

Aquatic Resources Delineation Report for the Fair Oaks Ranch 542-Acre Property Project, Wagoner County, Oklahoma

JULY 2023

PREPARED FOR

PartnerTulsa

PREPARED BY

SWCA Environmental Consultants

AQUATIC RESOURCES DELINEATION REPORT FOR THE FAIR OAKS RANCH 542-ACRE PROPERTY PROJECT, WAGONER COUNTY, OKLAHOMA

Prepared for

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1 INTRODUCTION AND PURPOSE

SWCA Environmental Consultants (SWCA) was retained by PartnerTulsa to complete an aquatic resources delineation and report for the Fair Oaks Ranch 542-Acre Property Project (project). The project consists of approximately 542 acres of privately owned land (project area) at the northwest corner of East 31st Street and the Creek Turnpike, in Tulsa, Wagoner County, Oklahoma (Figure 1).

The purpose of the aquatic resources delineation was to identify aquatic resources within the project area, determine whether the aquatic resources would be considered potential waters of the U.S. (WOTUS) by the U.S. Army Corps of Engineers (USACE), and assist PartnerTulsa in complying with Section 404 of the Clean Water Act (CWA) for project-related impacts to potential WOTUS. This aquatic resources delineation report describes the methods used to conduct the aquatic resources delineation and WOTUS evaluation, summarizes results of the delineation, and provides a summary conclusion regarding the potential jurisdictional status of aquatic resources identified during the delineation. The results and conclusions provided in this report represent SWCA's professional opinion based on our knowledge and experience with the USACE, including related regulatory guidance, documents, and manuals.

2 METHODS

SWCA received project data from PartnerTulsa on March 29, 2023. These data were used to conduct a background review and an aquatic resources delineation within the project area on June 14, 16, and 20, 2023.

Prior to and in support of conducting the aquatic resources delineation within the project area, SWCA reviewed background information using publicly available information from the sources listed below.

- U.S. Geological Survey (USGS): 7.5-minute quadrangle maps (Mingo, Oklahoma; Catoosa, Oklahoma; Broken Arrow, Oklahoma; Oneta, Oklahoma) (USGS 2018) and National Hydrography Dataset (NHD) viewer (USGS 2022)
- USACE: Antecedent Precipitation Tool (APT) (USACE 2020a)
- Natural Resources Conservation Service (NRCS): Web Soil Survey (NRCS 2019)
- Esri: ArcGIS Map Services (Esri 2022)
- Federal Emergency Management Agency (FEMA): National Flood Hazard Layer data for Wagoner County (FEMA 2021) and Estimated Base Flood Elevation Viewer (FEMA 2022)
- U.S. Fish and Wildlife Service (USFWS): National Wetlands Inventory (NWI) (USFWS 2022)

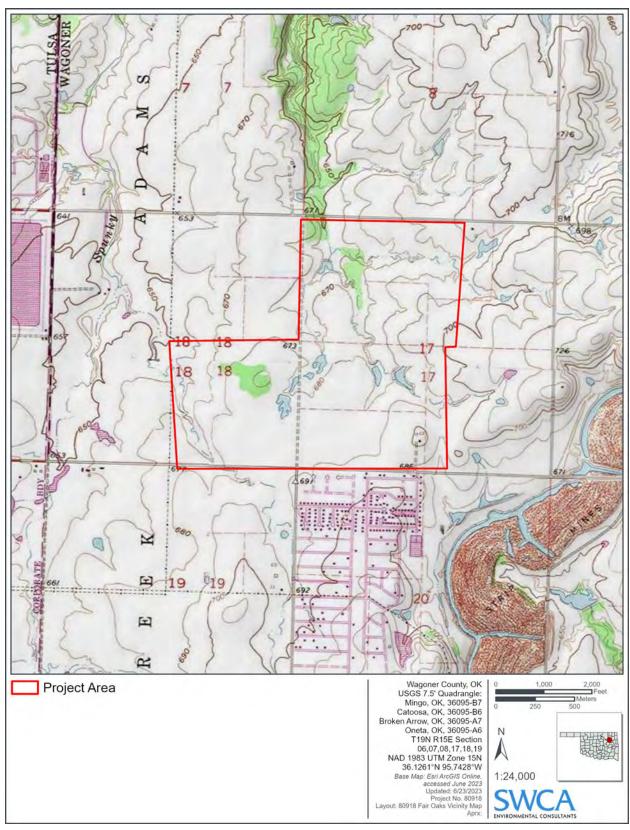


Figure 1. Project area location map.

SWCA conducted the aquatic resources delineation within the project area June 14, 16, and 20, 2023. The delineation was conducted in accordance with, and with respect to, guidance and information available from the sources listed below.

USACE:

- o The National Wetland Plant List, 2020 Wetland Ratings (USACE 2020b)
- o Regulatory Guidance Letter 05-05 (USACE 2005), which presents guidance on ordinary high water mark identification
- Corps of Engineers Wetlands Delineation Manual (1987 Manual) (Environmental Laboratory 1987)
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (MWR) (USACE 2010)
- Nationwide Permit Program (33 U.S. Code [USC] 401 et seq.; 33 USC 1344; 33 USC 1413;
 33 Code of Federal Regulations [CFR] 330; Federal Register 72:11092, 72:26082, and
 86:2744–2877) (USACE 2021)

• NRCS:

- Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils (Version 8.2) (NRCS 2019)
- o PLANTS Database (NRCS 2023)

• USFWS:

 Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979)

During the aquatic resource delineation, SWCA recorded data points to document the presence, or lack thereof, of the three required indicators of a wetland, as defined in the 1987 Manual and Regional Supplement and identified below (Environmental Laboratory 1987; USACE 2012).

- **Hydrophytic vegetation:** determined by identification of dominant species and their USACE-designated wetland indicator status (USACE 2020b).
- Wetland hydrology: determined by visual inspection with consideration from APT results and excavation of soil pits.
- **Hydric soils:** determined by characterizing soil features (i.e., color and texture) from soil pits.

SWCA used a Samsung Active Tab 2 and Juniper Geode real-time, differentially corrected global positioning system (GPS) unit with sub-meter accuracy to geographically reference features such as data points, wetland boundaries, and ordinary high-water marks. Areas that were designated to be possible aquatic resources from NHD and NWI data but lacked the criteria in the field or have changed, were documented with data points and/or photo points. SWCA used geographic information system (GIS) software to analyze collected features, calculate areas, and generate figures. All point, line, and polygon data collected using the GPS unit and displayed in figures are for review purposes only and do not represent a professional civil survey.

2.1 Potential Waters of the U.S. Determination

The USACE makes determinations on which aquatic resources are considered WOTUS through a process referred to as approved jurisdictional determination (AJD). USACE AJDs are guided by agency rules and

policy. Accordingly, aquatic resources may be considered non-jurisdictional (i.e., not a WOTUS) if they are found to be excluded waters under current rules and policy.

The U.S. Environmental Protection Agency (EPA) and the USACE are interpreting the phrase "waters of the U.S." consistent with the U.S. Supreme Court's May 25, 2023, decision in the case of *Sackett v. EPA* (i.e.; Sackett Decision) (EPA 2023a). However, the agencies are currently reviewing the decision to determine next steps. The Sackett Decision is thought to be a narrower interpretation of the aquatic resources that are considered WOTUS when compared to the previous definition which followed the U.S. Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States* and resulted in the joint agency memorandum titled "*Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States*" (2008 Guidance) (EPA 2008).

The Sackett Decision focused on wetlands and the agencies use of the significant nexus test with little mention or reference to waterways. Due to guidance yet to be issued for how the agencies will interpret the Sackett Decision pertaining to waterways, SWCA evaluated the potential jurisdictional status of waterways within the project area using the 2008 Guidance minus the significant nexus test. The potential jurisdictional status for wetlands within the project area were evaluated with consideration to the Sackett Decision (EPA 2023b).

3 PROJECT AREA DESCRIPTION

The project area is located within the Osage Cuestas (ecoregion 40b) subdivision of the Central Irregular Plains Level III ecoregion (Woods et al. 2005). The Osage Cuestas ecoregion occurs on mostly flat to irregular plains, separated by low hills and east-facing cuestas. Ecoregion 40b is primarily underlain by Pennsylvanian-age sandstone and shale interbedded with western-dipping coal and limestone. Perennial streams occur throughout the Osage Cuestas, with most streams possessing pools of sand, mud, or gravel substrates. Natural vegetation consists of tall grass prairie, including little bluestem, switchgrass, and Indiangrass, that gradually mixes with oak-hickory forests in the eastern portion of the ecoregion. Additionally, oak woodlands and oak forests occur on rocky hills. Ground elevation within the project area ranges from approximately 649 to 743 feet above mean sea level. Current land use within the project area is primarily rangeland and undeveloped pastures; adjacent housing developments are located to the south of the project area.

The project area is located within the Spunky Creek sub-watershed (Oklahoma Water Resources Board 2022). The primary source of surface water within the project area is precipitation runoff (overland flow). The FEMA Flood Insurance Rate Map panels 40145C0020J, 40145C0040J, 40145C0085J, and 40145C0105J for this region indicate that the project area is outside of the 100 and 500-year floodplains (FEMA 2021). Therefore, in accordance with the Flood Insurance Program, a floodplain development permit would not be required for the development of the Fair Oaks 542-acre Property within Wagoner County, Oklahoma.

3.1 Vegetation

SWCA identified three vegetation communities within the project area during the aquatic resources delineation: forested upland, herbaceous upland, and palustrine emergent (PEM) wetland. Dominant plant species observed in each vegetation community are listed below. Appendices A and B contain a photographic log and MWR Supplement data forms, respectively, of representative data point locations for each of the vegetation communities observed in the project area.

- Forested Upland: The forested upland vegetation community consisted of a tree stratum dominant in American elm (*Ulmus americana*) and sugarberry (*Celtis laevigata*), with a minor gum bully (*Sideroxylon lanuginosum*) component. The sapling/shrub stratum displays a dominance of coralberry (*Symphoricarpos orbiculatus*), accompanied by pecan (*Carya illinoinensis*), possumhaw (*Ilex decidua*), and American elm. The herbaceous stratum consists of eastern woodland sedge (*Carex blanda*), arrow-feather threeawn (*Aristida purpurascens*), Asiatic dayflower (*Commelina communis*), and winter bentgrass (*Agrostis hyemalis*). The woody vine stratum consists of saw greenbrier (*Smilax bona-nox*) and muscadine (*Vitis rotundifolia*).
- Herbaceous Upland: The majority of the herbaceous upland consists of prairie rangelands. Dominant vegetation within the herbaceous stratum consists of Bermuda grass (*Cynodon dactylon*), Persian ryegrass (*Lolium persicum*), and little barley (*Hordeum pusillum*). Additional herbaceous species include tall fescue (*Schedonorus arundinaceus*), rough barnyardgrass (*Echinochloa muricata*), Heller's rosette grass (*Dichanthelium oligosanthes*), and yellow-fruit sedge (*Carex annectens*). Scattered trees and shrubs are minimal within herbaceous upland communities.
- **PEM Wetland:** The PEM wetlands vegetation community is primarily composed of herbaceous species with a dominance of rough cocklebur (*Xanthium strumarium*), American water-willow (*Justicia americana*), and marshpepper knotweed (*Persicaria hydropiper*). Hairy beggarticks (*Bidens pilosa*), frogfruit (*Phyla lanceolata*), and Buckley slimpod rush (*Juncus diffusissimus*) also occur within the PEM wetland communities.

3.2 Soils

According to the NRCS, the project area contains 10 soil map units (Table 1). The majority of the mapped soil units within the project area consist of fine sandy loam, silty clay, or clay loam with or without gravel. None of the 10 soil map units are classified as hydric (NRCS 2019).

Table 1. Soil Map Units Within the Project Area

Soil Map Unit Name	Soil Description	Hydric Soil	Acres within Project Area	Percentage of Project Area
Bates fine sandy loam, 3 to 5 percent slopes	Fine sandy or clay residuum weathered from sandstone and shale occurring on hillslopes on loamy uplands.	No	59.1	10.92%
Catoosa-Shidler-Rock outcrop complex, 1 to 8 percent slopes	Silty clay residuum weathered from limestone or cherty limestone occurring on interfluves on loamy uplands.	No	105.0	19.33%
Coweta-Bates complex, 3 to 5 percent slopes	Loamy residuum weathered from sandstone and shale occurring on hillslopes on shallow sandstone or loamy uplands.	No	0.8	0.14%
Dennis silt loam, 1 to 3 percent slopes	Silty and clayey residuum weathered from shale occurring on interfluves on loamy uplands.	No	83.5	15.44%
Dennis silt loam, 3 to 5 percent slopes	Silty and clayey residuum weathered from shale occurring on hillslopes on loamy uplands.	No	20.4	3.77%
Dennis-Radley complex, 0 to 15 percent slopes	Silty and clayey residuum weathered from shale or silt alluvium occurring on hillslopes or drainageways on loamy uplands.	No	79.0	14.60%
Okemah silt loam, 0 to 1 percent slopes	Clayey and loamy colluvium or alluvium over clayey residuum weathered from shale occurring on paleoterraces on loamy uplands.	No	75.9	13.95%

Soil Map Unit Name	Soil Description	Hydric Soil	Acres within Project Area	Percentage of Project Area
Summit silty clay loam, 1 to 3 percent slopes	Calcareous clayey colluvium and/or residuum weathered from shale occurring on interfluves on loamy uplands.	No	115.0	21.25%
Summit silty clay loam, 3 to 5 percent slopes	Calcareous clayey colluvium and/or residuum weathered from shale occurring on interfluves on loamy uplands.	No	0.0009	<0.01%
Water	Water	No	3.3	0.62%
Total			542	100.0

Source: NRCS (2019)

4 AQUATIC RESOURCES

During the June 2023 aquatic resources delineation, SWCA identified 18 waterways, 8 waterbodies, and 2 wetlands within the project area. The aquatic resources are discussed further in Sections 4.1 through 4.3. Representative photographs of identified aquatic resources are provided in Appendix A, and data forms are provided in Appendix B.

According to the APT (Appendix C), the aquatic resources delineation was performed during the dry season and the project area's corresponding climatological division was experiencing mild drought conditions. At the project area scale, the rainfall condition at the time of the aquatic resources delineation was calculated as normal on June 14, 16, and 20, 2023 (USACE 2020a).

Figure 2 displays an overview of the aquatic resources mapped during the delineation, while Appendix D includes a map book of the aquatic resources delineation results.

4.1 Waterways

SWCA identified 1 perennial waterway, 4 intermittent waterways, 12 ephemeral waterways, and 1 wetweather conveyance within the project area (Table 2; see Figure 2; see Appendix D). One of the ephemeral waterways is classified as a roadside ditch (SA015). All delineated waterways are considered unnamed tributaries to Spunky Creek.

The perennial waterway was classified as perennial because it appears to carry water continuously throughout the year. The intermittent waterways were classified an intermittent because they appear to carry water during most of the year but may cease to flow a few times a year or seasonally. The ephemeral waterways were classified as ephemeral because they appear to only convey water in direct response to precipitation events. Ephemeral waterways that were isolated and observed to lack any connectivity to other surface waters within the project area are likely not considered potential WOTUS as they do not contribute ephemeral flow to tributaries of traditional navigable WOTUS or other potentially jurisdictional WOTUS. Conversely, ephemeral waterways that were observed to have a hydrologic connection to potential WOTUS are considered potential WOTUS. Table 2 provides a summary of the waterways within the project area, including resource identification, classification, and potential WOTUS status.

^{*} Minor components of soil map unit are considered hydric.

Table 2. Summary of Waterways Within the Project Area

Resource ID	Classification	Area (acres)	Mapped Length (feet)	Potential WOTUS Under 2008 Guidance
SA001a	Intermittent Stream	0.04	1033.70	Yes
SA001b	Intermittent Stream	0.32	4625.04	Yes
SA001c	Intermittent Stream	0.13	1100.93	Yes
SA002a	Ephemeral Stream	0.09	2407.23	No
SA002b	Ephemeral Stream	0.005	199.23	No
SA002c	Ephemeral Stream	0.02	704.86	No
SA002d	Ephemeral Stream	0.001	46.13	No
SA003	Perennial Stream	0.37	2920.02	Yes
SA004a	Ephemeral Stream	0.002	103.42	No
SA004b	Ephemeral Stream	0.02	948.86	No
SA004c	Ephemeral Stream	0.006	161.19	No
SA005	Intermittent Stream	0.46	4490.58	Yes
SA006	Ephemeral Stream	0.008	96.11	Yes
SA007	Wet-Weather Conveyance	0.007	307.79	No
SA008	Ephemeral Stream	0.006	188.81	Yes
SA009	Ephemeral Stream	0.02	643.34	No
SA010	Ephemeral Stream	0.01	301.35	No
SA015	Ephemeral Stream	0.25	4755.73	No

4.2 Waterbodies

SWCA identified 8 waterbodies within the project area. Table 3 provides a summary of the waterbodies within the project area, including resource identification, classifications, and potential WOTUS status.

Table 3. Summary of Waterbodies Within the Project Area

Resource ID	Classification	Area (acres)	Potential WOTUS Under 2008 Guidance
PA001	Impoundment	1.90	Yes
PA002	Impoundment	0.48	No
PA003	Impoundment	0.90	No
PA004	Impoundment	0.17	No
PA005	Impoundment	0.13	No
PA006	Impoundment	0.77	No
PA007	Impoundment	1.32	Yes
PA008	Pond	1.11	No*

^{*} Based on aquatic resources delineation data, SWCA's understanding of the USACE's process for AJDs, and review of recent AJDs for similarly situated aquatic resources, isolated upland constructed ponds would likely not be considered WOTUS

4.3 Wetlands

SWCA delineated 2 wetlands during the aquatic resource delineation, with both wetlands being categorized as PEM. Table 4 provides a summary of the wetlands within the project area, including resource identification, classification, and potential WOTUS status.

Table 4. Summary of Wetlands Within the Project Area

Resource ID	Classification	Area (acres)	Potential WOTUS Under <i>Sackett</i> Guidance
WA001	PEM	0.18	No
WA002	PEM	0.12	Yes

Note: PEM = Palustrine Emergent Wetland

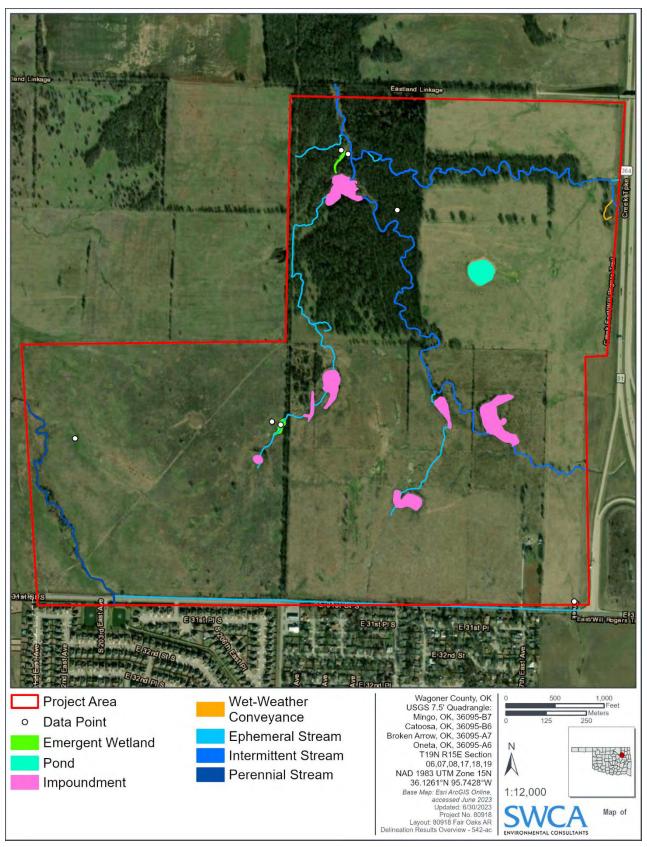


Figure 2. Aquatic resources delineation results overview map.

5 CONCLUSIONS

SWCA identified a total of 28 aquatic resources within the project area during the June 14, 16, and 20, 2023 aquatic resources delineation. Of these 28 aquatic resources within the project area, 7 waterways (see Table 2), 2 waterbodies (see Table 3), and 1 wetland (see Table 4) would likely be considered WOTUS under Section 404 of the CWA and would be regulated by the USACE Tulsa District. However, only the USACE and EPA can make official determinations regarding the jurisdictional status or limits under Section 404 of the CWA for the aquatic resources identified during the aquatic resources delineation.

Certain activities (i.e., discharge of dredge or fill materials) within WOTUS require authorization from the USACE. Regulated activities within WOTUS could be authorized under the general terms and conditions of Nationwide Permits (NWPs) 51 (Land-Based Renewable Energy Generation Facilities), 14 (Linear Transportation Projects), or 57 (Electric Utility Line and Telecommunications Activities). The NWPs may authorize project impacts resulting in a loss of up to 1/2 of an acre of WOTUS. However, depending on project design and the activities proposed within WOTUS, a pre-construction notification (PCN) to the USACE Tulsa District could be required. A PCN is generally required under all three NWPs if the project will result in a loss exceeding 1/10 of an acre of WOTUS, or if other conditions of the NWPs are not met (such as if the project impacts cultural resources or may affect threatened or endangered species). Once the project design is known, SWCA can calculate impacts, analyze proposed activities as they pertain to the general terms and conditions of the Nationwide Permit(s), and assist PartnerTulsa in determining if a PCN to the USACE would be required.

6 LITERATURE CITED

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Aquatic Resources Delineation Report for the I Oklahoma	Fair Oaks Ranch 5	542-acre Property Pr	roject, Wagoner Co	ounty,
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APPENDIX A

Photographic Log



Figure A1. Representative photo of herbaceous upland vegetative community within the project area, facing south (DPA001_U).



Figure A2. Representative photo of herbaceous upland vegetative community within the project area, facing west (DPA003_U).



Figure A3. Representative photo of herbaceous upland vegetative community within the project area, facing north (DPA004_U).



Figure A4. Representative photo of forested upland vegetative community within the project area, facing east (DPA006_U).



Figure A5. Representative photo of forested upland vegetative community within the project area, facing south (DPA007_U).



Figure A6. Representative photo of PEM wetland vegetative community within the project area, facing south (WA001; DPA002_PEM).



Figure A7. Representative photo of PEM wetland vegetative community within the project area, facing west (WA002; DPA005_PEM).



Figure A8. Representative photo of perennial stream SA003 within the project area, facing downstream.



Figure A9. Representative photo of intermittent stream SA001a within the project area, facing downstream.



Figure A10. Representative photo of intermittent stream SA001b within the project area, facing downstream.



Figure A11. Representative photo of intermittent stream SA001c within the project area, facing upstream.



Figure A12. Representative photo of intermittent stream SA005 within the project area, facing downstream.



Figure A13. Representative photo of ephemeral stream SA002a within the project area, facing upstream.



Figure A14. Representative photo of ephemeral stream SA002c within the project area, facing downstream.



Figure A15. Representative photo of ephemeral stream SA004b within the project area, facing downstream.



Figure A16. Representative photo of ephemeral stream SA006 within the project area, facing upstream.



Figure A17. Representative photo of ephemeral stream SA008 within the project area, facing upstream.



Figure A18. Representative photo of ephemeral stream SA009 within the project area, facing upstream.



Figure A19. Representative photo of ephemeral stream SA010 within the project area, facing downstream.



Figure A20. Representative photo of ephemeral stream SA015 (roadside ditch) within the project area, facing upstream.



Figure A21. Representative photo of wet-weather conveyance SA007 within the project area, facing upstream.



Figure A22. Representative photo of man-made pond within the project area, facing west (PA008).



Figure A23. Representative photo of man-made impoundment within the project area, facing east (PA001).



Figure A24. Representative photo of man-made impoundment within the project area, facing east (PA002).



Figure A25. Representative photo of man-made impoundment within the project area, facing south (PA003).



Figure A26. Representative photo of natural impoundment within the project area, facing north (PA004).



Figure A27. Representative photo of man-made impoundment within the project area, facing south (PA005).



Figure A28. Representative photo of man-made impoundment within the project area, facing east (PA006).

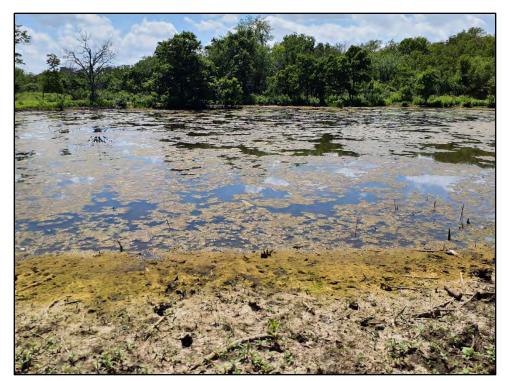


Figure A29. Representative photo of man-made impoundment within the project area, facing west (PA007).

Aquatic Resources Delineation Report for the Oklahoma	Fair Oaks Ranc	h 542-acre Prope	erty Project, Wag	oner County,
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APPENDIX B

U.S. Army Corps of Engineers Wetland Determination Data Forms Midwest Region

oject/Site:	Fair Oaks Ranch 54	42-acre Property	Count	y: Wagoner	Sampling Date	e:Ju	ıne 14, 2023	
plicant/Owner:		PartnerTulsa		State:	OK Sampling Poin	nt:	DPA001_U	
	Anthony Thornton				e:			
ndform (hillslope, te	rrace, etc.):	Rangel	and	Local relief (c	oncave, convex, none): .11933 Datum:	C	oncave	
pe (%):	0-5%	Lat:	95.73393	Long:36	.11933 Datum:	NAD 1983	UTM Zone 15	N
Map Unit Name:		Dennis-Radley comp	olex, 0 to 15 perc	ent slopes	NWI classification	:	N/A	
climatic / hydrologi	ic conditions on the site t	ypical for this time of	year? Y	resNo_X	(If no, explain in Remar	ks.)		
Vegetation	No ,Soil No	or Hydrology No	significantly	disturbed? A	re "Normal Circumstances" p	resent? Yes	X N	lo
Vegetation	No ,Soil No	or Hydrology No	naturally prol	blematic? (If	needed, explain any answer	rs in Remarks.)		
IMMARY OF F	EINDINGS - Attack	n sita man sha	wina samnli	na noint locations	s, transects, importa	ent foatures c	at c	
NINIAKT OF I	INDINGS - Attaci	i site iliap silo	wing sampii	ing point locations	s, transects, importa	int reatures, e	;tG.	
ydrophytic Vegetati	on Present? Yes	No _	X					
ydric Soil Present?	Yes	No	X	Is the Sampled Area				
etland Hydrology P	Present? Yes	X No		within a Wetland?	Yes	No	X	
						_		
emarks:								
This point was det	ermined not to be within	a wetland due to the	lack of hydrophy	tic vegetation and hydric	soils.			
The survey area w	as determined to be drie	er than normal at the t	time of survey.					
GETATION -	Use scientific nar	mes of plants.						
					Dominance Test worksh			
		Absolute		Indicator				
	ot size: 30 ft.) % cover	Species?	Status	Number of Dominant Spe			
1. None Observ	<u>red</u>				That Are OBL, FACW, or	FAC:	0	(A)
3					Total Number of Dominar			
4					Species Across All Strata	ı:	1	(B)
5								
		=	Total Cover		Percent of Dominant Spe	cies		
Sapling/Shrub Stra	atum (Plot size:	15 ft.)			That Are OBL, FACW, or	FAC:	0	(A/E
1. None Observ	red							
2					Prevalence Index Works	sheet:		
3					Total % Cover	of: N	Multiply by:	
4		<u> </u>			OBL species	5 x 1 = _	5	
5					FACW species	0 x 2 = _	0	
		=	Total Cover		FAC species	5 x 3 =	15	
Herb Stratum (Pl	ot size: 5 ft.)			FACU species	95 x 4 =	380	
1. Cynodon dac	etylon	85	Yes	FACU	UPL species	0 x 5 = _	0	
2. Schedonorus	arundinaceus	10	No	FACU	Column Totals:	105 (A)	400	(B)
3. Hordeum pus	sillum		No	FAC	Prevalence Index = B/A =	= 3.81		
4. Echinochloa	muricata	<u> </u>	No	OBL				
5.					Hydrophytic Vegetation	Indicators:		
6					1 - Rapid Test for Hy	ydrophytic Vegetati	on	
7.					2 - Dominance Test	_		
8.					3 - Prevalence Index			
9.					4 - Morphological Ad		e supportina	
10.						or on a separate sh		
		 105 =	Total Cover		Problematic Hydroph	•	,	
Woody Vine Stratu	<u>um</u> (Plot size: ;	30 ft.)	10101 00101		¹ Indicators of hydric soil a		• •	
1. None Observ	·	<u>50 it.</u>)			be present, unless disturb	_		
2.	Gu					<u>.</u>		
۷			Total Cover					
		=	Total Cover		Hydrophytic	Vaa	Ma	v
					Vegetation Present?	Yes	No	Х
emarks:								
	tion of budges by 41	ation was absenced 6	>E00/ of darest-	ot aposica indeved as EAC	21 or drior)			
ino positive indicat	uon or nyarophytic vegeta	auon was observed (2	≤ou% ot dominar	nt species indexed as FAC	or arier).			

SOIL

Sampling Point: DPA001_U

Denth	B # 4 *			ъ. і -				
Depth (inches)	Matrix		<u> </u>		eatures - 1		÷ .	5
(inches)	Color (moist)	<u>%</u>	Color (moist)		Type ¹	Loc ²	Texture	Remarks
0-1	10YR 2/2	100	None				Organic Layer	
1-2	10YR 3/2	90	2.5YR 4/8	<u>10</u>	C	PL	Loam	
2-4	10YR 3/1	100	None				Loam	
4-20	2.5YR 2.5/1	80	None				Clay Loam	Sandstone present
4-20	10YR 5/4	_20_	None			_ 	Clay Loam	
Hydric Soils		tion, RM=F		=Masked Sa			ocation: PL=Pore Lini Indicators for Prol Coast Prairie F	olematic Hydric Soils ³ :
Histosol				-	X (34)			
<u></u>	pipedon (A2)			Redox (S5)			Dark Surface (
	listic (A3)			d Matrix (S6)				se Masses (F12)
	en Sulfide (A4)			Mucky Miner				Dark Surface (TF12)
<u></u>	d Layers (A5)			Gleyed Matri			Other (Explain	ın Remarks)
2 cm Mu	uck (A10)		Deplete	ed Matrix (F3))			
Deplete	ed Below Dark Surface	(A11)	Redox	Dark Surface	e (F6)			
Thick D	ark Surface (A12)		Deplete	ed Dark Surfa	ace (F7)			
Sandy N	Mucky Mineral (S1)		Redox	Depressions	(F8)		³ Indicators of hydro	phytic vegetation and
5 cm Mu	ucky Peat or Peat (S3)		_ 				wetland hydrology unless disturbed o	
Restrictive I	Layer (if present):						amoso disturbed (5.00.0.114.10.
Туре:								
Depth(ir	nches):					Hydrid	Soil Present?	Yes No X
		s was obse						
	SY plogy Indicators:							
etland Hydro				·)			Secondary Indicato	rs (minimum of two required)
etland Hydro	ology Indicators:		check all that apply	r) Stained Leav	res (B9)		Secondary Indicato Surface Soil C	
etland Hydro Primary Indic Surface	plogy Indicators: cators (minimum of one Water (A1)		check all that apply	Stained Leav			Surface Soil C	racks (B6)
etland Hydro Primary Indio Surface High Wa	cators (minimum of one Water (A1) ater Table (A2)		check all that applyWater-s	Stained Leav Fauna (B13)		Surface Soil C Drainage Patte	racks (B6) erns (B10)
etland Hydro Primary Indio Surface High Wa	cators (minimum of one Water (A1) ater Table (A2) ion (A3)		check all that apply Water-S Aquatic	Stained Leav Fauna (B13 quatic Plants	(B14)		Surface Soil C Drainage Patte Dry-Season W	racks (B6) erns (B10) ater Table (C2)
Primary Indic Surface High Water N	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1)		check all that apply Water-S Aquation True Ac	Stained Leav Fauna (B13 quatic Plants en Sulfide Od	(B14) dor (C1)	ots (C3)	Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro	racks (B6) erns (B10) 'ater Table (C2) ws (C8)
Primary Indic Surface High Water N Sedime	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)		check all that apply Water-S Aquation True Ac Hydrog	Stained Leav Fauna (B13 quatic Plants en Sulfide Oc d Rhizosphe	(B14) dor (C1) eres on Living Roc	ots (C3)	Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vis	racks (B6) erns (B10) later Table (C2) ws (C8) ble on Aerial Imagery (C9)
Primary Indic Surface High Water N Sedime Drift De	cators (minimum of one water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)		check all that apply Water-S Aquation True Ao Hydrogo Oxidize Presen	Stained Leaver Fauna (B13 quatic Plants en Sulfide Octobro Rhizosphe ce of Reduce	(B14) dor (C1) eres on Living Roced Iron (C4)		Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision	racks (B6) erns (B10) fater Table (C2) ws (C8) fble on Aerial Imagery (C9) essed Plants (D1)
etland Hydro Primary Indio Surface High Water Notes Sedime Drift De	cators (minimum of one water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) sposits (B3) at or Crust (B4)		check all that apply Water-S Aquation True Ao Hydrog Oxidize Present	Stained Leaver Fauna (B13 quatic Plants en Sulfide Octobro Reduction Fauna (B13 per Pauna (B13 p	(B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils		Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Street X Geomorphic P	racks (B6) erns (B10) fater Table (C2) ws (C8) fble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
etland Hydro Primary Indio Surface High Water Mater Mater Mater Sedime Drift De Algal Ma	cators (minimum of one water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5)	e required;	check all that apply Water-S Aquation True Ac Hydrog Oxidize Presence Recent Thin Mo	Stained Leaver Fauna (B13 quatic Plants en Sulfide Octobro Reducting Control Reducting Control Reducting Reducting Reducting Surface ((B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils		Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision	racks (B6) erns (B10) fater Table (C2) ws (C8) fble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
etland Hydro Primary Indio Surface High Water Now Sedime Drift De Algal Mater Inundati	cators (minimum of one water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) sposits (B3) at or Crust (B4)	e required;	check all that apply Water-s Aquation True Act Hydroge Oxidize Present Recent Thin Mo	Stained Leaver Fauna (B13 quatic Plants en Sulfide Octobro Reduction Fauna (B13 per Pauna (B13 p	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7)		Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Street X Geomorphic P	racks (B6) erns (B10) fater Table (C2) ws (C8) fble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
etland Hydro Primary Indio Surface High Water Now Sedime Drift De Algal Mater Inundati	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial Im	e required;	check all that apply Water-s Aquation True Act Hydroge Oxidize Present Recent Thin Mo	Stained Leaver Fauna (B13 quatic Plants en Sulfide Octobro Reduced Iron Reduction Well Data	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7)		Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Street X Geomorphic P	racks (B6) erns (B10) fater Table (C2) ws (C8) fble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
etland Hydro Primary Indio Surface High Water Nater Na	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial Im y Vegetated Concave	e required; nagery (B7 Surface (B	check all that apply Water-S Aquation True Ac Hydrogn Oxidize Present Recent Thin Mo Gauge (88) Other (8)	Stained Leaver Fauna (B13 quatic Plants en Sulfide Octobro Sulfide Octobro Reduction Reduction Well Data Explain in Reserverse	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7) (D9) emarks)		Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Street X Geomorphic P	racks (B6) erns (B10) fater Table (C2) ws (C8) fble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
Primary Indice Surface High Water Mater Ma	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial Im y Vegetated Concave vations: er Present? Yes	nagery (B7 Surface (B	check all that apply Water-S Aquation True Ac Hydrogn Oxidize Present Recent Thin Mo Gauge Other (I	Stained Leaver Fauna (B13 quatic Plants en Sulfide Octobro Reduction Reduction Well Data Explain in Reduction Reduction Reduction Well Data Explain in Reduction Reduction Reduction Well Data Explain in Reduction Redu	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7) (D9) emarks)		Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Street X Geomorphic P	racks (B6) erns (B10) fater Table (C2) ws (C8) fble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
Primary Indice Surface High Water Notes Sedime Drift De Algal Ma Iron Dep Inundati Sparsel Surface Water Water Table	cators (minimum of one water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial Imply Vegetated Concave exations: er Present? Yes Present? Yes	nagery (B7 Surface (B	check all that apply Water-S Aquation True Ac Hydrog Oxidize Present Recent Thin Mo Gauge Other (I	Stained Leaver Fauna (B13 quatic Plants en Sulfide Octobro Reduction Reduction Well Data Explain in Reserve (inches):	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7) (D9) emarks) N/A >20	(C6)	Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Stro X Geomorphic P FAC-Neutral T	racks (B6) erns (B10) dater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
Primary Indice Surface High Water Nater Nate Nater Nater Nater Nater Nater Nater Nate Nater Nate Nater Nater Nate Nater Nate Nater Nate Nater Nate Nater Nate Nater Nate Nate Nater Nate Nate Nate Nater Nate Nate Nater Nate Nate Nate Nate Nater Nate Nater Nate Nate Nate Nate Nate Nate Nate Nate	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial Im y Vegetated Concave vations: er Present? Yes Present? Yes resent? Yes	nagery (B7 Surface (B	check all that apply Water-S Aquation True Ac Hydrog Oxidize Present Recent Thin Mo Gauge Other (I	Stained Leaver Fauna (B13 quatic Plants en Sulfide Octobro Reduction Reduction Well Data Explain in Reduction Reduction Reduction Well Data Explain in Reduction Reduction Reduction Well Data Explain in Reduction Redu	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7) (D9) emarks)	(C6)	Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Street X Geomorphic P	racks (B6) erns (B10) dater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
etland Hydro Primary Indio Surface High Water Mater Table Saturation Projection of the Control of the Contr	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial Im y Vegetated Concave vations: er Present? Yes Present? Yes coillary fringe)	nagery (B7 Surface (B	check all that apply Water-S Aquation True Ac Hydrogn Oxidize Present Recent Thin Mo Gauge Other (I	Stained Leaver Fauna (B13 quatic Plants en Sulfide Octobro Reduced Iron Reduction Well Data Explain in Reserve (inches): oth (inches): oth (inches):	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7) (D9) emarks) N/A >20 >20	(C6)	Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Stro X Geomorphic P FAC-Neutral T	racks (B6) erns (B10) dater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
Primary Indice Surface High Water Notes Sedime Drift De Algal Mater Notes Inundati Sparsel Field Observ Surface Water Table Saturation Projection Company Comp	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial Im y Vegetated Concave vations: er Present? Yes Present? Yes resent? Yes	nagery (B7 Surface (B	check all that apply Water-S Aquation True Ac Hydrogn Oxidize Present Recent Thin Mo Gauge Other (I	Stained Leaver Fauna (B13 quatic Plants en Sulfide Octobro Reduced Iron Reduction Well Data Explain in Reserve (inches): oth (inches): oth (inches):	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7) (D9) emarks) N/A >20 >20	(C6)	Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Stro X Geomorphic P FAC-Neutral T	racks (B6) erns (B10) dater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
Primary Indice Surface High Water Nater Table Saturation Projection (includes capescribe Records)	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial Im y Vegetated Concave vations: er Present? Yes Present? Yes coillary fringe)	nagery (B7 Surface (B	check all that apply Water-S Aquation True Ac Hydrogn Oxidize Present Recent Thin Mo Gauge Other (I	Stained Leaver Fauna (B13 quatic Plants en Sulfide Octobro Reduced Iron Reduction Well Data Explain in Reserve (inches): oth (inches): oth (inches):	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7) (D9) emarks) N/A >20 >20	(C6)	Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Stro X Geomorphic P FAC-Neutral T	racks (B6) erns (B10) dater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
Primary Indice Surface High Water Notes Sedime Drift De Algal Mater Notes Inundati Sparsel Field Observ Surface Water Table Saturation Projection Company Comp	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial Im y Vegetated Concave vations: er Present? Yes Present? Yes coillary fringe)	nagery (B7 Surface (B	check all that apply Water-S Aquation True Ac Hydrogn Oxidize Present Recent Thin Mo Gauge Other (I	Stained Leaver Fauna (B13 quatic Plants en Sulfide Octobro Reduced Iron Reduction Well Data Explain in Reserve (inches): oth (inches): oth (inches):	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7) (D9) emarks) N/A >20 >20	(C6)	Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Stro X Geomorphic P FAC-Neutral T	racks (B6) erns (B10) dater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
Primary Indice Surface High Water Nater Table Saturation Projection Recorders	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial Im y Vegetated Concave vations: er Present? Yes Present? Yes coillary fringe)	nagery (B7 Surface (B	check all that apply Water-S Aquation True Ac Hydrog Oxidize Presence Recent Thin Mo Gauge Other (I	Stained Leaver Fauna (B13 quatic Plants en Sulfide Order Reduction Reduction Reduction Reduction Well Data Explain in Research (inches): oth (inches): oth (inches): oth (inches):	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7) (D9) emarks) N/A >20 >20 s inspections), if a	(C6)	Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Stro X Geomorphic P FAC-Neutral T	racks (B6) erns (B10) dater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
Primary Indice Surface High Water Nater Table Saturation Projection Recorders	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial Im y Vegetated Concave vations: er Present? Yes Present? Yes coillary fringe) rded Data (stream gauge	nagery (B7 Surface (B	check all that apply Water-S Aquation True Ac Hydrog Oxidize Presence Recent Thin Mo Gauge Other (I	Stained Leaver Fauna (B13 quatic Plants en Sulfide Order Reduction Reduction Reduction Reduction Well Data Explain in Research (inches): oth (inches): oth (inches): oth (inches):	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7) (D9) emarks) N/A >20 >20 s inspections), if a	(C6)	Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Stro X Geomorphic P FAC-Neutral T	racks (B6) erns (B10) dater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
Primary Indice Surface High Water Nater Table Saturation Projection Recorders	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial Im y Vegetated Concave vations: er Present? Yes Present? Yes coillary fringe) rded Data (stream gauge	nagery (B7 Surface (B	check all that apply Water-S Aquation True Ac Hydrog Oxidize Presence Recent Thin Mo Gauge Other (I	Stained Leaver Fauna (B13 quatic Plants en Sulfide Order Reduction Reduction Reduction Reduction Well Data Explain in Research (inches): oth (inches): oth (inches): oth (inches):	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7) (D9) emarks) N/A >20 >20 s inspections), if a	(C6)	Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Stro X Geomorphic P FAC-Neutral T	racks (B6) erns (B10) dater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
Primary Indice Surface High Water Nater Table Saturation Projection Recorders	cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial Im y Vegetated Concave vations: er Present? Yes Present? Yes coillary fringe) rded Data (stream gauge	nagery (B7 Surface (B	check all that apply Water-S Aquation True Ac Hydrog Oxidize Presence Recent Thin Mo Gauge Other (I	Stained Leaver Fauna (B13 quatic Plants en Sulfide Order Reduction Reduction Reduction Reduction Well Data Explain in Research (inches): oth (inches): oth (inches): oth (inches):	(B14) (B14) dor (C1) eres on Living Roced Iron (C4) on in Tilled Soils (C7) (D9) emarks) N/A >20 >20 s inspections), if a	(C6)	Surface Soil C Drainage Patte Dry-Season W X Crayfish Burro Saturation Vision Stunted or Stro X Geomorphic P FAC-Neutral T	racks (B6) erns (B10) dater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)

Project/Site:	Fair Oaks Ranch 542-acr	e Property	County:	Wagoner	Sampling Da	ate: June 14, 2023
Applicant/Owner:	Р	artnerTulsa		State:	OK Sampling Po	oint: DPA002_PEM
Investigator(s):	Anthony Thornton and	Krista McClure	Section, 7	Γownship, Range:		18-T19N-R15E
Landform (hillslope, ter	rrace, etc.):	Depression		Local relief (co	ncave, convex, none):	Concave
Slope (%):	0-5% L	_at:95.7442	23 Long	:36.1	2404 Datum:	NAD 1983 UTM Zone 15N
Soil Map Unit Name:	Denr	is-Radley complex, 0 t	o 15 percent slope	es	NWI classification	on: PUBHh
Are climatic / hydrologic	ic conditions on the site typical	for this time of year?	Yes	No <u>X</u>	(If no, explain in Rema	arks.)
Are Vegetation	No ,Soil No ,or Hy	rdrology No sign	nificantly disturbed	l? Are	e "Normal Circumstances"	present? Yes X No
Are Vegetation	No ,Soil No ,or Hy	drology No nat	urally problematic?	? (If r	needed, explain any answ	ers in Remarks.)
SUMMARY OF F	FINDINGS - Attach site	e map showing	sampling poi	int locations	, transects, import	ant features, etc.
					•	<u> </u>
Hydrophytic Vegetation	on Present? Yes X	No				
Hydric Soil Present?				e Sampled Area		
Wetland Hydrology P			_	in a Wetland?	Yes X	No
vvetidila Hydrology i	103 <u>X</u>		_ """	in a wettana.	103 <u>X</u>	
Remarks:			-			
This point was dete	ermined to be within a wetland	I due to the presence o	of all 3 wetland crite	eria.		
The survey area wa	as determined to be drier than	normal at the time of	survey.			
VEGETATION						
VEGETATION - (Use scientific names	or plants.				
		Absolute Do	minant Ind	dicator	Dominance Test work	sheet:
Tree Stratum (Plo	ot size: 30 ft.)	% cover Sp	ecies? S	Status	Number of Dominant Sp	pecies
1. None Observe	red				That Are OBL, FACW,	or FAC: <u>2</u> (A)
2						
_					Total Number of Domin	ant
4					Species Across All Stra	ta: <u>2</u> (B)
5.						
		0 = Total 0	Cover		Percent of Dominant Sp	pecies
Sapling/Shrub Stra	atum (Plot size: 15 ft.)			That Are OBL, FACW,	or FAC: <u>100%</u> (A/B)
1. None Observe	red					-
2					Prevalence Index Wor	ksheet:
					Total % Cove	er of: Multiply by:
4					OBL species	50 x 1 = 50
E					FACW species	0 x 2 = 0
		0 = Total (Cover		FAC species	20 x 3 = 60
Herb Stratum (Plo	ot size:5 ft)				FACU species	0 x 4 = 0
1. Xanthium stru	umarium	20	Yes I	FAC	UPL species	0 x 5 =
2. Persicaria hyd	dropiper	50	Yes	OBL	Column Totals:	70 (A) 110 (B)
3.					Prevalence Index = B/A	= 1.57
4						<u> </u>
_					Hydrophytic Vegetatio	n Indicators:
					1 - Rapid Test for I	Hydrophytic Vegetation
_					X 2 - Dominance Tes	
8.					X 3 - Prevalence Inde	
9.						Adaptations ¹ (Provide supporting
10.					· ·	s or on a separate sheet)
		70 = Total (Cover		Problematic Hydro	phytic Vegetation ¹ (Explain)
Woody Vine Stratu	um (Plot size: 30 ft.)				and wetland hydrology must
1. None Observe					be present, unless distu	• • • • • • • • • • • • • • • • • • • •
2.	<u></u>					
۷.		0 = Total (
			Sovei		Hydrophytic Vegetation Present?	Yes X No
					vegetation i resent:	163 <u>X</u> NO
Remarks:				<u> </u>		
	on of hydrophytic vegetation wa	as observed (>50% of	dominant species	indexed as OBL. I	FACW. or FAC).	
•	on of hydrophytic vegetation wa	•	•			
, , p = = = =		(

SOIL

Sampling Point: DPA002_PEM

Profile Descr	iption: (Describe to	the depth	needed to docum	ent the in	dicator or confire	m the abse	ence of	f indicators.)	
Depth	Matrix			Redox	x Features				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc	2	Texture	Remarks
0-1	7.5YR 2.5/1	100	None		<u></u>			Muck	
1-8	7.5YR 2.5/1	85	5YR 3/4	15	C	M		Clay	
	7.011(2.0/1						<u>' </u>		
									
1_ 0 0									
Hydric Soils	ncentration, D=Deple	tion, RM=R	reduced Matrix, MS	=Masked S	Sand Grains.		-L	ocation: PL=Pore Lining	_
•								Indicators for Proble	•
Histosol	•			Gleyed Mat	` '			Coast Prairie Re	
	ipedon (A2)			Redox (S5)				Dark Surface (S	
Black His	stic (A3)		Strippe	d Matrix (S	6)			Iron-Manganese	Masses (F12)
Hydroge	n Sulfide (A4)		Loamy	Mucky Min	eral (F1)			Very Shallow Da	rk Surface (TF12)
Stratified	Layers (A5)		Loamy	Gleyed Ma	trix (F2)			Other (Explain in	Remarks)
X2 cm Mu	ck (A10)		Deplete	ed Matrix (F	- 3)				
Depleted	Below Dark Surface	(A11)	Redox	Dark Surfa	ce (F6)				
Thick Da	rk Surface (A12)		Deplete	ed Dark Su	rface (F7)				
Sandy M	ucky Mineral (S1)		Redox	Depressior	ns (F8)			³ Indicators of hydroph	ytic vegetation and
5 cm Mu	cky Peat or Peat (S3))						wetland hydrology m	nust be present,
								unless disturbed or p	oroblematic.
Restrictive L	ayer (if present):								
Type:									
Depth(in	•						Hvdrid	Soil Present?	Yes X No
-1 - (_				,		
HYDROLOG	Y								
Wetland Hydrol	ogy Indicators:								
Primary Indica	ators (minimum of on	e required;	check all that apply	<u>'</u>)				Secondary Indicators	(minimum of two required)
X Surface	Nater (A1)		Water-	Stained Lea	aves (B9)			Surface Soil Cra	cks (B6)
High Wa	ter Table (A2)		Aquatio	Fauna (B	13)			Drainage Patterr	ns (B10)
X Saturation	n (A3)		True Ad	quatic Plan	ts (B14)			Dry-Season Wat	er Table (C2)
Water M	arks (B1)		Hydrog	en Sulfide	Odor (C1)			X Crayfish Burrows	s (C8)
 Sedimen	t Deposits (B2)		 Oxidize	d Rhizospł	neres on Living R	oots (C3)		Saturation Visible	e on Aerial Imagery (C9)
Drift Dep	osits (B3)		—— Presen	ce of Redu	ced Iron (C4)			Stunted or Stress	sed Plants (D1)
	t or Crust (B4)				ction in Tilled Soil	ls (C6)		X Geomorphic Pos	sition (D2)
	osits (B5)			uck Surface		` '		FAC-Neutral Tes	
	on Visible on Aerial In	nagery (B7)		or Well Da					
	Vegetated Concave			Explain in F					
Oparoory	vogotatou comouvo	Canaco (D			tomanto				
Field Observ	ations:								
Surface Wate		X No	Dep	oth (inches)): 0.5				
Water Table F				oth (inches)					
Saturation Pre		X No				,	Wotlar	nd Hydrology Present?	Yes X No
(includes capi		INC) Del	oth (inches)). <u> </u>		vveliai	nd Hydrology Fresent?	162 <u>v</u> 100
<u> </u>	led Data (stream gau	ige, monitor	ring well, aerial pho	tos, previo	us inspections), if	available:			
	, 5			•	, ,,				
Remarks:									
	cation of wetland hyd	drology was	observed (at least	one primai	ry indicator)				
-	cation of wetland hyd		•	-					
, , poortivo indi	sale. Si Wolland Hyd	gy was	5555.15d (dt 10d5t	3300110	, maioaioioj.				

ect/Site: Fa	ir Oaks Ranch 542	2-acre Property	Coun	ty: Wag	goner	Sampling Date:	Jı	ıne 14, 20	23
licant/Owner:		PartnerTulsa		State:	OK :	Sampling Point:		DPA003_L	J
estigator(s): Antho	ony Thornton ar	nd Krista M	/IcClure	Section, Township, F	lange:	18-T′	19N-R15E		
dform (hillslope, terrace, e	etc.):	Range	eland	Local rel		x, none):		Convex	
oe (%):	0-5%	Lat:	-95.74453	Long:	36.12412	Datum:	NAD 1983	3 UTM Zone	15N
Map Unit Name:	Γ	Dennis-Radley com	plex, 0 to 15 per	cent slopes	NW	classification:		N/A	
climatic / hydrologic cond	itions on the site ty	pical for this time o	f year?	YesNo_	X (If no, exp	lain in Remarks.)			
Vegetation No	,Soil No ,c	or Hydrology N e	osignificantly	disturbed?	Are "Normal Circ	umstances" present	? Yes	Х	No
Vegetation No	,Soil No ,c	or Hydrology N o	o naturally pro	blematic?	(If needed, expla	in any answers in Re	marks.)		
IMMARY OF FINDI	NGS - Attach	eito man eho	wing sampl	ing point locat	ione transact	s important fo	aturos c	ot c	
	MOS - Attach	Site map sno	willy sampi	ing point locat	ions, transect	s, important re		ic.	
drophytic Vegetation Pres	sent? Yes _	No _	X						
dric Soil Present?	Yes _	No _	X	Is the Sampled	Area				
etland Hydrology Present	? Yes _	No No	X	within a Wetlan	d? Y	es	No	Х	
emarks:									
This point was determine	d not to be within a	wetland due to the	e lack of all three	wetland criteria.					
The survey area was det	ermined to be drier	than normal at the	time of survey.						
· · · · · · · · · · · · · · · · · · ·			, ,						
GETATION - Use	scientific nam	es of plants.							
		Absolute	Dominant	Indicator	Dominance	e Test worksheet:			
Troc Stratum (Diat size	20 th \								
Tree Stratum (Plot size)	% cover	Species?	Status		Dominant Species		4	(4)
1. None Observed					I nat Are O	BL, FACW, or FAC:		1	(A)
0					Tatal Nivesh	an of Danisant			
						er of Dominant		•	(D)
					Species Ac	ross All Strata:		2	(B)
5									
/			= Total Cover			Dominant Species			
Sapling/Shrub Stratum	(Plot size: 15	<u>5 ft.</u>)			That Are O	BL, FACW, or FAC:		50%	(A/B)
1. None Observed		<u> </u>			Provolone	Index Worksheet:			
2									
3					-	otal % Cover of:		Multiply by:	<u> </u>
					OBL specie				
5					FACW spec		x 2 = _		
		:	= Total Cover		FAC specie				
Herb Stratum (Plot size	5 ft)				FACU spec	ies <u>105</u>	x 4 = _	420	
1. Schedonorus arund	naceus	10	<u>No</u>	FACU	UPL specie	s <u>0</u>	x 5 = _	0	
2. Hordeum pusillum		30	Yes	FAC	Column To	als: <u>140</u>) (A) _	520	(B)
3. Cynodon dactylon		90	Yes	FACU	Prevalence	Index = B/A =	3.71		
4. <u>Dichanthelium oligo</u>	santhes	5	No	FACU					
5. Carex annectens		5	No	FACW	Hydrophyti	c Vegetation Indica	tors:		
6					1 - Ra	oid Test for Hydrophy	∕tic Vegetati	on	
7					2 - Doi	minance Test is >50%	%		
8					3 - Pre	valence Index is ≤3.0) ¹		
9.					4 - Mo	rphological Adaptatio	ns¹ (Provide	e supportir	ng
10.					data	in Remarks or on a	separate sh	neet)	
10.		140	= Total Cover		Proble	matic Hydrophytic Ve	egetation ¹ (E	Explain)	
		0 ft.)			¹ Indicators	of hydric soil and wet	land hydrold	ogy must	
	(Plot size: 30				be present,	unless disturbed or p	oroblematic.		
Woody Vine Stratum	(Plot size: 30								
Woody Vine Stratum 1. None Observed	(Plot size: 30								
Woody Vine Stratum	(Plot size: 30		= Total Cover		Hydronbyt	•			
Woody Vine Stratum 1. None Observed	(Plot size: 30		= Total Cover		Hydrophyti Vegetation		Yes	No	X
Woody Vine Stratum 1. None Observed	(Plot size: 30		= Total Cover		Hydrophyti Vegetation		Yes	No _	X
Woody Vine Stratum 1. None Observed 2.	(Plot size: 30		= Total Cover				Yes	No _	X
Woody Vine Stratum 1. None Observed 2. emarks:				nt species indexed as	Vegetation		Yes	No _	X
Woody Vine Stratum 1. None Observed 2.				nt species indexed as	Vegetation		Yes	No _	X
Woody Vine Stratum 1. None Observed 2. emarks:				nt species indexed as	Vegetation		Yes	No _	X
Woody Vine Stratum 1. None Observed 2. emarks:				nt species indexed as	Vegetation		Yes	No _	X

SOIL

Sampling Point: DPA003_U

_	Matrix				x Features				
nches)	Color (moist)	%	Color (moist)	_%	Type ¹	Loc ²	Texture	R	emarks
0-22	10YR 2/2	100	None				Loam		
	,								
	_								
									
									
	centration, D=Deple	etion, RM=R	Reduced Matrix, M	IS=Masked S	Sand Grains.	2	Location: PL=Pore Linir		2
ydric Soils In	dicators:						Indicators for Prob	olematic Hydric So	oils":
Histosol (A	N1)		Sand	y Gleyed Mat	trix (S4)		Coast Prairie R	Redox (A16)	
Histic Epip	edon (A2)		Sand	y Redox (S5))		Dark Surface (S7)	
Black Histi	ic (A3)		Stripp	ed Matrix (S	6)		Iron-Manganes	e Masses (F12)	
Hydrogen	Sulfide (A4)		Loam	y Mucky Min	eral (F1)		Very Shallow D	ark Surface (TF12	2)
Stratified L	ayers (A5)		 Loam	y Gleyed Ma	ntrix (F2)		Other (Explain	in Remarks)	
 2 cm Muck				ted Matrix (F				ŕ	
	` Below Dark Surface	e (A11)		x Dark Surfa					
	Surface (A12)	, (, (, 1, 1)		eted Dark Su	` '				
	cky Mineral (S1)			x Depression			³ Indicators of hydror	hytic vegetation a	nd
	, ,	`	1\eao.	x Deplession	13 (1 0)		wetland hydrology	•	iu
o cm iviuck	xy Peat or Peat (S3)					unless disturbed o	•	
ostrictivo I av	/er (if present):					T	dilicos disturbed o	i problematic.	
	ei (ii preseit).								
Type:									
Depth(inch	nes):					Hydr	ic Soil Present?	Yes	NoX
	cation of hydric soil	s was obse	erved.						
o positive indi		ls was obse	erved.						
o positive indi		s was obse	erved.						
OROLOGY				oly)			Secondary Indicator	s (minimum of two	required)
OROLOGY	gy Indicators: ors (minimum of on		check all that app	oly) r-Stained Lea	aves (B9)		Secondary Indicator Surface Soil C		required)
OROLOGY land Hydrologrimary IndicateSurface W	gy Indicators: ors (minimum of on		check all that app					acks (B6)	required)
OROLOGY land Hydrologrimary IndicateSurface W	gy Indicators: ors (minimum of one fater (A1) or Table (A2)		check all that app Wate Aquat	r-Stained Lea	13)		Surface Soil Co	acks (B6)	required)
OROLOGY Iand Hydrologous Surface W High Wate Saturation	gy Indicators: ors (minimum of one of ater (A1) or Table (A2) (A3)		check all that app —_ Wate —_ Aquat —_ True	r-Stained Lea tic Fauna (B1 Aquatic Plan	13) ts (B14)		Surface Soil Control Drainage Patte Dry-Season W	racks (B6) erns (B10) ater Table (C2)	required)
OROLOGY Iand Hydrologous Surface W High Wate Saturation Water Mar	gy Indicators: ors (minimum of one of ater (A1) or Table (A2) (A3) oks (B1)		check all that app Wate Aquate True	r-Stained Lea tic Fauna (B1 Aquatic Plan ogen Sulfide	13) ts (B14) Odor (C1)	ots (C3)	Surface Soil Control Drainage Patte Dry-Season W Crayfish Burrow	racks (B6) erns (B10) ater Table (C2) ws (C8)	
PROLOGY Iand Hydrologo rimary Indicate Surface W High Wate Saturation Water Mar Sediment	gy Indicators: ors (minimum of one of atter (A1) or Table (A2) (A3) oks (B1) Deposits (B2)		check all that app Wate Aquate True A Hydro	r-Stained Leatic Fauna (B1 Aquatic Plan ogen Sulfide (zed Rhizosph	13) its (B14) Odor (C1) heres on Living Roc	ots (C3)	Surface Soil Control Drainage Patte Dry-Season W Crayfish Burrow Saturation Visil	racks (B6) erns (B10) ater Table (C2) ws (C8) ble on Aerial Image	
DROLOGY Iand Hydrology Imary Indicate Surface W High Wate Saturation Water Mar Sediment Drift Depos	gy Indicators: ors (minimum of one dater (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3)		check all that app Wate Aquat True Hydro Oxidia	r-Stained Leatic Fauna (B1 Aquatic Plan ogen Sulfide (zed Rhizosph ence of Redu	13) ts (B14) Odor (C1) heres on Living Roc iced Iron (C4)		Surface Soil Control Drainage Patte Dry-Season W Crayfish Burrow Saturation Visit	racks (B6) erns (B10) eater Table (C2) ews (C8) ble on Aerial Image essed Plants (D1)	
PROLOGY Iand Hydrology Imary Indicate Surface W High Wate Saturation Water Mar Sediment Drift Depos	gy Indicators: ors (minimum of one dater (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4)		check all that app Wate Aquat True A Hydro Oxidiz Prese	r-Stained Leatic Fauna (B1 Aquatic Plan ogen Sulfide (zed Rhizosph ence of Redu	ts (B14) Odor (C1) heres on Living Roc iced Iron (C4) ction in Tilled Soils		Surface Soil Control Drainage Patter Dry-Season W Crayfish Burrow Saturation Visit Stunted or Stree Geomorphic Po	racks (B6) erns (B10) ater Table (C2) ws (C8) ble on Aerial Image essed Plants (D1) osition (D2)	
DROLOGY Iand Hydrologous Imary Indicate Surface W High Wate Saturation Water Mar Sediment Drift Deposed	gy Indicators: ors (minimum of one dater (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5)	e required;	check all that app Wate Aquat True A Hydro Oxidiz Prese Recel Thin I	r-Stained Leatic Fauna (B1 Aquatic Planagen Sulfide (zed Rhizosphence of Redu nt Iron Reduct	ts (B14) Odor (C1) heres on Living Roc iced Iron (C4) ction in Tilled Soils e (C7)		Surface Soil Control Drainage Patte Dry-Season W Crayfish Burrow Saturation Visit	racks (B6) erns (B10) ater Table (C2) ws (C8) ble on Aerial Image essed Plants (D1) osition (D2)	
DROLOGY Iand Hydrology Imary Indicate Surface W High Wate Saturation Water Mar Sediment Drift Depose Algal Mate Iron Depose Inundation	gy Indicators: ors (minimum of one ater (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) Visible on Aerial In	e required; nagery (B7)	check all that app Wate Aquat True Hydro Oxidiz Prese Recei Thin I	r-Stained Leatic Fauna (B1 Aquatic Planagen Sulfide (zed Rhizosphence of Redu nt Iron Reduct Muck Surface e or Well Da	ts (B14) Odor (C1) heres on Living Roc iced Iron (C4) ction in Tilled Soils e (C7) ita (D9)		Surface Soil Control Drainage Patter Dry-Season W Crayfish Burrow Saturation Visit Stunted or Stree Geomorphic Po	racks (B6) erns (B10) ater Table (C2) ws (C8) ble on Aerial Image essed Plants (D1) osition (D2)	
DROLOGY Iand Hydrology Imary Indicate Surface W High Wate Saturation Water Mar Sediment Drift Depose Algal Mate Iron Depose Inundation	gy Indicators: ors (minimum of one dater (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5)	e required; nagery (B7)	check all that app Wate Aquat True Hydro Oxidiz Prese Recei Thin I	r-Stained Leatic Fauna (B1 Aquatic Planagen Sulfide (zed Rhizosphence of Redu nt Iron Reduct	ts (B14) Odor (C1) heres on Living Roc iced Iron (C4) ction in Tilled Soils e (C7) ita (D9)		Surface Soil Control Drainage Patter Dry-Season W Crayfish Burrow Saturation Visit Stunted or Stree Geomorphic Po	racks (B6) erns (B10) ater Table (C2) ws (C8) ble on Aerial Image essed Plants (D1) osition (D2)	
DROLOGY Iand Hydrology Imary Indicate Surface W High Wate Saturation Water Mar Sediment Drift Depose Algal Mate Iron Depose Inundation	gy Indicators: ors (minimum of one dater (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) Visible on Aerial Independent	e required; nagery (B7)	check all that app Wate Aquat True Hydro Oxidiz Prese Recei Thin I	r-Stained Leatic Fauna (B1 Aquatic Planagen Sulfide (zed Rhizosphence of Redu nt Iron Reduct Muck Surface e or Well Da	ts (B14) Odor (C1) heres on Living Roc iced Iron (C4) ction in Tilled Soils e (C7) ita (D9)		Surface Soil Control Drainage Patter Dry-Season W Crayfish Burrow Saturation Visit Stunted or Stree Geomorphic Po	racks (B6) erns (B10) ater Table (C2) ws (C8) ble on Aerial Image essed Plants (D1) osition (D2)	
DROLOGY Iand Hydrology Iand Hydrology Imary Indicate Surface W High Wate Saturation Water Mar Sediment Drift Depose Algal Mate Iron Depose Inundation Sparsely W	gy Indicators: ors (minimum of one dater (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) Visible on Aerial Indicates: Vegetated Concave	e required; nagery (B7)	check all that app Wate Aquat True Hydro Oxidiz Prese Recei Thin f Gaug 8) Other	r-Stained Leatic Fauna (B1 Aquatic Planagen Sulfide (zed Rhizosphence of Redu nt Iron Reduct Muck Surface e or Well Da	ts (B14) Odor (C1) heres on Living Roc iced Iron (C4) ction in Tilled Soils e (C7) ita (D9) Remarks)		Surface Soil Control Drainage Patter Dry-Season W Crayfish Burrow Saturation Visit Stunted or Stree Geomorphic Po	racks (B6) erns (B10) ater Table (C2) ws (C8) ble on Aerial Image essed Plants (D1) osition (D2)	
PROLOGY Iand Hydrologous Imary Indicate Surface W High Wate Saturation Water Mar Sediment Drift Depose Algal Mate Iron Depose Inundation Sparsely W Ield Observate	gy Indicators: ors (minimum of one dater (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) Visible on Aerial Indicated Concave cions: Present? Yes	e required; nagery (B7) Surface (B	check all that app Wate Aquat True A Hydro Oxidiz Prese Recel Thin I Gaug 8) Other	r-Stained Leatic Fauna (Banagen Sulfide et al., and the state of Reduction Reduction Reduction Surface or Well Date (Explain in Faunagen)	ts (B14) Odor (C1) heres on Living Rocaced Iron (C4) ction in Tilled Soils e (C7) hta (D9) Remarks) N/A		Surface Soil Control Drainage Patter Dry-Season W Crayfish Burrow Saturation Visit Stunted or Stree Geomorphic Po	racks (B6) erns (B10) ater Table (C2) ws (C8) ble on Aerial Image essed Plants (D1) osition (D2)	
PROLOGY Iand Hydrology Iand Hydrology Imary Indicate Surface W High Water Saturation Water Mar Sediment Drift Depose Algal Mate Iron Depose Inundation Sparsely W Ield Observate Urface Water	gy Indicators: ors (minimum of one dater (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) Visible on Aerial Indicated Concave cions: Present? Yes esent? Yes	nagery (B7) Surface (B	check all that app Wate Aquat True Hydro Oxidiz Prese Recel Thin I	r-Stained Leatic Fauna (Banagen Sulfide (Explain in February) r (Explain in February) epth (inches) r (Entropy)	ts (B14) Odor (C1) heres on Living Rocalced Iron (C4) ction in Tilled Soils (C7) hata (D9) Remarks) N/A N/A	(C6)	Surface Soil Crange Patter Dry-Season W Crayfish Burrow Saturation Visit Stunted or Stree Geomorphic Por FAC-Neutral To	racks (B6) erns (B10) ater Table (C2) ws (C8) ble on Aerial Image essed Plants (D1) bisition (D2) est (D5)	ery (C9)
PROLOGY Iand Hydrology Iand Hydrology Imary Indicate Surface W High Water Saturation Water Mar Sediment Drift Depose Algal Mate Iron Depose Inundation Sparsely W Ield Observate Vater Table Preservate Interval of the preservation of the prese	gy Indicators: ors (minimum of one dater (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) Visible on Aerial Independent of the dependent of the dependen	nagery (B7) Surface (B	check all that app Wate Aquat True Hydro Oxidiz Prese Recel Thin I	r-Stained Leatic Fauna (Banagen Sulfide (Explain in February) r (Explain in February)	ts (B14) Odor (C1) heres on Living Rocalced Iron (C4) ction in Tilled Soils (C7) hata (D9) Remarks) N/A N/A	(C6)	Surface Soil Control Drainage Patter Dry-Season W Crayfish Burrow Saturation Visit Stunted or Stree Geomorphic Po	racks (B6) erns (B10) ater Table (C2) ws (C8) ble on Aerial Image essed Plants (D1) bisition (D2) est (D5)	
PROLOGY Iand Hydrology Iand Hydrology Imary Indicate Surface W High Water Saturation Water Mar Sediment Drift Depose Algal Mate Iron Depose Inundation Sparsely W Ield Observate Vater Table Presencludes capilla	gy Indicators: ors (minimum of one dater (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) Visible on Aerial Indicated Concave cions: Present? Yes ent? Yes ary fringe)	nagery (B7) Surface (B	check all that app Wate Aquat True Hydro Oxidiz Prese Recen Thin I Gaug 8) X D X D X D X D	r-Stained Leatic Fauna (Banagen Sulfide ezed Rhizosphence of Redunt Iron Reduct Surface or Well Date (Explain in Faunt Iron Reduct Surface or Well Date (Explain in Faunt Iron Reduct Explain in Faunt Iron Reduct Surface or Well Date (Explain in Faunt Iron Reduct Explain Iron	ts (B14) Odor (C1) heres on Living Rocalced Iron (C4) ction in Tilled Soils (C7) hata (D9) Remarks) N/A N/A	(C6)	Surface Soil Crange Patter Dry-Season W Crayfish Burrow Saturation Visit Stunted or Stree Geomorphic Por FAC-Neutral To	racks (B6) erns (B10) ater Table (C2) ws (C8) ble on Aerial Image essed Plants (D1) bisition (D2) est (D5)	ery (C9)
PROLOGY Iand Hydrology Iand Hydrology Imary Indicate Surface W High Water Saturation Water Mar Sediment Drift Depose Algal Mate Iron Depose Inundation Sparsely W Ield Observate Vater Table Presencludes capilla	gy Indicators: ors (minimum of one dater (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) Visible on Aerial Indicated Concave cions: Present? Yes ent? Yes ary fringe)	nagery (B7) Surface (B	check all that app Wate Aquat True Hydro Oxidiz Prese Recen Thin I Gaug 8) X D X D X D X D	r-Stained Leatic Fauna (Banagen Sulfide ezed Rhizosphence of Redunt Iron Reduct Surface or Well Date (Explain in Faunt Iron Reduct Surface or Well Date (Explain in Faunt Iron Reduct Explain in Faunt Iron Reduct Surface or Well Date (Explain in Faunt Iron Reduct Explain Iron	13) ts (B14) Odor (C1) heres on Living Roc iced Iron (C4) ction in Tilled Soils e (C7) ita (D9) Remarks)	(C6)	Surface Soil Crange Patter Dry-Season W Crayfish Burrow Saturation Visit Stunted or Stree Geomorphic Por FAC-Neutral To	racks (B6) erns (B10) ater Table (C2) ws (C8) ble on Aerial Image essed Plants (D1) bisition (D2) est (D5)	ery (C9)
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form (hillslope, terrace) (%): Map Unit Name: climatic / hydrologic co /egetation No	e, etc.): 0-5%	and	Krista M Range		Section, Township, Ra					<u>J</u>
form (hillslope, terrace) (%): Map Unit Name: climatic / hydrologic co /egetation No	e, etc.): 0-5%		Range							
e (%): Map Unit Name: Slimatic / hydrologic co /egetation Magetation	0-5%			eland	Local relie	of Joonson	· convov nono):		_	
e (%): Map Unit Name: Slimatic / hydrologic co /egetation Magetation	0-5%					ei (concave	e, convex, none).		Concave	
limatic / hydrologic co		Lai.			Long:				83 UTM Zone	15N
limatic / hydrologic co	Cato	osa-Shidler	-Rock out	crop complex, 1 to	o 8 percent slopes		NWI classification	:	PEM1C	
egetation No	onditions on the site	e typical for	this time o	of year?	Yes No	X (If	- ⁻ no, explain in Remar	ks.)		
·					<u> </u>		mal Circumstances" p		X	No
egetation N	·				blematic?		•			
									. 4	
MIMIARY OF FIN	DINGS - Atta	cn site n	nap sno	owing sampi	ing point location	ons, trai	nsects, importa	int reatures,	etc.	
Irophytic Vegetation I	Present? Yes	S	No	x						
Iric Soil Present?		 S		X	Is the Sampled A	Area				
tland Hydrology Pres		 S		X	within a Wetland	! ?	Yes	No	X	
			,							
narks:				•						
his point was determ	ined not to be with	in a wetland	due to the	e lack of all three	wetland criteria.					
he survey area was	determined to be d	rier than noi	rmal at the	time of survey						
The currey area mae				· ····································						
GETATION - Us	e scientific na	ames of	plants.							
			•			Dor	minance Test worksl	2001		
			Absolute							
Tree Stratum (Plot s	ize: 30 ft.	_)	% cover	Species?	Status		nber of Dominant Spe			
1. None Observed				·		Tha	t Are OBL, FACW, or	FAC:	0	(A)
2										
3						Tota	al Number of Dominar	nt		
4						Spe	ecies Across All Strata	ı:	2	(B)
5										
			0	= Total Cover		Per	cent of Dominant Spe	cies		
Sapling/Shrub Stratur	<u>n</u> (Plot size:	15 ft.)			Tha	t Are OBL, FACW, or	FAC:	0	(A/l
1. None Observed										
2						Pre	valence Index Works	sheet:		
•							Total % Cover	of:	Multiply by:	:
4						ОВІ	_ species		= 0	
_						FAC	CW species	0 x 2 =		
			0	= Total Cover			C species	0 x 3 =		
Herb Stratum (Plot s	ize: 5 ft.)		•			CU species	80 x 4 =	320	
1. Lolium persicum			20	Yes	UPL		_ species	20 x 5 =	•	
2. Cynodon dactylc			80	Yes	FACU		umn Totals:		420	(B)
	•						valence Index = B/A =			(_)
-				·			valorioo iriaox – <i>bir</i> (-		<u></u>	
						Hyc	Irophytic Vegetation	Indicators:		
•							1 - Rapid Test for Hy		ution	
7							2 - Dominance Test		.tiOi1	
8.						-	_2 - Dominance Test 3 - Prevalence Index			
				·			_3 - 1 Tevalence inde/ 4 - Morphological Ad	_	do cupportio	na
-							data in Remarks o			ıg
10			400	Tatal Oarran					,	
N. 1. W. O. 1	(DL	00 (1	100	= Total Cover		1, ,	Problematic Hydropl	_		
Voody Vine Stratum	(Plot size:	30 ft.	.)				licators of hydric soil a present, unless disturb	•	•	
1. None Observed							Troopin, armood alotars	od of probleman		
2				·						
			0	= Total Cover			Irophytic			
						Veg	jetation Present?	Yes	No	X
marks:										
lo positive indication	of hydrophytic vege	etation was	observed	(≥50% of dominar	nt species indexed as	FACU or d	rier).			

SOIL

Sampling Point: DPA004_U

Adric Soils Indicators: Histosol (A1) Sandy Gleyed Matrix (S4) Coast Fright Phistic Epipedon (A2) Sandy Redox (S5) Dark Surfusion (A2) Sandy Redox (S5) Iron-Many Pudropen Sulfide (A4) Loamy Mucky Mineral (F1) Very Sha Straitfied Layers (A5) Loamy Gleyed Matrix (F2) Other (E5) Thick Dark Surface (A11) Redox Dark Surface (F6) Pepleted Below Dark Surface (A11) Redox Dark Surface (F7) Sandy Mucky Mineral (S1) Pepleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) Pepleted Dark Surface (F7) Send Mucky Peat or Peat (S3) Wetland hydrology Indicators of Iron Mucky Peat or Peat (S3) Wetland hydrology Indicators: Type: Rock/Gravel Depth(inches): 5 Hydric Soils was observed. ROLOGY and Hydrology Indicators: Imary Indicators (Matric (A1) Water-Stained Leaves (B9) Surface Surface (S4) Drainage Saturation (A3) True Aquatic Flanta (B14) Dry-Seast Staturation (A3) Hydrogen Sulfide Odor (C1) CrayBish Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorp	
Clay	ore Lining, M=Matrix. for Problematic Hydric Soils ³ : Prairie Redox (A16) surface (S7) anganese Masses (F12) hallow Dark Surface (TF12) (Explain in Remarks) of hydrophytic vegetation and ydrology must be present,
ype: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. **Location: PL=Pon rdric Soils Indicators: Indicators for Indi	ore Lining, M=Matrix. for Problematic Hydric Soils ³ : Prairie Redox (A16) surface (S7) anganese Masses (F12) hallow Dark Surface (TF12) (Explain in Remarks) of hydrophytic vegetation and ydrology must be present,
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Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Peld Observations: Irface Water Present? Yes NoX Depth (inches): >20 Saturation Present? Yes NoX Depth (inches): >20 Surface Capillary fringe) Price Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	d or Stressed Plants (D1)
Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neu Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) eld Observations: urface Water Present? Yes No X Depth (inches): N/A ater Table Present? Yes No X Depth (inches): >20 aturation Present? Yes No X Depth (inches): >20 Wetland Hydrology Pricludes capillary fringe) oribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	orphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	eutral Test (D5)
Sparsely Vegetated Concave Surface (B8)Other (Explain in Remarks) eld Observations: urface Water Present? Yes NoX Depth (inches):	(20)
eld Observations: urface Water Present? Yes NoX Depth (inches): N/A	
arface Water Present? Yes NoX Depth (inches): N/A atter Table Present? Yes NoX Depth (inches): >20 Wetland Hydrology Present	
ater Table Present? Yes No X Depth (inches): >20 aturation Present? Yes No X Depth (inches): >20 Cartination Present? Yes No X Depth (inches): >20	
ater Table Present? Yes No X Depth (inches): >20 aturation Present? Yes No X Depth (inches): >20 Cartination Present? Yes No X Depth (inches): >20	
aturation Present? Yes No X Depth (inches): >20 Wetland Hydrology Procludes capillary fringe) cribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: arks:	
cribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: arks:	Present? Yes No X
cribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: arks:	
arks:	
o podlitvo maloation or wetiana nyarology was observed.	

Project/Site:	Fair Oaks Ranch	n 542-acre Property	County:	Wagon	<u>er</u> Samplir	ng Date:	June 16, 2023	
Applicant/Owner:		PartnerTulsa		State:	OK Samplir	ng Point:	DPA005_PEM	
Investigator(s):	Anthony Thornton	andKrista Mc0	Clure Section	n, Township, Ran	ge:	17-T19N-	R15E	
Landform (hillslope, teri	race, etc.):	Depressi	on	Local relief	(concave, convex, none	e):	Concave	
Slope (%):	0-5%	Lat:95	5.74217 Lo	ong:3	6.13167 Dat	tum:N	IAD 1983 UTM Zone 15N	N
Soil Map Unit Name:		Dennis-Radley comple	ex, 0 to 15 percent slo	opes	NWI classif	ication:	N/A	
Are climatic / hydrologic	c conditions on the si	te typical for this time of ye	ear? Yes	No X	(If no, explain in	Remarks.)		
Are Vegetation	No ,Soil No	or Hydrology No	_significantly disturb	ped?	Are "Normal Circumstar	nces" present?	Yes X No	0
Are Vegetation	No ,Soil No	or Hydrology No	naturally problema	tic?	(If needed, explain any	answers in Remar	ks.)	
SIIMMADV OF E	INDINGS - Atta	ch site map show	– ina samnlina n	oint location	ne transpote imi	oortant foatu	ros oto	
30 WIWIAKT OF T	INDINGS - Atta	ich site map snow	ing samping p		is, transects, imp	portant reatu	165, 616.	
Hydrophytic Vegetatio	n Present? Ye	es <u>X</u> No						
Hydric Soil Present?	Υe	es <u>X</u> No	Is	the Sampled Are	ea			
Wetland Hydrology Pr	resent? Ye	es X No	wi	thin a Wetland?	Yes	X N	o	
Remarks:								
This point was dete	ermined to be within a	a wetland due to the prese	nce of all 3 wetland of	criteria.				
The survey area wa	as determined to be a	drier than normal at the tin	ne of survey					
The survey area wa	as determined to be t		ie or survey.					
VEGETATION - I	Jse scientific n	names of plants.						
					D T (
		Absolute	Dominant	Indicator	Dominance Test v	worksneet:		
Tree Stratum (Plo	ot size: 30 ft.) <u>% cover</u>	Species?	Status	Number of Domina	ant Species		
1. None Observe	ed				That Are OBL, FAC	CW, or FAC:	2	(A)
2								
•		<u> </u>		_	Total Number of D	ominant		
4					Species Across All	Strata:	2	(B)
F					•			` ′
			otal Cover		Percent of Domina	nt Species		
Sapling/Shrub Stra	tum (Plot size:	15 ft.)			That Are OBL, FAC	•	100%	(A/B)
1. None Observe					mat Ale ODL, i At	SW, OFFAC.	10070	(ハロ)
					Prevalence Index	Worksheet:		
							NA deletion le color	
						Cover of:	Multiply by:	_
					OBL species	85	x 1 = 85	_
5					FACW species	15	x 2 = 30	
		= T	otal Cover		FAC species	0	x 3 = 0	<u> </u>
<u>Herb Stratum</u> (Plo	•)			FACU species	0	x 4 = 0	
1. <i>Justicia ameri</i>	cana	50	Yes	OBL	UPL species	0	x 5 = 0	<u></u>
2. Persicaria hyd	dropiper		<u>Yes</u>	OBL	Column Totals:	100	(A) <u>115</u>	(B)
3. <u>Bidens pilosa</u>		5	No	FACW	Prevalence Index =	= B/A =	1.15	
4. Juncus diffusis	ssimus	10	<u>No</u>	FACW				
5. <i>Phyla lanceola</i>	ata	5	No	OBL	Hydrophytic Vege	etation Indicators	:	
6		<u></u>			1 - Rapid Tes	t for Hydrophytic V	egetation	
7.				_	X 2 - Dominance	e Test is >50%		
Ω					X 3 - Prevalence	e Index is ≤3.0 ¹		
				_			(Provide supporting	
10.					 · · ·	narks or on a sepa	•	
10.		100 7	otal Cover			lydrophytic Vegeta	,	
Manda Non Charles	(Dist sine)		olai Covei		 			
Woody Vine Stratu		30 ft.)			¹ Indicators of hydri be present, unless			
1. None Observe	J U				20 p. 000 it, di 11000			
2								
		0= T	otal Cover		Hydrophytic			
					Vegetation Preser	nt? Ye	sX No	
Damania								
Remarks:		detien - Land	0/ -4 1		I			
·		etation was observed (>50	•		L, FACW, or FAC).			
A positive indication	n of hydrophytic vege	etation was observed (Pre	/alence Index is ≤ 3.0	0).				

SOIL Sampling Point: DPA005_PEM

epth	Matrix			Redox	Features			
nches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-2	10YR 2/1	100	None				Muck	
2-4	10YR 2/1	99	7.5YR 3/4	1			Silty Clay	
4-22	10YR 2/1	<u>85</u>	2.5YR 2.5/4	10	C	M	Clay	gravel present
7 22	1011(2/1		2.511(2.5/4	10			Oldy	graver present
								· -
								·
						21	- DI Di Li	The NA Marks
l ype: C=Cor lydric Soils l	ncentration, D=Deple	etion, RM=F	Reduced Matrix, MS	=Masked S	and Grains.	-[_ocation: PL=Pore Lir	_
				.				oblematic Hydric Soils ³ :
Histosol				Gleyed Mat	, ,			Redox (A16)
	ipedon (A2)			Redox (S5)			Dark Surface	
Black His	, ,			d Matrix (S6				ese Masses (F12)
Hydroger	n Sulfide (A4)		Loamy	Mucky Mine	eral (F1)		Very Shallow	Dark Surface (TF12)
Stratified	Layers (A5)		Loamy	Gleyed Mat	rix (F2)		Other (Explai	n in Remarks)
X 2 cm Mu	ck (A10)		Deplete	ed Matrix (F	3)			
Depleted	Below Dark Surface	e (A11)	Redox	Dark Surfac	ce (F6)			
Thick Da	rk Surface (A12)		Deplete	ed Dark Sur	face (F7)			
Sandy M	ucky Mineral (S1)		Redox	Depression	s (F8)		³ Indicators of hydro	ophytic vegetation and
5 cm Mu	cky Peat or Peat (S3)					wetland hydrolog	y must be present,
							unless disturbed	or problematic.
Restrictive La	ayer (if present):							
Type:								
Depth(ind	ches):		_			Hvdri	c Soil Present?	Yes X No
narks: . positive indi	cation of hydric soil v	was observ	ed.					
positive indi		was observ	ed.					
positive indi	Y	was observ	ed.					
positive indi		was observ	ed.					
POLOG	Y			')			Secondary Indicate	ors (minimum of two required)
POLOG	Y ogy Indicators: ators (minimum of on		check all that apply	r) Stained Lea	ıves (B9)		Secondary Indicate Surface Soil (<u> </u>
Primary Indica	Y ogy Indicators: ators (minimum of on		check all that apply		• •			Cracks (B6)
Primary Indica	Y ogy Indicators: ators (minimum of on Water (A1) ter Table (A2)		check all that applyWater-	Stained Lea	3)		Surface Soil (Cracks (B6)
Primary Indica X Surface V High Wa	Y ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) n (A3)		check all that apply Water- Aquatio	Stained Lea Fauna (B1	3) s (B14)		Surface Soil (Cracks (B6) terns (B10) Vater Table (C2)
Primary Indicated Water Market Mater Market	Y ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) n (A3)		check all that apply Water-S Aquation True Ao Hydrog	Stained Lea Fauna (B1 quatic Plant en Sulfide (3) s (B14)	ots (C3)	Surface Soil (Drainage Pat Dry-Season \ Crayfish Burr	Cracks (B6) terns (B10) Vater Table (C2)
PROLOGY Sland Hydrol Trimary Indica X Surface N High War Saturatio Water Ma Sedimen	yogy Indicators: ators (minimum of on Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2)		check all that apply Water-S Aquation True Ao Hydrog Oxidize	Stained Lea Fauna (B1 quatic Plant en Sulfide (d Rhizosph	3) s (B14) Ddor (C1) eres on Living Ro	ots (C3)	Surface Soil (Drainage Pat Dry-Season \ Crayfish Burr Saturation Vis	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9)
Primary Indicated Saturation Water Manual Sedimen Drift Dep	yogy Indicators: ators (minimum of on Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3)		check all that apply Water-S Aquation True Ao Hydrog Oxidize	Stained Lea Fauna (B1 quatic Plant en Sulfide (d Rhizosph ce of Reduc	3) s (B14) Ddor (C1) eres on Living Rocced Iron (C4)		Surface Soil (Drainage Pat Dry-Season \ Crayfish Burr Saturation Vis	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1)
Primary Indicated Water Margary Mater Margary	yogy Indicators: ators (minimum of on Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)		check all that apply Water-S Aquation True Ao Hydrog Oxidize Present	Stained Lea Fauna (B1 quatic Plant en Sulfide (d Rhizosph ce of Reduc	3) s (B14) Ddor (C1) eres on Living Roced Iron (C4) etion in Tilled Soils		Surface Soil (Drainage Pat Dry-Season (Crayfish Burr Saturation Vis Stunted or St Geomorphic	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2)
PROLOGY Cland Hydrology X Surface V High War Saturation Water Mar Sedimen Drift Dep Algal Mar Iron Depo	yogy Indicators: ators (minimum of on Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	e required;	check all that apply Water-S Aquation True Ac Hydrog Oxidize Present Recent Thin Mo	Stained Lea Fauna (B1 quatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc	3) s (B14) Odor (C1) eres on Living Roced Iron (C4) etion in Tilled Soils		Surface Soil (Drainage Pat Dry-Season \ Crayfish Burr Saturation Vis	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2)
PROLOGY Primary Indication Saturation Water Mater Mat	ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial In	e required;	check all that apply Water-s Aquation True Act Hydrog Oxidize Present Recent Thin Mo	Stained Lead Fauna (B1 quatic Plant en Sulfide (B) de Rhizosphace of Reduction Reduction Well Dat	s (B14) Ddor (C1) eres on Living Rocced Iron (C4) etion in Tilled Soils e (C7) fa (D9)		Surface Soil (Drainage Pat Dry-Season (Crayfish Burr Saturation Vis Stunted or St Geomorphic	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2)
PROLOGY Primary Indication Saturation Water Mater Mat	yogy Indicators: ators (minimum of on Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	e required;	check all that apply Water-s Aquation True Act Hydrog Oxidize Present Recent Thin Mo	Stained Lea Fauna (B1 quatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc	s (B14) Ddor (C1) eres on Living Rocced Iron (C4) etion in Tilled Soils e (C7) fa (D9)		Surface Soil (Drainage Pat Dry-Season (Crayfish Burr Saturation Vis Stunted or St Geomorphic	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2)
PROLOGY Primary Indication Saturation Water Mater Mat	ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) in Visible on Aerial In Vegetated Concave	e required;	check all that apply Water-s Aquation True Act Hydrog Oxidize Present Recent Thin Mo	Stained Lead Fauna (B1 quatic Plant en Sulfide (B) de Rhizosphace of Reduction Reduction Well Dat	s (B14) Ddor (C1) eres on Living Rocced Iron (C4) etion in Tilled Soils e (C7) fa (D9)		Surface Soil (Drainage Pat Dry-Season (Crayfish Burr Saturation Vis Stunted or St Geomorphic	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2)
Primary Indicated Saturation Water May Sedimen Drift Dep Algal May Iron Depo Inundation Sparsely	ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial In Vegetated Concave	e required;	check all that apply Water-S Aquation True Ao Hydrog Oxidize Present Recent Thin Mo Gauge 8) Other (6)	Stained Lead Fauna (B1 quatic Plant en Sulfide (B) de Rhizosphace of Reduction Reduction Well Dat	s (B14) Ddor (C1) eres on Living Rocced Iron (C4) etion in Tilled Soils e (C7) ea (D9) Remarks)		Surface Soil (Drainage Pat Dry-Season (Crayfish Burr Saturation Vis Stunted or St Geomorphic	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2)
Primary Indica X Surface N High Water Ma Sedimen Drift Dep Algal Mat Iron Depo Inundation Sparsely	ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) in Visible on Aerial In Vegetated Concave ations: r Present? Yes	e required; nagery (B7) Surface (B	check all that apply Water-S Aquation True Ao Hydrog Oxidize Present Recent Thin Mo Gauge 8) Other (I	Stained Least Fauna (B1 quatic Plant en Sulfide (ed Rhizosphoce of Reductor Reductor Well Date Explain in R	s (B14) Ddor (C1) eres on Living Rocced Iron (C4) etion in Tilled Soils e (C7) ea (D9) Remarks)		Surface Soil (Drainage Pat Dry-Season (Crayfish Burr Saturation Vis Stunted or St Geomorphic	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2)
Primary Indica X Surface V High War Saturatio Water Ma Sedimen Drift Dep Algal Mar Iron Depo Inundatio Sparsely Field Observate Vater Table Foaturation Pre-	ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial In Vegetated Concave ations: r Present? Yes Present? Yes esent? Yes	nagery (B7) Surface (B	check all that apply Water-S Aquation True Ao Hydrog Oxidize Present Recent Thin Mo Gauge 8) Other (I	Stained Lead Fauna (B1 quatic Plant en Sulfide (Ed Rhizosphere of Reduction Reduction Well Datter Explain in Reduction Reducti	s (B14) Ddor (C1) eres on Living Rocced Iron (C4) etion in Tilled Soils e (C7) ea (D9) Remarks)	(C6)	Surface Soil (Drainage Pat Dry-Season (Crayfish Burr Saturation Vis Stunted or St Geomorphic	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2) Test (D5)
Primary Indica X Surface N High Water Ma Sedimen Drift Dep Algal Mat Iron Depo Inundation Sparsely Field Observate Vater Table Field Company F	ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial In Vegetated Concave ations: r Present? Yes esent? Yes elsent? Yes ellary fringe)	nagery (B7) Surface (B	check all that apply Water-S Aquation True Ac Hydrog Oxidize Present Recent Thin Mo Gauge 8) Other (I	Stained Lead Fauna (B1 quatic Plant en Sulfide (Ed Rhizosphore of Reduction Reduction Reduction Well Date Explain in Research (inches) oth (inches) oth (inches)	s (B14) Ddor (C1) eres on Living Rocced Iron (C4) etion in Tilled Soils e (C7) ea (D9) Remarks)	(C6)	Surface Soil (Drainage Pat Dry-Season V Crayfish Burr Saturation Vis Stunted or St Geomorphic FAC-Neutral	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2) Test (D5)
Primary Indica X Surface N High Water Ma Sedimen Drift Dep Algal Mat Iron Depo Inundation Sparsely Field Observate Vater Table Field Company F	ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial In Vegetated Concave ations: r Present? Yes Present? Yes esent? Yes	nagery (B7) Surface (B	check all that apply Water-S Aquation True Ac Hydrog Oxidize Present Recent Thin Mo Gauge 8) Other (I	Stained Lead Fauna (B1 quatic Plant en Sulfide (Ed Rhizosphore of Reduction Reduction Reduction Well Date Explain in Research (inches) oth (inches) oth (inches)	s (B14) Ddor (C1) eres on Living Rocced Iron (C4) etion in Tilled Soils e (C7) ea (D9) Remarks)	(C6)	Surface Soil (Drainage Pat Dry-Season V Crayfish Burr Saturation Vis Stunted or St Geomorphic FAC-Neutral	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2) Test (D5)
Primary Indica X Surface N High Water Ma Sedimen Drift Dep Algal Mat Iron Depo Inundation Sparsely Field Observate Vater Table Field Company F	ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial In Vegetated Concave ations: r Present? Yes esent? Yes elsent? Yes ellary fringe)	nagery (B7) Surface (B	check all that apply Water-S Aquation True Ac Hydrog Oxidize Present Recent Thin Mo Gauge 8) Other (I	Stained Lead Fauna (B1 quatic Plant en Sulfide (Ed Rhizosphore of Reduction Reduction Reduction Well Date Explain in Research (inches) oth (inches) oth (inches)	s (B14) Ddor (C1) eres on Living Rocced Iron (C4) etion in Tilled Soils e (C7) ea (D9) Remarks)	(C6)	Surface Soil (Drainage Pat Dry-Season V Crayfish Burr Saturation Vis Stunted or St Geomorphic FAC-Neutral	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2) Test (D5)
PROLOGY Eland Hydrology Eland Hydrology Eland Hydrology Eland Hydrology Eland Hydrology Surface Valuation Water May Sedimen Drift Dep Algal May Iron Depo Inundation Sparsely Field Observation Surface Water Vater Table Field Field Composition Elaturation President Records Cribe Records	ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial In Vegetated Concave ations: r Present? Yes esent? Yes elsent? Yes ellary fringe)	nagery (B7) Surface (B	check all that apply Water-S Aquation True Ac Hydrog Oxidize Present Recent Thin Mo Gauge 8) Other (I	Stained Lead Fauna (B1 quatic Plant en Sulfide (Ed Rhizosphore of Reduction Reduction Reduction Well Date Explain in Research (inches) oth (inches) oth (inches)	s (B14) Ddor (C1) eres on Living Rocced Iron (C4) etion in Tilled Soils e (C7) ea (D9) Remarks)	(C6)	Surface Soil (Drainage Pat Dry-Season V Crayfish Burr Saturation Vis Stunted or St Geomorphic FAC-Neutral	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2) Test (D5)
PROLOGY Primary Indicator X Surface V High War Saturation Water Mar Sedimen Drift Dep Algal Mar Iron Depo Inundation Sparsely Field Observation Surface Water Vater Table Field Saturation President Second	ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial In Vegetated Concave ations: r Present? Yes esent? Yes ellary fringe) led Data (stream gau	e required; magery (B7) Surface (B	check all that apply Water-S Aquation True Ac Hydrog Oxidize Present Recent Thin Mo Gauge 8) Other (I	Stained Lead Fauna (B1 quatic Plant en Sulfide (Ed Rhizosphote of Reduction Reduction Reduction Well Dattexplain in Responsible (inches) oth (inches) oth (inches) oth (inches)	s (B14) Ddor (C1) eres on Living Rocced Iron (C4) etion in Tilled Soils e (C7) ea (D9) Remarks)	(C6)	Surface Soil (Drainage Pat Dry-Season V Crayfish Burr Saturation Vis Stunted or St Geomorphic FAC-Neutral	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2) Test (D5)
PROLOGY Primary Indicator X Surface V High War Saturation Water Mar Sedimen Drift Dep Algal Mar Iron Depo Inundation Sparsely Field Observation Surface Water Vater Table Field Saturation President Second	ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial In Vegetated Concave ations: r Present? Yes esent? Yes elsent? Yes ellary fringe)	e required; magery (B7) Surface (B	check all that apply Water-S Aquation True Ac Hydrog Oxidize Present Recent Thin Mo Gauge 8) Other (I	Stained Lead Fauna (B1 quatic Plant en Sulfide (Ed Rhizosphote of Reduction Reduction Reduction Well Dattexplain in Responsible (inches) oth (inches) oth (inches) oth (inches)	s (B14) Ddor (C1) eres on Living Rocced Iron (C4) etion in Tilled Soils e (C7) ea (D9) Remarks)	(C6)	Surface Soil (Drainage Pat Dry-Season V Crayfish Burr Saturation Vis Stunted or St Geomorphic FAC-Neutral	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2) Test (D5)
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PROLOGY Primary Indicator X Surface V High War Saturation Water Mar Sedimen Drift Dep Algal Mar Iron Depo Inundation Sparsely Field Observation Surface Water Vater Table Field Saturation President Second	ogy Indicators: ators (minimum of on Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial In Vegetated Concave ations: r Present? Yes esent? Yes ellary fringe) led Data (stream gau	e required; magery (B7) Surface (B	check all that apply Water-S Aquation True Ac Hydrog Oxidize Present Recent Thin Mo Gauge 8) Other (I	Stained Lead Fauna (B1 quatic Plant en Sulfide (Ed Rhizosphote of Reduction Reduction Reduction Well Dattexplain in Responsible (inches) oth (inches) oth (inches) oth (inches)	s (B14) Ddor (C1) eres on Living Rocced Iron (C4) etion in Tilled Soils e (C7) ea (D9) Remarks)	(C6)	Surface Soil (Drainage Pat Dry-Season V Crayfish Burr Saturation Vis Stunted or St Geomorphic FAC-Neutral	Cracks (B6) terns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) ressed Plants (D1) Position (D2) Test (D5)

Project/Site:	Fair Oaks Ranch	542-acre Property	County:	Wagone	r Sampling D	ate:	June 16, 2023	3
Applicant/Owner:		PartnerTulsa		State:	OK Sampling P	oint:	DPA006_U	
Investigator(s):	Anthony Thornton	andKrista M	lcClure Sec	ction, Township, Range	e:	17-T19N-R1	5E	
_andform (hillslope, teri	race, etc.):	Range	land	Local relief (d	concave, convex, none):		Convex	
Slope (%):	0-5%	Lat:	-95.74240	Long:36	5.13178 Datum:	NAD	1983 UTM Zone 1!	5N
Soil Map Unit Name:		Dennis-Radley com	plex, 0 to 15 percen	t slopes	NWI classificati	on:	N/A	
•		te typical for this time of		•	(If no, explain in Rem	•		
			-	· · · · · · · · · · · · · · · · · · ·	re "Normal Circumstances	•	′es X 1	No
		or Hydrology No.			f needed, explain any ansv			
				·				
SUMMARY OF F	INDINGS - Atta	ch site map sho	wing sampling	g point locations	s, transects, impor	tant features	s, etc.	
Hydrophytic Vegetatio	n Present? Ye	es No	x					
Hydric Soil Present?	Ye		<u> </u>	Is the Sampled Area	1			
Wetland Hydrology Pr			$\frac{x}{x}$	within a Wetland?	Yes	No	X	
Welland Hydrology Fi	esent: Te	INU _		within a wetiand:	165			
Domonico			<u> </u>					
Remarks:	armined not to be with	nin a wetland due to the	lack of all thron wot	tland critoria				
•				liano cinena.				
The survey area wa	as determined to be d	Irier than normal at the	time of survey.					
VEGETATION - U	Jse scientific n	ames of plants.						
		A la a a last a	Daninant	La dia atau	Dominance Test worl	 (sheet:		
		Absolute	Dominant	indicator				
Tree Stratum (Plo) <u>% cover</u>	Species?	<u>Status</u>	Number of Dominant S	•		
1. <u>Ulmus america</u>	ana		No	<u>FACW</u>	That Are OBL, FACW,	or FAC:	3	(A)
2. <u>Celtis laevigat</u>	<u>a </u>	80	Yes	FACW				
3. Sideroxylon la	nuginosum	5	No	FACW	Total Number of Domi	nant		
4					Species Across All Stra	ata: _	6	(B)
E			<u></u> ,					
		 105 :	= Total Cover		Percent of Dominant S	pecies		
Sapling/Shrub Stra	tum (Plot size:	15 ft.)			That Are OBL, FACW,	•	50%	(A/B)
1. Ilex decidua	(i i i i i i i i i i i i i i i i i i i	10	No	FACW	,	_		(' ' ' ' ' ' ' '
Carya illinoine		10	No No	FACW	Prevalence Index Wo	rksheet:		
		40	Yes	FACU	Total % Cov	or of:	Multiply by:	
	os orbiculatus						Multiply by:	
4. <u>Celtis laevigat</u>	<u>a </u>		<u>Yes</u>	<u>FACW</u>	OBL species		1 = 0	
5					FACW species		2 = 290	
		80=	= Total Cover		FAC species		3 = 90	
<u>Herb Stratum</u> (Plo	ot size: 5 ft.)			FACU species	X	4 = 640	
1. Carex blanda			Yes	<u>FAC</u>	UPL species	x	5 =	
2. Aristida purpu	rascens	40	Yes	FACU	Column Totals:	335((A) 1020	(B)
3					Prevalence Index = B/A	<i>λ</i> =3	3.04	
4			<u></u> ,					
_					Hydrophytic Vegetati	on Indicators:		
_					1 - Rapid Test for	Hydrophytic Veg	etation	
7					2 - Dominance Te			
8					3 - Prevalence Inc	•		
9.					4 - Morphological		ovide supporting	~
						s or on a separat		J
10			T-1-1-C			•	ŕ	
			= Total Cover		Problematic Hydro			
Woody Vine Stratu		30 ft.)			¹ Indicators of hydric so	_		
1. Smilax bona-r	IOX	80	Yes	<u>FACU</u>	be present, unless dist	niped or broblem	auc.	
2. Vitis vulpina		10	<u>No</u>	FAC				
		90 _=	= Total Cover		Hydrophytic			
		_			Vegetation Present?	Yes_	No	X
Remarks:								
No positive indication	on of hydrophytic veg	jetation was observed (≥50% of dominant s	pecies indexed as FA	CU or drier).			
-		`			·			

SOIL

Sampling Point: DPA006_U

Histosol (A1) Sandy Gleyed Matrix (S4) Histosol (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Sandy Redox (S5) Sandy Redox Matrix (F2) Sandy Mucky Mineral (F1) Sandy Mucky Mineral (F1) Sandy Mucky (A10) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F6) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Redox Depressions (F8) Hydric Soil Restrictive Layer (if present): Type: Sandy Mucky Mineral (S1) Redox Depressions (F8) Hydric Soil Wastrictive Layer (if present): Type: Septiminary Sandy Mucky Mineral (S1) Wastrictive Layer (if present): Type: Septiminary Sandy Mucky Mineral (S1) Wastrictive Layer (if present): Type: Septiminary Sandy Mucky Mineral (S1) Wastrictive Layer (if present): Type: Septiminary Sandy Mucky Mineral (S1) Wastrictive Layer (if present): Water Stained Leaves (B9) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Mydrogen Sulfide Odor (C1) Sediment Deposits (B2) Aquatic Fauna (B13) True Aquatic Plants (B14) Mydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Aquatic Fauna (B13) Presence of Reduced Iron (C4) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Burface Water Present? Yes No X Depth (Inches): N/A Water Table Present? Yes No X Depth (Inches): Sounds Caster Sandy Matrix (S6) Depth (Inches): Sounds Caster Sandy Matrix (S6) Field Observations: Burface Water Present? Yes No X Depth (Inches): Sounds Caster Sandy Matrix (S6) Field Observations: Sounds Ma	Texture Remarks Clay Loam
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Inc. Histoc Solis Indicators: Histocal (A1) Sandy Redox (S5) Black Histoc (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Loarny Mucky Mineral (F1) Stratified Layers (A5) Depleted Matrix (F3) Redox Deriv Surface (F6) Thick Dark Surface (A11) Redox Dark Surface (F7) Sandy Mucky Mineral (S1) Free Mucky Peat or Peat (S3) Westrictive Layer (if present): Type: Depth(inches): Type: Depth(inches): Water Midcators (minimum of one required; check all that apply) See Surface Water (A1) High Water Rable (A2) Aquatic Fauna (B13) Saluration (A3) True Aquatic Fauna (B13) Selmant Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Presence of Reduced Iron (C4) Adjal Mat or Crust (B4) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) Sparsety Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Burface Water Present? Yes No X Depth (inches): 3-20 Wetland Hydrolides collibre fine) Wetland Hydrolides collibre fine) Wetland Hydrolides collibre in Fine Available:	Clay Loam
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Phydric Soils Indicators: Histosol (A1) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Stratified Layers (A6) Loamy Gleyed Matrix (F3) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Redox Dark Surface (F7) Thick Dark Surface (A12) Depleted Below Dark Surface (A12) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (F1) Some Mucky Peat or Peat (S3) Restrictive Layer (If present): Type: Depthinches): Depthinches): Hydric Soil Water-Stained Leaves (B9) Aquatic Fauna (B13) Sardave Water (A1) Water Marks (B1) Water Marks (B1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Roots (C3) Fresence of Reduced from (C4) Algal Mat or Crust (B4) Inon Deposits (B3) Presence of Reduced from (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Titled Soils (C6) Inon Deposits (B3) Thin Muck Surface (C7) Induction Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes No X Depth (inches): 320 Wetland Hydrolades capillar finge) Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Histosol (A1) Sandy Gleyed Matrix (S4) Histosol (A1) Sandy Gleyed Matrix (S4) Histosol (A1) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Loarny Mucky Mineral (F1) Stratified Layers (A5) Loarny Mucky Mineral (F1) Depleted Matrix (F2) Depleted Matrix (F2) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) And Mucky Peat or Peat (S3) Restrictive Layer (if present): Type: Depth(inches): Hydric soils was observed. DROLOGY Itland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Septication (A3) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B2) Drift Deposits (B2) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Inundation visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes No X Depth (inches): N/A Surface Water Stealine Present? Yes No X Depth (inches): 220 Wetland Hydroles Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Histosol (A1) Sandy Gleyed Matrix (S4) Histosol (A1) Sandy Gleyed Matrix (S4) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Loamy Mucky Mineral (F1) Stratified Layers (A5) Loamy Mucky Mineral (F1) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) In Mucky Peat or Peat (S3) Redox Depressions (F8) In Mucky Peat or Peat (S3) Restrictive Layer (if present): Type: Depth(inches): Hydric Soil Marks: No positive indication of hydric soils was observed. DROLOGY Itland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) See Surface Water (A1) Aquatic Fauna (B13) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Sediment Deposits (B14) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Persence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes No X Depth (inches): N/A Valer Table Present? Yes No X Depth (inches): 220 Wetland Hy includes capillary fringe) Coribe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Histosol (A1) Sandy Gleyed Matrix (S4) Histosol (A1) Sandy Gleyed Matrix (S4) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Loamy Mucky Mineral (F1) Stratified Layers (A5) Loamy Mucky Mineral (F1) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) In Mucky Peat or Peat (S3) Redox Depressions (F8) In Mucky Peat or Peat (S3) Restrictive Layer (if present): Type: Depth(inches): Hydric Soil Marks: No positive indication of hydric soils was observed. DROLOGY Itland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) See Surface Water (A1) Aquatic Fauna (B13) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Sediment Deposits (B14) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Persence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes No X Depth (inches): N/A Valer Table Present? Yes No X Depth (inches): 220 Wetland Hy includes capillary fringe) Coribe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:	
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Histosol (A1) Sandy Gleyed Matrix (S4) Histosol (A1) Sandy Gleyed Matrix (S4) Histosol (A1) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Loarny Mucky Mineral (F1) Stratified Layers (A5) Loarny Gleyed Matrix (F2) 2 cm Muck (A10) Depleted Matrix (F2) 2 cm Muck (A10) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) In Mucky Peat or Peat (S3) Redox Depressions (F8) In Mucky Peat or Peat (S3) Redox Depressions (F8) In Mucky Peat or Peat (S3) Redox Depressions (F8) Redox Depressions (F8) In Mucky Peat or Peat (S3) Redox Depressions (F8) Redox Depressions (F8) In Mucky Peat or Peat (S3) Redox Depressions (F8) Re	
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Histosol (A1) Sandy Gleyed Matrix (S4) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Loarny Mucky Mineral (F1) Stratified Layers (A5) Loarny Mucky Mineral (F1) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) 5 cm Mucky Peat or Peat (S3) Westrictive Layer (if present): Type: Depth(inches): Hydric Soil Depth (inches): Hydric Soil Depth (inches): Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Dirth Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Wetland Hydroles Indexed Present? Yes No X Depth (inches): 320 Wetland Hydroles Crube Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	on: PL=Pore Lining, M=Matrix.
Histic Epipedon (A2) Black Histic (A3) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Stratified Layers (A5) Loamy Gleyed Matrix (F2) 2 cm Muck (A10) Depleted Below Dark Surface (A11) Depleted Dark Surface (A12) Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3) Pestrictive Layer (if present): Type: Depth(inches): Type: Depth(inches): Hydric Soil High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Difft Deposits (B3) Algal Mat or Crust (B4) Hron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Pick Trable Present? Yes No X Depth (inches): No Wettand Hydrology Indicators (C3) Difft Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) No X Depth (inches): No X Depth (inches): No Wettand Hydrology indicators (F7) Redox Dark Surface (F6) Hydric Soil Hydri	dicators for Problematic Hydric Soils ³ :
Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Stratified Layers (A5) Loamy Gleyed Matrix (F2) 2 cm Muck (A10) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Redox Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) 5 cm Mucky Peat or Peat (S3) Redox Depressions (F8) 6 cm Mucky Peat or Peat (S3) 6 cm Mucky Peat or Peat (S3) 6 cm Mucky Peat or Peat (S3) 7 line 6 cm Mucky Peat or Peat (S3) 7 line 6 cm Mucky Peat or Peat (S3) 7 line 7 line 8 lin	Coast Prairie Redox (A16)
Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Scm Mucky Peat or Peat (S3) Serrictive Layer (if present): Type: Depth(inches): Depth(inches)	Dark Surface (S7)
Stratified Layers (A5) Loamy Gleyed Matrix (F2) 2 cm Muck (A10) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) IN WA Loamy Mucky Peat or Peat (S3) Westrictive Layer (if present): Type: Depth(inches): Hydric soils was observed. DROLOGY Iand Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Se Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Iron Deposits (B4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Wetland Hydrology Indicators: utace Water Present? Yes No X Depth (inches): >20 Wetland Hydrology Indicators: urface Water Present? Yes No X Depth (inches): >20 Wetland Hydrology Indicators: urface Water Present? Yes No X Depth (inches): >20 Wetland Hydrology Indicators: urface Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Iron-Manganese Masses (F12)
	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) 3-land Surface (F7) Sandy Mucky Peat or Peat (S3) Wuserictive Layer (if present): Type: Depth(inches): Hydric Soils was observed. DROLOGY land Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Se Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Iron Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B6) Agail Mat or Crust (E4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B6) Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) ield Observations: urface Water Present? Yes No X Depth (inches): 3-20 aturation Present? Yes No X Depth (inches): 3-20	Other (Explain in Remarks)
Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) 3-land Surface (F7) Sandy Mucky Peat or Peat (S3) Wuserictive Layer (if present): Type: Depth(inches): Hydric Soils was observed. DROLOGY land Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Se Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Iron Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B6) Agail Mat or Crust (E4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B6) Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) ield Observations: urface Water Present? Yes No X Depth (inches): 3-20 aturation Present? Yes No X Depth (inches): 3-20	
Thick Dark Surface (A12) Depleted Dark Surface (F7) 3in 5cm Mucky Mineral (S1) Redox Depressions (F8) 3in 5cm Mucky Peat or Peat (S3) Westrictive Layer (if present): Depth(inches): Hydric Soil was observed Hydric Soil harks: Depth(inches): Hydric Soil was observed Hydric Soil was observed	
Sandy Mucky Mineral (S1) Redox Depressions (F8) SIN WEST CONTROLOGY Page	
strictive Layer (if present): Type: Depth(inches): Inarks: Dopositive indication of hydric soils was observed. DROLOGY land Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Segurface Water (A1) High Water Table (A2) Saturation (A3) True Aquatic Palnat (B14) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Iron Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Iron Deposits (B5) Clay Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) leid Observations: urface Water Present? Yes No X Depth (inches): Journal of Surface (C7) Attractor Water Table Present? Yes No X Depth (inches): Journal of Surface (C7) Attractor Water Table Present? Yes No X Depth (inches): Journal of Surface (C7) Attractor Water Present? Yes No X Depth (inches): Journal of Surface (C7) Attractor Water Present? Yes No X Depth (inches): Journal of Surface (C7) Attractor Water Present? Yes No X Depth (inches): Journal of Surface (C7) Attractor Water Present? Yes No X Depth (inches): Journal of Surface (C7) Attractor Water Present? Yes No X Depth (inches): Journal of Surface (C7) Attractor Water Present? Yes No X Depth (inches): Journal of Surface (C7) Attractor Water Present? Yes No X Depth (inches): Journal of Surface (C7) Attractor Water Present? Yes No X Depth (inches): Journal of Surface (C7) Wetland Hynchuldes capillary fringe) Cribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	ndicators of hydrophytic vegetation and
estrictive Layer (if present): Type: Depth(inches): Depth(in	wetland hydrology must be present,
estrictive Layer (if present): Type: Depth(inches): Depth(inches): D	unless disturbed or problematic.
Type:	
Depth(inches):	
DROLOGY Iand Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply)	
DROLOGY Iand Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Segurface Water (A1) High Water Table (A2) Saturation (A3) True Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Ield Observations: Urface Water Present? Yes No X Depth (inches): Ves No X Depth (inches): Verico Available: Veribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	I Present? Yes NoX
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No X Depth (inches): >20 Saturation Present? Yes No X Depth (inches): >20 Wetland Hy includes capillary fringe) Serial Aquatic Fauna (B13) Aquatic Fauna (B13) Aquatic Fauna (B14) Aquatic Fauna (B13) Aquatic Fauna (B14) Aquatic Fauna (B14) Aquatic Fauna (B15) Aquatic Fauna (B14) Aquatic Fauna (B15) True Aquatic Plants (B14) Aquatic Fauna (B13) Fire Aquatic Plants (B14) Fire Aquatic Fauna (B13) Aquatic Fauna (B13) Fire Aquatic Fauna (B13) Aquatic Fauna (B13) Fire Aquatic Plants (B14) Fire Aquatic Fauna (B13) Fire Aquatic Fauna (B14) Fire Aquatic Fauna (B13) Fire Aquatic Fauna (B13) Fire Aquatic Fauna (B13) Fire Aquatic Fauna (B14)	
Surface Water (A1)	
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Ves No X Depth (inches): Surface Present? Ves No X Depth (inches): Saturation Present? Ves No X Depth (inches): S	econdary Indicators (minimum of two required)
Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water Present? Yes No X Depth (inches): >20 Staturation Present? Yes No X Depth (inches): >20 Wetland Hy Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Surface Soil Cracks (B6)
Water Marks (B1)	Drainage Patterns (B10)
Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) ield Observations: urface Water Present? Yes No X Depth (inches): N/A Vater Table Present? Yes No X Depth (inches): >20 aturation Present? Yes No X Depth (inches): >20 wetland Hy ncludes capillary fringe) cribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Dry-Season Water Table (C2)
Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Depth (inches): Vater Table Present? Yes No Atturation Present? Yes No X Depth (inches): Depth (i	Crayfish Burrows (C8)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Depth (inches): Wrface Water Present? Yes No Water Table Present? Yes No X Depth (inches): Depth (inches	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Ield Observations: Urface Water Present? Yes No X Depth (inches): N/A Vater Table Present? Yes No X Depth (inches): >20 aturation Present? Yes No X Depth (inches): >20 Wetland Hyncludes capillary fringe) Cribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Stunted or Stressed Plants (D1)
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) ield Observations: urface Water Present? Yes NoX Depth (inches): No X Depth (inches): >20 Auturation Present? Yes No X Depth (inches): >20 Wetland Hy ncludes capillary fringe) cribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) ield Observations: urface Water Present? Yes No X Depth (inches): N/A /ater Table Present? Yes No X Depth (inches): >20 aturation Present? Yes No X Depth (inches): >20 wetland Hy ncludes capillary fringe) cribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	FAC-Neutral Test (D5)
Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) ield Observations: urface Water Present? Yes NoX Depth (inches): N/A	
ield Observations: urface Water Present? Yes NoX Depth (inches): N/A /ater Table Present? Yes NoX Depth (inches): >20 aturation Present? Yes No X Depth (inches): >20 Wetland Hy ncludes capillary fringe) cribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
urface Water Present? Yes No X Depth (inches): N/A /ater Table Present? Yes No X Depth (inches): >20 aturation Present? Yes No X Depth (inches): >20 Metland Hyncludes capillary fringe) cribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Atter Table Present? Yes No X Depth (inches): >20 atturation Present? Yes No X Depth (inches): >20 Metland Hy nocludes capillary fringe) cribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Atter Table Present? Yes No X Depth (inches): >20 atturation Present? Yes No X Depth (inches): >20 multiple Wetland Hy nolludes capillary fringe) cribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Saturation Present? Yes No X Depth (inches): >20 Wetland Hy includes capillary fringe) Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
includes capillary fringe) scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
	vdrology Present? Yes No X
narks:	ydrology Present? Yes NoX_
narks:	ydrology Present? Yes NoX
narks:	ydrology Present? Yes No X
	ydrology Present? Yes No X
No positive indication of wetland hydrology was observed.	ydrology Present? Yes No X_
to positive indication of weather hydrology was observed.	ydrology Present? Yes NoX
	ydrology Present? Yes No X
	ydrology Present? Yes NoX
	ydrology Present? Yes NoX

cant/Owner:	acre Property	County	y:Wagone	er Sampling Dat	te: June 16, 2023			
	PartnerTulsa		State:	OK Sampling Poir	nt:DPA007_U			
stigator(s): <u>Anthony Thornton</u> an	d Krista Mo	Clure S	Section, Township, Rang	ge:	17-T19N-R15E			
form (hillslope, terrace, etc.):	Bottomland Hard	wood Forest	Local relief ((concave, convex, none):	Convex			
e (%): 0-5%								
Map Unit Name: D	ennis-Radley comp	lex, 0 to 15 perc	ent slopes	NWI classification	n: PFO1A			
limatic / hydrologic conditions on the site typ								
egetation No ,Soil No ,o								
/egetation No ,Soil No ,o								
MMARY OF FINDINGS - Attach	site map snov	ving sampili	ng point location	is, transects, importa	ant features, etc.			
drophytic Vegetation Present? Yes	X No							
		X	Is the Sampled Are	ea				
tland Hydrology Present? Yes			within a Wetland?	Yes	No X			
								
marks: This point was determined not to be within a The survey area was determined to be drier t		•	ls and wetland hydrolog	ıy.				
GETATION - Use scientific name	•			Dominance Test works	hoot			
	Absolute							
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	<u>Status</u>	Number of Dominant Spe				
Celtis laevigata		Yes	FACW	That Are OBL, FACW, or	r FAC: <u>3</u> (A			
2. <u>Ulmus americana</u>	30	Yes	FACW					
3				Total Number of Domina				
4	<u> </u>			Species Across All Strata	a: <u>5</u> (E			
5	<u> </u>							
	110=	Total Cover		Percent of Dominant Spe	ecies			
Sapling/Shrub Stratum (Plot size: 15	<u>ft.</u>)			That Are OBL, FACW, or	r FAC: 60% (A			
1. <u>Ilex decidua</u>	10	No	FACW					
2. Symphoricarpos orbiculatus	60	Yes	FACU	Prevalence Index Work	sheet:			
3				Total % Cover	of: Multiply by:			
4				OBL species	0 x 1 = 0			
5				FACW species	120 x 2 = 240			
	<u>70</u> =	Total Cover		FAC species	50 x 3 = 150			
Herb Stratum (Plot size: 5 ft.)				FACU species	90 x 4 = 360			
1. Commelina communis	30	Yes	<u>FACU</u>	UPL species	0 x 5 = 0			
2. Agrostis hyemalis	40	Yes	FAC	Column Totals:	260 (A) 750 (E			
3. Carex blanda	10	No	FAC	Prevalence Index = B/A =	= 2.88			
4	<u></u>							
5	<u></u>			Hydrophytic Vegetation	ı Indicators:			
6				1 - Rapid Test for H	apid Test for Hydrophytic Vegetation			
7				X 2 - Dominance Test is >50%				
8	<u></u>			X 3 - Prevalence Inde	x is ≤3.0 ¹			
9.	_			4 - Morphological A	daptations ¹ (Provide supporting			
10.				data in Remarks	or on a separate sheet)			
	<u>80</u> =	Total Cover		Problematic Hydrop	phytic Vegetation ¹ (Explain)			
				 	and wetland hydrology must			
Woody Vine Stratum (Plot size: 30	ft.)			•				
	<u>ft.</u>)			be present, unless distur	bed or problematic.			
Noody Vine Stratum (Plot size: 30 1. None Observed 2.	<u>ft.</u>)			be present, unless distur	bed or problematic.			

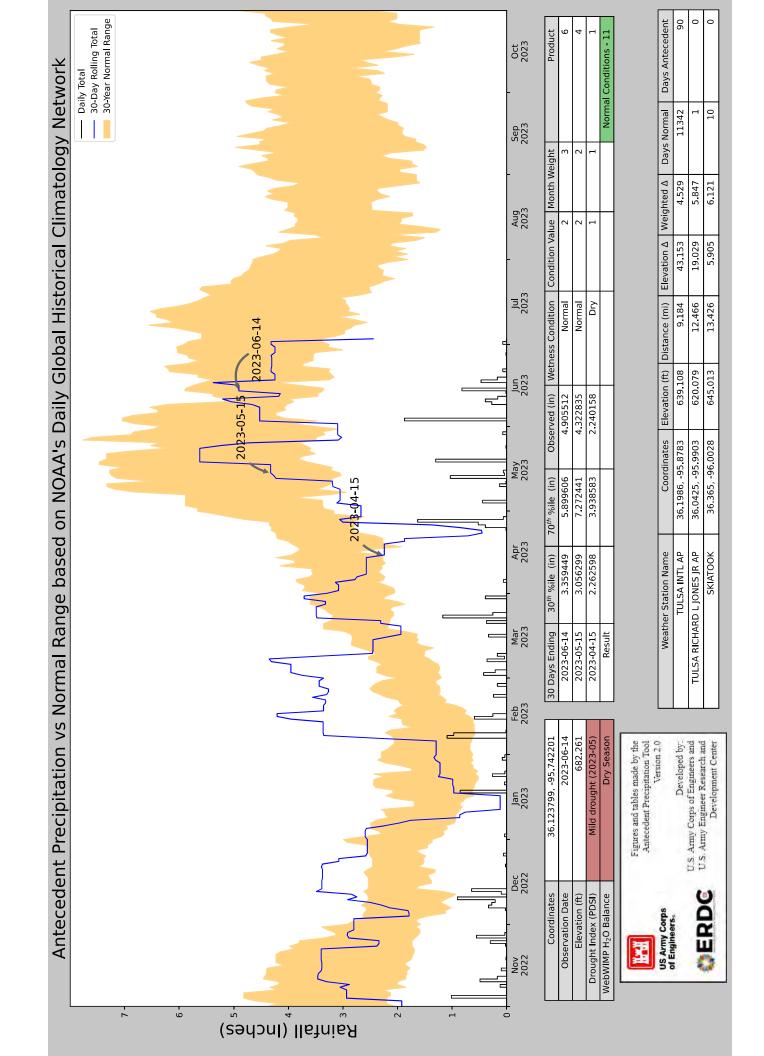
SOIL

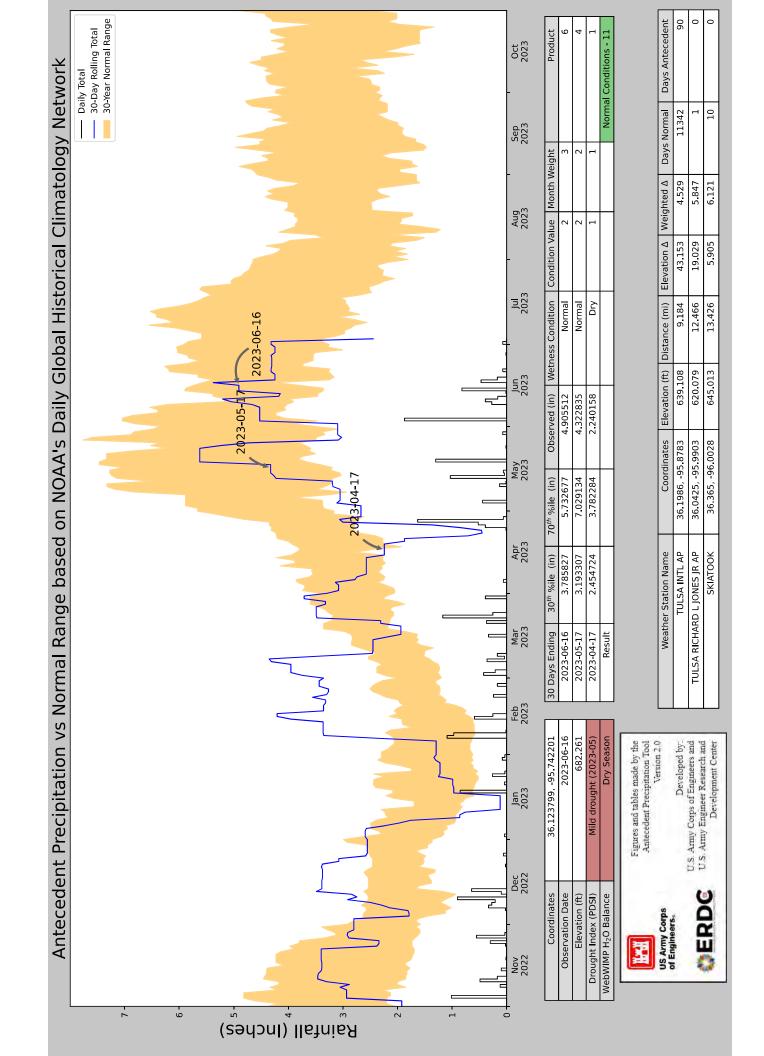
Sampling Point: DPA007_U

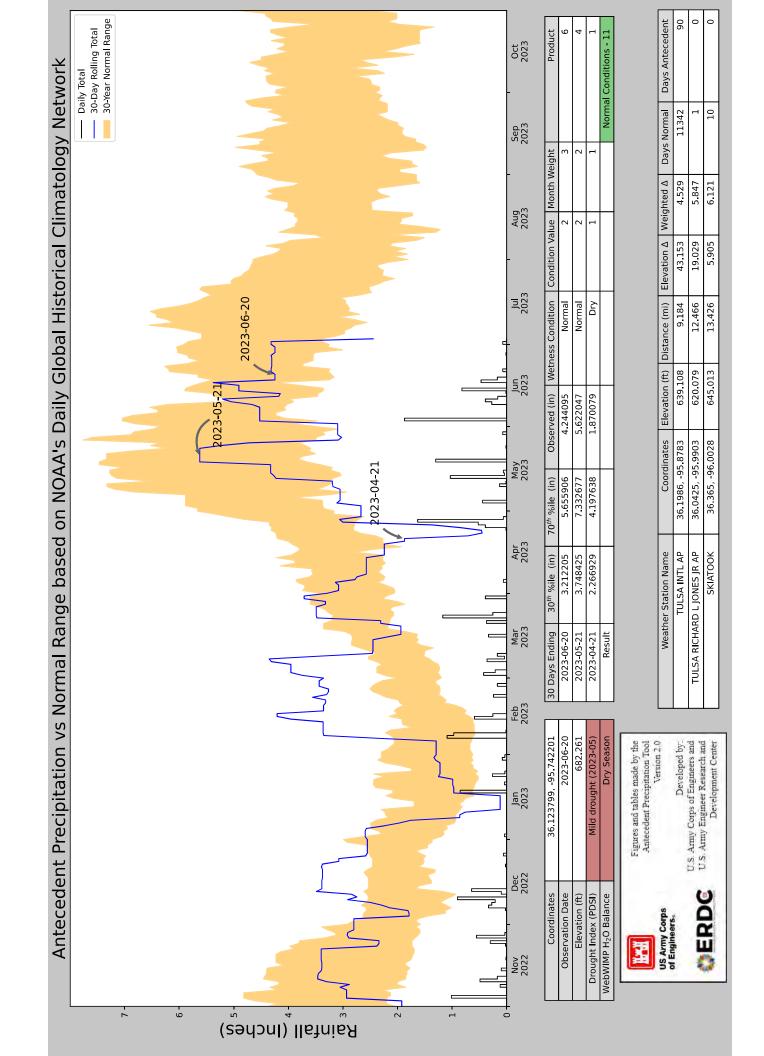
Profile Desc	ription: (Describe to	the depth	needed to docum	nent the inc	licator or confirm	n the abse	nce of	indicators.)				
Depth Matrix Redox Features												
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc	²	Texture	R	emarks		
0-22	7.5YR 3/1	100	None	_		_		Clay Loam				
		·				-						
1 _{Tyroo:} C-Co	uncontration D_Dank	tion DM_D	aduand Matrix MS	 	and Crains		2 _{1.6}	cation: PL=Pore Lining	M_Motrix			
Hydric Soils	ncentration, D=Deple Indicators:	tion, Kivi=K	educed Matrix, MS	=iviaskeu s	and Grains.		L	Indicators for Proble		nils ³ ·		
									_	OII3 .		
	Histosol (A1) Sandy Gleyed Matrix (S4) Sandy Baday (S5)							Coast Prairie Red				
	Histic Epipedon (A2) Sandy Redox (S5)						Dark Surface (S7) Iron-Manganese Masses (F12)					
	Black Histic (A3) Stripped Matrix (S6)											
	Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1)						Very Shallow Dark Surface (TF12)					
	Stratified Layers (A5) Loamy Gleyed Matrix (F2)						Other (Explain in Remarks)					
	ıck (A10)			ed Matrix (F	-							
	d Below Dark Surface	e (A11)		Dark Surfac								
	ark Surface (A12)			ed Dark Sur -			3					
	lucky Mineral (S1)		Redox	Depression	s (F8)			³ Indicators of hydrophy	=	nd		
5 cm Mu	icky Peat or Peat (S3)						wetland hydrology m	-			
								unless disturbed or p	roblematic.			
Restrictive L	ayer (if present):											
Type:												
Depth(in	ches):		_				Hydric	Soil Present?	Yes	NoX		
Remarks:												
HYDROLOG	Y											
	logy Indicators:											
_												
	ators (minimum of on	e required;			(50)		Secondary Indicators (minimum of two required)					
	Water-Stained Leaves (B9)					Surface Soil Cracks (B6)						
	High Water Table (A2)Aquatic Fauna (B13)					Drainage Patterns (B10)						
	True Aquatic Plants (B14)						Dry-Season Water Table (C2)					
	Hydrogen Sulfide Odor (C1)						Crayfish Burrows (C8)					
· · · · · · · · · · · · · · · · · · ·	Oxidized Rhizospheres on Living Roots					oots (C3)						
	Drift Deposits (B3) Presence of Reduced Iron (C4)						Stunted or Stressed Plants (D1)					
	Algal Mat or Crust (B4)Recent Iron Reduction in Tilled Soils (C						X Geomorphic Position (D2)					
	Iron Deposits (B5) Thin Muck Surface (C7)							FAC-Neutral Tes	t (D5)			
	Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9)											
Sparsely	Vegetated Concave	Surface (B8	B)Other (Explain in R	temarks)							
Field Observ	rations:											
Surface Wate	er Present? Yes	No	XDep	oth (inches)	: N/A							
Water Table	Present? Yes	No		oth (inches)								
Saturation Pr		No		oth (inches)		,	Wetlan	nd Hydrology Present?	Yes	NoX		
(includes cap	• • •					11-1-1-						
Describe Record	ded Data (stream gau	ige, monitor	ıng weii, aeriai pno	itos, previou	is inspections), if	available:						
Domorko												
Remarks:	المالية المسالمة المالية المسالمة المالية											
ivo positive ir	dication of wetland h	yurology wa	s observed.									

APPENDIX C

Antecedent Precipitation Tool

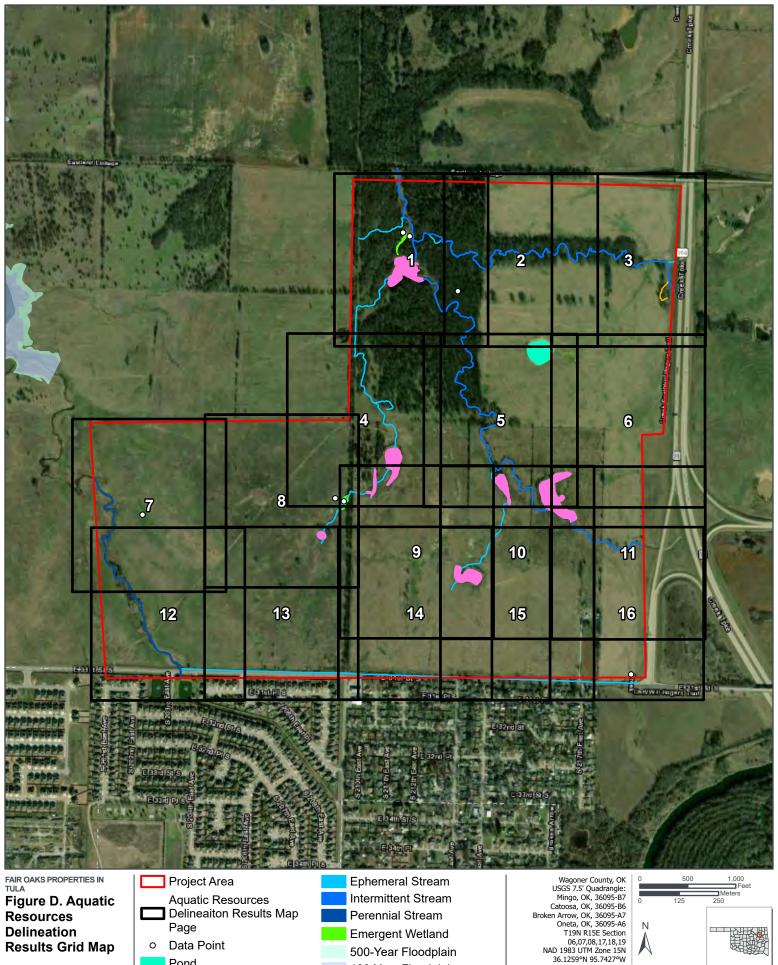






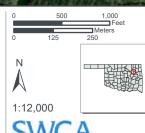
APPENDIX D

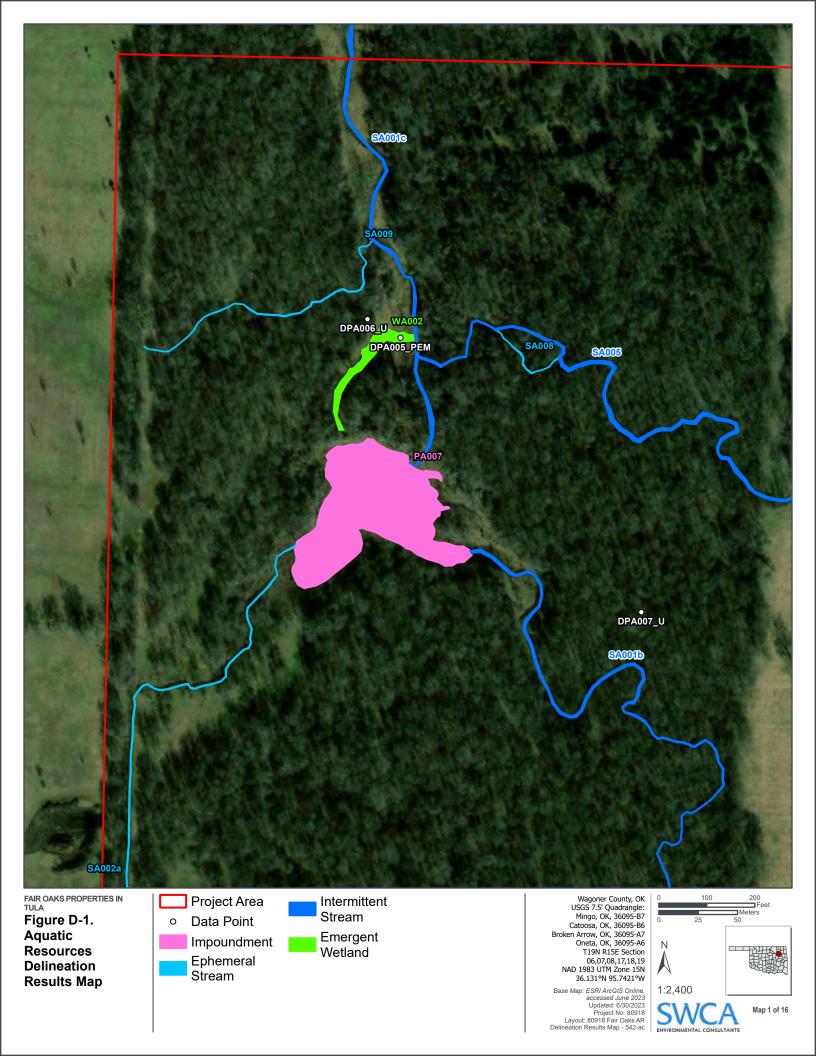
Aquatic Resources Results Figures



Pond Impoundment Wet-Weather Conveyance

100-Year Floodplain Regulatory Floodway

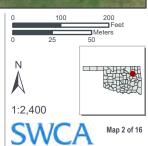


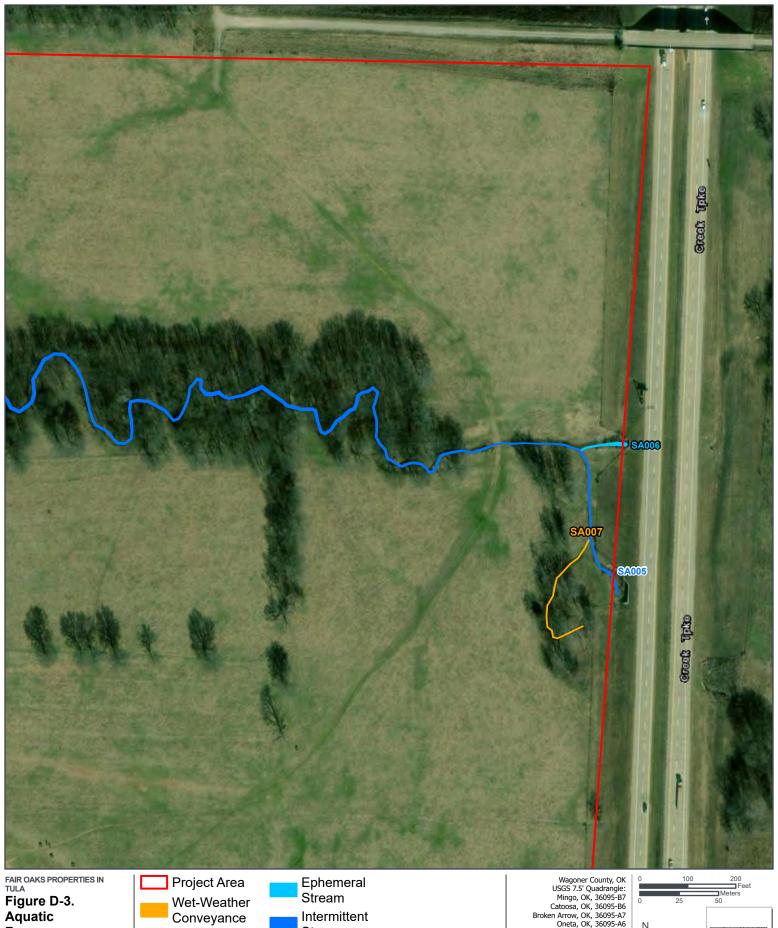




Pond Intermittent Stream

Wagoner County, OK USGS 7.5' Quadrangle: Mingo, OK, 36095-B7 Catoosa, OK, 36095-B7 Catrow, OK, 36095-A7 Oneta, OK, 36095-A6 T19N R15E Section 06,07,08,17,18,19 NAD 1983 UTM Zone 15N 36.1311°N 95,7382°W

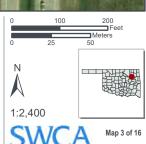


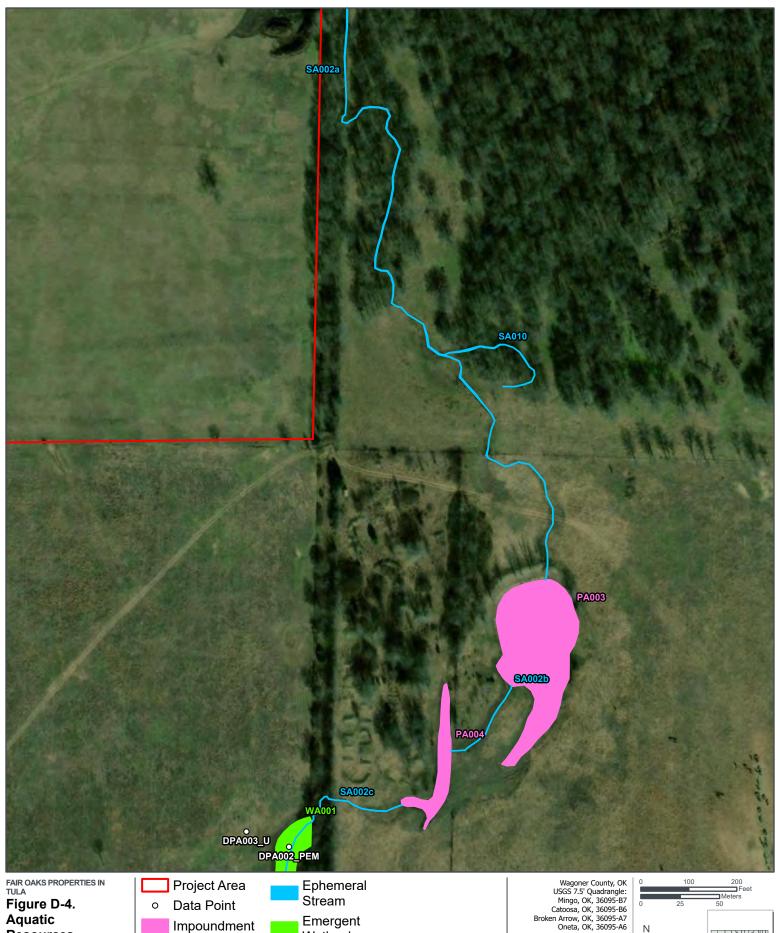


Wet-Weather Conveyance

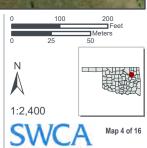
Intermittent Stream

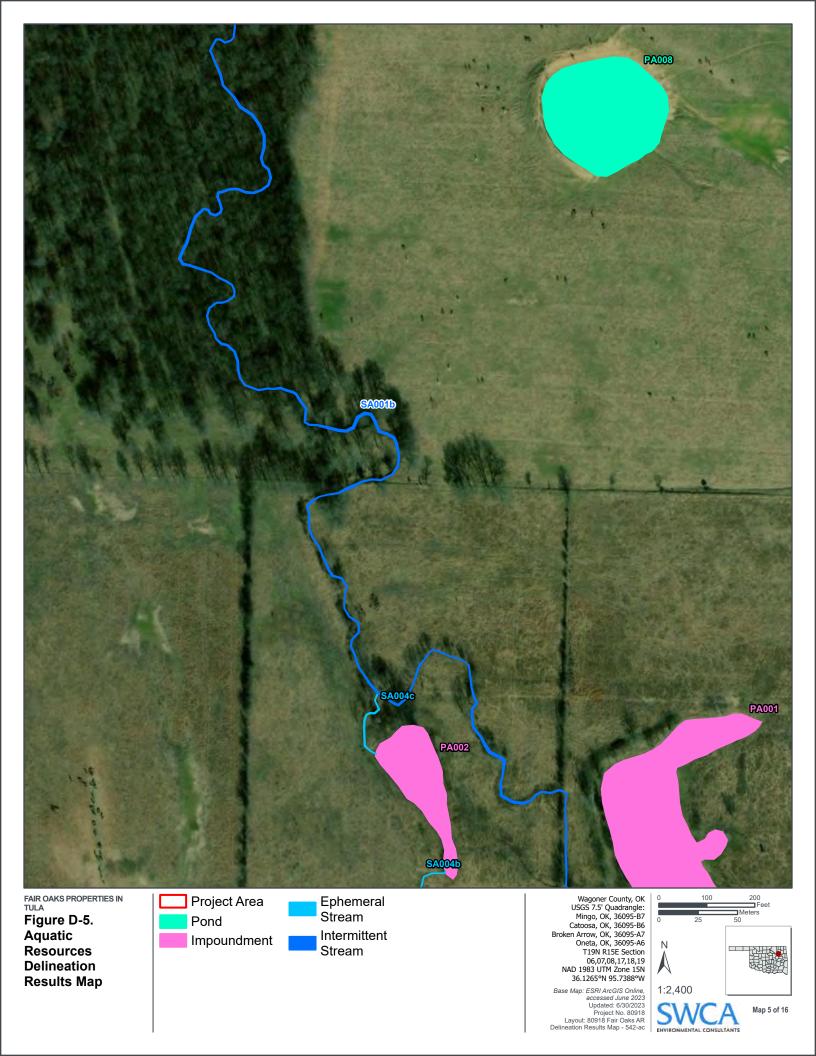
Wagoner County, OK USGS 7.5' Quadrangle: Mingo, OK, 36095-B7 Catoosa, OK, 36095-B6 Broken Arrow, OK, 36095-A6 Oneta, OK, 36095-A6 T19N R15E Section 06,07,08,17,18,19 NAD 1983 UTM Zone 15N 36.1312eN 95,7344eW

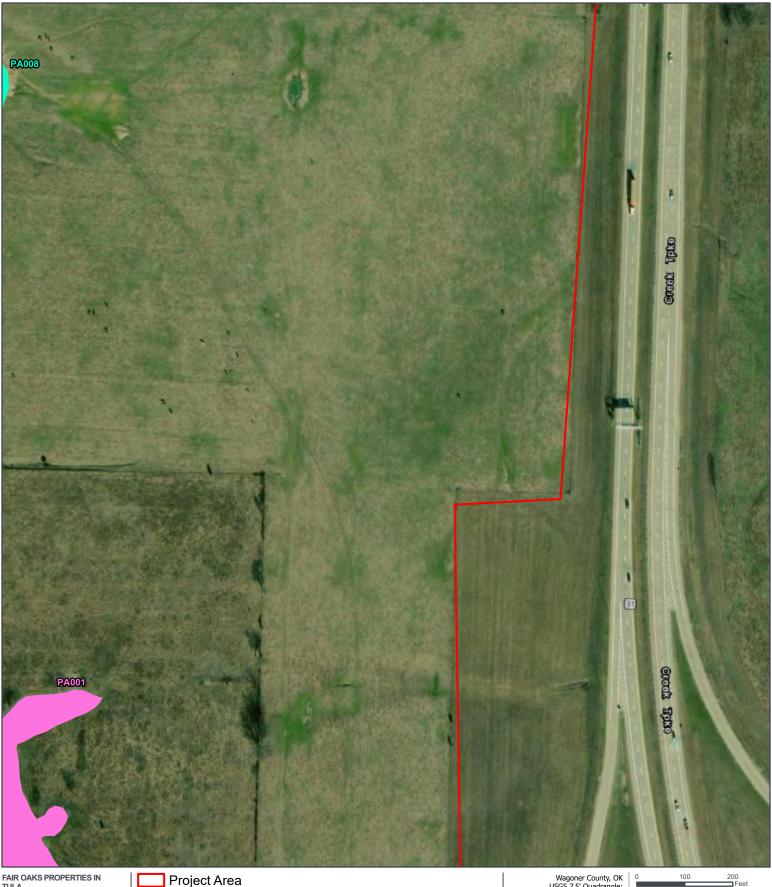




Impoundment Wetland Wagoner County, OK USGS 7.5' Quadrangle: Mingo, OK, 36095-B7 Catoosa, OK, 36095-B6 Broken Arrow, OK, 36095-A7 Oneta, OK, 36095-A6 T19N R15E Section 06,07,08,17,18,19 NAD 1983 UTM Zone 15N 36 12649N 95 74369W 36.1264°N 95.7436°W

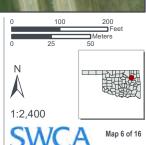






FAIR OAKS PROPERTIES IN TULA
Figure D-6.
Aquatic Resources Delineation **Results Map**

Project Area Pond Impoundment Wagoner County, OK USGS 7.5' Quadrangle: Mingo, OK, 36095-B7 Catoosa, OK, 36095-B6 Broken Arrow, OK, 36095-A7 Oneta, OK, 36095-A6 T19N R15E Section 06,07,08,17,18,19 NAD 1983 UTM Zone 15N 36.1266'N 95,7343'W

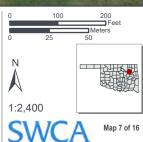


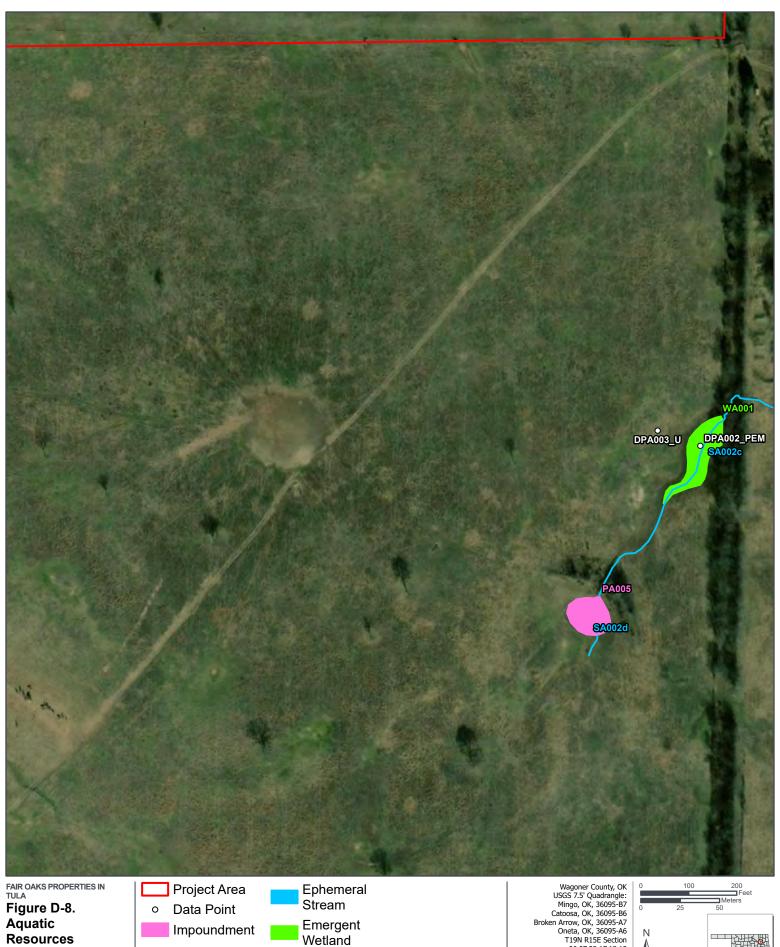


Data Point

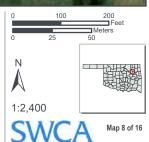
Perennial Stream

Wagoner County, OK USGS 7.5' Quadrangle: Mingo, OK, 36095-B7 Catoosa, OK, 36095-B6 Broken Arrow, OK, 36095-A7 Oneta, OK, 36095-A6 T19N R15E Section 06,07,08,17,18,19 NAD 1983 UTM Zone 15N 36.1238*N 95.7511*W





Wagoner County, OK USGS 7.5' Quadrangle: Mingo, OK, 36095-B7 Catoosa, OK, 36095-B6 Broken Arrow, OK, 36095-A7 Oneta, OK, 36095-A6 T19N R15E Section 06,07,08,17,18,19 NAD 1983 UTM Zone 15N 36 1242N 95 74649W 36.124°N 95.7464°W

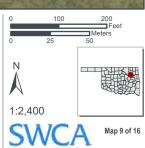


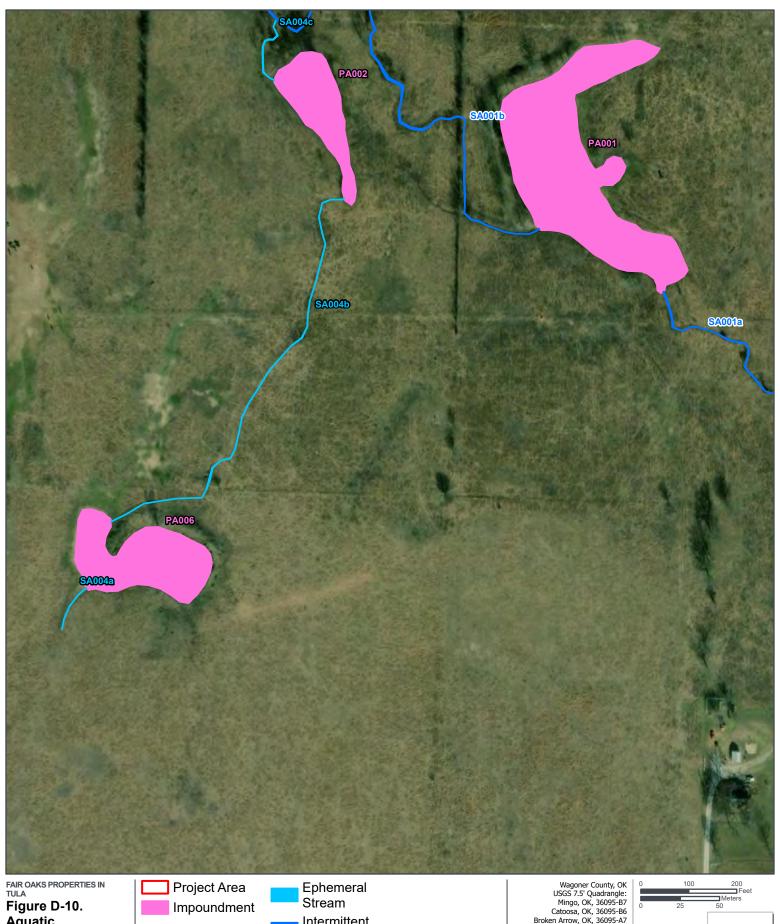


Results Map

Stream

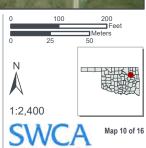
36.1226°N 95.7416°W

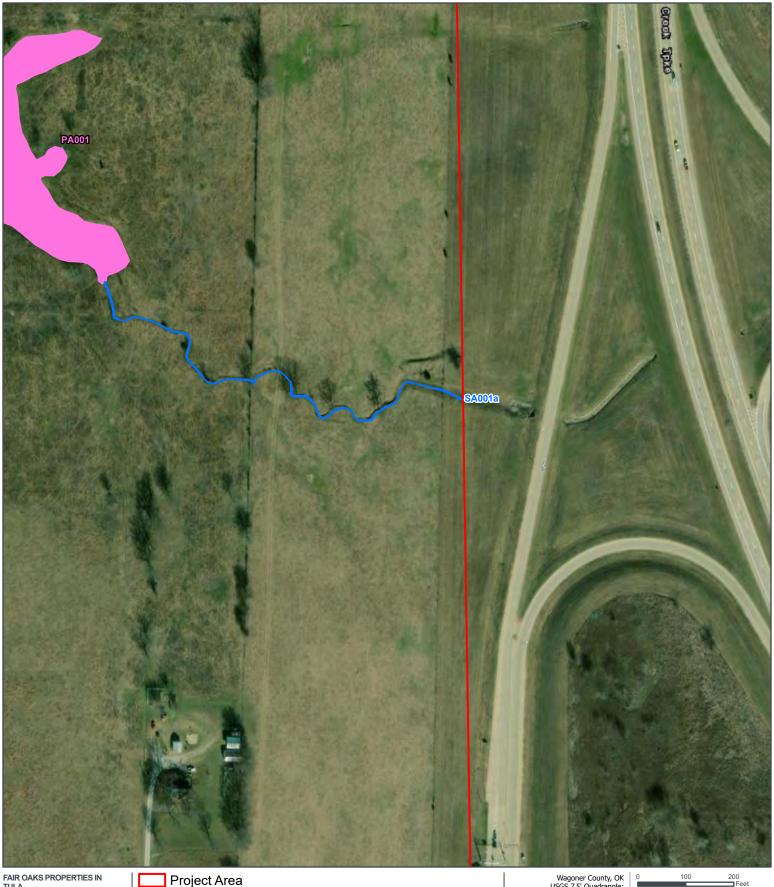




Aquatic Resources Delineation **Results Map** Intermittent Stream

Wagoner County, OK USGS 7.5' Quadrangle: Mingo, OK, 36095-B7 Catoosa, OK, 36095-B6 Broken Arrow, OK, 36095-A7 Oneta, OK, 36095-A6 T19N R15E Section 06,07,08,17,18,19 NAD 1983 UTM Zone 15N 36.1227°N 95,7381°W

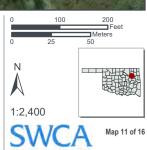




FAIR OAKS PROPERTIES IN TULA
Figure D-11.
Aquatic
Resources Delineation Results Map

Project Area Impoundment Intermittent Stream

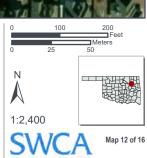
Wagoner County, OK USGS 7.5' Quadrangle: Mingo, OK, 36095-B7 Catoosa, OK, 36095-B6 Broken Arrow, OK, 36095-A6 Oneta, OK, 36095-A6 T19N R15E Section 06,07,08,17,18,19 NAD 1983 UTM Zone 15N 36.1228*N 95,7341*W





Ephemeral Stream Perennial Stream

Wagoner County, OK USGS 7.5' Quadrangle: Mingo, OK, 36095-B7 Catoosa, OK, 36095-B7 Catorow, OK, 36095-A7 Oneta, OK, 36095-A6 T19N R15E Section 06,07,08,17,18,19 NAD 1983 UTM Zone 15N 36.1207*N 95.7503*W



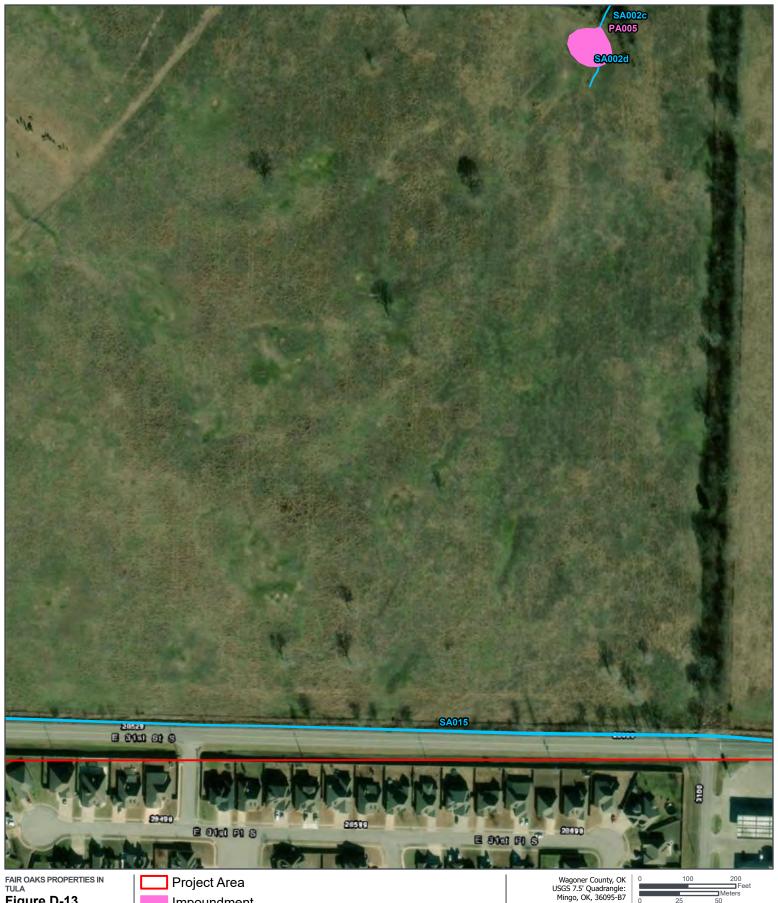
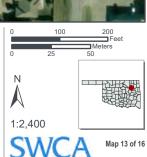
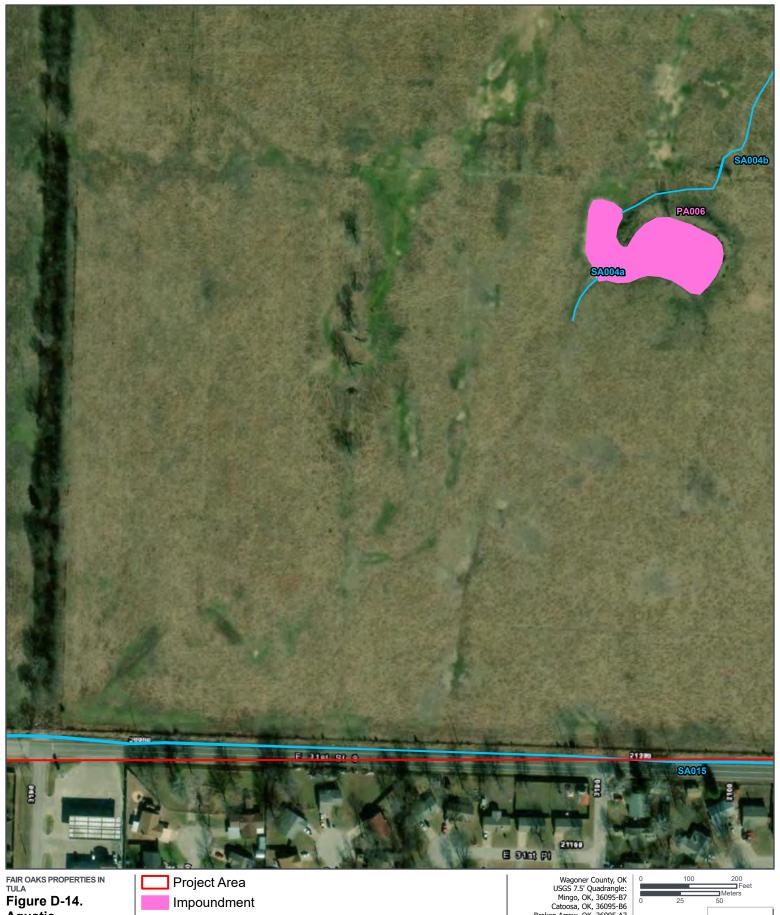


Figure D-13. Aquatic Resources Delineation Results Map Project Area
Impoundment
Ephemeral
Stream

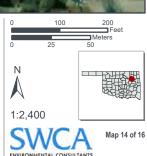
Wagoner County, OK USGS 7.5' Quadrangle: Mingo, OK, 36095-B7 Catoosa, OK, 36095-B6 Broken Arrow, OK, 36095-A6 T19N R15E Section 06,07,08,17,18,19 NAD 1983 UTM Zone 15N 36.1208"N 95.7463°W





Aquatic Resources Delineation **Results Map** **Ephemeral** Stream

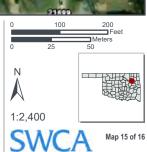
Wagoner County, OK USGS 7.5' Quadrangle: Mingo, OK, 36095-B7 Catoosa, OK, 36095-B6 Broken Arrow, OK, 36095-A7 Oneta, OK, 36095-A6 T19N R15E Section 06,07,08,17,18,19 NAD 1983 UTM Zone 15N 36 12092N 95 7416°W 36.1209°N 95.7416°W





Stream

Wagoner County, OK USGS 7.5' Quadrangle: Mingo, OK, 36095-B7 Catoosa, OK, 36095-B6 Broken Arrow, OK, 36095-A6 Oneta, OK, 36095-A6 T19N R15E Section 06,07,08,17,18,19 NAD 1983 UTM Zone 15N 36.121'N 95.738'W



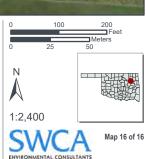


Data Point

Stream

Intermittent Stream

Wagoner County, OK USGS 7.5' Quadrangle: Mingo, OK, 36095-B7 Catoosa, OK, 36095-B7 Catrow, OK, 36095-A7 Oneta, OK, 36095-A6 T19N R15E Section 06,07,08,17,18,19 NAD 1983 UTM Zone 15N 36.1211°N 95,7341°W



APPENDIX E

Delineator Resumes



KRISTA MCCLURE, B.A., ASSISTANT STAFF BIOLOGIST

Krista McClure is an assistant staff biologist who has been working remotely for SWCA's Arlington, Texas office, for excess of one year. She is certified to conduct wetland delineations, with guidance from USACE regional supplements, as of March 2023. Ms. McClure has served as a field crew member in Oklahoma and Texas on a multitude of natural resource surveys, including aquatic resource delineations, habitat assessments for threatened and endangered species, aerial and on-the-ground raptor nest surveys, and Phase I environmental site assessments. Her experience in environmental consulting also entails biological resource desktop reviews, prey base assessment ground-truthing, and extensive stormwater pollution prevention plan (SWPPP) inspections associated with oil and natural gas pipeline construction and transmission line re-builds.

YEARS OF EXPERIENCE

1+

EXPERTISE

Field data collection, including notetaking and GPS data (using Juniper

Wetland and stream delineation

Raptor nest surveys

Natural resources and habitat surveys

Environmental compliance monitoring

Desktop reviews

EDUCATION

B.A., Sustainability Studies; University of Texas at Austin, TX; December 2021

B.A., Geography; University of Texas at Austin, TX; 2021

REGISTRATIONS / CERTIFICATIONS

Certified Wetland Delineator: Wetland Training Institute, Inc.; 2023

SELECTED PROJECT EXPERIENCE (* denotes project experience prior to SWCA)

Pittsburg to Johnston County; American Electric Power; Johnston County, Oklahoma. SWCA is conducting various cultural and natural resources services for a transmission line rebuild. Role: Assistant Staff Biologist. Performed wetland delineation and habitat suitability surveys for American Burying Beetle as crew member.

Barnsdall to Skiatook Transmission Line; American Electric Power; Osage County, Oklahoma. SWCA managed the protected species investigations, mitigation plan, and stormwater pollution prevention plan (SWPPP) for a transmission line rebuild. *Role:* Assistant Staff Biologist. Performed SWPPP inspections and generated inspection reports with photologs. Assisted with American Burying Beetle presence surveys.

Daytona Pipeline; Confidential Client and Location. SWCA managed the Section 404 aquatic resources delineation, cultural resources investigations, and protected species investigations prior to construction of a natural gas pipeline. Role: Assistant Staff Biologist. Performed wetland delineation and T&E species field surveys as crew member for proposed project and associated access roads.

Beaver Creek Delineation; Confidential Client and Location. SWCA provided environmental support via Section 404 aquatic resources delineation for a proposed solar project. Role: Natural Resource Technician. Performed wetland delineation as GPS technician for the proposed project.

Buzz Solar; Confidential Client and Location. SWCA was engaged to prepare a Phase I environmental site assessment, Section 404 aquatic resources delineation, and wildlife habitat assessment for a proposed solar project. Role: Natural Resource Technician. Recorded field observations and photos for Phase I environmental site assessment. Performed wetland delineation as crew member.

Wagon Wheel; Confidential Client and Location. SWCA provided environmental services that included bat, raptor, and prey base assessment surveys for a proposed wind project. Role: Natural Resource Technician. Assisted with aerial eagle (and other raptor) nest surveys. Conducted ground-truthing surveys for prey base (e.g., prairie dogs) assessment.



ANTHONY THORNTON, M.S., STAFF BIOLOGIST

Mr. Thornton is a staff biologist with over 8 years of experience, including 1 year of experience working in SWCA's Arlington, Texas, office. His project responsibilities include serving as crew lead for aquatic resources delineations and threatened and endangered (T&E) species surveys for habitat analysis. He has led multiple crews for aquatic resources delineation surveys within the Arid West, Great Plains, and Atlantic and Gulf Coastal Plains U.S. Army Corps of Engineers (USACE) wetland delineation regions. His versatility as a staff biologist also includes experience with Phase I environmental site assessments and report and permitting preparation. He is also certified to conduct aquatic resources delineations nationwide, following the USACE manual.

YEARS OF EXPERIENCE

8+

EXPERTISE

Plant identification and T&E species surveys with habitat assessment

Stream and wetland delineation per USACE manual with Richard Chinn Environmental Training, Inc., certification

Field data collection, including taking adequate notes and using Juniper Geode

Phase I environmental site assessments

American burying beetle surveys

Raptor nest surveys

Invertebrate and fish sampling for stream health assessment as part of Oklahoma's Blue Thumb program

Water and soil testing, vegetation surveys, and wetland delineation as part of development of the Oklahoma Rapid Assessment for Floodplain Wetlands

EDUCATION

M.S., Natural Resource Ecology and Management; Oklahoma State University; Stillwater; 2021

REGISTRATIONS / CERTIFICATIONS

Certified Wetland Delineator; Richard Chinn Environmental Training, Inc.; 2022

SELECTED PROJECT EXPERIENCE

AEP Rock Falls Wind Farm PCMM; American Electric Power, Kay County, Oklahoma. SWCA is conducting Post Construction Mortality Monitoring for an established wind farm. Role: Staff Biologist. Performed searcher efficiency trials, carcass persistence trials, and collected bat acoustic recordings for the project.

Pittsburg to Johnston County; American Electric Power; Johnston County, Oklahoma. SWCA is conducting various cultural and natural resources services for a transmission line rebuild. Role: Staff Biologist. Performed aquatic delineation and habitat suitability surveys for American burying beetle as field lead.

Barnsdall to Skiatook Transmission Line; American Electric Power; Osage County, Oklahoma. SWCA managed the protected species investigations, mitigation plan, and stormwater pollution prevention plan (SWPPP) for a transmission line rebuild. Role: Staff Biologist. Performed SWPPP inspections and generated inspection reports with photologs. Assisted with American burying beetle presence/absence surveys.

Natural Gas Pipeline: Confidential Client and Location. SWCA managed the Section 404 aquatic resources delineation, cultural resources investigations, and protected species investigations prior to construction of a natural gas pipeline. Role: Staff Biologist. Performed wetland delineation and T&E species field surveys as field lead for proposed project and associated access roads.

Beaver Creek Delineation; Confidential Client and Location. SWCA provided environmental support via Section 404 aquatic resources delineation for a proposed solar project. Role: Staff Biologist. Performed aquatic delineation as field lead for the proposed project.

Buzz Solar; Confidential Client and Location. SWCA was engaged to prepare a Phase I environmental site assessment, Section 404 aquatic resources delineation, and wildlife habitat assessment for a proposed solar project. Role: Staff Biologist. Recorded field observations and photos for Phase I environmental site assessment. Performed aquatic delineation as field lead.

Wagon Wheel; Confidential Client and Location. SWCA provided environmental services that included bat, raptor, and prey base assessment surveys for a proposed wind project. Role: Staff Biologist. Conducted aerial eagle (and other raptor) nest surveys.