

WETLAND DELINEATION FOR THE STERLING RANCH DEVELOPMENT PROJECT

EL PASO COUNTY, CO PROJECT NO. 15-001

PREPARED FOR:

M&S Civil Consultants 102 E. Pikes Peak Ave, Suite 306 Colorado Springs, Colorado 80901 Phone: 719-491-0818 Contact: Virgil Sanchez

PREPARED BY:

CORE Consultants, Inc. 1950 W. Littleton Boulevard, Suite 109 Littleton, CO 80201 Phone: 303-703-4444 Contact: Dan Maynard CORE Project Number: 15-001

MAY 7, 2015



TABLE OF CONTENTS	
EXECUTIVE SUMMARYIV	
1.0 INTRODUCTION	
2.0 METHODS	
3.0 SITE DESCRIPTION	
4.0 BACKGROUND DOCUMENTATION REVIEW74.1 Aerial Photograph Review84.2 National Wetlands Inventory Map Review84.3 USGS Topographic Map Review84.4 FEMA FIRM Floodplain Review94.5 County Soil Survey Map Review9	
5.0 RESULTS 10 5.1 Watercourses including WOUS 10 5.2 Wetlands 11 5.3 Soils 12 5.4 Hydrology 13 5.5 Vegetation 14	
6.0 CONCLUSIONS AND RECOMMENDATIONS15	
7.0 GENERAL COMMENTS 17	
REFERENCES	
COMMON WETLAND DELINEATION DEFINITIONS	



Wetland Delineation Report Sterling Ranch Development Project El Paso County, Colorado

LIST OF APPENDICES

APPENDIX I -

Sterling Ranch Site Location Map Sterling Ranch Wetland Delineation Map Sterling Ranch Soil Associations Map National Wetland Inventory Map FEMA Flood Insurance Rate Map

Appendix II –

Photographic Log

APPENDIX III –

Wetland Delineation Data Forms



EXECUTIVE SUMMARY

Core Consultants, Inc. (CORE) was retained by MS Civil Consultants, Inc. (Client) to perform a Wetland Delineation for the proposed Sterling Ranch Project (Project). The Project is located on 1,443.7 acres in unincorporated El Paso County (County), Colorado (Project Area). The Project includes 5,500 residential units, 56 acres of commercial development, 57 acres of school sites, 210 acres of parks, and twoacres of utilities. The County Board of Commissioners initially approved this project on November 10, 2008. The Project Area encompasses a portion of the perennial stream Sand Creek, its western tributaries, and adjacent uplands.

This Executive Summary is intended to be taken in context with the following report and is not designed to be used as a separate document. The following summarizes the results of the wetland delineation.

This document is an assessment of the potential regulatory status of wetlands, significant bodies of water, watercourses, and/or floodplains located within the Project Area, based on Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. The wetland delineation was performed in accordance with the US Army Corps of Engineers (USACE) Great Plains Regional Supplement (Version 2.0) (USACE 2010) and the 1987 USACE Wetland Delineation Manual (USACE 1987).

CORE conducted a site visit to assess the presence of wetlands, watercourses or other similar features within the Project Area, and, if identified, delineate their boundaries. Field work was conducted on February 4th and 5th and on March 10th, 11th, 16th, and 22nd, 2015. An earlier wetland delineation was conducted by Walsh Environmental Scientists and Engineers, LLC (Walsh) in 2009. A Jurisdictional Determination (JD) request was submitted to the USACE at that time. An approved JD was issued on April 14, 2008 under USACE File No. SPA-2007-00551-SCO. Observations of hydric soils, wetland vegetation, and hydrology aided in CORE's determination of the potential regulatory status of wetlands and Waters of the U.S. (WOUS) within the Project Area.

Based on the field reconnaissance and document review, it is the opinion of CORE that Sand Creek, the western tributary, in-line ponds, and abutting wetlands will maintain their status as jurisdictional waters of the U.S. (WOUS) due to a connection with downstream waters and the presence of a defined bed and bank system. Per Section 404 of the Clean Water Act, a USACE permit is required for the discharge of dredged or fill material into WOUS and mitigation is often necessary.



1.0 INTRODUCTION

Core Consultants, Inc. (CORE) was retained by MS Civil Consultants, Inc. (Client) to perform a wetland delineation for the proposed Sterling Ranch (Project). This report presents the results of the wetland delineation for the Project Area.

The Project is located on 1,443.7 acres in unincorporated El Paso County (County), Colorado. Refer to the *Site Location Map* in **Appendix I**. The Property is on the United States Geological Survey (USGS) Falcon Quadrangle on portions of Sections 27, 28, 32, 33, and 34 in Township 12 South, Range 65 West and the northwest portion of Section 4, Township 13 South, Range 65 West. The approximate coordinates of the project center are 39.964483 latitude and -104.664944 longitude (WGS 84 datum). Project Area elevation ranges from 7,337 feet in the northeast to 6,979 feet on the southern edge. The Project is in the Arkansas River drainage basin.

The proposed Project includes 5,500 residential units, 56 acres of commercial development, 57 acres of school sites, 210 acres of parks, two-acres of utilities, and associated infrastructure such as sewers and roads. The County Board of Commissioners initially approved this project on November 10, 2008. In April 2007, Walsh Environmental Scientists and Engineers, LLC (Walsh) completed a wetland delineation in support of the project (Walsh 2009). A Jurisdictional Determination (JD) request was submitted to the US Army Corps of Engineers (USACE) on June 8, 2007. An approved JD was issued April 14, 2008 under USACE File No. SPA-2007-00551-SCO. At that time, Sand Creek and one western tributary were determined to be under USACE jurisdiction.

2.0 METHODS

The purpose of the wetland delineation was to provide an update to the information gathered about the site in 2009 by Walsh; to determine if wetlands watercourses, or other bodies of water are still present within the Project Area in similar size and location; and wherever found, to delineate and survey the boundaries of these features and determine if they have the potential to fall under the jurisdiction of the USACE, based on Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

Identification of watercourses was initially performed utilizing existing mapping of known watercourses, including the National Hydrography Dataset (NHD) and topographic maps. Additionally, a review of current and historical



documentation, which included available aerial photographs, US Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps, soil survey maps, and floodplain maps, was performed in order to evaluate overall water resource characteristics of the Project Area. Watercourses and other water features identified in the preliminary desktop analysis were inspected in the field to assess their jurisdictional potential.

Core visited the Project Area to delineate wetlands on February 4th and 5th, and on March 10th, 11th, 16th, and 22nd, 2015. This wetland delineation was performed in accordance with the Great Plains Regional Supplement (Version 2.0) (USACE 2010) to the 1987 USACE Wetland Delineation Manual (USACE 1987).

The determination of a wetland depends on three basic parameters: 1) presence of hydrophytic vegetation, 2) presence of hydric soils, and 3) wetland hydrology for a specific period of time. Vegetation, soils, and hydrology were analyzed for the determination of the presence of wetlands, watercourses, and similar features. A wetland boundary delineation was conducted along potential WOUS, including wetlands, within the Project Area. Boundaries were mapped using a Trimble Geo 7X global positioning system (GPS) unit with sub-foot accuracy. Photographs depicting conditions at the time of the field reconnaissance are provided in **Appendix II**. Results of the field assessment and descriptions of observed features are included below, and in **Appendix III**: Wetland Delineation Data Forms.

2.1 Scope of Services

The Scope of Services for the wetland delineation included the following components:

- Background documentation review of aerial photographs (US Department of Agriculture [USDA] 2010), NWI Maps (USFWS 2014), U.S. Geological Survey Topographic Maps (USGS 1994), FEMA Flood Insurance Rate Maps (FIRM) (FEMA 2005), and associated data.
- Field reconnaissance that evaluates specific water resource characteristics and features within the Project Area.
- Generation of a Property Features Map, a Soils Survey Map, an NWI Map, and a FEMA Flood Zone Map illustrating the location of the surveyed wetland boundaries and other notable features in relation to the proposed Project Area boundary.



• Preparation and submittal of this report summarizing the findings of the above-described tasks.

3.0 SITE DESCRIPTION

The Sterling Ranch Project Area comprises approximately 1,500 acres of undeveloped land immediately northeast of the intersection of Vollmer Road and Black Forest Road in El Paso County, Colorado. Within the property, the Project Area encompasses stretches of the perennial stream Sand Creek, its nearest western tributary, and adjacent undeveloped land. The center of the property has been disturbed by some sand and gravel mining activities. The Project Area is predominantly bordered by undeveloped land, with sparse residential development to the west, northeast and south.

Sterling Ranch is located in the Foothill Grasslands (Level IV Ecoregion) of the Southwestern Tablelands (Level III Ecoregion) of Colorado (Chapman et al. 2006). The Foothill Grasslands are characterized by dissected and irregular plains and some scattered pine woodlands. Soils in the region are largely sandy and clayey loams which formed from arkosic sedimentary rock, alluviums, and weathered sandstone and shales. Currently, the region is dominated by rangeland land use with scattered cropland and increasing urban development. Historically, vegetation consisted of big and little bluestem (Andropogon gerardii) and (Schizachyrium scoparium), switchgrass (Panicum virgatum), fescues (Festuca spp.), prairie Junegrass (Koeleria macrantha), bluebunch wheatgrass (Pseudoroegneria spicata), needleand-thread (Hesperostipa comata), slender wheatgrass (Elymus trachycaulus), wheatgrass (Pascopyrum smithii), sideoats western grama (Bouteoloa curtipendula), and galleta grass (Pleuraphis sp.) (Chapman et al. 2006).

Hydrology of the main channel of Sand Creek has likely been affected by increasing development at the western boundary of the project and by an apparent quarry which exists in the south-central portion of the site. Additionally, manmade detention ponds have also altered the natural hydrology through this stretch of Sand Creek.

4.0 BACKGROUND DOCUMENTATION REVIEW

A review of Project Area background documentation was performed utilizing aerial photographs, NWI Maps, USGS Topographic Maps, FEMA FIRM Maps, and county Soil Survey Maps. A discussion of each evaluation process follows.



4.1 Aerial Photograph Review Results

Aerial photographs dated 1999, 2003, 2004, 2005, 2006, 2008, 2011, and 2013 were obtained from the U.S. Department of Agriculture Farm Service Agency (USDA 2010). Aerial photograph interpretation was conducted to identify potential wetlands or other landscape features within the property. Visible landscape features include a watercourse (Sand Creek), three manmade stock ponds within the main channel of Sand Creek, apparent grassland areas with scattered shrubs, and a large (approximately 120 ac.) quarry area in the south-central portion of the site (operations commenced between 2003 and 2004)(USDA 2010). Residential development to the west, south, and northeast of the property appears to have been initiated prior to 1999, and development has increased until present time. Sand Creek appears to have undergone limited changes during the time period reviewed, as construction of manmade ponds occurred prior to 1999.

4.2 National Wetlands Inventory Map Review

A review of NWI Maps (USFWS 2014) was conducted to determine the likely presence, location, size, and type of wetlands potentially located within the Project Area. The USFWS generates NWI Maps through aerial photograph interpretation. NWI maps may not show accurately the extent or existence of wetland systems in a specific area, nor do they always correctly identify wetlands, if present. Therefore, the maps were utilized for preliminary analysis only. Field reconnaissance was conducted to better determine the extent and type of wetlands located within the Project Area.

According to NWI data, three mapped wetlands are located within the property. Three potential PUBF (Palustrine Unconsolidated Bottom, Semi-permanently Flooded) freshwater ponds are located in-line with the main channel of Sand Creek and correspond to the three manmade stock ponds depicted in aerial imagery. Additional potential PUBF wetlands are located in the vicinity of the Project. Additional NWI mapped features in the vicinity of the Project Area include two potential R4SBA (Riverine, Intermittent Streambed, Temporarily Flooded) wetlands located east and west of the property. Field observations generally confirmed the presence of NWI wetlands in the Project Area; refer to the National Wetland Inventory Map in Appendix I for more details regarding NWI mapped wetlands.

4.3 USGS Topographic Map Review

The USGS 7.5-Minute Topographic map – Falcon NW Quadrangle (USGS 1965, Revised 1994) indicates that elevations within the Sterling Ranch property range between approximately 7,290 and 6,980 feet above mean sea level (AMSL). The map shows the property generally sloping from higher elevations in the northeast to



lower elevations in the southwest. Topographic maps do not depict any buildings or structures within the property with the exception of a pumping station on the central western boundary of the property. One watercourse, Sand Creek, is depicted within the property, with an unnamed western tributary located in the northwest quadrant of the site. Three manmade stock ponds are depicted within the main channel of Sand Creek. In general, the features indicated on the topographic maps correspond with field observations, except that further development than what is depicted in these maps has occurred in the vicinity of the Project Area.

4.4 FEMA FIRM Floodplain Review

A review of FEMA FIRM floodplain maps (FEMA 2005) was conducted to determine the existence, location, and extent of floodplains which may be located within the Project Area. The FIRM maps show floodplain areas along rivers and tributaries. The maps record the following data: 100-year (1% chance of annual flooding) and 500-year (0.2% annual chance of flooding) floodplains, the height of the base flood (Base Flood Elevations), and the risk premium zones developed from topographical information across a floodplain. The FEMA generates FIRM floodplain maps for flood insurance purposes.

FEMA Floodplain maps for El Paso County (FEMA 2005) were reviewed and indicate portions of the Project Area within and adjacent to the main channel of Sand Creek are located within a designated Zone A Special Flood Hazard Area, and are at risk of inundation by a 100-year flood with base flood elevations undetermined. The remainder of the property is identified as Zone X flood zones, which consist of areas of minimal flood risk "outside the 1-percent and 0.2-percent-annual-chance floodplains" (FEMA 2005). The presence of a Zone A floodplain indicates that certain limited floodplain constraints may be anticipated for this project. Coordination with the local floodplain administrator is recommended to assess the extent of potential floodplain constraints and potential permitting requirements. Refer to the *FEMA Flood Insurance Rate Map* in **Appendix I** for additional information regarding floodplains located within the Sterling Ranch property.

4.5 County Soil Survey Map Review

The El Paso County Soil Survey indicates the dominant soil associations comprising the Project Area are Columbine gravelly sandy loam (0 to 3 percent slopes), Pring coarse sandy loams (3 to 8 percent slopes), and Blakeland loamy sand (1 to 9 percent slopes). These soil series are classified as hydric soils by the Natural



Resources Conservation Service (NRCS) with the exception of Pring coarse sandy loams (NRCS 2015).

5.0 RESULTS

5.1 Watercourses including WOUS

The information gathered from desktop review and the field reconnaissance indicates that one perennial stream (Sand Creek) and one intermittent western tributary constitute the main watercourses on the site. See **Appendix I**: Wetland Delineation Map.

Sand Creek generally flows from north to south through the middle of the property. The creek is located within a deeply incised and sinuous channel that ranges in width from approximately 50 to 100 feet. In some areas the channel is canyon-like with nearly vertical walls that are 10 to 20 feet high. Many of the banks are denuded and perched high above the streambed. The flowing creek and associated wetlands are located in the bottom of the channel. In most sections, the creek is shallow and wide with two to three inches of slowly flowing water in a 10 to 20 foot-wide main channel. There is dense cover of herbaceous wetland plants and in some areas the creek is braided with sandy upland in-stream islands. In a few sections, the creek is narrow with short drops and micro pools. There are five ponded areas along Sand Creek; three manmade ponds with earthen dams (Ponds 1, 2, and 4), a ponded area created by a road crossing (Pond 3), and the small Pond 5 created by flow exiting Pond 4. Culverts preserve hydrologic connection throughout the site.

The western tributary to Sand Creek is a narrow, forked channel that meanders through uplands before joining the main channel to the south (off-site). Water (two inches) was present in most of the northern half of the channel at the time of the site visit, although water may only be seasonally present. A fence splits the western tributary roughly in half. The southern half of the western tributary is different than the northern half. The channel is narrower, drier, and there was no surface water. Bed and bank are relatively poorly defined, however there is hydrophytic vegetation along the channel bed.

Both Sand Creek and the main western tributary were thought to be jurisdictional WOUS following the on-site investigation. Hydrologic connection was maintained throughout the property, including through the three manmade ponds which have outflows built into the berms in the form of culverts. Sand Creek flows into Fountain Creek (a jurisdictional waterway) further downstream and south of the city of Colorado Springs.



5.2 Wetlands

Potentially jurisdictional wetlands were observed throughout both the main channel of Sand Creek and the western tributary. Soils, hydrologic indicators, and vegetation were examined on site to determine the presence or absence of wetlands.

Wetlands associated with Sand Creek are generally 20 to 80 feet wide and occupy 50 to 90 percent of the channel bottom (Wetlands 6-10 on the *Wetland Delineation Map*, **Appendix I**). Wetland 4 in the vicinity of Pond 1 is atypical in that the wetland is split into two areas. The western wetlands are in a broad, low area and appear to be remnant wetlands associated with the historic creek location. Some water flows over the southwest edge of Pond 1 and contributes to hydrology in this area. Along the east side, two ditches seem to function as the low flow channel for the Creek. A shallow ditch appears to have been cut to direct water into Pond 1, water flows beneath the dam via a culvert, then south for approximately 200 feet via a wide ditch or modified natural channel, and then rejoins the main channel of Sand Creek. There is one small isolated wetland (Wetland 5) located south of the dam for Pond 1.

Wetlands associated with the northern half of the western tributary are generally 15 to 30 feet wide and occupy a broad swale (Wetland 1). The northern ends of the western tributary (Wetlands 11 and 12) are separated from the main channels by a dirt access road (see hydrology section for additional details). Wetland 3 is an isolated wetland located west of Wetland 1. Along the south half of the western tributary, Wetland 2 is narrower and drier. A small copse of trees marks the southern boundary of the property along the western tributary, with a dense thicket of shrubs lining the banks for several hundred feet along the southern (downstream) end.

Table 1 below describes the locations and types of wetlands on the Projectthat may be impacted by the construction of roadways.

Wetland Number	Location	LATITUDE	LONGITUDE	Wetland Type
WL 1	Western Tributary	38.95605° N	-104.68106° W	PEMC (Palustrine Emergent)
WL 2	Western Tributary	38.95469° N	-104.68043° W	PSSC (Palustrine Scrub-Shrub)

 Table 1. Wetland Location Points*



WL 3 (Isolated)	Near Western Tributary	38.95755° N	-104.68055° W PEMC (Palustrine Emergent	
WL 4	Sand Creek (North)	38.97032° N	-104.66583° W	PEMCh (Palustrine Emergent)
WL 5 (Isolated)	Sand Creek (North)	38.97102° N	-104.66483° W	PEMC (Palustrine Emergent)
WL 6	Sand Creek (Middle)	38.96711° N	-104.66814° W	R4SBC (Riverine Intermittent)
WL 7	Sand Creek (Middle)	38.96273° N	-104.67327° W	R4SBC (Riverine Intermittent)
WL 8	Sand Creek (South)	38.96108° N	-104.67268° W	R4SBC (Riverine Intermittent)
WL 9	Sand Creek (South)	38.95743° N	-104.67466° W	R4SBC (Riverine Intermittent)
WL 10	Sand Creek (South)	38.95586° N	-104.67339° W	R4SBC (Riverine Intermittent)
WL 11	Western Tributary	38.95849° N	-104.68049° W	PEMC (Palustrine Emergent)
WL 12	Western Tributary	38.95849° N	-104.67928° W	PEMC (Palustrine Emergent)

*For the location of WL 42 coordinates were taken at the point where wetland vegetation transitioned from emergent (WL 1) to scrub-shrub

5.3 Soils

The following section discusses the Natural Resources Conservation Service (NRCS) soils series that were mapped in the Project Area (USDA, 2015). Refer to **Appendix I**: Sterling Ranch Soil Associations Map). Dominant soil series included:

- Columbine gravelly sandy loam, 0 to 3 percent slopes, covers much of the southeast upland areas and is the most abundant soil in the Project Area (approximately 47 percent [~47%] of the Project Area).
- Pring coarse sandy loam, 3 to 8 percent slopes, is mapped along Sand Creek and is also common (~44%).
- Blakeland loamy sand, 1 to 9 percent slopes, is mapped west of the tributary and east of Sand Creek (~9%).



 Blakeland-Fluvaquentic Haplaquolls are mapped along much of the Western Tributary (~1%).

All of the mapped soil series are on the NRCS Hydric Soils List (NRCS, 2014). Each of the soil series are described as having dark A-horizons with dry soil chromas of 2 or 3.

Soil samples were taken at each of the nine sampling points (refer to **Appendix I**: *Wetland Delineation Map* and **Appendix III**: *Wetland Delineation Data Forms*). All soil pits were dug near the suspected wetland/non-wetland boundary as indicated by the presence of hydrophytes. Soils observed at sampling points were generally consistent with the mapped types, including the presence of a dark A-horizon in upland areas. Refer to the wetland delineation data sheets in **Appendix III** for complete soil profiles.

5.4 Hydrology

Flows from Sand Creek and its western tributary are the primary hydrologic sources for wetlands in the Project Area. Based on the extent of wetland vegetation beyond areas with surface water, and the presence of saturated sand at a depth of two-inches at SP-8, Sand Creek likely has significant sub-surface flows. Runoff from naturally occurring events (i.e. snowmelt and precipitation) flows into these areas. Artificial sources of hydrology were not observed on the Project, although hydrology has been altered by construction. Hydrologic indicators observed at wetlands on the site included surface water, high water table, saturation, water stained leaves, hydrogen sulfide odor, oxidized rhizospheres on living roots, and presence of reduced iron (see **Appendix III**: Wetland Delineation Data Forms).

The hydrology of Sand Creek has been altered by the construction of earthen dams to create three stock ponds (Ponds 1, 2, and 4). These three ponds are identified by the NWI as Palustrine Unconsolidated Bottom (PUBF). The Pond 4 outfall culvert drains into another small (approximately six-foot diameter) open water area. Finally, a fifth ponded area, Pond 3, appears to have been created by construction of a road. Standpipes and culverts are used to drain the ponds. They also appear to limit the volume of water that flows through Sand Creek, so in most areas the active channel is almost flat with slowly flowing water.

The hydrology of the western tributary to Sand Creek appears to have been altered by construction of an industrial facility to the north (upstream). Based on aerial photographs, it appears this facility was constructed on top of wet swales that historically drained into the western tributary, thus likely reducing flow. Two



channels flow onto the Project Area from this facility (Wetlands 11 and 12), immediately flow under an access road via culverts (into Wetland 1), and then converge within the Project Area approximately 400 feet south of the property boundary. However, the culvert for the eastern channel (downstream and south of Wetland 12) now appears to be clogged, water is ponding along the north side of the road, and does not appear to flow into Wetland 2. Thus, the portion of the western tributary (Wetland 1) near the road appears to be drying up, but there appears to be well-developed wetland hydrology in the rest of Wetland 1 as indicated by surface water and surface saturation. Wetland 3 is an isolated wetland located in a low area west of Wetland 1. The southern/downstream portion (Wetland 2) of the western tributary is narrower and drier at the surface than the northern portion. Surface conditions might be drier because there is proportionally more subsurface flows due to different soils or less soil compaction by cattle.

5.5 Vegetation

Vegetation in the upland areas consists of short- and mid-grass prairie dominated by blue grama (*Bouteloua gracilis*). Other species include fringed sage (*Artemisia frigida*), mountain muhly (*Muhlenbergia montana*), western wheatgrass, purple three-awn (*Aristida purpurea*) and prairie Junegrass. Cattle were present in most of the project area in February, but were gone in March.

Wetlands along the Sand Creek channel are dominated by herbaceous species. Areas along the stream were heavily grazed in February, but the cattle had been removed prior to the March site visits and new growth was visible. Plants observed in wetlands on the site ranged in wetland indicator status from OBL (obligate wetland plants) to UPL (upland plants), though plants rated OBL and FACW (facultative wetland plants) were dominant. The wettest areas are dominated by Nebraska and beaked sedge (*Carex nebrascensis* and *C. utriculata*), along with Rocky mountain rush (*Juncus saximontanus*). Other dominant hydrophytes are arctic rush (*Juncus arcticus*) and redtop (*Agrostis gigantea*). Other common wetland species include panicled bulrush (*Scirpus microcarpus*), saltgrass (*Distichlis spicata*), and switchgrass (*Panicum virgatum*). Slender wheatgrass (*Elymus trachycaulus*) was common on slopes just above the wetlands.

Along Sand Creek, there are some patches of sandbar willow (*Salix exigua*) with overall cover of roughly ten percent. Wetland vegetation associated with the ponds is similar to that found along the main channel of Sand Creek. The exception to this is Pond #2 which also has areas of dense emergent wetland vegetation dominated by, broadleaf cattail (*Typha latifolia*) and hardstem bulrush (*Schoenoplectus acutus*).



Wetlands along the northern portion of the western tributary (Wetland 1) are dominated by herbaceous species. The wettest areas are dominated by sedges. In drier wetland areas, rushes and grasses are dominant. The southern half of the western tributary (Wetland 2) is a relatively dry wetland that does not appear to have been grazed in the past year. There are few sedges and more common species include redtop, artic rush, and Canada wildrye (*Elymus canadensis*). At the southern end of the western tributary there is a small scrub-shrub wetland where snowberry (*Symphoricarpos occidentalis*), peachleaf willow (*Salix amygdaloides*), and plains and narrowleaf cottonwood (*Populus deltoides*, *P. angustifolia*) are associated with the channel.

6.0 CONCLUSIONS AND RECOMMENDATIONS

A wetland delineation was completed by Walsh Environmental Scientists and Engineers, LLC (Walsh) and included an assessment of the previous project design. A Jurisdictional Determination (JD) request was submitted to the USACE at that time. An approved JD was issued April 14, 2008 under USACE File No. SPA-2007-00551-SCO. At that time, Sand Creek and one western tributary were determined to be under USACE jurisdiction. The same conclusions were reached by CORE in 2015.

In summary, one watercourse, Sand Creek, and its western tributaries are located within the Sterling Ranch property. Sand Creek is a perennial stream with a defined bed and bank and appears to flow into Fountain Creek downstream. The western tributary to Sand Creek also has a somewhat nebulous, though mostly defined bed and bank. A site visit with the USACE on February 19, 2015 provided clarification on the status of the western tributary, with USACE liaison Christopher Grosso generally agreeing with Core's assessment of the site. As such, both Sand Creek and its primary western tributary are expected be still be considered jurisdictional WOUS by the USACE. Accordingly, impacts to these channels or associated in-stream or adjacent wetlands would require permitting through the USACE under Section 404 of the Clean Water Act.

The USACE typically has jurisdiction over navigable or traditionally navigable waters, relatively permanent waters, and wetlands that abut such waters, and determines jurisdiction over other waters based predominantly on their significant nexus to navigable or traditionally navigable waters (i.e. WOUS). Impacts to WOUS should be avoided and minimized to the extent possible. A permit under Section 404 of



the Clean Water Act is required for the discharge of dredged or fill material into WOUS and mitigation is typically required.

While the USACE regulates only those activities resulting in a discharge of dredge or fill material into waters of the U.S., the Colorado Department of Public Health and Environment (CDPHE) has the authority to regulate activities resulting in a discharge of pollutants into state waters. The CDPHE conducts Section 401 certification reviews of projects in Colorado requiring a CWA Section 404 permit from the USACE. The purpose of these certification reviews is to determine whether a proposed discharge will comply with Colorado water quality standards.

In Colorado, joint Section 404 and 401 permitting is utilized through the Nationwide Permit (NWP) program, as NWPs are certified by statute. A NWP is a general permit intended to apply throughout the United States and is designed to eliminate the need to issue an individual permit for specific small-scale activities which minimally affect wetlands. NWPs allow certain activities to take place in WOUS which may result in minimal impacts to WOUS, including wetlands.

Should impacts to WOUS require the loss of greater than 0.5 acre and/or 300 linear feet of stream bed, a residential development project would be permitted under an Individual Permit (IP). A pre-construction notification (PCN) is not required for activities permitted under an IP. Rather, IPs require a 30-day public notice period, and a separate 401 Water Quality Certification process will be required through CDPHE.

The Project Area encompasses portions of the perennial stream Sand Creek, a minor tributary to the west, and adjacent undeveloped upland. It is anticipated that there will be unavoidable impacts to jurisdictional waters associated with the main channel of Sand Creek and its main western tributary. Core understands that the project will likely be constructed in phases. Impacts for each phase would be permitted under one of the two aforementioned Section 404/401 permitting processes depending on the type of work and impacts to WOUS. The first stage of the project is road construction. The resulting impacts to WOUS are expected to be permitted under Nationwide Permit 14 for Linear Transportation Crossings. As the project moves forward, additional USACE permitting will be required.

The proposed preliminary plan layout indicates far more disturbance than linear transportation crossings and appears to cut off the wetland to the south (as does the proposed Marksheffel Road through the City parcel). Verify USACE requirements.



7.0 GENERAL COMMENTS

This report was intended to provide general information regarding the Project Area, using readily-available published information, agency databases, and field reconnaissance. A wetland delineation such as the one performed for this Project Area, is of limited scope, is noninvasive and cannot eliminate the potential that environmental concerns are present at the Project Area beyond what is identified by the limited scope of this report.

This report was performed in accordance with generally accepted practices of this profession undertaken in similar studies at the same time and in the same geographical area. This report has been prepared for the exclusive use and reliance of our Client for the specific application as discussed.

Should you have any questions regarding this or any other matter, please feel free to contact our office at (303) 703-4444.

Sincerely, CORE Consultants

Jun Myun

Daniel Maynard, Project Coordinator/Ecologist



REFERENCES

- Chapman, S.S., Griffith, G.E., Omernik, J.M., Price, A.B., Freeouf, J., and Schrupp, D.L., 2006, Ecoregions of Colorado. Reston, Virginia, U.S. Geological Survey (map scale 1:1,200,000). ftp://ftp.epa.gov/wed/ecoregions/co/co_front.pdf
- Federal Emergency Management Agency. 2005. El Paso County, Colorado FEMA Flood Insurance Rate Maps. Map 08041C0535F.
- Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. The National Wetland Plant List: 2014 Update of Wetland Ratings. Phytoneuron 2014-41: 1-42.
- Natural Resources Conservation Service (NRCS). 2014. List of Hydric Soils. Available at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/
- U.S. Army Corps of Engineers (USACE). 1987. Wetlands Delineation Manual.
- USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Regional Supplement (Version 2).
- U.S. Department of Agriculture. 2010. Farm Service Agency National Agricultural Imagery Program.
- U.S. Fish and Wildlife Service. 2015. National Wetland Inventory. Available at: http://www.fws.gov/wetlands/.
- U.S. Geological Survey 7.5-Minute Topographic Maps. 1994. Falcon NW Quadrangle Colorado.
- Walsh Environmental Scientists and Engineers, LLC. 2009. Wetland Impact Report for the Sterling Ranch Property in El Paso County. Prepared for Morely-Bentley Investments, Inc. April 13, 2009.



COMMON WETLAND DELINEATION DEFINITIONS

<u>Atypical wetland</u>: This term refers to areas in which one or more parameters (vegetation, soil and/or hydrology) have been sufficiently altered by human activities or natural events to preclude the presence of wetland indicators of the parameter.

<u>Emergent Wetland</u>: Vegetation classification of a wetland system where the dominant vegetation consists of rooted herbaceous plant species that have parts extending above a water surface.

<u>100-year flood</u>: A flood with a magnitude that has a 1% chance of occurring or being exceeded in any given year.

<u>Floodplain:</u> The area of land adjoining a river or steam that will be inundated by a 100-year flood.

<u>Floodway:</u> The channel of a river or stream and the portions of the floodplain adjoining the channel that is reasonably required to carry and discharge a 100-year flood.

<u>Inland lake or stream</u>: "...any natural or artificial lake, pond or impoundment which has a surface area of 5 acres or greater; a river, stream or creek which may or may not be serving as a drain; any body of water which has definite banks, a bed and visible evidence of a continued flow or continued occurrence of water..." as defined by Part 301, Inland Lakes and Streams, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

<u>Hydric soil</u>: Soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (1991 National Technical Committee on Hydric Soils definition).

<u>Hydrophytes:</u> Plant species that grows in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content; plants typically found in wet habitats.

<u>Scrub-Shrub Wetland</u>: Vegetation classification of a wetland system where the dominant vegetation consists of woody plants less than 3 inches in diameter but greater than 3 feet in height.

<u>Typical situation</u>: That which normally, usually, or commonly occurs.



<u>Vernal Pool:</u> Shallow, intermittently-flooded forested wetland, generally dry for most of the summer and fall.

<u>Wooded (Forested) Wetland</u>: Vegetation classification of a wetland system where the dominant vegetation consists of woody plants 3 inches in diameter or greater regardless of height.

<u>Wetland</u>: "...land characterized by the presence of water at a frequency and duration sufficient to support and that under normal circumstances does support wetland vegetation or aquatic life and is commonly referred to as a bog, swamp, or marsh..." as defined by Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451.

<u>Wetland hydrology:</u> Hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season.

Wetland Indicator Status:

OBL: Obligate wetland plant that occurs almost always, 99% of the time, in wetlands under natural conditions, but which rarely occur in non-wetlands.

FACW: Facultative wetland plant that occurs usually, 67% to 99% of the time, in wetlands, but also occurs 1% to 33% of the time in non-wetlands.

FAC: Facultative plant that occurs in both wetlands and non-wetlands 33% to 67% of the time.

FACU:Plant that occurs sometimes, 1% to 33% of the time, in wetlands but occurs more often, 67% to 99% of the time, in non-wetlands.

UPL: Plant that occurs almost always, 99% of the time, in uplands under natural conditions, but which rarely occurs in wetlands.



Wetland Delineation Report Sterling Ranch Road Construction El Paso County, Colorado

APPENDIX I

Sterling Ranch Site Location Map Sterling Ranch Wetland Delineation Map Sterling Ranch Soil Series Map National Wetland Inventory Map FEMA Flood Insurance Rate Map



Sterling Ranch Site Location Map

El Paso County, Colorado

0 2,000 4,000 Feet 1 inch = 4,000 feet



CIVIL ENGINEERING DEVELOPMENT CONSULTING LAND SURVEYING

303.703.4444

1950 W. Littleton Blvd., Ste. 109 Littleton, CO 80120



Sterling Ranch Wetland Delineation Map

El Paso County, Colorado

0 500 1,000 Feet 1 inch = 1,000 feet

Date: 4/28/2015 Project #: 15-001



CONSULTANTS

Sample Point
 NHD Watercourse
 Project Boundary

CIVIL ENGINEERING DEVELOPMENT CONSULTING LAND SURVEYING

303.703.4444 1950 W. Littleton Blvd., Ste. 109 Littleton, CO 80120



County Soil Survey Map

El Paso County, Colorado

2,000 1,000 0 Feet 1 inch = 1,500 feet

Date: 5/20/2015 Project #: 15-001

Hydric Soil

> CIVIL ENGINEERING DEVELOPMENT CONSULTING LAND SURVEYING

303.703.4444

CONSULTANTS

1950 W. Littleton Blvd., Ste. 109 Littleton, CO 80120



Sterling Ranch National Wetland Inventory Map El Paso County, Colorado

1,000 2,000

Feet

1 inch = 2,000 feet

0

Study Area NHD Watercourse

ONSULTANTS

🖊 NWI Wetland NHD Waterbody

> CIVIL ENGINEERING DEVELOPMENT CONSULTING LAND SURVEYING

303.703.4444

1950 W. Littleton Blvd., Ste. 109 Littleton, CO 80120

Date: 5/19/2015 Project #: 15-001



El Paso County, Colorado

CIVIL ENGINEERING DEVELOPMENT CONSULTING LAND SURVEYING

1,000 2,000 Feet 1 inch = 2,000 feet

0

Date: 5/19/2015 Project #: 15-001

303.703.4444 ONSULTANTS

1950 W. Littleton Blvd., Ste. 109 Littleton, CO 80120



Wetland Delineation Report Sterling Ranch Road Construction El Paso County, Colorado

<u>APPENDIX II</u> Photo Log





Sampling Point 1 (SP 1) Vicinity – Looking south down Sand Creek from just south of Pond 4. Typical Sand Creek stream channel characteristics and vegetation. 2/5/15



Sampling Point 2 Vicinity – Looking northwest (upstream) from proposed Sterling Ranch Road crossing. Typical Sand Creek stream channel characteristics and vegetation. 2/5/15





Sampling Point 3 Vicinity– Looking north along western tributary (Wetland 1) from proposed Sterling Ranch Road crossing. Area is typical of the northern half of the western tributary. Photo taken on 2/5/15 when cattle were still on the site.



Sampling Point4 Vicinity – Near proposed Briargate Parkway crossing of Wetland 6. Typical Sand Creek stream channel characteristics and vegetation. 2/5/15





Sampling Point 5 – Upland near Western Tributary, facing southeast towards Western Tributary. 3/10/15



Sampling Point 6 – West side of Western Tributary wetland, looking south along Wetland 1 swale. Photo taken on 3/10/15; cattle had been removed 2-3 weeks earlier.





Sampling Point 7 – Wetland vegetation in Sand Creek, facing northwest. Note shallow, standing water on left side of photo. 3/11/15



Sampling Point 8 – Wetland on low bench along east side of Sand Creek, facing west towards SP 7. 3/11/15





Sampling Point 8 – Upland above Sand Creek, facing west towards SP 7 and 8. 3/11/15



Pond 1 – Looking north from west end of the dam. Water flows out of the pond on this southwest corner and there is also a culvert in the dam center that drains south into the main channel of Sand Creek. The distant cottonwoods are growing along Sand Creek just north of the Project Area. 3/22/15





Pond 2 – Looking north from dam. Sand Creek enters the pond on left side of the photo. Pond has well-developed fringe of emergent vegetation. 3/16/15



Pond 3 – Looking north from the road, across a shallow ponded area and up Sand Creek (Wetland 7). Water from the adjacent uplands flows into this area via a sandy channel partially visible on the right (east) side of the photo. 3/16/15





Pond 4 – Looking northwest from dam. This deep pond has a sparse, narrow wetland fringe. The pond drains via the standpipe, to a culvert under the dam, and into Pond. Pond 5 is a small open water area (~6' diameter). 3/16/15



Western Tributary, Wetland 2 – Southern half of the western tributary to Sand Creek, facing north along the poorly defined channel with a narrow band of wetland vegetation. 3/10/15



Wetland Delineation Report Sterling Ranch Road Construction El Paso County, Colorado

<u>Appendix III</u> Wetland Delineation Data Forms

WETLAND DETERMINATION DA	ATA FORM – Great Plains Region
Project/Site: Sterling Ranch South city/c	ounty: <u>El Paso (o.</u> Sampling Date: <u>2/5/15</u>
Applicant/Owner: MS Civil Consultants	State: Sampling Point:
Investigator(s): DAN MAYNARD Section	on, Township, Range: Sec. 33, TIZS R65W
Landform (hillslope, terrace, etc.):Local	relief (concave, convex, none): Concave Slope (%): 1-2%
Subregion (LRR): Lat: 38.7	5 886 N Long: -109.67310 W Datum: W9> 87
Soil Map Unit Name: Pring (Aridic Haplustolls)	NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Y Are Vegetation, Soil, or Hydrology significantly distur Are Vegetation, Soil, or Hydrology naturally problema	No (If no, explain in Remarks.) bed? Are "Normal Circumstances" present? Yes No atic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sam	pling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Yes No
Remarks: Vegetation is disturbed by P	nearly cattle graveing

VEGETATION – Use scientific names of plants.

4.	Tree Stratum (Plot size:) 1 2 3.	Absolute <u>% Cover</u>	Dominant Indicator Species? Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): Total Number of Dominant
Sabling/Shrub Stratum (Plot size:	4.			Species Across All Strata: (B)
1.	Sapling/Shrub Stratum (Plot size:)	_	= Total Cover	Percent of Dominant Species
2.	1	· · · · · · · · · · · · · · · · · · ·	·	Prevalence Index worksheet:
3.	2			Total % Cover of: Multiply by:
4:	3	·		OBL species x 1 =
3.	4		·	FACW species x 2 =
Herb Stratum (Plot size: 5 × 5)	s		= Total Cover	FAC species
1. Duncus archicus 75 V MACW 2. Carex Utriculata 8 OBL Column Tetals: (A) (B) 3. Kosa woodsii 10 FACU Prevalence Index = B/A = (A) (B) 4. Poa trivialis 15 FACU Hydrophytic Vegetation Indicators: (A) (B) 5. Cirsivm arvense 2 FACU Hydrophytic Vegetation Indicators: (A) (B) 6. 7. 2 FACU Hydrophytic Vegetation Indicators: (A) (B) 9. 3.	Herb Stratum (Plot size: <u>5 × ></u>)			FACU species x 4 =
2. Carex () firiculata 8 0BL Column Totals:(A)(B) 3. Ko Sa wood Sii 10 FACU Prevalence Index = B/A = 4. Ioa frivialis 15 FACU Hydrophytic Vegetation Indicators: 5. Civsivm arviense 2 FACU Hydrophytic Vegetation Indicators: 6.	1. Duncus arcticus	75	V HACW	UPL species x 5 =
3. Ko Sa Wood Sii 10 FACU Prevalence Index = B/A = 4. Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 1 5. Cirsium anvense 2 FACU Hydrophytic Vegetation Indicators: 1 6. 1 1 Rapid Test for Hydrophytic Vegetation 2 Dominance Test is >50% 7. 3 Prevalence Index is \$3.0^1 4 Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 9. 10. 10 = Total Cover Problematic Hydrophytic Vegetation 1 (Explain) 1 1 1 = Total Cover Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 1.	2. Carex Utiriculata	8	OBL	Column Totals: (A) (B)
4. Yoa 4n Vialities 15 5. Cirsivm anvenge 2 Frequencies 6. 1 - Rapid Test for Hydrophytic Vegetation 7. 2 - Dominance Test is >50% 8. 3 - Prevalence Index is \$3.01 9. - A - Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet) 10. - Problematic Hydrophytic Vegetation1 (Explain) 11. - Problematic Hydrophytic Vegetation1 (Explain) 1. - Problematic Hydrophytic vegetation1 (Explain) 1. - Hydrophytic Vegetation Problematic. 9. - Hydrophytic Vegetation Problematic. 1. - Hydrophytic Vegetation Problematic. 9. - Total Cover 1. - Problematic Hydrophytic Vegetation Problematic. 1. - Problematic Nucless disturbed or problematic. 1. - Total Cover Yes No Remarks: - No	3. Rosa woodsii	10	FACU	Z Prevalence Index = B/A =
5. Cursion arvense 6. 1 - Rapid Test for Hydrophytic Vegetation 7. 2 - Dominance Test is >50% 8. 3 - Prevalence Index is \$3.01 9. 4 - Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet) 10. 10. 11. 10. 12. 11. 13. 11. 14. 11. 14. 11. 15. 11. 16. 11. 17. 11. 18. 11. 19. 10. 10. 11. 11. 11. 12. 11. 14. 11. 15. 11. 16. 11. 17. 11. 18. 11. 19. 11. 10. 11. 10. 11. 11. 11. 12. 11. 13. 11. 14. 11. 15. 11. 16.	4. Voa trivialis	15	MACW	Hydrophytic Vegetation Indicators:
6.	5. Cirsium arvenge	-2	BACU	+ 1 - Rapid Test for Hydrophytic Vegetation
7.	6		· · · · · · · · · · · · · · · · · · ·	+ 2 - Dominance Test is >50%
8	7			3 - Prevalence Index is ≤3.0 ¹
9.	8			4 - Morphological Adaptations ¹ (Provide supporting
10	9			data in Remarks or on a separate sheet)
Woody Vine Stratum (Plot size:)	10	110		Problematic Hydrophytic Vegetation' (Explain)
1.	Woody Vine Stratum (Plot size:)	-40	= Total Cover	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.	1			
Remarks:	2	_	= Total Cover	Hydrophytic Vegetation Present? Yes No
	Remarks:			

Profile Description: (Describe to the depth		
	needed to document the indicator or confin	rm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹ Loc ²	Texture Remarks
0-4" 0YR 3/3 100		Cause SL A Horizon
4-12+" IDYR 3/2 GO	7.5YR 4/6 20 C, PL	Correst A Howizon (Poner inter
V-12+" IDYR GIL 20		The C H Horr Abre Chorrison
The winder au		Logmy and
	<u></u>	· · · ·
¹ Type: C=Concentration, D=Depletion, RM=R	educed Matrix, CS=Covered or Coated Sand (Grains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all LF	RRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	1 cm Muck (A9) (LRR I, J)
Histic Epipedon (A2)	🛨 Sandy Redox (S5)	Coast Prairie Redox (A16) (LRR F, G, H)
Black Histic (A3)	Stripped Matrix (S6)	Dark Surface (S7) (LRR G)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	High Plains Depressions (F16)
Stratified Layers (A5) (LRR F)	Loamy Gleyed Matrix (F2)	(LRR H outside of MLRA 72 & 73)
Depleted Polesy Dark Conf. (144)	Depleted Matrix (F3)	Reduced Vertic (F18)
Depleted Below Dark Surface (A11)	— Redox Dark Surface (F6)	Red Parent Material (TF2)
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	Very Shallow Dark Surface (TF12)
2.5 cm Mucky Peat or Peat (S2) (I RR G	H) High Plains Depressions (F8)	³ Indiasters of hydrophytic wasterion and
5 cm Mucky Peat or Peat (S3) (LRR F)	(MIRA 72 & 73 of LPP H)	wotland bydrology must be present
		unless disturbed or problematic
Restrictive Layer (if present):		
Type:		/
Depth (inches):		Hudrig Soil Brogant2 Mag
Pemarke:		Hydric Son Present? Tes No
Nemarka.		
IYDROLOGY		
and stand a		
Wetland Hydrology Indicators:		
Wetland Hydrology Indicators:	sheek all that apply)	
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; of Surface Water (A1)	check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required: c</u> <u></u>	check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required: of Surface Water (A1) High Water Table (A2) Saturation (A2)	check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13)	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required: of Surface Water (A1) High Water Table (A2) Saturation (A3) Website Machine (A4)	<u>Check all that apply)</u> <u>Salt Crust (B11)</u> <u>Aquatic Invertebrates (B13)</u> <u>Hydrogen Sulfide Odor (C1)</u>	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required: of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Codiment Descrite (B0)	Check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Coxidized Rhizospheres on Living Roots (C3)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required: of a surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	 <u>Salt Crust (B11)</u> Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) 	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required: of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	Check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4)	 Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required: of 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)	 Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) 	 Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; of 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)	check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks)	 Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required: of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	 Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks) 	 Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required: (Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations:	Check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks)	 Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required: of section (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Water Present?	Check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks)	 Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required: of the second se	Check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks)	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Coxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; (Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No Water Table Present? Yes No Saturation Present? Yes No	Check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Weat	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Coxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; (Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No Saturation Present? Yes No Saturation Present? Yes No Saturation Present? Yes No	Check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches):	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Coxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; (Check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches):	 Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F) tland Hydrology Present? Yes No , if available:
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; of a surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water Table Present? Yes No Saturation Present? Yes No Situration Present? Yes No Situration Present? Yes No Situration Present? Yes No Situration Present? Yes No	Check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches):	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; of a surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water Table Present? Yes No Saturation Present? Yes Describe Recorded Data (stream gauge, monit Remarks:	Check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches):	 Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; of a surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water Table Present? Yes No Saturation Present? Secribe Recorded Data (stream gauge, monit Remarks:	check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches):	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Coxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F) tland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; of a surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No Saturation Present? Yes No Saturation Present? Yes No Saturation Present? Yes Saturation Present? Yes No	Check all that apply) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches):	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Coxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sterling Ranch South	City/County: El Paso Co, Sampling Date: 2/5/15
Applicant/Owner: MS CIVIL CONSULTANTS	State: <u>CO</u> Sampling Point: <u>2</u>
Investigator(s): DAN MAYNARD	Section, Township, Range: Sec. 33, T125 R65W
Landform (hillslope, terrace, etc.): Swale	Local relief (concave, convex, none) Concave Slope (%): 1-2%
Subregion (LRR): LRR G Lat: 38	3.95719° N Long: 104.67362 W Datum: WGS 84
Soil Map Unit Name: Pring (Avidic Haplusto,	NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of ye	ar? Yes 📈 No (If no, explain in Remarks.)
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ significantly	disturbed? Are "Normal Circumstances" present? Yes Ves No
Are Vegetation, Soil, or Hydrology naturally pro	blematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes V	
Hydric Soil Present? Yes V No	Is the Sampled Area
Wetland Hydrology Present? Yes Ves No	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:) 1.)	Absolute <u>% Cover</u>	Dominant I Species?	ndicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):
3 4				Total Number of Dominant Species Across All Strata: (B)
Sapling/Shrub Stratum (Plot size:)		= Total Cove	er	Percent of Dominant Species That Are OBL, FACW, or FAC:
2 3 4.				Prevalence Index worksheet:
5	2.0	= Total Cove	er FIACU	FACW species 36 $x^2 = 60$ FAC species $x^3 = -$ FACU species 36 $x^4 = 194$ UPL species 2 $x^5 = 10$
2. Schizachyrium Scopanium 3. Carezo Utriculata 4. Juncus articus	15 25 24430		FACU	Column Totals: $\underline{93}$ (A) $\underline{239}$ (B) Prevalence Index = B/A = $\underline{2.57}$
5. Koelenta macrantha 6. Mullein (Verbascum Hapsis) 7. Pasc. Smithij	52		VPL FACU	1 - Rapid Test for Hydrophytic Vegetation 1 - 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹
9 10	98	= Total Cove	er	 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain)
Woody Vine Stratum (Plot size:) 1				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2 2		= Total Cove	ər	Hydrophytic Vegetation Present? Yes No
Remarks: At welland boundary Vegetation is high	in a ly vac	sma nied i	ill s in vi	wale at an oxbosw; icinity
US Army Corps of Engineers				Great Plains – Version 2.0

SOIL		Sampling Point:
Profile Description: (Describe to the depth	needed to document the indicator or co	nfirm the absence of indicators.)
Depth <u>Matrix</u>	Redox Features	- ² Testar
0-3" 75 YR 3/2- 100		c Texture Remarks
2-6" INVP 212 100		S D (many Strat (Ma))
5-9 011 3/3 700	NO 116 30 0 01	and (coarse)
<u>6-8</u> 10 41 TIC TO 5	7K 716 30 C PL	- DIL
8-16T Gley 1 6/N 85 5	-17R41615 C PI	Loamy Sand (Fine)
1		
¹ Type: C=Concentration D=Depletion RM=Re	duced Matrix, CS=Covered or Coated Sar	ad Grains ² Location: PL=Pore Lining M=Matrix
Hydric Soil Indicators: (Applicable to all LR	Rs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	1 cm Muck (A9) (LRR I, J)
Histic Epipedon (A2)	Sandy Redox (S5)	Coast Prairie Redox (A16) (LRR F, G, H)
Black Histic (A3)	Stripped Matrix (S6)	Dark Surface (S7) (LRR G)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	High Plains Depressions (F16)
Stratified Layers (A5) (LRR F)	Loamy Gleyed Matrix (F2)	(LRR H outside of MLRA 72 & 73)
1 cm Muck (A9) (LRR F, G, H)	Depleted Matrix (F3)	Reduced Vertic (F18)
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	Red Parent Material (TF2)
Inick Dark Surface (A12)	Depleted Dark Surface (F7) Depleted Dark Surface (F7)	Very Shallow Dark Surface (TF12)
2.5 cm Mucky Peat or Peat (S2) (I PP G L	Ligh Plains Depressions (F8)	<u>Uther (Explain in Remarks)</u>
5 cm Mucky Peat or Peat (S2) (LRR G, P	(MI RA 72 & 73 of LRP H)	indicators of hydrophytic vegetation and
	(MERA 72 & 75 OF ERR H)	unless disturbed or problematic
Restrictive Layer (if present):		
Туре:	-	
Depth (inches):	-	Hydric Soil Present? Yes Ves No
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; cl	neck all that apply)	Secondary Indicators (minimum of two required)
Surface Water (A1)	Salt Crust (B11)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Invertebrates (B13)	Sparsely Vegetated Concave Surface (B8)
± Saturation (A3)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Water Marks (B1)	Dry-Season Water Table (C2)	Oxidized Rhizospheres on Living Roots (C3)
<u> Sediment Deposits (B2)</u>	Oxidized Rhizospheres on Living Ro	oots (C3) (where tilled)
Drift Deposits (B3)	(where not tilled)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)		Frost-Heave Hummocks (D7) (LRR F)
Field Observations:	1	
Surface Water Present? Yes No	Depth (inches):	
Water Table Present? Yes No	V Depth (inches):	/
Saturation Present? Yes Ves No	Depth (inches): N	Wetland Hydrology Present? Yes 📈 No
(includes capillary fringe)	descured a solution of the solution	
Describe Recorded Data (stream gauge, monito	ring well, aerial photos, previous inspectio	ns), it available:
Pomorke		
Nomans.		
	-	36

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Stepling Ranch South City/C	ounty: <u>El Paso Co.</u> Sampling Date: <u>2/5/15</u>
Applicant/Owner: MS Civil Consultants	State: <u>CO</u> Sampling Point: <u>3</u>
Investigator(s): DAN MAYNTARD Section	on, Township, Range: Sec. 33, TJ25 R65W
Landform (hillslope, terrace, etc.):Loca	relief (concave, convex, none): Concave Slope (%): 1%
Subregion (LRR): LRR G Lat: 38 .93	625 N Long: 104,68 113 W Datum: 465 84
Soil Map Unit Name: Blakeland CTorribr thent	c Haplustolls NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Y Are Vegetation, Soil, or Hydrology significantly distur Are Vegetation, Soil, or Hydrology naturally problem SUMMARY OF FINDINGS – Attach site map showing sam	res <u>V</u> ¹ No (If no, explain in Remarks.) bed? Are "Normal Circumstances" present? Yes <u>No</u> No atic? (If needed, explain any answers in Remarks.) appling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Yes No
Remarks: Cattle grazing has disturbed	vegetation

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute Dominant Indicator % Cover Species? Status	Dominance Test worksheet: Number of Dominant Species
1		That Are OBL, FACW, or FAC
2		(excluding FAC-).
3		Total Number of Dominant 2
4		Species Across All Strata: (B)
Sapling/Shrub Stratum (Plot size:)	= Total Cover	Percent of Dominant Species/OO / (A/B)
1		Prevalence Index worksheet:
2		Total % Cover of: Multinly by:
3		
4		
5		FACW species XZ=
F'. 5'	= Total Cover	FAC species x 3 =
Herb Stratum (Plot size: 7 X V)	AF J DRI	FACU species x 4 =
1. Carex neorascensis	10 UDL	UPL species x 5 =
2. Cavex uticulata	20 0154	Column Totals: (A) (B)
3. SUNCUS ArCHOUS	35 V FACW	Prevalence Index = B/A =
4. Mantarostis gigantea	20 HACW	Hydrophytic Vegetation Indicators:
5. Civation arverse	<u>5</u> Macu	1 Popid Test for Hydrophytic Vegetation
6. Aster (Symphyotrichum Sp.)	5 1	- 1 - Rapid Test for Hydrophydro Vegetadon
7		2 - Dominance rest is $> 50%$
8		3 - Prevalence index is >3.0
9		 4 - Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet)
10		Problematic Hydrophytic Vegetation ¹ (Explain)
the second second second second second	= Total Cover	
Woody Vine Stratum (Plot size:)		¹ Indicators of hydric soil and wetland hydrology must
1		be present, unless disturbed of problematic.
2		Hydrophytic
% Bare Ground in Herb Stratum	= Total Cover	Vegetation Ves No No
Remarks:		

US Army Corps of Engineers

Great Plains - Version 2.0

0	0	٠	۰.
5	()	ı	Ŀ.
6	\sim	٠	

Remarks
Remarks
Pore Lining, M=Matrix. natic Hydric Soils ³ : RR I, J) x (A16) (LRR F, G, H) (LRR G) ssions (F16) e of MLRA 72 & 73) 18) al (TF2) Surface (TF12) tic vegetation and must be present,
Pore Lining, M=Matrix. natic Hydric Soils ³ : RR I, J) x (A16) (LRR F, G, H) (LRR G) ssions (F16) e of MLRA 72 & 73) 18) al (TF2) Surface (TF12) tic vegetation and must be present,
Pore Lining, M=Matrix. natic Hydric Soils ³ : .RR I, J) x (A16) (LRR F, G, H) (LRR G) ssions (F16) e of MLRA 72 & 73) 18) al (TF2) Surface (TF12) tic vegetation and must be present,
Pore Lining, M=Matrix. natic Hydric Soils ³ : .RR I, J) DX (A16) (LRR F, G, H) (LRR G) ssions (F16) e of MLRA 72 & 73) 18) al (TF2) : Surface (TF12) ?emarks) tic vegetation and must be present,
matic Hydric Soils ³ : .RR I, J) (LRR G) ssions (F16) e of MLRA 72 & 73) 18) al (TF2) : Surface (TF12) tic vegetation and must be present,
RR I, J) (A16) (LRR F, G, H) (LRR G) ssions (F16) e of MLRA 72 & 73) 18) al (TF2) Surface (TF12) Remarks) tic vegetation and must be present,
ox (A16) (LRR F, G, H) (LRR G) ssions (F16) e of MLRA 72 & 73) 18) al (TF2) : Surface (TF12) Remarks) tic vegetation and must be present,
ssions (F16) e of MLRA 72 & 73) 18) al (TF2) Surface (TF12) tic vegetation and must be present,
e of MLRA 72 & 73) 18) al (TF2) Surface (TF12) tic vegetation and must be present,
18) al (TF2) : Surface (TF12) ?emarks) tic vegetation and must be present,
al (TF2) : Surface (TF12) ?emarks) tic vegetation and must be present,
s Surface (TF12) Remarks) tic vegetation and must be present,
Remarks) 'tic vegetation and must be present,
rtic vegetation and must be present,
must be present,
a constant for some star
, problematici
Yes No
a (minimum of two roquirod
s (minimum of two required
s (minimum of two required acks (B6)
s (minimum of two required acks (B6) ated Concave Surface (B8)
s (minimum of two required acks (B6) ated Concave Surface (B8) ns (B10)
s (minimum of two required acks (B6) ated Concave Surface (B8) ns (B10) spheres on Living Roots (C
<u>s (minimum of two required</u> acks (B6) ated Concave Surface (B8) ns (B10) spheres on Living Roots (C rs (C8)
s (minimum of two required acks (B6) ated Concave Surface (B8) ns (B10) pheres on Living Roots (C: rs (C8) le on Aerial Imagery (C9)
s (minimum of two required acks (B6) ated Concave Surface (B8) ns (B10) spheres on Living Roots (C: rs (C8) le on Aerial Imagery (C9) sition (D2)
s (minimum of two required acks (B6) ated Concave Surface (B8) ns (B10) spheres on Living Roots (C rs (C8) le on Aerial Imagery (C9) sition (D2) st (D5)
s (minimum of two required acks (B6) ated Concave Surface (B8) ns (B10) spheres on Living Roots (C <i>r</i> s (C8) le on Aerial Imagery (C9) sition (D2) st (D5) immocks (D7) (LRR F)
s (minimum of two required acks (B6) ated Concave Surface (B8) ns (B10) spheres on Living Roots (C: <i>rs</i> (C8) le on Aerial Imagery (C9) sition (D2) st (D5) immocks (D7) (LRR F)
s (minimum of two required acks (B6) ated Concave Surface (B8) ns (B10) spheres on Living Roots (C: /s (C8) le on Aerial Imagery (C9) sition (D2) st (D5) immocks (D7) (LRR F)
s (minimum of two required acks (B6) ated Concave Surface (B8) ms (B10) spheres on Living Roots (C: rs (C8) le on Aerial Imagery (C9) sition (D2) st (D5) immocks (D7) (LRR F)
s (minimum of two required acks (B6) ated Concave Surface (B8) ms (B10) spheres on Living Roots (C rs (C8) le on Aerial Imagery (C9) sition (D2) st (D5) immocks (D7) (LRR F)
r problematic. Yes

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region
Project/Site: Sterling Ranch South City/County: El Paso Co. Sampling Date: 2(5/15
Applicant/Owner: MS Civil Consultants State: D Sampling Point: 4
Investigator(s): Dan Maynard Section, Township, Range: Sec. 33, NZS R65W
Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 1%
Subregion (LRR): LRR G Lat: 38.96760 ° N Long: -104.66824 W Datum: 265 84
Soil Map Unit Name: Ring CANidic Happistol(s) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No Is the Sampled Area Hydric Soil Present? Yes No within a Wetland? Wetland Hydrology Present? Yes No

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:	% Cover	Species? Status	Number of Dominant Species
1			That Are OBL, FACW, or FAC
2			(excluding FAC-):
3	_		Total Number of Dominant
4			Species Across All Strata: (B)
1-1-101		= Total Cover	Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 15 X1>)	20	1 500 1	That Are OBL, FACW, or FAC:(A/B)
1. Salix invorata	30	V HACW	Prese la se la deserva de basta
2			Prevalence Index worksneet:
3		<u></u>	Total % Cover of: Multiply by:
4.			OBL species x 1 =
5.		and the second	FACW species x2 =
1 ~1	30	= Total Cover	FAC species x 3 =
Herb Stratum (Plot size: 5 X S)		100.	FACU species x 4 =
1. Bulrush (Scinpus microcarpus,	10	_ OBL	UPL species x 5 =
2. Carex rebrascensis	30	V, OBL	Column Totals: (A) (B)
3. Juncus arcticus	30	V FACW	
4. Blakby Aster (Symphyofichum SD.)) 5	?	Prevalence Index = B/A =
5 TUNCUS Mertensianus	10	OBL	Hydrophytic Vegetation Indicators:
6	10		1 - Rapid Test for Hydrophytic Vegetation
7			1 2 - Dominance Test is >50%
1			3 - Prevalence Index is ≤3.0 ¹
8	100000	·	4 - Morphological Adaptations ¹ (Provide supporting
9		·	data in Remarks or on a separate sheet)
10	26		Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:	_09	= Total Cover	¹ Indicators of hydric soil and wetland hydrology must
1			be present, unless disturbed or problematic.
		·	Huden shafe
2	-	- Tabl Oams	Vegetation
% Bare Ground in Herb Stratum		= Total Cover	Present? Yes V No
Remarks:			

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Depth Dolor (moist) % Color (moist) % Texture Remarks 0 -1 2.57 712 (00 Color (moist) % Texture Remarks 0 -1 2.57 712 (00 Color (moist) % Texture Remarks 0 -1 7.57 712 (00 Color (moist) % Texture Remarks 10 + 1 2.57 712 (00 Color (moist) % Color (moist) % 10 + 1 2.57 712 (00 Color (moist) % Color (moist) % Color (moist) % 10 + 1 2.57 712 (00 Color (moist) % Color (moist)	SOIL		Sampling Point:
Depth Matrix Redox Features Inches) 2.57 31 Color (mols) 5 Type Loc Texture Remarks U-104 2.57 71/2 000 Science	Profile Description: (Describe to the depth	needed to document the indicator or confi	rm the absence of indicators.)
Color (moist) % Color (moist) % Type: Tarkurs Remarks 0 - 44* Z.S.Y 3/1 /00 SCL_(Med.) SCL_(Med.) 0 - 44* Z.S.Y 7/2 /00 Damy Sull (Conne) 0 - 44* Z.S.Y 7/2 /00 Damy Sull (Conne) 0 - 44* Z.S.Y 7/2 /00 Damy Sull (Conne) 0 - 44* Z.S.Y 7/2 /00 Damy Sull (Conne) 0 - 44* Z.S.Y 7/2 /00 Damy Sull (Conne) 0 - 44* Z.S.Y Allow (Allow) Damy Sull (Conne) 1 Trype: C-Concentration, D=Depletion, RM-Reduced Matrix, CS-Covered or Coated Sand Grains. *1 coation: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators: (Applicable to All CRR + G, H) Histosol (A1) Sandy Redox (S5) Dark Surface (F1) Coast Praine Redox (Allo (LRR + G, H) 1 Trik Dark Surface (A1) Depleted Matrix (F2) Redox Depressions (F16) 2.5 cm Muck/ Peat or Peat (S2) (LRR G, H) High Bias Depressions (F12) Redox Depressions (F16) <td>Depth Matrix</td> <td>Redox Features</td> <td></td>	Depth Matrix	Redox Features	
04' 2.5Y 3.1 100 U-14'' 2.5Y 7.12 100 10+4'' 2.5Y 7.12 100 11+15 11+15 100 100 100 11+15 11+15 11+15 11+15 11+15 11+15 11+15 11+	(inches) Color (moist) %	Color (moist) % Type ¹ Loc ²	- Texture Remarks
U-Left 2.571 712 00 ID+H 2.571 712 100 ID+H 2.571 712 100 Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Apdite Soils*: Histosol (A1) Sandy Gleyed Matrix (S4) Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Gleyed Matrix (S4) I orn Muck (A9) (LRR F, G, H) Black Histo (A2) Sandy Redox (S5) Coastel Ser Praile Redox (A16) (LRR F, G, H) Depleted Below Dark Surface (A11) Depleted Matrix (F2) LCarmy Gueyed Matrix (F2) Startified Lelow Dark Surface (A12) Depleted Dark Surface (F7) Red Parent Material (TF2) S orn Mucky Peat or Peat (S2) (LRR F, D, H) Depleted Dark Surface (F7) Red Parent Material (TF2) S orn Mucky Peat or Peat (S2) (LRR F, D, H) High Plains Depressions (F16) URR A coaster (F7) S orn Mucky Peat or Peat (S2) (LRR F, D, H) High Plains Depressions (F16) High Plains Depressions (F16) S orn Mucky Peat or Peat (S2) (LRR F, O, H) High Plains Depressions (F16) High Plains Depressions (F16) S orn Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) Wetand hydrology must be present, un	A-4° 2.5Y 3/1 100		SCI (Med)
ID1H 2.57 712 100 Daty Sul Convel ID1H 2.57 712 100 Daty Sul Convel Intervention Intervention Intervention Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention Image: Intervention	11-101 2 EV 7/2 100 -		Sel Chiel
Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A) Image: Stratified Layers (A)	4-10 2.51 112 100 -		SCh (Med)
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls ¹ : Histosci (A1) Sandy Gleyd Matrix (S4) Indicators for Problematic Hydric Solls ¹ : Histosci (A3) Stripped Matrix (S6) Dark Surface (A1) Coast Prairie Redox (A16) (LRR F, G, H) Stratified Layers (A5) (LRR F) Loamy Gleyed Matrix (F2) Matrix (F2) Redox Dark Surface (F7) Thick Dark Surface (A11) Redox Dark Surface (F7) Redox Dark Surface (F7) Redox Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Matrix (F2) UMLRA 72 & 73 of LRR H) Very Shallow Dark Surface (TF12) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Redox Dark Surface (F7) Very Shallow Dark Surface (TF12) Som Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F8) ¹ Indicators of hydrophylic vegetation and wetland Hydrology must be present, unless disturbed or problematic. Type: Matrix Matrix Sandrou Riveropantermates Sur	10+ 2.57 +12 100	letter and the second s	Laamy Sand (Coave)
'Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ² : Histic Epipedon (A2) Sandy Redox (S5) Dask Histic (A3) Loarny Mudxy Mineral (F1) Hydrogen Sulfide (A4) Loarny Mudxy Mineral (F1) Depleted Dark Surface (F6) Graft Parine Redox (A16) (LRR F, G, H) Depleted Dark Surface (F6) Reduced Vertic (F18) Reduced Vertic (F12) Popleted Dark Surface (F6) Stratified Layers (A5) (LRR F) Depleted Matrix (F2) Stratified Layers (A5) (LRR F) Depleted Matrix (F2) Stratified Layers (A5) (LRR F) Depleted Matrix (F3) Reduced Vertic (F18) Reduced Vertic (F18) Stratified Layers (A5) (LRR F) Multicators (F6) Stratified Layers (A5) (LRR F) High Plains Depressions (F16) Stratified Verter (S1) High Plains Depressions (F16) Stratified Layers (H) (inches): High Plains Depressions (F16) Type: Matrix Depth (inches): Matrix Type: Matrix Method K43) (LAR F, (A2) Salt Crust (B11)			/
Image: Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. PLocation: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils?: Histosol (A1) Sandy Gleved Matrix (S4) Indicators for Problematic Hydric Soils?: Histosol (A1) Sandy Redox (S5) Dark Surface (S7) (LRR G) Black Histic (A3) Loamy Gleved Matrix (F2) Coast Prairie Redox (A16) (LRR F, G, H) Stratified Layers (A5) (LRR F, G, H) Depleted Matrix (F2) (LRR H outside of MLRA 72 & 73) Care mMuck (A9) (LRR F, G, H) Depleted Matrix (F3) Redox Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Very Shallow Dark Surface (T7) So on Mucky Peat or Peat (S2) (LRR F) High Plains Depressions (F16) Very Shallow Dark Surface (T7) So on Mucky Peat or Peat (S2) (LRR F) (MLRA 72 & 73 of LRR H) Very Shallow Dark Surface (T7) Type:			
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ² : Histosol (A1) Sandy Redxx (S5) Coast or Prainte Redx (A16) (LRR F, G, H) Black Histic (A3) Stripped Matrix (S6) Dark Surface (S7) (LRR G) Hydrogen Sulfide (A4) Loarny Mucky Mineral (F1) High Plains Depressions (F16) Tom Muck (A9) (LRR F, G, H) Depleted Matrix (F2) Reduced Vertic (F18) Back Histic (A3) Depleted Matrix (F2) Reduced Vertic (F18) Tom Muck (A9) (LRR F, G, H) Depleted Matrix (F2) Reduced Vertic (F18) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain In Remarks) 2.5 om Mucky Peat or Peat (S2) (LRR F, M, H) High Plains Depressions (F8) Other (Explain In Remarks) Type:			
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (LRR I, J) Black Histic (A3) Sandy Redox (S5) Coast Praine Redox (A16) (LRR F, G, H) Black Histic (A3) Loamy Gleyed Matrix (S6) Dark Surface (T1) Stratified Layers (A5) (LRR F, G, H) Loamy Gleyed Matrix (F2) (LR H outside of MLRA 72 & 73) 1 cm Muck (A9) (LRR F, G, H) Depleted Matrix (F2) (LR H outside of MLRA 72 & 73) 2 Som Mucky Mineral (S1) Redox Dark Surface (F7) Pepleted Matrix (F2) 2 Som Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F8) ³ Indicators of hydrophydiv vegotation and wetland hydrology must be present, unless disturbed or problematic. Type:			
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ¹ : Histos (A1) Sandy Gleyed Matrix (S4) Indicators for Problematic Hydric Soils ¹ : Histo Epipedon (A2) Sandy Gleyed Matrix (S5) Coast Praire Redox (A16) (LRR F, G, H) Black Histic (A3) Stripped Matrix (S6) High Plains Depressions (F16) 1 orm Muck (A9) (LRR F, G, H) Depleted Matrix (F2) ILRR H outside of MLRA 72 & 73) 1 orm Muck (A9) (LRR F, G, H) Depleted Matrix (F2) Reduced Vertic (F18) Body Below Dark Surface (A11) Redox Dark Surface (F7) Very Shallow Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Dark Surface (F8) Reduced Vertic (F18) 2.5 Gm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16) ¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Type:			
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ¹ ; Histic Epipedon (A2) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (LRR F, G, H) Black Histic (A3) Straffed Cayers (A5) (LRR F, G, H) Dark Surface (S7) (LRR G) Straffed Layers (A5) (LRR F, G, H) Depleted Matrix (F2) (LRR H outside of MLRA 72 & 73) Reduced Vertic (F18) Reduced Vertic (F18) Reduced Vertic (F18) Sandy Mucky Mineral (S1) Redox Depressions (F6) Very Shallow Dark Surface (TF12) Sandy Velator Peat (S3) (LRR F, High Plains Depressions (F6) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) * 5 cm Mucky Peat or Peat (S3) (LRR F, High Plains Depressions (F16) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Type:			
Type: Constants:	¹ Type: C=Concentration D=Depletion RM-P	educed Matrix CS=Covered or Costed Send (Croine ² I continue DI - Deve Lining M-Metric
Histos (A1) Histos (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (LRR (J)) Histos (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) (LRR F, G, H) Black Histic (A3) Stripped Matrix (S6) Coast Prairie Redox (A16) (LRR F, G, H) Stratified Layers (A5) (LRR F) Loamy Mucky Mineral (F1) High Plains Depressions (F16) 1 cm Muck (A9) (LRR F, G, H) Depleted Matrix (F2) High Plains Depressions (F16) 2 Depleted Balow Dark Surface (A12) Depleted Matrix (F2) Redox Depressions (F16) 2 Sandy Mucky Mineral (S1) Redox Depressions (F16) Redox Depressions (F16) 2 S cm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16) High Plains Depressions (F16) 5 cm Mucky Peat or Peat (S2) (LRR F) (MLRA 72 & 73 of LRR H) Pepteid Dark Surface (T12) Deptit (inches):	Hydric Soil Indicators: (Applicable to all LE	Rs. unless otherwise noted)	Indicators for Problematic Hydric Soils ³
Histic Epipedon (A2) Sandy Redex (S5) 1 cm Muck (A9) (LRR F, G, H) Black Histic (A3) Sandy Redex (S5) Coast Prainie Redox (A16) (LRR F, G, H) Depleted Layers (A5) (LRR F, G, H) Loamy Mucky Mineral (F1) High Plains Depressions (F16) Thick Dark Surface (A11) Redox Dark Surface (F7) Redox Dark Surface (F7) Startified Layers (A5) (LRR F, G, H) Depleted Matrix (F2) Very Shallow Dark Surface (TF2) Sandy Redox Dark Surface (A11) Redox Dark Surface (F7) Redox Dark Surface (F7) S or Mucky Peat or Peat (S2) (LRR F, H) High Plains Depressions (F16) High Plains Depressions (F16) S or Mucky Peat or Peat (S2) (LRR F) (MLRA 72 & 73 of LRR H) Other (Explain in Remarks) Type:	- Histosol (A1)	Sandy Gloved Metrix (S4)	
In Back Expression (Ac) Stripped Matrix (S5) Black Histic (A3) Stripped Matrix (S5) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) 1 cm Muck (A9) (LRR F, G, H) Depleted Matrix (S5) 1 cm Muck (A9) (LRR F, G, H) Depleted Matrix (F2) 2 1 cm Muck (A9) (LRR F, G, H) Depleted Matrix (F3) 2 5 cm Muck (A9) (LRR F, G, H) Depleted Matrix (F3) 2 5 cm Muck (A9) (LRR F, G, H) Redox Dark Surface (F6) 2 5 cm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16) 5 cm Mucky Peat or Peat (S2) (LRR F) Multra 72 & 73 of LRR H) Restrictive Layer (if present): Type:	— Histic Enipedon (A2)	Sandy Gleyed Matrix (54)	1 cm Muck (A9) (LRR I, J)
Hydrogen Sulfide (Ad) Loamy Mucky Mineral (S1) Loamy Gleyed Matrix (F2) Stratified Layers (A5) (LRR F, G, H) Loamy Gleyed Matrix (F2) High Plains Depressions (F16) Depleted Below Dark Surface (A11) Redox Depressions (F16) Red Parent Material (TF2) Standy Mucky Mineral (S1) Depleted Dark Surface (F7) Red Parent Material (TF2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Red Parent Material (TF2) Sandy Mucky Mineral (S1) Redox Depressions (F16) Other (Explain in Remarks) 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16) Other (Explain in Remarks) 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) Other (Explain in Remarks) Type:	Black Histic (A3)	Stripped Matrix (S6)	Dark Surface (S7) (LCK F, G, H)
Stratified Layers (A) (LRR F) Loamy Middel (T) Loamy Gleved Matrix (F2) Loamy Gleved Matrix (F2) Loamy Gleved Matrix (F2) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sendy Mucky Mineral (S1) Z.5 cm Mucky Peat or Peat (S2) (LRR G, H) Sourd Y Depleted Dark Surface (FF) Sendy Mucky Peat or Peat (S2) (LRR F, H) High Plains Depressions (F16) (MLRA 72 & 73 of LRR H) Wetland Hydrology must be present, unless disturbed or problematic. Type: Depth (inches): Remarks: Hydric Soil Present? Yes No Surface Water (A1) Saftace Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) (where not tilled) Crayfish Burrows (C8) Crayfish Burrows (C8) Crayfish Burrows (C8) Crayfish	+ Hydrogen Sulfide (A4)	Loamy Mucky Mineral (E1)	High Plains Depressions (E16)
1 cm Muck (A9) (LRF, G, H) Depleted Matrix (F2) Reduced Vertic (F18) Depleted Below Dark Surface (A12) Depleted Matrix (F2) Reduced Vertic (F18) Thick Dark Surface (A12) Depleted Matrix (F2) Reduced Vertic (F18) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16) Other (Explain in Remarks) mestrictive Layer (if present): MLRA 72 & 73 of LRR H) Wetland hydrology must be present, unless disturbed or problematic. Type:	Stratified Lavers (A5) (LRR F)	Loamy Gleved Matrix (F2)	(I RR H outside of MI DA 72 & 73)
Image: Construction of the secondary indicators: Primery Indicators (Mineral (S1) Image: Construction of the secondary indicators: Primery Indicators (Mineral (S1) Image: Construction of the secondary indicators: Primery Indicators (Mineral (S1) Image: Construction of the secondary indicators: Primery Indicators: Type:	1 cm Muck (A9) (LRR F. G. H)	Depleted Matrix (F3)	Reduced Vertic (E18)
Thick Dark Surface (A12) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Sandy Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Yes	Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	Red Parent Material (TF2)
Sandy Mucky Mineral (S1) Redox Depressions (F8) High Plains Depressions (F6) Wither (Explain in Remarks) Type: Depth (inches): Primary Indicators: Primary Indicators: Primary Indicators: Primary Indicators: Primary Indicators: Saturation (A3) High Water Table (A2) Saturation (A3) High Water Marks (B1) Dift Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) (where not tilled) Oxidized Rhizospheres on Living Roots (C3) (where not tilled) Crayfish Burrows (C8)	- Thick Dark Surface (A12)	Depleted Dark Surface (F7)	Very Shallow Dark Surface (TE12)
2.5 cm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:	Sandy Mucky Mineral (S1)	Redox Depressions (F8)	Other (Explain in Remarks)
 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present? Yes No Remarks: Hydric Soil Present? Yes No No IVDROLOGY Secondary Indicators: No Secondary Indicators (minimum of two required) Surface Water (A1) Saturation (A3) Hydrogen Sulfide Odor (C1) Mater Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) (where not tilled) Crayfish Burrows (C8) Crayfish Burrows (C8) 	2.5 cm Mucky Peat or Peat (S2) (LRR G. I	High Plains Depressions (F16)	³ Indicators of hydrophytic vegetation and
unless disturbed or problematic. Image: Intermediate and the second	5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)	wetland hydrology must be present
Restrictive Layer (if present): Type:			unless disturbed or problematic.
Type:	Restrictive Layer (if present):		
Depth (inches): Hydric Soil Present? Yes No Remarks: HyDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) Salt Crust (B11) High Water Table (A2) Aquatic Invertebrates (B13) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Orift Deposits (B3) (where not tilled) Algal Mat or Crust (B4) Pressense of Padword Iron (C4)	Type://A		
Remarks: IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) High Water Table (A2) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Water Marks (B1) Drift Deposits (B3) Algal Mat or Crust (B4)	Depth (inches):		Hydric Soil Present? Ves V
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) 1 Surface Water (A1) 2 Salt Crust (B11) 4 High Water Table (A2) 3 Aquatic Invertebrates (B13) 4 Hydrogen Sulfide Odor (C1) 5 Dry-Season Water Table (C2) 5 Oxidized Rhizospheres on Living Roots (C3) 6 Where not tilled) 2 Primary Indicators (minimum of two required) 4 Surface Soil Cracks (B6) 5 Sparsely Vegetated Concave Surface (B8) 5 Dry-Season Water Table (C2) 5 Oxidized Rhizospheres on Living Roots (C3) 6 (where not tilled) 7 Presence of Pedwood Iron (C4)	Remarke:		
Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) Yumer Marks (B1) Aquatic Invertebrates (B13) Salt Crust (B11) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Water Marks (B3) Water not tilled) Oxidized Rhizospheres on Living Roots (C3) Water Marks (B4) Oxidized Rhizospheres on Living Roots (C3) Salt Crust (B4)	Remarks.		
Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) Yuman Might Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) Yuman Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) Yuman Surface Water (A1) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Yuman Surface Water (A3) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Yuman Surface Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Yuman Marks (B3) Yuman Marks (B1) Oxidized Rhizospheres on Living Roots (C3) Yuman Marks (B4) Yuman Marks (B4) Stater (B4)			
Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) + High Water Table (A2) - Aquatic Invertebrates (B13) - Surface Soil Cracks (B6) - Saturation (A3) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roots (C3) - Drift Deposits (B3) - Oxidized Rhizospheres on Living Roots (C4) - Crayfish Burrows (C8)			
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Salt Crust (B11) High Water Table (A2) Aquatic Invertebrates (B13) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4)			
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) High Water Table (A2) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Water Marks (B1) Dry-Season Water Table (A2) Oxidized Rhizospheres on Living Roots (C3) Water Marks (B1) Dry-Season Water Table (A2) Mater Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4)	IT DROEDGT		
Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Saturation (A3) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Water Marks (B1) Oxidized Rhizospheres on Living Roots (C3) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation (C4)	Wetland Hydrology Indicators:		
Image: Surface Water (A1) Image: Salt Crust (B11) Image: Salt Crust (B11) Image: High Water Table (A2) Image: Aquatic Invertebrates (B13) Image: Salt Crust (B11) Image: Salt Crust (B1) Image: Aquatic Invertebrates (B13) Image: Salt Crust (B1) Image: Salt Crust (B1) Image: Aquatic Invertebrates (B13) Image: Salt Crust (B1) Image: Salt Crust (B1) Image: Salt Crust (B1) Image: Salt Crust (B1) Image: Salt Crust (B1) Image: Salt Crust (B1) Image: Salt Crust (B1) Image: Salt Crust (B1) Image: Salt Crust (B1) Image: Salt Crust (B1) Image: Salt Crust (B1) Image: Salt Crust (B1) Image: Salt Crust (B1) Image: Salt Crust (B2) Image: Salt Crust (B2) Image: Salt Crust (B2) Image: Salt Crust (B3) Image: Salt Crust (B4) Image: Salt Crust (B4) Image: Salt Crust (B4) Image: Salt Crust (B4) Image: Salt Crust (C1) Image: Salt Crust (B4) Image: Salt Crust (C1) Image: Salt Crust (C1) Image: Salt Crust (B4) Image: Salt Crust (C1) Image: Salt Crust (C1) Image: Salt Crust (B4) Image: Salt Crust (C1) Image: Salt Crust (C1) Image: Salt Crust (B4) Image: Salt Crust (C1) Image: Salt Crust (C1)	Primary Indicators (minimum of one required; c	heck all that apply)	Secondary Indicators (minimum of two required)
+ High Water Table (A2) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8) Saturation (A3) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation (C4)	Surface Water (A1)	Salt Crust (B11)	L Surface Soil Cracks (B6)
Saturation (A3) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) (where not tilled) Algal Mat or Crust (B4) Presence of Reduced Iron (C4)	🕂 High Water Table (A2)	Aquatic Invertebrates (B13)	Sparsely Vegetated Concave Surface (B8)
Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Asciel Imagene (C0)	Saturation (A3)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Assid Imagene (C0)	Water Marks (B1)	Dry-Season Water Table (C2)	Oxidized Rhizospheres on Living Roots (C3)
Drift Deposits (B3) (where not tilled) (where not tilled) Crayfish Burrows (C8) Saturation Visible on Astic Unserver (C0)	Sediment Deposits (B2)	Cidized Rhizospheres on Living Roots	(where tilled)
Algal Mat or Crust (B4)	Drift Deposits (B3)	(where not tilled)	Cravfish Burrows (C8)
	Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Saturation Visible on Aerial Imagery (CO)
Tion Deposits (B5)	Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2)
Inumdation Visible on Aerial Imageny (B7) Other (Explain in Remorted)	Inundation Visible on Aerial Imagons (P7)	Other (Explain in Permerka)	
Water-Stained Leaves (B0)	- Water-Stained Leaves (P0)		
Frost-Heave Hummocks (D/) (LRR F)	Field Observations:		Frost-Heave Hummocks (D7) (LRK F)

Water-Stained Leaves	(B9)		Frost-Heave Hummocks (D7)
Field Observations:	1	, 10	
Surface Water Present?	Yes 🔨 No 🔄	Depth (inches):	
Water Table Present?	Yes 📈 No 🔄	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes 🔨 No _	Depth (inches):	Wetland Hydrology Present? Yes
Describe Recorded Data (si	tream gauge, monitorin	g well, aerial photos, previous in	spections), if available:
Remarks:			

No

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sterling Ranch	City/County: El Paso Count	ty	Sampling Date: 3/1	0/15
Applicant/Owner: MS Civil Consultants		State: CO	Sampling Point: 5	
Investigator(s): Julia Auckland	Section, Township, Range:	Section 33, T12S,	R65W	
Landform (hillslope, terrace, etc.): <u>slope</u>	Local relief (concave, conve	x, none): <u>convex</u>	Slope	(%): <u>3</u>
Subregion (LRR): G-Western Great Plains Lat: 38	3.955981 Lon	g: -104.681231	Datum:	WGS 84
Soil Map Unit Name: Blakeland-Fluvaquentic Haplaquolls		NWI classific	ation:	
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes <u>X</u> No	(If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology significantly	/ disturbed? Are "Norm	al Circumstances" p	eresent? Yes <u>x</u>	No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed	, explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locat	ions, transects	, important feat	ures, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No X Yes No X Yes No X	Is the Sampled Area within a Wetland?	Yes No <u>×</u>				
Remarks:							
Upland on gentle slope, ~20' west and ~3' higher than wetland sampling point #6. Snow cover until 3/9, 99% melted today.							

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 Ft radius)	% Cover	Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC
2	<u> </u>			$(\text{excluding FAC-}): \qquad \underbrace{\mathbf{O}}_{(A)}$
3.				Total Number of Dominant
4				Species Across All Strata: <u>1</u> (B)
···	0	= Total Cov	/er	Dereent of Deminent Species
Sapling/Shrub Stratum (Plot size: 15 Ft radius)		Total Co		That Are OBL, FACW, or FAC: 0 (A/B)
1.				
2				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3			<u> </u>	OBL species x 1 = 0
4				FACW species x 2 = 0
5			<u></u>	FAC species $x_3 = 0$
5 Ft radius	0	= Total Co	ver	EACH species $x 4 = 0$
Herb Stratum (Plot size: <u>o realize</u>)	73	v	1 IPI	$\frac{1}{100} \frac{1}{100} \frac{1}$
1. Bouteloua graciiis				$0 + z + 0 \qquad (A) \qquad (D)$
2. Artemisia frigida		<u>N</u>	UPL	Column Totals: \underline{O} (A) \underline{O} (B)
3. Aster sp.	_ 5	<u>N</u>		Prevalence index = $B/A = NaN$
4, Juncus articus (balticus)	1	<u>N</u>	FACW	
5. Aristida purpurea	1	N	UPL	Hydrophytic Vegetation indicators.
6.				1 - Rapid lest for Hydropnytic Vegetation
7	_			2 - Dominance Test is >50%
0		• •••		3 - Prevalence Index is ≤3.0 '
0				4 - Morphological Adaptations ¹ (Provide supporting
9		·		data in Remarks or on a separate sneet)
10				Problematic Hydrophytic Vegetation (Explain)
Weader Vine Stratum (Distaire: 15 Ft radius	90	= Totai Co	ver	¹ Indicators of hydric soil and wetland hydrology must
woody vine stratum (Plot size)				be present, unless disturbed or problematic.
1		- <u> </u>		
2	<u></u>			Hydrophytic
		= Total Co	ver	Present? Yes No X
% Bare Ground in Herb Stratum	90	= I otal Ve	g Cover	
Remarks:	D5 - FAC Neu	rtral Test for hydro	logy. Drop all FAC	C, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.

SOIL

Sampling Point: 5

Profile Description	: (Describe	to the depth	needed to docu							
Depth	Matrix		Redo	x Features	Tunc ¹		Toxturo	D,	emarks	
(inches) Col	lor (moist)		Color (moist)		Type	LOC	sandy loam	10% fine (1-2 mm)	to medium (2-5mm)	oravel
<u>0-16 10YI</u>	R 2/1	100					Sandy Ioann			
		· ·····								
······································										
······································					····					
				~			. 2.	<u> </u>		
¹ Type: C=Concentr	ration, D=Dep	letion, RM=R	Reduced Matrix, C	S=Covered of	or Coated	Sand G	rains. Lo	cation: PL=Pore	Lining, M=Matrix.	
Hydric Soil Indicat	tors: (Applic	able to all L	RRs, unless othe	rwise noted	1.)		Indicators			
Histosol (A1)			Sandy	Gleyed Matr	ix (S4)		1 cm l	Muck (A9) (LRR I		`
Histic Epipedor	n (A2)		Sandy	Redox (S5)			Coast	Prairie Redox (A	(16) (LKK F, G, H)
Black Histic (A3	3)		Strippe	d Matrix (So)) ! (E1)		Dark		ns (F16)	
Hydrogen Sulfi	de (A4)	-	Loamy	Mucky Mine	riv (E2)		night	R H outside of	MIRA 72 & 73)	
Stratified Layer	rs (A5) (LRR	F)	Loamy	od Matrix (E?	/IX (F∠) 3)		Redu	ced Vertic (F18)		
1 cm Muck (A9) (LKK F, G,	п) р (А11)	Depied	Dark Surfac	5) 2e (F6)		Red F	Parent Material (T	F2)	
Depieted Below	M Dark Sunau face (A12)		Redex	ed Dark Surf	face (F7)		Very	Shallow Dark Sur	face (TF12)	
Thick Dark Sur Sandy Mucky I	Mineral (S1)		Redox	Depressions	s (F8)		Other	(Explain in Rema	arks)	
2.5 cm Mucky	Peat or Peat	(S2) (LRR G .	. H) High P	lains Depres	sions (F	16)	³ Indicators	s of hydrophytic v	egetation and	
5 cm Mucky Pe	eat or Peat (S	3) (LRR F)	(M	LRA 72 & 73	3 of LRR	H)	wetlar	nd hydrology mus	st be present,	
	·						unles	s disturbed or pro	oblematic.	
Restrictive Layer	(if present):	<u></u>								
Type:										
Depth (inches):							Hydric So	il Present? Ye	esNo_X	
Depth (inches):						#	Hydric So	I Present? Ye	es No _×	
Depth (inches): Remarks: Soil is very dark a	and uniform	Not reduce	ed.	by#e ₩		a.r.	Hydric So	l Present? Ye	es No	
Depth (inches): Remarks: Soil is very dark a	and uniform	. Not reduce	ed.	4.4.1			Hydric So	il Present? Ye	es No <u>×</u>	
Depth (inches); Remarks: Soil is very dark a	and uniform.	. Not reduce	ed.				Hydric So	l Present? Ye	es No <u>×</u>	
Depth (inches): Remarks: Soil is very dark a	and uniform.	. Not reduce	ed.				Hydric Sol	il Present? Ye	25 No <u>×</u>	
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog	and uniform. gy Indicators	. Not reduce	ed.				Hydric Soi	l Present? Ye	25 No <u>×</u>	
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators	and uniform. gy Indicators (minimum of	Not reduce	ed. ; check all that ap	ply)			Hydric Sol	I Present? Ye	ninimum of two re	quired
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators Surface Water	and uniform. gy Indicators (minimum of r (A1)	. Not reduce :: one required	ed. ; <u>check all that ap</u> Salt Crus	<u>ply)</u> st (B11)			Hydric Sol	I Present? Ye Jary Indicators (m rface Soil Cracks	ninimum of two re- s (B6)	quired
Depth (inches); Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators Surface Water High Water Ta	and uniform. gy Indicators (minimum of r (A1) able (A2)	. Not reduce	ed. ; <u>check all that ap</u> Salt Crus Aquatic i	ply) st (B11) invertebrates	s (B13)		Hydric Sol	Il Present? Ye dary Indicators (m rface Soil Cracks arsely Vegetated	ninimum of two res 6 (B6) 1 Concave Surface	quired
Depth (inches); Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3	and uniform. gy Indicators (minimum of r (A1) able (A2) 3)	. Not reduce	ed. ; <u>check all that ap</u> Sait Crus Aquatic i Hydroge	oly) st (B11) invertebrates n Sulfide Od	s (B13) lor (C1)		Hydric Sol	I Present? Ye dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (hinimum of two re- s (B6) d Concave Surface (B10)	quired
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (and uniform. gy Indicators (minimum of r (A1) able (A2) 3) (B1)	. Not reduce	ed. ; <u>check all that ap</u> Sait Cru: Aquatic I Hydroge Dry-Sea	ply) st (B11) invertebrates n Sulfide Od son Water Ta	s (B13) lor (C1) able (C2)		Hydric Sol Second Su Sp Dr Ox	I Present? Ye Jary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (idized Rhizosphe	hinimum of two re- s (B6) d Concave Surface (B10) eres on Living Ro	quired e (B8) ots (C
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators 	and uniform. gy Indicators (minimum of r (A1) able (A2) 3) (B1) posits (B2)	. Not reduce	ed. ; check all that ap Salt Crus Aquatic I Hydroge Dry-Sea Oxidizec	oly) st (B11) invertebrates n Sulfide Od son Water Ta I Rhizospher	s (B13) lor (C1) able (C2) res on Liv	ing Root	Hydric Sol Second Su Sr Dr O s (C3)	I Present? Ye lary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (kidized Rhizosphe where tilled)	hinimum of two re- s (B6) d Concave Surface (B10) eres on Living Roo	guirec ∋ (B8) ots (C
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits	and uniform. gy Indicators (minimum of r (A1) able (A2) 3) (B1) posits (B2) (B3)	Not reduce	ed. ; check all that ap Sait Crus Aquatic I Hydroge Dry-Sea Oxidizeo (where	oly) st (B11) invertebrates n Sulfide Od son Water Ta I Rhizospher e not tilled)	s (B13) lor (C1) able (C2) res on Liv	ing Root	Hydric Sol - <u>Second</u> - Su - Su - Su - Su - Su - Su - Su - Su - Cr	ll Present? Ye dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (kidized Rhizosphe where tilled) ayfish Burrows (0	ninimum of two re- s (B6) d Concave Surface (B10) eres on Living Roc C8)	quirec ∋ (B8) ots (C
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators 	and uniform. gy Indicators (minimum of r (A1) able (A2) 3) (B1) boosits (B2) (B3) Crust (B4)	. Not reduce	ed. <u>; check all that ap</u> Salt Crus Aquatic I Hydroge Dry-Sea Oxidizec (where Presenc	bly) st (B11) nvertebrates n Sulfide Od son Water Ta l Rhizospher e not tilled) e of Reduced	s (B13) lor (C1) able (C2) res on Liv d Iron (C-	ing Root	Hydric Sol - <u>Second</u> - Su - Su	ll Present? Ye dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (idized Rhizosphe where tilled) ayfish Burrows (C aturation Visible o	hinimum of two re- s (B6) I Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery	guirec ∋ (B8) bts (C (C9)
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or O Iron Deposits	and uniform. gy Indicators (minimum of r (A1) able (A2) 3) (B1) bosits (B2) (B3) Crust (B4) (B5)	. Not reduce	ed. <u>; check all that ap</u> Salt Crus Aquatic I Hydroge Dry-Sea Oxidizec (where Presenc Thin Mu	<u>ply)</u> st (B11) invertebrates n Sulfide Od son Water Ta l Rhizospher e not tilled) e of Reduced ck Surface (0	s (B13) lor (C1) able (C2) res on Liv d Iron (C- C7)	ing Root 4)	Hydric Sol - <u>Second</u> - Su - Su - Dr - Or - Or - Sa - Gu	I Present? Ye dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (kidized Rhizosphe where tilled) ayfish Burrows (C aturation Visible o comorphic Positic	hinimum of two re- s (B6) I Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery on (D2)	quirec e (B8) ots (C (C9)
Depth (inches); Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits	and uniform. gy Indicators (minimum of r (A1) able (A2) 3) (B1) posits (B2) (B3) Crust (B4) (B5) sible on Aeria	. Not reduce	ed. ; check all that ap Salt Crus Aquatic I Hydroge Dry-Sea Oxidizec (where Presenc Thin Mu Y) Other (E	ply) st (B11) invertebrates n Sulfide Od son Water Ta l Rhizospher e not tilled) e of Reduced ck Surface (0 ixplain in Ref	s (B13) lor (C1) able (C2) res on Liv d Iron (C- C7) marks)	ing Root 4)	Hydric Sol - Second - Su - Su	I Present? Ye dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (didized Rhizosphe where tilled) ayfish Burrows (C aturation Visible o comorphic Positic AC-Neutral Test (1)	ninimum of two re- s (B6) I Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery on (D2) D5)	quirec ∋ (B8) Dts (C (C9)
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators 	and uniform. gy Indicators (minimum of r (A1) able (A2) 3) (B1) posits (B2) (B3) Crust (B4) (B5) sible on Aeria d Leaves (B9)	Not reduce	ed. ; check all that ap Salt Crus Aquatic I Hydroge Dry-Sea Oxidized (where Presenc Thin Mu r) Other (E	bly) st (B11) invertebrates n Sulfide Od son Water Ta l Rhizospher e not tilled) e of Reduced ck Surface (C ixplain in Ref	s (B13) lor (C1) able (C2) res on Liv d Iron (C- C7) marks)	ing Root 4)	Hydric Sol - Second - Su - Su - Dr - Dr - Cr - Cr - Sa - Fr - Fr	I Present? Ye dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (didized Rhizosphe where tilled) ayfish Burrows (C aturation Visible o comorphic Positic AC-Neutral Test (f ost-Heave Humm	hinimum of two re- s (B6) I Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery on (D2) D5) hocks (D7) (LRR	guirec ∋ (B8) bts (C (C9) F)
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vis Water-Stainec Field Observation	and uniform. gy Indicators (minimum of r (A1) able (A2) 3) (B1) boosits (B2) (B3) (B3) Crust (B4) (B5) sible on Aeria d Leaves (B9)	. Not reduce	ed. ; check all that ap Salt Crus Aquatic i Hydroge Dry-Sea Oxidized (where Presenc Thin Mu ') Other (E	ply) st (B11) invertebrates n Sulfide Od son Water Ta I Rhizospher e not tilled) e of Reducer ck Surface (C ixplain in Ren	s (B13) lor (C1) able (C2) res on Liv d Iron (C- C7) marks)	ing Root 4)	Hydric Sol - <u>Second</u> - Su - Su	I Present? Ye dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (kidized Rhizosphe where tilled) ayfish Burrows (C uturation Visible o comorphic Positic AC-Neutral Test (I ost-Heave Humm	hinimum of two re- s (B6) d Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery on (D2) D5) nocks (D7) (LRR	<u>quirec</u> ∋ (B8) ots (C (C9) F)
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog <u>Primary Indicators</u> Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vis Water-Stained Field Observation	and uniform. gy Indicators (minimum of r (A1) able (A2) 3) (B1) bosits (B2) (B3) (B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns: const2	I Imagery (B7	ed. ; check all that ap Sait Crus Aquatic I Hydroge Dry-Sea Oxidizeo (where Presenc Thin Mu r) Other (E	ply) st (B11) invertebrates n Sulfide Od son Water Ta I Rhizospher e not tilled) e of Reduced ck Surface ((ixplain in Ref	s (B13) lor (C1) able (C2) res on Liv d Iron (C- C7) marks)	ing Root 4)	Hydric Sol - Second - Su - Su	I Present? Ye Jary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (kidized Rhizosphe where tilled) ayfish Burrows (C aturation Visible o eomorphic Positic AC-Neutral Test (I ost-Heave Humrr	hinimum of two re- s (B6) d Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery on (D2) D5) nocks (D7) (LRR	guired ∋ (B8) ots (C (C9) F)
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vis Water-Stained Field Observation Surface Water Pre	and uniform. gy Indicators (minimum of r (A1) able (A2) (B1) bosits (B2) (B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns: esent?	I Imagery (B7	ed. ; check all that ap Sait Crus Aquatic I Hydroge Dry-Sea Dry-Sea Oxidizeo (where Presenc Thin Mu r) Other (E	ply) st (B11) invertebrates n Sulfide Od son Water Ta I Rhizospher e not tilled) e of Reduced ck Surface ((ixplain in Ref inches):	s (B13) lor (C1) able (C2) res on Liv d Iron (C- C7) marks)	ing Root 4)	Hydric Sol Second Su Sp Dr Os s (C3) (0 Se Ge Fr	I Present? Ye dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (kidized Rhizosphe where tilled) ayfish Burrows (C aturation Visible o comorphic Positic AC-Neutral Test (1 ost-Heave Humm	hinimum of two re- s (B6) d Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery on (D2) D5) nocks (D7) (LRR	guirec e (B8) ots (C (C9) F)
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators 	and uniform. gy Indicators (minimum of r (A1) able (A2) (B1) bosits (B2) (B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns: esent? ent?	Not reduce	ed. ; check all that ap Sait Crus Sait Crus Aquatic I Hydroge Dry-Sea Oxidizec (where Presenc Thin Mu r) Other (E No X Depth (bly) st (B11) nvertebrates n Sulfide Od son Water Ta l Rhizospher e not tilled) e of Reduced ck Surface ((ixplain in Ren inches):	s (B13) lor (C1) able (C2) res on Liv d Iron (C- C7) marks)	ing Root 4)	Hydric Sol 	I Present? Ye	ninimum of two re- s (B6) d Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery on (D2) D5) nocks (D7) (LRR	quirec e (B8) ots (C (C9) F)
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vis Water-Stained Field Observation Surface Water Prese Water Table Prese Saturation Presen	and uniform. gy Indicators (minimum of r (A1) able (A2) 3) (B1) bosits (B2) (B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns: esent? ent? trice	Not reduce one required Imagery (B7) Yes N Yes N	ed. ; check all that ap Salt Crus Aquatic Hydroge Dry-Sea Oxidizec (where Presenc Thin Mu r) Other (E No X Depth (No X Depth (<u>ply)</u> st (B11) invertebrates n Sulfide Od son Water Ta l Rhizospher e not tilled) e of Reduced ck Surface (C ixplain in Ren inches): (inches):	s (B13) lor (C1) able (C2) res on Liv d Iron (C- C7) marks)	ing Root 4) We	Hydric Soi - Second - Su - Su	dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (idized Rhizosphe where tilled) ayfish Burrows (C ituration Visible o eomorphic Positic AC-Neutral Test (ost-Heave Humm	hinimum of two re- s (B6) I Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery on (D2) D5) nocks (D7) (LRR	quirec ≥ (B8) ots (C (C9) F) x
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vis Water-Stained Field Observation Surface Water Prese Saturation Presen (includes capillary Describe Recorde	and uniform. gy Indicators (minimum of r (A1) able (A2) 3) (B1) bosits (B2) (B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns: esent? ent? trige) ad Data (streat	Not reduce	ed. <u>; check all that ap</u> Salt Crus Aquatic I Hydroge Dry-Sea Oxidizec (where Presenc Thin Mu r)Other (E No XDepth (No X)Depth	ply) st (B11) invertebrates n Sulfide Od son Water Ta inches): inches): (inches): (inches):	s (B13) lor (C1) able (C2) res on Liv d Iron (C- C7) marks) evious in	ing Root 4) We	Hydric Soi - <u>Second</u> - Su - Su	dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (idized Rhizosphe where tilled) ayfish Burrows (C aturation Visible o eomorphic Positic AC-Neutral Test (f ost-Heave Humm	hinimum of two re- s (B6) I Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery on (D2) D5) nocks (D7) (LRR	quired ⇒ (B8) ots (C (C9) F) x
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators 	and uniform. gy Indicators (minimum of r (A1) able (A2) 3) (B1) bosits (B2) (B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns: esent? ent? tr? fringe) d Data (streat	Not reduce one required Imagery (B7) Yes N Yes N Yes N Yes N	ed. <u>; check all that ap</u> Salt Crus Aquatic i Hydroge Dry-Sea Oxidized (where Presenc Thin Mu r)Other (E No XDepth (No X)))))))))))))))))))))))))))))))	ply) st (B11) invertebrates n Sulfide Od son Water Ta I Rhizospher e not tilled) e of Reduced ck Surface (0 ixplain in Ref inches): (inches): (inches): al photos, pre	s (B13) lor (C1) able (C2) res on Liv d Iron (C- C7) marks) evious in	ing Root 4) We spections	Hydric Sol - <u>Second</u> - Su - Su	dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (didized Rhizosphe where tilled) ayfish Burrows (C aturation Visible o eomorphic Positic AC-Neutral Test (1 ost-Heave Humm	ninimum of two re- s (B6) I Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery on (D2) D5) nocks (D7) (LRR	guirec ∋ (B8) bts (C (C9) F)
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vis Water-Stained Field Observation Surface Water Prese Saturation Presen (includes capillary Describe Recorde	and uniform. gy Indicators (minimum of r (A1) able (A2) 3) (B1) posits (B2) (B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns: esent? ent? tringe) ad Data (streat	I Imagery (B7) Yes N Yes N Yes N Yes N	ed. <u>; check all that ap</u> Salt Crus Aquatic i Hydroge Dry-Sea Oxidized (where Presenc Thin Mu r)Other (E No XDepth (No X)Depth (No XDepth (No X)Depth (No X)	ply) st (B11) invertebrates n Sulfide Od son Water Ta l Rhizospher e not tilled) e of Reducer ck Surface ((ixplain in Ren inches):	s (B13) lor (C1) able (C2) res on Liv d Iron (C- C7) marks) evious in	ing Root 4) We spections	Hydric Sol <u>Second</u> <u>Second</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u> <u>Su</u>	I Present? Ye dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (didized Rhizosphe where tilled) ayfish Burrows (C aturation Visible o eomorphic Positic AC-Neutral Test (f ost-Heave Humm	hinimum of two re- s (B6) I Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery on (D2) D5) hocks (D7) (LRR	guirec ∋ (B8) ots (C (C9) F) x
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators 	and uniform. gy Indicators (minimum of r (A1) able (A2) (B1) bosits (B2) (B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns: essent? ent? t? fringe) ed Data (streation)	I Imagery (B7) Yes N Yes N Yes N Yes N	ed. <u>; check all that ap</u> Sait Crus Aquatic i Hydroge Dry-Sea Oxidized (where Presenc Thin Mu y)Other (E No XDepth (No XDepth (No XDepth (pritoring well, aerial)	ply) st (B11) invertebrates n Sulfide Od son Water Ta I Rhizospher e not tilled) e of Reduced ck Surface (C ixplain in Ren inches):	s (B13) lor (C1) able (C2) res on Liv d Iron (C- C7) marks) evious in	ing Root 4) We spections	Hydric Sol - <u>Second</u> - Su - Su	I Present? Ye dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (didized Rhizosphe where tilled) ayfish Burrows (C aturation Visible o comorphic Positic AC-Neutral Test (f ost-Heave Humm	hinimum of two re- s (B6) d Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery on (D2) D5) nocks (D7) (LRR	<u>quirec</u> ∋ (B8) ots (C (C9) F)
Depth (inches): Remarks: Soil is very dark a HYDROLOGY Wetland Hydrolog Primary Indicators 	and uniform. gy Indicators (minimum of r (A1) able (A2) (B1) bosits (B2) (B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns: esent? ent? t? fringe) d Data (streat	Not reduce in a construction of the second	ed. ; check all that ap Sait Crus Aquatic I Hydroge Dry-Sea Oxidized (where Presenc Thin Mu r)Other (E No XDepth (No XDepth (No XDepth (no XDepth (pritoring well, aerial	ply) st (B11) invertebrates n Sulfide Od son Water Ta l Rhizospher e not tilled) e of Reduced ck Surface ((ixplain in Ren inches):	s (B13) lor (C1) able (C2) res on Liv d Iron (C- C7) marks) evious in	ing Root 4) We spections	Hydric Sol Second	I Present? Ye dary Indicators (m rface Soil Cracks arsely Vegetated ainage Patterns (didized Rhizosphe where tilled) ayfish Burrows (C aturation Visible o eomorphic Positic AC-Neutral Test (f ost-Heave Humm	hinimum of two re- s (B6) d Concave Surface (B10) eres on Living Ro- C8) on Aerial Imagery on (D2) D5) nocks (D7) (LRR /es No	guire(⇒ (B8) ots (C (C9) F) ×

WETLAND DETERMINATION DATA FORM -- Great Plains Region

Project/Site: Sterling Ranch	_ City/County: El Paso Coun	ty	Sampling Date: 3/10/15
Applicant/Owner: MS Civil Consultants		_ State: CO	Sampling Point: <u>6</u>
Investigator(s); Julia Auckland	_ Section, Township, Range:	Section 33, T12S,	R65W
Landform (hillslope, terrace, etc.): swale	Local relief (concave, conve	ex, none): <u>concave</u>	Slope (%): <u>1</u>
Subregion (LRR): G-Western Great Plains Lat: 3	38.956039 Lor	ng: <u>-104.681067</u>	Datum: WGS 84
Soil Map Unit Name: Blakeland Fluvaquentic Haplaquolls	· · · · · · · · · · · · · · · · · · ·	NWI classific	ation:
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes <u>×</u> No	_ (If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrology significant	tly disturbed? Are "Norm	nal Circumstances" p	oresent? Yes X No
Are Vegetation, Soil, or Hydrology naturally p	problematic? (If needed	l, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map showin	ng sampling point loca	tions, transects	, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>×</u> No Yes <u>×</u> No Yes <u>×</u> No	Is the Sampled Area within a Wetland?	Yes <u>×</u> No
Remarks: Western tributary to Sand Creek today.	. Shallow swale with ~15 foot wide	e swath of wetland vegetatic	on. Snow cover until 3/9, 99% melted

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 Ft radius</u>)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC
2.				$(\text{excluding FAC}): \qquad \underline{\mathbf{C}} \qquad (A)$
3				Total Number of Dominant
1				Species Across All Strata: <u>3</u> (B)
4	0	= Total Cov	/er	Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 15 Ft radius)	<u></u>			That Are OBL, FACW, or FAC: 1 (A/B)
1				Prevalence Index worksheet:
2		. <u></u>		Total % Cover of: Multiply by:
3		·		OBL species 65 $x_1 = 65$
4				EACW species $\frac{25}{x^2} = 50$
5.		. <u></u>		FACT species $2 = 0$
	0	= Total Co	ver	FAC species $33 - 20$
Herb Stratum (Plot size: 5 Ft radius)				FACU species 3 $x 4 = 23$
1. Carex nebrascensis	45	<u> </u>	OBL	UPL species $x 5 = 0$
2. Juncus articus (balticus)	25	<u>Y</u>	FACW	Column Totals: 95 (A) 135 (B)
3 Carex utriculata	20	<u>Y</u>	OBL	$P_{\rm max} = P/A = -1.4210526315789473$
A Elymus trachycaulus	5	N	FACU	
E				Hydrophytic Vegetation indicators:
6				1 - Rapid Test for Hydrophytic Vegetation All dominants are FACW and/or OBL.
0			·	X 2 - Dominance Test is >50%
/				X_ 3 - Prevalence Index is ≤3.0 ¹
8 9				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
10.				Problematic Hydrophytic Vegetation ¹ (Explain)
	95	= Total Co	ver	
Woody Vine Stratum (Plot size: 15 Ft radius)		-		'Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1				
2				Vegetation
		_ = Total Co	ver	Present? Yes X No
% Bare Ground in Herb Stratum	95		g Cover	
Remarks:	D5 - FAC Ne	eutral Test for hydro	logy. Drop all FA	C, cross examine all other dominants. If > 50% remaining are FACW to OBL, then YES to D5.
Moss~5%. Carex spp. dominant in center of swall trachycaulus. Other species observed along the v	e. Along w vetland per	euano peri imeter bev	ond samp	ling radius: Agrostis gigantea, Distichlis spicata, and

Panicum virgatum.

SOIL

Sampling Point: 6

Profile Des	cription: (Describe	to the de	pth needed to docu	nent the	mulcato			
Depth	Matrix		Redo	<u>x Featur</u> %	es Type ¹	1 oc^2	Texture	Remarks
nches)	$\frac{\text{Color (moist)}}{10 \text{ VR } 3/2}$	100					sandy loam	10% fine to medium gravel, similar to SP1
-1	$\frac{10 \text{ In } 3/2}{\text{Glov 1.2.5/N}}$	<u>- 100</u> - <u>81</u>	Glev 1 6/10Y	5	– – – – – – – – – – – – – – – – – – –	M	loamy sand	depleted areas are light "greenish gray" clay w PL
-8	Gley 12.5/1		7.5 YB 5/6		- <u>-</u>	PL		prominent
			White N/9	3	- <u>-</u>	M		white salt crystals
	1078 4/3	10						not depleted, brown
		100						
-16	Gley 1 2.5/N							
	Concentration, D=De	oletion, RI	/=Reduced Matrix, C	S=Cover	ed or Coa	ited Sand G	 Grains. ² Lo	cation: PL=Pore Lining, M=Matrix.
dric Soi	I Indicators: (Applie	cable to a	II LRRs, unless othe	erwise no	oted.)		Indicators	s for Problematic Hydric Solls
Histoso Histic I Black I Hydrog Stratifi Deplet Thick I Sandy 2.5 cm Sestrictive	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ed Layers (A5) (LRR Muck (A9) (LRR F, G, Muck (A9) (LRR F, G, Mucky Agent Surfa Dark Surface (A12) Mucky Mineral (S1) Mucky Peat or Peat Mucky Peat or Peat (S2) E Layer (if present):	F) H) ce (A11) (S2) (LRF S3) (LRR	Sandy Sandy Strippe Loamy Deplet Redox Redox Redox Redox F) (M	Redox (S ed Matrix Mucky M Gleyed ed Matrix Dark Su ed Dark Su ed Dark S Depress Plains Dep ILRA 72	(S4) (S6) Matrix (F2) (F3) rface (F6) Surface (F6) Surface (F6) pressions & 73 of L	(F16) RRH)	Coast Dark High I Redu Redu Red F Very Other ³ Indicator wetlau unles	t Prairie Redox (A16) (LRR F, G, H) Surface (S7) (LRR G) Plains Depressions (F16) RR H outside of MLRA 72 & 73) ced Vertic (F18) Parent Material (TF2) Shallow Dark Surface (TF12) r (Explain in Remarks) s of hydrophytic vegetation and nd hydrology must be present, as disturbed or problematic.
Depth ((inches):						Hydric So	il Present? Yes <u>×</u> No
Remarks: Slightly bl	acker than upland	soil at SF	P1. Moss 5%.					
YDROL	.OGY							
Netland H	Hydrology Indicator	s:						
Primary In	dicators (minimum of	one requ	ired; check all that ap	ply)			Secon	dary Indicators (minimum of two require
Surfa	ce Water (A1)		Salt Cru	st (B11)			Su	urface Soil Cracks (B6)
High	Water Table (A2)		Aquatic	Invertebr	ates (B13)	Sr	parsely Vegetated Concave Surface (B8
X Satur	ration (A3)		Hydroge	en Sulfide	Odor (C	1)	Di	rainage Patterns (B10)

	-
<u>×</u>	Saturation (A3)
ł	Water Marks (B

Water Marks (B1)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	x_ Oxidized Rhizospheres on Livi
Drift Deposits (B3)	(where not tilled)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4
Iron Deposits (B5)	Thin Muck Surface (C7)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)
X Water-Stained Leaves (B9)	
Field Observations:	
Surface Water Present? Yes No	X Depth (inches):

 Water Marke (97) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) X Water-Stained Leaves (B9) 	 X Oxidized Rhizospheres on Living Roots (C (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks) 	 (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) X Geomorphic Position (D2) X FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Field Observations: Surface Water Present? Yes No Water Table Present? Yes X No Saturation Present? Yes X No (includes capillary fringe) No Describe Resented Data (stream gauge monit	X Depth (inches): I Depth (inches): 15 Depth (inches): surface Depth (inches): surface Wetla oring well, aerial photos, previous inspections), if	nd Hydrology Present? Yes <u>×</u> No f available:
Describe Recorded Data (stream gauge, moniti	oring well, aerial photos, previous inspections), in	available.

Remarks:

~1-2 inches of standing water in the center of the swale (3 feet east of SP), likely snow melt on top of partially frozen ground.

____ Oxidized Rhizospheres on Living Roots (C3)

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site. Sterling Ranch	City/County: El Paso Cou	nty	Sampling Date: 3/11/1	5
Applicant/Owner: MS Civil Consultants		State: CO	Sampling Point: 7	
Investigator(s): Julia Auckland	Section, Township, Range	: Section 33, T12S,	R65W	
Landform (hillslope, terrace, etc.): Sand Creek	_ Local relief (concave, con	vex, none): <u>concave</u>	Slope (%):
Subregion (LRR): G-Western Great Plains	8.956325 Lo	ong: <u>-104.673700</u>	Datum: W	GS 84
Soil Map Unit Name: Columbine gravelly sandy loam		NWI classific	cation:	<u></u>
Are climatic / hydrologic conditions on the site typical for this time of y	ear? Yes <u>×</u> No	(If no, explain in R	Remarks.)	
Are Vegetation, Soil, or Hydrology significantly	y disturbed? Are "Nor	rmal Circumstances" p	present? Yes X	No
Are Vegetation, Soil, or Hydrology naturally pr	roblematic? (If neede	əd, explain any answe	ers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Remarks:

Sand Creek is a shallow swale with an ~20 foot-wide swath of wetland vegetation. The creek is located in the flat bottom of an approximately 60 foot side canyon-like depression. Along the west side of the depression, the steep, bare, sandy wall is approximately 20 feet high. The vegetated east side slopes up more gradually (towards SP 9).

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 Ft radius</u>)	% Cover	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC	(4)
2				(excluding FAC-):	(A)
2				Total Number of Dominant	
J				Species Across All Strata: 4	(B)
4	0			Design of Design of Creation	
Sapling (Shrub Stratum (Plot size: 15 Ft radius)	<u> </u>	- 10tai C01		That Are OBL FACW, or FAC: 1	(A/B)
					· · ·
l				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3	. <u></u>		<u> </u>	OBL species <u>50</u> x 1 = <u>50</u>	-
4		. <u> </u>		FACW species _45 x 2 = _90	_
5				FAC species $x 3 = 0$	
5 Et rodius	0	= Total Co	ver	FACU species $x 4 = 0$	
Herb Stratum (Plot size: 5 Fillaulus)	25	v	OBI	$11PL \text{ species} \qquad x_5 = 0$	
1. Carex nebrascensis	20			Column Totolo: 95 (A) 140	
2. Carex utriculata	25	- <u>Y</u>			
3. <u>Juncus saximontanus</u> (J. ensifolius in Culver and Lemly)		<u>Y</u>	FACW	Prevalence Index = B/A = 1.473684210526315	57
4. Juncus articus (balticus)	20	<u>Y</u>	FACW	Hydrophytic Vegetation Indicators'	
5 Juncus dudleyi (tenuis)	5	<u>N</u>	FACW	Y 1 Denid Test for Hydrophytic Vagatation	
6					
7					
				x_3 - Prevalence Index is $\leq 3.0^{\circ}$	
8.		-		4 - Morphological Adaptations' (Provide sup	porting
9	_			data in remarks or on a separate sheet)	in)
10	05			- Problematic Hydrophytic Vegetation (Expla)
bit a bit of the other (Distriction 15 Ft radius	30	= 1 otal Co	ver	¹ Indicators of hydric soil and wetland hydrology r	must
woody vine Stratum (Plot size:)				be present, unless disturbed or problematic.	
1					
2				Vegetation	
5	05	_ = Total Co	ver over	Present? Yes X No	
% Bare Ground in Herb Stratum	95	= 10tal Ve	y Cover		
Kemarks:	D5 - FAC Ne	eutral Test for hydro	ology. Drop all FA	c, cross examine all other dominants. If > 50% remaining are FACW to OBL, then vegetation is dominated by Carex spp.and Ju	Incus
Sampling point vegetation is characteristic of the we	alei aleat	s along Sa			
spp.					
		<u></u>		Creat Plaina Vara	ion 2.0
US Army Corps of Engineers				Great Plains – Vers	1011 2.0

US Army Corps of Engineers

SOIL

Sampling Point: 7

Profile Desc	cription: (Describe	to the de	oth needed to docum	ent the	indicator	or confi	rm the absence	of indicators.)
Depth (inches)	Matrix	0/,	Redox	Feature %	S Type ¹	L oc ²	– Texture	Remarks
(Inches)	2 5V 2/1	- <u> </u>		/ù			clav loam	
0-0			Glov 2 2 5/1000	20	- <u></u>	M	clay loam	
3-6			Gley 2 2.5/10PB			111		20% fine to medium sand
6-9	Gley 1 4/N	- 100	······				laanu aand	20% life to medium sand
9-16	Gley 1 4/10Y	100					loamy sand	sandier than above, line sand
¹ Type: C=C	concentration, D=De	pletion, RN	I=Reduced Matrix, CS	=Covere	ed or Coat	ed Sand	Grains. ² Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applie	cable to a	II LRRs, unless other	wise no	ted.)		Indicators	s for Problematic Hydric Soils":
Histoso	I (A1)		<u>^</u> Sandy G	leyed M	atrix (S4)		1 cm	Muck (A9) (LRR I, J)
Histic E	pipedon (A2)		Sandy F	Redox (S	5)		Coast	Prairie Redox (A16) (LRR F, G, H)
Black H	listic (A3)		Stripped	Matrix (S6)		Dark :	Surface (S7) (LKR G)
Hydrog	en Sulfide (A4)	-	Loamy N	VIUCKY M	ineral (F1) Actrix (F2)		High I	Frame Depressions (Γ 10) RR H outside of MI RA 72 & 73)
Stratifie	ed Layers (A5) (LRR	F)	Loamy (Jieyea N	natrix (F∠) /E3\		(L) Redu	ced Vertic (F18)
1 cm M	uck (A9) (LRR F, G,	H)		u watrix Jark Sur	(FS)		Red F	Parent Material (TF2)
Lepiete	ea Below Dark Surfa	ue (A11)	Redux L	d Dark Sur	uutace (F7	')	Verv	Shallow Dark Surface (TF12)
I NICK U	Mucky Mineral (Q1)		Redoy [)epressi	ons (F8)	,	Other	(Explain in Remarks)
Sandy I	Mucky Peat or Peat	(S2) (I RR	(G, H) High Pla	ains Den	ressions (F16)	³ Indicators	s of hydrophytic vegetation and
2.5 UM 5 cm M	lucky Peat or Peat (S	(32) (LRR F	· · · · · · · · · · · · · · · · · · ·	RA 72 8	73 of LR	RH)	wetlar	nd hydrology must be present,
0 om W			, (unles	s disturbed or problematic.
Restrictive	Layer (if present):							
Туре:								
Depth (ir	nches):						Hydric So	il Present? Yes <u>×</u> No
Remarks:								
Slightly bro	ownish on top 3", t	hen more	e reduced (gleyed).					
			<u> </u>					
Wotland H	vdrology Indicators	2'						
Primary Ind	licators (minimum of	one reauii	red: check all that appl	v)			Second	dary Indicators (minimum of two required)
<u>Finary inc</u>	a Motor (A1)	0(10 1000	Salt Crust	(B11)				Irface Soil Cracks (B6)
	e water (AT)			vertebra	tes (B13)		Sc	arsely Vegetated Concave Surface (B8)
	tion $(A2)$		Hydrogen	Sulfide	Odor (C1)		0p	ainage Patterns (B10)
	uon (AS) Marka (P1)			on Wate	Table (C	2)	O	kidized Rhizospheres orı Livina Roots (C3
vvater	warks (B1)			Phizoeni	i i abio (O	-, ivina Roj	ots (C3) $($	(where tilled)
Sedim	ent Deposits (B2)			not tille	10103 011 L d)	ining i tu		avfish Burrows (C8)
Drift D	eposits (B3)		(wnere	of Dodu	u) ood Iron ((1 1	Ci	aturation Visible on Aerial Imagery (C9)
Algal N	Mat or Crust (B4)			OI RECU	Ceu Iron (U	J4)	<u>~</u> 30 X C	comorphic Position (D2)
Iron De	eposits (B5)			Surraci			<u>~</u> G	AC-Neutral Test (D5)
Inunda	tion Visible on Aeria	i Imagery	(B7) Other (Ex	piain in I	vemarks)		<u>~</u> F/	
X Water-	-Stained Leaves (B9)				T	Fr	
Field Obse	ervations:		. Y					
Surface Wa	ater Present?	Yes	_ No <u>^</u> Depth (ir	nches): _	<u></u>			
Water Tabl	le Present?	Yes <u>x</u>	_ No Depth (ir	nches):	o			
Saturation	Present?	Yes <u>x</u>	_ No Depth (ir	nches): _	surface	— ^v	Vetland Hydrold	ogy Present? Yes <u>×</u> No
Describe R	Recorded Data (strea	am gauge,	monitoring well, aerial	photos,	previous i	nspectio	ns), if available:	
	•	-						
Remarks:			<u></u>					
~2-3 inche	es of standing wat	er in the o	center of the swale (2 feet v	vest of SF	?).		

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site Sterling Ranch			City/Co	unty: El Paso Co	ounty		_ Sampling	Date: <u>3/</u>	11/15
Applicant/Owner MS Civil Consultant	s				State	<u>. co</u>	_ Sampling	Point: <u>8</u>	
Investigator(s); Julia Auckland			Section	, Township, Rang	ge: <u>Sectio</u>	n 33, T12S	, R65W		
Landform (hillslope, terrace, etc.): San Subregion (LBB): G-Western Great P	d Creek	Lat:	Local ı 38.95633	elief (concave, co 8	onvex, non Long: <u>-10</u>	e): <u>concave</u> 4.673674)	Slope Datum	: (%): <u>0</u> : WGS 84
Soil Map Unit Name: Columbine grave	elly sandy loar	n				NWI classifi	ication:		
Are climatic / hydrologic conditions on t	he site typical f	or this time c	of year? Ye	s <u>×</u> No	(If no	, explain in l	Remarks.)		
Are Vegetation, Soil, or	Hydrology	significa	ntly disturb	ed? Are "N	Normal Circ	umstances"	present?	Yes <u>*</u>	No
Are Vegetation, Soil, or	Hydrology	naturally	y problemat	ic? (If nee	eded, expla	in any answ	ers in Rem	arks.)	
SUMMARY OF FINDINGS - A	ttach site r	nap show	ing sam	pling point lo	ocations,	transect	s, impor	tant fea	tures, etc.
Hydrophytic Vegetation Present?	Yes X	No		Is the Sampled	Агеа				
Hydric Soil Present?	Yes <u>×</u>	No		within a Wetland	d?	Yes <u>×</u>	No		
Wetland Hydrology Present?	Yes <u>×</u>	No							
Remarks:	·		Trook for	noling point is -	JO'NE of	SP7 and	18-24" ah	ove wate	r in Sand
Transitional wetland on slightly ra	ised bench al	ong Sana C	Jieek. Sar	nping point is ~					

Creek. Dug pit to check soils and hydrology in an area with a mix of Juncus balticus, Agrostis gigantea, and Elymus trachycaulus; a common species assemblage along the wetland edge.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 Ft radius</u>)	% Cover	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC	(•)
·				(excluding FAC-):	(A)
2				Total Number of Dominant	
3				Species Across All Strata: 2	(B)
4	0	- Total Cov	/or	Demonst of Dominant Spacies	
Sepling/Shrub Stratum (Plot size: 15 Ft radius)		- 10(a) 001		That Are OBL, FACW, or FAC: _1	(A/B)
l;				Prevalence Index worksheet:	
2		• •••••		Total % Cover of:Multiply by:	
3		-	<u> </u>	OBL species 0 $x 1 = 0$	-
4				FACW species <u>70</u> x 2 = <u>140</u>	
5				FAC species $x_3 = 0$	
5 Et radius	0	= Total Co	ver	FACU species $30 x 4 = 120$	_
Herb Stratum (Plot size: <u>51771adids</u>)	50	Y	FACW	11PL species $x 5 = 0$	
1. Juncus saximonianus (ensilonus in ouiver and comy)	20	- <u>.</u>	FACW	Column Totals: 100 (A) 260	(B)
2. Agrostis gigantea	10	_ <u></u>	EACU		_ (=)
3. Schizachyrium scoparium	10	_ <u>N</u>		Prevalence Index = B/A = 2.6	
4. Elymus trachycaulus	10	<u>N</u>	FACO	Hydrophytic Vegetation Indicators:	
5. Juncus articus (balticus)		<u>N</u>	FACW	X 1 - Ranid Test for Hydrophytic Vegetation	
6.			•	All dominants are FACW and/or OBL.	
7.				$\mathbf{x} = 2 \cdot \mathbf{B}$ of the matrix of the test of test o	
8				A Marshele rice Index is 20.0	norting
9				data in Remarks or on a separate sheet)	porang
10				Problematic Hydrophytic Vegetation ¹ (Expla	in)
10.	100	= Total Co	ver		
Woody Vine Stratum (Plot size: 15 Ft radius				¹ Indicators of hydric soil and wetland hydrology	nust
1				be present, unless disturbed of problemate.	
2				Hydrophytic	
2.		= Total Co	ver	Vegetation	
% Bare Ground in Herb Stratum 0	100	_= Total Ve	g Cover	Present? Yes <u>^ No</u>	
Remarks:	D5 - FAC N	eutral Test for hvdr	ology. Drop all FA	C, cross examine all other dominants. If > 50% remaining are FACW to OBL, then	YES to D5.
Sampling point vegetation is characteristic of the tra	insitional	wetland ar	eas along	Sand Creek where vegetation is typically don	ninated
by Juncus spp. and Agrostis gigantea with lesser co	overage o	f a mix of I	FACU gra	sses.	

c	\sim	H	
9	Q		

Sampling Point: 8

Jepin	Motrix		Red	ov Feature	26					
inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	Remarks		
)-2 2	2.5Y 3/1	77	5YR 4/6	3	С	PL	clay loam			
			2.5Y 4/1	20	 D	M				
2-6	10YR 4/1	70	5YR 4/6	10	С	PL& M	clay loam	C spread beyond PL and into matrix		
6-18	10YR 4/3	100					sand	coarse super-saturated sand		
	ncentration D=De	pletion, RN	/-Reduced Matrix, (CS=Cover	 ed or Coati	ed Sand G	rains. ² Lo	cation: PL=Pore Lining, M=Matrix.		
ydric Soil in	ndicators: (Appli	cable to a	I LRRs, unless oth	erwise no	oted.)		Indicators	for Problematic Hydric Soils ³ :		
Histosol (/	A1)		Sandy	/ Gleyed N	latrix (S4)		1 cm I	Muck (A9) (LRR I, J)		
Histic Epi	ipedon (A2)		Sandy	/ Redox (S	5)		Coast	Prairie Redox (A16) (LRR F, G, H)		
Black Hist	tic (A3)		Stripp	ed Matrix	(S6)		Dark S	Surface (S7) (LRR G)		
Hydrogen	n Sulfide (A4)		Loam	y Mucky N	lineral (F1))	High F			
Stratified	Layers (A5) (LRR	(F)	Loam	y Gleyed N	viatrix (F2)		(Lt Dodu	$T_{A} \cap Outside Of MERA (2 & (3))$		
1 cm Muc	ck (A9) (LRR F, G	, H)		v Dark Sur	(୮୬) face (F6)		Red F	Parent Material (TF2)		
Depleted	Below Dark Surfa	ice (ATT)	Redux	ted Dark Su	Surface (F7	7)	Verv S	Shallow Dark Surface (TF12)		
TRICK Dar Sandy Mi	n Sunace (A12) ucky Mineral (S1)		Deple Redo	x Depress	ions (F8)	,	Other	(Explain in Remarks)		
2.5 cm Mi	ucky Peat or Peat	(S2) (LRF	(G, H) High I	Plains Der	ressions (F16)	³ Indicators	of hydrophytic vegetation and		
5 cm Muc	cky Peat or Peat (S3) (LRR F	(MLRA 72 & 73 of LRR H)			RH)	wetland hydrology must be present,			
	•						unles	s disturbed or problematic.		
Restrictive La	ayer (if present):									
i ype:										
Depth (incl	ches):						Hydric Soi	I Present? Yes <u>×</u> No		
Depth (incl Remarks: Auch sandie	er than SP 7.						Hydric Soi	l Present? Yes <u>×</u> No		
Depth (incl Remarks: Auch sandie YDROLOC	hes): er than SP 7. GY trology Indicator	s:					Hydric Soi	l Present? Yes <u>×</u> No		
Depth (incl Remarks: Auch sandie YDROLOC Wetland Hyd	er than SP 7. GY drology Indicator	s: f one requi	red: check all that ap	oply)			Hydric Soi	I Present? Yes X No		
Depth (incl Remarks: Auch sandie YDROLOC Vetland Hyd Primary Indica Surface V	ches): er than SP 7. GY drology Indicator cators (minimum o Water (A1)	s: f one requi	red; check all that ar Salt Cru	oply) jst (B11)			Hydric Soi	I Present? Yes <u>×</u> No hary Indicators (minimum of two required rface Soil Cracks (B6)		
Ype: Depth (incl Remarks: Auch sandie YDROLOO Vetland Hyd Primary Indica Surface V High Wat	ches): er than SP 7. GY drology Indicator cators (minimum o Water (A1) ter Table (A2)	s : f one requi	red: check all that an Salt Cru Salt Cru	oply) ist (B11) Invertebra	ates (B13)		Hydric Soi	I Present? Yes X No dary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8)		
Pype: Depth (incl Remarks: Much sandie YDROLOO Wetland Hyd Primary Indica Surface V High Wat X Saturatio	ches): er than SP 7. GY drology Indicator cators (minimum o Water (A1) tter Table (A2) op (A3)	s : f one requi	red; check all that ar Salt Cru Salt Cru Aquatic Hvdroge	oply) ist (B11) Invertebra en Sulfide	ates (B13) Odor (C1)		Hydric Soi	Il Present? Yes X No tary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10)		
Ype: Depth (incl Remarks: Much sandie YDROLOC Wetland Hyd Primary Indica Surface V High Wat X Saturatio Water Ma	er than SP 7. GY frology Indicator sators (minimum o Water (A1) tter Table (A2) on (A3) arks (B1)	s : f one requi	red: check all that ar Salt Cru Salt Cru Aquatic Hydroge Drv-Sea	oply) ist (B11) Invertebra en Sulfide ason Wate	ites (B13) Odor (C1) r Table (C:	2)	Hydric Soi	I Present? Yes X No tary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) idized Rhizospheres on Living Roots (C		
Ype: Depth (incl Remarks: Much sandie YDROLOC Wetland Hyd Primary Indica Surface V High Wat X Saturatio Water Ma Sedimen	er than SP 7. GY drology Indicator ators (minimum of Water (A1) ter Table (A2) on (A3) larks (B1) at Deposits (B2)	s: f one requi	red: check all that an Salt Cru Salt Cru Aquatic Hydroge Dry-Sea X Oxidize	oply) Ist (B11) Invertebra en Sulfide ason Wate d Rhizosp	ates (B13) Odor (C1) r Table (C2 heres on L	2) iving Roots	Hydric Soi Second Second Su Sp Dra So S (C3)	I Present? Yes X No dary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) idized Rhizospheres on Living Roots (C where tilled)		
Primary Indica Sedimen Depth (incl Remarks: Much sandie YDROLOC Vetland Hyd Primary Indica Surface V High Wat X Saturatio Water Ma Sedimen Drift Dep	er than SP 7. GY drology Indicator cators (minimum or Water (A1) tter Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3)	s: fone requi	red; check all that ar Salt Cru Aquatic Hydroge Dry-Sea X Oxidize (wher	oply) Ist (B11) Invertebra en Sulfide ason Wate d Rhizosp re not tille	ates (B13) Odor (C1) r Table (C2 heres on L d)	2) iving Roots	Hydric Soi <u>Seconc</u> <u>Seconc</u> <u>Su</u> <u>Sp</u> <u>Dra</u> <u>Sp</u> <u>Si</u> Si Si <u>Si</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u>Sp</u> <u></u>	I Present? Yes X No No Mary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8 ainage Patterns (B10) didized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8)		
	ches): er than SP 7. GY Grology Indicator cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	s: fone requi	red; check all that ar Salt Cru Aquatic Hydroge Dry-Sea X_ Oxidize (wher Presend	oply) ust (B11) Invertebra en Sulfide ason Wate d Rhizosp re not tille ce of Redu	ates (B13) Odor (C1) r Table (C: heres on L d) iced Iron (2) iving Roots C4)	Hydric Soi Second Second Su Sp Dra So So So So So So So So So So	I Present? Yes X No No lary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8 ainage Patterns (B10) idized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) ituration Visible on Aerial Imagery (C9)		
Ype: Depth (incl Remarks: Much sandie YDROLOO Wetland Hyd Primary Indica Surface V High Wat X Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep	ches): er than SP 7. GY drology Indicator cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	s : f one requi	red: check all that ar Salt Cru Aquatic Hydroge Dry-Sea X Oxidize (wher Presend X Thin Mu	oply) Ist (B11) Invertebra en Sulfide ason Wate d Rhizosp re not tille ce of Redu uck Surfac	ates (B13) Odor (C1) r Table (C heres on L d) iced Iron (e (C7)	2) iving Roots C4)	Hydric Soi Second Second Su Sp Dra Solution Solution Second S	I Present? Yes X No No <u>tary Indicators (minimum of two requirer</u> rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8 ainage Patterns (B10) idized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) ituration Visible on Aerial Imagery (C9) comorphic Position (D2)		
I ype: Depth (incl Remarks: Much sandie YDROLOC Wetland Hyd Primary Indica Surface V High Wat X Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatic	er than SP 7. GY drology Indicator eators (minimum of Water (A1) ter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria	s: f one requi	red: check all that ar Salt Cru Aquatic Hydroge Dry-Sea X Oxidize (when Presend X Thin Mu (B7) Other (I	oply) Ist (B11) Invertebra en Sulfide ason Wate d Rhizosp re not tille ce of Redu uck Surfac Explain in	ates (B13) Odor (C1) r Table (C2) heres on L d) iced Iron (e (C7) Remarks)	2) iving Roots C4)	Hydric Soi <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Seconc</u> <u>Sec</u>	A present? Yes X No No A present? Yes X No No A present? Yes X No A present of two required frace Soil Cracks (B6) arsely Vegetated Concave Surface (B8 ainage Patterns (B10) tidized Rhizospheres on Living Roots (Combere tilled) ayfish Burrows (C8) turation Visible on Aerial Imagery (C9) comorphic Position (D2) AC-Neutral Test (D5)		
I ype: Depth (incl Remarks: Much sandie YDROLOC YDROLOC Wetland Hyd Primary Indica Surface W High Wat X Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Depu Inundatic X Water-St	er than SP 7. GY drology Indicator ators (minimum of Water (A1) ter Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria tained Leaves (B5)	s: f one requi f one requi	red: check all that ar Salt Cru Aquatic Hydroge Dry-Sea X Oxidize (wher Presend X Thin Mu (B7) Other (I	oply) Ist (B11) Invertebra en Sulfide ason Wate d Rhizosp re not tille ce of Redu uck Surfac Explain in	ates (B13) Odor (C1) r Table (C3 heres on L d) iced Iron (e (C7) Remarks)	2) iving Roots C4)	Hydric Soi Second Second Su Su Su Su Su Su Su Su Su Su	Ary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) didized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) turation Visible on Aerial Imagery (C9) ecomorphic Position (D2) AC-Neutral Test (D5) ost-Heave Hummocks (D7) (LRR F)		
	er than SP 7. GY drology Indicator eators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria tained Leaves (B5) vations:	s: f one requi f one requi	red: check all that ar Salt Cru Aquatic Hydroge Dry-Sea X Oxidize (wher Presend X Thin Mu (B7) Other (I	oply) Ist (B11) Invertebra en Sulfide ason Wate d Rhizosp re not tille ce of Redu uck Surfac Explain in	ates (B13) Odor (C1) r Table (C: heres on L d) uced Iron ((e (C7) Remarks)	2) iving Roots C4)	Hydric Soi Second Second Su Su Su Su Su Su Su Su Su Su	I Present? Yes X No No Mary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) didized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) uturation Visible on Aerial Imagery (C9) eomorphic Position (D2) AC-Neutral Test (D5) ost-Heave Hummocks (D7) (LRR F)		
	er than SP 7. GY Grology Indicator eators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) at or Crust (B4) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria tained Leaves (B5) vations: er Present?	s: fone requir fone requir fone requir fone requir fone requir	red: check all that ar Salt Cru Aquatic Hydroge Dry-Sea X Oxidize (wher Presend X Thin Mu (B7) Other (I	oply) ust (B11) Invertebra en Sulfide ason Wate d Rhizosp re not tille ce of Redu uck Surfac Explain in (inches):	ates (B13) Odor (C1) r Table (C: heres on L d) iced Iron (e (C7) Remarks)	2) iving Roots C4)	Hydric Soi Second Second Su Sp Dra Sp Dra So So So So So So So So So So	I Present? Yes X No No I ary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) tidized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) turation Visible on Aerial Imagery (C9) comorphic Position (D2) AC-Neutral Test (D5) ost-Heave Hummocks (D7) (LRR F)		
	ches): er than SP 7. GY drology Indicator cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria tained Leaves (B5) vations: er Present? Present?	s: fone requi	red: check all that ar Salt Cru Aquatic Hydroge Dry-Sea X Oxidize (wher Presend X Thin Mu (B7) Other (I (B7) Other (I	oply) ust (B11) Invertebra en Sulfide ason Wate d Rhizosp re not tille ce of Redu uck Surfac Explain in (inches): _ (inches): _	ates (B13) Odor (C1) r Table (C: heres on L d) iced Iron (⁶ e (C7) Remarks) 16	2) iving Roots C4)	Hydric Soi Second Second Su Su So So So So So So Second Se	I Present? Yes X No No I ary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8) ainage Patterns (B10) idized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) ituration Visible on Aerial Imagery (C9) comorphic Position (D2) AC-Neutral Test (D5) ost-Heave Hummocks (D7) (LRR F)		
	er than SP 7. GY drology Indicator eators (minimum of Water (A1) ter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria tained Leaves (B5) vations: er Present? Present?	s: fone required fone fone required fone fone required fone fone required fone fone fone fone fone fone fone fone	red: check all that ar Salt Cru Aquatic Hydroga Dry-Sea X Oxidize (wher Presend X Thin Mu (B7) Other (I No X Depth No Depth No Depth	oply) ust (B11) Invertebra en Sulfide ason Wate d Rhizosp re not tille ce of Redu uck Surfac Explain in (inches): _ (inches): _ (inches):	ates (B13) Odor (C1) r Table (C heres on L d) iced Iron (e (C7) Remarks) 16 2	2) iving Roots C4)	Hydric Soi Second	I Present? Yes X No dary Indicators (minimum of two required rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8 ainage Patterns (B10) idized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) ituration Visible on Aerial Imagery (C9) comorphic Position (D2) AC-Neutral Test (D5) ost-Heave Hummocks (D7) (LRR F)		
	ches): er than SP 7. GY drology Indicator cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aeria tained Leaves (B5) vations: er Present? Present? Present? pillary fringe) corded Data (stree	s: fone requi	red: check all that ar Salt Cru Aquatic Hydroge Dry-Sea X Oxidize (when Presend X Thin Mu (B7) Other (I No X Depth No Depth No Depth No Depth Depth No Depth No Depth	oply) ust (B11) Invertebra en Sulfide ason Wate d Rhizosp re not tille ce of Redu uck Surfac Explain in (inches): _ (inches): _ (inches): _	ates (B13) Odor (C1) r Table (C heres on L d) iced Iron (⁶ e (C7) Remarks) 16 2 previous i	2) iving Roots C4) We nspections	Hydric Soi Second	I Present? Yes X No tary Indicators (minimum of two requirer rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8 ainage Patterns (B10) tidized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) turation Visible on Aerial Imagery (C9) comorphic Position (D2) AC-Neutral Test (D5) ost-Heave Hummocks (D7) (LRR F) mgy Present? Yes X No		
	er than SP 7. GY GY Grology Indicator eators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria tained Leaves (B5) vations: er Present? Present? Present? pillary fringe) corded Data (street	s: fone required fone required	red: check all that ar Salt Cru Aquatic Hydroge Dry-Sea XOxidize (wher Presend XThin Mu (B7)Other (I NoDepth NoDepth NoDepth NoDepth NoDepth Depth Depth Depth Depth Depth	oply) ust (B11) Invertebra en Sulfide ason Wate d Rhizosp re not tille ce of Redu uck Surfac Explain in (inches): (inches): (inches): ial photos,	ates (B13) Odor (C1) r Table (C2 heres on L d) iced Iron ((e (C7) Remarks) 16 2 previous i	2) iving Roots C4) We nspections	Hydric Soi Second Su Su Sp Dra Sp Dra So So So So So So So So So So	I Present? Yes X No dary Indicators (minimum of two require rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8 ainage Patterns (B10) tidized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) turation Visible on Aerial Imagery (C9) eomorphic Position (D2) AC-Neutral Test (D5) ost-Heave Hummocks (D7) (LRR F) mgy Present? Yes X No		
	ches): er than SP 7. GY Grology Indicator cators (minimum of Water (A1) tter Table (A2) on (A3) arks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) posits (B5) on Visible on Aeria tained Leaves (B5) vations: er Present? Present? Present? pillary fringe) corded Data (stree	s: fone required fone required	red: check all that ar Salt Cru Aquatic Aquatic Hydroge Dry-Sea XOxidize (wher Presend XThin Mu (B7)Other (I NoDepth NoDepth NoDepth NoDepth NoDepth NoDepth NoDepth NoDepth	oply) ust (B11) Invertebra en Sulfide ason Wate d Rhizosp re not tille ce of Redu uck Surfac Explain in (inches): (inches): (inches):	ates (B13) Odor (C1) r Table (C: heres on L d) iced Iron (e (C7) Remarks) 16 2 previous i	2) iving Roots C4) We nspections	Hydric Soi Second	I Present? Yes X No tary Indicators (minimum of two require rface Soil Cracks (B6) arsely Vegetated Concave Surface (B8 ainage Patterns (B10) idized Rhizospheres on Living Roots (C where tilled) ayfish Burrows (C8) ituration Visible on Aerial Imagery (C9) eomorphic Position (D2) AC-Neutral Test (D5) ost-Heave Hummocks (D7) (LRR F) pgy Present? Yes X No		

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sterling Ranch			City/County: E	Paso County		Sampling Date: 3/	1/15
Applicant/Owner: MS Civil Consultan	ts			Sta	ate: <u>CO</u>	Sampling Point: 9	
Investigator(s): Julia Auckland			_ Section, Towns	hip, Range: <u>Sec</u>	tion 33, T12S,	R65W	w
Landform (hillslope, terrace, etc.): slop	e Plains	Lat: 3	_ Local relief (co 38.956326	ncave, convex, n Long: -	one): <u>convex</u> 104.673410	Slope Datum:	(%): <u>1-2</u> WGS 84
Soil Man Unit Name: Columbine grav	elly sandy loan	n, 0-3% slopes	S		_ NWI classific	cation:	
Are climatic / hydrologic conditions on Are Vegetation, Soil, o Are Vegetation, Soil, o SUMMARY OF FINDINGS –	the site typical fo · Hydrology · Hydrology Attach site π	or this time of y significantl naturally p nap showin	vear? Yes <u>x</u> ly disturbed? roblematic? I g sampling p	No (If Are "Normal C (If needed, exp point location	no, explain in F ircumstances" blain any answe s, transects	Remarks.) present? Yes <u>×</u> ers in Remarks.) s, important fea	No tures, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No <u>×</u> No <u>×</u> No <u>×</u>	- Is the S - within a	ampled Area Wetland?	Yes	No <u>×</u>	
Remarks: Upland on slope above Sand Cre	ek, ~60' east a	and ~8' highe	r than wetland	sampling point	#8 .		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 Ft radius) % Cover Species? Status // Species? Status Number of Dominant Species // That Are OBL, FACW, or FAC (excluding FAC-): 0 (A) 3.
1.
2.
3. Total Number of Dominant 4. Species Across All Strata: 1 (B)
Species Across All Strata: 1 (B)
0 = Total Cover Descent of Deminant Species
Sapling/Shrub Stratum (Plot size: 15 Ft radius) (A/B)
1
2. Prevalence Index worksheet:
Total % Cover of: Multiply by:
OBL species x 1 = 0
FACW species x2 = 0
0 = Total Cover FAC species x 3 = 0
Herb Stratum (Plot size: 5 Ft radius) FACU species $x 4 = 0$
1 Bouteloua gracilis 79 Y UPL UPL species x 5 = 0
2 Artemisia frigida 10 N UPL Column Totals: 0 (A) 0 (B)
3 Coryphantha vivipara (cactus) 1 N UPL
A Hesperostipa comata 10 N UPL Prevalence Index = B/A = NaN
4. Hydrophytic Vegetation Indicators:
5 1 - Rapid Test for Hydrophytic Vegetation
0 2 - Dominance Test is >50%
7 3 - Prevalence Index is ≤3.0 ¹
8 4 - Morphological Adaptations ¹ (Provide supporting
9 data in Remarks or on a separate sheet)
10 Problematic Hydrophytic Vegetation' (Explain)
100 = Total Cover
be present, unless disturbed or problematic.
% Para Ground in Herb Stratum 0 100 - Total Ven Cover Present? Yes No X
Bare Glouid in The Biotration Plots very cover
D5 - FAC Neutral Test for hydrology. Drop all FAC, cross examine all other dominants. It > 50% remaining are FACW to OBL, liner FES to D5

Sampling Point: 9

Profile Desc	cription: (Describe	to the depth r	needed to docur	nent the i	ndicator	or confirm	n the absence	of indicators.)	
Depth	Matrix		Redo	x Features	3		- -	- .	
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	<u>Type</u>	_Loc ²	Texture	Remarks	
0-4	7.5 YR 3/1	100					sandy loam	10% fine (1-2mm) to medium (2-5mm) gravel	
4-15	7.5 YR 2.5/1	100			<u></u>		sandy loam	black, 10% fine to medium gravel	
	<u> </u>		y	- ·					
				· ·····					
		- <u></u>		·	<u> </u>				
	<u></u>								
				·					
¹ Type: C=C	oncentration, D=Dep	letion, RM=Re	duced Matrix, CS	S=Covered	d or Coate	ed Sand G	rains. ² Lo	cation: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators: (Applic	able to all LR	Ks, unless other						
Histoso	I (A1) ninadan (A2)		Sandy C	Sleyed Ma	itrix (54)		Coast	Prairie Redox (A16) (I RR F G H)	
HISTIC E	pipedon (A∠) listic (A3)		Sanuy i	1 Matrix (S	9 36)		Dark S	Surface (S7) (LRR G)	
Hvdrog	en Sulfide (A4)		Loamv	Mucky Mi	neral (F1)		High F	Plains Depressions (F16)	
Stratifie	d Layers (A5) (LRR	F)	Loamy	Gleyed M	atrix (F2)		(LF	RR H outside of MLRA 72 & 73)	
1 cm M	uck (A9) (LRR F, G,	H)	Deplete	d Matrix (F3)		Reduc	ced Vertic (F18)	
Deplete	d Below Dark Surfac	æ (A11)	Redox I	Dark Surfa	ace (F6)		Red P	arent Material (TF2)	
Thick D	ark Surface (A12)		Deplete	d Dark Su	Inface (F7)	Very S	Shallow Dark Surface (TF12)	
Sandy I	Mucky Mineral (S1)		Redox I	Jepressio	ns (F8) Sectors (F	16)	Other	(Explain in Remarks)	
2.5 cm	MUCKY Peat of Peat	(52) (LRR G, F (3) (I DD E)	1) nign Pi (Mi		73 of I RF	2 H)	wetland bydrology must be present		
5 CIII M	ucky real of real (3	5) (LRR P)	(11)			,	unless	s disturbed or problematic.	
Restrictive	Layer (if present):						1		
Type:									
Depth (ir	nches):						Hydric Soi	l Present? Yes No _X	
Remarks:				· · · ·					
Very dark,	loose, moist soil.	Not reduced.							
_									
					. <u></u>				
HIDROLU		•							
wetland Hy	drology indicators	;	heals all that ann	6.0			Second	any Indicators (minimum of two required)	
Primary Ind	icators (minimum of	one requirea; a	neck all that app	(D44)			Second	face Soil Crocks (R6)	
Surface	e Water (A1)		Salt Crust	(B11) Vertebret	(P12)		Sui	Tace Soli Clacks (B0)	
High W	ater Table (A2)		Aquatic in	Sulfido O	dor(C1)		Spa	aisery vegetated Concave Surface (DC)	
Saturat	Nortice (P1)			on Water	Table (C2	`		idized Rhizospheres on Living Roots (C3)	
Vvaler I	viains (DT)		Ovidized	Rhizosnhe	res on Liv	/ vina Roots	(C3) (1	where tilled)	
Drift De	anosits (B3)		(where	not tilled)	ing rooto	Cra	avfish Burrows (C8)	
Algal M	lat or Crust (B4)		Presence	of Reduc	, ed Iron (C	4)	Sat	turation Visible on Aerial Imagery (C9)	
Iron De	enosits (B5)		Thin Muc	k Surface	(C7)	.,	Ge	omorphic Position (D2)	
Inunda	tion Visible on Aerial	Imagery (B7)	Other (Ex	plain in R	emarks)		FA	C-Neutral Test (D5)	
Water-	Stained Leaves (B9)			•	,		Fro	ost-Heave Hummocks (D7) (LRR F)	
Field Obse	rvations:					<u> </u>			
Surface Wa	ater Present?	Yes No	X Depth (ir	nches):					
Water Table	e Present?	Yes No	X Depth (ir	nches):					
Saturation I	Present?	Yes No	x Depth (ir	nches):		Wet	land Hydrolog	gy Present? Yes No <u>×</u>	
(includes ca	apillary fringe)	n daude moni	toring well seriel	nhotos n	revious in	spections	if available:		
Describe R	ecolueu Data (sifeal	n gauge, moni	toring well, actidi	μιστος, μ		0000000			
Remarks:									
No wetlan	d hydrology indica	tors.							
110 weudi									
<u> </u>	· · · · · · · · · · · · · · · · · · ·								

Markup Summary

3/5/2019 3:37:50) PM (1)	
al 🔸	Subject: Highlight Page Label: 10 Author: dsdrice Date: 3/5/2019 3:37:50 PM Color:	
3/5/2019 3:38:1	7 PM (1)	
- e	Subject: Highlight Page Label: 15 Author: dsdrice Date: 3/5/2019 3:38:17 PM Color:	
3/5/2019 3:38:54	4 PM (1)	
	Subject: Highlight Page Label: 15 Author: dsdrice Date: 3/5/2019 3:38:54 PM Color:	Impacts to WOUS should be avoided and minimized to the extent possible.
3/5/2019 3:39:4	0 PM (1)	
<text><text><text><text><text><text><text></text></text></text></text></text></text></text>	Subject: Highlight Page Label: 16 Author: dsdrice Date: 3/5/2019 3:39:40 PM Color:	In Colorado, joint Section 404 and 401 permitting is utilized through the Nationwide Permit (NWP) program, as NWPs are certified by statute.
3/5/2019 3:39:5	3 PM (1)	
trom the USACE The purpose of these or a proposed discharge will comply with C in Colonado, parts Section 244 and - tationades Purmit (MMP) program, and year of purposed purposed purposed provide the section of the section of the part of purposed purposed on the section with the section of the section of the sec- tion of the section of the section of the WCA which the section of the section of the WCA which the section of the section of the the section of the section of the section with the section of the section of the section of the section of the section of the section of the section of the section of the section of the accimites permitted under an IP. Raher I and a separate 40 Water Quality Certit and a separate 40 Water Quality Certit and the separate 40 Wa	Subject: Highlight Page Label: 16 Author: dsdrice Date: 3/5/2019 3:39:53 PM Color:	which minimally affect wetlands.
3/5/2019 3:40:1	7 PM (1)	
	Subject: Highlight Page Label: 16 Author: dsdrice Date: 3/5/2019 3:40:17 PM Color:	Should impacts to WOUS require the loss of greater than 0.5 acre and/or 300 linear feet of stream bed, a residential development project would be permitted under an Individual Permit (IP).
3/5/2019 3:40:43	3 PM (1)	
All and a spectra device the state state and a spectra device state and	Subject: Highlight Page Label: 16 Author: dsdrice Date: 3/5/2019 3:40:43 PM Color:	Linear Transportation Crossings.

3/5/2019 3:46:58 PM (1)



Subject: Callout Page Label: 16 Author: dsdrice Date: 3/5/2019 3:46:58 PM Color:

The proposed preliminary plan layout indicates far more disturbance than linear transportation crossings and appears to cut off the wetland to the south (as does the proposed Marksheffel Road through the City parcel). Verify USACE requirements.