.* This soil series is described as well-drained, is not considered hydric, and is commonly associated with alluvial fans and stream terraces. Parent material includes clayey alluvium derived from shale.
- *Fort loam, 1 to 5 percent slopes, cool*. This soil series is described as well-drained, is not considered hydric, and is commonly associated with fans, interfluves, and plains. Parent material includes loamy alluvium and/or eolian deposits.
- *Manzanola silty clay loam, saline, 0 to 2 percent slopes*. This soil series is described as well-drained, is not considered hydric, and is commonly associated with drainageways. Parent material includes alluvium derived from shale.

- *Midway clay loam, 3 to 25 percent slopes*. This soil series is described as well-drained, is not considered hydric, and is commonly associated with hills and uplands. Parent material includes slope alluvium over residuum weathered from shale.
- *Razor-Midway complex*. This soil series is described as well-drained, is not considered hydric, and is commonly associated with hills. Parent material includes clayey slope alluvium over residuum weathered from shale.
- *Ustic Torrifluvents, loamy*. This soil series is described as well-drained, is not considered hydric, and is commonly associated with floodplains and stream terraces. Parent material includes sandy, clayey and stratified loam materials.

Further details on soils in and adjacent to wetlands can be found in Appendix B.

3.2 Non-Wetland Waters and Wetlands

Eight non-wetland water features and 21 wetlands were mapped in the project area (Tables 1 and 2; Figure 2). The non-wetland water features included Williams Creek, six unnamed drainages (Unnamed Drainage 1 through 6) and an unnamed pond (Unnamed Pond 1). Wetlands were identified along three of the non-wetland waters: Williams Creek (Wetland-01 [WL-01] through WL-08); Unnamed Drainage 2 (WL-09 through WL-12) and Unnamed Drainage 6 (WL-13 through WL-21).

3.2.1 Williams Creek and Associated Wetlands (WL-01 through WL-08)

Williams Creek is an incised creek with a natural substrate that is mapped as a dashed blue line on the Fountain NE and Fountain SE, Colorado 7.5 Minute Quadrangles (USGS, 1961; USGS 1975). Where it passes through the project area, Williams Creek is classified as "Intermittent Stream" by the NHD and "Riverine Intermittent" by the NWI (USGS, 2020; USFWS, 2018). Within the project area, the creek had a continuous and well-defined OHWM in the north (Figure 2a and 2c). In the southern portions of the project area, the OWHM was well-defined in places, but indistinct along portions of the drainage (Figure 2g and 2i). On average, where the OHWM was mapped, the drainage had an approximately 5- to 10-foot-high incised bank (Appendix A, photo 1). The creek was dry at the time of both site visits with some intermittent standing water observed. Williams Creek likely flows during storm events and seasonally wet periods, and flow within the drainage is to the south to Fountain Creek and eventually into the Arkansas River, a TNW (USGS, 2019; Figure 2). Two small artificial depressions (stock ponds) abutting Williams Creek were also noted (Figure 2i). During the site visits, these areas were dry and covered with common sunflower. Given the proximity to the creek, these features are included in the Williams Creek drainage. Because water from Williams Creek may ultimately flow into a TNW, the feature may be jurisdictional. However, only the USACE has the final authority to determine jurisdictional status.

Eight wetlands associated with Williams Creek were delineated within the project area: WL-01 through WL-08 (Table 2; Figure 2a and 2c; Appendix A, photos 9 thru 11). All wetlands were PEM wetlands except WL-07. WL-07 was classified as a PSS wetland (Cowardin et al., 1979). The wetlands were all located in the northern portion of the project area along or within the drainage. The likely source of hydrology to these wetlands is from stormwater runoff associated with the creek. Three sampling points were excavated in the wetlands along the drainage: SP-01 in WL-01, SP-03 in WL-05 and SP-05 in WL-07 (Figure 2a and 2c; Appendix A, photos 18 thru 20; Appendix B;). Sampling points were not completed in nearby wetlands that had similar vegetation. In wetlands where sampling points were not completed, reference pits were excavated to confirm soils and hydrology.

3.2.2 *Unnamed Drainage 1*

Unnamed Drainage 1 is mapped as a solid blue line within the project area on the Fountain, Colorado 7.5-Minute Quadrangle (USGS, 1994a; Figure 1a). It is classified as "Intermittent Stream" by the NHD and "Riverine Intermittent" by the NWI (USGS, 2020; USFWS, 2018). At the time of the site visit, the OHWM was faint and discernable only in some areas. Numerous human-made impoundments intersected the drainage, which resulted in the formation of several artificial depressions (stock ponds) along the drainage (Figure 2e; Photo 2 in Photographic Log). The drainage, including the stock ponds, was dry during the time of the site visits. Unnamed Drainage 1 likely flows only during seasonally wet periods or storm events. During these times, the drainage presumably flows southeast toward Williams Creek, which ultimately discharges into the Arkansas River, a TNW (USGS, 2020). Because water from Unnamed Drainage 1 may ultimately flow into a TNW, the feature may be jurisdictional. However, only the USACE has the final authority to determine jurisdictional status.

No wetlands associated with Unnamed Drainage 1 were delineated within the project area.

3.2.3 *Unnamed Drainage 2 and Associated Wetlands (WL-09 through WL-12)*

Within the project area, Unnamed Drainage 2 is mapped as a dashed blue line on the Fountain, Fountain SE, and Fountain NE, Colorado 7.5-Minute Quadrangles (USGS, 1994a; USGS, 1961; USGS 1974; Figure 1b). It is classified as "Intermittent Stream" by the NHD and "Riverine Intermittent" by the NWI (USGS, 2020; USFWS, 2018). At the time of the site visit, the OHWM was faint and discernable only in some areas, and the OHWM did not extend toward Williams Creek due to the presence of a construction site (Figure 2e, 2f, 2g and 2i; Appendix A, photo 3). Numerous human-made impoundments intersected the drainage, which resulted in the formation of several artificial depressions (stock ponds) along the drainage. The drainage, including the stock ponds, was dry at the time of the site visits and likely only flows during seasonally wet periods or storm events, and does not appear to have a direct connection to Williams Creek or a TNW due to the construction site. It is likely that this drainage once had a connection to Williams Creek. Because Unnamed Drainage 2 does not have an apparent surface water connection to a TNW, the feature may be non-jurisdictional. However, only the USACE has the final authority to determine jurisdictional status.

Four wetlands associated with Unnamed Drainage 2 were delineated within the project area: WL-09 through WL-12 (Table 2; Figure 2e, 2f and 2i; Photos 12-14 in Photographic Log). All four wetlands were PEM wetlands and were dominated by emergent vegetation (Cowardin et al., 1979). The likely source of hydrology to these wetlands is from stormwater runoff associated with Unnamed Drainage 2. Five sampling points were excavated in the wetlands along the drainage: SP-14 in WL-09; SP-16 in WL-10; SP-19 in WL-11; and SP-21 in WL-12 (Appendix B; Appendix A, photo 24).

3.2.4 *Unnamed Drainage 3*

Unlike the other drainages noted within the project area, Unnamed Drainage 3 is not mapped on the USGS 7.5Minute Quadrangles or in the NHD (USGS, multiple years). At the time of the site visits, the drainage was dry and unvegetated toward the center, and the OHWM was discernable only immediately north and south of two-track access road before fading into the surrounding uplands (Figure 2f; Appendix A, photo 4). It is unlikely that the drainage flows into another waterbody, even during high flow events (USGS, 2020). Because Unnamed Drainage 3 does not have an apparent surface water connection to a TNW, the feature may be non-jurisdictional. However, only the USACE has the final authority to determine jurisdictional status.

No wetlands associated with Unnamed Drainage 3 were delineated within the project area.

3.2.5 Unnamed Drainage 4

Within the project area, Unnamed Drainage 4 is mapped as a solid blue line in the Fountain, Buttes and Fountain SE, Colorado 7.5-Minute Quadrangles (USGS, 1994a; USGS 1994b; USGS, 1974; Figure 1b). It is classified as "Intermittent Stream" by the NHD and "Riverine Intermittent" by the NWI (USGS, 2020; USFWS, 2018). At the time of the site visit, the OHWM was faint and discernable only in some areas, and not continuous (Figure 2f and 2h; Appendix A, photo 5). Several human-made impoundments intersected the drainage, which resulted in the formation of several stock ponds. The drainage, including the stock ponds, was dry during the time of the site visits, and likely only flows during seasonally wet periods or storm events. During these times, the drainage presumably flows southeast toward Williams Creek, which ultimately discharges into the Arkansas River, a TNW (USGS, 2020). Because water from Unnamed Drainage 4 may ultimately flow into a TNW, the feature may be jurisdictional. However, only the USACE has the final authority to determine jurisdictional status.

No wetlands associated with Unnamed Drainage 4 were delineated within the project area.

3.2.6 Unnamed Drainage 5

Unnamed Drainage 5 is mapped as a solid blue line on the Fountain, Colorado 7.5-Minute Quadrangle within the project area (USGS, 1994a; Figure 1a). It is classified as "Intermittent Stream" by the NHD and "Riverine Intermittent" by the NWI (USGS, 2020; USFWS, 2018). At the time of the site visits, the OHWM was faint and not continuous (Figure 2c; Appendix A, photo 6). A large human-made impoundment was noted at the western portion of the drainage, and several areas of OHWM were mapped. This area was likely several smaller drainages in the past but has been altered into a main impoundment which likely collects stormwater and feeds the drainage to the south. The drainage, including the impoundment, was dry during the time of the site visits, and likely only flows during seasonally wet periods or storm events. During these times, the drainage appears to flow southeast toward Williams Creek, which ultimately discharges into the Arkansas River, a TNW (USGS, 2020). Because water from Unnamed Drainage 5 may ultimately flow into a TNW, the feature may be jurisdictional. However, only the USACE has the final authority to determine jurisdictional status.

No wetlands associated with Unnamed Drainage 5 were delineated within the project area.

3.2.7 Unnamed Drainage 6 and Associated Wetlands (WL-13 through WL-21)

Unnamed Drainage 6 is mapped as a dashed blue line on the Fountain NE, Colorado 7.5-Minute Quadrangle (USGS, 1961; Figure 1a). It is classified as "Intermittent Stream" by the NHD and "Riverine Intermittent" by the NWI (USGS, 2020; USFWS, 2018). At the time of the site visit, the drainage was dry, with a continuous and often incised channel within the OHWM (Figure 2b, 2c and 2d; Appendix A, photo 7). Some pooling water was observed in lower-lying areas. The drainage likely only flows during seasonally wet periods or storm events. During these times, the drainage appears to flow southeast toward Williams Creek, which ultimately discharges into the Arkansas River, a TNW (USGS, 2020). Because water from Unnamed Drainage 6 may ultimately flow into a TNW, the feature may be jurisdictional. However, only the USACE has the final authority to determine jurisdictional status.

Nine wetlands associated with Unnamed Drainage 6 were delineated within the project area: WL-13, WL-14, WL-15, WL-16, WL-17, WL-18, WL-19, WL-20 and WL-21 (Table 2; Figure 2b, 2c and 2d; Appendix A, photos 15 thru 17). All wetlands were PEM wetlands and were dominated by emergent vegetation (Cowardin et al., 1979). Some small areas of salt cedar were noted. The likely source of hydrology to these wetlands is from stormwater runoff associated with Unnamed Drainage 6. Three sampling points were excavated in the wetlands along the drainage: SP-07 in WL-13; SP-09 in WL-16; and SP-11 in WL-18 (Appendix B; Appendix A, photos 21 thru 23). Sampling points were not completed in all wetlands as characteristics were similar between

wetlands. In wetlands where sampling points were not completed, reference pits were excavated to confirm soils and hydrology.

3.2.8 Unnamed Pond 1

Within the project area, Unnamed Pond 1 is shown as an intermittent pond associated with a former unnamed drainage on the Fountain, Colorado 7.5-Minute Quadrangle (USGS, 1994a; Figure 1a). Based on USGS maps, it appears that this pond was likely connected to Unnamed Drainage 5 in the past; however, a dirt access road has been constructed between the pond and Unnamed Drainage 5, and Unnamed Pond 1 now appears to be hydrologically isolated (Figure 2a; Photo 8 in Photographic Log). The pond was dry at the time of the site visits. Because Unnamed Pond 1 does not have an apparent surface water connection to a TNW, the feature may be non-jurisdictional. However, only the USACE has the final authority to determine jurisdictional status.

No wetlands associated with Unnamed Pond 1 were delineated within the project area.

4. Conclusions

Pinyon has performed a delineation of non-wetland waters and wetlands for the Pike Solar Project area. The information in this report will be used to obtain an Approved Jurisdictional Determination for the features identified within the project area: Williams Creek and associated wetlands (WL-01 through WL-08); Unnamed Drainage 1; Unnamed Drainage 2 and associated wetlands (WL-09 through WL-12); Unnamed Drainage 3; Unnamed Drainage 4; Unnamed Drainage 5; Unnamed Drainage 6 and associated wetlands (WL-13 through WL-21); and Unnamed Pond 1. The outcome of the jurisdictional determination will be used to inform project design. If the USACE concludes that any of the features in the project area are non-jurisdictional, then the project will be able to proceed with project activities in those areas without obtaining a Section 404 permit. A Section 404 permit must be sought for dredge or fill activities in areas determined to be jurisdictional.

Five of the drainage features (Williams Creek, Unnamed Drainage 1, 4, 5 and 6) and their associated wetlands (WL-1 thru 8 and WL-13 thru WL-21) delineated within the project area have potential connection to the Arkansas River, a TNW, and may therefore be jurisdictional. However, these features are intermittent and/or ephemeral, have been altered by human activity (impoundments), are dependent on seasonally wet periods and stormwater, and did not have a continuous OHWM for their entire length. The remaining drainage features (Unnamed Drainage 2, Unnamed Drainage 3 and Unnamed Pond 1) and their associated wetlands (WL-09 thru WL-12) do not appear to have a connection to a TNW and may therefore be non-jurisdictional. Jurisdictional status will ultimately be determined by the USACE.

5. Limitations

This report was prepared by Pinyon, at the request of and for the sole benefit of JSI, or any entity controlling, controlled by, or under common control with JSI. The conclusions and recommendations offered in this report are based on the data obtained from a limited number of samples, within a prescribed project area as described in the text. Soil, hydrologic, vegetation, biological and ecological conditions typically vary even over short distances, by season, by elevation, and by meteorological conditions. Thus, the nature and extent of variations outside this biological investigation may not become evident except through further investigation. It is possible that ecological conditions may change from those observed, particularly over time.

6. References

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Figures

Tables

Table 1. Non-Wetland Water Features Information

Waterbody Name	Figure Number	Latitude/ Longitude[1]	Flow Type	Downstream Connection	Acres Delineated
Williams Creek	2a, 2c, 2g and 2i	38.665398/-104.623097	Intermittent	Arkansas River[2]	8.85
Unnamed Drainage 1	2e	38.650457/-104.628062	Intermittent	Williams Creek	1.88
Unnamed Drainage 2	2e, 2f, 2g and 2i	38.630774/-104.618255	Intermittent	Williams Creek	1.32
Unnamed Drainage 3	2f	38.629237/-104.623995	Intermittent	Williams Creek	0.08
Unnamed Drainage 4	2f and 2h	38.632507/-104.633944	Intermittent	Williams Creek	0.88
Unnamed Drainage 5	2c	38.658921/-104.632920	Intermittent	Williams Creek	2.23
Unnamed Drainage 6	2b, 2c and 2d	38.664486/-104.608105	Intermittent	Williams Creek	12.56
Unnamed Pond 1	2a	38.666952/-104.632783	Intermittent	Williams Creek	0.86

[1]World Geodetic System [WGS] 84 Decimal Degrees

[2]Arkansas River is a Traditional Navigable Water (TNW)

Table 2. Wetland Features Information

Wetland ID	Associated Waterbody	Figure Number	Latitude/ Longitude[1]	Cowardin Classification (Cowardin et al., 1979)	Hydrology Source	Wetland Determination Data Form IDs[2,3,4]	Acres Delineated
WL-01	Williams Creek	2c	38.664759/-104.625707	PEM	Stormwater	SP-01 (SP-02)	0.04
WL-02		2c	38.665650/-104.625058	PEM	Stormwater	None	0.27
WL-03		2c	38.665744/-104.622676	PEM	Stormwater	None	0.01
WL-04		2c	38.665952/-104.622592	PEM	Stormwater	None	0.01
WL-05		2a	38.668330/-104.623052	PEM	Stormwater	SP-03 (SP-04)	1.00
WL-06		2a	38.672502/-104.621766	PEM	Stormwater	None	1.34
WL-07		2a	38.677083/-104.620904	PSS	Stormwater	SP-05 (SP-06)	0.06
WL-08		2a	38.678987/-104.621714	PEM	Stormwater	None	0.11
WL-09	Unnamed Drainage 2	2i	38.621048/-104.618422	PEM	Stormwater	SP-14	0,69
WL-10		2i	38.624981/-104.617728	PEM	Stormwater	SP-16 (SP-17)	0.99
WL-11		2f	38.634575/-104.621371	PEM	Stormwater	SP-19 (SP-20)	0.33
WL-12		2e	38.642131/-104.627385	PEM	Stormwater	SP-21 (SP-22)	0.41
WL-13	Unnamed Drainage 6	2c	38.661581/-104.618685	PEM	Stormwater	SP-07 (SP-08)	0.02
WL-14		2d	38.661636/-104.618235	PEM	Stormwater	None	0.01
WL-15		2d	38.661744/-104.618141	PEM	Stormwater	None	0.01
WL-16		2d	38.662061/-104.616728	PEM	Stormwater	SP-09 (SP-10)	0.02
WL-17		2d	38.662432/-104.616075	PEM	Stormwater	None	0.04
WL-18		2d	38.664073/-104.611377	PEM	Stormwater	SP-11 (SP-12)	4.01
WL-19		2d	38.665257/-104.608386	PEM	Stormwater	None	0.05
WL-20		2b and 2d	38.668749/-104.607592	PEM	Stormwater	None	1.73
WL-21		2b	38.671217/-104.605567	PEM	Stormwater	None	0.47

[1]World Geodetic System [WGS] 84 Decimal Degrees

[2]See Appendix B for Wetland Determination Data Forms

[3] Corresponding Upland Sampling Point in ( )

[4]Sampling points were not excavated in all wetlands as characteristics were similar between wetlands. In wetlands where sampling points were not excavated, reference pits were completed to confirm soils and hydrology.

PEM = Palustrine Emergent

PSS = Palustrine Scrub Shrub

Appendices

Appendix A Photographic Log

Photo 1. View of Williams Creek showing a heavily incised channel. Photo taken facing northeast.

Photo 2. View of Unnamed Drainage 1. The ordinary high water mark (OHWM) was faint and intermittent. Photo facing northwest.

Photo 3. View of Unnamed Drainage 2. Photo taken facing north.

Photo 4. View of Unnamed Drainage 3. Drainage was dry at the time of the site visit.

Photo 5. View of Unnamed Drainage 4. Drainage was dry at the time of the site visit. Photo taken facing east.

Photo 6. View of Unnamed Drainage 5. The drainage was dry at the time of the site visit and the OHWM was faint and not continuous. Photo taken facing northwest.

Photo 7. View of Unnamed Drainage 6 showing an incised channel. Photo taken facing northeast.

Photo 8. View of Unnamed Pond 1. Photo taken facing southwest.

Photo 9. View of WL-05 within the OHWM of Williams Creek. Photo taken facing south.

Photo 10. View of WL-06 within the OHWM of Williams Creek. Photo taken facing northwest.

Photo 11. View of WL-07 within the OHWM of Williams Creek. Photo taken facing southeast.

Photo 12. View of WL-09 along Unnamed Drainage 2. Photo taken facing west.

Photo 13. View of WL-11 along Unnamed Drainage 2. Photo taken facing south.

Photo 14. View of WL-12 along Unnamed Drainage 2. Photo taken facing east.

Photo 15. View of WL-16 within the OHWM of Unnamed Drainage 6. Photo taken facing west.

Photo 16. View of WL-17 within the OHWM of Unnamed Drainage 6. Photo taken facing northeast.

Photo 17. View of WL-20 within the OHWM of Unnamed Drainage 6. Photo taken facing west.

Photo 18. View of Sampling Point (SP)-01 in WL-01. Some standing water of Williams Creek noticeable in the background. Photo taken facing north.

Photo 19. View of SP-03 in WL-05. Photo taken facing east.

Photo 20. View of SP-05 in WL-07. Photo taken facing south.

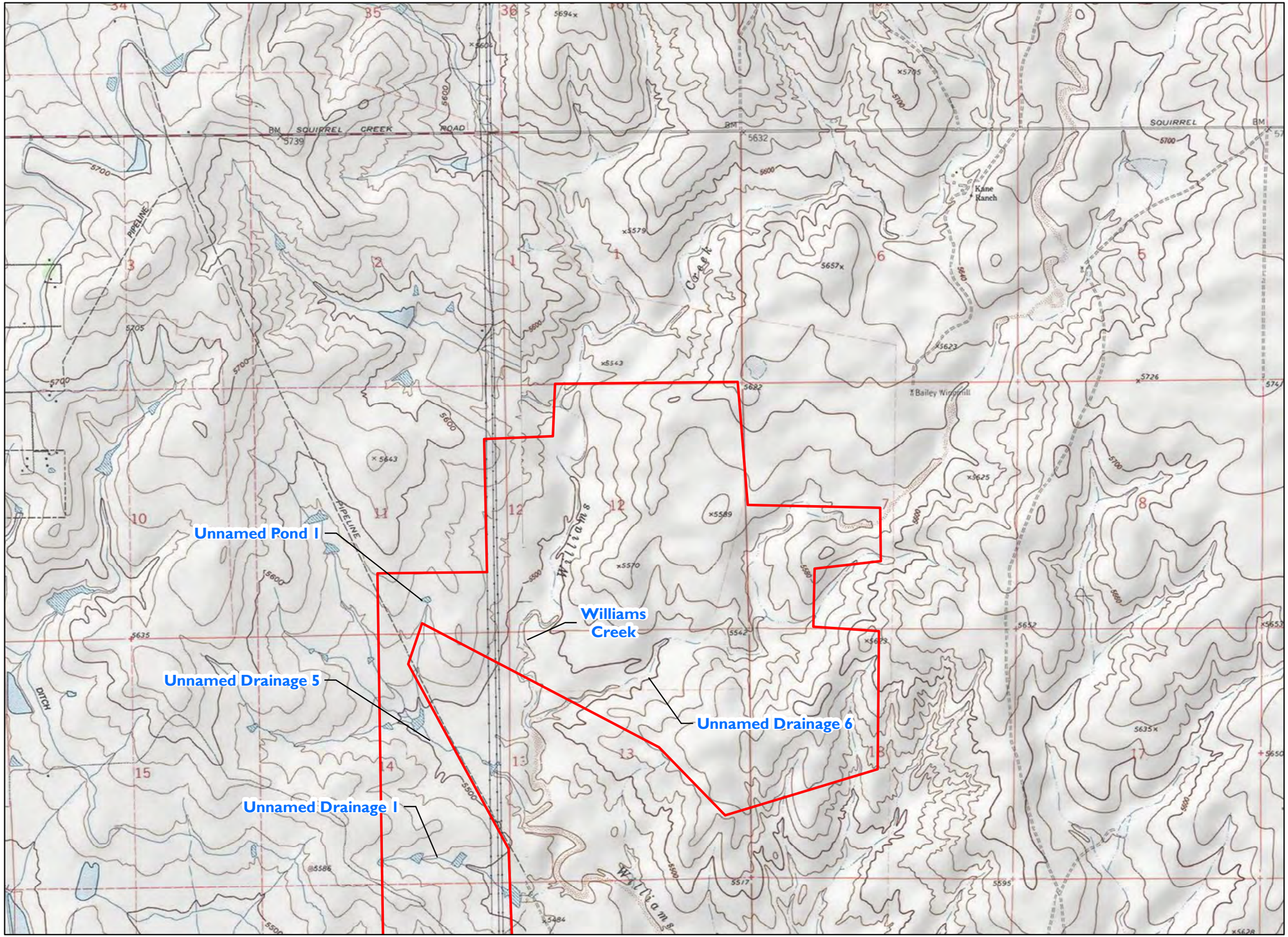
Photo 21. View of SP-07 in WL-13.

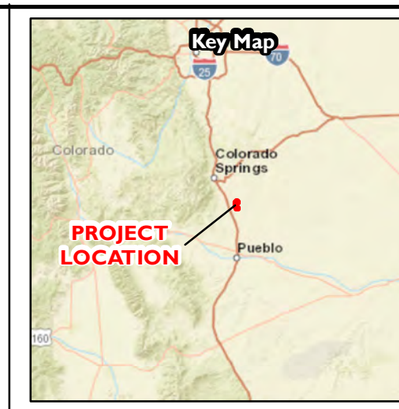
Photo 22. View of SP-09 in WL-16.

Photo 23. View of SP-11 in WL-18. Standing water within Unnamed Drainage 6 in the background. Photo taken facing north.

Photo 24. View of SP-21 in WL-12.

Appendix B Wetland Determination Data Forms





Legend

Project Area

USGS 7.5" Topographic Map
Fountain, Colorado 1961 (revised 1994)
Fountain NE, Colorado 1961
Fountain SE, Colorado 1961 (revised 1974)
Buttes, Colorado 1961 (revised 1994)

1 inch = 2,000 feet

0 1,000 2,000 Feet

Pinyon Environmental, Inc.

PROJECT LOCATION

Pike Solar Project
El Paso County, Colorado

Site Location: Multiple Sections, Township 16S, Ranges 64 and 65W, 6th Principal Meridian	Drawn By: MJS/JAF	Figure: 1a
Pinyon Project Number: 1/20-1215-02	Reviewed By: PMW	Date: 9/28/2020

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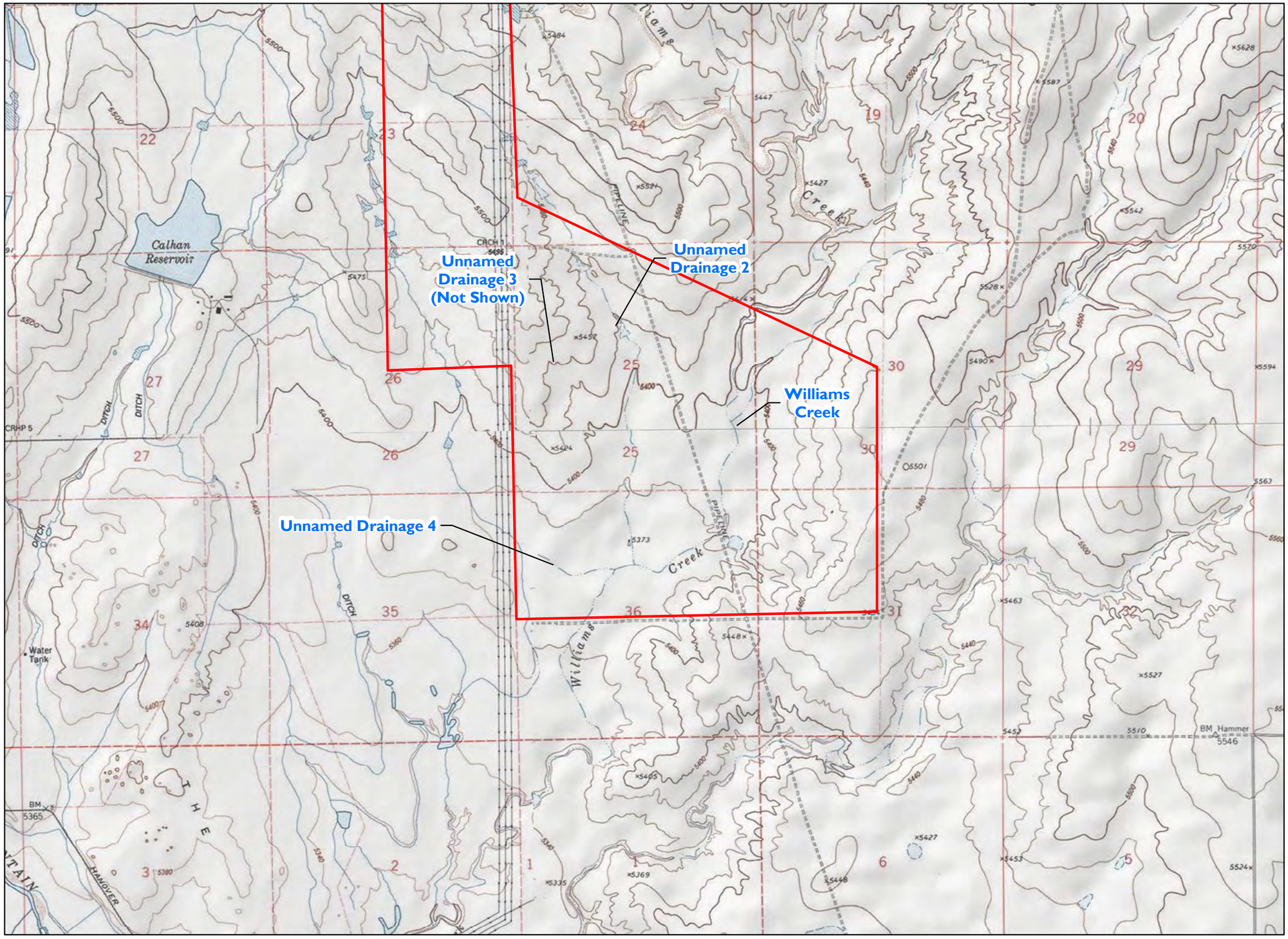

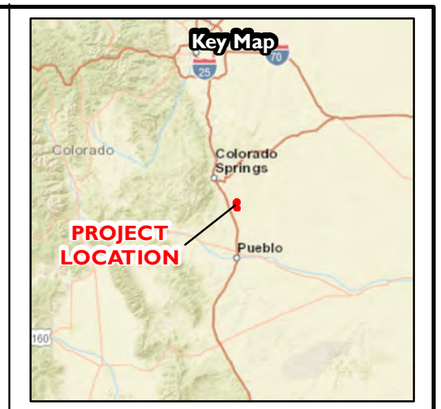

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Fountain NE, Colorado 1961
Fountain SE, Colorado 1961 (revised 1974)
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PROJECT LOCATION

Pike Solar Project
El Paso County, Colorado

Site Location: Multiple Sections, Township 16S, Ranges 64 and 65W, 6th Principal Meridian	Drawn By: MJS/JAF	Figure: 1b
Pinyon Project Number: 1/20-1215-02	Reviewed By: PMW	Date: 9/28/2020

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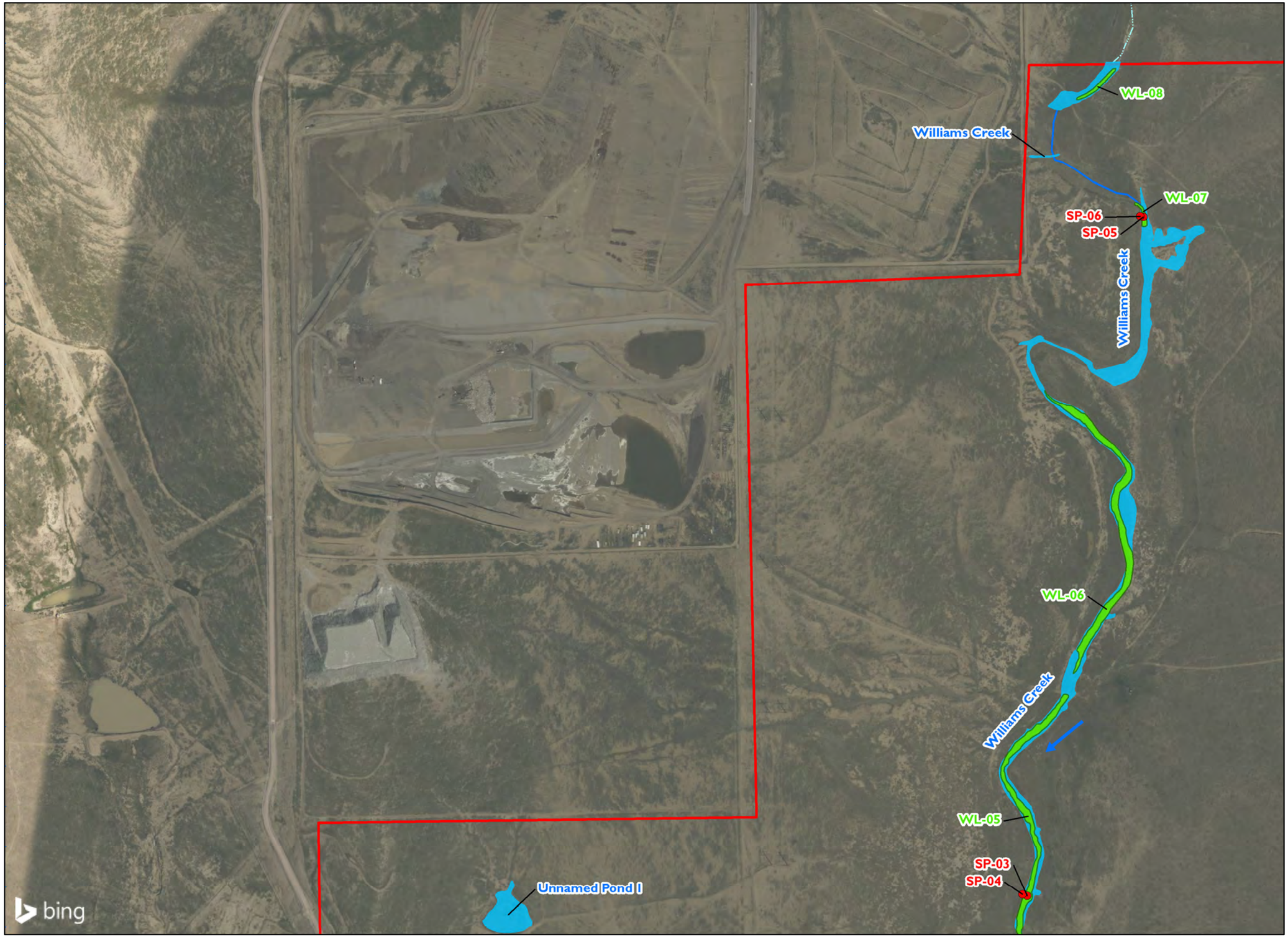

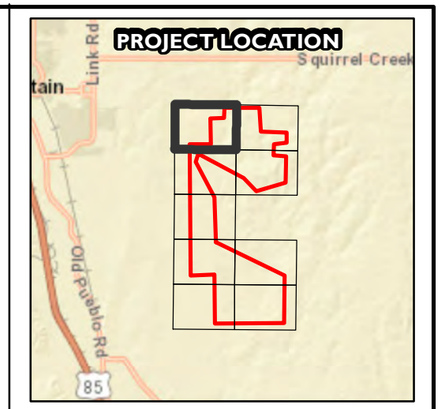

Legend

- Sampling Point
- Wetlands
- Non-Wetland Water (OHWM in Project Area)
- Intermittent/Ephemeral Stream (No OHWM in Project Area)
- Project Area
- Intermittent/Ephemeral Stream
- Flow Direction

1 inch = 500 feet

0 250 500 Feet

Pinyon Environmental, Inc.

NON-WETLAND WATERS AND WETLANDS

Pike Solar Project

El Paso County, Colorado

Site Location: Multiple Sections, Township 16S, Ranges 64 and 65W, 6th Principal Meridian	Drawn By: MJS/JAF	Figure: 2a
Pinyon Project Number: 1/20-1215-02	Reviewed By: PMW	Date: 10/2/2020

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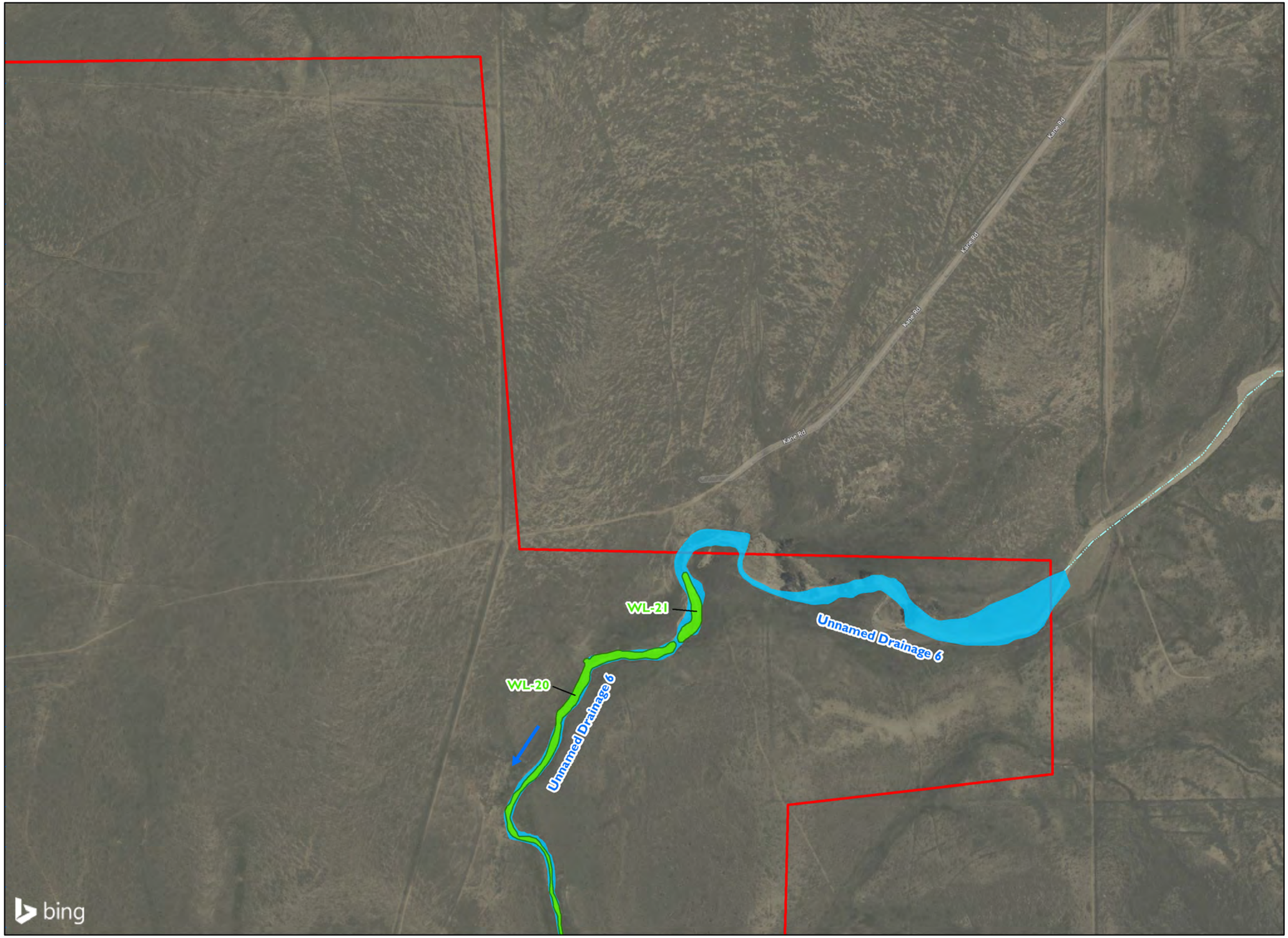

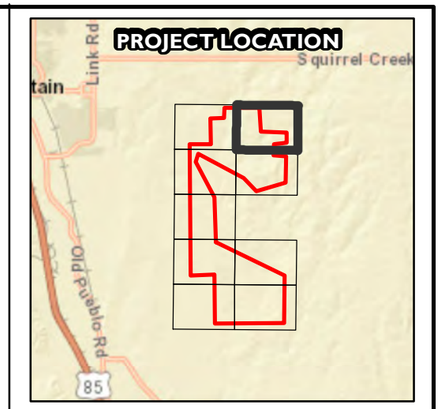

Legend

- Sampling Point
- Wetlands
- Non-Wetland Water (OHWM in Project Area)
- Intermittent/Ephemeral Stream (No OHWM in Project Area)
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- Intermittent/Ephemeral Stream
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Pinyon Environmental, Inc.

NON-WETLAND WATERS AND WETLANDS

Pike Solar Project
El Paso County, Colorado

Site Location: Multiple Sections, Township 16S, Ranges 64 and 65W, 6th Principal Meridian	Drawn By: MJS/JAF · Figure: 2b
Pinyon Project Number: 1/20-1215-02	Reviewed By: PMW · Date: 10/2/2020

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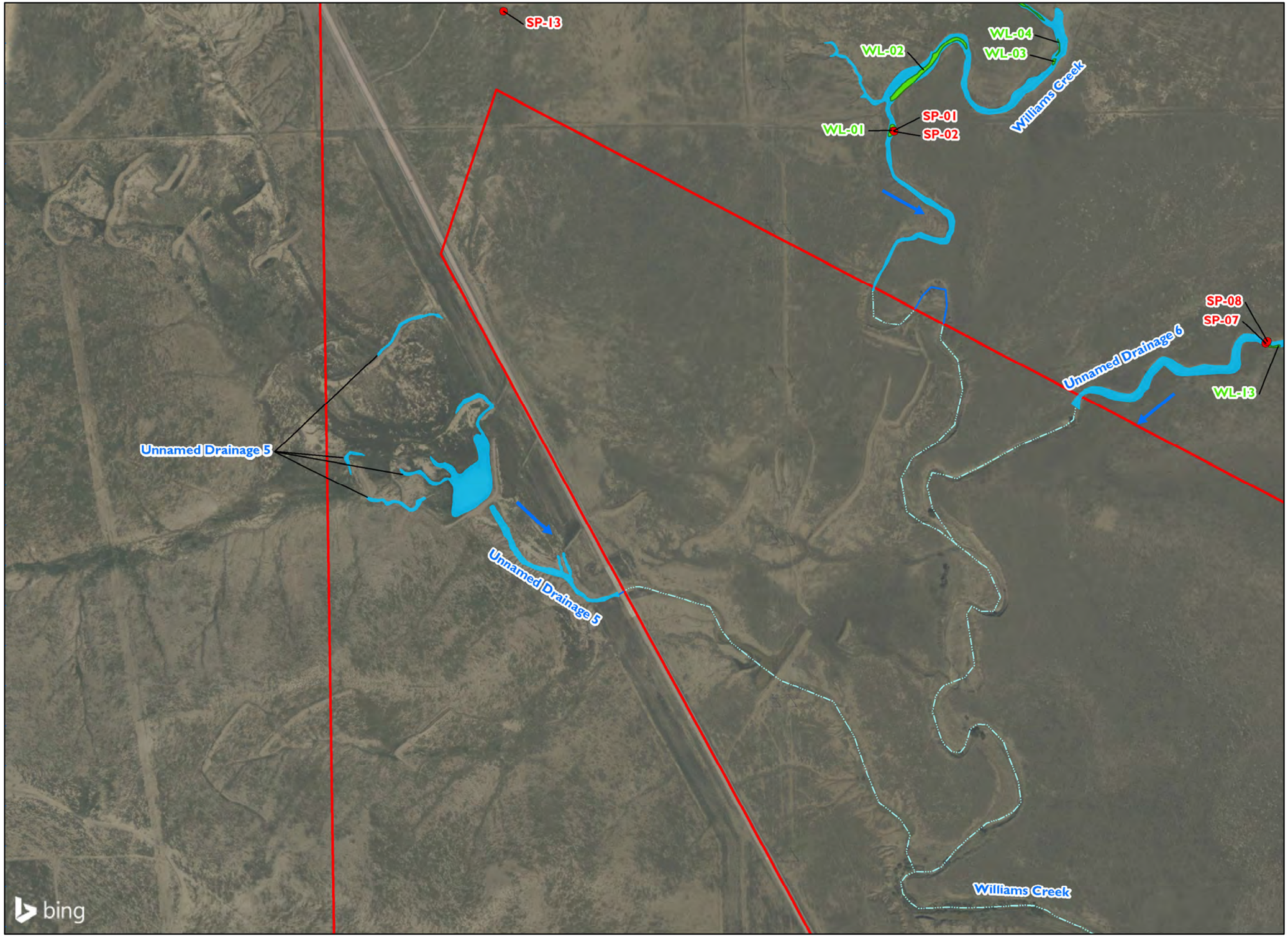

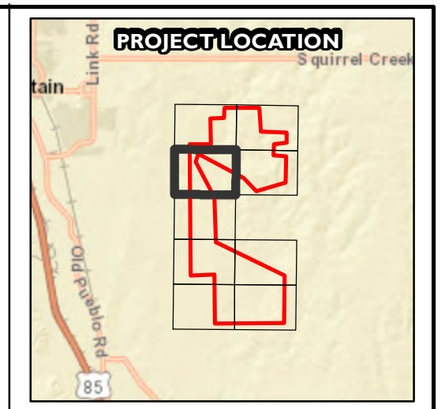

Legend

- Sampling Point
- Wetlands
- Non-Wetland Water (OHWM in Project Area)
- Intermittent/Ephemeral Stream (No OHWM in Project Area)
- Project Area
- Intermittent/Ephemeral Stream
- Flow Direction

1 inch = 500 feet

0 250 500 Feet

Pinyon Environmental, Inc.

NON-WETLAND WATERS AND WETLANDS

Pike Solar Project

El Paso County, Colorado

Site Location: Multiple Sections, Township 16S, Ranges 64 and 65W, 6th Principal Meridian	Drawn By: MJS/JAF	Figure: 2c
Pinyon Project Number: 1/20-1215-02	Reviewed By: PMW	Date: 10/2/2020

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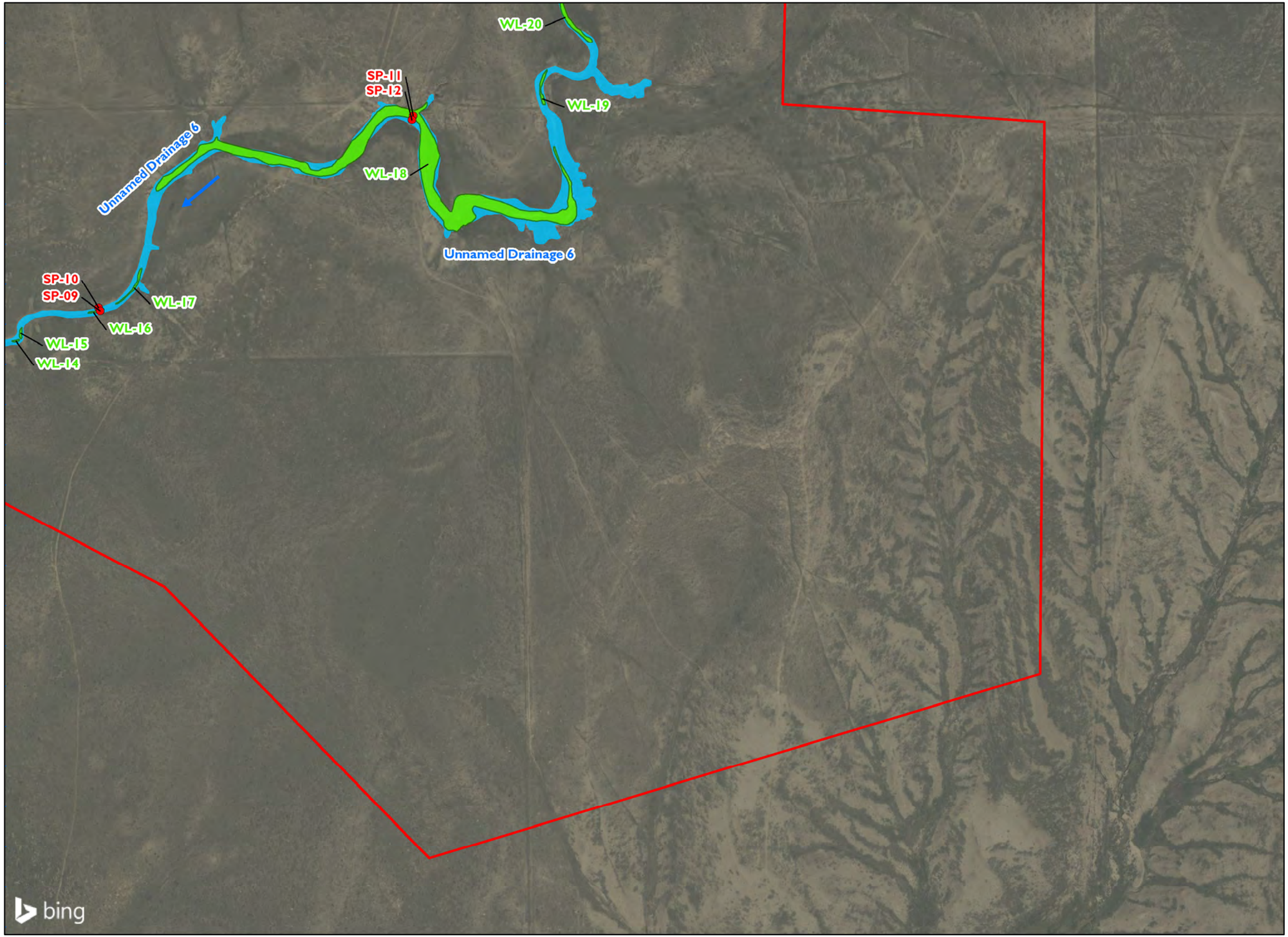

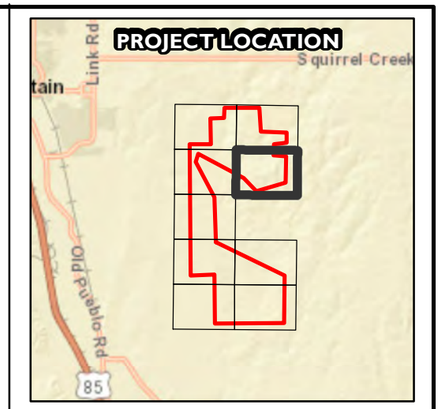

Legend

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- Wetlands
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- Intermittent/Ephemeral Stream (No OHWM in Project Area)
- Project Area
- Intermittent/Ephemeral Stream
- Flow Direction

1 inch = 500 feet

0 250 500 Feet

Pinyon Environmental, Inc.

NON-WETLAND WATERS AND WETLANDS

Pike Solar Project

El Paso County, Colorado

Site Location: Multiple Sections, Township 16S, Ranges 64 and 65W, 6th Principal Meridian	Drawn By: MJS/JAF	Figure: 2d
Pinyon Project Number: 1/20-1215-02	Reviewed By: PMW	Date: 10/2/2020

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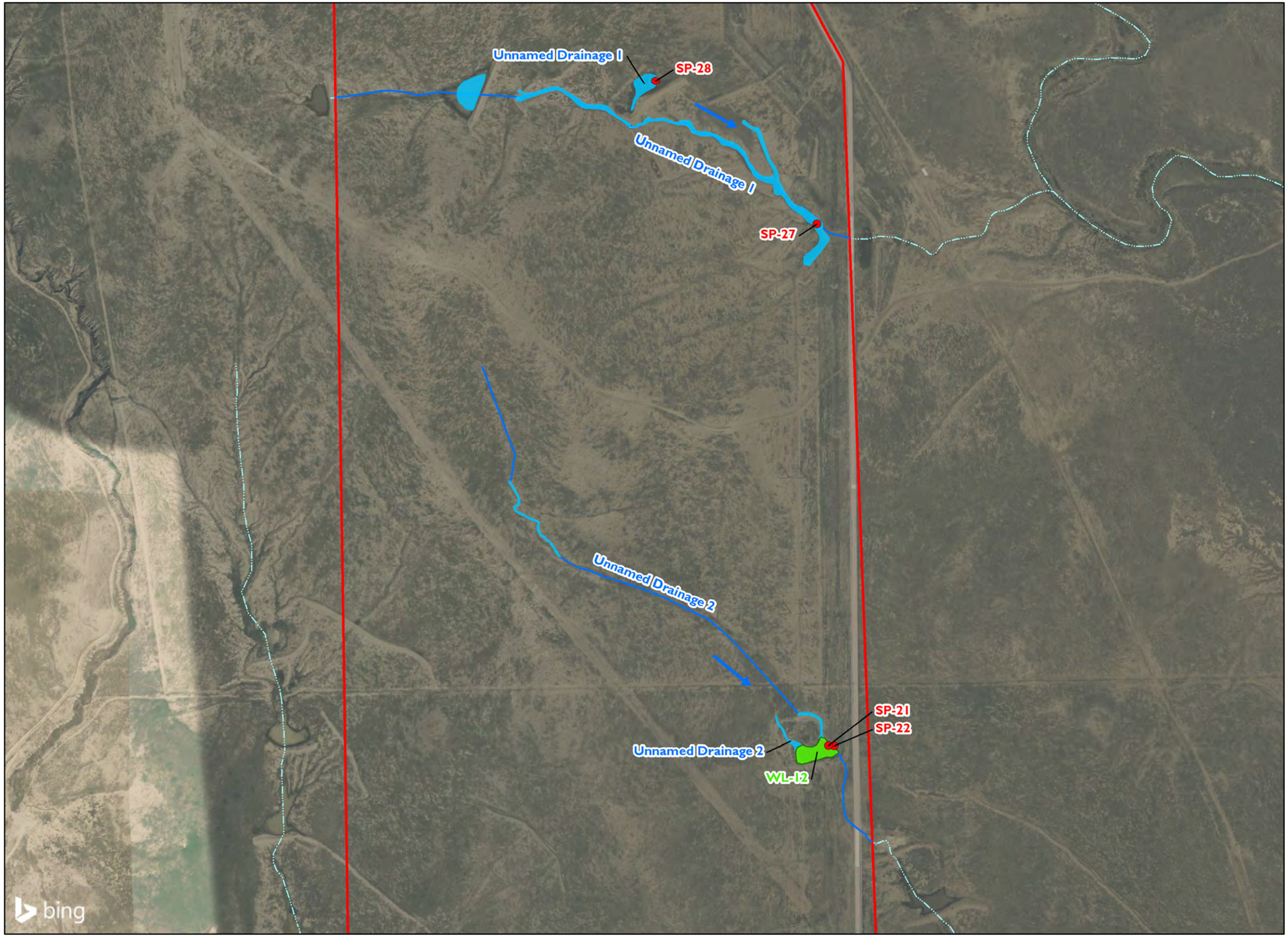

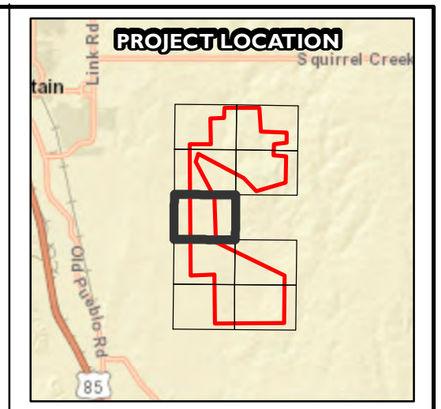

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- Project Area
- Intermittent/Ephemeral Stream
- Flow Direction

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0 250 500 Feet

Pinyon Environmental, Inc.

NON-WETLAND WATERS AND WETLANDS

Pike Solar Project
El Paso County, Colorado

Site Location: Multiple Sections, Township 16S, Ranges 64 and 65W, 6th Principal Meridian	Drawn By: MJS/JAF	Figure: 2e
Pinyon Project Number: 1/20-1215-02	Reviewed By: PMW	Date: 10/2/2020

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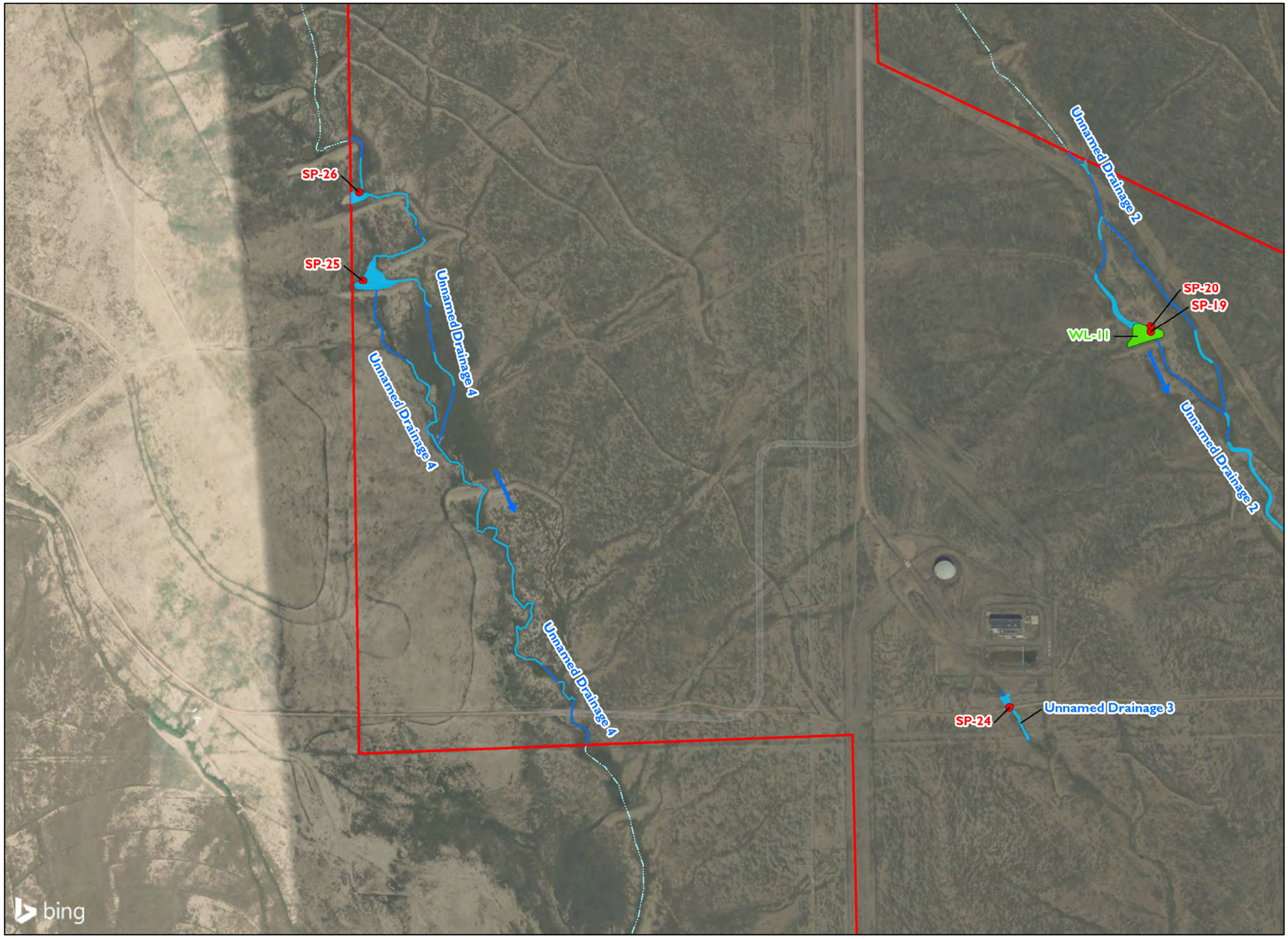

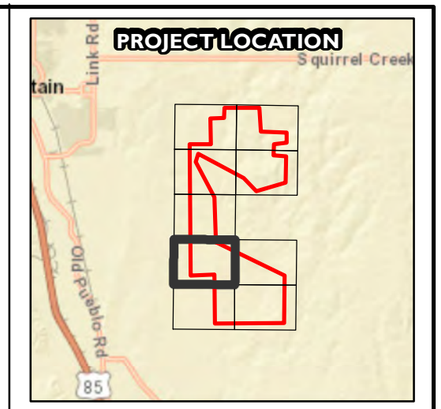

Legend

- Sampling Point
- Wetlands
- Non-Wetland Water (OHWM in Project Area)
- Intermittent/Ephemeral Stream (No OHWM in Project Area)
- Project Area
- Intermittent/Ephemeral Stream
- Flow Direction

1 inch = 500 feet

0 250 500 Feet

Pinyon Environmental, Inc.

NON-WETLAND WATERS AND WETLANDS

Pike Solar Project

El Paso County, Colorado

Site Location: Multiple Sections, Township 16S, Ranges 64 and 65W, 6th Principal Meridian	Drawn By: MJS/JAF	Figure: 2f
Pinyon Project Number: 1/20-1215-02	Reviewed By: PMW	Date: 10/2/2020

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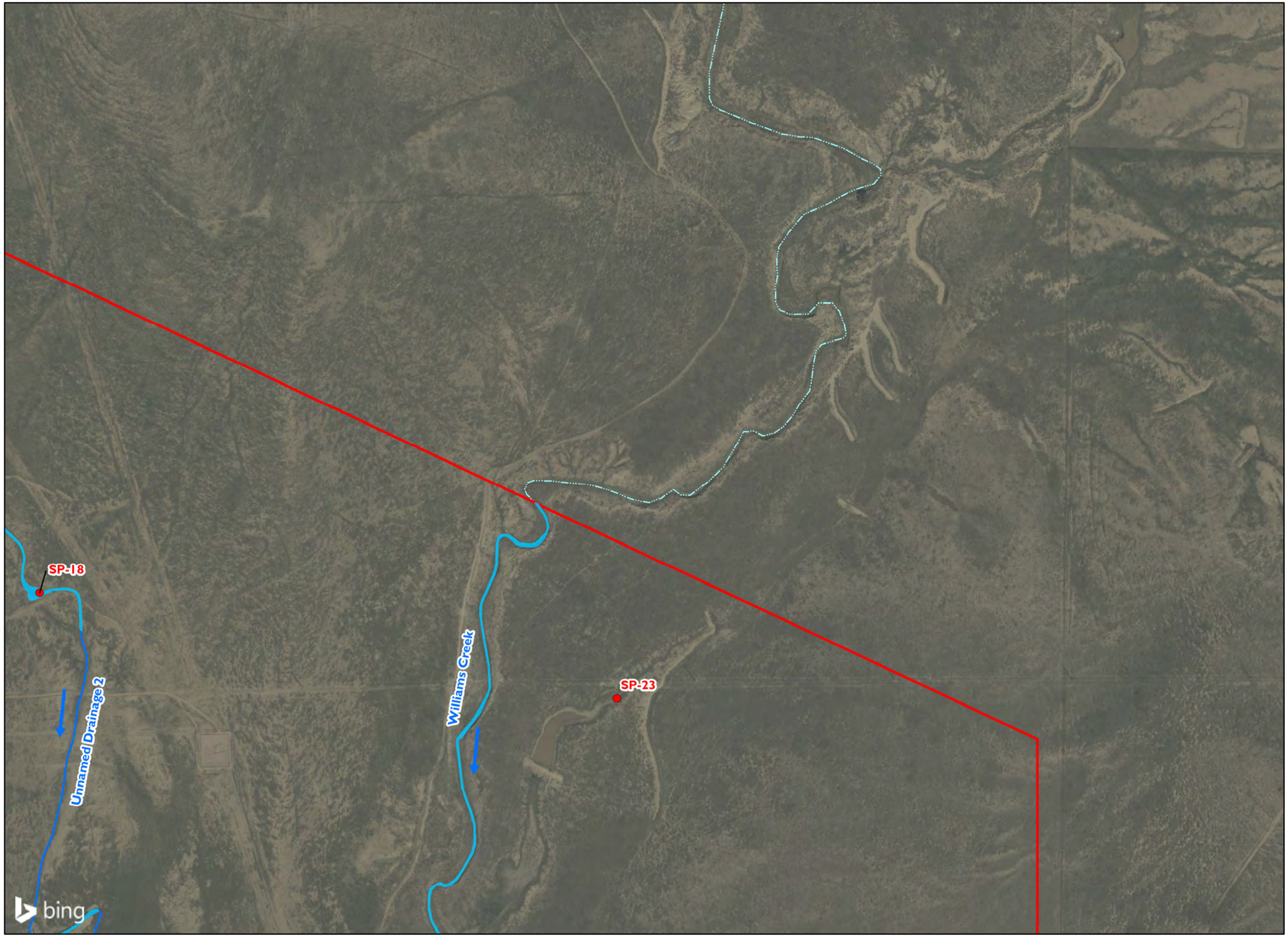

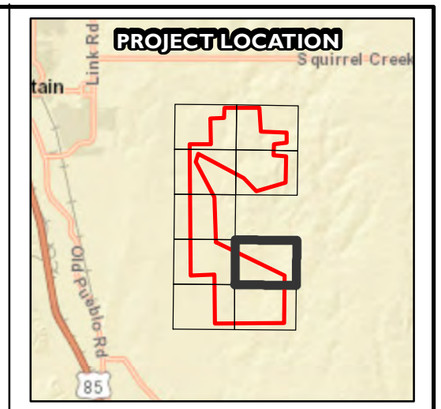

Legend

- Sampling Point
- Wetlands
- Non-Wetland Water (OHWM in Project Area)
- Intermittent/Ephemeral Stream (No OHWM in Project Area)
- Project Area
- Intermittent/Ephemeral Stream
- Flow Direction

1 inch = 500 feet

0 250 500 Feet

Pinyon Environmental, Inc.

NON-WETLAND WATERS AND WETLANDS

Pike Solar Project
El Paso County, Colorado

Site Location: Multiple Sections, Township 16S, Ranges 64 and 65W, 6th Principal Meridian	Drawn By: MJS/JAF	Figure: 2g
Pinyon Project Number: 1/20-1215-02	Reviewed By: PMW	Date: 10/2/2020

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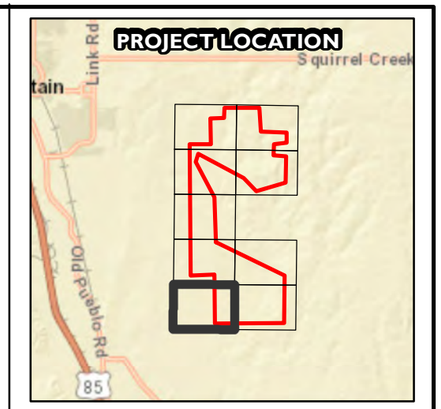

Legend

- Sampling Point
- Wetlands
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Pinyon Environmental, Inc.

NON-WETLAND WATERS AND WETLANDS

Pike Solar Project
El Paso County, Colorado

Site Location: Multiple Sections, Township 16S, Ranges 64 and 65W, 6th Principal Meridian	Drawn By: MJS/JAF	Figure: 2h
Pinyon Project Number: 1/20-1215-02	Reviewed By: PMW	Date: 10/2/2020

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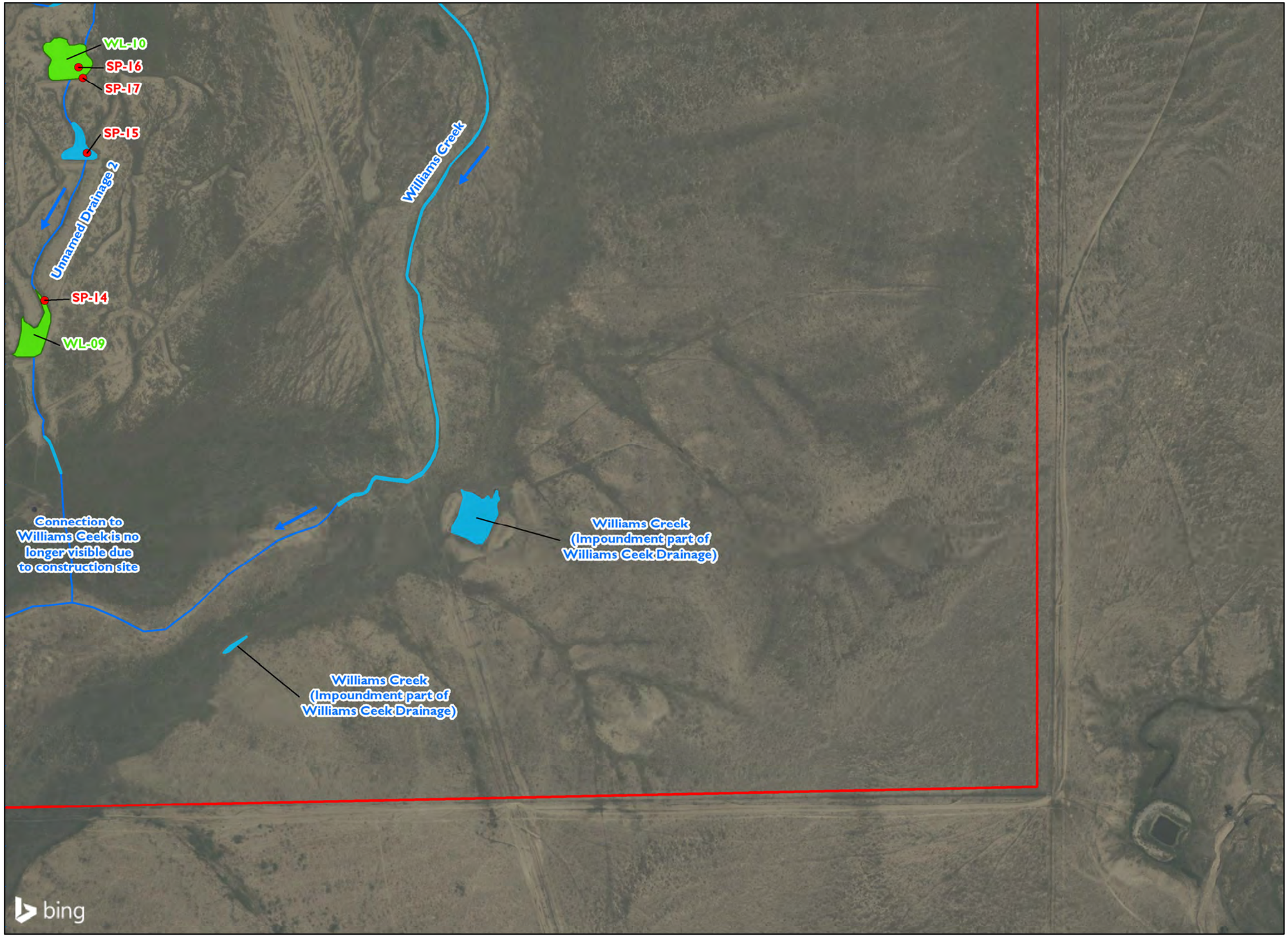

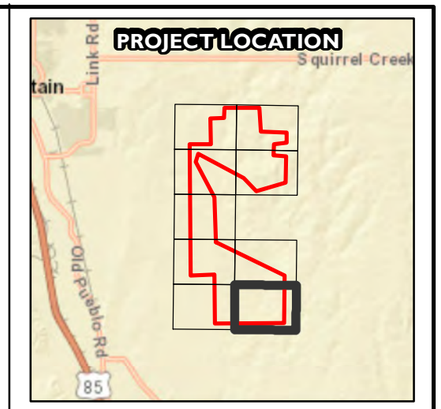

Legend

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Pinyon Environmental, Inc.

NON-WETLAND WATERS AND WETLANDS

Pike Solar Project

El Paso County, Colorado

Site Location: Multiple Sections, Township 16S, Ranges 64 and 65W, 6th Principal Meridian	Drawn By: MJS/JAF	Figure: 2i
Pinyon Project Number: 1/20-1215-02	Reviewed By: PMW	Date: 10/2/2020

Document Path: Z:\PROJECTS\2020\120121502 Juwi Pike Solar Project\Figures\ArcMap\MXDs\BIO02_WUS_PikeSolar.mxd

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso County Sampling Date: 9/7/2020

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-01

Investigator(s): PJW & TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 13, Township 16 South, Range 65 West

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): Western Great Plains (LRR G) Lat: 38.664755° Long: -104.625672° Datum: WGS84

Soil Map Unit Name: Ustic Torrifluvents, loamy NWI classification: R4SBC

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

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

Are Vegetation N, Soil N, or Hydrology N 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 _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

SP-01 was excavated within the ordinary high water mark of Williams Creek in an area dominated by Schoenoplectus pungens. SP-01 pairs with WL-01 and upland pit SP-02.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. Tamarix chinensis	3	N	FACW
2.			
3.			
4.			
5.			
	3 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Schoenoplectus pungens	60	Y	OBL
2. Bouteloua dactyloides	5	N	FACU
3. Chenopodium album	2	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	67 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 33	70 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
All dominants are FACW and/or OBL.

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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

Remarks:

D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

Vegetation passes the Rapid Test. Hydrophytic vegetation is present.

SOIL

Sampling Point: SP-01

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 5/2	100					clay loam	no redox noted
1 - 14	10YR 4/2	94	10YR 3/6	6	C	M	clay laom	prominent redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ^ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: hard clay pan

Depth (inches): 14

Hydric Soil Present? Yes X No ___

Remarks:

Hydric soil indicator Depleted Matrix (F3) noted. Hydric soil is present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

A Salt Crust (B11) was noted adjacent to the sampling pit. Sampling pit was excavated within the ordinary high water mark of Williams Creek; therefore, Geomorphic Position (D2) was present. Vegetation in the area passed the FAC-Neutral Test (D5). Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso County Sampling Date: 9/7/2020

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-02

Investigator(s): PJW & TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 13, Township 16 South, Range 65 West

Landform (hillslope, terrace, etc.): creek bank Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): Western Great Plains (LRR G) Lat: 38.664742° Long: -104.625659° Datum: WGS84

Soil Map Unit Name: Ustic Torrifluvents, loamy NWI classification: none

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

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

Are Vegetation N, Soil N, or Hydrology N 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:
SP-02 was excavated in the bank of Williams Creek in an area dominated by upland vegetation. SP-02 pairs with wetland pit SP-01.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. Tamarix chinensis	3	N	FACW
2.			
3.			
4.			
5.			
	3 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Bouteloua dactyloides	50	Y	FACU
2. Glycyrrhiza lepidota	10	N	FACU
3. Chenopodium album	8	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	68 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 32	71 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	3	x 2 =	6
FAC species	0	x 3 =	0
FACU species	68	x 4 =	272
UPL species	0	x 5 =	0
Column Totals:	71 (A)		278 (B)

Prevalence Index = B/A = 3.915492957746479

Hydrophytic Vegetation Indicators:

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

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

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

Remarks:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.
Vegetation does not pass the Rapid Test, Dominance Test, or Prevalence Index Test. Hydrophytic vegetation is not present.

SOIL

Sampling Point: SP-02

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 14	10YR 4/4	100					clay loam	no redox noted

[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 F**)
___ 1 cm Muck (A9) (**LRR F, G, H**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR I, J**)
___ Coast Prairie Redox (A16) (**LRR F, G, H**)
___ Dark Surface (S7) (**LRR G**)
___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: 14

Depth (inches): hard clay pan

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators noted. Hydric soil is not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

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

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

Remarks:

No hydrology indicators noted. Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso County Sampling Date: 9/7/2020

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-03

Investigator(s): PJW & TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 12, Township 16 South, Range 65 West

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): Western Great Plains (LRR G) Lat: 38.667170° Long: -104.623155° Datum: WGS84

Soil Map Unit Name: Ustic Torrifluvents, loamy 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 N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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 ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

SP-03 was excavated within the ordinary high water mark of Williams Creek in an area dominated by Typha angustifolia and Schoenoplectus pungens. SP-03 was excavated in WL-05 and pairs with upland pit SP-04.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Typha angustifolia	40	Y	OBL
2. Schoenoplectus pungens	30	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 30	70 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
All dominants are FACW and/or OBL.

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

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

Remarks:

D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

Vegetation passes the Rapid Test. Hydrophytic vegetation is present.

SOIL

Sampling Point: SP-03

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	50					silty clay	no redox noted
0 - 4	10YR 4/2	40	10YR 3/6	10	C	M	silty clay loam	prominent redox noted
4 - 18	20YR 2/1	100					silty clay	no redox noted

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

Hydric soil indicator Hydrogen Sulfide (A4) noted. Hydric soil is present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 10

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Saturation (A3) was noted at 10 inches depth. Sampling pit was excavated within the ordinary high water mark of Williams Creek; therefore, Geomorphic Position (D2) was present. Vegetation in the area passed the FAC-Neutral Test (D5). Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso County Sampling Date: 9/7/2020

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-04

Investigator(s): PJW & TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 12, Township 16 South, Range 65 West

Landform (hillslope, terrace, etc.): bank of creek Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): Western Great Plains (LRR G) Lat: 38.667193° Long: -104.623244° Datum: WGS84

Soil Map Unit Name: Ustic Torrifluvents, loamy NWI classification: none

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

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

Are Vegetation N, Soil N, or Hydrology N 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:

SP-04 was excavated in the bank of Williams Creek in a sparsely vegetated area dominated by Bouteloua dactyloides. SP-04 pairs with wetland pit SP-03.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Bouteloua dactyloides	30	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 70	30 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

All dominants are FACW and/or OBL.

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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

Remarks:

D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

Vegetation does not pass the Rapid Test, Dominance Test, or Prevalence Index Test. Hydrophytic vegetation is not present.

SOIL

Sampling Point: SP-04

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 5/3	99	10YR 4/6	1	C	M	clay	distinct redox noted

[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 F**)
___ 1 cm Muck (A9) (**LRR F, G, H**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR I, J**)
___ Coast Prairie Redox (A16) (**LRR F, G, H**)
___ Dark Surface (S7) (**LRR G**)
___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if present):
Type: hard clay pan
Depth (inches): 10

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
No hydric soil indicators noted. Hydric soil is not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:
No hydrology indicators noted. Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso County Sampling Date: 9/7/2020

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-05

Investigator(s): PJW & TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 12, Township 16 South, Range 65 West

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): Western Great Plains (LRR G) Lat: 38.677053° Long: -104.620874° Datum: WGS84

Soil Map Unit Name: Ustic Torrifluvents, loamy NWI classification: R4SBA

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

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

Are Vegetation N, Soil N, or Hydrology N 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 ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

SP-05 was excavated within the ordinary high water mark of Williams Creek in a sparsely vegetated area dominated by Tamarix chinensis. SP-05 was excavated in WL-07 and pairs with upland pit SP-06.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. Tamarix chinensis	8	Y	FACW
2.			
3.			
4.			
5.			
	8 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Bouteloua dactyloides	1	N	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	1 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 99	9 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
All dominants are FACW and/or OBL.

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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

Remarks:

D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

Vegetation passes the Rapid Test. Hydrophytic vegetation is present.

SOIL

Sampling Point: SP-05

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 16	2.5YR 4/2	95	2.5YR 4/4	5	C	M	clay	distinct redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ^ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: none

Depth (inches): n/a

Hydric Soil Present? Yes X No ___

Remarks:

Hydric soil indicator Depleted Matrix (F3) noted. Hydric soil is present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Sparsely Vegetated Concave Surface (B8) noted. Sampling pit was excavated with the ordinary high water mark of Williams Creek; therefore, Geomorphic Position (D2) is present. Vegetation passes the FAC-Neutral Test (D5). Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso County Sampling Date: 9/7/2020

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-06

Investigator(s): PJW & TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 12, Township 16 South, Range 65 West

Landform (hillslope, terrace, etc.): bank of creek Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): Western Great Plains (LRR G) Lat: 38.677061° Long: -104.620933° Datum: WGS84

Soil Map Unit Name: Ustic Torrifluvents, loamy NWI classification: none

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

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

Are Vegetation N, Soil N, or Hydrology N 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:

SP-06 was excavated in the bank of Williams Creek in a sparsely vegetated area dominated by Bouteloua dactyloides. SP-06 pairs with wetland pit SP-05.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. Tamarix chinensis	6	Y	FACW
2.			
3.			
4.			
5.			
	6 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Bouteloua dactyloides	10	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 90	16 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	6	x 2 =	12
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	16 (A)		52 (B)

Prevalence Index = B/A = 3.25

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

All dominants are FACW and/or OBL.

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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

Remarks:

D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

Vegetation does not pass Rapid Test, Dominance Test, or Prevalence Index Test. Hydrophytic vegetation is not present.

SOIL

Sampling Point: SP-06

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 5/2	100					clay	no redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: hard clay pan

Depth (inches): 8

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators noted. Hydric soil is not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

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

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

Remarks:

No hydrology indicators noted. Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso County Sampling Date: 9/10/2020

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-07

Investigator(s): TLM & CK - Pinyon Environmental, Inc. Section, Township, Range: Section 13, Township 16 South, Range 65 West

Landform (hillslope, terrace, etc.): Streambed Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): Western Great Plains (LRR G) Lat: 38.661605° Long: -104.618790° Datum: WGS84

Soil Map Unit Name: Ascalon sandy loam, 1 to 3 percent slopes NWI classification: R4SBC

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

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

Are Vegetation N, Soil N, or Hydrology N 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 X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
Vegetation does not pass as hydrophytic; therefore, this is a problematic wetland. Vegetation in stream channel is noticeably different from upland areas around it. Soil and hydrology indicators were noted

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. Tamarix parviflora	5	Y	FACW
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Astragalus canadensis	65	Y	FAC
2. Medicago sativa	10	N	UPL
3. Hordeum jubatum	10	N	FACW
4. Equisetum arvense	5	N	FAC
5. Helianthus annuus	5	N	FACU
6. Polygonum pensylvanicum	5	N	FACW
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 0	105 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	70	x 3 =	210
FACU species	5	x 4 =	20
UPL species	10	x 5 =	50
Column Totals:	105 (A)		320 (B)

Prevalence Index = B/A = 3.0476190476190474

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
All dominants are FACW and/or OBL.
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
X 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:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.
Vegetation does not pass as hydrophytic. However, due to it's geomorphic position, possible grazing and climactic variability as well as hydric soil and hydrology indicators present, this is considered a problematic hydrophitic vegetation area.

SOIL

Sampling Point: SP-07

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 5/2	80	10YR 6/8	20	C	M	sandy clay	prominent redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:
Depleted matrix (F3) and Sandy Redox (S5) noted in soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 3

Wetland Hydrology Present? Yes X No ___

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

Remarks:
SP-07 was excavated in a stream bed, so Geomorphic Position (D2) passes. Saturation (A3) was noted at 3 inches below ground surface. Hydrogen Sulfide Odor (C1) was noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso County Sampling Date: 9/10/2020

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-08

Investigator(s): TLM & CK - Pinyon Environmental, Inc. Section, Township, Range: Section 13, Township 16 South, Range 65 West

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): Western Great Plains (LRR G) Lat: 38.661631° Long: -104.618761° Datum: WGS84

Soil Map Unit Name: Ascalon sandy loam, 1 to 3 percent slopes NWI classification: R4SBC

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

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

Are Vegetation N, Soil N, or Hydrology N 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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
Vegetation passes as hydrophytic; Soil and hydrology indicators were not noted.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. Tamarix parviflora	5	Y	FACW
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Panicum virgatum	25	Y	FACW
2. Equisetum arvense	15	Y	FAC
3. Bassia scoparia	15	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 45	60 = Total Veg Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	15	x 3 =	45
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	60 (A)		165 (B)

Prevalence Index = B/A = 2.75

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50% (All dominants are FACW and/or OBL.)

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

Vegetation passes as hydrophytic; however, vegetation is in a discretely upland area.

SOIL

Sampling Point: SP-08

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 4/2	100					Sandy loa	

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:
No hydric soils indicators noted.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

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

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

Remarks:
No hydrology indicators noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso County Sampling Date: 9/10/2020

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-09

Investigator(s): TLM & CK - Pinyon Environmental, Inc. Section, Township, Range: Section 11, Township 16 South, Range 65 West

Landform (hillslope, terrace, etc.): Streambed Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): Western Great Plains (LRR G) Lat: 38.662065° Long: -104.616663° Datum: WGS84

Soil Map Unit Name: Fort loam, 1 to 5 percent slopes, cool NWI classification: R4SBC

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

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

Are Vegetation N, Soil N, or Hydrology N 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 ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Hydrophytic vegetation, hydric soil, and hydrology indicators noted at SP-09.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. Tamarix parviflora	20	Y	FACW
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Schoenoplectus pungens	60	Y	OBL
2. Astragalus canadensis	5	N	FAC
3. Hordeum jubatum	5	N	FACW
4. Polygonum pensylvanicum	5	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 25	95 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

All dominants are FACW and/or OBL.

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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

Remarks:
Vegetation passes Rapid Test and Dominance Test; therefore, vegetation is hydrophytic.

D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

SOIL

Sampling Point: SP-09

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 5/4	100					Loamy sa	Two matrix colors starting at
1-20	Gley 1 4/10Y	65	7.5YR 5/6	5	C	M	Loamy sa	one inch below ground surface
1-20	Gley 1 2.5/N	35						

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- X Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:
Sandy Gleyed Matrix (S4) and Sandy Redox (S5) were noted.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 1

Wetland Hydrology Present? Yes X No ___

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

Remarks:
Saturation (A3) and Hydrogen Sulfide Odor (C2) were noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso County Sampling Date: 9/10/2020

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-10

Investigator(s): TLM & CK - Pinyon Environmental, Inc. Section, Township, Range: Section 11, Township 16 South, Range 65 West

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): Western Great Plains (LRR G) Lat: 38.662108° Long: -104.616687° Datum: WGS84

Soil Map Unit Name: Fort loam, 1 to 5 percent slopes, cool NWI classification: R4SBC

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

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

Are Vegetation N, Soil N, or Hydrology N 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:
No hydrophytic vegetation, hydric soils or hydrology indicators noted at SP-10.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. Tamarix parviflora	10	Y	FACW
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Sorghum halepense	20	Y	FACU
2. Panicum virgatum	20	Y	FACW
3. Tribulus terrestris	15	Y	UPL
4. Medicago sativa	15	Y	UPL
5.			
6.			
7.			
8.			
9.			
10.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 30	80 = Total Veg Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	30	x 2 = 60
FAC species	0	x 3 = 0
FACU species	20	x 4 = 80
UPL species	30	x 5 = 150
Column Totals:	80 (A)	290 (B)

Prevalence Index = B/A = 3.625

Hydrophytic Vegetation Indicators:

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

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

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

Remarks:
Vegetation is not hydrophytic.

D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

SOIL

Sampling Point: SP-10

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 %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/4	100					sandy loa	

[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 F**)
___ 1 cm Muck (A9) (**LRR F, G, H**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR I, J**)
___ Coast Prairie Redox (A16) (**LRR F, G, H**)
___ Dark Surface (S7) (**LRR G**)
___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:
No hydric soils indicators noted.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

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

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

Remarks:
No hydrology indicators noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso County Sampling Date: 9/10/2020

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-11

Investigator(s): TLM & CK - Pinyon Environmental, Inc. Section, Township, Range: Section 13, Township 16 South, Range 65 West

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): Western Great Plains (LRR G) Lat: 38.664865° Long: -104.610805° Datum: WGS84

Soil Map Unit Name: Razor-Midway complex NWI classification: R4SBC

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

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

Are Vegetation N, Soil N, or Hydrology N 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 _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
SP-11 excavated near open waters. Hydrophytic vegetation, hydric soils, and hydrology indicators noted.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Schoenoplectus pungens	90	Y	OBL
2. Typha angustifolia	10	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 0	100 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

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

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

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

Remarks:
Vegetation passes Rapid Test for Hydrophytic Vegetation.
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

SOIL

Sampling Point: SP-11

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 5/3	90	5YR 4/6	10	C	M	Sandy cla	Two matrix colors starting at
3-20	Gley 1 4/10GY	60	10YR 5/6	20	C	M	Sandy cla	three inches below ground
3-20	Gley 2 3/5PB	20						surface.

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:
Hydrogen Sulfide (A4) and Sandy Gleyed Matrix (S4) indicators noted.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 8

Wetland Hydrology Present? Yes X No ___

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

Remarks:
Saturation (A3) noted starting at 8 inches below ground surface. Hydrogen Sulfide Odor (C1) was also noted. Geomorphic Position (D2) and FAC-Neutral Test (D5) also pass as hydrology indicators.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso County Sampling Date: 9/10/2020

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-12

Investigator(s): TLM & CK - Pinyon Environmental, Inc. Section, Township, Range: Section 13, Township 16 South, Range 65 West

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): Western Great Plains (LRR G) Lat: 38.664800° Long: -104.610828° Datum: WGS84

Soil Map Unit Name: Razor-Midway complex NWI classification: R4SBC

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

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

Are Vegetation N, Soil N, or Hydrology N 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:
No hydrophytic vegetation, hydric soils or hydrology indicators noted.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Ambrosia psilostachya	30	Y	FACU
2. Medicago sativa	30	Y	UPL
3. Hordeum jubatum	20	Y	FACW
4. Tribulus terrestris	10	N	UPL
5. Schoenoplectus pungens	10	N	OBL
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 0	100 = Total Veg Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	40	x 5 =	200
Column Totals:	100 (A)		370 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50% (All dominants are FACW and/or OBL.)

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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:
Vegetation does not pass as hydrophytic.

D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

SOIL

Sampling Point: SP-12

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 5/4	100					Loamy sa	

[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 F**)
___ 1 cm Muck (A9) (**LRR F, G, H**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR I, J**)
___ Coast Prairie Redox (A16) (**LRR F, G, H**)
___ Dark Surface (S7) (**LRR G**)
___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:
No hydric soil indicators noted.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

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

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

Remarks:
SP-12 was dug within the floodplain, so Geomorphic Position (D2) was noted; however, no other hydrology indicators were noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso County Sampling Date: 9/7/2020

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-13

Investigator(s): PJW & TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 11, Township 16 South, Range 65 West

Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): Western Great Plains (LRR G) Lat: 38.666551° Long: -104.632898° Datum: WGS84

Soil Map Unit Name: Razor-Midway complex NWI classification: R4SBC

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

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

Are Vegetation N, Soil N, or Hydrology N 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 _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
SP-13 was excavated in a swale abutting a berm in an area dominated by Juncus balticus.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Juncus balticus	30	Y	FACW
2. Bouteloua dactyloides	10	Y	FACU
3. Sporobolus airoides	8	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	48 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 52	48 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	8	x 3 =	24
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	48 (A)		124 (B)

Prevalence Index = B/A = 2.5833333333333335

Hydrophytic Vegetation Indicators:

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

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

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

Remarks:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.
Vegetation passes the Prevalence Index Test. Hydrophytic vegetation is present.

SOIL

Sampling Point: SP-13

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 14	10YR 5/4	95	10YR 5/8	5	C	M	clay	prominent redox noted

[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 F**)
___ 1 cm Muck (A9) (**LRR F, G, H**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR I, J**)
___ Coast Prairie Redox (A16) (**LRR F, G, H**)
___ Dark Surface (S7) (**LRR G**)
___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if present):
Type: hard clay pan
Depth (inches): 14

Hydric Soil Present? Yes ___ No X

Remarks:
No hydric soil indicators noted. Area is not a closed depression, and therefore does not pass for Redox Depressions. Hydric soil is not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ___ No X

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

Remarks:
SP-13 was excavated in a swale; therefore, passes for Geomorphic Position (D2). No other hydrology indicators were noted. Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/16/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-14

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 25, Township 16S, Range 65W

Landform (hillslope, terrace, etc.): depression/swale Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Western Great Plains Range and Irrigated Region Lat: 38.621457° Long: -104.618193° Datum: WGS84

Soil Map Unit Name: Heldt clay loam, 0 to 3 percent slopes NWI classification: R4SBC

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

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

Are Vegetation No, Soil No, or Hydrology No 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 _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
Sampling pit excavated in an artificially-formed depression (stock pond) abutting an impoundment.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Eleocharis palustris	100	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 50	100 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

All dominants are FACW and/or OBL.

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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

Remarks:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

Eleocharis palustris mostly dead. Passed Rapid test for hydrophytic vegetation, dominance test, and prevalence index; hydrophytic vegetation is present.

SOIL

Sampling Point: SP-14

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 4/3	100					silty clay	No redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ^ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- X Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: hard clay layer

Depth (inches): 10

Hydric Soil Present? Yes X No ___

Remarks:

Problematic indicator Seasonally Ponded Soils is present. Hydrophytic vegetation and wetland hydrology are present and the area is located in a depression likely to collect or concentrate water. Soils are classified as moderately to strongly alkaline.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Sampling pit excavated in a seasonally ponded depression. Wetland hydrology indicators noted. Wetland hydrology is present

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/19/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-15

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 25, Township 16S, Range 65W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR): Western Great Plains Range and Irrigated Region Lat: 38.623607° Long: -104.617382° Datum: WGS84

Soil Map Unit Name: Heldt clay loam, 0 to 3 percent slopes NWI classification: R4SBC

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

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

Are Vegetation No, Soil No, or Hydrology No 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 X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
Sampling pit excavated in an artificially-formed depression (stock pond) abutting an impoundment.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Helianthus annuus	50	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 50	50 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50% (All dominants are FACW and/or OBL.)

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

Does not pass the Rapid Test, Dominance Test, or Prevalence Index Test. Hydrophytic vegetation is not present.

SOIL

Sampling Point: SP-15

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 4/2	70	10YR 4/6	30	C	M	clay	Prominent redox noted
1 - 7	10YR 4/2	98	10YR 4/6	2	C	M	clay	Prominent redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: hard clay layer

Depth (inches): 7

Hydric Soil Present? Yes X No ___

Remarks:

Hydric soil indicator Depleted Matrix (F3) noted. Hydric soil is present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Inundation and saturation visible for most of the years in which images were clear enough to determine whether or not there was inundation and saturation (Google Earth Imagery).

Remarks:

Sampling pit excavated in a depression subject to ponding. Wetland hydrology indicators noted. Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/19/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-16

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 25, Township 16S, Range 65W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Western Great Plains and Irrigated Region Lat: 38.624864° Long: -104.617524° Datum: WGS84

Soil Map Unit Name: Heldt clay loam, 0 to 3 percent slopes NWI classification: none

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

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

Are Vegetation No, Soil No, or Hydrology No 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 _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
Sampling pit excavated in an artificially-formed depression (stock pond) abutting an impoundment.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Suckleya suckleyana	15	Y	FACW
2. Helianthus annuus	10	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	25 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 75	25 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	15	x 2 = 30
FAC species	0	x 3 = 0
FACU species	10	x 4 = 40
UPL species	0	x 5 = 0
Column Totals:	25 (A)	70 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

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

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

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

Remarks:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.
Passes Prevalence Index Test. Hydrophytic vegetation is present.

SOIL

Sampling Point: SP-16

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 4/2	85	10YR 5/8	15	C	M	clay	Prominent redox noted
5 - 12	10YR 4/2	98	10YR 5/8	2	C	M	clay	Prominent redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ^ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: n/a

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

Hydric soil indicators include Depleted Dark Surface (F7) and Redox Depressions (F8). Hydric soil is present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Inundation and saturation visible for most of the years in which images were clear enough to determine whether or not there was inundation and saturation (Google Earth Imagery).

Remarks:

Sampling pit excavated in a depression subject to ponding. Wetland hydrology indicators noted. Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/19/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-17

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 25, Township 16S, Range 65W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): Western Great Plains and Irrigated Region Lat: 38.624708° Long: -104.617443° Datum: WGS84

Soil Map Unit Name: Heldt clay loam, 0 to 3 percent slopes NWI classification: none

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

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

Are Vegetation No, Soil No, or Hydrology No 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:
Sampling pit excavated up-gradient of SP-16 in an area dominated by Pascopyrum smithii.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Pascopyrum smithii	95	Y	FACU
2. Helianthus annuus	5	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 0	100 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

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

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

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

Remarks:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.
Does not pass Rapid Test, Dominance Test, or Prevalence Index Test. Hydrophytic vegetation is not present.

SOIL

Sampling Point: SP-17

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 5/3	100					clay	No redox noted

[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 F**)
___ 1 cm Muck (A9) (**LRR F, G, H**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR I, J**)
___ Coast Prairie Redox (A16) (**LRR F, G, H**)
___ Dark Surface (S7) (**LRR G**)
___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if present):
Type: hard clay layer
Depth (inches): 6

Hydric Soil Present? Yes ___ No X

Remarks:
No hydric soil indicators noted. Hydric soil is not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ___ No X

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

Remarks:
Sampling pit excavated in a depression area subject to some inundation. Only one secondary hydrology indicator noted: Geomorphic Position (D2). Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/19/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-18

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 25, Township 16S, Range 65W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Western Great Plains and Irrigated Region Lat: 38.630787° Long: -104.618172° Datum: WGS84

Soil Map Unit Name: Razor-Midway complex NWI classification: PUSA

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

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

Are Vegetation No, Soil No, or Hydrology No 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 _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
Sampling pit excavated in a shallow swale (not a closed depression) dominated by Eleocharis palustris.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Eleocharis palustris	90	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 10	90 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50% (All dominants are FACW and/or OBL.)

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

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

Remarks:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

Passes Rapid Test, Dominance test, and Prevalence Index Test. Hydrophytic vegetation is present.

SOIL

Sampling Point: SP-18

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 4/2	95	10YR 6/8	5	C	M/PL	clay	Prominent redox noted
1 - 10	10YR 4/2	100					clay	No redox noted

[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 F**)
___ 1 cm Muck (A9) (**LRR F, G, H**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR I, J**)
___ Coast Prairie Redox (A16) (**LRR F, G, H**)
___ Dark Surface (S7) (**LRR G**)
___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: 10

Depth (inches): hard clay layer

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators noted. Hydric soil is not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

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

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

Remarks:

Sampling pit excavated in a swale subject to some inundation. Two secondary hydrology indicators noted. Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/19/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-19

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 25, Township 16S, Range 65W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Western Great Plains and Irrigated Region Lat: 38.634621° Long: -104.621261° Datum: WGS84

Soil Map Unit Name: Manzanola silty clay loam, saline, 0 to 2 percent slopes NWI classification: PUSC

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

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

Are Vegetation No, Soil Yes, or Hydrology No 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 _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

Sampling pit excavated in an artificially-formed depression (stock pond) abutting an impoundment; Suckleya suckleyana surrounded by mix of Helianthus annuus, Eleocharis palustris, and Chenopodium album (noted nearby but outside of the five foot radius of the sampling pit).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Helianthus annuus	50	Y	FACU
2. Suckleya suckleyana	50	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 0	100 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	100 (A)		300 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50% (All dominants are FACW and/or OBL.)

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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

Remarks:

D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

Passes Prevalence Index Test; hydrophytic vegetation present.

SOIL

Sampling Point: SP-19

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 5/3	93	10YR 5/4	7	C	M	clay	Faint redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- X Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: hard clay layer

Depth (inches): 8

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Problematic indicator Seasonally Ponded Soils is present. Hydrophytic vegetation and wetland hydrology are present and the area is located in a depression likely to collect or concentrate water. Soils are classified as slightly alkaline to strongly alkaline.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

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

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

Inundation and saturation visible for most of the years in which images were clear enough to determine whether or not there was inundation or saturation (Google Earth Imagery).

Remarks:

Sampling pit excavated in a depression subject to ponding. Wetland hydrology indicators noted. Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/19/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-20

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 25, Township 16S, Range 65W

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

Subregion (LRR): Western Great Plains and Irrigated Region Lat: 38.634702° Long: -104.621259° Datum: WGS94

Soil Map Unit Name: Manzanola silty clay loam, saline, 0 to 2 percent slopes NWI classification: PUSC

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

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

Are Vegetation No, Soil No, or Hydrology No 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 _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
Sampling pit excavated in a flat area up-gradient of SP-19.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Sporobolus airoides	45	Y	FAC
2. Oonopsis foliosa	10	N	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 45	55 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	0	x 4 =	0
UPL species	10	x 5 =	50
Column Totals:	55 (A)		185 (B)

Prevalence Index = B/A = 3.3636363636363638

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50% (All dominants are FACW and/or OBL.)

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

Passes Dominance Test for hydrophytic vegetation. Hydrophytic vegetation is present.

SOIL

Sampling Point: SP-20

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 4/3	100					clay	No redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: hard clay layer

Depth (inches): 12

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

No hydric soil indicators noted. Hydric soil is not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

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

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

Remarks:

No wetland hydrology indicators noted. Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/15/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-21

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 23, Township 16S, Range 65W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Western Great Plains and Irrigated Region Lat: 38.642212° Long: -104.627158 Datum: WGS84

Soil Map Unit Name: Manzanola silty clay loam, saline, 0 to 2 percent slopes NWI classification: R5UBH

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

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

Are Vegetation No, Soil No, or Hydrology No 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 ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

Sampling pit excavated in an artificially-formed depression (stock pond) abutting an impoundment. Vegetation dominated by Eleocharis palustris and Helianthus annuus.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Eleocharis palustris	50	Y	OBL
2. Helianthus annuus	50	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 0	100 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	100 (A)		250 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

All dominants are FACW and/or OBL.

___ 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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

Remarks:

D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

Passes Prevalence Index Test; hydrophytic vegetation is present.

SOIL

Sampling Point: SP-21

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 5/3	93	7.5 YR 5/8	7	C	M	clay	Prominent redox noted
8 - 16	10YR 5/3	100					clay	No redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: n/a

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

Passes for Redox Depressions (F8). Hydric soil is present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Inundation and saturation visible for most of the years in which images were clear enough to determine whether or not there was inundation or saturation (Google Earth Imagery).

Remarks:

Sampling pit excavated in a depression subject to ponding. Wetland hydrology indicators noted. Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/15/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-22

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 23, Township 16S, Range 65W

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

Subregion (LRR): Western Great Plains and Irrigated Region Lat: 38.649295° Long: -104.626445° Datum: WGS84

Soil Map Unit Name: Manzanola silty clay loam, saline, 0-2 percent slopes NWI classification: R5UBH

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

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

Are Vegetation No, Soil No, or Hydrology No 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:
Sampling pit excavated up-gradient of SP-22.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Pascopyrum smithii	80	Y	FACU
2. Sporobolus airoides	20	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 0	100 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	100 (A)		380 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

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

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

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

Remarks:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.
Does not pass Rapid Test, Dominance Test, or Prevalence Index Test. No hydrophytic vegetation present.

SOIL

Sampling Point: SP-22

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 4/3	100					clay	No redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: hard clay layer

Depth (inches): 6

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

No hydric soil indicators noted. Hydric soil is not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

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

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

Remarks:

No wetland hydrology indicators noted. Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/18/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-23

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 30, Township 16S, Range 65W

Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Western Great Plains Range and Irriga Lat: 38.629161° Long: -104.607466° Datum: WGS84

Soil Map Unit Name: Manzanola silty clay loam, saline, 0 to 2 percent NWI classification: R4SBC

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

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

Are Vegetation No, Soil No, or Hydrology No 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:
Sampling pit excavated in a shallow swale.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Helianthus annuus	70	Y	FACU
2. Conyza canadensis	10	N	UPL
3. Ratibida columnifera	10	N	UPL
4. Pascopyrum smithii	10	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum 0	100 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	80	x 4 =	320
UPL species	20	x 5 =	100
Column Totals:	100 (A)		420 (B)

Prevalence Index = B/A = 4.2

Hydrophytic Vegetation Indicators:

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

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

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

Remarks:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.
Does not pass Rapid Test, Dominance Test, or Prevalence Index Test. Hydrophytic vegetation is not present.

SOIL

Sampling Point: SP-23

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 5/2	99	10YR 6/6	1	C	M	clay	Prominent redox noted

[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 F**)
___ 1 cm Muck (A9) (**LRR F, G, H**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR I, J**)
___ Coast Prairie Redox (A16) (**LRR F, G, H**)
___ Dark Surface (S7) (**LRR G**)
___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if present):
Type: hard clay layer
Depth (inches): 5

Hydric Soil Present? Yes ___ No X

Remarks:
No hydric soil indicators noted. Hydric soil is not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ___ No X

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

Remarks:
Sampling pit excavated in a lower elevation area subject to inundation. Only one secondary indicator noted: Geomorphic Position (D2). Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/16/16

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-24

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 25, Township 16S, Range 65W

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): Western Great Plains Range and Irriga Lat: 38.629170° Long: -104.623952° Datum: WGS84

Soil Map Unit Name: Midway clay loam, 3 to 25 percent slopes NWI classification: none

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

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

Are Vegetation No, Soil No, or Hydrology No 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 _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
Sampling pit excavated in a small drainage fed by pipe under road with sparse vegetation.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Sporobolus airoides	40	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 60	40 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	40 (A)		120 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

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

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

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

Remarks:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.
Passes Dominance Test and Prevalence Index Test for hydrophytic vegetation. Hydrophytic vegetation is present.

SOIL

Sampling Point: SP-24

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 4/2	100					silty clay	No redox noted

[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 F**)
___ 1 cm Muck (A9) (**LRR F, G, H**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR I, J**)
___ Coast Prairie Redox (A16) (**LRR F, G, H**)
___ Dark Surface (S7) (**LRR G**)
___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if present):
Type: hard clay layer
Depth (inches): 12

Hydric Soil Present? Yes ___ No X

Remarks:
No hydric soil indicators noted. Hydric soil not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:
Sampling pit excavated in a depression subject to ponding. Wetland hydrology indicators noted. Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/19/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-25

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 26, Township 16S, Range 65W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Western Great Plains Range and Irriga Lat: 38.635480° Long: -104.635895° Datum: WGS84

Soil Map Unit Name: Heldt clay loam, 0 to 3 percent slopes NWI classification: PEM1Ah

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

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

Are Vegetation No, Soil No, or Hydrology No 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 X	No _____	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
Sampling pit excavated in an artificial depression (stock pond) abutting an impoundment.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Helianthus annuus	30	Y	FACU
2. Bassia scoparia	30	Y	FACU
3. Eleocharis palustris	30	Y	OBL
4. Convolvulus arvensis	10	N	UPL
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 0	100 = Total Veg Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	10	x 5 =	50
Column Totals:	100 (A)		320 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

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

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

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

Remarks:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.
Does not pass Rapid Test, Dominance Test, or Prevalence Index Test. Hydrophytic vegetation is not present. Eleocharis palustris mostly dead.

SOIL

Sampling Point: SP-25

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 4/2	80	10YR 5/6	20	C	M	clay	Prominent redox noted
1- 16	10YR 4/2	93	10YR 5/6	7	C	M	clay	Prominent redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ^ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: hard clay layer

Depth (inches): 16

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Hydric soil indicator Depleted Matrix (F3) noted. Hydric soil is present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

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

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

Remarks:

Sampling pit excavated in a depression area subject to ponding. Only one secondary indicator noted: Geomorphic Position (D2). Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/17/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-26

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 23, Township 16S, Range 65W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Western Great Plains Range and Irriga Lat: 38.636774° Long: -104.635949° Datum: WGS84

Soil Map Unit Name: Heldt clay loam, 0 to 3 percent slopes NWI classification: R4SBC

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

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

Are Vegetation No, Soil No, or Hydrology No 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 X	No _____	

Remarks:
Sampling pit excavated in an artificial depression (stock pond) abutting an impoundment.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. Tamarisk sp.	2	Y	FACW
2.			
3.			
4.			
5.			
	2	= Total Cover	
Herb Stratum (Plot size: 5 Ft radius)			
1. Chenopodium album	60	Y	FACU
2. Rumex crispus	15	N	FAC
3. Hordeum jubatum	10	N	FACW
4. Asclepias subverticillata	10	N	FACU
5. Helianthus annuus	5	N	FACU
6.			
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0	= Total Cover	
% Bare Ground in Herb Stratum 20	102	= Total Veg Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	12	x 2 =	24
FAC species	15	x 3 =	45
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals:	102 (A)		369 (B)

Prevalence Index = B/A = 3.6176470588235294

Hydrophytic Vegetation Indicators:

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

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

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

Remarks:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.
Does not pass Rapid Test, Dominance Test, or Prevalence Index Test. Hydrophytic vegetation is not present.

SOIL

Sampling Point: SP-26

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 4/2	100						No redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: hard clay layer

Depth (inches): 10

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators noted. Hydric soil is not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

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

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

Saturation somewhat visible on Aerial Imagery (Google Earth Imagery)

Remarks:

Sampling pit excavated in a depression subjected to ponding. Two secondary hydrology indicators were noted. Wetland hydrology is present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/19/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-27

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 23, Township 16S, Range 65W

Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Western Great Plains and Irrigated Region Lat: 38.649822° Long: -104.627277° Datum: WGS84

Soil Map Unit Name: Midway clay loam, 3 to 25 percent slopes NWI classification: PEM1Ch

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

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

Are Vegetation No, Soil No, or Hydrology No 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:
Sampling pit excavated in a shallow swale area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Helianthus annuus	80	Y	FACU
2. Eleocharis palustris	10	N	OBL
3. Pascopyrum smithii	10	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 0	100 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals:	100 (A)		370 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

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

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

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

Remarks:
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.
Does not pass Rapid Test, Dominance Test, or Prevalence Index Test. Hydrophytic vegetation is not present.

SOIL

Sampling Point: SP-27

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 5/3	100					clay	No redox noted

[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 F**)
___ 1 cm Muck (A9) (**LRR F, G, H**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR I, J**)
___ Coast Prairie Redox (A16) (**LRR F, G, H**)
___ Dark Surface (S7) (**LRR G**)
___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: n/a

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

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

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

Remarks:

Sampling pit excavated in a lower elevation area subject to some inundation. Only one secondary indicator noted (Geomorphic Position; D2). Wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Pike Solar Project City/County: El Paso Sampling Date: 7/15/19

Applicant/Owner: JSI Construction Group, LLC State: CO Sampling Point: SP-28

Investigator(s): PJW and TLM - Pinyon Environmental, Inc. Section, Township, Range: Section 14, Township 16S, Range 65W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Western Great Plains and Irrigated Region Lat: 38.651935° Long: -104.630253° Datum: WGS84

Soil Map Unit Name: Midway clay loam, 3 to 25 percent slopes NWI classification: PEM1Ch

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

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

Are Vegetation No, Soil No, or Hydrology No 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 X	No _____	

Remarks:
Sampling pit excavated in an artificially-formed depression area (stock pond) abutting an impoundment.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 Ft radius)			
1. Helianthus annuus	40	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: 15 Ft radius)			
1. N/A			
2.			
	= Total Cover		
% Bare Ground in Herb Stratum 60	40 = Total Veg Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

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

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

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

Remarks:
Mostly bare ground surrounded by Helianthus anuus. No hydrophytic vegetation present.
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

SOIL

Sampling Point: SP-28

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 %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 4/3	98	10YR 4/6	2	M	C	clay	Distinct redox noted

[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 F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: n/a

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

No hydric soil indicators noted. Hydric soil is not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Inundation and saturation visible for most of the years in which images were clear enough to determine whether or not there was inundation or saturation (Google Earth Imagery).

Remarks:

Sampling point is in a depression subject to ponding. Wetland hydrology indicators noted. Wetland hydrology is present.