

July 30, 2021

Kraig Jashinsky U.S. Army Corps of Engineers 201 West 8<sup>th</sup> Street, Suite 350 Pueblo, CO 81003

Subject: Request for an Approved Jurisdictional Determination for the Thunderbird Property Project, Pueblo County, Colorado

Dear Mr. Jashinsky:

Pinyon Environmental, Inc. (Pinyon), on behalf of Martin Marietta, is respectfully submitting this approved jurisdictional determination request for the non-wetland water and wetland features identified in the study area of the above-referenced project. To assist you in making this determination, we have enclosed a Biological Resources Report (BRR) as well as a "Request for Corps Jurisdictional Determination" form. A description of the non-wetland waters and wetlands identified in the project's study area is presented in detail in the enclosed BRR; specifically, *Section 3.4* and *Figure 2*. Wetland Determination Data Forms are also included in *Appendix B* of the BRR.

Of the wetlands and non-wetland waters delineated within the study area, Pinyon requests that the following be reviewed for approved jurisdictional determination:

- Arkansas River and associated wetlands (Arkansas River Wetland Complex Wetland [WL] I)
- Excelsior Ditch and associated wetlands (WL-2 through WL-8)
- An Abandoned Channel of the Arkansas River (Arkansas River Wetland Complex WL-I)
- Thunderbird Lake and associated wetlands (WL-9)
- Unnamed Pond I and associated wetlands (WL-10)
- Unnamed Pond 2
- WL-11
- WL-12

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

Sincerely,

**PINYON** ENVIRONMENTAL, INC.,

Korby Mintken Biologist

Cc: Chase Taylor, Pinyon Environmental Beth Haake, Martin Marietta

#### Appendix 1 - REQUEST FOR CORPS JURISDICTIONAL DETERMINATION (JD)

To: District Name Here

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•	I am requesting a	a JD on r	property	located at:	Thunderbird Project,	Pueblo County, Colorado
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	(Street Address)
	City/Township/Parish: Pueblo County: Pueblo State: CO
	Acreage of Parcel/Review Area for JD: 560
	Section: <u>6</u> , <u>31</u> , <u>32</u> Township: <u>20 and 21 S</u> Range: <u>63W</u>
	Latitude (decimal degrees): <u>39.265296°</u> Longitude (decimal degrees): <u>-104.478090°</u>
	(For linear projects, please include the center point of the proposed alignment.)
	Please attach a survey/plat map and vicinity map identifying location and review area for the JD.
	Light currently own this property.
	□ am an agent/consultant acting on behalf of the requestor.
	Other (please explain):
	Reason for request: (check as many as applicable)
	I intend to construct/develop a project or perform activities on this parcel which would be designed to
	avoid all aquatic resources.
	I intend to construct/develop a project or perform activities on this parcel which would be designed to
	avoid all jurisdictional aquatic resources under Corps authority.
	I intend to construct/develop a project or perform activities on this parcel which may require
	authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional
	aquatic resources and as an initial step in a future permitting process.
	the Cerne: this request is accompanied by my permit application and the ID is to be used in the permitting processes
	The Corps, this request is accompanied by my permit application and the JD is to be used in the permitting process.
	included on the district Section 10 list and/or is subject to the obb and flow of the tide
	A Corps ID is required in order to obtain my local/state authorization
	Lintend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that
	jurisdiction does/does not exist over the aquatic resource on the parcel
	L believe that the site may be comprised entirely of dry land
	Other:
	Type of determination being requested.
	✓ I am requesting an approved JD.
	I am requesting a preliminary JD.
	I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.
	I am unclear as to which JD I would like to request and require additional information to inform my decision.
Зy	signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a
	any an antity with a walk a with a side of a barrahy areas Carray narray not visible of antity to logally access the

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

*Signature: <u><i>Chase Taylor</i></u>	C	7/30/2021 pate:
• Typed or printed name:	Chase Taylor	
Company name:	Pinyon Environmental, Inc.	
Address:	3222 S. Vance Street, Suite 200	
	Lakewood, CO 80227	
Daytime phone no.:	303.980.5200	
Email address:	Taylor@pinyon-env.com	

\*Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.

			0											
Principal Purpose:	The inform	ation tha	it you provide	will be used	in evalu	ating you	r request t	o determine	e whether t	there are any	/ aquatic	resources	within th	e project
area subject to feder	ral jurisdicti	on under	the regulator	y authorities	reference	ced above	÷.							

Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be
made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in
the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.
Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be
issued.



July 30 2021

# **Biological Resources Report**

Thunderbird Property Pueblo County, Colorado

> Prepared for: Martin Marietta 1910 Rand Avenue Colorado Springs, Colorado 80905

> > **Pinyon Project No.:** 120115103.BIO001





July 30, 2021

## **Biological Resources Report**

Thunderbird Property Pueblo County, Colorado

> Prepared for: Martin Marietta 1910 Rand Avenue Colorado Springs, Colorado 80905

> > Pinyon Project No.: 120115103.BIO001

> > > **Prepared by:**

Brandler Andersay

Brandee Anderson Biologist

**Reviewed by:** 

gha: an

Karin McShea Technical Group Manager - Biological Resources



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## I. Introduction and Project Description

Martin Marietta has contracted Pinyon Environmental, Inc. (Pinyon), to conduct a biological survey for the Thunderbird Property Project (project) in Pueblo County, Colorado (Figure I). Martin Marietta is considering developing aggregate materials on the Thunderbird Property and would like to understand potential impacts to biological resources prior to initiating development so that permit requirements can be assessed. A Clean Water Act Section 404 (Section 404) Permit may be required; however, the level of permitting (Nationwide versus Individual permit) cannot be determined until impacts to jurisdictional Waters of the U.S. (WUS) are known. Therefore, Martin Marietta would like to submit a request for a Jurisdictional Determination to the U.S. Army Corps of Engineers (USACE) to better understand potential Section 404 permitting steps. The purpose of this report is to summarize potential constraints on development posed by biological resources within the project area and to address existing conditions regarding biological resources and protected species in accordance with the following federal and state regulations or policies:

- <u>The Endangered Species Act (ESA)</u>: This federal regulation protects listed plant and animal species with the goal of ensuring their long-term survival. The U.S. Fish and Wildlife Service (USFWS) administers these requirements.
- <u>The Colorado Non-game, Endangered, and Threatened Species Conservation Act</u>: Protects state-listed threatened (ST), state-listed endangered (SE), and state special concern species (SC) with the goal of ensuring their long-term survival. Colorado Parks and Wildlife (CPW) administers these requirements.
- <u>The Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act</u> (<u>BGEPA</u>): Federal regulations; vegetation clearing, earth-moving, bridge demolition, and other construction activities have the potential to disrupt nesting activity or destroy nests of bird species protected under the MBTA and BGEPA. The USFWS administers these requirements.
- <u>Section 404 of the Clean Water Act (CWA)</u>: Regulates WUS, which include non-wetland waters and wetlands, and impacts to these features would require permitting through the USACE.
- <u>Noxious Weeds</u>: The Colorado Department of Agriculture (CDA) Noxious Weed Act of 2003 (CRS 35-5-101; CRS 35-5.5-101; Executive Order (EO) D-006-99) defines and prioritizes management objectives for state-designated noxious weeds. The CDA classifies noxious weed species into three categories: List A, List B, and List C. List A species are designated by the Commissioner of the CDA for eradication. List B species are those species that are managed to stop continued spread. List C species are weed species that are not required to be managed by local jurisdictions but are monitored to provide additional education and research (CDA, 2021).



## I.I Project Location

The project is shown in Figure 1 and described in Table 1-1, below.

#### Table I-I Project Location

County	Pueblo
United States Geological Survey (USGS) 7.5-Minute Quadrangle	Devine, 2019
Section, Township, and Range (6th Principal Meridian)	Sections 31 and 32, Township 20 South, Range 63 West and Section 6, Township 21 South, Range 63 West
Elevation of Project (feet above mean sea level)	4,560
Approximate Central Location in World Geodetic System of 1984 (WGS84) Decimal Degrees	38.265296°, -104.478090°



## 2. Methods

Pinyon biologists Mark Fletcher and Tim Merlino visited the site on August 11 through 13, 2020, to assess the study area for biological resources. The weather during the site visit was clear and sunny, and the temperature was approximately 95° Fahrenheit.

On July 1, 2021, Pinyon biologist Korby Mintken visited the site with Martin Marietta and USACE personnel to review/discuss wetland and non-wetland waters that were assessed during the 2020 site visits. The weather was clear and sunny, and the temperature was approximately 90° Fahrenheit.

### 2.1 Study Area

Pinyon was provided with the boundaries where the maximum extent of project impacts are anticipated to occur. This area is further referred to in this report as the "study area."

### 2.2 Survey Parameters

Pinyon personnel surveyed the study area for biological resources by walking and/or driving throughout the study area and recording the locations of sensitive habitat features (Figure 2). During the site visit, data were recorded using tablet-based Collector for ArcGIS paired with a Trimble RI antenna to obtain sub-meter accuracy. The data were downloaded and mapped in ArcGIS mapping software. Notes and photographs were taken to record field conditions (Appendix A).

The following activities were completed during the site visit:

- General habitat conditions and land uses were noted. Dominant plant species and plant habitats were recorded.
- The study area was evaluated for protected species and their habitats, including:
  - Federally listed threatened and endangered species, as specified by the USFWS online Information for Planning and Consultation (IPaC) System (USFWS, 2021).
  - State-listed endangered, threatened, and sensitive species, as specified by USGS quadrangle on the CPW and Colorado Natural Heritage Program (CNHP) websites (CPW, 2019; CNHP, 2021).
  - Migratory birds.
- Potential WUS were mapped/delineated in accordance with the 1987 USACE "Wetland Delineation Manual" and the 2010 Corps "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)" (Environmental Laboratory, 1987; USACE, 2010). The boundaries of the ordinary-high water mark (OHWM) were identified in accordance with the 2014 USACE "A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States" (USACE, 2014). 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. Wetland determination data forms are included in Appendix B.
- Noxious weeds were documented but not mapped.



## 3. Results

## 3.1 Habitat Description

#### 3.1.1 Land Use

The study area is located in a rural area east of Pueblo, generally between U.S. Highway 50 and the Arkansas River (Figure 1). The study area is located in the floodplain of the Arkansas River and Saint Charles River and numerous non-wetland waters, such as Thunderbird Lake, and wetlands were noted throughout the study area (see Section 3.4 Non-wetland Waters and Wetlands) (Figure 2). No structures are currently located in the study area; although, a powerline traverses the western portion of the site from north to south and various two-track roads are located in the western portion of the study area. The Town of Baxter is located just north of the study area and numerous small residential areas and agricultural fields are located near the study area.

#### 3.1.2 General Habitat and Vegetation Description

Dominant species along portions of the upland habitats included grasses such as smooth brome (Bromus inermis), blue grama (Bouteloua gracilis), purple threeawn (Aristida purpurea), and cheatgrass (Bromus tectorum). Common herbaceous species were field bindweed (Convolvulus arvensis), diffuse knapweed (Centaurea diffusa), Canada thistle (Cirsium arvense), annual sunflower (Helianthus annuus), American licorice (Glycyrrhiza lepidota), and kochia (Bassia scoparia). Common shrubs included rubber rabbitbrush (Ericameria nauseosa) and saltcedar (Tamarix chinensis). Trees were dominated by stands of plains cottonwood (Populus deltoides). Less dense scattered trees included Siberian elm (Ulmus pumila).

The site is located along the Arkansas River; therefore, riparian habitat makes up much of the study area. Dominant species in the riparian areas included smooth brome, purple threeawn, coyote willow (*Salix exigua*), saltcedar, Russian olive (*Elaeagnus angustifolia*), and plains cottonwood. Other common species included reed canary grass (*Phalaris arundinacea*), common threesquare (*Schoenoplectus pungens*), narrowleaf cattail (*Typha angustifolia*), Canada thistle, and various grass species (Poaceae). No sensitive or rare plant species were noted within the study area.

Wetlands were delineated within the study area and are described further in Section 3.4.2 Wetlands.

### 3.2 Threatened and Endangered Species

#### 3.2.1 Federally Listed Species

Based on a review of the USFWS online IPaC System, there are three federally listed species with the potential to occur in, or be impacted by, a project in this location (USFWS, 2021). The habitat and distribution of each of the species was reviewed, and the potential for occurrence was assigned based on the conditions within the study area (Table 3-1). Per the USFWS, no critical habitats are mapped in the study area.



Common Name	Species	Federal Status	Habitat <sup>1</sup>	Potential for Occurrence in Study Area	
Birds					
Eastern Black Rail	Laterallus jamaicensis ssp. jamaicensis	FT	In the interior U.S., Eastern Black Rail uses wet sedge meadows with dense cover. In Colorado, the birds generally use shallow wetlands often dominated by cattails.	Low. See discussion below table.	
Fish					
Greenback Cutthroat Trout	Oncorhynchus clarki stomias	FT	Occurs in cold and clear headwater streams with a gravel substrate. Also occurs in cold mountain lakes. Requires a rich supply of insects for food.	None. Suitable habitat does not occur within the study area. The closest known population is located in the upper reaches of Bear Creek, west of Colorado Springs, Colorado.	
Mammals					
Canada Lynx	Lynx canadensis	FT	Uneven-aged stands with relatively open canopies and well-developed understories of coniferous forests. Moist boreal forests with cold, snowy winters and high-density snowshoe hare prey base. Restricted to isolated areas of the central portion of Colorado.	None. Suitable habitat does not occur within the study area.	
Notes: FT = federally list	ted as threatened.				

Table 3-I	Federally Listed S	pecies and Their Potential	to Occur in the Study Area

<sup>1</sup> – Based on a review of Colorado Parks and Wildlife, Threatened and Endangered List (CPW, 2021); Colorado Parks and Wildlife, Species Activity Mapping (CPW, 2019); U.S. Fish and Wildlife Service, Information for Planning and Consultation (USFWS, 2021).

#### 3.2.1.1 Eastern Black Rail

In Colorado, the Eastern Black Rail is known to use shallow wetlands, dominated by cattails. Per CPW data, core habitat for the Eastern Black Rail is located along the Arkansas River, approximately from Interstate 25 in Pueblo to the Colorado/Kansas state-line (CPW, 2018). The projects study area is adjacent to the Arkansas River and consists of wetland habitat, which includes few, small, cattail patches. Although most of the wetlands within the study area are dominated by shrubs, marginal Eastern Black Rail habitat may occur within the study area.



#### 3.2.2 State-Listed and Special Concern Species

Based on a review of the CPW Species Activity Mapping data and the CNHP Tracking List, there are three state-listed species that have potential to occur within the study area (CPW, 2019; CNHP, 2021). These species are the Burrowing Owl (*Athene cunicularia*; ST), Bald Eagle (*Haliaeetus leucocephalus*; ST), and plains orangethroat darter (*Etheostoma spectabile*; SC). Due to the lack of suitable habitat (e.g., black-tailed prairie dog [*Cynomys ludovicianus*] burrows) within or near the study area, Burrowing Owls are not expected to occur in the study area. Further, per CPW data, the plains orangethroat darter only occurs in the Republican River basin, which is not within/near the study area (CPW, 2020). Therefore, the plains orangethroat darter is not expected to occur within the study area. The Burrowing Owl and plains orangethroat darter are not discussed further in this report. The remaining state-listed species (i.e., the Bald Eagle) may occur in the study area or be impacted by the project and is discussed below.

#### 3.2.2.1 Bald Eagle

The Bald Eagle is a federal recovery species (i.e., formerly federally listed) and a state-listed threatened species and has a low potential to occur in the study area. The study area is located within the species mapped winter range and foraging habitat (CPW, 2019). Per CPW data, no winter roosts or nests are located within the study area or within 0.5 mile of the study area. Although, surveys were conducted during the growing season, which reduces visibility. Further, per CPW data, the closest nest site is located approximately 6.5 miles east of the study area, and the closest roost site is located approximately 5 miles west of the study area (CPW, 2019). No Bald Eagles were observed during the site visit. However, Bald Eagles may utilize the large trees in study area for perching/hunting throughout the year.

#### 3.3 Migratory Birds

Large trees were noted within the study area, as well as within 0.5 mile of the study area (within the CPW Recommended Buffer Zones for raptors) that could be used by nesting raptors (CPW, 2008). Five potential raptor nests were noted within the study area (Figure 2). An adult Swainson's Hawk (*Buteo swainsoni*) was noted near one of the nests (Potential Nest 2) and one of the nests may be an Osprey (*Pandion haliaetus*) nest based on the distinctive nest placement (Potential Nest 1) (Figure 2; Appendix A, Photos I and 2). However, no nests were observed to be active during the site visits. If any of the nests were active during the 2020 season, the young had fully fledged from the nests. The site visits were conducted during the raptor nesting season, which occurs approximately between February and August. Raptors may use the same nests from year-to-year; therefore, it is likely that the nests will become active (i.e., will contain eggs and/or hatchlings) during subsequent nesting seasons. Raptors may also construct new nests within the 0.5-mile buffer of the project area prior to the onset of construction.

Large trees also provide suitable habitat for non-raptor species. The study area also had small- to mediumsized trees, shrubs, as well as grassy habitat, which provide suitable nesting habitats for other (non-raptor) birds.

### 3.4 Non-wetland Waters and Wetlands

The Arkansas River and an associated oxbow/abandoned channel, Saint Charles River, Excelsior Ditch, Thunderbird Lake, and two unnamed ponds, as well as numerous associated wetlands, were mapped within the study area (Figure 2; Appendix A). Wetland and non-wetland water features are described below.

#### 3.4.1 Non-wetland Waters

Seven non-wetland waters and/or OHWMs were delineated in the study area (Table 3-2).



Name/ID	Latitude <sup>1</sup>	Longitude <sup>1</sup>	Туре	Acres within Study Area
Arkansas River	38.263383°	-104.473814°	Riverine	30.88
Saint Charles River	38.263900°	-104.467462°	Riverine	0.25
Excelsior Ditch	38.268015°	-104.484564°	Ditch	2.15
Abandoned Channel of the Arkansas River	38.266586°	-104.463309°	Riverine	6.20
Thunderbird Lake	38.261030°	-104.492899°	Lake	3.88
Unnamed Pond I	38.262176°	-104.489737°	Pond	0.66
Unnamed Pond 2	38.262069°	-104.490891°	Pond	0.09

Approximate central location in World Geodetic System of 1984 (WGS84) Decimal Degrees

#### 3.4.1.1 Arkansas River

The Arkansas River is a perennial water feature represented as solid blue line on the USGS Devine, Colorado 7.5-minute quadrangle (Figure 1; Appendix A, Photo 3; USGS, 2019). Hydrophytic vegetation was noted along the river and in the floodplain (see Section 3.4.2.1 Arkansas River Wetland Complex for a description of the wetlands). The river flows to the east through the study area. Substrate within the river was primarily sand and unconsolidated silt material. In the western portion of the study area, the riverbank was lined with concrete rubble. In the eastern portion of the study area, the soil of the riverbank was comprised of sandy loam and is mapped as Bankard sand, 0 to 2 percent slopes, frequently flooded (USDA, 2019). Within the study area, the river width was approximately 250 feet. Water depth may vary depending on location and time of year. An OHWM was mapped along the river edge (Figure 2).

#### 3.4.1.2 Saint Charles River

The Saint Charles River is a perennial water feature represented as a solid blue line on the USGS Devine, Colorado 7.5-minute quadrangle (Figure 1; USGS, 2019). Hydrophytic vegetation was noted along the river and in the floodplain (see Section 3.4.2.1 Arkansas River Wetland Complex for a description of the wetlands). The river flows to the east through the study area and flows into the Arkansas River immediately east of the study area. Substrate within the river is unknown as the biologists did not have access to this area during the site visit. The soil of the riverbank is mapped as Glenberg-Haversid complex, 0 to 2 percent slopes, occasionally flooded (USDA, 2019). Within the study area, the river width was approximately 25 feet. Depths may vary depending on location and time of year. An OHWM was mapped along the river edge based on aerial imagery (Figures 2f and 2g).

#### 3.4.1.3 Excelsior Ditch

Excelsior Ditch is represented as a solid blue line on the 2019 USGS Devine, Colorado 7.5-minute quadrangle and a dashed blue line on the 1960 USGS Devine, Colorado 7.5-minute quadrangle (Figure 1; Appendix A, Photo 4; USGS, 2019; USGS, 1960). Hydrophytic vegetation was noted in patches along the fringe (see Section 3.4.2.2 Excelsior Ditch for a description of the wetlands). The ditch flows to the east through the study area. Substrate within the ditch was generally comprised of sand and small rock/cobble intermixed. The soil of the bank of the ditch was comprised of sandy clay and is mapped as Las Animas fine sandy loam, 0 to 2 percent slopes, frequently flooded (USDA, 2019). Within the study area, the average width was approximately 18 feet. An OHWM was mapped along the ditch edge (Figure 2). Per aerial imagery, Excelsior Ditch is fed by the



Arkansas River through a controlled water structure west of the study area and is assumed to be an agricultural ditch (Google Earth, 2021). Excelsior Ditch then flows to the east and connects with Chico Creek, a tributary of the Arkansas River, east of the study area.

#### 3.4.1.4 Abandoned Channel of the Arkansas River

The Abandoned Channel of the Arkansas is represented as a dashed blue line on the 2019 USGS Devine, Colorado 7.5-minute quadrangle and was once the mainstem of the Arkansas River according to the 1960 USGS Devine Colorado 7.5-minute quadrangle (Figure 1; Appendix A, Photos 5 and 6; USGS, 2019; USGS, 1960). The western portion of the channel was primarily covered with common duckweed (*Lemna minor*), a floating aquatic plant (Appendix A, Photo 5). Flows in the western portion of the channel were obstructed by a North American beaver (*Castor canadensis*) dam to the east. An OHWM was mapped for the western portion of the channel, east of the beaver dam. The average width of the eastern portion of the channel was approximately three feet and an OHWM was mapped along the channels edge (Figure 2; Appendix A, Photo 6). Substrate within the western portion of the channel was generally sand and small rock/cobble. The soil of the banks of the channel were mapped as Las Animas fine sandy loam, 0 to 2 percent slopes, frequently flooded and Bankard sand, 0 to 2 percent slopes, frequently flooded (USDA, 2019). The channel flows east and connects with the Arkansas River, just east of the study area.

#### 3.4.1.5 Thunderbird Lake

Thunderbird Lake is represented as a lake on the USGS Devine, Colorado 7.5-minute quadrangle (Figure 1; Appendix A, Photo 7; USGS, 2019). Hydrophytic vegetation was noted in patches along the fringe (see Section 3.4.2.3 Thunderbird Lake Wetlands for a description of the wetlands). Substrate within the lake was comprised of sand, clay, and loam materials. The soil of the bank of the lake was comprised of sandy loams and loamy sands and is mapped as Glenberg-Haversid complex, 0 to 2 percent slopes, occasionally flooded (USDA, 2019). The lake is a total of 3.88 acres. The depth of the lake is unknown. An OHWM was mapped around the lake (Figure 2). The lake appears to be isolated with no downstream connection to other waterbodies. The lake is approximately 350 feet north of the Arkansas River and is believed to be created from past mining activities.

#### 3.4.1.6 Unnamed Pond 1

Unnamed Pond I was noted in the study area east of Unnamed Pond 2 and Thunderbird Lake (Figure I; Appendix A, Photo 8). The pond is not represented on the USGS Devine, Colorado 7.5-minute quadrangle (USGS, 2019). Hydrophytic vegetation was noted in patches along the fringe (see Section 3.4.2.4 Unnamed Pond I Wetlands for a description of the wetlands). Substrate within the pond was comprised of sand, clay, and loam materials. The pond is a total of 0.66 acre. The depth of the pond is unknown. An OHWM was mapped around the pond (Figure 2). The pond appears to be isolated with no downstream connection to other waterbodies. The pond is approximately 500 feet northeast of the Arkansas River and is believed to be created from past mining activities.

#### 3.4.1.7 Unnamed Pond 2

Unnamed Pond 2 is represented as a pond on the USGS Devine, Colorado 7.5-minute quadrangle (Figure 1; Appendix A, Photo 9; USGS, 2019). The pond was covered in common duckweed. Substrate within the pond was comprised of sand, clay, and loam materials. The pond is a total of 0.09 acre with an approximate length of 90 feet and an approximate width of 50 feet. The depth of the pond is unknown. An OHWM was mapped around the pond (Figure 2). The pond appears to be isolated with no downstream connection to other waterbodies. The pond is approximately 500 feet northeast of the Arkansas River and is believed to be created from past mining activities.



#### 3.4.2 Wetlands

Twelve wetland areas were identified within the study area (Figure 2; Table 3-3). The wetland areas were grouped based on hydrological source (e.g., Arkansas River, Excelsior Ditch, Unnamed Pond I). Multiple wetland classifications may be included in each wetland area (e.g., Palustrine scrub shrub [PSS], palustrine emergent [PEM]) (Cowardin, et al., 1979). In general, vegetation, soils, and hydrology were similar between each of the wetland areas grouped by hydrologic source. Therefore, the wetland determination data forms completed generally represent each wetland as grouped by hydrologic source, rather than individual wetlands where completed. Reference pits were excavated throughout each wetland to confirm wetland boundaries or the presence of hydric soils. The following sections discuss each wetland area.

Name/ID	Associated Waterbodies	Latitude <sup>1</sup>	Longitude <sup>1</sup>	Cowardian Classification <sup>2</sup>	Acres
Wetland I (WL-I)	Arkansas River Wetland Complex, includes Arkansas River, the Abandoned Channel of Arkansas River, and Saint Charles River	38.264728°	-104.470642°	PSS	68.56
Wetland 2 (WL-2)	Excelsior Ditch	38.268948°	-104.482343°	PEM	0.01
Wetland 3 (WL-3)	Excelsior Ditch	38.265981°	-104.493097°	PEM	<0.01
Wetland 4 (WL-4)	Excelsior Ditch	38.265138°	-104.493243°	PEM	0.09
Wetland 5 (WL-5)	Excelsior Ditch	38.264120°	-104.493103°	PEM	0.01
Wetland 6 (WL-6)	Excelsior Ditch	38.263508°	-104.493890°	PEM	0.01
Wetland 7 (WL-7)	Excelsior Ditch	38.262081°	-104.494601°	PEM	<0.01
Wetland 8 (WL-8)	Excelsior Ditch	38.261434°	-104.494379°	PEM	0.03
Wetland 9 (WL-9)	Thunderbird Lake	38.260980°	-104.492623°	PSS	0.04
Wetland 10 (WL-10)	Unnamed Pond I	38.262234°	-104.489596°	PSS	0.06
Wetland 11 (WL-11)	None, Isolated	38.266524°	-104.493578°	PEM	0.05
Wetland 12 (WL-12)	None, Isolated	38.262463°	-104.493060°	PEM	0.38

Table 3-3	Summary	of Wetlands	<b>Delineated</b> in	n the Stud	v Area
	eannan y	or vv ccianas	Benneacean	i the otaa	, <b>m</b> cu

Approximate central location in World Geodetic System of 1984 (WGS84) Decimal Degrees

<sup>2</sup> Cowardin, et al., 1979

PEM=Palustrine Emergent, PSS=Palustrine Scrub Shrub

3.4.2.1 Arkansas River Wetland Complex

Wetland I



Wetland (WL) I included PSS wetlands associated with the Arkansas River, the Abandoned Channel of the Arkansas River, and the Saint Charles River (the Arkansas River Wetland Complex) (Figure 2; Appendix A, Photo 10). Due to the water depth and dense vegetation (i.e., lack of access), portions of the Arkansas River Wetland Complex were not formally delineated; rather, these areas were assumed (conservatively) to be wetland based on similar vegetation in delineated areas. The Arkansas River Wetland Complex was dominated by Russian olive and saltcedar. Coyote willow and plains cottonwoods were also noted intermixed in some areas. The understory consisted of a variety of herbaceous species such as reed canary grass, scratchgrass (Muhlenbergia asperifolia), narrowleaf cattail, and softstem bulrush (Schoenoplectus tabernaemontani) along the Abandoned Channel of the Arkansas River and annual beard-grass (Polypogon monspeliensis), redtop (Agrostis gigantea), prostrate knotweed (Polygonum aviculare), common spikerush (Eleocharis palustris), and Baltic rush (Juncus balticus) along the Arkansas River. As noted above, the Abandoned Channel of the Arkansas River was primarily covered with common duckweed, a floating aquatic plant, within the OHWM. Because common duckweed is an unrooted aquatic plant it can change with changes in water flows and therefore these areas were deemed non-wetland waters instead of wetlands. Sampling Point (SP) 5 and SP-7 were excavated in WL-I (Figure 2f and 2g; Appendix B). The areas passed the Dominance Test for Hydrophytic Vegetation. Hydric soil indicators observed were Redox Dark Surface (F6) and Hydrogen Sulfide (A4) for SP-5 and Depleted Matrix (F3) for SP-7. Primary wetland hydrology indicators observed were High Water Table (A2) at ten and eight inches and Saturation (A3) at one inch and from two to 20 inches for SP-5 and SP-7, respectively. Hydrogen Sulfide Odor (CI) was also observed at SP-5. Secondary hydrology indicators for SP-5 and SP-7 included Geomorphic Position (D2) and both areas passed the FAC-Neutral Test (D5).

#### 3.4.2.2 Excelsior Ditch Wetlands

#### Wetlands 2 through 8

WL-2 through WL-8 included PEM wetlands associated with the Excelsior Ditch (Figure 2; Appendix A, Photo II). SP-3 was excavated in WL-3, while the remaining wetlands associated with Excelsior Ditch were delineated based on similar vegetation and hydrologic conditions and reference pits were excavated throughout to confirm hydric soils and hydrology. Wetlands 2 through 8 contained species such as reed canary grass, annual beard-grass, common spikerush, and Pennsylvania smartweed (*Polygonum pensylvanicum*). SP-3 was completed in WL-3, on the south bank of Excelsior Ditch (Figure 2a; Appendix B). The area passed the Rapid Test for Hydrophytic Vegetation. The hydric soil indicator observed was a Depleted Matrix (F3). The primary wetland hydrology indicators included Geomorphic Position (D2) and the area passed the FAC-Neutral Test (D5).

#### 3.4.2.3 Thunderbird Lake Wetlands

#### Wetland 9

WL-9 included PSS wetlands around Thunderbird Lake (Figure 2b; Appendix A, Photo 12). WL-9 contained an overstory of Russian olive and a diverse understory of reed canary grass, scratchgrass, rough barnyard grass (*Echinochloa muricata*), common sunflower, swamp verbena (*Verbena hastata*), and common threesquare. SP-1 was completed in WL-9, on the east bank of Thunderbird Lake on a small peninsula (Figure 2b; Appendix B). The area passed the Dominance Test for Hydrophytic Vegetation. The hydric soil indicator observed was a Depleted Matrix (F3). Primary wetland hydrology indicators observed were High Water Table (A2) at ten inches and Saturation (A3) at ground surface to 20 inches. Secondary hydrology indicators included Geomorphic Position (D2) and the area passed the FAC-Neutral Test (D5). Numerous reference soil pits were excavated around the lake in areas with hydrophytic vegetation to confirm the presence of hydric soils and hydrology.



#### 3.4.2.4 Unnamed Pond I Wetlands

Wetland 10

WL-10 included PSS wetlands around Unnamed Pond I (Figure 2b; Appendix A, Photo 13). WL-10 contained an overstory of Russian olive and an understory of narrowleaf cattail. WL-10 was delineated as a wetland based on similar vegetation and hydrologic conditions as noted at SP-1 completed in WL-9 around Thunderbird Lake and reference pits were excavated throughout to confirm hydric soils (see Section 3.4.2.3).

3.4.2.5 Isolated Wetlands

Wetland II

WL-11 was an isolated, PEM wetland located in the northeastern portion of the study area (Figure 2a; Appendix A, Photo 14). WL-11 was dominated by common threesquare and a reference pit was excavated to confirm the presence of hydric soils and hydrology. WL-11 was delineated as a wetland based on similar vegetation and hydrologic conditions as noted at SP-1 completed in WL-9 around Thunderbird Lake and reference pits were excavated throughout to confirm hydric soils (see Section 3.4.2.3).

Wetland 12

WL-12 was an isolated, PEM wetland located north of Thunderbird Lake (Figure 2b; Appendix A, Photo 15). WL-12 was dominated by narrowleaf cattail and a reference pit was excavated to confirm the presence of hydric soils and hydrology. WL-12 was delineated as a wetland based on similar vegetation and hydrologic conditions as noted at SP-1 completed in WL-9 around Thunderbird Lake and reference pits were excavated throughout to confirm hydric soils (see Section 3.4.2.3).

### 3.5 Noxious Weeds

Weeds listed on the CDA Noxious Weed List were observed in the study area and the weeds present within the study area were typical of those located along Colorado's Front Range (CDA, 2021). No List-A noxious weed species were noted. Noxious weeds noted in the study area included: cheatgrass, field bindweed, diffuse knapweed, spotted knapweed (*Centaurea stoebe*), Canada thistle, common teasel (*Dipsacus fullonum*), saltcedar, and Russian olive. These weeds were scattered throughout the study area and were not mapped.



## 4. Conclusions and Mitigation Recommendations

Pinyon has completed this Biological Resources Report for the Thunderbird Property Project in Pueblo County, Colorado. The study area was assessed for the presence of biological resources including federally and state-listed species, migratory birds, non-wetland waters and wetlands, and noxious weeds.

## 4.1 Threatened and Endangered Species

#### 4.1.1 Federally Listed Species

The study area was assessed for the federally listed species with the potential to occur in the study area or be impacted by the project. Based on the habitat present, the project would have **no effect** on the greenback cutthroat trout and Canada lynx. No further consultation or mitigation for these species is required.

The study area is within core habitat for the Eastern Black Rail. Because PEM wetlands occur on-site, habitat for the Eastern Black Rail may occur; therefore, consultation with the USFWS may be required if these areas are impacted by the Project.

#### 4.1.2 State-Listed Species

The study area was assessed for ST, SE, and SC species with the potential to be impacted by the project. The Bald Eagle was identified as having potential to occur in the project area and is discussed below.

#### 4.1.2.1 Bald Eagle

Per CPW data, no Bald Eagle nests or winter roosts are located within 0.5 mile of the study area. However, Bald Eagles can build new nests and expand their winter roost habitat Because the site visits were conducted during the growing season, which reduces visibility, Pinyon recommends that the project perform additional nesting surveys prior to the commencement of work. If new (unmapped) Bald Eagle nests are noted, coordination with USFWS and/or CPW may be warranted.

### 4.2 Migratory Birds

Potential habitat for nesting birds, including potential raptor nests, were identified in and within a 0.5-mile buffer of the study area. The nesting season for most birds generally occurs from April through August, although raptors may nest as early as February and nests are protected at all times. Pinyon recommends that the project complies with the MBTA at all times, as well as follow recommended guidelines set by CPW for nesting raptors. If active raptor nests are confirmed to occur within a 0.5-mile buffer of the project area prior to the onset of construction, it is recommended that a qualified wildlife biologist coordination with USFWS and/or CPW to identify an appropriate action to ensure that project activities do not disrupt nesting activities. Pinyon also recommends that nesting surveys be completed for non-raptor species prior to construction if project activities occur during the nesting season.

### 4.3 Non-wetland Waters and Wetlands

Non-wetland waters and wetlands occur in the study area. Martin Marietta intends to limit impacts to WUS, to the extent practical. The project will submit a request for a Jurisdictional Determination to the USACE to determine areas under the jurisdiction of the USACE. Prior to the beginning of work and after design is complete, impacts to WUS will be determined. If impacts to WUS are anticipated to occur, Section 404 permitting would be required. The type of permitting (Nationwide Permit or Individual Permit) will be



dependent on the amount and type of impacts to WUS. If no impacts to WUS are anticipated, then no further action is required.

### 4.4 Noxious Weeds

Noxious weeds typical of Colorado's Front Range are present in the study area. No List-A noxious weed species were noted, and the List B and List C weeds identified did not appear to be greater in densities than the surrounding areas (outside of the study area). Nevertheless, the project is required to minimize the spread of noxious weeds during operations. Pinyon recommends that the project implements Best Management Practices into the project plans to reduce the spread of noxious weeds.



## 5. Limitations

This report was prepared by Pinyon, at the request of and for the sole benefit of Martin Marietta, or any entity controlling, controlled by, or under common control with Martin Marietta. The conclusions and recommendations offered in this report are based on the data obtained from a limited number of samples, within a prescribed study 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.



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# Figures



Path: Z:\PROJECTS\2020\120115103 Thunderbird Property\Figures\ArcMap\MXDs\BIO01\_Project Location.mxc

Drawn By: JAF	Figure: I
Reviewed By: BCA	Date: 9/9/2020







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Reviewed By: BCA

Date: 7/16/2021



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Reviewed By: BCA	Date: 7/16/2021



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Reviewed By: BCA

Date: 7/16/2021



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# **Legend**



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Reviewed By: BCA	Date: 7/16/2021



# Appendices



# Appendix A Photographic Log



Photo I. View of a Potential Nest 2 noted in the study area, just south of Excelsior Ditch. A Swainson's Hawk (*Buteo swainsoni*) was observed near this nest.



Photo 2. View of Potential Nest I noted in the study area, just north of the Arkansas River. Nest may be a potential Osprey (*Pandion haliaetus*) nest based on nest placement.





Photo 3. Representative view of the Arkansas River where it flows through the study area.

Photo 4. Representative view of the Excelsior Ditch where it flows through the study area.



Photo 5. Representative view of the western portion of the abandoned channel of the Arkansas River in the study area.



Photo 6. Representative view of the eastern portion of the abandoned channel of the Arkansas River in the study area.





Photo 7. Representative view of Thunderbird Lake in the study area.

Photo 8. Representative view of Unnamed Pond I in the study area.





Photo 9. Representative view of Unnamed Pond 2 in the study area.

Photo 10. Representative view of Wetland I (the Arkansas River Wetland Complex). Sampling Point 5 (SP-5) was completed in this area.





Photo 11. View of Wetland 7, which is representative of Wetlands 2 through 8, located along the Excelsior Ditch.

Photo 12. View of Wetland 9, located around Thunderbird Lake.





Photo 13. View of Wetland 10, located around Unnamed Pond 1.

Photo 14. View of Wetland 11, an isolated wetland located in the northwestern portion of the study area.





Photo 15. View of Wetland 12, an isolated wetland located north of Thunderbird Lake in the study area.



Appendix B Wetland Determination Data Forms

Project/Site: Thunderbird Property	City/County: Pueblo County	,	Sampling Date: 8/11/2020
Applicant/Owner: Martin Marietta		State: CO	Sampling Point: SP-1
Investigator(s): MRF/TLM, Pinyon Environmental Inc.	Section, Township, Range:	S31, T20S, R63W	
Landform (hillslope, terrace, etc.): Peninsula	_ Local relief (concave, conv	<sub>ex, none):</sub> <u>Concave</u>	Slope (%): 2
Subregion (LRR): <u>Western Great Plains Range and Irrigated Region</u> Lat: <u>38</u>	.260995° Lo	ng: <u>-104.492626°</u>	Datum: WGS 84
Soil Map Unit Name: Glenberg-Haversid complex, 0 to 2 percent slope	s, occasionally flooded	NWI classific	ation: PUBF
Are climatic / hydrologic conditions on the site typical for this time of year of version of the second sec	ear? Yes X No y disturbed? Are "Norr roblematic? (If needed	_ (If no, explain in Ro nal Circumstances" p d, explain any answe	emarks.) vresent? Yes X No rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling point loca	tions, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes X No	In the Compled Are		

Hydric Soil Present? Wetland Hydrology Present?	Yes X Yes X	No No No	Is the Sampled Area within a Wetland?	Yes X	No
Remarks:					
Peninsula within pond. Pond is su	rrounded by F	lussian olive trees	Hydrophytic vegetation	wetland hydrology	and hydric soils noted

Peninsula within pond. Pond is surrounded by Russian olive trees. Hydrophytic vegetation, wetland hydrology, and hydric soils noted.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 Ft radius)	% Cover	Species?	Status	Number of Dominant Species
1. Elaeagnus angustifolia	30	Y	FACU	That Are OBL, FACW, or FAC
2				(excluding FAC-): $\underline{2}$ (A)
3				Total Number of Dominant
4.				Species Across All Strata: <u>3</u> (B)
	30	= Total Cov	/er	Demonst of Demois and Creation
Sapling/Shrub Stratum (Plot size: 15 Ft radius				That Are OBL FACW or FAC <sup>66</sup> (A/B)
1. N/A				
2.				Prevalence Index worksheet:
3				Total % Cover of: Multiply by:
				OBL species $0$ x 1 = $0$
4				FACW species $0$ x 2 = 0
5				FAC species $0$ $x_3 = 0$
Llorb Stratum (Distaire, 5 Ft radius	0	= Total Cov	/er	$\frac{1}{1} = \frac{1}{1} = \frac{1}$
Schoenoplectus pungens	55	Y	OBI	$\frac{1}{1} = \frac{1}{1} = \frac{1}$
Bholaris arundinacea	20			$\frac{1}{2} OFL species \frac{1}{2} x S = \frac{1}{2}$
2. Muhlanhamia concritatio	- 20	- <u>-</u>		Column lotais: $\underline{\circ}$ (A) $\underline{\circ}$ (B)
3. Munienbergia asperiiolia	10	<u>N</u>	FACW	Prevalence index = $B/\Delta = NaN$
4. Verbena hastata	5	N	FACW	
5. Echinochloa muricata	5	N	FACW	A Devid Test (as the leader to ) (as station
<sub>6.</sub> Helianthus annuus	5	Ν	FACU	All dominants are FACW and/or OBL.
7.				$\frac{X}{2}$ 2 - Dominance Test is >50%
8				3 - Prevalence Index is ≤3.0 <sup>1</sup>
0				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10	100			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 15 Ft radius )	100	= Total Cov	/er	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1 N/A				be present, unless disturbed or problematic.
2	<u> </u>			Hydrophytic Vegetation
% Bara Cround in Llark Stratum 0	0	= Total Cov	/er	Present? Yes X No
	130	= Iotai Veç	JCover	
Desses deminance test for hydrophytic verstation	D5 - FAC Neu	tral Test for hydrol	ogy. Drop all FAC,	cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.
Passes dominance lest for hydrophylic vegetation.				

Profile Desc	cription: (Describ	pe to the depth r	eeded to docu	ment the	indicator	or confiri	n the absence	e of indicators.)	
Depth	Matrix	<u> </u>	Redo	ox Feature	es T	- 2	<b>-</b> <i>i</i>		
(inches)			Color (moist)	%				Remarks	
0-12	10YR 5/2	<u>95</u> 51	R 4/6	5	<u> </u>	IVI	SaL	Redox prominent	
12-20	10YR 4/2	100					LSa		
17							21		
Hydric Soil	Indicators: (App	licable to all LR	Rs, unless othe	s=Covere rwise no	ted.)	ed Sand G	Indicators	s for Problematic Hydric Soils <sup>3</sup> :	
Histosol	(A1)		Sandy	Gleved M	atrix (S4)		1 cm	Muck (A9) (LRR I, J)	
Histic E	pipedon (A2)		Sandy	Redox (S	5)		Coast	t Prairie Redox (A16) (LRR F, G, H)	
Black H	istic (A3)		Strippe	d Matrix (	ý S6)		Dark	Surface (S7) (LRR G)	
Hydroge	en Sulfide (A4)		Loamy	Mucky M	ineral (F1)		High	Plains Depressions (F16)	
Stratifie	d Lavers (A5) (LRI	<b>R F</b> )	Loamy	Gleved M	latrix (F2)		(L	RR H outside of MLRA 72 & 73)	
1 cm Mi	uck (A9) (LRR F. G	G. H)	X Deplete	ed Matrix	(F3)		Redu	ced Vertic (F18)	
Deplete	d Below Dark Surf	ace (A11)	Redox	Dark Surf	ace (F6)		Red F	Parent Material (TF2)	
Thick Da	ark Surface (A12)	( )	Deplete	ed Dark S	urface (F7	)	Verv	Shallow Dark Surface (TF12)	
Sandy M	Aucky Mineral (S1)	)	Redox	Depressio	ons (F8)	/	Other (Explain in Remarks)		
2.5 cm l	Mucky Peat or Pea	, at (S2) ( <b>LRR G. H</b>	) High Plains Depressions (F16)			16)	<sup>3</sup> Indicators of hydrophytic vegetation and		
<u>5 cm M</u>	ucky Peat or Peat (	(S3) (I RR F)	(MLRA 72 & 73 of LRR H)			2 H)	wetland hydrology must be present.		
		(00) (ERRET)				,	unless disturbed or problematic.		
Restrictive	Layer (if present)	:							
lype:			-					N/	
Depth (in	ches):		-				Hydric Soi	il Present? Yes X No	
Remarks:									
Soil sample	e meets requirem	nents for F3.							
HYDROLO	)GY								
Wetland Hy		re .							
		fono no nuino de el	ack all that are	<b>b</b> )			Coord	lon Indicators (minimum of two	

Primary Indicators (minimum	of one require	d; check	all that apply)		Sec	condary Indicators (minimum of two required)
Surface Water (A1)			Salt Crust (B11)		_	Surface Soil Cracks (B6)
X High Water Table (A2)			Aquatic Invertebrates (B13)			Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)			Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)	
Water Marks (B1)			Dry-Season Water Table (C2)	Oxidized Rhizospheres on Living Roots (C3)		
Sediment Deposits (B2)			Oxidized Rhizospheres on Living	Roots (C3) (where tilled)		
Drift Deposits (B3)			(where not tilled)			Crayfish Burrows (C8)
Algal Mat or Crust (B4)			Presence of Reduced Iron (C4)			Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Iron Deposits (B5) Thin Muck Surface (C7)				<u>X</u>	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)				X	FAC-Neutral Test (D5)	
Water-Stained Leaves (B	9)					Frost-Heave Hummocks (D7) (LRR F)
Field Observations:						
Surface Water Present?	Yes	<sub>No</sub> <u>X</u>	_ Depth (inches):			
Water Table Present?	Yes X	No	_ Depth (inches): <u>10</u>			
Saturation Present? (includes capillary fringe)	Yes X	No	_ Depth (inches): 0-20	Wetland I	Hydr	ology Present? Yes X No
Describe Recorded Data (stre	am gauge, m	onitoring	well, aerial photos, previous inspec	tions), if ava	ailabl	e:
Remarks:						
Meets requirements for A2	, A3, D2, an	d passes	s FAC-Neutral Test (D5).			

Project/Site: Thunderbird Property	City/County: Pueblo C	ounty	Sampling Date: 8/11/2020
Applicant/Owner: Martin Marietta		State: CO	Sampling Point: SP-2
Investigator(s): MRF/TLM, Pinyon Environmental Inc.	Section, Township, Ra	nge: S31, T20S, R63W	
Landform (hillslope, terrace, etc.): <u>Hillslope</u>	Local relief (concave,	convex, none): <u>Concave</u>	Slope (%): <u>1</u>
Subregion (LRR): Western Great Plains Range and Irrigated Region Lat: 38	.260998°	_ Long: <u>-104.492533°</u>	Datum: WGS 84
Soil Map Unit Name: Glenberg-Haversid complex, 0 to 2 percent slopes	s, occasionally flooded	NWI classific	ation: None
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes X No	(If no, explain in R	emarks.)
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> significantly	disturbed? Are	"Normal Circumstances" p	oresent? Yes X No
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> naturally pro	oblematic? (If ne	eded, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling point l	ocations, transects	, important features, etc.

Wetland Hydrology Present?   Yes No ^	Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes         No X           Yes         No X           Yes         No X           Yes         No X	Is the Sampled Area within a Wetland?	Yes	No <u>X</u>
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Remarks:

SP-2 is located upslope from SP-1. The area was dominated by upland vegetation. Hydric soils and wetland hydrology were not noted.

00 Ft	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 Ft radius )	% Cover	Species?	Status	Number of Dominant Species	
1. Elaeagnus angustifolia	40	Y	FACU	That Are OBL, FACW, or FAC	
2				(excluding FAC-):	(A)
3				Total Number of Dominant	
4.				Species Across All Strata: <u>3</u>	(B)
	40	= Total Cov	/or		
Sapling/Shrub Stratum (Plot size: 15 Ft radius )		- 10101 000		That Are OBL EACW or EAC: 0	(A/B)
1. N/A					(/ () D)
2				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	_
3				OBL species $0$ x 1 = $0$	
4				FACW species $0$ x 2 = $0$	-
5			<u> </u>	EAC species $0$ $x_3 = 0$	-
5 Ft radius	0	= Total Cov	/er	$\frac{125}{125} \times 4 = 500$	-
Herb Stratum (Plot size: <u>5111 adids</u> )	50	V	EACU	$\begin{array}{c} \text{FACO species}  \underline{1-0} \qquad x \neq \underline{1-0} \\ \text{ACO species}  \underline{1-0} \qquad x \neq \underline{1-0} \\ \text{ACO species}  \underline{1-0} \\ \text{ACO species} \\ ACO speci$	-
			FACU	UPL species $\frac{0}{105}$ x 5 = $\frac{0}{500}$	-
2. Chenopodium album	25	Y	FACU	Column Totals: 125 (A) 500	_ (B)
3. Helianthus annuus	10	N	FACU	$D_{\text{revel}}$ and $ aday = D(A = 4)$	
4					
5.				Hydrophytic Vegetation Indicators:	
6				1 - Rapid Test for Hydrophytic Vegetation	
7				2 - Dominance Test is >50%	
0				3 - Prevalence Index is ≤3.0 <sup>1</sup>	
0				4 - Morphological Adaptations <sup>1</sup> (Provide supp	oorting
9				data in Remarks or on a separate sheet)	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain	n)
March March Obstance (Distance 15 Et radius	85	= Total Cov	/er	<sup>1</sup> Indicators of hydric soil and watland hydrology m	wat
<u>Woody Vine Stratum</u> (Plot size: <u>101 tradius</u> )				be present, unless disturbed or problematic	lust
1. <u>N/A</u>					
2				Hydrophytic	
15	0	= Total Cov	/er	Vegetation Present? Ves No X	
% Bare Ground in Herb Stratum 15	<u>125</u>	= Total Veg	g Cover		
Remarks:	D5 - FAC Neut	tral Test for hydrol	ogy. Drop all FAC,	, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YI	ES to D5.
Area dominated by upland vegetation.					

Profile Des	cription: (Describe to the	e depth need	ed to docu	iment the indica	tor or confirm	n the absence	e of indicators.)
Depth	Matrix	-	Red	ox Features			
(inches)	Color (moist) %	5 Colo	r (moist)	%Тур	e <sup>1</sup> Loc <sup>2</sup>	Texture	Remarks
0-14	10YR 4/2 100	)				SaL	No redox noted
	·						
Туре: С=С	Concentration, D=Depletion,	RM=Reduce	ed Matrix, C	S=Covered or C	oated Sand G	rains. <sup>2</sup> Lo	ocation: PL=Pore Lining, M=Matrix.
lydric Soil	Indicators: (Applicable t	ο all LRRs, ι	unless othe	erwise noted.)		Indicators	s for Problematic Hydric Soils <sup>3</sup> :
Histoso	ol (A1)		Sandy	Gleyed Matrix (S	64)	1 cm	Muck (A9) ( <b>LRR I, J</b> )
Histic E	Epipedon (A2)		Sandy	Redox (S5)		Coasi	t Prairie Redox (A16) ( <b>LRR F, G, H</b> )
Black F	listic (A3)		Strippe	ed Matrix (S6)		Dark	Surface (S7) (LRR G)
Hydrog Stratific	en Sulfide (A4)		Loamy	/ Mucky Mineral ( / Cloved Matrix (I	F1) =2)	High	Plains Depressions (F16)
3uaune 1 cm M	(LAYEIS (AS) (LAAF)		Loanny Denlet	ed Matrix (F3)	2)	(⊾ Redu	ced Vertic (F18)
_ Deplete	ed Below Dark Surface (A1	1)	Beplot Redox	Dark Surface (F	6)	Red F	Parent Material (TF2)
Thick D	ark Surface (A12)	,	Deplet	ed Dark Surface	(F7)	Verv	Shallow Dark Surface (TF12)
Sandy	Mucky Mineral (S1)		Redox	Depressions (F8	3)	Other	(Explain in Remarks)
2.5 cm	Mucky Peat or Peat (S2) (L	.RR G, H)	High P	lains Depression	s (F16)	<sup>3</sup> Indicators	s of hydrophytic vegetation and
5 cm M	lucky Peat or Peat (S3) (LR	RF)	( <b>M</b>	LRA 72 & 73 of	LRR H)	wetlar	nd hydrology must be present,
						unles	s disturbed or problematic.
Restrictive	Layer (if present):						
Туре:							X
Depth (ir	nches):					Hydric Soi	il Present? Yes No X
Remarks:							
lo hydric s	soil indicators noted.						
YDROLO	DGY						
vetiand Hy	drology indicators:			. 1. )		0	land to the first of the second s
rimary ind	icators (minimum of one red	quirea; cneck	all that app			Second	lary indicators (minimum of two requ
_ Surface	e Water (A1)		_ Salt Crus	st (B11)	2.	Su	rface Soil Cracks (B6)
_ High W	ater Table (A2)	—	_ Aquatic Ii	nvertebrates (B1	3)	Sp	arsely Vegetated Concave Surface (
Saturat	ion (A3)	—	_ Hydroger	n Sulfide Odor (C	(1)	Dra	ainage Patterns (B10)
Water I	Marks (B1)		_ Dry-Seas	son Water Table	(C2)	Ox	Idized Rhizospheres on Living Roots
_ Sedime	ent Deposits (B2)		_ Oxidized	Rhizospheres or	LIVING Roots	(U3) (1	where tilled)
Drift De	eposits (B3)		(where	not tilled)	(0.1)	Cra	ayrısn Burrows (C8)
Algal M	lat or Crust (B4)		Presence	e of Reduced Iror	i (C4)	Sa	turation Visible on Aerial Imagery (C
Iron De	posits (B5)	<u> </u>	I hin Muc	K Surface (C7)	、 、	Ge	omorphic Position (D2)
Inundat	tion Visible on Aerial Image	ry (B7)	Other (E)	cplain in Remarks	S)	FA	C-Neutral Test (D5)
Water-9	Stained Leaves (R9)					Fro	st-Heave Hummocks (D7) (I RR F)

Water-Stained Leaves (	Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F)				
Field Observations:					
Surface Water Present?	Yes	No <u>X</u>	_ Depth (inches):		
Water Table Present?	Yes	<u>No X</u>	_ Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes	No X	_ Depth (inches):	Wetland Hydrology Present?	Yes No X
Describe Recorded Data (st	ream gauge	, monitoring	well, aerial photos, previous inspe	ctions), if available:	
Remarks:					
No hydrology indicators n	oted.				

Project/Site: Thunderbird Property	City/County: Pueblo C	ounty	Sampling Date: <u>8/11/2020</u>		
Applicant/Owner: Martin Marietta		State: CO	_ Sampling Point: SP-3		
Investigator(s): MRF/TLM, Pinyon Environmental Inc.	_ Section, Township, Ra	nge: S31, T20S, R63W			
Landform (hillslope, terrace, etc.): Terrace	_ Local relief (concave,	convex, none): <u>None</u>	Slope (%): <u>1</u>		
Subregion (LRR): <u>Western Great Plains Range and Irrigated Region</u> Lat: <u>3</u>	8.265960°	_ Long: <u>-104.493068°</u>	Datum: WGS 84		
Soil Map Unit Name: Las Animas fine sandy loam, 0 to 2 percent slop	es, frequently flooded	NWI classif	fication: Rp1FO		
Are climatic / hydrologic conditions on the site typical for this time of y Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> significantl Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> naturally p	rear? Yes X No y disturbed? Are roblematic? (If ne	(If no, explain in "Normal Circumstances" eeded, explain any answ	Remarks.) ' present? Yes <u>X</u> No /ers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map showin	g sampling point l	ocations, transect	s, important features, etc.		
X					

Hydrophytic Vegetation Present?	Yes X	No	Is the Sampled Area		
Hydric Soil Present?	Yes X	No	within a Wetland?	Vos X	No
Wetland Hydrology Present?	Yes X	No		163	
Remarks:					

Remarks:

SP-3 is located on a terrace along an irrigation ditch. The banks of the ditch are steeply incised and small wetland patches are present on terraced areas within the ditch. Hydrophytic vegetation, wetland hydrology, and hydric soils noted.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	-
Tree Stratum (Plot size: 30 Ft radius )	<u>% Cover</u>	Species?	Status	Number of Dominant Species	
1. <u>N/A</u>	·			That Are OBL, FACW, or FAC	`
2					)
3				Total Number of Dominant	
4				Species Across All Strata: 1 (B)	)
	0	= Total Cov	/er	Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 15 Ft radius )				That Are OBL, FACW, or FAC: 100 (A/	′B)
1. <u>N/A</u>				Developer to develop herefo	
2				Prevalence Index worksneet:	
3				I otal % Cover of: Multiply by:	
4				OBL species $\frac{0}{2}$ x 1 = $\frac{0}{2}$	
5.				FACW species $0   x^2 = 0$	
	0	= Total Cov	/er	FAC species $0$ x 3 = $0$	
Herb Stratum (Plot size: 5 Ft radius				FACU species $0   x 4 = 0$	
<sub>1.</sub> <u>Eleocharis palustris</u>	60	Y	OBL	UPL species $0   x 5 = 0$	
2. Phalaris arundinacea	10	Ν	FACW	Column Totals: <u>0</u> (A) <u>0</u> (E	3)
3. Polypogon monspeliensis	10	N	FACW		
A Persicaria pensylvanica	10	N	FACW	Prevalence Index = B/A = <u>NaN</u>	
5 Helianthus annuus	5	N	FACU	Hydrophytic Vegetation Indicators:	
				X 1 - Rapid Test for Hydrophytic Vegetation	
0	·			2 - Dominance Test is >50%	
<i>1</i>	·			3 - Prevalence Index is ≤3.0 <sup>1</sup>	
8	·			4 - Morphological Adaptations <sup>1</sup> (Provide supporti	ing
9	·			data in Remarks or on a separate sheet)	0
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
Weeder Vine Other (Diet size, 15 Ft radius)	95	= Total Cov	/er	<sup>1</sup> Indiactors of hydric coil and watland hydrology must	
<u>vvoody vine Stratum</u> (Piot size: <u>ion rhodido</u> )				be present, unless disturbed or problematic.	,
1	·				
2	<u> </u>		. <u> </u>	Hydrophytic	
% Dans Creverd in User Chestern 5	0	= Total Cov	/er	Present? Yes X No	
% bare Ground in Herb Stratum <u>∽</u>	95	= Iotal Veg	gCover		
Vegetation peaces the Danid and Demission Tests	D5 - FAC Neut	tral Test for hydrol	ogy. Drop all FAC,	, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to	D5.
vegetation passes the Rapid and Dominance Tests.					

#### SOIL

Depth	Matrix		Red	ox Featur	es1	. ,		<b>_</b> .
(inches)	Color (moist)	%	Color (moist)	%	<u>Type'</u>		Texture	Remarks
0-7	2.5Y 5/1	80	7.5YR 5/8	20	<u>C</u>	PL/M	SaCL	Redox prominent
7-20	Gley 1 4/N	100					SaCL	
	·							
Type: C=C	Concentration, D=D	epletion, RM	I=Reduced Matrix, C	S=Cover	ed or Coate	ed Sand G	rains. <sup>2</sup> Lo	ocation: PL=Pore Lining, M=Matrix.
lydric Soil	Indicators: (Appl	licable to al	I LRRs, unless othe	erwise no	oted.)		Indicator	s for Problematic Hydric Soils <sup>2</sup> :
Histoso	I (A1)		Sandy	Gleyed N	latrix (S4)		1 cm	Muck (A9) ( <b>LRR I, J</b> )
Histic E	pipedon (A2)		Sandy	Redox (S	(5) (20)		Coas	st Prairie Redox (A16) (LRR F, G, H)
Black H	listic (A3)		Strippe	ed Matrix	(S6) line and (E4)		Dark	Surface (S7) (LRR G)
Hydroge	en Suitide (A4)		Loamy		Ineral (F1)		High	Plains Depressions (F16)
Suaune		хг) 2 Ш)	X Doplot	od Matrix	(E2)		(L Rodu	Lead Vortic (E18)
T CIT M Deplete	d Below Dark Surf	асе (А11)	Redox	Dark Sur	(F3) face (F6)		Red I	Parent Material (TE2)
Depicto Thick D	ark Surface (A12)		Nedex	ed Dark S	Surface (F7	)	Verv	Shallow Dark Surface (TF12)
Sandv I	Mucky Mineral (S1)		Redox	Depressi	ons (F8)	/	Othe	r (Explain in Remarks)
2.5 cm	Mucky Peat or Pea	t (S2) ( <b>LRR</b>	G, H) High P	lains Dep	ressions (F	16)	<sup>3</sup> Indicator	s of hydrophytic vegetation and
5 cm M	ucky Peat or Peat (	(S3) ( <b>LRR F</b>	) (M	LRA 72 8	73 of LRF	R H)	wetla unles	nd hydrology must be present, ss disturbed or problematic.
Restrictive	Layer (if present)	:						·
Туре:								×
Depth (in	iches):						Hydric So	il Present? Yes <u>^</u> No
ioil sample	e meets requirem	ents for F3	i.					
YDROLC	OGY							
Vetland Hy	drology Indicator	'S:					_	
Primary Indi	<u>icators (minimum o</u>	f one require	ed; check all that app	oly)			Second	dary Indicators (minimum of two required
Surface	e Water (A1)		Salt Crus	t (B11)			Su	ırface Soil Cracks (B6)
High W	ater Table (A2)		Aquatic I	nvertebrat	tes (B13)		Sp	parsely Vegetated Concave Surface (B8
Saturati	ion (A3)		Hydroger	n Sulfide (	Odor (C1)		Dra	ainage Patterns (B10)
Water N	/larks (B1)		Dry-Seas	on Water	Table (C2	)	Ox	kidized Rhizospheres on Living Roots (C
Sedime	ent Deposits (B2)		X Oxidized	Rhizosph	eres on Liv	ring Roots	(C3) (	where tilled)
Drift De	posits (B3)		(where	not tilled	<b>i</b> )		Cra	ayfish Burrows (C8)

Wetland Hydrology Indicate	ors:			
Primary Indicators (minimum	of one required; check		Secondary Indicators (minimum of two required)	
Surface Water (A1)	_	_ Salt Crust (B11)	-	Surface Soil Cracks (B6)
High Water Table (A2)		Aquatic Invertebrates (B13)	-	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	_	_ Hydrogen Sulfide Odor (C1)	-	Drainage Patterns (B10)
Water Marks (B1)	_	Dry-Season Water Table (C2)	-	Oxidized Rhizospheres on Living Roots (C3)
Sediment Deposits (B2)	<u>x</u>	Oxidized Rhizospheres on Living	Roots (C3)	(where tilled)
Drift Deposits (B3)		(where not tilled)	-	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	_	Presence of Reduced Iron (C4)	-	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Thin Muck Surface (C7)	- -	K Geomorphic Position (D2)
Inundation Visible on Aer	ial Imagery (B7)	Other (Explain in Remarks)	-	X FAC-Neutral Test (D5)
Water-Stained Leaves (B	9)		-	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 Hy	rdrology Present? Yes X No
Describe Recorded Data (stre	am gauge, monitoring	well, aerial photos, previous inspec	tions), if avail	able:
Remarks:				
Meets requirements for C3	, D2, and passes the	e FAC-Neutral Test (D5).		

Project/Site: Thunderbird Property	City/County: F	Pueblo County		Sampling Date: 8	3/12/2020
Applicant/Owner: Martin Marietta			State: CO	Sampling Point:	SP-4
Investigator(s): MRF/TLM, Pinyon Environmental Inc.	Section, Town	ship, Range: _	S31, T20S, R63W		
Landform (hillslope, terrace, etc.): <u>None</u>	Local relief (c	oncave, conve	<sub>x, none):</sub> <u>Concave</u>	Slo	be (%): <u>1</u>
Subregion (LRR): <u>Western Great Plains Range and Irrigated Region</u> Lat: <u>38</u>	8.265930°	Long	g: <u>-104.493089°</u>	Datu	m: WGS 84
Soil Map Unit Name: Las Animas fine sandy loam, 0 to 2 percent slope	es, frequently flo	oded	NWI classific	ation: Rp1FO	
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes X	No	(If no, explain in R	emarks.)	
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> significantly	y disturbed?	Are "Norm	al Circumstances" p	oresent? Yes X	No
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> naturally pr	roblematic?	(If needed,	explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing	g sampling	point locati	ons, transects	, important fe	atures, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes         No         X           Yes         No         X           Yes         No         X	Is the Sampled Area within a Wetland?	Yes	No <u>X</u>
Romarks:				

Remarks:

SP-4 is located in the upland area adjacent to the irrigation ditch, above SP-3. Area lacking hydrophytic vegetation, wetland hydrology, and hydric soils.

#### **VEGETATION – Use scientific names of plants.**

Tree Stratum       (Plot size: 30 Pt radius )       % Cover Species ?       Status ?       Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):       0       (A)         2		Absolute	Dominant	Indicator	Dominance Test worksheet:
1. $N/A$ That Are OBL, FACW, or FAC (excluding FAC-):       0       (A)         3.       Total Number of Dominant       Total Number of Dominant       3       (B)         3.       0       = Total Cover       Percent of Dominant Species       0       (A)         1. $N/A$ 0       = Total Cover       Percent of Dominant Species       0       (A)         2.       1. $N/A$ 0       = Total Cover       Pervalence Index worksheet:       0       (A)         3.       0       = Total Cover       Pervalence Index worksheet:       1       0       (A)         4.       0       = Total Cover       FACU Species 0       x 1 = 0       (A)         4.       0       = Total Cover       FACU Species 0       x 2 = 0       (A)         4.       0       = Total Cover       FACU Species 0       x 3 = 0       (A)         1. Helianthus annuus       20       Y       FACU Uspecies 20       x 5 = 100       (C)       (A)         2.       15       Y       UPL       FACU Uspecies 45       (A)       280       (B)         3. Bromus tectorum       15       Y       UPL       1       Hydrophytic Vegetation Indicators:       1       -1       -1	Tree Stratum (Plot size: 30 Ft radius )	% Cover	Species?	Status	Number of Dominant Species
2.2.2.2.2.2.2.2.2.2.3.3.0= Total CoverTotal Number of Dominant Species That Are OBL, FACW, or FAC:0(A)1. N/A2.3 <t< td=""><td>1. <u>N/A</u></td><td></td><td></td><td></td><td>That Are OBL, FACW, or FAC</td></t<>	1. <u>N/A</u>				That Are OBL, FACW, or FAC
3.	2				$(\text{excluding FAC-}): \qquad \underline{\circ} \qquad (A)$
4.       0       = Total Cover       Species Across All Strata:       3       (B)         9       = Total Cover       Percent of Dominant Species That Are OBL, FACW, or FAC:       0       (A/B)         1.       N/A       Prevalence Index worksheet:       0       (A/B)         2.       0       = Total Cover       Prevalence Index worksheet:       0       (A/B)         4.       0       = Total Cover       Prevalence Index worksheet:       0       (A/B)         5.       0       = Total Cover       FACW species       0       x 1 = 0         7.       1.       Helianthus annuus       20       Y       FACU       FACU species       0       x 4 = 180         9.       15       Y       FACU       Prevalence Index = B/A = 4.3076923076923075       Prevalence Index = B/A = 4.3076923076923075         14 derophytic Vegetation andecares       5       N       FACU       Prevalence Index = S/A = 4.3076923076923075         2.       Consus canadensis       5       N       FACU       2.       0         6.       Chenopodium album       5       N       FACU       2.       0       .         9.       .       .       .       .       .       .       . <td>3</td> <td></td> <td></td> <td></td> <td>Total Number of Dominant</td>	3				Total Number of Dominant
Sapling/Shrub Stratum (Plot size: 15 Ft radius )       0       = Total Cover       Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)         1. N/A       -       -       -       -       -       (A/B)         2	4				Species Across All Strata: <u>3</u> (B)
Sapling/Shrub Stratum (Plot size: 15 Ft radius )       (A/B)         1. N/A       Prevalence Index worksheet:         3		0	= Total Cov	ver	Percent of Dominant Species
Image: NA intermediate in the second sec	Sapling/Shrub Stratum (Plot size: 15 Ft radius )				That Are OBL, FACW, or FAC: $0$ (A/B)
Prevalence Index worksheet:         3.	1. <u>N/A</u>				
3.       Total % Cover of:       Multiply by:         4.       .	2				Prevalence Index worksheet:
4.	3.				Total % Cover of: Multiply by:
5.       Image: second structure of the structure	4.				OBL species $\frac{0}{x + 1} = \frac{0}{x + 1}$
$D_{\rm error}$ $D_{\rm error}$ $D_{\rm error}$ $FAC species$ $D_{\rm error}$ $X 3 = 0$ $1.$ Helianthus annuus $20$ $Y$ $FAC U$ $FAC U$ species $\frac{0}{45}$ $x 4 = \frac{180}{100}$ $2.$ Bassia scoparia $15$ $Y$ $FAC U$ $VL$ species $\frac{20}{65}$ $x 5 = \frac{100}{280}$ $3.$ Bromus tectorum $15$ $Y$ $VL$ $VL$ $VL$ $Column Totals:$ $\frac{65}{65}$ $(A)$ $\frac{280}{280}$ $(B)$ $4.$ Cirsium arvense $5$ $N$ $FAC U$ $VL$	5				FACW species $0   x 2 = 0$
Herb Stratum (Plot size: $5$ Ft radius)Image: $5$ Ft radius)FT Clust coverFACU species $45$ x 4 = $\frac{180}{20}$ x 5 = $\frac{100}{280}$ (B)1. Helianthus annuus15YFACU FACUUPL species $20$ x 5 = $\frac{100}{280}$ (B)3. Bromus tectorum15YUPL FACUColumn Totals: $65$ (A) $280$ (B)4. Cirsium arvense5NFACU 	···	0	- Total Cov		FAC species $0 \times 3 = 0$
1. Helianthus annuus       20       Y       FACU       UPL species       20       x 5 = 100         2. Bassia scoparia       15       Y       FACU       UPL species       20       x 5 = 100         3. Bromus tectorum       15       Y       FACU       UPL       Column Totals:       65       (A)       280       (B)         4. Cirsium arvense       5       N       FACU       UPL       Prevalence Index = B/A = 4.3076923075       Hydrophytic Vegetation Indicators:         5. Conyza canadensis       5       N       UPL       Image: species       20       x 5 = 100       (B)         6. Chenopodium album       5       N       UPL       Image: species       20       x 5 = 4.3076923076923075         8.	Herb Stratum (Plot size: 5 Ft radius )		- 10(a) 000		FACU species <u>45</u> x 4 = <u>180</u>
2.       Bassia scoparia       15       Y       FACU       Column Totals:       65       (A)       280       (B)         3.       Bromus tectorum       15       Y       UPL       Prevalence Index = B/A =       4.3076923076923075         4.       Cirsium arvense       5       N       FACU       UPL       Prevalence Index = B/A =       4.3076923076923075         5.       Conyza canadensis       5       N       UPL       FACU       Hydrophytic Vegetation Indicators:         6.       Chenopodium album       5       N       FACU       -1       Rapid Test for Hydrophytic Vegetation         7.       -       -       -       -       -       -       -       -         8.       -       -       -       -       -       -       -       -       -       -       -         9.       -	1. Helianthus annuus	20	Υ	FACU	UPL species $\frac{20}{x 5} = \frac{100}{x - 100}$
3.       Bromus tectorum       15       Y       UPL       Prevalence Index = B/A = 4.3076923076923075         4.       Cirsium arvense       5       N       FACU       Prevalence Index = B/A = 4.3076923076923075         5.       Conyza canadensis       5       N       UPL       Hydrophytic Vegetation Indicators:         6.       Chenopodium album       5       N       FACU	2. Bassia scoparia	15	Y	FACU	Column Totals: <u>65</u> (A) <u>280</u> (B)
4. Cirsium arvense       5       N       FACU       Prevalence Index = B/A = 4.3076923076923075         5. Conyza canadensis       5       N       UPL       Hydrophytic Vegetation Indicators:         6. Chenopodium album       5       N       FACU	3. Bromus tectorum	15	Y	UPL	
5.       Conyza canadensis       5       N       UPL       Hydrophytic Vegetation Indicators:         6.       Chenopodium album       5       N       FACU       1 - Rapid Test for Hydrophytic Vegetation         7.	4 Cirsium arvense	5	N	FACU	Prevalence Index = $B/A = \frac{4.3076923076923075}{2}$
6.       Chenopodium album       5       N       FACU       1 - Rapid Test for Hydrophytic Vegetation         7.	5 Conyza canadensis	5	N	UPL	Hydrophytic Vegetation Indicators:
7.	6 Chenopodium album	5	N	FACU	1 - Rapid Test for Hydrophytic Vegetation
8.	7				2 - Dominance Test is >50%
0.	Q				3 - Prevalence Index is ≤3.0 <sup>1</sup>
9.	0				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
10.       Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)         Woody Vine Stratum (Plot size: 15 Ft radius )       65       = Total Cover       Indicators of hydric soil and wetland hydrology must	9				data in Remarks or on a separate sheet)
<u>Woody Vine Stratum</u> (Plot size: <u>15 Ft radius</u> ) = Total Cover <sup>1</sup> Indicators of hydric soil and wetland hydrology must	10	65			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
woody vine Stratum (110t size.	Woody Vine Stratum (Plot size: 15 Ft radius )	03	= Total Cov	ver	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1 N/A be present, unless disturbed or problematic.	1 N/A				be present, unless disturbed or problematic.
					Heat and a fee
2 Hydrophytic	۲ <u>۲</u>	0			Hydropnytic Vegetation
% Bare Ground in Herb Stratum 35 $65$ – Total Veg Cover Present? Yes No X	% Bare Ground in Herb Stratum 35	65	= I otal Cov	er Cover	Present? Yes <u>No X</u>
Remarks:	Remarks:	00	- rotai veg		

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 Dominance Test or Prevalence Index.

Deptn (inches)	Color (moist)	<u>%</u> C(	Neac	<u>x ⊢eature</u> %	S Type <sup>1</sup>	$1 \text{ oc}^2$	Texture	Remarks
0-20	2.5Y 5/3	100		/0	туре	LUC	Sal	No redox noted
0.20	2.01 0/0				·			
					. <u> </u>			
					<u> </u>			
					·			
					·			
					·			
<sup>1</sup> Type: C=C	oncentration, D=Dep	oletion, RM=Redu	iced Matrix, CS	S=Covere	d or Coate	d Sand G	ains. <sup>2</sup> Lo	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applic	able to all LRRs	, unless othe	rwise not	ed.)		Indicators	s for Problematic Hydric Soils <sup>3</sup> :
Histosol	l (A1)		Sandy (	Gleyed Ma	atrix (S4)		1 cm	Muck (A9) ( <b>LRR I, J</b> )
Histic E	pipedon (A2)		Sandy I	Redox (S5	5)		Coast	t Prairie Redox (A16) ( <b>LRR F, G, H</b> )
Black H	istic (A3)		Stripped	d Matrix (S	56) aarol (E1)		Dark	Surface (S7) (LRR G)
Hyuroge Stratifie	d Lavers (A5) ( <b>I RR</b>	F)		Gleved M	atrix (F2)		(I)	RR H outside of MI RA 72 & 73)
0 ardamet	uck (A9) (LRR F, G,	H)	Deplete	ed Matrix (	F3)		Redu	ced Vertic (F18)
Deplete	d Below Dark Surfac	, e (A11)	Redox I	Dark Surfa	ace (F6)		Red F	Parent Material (TF2)
Thick Da	ark Surface (A12)		Deplete	ed Dark Su	urface (F7)		Very S	Shallow Dark Surface (TF12)
Sandy M	Mucky Mineral (S1)		Redox I	Depressio	ns (F8)		Other	(Explain in Remarks)
2.5 cm I	Mucky Peat or Peat (	(S2) (LRR G, H)	High Pl	ains Depre	essions (F	16)	°Indicators	s of hydrophytic vegetation and
5 cm Mi	ucky Peat or Peat (S	3) ( <b>LRR F</b> )	(ML	.RA 72 &	73 of LRR	H)	wetlar	nd hydrology must be present,
Restrictive	l aver (if present):						unies	s disturbed of problematic.
Type:	Layer (in present).							
Denth (in	iches):						Hydric Soi	I Present? Yes No X
Bomorko:	icites).						Tiyane oo	
No hydric s	oil indicators note	Ч						
No Hyune 3		u.						
IYDROLO	OGY							
Wetland Hy	drology Indicators:	:						
Primary Indi	cators (minimum of c	one required; che	ck all that appl	y)			Second	lary Indicators (minimum of two required)
Surface	Water (A1)		Salt Crust	(B11)			Su	rface Soil Cracks (B6)
High Wa	ater Table (A2)		Aquatic In	vertebrate	es (B13)		Spa	arsely Vegetated Concave Surface (B8)
Saturati	ion (A3)		Hydrogen	Sulfide O	dor (C1)		Dra	ainage Patterns (B10)
Water M	/larks (B1)		Dry-Seaso	on Water 1	Table (C2)		Ox	idized Rhizospheres on Living Roots (C3)
Sedime	nt Deposits (B2)		Oxidized F	Rhizosphe	res on Livi	ing Roots	(C3) (v	where tilled)
Drift De	posits (B3)		(where	not tilled)			Cra	ayfish Burrows (C8)
Algal Ma	at or Crust (B4)		Presence	of Reduce	ed Iron (C4	-)	Sat	turation Visible on Aerial Imagery (C9)
Iron Dep	posits (B5)		Thin Muck	Surface (	(C7)		Ge	omorphic Position (D2)
Inundati	ion Visible on Aerial	Imagery (B7)	Other (Exp	plain in Re	emarks)		FA	C-Neutral Test (D5)
Water-S	Stained Leaves (B9)						Fro	ost-Heave Hummocks (D7) (LRR F)
	rvations:							
Field Obser		V						
Field Obser Surface Wat	ter Present? Y	/es No X	Depth (in	ches):		_		
Field Obser Surface Wat Water Table	ter Present? Y Present? Y	/es No <u>X</u> /es No <u>X</u>	Depth (in Depth (in	ches): ches):		_		

No wetland hydrology indicators noted.

Project/Site: Thunderbird Property	City/County: Pueblo	County	Sampling Date: 8/13/2020
Applicant/Owner: Martin Marietta		State: CO	Sampling Point: SP-5
Investigator(s): MRF/TLM, Pinyon Environmental Inc.	Section, Township, I	Range: S32, T20S, R63W	
Landform (hillslope, terrace, etc.): Oxbow	Local relief (concav	e, convex, none): <u>Concave</u>	Slope (%): 2
Subregion (LRR): Western Great Plains Range and Irrigated Region Lat: 38	.265770°	Long: <u>-104.474828°</u>	Datum: WGS84
Soil Map Unit Name: Bankard sand, 0 to 2 percent slopes, frequently flo	ooded	NWI classific	ation: R2UBH
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes X No		emarks.)
Are Vegetation No, Soil No, or Hydrology No significantly	disturbed? Ar	e "Normal Circumstances" p	present? Yes X No
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> naturally pr	oblematic? (If	needed, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling poin	t locations, transects	, important features, etc.

Hydric Soil Present?     Yes X     No     No       Wetland Hydrology Present?     Yes X     No	Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes         X         No           Yes         X         No           Yes         X         No	Is the Sampled Area within a Wetland?	Yes X	No
--	---	--	---------------------------------------	-------	----

Remarks:

SP-5 is located in an abandoned channel of the Arkansas River. There is standing water approximately 3 feet west of SP-5 and the water is covered by common duckweed. Much of the surrounding area is densely vegetated with Russian olive and tamarisk. Hydrophytic vegetation, wetland hydrology, and hydric soils noted.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 Ft radius )	% Cover	Species?	Status	Number of Dominant Species	
1. Elaeagnus angustifolia	35	Y	FACU	That Are OBL, FACW, or FAC	
2. Populus deltoides	15	Y	FAC	(excluding FAC-): 6	(A)
3.				Total Number of Dominant	
4.				Species Across All Strata: 7	(B)
	50	- Total Cov	/or		
Sapling/Shrub Stratum (Plot size: 15 Ft radius )		- 10101 001		That Are OBL EACW or EAC: 86	$(\Delta/R)$
1. Salix exigua	20	Υ	FACW		(А) D)
2. Tamarix chinensis	5	Y	FACW	Prevalence Index worksheet:	
3				Total % Cover of: Multiply by:	_
				OBL species $0$ $x_1 = 0$	_
4				FACW species $0$ x 2 = 0	
5				EAC species $0$ $x_3 = 0$	
List Obstance (Distained 5 Et radius	25	= Total Cov	/er	EACH appears $0$ $x = 0$	-
<u>Herb Stratum</u> (Plot size: <u>en tradico</u> )	40	v			-
					-
	25	Y		Column Totals: 0 (A) 0	_ (B)
3. Typha angustitolia	20	Y	OBL	Dravalance Index - D/A - NaN	
4. Schoenoplectus tabernaemontani	10	Ν	OBL		
5. Muhlenbergia asperifolia	2	Ν	FACW	Hydrophytic Vegetation Indicators:	
6	_			1 - Rapid Test for Hydrophytic Vegetation	
7				X 2 - Dominance Test is >50%	
0				3 - Prevalence Index is ≤3.0 <sup>1</sup>	
0				4 - Morphological Adaptations <sup>1</sup> (Provide supp	orting
9				data in Remarks or on a separate sheet)	-
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain	ı)
15 Et radius	97	= Total Cov	/er		
Woody Vine Stratum (Plot size: 13 Pt ladius )				be present unless disturbed or problematic	ust
1. <u>N/A</u>			<u> </u>		
2				Hydrophytic	
2	0	= Total Cov	/er	Vegetation Present 2 Ves X No	
% Bare Ground in Herb Stratum 3	<u>172</u>	= Total Veg	g Cover		
Remarks:	D5 - FAC Neu	ral Test for hydrolo	ogy. Drop all FAC,	cross examine all other dominants. If > 50% remaining are FACW to OBL, then YE	S to D5.
Vegetation passes the dominance test.					

#### SOIL

Profile Desc	cription: (Describ	e to the de	pth needed to doo	cument th	e indicato	r or confiri	m the absence	e of indicators.)
Depth (inches)	Color (moist)	%	Color (moist)	dox Featu %	res Type <sup>1</sup>	$\log^2$	Texture	Remarks
0-8	10YR 3/2	92	10YR 4/6	8	<u> </u>	M	SaL	Redox prominent
8-20	10YR 3/2	85	10YR 4/6	2	C	Μ	SaL	Redox prominent
8-20	Glev 1 3/N	13					Sal	Soil sample has dark mottling from 8-20 inches
								g
			<u> </u>					
	_							
<sup>1</sup> Type: C=C	oncentration, D=De	epletion, RN	I=Reduced Matrix,	CS=Cove	red or Coa	ted Sand G	rains. <sup>2</sup> Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to a	ll LRRs, unless ot	herwise n	oted.)		Indicators	s for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sand	ly Gleyed I	Matrix (S4)	)	1 cm l	Muck (A9) ( <b>LRR I, J</b> )
Histic Ep	pipedon (A2)		Sand	ly Redox (	S5)		Coast	Prairie Redox (A16) (LRR F, G, H)
Black Hi	istic (A3)		Stripp	ped Matrix	(S6) Ainoral (E1	`	Dark S	Surface (S7) (LRR G)
Stratified	d Lavers (A5) ( <b>I RR</b>	? F)	Loan	iy Mucky r v Gleved	Matrix (F2	)	rigit r (1 F	R H outside of MI RA 72 & 73)
1 cm Mu	uck (A9) ( <b>LRR F, G</b>	, <b>H</b> )	Deple	eted Matrix	(F3)	/	Reduc	ced Vertic (F18)
Deplete	d Below Dark Surfa	ace (A11)	x Redo	ox Dark Su	rface (F6)		Red F	Parent Material (TF2)
Thick Da	ark Surface (A12)		Deple	eted Dark	Surface (F	7)	Very S	Shallow Dark Surface (TF12)
Sandy N	Aucky Mineral (S1)		Redo	Dising Devices	sions (F8)		Other	(Explain in Remarks)
2.5 cm M	icky Peat or Peat (	S3) (I RR F	а <b>G, п</b> ) <u></u> підп	MI RA 72	8 73 of IR	(F10) ( <b>R H</b> )	wetlan	ad hydrology must be present
0 0111110			/ (•				unless	s disturbed or problematic.
Restrictive	Layer (if present):							· · · ·
Туре:								
Depth (in	ches):						Hydric Soi	l Present? Yes X No
Remarks:							1	
Hydrogen s	ulfide odor noted	I. Soil sam	ple meets require	ements fo	or A4 and	F6.		
HYDROLO	GY							
Wetland Hv	drology Indicators	 s:						
Primary India	cators (minimum of	one require	ed: check all that a	(vlac			Second	ary Indicators (minimum of two required)
Surface	Water (A1)		Salt Cru	ust (B11)			Sur	face Soil Cracks (B6)
X High Wa	ater Table (A2)		Aquatic	Invertebra	ates (B13)		Spa	arsely Vegetated Concave Surface (B8)
X Saturatio	on (A3)		X Hydroge	en Sulfide	Odor (C1)		Dra	inage Patterns (B10)
Water N	larks (B1)		Dry-Sea	ason Wate	r Table (C	2)	Oxi	dized Rhizospheres on Living Roots (C3)
Sedimer	nt Deposits (B2)		Oxidize	d Rhizospl	heres on L	iving Roots	(C3) (v	where tilled)
Drift Dep	posits (B3)		(wher	re not tille	d)		Cra	yfish Burrows (C8)
Algal Ma	at or Crust (B4)		Presend	ce of Redu	ced Iron (0	C4)	Sat	uration Visible on Aerial Imagery (C9)
Iron Dep	posits (B5)		Thin Mu	uck Surfac	e (C7)			omorphic Position (D2)
Inundati	on Visible on Aeria	I Imagery (I	37) Other (B	Explain in I	Remarks)		<u>^</u> FA(	C-Neutral Test (D5)
Water-S	wations:	)					FI0	st-neave nummocks (D7) (LRR F)
Surface Wat	or Present?	Vec	No X Depth	(inches):				
Water Table	Present?		No Depth	(inches):	10			
Soturation D	rosopt?	Voc X	No Depth	(inches):	1	Wot	land Hydrolog	w Prosent? Vos X No
(includes cap	pillary fringe)	103		(110103)			iana nyarolog	
Describe Re	corded Data (strea	m gauge, n	nonitoring well, aeri	al photos,	previous ir	nspections)	, if available:	
Remarks:								
Meets requi	irements for A2,	A3, C1, D2	2, and the vegeta	tion pass	es the FA	C-Neutral	Test (D5).	

Project/Site: Thunderbird Property	City/County:	Pueblo County	Samplir	ng Date: <u>8/13</u>	3/2020
Applicant/Owner: Martin Marietta		State: CC	) Samplir	ng Point: SP-	6
Investigator(s): MRF/TLM, Pinyon Environmental Inc.	Section, Tow	nship, Range: <u>S32, T20S,</u>	R63W		
Landform (hillslope, terrace, etc.): <u>None</u>	Local relief (	concave, convex, none): <u>N</u>	lone	Slope (	%): _0
Subregion (LRR): Western Great Plains Range and Irrigated Region	Lat: 38.265793°	Long: -104.474	⊦809°	Datum:	WGS84
Soil Map Unit Name: Bankard sand, 0 to 2 percent slopes, free	quently flooded	NWI	classification: R	tp1SS	
Are climatic / hydrologic conditions on the site typical for this t Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> sig Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> nat	ime of year? Yes X nificantly disturbed? turally problematic?	No (If no, exp Are "Normal Circumst (If needed, explain an	lain in Remarks.) ances" present? y answers in Rer	) Yes <u>X</u> marks.)	_ No
SUMMARY OF FINDINGS – Attach site map sl	nowing sampling	point locations, tran	nsects, impo	rtant featu	res, etc.
Hydrophytic Vegetation Present?       Yes No         Hydric Soil Present?       Yes No         Wetland Hydrology Present?       Yes No	X Is the within	Sampled Area	esNo	» <u>×</u>	

Remarks:

SP-6 is in an upland area, above SP-5. The area is lacking hydrophytic vegetation, hydric soils, and hydrology.

#### **VEGETATION – Use scientific names of plants.**

	Abaaluta	Dominant	Indiantar	Dominanaa Taat waxkahaat
Tree Stratum (Plot size: 30 Ft radius	% Cover	Species?	Status	Dominance rest worksneet.
1 Elaeagnus angustifolia	25	Y	FACU	Number of Dominant Species
2. Populus deltoides	10	Y	FAC	(excluding FAC-): $\underline{3}$ (A)
3				Total Number of Dominant
4.				Species Across All Strata: 6 (B)
	35	= Total Co	ver	Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>15 Ft radius</u> )				That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. Salix exigua	10	Y	FACW	
2. Tamarix chinensis	5	Y	FACW	Prevalence Index worksheet:
3.				Total % Cover of: Multiply by:
4				OBL species $0$ $x 1 = 0$
5				FACW species <u>20</u> x 2 = <u>40</u>
	15	- Total Car		FAC species <u>10</u> x 3 = <u>30</u>
Herb Stratum (Plot size: 5 Ft radius )		- 10tal C0	vei	FACU species <u>40</u> x 4 = <u>160</u>
1. Bromus inermis	20	Y	UPL	UPL species _25 x 5 = _125
2. Ambrosia psilostachya	15	Y	FACU	Column Totals: <u>95</u> (A) <u>355</u> (B)
3. Muhlenbergia asperifolia	5	N	FACW	0 7000 /0 /0 7000 / 70
4. Bromus tectorum	5	N	UPL	Prevalence Index = $B/A = \frac{3.736842105263158}{2}$
5	-			Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophytic Vegetation
7				2 - Dominance Test is >50%
7				3 - Prevalence Index is $≤3.0^1$
8				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
No. 1 No. 1 (Dr. 1) 15 Et radius	45	= Total Co	ver	
<u>Woody Vine Stratum</u> (Plot size: 13 tradius)				be present, unless disturbed or problematic.
2				Hydrophytic
	0	- Total Co	or	Vegetation
% Bare Ground in Herb Stratum 55	95	= Total Ve	g Cover	Present? Yes <u>No X</u>
Remarks:				-

Vegetation does not pass the Dominance Test or Prevalence Index.

(Incres)	Color (moist)	% Co	lor (moist) % Tvi	$be^1 Loc^2$	Texture	Remarks	
0-20	10YR 4/3	100			SaL	No redox noted	
<u> </u>							
Type: C=C	oncentration, D=De	epletion, RM=Redu	ced Matrix, CS=Covered or C	coated Sand Gr	ains. <sup>2</sup> Lo	cation: PL=Pore Lining,	M=Matrix.
lydric Soil	Indicators: (Appl	licable to all LRRs	unless otherwise noted.)		Indicators	for Problematic Hydrid	c Soils <sup>3</sup> :
Histosol	(A1)		Sandy Gleyed Matrix (	S4)	1 cm I	Muck (A9) ( <b>LRR I, J</b> )	
Histic El	pipedon (A2)		Sandy Redox (S5)		Coast	Prairie Redox (A16) (LR	R F, G, H)
Black H	istic (A3)		Stripped Matrix (S6)		Dark S	Surface (S7) (LRR G)	
Hydroge Stratifio	en Sulfide (A4)	<b>7</b> E)	Loamy Mucky Mineral	(F1) F2)	High F	Plains Depressions (F16)	72 8 72)
0.0.0.0.0.0.0.0.0.0.00.00.00.00.00.	uck (A9) (IRR F G	<b>( H</b> )	Depleted Matrix (E3)	12)	Reduc	ed Vertic (F18)	12 0 13)
Deplete	d Below Dark Surfa	ace (A11)	Redox Dark Surface (F	6)	Red P	arent Material (TF2)	
 Thick Da	ark Surface (A12)		Depleted Dark Surface	(F7)	Very S	Shallow Dark Surface (TF	12)
Sandy N	/lucky Mineral (S1)	)	Redox Depressions (F	8)	Other	(Explain in Remarks)	
2.5 cm I	Mucky Peat or Pea	t (S2) (LRR G, H)	High Plains Depression	ns (F16)	<sup>3</sup> Indicators	of hydrophytic vegetatio	n and
5 cm Mi	ucky Peat or Peat (	(S3) ( <b>LRR F</b> )	(MLRA 72 & 73 of	LRR H)	wetlan	d hydrology must be pre	sent,
					unless	disturbed or problemation	С.
Restrictive	Layer (if present):	:					
Type:							
					Hvdric Soi	Present? Yes	No <u>^</u>
Depth (in	ches):				,		
Depth (in Remarks:	ches):						
Depth (in Remarks: No hydric s	ches): oil indicators not	ed.					
Depth (in Remarks: Io hydric s	ches):	ed.					
Depth (in Remarks: Io hydric s	ches): oil indicators not	ed.					
Depth (in Remarks: No hydric s YDROLO Wetland Hy	oil indicators not GY drology Indicator	ed. 's:					
Depth (in Remarks: No hydric s YDROLO Wetland Hy Primary India	ches): oil indicators not GY drology Indicator cators (minimum of	ed. 's: f one required; chea	:k all that apply)		Second	ary Indicators (minimum	of two required
Depth (in Remarks: Io hydric s YDROLO Vetland Hy Primary India Surface	ches): oil indicators not GY drology Indicator cators (minimum of Water (A1)	ed. 's: f one required; chea	<u>k all that apply)</u> Salt Crust (B11)		<u>Second</u>	ary Indicators (minimum face Soil Cracks (B6)	of two required
Depth (in Remarks: Io hydric s YDROLO Vetland Hy Primary India Surface High Wa	ches): oil indicators note GY drology Indicator cators (minimum of Water (A1) ater Table (A2)	ed. 's: f one required; chea	<u>sk all that apply)</u> Salt Crust (B11) Aquatic Invertebrates (B1	3)	<u>Second</u> Sur Spa	ary Indicators (minimum face Soil Cracks (B6) ursely Vegetated Concav	of two required e Surface (B8)
Depth (in Remarks: Io hydric s YDROLO Wetland Hy Primary India Surface High Wa Saturati	ches): oil indicators note GY drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3)	ed. 's: f one required; cher	<u>:k all that apply)</u> Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (C	3)	<u>Second</u> Sur Spa Dra	ary Indicators (minimum face Soil Cracks (B6) irsely Vegetated Concav inage Patterns (B10)	of two required e Surface (B8)
Depth (in Remarks: Io hydric s YDROLO Vetland Hy Primary India Surface High Wa Saturatio Water M	ches): oil indicators not GY drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1)	ed. s: f one required; chea	<u>k all that apply)</u> Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (C Dry-Season Water Table	3) 21) (C2)	Seconda Sur Spa Dra Oxi	ary Indicators (minimum face Soil Cracks (B6) irsely Vegetated Concav inage Patterns (B10) dized Rhizospheres on L	of two required e Surface (B8) iving Roots (C3
Depth (in Remarks: Jo hydric s YDROLO Wetland Hy Primary India Surface High Wa Saturati Water M Sedimen	ches): oil indicators not GGY drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2)	ed. 's: f one required; chea - -	<u>k all that apply)</u> Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (C Dry-Season Water Table Oxidized Rhizospheres of	3) 21) (C2) n Living Roots (	<u>Seconda</u> Sur Spa Dra Oxi (C3) (v	ary Indicators (minimum face Soil Cracks (B6) irsely Vegetated Concav inage Patterns (B10) dized Rhizospheres on L vhere tilled)	<u>of two required</u> e Surface (B8) iving Roots (C3
Depth (in Remarks: No hydric s YDROLO Vetland Hy Primary India Surface High Wa Saturati Water M Sedimen Drift Dej	ches): oil indicators not GGY drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3)	ed. 's: f one required; chea - - - -	<ul> <li>k all that apply)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B1</li> <li>Hydrogen Sulfide Odor (C</li> <li>Dry-Season Water Table</li> <li>Oxidized Rhizospheres of (where not tilled)</li> </ul>	3) 21) (C2) n Living Roots (	<u>Seconda</u> Sur Spa Dra Oxi (C3) (v	ary Indicators (minimum face Soil Cracks (B6) irsely Vegetated Concav inage Patterns (B10) dized Rhizospheres on L <b>/here tilled</b> ) yfish Burrows (C8)	<u>of two required</u> e Surface (B8) iving Roots (C3
Depth (in Remarks: Io hydric s YDROLO Vetland Hy Primary India Surface High Wa Saturati Water M Saturati Urift Dej Algal Ma	oil indicators not oil indicators not GGY drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) 1arks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	ed. 's: f one required; cher - - -	<ul> <li>k all that apply)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B1</li> <li>Hydrogen Sulfide Odor (C</li> <li>Dry-Season Water Table</li> <li>Oxidized Rhizospheres of (where not tilled)</li> <li>Presence of Reduced Iron</li> </ul>	3) 21) (C2) n Living Roots ( n (C4)	<u>Second</u> Sur Spa Dra Oxi (C3)Cra Sat	ary Indicators (minimum face Soil Cracks (B6) insely Vegetated Concav inage Patterns (B10) dized Rhizospheres on L <b>/here tilled</b> ) yfish Burrows (C8) uration Visible on Aerial	of two required e Surface (B8) iving Roots (C3
Depth (in Remarks: No hydric s YDROLO Wetland Hy Primary India Surface High Wa Saturati Water M Saturati Unift Dej Algal Ma Iron Dep	ches): oil indicators note GY drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	ed. s: f one required; chea - - - - - -	<ul> <li>k all that apply)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B1</li> <li>Hydrogen Sulfide Odor (C</li> <li>Dry-Season Water Table</li> <li>Oxidized Rhizospheres of (where not tilled)</li> <li>Presence of Reduced Iron</li> <li>Thin Muck Surface (C7)</li> </ul>	3) 21) (C2) n Living Roots ( n (C4)	<u>Second</u> Sur Spa Dra Oxi (V Cra Sat Sat	ary Indicators (minimum face Soil Cracks (B6) irsely Vegetated Concav inage Patterns (B10) dized Rhizospheres on L vhere tilled) yfish Burrows (C8) uration Visible on Aerial omorphic Position (D2)	of two required e Surface (B8) iving Roots (C3 Imagery (C9)
Depth (in Remarks: Io hydric s YDROLO Vetland Hy Primary India Saturatia Saturatia Water M Sedimen Drift Dej Algal Ma Iron Deg Inundati	ches): oil indicators not GY drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria	ed. 's: f one required; chea - - - - - - - - - - - - - - - - - - -	<ul> <li><u>k all that apply</u>)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B1</li> <li>Hydrogen Sulfide Odor (C</li> <li>Dry-Season Water Table</li> <li>Oxidized Rhizospheres of (where not tilled)</li> <li>Presence of Reduced Iron</li> <li>Thin Muck Surface (C7)</li> <li>Other (Explain in Remark</li> </ul>	3) 21) (C2) n Living Roots ( n (C4) s)	<u>Seconda</u> Sur Spa Dra Oxi (C3) (v Sat Sat Sat Sat SAt	ary Indicators (minimum face Soil Cracks (B6) insely Vegetated Concav inage Patterns (B10) dized Rhizospheres on L <b>vhere tilled</b> ) yfish Burrows (C8) uration Visible on Aerial omorphic Position (D2) C-Neutral Test (D5)	of two required e Surface (B8) iving Roots (C3 Imagery (C9)
Depth (in Remarks: Jo hydric s YDROLO Vetland Hy Primary India Surface High Wa Saturatia Water M Sedimea Drift Dep Algal Ma Iron Dep Inundati Water-S	ches): oil indicators not GGY drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria stained Leaves (B9	ed. 's: f one required; chea - - - - - - - - - - - - - - - - - - -	<ul> <li>k all that apply)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B1</li> <li>Hydrogen Sulfide Odor (C</li> <li>Dry-Season Water Table</li> <li>Oxidized Rhizospheres of</li> <li>(where not tilled)</li> <li>Presence of Reduced Iron</li> <li>Thin Muck Surface (C7)</li> <li>Other (Explain in Remark)</li> </ul>	3) 21) (C2) n Living Roots ( n (C4) s)	<u>Seconda</u> Sur Spa Dra Oxi (C3) (v Cra Sat Geo FA0 Fro	ary Indicators (minimum face Soil Cracks (B6) irsely Vegetated Concav inage Patterns (B10) dized Rhizospheres on L vhere tilled) yfish Burrows (C8) uration Visible on Aerial omorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7)	of two required e Surface (B8) iving Roots (C3 Imagery (C9) 7) ( <b>LRR F</b> )
Depth (in Remarks: Io hydric s YDROLO Vetland Hy Primary India Surface High Wa Saturati Water M Sedimele Drift Dep Algal Ma Iron Dep Inundati Water-S Field Obser	ches): oil indicators note GGY drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria stained Leaves (B9 vations:	ed. s: f one required; cher - - - - - - - - - - - - -	<ul> <li>k all that apply)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B1</li> <li>Hydrogen Sulfide Odor (C</li> <li>Dry-Season Water Table</li> <li>Oxidized Rhizospheres of (where not tilled)</li> <li>Presence of Reduced Iron</li> <li>Thin Muck Surface (C7)</li> <li>Other (Explain in Remark)</li> </ul>	3) 21) (C2) n Living Roots ( n (C4) s)	Second:	ary Indicators (minimum face Soil Cracks (B6) insely Vegetated Concav inage Patterns (B10) dized Rhizospheres on L <b>vhere tilled</b> ) yfish Burrows (C8) uration Visible on Aerial omorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7	of two required e Surface (B8) iving Roots (C3 Imagery (C9) 7) ( <b>LRR F</b> )
Depth (in Remarks: No hydric s IYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati Water-S Field Obser Surface Wat	ches): oil indicators note GY drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria stained Leaves (B9 vations: er Present?	ed. s: f one required; chean al Imagery (B7) ) Yes No X	<ul> <li><u>k all that apply</u></li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B1</li> <li>Hydrogen Sulfide Odor (C</li> <li>Dry-Season Water Table</li> <li>Oxidized Rhizospheres of (where not tilled)</li> <li>Presence of Reduced Iron</li> <li>Thin Muck Surface (C7)</li> <li>Other (Explain in Remark</li> <li>Depth (inches):</li> </ul>	3) 21) (C2) n Living Roots ( n (C4) s)	Second	ary Indicators (minimum face Soil Cracks (B6) insely Vegetated Concav inage Patterns (B10) dized Rhizospheres on L <b>vhere tilled</b> ) yfish Burrows (C8) uration Visible on Aerial omorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7	of two required e Surface (B8) iving Roots (C3 Imagery (C9) 7) ( <b>LRR F</b> )
Depth (in Remarks: No hydric s IYDROLO Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati Water-S Field Obser Surface Wat	ches): oil indicators not GY drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria catined Leaves (B9 vations: er Present? Present?	ed. s: f one required; chea al Imagery (B7) ) Yes No X Yes No X	<ul> <li><u>k all that apply</u></li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B1</li> <li>Hydrogen Sulfide Odor (C</li> <li>Dry-Season Water Table</li> <li>Oxidized Rhizospheres of (where not tilled)</li> <li>Presence of Reduced Iron</li> <li>Thin Muck Surface (C7)</li> <li>Other (Explain in Remark</li> <li>Depth (inches):</li> <li>Depth (inches):</li> </ul>	3) C1) (C2) n Living Roots ( n (C4) s)	Seconda	ary Indicators (minimum face Soil Cracks (B6) insely Vegetated Concav inage Patterns (B10) dized Rhizospheres on L <b>vhere tilled</b> ) yfish Burrows (C8) uration Visible on Aerial pomorphic Position (D2) C-Neutral Test (D5) st-Heave Hummocks (D7	of two required e Surface (B8) iving Roots (C3 Imagery (C9) 7) ( <b>LRR F</b> )

Remarks:

No hydrology indicators noted.

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

Project/Site: Thunderbird Property	City/County:	Pueblo County	Sampling Date: <u>8/13/2020</u>
Applicant/Owner: Martin Marietta		State: CO	Sampling Point: SP-7
Investigator(s): MRF/TLM, Pinyon Environmental Inc.	Section, Towr	nship, Range: <u>S32, T20S, R63</u>	W
Landform (hillslope, terrace, etc.): <u>Terrace</u>	Local relief (c	concave, convex, none): <u>None</u>	Slope (%): <u>3</u>
Subregion (LRR): <u>Western Great Plains Range and Irrigated Region</u> Lat: <u>38</u>	3.264843°	Long: -104.464321	° Datum: WGS84
Soil Map Unit Name: Bankard sand, 0 to 2 percent slopes, frequently for	ooded	NWI clas	ssification: Rp1SS
Are climatic / hydrologic conditions on the site typical for this time of ye Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> significantly	ear? Yes <u>X</u> / disturbed?	No (If no, explain Are "Normal Circumstance	in Remarks.) es" present? Yes X No
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> naturally pro	oblematic?	(If needed, explain any an	swers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling	point locations, transe	cts, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X Yes X Yes X	No No No	Is the Sampled Area within a Wetland?	Yes X	No
Bassadas					

Remarks:

SP-7 is located on a terrace along the banks of the Arkansas River. Hydrophytic vegetation, wetland hydrology, and hydric soils. noted.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 Ft radius )	% Cover	Species?	Status	Number of Dominant Species	
1. Elaeagnus angustifolia	15	Y	FACU	That Are OBL, FACW, or FAC	
2				(excluding FAC-): $4$ (A)	)
3				Total Number of Dominant	
4.				Species Across All Strata: 5 (B)	
	15	= Total Cov	/or	Description (Description	
Sapling/Shrub Stratum (Plot size: 15 Ft radius		- 10101 001		That Are OBL_EACW_or_EAC* 80 (A/E	B)
1. Salix exigua	30	Y	FACW		2)
2 Tamarix chinensis	5	N	FACW	Prevalence Index worksheet:	
3			·	Total % Cover of: Multiply by:	
3				OBL species $0   x 1 = 0$	
4			·	FACW species $0$ x 2 = $0$	
5			<u> </u>	EAC species $0$ $x_3 = 0$	
5 Et radius	35	= Total Cov	/er	$\frac{1}{2} = \frac{1}{2} = \frac{1}$	
Herb Stratum (Plot size: 011140103)	20	V		$\frac{1}{2} = \frac{1}{2} = \frac{1}$	
1. Eleocharis palustris	- 20	ř		UPL species $0 \times 5 = 0$	
2. Juncus balticus	15	Y	FACW	Column Totals: 0 (A) 0 (B	5)
3. Polypogon monspeliensis	15	Y	FACW	Dural taken D/A NaN	
4. Agrostis gigantea	5	Ν	FACW	Prevalence Index = B/A =	
<sub>5.</sub> Polygonum aviculare	5	Ν	FACU	Hydrophytic Vegetation Indicators:	
6				1 - Rapid Test for Hydrophytic Vegetation	
7			·	X 2 - Dominance Test is >50%	
1				3 - Prevalence Index is ≤3.0 <sup>1</sup>	
8				4 - Morphological Adaptations <sup>1</sup> (Provide supportir	ng
9			·	data in Remarks or on a separate sheet)	-
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
15 Et rodius	60	= Total Cov	/er		
Woody Vine Stratum (Plot size: 13 Ft ladius)				he present unless disturbed or problematic	
1. <u>N/A</u>					
2				Hydrophytic	
10	0	= Total Cov	/er	Vegetation	
% Bare Ground in Herb Stratum 40	<u>110</u>	= Total Veg	J Cover	Present? Tes No No	
Remarks:	D5 - FAC Neu	tral Test for hydrolo	ogy. Drop all FAC,	, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D	D5.
Vegetation passes the Dominance Test.					

Depth	Matrix	<u> </u>	Red	ox Feature	es	0		
(inches)	Color (moist)	%	Color (moist)	%	Type	Loc <sup>2</sup>	Texture	Remarks
0-8	2.5Y 5/2	90 1	0YR 5/6	10	C	M	SaL	Redox prominent
8-20	10YR 4/2	100					Sa	
Туре: С=С	Concentration, D=D	epletion, RM=F	Reduced Matrix, C	S=Covere	ed or Coate	ed Sand G	rains. <sup>2</sup> Lo	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to all L	RRs, unless othe	erwise no	ted.)		Indicator	s for Problematic Hydric Soils <sup>3</sup> :
Histosc	ol (A1)		Sandy	Gleyed M	atrix (S4)		1 cm	Muck (A9) ( <b>LRR I, J</b> )
Histic E	Epipedon (A2)		Sandy	Redox (S	5)		Coas	t Prairie Redox (A16) ( <b>LRR F, G, H</b> )
Black F	listic (A3)		Strippe	d Matrix (	S6)		Dark	Surface (S7) (LRR G)
Hydrog	en Sulfide (A4)		Loamy	Mucky M	ineral (F1)		High	Plains Depressions (F16)
Stratifie	ed Layers (A5) (LRI	R F)	Loamy	Gleyed N	latrix (F2)		(L	RR H outside of MLRA 72 & 73)
1 cm M	luck (A9) (LRR F, G	<b>G</b> , <b>H</b> )	× Deplete	ed Matrix	(F3)		Redu	ced Vertic (F18)
Deplete	ed Below Dark Surf	ace (A11)	Redox	Dark Surf	ace (F6)		Red H	Parent Material (TF2)
Thick D	ark Surface (A12)		Deplete	ed Dark S	urface (F7	)	Very	Shallow Dark Surface (TF12)
Sandy	Mucky Mineral (S1)	)	Redox	Depressio	ons (F8)		Other	r (Explain in Remarks)
2.5 cm	Mucky Peat or Pea	at (S2) ( <b>LRR G</b> ,	H) High P	lains Depi	ressions (F	16)	Indicators	s of hydrophytic vegetation and
5 cm M	ucky Peat or Peat (	(S3) ( <b>LRR F</b> )	(MI	LRA 72 &	73 of LRF	RH)	wetlar	nd hydrology must be present,
							unles	s disturbed or problematic.
Restrictive	Layer (if present)	-						
Type:			—					X
. <u>.</u>	1ches):						Hydric So	il Present? Yes <u>×</u> No
Depth (ir							•	
Depth (ir Remarks:								
Depth (ir Remarks: Soil sample	e meets requirem	ents for F3.						
Depth (ir Remarks: Soil sample	e meets requirem	ents for F3.						
Depth (ir Remarks: Soil sample	e meets requirem	nents for F3.						

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
Surface Water (A1)       Salt Crust (B11)         X       High Water Table (A2)       Aquatic Invertebrates (B13)         X       Saturation (A3)       Hydrogen Sulfide Odor (C1)         Water Marks (B1)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living         Drift Deposits (B3)       (where not tilled)	<ul> <li>Surface Soil Cracks (B6)</li> <li>Sparsely Vegetated Concave Surface (B8)</li> <li>Drainage Patterns (B10)</li> <li>Oxidized Rhizospheres on Living Roots (C3)</li> <li>(where tilled)</li> <li>Crayfish Burrows (C8)</li> </ul>
<ul> <li>Algal Mat or Crust (B4)</li> <li>Iron Deposits (B5)</li> <li>Inundation Visible on Aerial Imagery (B7)</li> <li>Water-Stained Leaves (B9)</li> </ul>	<ul> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>X Geomorphic Position (D2)</li> <li>X FAC-Neutral Test (D5)</li> <li>Frost-Heave Hummocks (D7) (LRR F)</li> </ul>
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches):	
Water Table Present? Yes X No Depth (inches): 8	
Saturation Present? Yes X No Depth (inches): 2-20 (includes capillary fringe)	Wetland Hydrology Present? Yes X No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe	ctions), if available:
Remarks:	
Meets requirements for A2, A3, D2, and the vegetation passes the FAC-Neut	ral test.

Project/Site: Thunderbird Property	City/County:	Pueblo County		_ Sampling Date: <u>8/13/2020</u>
Applicant/Owner: Martin Marietta			State: CO	_ Sampling Point: SP-8
Investigator(s): MRF/TLM, Pinyon Environmental Inc.	Section, Tow	nship, Range: <u>S</u>	32, T20S, R63W	
Landform (hillslope, terrace, etc.): <u>Hillslope</u>	Local relief (	concave, convex	, none): None	Slope (%): <u>8</u>
Subregion (LRR): <u>Western Great Plains Range and Irrigated Region</u> Lat: <u>38</u>	3.264874°	Long	: <u>-104.464246°</u>	Datum: WGS 84
Soil Map Unit Name: Bankard sand, 0 to 2 percent slopes, frequently flo	ooded		NWI classif	ication: Rp1SS
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes X	No	(If no, explain in	Remarks.)
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> significantly	y disturbed?	Are "Norma	l Circumstances"	present? Yes X No
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> naturally pr	oblematic?	(If needed,	explain any answ	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling	point location	ons, transect	s, important features, etc.

Wetland Hydrology Present?     Yes No X     Within a Wetland?     Yes No X	Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>X</u> Yes Yes	No No X No X	Is the Sampled Area within a Wetland?	Yes	No <u>X</u>
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Remarks:

SP-8 is located on the hillslope above SP-7, along the banks of the Arkansas River. The area is lacking hydrophytic vegetation, wetland hydrology, and hydric soils.

#### **VEGETATION – Use scientific names of plants.**

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 Ft radius )	% Cover	Species?	Status	Number of Dominant Species	
1. Elaeagnus angustifolia	10	Y	FACU	That Are OBL, FACW, or FAC	
2				(excluding FAC-): <u>5</u>	(A)
3				Total Number of Dominant	
4.				Species Across All Strata: 7	(B)
	10	= Total Cov	/er	Demonst of Dominant Species	
Sapling/Shrub Stratum (Plot size: 15 Ft radius )				That Are OBL FACW or FAC: 43	(A/B)
<sub>1.</sub> Salix exigua	60	Y	FACW		()
2. Tamarix chinensis	20	Y	FACW	Prevalence Index worksheet:	
3				Total % Cover of: Multiply by:	-
				OBL species <u>0</u> x 1 = <u>0</u>	
4				FACW species 85 $x 2 = 170$	
5				EAC species $0$ $x_3 = 0$	
Herb Stratum (Plot size: 5 Ft radius	00	= Total Cov	/er	FACU species $20$ $x 4 = 80$	
1 Chenopodium album	5	Y	FACU	UPL species $5 \times 5 = 25$	
2 Cirsium arvense	5	Y	FACU	Column Totals: 110 (A) 275	(B)
2. Phalaris arundinacea	5	Y	FACW	(), (), (), (), (), (), (), (), (), (),	(_)
Verbascum thapsus	5	Y	UPL	Prevalence Index = $B/A = 2.5$	-
4				Hydrophytic Vegetation Indicators:	
o				1 - Rapid Test for Hydrophytic Vegetation	
6				All dominants are FACW and/or OBL. 2 - Dominance Test is >50%	
7				$X = 3$ - Prevalence Index is $\leq 3.0^{1}$	
8				4 - Morphological Adaptations <sup>1</sup> (Provide suppo	ortina
9				data in Remarks or on a separate sheet)	Jrang
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain	)
	20	= Total Cov	ver		,
Woody Vine Stratum (Plot size: 15 Ft radius )				'Indicators of hydric soil and wetland hydrology mu	JSt
1. <u>N/A</u>					
2				Hydrophytic	
00	0	= Total Cov	/er	Vegetation	
% Bare Ground in Herb Stratum 80	<u>110</u>	= Total Veg	Cover	Present? Tes <u>^</u> NO	
Remarks:	D5 - FAC Neut	tral Test for hvdrolo	ogy. Drop all FAC.	cross examine all other dominants. If > 50% remaining are FACW to OBL, then YE	S to D5.

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. The vegetation passes the Prevalence Index. However, the area is lacking hydric soils and hydrology.

11000000	Color (moist)	0/ 0/	$1 \text{ or (moint)}$ $0/$ $T_{ymo}^{1}$ $1 \text{ or }$	Toxturo	Domorko
<u>(incries)</u> 0-20	10YR 4/3	<u>%</u> <u>C(</u> 100		Sal	Remarks
	ncontration D-Do		and Matrix, CS=Covered or Costed Sa	and Grains <sup>2</sup> L	
lydric Soil Ir	ndicators: (Appli	icable to all LRRs	. unless otherwise noted.)	Indicator	s for Problematic Hydric Soils <sup>3</sup> :
Histosol (	A1)		Sandy Gleved Matrix (S4)	1 cm	Muck (A9) (LRR L J)
Histic Epi	pedon (A2)		Sandy Redox (S5)	Coas	t Prairie Redox (A16) ( <b>LRR F, G, H</b> )
Black His	tic (A3)		Stripped Matrix (S6)	Dark	Surface (S7) (LRR G)
Hydroger	n Sulfide (A4)		Loamy Mucky Mineral (F1)	High	Plains Depressions (F16)
Stratified	Layers (A5) (LRR	R F)	Loamy Gleyed Matrix (F2)	(L	RR H outside of MLRA 72 & 73)
1 cm Muc	ck (A9) ( <b>LRR F, G</b>	, <b>H</b> )	Depleted Matrix (F3)	Redu	ced Vertic (F18)
Depleted	Below Dark Surfa	ace (A11)	Redox Dark Surface (F6)	Red I	Parent Material (TF2)
_ Thick Dar	rk Surface (A12)		Depleted Dark Surface (F7)	Very	Shallow Dark Surface (TF12)
Sandy IVIL	ucky Mineral (S1)		Lich Plains Depressions (F8)	<sup>3</sup> Indicator	(Explain in Remarks)
2.5 cm Muc	why Peat or Peat (	S3) (I RR F)	(MI RA 72 & 73 of L RR H)	wetla	nd hydrology must be present
0 011 Mac				unles	s disturbed or problematic.
Restrictive L	ayer (if present):				
<b>T</b>					
I VDe:					
Depth (incl	hes):			Hvdric So	il Present? Yes No <sup>X</sup>
Type: Depth (incl Remarks:	hes):			Hydric So	il Present? Yes No X
Depth (incl Remarks: No hvdric so	hes):			Hydric So	il Present? Yes <u>No X</u>
Depth (incl Remarks: Io hydric so	hes):	ed.		Hydric So	il Present? Yes <u>No X</u>
Depth (incl Remarks: lo hydric so	hes):	ed.		Hydric So	il Present? Yes <u>No X</u>
Depth (incl Remarks: Io hydric so	hes): il indicators note	ed.		Hydric So	il Present? Yes <u>No X</u>
Depth (incl Remarks: lo hydric so YDROLOC	hes): il indicators note GY rology Indicators	ed.		Hydric So	il Present? Yes <u>No X</u>
Depth (incl Remarks: Io hydric so YDROLOC Wetland Hyd Primary Indica	hes): il indicators note GY rology Indicators ators (minimum of	ed. s:	ck all that apply)	Hydric So	il Present? Yes <u>No X</u>
Depth (incl emarks: o hydric so YDROLOC Vetland Hyd Primary Indica Surface V	hes): il indicators note GY rology Indicators ators (minimum of Vater (A1)	ed. s: <sup>c</sup> one required; che	<u>ck all that apply)</u> Salt Crust (B11)	Hydric So Second Su	il Present? Yes <u>No X</u> dary Indicators (minimum of two required rface Soil Cracks (B6)
Pype: Depth (incl Remarks: Io hydric so YDROLOC Yetland Hyd Primary Indica Surface V High Wat	hes): il indicators note <b>GY</b> rology Indicators ators (minimum of Vater (A1) er Table (A2)	ed. s: <sup>c</sup> one required; che	ck all that apply) Salt Crust (B11) Aquatic Invertebrates (B13)	Hydric So	il Present? Yes <u>No X</u> lary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8)
Type: Depth (incl Remarks: Io hydric so YDROLOC Yetland Hyd Primary Indica Surface V High Wat Saturation	hes): il indicators note GY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3)	ed. s: <sup>c</sup> one required; che	ck all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	Hydric So Second Su Su Su Sp Dra	il Present? Yes <u>No X</u> dary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10)
Primary Indice Surface V Control of the second state of the seco	hes): il indicators note GY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1)	ed. s: i one required; che	<u>ck all that apply)</u> Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Hydric So	il Present? Yes <u>No X</u> lary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) idized Rhizospheres on Living Roots (C
Type: Depth (incl Remarks: Io hydric so YDROLOO YDROLO	hes): il indicators note GY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) : Deposits (B2)	ed. s: : one required; che	<u>ck all that apply)</u> Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living F	Hydric So            Second            Su            Sp            Dr.	il Present? Yes <u>No X</u> lary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) idized Rhizospheres on Living Roots (C where tilled)
Type: Depth (incl Remarks: Io hydric so YDROLOC Vetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo	hes): il indicators note GY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) : Deposits (B2) osits (B3)	ed. s: i one required; che	<u>ck all that apply)</u> Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living F (where not tilled)	Hydric So            Second            Su            Su            Su            Su            Dra            Ox           Roots (C3)         (	dary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) idized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8)
Type: Depth (incl Remarks: Io hydric so YDROLOC YDROLO	hes): il indicators note <b>GY</b> rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) t or Crust (B4)	ed. s: <sup>c</sup> one required; che	<u>ck all that apply)</u> Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living F ( <b>where not tilled</b> ) Presence of Reduced Iron (C4)	Hydric So            Second            Su            Su            Dr.	<u>dary Indicators (minimum of two required</u> rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) idized Rhizospheres on Living Roots (C <b>where tilled</b> ) ayfish Burrows (C8) turation Visible on Aerial Imagery (C9)
Type: Depth (incl Remarks: Io hydric so YDROLOC YDROLO	hes): il indicators note il indicators note ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) : Deposits (B2) osits (B3) : or Crust (B4) osits (B5)	ed. s: i one required; che	ck all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living F (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7)	Hydric So            Second            Su            Su            Su            Su            Su            Ox           Roots (C3)         (	Aary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) idized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) turation Visible on Aerial Imagery (C9) comorphic Position (D2)
Primary Indica Primary Indica Primary Indica Primary Indica Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundatio	il indicators note il indicators note GY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) t or Crust (B4) posits (B5) n Visible on Aeria	ed. s: : one required; che	<ul> <li><u>ck all that apply</u>)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B13)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Dry-Season Water Table (C2)</li> <li>Oxidized Rhizospheres on Living F</li> <li>(where not tilled)</li> <li>Presence of Reduced Iron (C4)</li> <li>Thin Muck Surface (C7)</li> <li>Other (Explain in Remarks)</li> </ul>	Hydric So	Il Present? Yes <u>No X</u> <u>lary Indicators (minimum of two required</u> rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) idized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) turation Visible on Aerial Imagery (C9) comorphic Position (D2) C-Neutral Test (D5)
Type: Depth (incl Remarks: Io hydric so YDROLOC YDROLOC Vetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundatio Water-Sta	il indicators note il indicators note GY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) c Deposits (B2) posits (B3) c or Crust (B4) posits (B5) n Visible on Aeria ained Leaves (B9)	ed. s: : one required; che l Imagery (B7)	<ul> <li><u>ck all that apply</u></li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B13)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Dry-Season Water Table (C2)</li> <li>Oxidized Rhizospheres on Living F</li> <li>(where not tilled)</li> <li>Presence of Reduced Iron (C4)</li> <li>Thin Muck Surface (C7)</li> <li>Other (Explain in Remarks)</li> </ul>	Hydric So Second Second Su Su Su Su Su Su Su Su Su Su	Ary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) idized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) turation Visible on Aerial Imagery (C9) comorphic Position (D2) C-Neutral Test (D5) ost-Heave Hummocks (D7) (LRR F)
Type: Depth (incl Remarks: Io hydric so YDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Saturation Drift Depo Algal Mat Iron Depo Inundatio Water-Sta Field Observ	hes):	ed. s: <sup>c</sup> one required; che I Imagery (B7)	ck all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living F (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks)	Hydric So            Second                Su                Ox	dary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) idized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) turation Visible on Aerial Imagery (C9) comorphic Position (D2) C-Neutral Test (D5) ost-Heave Hummocks (D7) (LRR F)
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(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators noted.