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June 10, 2019

Attn: Scott McKenzie  
AGZONE Services, LLC  
(via email)

**Re: Water Resources Addendum to the Biological Resources Assessment for Four Cannabis Cultivation Project Sites in Santa Margarita, San Luis Obispo County**

Dear Mr. McKenzie,

We have prepared this memorandum as an addendum to the Biological Resources Assessment for Four Cannabis Cultivation Project Sites in Santa Margarita in response to information requests from the California Department of Fish and Wildlife (CDFW). Cannabis cultivators applying for an Annual License from the California Department of Food and Agriculture must have a Lake and Streambed Alteration (LSA) Agreement or written verification that one is not needed. According to the CDFW's authority under 1602 of the Fish and Game Code, an entity may not "substantially divert or obstruct the natural flow... or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material... where it may pass into any river, stream, or lake, unless it notifies the CDFW". Such notification can necessitate an LSA and potential mitigation measures imposed by the CDFW.

**METHODS**

Pax Environmental performed a drone flight of the Project site to obtain a high-resolution aerial image and three-dimensional topographic survey (Figures 1 & 2). The aerial was compared with historic aerial imagery, topographic maps, and online wetlands databases to identify wetland features and/or areas with evidence of water transport. Aerial imagery was evaluated in the context of antecedent moisture conditions as determined from rainfall records for the historic aerial timeframe. Sources used to identify waters on the project site include Google Earth imagery and topography (Digital Globe May 1994, September 1994, July 2003, July 2004, December 2004, August 2005, December 2005, August 2006, June 2009, September 2010, August 2011, March 2013, April 2015, October 2016, and September 2018), [www.historicaerials.com](http://www.historicaerials.com) (1964), National Wetlands Inventory (USFWS 2019), U.S. Geological Survey National Hydrography Dataset (USGS 2004), U.S. Department of Agriculture Soils Maps (USDA 2019), weather records from Cal Poly San Luis Obispo Irrigation Training and Research Center (ITRC 2019), and field surveys performed on December 15, 2018; January 4, 2019; and April 26, 2019.

The April 26, 2019 field survey included data collection on features in the study area repeatedly observed on historic aerials, including documentation of ordinary high-water mark (OHWM), presence/absence of a defined bed and bank, photo-documentation, geographic positioning system (GPS) co-ordinates for wetland boundaries, and plant species identification. Areas that

exhibited wetland characteristics, including cracked surface soils and indicator plants, were given more detailed examination, including soil test pits.

Features identified in the study area were assessed using a hydrogeomorphic system developed by Semeniuk & Semeniuk (2016). The system assesses potential wetland features based on hydrologic processes and functions in terms of (1) geomorphic setting (i.e., topographic location), (2) dominant water source and its transport (precipitation, surface flow, subsurface flow, groundwater discharge, and artesian upwelling), and (3) hydrodynamics (e.g., the direction of flow and the strength of water movement). Features are grouped into one of seven classes: (1) depressional, (2) riverine, (3) mineral soil wet flats, (4) organic soil wet flats, (5) estuarine (also referred to as tidal fringe), (6) lacustrine (also referred to as lacustrine fringe), and (7) slopes.

## **RESULTS**

Five sets of features classified as riverine or depressional were identified on the project site during data collection. Features are described below and summarized in Table 1. The project footprint relative to the features identified in the study area is presented in Figure 3.

**Table 1.** Hydrologic features in the study area.

<b>Feature Number</b>	<b>Classification</b>	<b>Sub-Classification</b>	<b>State</b>	<b>Federal</b>	<b>Project Impacts</b>
1	Riverine	Intermittent	Yes	No	0
2	Depressional	Swale	Yes	No	10,020 ft <sup>2</sup>
3	Depressional	Wetland	Yes	Yes	1,715 ft <sup>2</sup>
4	Depressional	Non-wetland	No	No	82,764 ft <sup>2</sup>
5	Depressional	Pond	Yes	Yes	0
<b>Total</b>					<b>94,499 ft<sup>2</sup></b>

### **Feature 1 - Riverine**

One riverine feature (Feature 1, Figure 1) was identified in the northeastern portion of the study area and flows from northwest to southeast with the top of bank as close as 25 feet (ft) to the northeastern corner of the proposed perimeter fence at 11330 Tule Elk Lane. This drainage is the largest stream in the western Carrizo Valley and is tributary to Soda Lake, a closed endorheic basin. It is mapped as a blue-line stream by the U.S. Geological Survey (USGS) and classified in the National Wetlands Inventory (NWI) as R4SBC, a sparsely-vegetated, riverine system that is seasonally flooded with surface water for extended periods, especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable in this classification, ranging from saturated soil to a water table well below the ground surface.

During field investigation, this feature was observed to have an ordinary high-water mark (OHWM) and bed and bank consistent with aerial imagery. The stream course is also relatively consistent with NWI mapping. The channel ranges from 20 to 100 ft wide and shallow, with bankfull height less than 2 ft in the study area. Bed soils can be differentiated from surrounding uplands and are indicative of sedimentary fill, with exposure of underlying material in areas of higher stream velocity scour and deposition of fines in areas of low velocity or pooling. One facultative wetland species, woolly marbleheads (*Psilocarphus brevissimus*), and one facultative species, broad-leaved pepperweed (*Lepidium latifolium*), were present in patches throughout this feature. However, no surface moisture was observed, and test pits did not reveal hydric soils in an above-

average rainy season, suggesting a very brief hydroperiod during and following rain events and a water table typically well below the ground surface. Based on field conditions, this drainage has aperiodic surface water with short-term falling water table or a lack of prevailing or annual surface water with aperiodic input by storm events. Feature 1 would not be directly impacted by Project activities.

### Feature 2 – Depressional Swale

One depressional swale feature (Feature 2, Figure 1) was observed parallel to the south of the Feature 1 in the central portion of the study area. It is tributary to Feature 1 approximately 720 ft east of the Project site at 8710 Carissa Highway. Feature 2 is mapped and classified in the National Wetlands Inventory as PEM1A, a palustrine system characterized by surface water for brief periods (from a few days to a few weeks) during the growing season and a water table that lies well below the ground surface for most of the season. This feature has some areas of discernible OHWM, as well as bed and bank on aerials, but the course is not entirely consistent with NWI mapping and portions are not consistently discernible on historic aerials. OHWM is discernible in areas proximate to the 11330 Tule Elk Lane Project site from 1994, 2006, and 2010 aerials; and areas proximate to the 8710 Carissa Highway Project site from 1994, 2004, 2005, 2010, 2011, 2013, 2015 and 2016.

During field investigation, this feature was not readily discernible in the northern extent becoming more apparent as a shallow channel with gently sloping sides to the southeast in closer proximity to its confluence with Feature 1. Ordinary high-water marks (OHWM) were observed variably and bed and bank were only observed to the east of 11525 Tule Elk Lane. The swale ranges from 20 to 80 ft wide and is shallow, with bankfull height less than 1 ft in the study area. Bed soils can be differentiated from surrounding uplands and are indicative of scoured exposure of underlying material or deposition in the northern braid to the east of 11525 Tule Elk Lane. No facultative wetland plants or surface moisture were observed in this feature and test pits did not reveal hydric soils in an above-average rainy season, suggesting a very brief hydroperiod during and following rain events and a water table typically well below the ground surface. Based on field conditions, this drainage has a lack of prevailing or annual surface water with aperiodic input by storm events that percolates into the underlying soil or discharges into Feature 1. Approximately 0.23-acre of Feature 2 is within the proposed impact footprints for 11330 Tule Elk Lane and 8710 Carissa Highway Project sites.

### Feature 3 – Depressional Wetlands

Three closed depressional wetlands with diameters ranging from 80 to 130 ft were observed in the western extent of the study area adjacent to the west of 11525 Tule Elk Lane (Feature 3, Figure 1). Feature 3 is not mapped or classified in the NWI but is evident from aerials dating back to 1964. Although there was no standing water present at the time of the field investigation, there was evidence that standing water had been present in recent weeks, including cracked surface soils, discernible OHWM, hydric soils as evidenced by oxidized rhizospheres in the upper twelve inches, and the presence of facultative wetland plants, including woolly marbles (*Psilocarpus brevissimus*), valley pineapple weed (*Matricaria occidentalis*), and popcornflower (*Plagiobothrys stipitatus*). Hydric soils were mostly dry to 12 in during an above-average rainfall year, suggesting a brief hydroperiod following rain events and a water table typically well below the ground surface. Based on field conditions, these wetlands have a lack of prevailing or annual surface water with aperiodic input by storm events that percolates into the underlying soil. Approximately 1,715 ft<sup>2</sup> of Feature 3 is within the impact footprint for 11520 Tule Elk Lane.

#### Feature 4 – Non-wetland Depressions

There are non-wetland depressions throughout the 11520 and 11525 Tule Elk Way project sites that are inconsistently represented on aerial imagery (Feature 4, Figure 1). None of these depressions are mapped or classified in the NWI. During field investigation, these depressions were not discernible within the Project boundaries but were more readily discerned in the study area to the southwest of the 11520 Tule Elk Way Project boundary. No ordinary high-water marks (OHWM) or bed and bank were observed. No facultative wetland species, surface moisture, or evidence of discharge were observed. Test pits did not reveal hydric soils in an above-average rainy season, suggesting a very brief hydroperiod during and following rain events, and a water table typically well below the ground surface. Based on field conditions, these depressions have a lack of prevailing or annual surface water with aperiodic input by storm events that percolates into the underlying soil. During percolation and evaporation, fine sediments transported to these areas may settle and leave a residue, or the slightly prolonged saturation results in a longer flowering period for non-wetland plants that is inconsistently evident on aerials. It is anticipated that Feature 4 is not subject to the jurisdiction of the ACOE or CDFW. Approximately 1.9 acres of Feature 4 is within the proposed impact areas for 11520 and 11525 Tule Elk Lane and 8710 Carissa Highway Project site.

#### Feature 5 – Man-made Pond

There is a man-made pond on the 11520 Tule Elk Way property at the intersection with Carissa Highway. The pond is approximately 0.7-acre in size and sustained by the property owner's well water. The proposed Project would not affect this feature.

### **RECOMMENDATIONS**

The depressional swale (Feature 2) described above has some areas of discernible OHWM, as well as bed and bank and evidence of discharge into downstream-receiving waters. Any proposed fill or removal would likely require a 1602 Streambed Alteration Agreement with CDFW. Development of the 11330 Tule Elk Lane and 8710 Carissa Highway Project sites would directly impact approximately 0.23-acre of Feature 2.

The depressional wetlands (Feature 3) described above could potentially be considered Waters of the State and are predominantly composed of hydrophytic perennial plant species that are common to seasonal wetlands in central California. Any proposed fill or removal would likely require a Section 404 permit under the federal Clean Water Act (CWA), a Section 401 certification with the RWQCB, and potentially a 1602 Streambed Alteration Agreement with CDFW. Development of 11520 Tule Elk Lane would directly impact approximately 1,715 ft<sup>2</sup> of Feature 3.

Given the potential for impacts to federal- and state-regulated wetlands and non-wetland resources, an alternative footprint was developed that would avoid all wetland and non-wetland resources while accommodating the area required for project implementation. Figures 4 and 5 represent the alternative footprint relative to the mapped wetland and non-wetland resource subject to state and federal jurisdiction.

## **REFERENCES**

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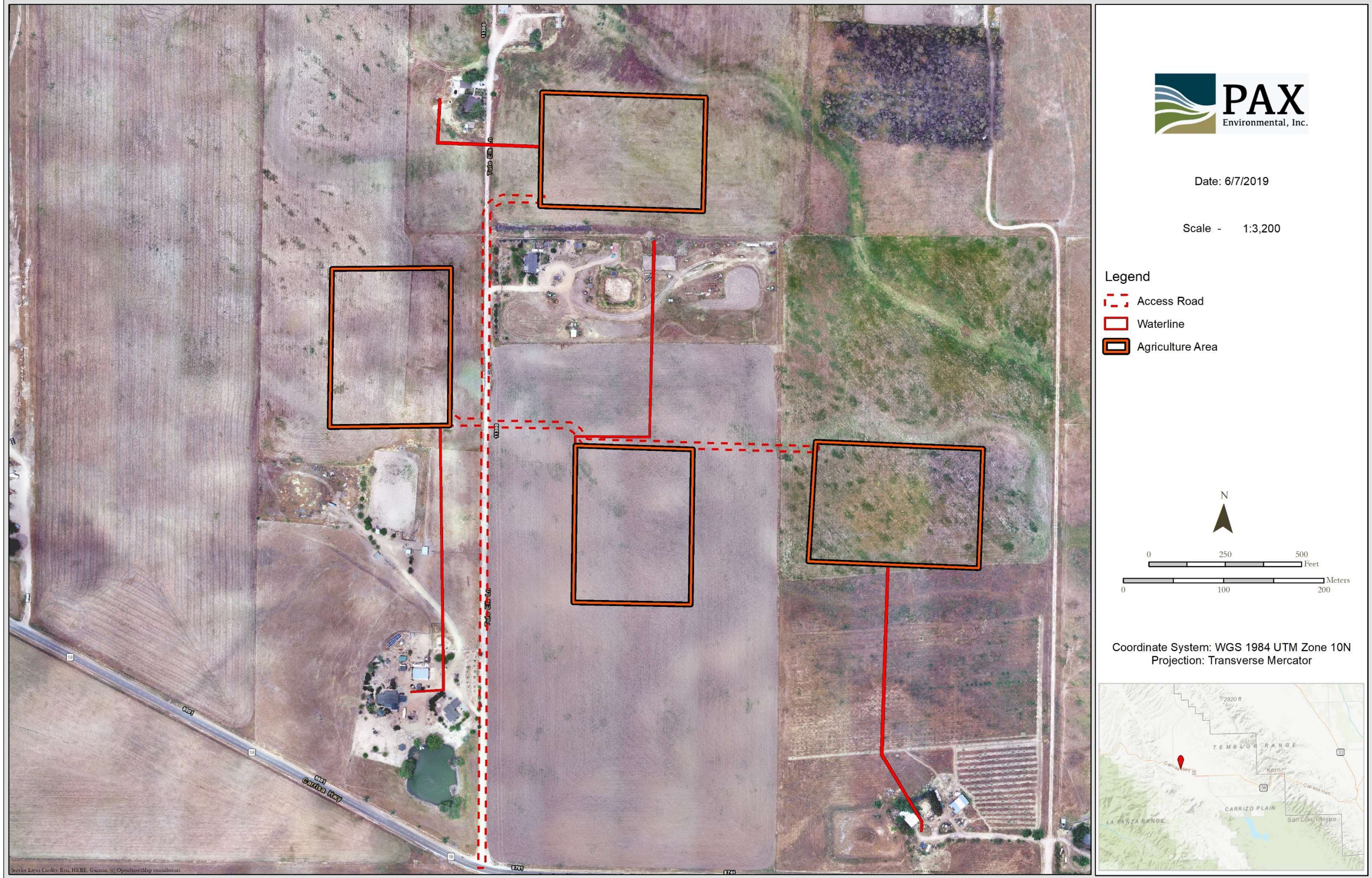
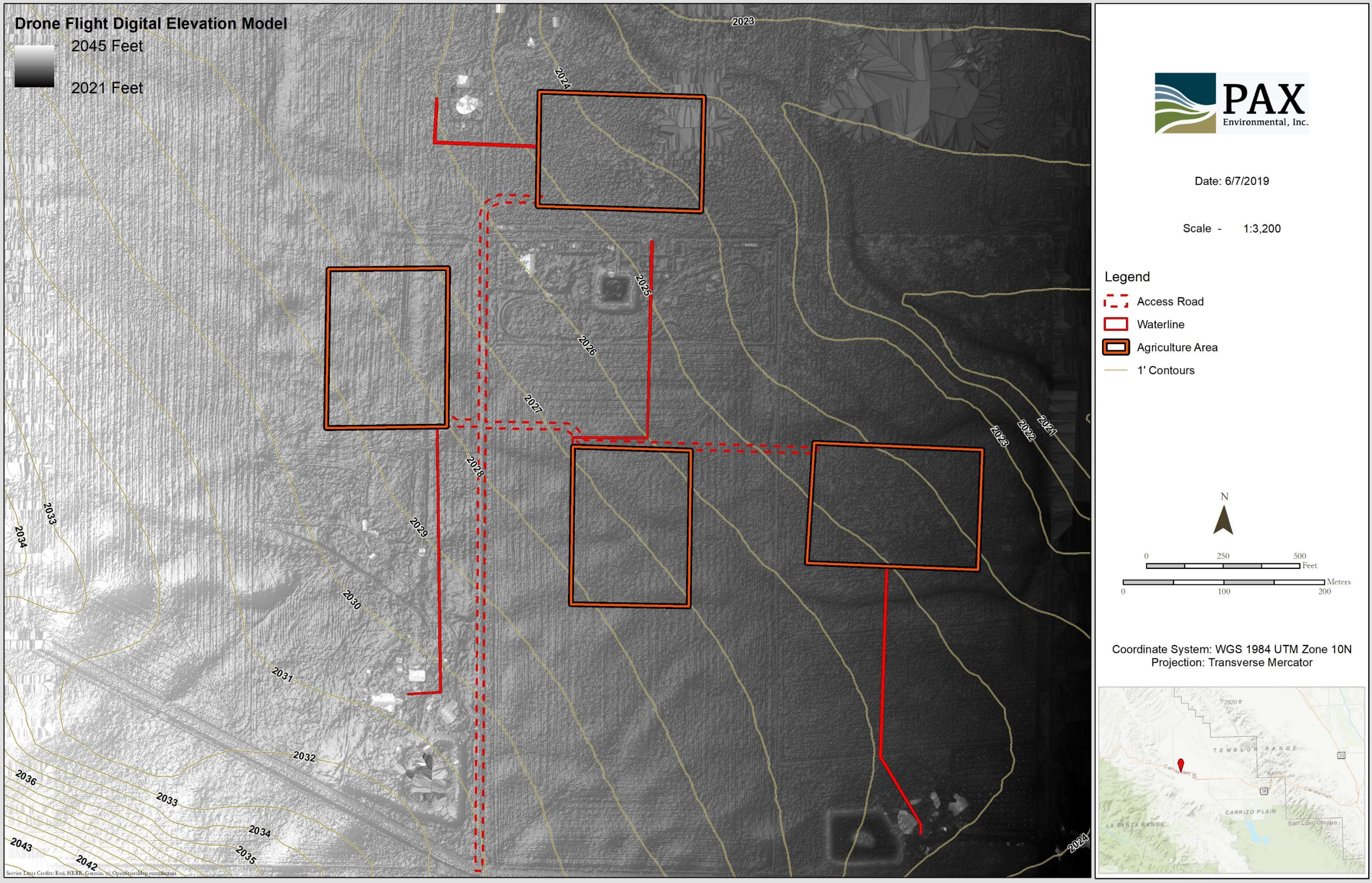


Figure 1. Drone aerial imagery with Project footprint.





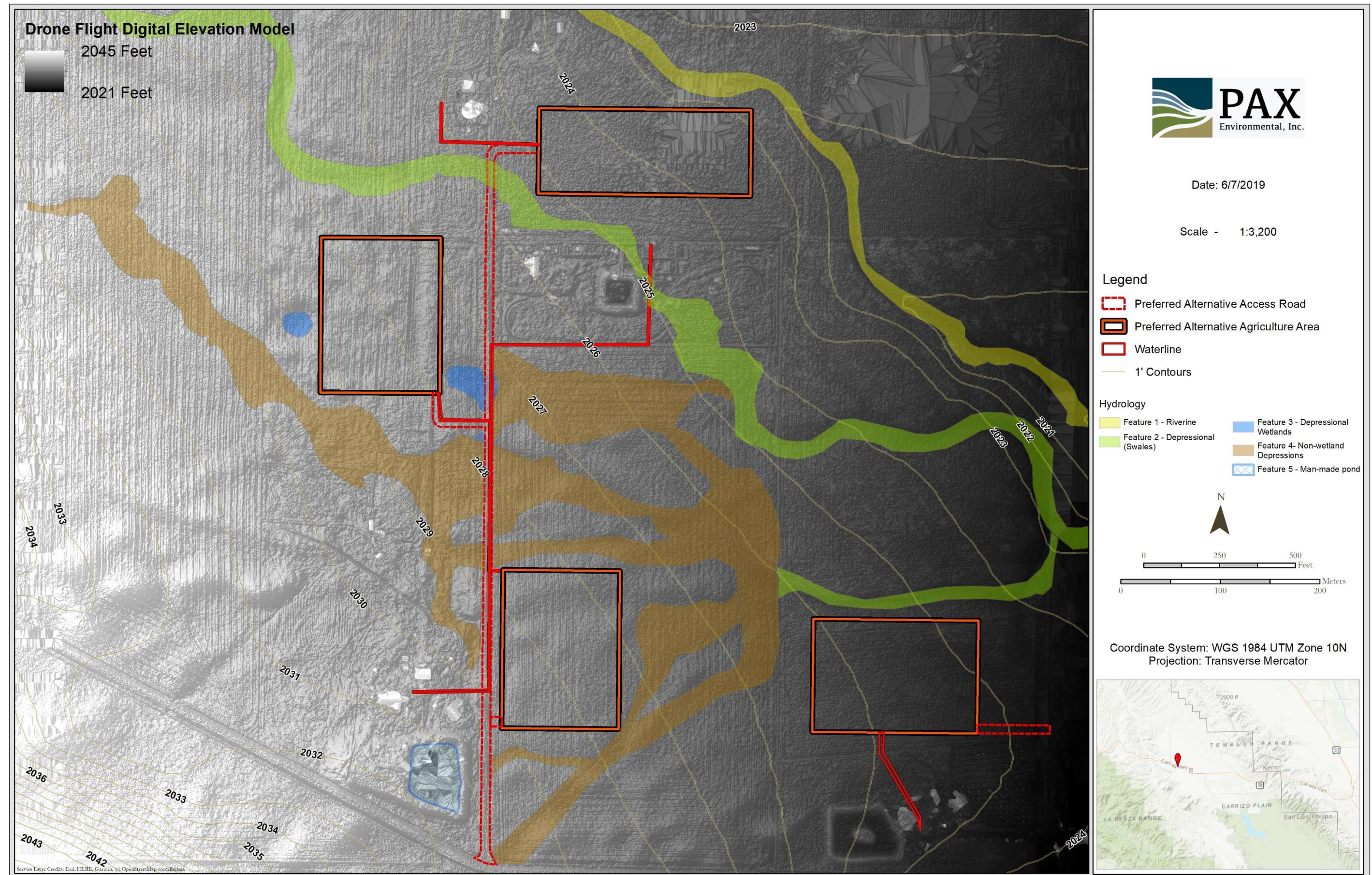
**Figure 2:** Drone flight topographic survey imagery with Project footprint.





**Figure 3:** Drone flight topographic survey imagery with Project footprint and mapped hydrogeomorphic features.





**Figure 4:** Drone flight topographic survey imagery with Alternative Project footprint and mapped hydrogeomorphic features.





Date: 6/7/2019

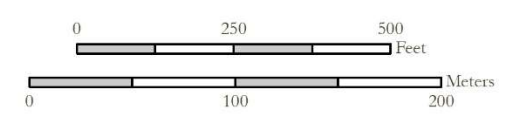
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Legend

- Preferred Alternative Access Road
- Preferred Alternative Agriculture Area
- Waterline

Hydrology

- Feature 1 - Riverine
- Feature 2 - Depressional (Swales)
- Feature 3 - Depressional Wetlands
- Feature 4 - Non-wetland Depressions
- Feature 5 - Man-made pond



Coordinate System: WGS 1984 UTM Zone 10N  
Projection: Transverse Mercator

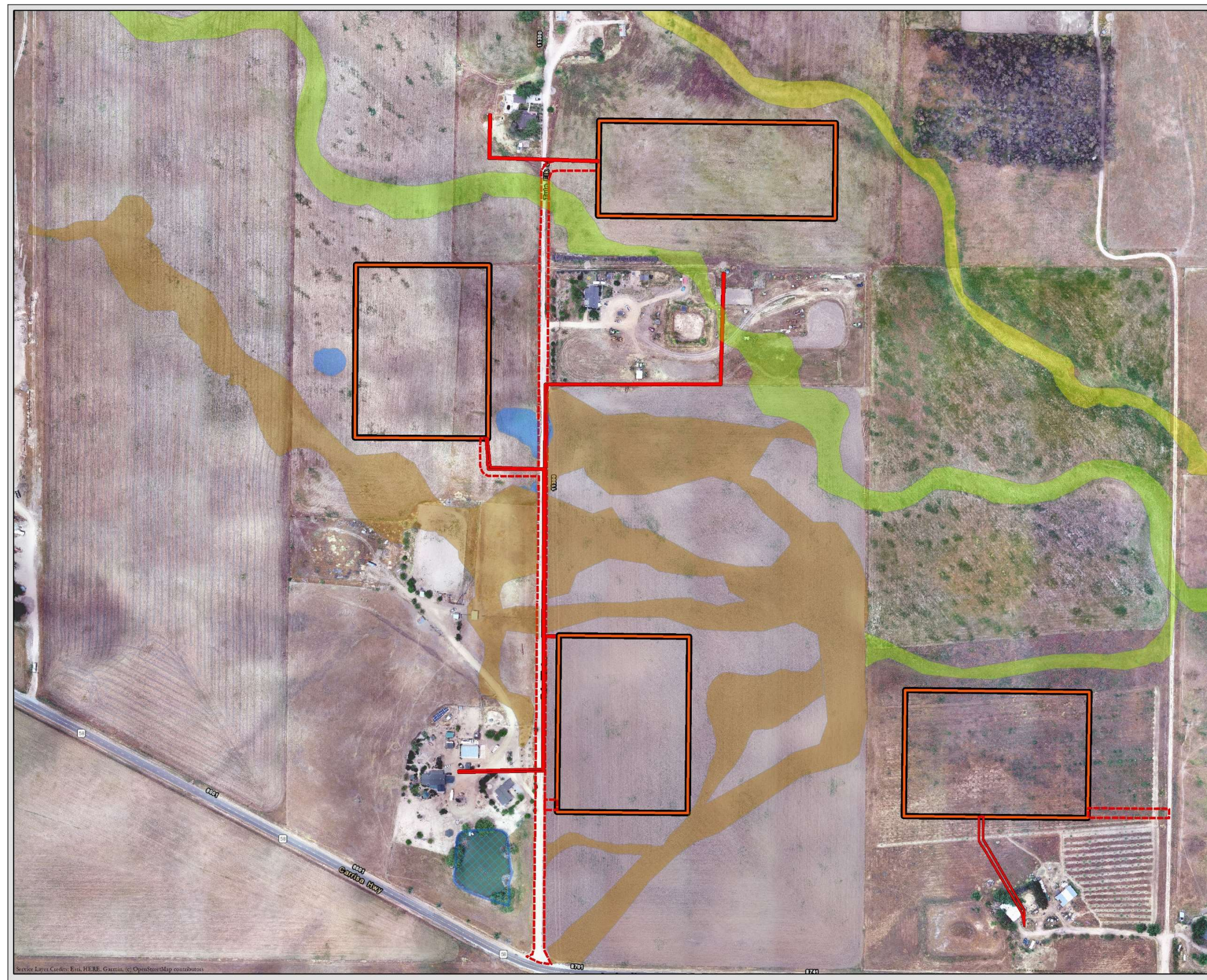


Figure 5: Drone flight aerial imagery with Project footprint and mapped hydrogeomorphic features.