

**Appendix A – Tennessee Valley Authority Site Clearing and
Grading Specifications**

Tennessee Valley Authority Site Clearing and Grading Specifications

1. General - The project manager with the clearing and/or grading contractor(s) shall review the environmental evaluation documents for the project or proposed activity (categorical exclusion checklist, environmental assessment, or environmental impact statement) along with all clearing and construction appendices, conditions in applicable general and/or site-specific permits, the storm water pollution prevention plan, open burning or demolition notification requirements, and any Tennessee Valley Authority (TVA) commitments to property owners. The contractor shall then plan and carry out operations using techniques consistent with good engineering and storm water management practices as outlined in TVA's best management practices (BMPs) manual. The contractor will protect areas that are to be left unaffected by access or clearing work at and adjacent to all work sites. In sensitive areas and their buffers, the contractor will retain as much native ground cover and other vegetation as possible. BMPs shall be installed before general site clearing or grading, with progressive stabilization BMPs applied from the perimeter toward the interior work areas as grading is completed. Any stabilized area that must be disturbed in subsequent steps shall have temporary BMPs installed until work is completed and the area is restabilized.

If the contractor fails to use BMPs or to follow environmental expectations discussed in the prebid, prework meeting or present in contract specifications, TVA will order corrective changes and additional work, as deemed necessary in TVA's judgment, to meet the intent of environmental laws and regulations or other guidelines. Major violations or continued minor violations will result in work suspension until correction of the situation is achieved or other remedial action is taken at the contractor's expense. Penalty clauses may be invoked as appropriate.

2. Regulations - The clearing contractor shall comply with all applicable federal, state, and local environmental and antipollution laws, regulations, and ordinances, including without limitation, all air, water, solid and hazardous waste, noise, and nuisance laws, regulations, and ordinances. He or she shall secure, or ensure that TVA has **secured, all necessary permits and authorizations and made all appropriate notifications** to conduct work on the acres shown on the drawings and plan and profile for the contract. The contractor's designated project manager will actively seek to prevent, control, monitor, and safely abate all commonly recognized forms of workplace and environmental pollution. Permits or authorizations and **any necessary certifications of trained employees knowledgeable of environmental requirements shall be documented** with copies submitted to TVA's project manager or environmental specialist before work begins. The **contractor and subcontractors will be responsible for meeting all** conditions **specified in permits**. Permit conditions shall be reviewed in prework discussions.
3. Land and Landscape Preservation - The contractor shall exercise care to preserve the condition of cleared soils by avoiding as much compacting and deep scarring as possible in areas not to be developed for buildings, structures, or foundations. As soon as possible after initial disturbance of the soil and in accordance with any permit(s) or other state or local environmental regulatory requirements, cover material shall be placed to prevent erosion and sedimentation of water bodies or conveyances to

surface water or groundwater. The placement of erosion/sediment controls shall begin at the perimeter and work progressively to the interior of the site. Repeated work in an area will require establishment of a ground cover immediately after each disturbance is completed. In areas outside the clearing, borrow, fill, or use and access areas, the natural vegetation shall be protected from damage. The contractor and his or her employees and subcontractors must not deviate from delineated access routes or use areas and must enter the site(s) at designated areas that will be marked. Clearing operations shall be conducted to prevent any unnecessary destruction, scarring, or defacing of the remaining natural vegetation and adjacent surroundings in the vicinity of the work. In sensitive public or environmental areas, appropriate buffer zones shall be observed by modifying the methods of clearing or reclearing, grading, borrow, or fill so that the buffer and sensitive area are protected. Some areas may require planting native low-growing plants or grasses to meet the criteria of regulatory agencies, executive orders, or commitments to special program interests.

4. Streamside Management Zones - The clearing and/or grading contractor(s) must leave as many rooted ground cover plants as possible in buffer zones along streams and other bodies of water or wet-weather conveyances thereto. In such streamside management zones (SMZs), tall-growing tree species (trees that would interfere with TVA's National Electrical Safety Code clearances) shall be cut, and the stumps may be treated to prevent resprouting. Low-growing trees identified by TVA as marginal electrical clearance problems may be cut and then the stump treated with growth regulators to allow low, slow-growing canopy development and active root growth. Only approved herbicides shall be used, and herbicide application shall be conducted by certified applicators from the Transmission Operations and Maintenance (TOM) organization after initial clearing and construction. Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment, such as a feller-buncher. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. Disturbed soils in SMZs must be stabilized by appropriate methods immediately after the access or site is cleared. Stabilization must occur within the time frame specified in applicable storm water permits or regulations. Stumps within SMZs may be cut close to the ground but must not be removed or uprooted. Trees, limbs, and debris shall be prevented from falling into water bodies or immediately removed from streams, ditches, ponds, and wet areas using methods that will minimize dragging or scarring the banks or stream bottom. No debris will be left in the water or watercourse. Equipment will cross streams, ditches, or wet areas only at locations designated by TVA after the application of appropriate erosion-control BMPs and consistent with permit conditions or regulatory requirements.
5. Wetlands - In forested wetlands, tall trees will be cut near the ground, leaving stumps and roots in place. The cambium may be treated with herbicides applied by certified applicators from the TOM organization to prevent regrowth. Understory trees that must be initially cut and removed may be allowed to grow back or may be treated with tree growth regulators selectively to slow growth and increase the reclearing cycle. The decision will be situationally made based on existing ground cover, wetland type, and tree species, since tall tree removal may "release" understory species and allow them to quickly grow to "electrical clearance problem" heights. In many circumstances, herbicides labeled for water and wetland use may be used in reclearing.

At substation, switching stations, and communications sites, wetlands are avoided unless there is no feasible alternative.

6. Sensitive Area Preservation - If prehistoric or historic artifacts or features that might be of archaeological or historical significance are discovered during clearing, grading, borrow, or fill operations, the activity shall immediately cease within a 100-foot radius, and a TVA project manager, an environmental specialist, and the TVA Cultural Resources program manager shall be notified. The site shall be protected and left as found until a determination about the resources, their significance, and site treatment is made by TVA's Cultural Resources Program. Work may continue beyond the finding zone and the 100-foot radius beyond its perimeter.
7. Water Quality Control - The contractor's clearing, grading, borrow and fill, and/or disposal activities shall be performed using BMPs that will prevent erosion and entrance of spillage, contaminants, debris, and other pollutants or objectionable materials into drainageways, surface waters, or groundwater. Special care shall be exercised in refueling equipment to prevent spills. Fueling areas shall be remote from any sinkhole, crevice, stream, or other water body. Open burning debris shall be kept away from streams and ditches and shall be incorporated into the soil. Only materials allowed to be burned under an open burning permit may be incorporated into the soil.

The clearing and grading contractor(s) and subcontractors will erect and (when TVA or contract construction personnel are unable) maintain BMPs, such as silt fences, on steep slopes and adjacent to any stream, wetland, or other water body. BMPs will be inspected by the TVA field engineer or other designated TVA or contractor personnel routinely and at least as frequently as required by the permit or good management practices and during periods of high runoff; any necessary repairs will be made as soon as practicable. BMP runoff sampling will be conducted in accordance with permit requirements. Records of all inspections and sampling will be maintained on site, and copies of inspection forms and sampling results will be forwarded to the TVA environmental specialist.

8. Turbidity and Blocking of Streams - If temporary clearing, grading, borrow, or fill activities must interrupt natural drainage, appropriate drainage facilities and erosion/sediment controls shall be provided to avoid erosion and siltation of streams and other water bodies or water conveyances. In Tennessee, conditions of an Aquatic Resource Alteration Permit shall be met. Turbidity levels in receiving waters or at storm water discharge points shall be monitored, documented, and reported if required by the applicable permit. Erosion and sediment control measures such as silt fences, water bars, and sediment traps shall be installed as soon as practicable after initial access, site, borrow, fill, or right-of-way disturbance and after sequential disturbance of stabilized areas due to stepwise construction requirement in accordance with applicable permit or regulatory requirements.

On rights-of-way, mechanized equipment shall not be operated in flowing water except when approved and then only to construct necessary stream crossings under direct guidance of TVA.

Construction of stream fords or other crossings will only be permitted at approved locations and to current TVA design or construction access road standards. At any construction site, material shall not be deposited in watercourses or within stream bank

areas where it could be washed away by high stream flows. Any clearing debris that enters streams or other water bodies shall be removed immediately. Appropriate U.S. Army Corps of Engineers and state permits shall be obtained for stream or wetland crossings.

9. Air Quality Control - The clearing or grading contractor shall take appropriate actions to limit the amount of air emissions created by clearing and disposal operations to be well within the limits of clearing or burning permits and/or forestry or local fire department requirements. All operations must be conducted in a manner that prevents nuisance conditions or damage to adjacent land, crops, dwellings, highways, or people. If building renovation or demolition is involved, the required air quality organization shall be notified the minimum 10 days in advance, and if the start date is delayed, renotified to start the clock again.
10. Dust and Mud Control - Clearing, grading, borrow, fill, or transport activities shall be conducted in a manner that minimizes the creation of fugitive dust. This may require limitations as to type of equipment, allowable speeds, and routes utilized. Control measures such as water, gravel, etc., or similar measures may be used subject to TVA approval. On new construction sites and easements, the last 100 feet before an access road approaches a county road or highway shall be graveled to prevent transfer of mud onto the public road.
11. Burning - The contractor shall obtain applicable permits and approvals to conduct controlled burning. The contractor will comply with all provisions of the permit, notification or authorization including burning site locations, controlled draft, burning hours, and such other conditions as stipulated. If weather conditions such as wind speed or wind direction change rapidly, the contractor's burning operation may be temporarily stopped by TVA's field engineer. The debris to be burned shall be kept as clean and dry as possible and stacked and burned in a manner that produces the minimum amount of smoke. Residue from burning will be disposed of according to permit stipulations. No fuel starters or enhancements other than kerosene will be allowed.
12. Smoke and Odors - The contractor will properly store and handle combustible and volatile materials that could create objectionable smoke, odor, or fumes. The contractor shall not burn oil or refuse that includes trash, rags, tires, plastics, or other manufactured debris.
13. Vehicle Exhaust Emissions - The contractor shall maintain and operate equipment in a manner that limits vehicle exhaust emissions. Equipment and vehicles will be kept within the manufacturer's recommended limits and tolerances. Excessive exhaust gases will be eliminated, and inefficient operating procedures will be revised or halted until corrective repairs or adjustments are made.
14. Vehicle Servicing - Routine maintenance of vehicles will not be performed on the site, right-of-way, or access route. However, if emergency or "have to" situations arise, minimal/temporary maintenance to vehicles will occur in order to mobilize the vehicle to an off-site maintenance shop. Some heavy equipment may have to be serviced on the right-of-way, site, or access route, except in designated sensitive areas. The clearing, grading, borrow, or fill contractor will properly maintain these vehicles with approved spill protection controls and countermeasures. If emergency maintenance in a

sensitive or questionable area arises, the Area Environmental Program Administration or project manager will be consulted. All wastes and used oils will be properly recovered, handled, and disposed/recycled. Equipment shall not be temporarily stored in stream floodplains, whether overnight or on weekends or holidays.

15. Noise Control - The contractor shall take steps to avoid the creation of excessive sound levels for employees, the public, or the site and adjacent property owners. Concentration of individual noisy pieces as well as the hours and locations of operation should be considered.
16. Noise Suppression - All internal combustion engines shall be properly equipped with mufflers. The equipment and mufflers shall be maintained at peak operating efficiency.
17. Sanitation - A designated representative of TVA or the clearing, grading, borrow, fill, or construction contractor shall contract a sanitary contractor who will provide sanitary chemical toilets convenient to all principal points of operation for every working party and at each construction step. The facilities shall comply with applicable federal, state, or local health laws and regulations. They shall not be located closer than 100 feet to any stream or tributary or to any wetland. The facilities shall be required to have proper servicing and maintenance, and the waste disposal contractor shall verify in writing that the waste disposal will be in state-approved facilities. Employees shall be notified of sanitation regulations and shall be required to use the toilet facilities.
18. Refuse Disposal - The clearing, grading, borrow, fill, or construction contractor and subcontractor(s) shall be responsible for daily cleanup and proper labeling, storage, and disposal of all refuse and debris on the site produced by his or her operations and employees. Facilities that meet applicable regulations and guidelines for refuse collection will be required. Only approved transport, storage, and disposal areas shall be used. Records of waste generation shall be maintained for a site and shall be provided to the project manager and environmental specialist assigned to the project.
19. Brush and Timber Disposal (Initial Clearing) - For initial clearing, trees are commonly part of the contractor's contract to remove as they wish. Trees may be removed from the site for lumber or pulpwood, or they may be chipped or stacked and burned. All such activities must be coordinated with the TVA field engineer and the open burning permits; notifications and regulatory requirements must be met. On rights-of-way, trees may be cut and left in place only in areas specified by TVA and approved by appropriate regulatory agencies. These areas may include sensitive wetlands or SMZs where tree removal would cause excessive ground disturbance or in very rugged terrain where windrowed trees are used as sediment barriers along the edge of the right-of-way, site, or access.

Trees that have been cut may not be left on a substation, switching station, or communications site.

20. Restoration of Site - All disturbed areas, with the exception of farmland under cultivation and any other areas as may be designated by TVA's specifications, shall be stabilized in the following manner unless the property owner and TVA's engineer specify a different method:

- A. The subsoil shall be loosened to a minimum depth of 6 inches if possible and worked to remove unnatural ridges and depressions.
- B. If needed, appropriate soil amendments will be added.
- C. All disturbed areas will initially be seeded with a temporary ground cover such as winter wheat, rye, or millet, depending on the season. Perennials may also be planted during initial seeding if proper growing conditions exist. Final restoration and final seeding will be performed as line, site, or communications facilities construction is completed. Final seeding will consist of permanent perennial grasses such as those outlined in TVA's *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities* (TVA, 2017). Exceptions would include those areas designated as native grass planting areas. Initial and final restoration will be performed by the clearing contractor with emphasis on using landscaping materials provided in guidelines for low maintenance native vegetation use.
- D. TVA holds the option, depending upon the time of year and weather condition, to delay or withdraw the requirement of seeding until more favorable planting conditions are certain. In the meantime, other stabilization techniques must be applied.
- E. Vegetation designated by the Federal Invasive Species Council must be eliminated at the work site, and equipment being transported from location to location must be inspected to ensure removal and destruction of live material.

References

Tennessee Valley Authority. 2017. *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities*, Revision 3. Edited by G. Behel, S. Benefield, R. Brannon, C. Buttram, G. Dalton, C. Ellis, C. Henley, T. Korth, T. Giles, A. Masters, J. Melton, R. Smith, J. Turk, T. White, R. Wilson. Chattanooga, TN.: Retrieved from <https://www.tva.com/Energy/Transmission-System/Transmission-System-Projects> (n.d.).

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Appendix B – Wetland Delineation Report

FINAL

Wetland Delineation Report

Origis Energy
Optimist Solar + Battery Energy Storage System
Clay County, Mississippi

October 12, 2021

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1.0 INTRODUCTION

Origis Holdings USA Subco, LLC (Origis) proposes to construct a utility scale solar farm and associated infrastructure in Clay County, Mississippi. Tetra Tech, Inc. (Tetra Tech), and their longtime teaming partner (CCR Environmental) based in Atlanta, conducted a wetland field survey in support of the Optimist Solar Project (Project). The first field delineation effort was conducted between November 16 and 20, 2020. The second field delineation effort was conducted between March 15 and 18, 2021. A third field delineation effort was conducted between July 19 and 22, 2021.

1.1 Project Description and Location

The Project area encompassed approximately 2,947 acres of land east of West Point, Mississippi (Figure 1). The Project area is drained by Spring Creek, McGee Creek, and Town Creek and predominantly made up of crop land and pastures, as well as emergent and forested wetlands. The Project area can be accessed from existing roads located off Mississippi Highway 50 (MS-50) to the south and Barton Ferry Road to the north.

1.2 Ecoregional Setting

The Project area is characterized by gently rolling hills, with elevation ranging from approximately 215 feet above mean sea level (amsl) to approximately 270 feet amsl. The Project area is divided between two sections of the East Gulf Coastal Plain physiographic province, the Black Prairie section to the west and the Tombigbee and Tennessee River Hills section to the east (Dockery and Thompson 2019). The Black Prairie, named for the high content of organic matter in the soil, is an important agricultural region that originally consisted of open prairie grasslands. The Tombigbee and Tennessee River Hills section comprises a hilly landscape developed on unconsolidated Cretaceous sands. The Project area lies within the Tombigbee River basin which contains high-order tributaries that flow southeasterly to the Tombigbee River.

2.0 DESKTOP ANALYSIS

The following sections briefly describe the methods and results of the desktop analysis.

2.1 Desktop Methodology

The desktop analysis was conducted to identify features that may be considered jurisdictional wetlands or other waters of the United States (WOTUS) under Section 404 of the Clean Water Act (CWA). ArcGIS software was used to identify where wetlands and other WOTUS resources might occur within the Project area. Desktop analysis was performed using the following sources:

- U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) Program
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI)
- Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS) Soil Survey Geographic Database (SSURGO) data for mapped hydric soils and drainage class
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM)
- The Multi-Resolution Land Characteristics Consortium (MRLC) National Land Cover Database (NLCD)

2.2 Desktop Results

Desktop analysis revealed several locations where wetlands and other WOTUS (ephemeral, intermittent, and perennial streams, drainage ditches, canals, ponds, etc.) had been documented within the Project area.

Wetlands and Streams

The NWI mapper showed four wetland types in the Project area: palustrine forested/shrub wetlands, freshwater emergent wetlands, freshwater ponds, and riverine wetlands (2019). NHD-identified stream reaches were documented within the Project area (NHD 2020). There were three named stream features within the Project area: Spring Creek, McGee Creek, and Town Creek. Figure 2 depicts the NWI and NHD data within and surrounding the Project area overlain on a topographic basemap.

Hydric Soils

The SSURGO database was consulted to identify soils in the Project area. For the purposes of the desktop analysis, map units categorized as hydric or predominantly hydric were considered potential wetlands. Three soil series in the Project area are partially hydric: Una clay loam, Leeper silty clay loam, and Griffith silty clay. Figure 3 depicts soil types, including hydric soils, in the Project area (NRCS 2020).

Floodplains

A desktop analysis for mapped floodplains was conducted using FEMA FIRM (2011) electronic data for floodplains within the Project area. Flood Zone A is located along Town Creek, McGee Creek, Spring Creek, and their tributaries (FEMA Flood Maps 28025C0355D, 28025C0215D, and 28025C0194D, effective 5/3/2011). Figure 4 contains the floodplain map for the Project area.

Land Cover

The NLCD (USGS 2016) is the most recent national land cover product created by the MRLC and is presented in Figure 5. Primary land use within the Project area is cultivated crops and pasture. Limited woody wetlands, mixed forest, and light industrial development occur within and along the boundaries of the Project area.

3.0 WETLAND DELINEATIONS

3.1 Wetland Delineation Methodology

The wetland delineations of the 2,947-acre Project area were conducted during the week of November 16, 2020, the week of March 15, 2021 and the week of July 19, 2021.

The wetland delineation followed the methodology in the *United States Army Corps of Engineers (USACE) Wetland Delineation Manual* (USACE 1987) and the *Regional Supplement to the USACE Wetland Delineation Manual: Atlantic Gulf Coastal Plain (Version 2.0)* (USACE 2010). The delineation process involved documenting dominant vegetation, soils, and hydrology in the Project area. For a site to be considered wetland, there must be positive indication of dominance by hydrophytic vegetation, hydric soils, and characteristic wetland hydrology. Under normal conditions, if a sample plot lacks any one of these three criteria, it is considered upland. To determine these three variables, the wetland biologist typically designated paired sample plots placed at discrete (typically less than 25 feet) distances from one another—one to represent wetland conditions, the other to represent uplands.

Hydrophytic Vegetation

The sample plot included nested concentric sampling rings for vegetation cover and species identification as follows: herbaceous vegetation was identified within a 5-foot radius of the sample plot center; sapling/shrub vegetation was identified within a 15-foot radius of the sample plot center; and trees and woody vines were documented within a 30-foot radius of the sample plot center.

The dominant vegetation at each sample plot was identified to species level and each species was assigned a wetland indicator status using *The National Wetland Plant List* (Lichvar 2018). The field team used the *Aquatic and Wetland Plants of the Southeastern United States Monocotyledons* (Godfrey and Wooten 1979) and *Aquatic and Wetland Plants of the Southeastern United States Dicotyledons* (Godfrey and Wooten 1981) as the field taxonomic references for keying unknown wetland plant species.

Hydrophytic vegetation, or plants that are indicators of wetlands, were evaluated during the assessment of the wetland.

Wetland Soils

Each sample plot featured a hand-dug soil pit approximately 16 inches deep. Soil from each soil test pit was evaluated for hue, value, and chroma in each observable horizon using *Munsell Soil Color Charts* (Munsell Color 2009). Each soil horizon was also examined for texture and for the presence of redoximorphic features, depleted matrix, saturation, and other specific criteria used to document hydric conditions. Each paired wetland and upland soil pit were mapped using an Arrow 100 handheld GPS with sub-meter accuracy.

Wetland Hydrology

Hydrology was analyzed for primary and secondary wetland indicators. Primary wetland indicators included visible inundation, presence of a high water table, soil saturation, water marks, drift lines, sediment deposits, and drainage patterns in wetlands. Secondary wetland indicators of wetland hydrology included observable features such as oxidized root channels associated with living roots, water-stained

leaves, soil cracks, and local soil survey data. Once dug, the soil test pits were left open a sufficient amount of time to allow the apparent high water table, if present, to stabilize.

Wetland Determination Data Forms

Sample plots that exhibited qualifying characteristics of hydrophytic vegetation, hydric soils, and wetland hydrology were identified as wetlands. A wetland determination data form specific to the Atlantic and Gulf Coastal Plain Region was completed for each paired wetland and upland sample plot. The wetland determination data forms are included as Appendix B.

Wetland Mapping

Once vegetation, soils, and hydrology had been assessed at each of the paired sample plots, delineation was conducted to identify the zone of transition between wetland and upland conditions. The wetland scientists accomplished the delineation by walking the outer limit of visibly identifiable wetland vegetation between the paired wetland and upland sample plots using an Arrow 100 GPS. The Arrow 100 GPS unit provides an estimated 3-foot (1-meter) survey accuracy (post-processing) or less. The field-collected data were plotted as a map layer using GIS software.

Wetland Delineator Qualifications

Casey Dunn (CCR Environmental) has a B.S. in Environmental Science from Lincoln Memorial University and a M.S. in Fisheries Science from the University of Tennessee. He is an ESA Certified Ecologist and has training in Hydrophytic Plant Identification and Wetland Delineations. Mr. Dunn has been working as an environmental consultant since 2011. Much of this time has been spent performing federal jurisdictional waters delineations and CWA Section 401/404 permitting for a variety of projects in 12 different states.

Randy Ficarrotta (CCR Environmental) has a B.S. in Biology from the University of Georgia. He has received formal training in Basic Wetland Delineation, Wetland Plant Identification, and Stream Identification and Morphology. Mr. Ficarrotta has been working as an environmental consultant since 2012. He has extensive experience delineating federal jurisdictional waters across the southeastern United States, where he has delineated thousands of acres of wetlands and many miles of streams.

Barbara Harris (Tetra Tech) has a B.S. in Biology and is a graduate from the Honors Program at Augusta University. She completed basic wetland and plant identification courses as part of her undergraduate education. Ms. Harris has been performing environmental field work and surveys since 2019 and supports the collection and processing of large volumes of field data.

Hal Mitchell (Tetra Tech) has a B.S. in Wildlife and Fisheries Science from Mississippi State University. He is a Certified Wildlife Biologist through the Wildlife Society. He received formal training and education on hydrophytic vegetation sampling, wetland delineation, and wetland functional assessments. He has been conducting ecological studies and wetland delineations in the southeast and other regions of the United States for more than 10 years.

3.2 Wetland Delineation Results

Twenty-six wetlands totaling 43.35 acres were delineated within the Project area (Table 1). Wetland classifications were determined based on the *Classification of Wetlands and Deepwater Habitats in the United States* (Cowardin et al. 1979). Photographs of all 26 wetlands are provided in the photo log

Table 1. Delineated Wetlands for Optimist Solar Project¹

Wetland Number	Delineated Acreage	Wetland Type	Latitude	Longitude	Figure 7 Plate Number	Appendix C Photo Number
W-1	0.19	PFO	33.61026	-88.59430	15	1
W-2	0.14	PFO	33.62105	-88.58130	12	2
W-3	0.01	PSS	33.65133	-88.59110	7	3
W-4	0.13	PFO	33.64722	-88.59050	8	4
W-5	0.72	PFO	33.63244	-88.58430	9	5
W-6	0.21	PEM	33.63227	-88.58470	9	6
W-7	1.54	PFO	33.61822	-88.57990	14	7
W-8	0.30	PEM	33.61540	-88.57790	14	8
W-9	0.16	PFO	33.63541	-88.57190	10	9
W-10	0.31	PEM	33.62283	-88.59430	11	10
W-11	12.29	PEM	33.63568	-88.63810	1	52
W-12	0.33	PFO	33.63631	-88.63900	1	53
W-13	2.07	PFO	33.63621	-88.63810	1	54
W-14	7.90	PFO	33.63316	-88.63820	2	55
W-15	1.79	PFO	33.62958	-88.63780	2	56
W-16	1.38	PEM	33.63223	-88.60530	6	57
W-18	3.35	PEM	33.63280	-88.6497	2	59
W-19	0.21	PEM	33.63689	-88.64820	1	60
W-20	0.27	PEM	33.63886	-88.64520	1	61
W-21	4.20	PFO	33.63547	-88.62740	3	62
W-22	0.60	PEM	33.63032	-88.60050	6	63
W-23	1.94	PEM	33.63156	-88.61939	5	91
W-24	0.08	PFO	33.63103	-88.61581	5	92
W-25	0.66	PFO	33.62733	-88.61571	5	93
W-26	0.06	PEM	33.62896	-88.61587	5	94
W-27	4.26	PFO	33.62745	-88.61438	5	95
TOTAL	43.35					

Note:

1. All potentially non-jurisdictional wetlands are shaded gray

(Appendix C). An overview of the results can be found on Figure 6, and more detailed results are presented within the mapbook in Figure 7 (Appendix A).

Fourteen palustrine forested (PFO) wetlands, totaling approximately 24.17 acres, were delineated. Vegetation in the PFO wetlands was dominated by alligatorweed (*Alternanthera philoxeroides*), black willow (*Salix nigra*), buttonbush (*Cephalanthus occidentalis*), Cherokee sedge (*Carex cherokeensis*), common boneset (*Eupatorium perfoliatum*), Eastern cottonwood (*Populus deltoides*), green ash (*Fraxinus pennsylvanica*), longleaf woodoats (*Chasmanthium sessiliflorum*), Osage orange (*Maclura pomifera*), pinkweed (*Persicaria pensylvanica*), river oats (*Chasmanthium latifolium*), sugarberry (*Celtis laevigata*), sugarcane plumegrass (*Saccharum giganteum*), water hickory (*Carya aquatica*), and willow oak (*Quercus phellos*). Hydrology indicators included presence of surface water, high water table, soil saturation, water marks, drift deposits, algal mat or crust, inundation visible on aerial imagery, water-stained leaves, aquatic fauna, oxidized rhizospheres along living roots, sparsely vegetated concave surface, drainage patterns, moss trim lines, crayfish burrows, saturation visible on aerial imagery, geomorphic position and FAC-neutral test. Hydric soil was indicated by the presence of a depleted matrix and redox within a dark surface.

Eleven palustrine emergent (PEM) wetlands, totaling approximately 19.17 acres, were delineated. Dominant vegetation in the PEM wetlands included barnyardgrass (*Echinochloa crus-galli*), blunt

spikerush (*Eleocharis obtusa*), broadleaf cattail (*Typha latifolia*), bushy bluestem (*Andropogon glomeratus*), buttercup (*Ranunculus bulbosus*), cherrybark oak (*Quercus pagoda*), creeping primrose-willow (*Ludwigia repens*), pinkweed, river oats, roughleaf dogwood (*Cornus drummondii*), sugarberry, and soft rush (*Juncus effusus*). Hydrology indicators included presence of surface water, high water table, saturation, water marks, inundation visible on aerial imagery, water-stained leaves, aquatic fauna, hydrogen sulfide odor, oxidized rhizospheres along living roots, drainage patterns, crayfish burrows, saturation visible on aerial imagery, geomorphic position, FAC-neutral test, and sphagnum moss. Hydric soil was indicated by the presence of a depleted matrix, hydrogen sulfide, and depletion below a dark surface.

One palustrine scrub/shrub (PSS) wetland, approximately 0.01 acre, was delineated. Dominant vegetation in the PSS wetland consisted of swamp cottonwood (*Populus heterophylla*) and giant goldenrod (*Solidago gigantea*). Hydrology indicators included presence of saturation, sediment deposits, drift deposits, water-stained leaves, aquatic fauna, drainage patterns, crayfish burrows, and geomorphic position. Hydric soil was indicated by the presence of a depleted matrix.

3.3 Conclusions

A total of 26 wetlands were identified on the Project site. Of the identified features, four PEM wetlands (17.23 acres), 10 PFO wetlands (18.94 acres), and one PSS wetland (0.01 acre) meet criteria to be considered a Water of the U.S. These wetlands were directly adjacent to or presented surficial hydrological connection to a jurisdictional intermittent or perennial stream. Other wetland features were deemed isolated and therefore not jurisdictional. Although these findings were based upon a survey utilizing USACE-approved protocols, the USACE (Mobile District) must make the official determinations on the presence or absence of jurisdictional wetlands on the Site through the jurisdictional determination process.

4.0 ASSESSMENT OF OTHER WOTUS

It is important to assess and map non-wetland WOTUS because these features are also regulated under the CWA for dredge or fill activities that may be caused by construction of the Project. Other WOTUS delineated within the Project area included ephemeral, intermittent, and perennial streams, as well as stock ponds and larger manmade impoundments.

4.1 Other WOTUS Assessment Methodology

Streams and waterbodies were mapped along their ordinary high water marks (OHWMs). USACE regulations define the term “ordinary high water mark” for purposes of the CWA lateral jurisdiction as the “line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.” Upon observation of the OHWM, the field team used the Arrow 100 GPS unit to map this line.

4.2 Other WOTUS Results

Streams

Seventy-five stream channels, consisting of three stream types (perennial, intermittent, and ephemeral) and totaling 54,489.75 linear feet were delineated within the Project area (Table 2, Figure 7). Naming of streams stayed consistent even if the stream flow regime changed throughout the reach of the stream within the Project area. Photographs are provided in Appendix C.

A total of seven perennial stream reaches were delineated within the Project area for a combined length of 19,445.44 feet. The perennial streams within the Project area had average top of bank widths ranging from three to 30 feet. Most reaches of Spring Creek (S-8, S-12, S-22) were determined to be perennial; however, some northern reaches were determined to be ephemeral and intermittent. Within the Project area, flows trended south and were turbid during all days of observation. McGee Creek (S-54) was very turbid and moderate erosion of the stream banks was observed. A concrete low water crossing was observed that is likely used for crossing the stream. Town Creek (S-63) was heavily disturbed by agricultural practices and the beaver impoundment located at W-18. The flow trended south and was slightly turbid. Aquatic life was observed in perennial reach S-52.

A total of 13 intermittent stream reaches were delineated within the Project area for a combined length of 12,343.92 feet. Intermittent streams had average top of bank widths ranging from 0.5 to 20 feet. Channelization with culverted areas were observed along S-45, S-47, S-52, S-57, and S-63. Streambeds were mostly composed of silty substrate. Some aquatic wildlife was observed within, S-45 and S-47.

A total of 55 ephemeral stream reaches were delineated within the Project area for combined length of 22,700.39 feet. These streams were typically shorter in length and served as local drainage features leading to intermittent and perennial streams. In general, they averaged approximately 2 to 6 feet wide at top of bank. The stream flows trended south.

Table 2. Optimist Solar Project Delineated Streams¹

Feature Number	Stream Name	Latitude	Longitude	Flow Regime	Length of Feature Delineated	Figure 7 Sheet Map Number	Appendix C Photo Number
S-1	Unnamed	33.61208	-88.59060	Ephemeral	1,083.32	13	36*, 37*
S-2	Unnamed	33.61081	-88.59060	Ephemeral	859.73	13 and 15	36*, 37*
S-3	Unnamed	33.60957	-88.59430	Intermittent	2,041.91	13 and 15	23, 24
S-4	Unnamed	33.60898	-88.59500	Ephemeral	79.68	15	36*, 37*
S-5	Unnamed	33.60741	-88.59670	Ephemeral	19.81	15	36*, 37*
S-6	Unnamed	33.62111	-88.58600	Ephemeral	433.12	11	36*, 37*
S-7	Unnamed	33.62316	-88.58540	Intermittent and Ephemeral	2,188.30	11	25, 26, 36*, 37*
S-8	Spring Creek	33.61978	-88.58110	Perennial	8,612.30	14	19, 20, 21, 22
S-9	Unnamed	33.62173	-88.57740	Ephemeral	1,981.56	12	36*, 37*
S-10	Unnamed	33.62213	-88.57940	Ephemeral	308.16	12	36*, 37*
S-11	Unnamed	33.65035	-88.59150	Intermittent	699.66	7	27
S-12	Spring Creek	33.64689	-88.59020	Perennial, Intermittent, and Ephemeral	4,190.82	7	11, 12, 28, 29, 36*, 37*
S-13	Unnamed	33.64752	-88.58980	Intermittent and Ephemeral	825.96	7	30, 31, 36*, 37*
S-13A	Unnamed	33.64752	-88.58980	Ephemeral	86.85	7	36*, 37*
S-14	Unnamed	33.6447	-88.58880	Ephemeral	88.86	8	36*, 37*
S-15	Unnamed	33.64383	-88.58850	Ephemeral	197.59	8	36*, 37*
S-16	Unnamed	33.64367	-88.58870	Ephemeral	124.84	8	36*, 37*
S-17	Unnamed	33.64345	-88.58860	Ephemeral	43.39	8	36*, 37*
S-18	Unnamed	33.6219	-88.57690	Ephemeral	213.75	12	36*, 37*
S-19	Unnamed	33.63555	-88.58870	Perennial, Intermittent, and Ephemeral	4,895.77	8 and 9	13, 14, 15, 32, 33, 36*, 37*
S-20	Unnamed	33.63695	-88.59020	Ephemeral	43.92	9	36*, 37*
S-21	Unnamed	33.63209	-88.58660	Ephemeral	155.04	9	36*, 37*
S-22	Spring Creek	33.63303	-88.58550	Perennial	2,502.44	9	17, 18
S-23	Unnamed	33.62916	-88.58360	Ephemeral	492.49	12	36*, 37*
S-24	Unnamed	33.62921	-88.58301	Ephemeral	38.73	9 and 12	36*, 37*
S-25	Unnamed	33.62915	-88.58444	Ephemeral	59.46	9 and 11	36*, 37*
S-26	Unnamed	33.63170	-88.57100	Ephemeral	157.43	10	36*, 37*
S-27	Unnamed	33.62514	-88.58280	Ephemeral	74.45	12	36*, 37*
S-29	Unnamed	33.6168	-88.57973	Ephemeral	886.03	14	36*, 37*
S-29A	Unnamed	33.61683	-88.57992	Ephemeral	92.50	14	36*, 37*
S-30	Unnamed	33.63268	-88.58550	Ephemeral	66.98	9	36*, 37*
S-31	Unnamed	33.61649	-88.58063	Ephemeral	357.60	14	36*, 37*
S-32	Unnamed	33.63408	-88.57280	Ephemeral	796.79	10	36*, 37*
S-33	Unnamed	33.61137	-88.57866	Ephemeral	417.93	14	36*, 37*
S-35	Unnamed	33.61096	-88.57792	Ephemeral	1,279.35	14 and 16	36*, 37*
S-37	Unnamed	33.61037	-88.57892	Ephemeral	256.08	16	36*, 37*

Feature Number	Stream Name	Latitude	Longitude	Flow Regime	Length of Feature Delineated	Figure 7 Sheet Map Number	Appendix C Photo Number
S-39	Unnamed	33.60953	-88.58032	Intermittent	594.41	16	34, 35
S-41	Unnamed	33.61113	-88.57981	Ephemeral	307.89	14	36*, 37*
S-43	Unnamed	33.61107	-88.57986	Ephemeral	70.23	14	36*, 37*
S-45	Unnamed	33.63079	-88.63830	Intermittent	389.77	2	66, 67
S-46	Unnamed	33.62944	-88.63850	Ephemeral	117.51	2	36*, 37*
S-47	Unnamed	33.63419	-88.63850	Intermittent	994.02	1 and 2	68
S-48	Unnamed	33.63476	-88.63850	Ephemeral	212.56	1	36*, 37*
S-49	Unnamed	33.63256	-88.63850	Ephemeral	289.10	2	36*, 37*
S-50	Unnamed	33.63008	-88.63890	Ephemeral	229.77	2	36*, 37*
S-51	Unnamed	33.63337	-88.63820	Ephemeral	780.38	2	36*, 37*
S-52	Unnamed	33.63452	-88.60240	Perennial, Intermittent, and Ephemeral	2134.00	6	69, 70, 71, 72, 36*, 37*
S-53	Unnamed	33.63438	-88.60300	Ephemeral	164.40	6	36*, 37*
S-54	McGee Creek	33.63469	-88.61720	Perennial	2266.94	5	73, 74
S-57	Unnamed	33.63527	-88.61290	Intermittent	469.34	4	75, 76
S-62	Unnamed	33.63210	-88.65000	Ephemeral	98.28	2	36*, 37*
S-63	Town Creek	33.63478	-88.64910	Perennial, Intermittent, and Ephemeral	1306.86	1 and 2	77, 78, 79, 80, 36*, 37*
S-64	Unnamed	33.63661	-88.64880	Intermittent	483.82	1	81, 82
S-65	Unnamed	33.63775	-88.64670	Ephemeral	1059.27	1	36*, 37*
S-66	Unnamed	33.63912	-88.64490	Ephemeral	280.36	1	36*, 37*
S-67	Unnamed	33.63635	-88.62740	Ephemeral	166.81	3	36*, 37*
S-68	Unnamed	33.63560	-88.62220	Ephemeral	1055.78	3	36*, 37*
S-71	Unnamed	33.63058	-88.62360	Ephemeral	44.07	3	36*, 37*
S-72	Unnamed	33.62960	-88.62370	Ephemeral	474.87	3	36*, 37*
S-73	Unnamed	33.63228	-86.61868	Ephemeral	1585.22	5	36*, 37*
S-74	Unnamed	33.62853	-88.61539	Ephemeral	698.18	5	36*, 37*
S-75	Unnamed	33.62738	-88.61613	Ephemeral	112.05	5	36*, 37*
S-76	Unnamed	33.62741	-88.6158	Ephemeral	204.73	5	36*, 37*
S-77	Unnamed	33.62809	-88.61814	Ephemeral	1049.92	5	36*, 37*
S-78	Unnamed	33.62786	-88.61471	Ephemeral	196.58	5	36*, 37*

Notes:

1. All potentially non-jurisdictional streams are shaded gray.

Asterisk (*) indicates representative ephemeral stream photos.

Open Waterbodies

Twenty-five open waterbodies were delineated for a total of 22.33 acres within the Project area (Table 3). Photographs are provided in Appendix C. Many of the waterbodies are connected to streams within the Project area. Wetland fringe and/or emergent vegetation was observed along the banks of OW-5, OW-6, OW-7, OW-8, OW-9, OW-16, OW-18, OW-24, OW-25, and OW-26.

Table 3. Optimist Solar Project Delineated Open Waterbodies¹

Feature Number	Latitude	Longitude	Acreage of Feature Delineated	Figure 7—Sheet Map Number	Appendix C—Photo Number
OW-1	33.59673	-88.58270	4.73	17	38
OW-2	33.60018	-88.582	0.46	17	39
OW-3	33.61367	-88.5849	1.56	13	40
OW-4	33.60908	-88.5916	0.20	15	41
OW-5	33.62099	-88.5875	0.32	11	42
OW-6	33.63401	-88.5744	0.22	10	43
OW-7	33.61734	-88.5748	0.17	14	44
OW-8	33.61372	-88.5768	0.52	14	45
OW-9	33.61538	-88.5782	0.35	14	46
OW-10	33.62099	-88.58750	0.85	11	47
OW-11	33.63401	-88.57440	0.81	11	48
OW-12	33.61734	-88.57480	0.55	11	49
OW-13	33.61372	-88.57680	1.51	11	50
OW-14	33.61538	-88.57820	0.37	11	51
OW-15	33.62611	-88.5881	5.18	1	83
OW-16	33.63146	-88.60576	0.87	6	84
OW-18	33.62223	-88.595	0.21	1	86
OW-19	33.6212	-88.5946	0.20	6	87
OW-20	33.63697	-88.6071	0.74	6	88
OW-21	33.62974	-88.626	0.24	3	89
OW-22	33.63104	-88.6438	1.54	2	90
OW-23	33.63155	-88.61971	0.20	5	96
OW-24	33.62813	-88.61593	0.09	5	97
OW-25	33.62928	-88.61589	0.09	5	97
OW-26	33.63043	-88.6163	0.35	5	97

Note:

1. All potentially non-jurisdictional streams are shaded gray.

4.3 Conclusions

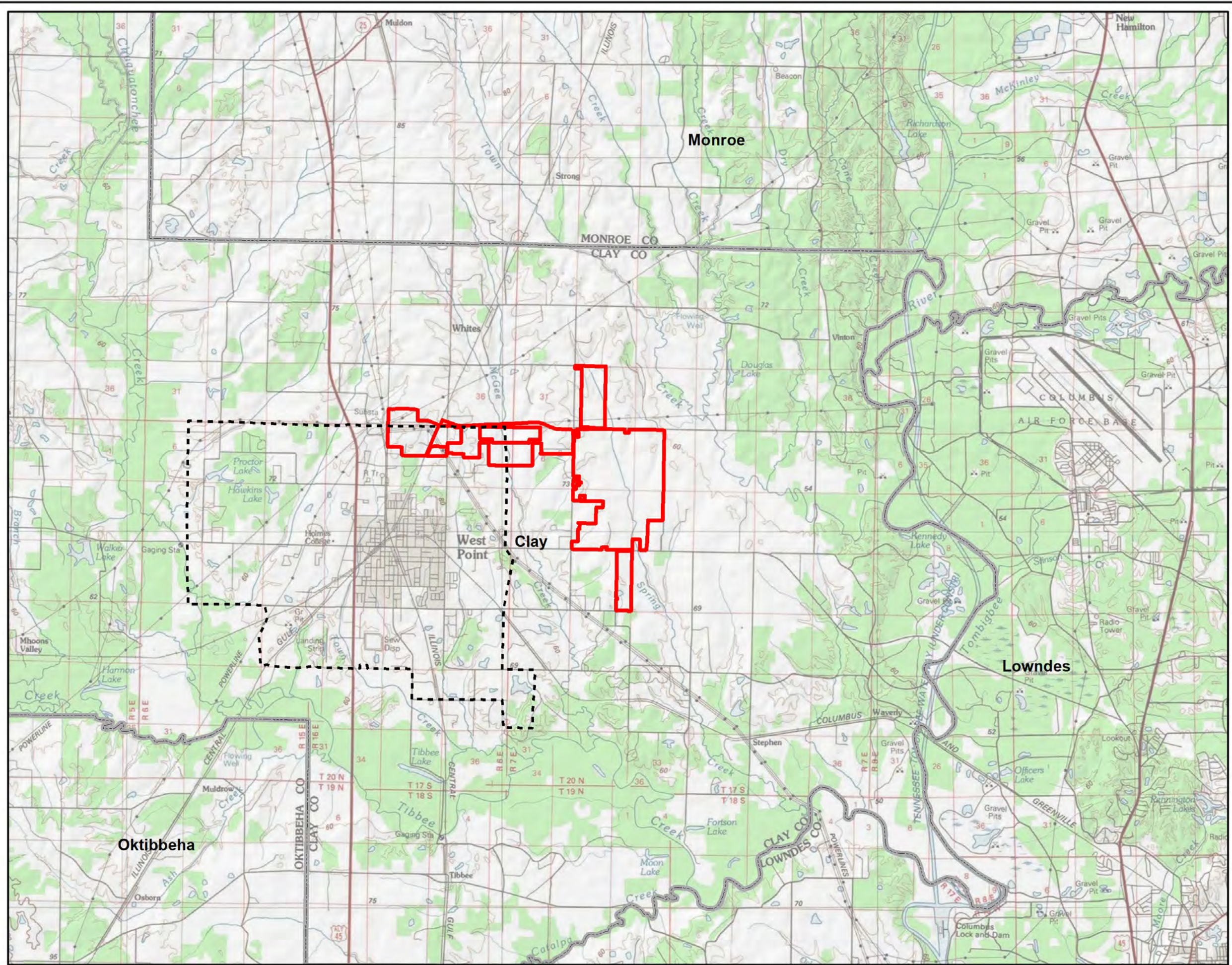
A total of 75 streams and 25 open waters were identified on the Project site. Of the identified features, 16 streams (31,789.36 linear feet) and four open waters (1.72 acres) meet criteria to be considered a Water of the U.S. Although these findings were based upon a survey utilizing USACE-approved protocols, the USACE (Mobile District) must make the official determinations on the presence or absence of jurisdictional wetlands on the Site through the jurisdictional determination process.

5.0 REFERENCES

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. United States Government Printing Office. Washington, D.C. GPO024-010-00524 6.
- Dockery III, David T. and David. E. Thompson. 2019. Mississippi Environmental Geology. Mississippi Department of Environmental Quality, Jackson, MS. Accessed August 21, 2020. <https://www.mdeq.ms.gov/wpcontent/uploads/2019/03/EnvironmentalGeologyOfMississippi.pdf>.
- FEMA (Federal Emergency Management Agency). 2011. FEMA Flood Map Service Center, Clay County, Mississippi. Accessed August 19, 2020. <https://msc.fema.gov/portal/search>.
- Godfrey, R.K. and J.W. Wooten. 1979. Aquatic and Wetland Plants of the Southeastern United States Monocotyledons. The University of Georgia Press. Athens, Georgia.
- . 1981. *Aquatic and Wetland Plants of the Southeastern United States Dicotyledons*. The University of Georgia Press. Athens, Georgia.
- Lichvar, Robert W. 2018. *The National Wetland Plant List*. Report ERDC/CRREL TR-12-11. U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory.
- Munsell Color. 2009. Munsell® Soil Color Charts. Grand Rapids, MI.
- NRCS (Natural Resource Conservation Service), USDA. 2020. Soil Survey, Clay County, Mississippi. Accessed August 19, 2020. <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.
- USACE (U.S. Army Corps of Engineers). 1987. Corps of Engineers Wetland Delineation Manual. Environmental Laboratory. U.S. Army Corps of Engineers Waterways Experiment Station. Technical Report Y-87-1. January.
- . 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain (Version 2.0). Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- USFWS (U.S. Fish and Wildlife Service). 2019. National Wetlands Inventory. Available at: <http://www.fws.gov/wetlands/>. Accessed August 2019.
- USGS. (U.S. Geological Survey). 2016. Multi-Resolution Land Characteristics Consortium. National Land Cover Database. Accessed August 17, 2020. <https://www.mrlc.gov/data/nlcd-2016-land-cover-conus>.
- . 2020. National Hydrography Dataset. Mississippi. Accessed August 14, 2020. <http://nhd.usgs.gov/data.html>.

APPENDIX A

FIGURES



Legend

- Site Boundary
- County Boundary
- City of West Point

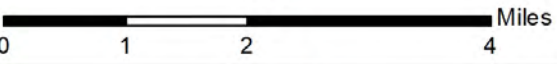
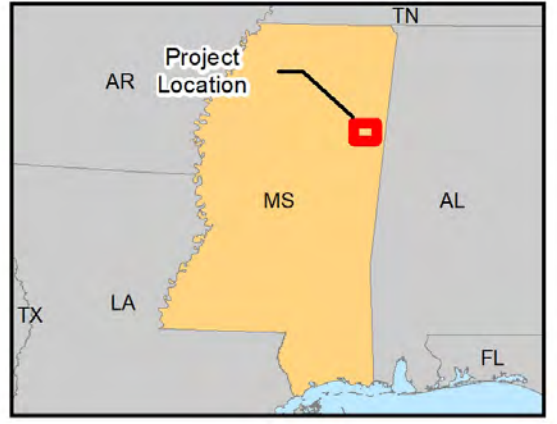


Figure 1
Site Location Map
Optimist Solar Facility
Clay County, MS

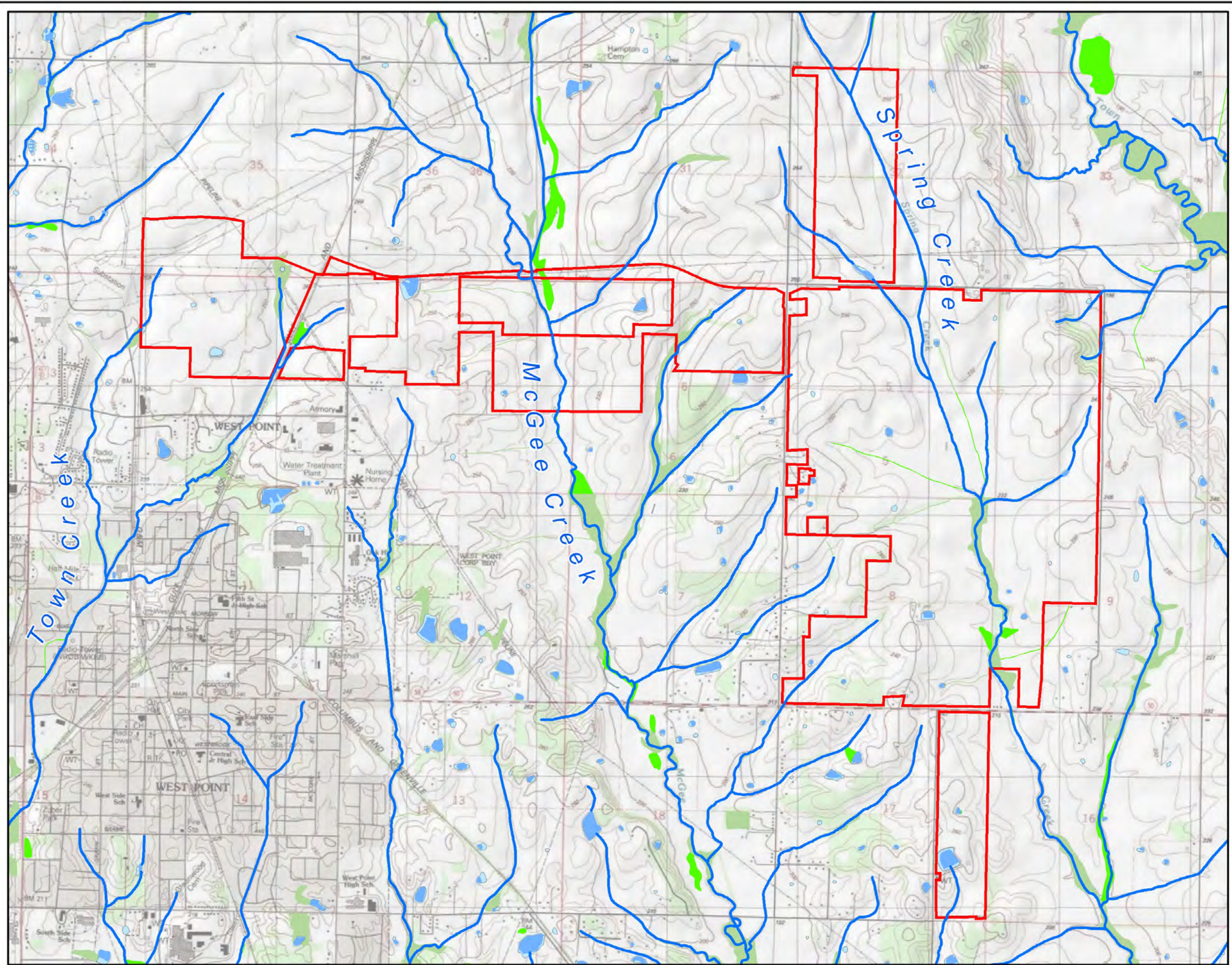
Prepared For:

Prepared By: TETRA TECH

Date:
08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

- Site Boundary
- National Hydrography Dataset Waterbody
- National Hydrography Dataset Watercourse

National Wetland Inventory

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

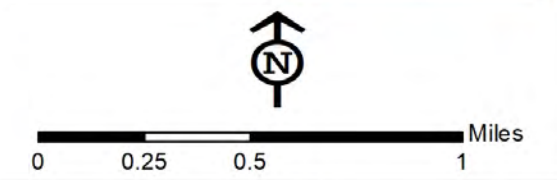
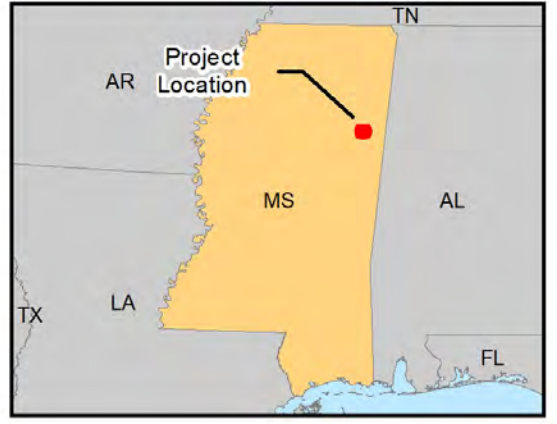


Figure 2
Wetlands and Waterbodies Map
Optimist Solar Facility
Clay County, MS

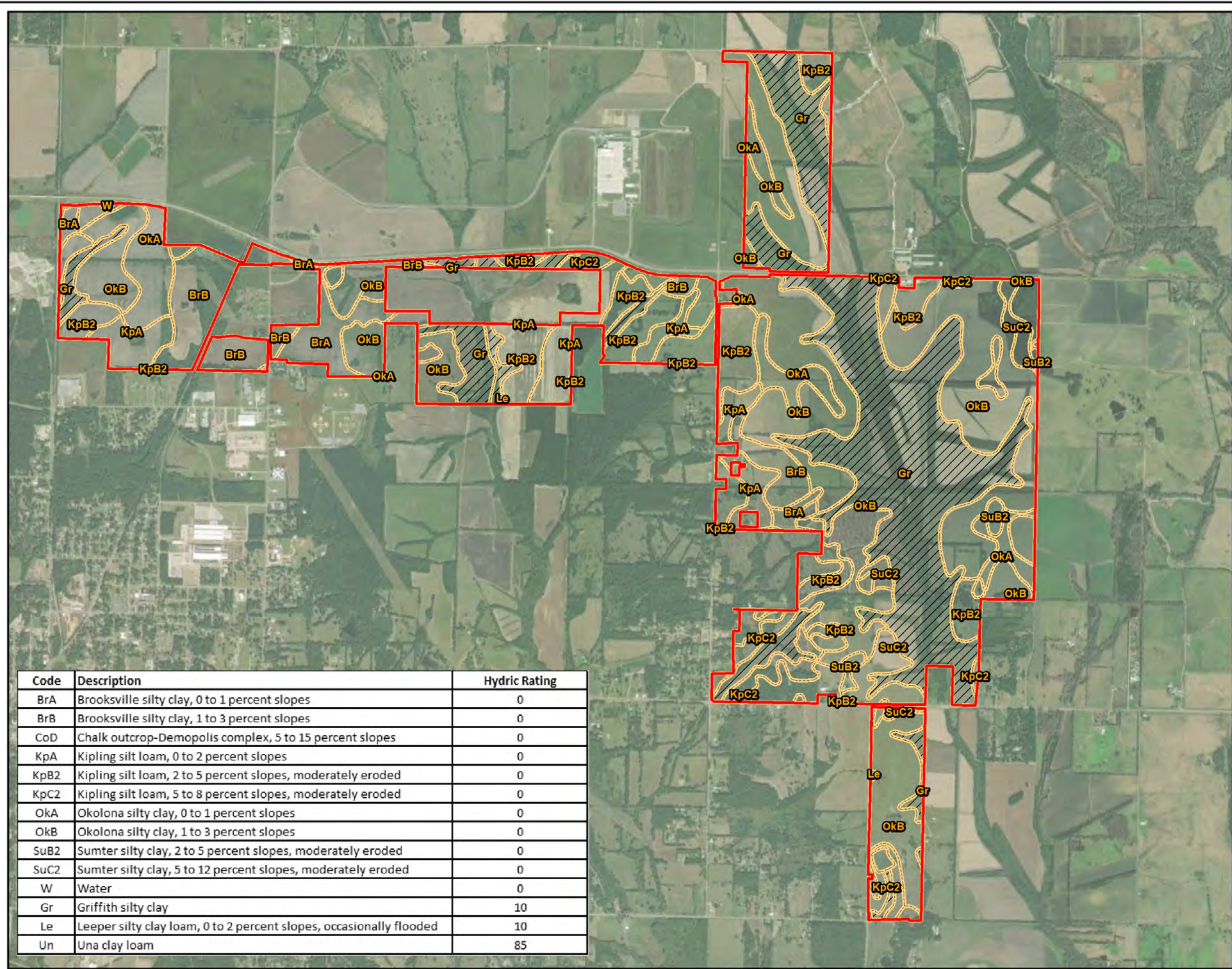
Prepared For: 

Prepared By:  **TETRA TECH**

Date: 08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; USFWS, 2020; USGS, 2020

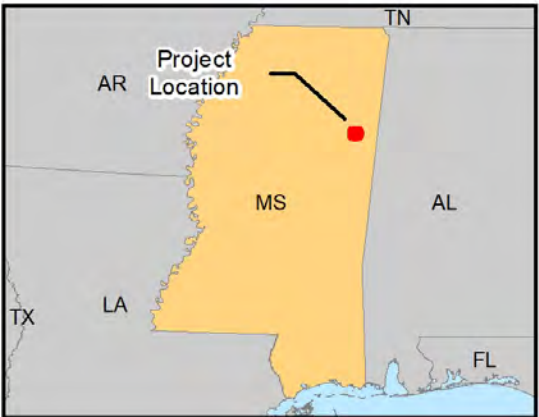
Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Code	Description	Hydric Rating
BrA	Brooksville silty clay, 0 to 1 percent slopes	0
BrB	Brooksville silty clay, 1 to 3 percent slopes	0
CoD	Chalk outcrop-Demopolis complex, 5 to 15 percent slopes	0
KpA	Kipling silt loam, 0 to 2 percent slopes	0
KpB2	Kipling silt loam, 2 to 5 percent slopes, moderately eroded	0
KpC2	Kipling silt loam, 5 to 8 percent slopes, moderately eroded	0
OkA	Okolona silty clay, 0 to 1 percent slopes	0
OkB	Okolona silty clay, 1 to 3 percent slopes	0
SuB2	Sumter silty clay, 2 to 5 percent slopes, moderately eroded	0
SuC2	Sumter silty clay, 5 to 12 percent slopes, moderately eroded	0
W	Water	0
Gr	Griffith silty clay	10
Le	Leeper silty clay loam, 0 to 2 percent slopes, occasionally flooded	10
Un	Una clay loam	85

Legend

- Site Boundary
- Soil Unit
- Hydric Soil



0 0.25 0.5 1 Miles

Figure 3
Soils Map
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:

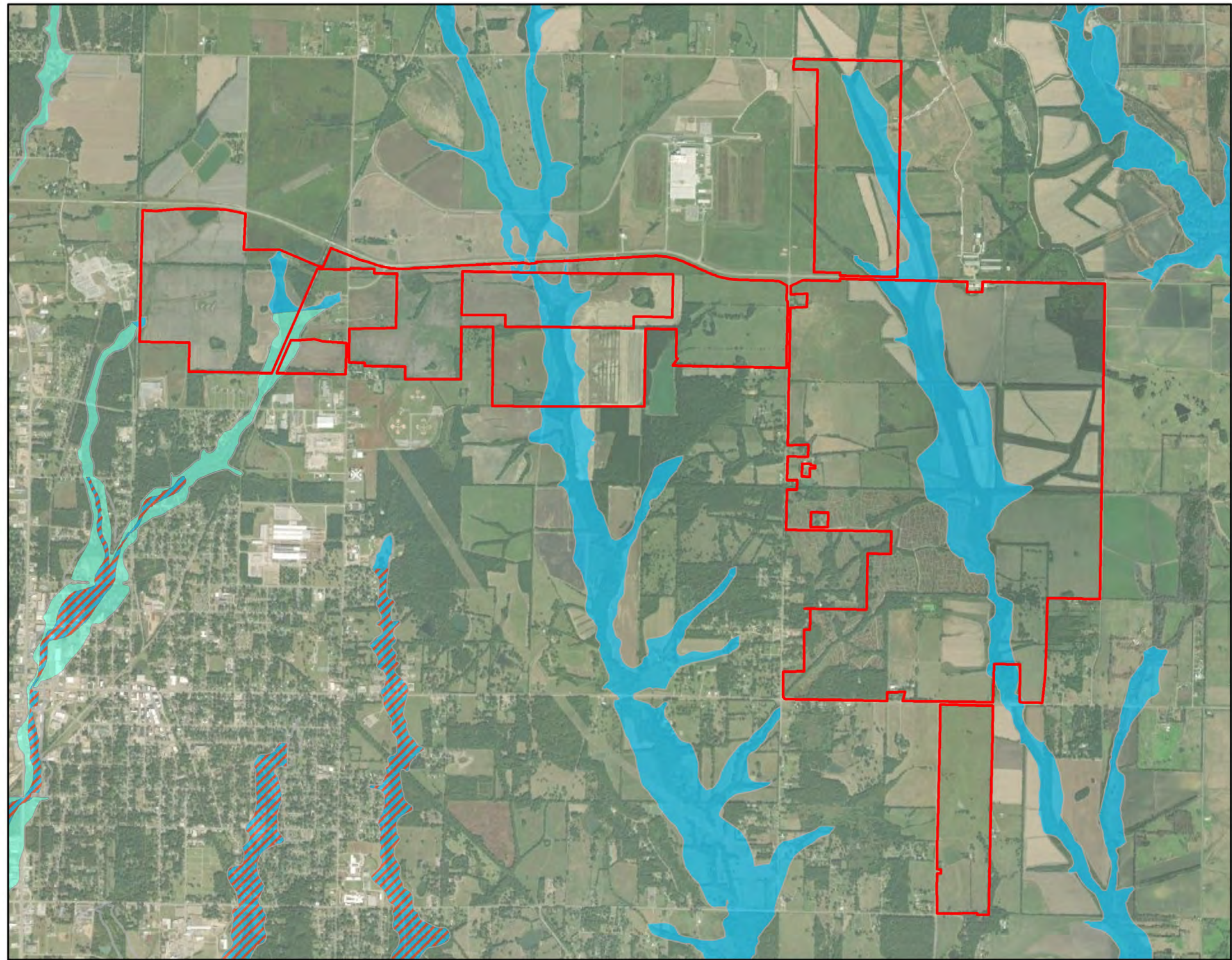


Date:

08/2021

Source: Esri, et. al., 2020; NRCS, 2020; Origis Energy, 2020


Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North





Legend


 Site Boundary

Floodplain

 Zone A - 1% Annual Flood Hazard

 Zone AE - 1% Annual Flood Risk

 Zone AE - Floodway

 Zone X - Area of Minimal Flood Hazard



0 0.25 0.5 1 Miles

Figure 4
Floodplain Map
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:

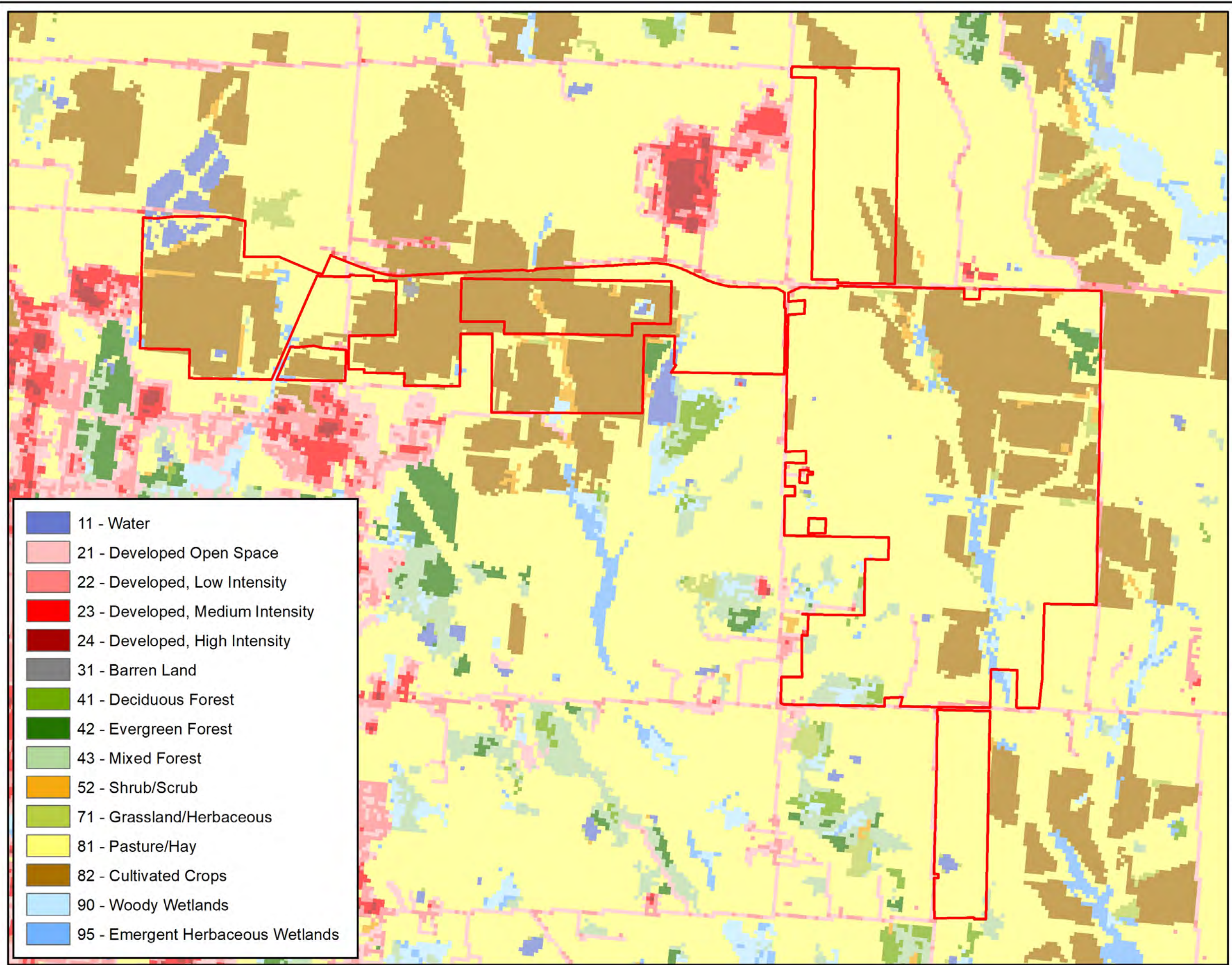


Date:

08/2021

Source: Esri, et. al., 2020; FEMA, 2020; Origis Energy, 2020

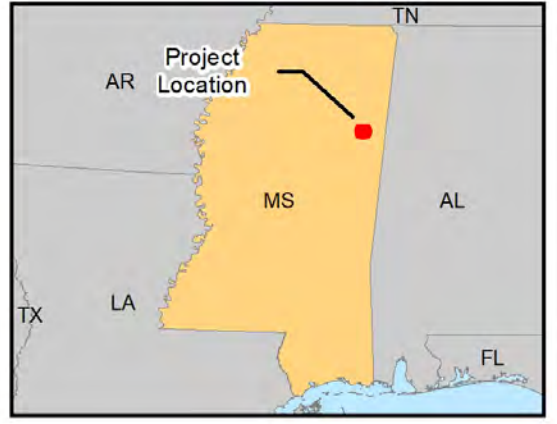
Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



- 11 - Water
- 21 - Developed Open Space
- 22 - Developed, Low Intensity
- 23 - Developed, Medium Intensity
- 24 - Developed, High Intensity
- 31 - Barren Land
- 41 - Deciduous Forest
- 42 - Evergreen Forest
- 43 - Mixed Forest
- 52 - Shrub/Scrub
- 71 - Grassland/Herbaceous
- 81 - Pasture/Hay
- 82 - Cultivated Crops
- 90 - Woody Wetlands
- 95 - Emergent Herbaceous Wetlands

Legend

Site Boundary



0 0.25 0.5 1 Miles

Figure 5
Land Use/Land Cover Map
Optimist Solar Facility
Clay County, MS

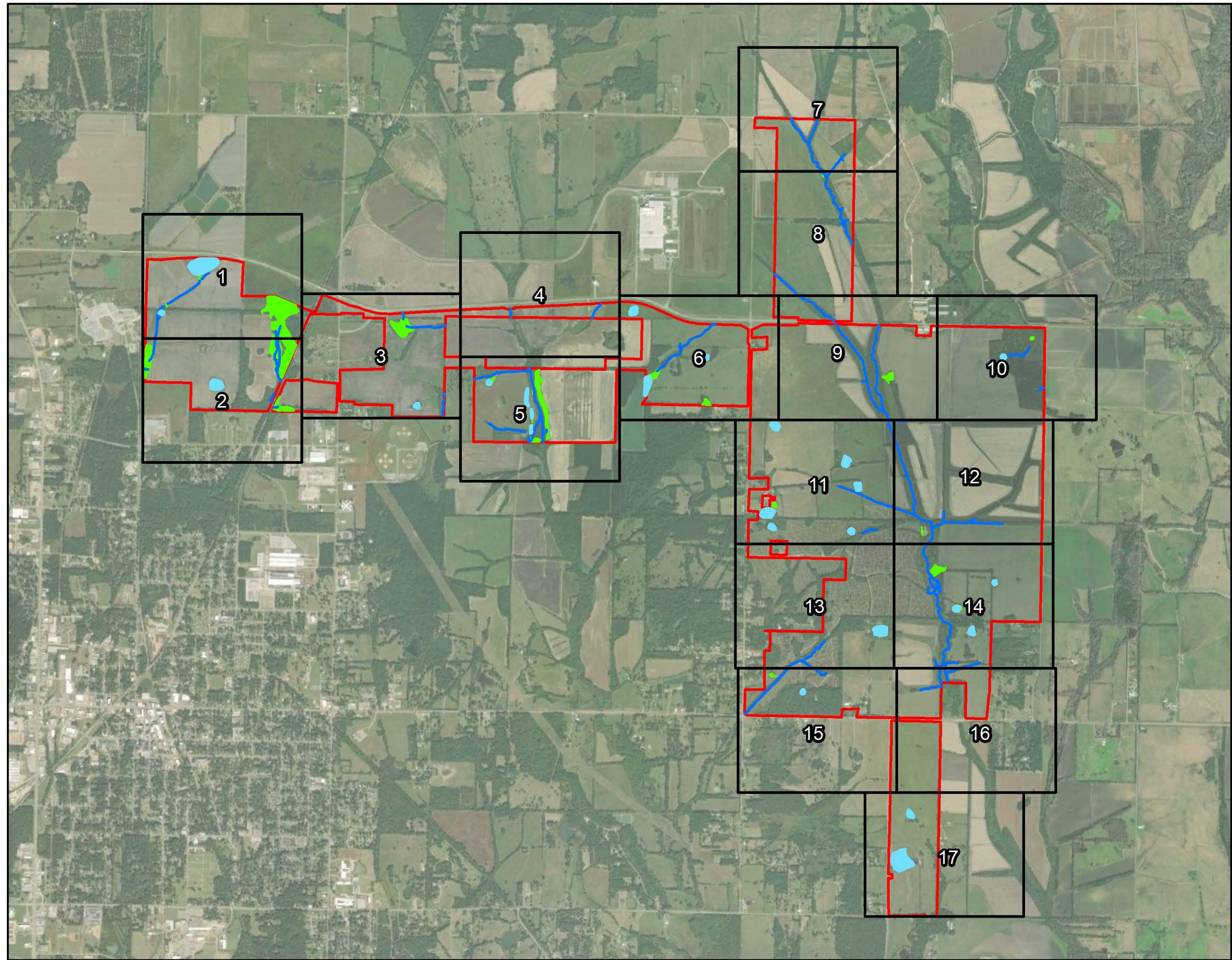
Prepared For: 

Prepared By: 

Date:
08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; USGS National Landcover Dataset, 2016

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

-  Site Boundary
-  Mapbook Plate
-  Delineated Open Waterbody
-  Delineated Wetland
-  Delineated Stream



Figure 6
Delineated Aquatic Resources Overview Map
Optimist Solar Facility
Clay County, MS

Prepared For: 
Origis Energy

Prepared By:  TETRA TECH	Date: 08/2021
--	-------------------------

Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

- Site Boundary
- Delineated Open Waterbody

Delineated Wetland-Cowardin

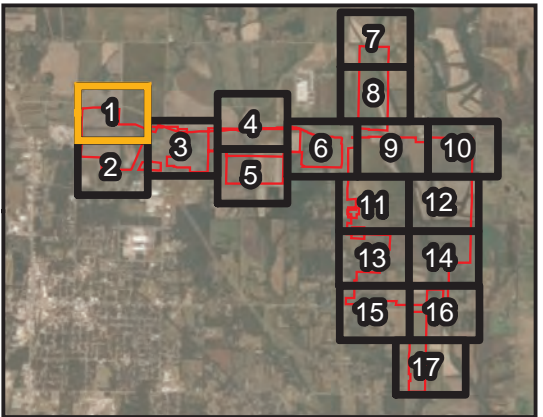
- Palustrine Emergent
- Palustrine Forested

Stream Flow Regime

- Ephemeral
- Intermittent
- Perennial

Plot Type

- Wetland Plot
- Upland Plot



0 125 250 500 Feet

Figure 7
Delineated Aquatic Resources
Plate 1 of 17
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:



Date:

08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

Site Boundary

Delineated Open Waterbody

Delineated Wetland-Cowardin

Palustrine Emergent

Palustrine Forested

Stream Flow Regime

Ephemeral

Intermittent

Plot Type

Wetland Plot

Upland Plot

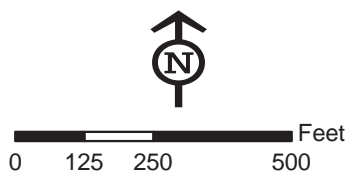
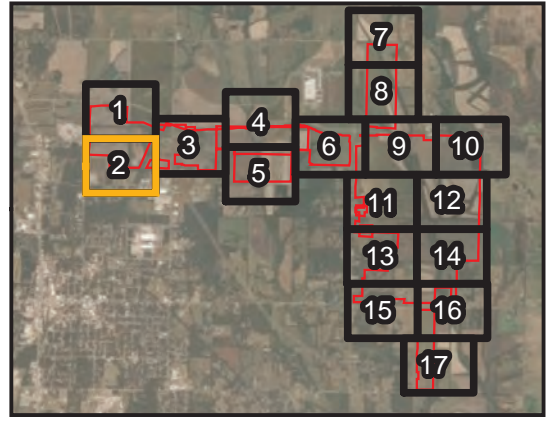


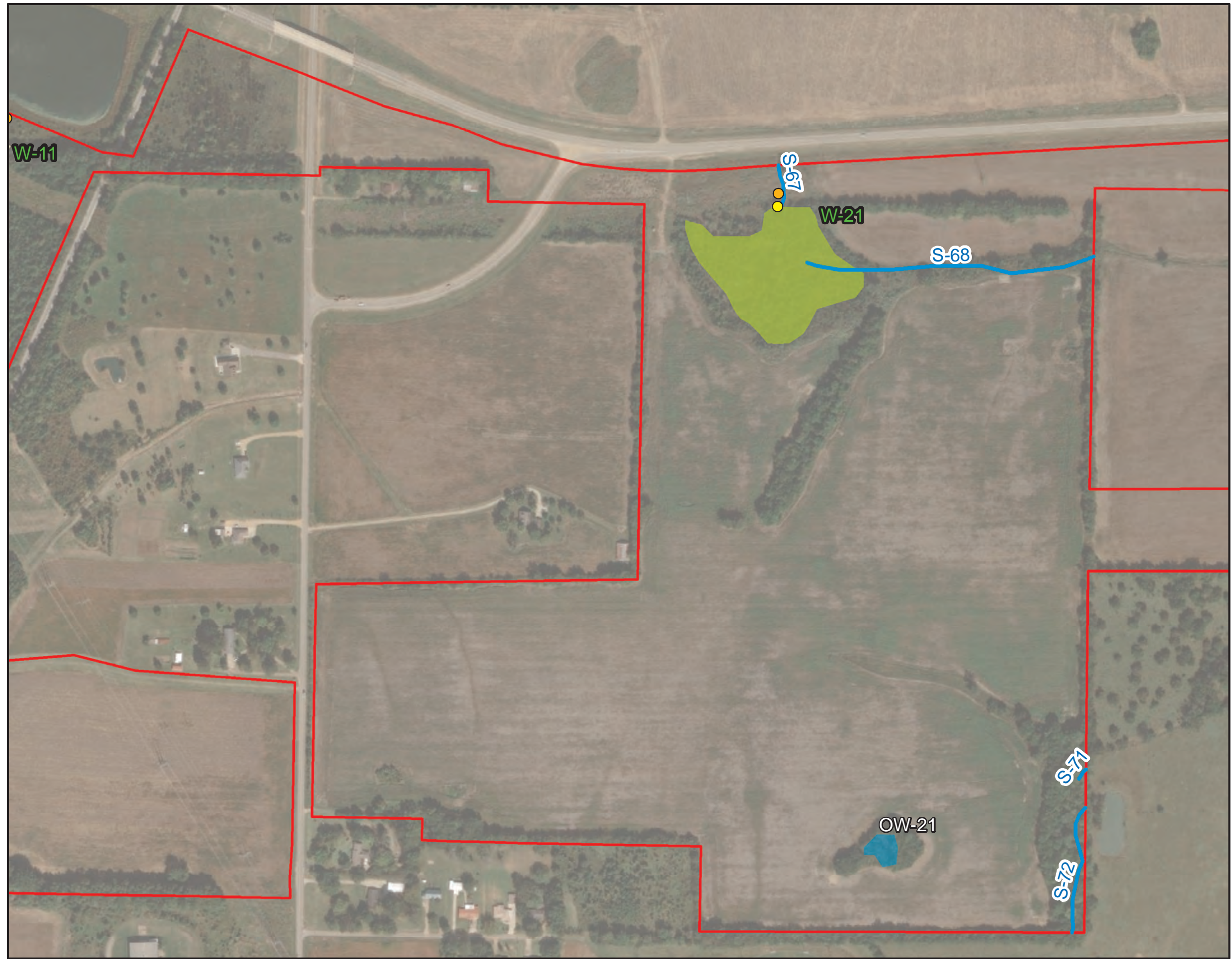
Figure 7
Delineated Aquatic Resources
Plate 2 of 17
Optimist Solar Facility
Clay County, MS

Prepared For:

Prepared By:	Date:
	08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

- Site Boundary
- Delineated Open Waterbody
- Delineated Wetland-Cowardin**
 - Palustrine Emergent
 - Palustrine Forested
- Stream Flow Regime**
 - Ephemeral
- Plot Type**
 - Wetland Plot
 - Upland Plot

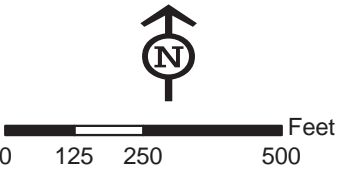
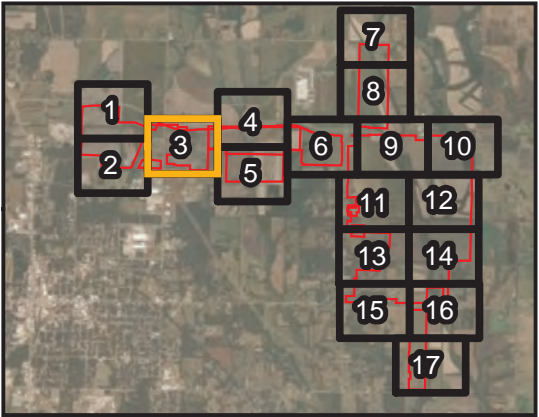


Figure 7
Delineated Aquatic Resources
Plate 3 of 17
Optimist Solar Facility
Clay County, MS

Prepared For:

Prepared By:

Date:
08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



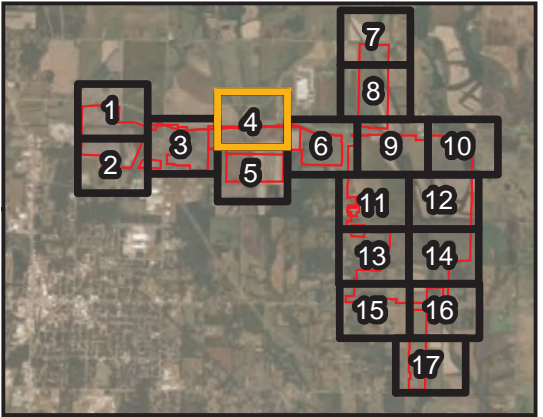
Legend

 Site Boundary

Stream Flow Regime

 Intermittent

 Perennial



0 125 250 500 Feet

Figure 7
Delineated Aquatic Resources
Plate 4 of 17
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:



Date:

08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020;
Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

- Site Boundary
- Delineated Open Waterbody

Delineated Wetland-Cowardin

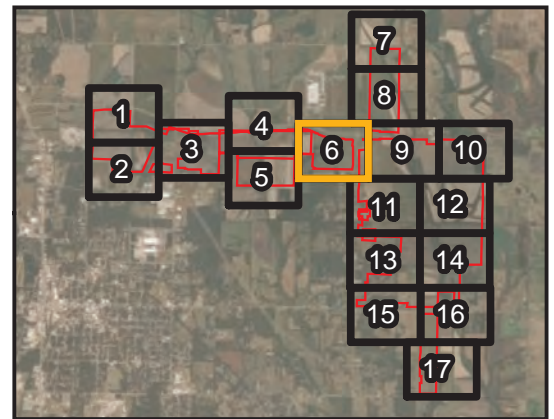
- Palustrine Emergent

Stream Flow Regime

- Ephemeral
- Intermittent
- Perennial

Plot Type

- Wetland Plot
- Upland Plot



0 125 250 500 Feet

Figure 7
Delineated Aquatic Resources
Plate 6 of 17
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:

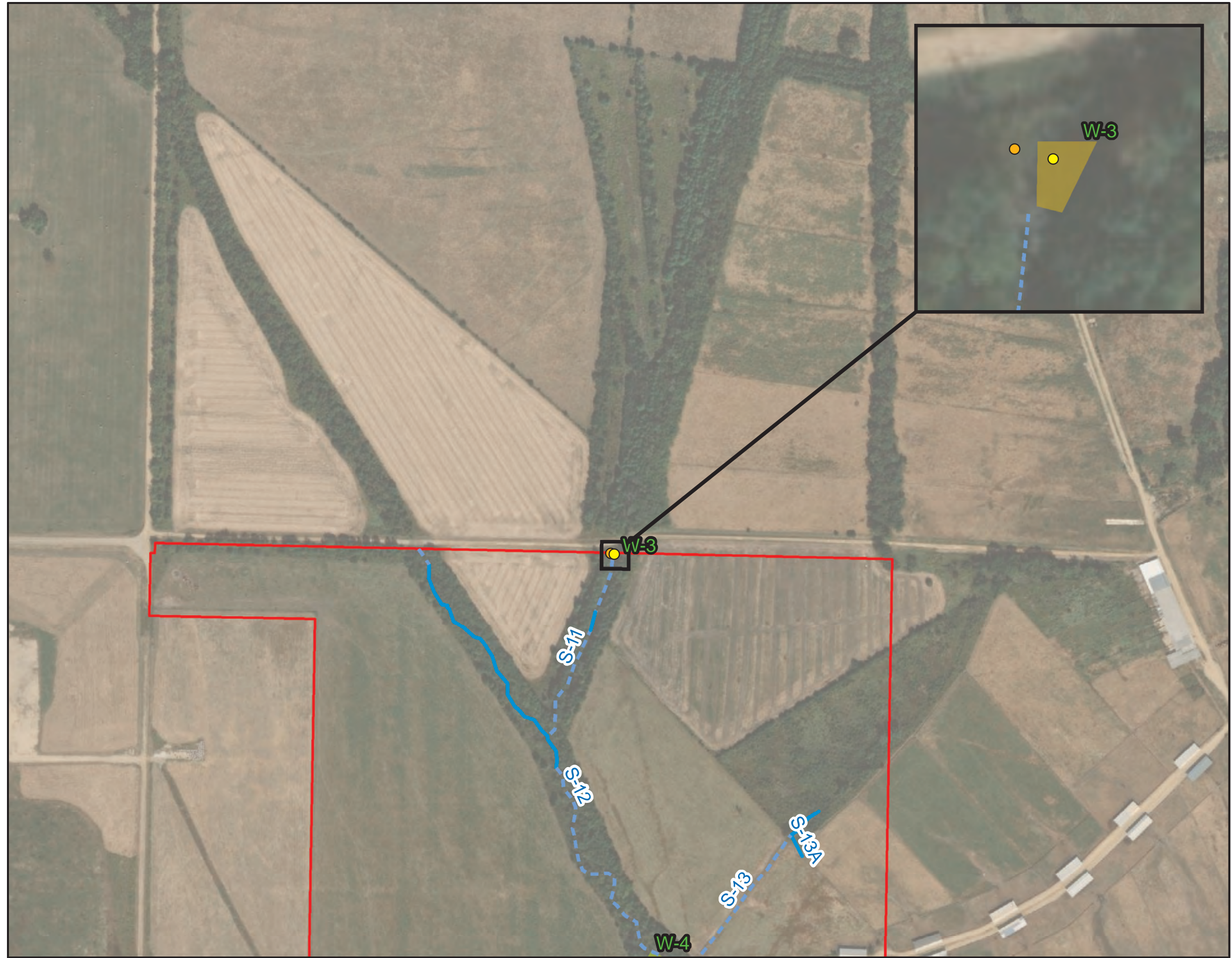


Date:

08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

 Site Boundary

Delineated Wetland-Cowardin

 Palustrine Forested

 Palustrine Scrub-Shrub

Stream Flow Regime

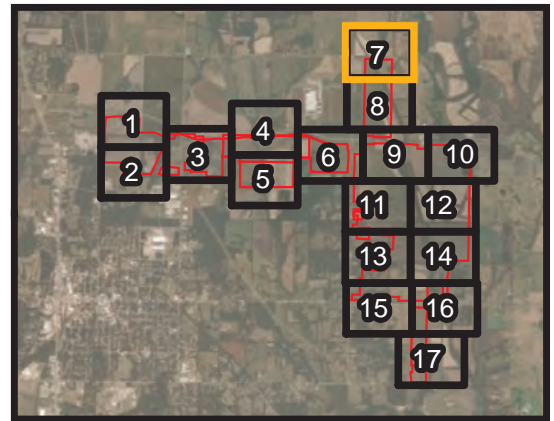
 Ephemeral

 Intermittent

Plot Type

 Wetland Plot

 Upland Plot



0 125 250 500 Feet

Figure 7
Delineated Aquatic Resources
Plate of 17
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:



Date:

08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020;
Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

 Site Boundary

Delineated Wetland-Cowardin

 Palustrine Forested

Stream Flow Regime

 Ephemeral

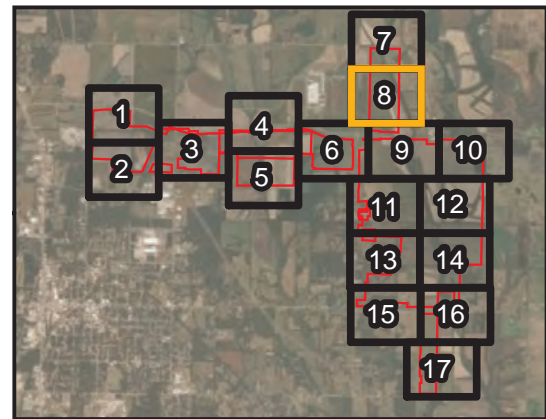
 Intermittent

 Perennial

Plot Type

 Wetland Plot

 Upland Plot



0 125 250 500 Feet

Figure 7
Delineated Aquatic Resources
Plate 8 of 17
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:

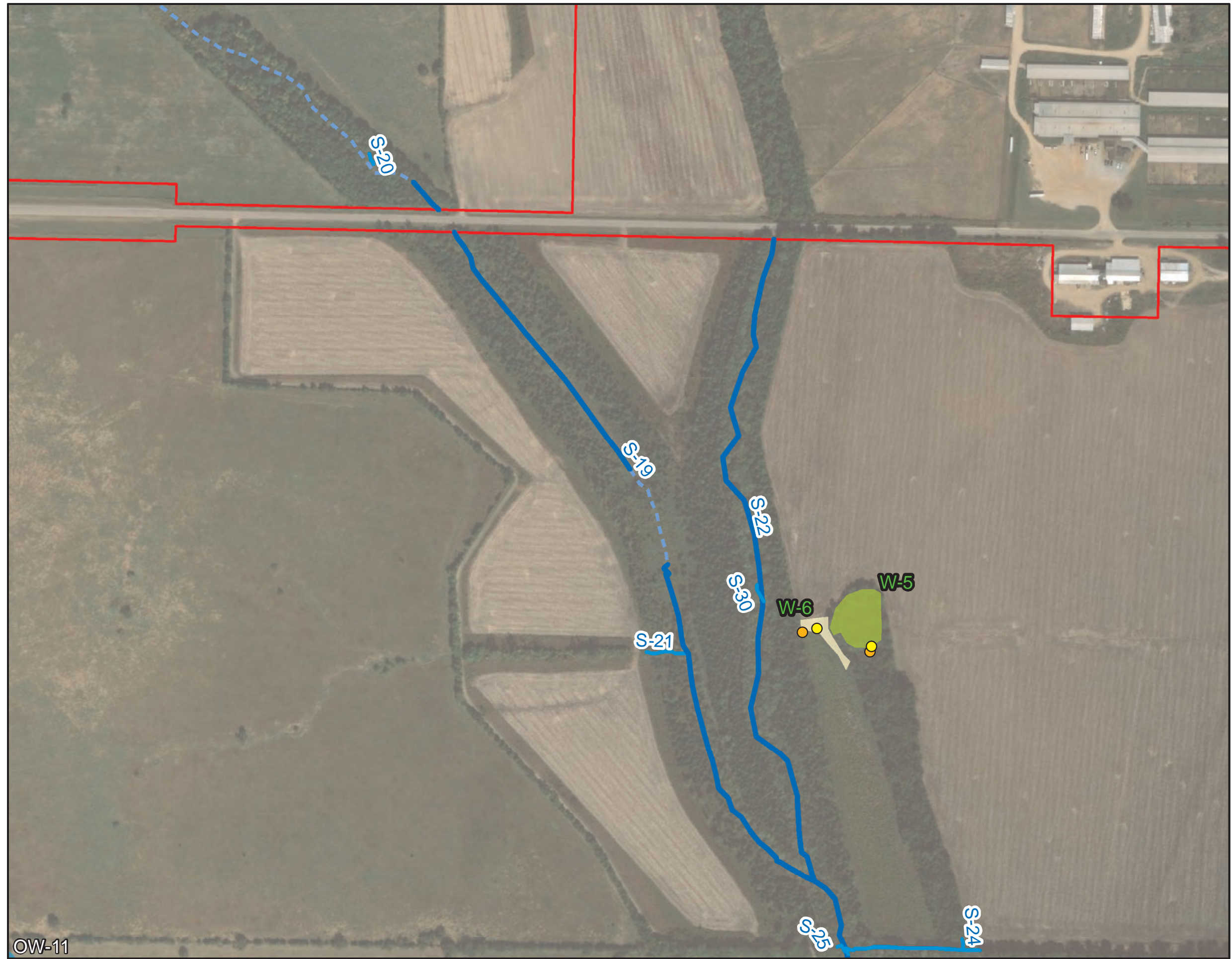


Date:

08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020;
Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

- Site Boundary
- Delineated Open Waterbody

Delineated Wetland-Cowardin

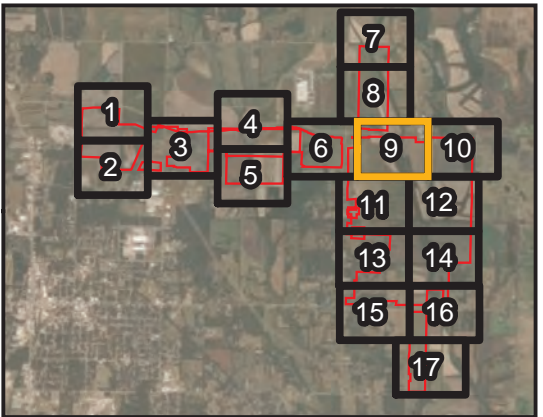
- Palustrine Emergent
- Palustrine Forested

Stream Flow Regime

- Ephemeral
- Intermittent
- Perennial

Plot Type

- Wetland Plot
- Upland Plot



0 125 250 500 Feet

Figure 7
Delineated Aquatic Resources
Plate 9 of 17
Optimist Solar Facility
Clay County, MS

Prepared For:

Prepared By:



Date:
08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

-  Site Boundary
-  Delineated Open Waterbody

Delineated Wetland-Cowardin

-  Palustrine Forested

Stream Flow Regime

-  Ephemeral

Plot Type

-  Wetland Plot
-  Upland Plot

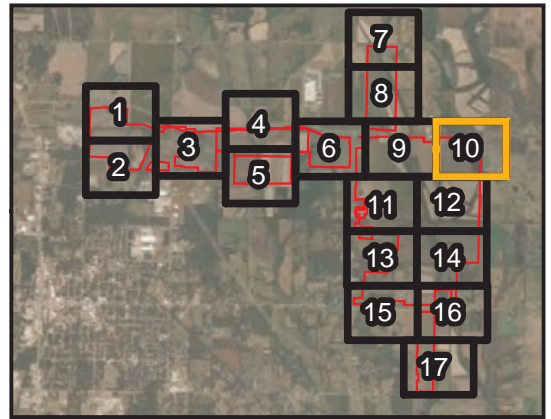


Figure 7
Delineated Aquatic Resources
Plate 10 of 17
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:



Date:

08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

- Site Boundary
- Delineated Open Waterbody

Delineated Wetland-Cowardin

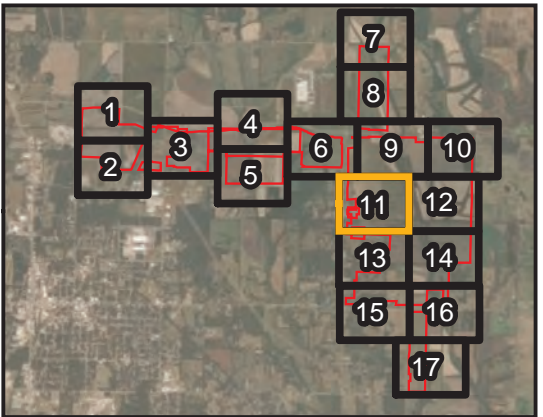
- Palustrine Emergent

Stream Flow Regime

- Ephemeral
- Intermittent
- Perennial

Plot Type

- Wetland Plot
- Upland Plot



0 125 250 500 Feet

Figure 7
Delineated Aquatic Resources
Plate 11 of 17
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:



Date:

08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

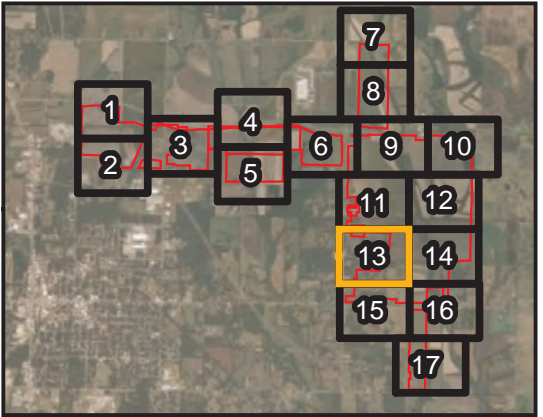
 Site Boundary

 Delineated Open Waterbody

Stream Flow Regime

 Ephemeral

 Intermittent



0 125 250 500 Feet

Figure 7
Delineated Aquatic Resources
Plate 13 of 17
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:

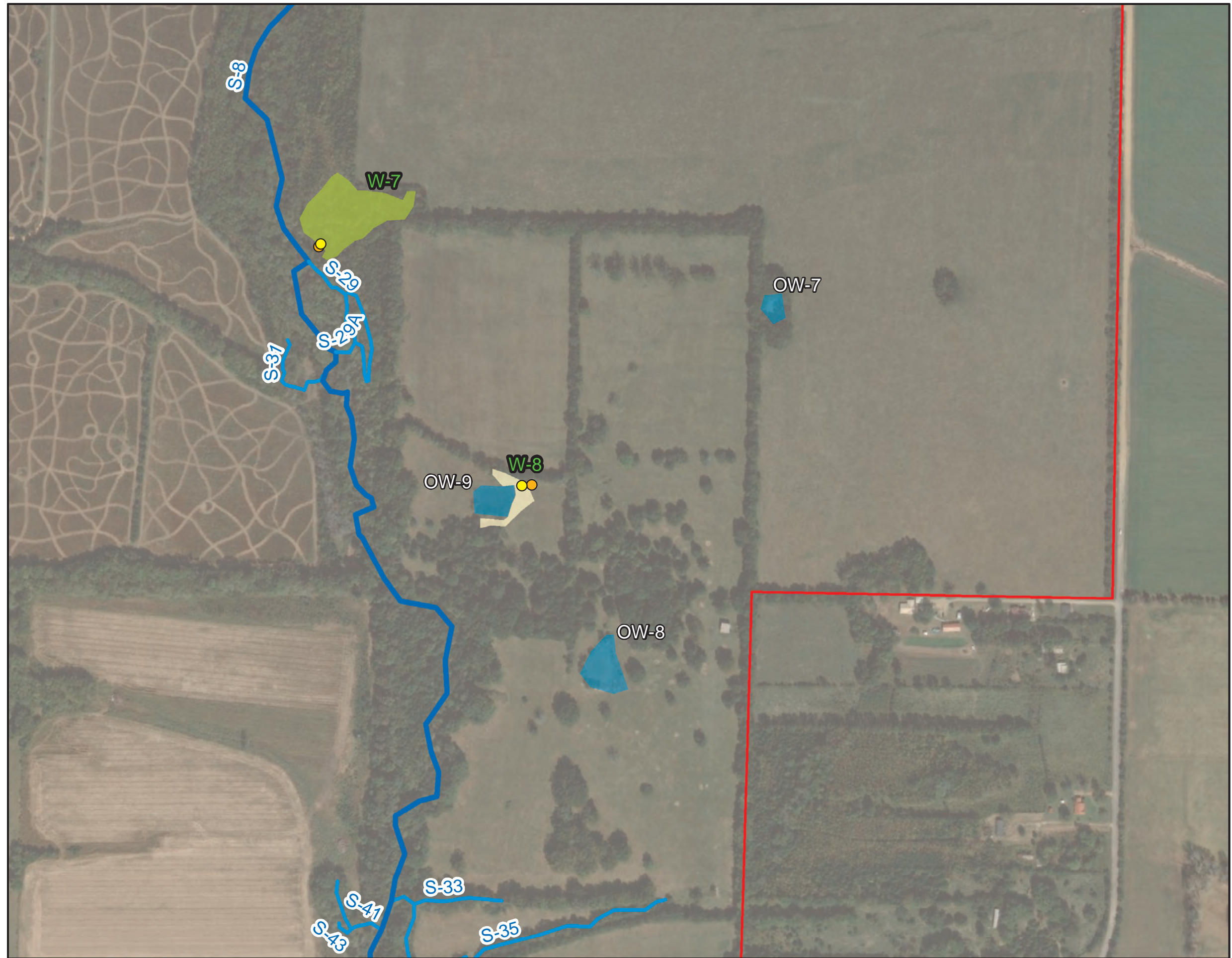


Date:

08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020;
Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

- Site Boundary
- Delineated Open Waterbody

Delineated Wetland-Cowardin

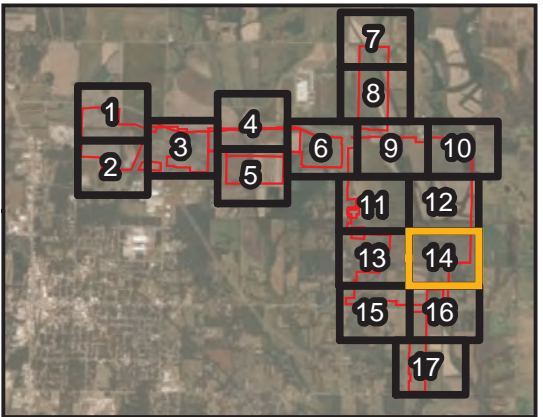
- Palustrine Emergent
- Palustrine Forested

Stream Flow Regime

- Ephemeral
- Perennial

Plot Type

- Wetland Plot
- Upland Plot



0 125 250 500 Feet

Figure 7
Delineated Aquatic Resources
Plate 14 of 17
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:

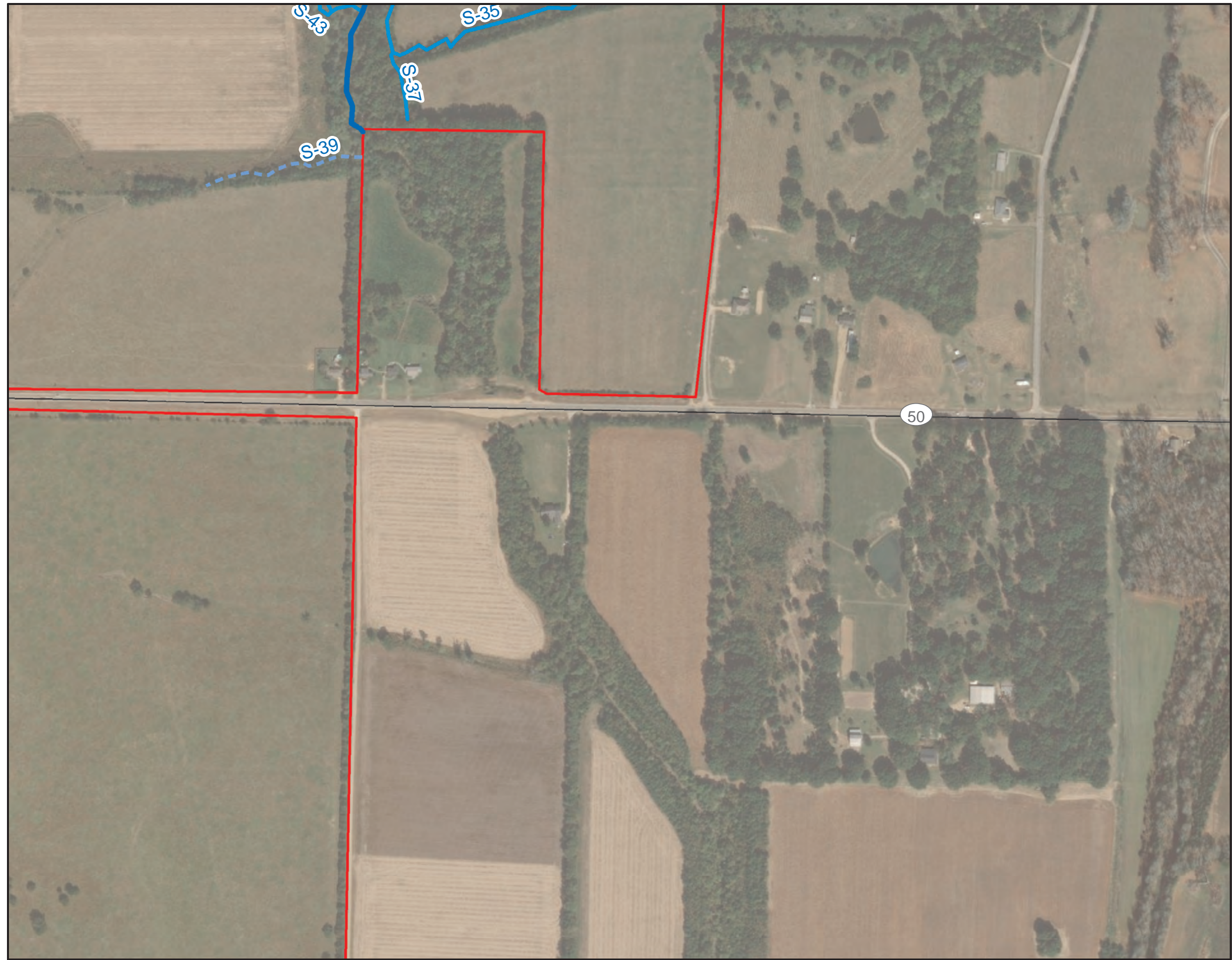


Date:

08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

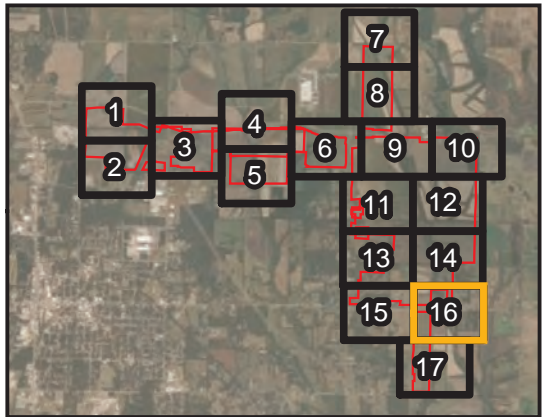
Site Boundary

Stream Flow Regime

Ephemeral

Intermittent

Perennial



0 125 250 500 Feet

Figure 7
Delineated Aquatic Resources
Plate 16 of 17
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:



Date:

08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020;
Tetra Tech, 2020

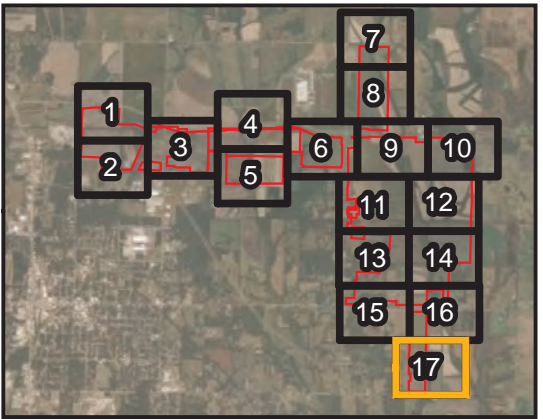
Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

 Site Boundary

 Delineated Open Waterbody



0 125 250 500 Feet

Figure 7
Delineated Aquatic Resources
Plate 17 of 17
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:



Date:

08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020;
Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North

Appendix C – Wetland Data Forms

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
--	---

Project/Site: Optimist City/County: Clay County Sampling Date: 11/17/2020
 Applicant/Owner: Origis State: MS Sampling Point: W1
 Investigator(s): HM, RF, BH, CD Section, Township, Range: S8 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): <2
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.61025374 Long: -88.59418532 Datum: NAD83
 Soil Map Unit Name: KpC2 - Kipling silt loam, 5 to 8 percent slopes, moderately eroded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) </td> </tr> </table>		<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U) </td> <td style="width: 50%;"></td> </tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U)	
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)					
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U)						
Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>16</u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Manmade pond with berms and drainage patterns observed at the inflow.						

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>10</u>	20% of total cover: <u>4</u>		

Sapling Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>
2. <u>Juniperus virginiana</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>6</u>	20% of total cover: <u>3</u>		

Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ilex decidua</u>	<u>2</u>	<u>No</u>	<u>FACW</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>1</u>	20% of total cover: <u>1</u>		

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Chasmanthium sessiliflorum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Persicaria lapathifolia</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>
3. <u>Solidago rugosa</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
4. <u>Eleocharis palustris</u>	<u>5</u>	<u>No</u>	<u>OBL</u>
5. <u>Carex cherokeensis</u>	<u>2</u>	<u>No</u>	<u>FACW</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>24</u>	20% of total cover: <u>10</u>		

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax rotundifolia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Mikania scandens</u>	<u>2</u>	<u>No</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>6</u>	20% of total cover: <u>3</u>		

Remarks: (If observed, list morphological adaptations below.)

Dominance Test worksheet:

 Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
 Total Number of Dominant Species Across All Strata: 5 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>35</u>	x 1 = <u>35</u>
FACW species <u>21</u>	x 2 = <u>42</u>
FAC species <u>37</u>	x 3 = <u>111</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>93</u> (A)	<u>188</u> (B)
Prevalence Index = B/A = <u>2.02</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

 Yes X No _____

SOIL

Sampling Point: W1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	5YR 5/1	100						
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)					Indicators for Problematic Hydric Soils³:			
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)					
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)					
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)					
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)					
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)					
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input type="checkbox"/> Depleted Matrix (F3)					
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input checked="" type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)					
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)					
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)					
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)					
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)					
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
(LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____								
				Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____				
Remarks:								

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

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/17/2020
 Applicant/Owner: Origis State: MS Sampling Point: U1
 Investigator(s): HM, RF, BH, CD Section, Township, Range: S8 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): Berm Local relief (concave, convex, none): Concave Slope (%): <2
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.61026764 Long: -88.59414375 Datum: NAD83
 Soil Map Unit Name: KpC2 - Kipling silt loam, 5 to 8 percent slopes, moderately eroded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> </div> <div style="width: 48%;"> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u> </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u> <u>Sphagnum Moss (D8) (LRR T, U)</u>
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Ulmus alata</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ =Total Cover			
50% of total cover: <u>23</u>	20% of total cover: <u>9</u>		

Sapling Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Juniperus virginiana</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ =Total Cover			
50% of total cover: <u>18</u>	20% of total cover: <u>7</u>		

Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ilex decidua</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ =Total Cover			
50% of total cover: <u>5</u>	20% of total cover: <u>2</u>		

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Chasmanthium sessiliflorum</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
_____ =Total Cover			
50% of total cover: <u>15</u>	20% of total cover: <u>6</u>		

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax rotundifolia</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ =Total Cover			
50% of total cover: <u>3</u>	20% of total cover: <u>1</u>		

Remarks: (If observed, list morphological adaptations below.)

Dominance Test worksheet:

 Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
 Total Number of Dominant Species Across All Strata: 7 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>65</u>	x 3 = <u>195</u>
FACU species <u>60</u>	x 4 = <u>240</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>125</u> (A)	<u>435</u> (B)
Prevalence Index = B/A = <u>3.48</u>	

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

 Yes X No _____

SOIL

Sampling Point: U1

[illegible]

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/17/2020
 Applicant/Owner: Origis State: MS Sampling Point: W2
 Investigator(s): CD, HM Section, Township, Range: S8 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): Drainage Basin/Depression Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.62088209 Long: -88.58129308 Datum: NAD83
 Soil Map Unit Name: Gr - Griffith silt clay NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td><u>X</u> Surface Water (A1)</td> <td><u> </u> Aquatic Fauna (B13)</td> </tr> <tr> <td><u>X</u> High Water Table (A2)</td> <td><u> </u> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td><u>X</u> Saturation (A3)</td> <td><u> </u> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><u> </u> Water Marks (B1)</td> <td><u> </u> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td><u> </u> Sediment Deposits (B2)</td> <td><u> </u> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><u> </u> Drift Deposits (B3)</td> <td><u> </u> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><u> </u> Algal Mat or Crust (B4)</td> <td><u> </u> Thin Muck Surface (C7)</td> </tr> <tr> <td><u> </u> Iron Deposits (B5)</td> <td><u> </u> Other (Explain in Remarks)</td> </tr> <tr> <td><u> </u> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><u>X</u> Water-Stained Leaves (B9)</td> <td></td> </tr> </table>		<u>X</u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u>X</u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u>X</u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Inundation Visible on Aerial Imagery (B7)		<u>X</u> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr> <td><u> </u> Surface Soil Cracks (B6)</td> </tr> <tr> <td><u>X</u> Sparsely Vegetated Concave Surface (B8)</td> </tr> <tr> <td><u>X</u> Drainage Patterns (B10)</td> </tr> <tr> <td><u> </u> Moss Trim Lines (B16)</td> </tr> <tr> <td><u> </u> Dry-Season Water Table (C2)</td> </tr> <tr> <td><u>X</u> Crayfish Burrows (C8)</td> </tr> <tr> <td><u> </u> Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td><u>X</u> Geomorphic Position (D2)</td> </tr> <tr> <td><u> </u> Shallow Aquitard (D3)</td> </tr> <tr> <td><u>X</u> FAC-Neutral Test (D5)</td> </tr> <tr> <td><u> </u> Sphagnum Moss (D8) (LRR T, U)</td> </tr> </table>	<u> </u> Surface Soil Cracks (B6)	<u>X</u> Sparsely Vegetated Concave Surface (B8)	<u>X</u> Drainage Patterns (B10)	<u> </u> Moss Trim Lines (B16)	<u> </u> Dry-Season Water Table (C2)	<u>X</u> Crayfish Burrows (C8)	<u> </u> Saturation Visible on Aerial Imagery (C9)	<u>X</u> Geomorphic Position (D2)	<u> </u> Shallow Aquitard (D3)	<u>X</u> FAC-Neutral Test (D5)	<u> </u> Sphagnum Moss (D8) (LRR T, U)
<u>X</u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)																																
<u>X</u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)																																
<u>X</u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)																																
<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)																																
<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)																																
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<u> </u> Surface Soil Cracks (B6)																																	
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<u>X</u> FAC-Neutral Test (D5)																																	
<u> </u> Sphagnum Moss (D8) (LRR T, U)																																	
Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>10</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>																																
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:																																	
Remarks: Small vernal pool fragmented by road crossing and surrounded by historic grading/tilling.																																	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W2

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Celtis laevigata</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. <u>Maclura pomifera</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
55 = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>55</u></td> <td>x 2 = <u>110</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>45</u></td> <td>x 4 = <u>180</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>125</u> (A)</td> <td><u>365</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.92</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>55</u>	x 2 = <u>110</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>45</u>	x 4 = <u>180</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>125</u> (A)	<u>365</u> (B)	Prevalence Index = B/A = <u>2.92</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>55</u>	x 2 = <u>110</u>																			
FAC species <u>25</u>	x 3 = <u>75</u>																			
FACU species <u>45</u>	x 4 = <u>180</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>125</u> (A)	<u>365</u> (B)																			
Prevalence Index = B/A = <u>2.92</u>																				
50% of total cover: <u>28</u> 20% of total cover: <u>11</u>																				
Sapling Stratum (Plot size: <u>15</u>)																				
1. <u>Celtis laevigata</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. <u>Maclura pomifera</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
45 = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
50% of total cover: <u>23</u> 20% of total cover: <u>9</u>																				
Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Lolium perenne</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
20 = Total Cover																				
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u>Rubus argutus</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
5 = Total Cover																				
50% of total cover: <u>3</u> 20% of total cover: <u>1</u>																				
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/1	100					Loamy/Clayey	
3-16	10YR 4/1	100					Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)								Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)				<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)				<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)				<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)				(outside MLRA 150A)	
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)				<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)				(outside MLRA 150A, 150B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)				<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)				<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)				(MLRA 153B)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)				<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)				(outside MLRA 138, 152A in FL, 154)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				(MLRA 153B, 153D)	
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)					
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
(LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed): Type: _____ Depth (inches): _____							Hydric Soil Present? Yes <u>X</u> No _____	
Remarks: Thick dark surface								

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

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/17/2020
 Applicant/Owner: Origis State: MS Sampling Point: U2
 Investigator(s): HM, CD Section, Township, Range: S8 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): <1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.62086984 Long: -88.58136671 Datum: NAD83
 Soil Map Unit Name: Gr - Griffith silt clay NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> </div> <div style="width: 48%;"> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u> </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u> <u>Sphagnum Moss (D8) (LRR T, U)</u>
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Flows out to the South. Upland slope down into wetland.		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U2

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Celtis laevigata</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. <u>Maclura pomifera</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
35 = Total Cover																				
50% of total cover: <u>18</u>		20% of total cover: <u>7</u>																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. <u>Fraxinus pennsylvanica</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>35</u></td> <td>x 2 = <u>70</u></td> </tr> <tr> <td>FAC species <u>44</u></td> <td>x 3 = <u>132</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>129</u> (A)</td> <td><u>402</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.12</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>35</u>	x 2 = <u>70</u>	FAC species <u>44</u>	x 3 = <u>132</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>129</u> (A)	<u>402</u> (B)	Prevalence Index = B/A = <u>3.12</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>35</u>	x 2 = <u>70</u>																			
FAC species <u>44</u>	x 3 = <u>132</u>																			
FACU species <u>50</u>	x 4 = <u>200</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>129</u> (A)	<u>402</u> (B)																			
Prevalence Index = B/A = <u>3.12</u>																				
2. <u>Cornus drummondii</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
20 = Total Cover																				
50% of total cover: <u>10</u>		20% of total cover: <u>4</u>																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Juniperus virginiana</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. <u>Ligustrum sinense</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
25 = Total Cover																				
50% of total cover: <u>13</u>		20% of total cover: <u>5</u>																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Lolium perenne</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Ligustrum sinense</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Silphium perfoliatum</u>	<u>2</u>	<u>No</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
37 = Total Cover																				
50% of total cover: <u>19</u>		20% of total cover: <u>8</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u>Rubus argutus</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Smilax glauca</u>	<u>2</u>	<u>No</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
12 = Total Cover																				
50% of total cover: <u>6</u>		20% of total cover: <u>3</u>																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: U2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)													
Depth (inches)	Matrix		Redox Features				Texture	Remarks					
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²							
0-8	10YR 3/2	100					Loamy/Clayey						
8-16	10YR 3/2	99	10YR 5/6	1	C	PL	Loamy/Clayey						
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)					Indicators for Problematic Hydric Soils³:								
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)					<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) (MLRA 153B, 153D) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 149A, 153C, 153D) <input type="checkbox"/> Very Shallow Dark Surface (F22) (MLRA 138, 152A in FL, 154)					<input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Coast Prairie Redox (A16) (outside MLRA 150A) <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 153B) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) (outside MLRA 138, 152A in FL, 154) <input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7) (MLRA 153B, 153D) <input type="checkbox"/> Other (Explain in Remarks)			
					³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.								
Restrictive Layer (if observed): Type: _____ Depth (inches): _____							Hydric Soil Present? Yes _____ No <u>X</u>						
Remarks:													

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/18/2020
 Applicant/Owner: Origis State: MS Sampling Point: W3
 Investigator(s): RF, BH Section, Township, Range: S29 T16S R7E, T16S R7E
 Landform (hillside, terrace, etc.): roadway drainage area Local relief (concave, convex, none): Concave Slope (%): <2
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.651417 Long: -88.591010 Datum: NAD83
 Soil Map Unit Name: Gr - Griffith silt clay NWI classification: PSS
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td><u> </u> Surface Water (A1)</td> <td><u>X</u> Aquatic Fauna (B13)</td> </tr> <tr> <td><u>X</u> High Water Table (A2)</td> <td><u> </u> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td><u>X</u> Saturation (A3)</td> <td><u> </u> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><u> </u> Water Marks (B1)</td> <td><u> </u> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td><u>X</u> Sediment Deposits (B2)</td> <td><u> </u> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><u>X</u> Drift Deposits (B3)</td> <td><u> </u> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><u> </u> Algal Mat or Crust (B4)</td> <td><u> </u> Thin Muck Surface (C7)</td> </tr> <tr> <td><u> </u> Iron Deposits (B5)</td> <td><u> </u> Other (Explain in Remarks)</td> </tr> <tr> <td><u> </u> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><u>X</u> Water-Stained Leaves (B9)</td> <td></td> </tr> </table>		<u> </u> Surface Water (A1)	<u>X</u> Aquatic Fauna (B13)	<u>X</u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u>X</u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u>X</u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u>X</u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Inundation Visible on Aerial Imagery (B7)		<u>X</u> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr> <td><u> </u> Surface Soil Cracks (B6)</td> </tr> <tr> <td><u> </u> Sparsely Vegetated Concave Surface (B8)</td> </tr> <tr> <td><u>X</u> Drainage Patterns (B10)</td> </tr> <tr> <td><u> </u> Moss Trim Lines (B16)</td> </tr> <tr> <td><u> </u> Dry-Season Water Table (C2)</td> </tr> <tr> <td><u>X</u> Crayfish Burrows (C8)</td> </tr> <tr> <td><u> </u> Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td><u>X</u> Geomorphic Position (D2)</td> </tr> <tr> <td><u> </u> Shallow Aquitard (D3)</td> </tr> <tr> <td><u> </u> FAC-Neutral Test (D5)</td> </tr> <tr> <td><u> </u> Sphagnum Moss (D8) (LRR T, U)</td> </tr> </table>	<u> </u> Surface Soil Cracks (B6)	<u> </u> Sparsely Vegetated Concave Surface (B8)	<u>X</u> Drainage Patterns (B10)	<u> </u> Moss Trim Lines (B16)	<u> </u> Dry-Season Water Table (C2)	<u>X</u> Crayfish Burrows (C8)	<u> </u> Saturation Visible on Aerial Imagery (C9)	<u>X</u> Geomorphic Position (D2)	<u> </u> Shallow Aquitard (D3)	<u> </u> FAC-Neutral Test (D5)	<u> </u> Sphagnum Moss (D8) (LRR T, U)
<u> </u> Surface Water (A1)	<u>X</u> Aquatic Fauna (B13)																																
<u>X</u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)																																
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<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)																																
<u>X</u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)																																
<u>X</u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)																																
<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)																																
<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)																																
<u> </u> Inundation Visible on Aerial Imagery (B7)																																	
<u>X</u> Water-Stained Leaves (B9)																																	
<u> </u> Surface Soil Cracks (B6)																																	
<u> </u> Sparsely Vegetated Concave Surface (B8)																																	
<u>X</u> Drainage Patterns (B10)																																	
<u> </u> Moss Trim Lines (B16)																																	
<u> </u> Dry-Season Water Table (C2)																																	
<u>X</u> Crayfish Burrows (C8)																																	
<u> </u> Saturation Visible on Aerial Imagery (C9)																																	
<u>X</u> Geomorphic Position (D2)																																	
<u> </u> Shallow Aquitard (D3)																																	
<u> </u> FAC-Neutral Test (D5)																																	
<u> </u> Sphagnum Moss (D8) (LRR T, U)																																	
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>4</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>																																
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:																																	
Remarks:																																	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W3

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Celtis laevigata</u>	<u>60</u>	<u>Yes</u>	<u>OBL</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. <u>Salix nigra</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
90 = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>110</u></td> <td>x 1 = <u>110</u></td> </tr> <tr> <td>FACW species <u>70</u></td> <td>x 2 = <u>140</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>205</u> (A)</td> <td><u>325</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.59</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>110</u>	x 1 = <u>110</u>	FACW species <u>70</u>	x 2 = <u>140</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>205</u> (A)	<u>325</u> (B)	Prevalence Index = B/A = <u>1.59</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>110</u>	x 1 = <u>110</u>																			
FACW species <u>70</u>	x 2 = <u>140</u>																			
FAC species <u>25</u>	x 3 = <u>75</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>205</u> (A)	<u>325</u> (B)																			
Prevalence Index = B/A = <u>1.59</u>																				
50% of total cover: <u>45</u> 20% of total cover: <u>18</u>																				
Sapling Stratum (Plot size: <u>15</u>)																				
1. <u>Salix nigra</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
20 = Total Cover																				
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>																				
Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Lolium perenne</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Eupatorium semiserratum</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Panicum virgatum</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
95 = Total Cover																				
50% of total cover: <u>48</u> 20% of total cover: <u>19</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 5/1	95	5YR 4/6	5	C	PL	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
<input type="checkbox"/> (LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/18/2020

Applicant/Owner: Origis State: MS Sampling Point: U3

Investigator(s): RF, BH Section, Township, Range: S29 T16S R7E, T16S R7E

Landform (hillside, terrace, etc.): hillslope to terrace Local relief (concave, convex, none): convex Slope (%): 1-3

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.65135087 Long: -88.59113652 Datum: NAD83

Soil Map Unit Name: Gr - Griffith silt clay NWI classification: N/A

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 45%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U3

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Celtis laevigata</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
20 = Total Cover																				
50% of total cover: <u>10</u>		20% of total cover: <u>4</u>																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>65</u></td> <td>x 4 = <u>260</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>85</u> (A)</td> <td><u>320</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.76</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>65</u>	x 4 = <u>260</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>85</u> (A)	<u>320</u> (B)	Prevalence Index = B/A = <u>3.76</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>65</u>	x 4 = <u>260</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>85</u> (A)	<u>320</u> (B)																			
Prevalence Index = B/A = <u>3.76</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>_____</u> Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Lolium perenne</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Solidago rugosa</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
60 = Total Cover																				
50% of total cover: <u>30</u>		20% of total cover: <u>12</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u>Rubus trivialis</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Present? Yes <u>_____</u> No <u>X</u>																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
5 = Total Cover																				
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: U3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 3/3	100						
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)					Indicators for Problematic Hydric Soils³:			
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)					
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)					
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)					
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)					
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)					
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input type="checkbox"/> Depleted Matrix (F3)					
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)					
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)					
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)					
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)					
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)					
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
(LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____								
				Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks:								

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

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/18/2020
 Applicant/Owner: Origis State: MS Sampling Point: W4
 Investigator(s): HM, RF, BH, CD Section, Township, Range: S32 T16S R7E, T16S R7E
 Landform (hillside, terrace, etc.): floodplain depression Local relief (concave, convex, none): Concave Slope (%): 20
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.64713449 Long: -88.59039847 Datum: NAD83
 Soil Map Unit Name: Gr - Griffith silt clay NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Sourced from adjacent stream and pasture runoff.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u>X</u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W4

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Celtis laevigata</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. <u>Salix nigra</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
50 = Total Cover																				
50% of total cover: <u>25</u>		20% of total cover: <u>10</u>																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>20</u></td> <td>x 1 = <u>20</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>65</u> (A)</td> <td><u>125</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.92</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>20</u>	x 1 = <u>20</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>65</u> (A)	<u>125</u> (B)	Prevalence Index = B/A = <u>1.92</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>20</u>	x 1 = <u>20</u>																			
FACW species <u>30</u>	x 2 = <u>60</u>																			
FAC species <u>15</u>	x 3 = <u>45</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>65</u> (A)	<u>125</u> (B)																			
Prevalence Index = B/A = <u>1.92</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Lolium perenne</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Eupatorium semiserratum</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
15 = Total Cover																				
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	90	7.5YR 4/6	10	C	PL	Loamy/Clayey	
8-16	10YR 3/2	80	7.5YR 4/6	20	C	PL	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)					Indicators for Problematic Hydric Soils³:			
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) (MLRA 153B, 153D) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) (MLRA 149A, 153C, 153D) <input type="checkbox"/> Polyvalue Below Surface (S8) <input type="checkbox"/> Very Shallow Dark Surface (F22) (MLRA 138, 152A in FL, 154)					<input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Coast Prairie Redox (A16) (outside MLRA 150A) <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 153B) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) (outside MLRA 138, 152A in FL, 154) <input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7) (MLRA 153B, 153D) <input type="checkbox"/> Other (Explain in Remarks)			
Restrictive Layer (if observed): Type: _____ Depth (inches): _____					Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____			
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/18/2020

Applicant/Owner: Origis State: MS Sampling Point: U4

Investigator(s): HM, RF, BH, CD Section, Township, Range: S32 T16S R7E, T16S R7E

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

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.64714080 Long: -88.59034326 Datum: NAD83

Soil Map Unit Name: Gr - Griffith silt clay NWI classification: N/A

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> </div> <div style="width: 48%;"> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u> </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>X FAC-Neutral Test (D5)</u> <u>Sphagnum Moss (D8) (LRR T, U)</u>
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U4

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Celtis laevigata</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Salix nigra</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>25</u>	20% of total cover: <u>10</u>		

Sapling Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____	20% of total cover: _____		

Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____	20% of total cover: _____		

Herb Stratum (Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Chasmanthium sessiliflorum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Ligustrum sinense</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>15</u>	20% of total cover: <u>6</u>		

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Rubus argutus</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>3</u>	20% of total cover: <u>1</u>		

Remarks: (If observed, list morphological adaptations below.)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>35</u>	x 3 = <u>105</u>
FACU species <u>20</u>	x 4 = <u>80</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>85</u> (A)	<u>245</u> (B)
Prevalence Index = B/A = <u>2.88</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes X No _____

SOIL

Sampling Point: U4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)													
Depth (inches)	Matrix		Redox Features				Texture	Remarks					
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²							
0-16	10YR 3/2	100					Loamy/Clayey						
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)					Indicators for Problematic Hydric Soils³:								
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)					<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) (MLRA 153B, 153D) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 149A, 153C, 153D) <input type="checkbox"/> Very Shallow Dark Surface (F22) (MLRA 138, 152A in FL, 154)					<input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Coast Prairie Redox (A16) (outside MLRA 150A) <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 153B) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) (outside MLRA 138, 152A in FL, 154) <input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7) (MLRA 153B, 153D) <input type="checkbox"/> Other (Explain in Remarks)			
Restrictive Layer (if observed): Type: _____ Depth (inches): _____					Hydric Soil Present? Yes _____ No <u> X </u>								
Remarks:													

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

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/17/2020
 Applicant/Owner: Origis State: MS Sampling Point: W5
 Investigator(s): CD, HM Section, Township, Range: S5 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 5
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.63216639 Long: -88.58415776 Datum: NAD83
 Soil Map Unit Name: Gr - Griffith silt clay NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) </td> </tr> </table>		<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U) </td> <td style="width: 50%;"></td> </tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U)	
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)					
<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U)						
Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>14</u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Remarks: Open water wetland with mature <i>Cephalanthus occidentalis</i> and <i>Hydrocotyle umbellata</i> growing throughout the pool. No visible incoming water source and surrounded by artificial berms with mature trees.						

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W5

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Celtis laevigata</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>12</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. <u>Maclura pomifera</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Salix nigra</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
70 = Total Cover																				
50% of total cover: <u>35</u>		20% of total cover: <u>14</u>																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. <u>Celtis laevigata</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>85</u></td> <td>x 1 = <u>85</u></td> </tr> <tr> <td>FACW species <u>80</u></td> <td>x 2 = <u>160</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>40</u></td> <td>x 4 = <u>160</u></td> </tr> <tr> <td>UPL species <u>15</u></td> <td>x 5 = <u>75</u></td> </tr> <tr> <td>Column Totals: <u>235</u> (A)</td> <td><u>525</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.23</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>85</u>	x 1 = <u>85</u>	FACW species <u>80</u>	x 2 = <u>160</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>40</u>	x 4 = <u>160</u>	UPL species <u>15</u>	x 5 = <u>75</u>	Column Totals: <u>235</u> (A)	<u>525</u> (B)	Prevalence Index = B/A = <u>2.23</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>85</u>	x 1 = <u>85</u>																			
FACW species <u>80</u>	x 2 = <u>160</u>																			
FAC species <u>15</u>	x 3 = <u>45</u>																			
FACU species <u>40</u>	x 4 = <u>160</u>																			
UPL species <u>15</u>	x 5 = <u>75</u>																			
Column Totals: <u>235</u> (A)	<u>525</u> (B)																			
Prevalence Index = B/A = <u>2.23</u>																				
2. <u>Maclura pomifera</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Salix nigra</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
40 = Total Cover																				
50% of total cover: <u>20</u>		20% of total cover: <u>8</u>																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Cephalanthus occidentalis</u>	<u>35</u>	<u>Yes</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
35 = Total Cover																				
50% of total cover: <u>18</u>		20% of total cover: <u>7</u>																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Lolium perenne</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Persicaria lapathifolia</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Symphyotrichum ericoides</u>	<u>15</u>	<u>Yes</u>	<u>UPL</u>																	
4. <u>Solidago canadensis</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
5. <u>Juncus effusus</u>	<u>5</u>	<u>No</u>	<u>OBL</u>																	
6. <u>Chasmanthium sessiliflorum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
80 = Total Cover																				
50% of total cover: <u>40</u>		20% of total cover: <u>16</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u>Smilax glauca</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
10 = Total Cover																				
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	95	7.5YR 4/6	5	C	M	Loamy/Clayey	
8-16	10YR 3/2	80	7.5YR 4/6	20	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.							² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)							Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)				<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)				<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)				<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)				(outside MLRA 150A)	
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)				<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input type="checkbox"/> Depleted Matrix (F3)				(outside MLRA 150A, 150B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input checked="" type="checkbox"/> Redox Dark Surface (F6)				<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)				<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)				(MLRA 153B)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)				<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)				(outside MLRA 138, 152A in FL, 154)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				(MLRA 153B, 153D)	
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)					
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
(LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <u> X </u> No <u> </u>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/18/2020

Applicant/Owner: Origis State: MS Sampling Point: U5

Investigator(s): CD, HM Section, Township, Range: S5 T17S R7E, T17S R7E

Landform (hillside, terrace, etc.): hillslope, dam, berm Local relief (concave, convex, none): Convex Slope (%): 5

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.63211497 Long: -88.58417497 Datum: NAD83

Soil Map Unit Name: Gr - Griffith silt clay NWI classification: N/A

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> </div> <div style="width: 48%;"> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u> </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u> <u>Sphagnum Moss (D8) (LRR T, U)</u>
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U5

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Celtis laevigata</u>	40	Yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>11</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>45.5%</u> (A/B)																
2. <u>Maclura pomifera</u>	20	Yes	FACU																	
3. <u>Salix nigra</u>	5	No	FACU																	
4. _____																				
5. _____																				
6. _____																				
65 = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>55</u></td> <td>x 2 = <u>110</u></td> </tr> <tr> <td>FAC species <u>27</u></td> <td>x 3 = <u>81</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>172</u> (A)</td> <td><u>551</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.20</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>55</u>	x 2 = <u>110</u>	FAC species <u>27</u>	x 3 = <u>81</u>	FACU species <u>90</u>	x 4 = <u>360</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>172</u> (A)	<u>551</u> (B)	Prevalence Index = B/A = <u>3.20</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>55</u>	x 2 = <u>110</u>																			
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UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>172</u> (A)	<u>551</u> (B)																			
Prevalence Index = B/A = <u>3.20</u>																				
50% of total cover: <u>33</u> 20% of total cover: <u>13</u>																				
Sapling Stratum (Plot size: <u>15</u>)																				
1. <u>Celtis laevigata</u>	15	Yes	FACW	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)																
2. <u>Juniperus virginiana</u>	15	Yes	FACU																	
3. <u>Salix nigra</u>	10	Yes	FACU																	
4. _____																				
5. _____																				
6. _____																				
40 = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
50% of total cover: <u>20</u> 20% of total cover: <u>8</u>																				
Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Cephalanthus occidentalis</u>	5	Yes	FACU	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
5 = Total Cover				Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																
50% of total cover: <u>3</u> 20% of total cover: <u>1</u>																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Solidago canadensis</u>	20	Yes	FACU	Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																
2. <u>Persicaria lapathifolia</u>	15	Yes	FAC																	
3. <u>Symphyotrichum ericoides</u>	15	Yes	FACU																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
50 = Total Cover																				
50% of total cover: <u>25</u> 20% of total cover: <u>10</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u>Toxicodendron radicans</u>	5	Yes	FAC																	
2. <u>Rubus argutus</u>	5	Yes	FAC																	
3. <u>Smilax glauca</u>	2	No	FAC																	
4. _____																				
5. _____																				
12 = Total Cover																				
50% of total cover: <u>6</u> 20% of total cover: <u>3</u>																				
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: U5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 3/2	100					Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) <input type="checkbox"/> Black Histic (A3) (MLRA 153B, 153D) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 149A, 153C, 153D) <input type="checkbox"/> (LRR S, T, U) <input type="checkbox"/> Very Shallow Dark Surface (F22) <input type="checkbox"/> (MLRA 138, 152A in FL, 154) </div> <div style="width: 35%;"> Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> (outside MLRA 150A) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> (outside MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) <input type="checkbox"/> (MLRA 153B) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) <input type="checkbox"/> (outside MLRA 138, 152A in FL, 154) <input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7) <input type="checkbox"/> (MLRA 153B, 153D) <input type="checkbox"/> Other (Explain in Remarks) </div> </div>								
Restrictive Layer (if observed): Type: _____ Depth (inches): _____							Hydric Soil Present? Yes _____ No <u>X</u>	
Remarks:								

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

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/18/2020

Applicant/Owner: Origis State: MS Sampling Point: W6

Investigator(s): CD, HM Section, Township, Range: S5 T17S R7E, T17S R7E

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

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.63233966 Long: -88.58481229 Datum: NAD83

Soil Map Unit Name: Gr - Griffith silt clay NWI classification: PEM

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9) </td> <td style="width: 50%; vertical-align: top;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </td> </tr> </table>		<u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9)	<u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u>X</u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u>X</u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U) </td> <td style="width: 50%; vertical-align: top;"> </td> </tr> </table>	<u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u>X</u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u>X</u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)									
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Field Observations: <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Surface Water Present?</td> <td style="width: 10%;">Yes <u> </u></td> <td style="width: 10%;">No <u>X</u></td> <td style="width: 47%;">Depth (inches): <u> </u></td> </tr> <tr> <td>Water Table Present?</td> <td>Yes <u> </u></td> <td>No <u>X</u></td> <td>Depth (inches): <u> </u></td> </tr> <tr> <td>Saturation Present?</td> <td>Yes <u>X</u></td> <td>No <u> </u></td> <td>Depth (inches): <u>8</u></td> </tr> </table> (includes capillary fringe)		Surface Water Present?	Yes <u> </u>	No <u>X</u>	Depth (inches): <u> </u>	Water Table Present?	Yes <u> </u>	No <u>X</u>	Depth (inches): <u> </u>	Saturation Present?	Yes <u>X</u>	No <u> </u>	Depth (inches): <u>8</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface Water Present?	Yes <u> </u>	No <u>X</u>	Depth (inches): <u> </u>											
Water Table Present?	Yes <u> </u>	No <u>X</u>	Depth (inches): <u> </u>											
Saturation Present?	Yes <u>X</u>	No <u> </u>	Depth (inches): <u>8</u>											
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:														
Remarks: Surface water observed at site but not present in the soil test pit.														

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W6

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>35</u></td> <td>x 1 = <u>35</u></td> </tr> <tr> <td>FACW species <u>15</u></td> <td>x 2 = <u>30</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>65</u> (A)</td> <td><u>130</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>35</u>	x 1 = <u>35</u>	FACW species <u>15</u>	x 2 = <u>30</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>65</u> (A)	<u>130</u> (B)	Prevalence Index = B/A = <u>2.00</u>	
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Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
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4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover		Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
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1. _____	_____	_____	_____																	
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50% of total cover: _____		20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Lolium perenne</u>	<u>15</u>	Yes	OBL	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Persicaria lapathifolia</u>	<u>15</u>	Yes	FACW																	
3. <u>Symphyotrichum ericoides</u>	<u>10</u>	Yes	OBL																	
4. <u>Solidago canadensis</u>	<u>10</u>	Yes	OBL																	
5. <u>Juncus effusus</u>	<u>10</u>	Yes	FACU																	
6. <u>Chasmanthium sessiliflorum</u>	<u>5</u>	No	UPL																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
		65 =Total Cover																		
50% of total cover: <u>33</u>		20% of total cover: <u>13</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		=Total Cover		Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 4/1	95	10YR 5/8	5	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> (MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			<input type="checkbox"/> (outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> (outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> (MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			<input type="checkbox"/> (outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			<input type="checkbox"/> (MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			<input type="checkbox"/> (MLRA 149A, 153C, 153D)					
<input type="checkbox"/> (LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
<input type="checkbox"/> (MLRA 138, 152A in FL, 154)								
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/18/2020
 Applicant/Owner: Origis State: MS Sampling Point: U6
 Investigator(s): CD, HM Section, Township, Range: S5 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): hillslope, berm Local relief (concave, convex, none): Convex Slope (%): 6
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.63230015 Long: -88.58498486 Datum: NAD83
 Soil Map Unit Name: Gr - Griffith silt clay NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Artificial berm adjacent to agriculture field		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U6

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>85</u></td> <td>x 4 = <u>340</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>85</u> (A)</td> <td><u>340</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>85</u>	x 4 = <u>340</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>85</u> (A)	<u>340</u> (B)	Prevalence Index = B/A = <u>4.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>85</u>	x 4 = <u>340</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>85</u> (A)	<u>340</u> (B)																			
Prevalence Index = B/A = <u>4.00</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Ambrosia artemisiifolia</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Persicaria lapathifolia</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Symphyotrichum ericoides</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
85 =Total Cover																				
50% of total cover: <u>43</u> 20% of total cover: <u>17</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.)																				

Definitions of Five Vegetation Strata:
Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No X

SOIL

Sampling Point: U6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 3/2	100						
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.							² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)					
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
(LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes _____ No <u> X </u>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/19/2020
 Applicant/Owner: Origis State: MS Sampling Point: W7
 Investigator(s): RF, BH Section, Township, Range: S8 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): inundated floodplain (beavers) Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.61790928 Long: -88.58026272 Datum: NAD83
 Soil Map Unit Name: Gr - Griffith silt clay NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Small tributary with plastic outlet drain underneath fairly steep bank standing on the left bank looking downstream at Spring Creek; large beaver dam at inlet has created 1-2 acre permanently inundated (2"-2.5') wetland/stream complex; same aquatic bed, emergent/submergent vegetation habitat	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <u>X</u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9) </td> <td style="width: 50%; vertical-align: top;"> <u>X</u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </td> </tr> </table>		<u>X</u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9)	<u>X</u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u>X</u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U) </td> <td style="width: 50%; vertical-align: top;"> </td> </tr> </table>	<u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u>X</u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)	
<u>X</u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9)	<u>X</u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)					
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Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2.5</u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:						

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W7

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>
2. <u>Juniperus virginiana</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>25</u>	20% of total cover: <u>10</u>		

Sapling Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____	20% of total cover: _____		

Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carya aquatica</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>
2. <u>Salix nigra</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>
3. <u>Cephalanthus occidentalis</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>33</u>	20% of total cover: <u>13</u>		

Herb Stratum (Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lolium perenne</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Persicaria lapathifolia</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>
3. <u>Chasmanthium sessiliflorum</u>	<u>20</u>	<u>No</u>	<u>FAC</u>
4. <u>Solidago canadensis</u>	<u>15</u>	<u>No</u>	<u>OBL</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>53</u>	20% of total cover: <u>21</u>		

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax rotundifolia</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Mikania scandens</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>23</u>	20% of total cover: <u>9</u>		

Remarks: (If observed, list morphological adaptations below.)

Dominance Test worksheet:

 Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)
 Total Number of Dominant Species Across All Strata: 9 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 88.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>110</u>	x 1 = <u>110</u>
FACW species <u>90</u>	x 2 = <u>180</u>
FAC species <u>45</u>	x 3 = <u>135</u>
FACU species <u>20</u>	x 4 = <u>80</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>265</u> (A)	<u>505</u> (B)
Prevalence Index = B/A = <u>1.91</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

 Yes X No _____

SOIL

Sampling Point: W7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 6/1	98	5YR 5/8	2	C	PL	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> (MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			<input type="checkbox"/> (outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> (outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> (MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			<input type="checkbox"/> (outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			<input type="checkbox"/> (MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)					
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			<input type="checkbox"/> (MLRA 149A, 153C, 153D)					
<input type="checkbox"/> (LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			<input type="checkbox"/> (MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____								
						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/19/2020
 Applicant/Owner: Origis State: MS Sampling Point: U7
 Investigator(s): RF, BH Section, Township, Range: S8 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): hillslope (gentle) Local relief (concave, convex, none): convex Slope (%): 1-3
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.61788357 Long: -88.58028215 Datum: NAD83
 Soil Map Unit Name: Gr - Griffith silt clay NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> </div> <div style="width: 48%;"> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u> </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u> <u>Sphagnum Moss (D8) (LRR T, U)</u>
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U7

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>25</u>	20% of total cover: <u>10</u>		

Sapling Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Maclura pomifera</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>10</u>	20% of total cover: <u>4</u>		

Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____	20% of total cover: _____		

Herb Stratum (Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lolium perenne</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Persicaria lapathifolia</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>30</u>	20% of total cover: <u>12</u>		

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____	20% of total cover: _____		

Remarks: (If observed, list morphological adaptations below.)

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>20</u>	x 3 = <u>60</u>
FACU species <u>110</u>	x 4 = <u>440</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>130</u> (A)	<u>500</u> (B)
Prevalence Index = B/A = <u>3.85</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes No X

SOIL

Sampling Point: U7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		Redox Features				Texture	Remarks		
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²				
0-10	10YR 4/6	100								
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix.										
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)					<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) (MLRA 153B, 153D) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 149A, 153C, 153D) <input type="checkbox"/> Very Shallow Dark Surface (F22) (MLRA 138, 152A in FL, 154)				Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Coast Prairie Redox (A16) (outside MLRA 150A) <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 153B) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) (outside MLRA 138, 152A in FL, 154) <input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7) (MLRA 153B, 153D) <input type="checkbox"/> Other (Explain in Remarks)	
Restrictive Layer (if observed): Type: _____ Depth (inches): _____					Hydric Soil Present? Yes _____ No <u> X </u>					
Remarks:										

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

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/20/2020
 Applicant/Owner: Origis State: MS Sampling Point: W8
 Investigator(s): HM, CD Section, Township, Range: S9 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.61553 Long: -88.57781 Datum: NAD83
 Soil Map Unit Name: Gr - Griffith silt clay NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>X</u> Surface Water (A1) <u> </u> Aquatic Fauna (B13) <u>X</u> High Water Table (A2) <u> </u> Marl Deposits (B15) (LRR U) <u>X</u> Saturation (A3) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Water Marks (B1) <u>X</u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Sediment Deposits (B2) <u> </u> Presence of Reduced Iron (C4) <u> </u> Drift Deposits (B3) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Algal Mat or Crust (B4) <u> </u> Thin Muck Surface (C7) <u> </u> Iron Deposits (B5) <u> </u> Other (Explain in Remarks) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u>X</u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u>X</u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>1</u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Adjacent to OW12. Impacted by cattle access.	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W8

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>65</u></td> <td>x 1 = <u>65</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>70</u> (A)</td> <td><u>75</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.07</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>65</u>	x 1 = <u>65</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>70</u> (A)	<u>75</u> (B)	Prevalence Index = B/A = <u>1.07</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>65</u>	x 1 = <u>65</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>70</u> (A)	<u>75</u> (B)																			
Prevalence Index = B/A = <u>1.07</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling Stratum (Plot size: <u>15</u>)																				
1. <u>Salix nigra</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
50% of total cover: <u>8</u> 20% of total cover: <u>3</u>																				
Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Juncus effusus</u>	<u>35</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Eleocharis obtusa</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>28</u> 20% of total cover: <u>11</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)													
Depth (inches)	Matrix		Redox Features				Texture	Remarks					
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²							
0-16	10YR 5/1	80	7.5YR 4/6	20	C	M	Loamy/Clayey						
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)					Indicators for Problematic Hydric Soils³:								
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)					<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) (MLRA 153B, 153D) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 149A, 153C, 153D) <input type="checkbox"/> Very Shallow Dark Surface (F22) (MLRA 138, 152A in FL, 154)					<input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Coast Prairie Redox (A16) (outside MLRA 150A) <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 153B) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) (outside MLRA 138, 152A in FL, 154) <input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7) (MLRA 153B, 153D) <input type="checkbox"/> Other (Explain in Remarks)			
					³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.								
Restrictive Layer (if observed): Type: _____ Depth (inches): _____							Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____						
Remarks: <div style="border: 1px solid black; height: 300px; width: 100%; margin-top: 10px;"></div>													

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/20/2020
 Applicant/Owner: Origis State: MS Sampling Point: U8
 Investigator(s): HM, CD Section, Township, Range: S9 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.61553 Long: -88.577698 Datum: NAD83
 Soil Map Unit Name: Gr - Griffith silt clay NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U8

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>25</u></td> <td>x 4 = <u>100</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>60</u> (A)</td> <td><u>180</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>25</u>	x 4 = <u>100</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>60</u> (A)	<u>180</u> (B)	Prevalence Index = B/A = <u>3.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>25</u>	x 2 = <u>50</u>																			
FAC species <u>10</u>	x 3 = <u>30</u>																			
FACU species <u>25</u>	x 4 = <u>100</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>60</u> (A)	<u>180</u> (B)																			
Prevalence Index = B/A = <u>3.00</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Juncus effusus</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Cynodon dactylon</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Vernonia missurica</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>28</u> 20% of total cover: <u>11</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u>Rubus trivialis</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>3</u> 20% of total cover: <u>1</u>																				
Remarks: (If observed, list morphological adaptations below.)																				

Hydrophytic Vegetation Present? Yes No X

SOIL

Sampling Point: U8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/1	95	7.5YR 4/6	5	C	M	Loamy/Clayey	
4-16	10YR 5/1	80	7.5YR 4/6	20	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) <input type="checkbox"/> Black Histic (A3) (MLRA 153B, 153D) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 149A, 153C, 153D) <input type="checkbox"/> (LRR S, T, U) <input type="checkbox"/> Very Shallow Dark Surface (F22) <input type="checkbox"/> (MLRA 138, 152A in FL, 154) </div> <div style="width: 35%;"> Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> (outside MLRA 150A) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> (outside MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) <input type="checkbox"/> (MLRA 153B) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) <input type="checkbox"/> (outside MLRA 138, 152A in FL, 154) <input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7) <input type="checkbox"/> (MLRA 153B, 153D) <input type="checkbox"/> Other (Explain in Remarks) </div> </div>								
<div style="display: flex; justify-content: space-between;"> <div style="width: 55%;"> Restrictive Layer (if observed): Type: _____ Depth (inches): _____ </div> <div style="width: 40%;"> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ </div> </div>								
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/18/20
 Applicant/Owner: Origis State: MS Sampling Point: W9
 Investigator(s): HM, CD Section, Township, Range: S4 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): manmade pond Local relief (concave, convex, none): concave Slope (%): 4
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.63539028 Long: -88.57173913 Datum: NAD83
 Soil Map Unit Name: OkB - Okolona silt clay, 1 to 3 percent slopes NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <u>X</u> Surface Water (A1) <u> </u> Aquatic Fauna (B13) <u> </u> High Water Table (A2) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Saturation (A3) <u> </u> Hydrogen Sulfide Odor (C1) <u>X</u> Water Marks (B1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Sediment Deposits (B2) <u> </u> Presence of Reduced Iron (C4) <u> </u> Drift Deposits (B3) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Algal Mat or Crust (B4) <u> </u> Thin Muck Surface (C7) <u> </u> Iron Deposits (B5) <u> </u> Other (Explain in Remarks) <u>X</u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u>X</u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u>X</u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u>X</u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12</u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Open water wetland that appears manmade. No water or saturation observed in test pit.		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W9

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Populus deltoides</i>	40	Yes	FAC
2. <i>Salix nigra</i>	15	Yes	OBL
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
55 = Total Cover			
50% of total cover: <u>28</u>	20% of total cover: <u>11</u>		

Sapling Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Populus deltoides</i>	20	Yes	FAC
2. <i>Salix nigra</i>	5	Yes	OBL
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
25 = Total Cover			
50% of total cover: <u>13</u>	20% of total cover: <u>5</u>		

Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Ligustrum sinense</i>	5	Yes	FAC
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
5 = Total Cover			
50% of total cover: <u>3</u>	20% of total cover: <u>1</u>		

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Stellaria alsine</i>	30	Yes	OBL
2. <i>Pluchea camphorata</i>	20	Yes	FACW
3. <i>Persicaria hydropiperoides</i>	10	No	OBL
4. <i>Urtica dioica</i>	5	No	FAC
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
65 = Total Cover			
50% of total cover: <u>33</u>	20% of total cover: <u>13</u>		

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Vitis aestivalis</i>	5	Yes	FACU
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
5 = Total Cover			
50% of total cover: <u>3</u>	20% of total cover: <u>1</u>		

Remarks: (If observed, list morphological adaptations below.)

Dominance Test worksheet:

 Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)
 Total Number of Dominant Species Across All Strata: 8 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>60</u>	x 1 = <u>60</u>
FACW species <u>20</u>	x 2 = <u>40</u>
FAC species <u>70</u>	x 3 = <u>210</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>155</u> (A)	<u>330</u> (B)
Prevalence Index = B/A = <u>2.13</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

 Yes X No _____

SOIL

Sampling Point: W9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/1	95	7.5YR 4/6	5	C	PL	Loamy/Clayey	
8-16	10YR 3/2	100			C	PL	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.							² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input checked="" type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)					
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
(LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <u> X </u> No <u> </u>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/18/2020
 Applicant/Owner: Origis State: MS Sampling Point: U9
 Investigator(s): HM, CD Section, Township, Range: S4 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): Berm Local relief (concave, convex, none): convex Slope (%): 4
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.63531185 Long: -88.57170210 Datum: NAD83
 Soil Map Unit Name: OkB - Okolona silt clay, 1 to 3 percent slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> </div> <div style="width: 48%;"> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u> </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u> <u>Sphagnum Moss (D8) (LRR T, U)</u>
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U9

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>8</u>	20% of total cover: <u>3</u>		

Sapling Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Juniperus virginiana</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>8</u>	20% of total cover: <u>3</u>		

Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>
2. <u>Cornus drummondii</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Ligustrum sinense</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>13</u>	20% of total cover: <u>5</u>		

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Solidago canadensis</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>10</u>	20% of total cover: <u>4</u>		

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Vitis aestivalis</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Parthenocissus quinquefolia</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Rubus argutus</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>13</u>	20% of total cover: <u>5</u>		

Remarks: (If observed, list morphological adaptations below.)

Dominance Test worksheet:

 Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
 Total Number of Dominant Species Across All Strata: 9 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 55.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>30</u>	x 1 = <u>30</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>15</u>	x 3 = <u>45</u>
FACU species <u>55</u>	x 4 = <u>220</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>295</u> (B)
Prevalence Index = B/A = <u>2.95</u>	

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

 Yes X No _____

SOIL

Sampling Point: U9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)													
Depth (inches)	Matrix		Redox Features				Texture	Remarks					
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²							
0-16	10YR 3/2	100					Loamy/Clayey						
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)					Indicators for Problematic Hydric Soils³:								
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)					<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) (MLRA 153B, 153D) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 149A, 153C, 153D) <input type="checkbox"/> Very Shallow Dark Surface (F22) (MLRA 138, 152A in FL, 154)					<input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Coast Prairie Redox (A16) (outside MLRA 150A) <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 153B) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) (outside MLRA 138, 152A in FL, 154) <input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7) (MLRA 153B, 153D) <input type="checkbox"/> Other (Explain in Remarks)			
					³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.								
Restrictive Layer (if observed): Type: _____ Depth (inches): _____							Hydric Soil Present? Yes _____ No <u>X</u>						
Remarks:													

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/20/20
 Applicant/Owner: Origis State: MS Sampling Point: W10
 Investigator(s): HM, CD Section, Township, Range: S5 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.62267 Long: -88.59430 Datum: NAD83
 Soil Map Unit Name: KpA - Kipling silt loam, 0 to 2 percent slopes NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X
 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <u> </u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u>X</u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </td> <td style="width: 50%; vertical-align: top;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </td> </tr> </table>		<u> </u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u>X</u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9)	<u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U) </td> <td style="width: 50%; vertical-align: top;"> </td> </tr> </table>	<u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)	
<u> </u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u>X</u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9)	<u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)					
<u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)						
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Remarks: Wetland depression that is isolated but has a strong groundwater connection. Adjacent to and upslope of OW18. Frequently mowed.						

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W10

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>35</u></td> <td>x 1 = <u>35</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>35</u> (A)</td> <td><u>35</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>35</u>	x 1 = <u>35</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>35</u> (A)	<u>35</u> (B)	Prevalence Index = B/A = <u>1.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>35</u>	x 1 = <u>35</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>35</u> (A)	<u>35</u> (B)																			
Prevalence Index = B/A = <u>1.00</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling Stratum (Plot size: <u>15</u>)				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
50% of total cover: _____ 20% of total cover: _____																				
Shrub Stratum (Plot size: <u>15</u>)				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Stellaria alsine</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Eleocharis obtusa</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Persicaria hydropiperoides</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>18</u> 20% of total cover: <u>7</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 5/1	80	7.5YR 6/8	20	C	M	Loamy/Clayey	
6-16	10YR 7/1	90	7.5YR 5/8	10	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.							² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)							Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)					
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
(LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____								
Remarks:						Hydric Soil Present? Yes <u> X </u> No <u> </u>		

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 11/20/20
 Applicant/Owner: Origis State: MS Sampling Point: U10
 Investigator(s): HM, CD Section, Township, Range: S5 T17S R7E, T17S R7E
 Landform (hillside, terrace, etc.): Hillslope (earthen dam) Local relief (concave, convex, none): convex Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.62261 Long: -88.59431 Datum: NAD83
 Soil Map Unit Name: KpA - Kipling silt loam, 0 to 2 percent slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X
 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Test pit and upland area are manmade berms. Adjacent to OW18.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> </div> <div style="width: 48%;"> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u> </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u> <u>Sphagnum Moss (D8) (LRR T, U)</u>
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Wetland depression that is isolated but has a strong groundwater connection. Adjacent to and upslope of OW18. Frequently mowed.	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U10

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>85</u></td> <td>x 4 = <u>340</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>85</u> (A)</td> <td><u>340</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>85</u>	x 4 = <u>340</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>85</u> (A)	<u>340</u> (B)	Prevalence Index = B/A = <u>4.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>85</u>	x 4 = <u>340</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>85</u> (A)	<u>340</u> (B)																			
Prevalence Index = B/A = <u>4.00</u>																				
50% of total cover: _____		20% of total cover: _____																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <i>Lolium perenne</i>	80	Yes	FACU																	
2. <i>Plantago virginica</i>	5	No	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
		85 =Total Cover																		
50% of total cover: <u>43</u>		20% of total cover: <u>17</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

Hydrophytic Vegetation Present? Yes No X

SOIL

Sampling Point: U10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 5/1	80	7.5YR 6/8	20	C	M	Loamy/Clayey	
6-16	10YR 7/1	90	7.5YR 5/8	10	C	PL	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> (MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			<input type="checkbox"/> (outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> (outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> (MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			<input type="checkbox"/> (outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			<input type="checkbox"/> (MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			<input type="checkbox"/> (MLRA 149A, 153C, 153D)					
<input type="checkbox"/> (LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
<input type="checkbox"/> (MLRA 138, 152A in FL, 154)								
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/15/2021
 Applicant/Owner: Origis State: MS Sampling Point: W11
 Investigator(s): HM, BH Section, Township, Range: S35 T16S R6E
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.636924677 Long: -88.6368684058333 Datum: NAD93
 Soil Map Unit Name: BrB - Brooksville silty clay, 1 to 3 percent slopes NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%;"> <tr> <td><u>X</u> Surface Water (A1)</td> <td><u>X</u> Aquatic Fauna (B13)</td> </tr> <tr> <td><u> </u> High Water Table (A2)</td> <td><u> </u> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td><u>X</u> Saturation (A3)</td> <td><u>X</u> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><u> </u> Water Marks (B1)</td> <td><u>X</u> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td><u> </u> Sediment Deposits (B2)</td> <td><u> </u> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><u> </u> Drift Deposits (B3)</td> <td><u> </u> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><u> </u> Algal Mat or Crust (B4)</td> <td><u> </u> Thin Muck Surface (C7)</td> </tr> <tr> <td><u> </u> Iron Deposits (B5)</td> <td><u> </u> Other (Explain in Remarks)</td> </tr> <tr> <td><u> </u> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><u> </u> Water-Stained Leaves (B9)</td> <td></td> </tr> </table>		<u>X</u> Surface Water (A1)	<u>X</u> Aquatic Fauna (B13)	<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u>X</u> Saturation (A3)	<u>X</u> Hydrogen Sulfide Odor (C1)	<u> </u> Water Marks (B1)	<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <table style="width: 100%;"> <tr> <td><u> </u> Surface Soil Cracks (B6)</td> </tr> <tr> <td><u> </u> Sparsely Vegetated Concave Surface (B8)</td> </tr> <tr> <td><u>X</u> Drainage Patterns (B10)</td> </tr> <tr> <td><u> </u> Moss Trim Lines (B16)</td> </tr> <tr> <td><u> </u> Dry-Season Water Table (C2)</td> </tr> <tr> <td><u> </u> Crayfish Burrows (C8)</td> </tr> <tr> <td><u> </u> Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td><u> </u> Geomorphic Position (D2)</td> </tr> <tr> <td><u> </u> Shallow Aquitard (D3)</td> </tr> <tr> <td><u> </u> FAC-Neutral Test (D5)</td> </tr> <tr> <td><u>X</u> Sphagnum Moss (D8) (LRR T, U)</td> </tr> </table>	<u> </u> Surface Soil Cracks (B6)	<u> </u> Sparsely Vegetated Concave Surface (B8)	<u>X</u> Drainage Patterns (B10)	<u> </u> Moss Trim Lines (B16)	<u> </u> Dry-Season Water Table (C2)	<u> </u> Crayfish Burrows (C8)	<u> </u> Saturation Visible on Aerial Imagery (C9)	<u> </u> Geomorphic Position (D2)	<u> </u> Shallow Aquitard (D3)	<u> </u> FAC-Neutral Test (D5)	<u>X</u> Sphagnum Moss (D8) (LRR T, U)
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Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>1</u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>																																
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:																																	
Remarks:																																	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W11

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>35</u></td> <td>x 2 = <u>70</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>85</u> (A)</td> <td><u>210</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.47</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>35</u>	x 2 = <u>70</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>85</u> (A)	<u>210</u> (B)	Prevalence Index = B/A = <u>2.47</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>15</u>	x 1 = <u>15</u>																			
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Prevalence Index = B/A = <u>2.47</u>																				
50% of total cover: _____		20% of total cover: _____																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. <u>Celtis laevigata</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. <u>Cornus drummondii</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		10 =Total Cover		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Cornus drummondii</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Celtis laevigata</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		20 =Total Cover		Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
50% of total cover: <u>10</u>		20% of total cover: <u>4</u>																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Andropogon glomeratus</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	_____																
2. <u>Eleocharis obtusa</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Carex pensylvanica</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Alisma lanceolatum</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Dichanthelium scoparium</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
		55 =Total Cover																		
50% of total cover: <u>28</u>		20% of total cover: <u>11</u>																		
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____	_____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-24	10YR 4/2	90	10YR 4/6	10	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
<input type="checkbox"/> (LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
(MLRA 138, 152A in FL, 154)								
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/15/2021
 Applicant/Owner: Origis State: MS Sampling Point: U11
 Investigator(s): HM, BH Section, Township, Range: S35 T16S R6E
 Landform (hillside, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6368995703333 Long: -88.6366288888333 Datum: NAD83
 Soil Map Unit Name: BrB - Brooksville silty clay, 1 to 3 percent slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland slope from beaver made depressional wetland	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> </div> <div style="width: 48%;"> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u> </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u> <u>Sphagnum Moss (D8) (LRR T, U)</u>
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U11

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>62.5%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>65</u></td> <td>x 4 = <u>260</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>355</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.23</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>65</u>	x 4 = <u>260</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>110</u> (A)	<u>355</u> (B)	Prevalence Index = B/A = <u>3.23</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>40</u>	x 2 = <u>80</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>65</u>	x 4 = <u>260</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>110</u> (A)	<u>355</u> (B)																			
Prevalence Index = B/A = <u>3.23</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling Stratum (Plot size: <u>15</u>)																				
1. <u>Celtis laevigata</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																				
Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Ilex decidua</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Celtis laevigata</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Cornus drummondii</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
50% of total cover: <u>8</u> 20% of total cover: <u>3</u>																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Solidago canadensis</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>	_____																
2. <u>Andropogon glomeratus</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Carex pensylvanica</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Eleocharis rotunda</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>35</u> 20% of total cover: <u>14</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u>Rubus trivialis</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	_____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>8</u> 20% of total cover: <u>3</u>																				
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: U11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	100					Loamy/Clayey	
6-21	10YR 4/2	100					Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)								Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)				<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)				<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)				<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)				(outside MLRA 150A)	
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)				<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input type="checkbox"/> Depleted Matrix (F3)				(outside MLRA 150A, 150B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)				<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)				<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)				(MLRA 153B)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)				<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)				(outside MLRA 138, 152A in FL, 154)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				(MLRA 153B, 153D)	
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)					
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
(LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed): Type: _____ Depth (inches): _____							Hydric Soil Present? Yes _____ No <u>X</u>	
Remarks:								

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

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/16/2021

Applicant/Owner: Origis State: MS Sampling Point: W12

Investigator(s): HM, BH Section, Township, Range: S2 T17S R6E

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

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6362896403333 Long: -88.639036274 Datum: NAD83

Soil Map Unit Name: BrB - Brooksville silty clay, 1 to 3 percent slopes NWI classification: PFO

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <u>X</u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) <u>X</u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u>X</u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9) </td> <td style="width: 50%; vertical-align: top;"> <u>X</u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </td> </tr> </table>		<u>X</u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) <u>X</u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u>X</u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9)	<u>X</u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u>X</u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u>X</u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U) </td> <td style="width: 50%; vertical-align: top;"> </td> </tr> </table>	<u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u>X</u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u>X</u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)	
<u>X</u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) <u>X</u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u>X</u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9)	<u>X</u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)					
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Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>3</u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Remarks:						

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W12

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Celtis laevigata</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
3. <u>Quercus phellos</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
4. <u>Maclura pomifera</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
5. <u>Cornus florida</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
6. <u>Juniperus virginiana</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
	<u>60</u> =Total Cover		
50% of total cover: <u>30</u>	20% of total cover: <u>12</u>		

Sapling Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	_____ =Total Cover		
50% of total cover: _____	20% of total cover: _____		

Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ligustrum sinense</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Celtis laevigata</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	<u>20</u> =Total Cover		
50% of total cover: <u>10</u>	20% of total cover: <u>4</u>		

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carex cherokeensis</u>	<u>50</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Alternanthera philoxeroides</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>
3. <u>Arundinaria gigantea</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>
4. <u>Packera glabella</u>	<u>10</u>	<u>No</u>	<u>OBL</u>
5. <u>Allium canadense</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	<u>100</u> =Total Cover		
50% of total cover: <u>50</u>	20% of total cover: <u>20</u>		

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
	<u>5</u> =Total Cover		
50% of total cover: <u>3</u>	20% of total cover: <u>1</u>		

Remarks: (If observed, list morphological adaptations below.)

Dominance Test worksheet:

 Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)
 Total Number of Dominant Species Across All Strata: 10 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>25</u>	x 1 = <u>25</u>
FACW species <u>115</u>	x 2 = <u>230</u>
FAC species <u>10</u>	x 3 = <u>30</u>
FACU species <u>35</u>	x 4 = <u>140</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>185</u> (A)	<u>425</u> (B)
Prevalence Index = B/A = <u>2.30</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:
Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

 Yes X No _____

SOIL

Sampling Point: W12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 5/1	90	10YR 5/8	10	C	M	Loamy/Clayey	
12-24	10YR 3/1	90	10YR 5/8	10	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.							² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
(LRR S, T, U)			(MLRA 149A, 153C, 153D)					
(MLRA 138, 152A in FL, 154)								
Restrictive Layer (if observed):								
Type: _____						Hydric Soil Present? Yes <u> X </u> No <u> </u>		
Depth (inches): _____								
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/16/2021
 Applicant/Owner: Origis State: MS Sampling Point: U12
 Investigator(s): HM, BH Section, Township, Range: S2 T17S R6E
 Landform (hillside, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6361586578333 Long: -88.6390851558334 Datum: NAD83
 Soil Map Unit Name: BrB - Brooksville silty clay, 1 to 3 percent slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U12

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Quercus falcata</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
5 = Total Cover																				
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>15</u> (A)</td> <td><u>60</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>15</u> (A)	<u>60</u> (B)	Prevalence Index = B/A = <u>4.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>15</u>	x 4 = <u>60</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>15</u> (A)	<u>60</u> (B)																			
Prevalence Index = B/A = <u>4.00</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>_____</u> Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Poa annua</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
10 = Total Cover																				
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>_____</u> No <u>X</u>																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: U12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 3/2	90	10YR 5/8	10	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
<input type="checkbox"/> Very Shallow Dark Surface (F22)			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes _____ No <u>X</u>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/16/21
 Applicant/Owner: Origis State: MS Sampling Point: W13
 Investigator(s): HM, BH Section, Township, Range: S2 T17S R6E
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.635946857 Long: -88.6378069205 Datum: NAD83
 Soil Map Unit Name: BrB - Brooksville silty clay, 1 to 3 percent slopes NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <u> </u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u>X</u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9) </td> <td style="width: 50%; vertical-align: top;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </td> </tr> </table>		<u> </u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u>X</u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9)	<u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U) </td> <td style="width: 50%; vertical-align: top;"> </td> </tr> </table>	<u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)	
<u> </u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u>X</u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9)	<u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)					
<u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)						
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:						

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W13

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus phellos</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Carex pensylvanica</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Quercus phellos</u>	<u>10</u>	<u>No</u>	<u>FACW</u>
4. <u>Celtis laevigata</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
5. <u>Pinus taeda</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
6. _____	_____	_____	_____
		<u>60</u> = Total Cover	
50% of total cover: <u>30</u>		20% of total cover: <u>12</u>	

Sapling Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		_____ = Total Cover	
50% of total cover: _____		20% of total cover: _____	

Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ligustrum sinense</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		<u>5</u> = Total Cover	
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>	

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carex cherokeensis</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Alternanthera philoxeroides</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>
3. <u>Andropogon virginicus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
		<u>50</u> = Total Cover	
50% of total cover: <u>25</u>		20% of total cover: <u>10</u>	

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Rubus trivialis</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
		<u>10</u> = Total Cover	
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>	

Remarks: (If observed, list morphological adaptations below.)

Dominance Test worksheet:

 Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
 Total Number of Dominant Species Across All Strata: 7 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>15</u>	x 1 = <u>15</u>
FACW species <u>45</u>	x 2 = <u>90</u>
FAC species <u>20</u>	x 3 = <u>60</u>
FACU species <u>45</u>	x 4 = <u>180</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>125</u> (A)	<u>345</u> (B)
Prevalence Index = B/A = <u>2.76</u>	

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

 Yes X No _____

SOIL

Sampling Point: W13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-24	2.5YR 5/1	70	10YR 5/8	30	C	M	Loamy/Clayey	with tiny clay
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
<input type="checkbox"/> (LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
(MLRA 138, 152A in FL, 154)								
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/16/21
 Applicant/Owner: Origis State: MS Sampling Point: U13
 Investigator(s): HM, BH Section, Township, Range: S2 T17S R6E
 Landform (hillside, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6359251356667 Long: -88.637686438 Datum: NAD83
 Soil Map Unit Name: BrB - Brooksville silty clay, 1 to 3 percent slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u>X</u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U13

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Juniperus virginiana</u>	<u>70</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Carex pensylvanica</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>40</u>	20% of total cover: <u>16</u>		

Sapling Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____	20% of total cover: _____		

Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carex pensylvanica</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Ligustrum sinense</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>5</u>	20% of total cover: <u>2</u>		

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Atrichum angustatum</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Ligustrum sinense</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Packera glabella</u>	<u>5</u>	<u>No</u>	<u>OBL</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>23</u>	20% of total cover: <u>9</u>		

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Rubus trivialis</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>5</u>	20% of total cover: <u>2</u>		

Remarks: (If observed, list morphological adaptations below.)

Dominance Test worksheet:

 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 7 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>5</u>	x 1 = <u>5</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>15</u>	x 3 = <u>45</u>
FACU species <u>125</u>	x 4 = <u>500</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>145</u> (A)	<u>550</u> (B)
Prevalence Index = B/A = <u>3.79</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:
Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

 Yes _____ No X

SOIL

Sampling Point: U13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-24	2.5YR 5/2	90	10YR 5/8	10	C	M	Loamy/Clayey	little clay
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
<input type="checkbox"/> (LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/16/21
 Applicant/Owner: Origis State: MS Sampling Point: W14
 Investigator(s): HM, BH Section, Township, Range: S2 T17S R6E
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6345084981667 Long: -88.6383078616667 Datum: NAD83
 Soil Map Unit Name: BrB - Brooksville silty clay, 1 to 3 percent slopes NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <u>X</u> Surface Water (A1) <u>X</u> Aquatic Fauna (B13) <u>X</u> High Water Table (A2) <u> </u> Marl Deposits (B15) (LRR U) <u>X</u> Saturation (A3) <u> </u> Hydrogen Sulfide Odor (C1) <u>X</u> Water Marks (B1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Sediment Deposits (B2) <u> </u> Presence of Reduced Iron (C4) <u>X</u> Drift Deposits (B3) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Algal Mat or Crust (B4) <u> </u> Thin Muck Surface (C7) <u> </u> Iron Deposits (B5) <u> </u> Other (Explain in Remarks) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u>X</u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u>X</u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>3</u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W14

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus phellos</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Juniperus virginiana</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Salix nigra</u>	<u>10</u>	<u>No</u>	<u>OBL</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		<u>65</u> = Total Cover	
50% of total cover: <u>33</u>		20% of total cover: <u>13</u>	

Sapling Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		_____ = Total Cover	
50% of total cover: _____		20% of total cover: _____	

Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ilex decidua</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		<u>15</u> = Total Cover	
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>	

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Alternanthera philoxeroides</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>
2. <u>Carex pensylvanica</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Juncus effusus</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
		<u>45</u> = Total Cover	
50% of total cover: <u>23</u>		20% of total cover: <u>9</u>	

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Rubus trivialis</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Berchemia scandens</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
		<u>15</u> = Total Cover	
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>	

Remarks: (If observed, list morphological adaptations below.)

Dominance Test worksheet:

 Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
 Total Number of Dominant Species Across All Strata: 9 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 55.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>40</u>	x 1 = <u>40</u>
FACW species <u>55</u>	x 2 = <u>110</u>
FAC species <u>5</u>	x 3 = <u>15</u>
FACU species <u>40</u>	x 4 = <u>160</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>140</u> (A)	<u>325</u> (B)
Prevalence Index = B/A = <u>2.32</u>	

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

 Yes X No _____

SOIL

Sampling Point: W14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-24	2.5YR 5/2	70	10YR 5/8	30	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.								
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) <input type="checkbox"/> Black Histic (A3) (MLRA 153B, 153D) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input checked="" type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) <input checked="" type="checkbox"/> Anomalous Bright Floodplain Soils (F20) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 149A, 153C, 153D) <input type="checkbox"/> Very Shallow Dark Surface (F22) (MLRA 138, 152A in FL, 154) </div> <div style="width: 35%;"> Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Coast Prairie Redox (A16) (outside MLRA 150A) <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 153B) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) (outside MLRA 138, 152A in FL, 154) <input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7) (MLRA 153B, 153D) <input type="checkbox"/> Other (Explain in Remarks) </div> </div>								
<div style="display: flex; justify-content: space-between;"> <div style="width: 55%;"> Restrictive Layer (if observed): Type: _____ Depth (inches): _____ </div> <div style="width: 40%;"> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ </div> </div>								
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/16/21
 Applicant/Owner: Origis State: MS Sampling Point: U14
 Investigator(s): HM, BH Section, Township, Range: S2 T17S R6E
 Landform (hillside, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.634468184 Long: -88.63817800091667 Datum: NAD83
 Soil Map Unit Name: BrB - Brooksville silty clay, 1 to 3 percent slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> </div> <div style="width: 48%;"> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u> </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u> <u>Sphagnum Moss (D8) (LRR T, U)</u>
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U14

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Quercus phellos</u>	<u>60</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
60 = Total Cover																				
50% of total cover: <u>30</u>		20% of total cover: <u>12</u>																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>105</u></td> <td>x 4 = <u>420</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u>465</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.88</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>105</u>	x 4 = <u>420</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>120</u> (A)	<u>465</u> (B)	Prevalence Index = B/A = <u>3.88</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>15</u>	x 3 = <u>45</u>																			
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UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>120</u> (A)	<u>465</u> (B)																			
Prevalence Index = B/A = <u>3.88</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
5 = Total Cover																				
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Alternanthera philoxeroides</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Panicum virgatum</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Solidago canadensis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
35 = Total Cover																				
50% of total cover: <u>18</u>		20% of total cover: <u>7</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u>Lonicera japonica</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
20 = Total Cover																				
50% of total cover: <u>10</u>		20% of total cover: <u>4</u>																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: U14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 5/2	90	10YR 5/8	10	C	M	Loamy/Clayey	
10-18	10YR 5/2	90	10YR 5/8	10	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.							² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)							Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)				<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)				<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)				<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)				(outside MLRA 150A)	
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)				<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)				(outside MLRA 150A, 150B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)				<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)				<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)				(MLRA 153B)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)				<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)				<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)				(outside MLRA 138, 152A in FL, 154)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)				<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				(MLRA 153B, 153D)	
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)					
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
(LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <u> X </u> No <u> </u>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/16/21
 Applicant/Owner: Origis State: MS Sampling Point: W15
 Investigator(s): HM, BH Section, Township, Range: S2 T17S R6E
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6295655465 Long: -88.6385713131667 Datum: NAD83
 Soil Map Unit Name: BrB - Brooksville silty clay, 1 to 3 percent slopes NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td><u> </u> Surface Water (A1)</td> <td><u>X</u> Aquatic Fauna (B13)</td> </tr> <tr> <td><u> </u> High Water Table (A2)</td> <td><u> </u> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td><u>X</u> Saturation (A3)</td> <td><u> </u> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><u> </u> Water Marks (B1)</td> <td><u> </u> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td><u> </u> Sediment Deposits (B2)</td> <td><u> </u> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><u> </u> Drift Deposits (B3)</td> <td><u> </u> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><u> </u> Algal Mat or Crust (B4)</td> <td><u> </u> Thin Muck Surface (C7)</td> </tr> <tr> <td><u> </u> Iron Deposits (B5)</td> <td><u> </u> Other (Explain in Remarks)</td> </tr> <tr> <td><u> </u> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><u>X</u> Water-Stained Leaves (B9)</td> <td></td> </tr> </table>		<u> </u> Surface Water (A1)	<u>X</u> Aquatic Fauna (B13)	<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u>X</u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Inundation Visible on Aerial Imagery (B7)		<u>X</u> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr> <td><u> </u> Surface Soil Cracks (B6)</td> </tr> <tr> <td><u> </u> Sparsely Vegetated Concave Surface (B8)</td> </tr> <tr> <td><u>X</u> Drainage Patterns (B10)</td> </tr> <tr> <td><u>X</u> Moss Trim Lines (B16)</td> </tr> <tr> <td><u> </u> Dry-Season Water Table (C2)</td> </tr> <tr> <td><u>X</u> Crayfish Burrows (C8)</td> </tr> <tr> <td><u> </u> Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td><u>X</u> Geomorphic Position (D2)</td> </tr> <tr> <td><u> </u> Shallow Aquitard (D3)</td> </tr> <tr> <td><u> </u> FAC-Neutral Test (D5)</td> </tr> <tr> <td><u> </u> Sphagnum Moss (D8) (LRR T, U)</td> </tr> </table>	<u> </u> Surface Soil Cracks (B6)	<u> </u> Sparsely Vegetated Concave Surface (B8)	<u>X</u> Drainage Patterns (B10)	<u>X</u> Moss Trim Lines (B16)	<u> </u> Dry-Season Water Table (C2)	<u>X</u> Crayfish Burrows (C8)	<u> </u> Saturation Visible on Aerial Imagery (C9)	<u>X</u> Geomorphic Position (D2)	<u> </u> Shallow Aquitard (D3)	<u> </u> FAC-Neutral Test (D5)	<u> </u> Sphagnum Moss (D8) (LRR T, U)
<u> </u> Surface Water (A1)	<u>X</u> Aquatic Fauna (B13)																																
<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)																																
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Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>																																
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:																																	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W15

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus phellos</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Carex pensylvanica</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Celtis laevigata</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ =Total Cover			
50% of total cover: <u>33</u>	20% of total cover: <u>13</u>		

Sapling Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus phellos</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ =Total Cover			
50% of total cover: <u>3</u>	20% of total cover: <u>1</u>		

Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ligustrum sinense</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Quercus phellos</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ =Total Cover			
50% of total cover: <u>8</u>	20% of total cover: <u>3</u>		

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Allium canadense</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Carthamus strictus</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Alternanthera philoxeroides</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
_____ =Total Cover			
50% of total cover: <u>15</u>	20% of total cover: <u>6</u>		

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Smilax rotundifolia</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ =Total Cover			
50% of total cover: <u>8</u>	20% of total cover: <u>3</u>		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>10</u>	x 1 = <u>10</u>
FACW species <u>45</u>	x 2 = <u>90</u>
FAC species <u>15</u>	x 3 = <u>45</u>
FACU species <u>60</u>	x 4 = <u>240</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>130</u> (A)	<u>385</u> (B)
Prevalence Index = B/A = <u>2.96</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤3.0¹

_____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes X No _____

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: W15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)												
Depth (inches)	Matrix		Redox Features				Texture	Remarks				
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²						
0-8	2.5YR 5/2	80	10YR 5/8	20	C	M	Loamy/Clayey					
8-24	2.5YR 5/2	80	10YR 5/8	20	C	M	Loamy/Clayey					
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix.												
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)					<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) (MLRA 153B, 153D) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 149A, 153C, 153D) <input type="checkbox"/> Very Shallow Dark Surface (F22) (MLRA 138, 152A in FL, 154)				Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Coast Prairie Redox (A16) (outside MLRA 150A) <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 153B) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) (outside MLRA 138, 152A in FL, 154) <input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7) (MLRA 153B, 153D) <input type="checkbox"/> Other (Explain in Remarks)			
Restrictive Layer (if observed): Type: _____ Depth (inches): _____					Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____							
Remarks:												

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

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/16/21
 Applicant/Owner: Origis State: MS Sampling Point: U15
 Investigator(s): HM, BH Section, Township, Range: S2 T17S R6E
 Landform (hillside, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6295341255 Long: -88.6386768501667 Datum: NAD83
 Soil Map Unit Name: BrB - Brooksville silty clay, 1 to 3 percent slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U15

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Quercus phellos</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>62.5%</u> (A/B)																
2. <u>Quercus phellos</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Ulmus alata</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Carya tomentosa</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>18</u>		20% of total cover: <u>7</u>																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>15</u></td> <td>x 2 = <u>30</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>35</u></td> <td>x 4 = <u>140</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>245</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.27</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>15</u>	x 2 = <u>30</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>35</u>	x 4 = <u>140</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>75</u> (A)	<u>245</u> (B)	Prevalence Index = B/A = <u>3.27</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>15</u>	x 2 = <u>30</u>																			
FAC species <u>25</u>	x 3 = <u>75</u>																			
FACU species <u>35</u>	x 4 = <u>140</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>75</u> (A)	<u>245</u> (B)																			
Prevalence Index = B/A = <u>3.27</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Ligustrum sinense</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. <u>Quercus phellos</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Tipularia discolor</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u>Berchemia scandens</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Smilax rotundifolia</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Lonicera japonica</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>10</u>		20% of total cover: <u>4</u>																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: U15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-24	2.5YR 5/3	100						
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.								
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U) </div> <div style="width: 38%;"> <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) (MLRA 153B, 153D) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 149A, 153C, 153D) <input type="checkbox"/> Very Shallow Dark Surface (F22) (MLRA 138, 152A in FL, 154) </div> <div style="width: 2%;"> Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Coast Prairie Redox (A16) (outside MLRA 150A) <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 153B) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) (outside MLRA 138, 152A in FL, 154) <input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7) (MLRA 153B, 153D) <input type="checkbox"/> Other (Explain in Remarks) </div> </div>								
Restrictive Layer (if observed): Type: _____ Depth (inches): _____							Hydric Soil Present? Yes _____ No <u>X</u>	
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/17/21
 Applicant/Owner: Origis State: MS Sampling Point: W16
 Investigator(s): HM, BH Section, Township, Range: S6 T17S R7E
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6320918945 Long: -88.6058089356667 Datum: NAD83
 Soil Map Unit Name: KpB2 - Kipling silt loam, 2 to 5 percent slopes, moderately eroded NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td><u> </u> Surface Water (A1)</td> <td><u>X</u> Aquatic Fauna (B13)</td> </tr> <tr> <td><u> </u> High Water Table (A2)</td> <td><u> </u> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td><u>X</u> Saturation (A3)</td> <td><u>X</u> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><u>X</u> Water Marks (B1)</td> <td><u> </u> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td><u> </u> Sediment Deposits (B2)</td> <td><u> </u> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><u> </u> Drift Deposits (B3)</td> <td><u> </u> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><u> </u> Algal Mat or Crust (B4)</td> <td><u> </u> Thin Muck Surface (C7)</td> </tr> <tr> <td><u> </u> Iron Deposits (B5)</td> <td><u> </u> Other (Explain in Remarks)</td> </tr> <tr> <td><u>X</u> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><u>X</u> Water-Stained Leaves (B9)</td> <td></td> </tr> </table>		<u> </u> Surface Water (A1)	<u>X</u> Aquatic Fauna (B13)	<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u>X</u> Saturation (A3)	<u>X</u> Hydrogen Sulfide Odor (C1)	<u>X</u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u>X</u> Inundation Visible on Aerial Imagery (B7)		<u>X</u> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr> <td><u> </u> Surface Soil Cracks (B6)</td> </tr> <tr> <td><u> </u> Sparsely Vegetated Concave Surface (B8)</td> </tr> <tr> <td><u>X</u> Drainage Patterns (B10)</td> </tr> <tr> <td><u> </u> Moss Trim Lines (B16)</td> </tr> <tr> <td><u> </u> Dry-Season Water Table (C2)</td> </tr> <tr> <td><u> </u> Crayfish Burrows (C8)</td> </tr> <tr> <td><u>X</u> Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td><u>X</u> Geomorphic Position (D2)</td> </tr> <tr> <td><u> </u> Shallow Aquitard (D3)</td> </tr> <tr> <td><u> </u> FAC-Neutral Test (D5)</td> </tr> <tr> <td><u> </u> Sphagnum Moss (D8) (LRR T, U)</td> </tr> </table>	<u> </u> Surface Soil Cracks (B6)	<u> </u> Sparsely Vegetated Concave Surface (B8)	<u>X</u> Drainage Patterns (B10)	<u> </u> Moss Trim Lines (B16)	<u> </u> Dry-Season Water Table (C2)	<u> </u> Crayfish Burrows (C8)	<u>X</u> Saturation Visible on Aerial Imagery (C9)	<u>X</u> Geomorphic Position (D2)	<u> </u> Shallow Aquitard (D3)	<u> </u> FAC-Neutral Test (D5)	<u> </u> Sphagnum Moss (D8) (LRR T, U)
<u> </u> Surface Water (A1)	<u>X</u> Aquatic Fauna (B13)																																
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<u> </u> FAC-Neutral Test (D5)																																	
<u> </u> Sphagnum Moss (D8) (LRR T, U)																																	
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>																																
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:																																	
Remarks:																																	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W16

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Quercus pagoda</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>44.4%</u> (A/B)																
2. <u>Juniperus virginiana</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Ostrya virginiana</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
50 = Total Cover																				
50% of total cover: <u>25</u>		20% of total cover: <u>10</u>																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>25</u></td> <td>x 1 = <u>25</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>335</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: right;">Prevalence Index = B/A = <u>2.91</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>25</u>	x 1 = <u>25</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>115</u> (A)	<u>335</u> (B)	Prevalence Index = B/A = <u>2.91</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>25</u>	x 1 = <u>25</u>																			
FACW species <u>20</u>	x 2 = <u>40</u>																			
FAC species <u>10</u>	x 3 = <u>30</u>																			
FACU species <u>60</u>	x 4 = <u>240</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>115</u> (A)	<u>335</u> (B)																			
Prevalence Index = B/A = <u>2.91</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Ligustrum sinense</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>_____</u> Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
10 = Total Cover																				
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Juncus effusus</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Alternanthera philoxeroides</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Plantago lanceolata</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Ranunculus obtusus</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
5. <u>Ludwigia repens</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
55 = Total Cover																				
50% of total cover: <u>28</u>		20% of total cover: <u>11</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)													
Depth (inches)	Matrix		Redox Features				Texture	Remarks					
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²							
0-4	10YR 4/1	90	10YR 3/6	10	C	M	Loamy/Clayey						
4-20	2.5Y 6/1	90	2.5Y 6/8	10	C	M	Loamy/Clayey						
20-24	2.5Y 7/1	85	10YR 6/8	15	C	M	Loamy/Clayey						
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix.													
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)					Indicators for Problematic Hydric Soils³:								
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input checked="" type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)					<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) (MLRA 153B, 153D) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 149A, 153C, 153D) <input type="checkbox"/> Very Shallow Dark Surface (F22) (MLRA 138, 152A in FL, 154)					<input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Coast Prairie Redox (A16) (outside MLRA 150A) <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 153B) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) (outside MLRA 138, 152A in FL, 154) <input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7) (MLRA 153B, 153D) <input type="checkbox"/> Other (Explain in Remarks)			
Restrictive Layer (if observed): Type: _____ Depth (inches): _____					Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____								
Remarks:													

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/17/21
 Applicant/Owner: Origis State: MS Sampling Point: U16
 Investigator(s): HM, BH Section, Township, Range: S6 T17S R7E
 Landform (hillside, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6321571553333 Long: -88.6059164291667 Datum: NAD83
 Soil Map Unit Name: KpB2 - Kipling silt loam, 2 to 5 percent slopes, moderately eroded NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> </div> <div style="width: 48%;"> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u> </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u> <u>Sphagnum Moss (D8) (LRR T, U)</u>
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U16

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Quercus pagoda</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)																
2. <u>Juniperus virginiana</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Ostrya virginiana</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Prunus serotina</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
55 = Total Cover																				
50% of total cover: <u>28</u>		20% of total cover: <u>11</u>																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. <u>Juniperus virginiana</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>125</u></td> <td>x 4 = <u>500</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>150</u> (A)</td> <td><u>555</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.70</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>125</u>	x 4 = <u>500</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>150</u> (A)	<u>555</u> (B)	Prevalence Index = B/A = <u>3.70</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>20</u>	x 2 = <u>40</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>125</u>	x 4 = <u>500</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>150</u> (A)	<u>555</u> (B)																			
Prevalence Index = B/A = <u>3.70</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
5 = Total Cover																				
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Ligustrum sinense</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>Problematic Hydrophytic Vegetation¹ (Explain)</u>																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
5 = Total Cover																				
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Carex pensylvanica</u>	<u>80</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Claytonia virginica</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
85 = Total Cover																				
50% of total cover: <u>43</u>		20% of total cover: <u>17</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: U16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-24	2.5Y 7/1	70	10YR 5/8	30	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
___ Histosol (A1)			___ Thin Dark Surface (S9) (LRR S, T, U)			___ 1 cm Muck (A9) (LRR O)		
___ Histic Epipedon (A2)			___ Barrier Islands 1 cm Muck (S12)			___ 2 cm Muck (A10) (LRR S)		
___ Black Histic (A3)			(MLRA 153B, 153D)			___ Coast Prairie Redox (A16)		
___ Hydrogen Sulfide (A4)			___ Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
___ Stratified Layers (A5)			___ Loamy Gleyed Matrix (F2)			___ Reduced Vertic (F18)		
___ Organic Bodies (A6) (LRR P, T, U)			___ Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
___ 5 cm Mucky Mineral (A7) (LRR P, T, U)			___ Redox Dark Surface (F6)			___ Piedmont Floodplain Soils (F19) (LRR P, T)		
___ Muck Presence (A8) (LRR U)			___ Depleted Dark Surface (F7)			___ Anomalous Bright Floodplain Soils (F20)		
___ 1 cm Muck (A9) (LRR P, T)			___ Redox Depressions (F8)			(MLRA 153B)		
___ Depleted Below Dark Surface (A11)			___ Marl (F10) (LRR U)			___ Red Parent Material (F21)		
___ Thick Dark Surface (A12)			___ Depleted Ochric (F11) (MLRA 151)			___ Very Shallow Dark Surface (F22)		
___ Coast Prairie Redox (A16) (MLRA 150A)			___ Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
___ Sandy Mucky Mineral (S1) (LRR O, S)			___ Umbric Surface (F13) (LRR P, T, U)			___ Barrier Islands Low Chroma Matrix (TS7)		
___ Sandy Gleyed Matrix (S4)			___ Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
___ Sandy Redox (S5)			___ Reduced Vertic (F18) (MLRA 150A, 150B)			___ Other (Explain in Remarks)		
___ Stripped Matrix (S6)			___ Piedmont Floodplain Soils (F19) (MLRA 149A)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
___ Dark Surface (S7) (LRR P, S, T, U)			___ Anomalous Bright Floodplain Soils (F20)					
___ Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
___ (LRR S, T, U)			___ Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes _____ No <u>X</u>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>Optimist</u>	City/County: <u>Clay County</u>	Sampling Date: <u>03/18/2021</u>
Applicant/Owner: <u>Origis</u>	State: <u>MS</u>	Sampling Point: <u>W18</u>
Investigator(s): <u>HM, BH</u> Section, Township, Range: <u>S2 T17S R6E</u>		
Landform (hillside, terrace, etc.): <u>depression</u>	Local relief (concave, convex, none): <u>concave</u>	Slope (%): <u>1</u>
Subregion (LRR or MLRA): <u>LRR P, MLRA 135A</u>	Lat: <u>33.6321428526667</u>	Long: <u>-88.6498793758334</u> Datum: <u>NAD83</u>
Soil Map Unit Name: <u>KpB2 - Kipling silt loam, 2 to 5 percent slopes, moderately eroded</u> NWI classification: <u>PEM</u>		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u> </u> (If no, explain in Remarks.)		
Are Vegetation <u> </u> , Soil <u> </u> , or Hydrology <u> </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u> </u>		
Are Vegetation <u> </u> , Soil <u> </u> , or Hydrology <u> </u> 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u>X</u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u>X</u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>7</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W18

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>30</u></td> <td>x 1 = <u>30</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>95</u> (A)</td> <td><u>175</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.84</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>30</u>	x 1 = <u>30</u>	FACW species <u>50</u>	x 2 = <u>100</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>95</u> (A)	<u>175</u> (B)	Prevalence Index = B/A = <u>1.84</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>30</u>	x 1 = <u>30</u>																			
FACW species <u>50</u>	x 2 = <u>100</u>																			
FAC species <u>15</u>	x 3 = <u>45</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>95</u> (A)	<u>175</u> (B)																			
Prevalence Index = B/A = <u>1.84</u>																				
50% of total cover: _____		20% of total cover: _____																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Acer negundo</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		15 =Total Cover																		
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Persicaria pensylvanica</u>	<u>50</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Juncus effusus</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Ludwigia palustris</u>	<u>10</u>	<u>No</u>	<u>OBL</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
		80 =Total Cover																		
50% of total cover: <u>40</u>		20% of total cover: <u>16</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

Hydrophytic Vegetation Present? Yes X No _____

SOIL

Sampling Point: W18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 4/2	90	10YR 5/8	10	C	M	Loamy/Clayey	
6-24	10YR 5/1	70	10YR 5/8	30	C	M	Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)
<input type="checkbox"/> Black Histic (A3)	(MLRA 153B, 153D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
<input type="checkbox"/> Polyvalue Below Surface (S8)	(MLRA 149A, 153C, 153D)
(LRR S, T, U)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Coast Prairie Redox (A16)
(outside MLRA 150A)
<input type="checkbox"/> Reduced Vertic (F18)
(outside MLRA 150A, 150B)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)
<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)
(MLRA 153B, 153D)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/18/2021
 Applicant/Owner: Origis State: MS Sampling Point: U18
 Investigator(s): HM, BH Section, Township, Range: S2 T17S R6E
 Landform (hillside, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6320566586667 Long: -88.6496690533333 Datum: NAD83
 Soil Map Unit Name: KpB2 - Kipling silt loam, 2 to 5 percent slopes, moderately eroded NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U18

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>35</u></td> <td>x 4 = <u>140</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>45</u> (A)</td> <td><u>170</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.78</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>35</u>	x 4 = <u>140</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>45</u> (A)	<u>170</u> (B)	Prevalence Index = B/A = <u>3.78</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>10</u>	x 3 = <u>30</u>																			
FACU species <u>35</u>	x 4 = <u>140</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>45</u> (A)	<u>170</u> (B)																			
Prevalence Index = B/A = <u>3.78</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Acer negundo</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Poa annua</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Stellaria media</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Lamium amplexicaule</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Allium canadense</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>18</u> 20% of total cover: <u>7</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.)																				

Hydrophytic Vegetation Present? Yes No X

SOIL

Sampling Point: U18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 6/4	70	10YR 5/8	30	C	M	Loamy/Clayey	with little clay
12-16	10YR 6/6	70	10YR 5/8	30	C	M	Loamy/Clayey	
16-24	2.5Y 6/3	70	10YR 5/8	30	C	M	Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	(MLRA 153B, 153D)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	(outside MLRA 150A)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Depleted Matrix (F3)	(outside MLRA 150A, 150B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Redox Depressions (F8)	(MLRA 153B)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	(outside MLRA 138, 152A in FL, 154)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	(MLRA 153B, 153D)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)	
<input type="checkbox"/> Polyvalue Below Surface (S8)	(MLRA 149A, 153C, 153D)	
(LRR S, T, U)	<input type="checkbox"/> Very Shallow Dark Surface (F22)	
	(MLRA 138, 152A in FL, 154)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____		Hydric Soil Present? Yes _____ No <u>X</u>
Remarks:		

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/18/2021

Applicant/Owner: Origis State: MS Sampling Point: W19

Investigator(s): HM, BH Section, Township, Range: S35 T16S R6E

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

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6367654783333 Long: -88.648322073 Datum: NAD83

Soil Map Unit Name: Gr - Griffith silty clay NWI classification: PEM

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>3</u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W19

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>60</u></td> <td>x 1 = <u>60</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>70</u> (A)</td> <td><u>90</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.29</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>60</u>	x 1 = <u>60</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>70</u> (A)	<u>90</u> (B)	Prevalence Index = B/A = <u>1.29</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>60</u>	x 1 = <u>60</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>10</u>	x 3 = <u>30</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>70</u> (A)	<u>90</u> (B)																			
Prevalence Index = B/A = <u>1.29</u>																				
50% of total cover: _____		20% of total cover: _____																		
Sapling Stratum (Plot size: <u>15</u>)				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>15</u>)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
1. <u>Acer negundo</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Gleditsia triacanthos</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>																		
Herb Stratum (Plot size: <u>5</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
1. <u>Typha latifolia</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Juncus effusus</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Carex stricta</u>	<u>10</u>	<u>No</u>	<u>OBL</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: <u>30</u>		20% of total cover: <u>12</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-24	2.5Y 5/2	95	10YR 5/8	5	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
<input type="checkbox"/> (LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/18/2021
 Applicant/Owner: Origis State: MS Sampling Point: U19
 Investigator(s): HM, BH Section, Township, Range: S35 T16S R6E
 Landform (hillside, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6366991675 Long: -88.648430237 Datum: NAD83
 Soil Map Unit Name: Gr - Griffith silty clay NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Is the Sampled Area within a Wetland? </td> <td style="width: 40%; padding: 5px;"> Yes <u> </u> No <u>X</u> </td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 45%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)		
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Wetland Hydrology Present? </td> <td style="width: 40%; padding: 5px;"> Yes <u> </u> No <u>X</u> </td> </tr> </table>	Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:			

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U19

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>65</u></td> <td>x 4 = <u>260</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>70</u> (A)</td> <td><u>275</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.93</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>65</u>	x 4 = <u>260</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>70</u> (A)	<u>275</u> (B)	Prevalence Index = B/A = <u>3.93</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
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Column Totals: <u>70</u> (A)	<u>275</u> (B)																			
Prevalence Index = B/A = <u>3.93</u>																				
50% of total cover: _____		20% of total cover: _____																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Solidago canadensis</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Poa annua</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Vicia sativa</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Rumex crispus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
5. <u>Lamium amplexicaule</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
		<u>70</u> =Total Cover																		
50% of total cover: <u>35</u>		20% of total cover: <u>14</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: U19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-24	2.5Y 5/2	95	10YR 5/8	5	C	M	Loamy/Clayey	manure added
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
<input type="checkbox"/> Very Shallow Dark Surface (F22)			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes _____ No <u>X</u>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/18/2021
 Applicant/Owner: Origis State: MS Sampling Point: W20
 Investigator(s): HM, BH Section, Township, Range: S35 T16S R6E
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6387097323333 Long: -88.6453602131667 Datum: NAD83
 Soil Map Unit Name: Gr - Griffith silty clay NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%;"> <tr> <td><u>X</u> Surface Water (A1)</td> <td><u> </u> Aquatic Fauna (B13)</td> </tr> <tr> <td><u>X</u> High Water Table (A2)</td> <td><u> </u> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td><u>X</u> Saturation (A3)</td> <td><u> </u> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><u> </u> Water Marks (B1)</td> <td><u>X</u> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td><u> </u> Sediment Deposits (B2)</td> <td><u> </u> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><u> </u> Drift Deposits (B3)</td> <td><u> </u> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><u> </u> Algal Mat or Crust (B4)</td> <td><u> </u> Thin Muck Surface (C7)</td> </tr> <tr> <td><u> </u> Iron Deposits (B5)</td> <td><u> </u> Other (Explain in Remarks)</td> </tr> <tr> <td><u>X</u> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><u> </u> Water-Stained Leaves (B9)</td> <td></td> </tr> </table>		<u>X</u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u>X</u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u>X</u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Water Marks (B1)	<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u>X</u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <table style="width: 100%;"> <tr> <td><u> </u> Surface Soil Cracks (B6)</td> </tr> <tr> <td><u> </u> Sparsely Vegetated Concave Surface (B8)</td> </tr> <tr> <td><u>X</u> Drainage Patterns (B10)</td> </tr> <tr> <td><u> </u> Moss Trim Lines (B16)</td> </tr> <tr> <td><u> </u> Dry-Season Water Table (C2)</td> </tr> <tr> <td><u> </u> Crayfish Burrows (C8)</td> </tr> <tr> <td><u>X</u> Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td><u>X</u> Geomorphic Position (D2)</td> </tr> <tr> <td><u> </u> Shallow Aquitard (D3)</td> </tr> <tr> <td><u> </u> FAC-Neutral Test (D5)</td> </tr> <tr> <td><u> </u> Sphagnum Moss (D8) (LRR T, U)</td> </tr> </table>	<u> </u> Surface Soil Cracks (B6)	<u> </u> Sparsely Vegetated Concave Surface (B8)	<u>X</u> Drainage Patterns (B10)	<u> </u> Moss Trim Lines (B16)	<u> </u> Dry-Season Water Table (C2)	<u> </u> Crayfish Burrows (C8)	<u>X</u> Saturation Visible on Aerial Imagery (C9)	<u>X</u> Geomorphic Position (D2)	<u> </u> Shallow Aquitard (D3)	<u> </u> FAC-Neutral Test (D5)	<u> </u> Sphagnum Moss (D8) (LRR T, U)
<u>X</u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)																																
<u>X</u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)																																
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<u> </u> FAC-Neutral Test (D5)																																	
<u> </u> Sphagnum Moss (D8) (LRR T, U)																																	
Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8</u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>7</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>																																
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:																																	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W20

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>30</u></td> <td>x 1 = <u>30</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>65</u> (A)</td> <td><u>150</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.31</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>30</u>	x 1 = <u>30</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>65</u> (A)	<u>150</u> (B)	Prevalence Index = B/A = <u>2.31</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>30</u>	x 1 = <u>30</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
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UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>65</u> (A)	<u>150</u> (B)																			
Prevalence Index = B/A = <u>2.31</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
50% of total cover: _____ 20% of total cover: _____																				
Shrub Stratum (Plot size: <u>15</u>)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
1. <u>Typha latifolia</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Ludwigia palustris</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Rumex crispus</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Ranunculus bulbosus</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
5. <u>Plantago lanceolata</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
6. <u>Poa annua</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
65 =Total Cover																				
50% of total cover: <u>33</u> 20% of total cover: <u>13</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	2.5Y 5/2	100					Loamy/Clayey	
6-18	2.5Y 5/3	90	10YR 5/8	10	C	M	Loamy/Clayey	
18-24	2.5Y 6/4	70	10YR 5/8	30	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.								
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) <input type="checkbox"/> Black Histic (A3) (MLRA 153B, 153D) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 149A, 153C, 153D) <input type="checkbox"/> (LRR S, T, U) <input type="checkbox"/> Very Shallow Dark Surface (F22) <input type="checkbox"/> (MLRA 138, 152A in FL, 154) </div> <div style="width: 35%;"> Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> (outside MLRA 150A) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> (outside MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) <input type="checkbox"/> (MLRA 153B) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) <input type="checkbox"/> (outside MLRA 138, 152A in FL, 154) <input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7) <input type="checkbox"/> (MLRA 153B, 153D) <input type="checkbox"/> Other (Explain in Remarks) </div> </div>								
<div style="display: flex; justify-content: space-between;"> <div style="width: 55%;"> Restrictive Layer (if observed): Type: _____ Depth (inches): _____ </div> <div style="width: 40%;"> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ </div> </div>								
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/18/2021
 Applicant/Owner: Origis State: MS Sampling Point: U20
 Investigator(s): HM, BH Section, Township, Range: S35 T16S R6E
 Landform (hillside, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6386952858333 Long: -88.6454521306667 Datum: NAD83
 Soil Map Unit Name: OkB - Okolona silty clay, 1 to 3 percent slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Is the Sampled Area within a Wetland? </td> <td style="width: 40%; padding: 5px;"> Yes <u> </u> No <u>X</u> </td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> </div> <div style="width: 48%;"> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u> </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u> <u>Sphagnum Moss (D8) (LRR T, U)</u>		
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Wetland Hydrology Present? </td> <td style="width: 40%; padding: 5px;"> Yes <u> </u> No <u>X</u> </td> </tr> </table>	Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U20

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>10</u> (A)</td> <td><u>40</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>10</u> (A)	<u>40</u> (B)	Prevalence Index = B/A = <u>4.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>10</u> (A)	<u>40</u> (B)																			
Prevalence Index = B/A = <u>4.00</u>																				
50% of total cover: _____		20% of total cover: _____																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <i>Solidago canadensis</i>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																
2. <i>Stellaria media</i>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
		10 =Total Cover																		
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: U20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-24	2.5Y 5/3	95	10YR 5/8	5	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
<input type="checkbox"/> Very Shallow Dark Surface (F22)			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes _____ No <u>X</u>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/18/2021
 Applicant/Owner: Origis State: MS Sampling Point: W21
 Investigator(s): HM, BH Section, Township, Range: S1 T17S R6E
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6361397931667 Long: -88.6274119496667 Datum: NAD83
 Soil Map Unit Name: BrB - Brooksville silty clay, 1 to 3 percent slopes NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u>X</u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u>X</u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W21

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Salix nigra</u>	<u>80</u>	<u>Yes</u>	<u>OBL</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
80 = Total Cover																				
50% of total cover: <u>40</u>		20% of total cover: <u>16</u>																		
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>90</u></td> <td>x 1 = <u>90</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>120</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.20</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>90</u>	x 1 = <u>90</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>120</u> (B)	Prevalence Index = B/A = <u>1.20</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>90</u>	x 1 = <u>90</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>10</u>	x 3 = <u>30</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>100</u> (A)	<u>120</u> (B)																			
Prevalence Index = B/A = <u>1.20</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Acer negundo</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
5 = Total Cover																				
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Carex stricta</u>	<u>5</u>	<u>Yes</u>	<u>OBL</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Packera glabella</u>	<u>5</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Rumex crispus</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
15 = Total Cover																				
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 5/1	100					Loamy/Clayey	
4-12	10YR 4/1	95	10YR 5/8	5	C	M	Loamy/Clayey	
12-24	10YR 5/3	95	10YR 5/8	5	C	M	Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> (MLRA 153B, 153D)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> (outside MLRA 150A)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (outside MLRA 150A, 150B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	<input type="checkbox"/> (outside MLRA 138, 152A in FL, 154)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	<input type="checkbox"/> (MLRA 153B, 153D)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)	
<input type="checkbox"/> Polyvalue Below Surface (S8)	<input type="checkbox"/> (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> (LRR S, T, U)	<input type="checkbox"/> Very Shallow Dark Surface (F22)	
	<input type="checkbox"/> (MLRA 138, 152A in FL, 154)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____		Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
Remarks:		

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/18/2021

Applicant/Owner: Origis State: MS Sampling Point: U21

Investigator(s): HM, BH Section, Township, Range: S1 T17S R6E

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

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6362684098333 Long: -88.6274071913333 Datum: NAD83

Soil Map Unit Name: BrB - Brooksville silty clay, 1 to 3 percent slopes NWI classification: N/A

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 45%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U21

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>275</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.67</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>75</u> (A)	<u>275</u> (B)	Prevalence Index = B/A = <u>3.67</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>10</u>	x 2 = <u>20</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>60</u>	x 4 = <u>240</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>75</u> (A)	<u>275</u> (B)																			
Prevalence Index = B/A = <u>3.67</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Sorghum halepense</u>	<u>60</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Solidago gigantea</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
3. <u>Ranunculus bulbosus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>38</u> 20% of total cover: <u>15</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.)																				

Hydrophytic Vegetation Present? Yes No X

SOIL

Sampling Point: U21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-24	2.5Y 4/2	90	10YR 5/8	10	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
<input type="checkbox"/> (LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
(MLRA 138, 152A in FL, 154)								
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes _____ No <u>X</u>		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/18/2021
 Applicant/Owner: Origis State: MS Sampling Point: W22
 Investigator(s): HM, BH Section, Township, Range: S1 T17S R6E
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6361397931667 Long: -88.6274119496667 Datum: NAD83
 Soil Map Unit Name: BrB - Brooksville silty clay, 1 to 3 percent slopes NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> X </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> X </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>	
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VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W22

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>
2. <u>Quercus phellos</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
3. <u>Celtis laevigata</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>15</u>	20% of total cover: <u>6</u>		

Sapling Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____	20% of total cover: _____		

Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Celtis laevigata</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>3</u>	20% of total cover: <u>1</u>		

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ranunculus bulbosus</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Juncus effusus</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>
3. <u>Carex stricta</u>	<u>10</u>	<u>No</u>	<u>OBL</u>
4. <u>Plantago lanceolata</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
5. <u>Poa annua</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>28</u>	20% of total cover: <u>11</u>		

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____	20% of total cover: _____		

Remarks: (If observed, list morphological adaptations below.)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>35</u>	x 1 = <u>35</u>
FACW species <u>25</u>	x 2 = <u>50</u>
FAC species <u>15</u>	x 3 = <u>45</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>90</u> (A)	<u>190</u> (B)
Prevalence Index = B/A = <u>2.11</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤3.0¹

_____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes X No _____

SOIL

Sampling Point: W22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 4/2	95	10YR 5/8	5	C	M	Loamy/Clayey	
2-19	10YR 6/1	70	10YR 5/8	30	C	M	Loamy/Clayey	
19-24	10YR 7/1	70	10YR 5/8	30	C	M	Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Barrier Islands 1 cm Muck (S12) (MLRA 153B, 153D) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Anomalous Bright Floodplain Soils (F20) (MLRA 149A, 153C, 153D) <input type="checkbox"/> Very Shallow Dark Surface (F22) (MLRA 138, 152A in FL, 154)
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Indicators for Problematic Hydric Soils³:
☐ 1 cm Muck (A9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Coast Prairie Redox (A16)
 (outside MLRA 150A)
☐ Reduced Vertic (F18)
 (outside MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) **(LRR P, T)**
☐ Anomalous Bright Floodplain Soils (F20)
 (MLRA 153B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
 (outside MLRA 138, 152A in FL, 154)
☐ Barrier Islands Low Chroma Matrix (TS7)
 (MLRA 153B, 153D)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Optimist City/County: Clay County Sampling Date: 03/18/2021
 Applicant/Owner: Origis State: MS Sampling Point: U22
 Investigator(s): HM, BH Section, Township, Range: S6 T17S R7E
 Landform (hillside, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6304917141667 Long: -88.6002326576667 Datum: NAD83
 Soil Map Unit Name: KpB2 - Kipling silt loam, 2 to 5 percent slopes, moderately eroded NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td><u> </u> Surface Water (A1)</td> <td><u> </u> Aquatic Fauna (B13)</td> </tr> <tr> <td><u>X</u> High Water Table (A2)</td> <td><u> </u> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td><u> </u> Saturation (A3)</td> <td><u> </u> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><u> </u> Water Marks (B1)</td> <td><u> </u> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td><u> </u> Sediment Deposits (B2)</td> <td><u> </u> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><u> </u> Drift Deposits (B3)</td> <td><u> </u> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><u> </u> Algal Mat or Crust (B4)</td> <td><u> </u> Thin Muck Surface (C7)</td> </tr> <tr> <td><u> </u> Iron Deposits (B5)</td> <td><u> </u> Other (Explain in Remarks)</td> </tr> <tr> <td><u> </u> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><u> </u> Water-Stained Leaves (B9)</td> <td></td> </tr> </table>		<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u>X</u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr><td><u> </u> Surface Soil Cracks (B6)</td></tr> <tr><td><u> </u> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td><u> </u> Drainage Patterns (B10)</td></tr> <tr><td><u> </u> Moss Trim Lines (B16)</td></tr> <tr><td><u> </u> Dry-Season Water Table (C2)</td></tr> <tr><td><u> </u> Crayfish Burrows (C8)</td></tr> <tr><td><u> </u> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td><u> </u> Geomorphic Position (D2)</td></tr> <tr><td><u> </u> Shallow Aquitard (D3)</td></tr> <tr><td><u> </u> FAC-Neutral Test (D5)</td></tr> <tr><td><u> </u> Sphagnum Moss (D8) (LRR T, U)</td></tr> </table>	<u> </u> Surface Soil Cracks (B6)	<u> </u> Sparsely Vegetated Concave Surface (B8)	<u> </u> Drainage Patterns (B10)	<u> </u> Moss Trim Lines (B16)	<u> </u> Dry-Season Water Table (C2)	<u> </u> Crayfish Burrows (C8)	<u> </u> Saturation Visible on Aerial Imagery (C9)	<u> </u> Geomorphic Position (D2)	<u> </u> Shallow Aquitard (D3)	<u> </u> FAC-Neutral Test (D5)	<u> </u> Sphagnum Moss (D8) (LRR T, U)
<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)																																
<u>X</u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)																																
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Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12</u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>																																
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:																																	
Remarks:																																	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: U22

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Celtis laevigata</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)																
2. <u>Populus deltoides</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
30 = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>70</u></td> <td>x 4 = <u>280</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>350</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.50</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>70</u>	x 4 = <u>280</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>350</u> (B)	Prevalence Index = B/A = <u>3.50</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
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UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>100</u> (A)	<u>350</u> (B)																			
Prevalence Index = B/A = <u>3.50</u>																				
50% of total cover: <u>15</u> 20% of total cover: <u>6</u>																				
Sapling Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>_____</u> Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
50% of total cover: _____ 20% of total cover: _____																				
Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Juniperus virginiana</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
5 = Total Cover																				
50% of total cover: <u>3</u> 20% of total cover: <u>1</u>																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Festuca arundinacea</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Present? Yes <u>_____</u> No <u>X</u>																
2. <u>Trifolium repens</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Ranunculus rotundus</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Vicia sativa</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
65 = Total Cover																				
50% of total cover: <u>33</u> 20% of total cover: <u>13</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: U22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/1	100						
2-24	2.5YR 5/2	90	10YR 5/8	10	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.							² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			(outside MLRA 150A)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			(MLRA 153B)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)			(MLRA 153B, 153D)		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)					
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Polyvalue Below Surface (S8)			(MLRA 149A, 153C, 153D)					
(LRR S, T, U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)					
			(MLRA 138, 152A in FL, 154)					
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <u>X</u> No _____		
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay Sampling Date: 07/19/2021

Applicant/Owner: Origis State: MS Sampling Point: W-23-Wet

Investigator(s): HM, BH Section, Township, Range: S1 T17S R6E

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

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6315634343333 Long: -88.6193974268334 Datum: NAD83

Soil Map Unit Name: Okolona silty clay, 1 to 3 percent slopes NWI classification: PEM

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>9</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W-23-Wet

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Salix nigra</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
20 = Total Cover																				
50% of total cover: <u>10</u>		20% of total cover: <u>4</u>																		
Sapling Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>80</u></td> <td>x 1 = <u>80</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>160</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.45</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>80</u>	x 1 = <u>80</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>110</u> (A)	<u>160</u> (B)	Prevalence Index = B/A = <u>1.45</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>80</u>	x 1 = <u>80</u>																			
FACW species <u>10</u>	x 2 = <u>20</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>110</u> (A)	<u>160</u> (B)																			
Prevalence Index = B/A = <u>1.45</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>30</u>)																				
1. <u>Eleocharis obtusa</u>	<u>40</u>	<u>Yes</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. <u>Typha latifolia</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Cyperus esculentus</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Juncus torreyi</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
5. <u>Echinochloa colona</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
6. _____	_____	_____	_____																	
90 = Total Cover																				
50% of total cover: <u>45</u>		20% of total cover: <u>18</u>																		
Herb Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W-23-Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 4/2	100					Loamy/Clayey	
3-18	5Y 4/1	97	7.5YR 4/6	3	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)
<input type="checkbox"/> Black Histic (A3)	(MLRA 153B, 153D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
<input type="checkbox"/> Polyvalue Below Surface (S8)	(MLRA 149A, 153C, 153D)
(LRR S, T, U)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Coast Prairie Redox (A16)
(outside MLRA 150A)
<input type="checkbox"/> Reduced Vertic (F18)
(outside MLRA 150A, 150B)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)
<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)
(MLRA 153B, 153D)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay Sampling Date: 07/19/2021

Applicant/Owner: Origis State: MS Sampling Point: W-23-Up

Investigator(s): HM, BH Section, Township, Range: S1 T17S R6E

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

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6315260223333 Long: -88.6193495486667 Datum: NAD83

Soil Map Unit Name: Okolona silty clay, 1 to 3 percent slopes NWI classification: Upland

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U)	
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W-23-Up

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>30</u></td> <td>x 5 = <u>150</u></td> </tr> <tr> <td>Column Totals: <u>40</u> (A)</td> <td><u>190</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.75</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>30</u>	x 5 = <u>150</u>	Column Totals: <u>40</u> (A)	<u>190</u> (B)	Prevalence Index = B/A = <u>4.75</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>30</u>	x 5 = <u>150</u>																			
Column Totals: <u>40</u> (A)	<u>190</u> (B)																			
Prevalence Index = B/A = <u>4.75</u>																				
50% of total cover: _____		20% of total cover: _____																		
Sapling Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Glycine max</u>	<u>30</u>	Yes	UPL																	
2. <u>Amaranthus spinosus</u>	<u>10</u>	Yes	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
		40 =Total Cover																		
50% of total cover: <u>20</u>		20% of total cover: <u>8</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

Hydrophytic Vegetation Present? Yes No X

SOIL

Sampling Point: W-23-Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	5Y 3/1	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)
<input type="checkbox"/> Black Histic (A3)	(MLRA 153B, 153D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input checked="" type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
<input type="checkbox"/> Polyvalue Below Surface (S8)	(MLRA 149A, 153C, 153D)
(LRR S, T, U)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Coast Prairie Redox (A16)
(outside MLRA 150A)
<input type="checkbox"/> Reduced Vertic (F18)
(outside MLRA 150A, 150B)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)
<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)
(MLRA 153B, 153D)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Tilled agricultural field

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay Sampling Date: 07/19/2021

Applicant/Owner: Origis State: MS Sampling Point: W-24-Wet

Investigator(s): HM, BH Section, Township, Range: S1 T17S R6E

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

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6310368543333 Long: -88.6158135301667 Datum: NAD83

Soil Map Unit Name: Griffith silty clay NWI classification: PFO

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <table style="width: 100%;"> <tr> <td><u> </u> Surface Water (A1)</td> <td><u> </u> Aquatic Fauna (B13)</td> </tr> <tr> <td><u> </u> High Water Table (A2)</td> <td><u> </u> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td><u>X</u> Saturation (A3)</td> <td><u> </u> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><u> </u> Water Marks (B1)</td> <td><u> </u> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td><u> </u> Sediment Deposits (B2)</td> <td><u> </u> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><u> </u> Drift Deposits (B3)</td> <td><u> </u> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><u> </u> Algal Mat or Crust (B4)</td> <td><u> </u> Thin Muck Surface (C7)</td> </tr> <tr> <td><u> </u> Iron Deposits (B5)</td> <td><u> </u> Other (Explain in Remarks)</td> </tr> <tr> <td><u> </u> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><u>X</u> Water-Stained Leaves (B9)</td> <td></td> </tr> </table>	<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u>X</u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u> </u> Inundation Visible on Aerial Imagery (B7)		<u>X</u> Water-Stained Leaves (B9)		<u>Secondary Indicators</u> (minimum of two required) <table style="width: 100%;"> <tr> <td><u> </u> Surface Soil Cracks (B6)</td> </tr> <tr> <td><u> </u> Sparsely Vegetated Concave Surface (B8)</td> </tr> <tr> <td><u>X</u> Drainage Patterns (B10)</td> </tr> <tr> <td><u> </u> Moss Trim Lines (B16)</td> </tr> <tr> <td><u> </u> Dry-Season Water Table (C2)</td> </tr> <tr> <td><u> </u> Crayfish Burrows (C8)</td> </tr> <tr> <td><u> </u> Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td><u>X</u> Geomorphic Position (D2)</td> </tr> <tr> <td><u> </u> Shallow Aquitard (D3)</td> </tr> <tr> <td><u>X</u> FAC-Neutral Test (D5)</td> </tr> <tr> <td><u> </u> Sphagnum Moss (D8) (LRR T, U)</td> </tr> </table>	<u> </u> Surface Soil Cracks (B6)	<u> </u> Sparsely Vegetated Concave Surface (B8)	<u>X</u> Drainage Patterns (B10)	<u> </u> Moss Trim Lines (B16)	<u> </u> Dry-Season Water Table (C2)	<u> </u> Crayfish Burrows (C8)	<u> </u> Saturation Visible on Aerial Imagery (C9)	<u>X</u> Geomorphic Position (D2)	<u> </u> Shallow Aquitard (D3)	<u>X</u> FAC-Neutral Test (D5)	<u> </u> Sphagnum Moss (D8) (LRR T, U)
<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)																															
<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)																															
<u>X</u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)																															
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<u> </u> Sphagnum Moss (D8) (LRR T, U)																																
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>																															
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:																																

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W-24-Wet

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Celtis laevigata</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. <u>Quercus shumardii</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
70 =Total Cover																				
50% of total cover: <u>35</u>		20% of total cover: <u>14</u>																		
Sapling Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>40</u></td> <td>x 3 = <u>120</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>80</u> (A)</td> <td><u>200</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.50</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>40</u>	x 3 = <u>120</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>80</u> (A)	<u>200</u> (B)	Prevalence Index = B/A = <u>2.50</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>40</u>	x 2 = <u>80</u>																			
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Column Totals: <u>80</u> (A)	<u>200</u> (B)																			
Prevalence Index = B/A = <u>2.50</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ =Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ =Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Iva annua</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
10 =Total Cover																				
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ =Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W-24-Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 4/2	99	7.5YR 4/6	1	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)
<input type="checkbox"/> Black Histic (A3)	(MLRA 153B, 153D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
<input type="checkbox"/> Polyvalue Below Surface (S8)	(MLRA 149A, 153C, 153D)
(LRR S, T, U)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Coast Prairie Redox (A16)
(outside MLRA 150A)
<input type="checkbox"/> Reduced Vertic (F18)
(outside MLRA 150A, 150B)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)
<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)
(MLRA 153B, 153D)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>Optimist</u>	City/County: <u>Clay</u>	Sampling Date: <u>07/19/2021</u>
Applicant/Owner: <u>Origis</u>	State: <u>MS</u>	Sampling Point: <u>W-24-Up</u>
Investigator(s): <u>HM, BH</u> Section, Township, Range: <u>S1 T17S R6E</u>		
Landform (hillside, terrace, etc.): <u>Depression</u>	Local relief (concave, convex, none): <u>Concave</u>	Slope (%): <u>2</u>
Subregion (LRR or MLRA): <u>LRR P, MLRA 135A</u>	Lat: <u>33.6310302135</u>	Long: <u>-88.6157440815</u> Datum: <u>NAD83</u>
Soil Map Unit Name: <u>Griffith silty clay</u> NWI classification: <u>Upland</u>		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u> </u> (If no, explain in Remarks.)		
Are Vegetation <u> </u> , Soil <u> </u> , or Hydrology <u> </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u> </u>		
Are Vegetation <u> </u> , Soil <u> </u> , or Hydrology <u> </u> 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 50%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> X </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W-24-Up

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Celtis laevigata</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Acer negundo</u>	<u>10</u>	<u>No</u>	<u>FAC</u>
3. <u>Ulmus americana</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
4. <u>Quercus shumardii</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	<u>60</u> = Total Cover		
50% of total cover: <u>30</u>		20% of total cover: <u>12</u>	

Sapling Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	_____ = Total Cover		
50% of total cover: _____		20% of total cover: _____	

Shrub Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	_____ = Total Cover		
50% of total cover: _____		20% of total cover: _____	

Herb Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Verbesina alternifolia</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Chasmanthium latifolium</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Iva annua</u>	<u>10</u>	<u>No</u>	<u>FAC</u>
4. <u>Ligustrum sinense</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
5. <u>Bignonia capreolata</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
6. <u>Leersia virginica</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	<u>75</u> = Total Cover		
50% of total cover: <u>38</u>		20% of total cover: <u>15</u>	

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Rubus argutus</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
	<u>5</u> = Total Cover		
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>45</u>	x 2 = <u>90</u>
FAC species <u>95</u>	x 3 = <u>285</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>140</u> (A)	<u>375</u> (B)
Prevalence Index = B/A = <u>2.68</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes X No

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: W-24-Up**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 4/2	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)
<input type="checkbox"/> Black Histic (A3)	(MLRA 153B, 153D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
<input type="checkbox"/> Polyvalue Below Surface (S8)	(MLRA 149A, 153C, 153D)
(LRR S, T, U)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Coast Prairie Redox (A16)
(outside MLRA 150A)
<input type="checkbox"/> Reduced Vertic (F18)
(outside MLRA 150A, 150B)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)
<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)
(MLRA 153B, 153D)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay Sampling Date: 07/20/2021
 Applicant/Owner: Origis State: MS Sampling Point: W-25-Wet
 Investigator(s): HM, BH Section, Township, Range: S1 T17S R6E
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.627338618 Long: -88.6157117483334 Datum: NAD83
 Soil Map Unit Name: Griffith silty clay NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> X </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> X </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> X </u> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> X </u> Drainage Patterns (B10) <u> X </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> X </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 0 </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W-25-Wet

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Fraxinus pennsylvanica</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.3%</u> (A/B)																
2. <u>Celtis laevigata</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Acer negundo</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
4. <u>Maclura pomifera</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
80 = Total Cover																				
50% of total cover: <u>40</u>		20% of total cover: <u>16</u>																		
Sapling Stratum (Plot size: <u>30</u>)																				
1. <u>Celtis laevigata</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>50</u></td> <td>x 1 = <u>50</u></td> </tr> <tr> <td>FACW species <u>70</u></td> <td>x 2 = <u>140</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>155</u> (A)</td> <td><u>310</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>50</u>	x 1 = <u>50</u>	FACW species <u>70</u>	x 2 = <u>140</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>155</u> (A)	<u>310</u> (B)	Prevalence Index = B/A = <u>2.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>50</u>	x 1 = <u>50</u>																			
FACW species <u>70</u>	x 2 = <u>140</u>																			
FAC species <u>25</u>	x 3 = <u>75</u>																			
FACU species <u>5</u>	x 4 = <u>20</u>																			
UPL species <u>5</u>	x 5 = <u>25</u>																			
Column Totals: <u>155</u> (A)	<u>310</u> (B)																			
Prevalence Index = B/A = <u>2.00</u>																				
2. <u>Acer negundo</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
10 = Total Cover																				
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>																		
Shrub Stratum (Plot size: <u>30</u>)																				
1. <u>Poncirus trifoliata</u>	<u>5</u>	<u>Yes</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
5 = Total Cover																				
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>																		
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Gratiola neglecta</u>	<u>50</u>	<u>Yes</u>	<u>OBL</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Chasmanthium latifolium</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
60 = Total Cover																				
50% of total cover: <u>30</u>		20% of total cover: <u>12</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W-25-Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 4/1	95	7.5YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
3-18	10YR 4/1	70	5YR 4/6	30	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)
<input type="checkbox"/> Black Histic (A3)	(MLRA 153B, 153D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
<input type="checkbox"/> Polyvalue Below Surface (S8)	(MLRA 149A, 153C, 153D)
(LRR S, T, U)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Coast Prairie Redox (A16)
(outside MLRA 150A)
<input type="checkbox"/> Reduced Vertic (F18)
(outside MLRA 150A, 150B)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)
<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)
(MLRA 153B, 153D)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay Sampling Date: 07/20/2021

Applicant/Owner: Origis State: MS Sampling Point: W-25-Up

Investigator(s): HM, BH Section, Township, Range: S1 T17S R6E

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

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.627442442 Long: -88.6156750428333 Datum: NAD83

Soil Map Unit Name: Griffith silty clay NWI classification: Upland

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: center;"> Is the Sampled Area within a Wetland? </td> <td style="width: 40%; text-align: center;"> Yes <u> </u> No <u>X</u> </td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) </div> </div>		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U)	
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: center;"> Wetland Hydrology Present? </td> <td style="width: 40%; text-align: center;"> Yes <u>X</u> No <u> </u> </td> </tr> </table>	Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W-25-Up

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Celtis laevigata</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Maclura pomifera</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
3. <u>Fraxinus pennsylvanica</u>	<u>10</u>	<u>No</u>	<u>FACW</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
<u>60</u> = Total Cover			
50% of total cover: <u>30</u>		20% of total cover: <u>12</u>	

Sapling Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
<u>5</u> = Total Cover			
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>	

Shrub Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus shumardii</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
<u>5</u> = Total Cover			
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>	

Herb Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Chasmanthium latifolium</u>	<u>80</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Ruellia strepens</u>	<u>15</u>	<u>No</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
<u>95</u> = Total Cover			
50% of total cover: <u>48</u>		20% of total cover: <u>19</u>	

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____		20% of total cover: _____	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>55</u>	x 2 = <u>110</u>
FAC species <u>100</u>	x 3 = <u>300</u>
FACU species <u>10</u>	x 4 = <u>40</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>165</u> (A)	<u>450</u> (B)
Prevalence Index = B/A = <u>2.73</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes X No _____

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: W-25-Up

[illegible]

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optmist City/County: Clay Sampling Date: 07/20/2021
 Applicant/Owner: Origis State: MS Sampling Point: W-26-Wet
 Investigator(s): HM, BH Section, Township, Range: S1 T17S R6E
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6289634763333 Long: -88.6158702948333 Datum: NAD83
 Soil Map Unit Name: Griffith silty clay NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u>X</u> Aquatic Fauna (B13) <u> </u> High Water Table (A2) <u> </u> Marl Deposits (B15) (LRR U) <u>X</u> Saturation (A3) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Water Marks (B1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Sediment Deposits (B2) <u> </u> Presence of Reduced Iron (C4) <u> </u> Drift Deposits (B3) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Algal Mat or Crust (B4) <u> </u> Thin Muck Surface (C7) <u> </u> Iron Deposits (B5) <u> </u> Other (Explain in Remarks) <u>X</u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u>X</u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u>X</u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>3</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W-26-Wet

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
		=Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>70</u></td> <td>x 1 = <u>70</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>80</u> (A)</td> <td><u>100</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.25</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>70</u>	x 1 = <u>70</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>80</u> (A)	<u>100</u> (B)	Prevalence Index = B/A = <u>1.25</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>70</u>	x 1 = <u>70</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>10</u>	x 3 = <u>30</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>80</u> (A)	<u>100</u> (B)																			
Prevalence Index = B/A = <u>1.25</u>																				
50% of total cover: _____		20% of total cover: _____																		
Sapling Stratum (Plot size: <u>30</u>)				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>30</u>)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Herb Stratum (Plot size: <u>30</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
1. <u>Eleocharis obtusa</u>	<u>70</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Acalypha rhomboidea</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
		80 =Total Cover																		
50% of total cover: <u>40</u>		20% of total cover: <u>16</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		=Total Cover																		
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W-26-Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 4/1	97	7.5YR 4/6	3	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)
<input type="checkbox"/> Black Histic (A3)	(MLRA 153B, 153D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
<input type="checkbox"/> Polyvalue Below Surface (S8)	(MLRA 149A, 153C, 153D)
(LRR S, T, U)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Coast Prairie Redox (A16)
(outside MLRA 150A)
<input type="checkbox"/> Reduced Vertic (F18)
(outside MLRA 150A, 150B)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)
<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)
(MLRA 153B, 153D)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay Sampling Date: 07/20/2021

Applicant/Owner: Origis State: MS Sampling Point: W-26-Up

Investigator(s): HM. BH Section, Township, Range: S1 T17S R6E

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

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6289621563333 Long: -88.6159411033333 Datum: NAD83

Soil Map Unit Name: Griffith silty clay NWI classification: Upland

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u>X</u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u>X</u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W-26-Up

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>30</u></td> <td>x 5 = <u>150</u></td> </tr> <tr> <td>Column Totals: <u>30</u> (A)</td> <td><u>150</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>5.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>30</u>	x 5 = <u>150</u>	Column Totals: <u>30</u> (A)	<u>150</u> (B)	Prevalence Index = B/A = <u>5.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>30</u>	x 5 = <u>150</u>																			
Column Totals: <u>30</u> (A)	<u>150</u> (B)																			
Prevalence Index = B/A = <u>5.00</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Shrub Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Glycine max</u>	<u>30</u>	<u>Yes</u>	<u>UPL</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>15</u> 20% of total cover: <u>6</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.)																				

Hydrophytic Vegetation Present? Yes _____ No X

SOIL

Sampling Point: W-26-Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 4/1	97	7.5YR 4/6	3	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)
<input type="checkbox"/> Black Histic (A3)	(MLRA 153B, 153D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
<input type="checkbox"/> Polyvalue Below Surface (S8)	(MLRA 149A, 153C, 153D)
(LRR S, T, U)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Coast Prairie Redox (A16)
(outside MLRA 150A)
<input type="checkbox"/> Reduced Vertic (F18)
(outside MLRA 150A, 150B)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)
<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)
(MLRA 153B, 153D)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Recently tilled agricultural field

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay Sampling Date: 07/20/2021
 Applicant/Owner: Origis State: MS Sampling Point: W-27-Wet-1
 Investigator(s): HM, BH Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: _____ Long: _____ Datum: NAD83
 Soil Map Unit Name: _____ NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: Recent flood scour observed	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) _____ Surface Water (A1) <u>X</u> Aquatic Fauna (B13) _____ High Water Table (A2) _____ Marl Deposits (B15) (LRR U) <u>X</u> Saturation (A3) _____ Hydrogen Sulfide Odor (C1) <u>X</u> Water Marks (B1) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Sediment Deposits (B2) _____ Presence of Reduced Iron (C4) <u>X</u> Drift Deposits (B3) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Algal Mat or Crust (B4) _____ Thin Muck Surface (C7) _____ Iron Deposits (B5) _____ Other (Explain in Remarks) _____ Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9)	<u>Secondary Indicators</u> (minimum of two required) _____ Surface Soil Cracks (B6) _____ Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ FAC-Neutral Test (D5) _____ Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W-27-Wet-1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Salix nigra</u>	<u>50</u>	<u>Yes</u>	<u>OBL</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)																
2. <u>Acer negundo</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Albizia julibrissin</u>	<u>5</u>	<u>No</u>	<u>UPL</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
75 = Total Cover																				
50% of total cover: <u>38</u>		20% of total cover: <u>15</u>																		
Sapling Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>50</u></td> <td>x 1 = <u>50</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>110</u></td> <td>x 3 = <u>330</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>170</u> (A)</td> <td><u>430</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.53</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>50</u>	x 1 = <u>50</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>110</u>	x 3 = <u>330</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>170</u> (A)	<u>430</u> (B)	Prevalence Index = B/A = <u>2.53</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>50</u>	x 1 = <u>50</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>110</u>	x 3 = <u>330</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>10</u>	x 5 = <u>50</u>																			
Column Totals: <u>170</u> (A)	<u>430</u> (B)																			
Prevalence Index = B/A = <u>2.53</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Shrub Stratum (Plot size: <u>30</u>)																				
1. <u>Albizia julibrissin</u>	<u>5</u>	<u>Yes</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>_____</u> Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
5 = Total Cover																				
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>																		
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Ruellia simplex</u>	<u>70</u>	<u>Yes</u>	<u>FAC</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. <u>Chasmanthium latifolium</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
3. <u>Urtica dioica</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
90 = Total Cover																				
50% of total cover: <u>45</u>		20% of total cover: <u>18</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.)																				

SOIL

Sampling Point: W-27-Wet-1

[illegible]

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay Sampling Date: 07/20/2021

Applicant/Owner: Origis State: MS Sampling Point: W-27-Up-1

Investigator(s): HM, BH Section, Township, Range: S1 T17S R6E

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

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6315853028333 Long: -88.6157824868333 Datum: NAD83

Soil Map Unit Name: Griffith silty clay NWI classification: Upland

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 50%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W-27-Up-1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer negundo</u>	<u>75</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	<u>75</u> = Total Cover		
50% of total cover: <u>38</u>		20% of total cover: <u>15</u>	

Sapling Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	<u>5</u> = Total Cover		
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>	

Shrub Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	_____ = Total Cover		
50% of total cover: _____		20% of total cover: _____	

Herb Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Chasmanthium latifolium</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Verbesina alternifolia</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Lolium perenne</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	<u>55</u> = Total Cover		
50% of total cover: <u>28</u>		20% of total cover: <u>11</u>	

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Vitis aestivalis</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Rubus argutus</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
	<u>15</u> = Total Cover		
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>	

Remarks: (If observed, list morphological adaptations below.)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>5</u>	x 2 = <u>10</u>
FAC species <u>130</u>	x 3 = <u>390</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>150</u> (A)	<u>460</u> (B)
Prevalence Index = B/A = <u>3.07</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes X No _____

SOIL

Sampling Point: W-27-Up-1

[illegible]

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Optimist City/County: Clay Sampling Date: 07/20/2021
 Applicant/Owner: Origis State: MS Sampling Point: W-27-Wet-2
 Investigator(s): HM, BH Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: _____ Long: _____ Datum: NAD83
 Soil Map Unit Name: _____ NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply)		<u>Secondary Indicators</u> (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W-27-Wet-2

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Quercus palustris</u>	50	Yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)																
2. <u>Celtis laevigata</u>	20	Yes	FACW																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
70 =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>70</u></td> <td>x 2 = <u>140</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>270</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.57</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>70</u>	x 2 = <u>140</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>105</u> (A)	<u>270</u> (B)	Prevalence Index = B/A = <u>2.57</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>70</u>	x 2 = <u>140</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>5</u>	x 4 = <u>20</u>																			
UPL species <u>10</u>	x 5 = <u>50</u>																			
Column Totals: <u>105</u> (A)	<u>270</u> (B)																			
Prevalence Index = B/A = <u>2.57</u>																				
50% of total cover: <u>35</u> 20% of total cover: <u>14</u>																				
Sapling Stratum (Plot size: <u>30</u>)																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
_____ =Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Shrub Stratum (Plot size: <u>30</u>)																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
_____ =Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Carex pensylvanica</u>	10	Yes	UPL	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Urtica dioica</u>	10	Yes	FAC																	
3. <u>Ruellia simplex</u>	10	Yes	FAC																	
4. <u>Plantago rugelii</u>	5	No	FACU																	
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
35 =Total Cover																				
50% of total cover: <u>18</u> 20% of total cover: <u>7</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
_____ =Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.) Oak tree planting.																				

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes X No _____

SOIL

Sampling Point: W-27-Wet-2

[illegible]

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Optimist City/County: Clay Sampling Date: 07/20/2021

Applicant/Owner: Origis State: MS Sampling Point: W-27-Up-2

Investigator(s): HM, BH Section, Township, Range: S1 T17S R6E

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

Subregion (LRR or MLRA): LRR P, MLRA 135A Lat: 33.6274448423333 Long: -88.6142668178333 Datum: NAD83

Soil Map Unit Name: Leeper silty clay loam, 0 to 2 percent slopes, occasionally flooded NWI classification: Upland

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) </div> <div style="width: 48%;"> <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u>X</u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u>X</u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: W-27-Up-2

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer negundo</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)																
2. <u>Quercus palustris</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Celtis laevigata</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
<u>50</u> =Total Cover 50% of total cover: <u>25</u> 20% of total cover: <u>10</u>				Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>60</u> (A)</td> <td><u>160</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.67</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>60</u> (A)	<u>160</u> (B)	Prevalence Index = B/A = <u>2.67</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>30</u>	x 2 = <u>60</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>60</u> (A)	<u>160</u> (B)																			
Prevalence Index = B/A = <u>2.67</u>																				
<u>50</u> =Total Cover 50% of total cover: _____ 20% of total cover: _____																				
Sapling Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
<u>_____</u> =Total Cover 50% of total cover: _____ 20% of total cover: _____																				
Shrub Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
<u>_____</u> =Total Cover 50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Gossypium hirsutum</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
<u>10</u> =Total Cover 50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
<u>_____</u> =Total Cover 50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.)																				

Hydrophytic Vegetation Present? Yes X No _____

SOIL

Sampling Point: W-27-Up-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10YR 5/2	99	7.5YR 4/6	1	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)
<input type="checkbox"/> Black Histic (A3)	(MLRA 153B, 153D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
<input type="checkbox"/> Polyvalue Below Surface (S8)	(MLRA 149A, 153C, 153D)
(LRR S, T, U)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Coast Prairie Redox (A16)
(outside MLRA 150A)
<input type="checkbox"/> Reduced Vertic (F18)
(outside MLRA 150A, 150B)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)
<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
<input type="checkbox"/> Barrier Islands Low Chroma Matrix (TS7)
(MLRA 153B, 153D)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Appendix D – Protected Species and Ecological Assessment

FINAL

Protected Species and Ecological Assessment

Origis Energy
Optimist Solar + Battery Energy Storage System
Clay County, Mississippi

December 22, 2021



Prepared for:



800 Brickell Avenue, Suite 1000
Miami, Florida 33131

Prepared by:



117 Hearthstone Drive
Aiken, South Carolina 29803
Phone: (803) 649-7963

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APPENDICES

Appendix A – Figures

Figure 1. Project Location

Figure 2. Aerial Photograph of Site

Figure 3. Habitat Types

Figure 4. Potential Wood Stork Foraging Habitat

Appendix B – Photo Log: Ecological Communities

Appendix C – Photo Log: Protected Species Habitat

Appendix D – Official Species List

Appendix E – Bat Habitat Assessment

Appendix F – NLEB Bat Acoustic Survey Report

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1.0 INTRODUCTION

MS Solar 7, LLC, (MS Solar 7) proposes to construct a utility-scale solar farm and associated infrastructure in Clay County, Mississippi, known as the Optimist Solar Project (Project). The Project encompasses approximately 2,947 acres east of West Point, Mississippi (Appendix A, Figure 1). The Project area is drained by Spring Creek, McGee Creek, and Town Creek and is predominantly made up of crop land and pastures, as well as emergent and forested wetlands.

Tetra Tech, Inc. (Tetra Tech) retained the professional services of CCR Environmental, Inc. (CCR) to perform a general wildlife and vegetation characterization of the ecological communities in the Project area, which included identifying predominant vegetation and wildlife, noting invasive floral species present, and identifying and evaluating unique plant and wildlife habitats, if present. CCR also performed a habitat suitability assessment for federally and/or state-protected species, as well as limited surveys for the species themselves. The Project area and the adjacent existing substation were evaluated (Figure 2).

The surveys were conducted on April 14 - 15 and 25 - 27, 2021. During the April surveys, the weather was dry with temperatures in the 50s and 60s °F. An additional survey was conducted on July 22 - 23, 2021. The weather was overcast and rainy with temperatures in the 80s during the July survey.

2.0 BACKGROUND

The Project area is characterized by gently rolling hills, with elevation ranging from approximately 215 feet above mean sea level (amsl) to approximately 270 feet amsl. The Project area is divided between two sections of the East Gulf Coastal Plain physiographic province: the Black Prairie section to the west and the Tombigbee and Tennessee River Hills section to the east (Dockery and Thompson 2019). The Black Prairie, named for its dark, fertile soil, is an important agricultural region that originally consisted of open prairie grasslands. The Tombigbee and Tennessee River Hills section comprises a hilly landscape developed on unconsolidated Cretaceous sands. The Project area lies within the Tombigbee River basin, which contains high-order tributaries that flow southeast to join the Tombigbee River.

The project site is located in northeastern Mississippi near the border with Alabama. The Project area/parcels are north and east of the City of West Point. Land use in the area is mostly agricultural, but some forest and low-density residential areas are present. Additionally, a relatively large section of the Project area is used and managed as a hunting preserve, which features different land use characteristics (i.e., managed old field, with wildlife food plots and evidence of prescribed burns) than the surrounding areas.

3.0 ECOLOGICAL ASSESSMENT

3.1 Methods

Information on distribution, habitat requirements, life histories, and identification of the target species was compiled from a variety of sources, including *Manual of the Southeastern Flora* (Small 1933); *Manual of the Vascular Flora of the Carolinas* (Radford et al. 1968); *A Field Guide to Animal Tracks* (Murie 1974); *Aquatic and Wetland Plants of Southeastern United States, Monocotyledons* (Godfrey and Wooten 1979); *A Field Guide to the Birds: A Completely New Guide to All the Birds of Eastern and Central America* (Peterson 1980); *Vascular Flora of the Southeastern United States, Vol. I. Asteraceae*

(Cronquist 1980); *Aquatic and Wetland Plants of Southeastern United States, Dicotyledons* (Godfrey and Wooten 1981); *A Report on Some Rare, Threatened, or Endangered Forest-Related Vascular Plants of the South* (Kral 1983); *Vascular flora of the Southeastern United States, Vol.3, Part 2. Leguminosae (Fabaceae)* (Isley 1990); *Endangered and Threatened Wildlife and Plants Threatened Status for Apios Priceana (Price's Potato-bean)* (USFWS 1990); *A Field Guide to Reptiles and Amphibians, Eastern and Central North America* (Conant and Collins 1991); *Recovery Plan for Price's Potato-bean (Apios priceana)* (USFWS 1993); *Nonnative Invasive Plants of Southern Forests: A Field Guide for Identification and Control* (Miller 2003); *Amphibians and Reptiles of Georgia* (Jensen et al. 2008); and *Endangered Species of Mississippi* (MMNS 2014); and *Flora of the Southeastern United States* (Weakley 2020).

Most of the Project area and surrounding lands were in agricultural use, consisting of row crops, fallow fields, or pasture. Most parcels featured public roads around their perimeters, with gated dirt roads into the properties. Parcels that consisted of crops or open pasture were assessed primarily via a windshield survey in which they were viewed from a vehicle driven around the perimeter. All forested areas or areas inaccessible by vehicle were assessed/surveyed via pedestrian surveys performed by a 2-person crew.

During the assessments/surveys, land use was noted, habitat evaluated and photographed, and flora and fauna recorded.

3.2 Results and Conclusions

Vegetation

Five different vegetation communities were identified by Tetra Tech within the Project area using recent aerial photography (Figure 3). These vegetation communities were verified in the field by CCR biologists. Vegetation communities included Row Crops (includes fallow fields), Pasture, Riparian/Alluvial Forest, Old Field, and Upland Forest. The approximate acreage of these vegetative communities is provided in Table 1. The following paragraphs provide a description of each habitat type. Representative photographs are provided in Appendix B.

Table 1. List of Habitat Types

Habitat Type	Habitat Acreage	Habitat Type Percentage
Row Crops	1,082	36.7
Pasture	1,078	36.6
Riparian/Alluvial Forest	455	15.5
Old Field	230	7.8
Upland Forest	34	1.3

In addition to the previously discussed terrestrial habitats, the Project area contained approximately 43 acres of wetlands, 22 acres of open water (farm ponds), and several small streams; however, these

wetlands and waterbodies made up a small fraction (approximately 2 percent) of the total Project area (Tetra Tech 2021).

Row Crops and Pasture

Most of the terrestrial habitats (73.3 percent) in the Project area were agricultural, primarily consisting of row crops (including some fallow fields) and pasture (cattle were observed in most pasture areas). Corn and soybeans were the major row crops. In the pasture areas, most vegetation was herbaceous.

Dominant plants observed included hairy buttercup (*Ranunculus sardous*)¹, white clover (*Trifolium repens*)¹, Cherokee sedge (*Carex cherokeensis*), and tall fescue (*Festuca arundinacea*)¹. Other common to frequent plant species observed included bristle thistle (*Cirsium horridulum*); broomsedge (*Andropogon scoparius*); red cedar seedlings (*Juniperus virginiana*); dwarf dandelion (*Krigia caespitosa*); Long's sedge (*Carex longii*); Leavenworth's sedge (*Carex leavenworthii*); curly dock (*Rumex crispus*)¹; flat-stem bluegrass (*Poa compressa*)¹; little barley (*Hordeum pusillum*); path rush (*Juncus tenuis*); ironweed (*Vernonia gigantea*); Persian clover (*Trifolium resupinatum*)¹; and ryegrass (*Lolium perenne*)¹.

Riparian/Alluvial Forest and Upland Forest

Forested areas were the second most common terrestrial habitat type, consisting of riparian/alluvial forest (15.5 percent) and a small area of upland forest (1.3 percent). The riparian/alluvial forests (which included fence lines) were mostly disturbed. Dominant trees included sugarberry (*Celtis laevigata*), Osage orange (*Maclura pomifera*), and green ash (*Fraxinus pennsylvanica*). Other commonly observed species included red cedar; box-elder (*Acer negundo*); cottonwood (*Populus deltoides*); Shumard oak (*Quercus shumardii*); redbud (*Cercis canadensis*); black walnut (*Juglans nigra*); persimmon (*Diospyros virginiana*); shagbark hickory (*Carya ovata*); hop-hornbeam (*Carpinus caroliniana*); American elm (*Ulmus americana*); water oak (*Quercus nigra*); willow oak (*Quercus phellos*); and cherrybark oak (*Quercus pagoda*). Dominant shrubs included coralberry (*Symphoricarpos orbiculatus*) and poison oak (*Toxicodendron pubescens*). Other commonly observed shrubs included silky dogwood (*Cornus amomum*); elderberry (*Sambucus canadensis*); switch cane (*Arundinaria gigantea*); Chinese privet (*Ligustrum sinense*)¹; deciduous holly (*Ilex deciduous*); and red buckeye (*Aesculus pavia*).

The vines included peppervine (*Ampelopsis arborea*); Virginia creeper (*Parthenocissus quinquefolia*), poison ivy (*Toxicodendron radicans*); coralbead (*Cocculus carolina*); Japanese honeysuckle (*Lonicera japonica*)¹; cross vine (*Bignonia capreolata*); Southern dewberry (*Rubus trivialis*); common greenbrier (*Smilax rotundifolia*); bristly greenbrier (*Smilax hispida*); bullbrier (*Smilax bona-nox*); trumpet-creeper (*Campsis radicans*); fox grape (*Vitis vulpina*); possum grape (*Vitis cinerea*); and rattan vine (*Berchemia scandens*).

Dominant herbaceous vegetation included autumn bluegrass (*Poa sylvestris*), Cherokee sedge, butterweed (*Packera glabella*), calico aster (*Symphyotrichum lateriflorus*), river-oats (*Chasmanthium latifolium*), and fleabane (*Erigeron philadelphicus*). Other frequently observed species included golden alexander (*Zizia aurea*); wood mint (*Blephilia ciliata*); shiny wedgescale (*Sphenopholis nitida*); manna grass (*Glyceria striata*); honewort (*Cryptotaenia canadensis*); wild chervil (*Chaerophyllum tainturieri*); meadow rue (*Thalictrum revolutum*); thin-fruit sedge (*Carex flaccosperma*); common goldenrod (*Solidago altissima*); frostweed (*Verbesina virginica*); green dragon (*Arisaema dracontium*); wild onion (*Allium canadense*);

¹ Exotic. An exotic species is any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that habitat (USFWS 2012).

white nymph (*Trepocarpus aethusae*); large-seed forget-me-not (*Myosotis macrosperma*); prune-fruit sedge (*Carex corrugata*); wild garlic (*Allium vineale*)¹; rosy sedge (*Carex rosea*); sanicle (*Sanicula odorata*); nodding fescue (*Festuca verticillata*); water pimpernel (*Samolus parviflorus*); white avens (*Geum canadense*); tall dock (*Rumex altissimus*); common blue violet (*Viola sororia*); hairy buttercup¹; sharp-scale sedge (*Carex oxylepis*); corn salad (*Valerianella radiata*); Florida lettuce (*Lactuca floridana*); Carolina sedge (*Carex caroliniana*); white snakeroot (*Ageratina altissima*); lyre-leaf sage (*Salvia lyrata*); and blue-eyed-grass (*Sisyrinchium angustifolium*).

The upland forest consisted of a small area with a dense canopy and limited groundcover. It was part of a quail hunting club and included the following dominant tree species: post oak (*Quercus stellata*), black oak (*Quercus velutina*), water oak, Southern red oak (*Quercus falcata*), and hop-hornbeam. Other commonly observed species included red cedar; mockernut hickory (*Carya tomentosa*); white ash (*Fraxinus americana*); black cherry (*Prunus serotina*); pignut hickory (*Carya glabra*); basswood (*Tilia americana*); winged elm (*Ulmus alatus*); redbud; American elm; persimmon; willow oak; and sugarberry.

The shrubs included coralberry, deciduous holly, blackberry (*Rubus argutus*), and Chinese privet¹.

The vines included bullbrier; Virginia creeper; poison ivy; Japanese honeysuckle¹; coralbead; common greenbrier; cross vine; peppervine; Southern dewberry; rattan vine; and trumpet- creeper.

The herbaceous vegetation included upland sedges (*Carex* spp.); witchgrasses (*Dichanthelium* spp.); spring-beauty (*Claytonia virginica*); wild chervil; fleabane; common goldenrod; and nutrush (*Scleria triglomerata*).

Old Field

The least common terrestrial habitat type observed in the Project area was old field (7.8 percent). This habitat was primarily associated with the quail hunting club and appeared to be managed (including prescribed burns) as quail habitat. Old field habitats were typically open, dominated by low-growing herbaceous vegetation (grasses, forbs, and sedges), with widely scattered shrubs and trees (small oaks and cedars). The following plant species were dominant: bushy bluestem (*Andropogon glomeratus*), hairy buttercup¹, broomsedge, late-flowering thoroughwort (*Eupatorium serotinum*), and tall fescue¹. Other commonly observed species included Long's sedge; Leavenworth's sedge; white clover¹; Cherokee sedge; bristle thistle; red cedar; fox sedge (*Carex vulpinoidea*); greenbriers; common goldenrod; peppervine; shiny wedgescale; fleabane; horseweed (*Conyza canadensis*); dog-fennel (*Eupatorium capillaceum*); dogbane (*Apocynum cannabinum*); butterweed; red clover (*Trifolium pratense*)¹; narrowleaf vetch (*Vicia angustifolia*); curly dock; quaking grass (*Briza minor*); purple false foxglove (*Agalinis purpurea*); lyre-leaf sage; cudweed (*Gamochaeta* spp.); groundsel (*Packera anonymus*); hairy lovegrass (*Eragrostis hirsutus*); and sheep sorrel (*Rumex acetosella*).

Wetlands and Ponds

The wetland and vegetated pond margins were dominated by marsh pennywort (*Hydrocotyle ranunculoides*) and knotty-leaf rush (*Juncus acuminatus*). Other frequently observed species included hairy buttercup¹; roundhead rush (*Juncus validus*); marsh seedbox (*Ludwigia palustris*); keeled bulrush (*Isolepis carinata*); black willow (*Salix nigra*); Cherokee sedge; waternymph (*Najas guadalupensis*); soft rush (*Juncus effusus*); butterweed; mock bishop's-weed (*Ptilimnium capillaceum*); red maple (*Acer rubrum*); water horehound (*Lycopus* sp.); tallowtree (*Triadica sebifera*)¹; elderberry; curly dock; swamp

dogwood (*Cornus stricta*); cutgrass (*Leersia oryzoides*); box-elder; climbing hempweed (*Mikania scandens*); smartweed (*Persicaria* spp.); and peppervine.

Invasive/Exotic Plants

Although the Project area had been converted to agricultural use (probably in the 19th century) and is subject to periodic disturbance, including various land management activities and agricultural operations, invasive plants were not prevalent. The following invasive/exotic plants were observed during the survey: Chinese tallowtree; Chinese privet; Japanese honeysuckle; wild garlic; hairy buttercup; white clover; tall fescue; curly dock; flat-stem bluegrass; Persian clover; ryegrass; and red clover. Only one of these plants, Chinese tallow tree, is identified as a noxious weed in the state of Mississippi (Invasive.org 2021). Many of the other plants observed were exotic but not necessarily aggressively invasive; principally, the herbaceous species such as curly dock, ryegrass, and red clover. Although small portions of pastures contained hairy buttercup, white clover, and/or tall fescue, no sections of the Project area were dominated or overgrown with invasive plant species.

Wildlife

Although no rare or protected wildlife species was observed during the surveys, a variety of animals was present. All of these were species commonly observed in Mississippi. Most of the species on the list were observed by biologists during field surveys. Birds were the most abundant group, by far, with 33 species. A few species, such as the American bullfrog (*Lithobates catesbeianus*), were identified by their calls. One mammal, the raccoon (*Procyon lotor*), was identified by its tracks. A list of wildlife species found during the surveys is provided in Table 2.

Table 2. Wildlife Observed during Surveys

Common Name	Scientific Name
Amphibians and Reptiles	
American bullfrog	<i>Lithobates catesbeianus</i>
Cricket frog	<i>Acris crepitans</i>
Little brown skink	<i>Scincella lateralis</i>
Yellow-bellied slider	<i>Trachemys scripta scripta</i>
Birds	
American crow	<i>Corvus brachyrhynchos</i>
American robin	<i>Turdus migratorius</i>
Barn swallow	<i>Hirundo rustica</i>
Blue jay	<i>Cyanocitta cristata</i>
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>
Brown thrasher	<i>Toxostoma rufum</i>

Common Name	Scientific Name
Brown-headed cowbird	<i>Molothrus ater</i>
Canada goose	<i>Branta canadensis</i>
Carolina chickadee	<i>Poecile carolinensis</i>
Carolina wren	<i>Thryothorus ludovicianus</i>
Cattle egret	<i>Bubulcus ibis</i>
Common starling	<i>Sturnus vulgaris</i>
Double-crested cormorant	<i>Phalacrocorax auritus</i>
Eastern bluebird	<i>Sialia sialis</i>
Eastern meadowlark	<i>Sturnella magna</i>
Eastern phoebe	<i>Sayornis phoebe</i>
Eastern towhee	<i>Pipilo erythrophthalmus</i>
Field sparrow	<i>Spizella pusilla</i>
Great blue heron	<i>Ardea herodias</i>
Great egret	<i>Ardea alba</i>
Killdeer	<i>Charadrius vociferus</i>
Mourning dove	<i>Zenaida macroura</i>
Northern cardinal	<i>Cardinalis cardinalis</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Red-eyed vireo	<i>Vireo olivaceus</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Rock dove	<i>Columba livia</i>
Song sparrow	<i>Melospiza melodia</i>
Tufted titmouse	<i>Baeolophus bicolor</i>
Turkey vulture	<i>Cathartes aura</i>
White-eyed vireo	<i>Vireo griseus</i>
Yellow-billed cuckoo	<i>Coccyzus americanus</i>

Common Name	Scientific Name
Mammals	
Beaver	<i>Castor canadensis</i>
Rabbit (cottontail)	<i>Sylvilagus</i> sp.
Raccoon	<i>Procyon lotor</i>
White-tailed deer	<i>Odocoileus virginianus</i>
Insects	
Black swallowtail butterfly	<i>Papilio polyxenes</i>
Eastern pondhawk	<i>Erythemis simplicicollis</i>
Eastern tiger swallowtail	<i>Papilio glaucus</i>
Fire ant	<i>Solenopsis invicta</i>
Ichneumon wasp	<i>Ophion</i> sp.

Unique habitat

No unique habitats were observed during the surveys. No caves, karst terrain, or other unique geological features (e.g., limestone or chalk outcrops) were present. The Mississippi Natural Heritage Program is responsible for both the Natural Areas Registry and the identification, conservation, and protection of rare and exemplary natural communities (MNHP 2021a). None of the special habitats that the Mississippi Natural Areas Registry normally deems worthy of registration (e.g., old-growth forest, remnant prairie, longleaf pine savannah, pitcher plant bog, beech-magnolia streamside forest) were present. No “exemplary” natural communities (particularly good examples of a native community types, thus meriting preservation) appeared to be present.

4.0 PROTECTED SPECIES HABITAT ASSESSMENT

4.1 Methods

Tetra Tech uploaded the spatial data containing the Project boundary to the USFWS Information for Planning and Consultation (IPaC) tool and obtained an Official Species List (Appendix D). The query generated a list of 11 federally protected species that may occur within the boundary of the proposed Project and/or may be affected by the proposed Project (USFWS 2021). These species included the Northern long-eared bat (*Myotis septentrionalis*); wood stork (*Mycteria americana*); Price’s potato bean (*Apios priceana*); Southern combshell (*Epioblasma penita*); orangenacre mucket (*Lampsilis=Hamiota perovalis*); Alabama moccasinshell (*Medionidus acutissimus*); inflated heelsplitter (*Potamilus inflatus*); black clubshell (*Pleurobema curtum*); Southern clubshell (*Pleurobema decisum*); ovate clubshell (*Pleurobema perovatum*); and heavy pigtoe (*Pleurobema taitianum*).

Tetra Tech consulted with the Tennessee Valley Authority (TVA) to obtain a list of protected species and habitats from the TVA natural heritage database, along with input from TVA biologists about how to design biological surveys and assessments (TVA 2021). The query results did not return any state or federally protected species within the Project area; however, TVA biologists requested further information regarding the Northern long-eared bat, the wood stork, and Price's potato bean. A habitat assessment (Appendix E) and acoustic survey (Appendix F) were performed to assess bat roosting and foraging habitat as well as presence; wood stork foraging habitat and potato bean habitat were assessed in the field (results presented in sections that follow).

Tetra Tech requested spatial data from the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) Natural Heritage Program (MNHP) regarding known occurrences of rare and protected species to determine the target species for this survey (MNHP 2021b). The query results returned known occurrences of the grasshopper sparrow (*Ammodramus savannarum*) and Bewick's wren (*Thryomanes bewickii*) within the Project area. The grasshopper sparrow is endangered in Florida, but not in Mississippi (Ruth 2015). Bewick's wren is state-endangered in Mississippi and was once common across the southeast, but it has "vanished" from most of its former range east of the Mississippi River (Audubon 2021). Although these two species were technically not within the scope of the survey, biologists conducting surveys were instructed to record observations of either.

Based on these reviews and consultation, the following list of target species (species of potential concern) was developed:

- Price's potato bean – federally threatened;
- wood stork – federally threatened;
- Alabama sturgeon (*Scaphirhynchus suttkusi*) – federally endangered;
- Southern combshell – federally endangered;
- oranogenacre mucket – federally threatened;
- Alabama moccasinshell – federally threatened;
- inflated heelsplitter – federally threatened;
- black clubshell – federally endangered;
- Southern clubshell – federally endangered;
- flat pigtoe (*Pleurobema marshalli*) – federally endangered;
- ovate clubshell – federally endangered;
- heavy pigtoe – federally endangered;
- monkeyface (*Theliderma metanevra*) – federally endangered;
- stirrupshell (*Theliderma stapes*) – federally endangered;
- delicate spike (*Elliptio arctata*) – state endangered;
- crystal darter (*Crystallaria asprella*) – state endangered;
- frecklebelly madtom (*Noturus munitus*) – state endangered; and
- black-knobbed map turtle (*Graptemys nigrinoda*) – state endangered.

Information on distribution, habitat requirements, life histories, and identification of the target species was compiled from a variety of sources, including *A Report on Some Rare, Threatened, or Endangered Forest-Related Vascular Plants of the South* (Kral 1983); *Endangered and Threatened Wildlife and Plants Threatened Status for *Apios priceana* (Price's Potato-bean)* (USFWS 1990); *Recovery Plan for Price's Potato-bean (*Apios priceana*)* (USFWS 1993); *Revised Recovery Plan for the U.S. Breeding*

Population of the Wood Stork (USFWS 1996); *The Inland Fishes of Mississippi* (Ross 2001); *Freshwater Mussels of Alabama and the Mobile Basin and Tennessee* (Williams et al. 2008); *Recovery Plan for the Alabama Sturgeon, Scaphirhynchus suttkusi* (USFWS 2013); *Endangered Species of Mississippi* (MMNS 2014); *Guide to the Identification and Distribution of Freshwater Mussels (Bivalvia: Unionidae) in Mississippi* (Jones et al. 2019); *Species account: Black-Knobbed Map Turtle (Gratemys nigrinoda)* (Animal Diversity Web 2021); and NatureServe (2021).

As previously mentioned, most of the Project area and surrounding lands were in agricultural use (row crops/fallow fields or pasture) at the time of the surveys. Most parcels had public roads around their perimeters, with gated dirt roads into the properties. Parcels that consisted of crops or open pasture were assessed primarily via a windshield survey in which they were viewed from a vehicle driven around the perimeter. All forested areas or areas inaccessible by vehicle were assessed/surveyed via pedestrian surveys performed by a 2-person crew.

During the assessments/surveys, land use was noted, habitat evaluated and photographed, and flora and fauna recorded.

4.2 Results and Conclusions

Literature Review

The following target species information was derived from the previously cited literature.

Plants

Price's potato bean is a member of the pea family. It is a perennial, yellow-green climbing vine that can grow up to 15 feet in length from a large, potato-like tuber. Each vine leaf, which are alternately arranged on the stem, is about 8 – 12 inches long and has seven leaflets. This species produces fragrant pale pink or greenish-yellow pea-like flowers that bloom in the early summer, but the plants die back to the tuber by mid-summer.

This species occurs at the base or lowest portion of ravine slopes that grade into creek or stream bottoms, often below chalk outcrops, in marl or clay soil or drained loams on old alluvium over limestone. It is often found in mesic, open areas or at the edge of mixed hardwood stands and sometimes even grows along highway rights-of-way and powerline corridors.

Price's potato bean is endemic to Alabama, Mississippi, Kentucky, Tennessee, and Illinois. The single known Illinois population was destroyed, and this species is believed extirpated from that state (MMNS 2014). Currently, there are about 25 known total occurrences. In Mississippi, there are four sites in three counties (Oktibbeha, Clay, and Lee). The Clay County site contains a declining population of 15 – 20 individuals and is located on private land as a Registered Natural Area (USFWS 1993; NatureServe 2021).

Birds

The wood stork is the only true stork (family Ciconiidae) that regularly occurs in the U.S. This species is a large, long-legged wading bird that is up to 33 – 36 inches tall with a wingspan of up to five feet. It has a naked, dark (gray to black) head and neck, a white body, and black-edged wings and tail.

Wood storks make use of a variety of freshwater and estuarine wetlands for breeding, roosting, and feeding. They nest primarily in the upper branches of small to large cypress trees, mangroves, or dead hardwoods. Preferred nesting sites are trees in standing water or on small islands surrounded by broad expanses of open water. Nesting colony sites in water must remain inundated throughout the nesting cycle to prevent predation and nest abandonment. Several hundred nests may comprise a single wood stork colony, and these nests may be used for many years. Wood storks roost at sites that are structurally similar to their nesting sites, but a slightly wider variety of habitats are used to roost. These roosts may be used for brief or long periods of time and may be used repeatedly over a period of years (depending on hydrology of the area).

Wood storks forage in a variety of wetlands where prey (mostly small fish) densities are high and there is shallow, open water that allows the storks to feed effectively by tacto-location. Ideal conditions would include calm water that is 2 to 15 inches deep and is uncluttered by aquatic vegetation (Ogden 1990). Foraging sites include swamps, freshwater marshes, stock ponds, and managed impoundments.

This species breeds in Mexico and the southeastern U.S. in coastal areas that are adjacent to or surrounded by water or wetlands (primarily in Florida but also some in Georgia and South Carolina). Wood storks regularly occur in western Mississippi in those counties bordering the Mississippi River as post-breeding birds dispersing from their nesting colonies in Mexico or the other southeastern U.S. states (NatureServe 2021). Bent (1926) reported the only known record of wood storks nesting in Mississippi at Rodney (Claiborne County) with no details. In June of 1997, Mueller and McCabe (1997) reported six wood storks nesting in a large wading bird colony (nine species) at Jones Lake in Warren County, Mississippi; however, the nests were abandoned days later and actual production of young at this location was never confirmed. Wood storks have been observed with increasing frequency in some counties along the eastern edge of the state, although they may occur almost anywhere there are sloughs or swamps to provide feeding habitat (MMNS 2014).

Some of the small ponds, shallows of larger ponds, and open wetlands in the Project area appear to provide marginally suitable foraging habitat for wood storks (Figure 4), to the extent that water levels are acceptable, small fish are present in sufficient quantities, and aquatic vegetation is not too dense. Although wood storks have not been observed in the Project area, wood storks are routinely observed foraging in swamps, sloughs, and wetlands around Columbus Lake, approximately seven miles southeast of the Optimist site, and the old Tombigbee River Channel (eBird 2021). This suggests that site wetlands provide sub-optimal foraging habitat. However, as previously noted, there are no known/confirmed breeding colonies of wood storks in Mississippi.

Mussels

As previously noted, the Project lies within the Tombigbee River drainage, which encompasses approximately 6,025 square miles in northeast and eastern Mississippi. Major rivers of this system are the Buttahatchee River, Noxubee River, Sucarnoochee River, Town Creek (West Fork Tombigbee River), Bull Mountain Creek, Tibbee Creek (the Project is located within this watershed), and Luxapallila Creek. The Tombigbee River drainage has (or had) the largest number of mussel species (51) in Mississippi, including the federally listed *Theliderma stapes*; *Epioblasma penita*; *Hamiota perovalis*; *Medionidus acutissimus*; *Pleurobema curtum*; *P. decisum*; *P. marshalli*; *P. perovatum*; and *P. taitianum*. Of these, *Theliderma stapes*, *Pleurobema curtum*, *P. marshalli*, and *P. taitianum* are no longer found within the state (Jones et al. 2019).

The Southern combshell is a small to moderately-sized mussel (up to 3 inches in length) with a triangular to elliptical, moderately inflated shell that is tawny to greenish in color with white nacre. It occurs in small-to-large rivers in moderate-to-swift current in sand and sand/gravel substrates. The Southern combshell now is only known to occur in parts of the Buttahatchee River in Mississippi and Alabama (MMNS 2014; Jones et al. 2019).

The orangenacre mucket is a moderately-sized mussel (up to 3.5 inches in length) with an oval to elliptical, moderately inflated shell that is light brown to dark reddish-brown in color (sometimes with green rays) and white to pinkish orange nacre. It is found in medium-sized creeks to large coastal plain rivers in depositional areas along riffles or pools with current in sand and sand/gravel substrates. This species currently is known from the Buttahatchee River, Yellow Creek (Lowndes County), and a small segment of the East Fork Tombigbee River in Mississippi and in the Sipsey and Little Cahaba rivers in Alabama (MMNS 2014; Jones et al. 2019).

The Alabama moccasinshell is a very small mussel (< 1.5 inches in length) with an elliptical, moderately inflated shell that is yellow to brownish-yellow with broken green rays over the entire surface of the shell and white to salmon nacre. It occurs in medium-sized streams to rivers in slow-to-strong current in gravel substrates. The Alabama moccasinshell is known from three rivers in Mississippi: the Buttahatchee River, Luxapallila Creek, and a tributary of Luxapallila Creek (MMNS 2014; Jones et al. 2019).

The inflated heelsplitter is a large (maximum length approximately 6 inches), moderately inflated, thin-shelled mussel with an olive brown to dark brown/black periostracum, which usually has no rays. Its shell shape is generally triangular with dorsal wings and has bluish nacre in females and young males and purple in large males. This species generally inhabits large rivers below the Fall Line but is occasionally found in smaller rivers. On rare occasions, it has been found in reservoirs. This species was found in the Pearl River at Jackson, Mississippi, in the past but no longer occurs there. There are recent records from the Pearl River in Louisiana, so it is likely that this species also occurs in the lower Pearl River in Mississippi. The few recent records in Mississippi are primarily from the East Fork Tombigbee River in Itawamba, Lowndes, and Monroe counties (MMNS 2014; Jones et al. 2019).

The black clubshell is a small mussel that may grow to 2 inches in length, has a subtriangular shell inflated in front, and has a green to a dark greenish-brown color with bluish-white, iridescent nacre. This species is found in medium-to-large rivers in sand and sand/gravel substrates, often in waters less than five feet deep. In Mississippi, the black clubshell occurs only in a segment of the East Fork Tombigbee River in Monroe and Itawamba counties (MMNS 2014; Jones et al. 2019).

The Southern clubshell is a small mussel (up to 2.75 inches in length) with a triangular to elliptical, anteriorly-inflated shell that is tawny to dark brown in color with broken green rays or concentric bands and white nacre. It is found in medium-sized to large streams usually in deep runs with slow current in gravel and sand, and is occasionally found in shallow shoals in strong current or in pools. It is rarely found in large rivers today. In Mississippi, the Southern clubshell still survives in a few locations on the Buttahatchee River and the East Fork of the Tombigbee River (MMNS 2014; Jones et al. 2019).

The flat pigtoe is a small mussel (up to 2.5 inches in length) with a rounded sub-ovate to obliquely elliptical, moderately-inflated shell that is yellow-brown to dark brown in color and white to creamy-white nacre. It is found in large river shoals with moderate to swift current in sand and gravel substrate. This species once occurred in the Tombigbee River in Mississippi and Alabama but is now believed to be extinct (MMNS 2014; Jones et al. 2019).

The ovate clubshell is a small mussel (up to 2.0 inches in length) with an oval, moderately inflated shell that is yellow to dark brown and may occasionally have broad green rays that cover most of the beak and posterior ridge and white nacre. It prefers stable sand and gravel substrates in shoals and runs of large streams and rivers with moderate current and depths of less than three feet. In Mississippi, the ovate clubshell occurs in the Buttahatchee River and Yellow Creek (Lowndes County) (MMNS 2014; Jones et al. 2019).

The heavy pigtoe is a small mussel (up to 2.0 inches in length) with an obliquely triangular, inflated shell that is brown to brownish-black in color with white to bluish white nacre. It occurs in rivers and large creeks in gravel shoals in moderate current. The heavy pigtoe was last seen in Mississippi at one locality in the Buttahatchee River in 1987 (MMNS 2014; Jones et al. 2019).

The monkeyface is a moderately-sized mussel (up to 4.3 inches in length) with a quadrate to rhomboid, moderately-inflated shell covered in large, high, and elongated knobs and small tubercles. The periostracum color is tawny to greenish brown to dark brown often with green chevrons and triangles (especially in young individuals), and the nacre color is white. This species is found in medium-sized to large rivers in moderate current of gravel and sand substrates. In Mississippi, the monkeyface was known only from the old Tombigbee River channel before the river was destroyed by the Tennessee-Tombigbee Waterway and from the lower part of the Buttahatchee River. The last confirmed specimen in Mississippi was collected in 1980. A single specimen was reported during surveys of the East Fork Tombigbee River in 2010 - 2011, but this discovery has not been confirmed (MMNS 2014; Jones et al. 2019).

The stirrupshell is a small mussel (maximum length of approximately 2.5 inches) with a triangular, somewhat compressed shell that is yellowish-green to olive to brown in color with dark olive chevrons and triangles and white nacre. It inhabits shoals of large rivers with moderate to swift current over clean gravel substrates. The stirrupshell once occurred in the Tombigbee River in Mississippi and Alabama, and the Black Warrior and Alabama Rivers in Alabama. It is now presumed to be extinct (MMNS 2014; Jones et al. 2019).

The delicate spike is a moderately-sized mussel (up to 3.5 inches long) with an elliptical, elongate, and slightly compressed shell that is dark olive to brown to black with bluish-white-to-purplish nacre. The delicate spike occurs in rivers and moderately-sized creeks with moderate to strong currents in sand, cobble, or gravel substrate. In Mississippi, the delicate spike has been found in the Pearl, Pascagoula, and Tombigbee river drainages. It is known from a very small number of specimens collected from seven sites (MMNS 2014).

Fishes

The Alabama sturgeon is the smallest of all the North American sturgeons and typically only grows to approximately 31 inches in length and approximately 2 to 4 pounds in weight as an adult. It has a broad and flattened head with a shovel-like snout, with four barbels in front of the mouth that aid in locating prey. The species' preferred habitat appears to be the main channels of large Coastal Plain rivers with moderate-to-swift currents and stable gravel and sand substrates (Boschung and Mayden 2004).

The Alabama sturgeon was once found below the Fall Line in all the major rivers in the Mobile Basin, including the Alabama, Tombigbee, and Cahaba River systems. Never abundant, the species experienced a significant decline after 1970 (USFWS 2013). Since 2000, only three specimens have been collected or observed: one was caught, photographed, and released by a fisherman in the lower Cahaba River in 2000;

one was captured, tagged, and released in the lower Alabama River by the Alabama Department of Conservation and Natural Resources (ADCNR) biologists in 2007; and one was observed by ADCNR biologists in the lower Alabama River in 2009 (USFWS 2013). Although the species has eluded capture in recent years, Alabama sturgeon DNA was detected in 2014 and 2015 in multiple water samples collected from the Alabama River by researchers from the University of West Florida and the ADCNR. The species is believed extirpated from Mississippi (Kuhajda and Rider 2016; AL.com 2019).

The crystal darter is a slender darter (up to 6 inches long) with a relatively large and flat head and narrow caudal peduncle. It has four brown saddles on the back and the sides have a row of oblong dark brown blotches. Crystal darters inhabit large streams over clean sand and gravel in water deeper than two feet. It has been known to occur over remnant gravel patches (often near tributary confluences) in the altered main channel of the Tennessee-Tombigbee Waterway. In Mississippi, the crystal darter occurs in the Bayou Pierre, Homochitto, Pearl, and Tombigbee watersheds. The species formerly occurred in the Pascagoula River watershed of Mississippi as well but has not been collected there since the 1930s (MMNS 2014).

The frecklebelly madtom is a small catfish (maximum length of approximately 3.5 inches) with four dark brown, saddle-shaped blotches over a mottled, light brown ground color, and speckled abdomen with widely spaced brown spots. The frecklebelly madtom prefers stable gravel or cobble riffles and rapids in both the main river channels and in their larger tributaries. In Mississippi, this species occurs in major tributaries of the highly altered Tombigbee River, although surveys indicate that it no longer occurs in the main channel. It is relatively common throughout lower portions of the Pearl River drainage in the state (MMNS 2014).

Reptiles

The black-knobbed map turtle is a medium-sized aquatic turtle with adult females reaching lengths of 7.5 inches; adult males are smaller and average 3 - 4 inches. It has prominent black, knob-like projections on the center ridge of the carapace. The carapace varies from greenish-olive to brown and has narrow yellow or white circles on the costal scutes, and the skin is black with yellow stripes on the head, neck, tail, and legs, with a pair of crescent-shaped yellow bars behind the eyes. The black-knobbed map turtle prefers large streams and rivers with relatively fast current, numerous basking logs, and abundant sandbar areas for nesting. These streams must be wide enough to allow sunlight to reach basking sites for several hours per day. In Mississippi, this species occurs in the Tombigbee River system in Lowndes, Clay, Noxubee, Monroe, and Itawamba counties (MMNS 2014).

Field Habitat Assessment and Survey

The assessments/surveys were conducted on April 14–15 and 25–27, 2021. During the surveys, the weather was dry with temperatures in the 50s and 60s °F. After these surveys were performed, a minor land swap was proposed; therefore, an additional survey was conducted on July 22–23. The weather was overcast and rainy with temperatures in the 80s. Photo-documentation of the areas surveyed is presented in Appendix C.

Terrestrial Habitat

The terrestrial habitat in the study area generally fell into four major categories: agricultural (row crops and pasture), old field, riparian/alluvial forest, and upland forest. Some wetlands were present in the study area, but they were a minor component (approximately 1.5 percent) of the overall habitats in the study

area. All of the terrestrial habitats were disturbed (some more so than others); no mature, undisturbed habitats were present.

Most of the terrestrial habitats (73.5 percent) in the Project area were agricultural, consisting of row crops, fallow fields, and pasture (cattle observed in most pasture areas). Forested areas were the next most common terrestrial habitat type, consisting of riparian/alluvial woods (15.5 percent) and an area of upland forest (1.1 percent). The riparian/alluvial woods (which included fence lines) were generally disturbed. They were dominated by a canopy consisting mostly of sugarberry, Osage orange, and green ash; a shrub layer dominated by coralberry and poison oak; and an herbaceous layer dominated by autumn bluegrass, Cherokee sedge, butterweed, calico aster, river-oats, and fleabane. The upland forest was a small, dense, more-mature forested area associated with a quail hunting club. It was dominated by a canopy of post oak, black oak, water oak, southern red oak, and hop-hornbeam. Commonly observed understory vegetation included coralberry; deciduous holly; blackberry; bullbrier; Virginia creeper; poison ivy; coralbead; common greenbrier; upland sedges; witchgrasses; fleabane; and common goldenrod. The least-common terrestrial habitat type observed in the study area was old field (7.8 percent). This habitat was primarily associated with the quail hunting club and appeared to be managed (including prescribed burns) for quail habitat, consisting of open fields (herbaceous vegetation) with some shrubs and small trees. Dominant vegetation in this area included bushy bluestem, hairy buttercup, broomsedge, and tall fescue.

No suitable habitat was found in any of these terrestrial habitats for Price's potato bean. There were no chalk outcrops or limestone areas on ravine slopes that grade into creeks or streams, and the forested areas in the Project area were small, dense, and surrounded by agricultural areas; therefore, no suitable habitat was present. Suitable habitat also was not found at the existing substation site for Price's potato bean (or for any of the other target species).

Aquatic Habitat

Aquatic habitat included the mainstems of Town, McGee, and Spring creeks and their tributaries, as well as wetlands/open waters areas.

No suitable habitat for the target species was found in the creeks/streams within the Project area. All of the streams were moderately-sized or smaller; no rivers or shoal/riffle areas were present. Additionally, habitat in the largest streams (mainstems) was severely degraded. The channels were deeply incised with unstable, eroding banks, and sedimentation was extensive with silt, sand, and areas of exposed (scoured) claypan. No riffles were observed, and currents were generally low. Wetted widths ranged from approximately 10 to 25 feet, and depths appeared to be mostly less than 5 feet. Vegetated riparian areas were mostly narrow and surrounded by agricultural fields. The smaller streams also were degraded with incised channels, extensive sedimentation, and no riffles and little rocky substrate. Most streams had very turbid water.

Cattle have access to many sections of streams within the Project area and have contributed significantly to the observed habitat and water quality degradation.

Some of the small ponds, shallows of larger ponds, and open wetlands in the Project area (approximately 12.3 acres) appear to provide marginally suitable foraging habitat for wood storks, to the extent that water levels are acceptable and aquatic vegetation is not so dense as to interfere with stork foraging (Figure 4). As previously noted, there are no known/confirmed breeding colonies of wood storks in Mississippi.

Effect Determination

The effect determinations are based on the fact that protected species and their habitat were not observed during the field surveys; therefore, Project activities within the survey boundary are not anticipated to impact these species. Based on the data collected in the field and species habitat requirements, the following effect determinations were made for the federally protected target species:

“May affect, not likely to adversely affect”

- wood stork

“No effect”

- Price’s potato bean;
- Alabama sturgeon;
- Southern combshell;
- orangenacre mucket;
- Alabama moccasinshell;
- inflated heelsplitter;
- black clubshell;
- Southern clubshell;
- flat pigtoe;
- ovate clubshell;
- heavy pigtoe;
- monkeyface;
- stirrupshell.

The project is expected to have no impact on the state-protected target species (delicate spike, crystal darter, frecklebelly madtom, and black-knobbed map turtle).

5.0 REFERENCES

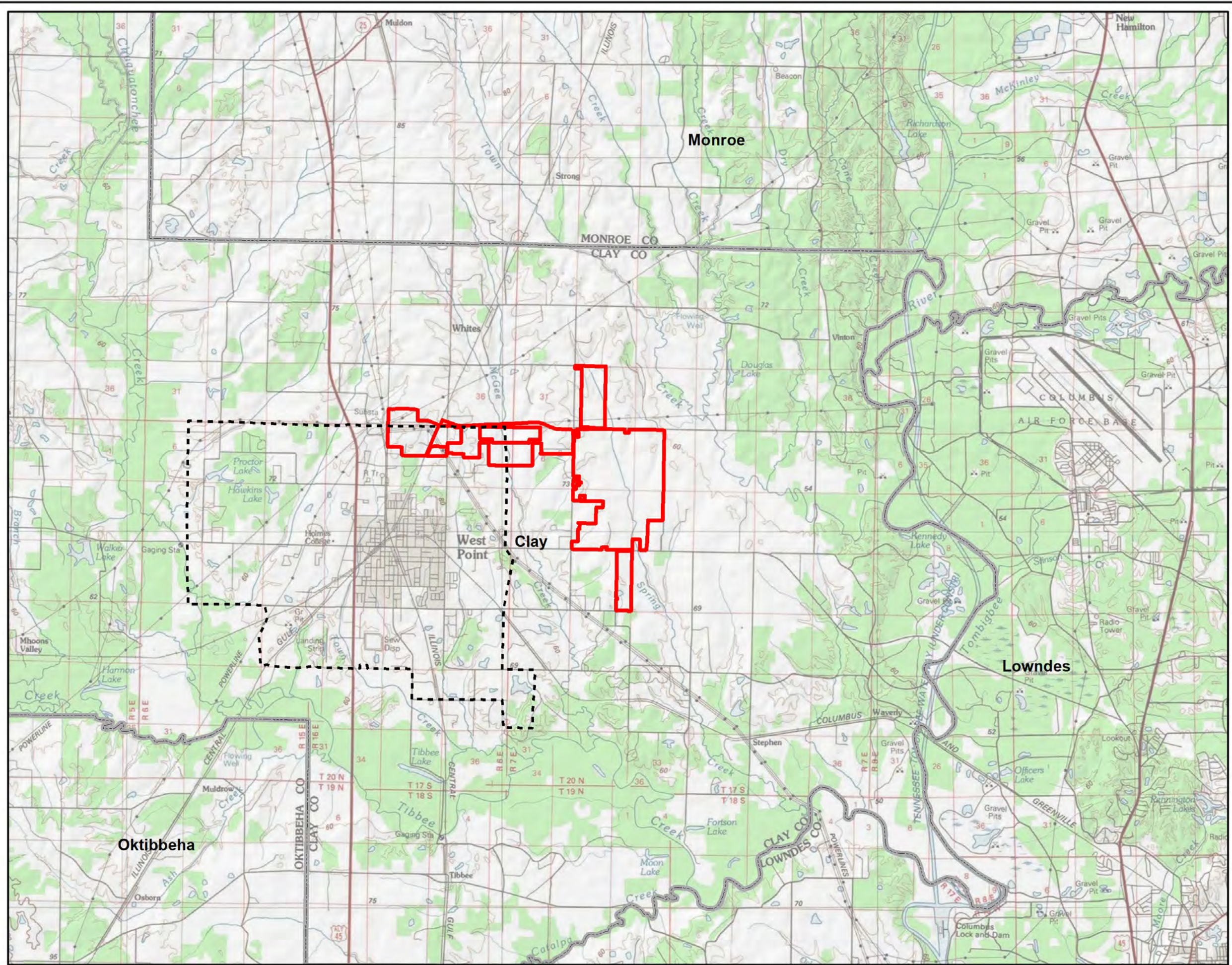
- AL.com. 2019. Search continues for the Alabama sturgeon, one of the rarest fish on earth.
<https://www.al.com/news/2019/10/search-continues-for-the-alabama-sturgeon-one-of-the-rarest-fish-on-earth.html>.
- Animal Diversity Web. 2021. Species account: Black-Knobbed Map Turtle (*Graptemys nigrinoda*).
https://animaldiversity.org/accounts/Graptemys_nigrinoda/
- Audubon (National Audubon Society). 2021. Bewick's Wren (*Thryomanes bewickii*)
<https://www.audubon.org/field-guide/bird/bewicks-wren>
- Bent, A.C. 1926. Life Histories of North American Marsh Birds. Smithsonian Institution. U.S. Natl. Mus. Bull. 135.
- Boschung, H.T. and R.L. Mayden. 2004. Fishes of Alabama. Smithsonian Books. Washington, DC.
- Conant, R. and J.T. Collins. 1991. A Field Guide to Reptiles and Amphibians, Eastern and Central North America. The Peterson Field Guide Series, Third Edition. Houghton Mifflin Company, Boston, MA.
- Cronquist, A. 1980. Vascular Flora of the Southeastern United States, Vol. I. Asteraceae. The University of North Carolina Press, Chapel Hill, NC.
- Dockery III, David. T., and D. E. Thompson. 2019. Mississippi Environmental Geology. Mississippi Department of Environmental Quality, Jackson, MS. Accessed April 2021.
<https://www.mdeq.ms.gov/wpcontent/uploads/2019/03/EnvironmentalGeologyOfMississippi.pdf>.
- eBird. 2021. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, NY. Available: <http://www.ebird.org>.
- Godfrey, R. K.K., and J. W. Wooten. 1979. Aquatic and Wetland Plants of Southeastern United States, Monocotyledons. University of Georgia Press, Athens, GA.
- Godfrey, R. K.K., and J. W. Wooten. 1981. Aquatic and Wetland Plants of Southeastern United States, Dicotyledons. The University of Georgia Press, Athens, GA.
- Invasive.org. 2021. Mississippi Noxious Weeds. A joint project of the University of Georgia - Center for Invasive Species and Ecosystem Health, USDA Animal and Plant Health Inspection Service, USDA Forest Service, USDA Identification Technology Program, and USDA National Institute of Food and Agriculture.
- Isley, D. 1990. Vascular flora of the Southeastern United States, Vol.3, Part 2. *Leguminosae (Fabaceae)*. The University of North Carolina Press, Chapel Hill, NC
- Jensen, J.B., C.D. Camp, W. Gibbons, and M.J. Elliott. 2008. Amphibians and Reptiles of Georgia. The University of Georgia Press, Athens, GA.
- Jones, R.L., M.D. Wagner, W.T. Slack, S. Peyton, and P. Hartfield. 2019. Guide to the Identification and Distribution of Freshwater Mussels (*Bivalvia: Unionidae*) in Mississippi. Prepared for the Mississippi Department of Wildlife, Fisheries, and Parks, Jackson, MS.
- Kral, R. 1983. A Report on Some Rare, Threatened, or Endangered Forest-Related Vascular Plants of the South. Technical Publication R8-TP 2. USDA Forest Service, Atlanta, GA.

- Kuhajda, B.R., and S.J. Rider. 2016. Status of the imperiled Alabama Sturgeon (*Scaphirhynchus suttkusi* Williams and Clemmer, 1991). *Journal of Applied Ichthyology*, Volume 32, Issue S1. Pages 15-29.
- Miller, J.H. 2003. Nonnative Invasive Plants of Southern Forests: A Field Guide for Identification and Control. General Technical Report SRS-62. United States Forest Service, Southern Research Station, Asheville, NC.
- MMNS (Mississippi Museum of Natural Science). 2014. Endangered Species of Mississippi. Mississippi Department of Wildlife, Fisheries, and Parks, Mississippi Museum of Natural Science, Jackson, Mississippi.
- MNHP (Mississippi Natural Heritage Program) 2021a. "Heritage Program." Accessed September 2021. <https://www.mdwfp.com/museum/seek-study/natural-heritage-program/>.
- MNHP (Mississippi Natural Heritage Program). 2021b. Heritage Spatial Data Request. Accessed via email correspondence with Nicole Hodges and Quentin Fairchild (Database Manager) on May 10, 2021.
- Mueller, A.J and C.A. McCabe. 1997. Possible nest attempt by Wood Storks in Mississippi. *The Mississippi Kite*, Vol. 27 (2), December 1997. Pages 18-20.
- Murie, O.J. 1974. *A Field Guide to Animal Tracks*. The Peterson Guide Series, Second Edition. Houghton Mifflin Company, New York, NY
- NatureServe. 2021. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, VA. Available <http://www.natureserve.org/explorer>.
- Ogden, J.C. 1990. Habitat Management Guidelines for the Wood Stork in the Southeast Region. Southeast Region, U.S. Fish and Wildlife Service.
- Peterson, R.T. 1980. *A Field Guide to the Birds: A Completely New Guide to All the Birds of Eastern and Central America*. The Peterson Guide Series, Houghton Mifflin Company, New York, NY.
- Radford, A. E., H. E. Ahles, and C. R. Bell. 1968. *Manual of the Vascular Flora of the Carolinas*. The University of North Carolina Press, Chapel Hill, NC.
- Ross, S.T. 2001. *The Inland Fishes of Mississippi*. University Press of Mississippi.
- Ruth, J.M. 2015. Status Assessment and Conservation Plan for the Grasshopper Sparrow (*Ammodramus savannarum*). Version 1.0 U.S. Fish and Wildlife Service, Lakewood, Colorado. 109 pp.
- Small, J. K. 1933. *Manual of the Southeastern flora*. Published by the author. New York, NY.
- Tetra Tech. 2021. Wetland Delineation Report. Origis Energy Optimist Solar + Battery Energy Storage System, Clay County, Mississippi. August 25, 2021.
- TVA (Tennessee Valley Authority). 2021. Heritage Database Query. Accessed via email correspondence with Caitlyn Fitzpatrick (NEPA Specialist) on April 6, 2021.
- USFWS (United States Fish and Wildlife Service). 1990. Endangered and Threatened Wildlife and Plants Threatened Status for *Apios Priceana* (Price's Potato-bean); Final Rule. 50 CFR 17, Federal Register (January 5, 1990), Vol. 55, No. 4, Pages 429-433.
- USFWS. 1993. Recovery Plan for Price's Potato-bean (*Apios priceana*). Jackson, MS. USFWS. 1996. Revised Recovery Plan for the U.S. Breeding Population of the Wood Stork. Atlanta, GA.

- USFWS. 2012. Frequently Asked Question About Invasive Species. Accessed September 2021.
<https://www.fws.gov/invasives/faq.html#:~:text=A%3A%20To%20understand%20what%20an%20invasive%20species%20is%2C,species%2C%20that%20is%20not%20native%20to%20that%20habitat.>
- USFWS. 2013. Recovery Plan for the Alabama Sturgeon, *Scaphirhynchus suttkusi*. Daphne, AL.
- USFWS. 2021. The Information, Planning, and Consultation System (IPaC System). Accessed May 17, 2021. <https://www.fws.gov/ipac/>
- Weakley, A.S. 2020. Flora of the southeastern United States. University of North Carolina Herbarium, North Carolina Botanical Garden. <http://herbarium.unc.edu/flora.htm>.
- Williams, J.D., A.E. Bogan, and J.T. Garner. 2008. Freshwater Mussels of Alabama and the Mobile Basin and Tennessee. The University of Alabama Press, Tuscaloosa, AL.

APPENDIX A

FIGURES



Legend

- Site Boundary
- County Boundary
- City of West Point

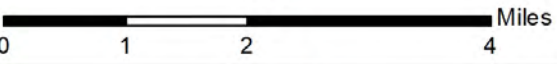
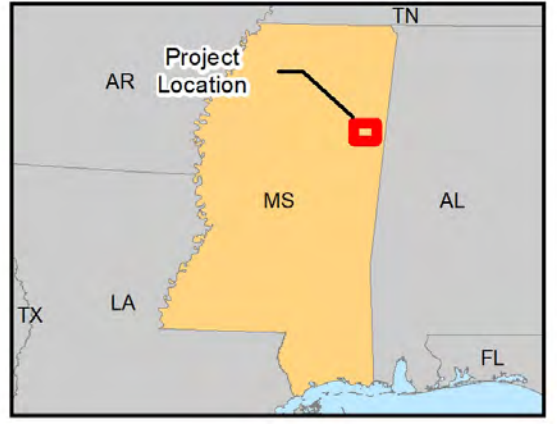


Figure 1
Site Location Map
Optimist Solar Facility
Clay County, MS

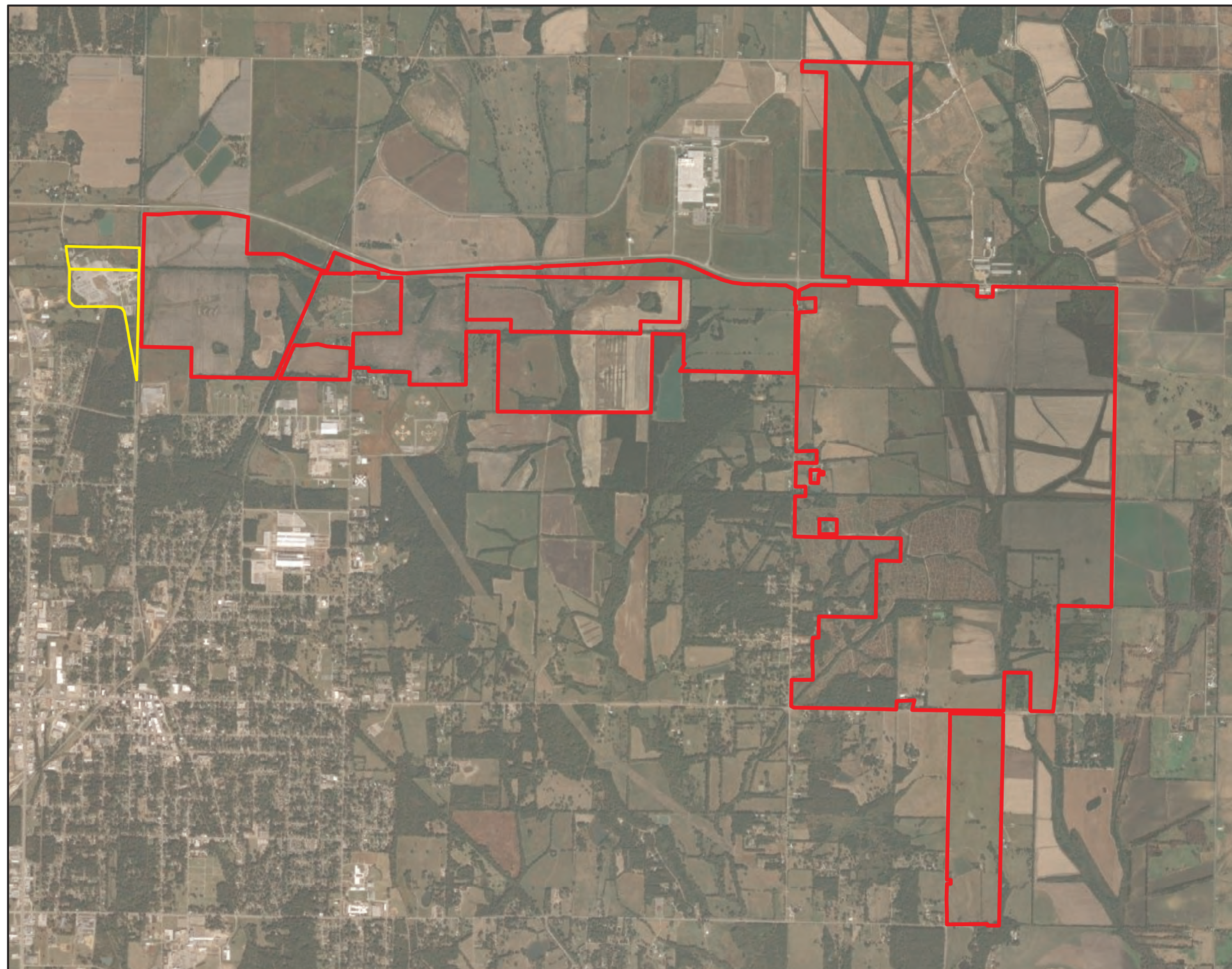
Prepared For:

Prepared By: TETRA TECH

Date:
08/2021

Source: Esri, et. al., 2020; Origis Energy, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

 Site Boundary


 Substation Parcels



Figure 2
Site Location - Aerial
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:

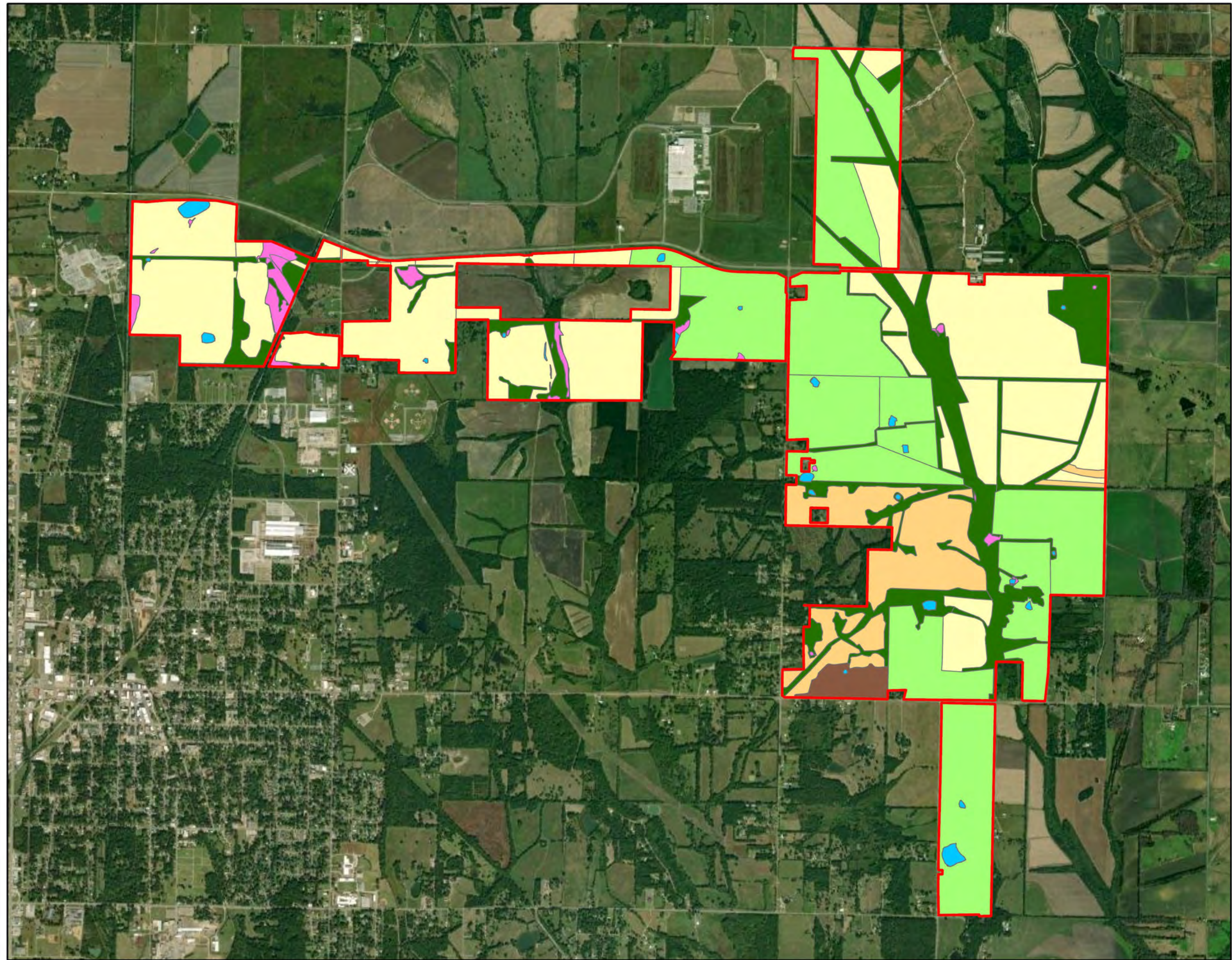


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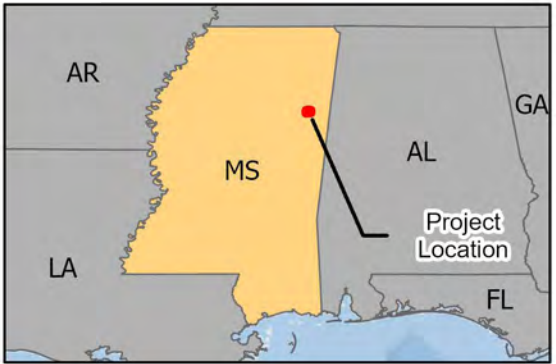
Source: Esri, et. al., 2020; Origis Energy, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

-  Survey Boundary
-  Impervious Surface
-  Old Field
-  Pasture
-  Open Water
-  Riparian/Alluvial Wood
-  Row Crop Agriculture
-  Upland Forest
-  Wetland Delineation



0 1,000 2,000 4,000 Feet

Figure 3
Habitat and Ecological Assessment Map
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:

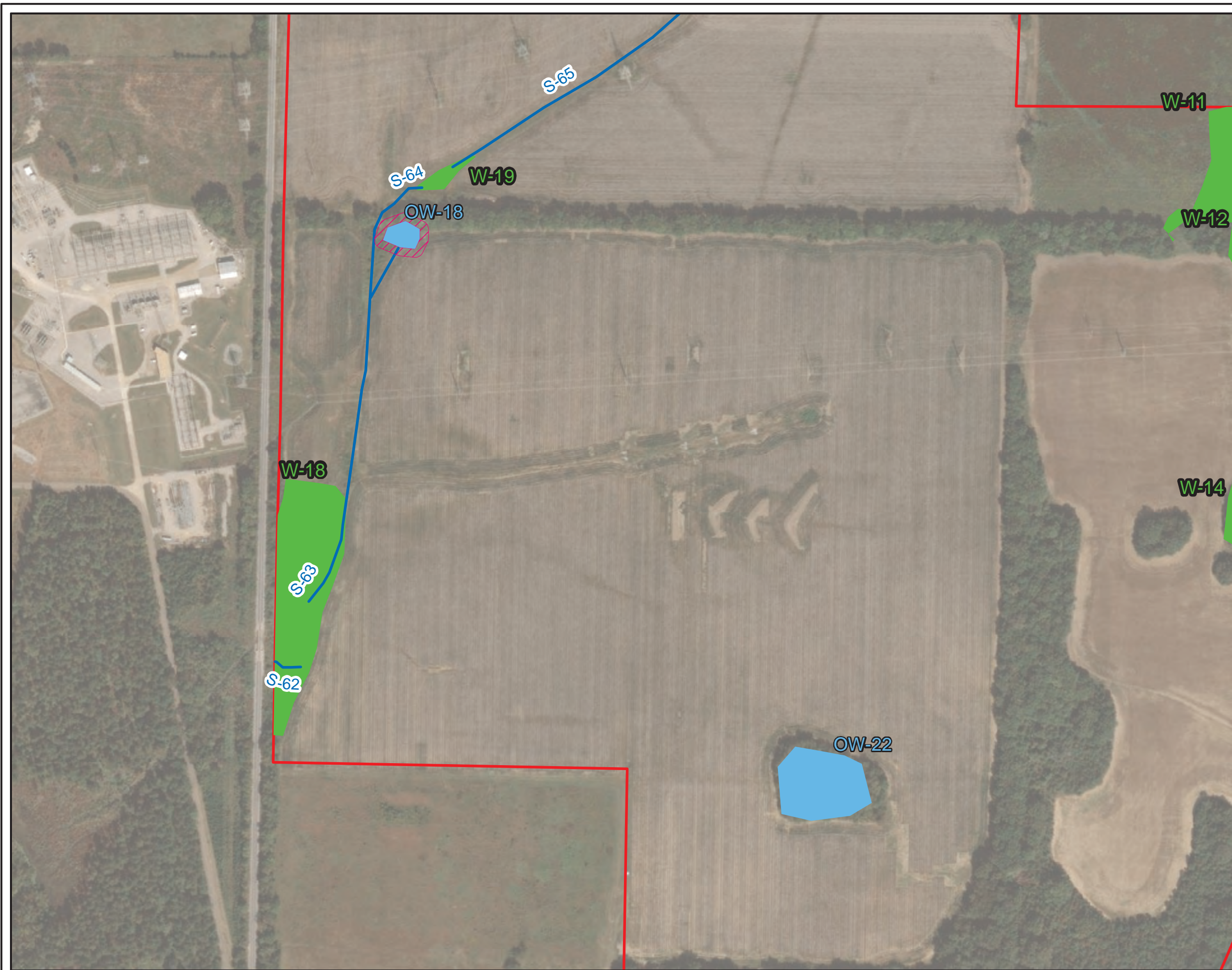


Date:

09/2021

Source: Esri et. al., 2021; Tetra Tech, 2021

Coordinate System: World Geodetic System, 1984
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Legend

- Site Boundary
- Delineated Open Waterbody
- Delineated Wetland
- Delineated Stream
- Wood Stork Foraging Habitat

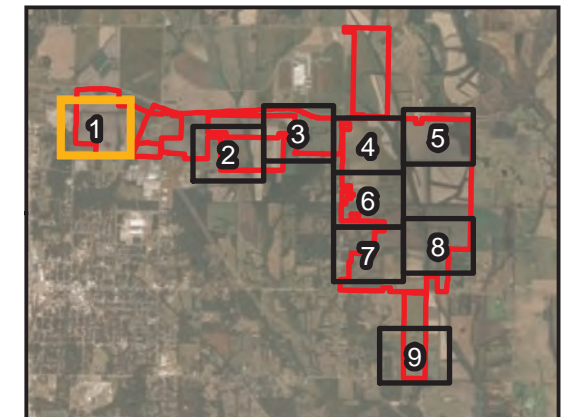


Figure 4-1
Wood Stork Foraging Habitat
Optimist Solar Facility
Clay County, MS

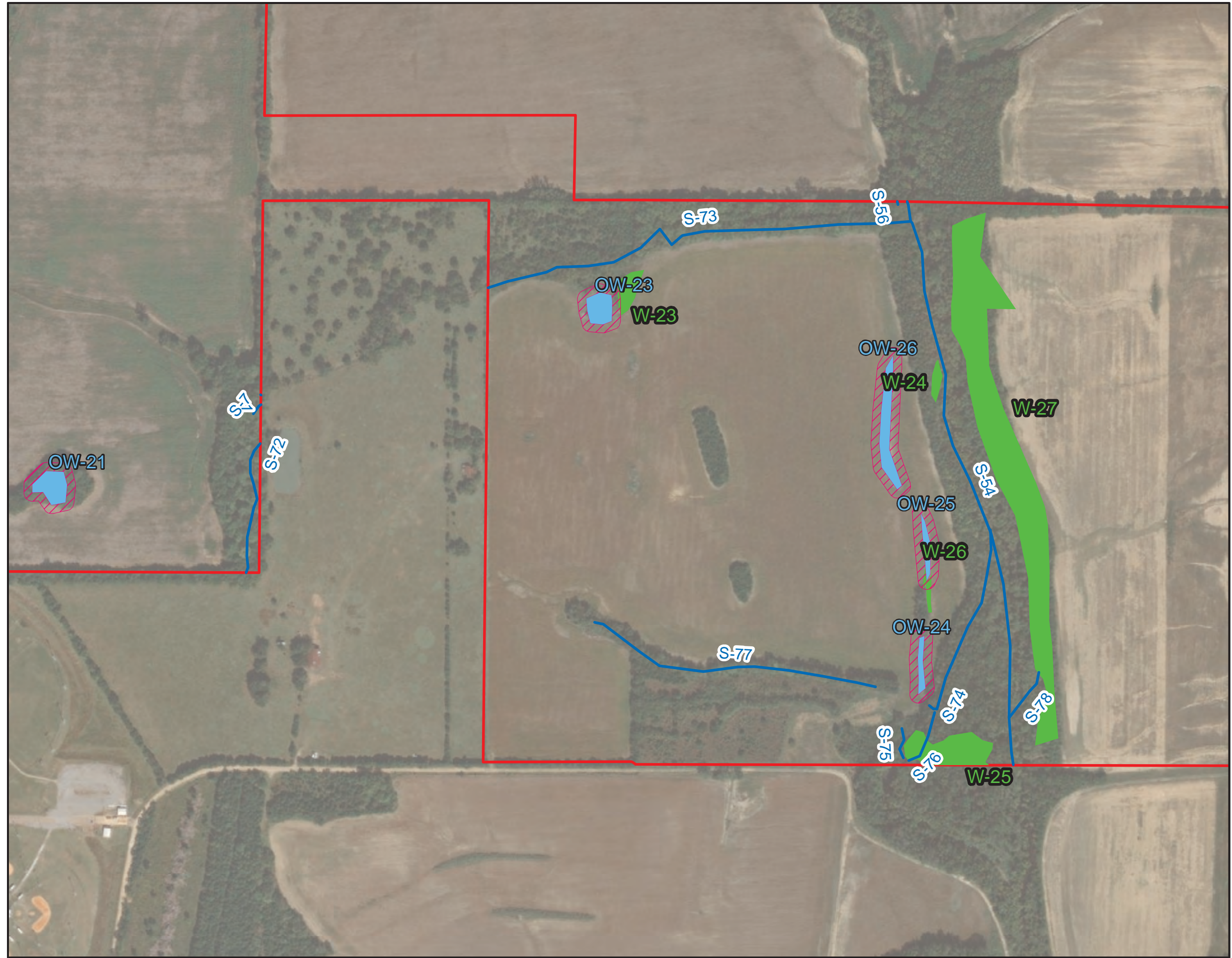
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Date:
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Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

- Site Boundary
- Delineated Open Waterbody
- Delineated Wetland
- Delineated Stream
- Wood Stork Foraging Habitat

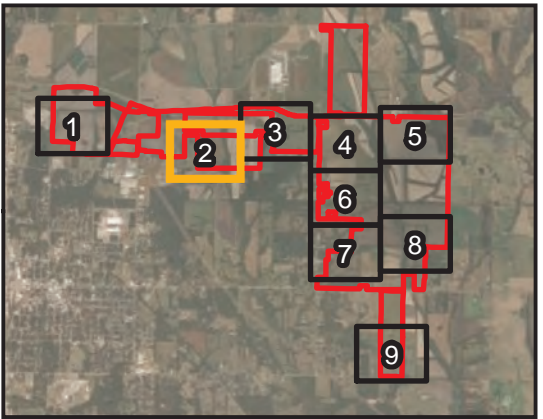


Figure 4-2
Wood Stork Foraging Habitat
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Clay County, MS

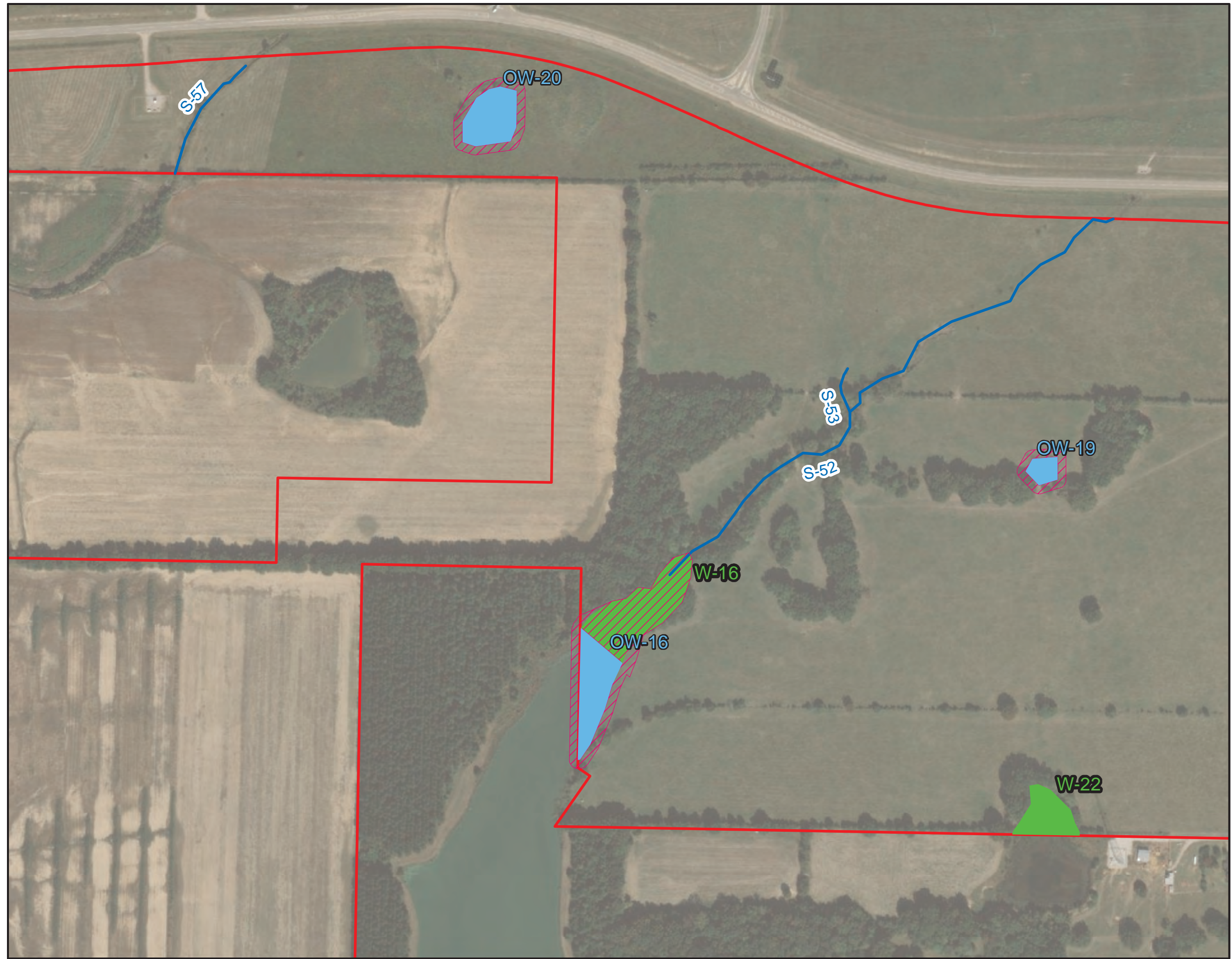
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Prepared By:

Date:
09/2021

Source: Esri, et. al., 2020; Origis Energy, 2020;
Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

-  Site Boundary
-  Delineated Open Waterbody
-  Delineated Wetland
-  Delineated Stream
-  Wood Stork Foraging Habitat

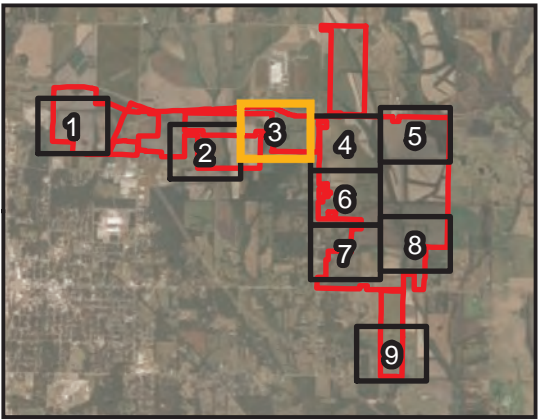



Figure 4-3
Wood Stork Foraging Habitat
Optimist Solar Facility
Clay County, MS

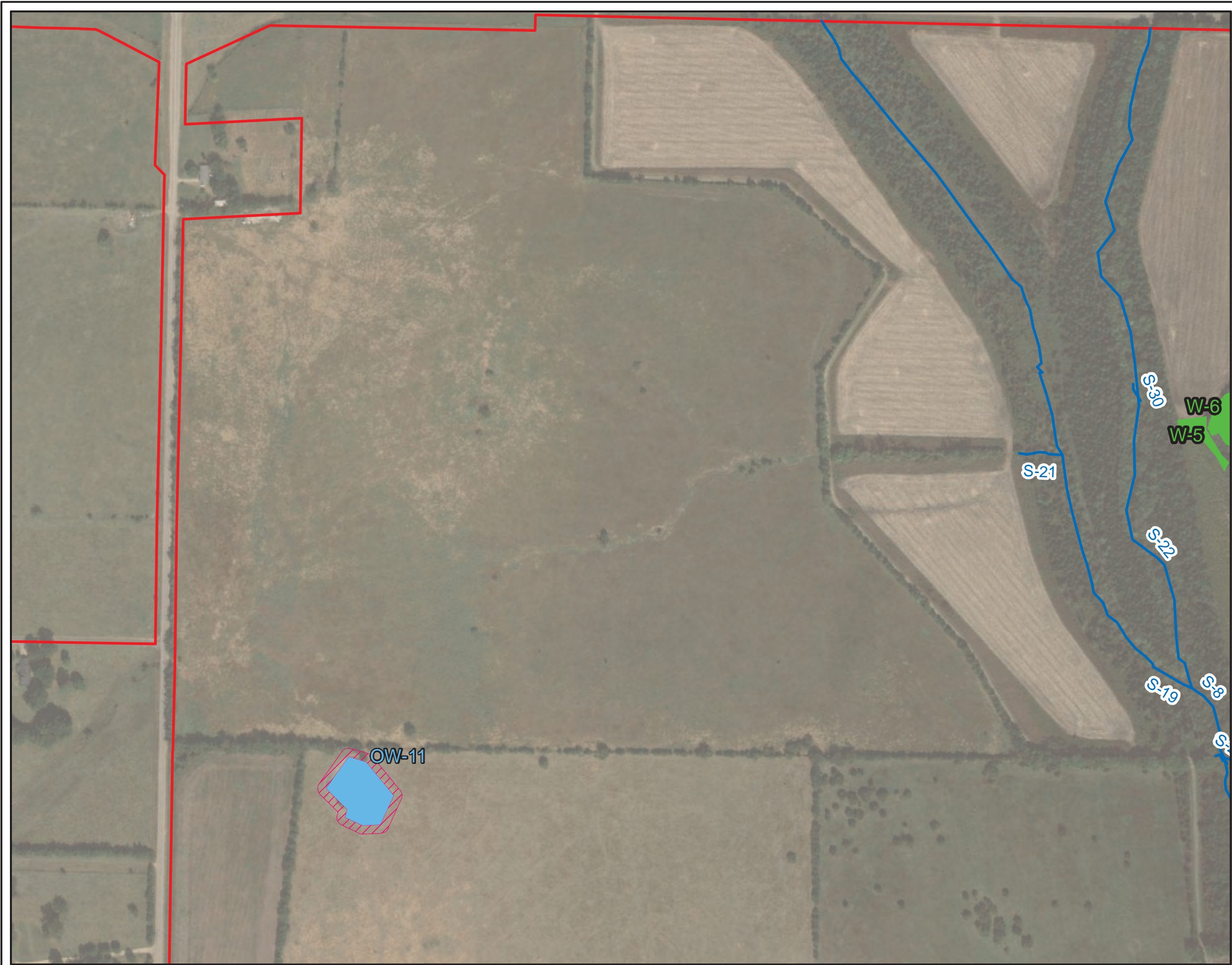
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Date:
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Source: Esri, et. al., 2020; Origis Energy, 2020;
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Universal Transverse Mercator, Zone 16 North



Legend

-  Site Boundary
-  Delineated Open Waterbody
-  Delineated Wetland
-  Delineated Stream
-  Wood Stork Foraging Habitat

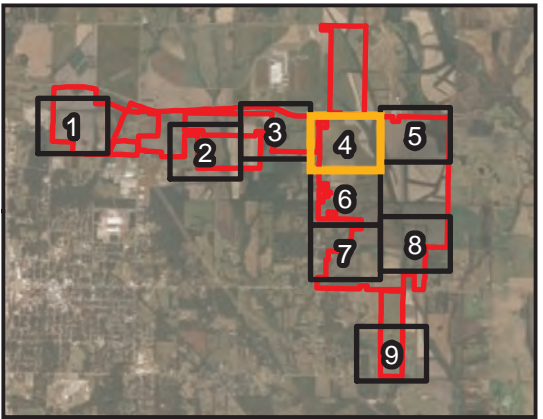



Figure 4-4
Wood Stork Foraging Habitat
Optimist Solar Facility
Clay County, MS

Prepared For: 

Prepared By: 

Date:
09/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

- Site Boundary
- Delineated Open Waterbody
- Delineated Wetland
- Delineated Stream
- Wood Stork Foraging Habitat

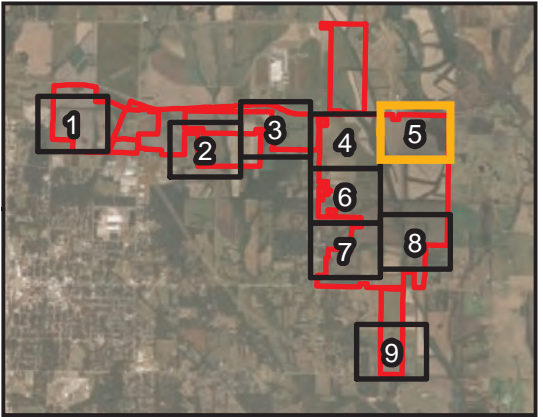



Figure 4-5
Wood Stork Foraging Habitat
Optimist Solar Facility
Clay County, MS

Prepared For: 
Origis Energy

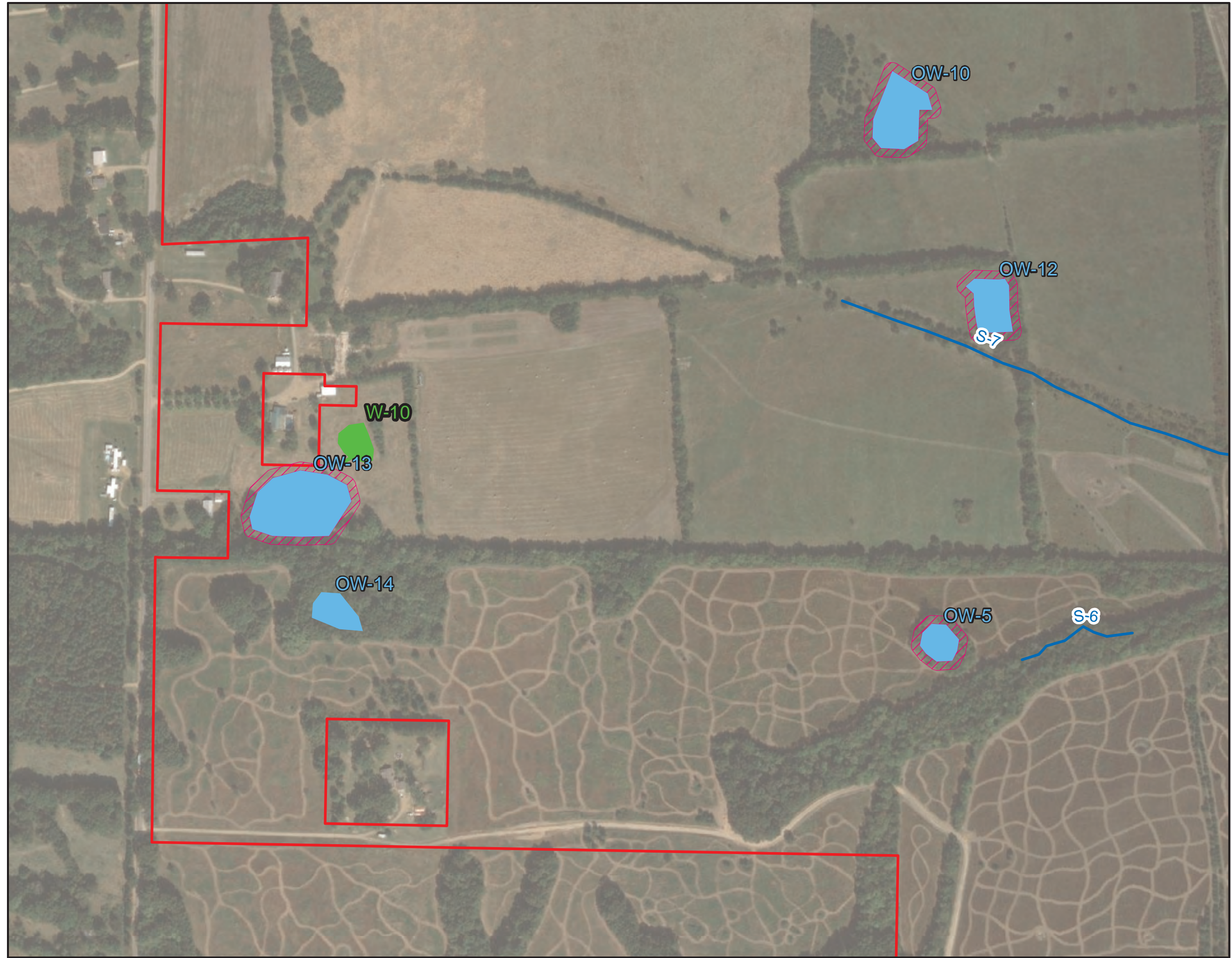
Prepared By: 

Date:
09/2021

Source: Esri, et. al., 2020; Origis Energy, 2020;
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Coordinate System: North American Datum, 1983
 Universal Transverse Mercator, Zone 16 North

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Legend

- Site Boundary
- Delineated Open Waterbody
- Delineated Wetland
- Delineated Stream
- Wood Stork Foraging Habitat

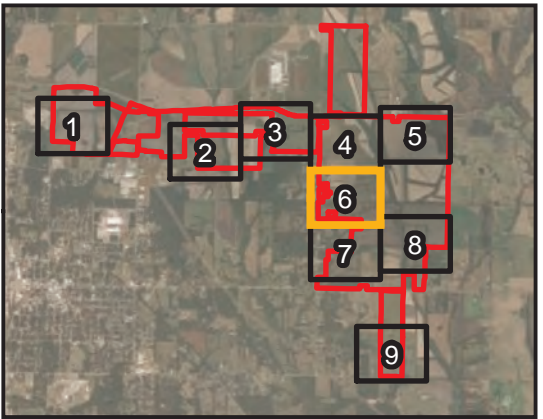



Figure 4-6
Wood Stork Foraging Habitat
Optimist Solar Facility
Clay County, MS

Prepared For: 

Prepared By: 

Date:
09/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

- Site Boundary
- Delineated Open Waterbody
- Delineated Wetland
- Delineated Stream
- Wood Stork Foraging Habitat

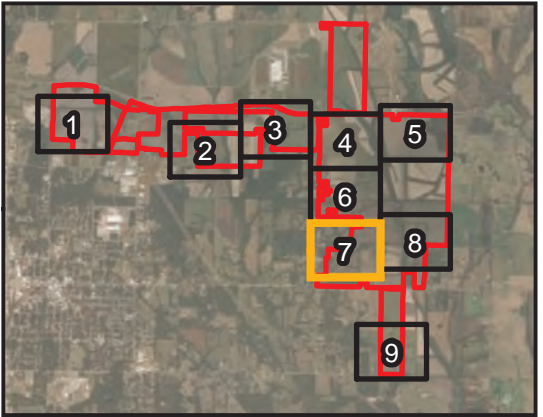



Figure 4-7
Wood Stork Foraging Habitat
Optimist Solar Facility
Clay County, MS

Prepared For: 
Origis Energy

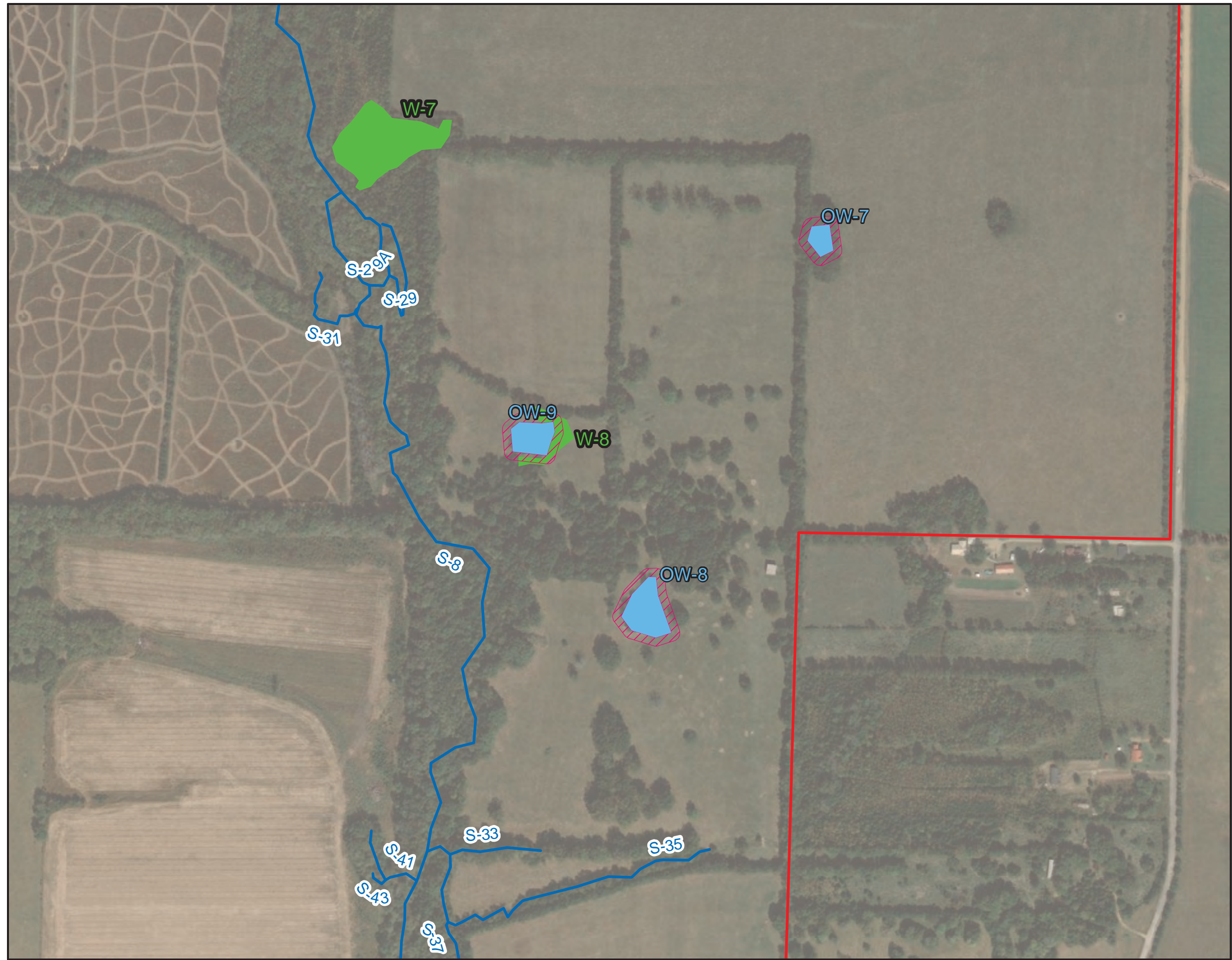
Prepared By:  **TETRA TECH**

Date:
09/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
 Universal Transverse Mercator, Zone 16 North

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Legend

-  Site Boundary
-  Delineated Open Waterbody
-  Delineated Wetland
-  Delineated Stream
-  Wood Stork Foraging Habitat

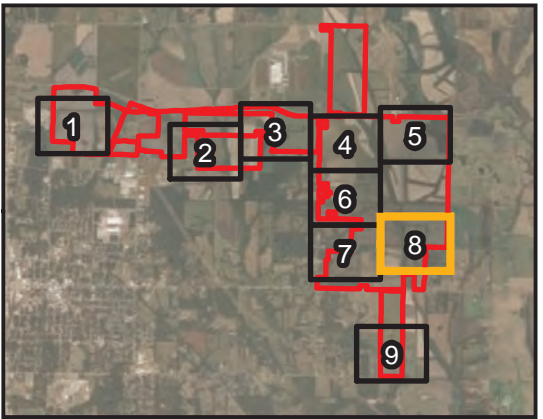



Figure 4-8
Wood Stork Foraging Habitat
Optimist Solar Facility
Clay County, MS

Prepared For: 
Origis Energy

Prepared By:  **TETRA TECH**




Date:
09/2021

Source: Esri, et. al., 2020; Origis Energy, 2020;
Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

-  Site Boundary
-  Delineated Open Waterbody
-  Wood Stork Foraging Habitat

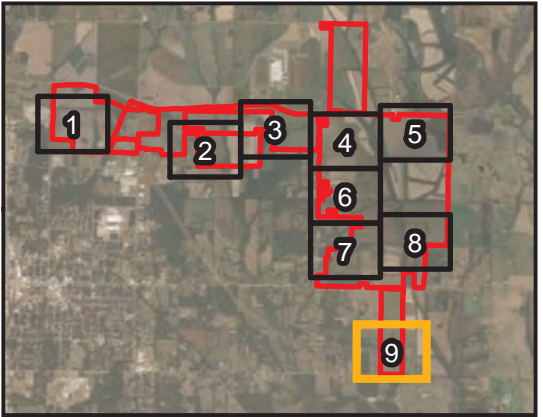



Figure 4-9
Wood Stork Foraging Habitat
Optimist Solar Facility
Clay County, MS

Prepared For: 

Prepared By: 

Date:
09/2021

Source: Esri, et. al., 2020; Origis Energy, 2020; Tetra Tech, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North

APPENDIX E

NLEB BAT HABITAT ASSESSMENT

FINAL

Bat Habitat Assessment

Origis Energy
Optimist Solar + Battery Energy Storage System
Clay County, Mississippi

October 12, 2021



Prepared for:



800 Brickell Avenue, Suite 1000
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1.0 INTRODUCTION

Origis Development, LLC (Origis) proposes to construct a utility-scale solar farm and associated infrastructure in Clay County, Mississippi. Origis contracted Tetra Tech, Inc. (Tetra Tech) to evaluate the suitability of habitat within the Project Area for bats. Tetra Tech evaluated all potential roosting and foraging habitats within the Project Area. This assessment emphasizes the Northern long-eared bat due to the bat's status as threatened under the Endangered Species Act (ESA) and because the Project is located within the bat's known geographic range and the U.S. Fish and Wildlife Service (USFWS) White Nose Syndrome (WNS) Zone.

The objectives of the habitat assessment were to:

- Evaluate habitat features within the Project Area for bats.
- Assess the likelihood of bat species occurring within the Project Area based on known distributions and habitat requirements of those in the region.

2.0 BACKGROUND

The Project area encompassed approximately 2,947 acres of land east of West Point, Mississippi (Appendix A). The Project area is drained by Spring Creek, McGee Creek, and Town Creek and is predominantly made up of cropland and pastureland, as well as emergent and forested wetlands. The Project area can be accessed from existing roads located off MS 50 to the south and Barton Ferry Road to the north.

2.1 Project Description

The Project area is characterized by gently rolling hills, with elevation ranging from approximately 190 feet above mean sea level (amsl) to approximately 260 feet amsl. The Project area is divided between two sections of the East Gulf Coastal Plain physiographic province, the Black Prairie section to the west and the Tombigbee and Tennessee River Hills section to the east (Dockery and Thompson 2019). The Black Prairie, so named for the high content of organic matter in the soil, is an important agricultural region that originally consisted of open prairie grasslands. The Tombigbee and Tennessee River Hills section comprises a hilly landscape developed on unconsolidated Cretaceous sands.

3.0 HABITAT ASSESSMENT METHODS

The habitat assessment followed the guidelines for Phase I habitat assessments as described in the "Range-Wide Indiana Bat Survey Guidelines" (USFWS 2020a).

3.1 Method

Prior to field work, a desktop analysis was performed using satellite imagery. Potentially suitable habitats were defined by three categories: summer roosting habitat, winter habitat, and foraging habitat. Northern long-eared bats arrive at hibernacula in August or September, begin hibernation in October and November, and exit hibernacula in March or April (USFWS 2013). Northern long-eared bats prefer

hibernacula with large entrances such as caves and mines, as well as less traditional hibernacula including dams, dry wells, and other man-made structures. Individuals may hibernate in cracks and crevices in hibernacula walls, and as such, may be overlooked during winter surveys. Although Northern long-eared bat are often found with other *Myotis* species, they generally prefer cooler temperatures and higher humidity (USFWS 2013). Hibernacula where Northern long-eared bat occur may also be used by big brown bat and little brown bat, and possibly Western small-footed bat (Brack et al. 2010). Foraging habitat includes any locations where food resources can be found and acquired through the aerial pursuit of prey or the gleaning of prey from the ground or plant substrates. Foraging habitats are not necessarily separate from roosting or migration habitat, although notable preferences among species for different foraging habitats exist, which are often different from preferred roosting locations (Harvey et al. 2011). All bats known to occur in Mississippi are insectivorous, feeding on a variety of prey, including moths, beetles, flies, and mosquitoes (Kunz and Fenton 2003). Bats typically forage in areas with high nocturnal insect densities, in riparian areas (Waldien and Hayes 2001), over waterbodies (Henry et al. 2002; Lacki et al. 2007), and along forest edges (Hayes and Gruver 2000; Rogers et al. 2006).

During the spring, summer, and early fall, Northern long-eared bats roost in forested habitat typically within 50 miles of wintering sites (USFWS 2013). Suitable summer habitat for the Northern long-eared bat has been described as “forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches diameter at breast height that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors” (USFWS 2020a). Other important features of suitable habitat are connectivity and setting. Individual trees greater than 1,000 feet from forested habitat are not suitable, nor are trees found in highly developed urban areas (USFWS 2018b).

Like other North American forest bats, female Northern long-eared bats roost colonially during the late spring and summer maternity period (approximately May to July). Maternity colonies (averaging 30–60 individuals) are usually found in mature forests with a higher abundance of standing dead trees (snags), but Northern long-eared bats may also roost in live, or partially live trees with cavities. Northern long-eared bats typically roost under the bark or in the cavities of trees, versus roosting in the foliage like some other tree bats (USFWS 2015). Both male and female Northern long-eared bats generally prefer snags, or live trees in early stages of decline (USFWS 2015). Less commonly, Northern long-eared bat summer roost sites may also include small tree cavities and man-made structures (Harvey et al. 2011). Roosts are often used for 2–11 nights, but maternity roosts may be occupied longer. Because of Northern long-eared bats’ inclination for switching roosts, multiple suitable roosting locations in a forested patch may be indicative of higher quality summer habitat. Summer home ranges for females are estimated to be 47–425 acres (USFWS 2013).

Evidence suggests that Northern long-eared bats select forest patches with greater connectivity to other patches and larger patches of mature forest with a closed canopy (USFWS 2013, USFWS 2015). There are several patches of forest within the Project that contain suitable roost trees, forest interior trees that are at least 300 feet from the forest edge. These patches of trees are predominantly associated with riparian areas, small woodlots, and windbreaks near pastures. These patches of trees are mainly associated with Spring and McGee Creeks and their tributaries.

As noted previously, potentially suitable habitats were identified using satellite imagery within the Project Area. Soil and topographical maps were also examined to identify any potential karst or other features that could serve as potential hibernacula (e.g., sinkholes). The habitat assessment was conducted on March 23-26 and July 19-20, 2021. All potentially suitable areas within the Project area were visited on

foot to delineate and quantify potential Northern long-eared bat summer roosting habitat. Additionally, foraging habitat and potential winter habitat were recorded. Northern long-eared bats will also use man-made structures such as buildings, bridges, and barns for roosting. All man-made structures within Northern long-eared bat potential roosting habitat were considered possible roost structures. The potentially suitable roosting habitats were ranked (high, medium, low quality) based on the availability of water, foraging opportunities, forest structure, solar exposure, and presence of potential roost trees (PRTs). Representative photographs of PRTs were taken and any forested areas containing PRTs were designated as potential roosting habitat for Northern long-eared bats. No known caves or underground mines were known to occur in the area.

3.2 Regulatory Framework

While most bird species in the U.S. are protected under the federal Migratory Bird Treaty Act and select bird species or groups of species are protected under other statutes, there are relatively few laws or regulations protecting bats. At the federal level, there are no laws or regulations specific to bats; existing environmental laws primarily address the protection of habitat favored by bats, such as caves, and prohibit wanton destruction of wildlife. Bat species determined to be at risk of extinction are listed under the federal ESA or protected at the state level. Beyond that, federal land management agencies such as the U.S. Forest Service, USFWS, and the Bureau of Land Management have developed habitat management guidelines and other provisions to enhance or minimize disturbance to natural habitats, including bat habitats. In some cases, these provisions have been established by regulations, such as the National Forest Management Act. In other cases, the protective provisions are implemented as agency policies lacking regulatory force. Habitat protections implemented by these federal agencies are applicable to federal lands administered by the respective agencies.

3.2.1 Federal Protection

Of the 45 species of bats known to occur in the continental United States, six species and two subspecies are currently federally listed as endangered and protected under the ESA (USFWS 2018a): gray bat (*Myotis grisescens*), Indiana bat (*M. sodalis*), Florida bonneted bat (*Eumops floridanus*), Ozark big-eared bat (*Corynorhinus townsendii ingens*), Virginia big-eared bat (*C. t. virginianus*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), Mexican long-nosed bat (*L. nivalis*), and Northern long-eared bat. Of these species, the Indiana bat, gray bat, and Northern long-eared bat are known to occur in Mississippi (MBWG 2016). The Project is within the range of the Northern long-eared bat, with records from a chalk mine in Tishomingo County and Wilkinson County (MBWG 2016). These occurrences are approximately 60 miles north-northeast and 215 miles southwest of the Project, respectively. The Project is not within the range of Indiana bat or gray bat, both of which are restricted to the northeastern part of the state (MBWG 2016). The tri-colored bat (*Perimyotis subflavus*), which also may occur in the Project Area, is currently under a status review for listing under the ESA as a threatened or endangered species with designated critical habitat (USFWS 2018b, CBD and DOW 2016). The status review for the tri-colored bat began in December 2017 and is still pending. The USFWS is also conducting a discretionary status review of the little brown bat (USFWS 2021). The USFWS expects to release the findings of the status review for these two species, as well as the Northern long-eared bat (see below) in the spring of 2021 and publish the regulatory guidance pertaining to the review in the fall of 2022 (USFWS 2020b).

Northern Long-Eared Bat

On April 2, 2015, the USFWS announced the Northern-long-eared bat was listed as threatened with an interim Section 4(d) rule; the final 4(d) rule was released on January 14, 2016 (USFWS 2016a). The intent of the 4(d) rule is to provide the USFWS flexibility in implementing the ESA by modifying regulations necessary to provide for the conservation of a threatened species while not overburdening private landowners, state agencies, and others with blanket regulations that do not further the conservation of the species. The USFWS determined that WNS is the primary threat to the Northern long-eared bat and regulating other sources of mortality or harm, such as from general habitat loss, will not effectively conserve this species. Additionally, in 2016 the USFWS determined that designating critical habitat for the Northern-long-eared bat was “not prudent” (USFWS 2016b).

The final 4(d) rule prohibits all purposeful take within the range of the Northern-long-eared bat except: removal of Northern long-eared bats from human structures, defense of human health (disease monitoring), or removal of hazardous trees for the protection of human life and property. All take incidental to otherwise lawful activities is allowed outside of the WNS Zone designated by USFWS. The WNS Zone includes all counties affected by WNS and an additional 150-mile buffer around these counties (USFWS 2020c). For areas within the WNS Zone, incidental take is prohibited only if it occurs within a hibernaculum, if tree removal activities occur within a quarter-mile of a known, occupied hibernaculum at any time of year or within 150 feet of a known, occupied maternity roost tree from June 1 through July 31 (USFWS 2016a).

Under the final 4(d) rule, incidental take by wind turbines is not prohibited. Regulatory mechanisms for wind energy facilities were not included in the final 4(d) rule because the primary factor causing the rapid population decline in Northern long-eared bat is WNS and the best available information suggests that Northern long-eared bat fatalities caused by wind facilities are not contributing significantly to the species’ decline. However, because harm to individual bats by turbines may occur, the USFWS recommends adopting voluntary protocols for best management practices, such as limiting operations of turbines in low-wind speed conditions during the fall bat migration season, to reduce impacts to bats (USFWS 2016a).

The Project Area is within the species’ range (USFWS 2020c; BCI 2021) and within the USFWS WNS zone (USFWS 2020c) where incidental take due to hibernacula disturbance or tree removal is prohibited under the final 4(d) rule.

3.2.2 State Protection

The protection and regulation of bat species that are not listed under the federal ESA is typically at the discretion of state wildlife agencies. State-listed threatened and endangered species are protected by Mississippi’s Nongame and Endangered Species Conservation Act of 1974 (MDWFP; MDWFP 2016). The gray bat and Indiana bat, which are not known to occur in Clay County, are listed as endangered species by MDWFP (MDWFP 2018). The Northern long-eared bat is not currently listed as threatened or endangered by MDWFP (MDWFP 2018).

Mississippi also ranks bat species using the Heritage ranking system developed by The Nature Conservancy and maintained by NatureServe (MDWFP 2018). The most recent Mississippi Wildlife Action Plan currently lists the Rafinesque’s big-eared bat, hoary bat, and southeastern myotis as Vulnerable due to a restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors making it vulnerable to extirpation. All three species are known to occur within

Clay County or within an adjacent county. It should be noted that Northern yellow bat and little brown bat are considered Possibly Extirpated from the state. These species do not have the same level of protection or regulation as species listed as threatened or endangered in Mississippi, but take is regulated in Mississippi under 40 Miss. Code. R. § 5-2.3.

4.0 RESULTS AND CONCLUSIONS

The desktop analysis identified 513.1 acres of forested habitat that would be assessed in the field. There were 25 distinct woodlots that were used to assign quality ratings. The field visit was conducted over a six-day period and all forested areas were visited. This habitat assessment resulted in 137.7 acres of high quality possible roosting habitat, 266.1 acres of medium quality possible roosting habitat, and 109.2 acres of low quality possible roosting habitat (Appendix A, Table 1). Additionally, 21 forested areas contained areas with suitable water resources that could be utilized by bats. No winter habitat was identified within the Project Area. Representative photographs of the forested areas, potential roost trees and structures, and water resources are included as Appendices B and C. The completed Phase I habitat assessments data forms can be found in Appendix D.

Table 1. Potential Bat Habitat within the Project Area.

Woodlot ID	Acres	Suitable Water Feature Present	Habitat Quality
1	3.4	Yes	Medium
2	11.5	No	Low
3	2.2	Yes	Medium
4	49.3	Yes	High
5	11.0	No	Medium
6	2.2	No	Medium
7	0.9	Yes	Medium
8	1.5	Yes	Medium
10	9.5	Yes	High
11	5.6	Yes	Medium
12	22.9	Yes	Medium
13	111.4	Yes	Medium
14	40.4	Yes	Medium
15	34.2	Yes	Low
16	49.6	Yes	Low

Woodlot ID	Acres	Suitable Water Feature Present	Habitat Quality
17	10.4	Yes	Medium
18	41.9	Yes	Medium
19	10.0	Yes	Medium
20	27.4	Yes	High
21	34.3	Yes	High
22	2.2	No	Medium
23	7.2	Yes	Low
24	17.2	Yes	High
25	0.1	Yes	Low
26	6.6	Yes	Low
Total	513.1		

The USFWS Northern Long-Eared Bat Interim Conference and Planning Guidance (USFWS 2014) includes a stepwise assessment approach with specific questions intended to facilitate review of potential impacts to the species. In addition, answers to the Key to the Northern Long-eared Bat 4(d) Rule for Federal Actions (USFWS 2016c) offer a streamlined consultation with USFWS, allowing federal agencies to rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities by using the framework. Incidental take from tree removal activities is not prohibited with respect to this species, so long as: tree removal activities do not: (1) take place within a hibernaculum, (2) occur within a quarter-mile of a known, occupied hibernaculum at any time of year, or (3) occur within 150 feet of a known, occupied maternity roost tree from June 1 through July 31.

The Project Area consists primarily of large open areas of pastureland, cropland, and forested riparian areas. Bat roosting and foraging habitat make up approximately 17 percent of the Project Area. The Project Area is within the range of the Northern long-eared bat and within the WNS zone. There are no known hibernacula for Northern long-eared bat within the state and the only known summer site is at the Tripoli Chalk Mine approximately 60 miles north-northeast of the Project Area (MBWG 2020). For areas within the WNS Zone, incidental take is prohibited only if it occurs within a hibernaculum, if tree removal activities occur within a quarter-mile of a known, occupied hibernaculum at any time of year, or if tree removal activities occur within 150 feet of a known, occupied maternity roost tree from June 1 through July 31 (USFWS 2016a).

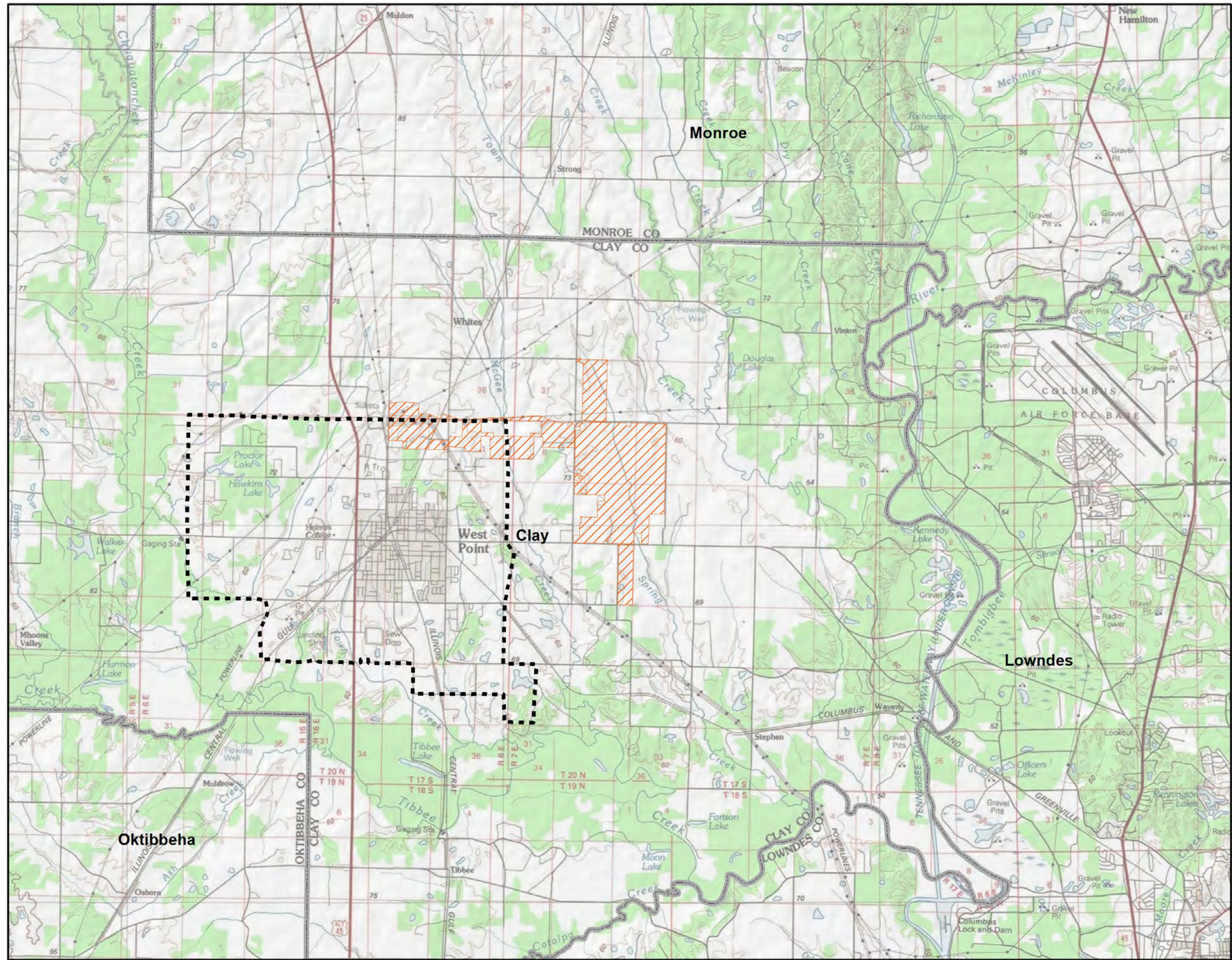
5.0 REFERENCES

- BCI (Bat Conservation International). 2021. Species profiles of North American bats. Available online at: <https://www.batcon.org/resources/media-education/species-profiles>. Accessed March 2021.
- Brack Jr., V., D. W. Sparks, J. O. Whitaker Jr., B. L. Walters, and A. Boyer. 2010. Bats of Ohio. Indiana State University Center for North American Bat Research and Conservation. 92 pp.
- CBD (Center for Biological Diversity) and DOW (Defenders of Wildlife). 2016. Petition to List the Tri-colored bat *Perimyotis subflavus* as Threatened or Endangered under the Endangered Species Act. Available online at: <https://ecos.fws.gov/docs/petitions/92000/885.pdf>. Accessed October 2019.
- Dockery III, David T. and David. E. Thompson. 2019. Mississippi Environmental Geology. Mississippi Department of Environmental Quality, Jackson, MS. Accessed April 2021. <https://www.mdeq.ms.gov/wpcontent/uploads/2019/03/EnvironmentalGeologyOfMississippi.pdf>.
- Harvey, M.J., J.S. Altenbach, and T. L. Best. 2011. Bats of the United States and Canada. The Johns Hopkins University Press, Baltimore, MD. USA.
- Hayes, J.P., and J.C. Gruver. 2000. Vertical stratification of activity of bats in an old-growth forest in western Washington. Northwest Science 74:102–108.
- Henry, M., D.W. Thomas, R. Vaudry, and M. Carrier. 2002. Foraging distances and home range of pregnant and lactating little brown bats (*Myotis lucifugus*). Journal of Mammalogy 83:767–774.
- Kunz, T.H. and M.B. Fenton (eds.). 2003. Bat Ecology. The University of Chicago Press. Chicago, Illinois.
- Lacki, M.J., J.P. Hayes, and A. Kurta. 2007. Bats in Forests: Conservation and Management. The Johns Hopkins University Press. Baltimore, Maryland.
- MDWFP (Mississippi Department of Wildlife, Fisheries, and Parks). 2016. Law book. Mississippi Department of Wildlife, Fisheries, and Parks. Jackson, Mississippi.
- MNHP (Mississippi Natural Heritage Program). 2018. Special animals tracking list. Mississippi Museum of Natural Science, Mississippi Department of Wildlife, Fisheries, and Parks. Jackson, Mississippi.
- Rogers, D.S., M.C. Belk, M.W. Gonzalez, and B.L. Coleman. 2006. Patterns of habitat use by bats along a riparian corridor in northeastern Utah. The Southwestern Naturalist 51:52–58.
- USFWS (United States Fish and Wildlife Service). 2013. 12-month Finding on a Petition to List the Eastern Small-footed Bat and the NLEB as Endangered or Threatened; Listing the NLEB as an Endangered Species – Proposed Rule. Federal Register 78(191):61046–61080. Available online at <https://www.gpo.gov/fdsys/pkg/FR-2013-10-02/pdf/2013-23753.pdf>. Accessed March 2021.
- USFWS. 2014. Northern Long-Eared Bat Interim Conference and Planning Guidance. USFWS Regions 2, 3, 4, 5, and 6. January 6, 2014. Available online at: <https://www.fws.gov/northeast/virginiafield/pdf/NLEBinterimGuidance6Jan2014.pdf>
- USFWS. 2015. Endangered and Threatened Wildlife and Plants; Threatened Species Status for the Northern Long-Eared Bat with 4(d) Rule. Federal Register 80(63): 17974-18033. Available



- online at
<http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/FRnlebFinalListing02April2015.pdf>
Accessed March 2021.
- USFWS. 2016a. Endangered and Threatened Wildlife and Plants; 4(d) Rule for the Northern Long-Eared Bat. Federal Register 81(9): 1900-1922. Available online at
<http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/FRnlebFinal4dRule14Jan2016.pdf>.
Accessed March 2021.
- USFWS. 2016b. Endangered and Threatened Wildlife and Plants; Determination that designation of Critical Habitat is not prudent for the Northern Long-Eared Bat. Federal Register 81(81): 24707-24714. Available online at
<https://www.fws.gov/Midwest/endangered/mammals/nleb/pdf/FRnorthern long-eared batCH04272016.pdf>. Accessed March 2021.
- USFWS. 2016c. Key to the Northern Long-Eared Bat Final 4(d) Rule for Federal Actions that May Affect Northern Long-Eared Bats. Available online at
<https://www.fws.gov/midwest/endangered/mammals/nleb/KeyFinal4dNLEBFedProjects.html>.
Accessed March 2021.
- USFWS. 2018a. Endangered Species of the United States. Available online at:
<http://www.fws.gov/endangered/species/us-species.html>. Accessed March 2021.
- USFWS. 2018b. Endangered and Threatened Wildlife and Plants; 90-Day Findings for Five Species. Federal Register 82(243):60362–60366.
- USFWS. 2020a. 2020 Range-Wide Indiana Bat Survey Guidelines May 2020. Available online at:
<https://www.fws.gov/midwest/endangered/mammals/inba/surveys/pdf/FINAL%20Range-wide%20IBat%20Survey%20Guidelines%203.23.20.pdf>. Accessed March 2021.
- USFWS. 2020b. Update: 3 Bat Species Status Assessment (SSA). News release. Available online at:
https://www.fws.gov/northeast/virginiafield/pdf/news_releases/20201125%20Bat%20SSA%201-page%20update.pdf. Accessed March 2021.
- USFWS. 2020c. Northern Long-Eared Bat final 4 (d) Rule. White-Nose Syndrome Zone Around WNS/Pd Positive Counties/Districts. Available online at
<http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf>. Accessed March 2021.
- USFWS. 2021. National Listing Work Plan 2021 to 2025. Available online at:
<https://www.fws.gov/midwest/endangered/listing/MidwestNLP.html>.
- Waldien, D.L., and J.P. Hayes. 2001. Activity areas of female long-eared myotis in coniferous forests in western Oregon. Northwest Science 75:307–314.

APPENDIX A

FIGURES



Legend

-  Site Boundary
-  County Boundary
-  City of West Point

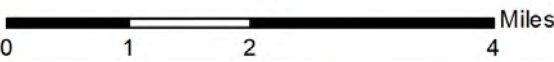


Figure 1
Site Location Map
Optimist Solar Facility
Clay County, MS

Prepared For:



Prepared By:

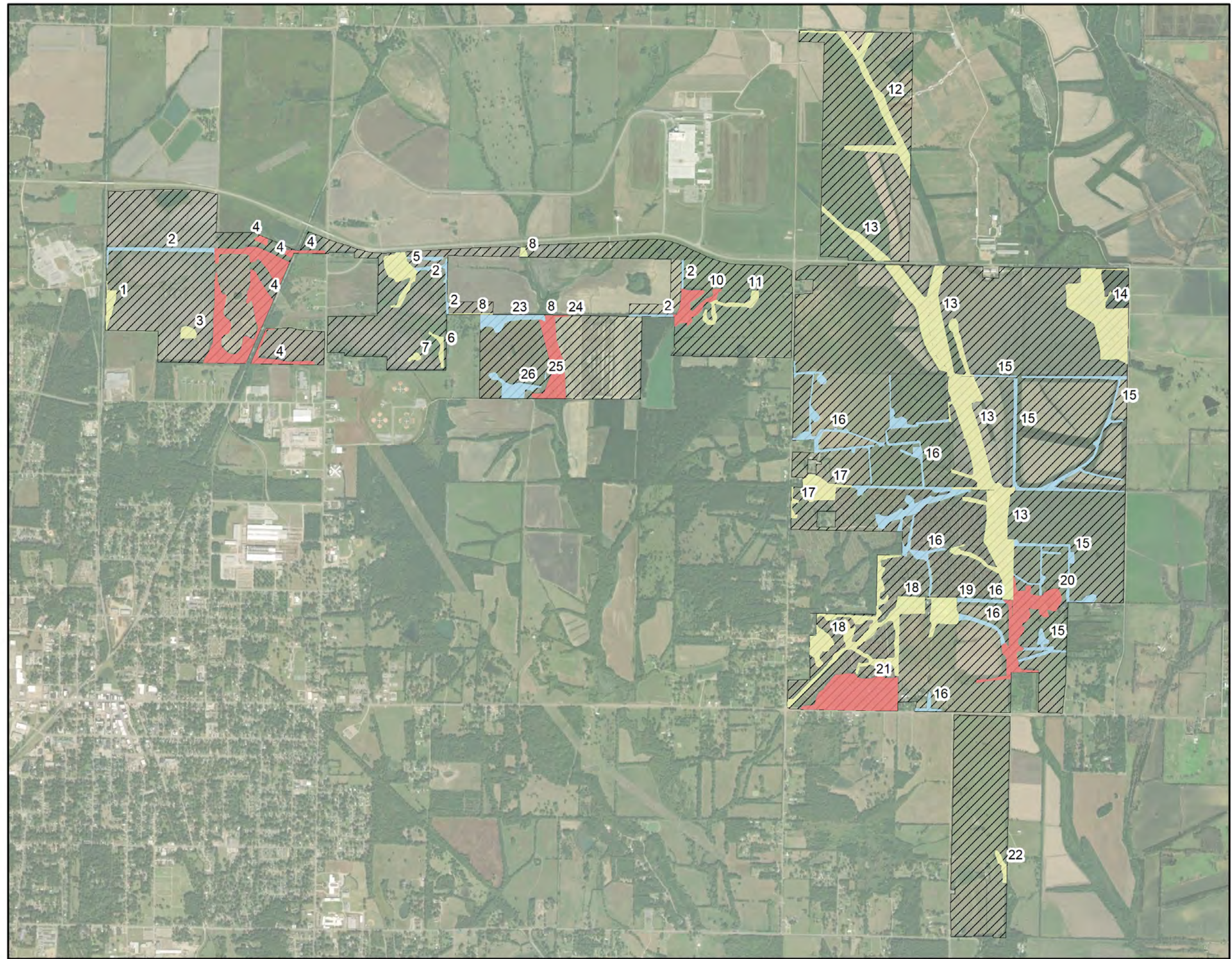


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
07/2021

Source: Esri, et. al., 2020; Origis Energy, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North



Legend

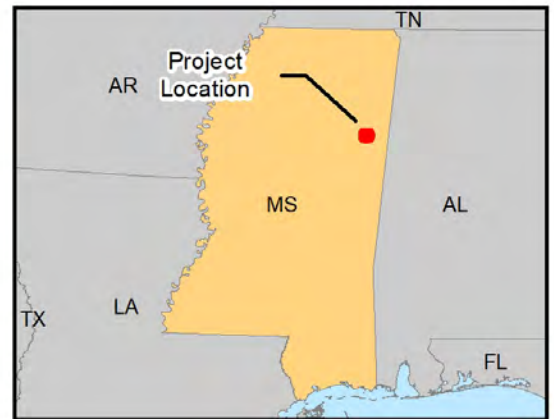
 Site Boundary

Habitat Rating

 Low

 Medium

 High



0 1,250 2,500 5,000 Feet

**Bat Habitat Map
Optimist Solar Facility
Clay County, MS**

Prepared For:



Prepared By:



Date:

07/2021

Source: Esri, et. al., 2020; Origis Energy, 2020

Coordinate System: North American Datum, 1983
Universal Transverse Mercator, Zone 16 North

APPENDIX D

PHASE I BAT HABITAT ASSESSMENT FORMS

APPENDIX A: PHASE I HABITAT ASSESSMENTS

INDIANA BAT HABITAT ASSESSMENT DATASHEET

Project Name: Optimist Date: March 23-26, 2021
 Township Range/Section: _____ Date: July 19-20, 2021
 Lat Long/UTM/ Zone: _____ Surveyor: Hal Mitchell

Brief Project Description

Mix of ag, pasture, forest, & grassland. Several forested riparian areas, mostly mixed age & scattered stands.

Project Area

	Total Acres	Forest Acres		Open Acres
Project	2,947.25	513.1		2,434.15
Proposed Tree Removal (ac)	Completely cleared	Partially cleared (will leave trees)	Preserve acres- no clearing	

Vegetation Cover Types

Pre-Project	Post-Project
Mainly forested riparian areas, wooded fence rows, ag lands, pasture, & some CRP type grasslands.	

Landscape within 5 mile radius

Flight corridors to other forested areas? Some narrow wooded fence rows & riparian areas. Some may have matrix to larger forested areas to the south & east.

Describe Adjacent Properties (e.g. forested, grassland, commercial or residential development, water sources)

Mostly the same. Mix of ag, pasture, & scattered forested areas.

Proximity to Public Land

What is the distance (mi.) from the project area to forested public lands (e.g., national or state forests, national or state parks, conservation areas, wildlife management areas)?

3 miles ENE.

APPENDIX A: PHASE 1 HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No. (s): _____

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral	Intermittent	Perennial	Describe existing condition of water sources: Stream connects to larger one offsite. Open water likely doesn't dry up.
Pools/Ponds (# and size)	1	Open and accessible to bats? yes		
Wetlands (approx. ac.)	Permanent	Seasonal		
	3.35	0		

Forest Resources at Sample Site

Closure/Density	Canopy (> 50%)	Midstory (20-50%)	Understory (< 20%)	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
	101	4	5	
Dominant Species of Mature Trees	Sugar berry & black willow			
% Trees w/ Exfoliating Bark	101	0	0	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (>15 in)	
	406	101	0	
No. of Suitable Snags	0			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Mostly emergent wetland w/ some black willow. Souther end has patch of larger trees but more dense midstory.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations

understory/midstory/canopy, examples of potential suitable snags and live trees, water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area.

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area.

A single sheet can be used for multiple sample sites if habitat is the same.

Sample Site Description	
Sample Site No (s): <u>2</u>	

Water Resources at Sample Site			
Stream Type (# and length)	Ephemeral <u>0</u>	Intermittent <u>0</u>	Perennial <u>0</u>
Pools/Ponds (# and size)	Open and accessible to bats?		
Wetlands (approx. ac.)	Permanent <u>0</u>	Seasonal <u>0</u>	
Describe existing condition of water sources: <div style="font-size: 2em; text-align: center;">NA</div>			

Forest Resources at Sample Site			
Closure/Density	Canopy (> 50%) <u>4</u>	Midstory (20-50%) <u>5</u>	Understory (<20%) <u>5</u>
Dominant Species of Mature Trees	<u>Sugarberry & eastern redcedar.</u>		
% Trees w/ Exfoliating Bark	<u>1</u>	<u>1</u>	<u>1</u>
Size Composition of Live Trees (%)	Small (3-8 in) <u>3</u>	Med (9-15 in) <u>4</u>	Large (>15 in) <u>2</u>
No. of Suitable Snags	<u>0</u>		

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Mostly fencerows. Narrow & often associated w/ adjacent open areas. All of similar age, structure, & species composition.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat.

Photographic Documentation: habitat shots at edge and interior from multiple locations; understory, midstory/canopy; examples of potential suitable snags and live trees; water sources.

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

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A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description	
Sample Site No (s): <u>3</u>	

Water Resources at Sample Site			
Stream Type (# and length)	Ephemeral <u>0</u>	Intermittent <u>0</u>	Perennial <u>0</u>
Pools/Ponds (# and size)	Open and accessible to bats? <u>YES</u>		
Wetlands (approx. ac.)	Permanent <u>0</u>	Seasonal <u>0</u>	
Describe existing condition of water sources: <u>Open water. Likely doesn't dry up.</u>			

Forest Resources at Sample Site			
Canopy/Density	Canopy (> 50%) <u>1</u>	Midstory (20-50%) <u>4</u>	Understory (< 20%) <u>4</u>
Dominant Species of Mature Trees	<u>Sugarberry, black willow + eastern redcedar</u>		
% Trees w/ Exfoliating Bark	<u>2</u>	<u>1</u>	<u>0</u>
Size Composition of Live Trees (%)	Small (3-8 in) <u>3</u>	Med (9-15 in) <u>3</u>	Large (> 15 in) <u>0</u>
Nu. of Suitable Snags	<u>0</u>		

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments: <u>isolated pond w/ wooded perimeter.</u> <u>Open water may be suitable for bat foraging.</u>

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations; understory/midstory/canopy; examples of potential suitable snags and live trees; water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

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A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No. (s): 4

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral 2	Intermittent 2	Perennial 0	Describe existing condition of water sources: Large forested wetland complex w/several beaver impoundments. Very wet but some may dry
Pools/Ponds (# and size)	4	Open and accessible to bats? YES		
Wetlands (approx. ac.)	Permanent 29.5	Seasonal 20		

Forest Resources at Sample Site

Closure/Density	Canopy (> 50%)	Midstory (20-50%)	Understory (<20%)	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
	10	3	2	
Dominant Species of Mature Trees	water & willow oak, sugarberry & winged elm			
% Trees w/ Exfoliating Bark	1	3	3	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (>15 in)	
	3	4	3	
No. of Suitable Snags	4			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Most mature forest w/in Project. Mainly a wetland complex w/ altered hydrology due to beaver. Good roosting & foraging potential.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations, understory/midstory/canopy, examples of potential suitable snags and live trees, water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No./s: 5

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral	Intermittent	Perennial	Describe existing condition of water sources: <i>pond holding water & draining to the east.</i>
Pools/Ponds (# and size)	1	Open and accessible to bats? <i>no</i>		
Wetlands (approx. ac.)	Permanent	Seasonal		
	8	3		

Forest Resources at Sample Site

Closure/Density	Canopy (> 50%)	Midstory (20-50%)	Understory (< 20%)	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
	<u>NA</u>	<u>4</u>	<u>5</u>	
Dominant Species of Mature Trees	<u>Black willow, sugarberry, & winged elm.</u>			
% Trees w/ Exfoliating Bark	<u>NA</u>	<u>5</u>	<u>3</u>	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (> 15 in)	
	<u>4</u>	<u>4</u>	<u>0</u>	
No. of Suitable Snags	<u>0</u>			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Forested wetland composed mainly of black willow, open water feature is densely vegetated & likely not suitable for foraging.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations;

understory/midstory/canopy; examples of potential suitable snags and live trees; water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

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A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No(s): 6

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral	Intermittent	Perennial	Describe existing condition of water source: <i>streams flowing to adjacent pasture,</i>
	2	0	0	
Pools/Ponds (# and size)	0	Open and accessible to bats?		
		NA		
Wetlands (approx. ac.)	Perennial	Seasonal		
	0	0		

streams flowing to adjacent pasture.

Forest Resources at Sample Site

Closure/Density	Canopy (> 50%)	Midstory (20-50%)	Understory (<20%)	1=1-10% 2=11-20% 3=21-40% 4=41-60% 5=61-80% 6=81-100%
	1	4	2	
Dominant Species of Mature Trees	Osage orange & sugarberry.			
% Trees w/ Exfoliating Bark	1	1	1	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (>15 in)	
	4	3	1	
No. of Suitable Snags	1			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Small wooded patch between ag & pasture land. Fairly open & may be used by bats foraging along stream.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots in edge and interior from multiple locations, understory/midstory/canopy, examples of potential suitable snags and live trees, water sources

APPENDIX A: PHASE 1 HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No. (s): 7

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral	Intermittent	Perennial	Describe existing condition of water sources: <i>Standing water that likely doesn't dry.</i>
	0	0	0	
Pools/Ponds (# and size)	1	Open and accessible to bats? <i>yes</i>		
Wetlands (approx. ac.)	Permanent 0	Seasonal 0		

Forest Resources at Sample Site

Closure/Density	Canopy (> 50')	Midstory (20-50')	Understory (<20')	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
	<u>NA</u>	<u>4</u>	<u>4</u>	
Dominant Species of Mature Trees	<u>Sugarberry & eastern redcedar</u>			
% Trees w/ Exfoliating Bark	<u>2</u>	<u>1</u>	<u>NA</u>	
Size Composition of Live Trees (%)	Small (3-8 in) <u>4</u>	Med (9-15 in) <u>4</u>	Large (>15 in) <u>NA</u>	
No. of Suitable Snags	<u>2</u>			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Isolated pond surrounded by ag field. Pond is open enough to be used by foraging bats.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations.

understory/midstory canopy; examples of potential suitable snags and live trees; water sources

APPENDIX A: PHASE 1 HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description	
Sample Site No. (s): <u>8</u>	

Water Resources at Sample Site			
Stream Type (# and length)	Ephemeral <u>3</u>	Intermittent <u>0</u>	Perennial <u>1</u>
Pools/Ponds (# and size)	Open and accessible to bats? <u>NA</u>		
Wetlands (approx. ac.)	Perennial <u>NA</u>	Seasonal <u>NA</u>	

Describe existing condition of water sources: McGee creek is perennial & ephemerals were mostly dry.

Forest Resources at Sample Site			
Closure/Density	Canopy (> 50%) <u>2</u>	Midstorey (20-50%) <u>4</u>	Understorey (< 20%) <u>2</u>
Dominant Species of Mature Trees	<u>Sugarberry & Boxelder</u>		
% Trees w/ Exfoliating Bark	<u>1</u>	<u>2</u>	<u>2</u>
Size Composition of Live Trees (%)	Small (3-8 in) <u>4</u>	Med (9-15 in) <u>2</u>	Large (>15 in) <u>1</u>
No. of Suitable Snags	<u>2</u>		

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments: Riparian corridor along McGee Creek & its tributaries. Parts of the stream is open enough to have foraging potential. Some snags also present.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations, understorey/midstorey/canopy, examples of potential suitable snags and live trees, water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

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Sample Site Description

Sample Site No. (s): 10

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral 0	Intermittent 0	Perennial 1	Describe existing condition of water sources. Large open water fed by perennial stream.
Pools/Ponds (# and size)	1	Open and accessible to bats? yes		
Wetlands (approx. ac.)	Permanent 1.3	Seasonal 0		

Forest Resources at Sample Site

Closure/Density	Canopy (> 50%)	Midstory (20-50%)	Understory (< 20%)	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
	5	2	1	
Dominant Species of Mature Trees	Shagbark & mockernut hickory, winged elm, & white oak.			
% Trees w/ Exfoliating Bark	35	5	5	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (> 15 in)	
	3	3	3	
No. of Suitable Snags	3			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Mature upland stand that slopes down to wetland fringe & large open water. Very good roosting & foraging habitat.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat.

Photographic Documentation: habitat shots at edge and interior from multiple locations; understory/midstory/canopy; examples of potential suitable snags and live trees; water sources.

APPENDIX A: PHASE 1 HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area.

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A single sheet can be used for multiple sample sites if habitat is the same.

Sample Site Description

Sample Site No.(s): 11

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral	Intermittent	Perennial	Describe existing condition of water sources: <i>Small Pond utilized by cattle.</i>
Pools/Ponds (# and size)	<i>1</i>	<i>Open and accessible to bats?</i> <i>YES</i>		
Wetlands (approx. ac.)	Permanent <i>N/A</i>	Seasonal <i>N/A</i>		

Forest Resources at Sample Site

Closure/Density	Canopy (> 50%)	Midstory (20-50%)	Understory (< 20%)	1-1-10%, 2-11-20%, 3-21-40%, 4-41-60%, 5-61-80%, 6-81-100%
Dominant Species of Mature Trees	<u>Eastern redcedar & sugarberry</u>			
% Trees w/ Exfoliating Bark	<u>1</u>	<u>2</u>	<u>NA</u>	
Size Composition of Live Trees (%)	Small (3-8 in) <u>4</u>	Med (9-15 in) <u>3</u>	Large (> 15 in) <u>NA</u>	
No. of Suitable Snags		<u>0</u>		

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Mostly a eastern redcedar fence line. Connects
to riparian area to the west.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat.

Photographic Documentation: Habitat shots at edge and interior from multiple locations, understory/midstory canopy, examples of potential suitable snags and live trees, water sources.

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No (s) 12

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral	Intermittent	Perennial	Describe existing condition of water sources
	4		1	
Pools/Ponds (# and size)	0	Open and accessible to bats?		
		NA		
Wetlands (approx. ac.)	Permanent	Seasonal		
	0	1		

Water flowing in all streams. Ephemerals likely dry in summer.

Forest Resources at Sample Site

Closure/Density	Canopy (> 50%)	Midstory (20-50%)	Understory (<20%)	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81=100%
	2	4	4	
Dominant Species of Mature Trees	Sugar berry & eastern red cedar			
% Trees w/ Exfoliating Bark	2	2	1	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (>15 in)	
	4	2	1	
No. of Suitable Snags	0			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Part of Spring Creek. Riparian area where most places are too dense for foraging. Adjacent to heavily grazed pasture land.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations, understory/midstory/canopy, examples of potential suitable snags and live trees, water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

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A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No. (s): 13

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral	Intermittent	Perennial	Describe existing condition of water sources
	8	1	2	
Pools/Ponds (# and size)	1	Open and accessible to bats?		
		yes		
Wetlands (approx. ac.)	Permanent	Seasonal		
	1.5	.25		Most streams flowing. Most ephemerals dry in summer. Ponds w/ water year-round.

Most streams flowing. Most ephemerals dry in summer. Ponds w/ water year-round.

Forest Resources at Sample Site

Closure/Density	Canopy (> 50%)	Midstory (20-50%)	Understory (< 20%)	1=1-10% 2=11-20% 3=21-40% 4=41-60% 5=61-80% 6=81-100%
	3	4	2	
Dominant Species of Mature Trees	Sugarberry & eastern redcedar			
% Trees w/ Exfoliating Bark	3	3	4	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (>15 in)	
	3	3	2	
No. of Suitable Snags	4			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Mostly riparian corridor along Spring Creek & its tributaries. Some areas may provide foraging potential. Several snags w/ good solar exposure observed.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations, understory/midstory/canopy, examples of potential suitable snags and live trees, water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

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Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No.(s): 14

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral 2	Intermittent 0	Perennial 0	Describe existing condition of water sources: Ephemerals were dry. Pond full of water.
Pools/Ponds (# and size)	1	Open and accessible to bats? yes		
Wetlands (approx. ac.)	Permanent 0	Seasonal 0		

Forest Resources at Sample Site

Closure/Density	Canopy (> 50')	Midstory (20-50')	Understory (< 20')	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
	<u>1</u>	<u>4</u>	<u>2</u>	
Dominant Species of Mature Trees	<u>Eastern redcedar</u>			
% Trees w/ Exfoliating Bark	<u>2</u>	<u>2</u>	<u>1</u>	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (>15 in)	
	<u>5</u>	<u>2</u>	<u>1</u>	
No. of Suitable Snags	<u>1</u>			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Wooded area adjacent to ag land. Mostly redcedar. Pond has some good foraging potential. Streams appear too dense for foraging. Pond has good foraging potential.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations.

understory/midstory/canopy, examples of potential suitable snags and live trees; water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No.(s): 15

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral 4	Intermittent 0	Perennial 0	Describe existing condition of water sources: Most streams dry.
Pools/Ponds (# and size)	Open and accessible to bats? YES			
Wetlands (approx. ac.)	Permanent 0	Seasonal 0		

Forest Resources at Sample Site

Closure/Density	Canopy (>50%)	Midstory (20-50%)	Understory (<20%)	1=1-10% 2=11-20% 3=21-40% 4=41-60% 5=61-80% 6=81-100%
	3	4	4	
Dominant Species of Mature Trees	Sugarberry & eastern redcedar.			
% Trees w/ Exfoliating Bark	1	1	1	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (>15 in)	
	5	2	1	
No. of Suitable Snags	0			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows: Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Mostly fence rows. Adjacent to pasture + ag lands. The structure of the tree area is likely not utilized by foraging or roosting bats.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations; understory/midstory/canopy, examples of potential suitable snags and live trees, water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description	
Sample Site No. (s): <u>16</u>	

Water Resources at Sample Site				Describe existing condition of water sources: <u>Most streams flowing. Some have connection w/ fire ponds.</u>
Stream Type (# and length)	Ephemeral <u>2</u>	Intermittent <u>1</u>	Perennial <u>0</u>	
Pools/Ponds (# and size)	<u>3-4</u>	Open and accessible to bats? <u>YES</u>		
Wetlands (approx. ac.)	Permanent <u>0</u>	Seasonal <u>0</u>		

Forest Resources at Sample Site				1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
Closure/Density	Canopy (> 50%) <u>3</u>	Midstory (20-50%) <u>4</u>	Understory (<20%) <u>4</u>	
Dominant Species of Mature Trees	<u>Sugarberry + eastern redcedar</u>			
% Trees w/ Exfoliating Bark	<u>1</u>	<u>1</u>	<u>1</u>	
Size Composition of Live Trees (%)	Small (3-8 in) <u>5</u>	Med (9-15 in) <u>2</u>	Large (>15 in) <u>1</u>	
No. of Suitable Snags	<u>0</u>			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:	<u>Mostly fence rows. Adjacent to pasture + conservation lands. The structure of the tree areas is likely not utilized for foraging or roosting by bats.</u>
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Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations, understory/midstory/canopy, examples of potential suitable snags and live trees, water sources

APPENDIX A: PHASE 1 HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No (s) 11

Water Resources at Sample Site

Stream Type (# and length)	<input checked="" type="radio"/> Ephemeral	<input type="radio"/> Intermittent	<input type="radio"/> Perennial	Describe existing condition of water sources: <u>Forested pond open enough for foraging.</u>
Ponds/Ponds (# and size)	<u>1</u>	Open and accessible to bats? <u>YES</u>		
Wetlands (approx. ac.)	<input checked="" type="radio"/> Permanent	<input checked="" type="radio"/> Seasonal		

Forest Resources at Sample Site

Closure/Density	Canopy (> 50%)	Midstory (20-50%)	Understory (< 20%)	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
	<u>5</u>	<u>3</u>	<u>2</u>	
Dominant Species of Mature Trees	<u>Red oak, sugarberry, & eastern redcedar.</u>			
% Trees w/ Exfoliating Bark	<u>3</u>	<u>4</u>	<u>3</u>	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (> 15 in)	
	<u>3</u>	<u>3</u>	<u>3</u>	
No. of Suitable Snags	<u>2</u>			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Mature forested upland area. Adjacent to conservation area. Open forested pond likely provides good foraging potential. Some snags observed.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations, understory/midstory/canopy, examples of potential suitable snags and live trees, water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No.(s): 18

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral	Intermittent	Perennial	Describe existing condition of water sources: <i>Streams flowing south. Wetland drains into stream.</i>
	<i>3</i>	<i>1</i>	<i>0</i>	
Pools/Ponds (# and size)	<i>1</i>	Open and accessible to bats? <i>YES</i>		
Wetlands (approx. ac.)	Permanent <i>0</i>	Seasonal <i>1.9</i>		

Forest Resources at Sample Site

Closure/Density	Canopy (>50%)	Midstory (20-50%)	Understory (<20%)	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
	3	5	3	
Dominant Species of Mature Trees	Sugarberry, Osage orange, & red oak			
% Trees w/ Exfoliating Bark	2	3	3	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (>15 in)	
	4	3	2	
No. of Suitable Snags	4			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Mostly thin riparian areas adjacent to conservation area. Some areas more dense w/ red cedar. Small pond good for foraging. Several snags were observed but with limited solar exposure.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior, from multiple locations, understory/midstory/canopy, examples of potential suitable snags and live trees, water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No (s): 19

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral	Intermittent	Perennial	Describe existing condition of water sources: Old hog lagoon that feeds small stream.
Pools/Ponds (# and size)	1	0	0	
Wetlands (approx. ac.)	1	Open and accessible to bats? YES		
	Permanent	Seasonal		

Forest Resources at Sample Site

Closure/Density	Canopy (> 50%)	Midstory (20-50%)	Understory (< 20%)	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
Dominant Species of Mature Trees	Sugarberry + Osage orange, black willow			
% Trees w/ Exfoliating Bark	2	3	4	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (> 15 in)	
	4	3	2	
No. of Suitable Snags		2		

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Several abandoned structures. Old hog barn w/ open water lagoon. Area around lagoon + structures mostly forested. Stream fed by lagoon.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations, understory/midstory/canopy, examples of potential suitable snags and live trees, water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

(A single sheet can be used for multiple sample sites if habitat is the same)

Sample Site Description

Sample Site No.(s): 20

Water Resources at Sample Site

Stream Type (# and length)	Epithermal 5	Intermittent 0	Perennial 1	Describe existing condition of water sources Spring Creek at near high water mark drainage for area.
Pools/Ponds (# and size)	2	Open and accessible to bats? yes		
Wetlands (approx. ac.)	Permanent 0	Seasonal .30		

Spring Creek at
near high water mark
drainage for area.

Forest Resources at Sample Site

Closure/Density	Canopy (>50%)	Midstory (20-50%)	Understory (<20%)	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
	3	4	3	
Dominant Species of Mature Trees	Eastern red cedar, red oak, white oak, + shagbark hickory.			
% Trees w/ Exfoliating Bark	3	3	3	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (>15 in)	
	3	2	2	
No. of Suitable Snags	2			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Along Spring Creek & it's tributaries.
Good foraging areas over ponds. Good roosting
potential in several areas within the
shagbark & snags. Streams likely too dense
for foraging.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat.

Photographic Documentation: habitat shots at edge and interior from multiple locations.

understory/midstory/canopy, examples of potential suitable snags and live trees, water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No.(s): 21

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral	Intermittent	Perennial	Describe existing condition of water sources: <i>Small forested pond. Manmade.</i>
Pools/Ponds (# and size)		Open and accessible to bats?		
Wetlands (approx. ac.)	Permanent	Seasonal		

Forest Resources at Sample Site

Closure/Density	Canopy (> 50%)	Midstory (20-50%)	Understory (<20%)	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
	<u>4</u>	<u>4</u>	<u>2</u>	
Dominant Species of Mature Trees	<u>Shagbark hickory, red oak, & winged elm.</u>			
% Trees w/ Exfoliating Bark	<u>3</u>	<u>4</u>	<u>4</u>	
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (>15 in)	
	<u>3</u>	<u>3</u>	<u>3</u>	
No. of Suitable Snags	<u>4</u>			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Fair number of mature shagbark in this area. Adjacent to conservation area. Several snags also provide potential habitat. Pond is open enough for foraging.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations, understory/midstory/canopy, examples of potential suitable snags and live trees, water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description

Sample Site No.(s): 22

Water Resources at Sample Site

Stream Type (# and length)	Ephemeral	Intermittent	Perennial	Describe existing condition of water sources: Small dry stream bed, drains adjacent pasture.
Pools/Ponds (# and size)	0	Open and accessible to bats?	NA	
Wetlands (approx. ac.)	Permanent	Seasonal		
	0	0		

Forest Resources at Sample Site

Closure/Density	Canopy (> 50%)	Midstory (20-50%)	Understory (<20%)	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
	1	3	1	
Dominant Species of Mature Trees	Sugarberry + eastern red cedar			
% Trees w/ Exfoliating Bark	1	1	1	
Size Composition of Live Trees (%)	Small (3-8 m)	Med (9-15 m)	Large (>15 m)	
	3	2	3	
No. of Suitable Snags	0			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Wooded riparian area, open along stream + likely provides good foraging potential. Large waterbody not far away.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations; understory/midstory/canopy; examples of potential suitable snags and live trees; water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description	
Sample Site No.(s):	23

Water Resources at Sample Site			
Stream Type (# and length)	Ephemeral	Intermittent	Perennial
Pools/Ponds (# and size)	1 ac	Open and accessible to bats?	
Wetlands (approx. ac.)	Permanent	Seasonal	
Describe existing condition of water sources: <i>open water + ephemeral stream</i>			

Forest Resources at Sample Site			
Closure/Density	Canopy (> 50%)	Midstory (20-50%)	Understory (<20%)
	2	3	5
1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%			
Dominant Species of Mature Trees	<i>Eastern red cedar, sugarberry, + Osage orange.</i>		
% Trees w/ Exfoliating Bark	5	5	10
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (>15 in)
	100	30	10
No. of Suitable Snags	0		

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

IS THE HABITAT SUITABLE FOR INDIANA BATS? 1/25

Additional Comments: <i>Some areas are dense stands of red cedar. Good foraging habitat along stream + open water.</i>

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations; understory/midstory/canopy; examples of potential suitable snags and live trees; water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description
Sample Site No.(s): <u>-24-</u>

Water Resources at Sample Site			
Stream Type (# and length)	Ephemeral <u>4</u>	Intermittent	Perennial <u>1</u>
Pools/Ponds (# and size)	<u>3</u>	Open and accessible to bats? <u>YES</u>	
Wetlands (approx. ac.)	Permanent <u>5</u>	Seasonal	
Describe existing condition of water sources: <u>small pools + perennial stream</u>			

Forest Resources at Sample Site			
Closure/Density	Canopy (> 50') <u>6</u>	Midstory (20-50') <u>3</u>	Understory (<20') <u>1</u>
Dominant Species of Mature Trees	<u>Sugarberry, Shumard's oak, + osage orange.</u>		
% Trees w/ Exfoliating Bark	<u>5</u>	<u>10</u>	<u>10</u>
Size Composition of Live Trees (%)	Small (3-8 in) <u>100</u>	Med (9-15 in) <u>30</u>	Large (>15 in) <u>10</u>
No. of Suitable Snags	<u>25</u>		

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:
<u>Large wetland complex associated w/ perennial stream. Has very open areas along riparian corridor excellent for foraging.</u>

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations; understory/midstory/canopy; examples of potential suitable snags and live trees; water sources

APPENDIX A: PHASE I HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description	
Sample Site No.(s):	25

Water Resources at Sample Site			
Stream Type (# and length)	Ephemeral <input checked="" type="checkbox"/>	Intermittent <input checked="" type="checkbox"/>	Perennial <input checked="" type="checkbox"/>
Pools/Ponds (# and size)	Open and accessible to bats? <input checked="" type="checkbox"/>		
Wetlands (approx. ac.)	Permanent <input checked="" type="checkbox"/>	Seasonal <input checked="" type="checkbox"/>	
Describe existing condition of water sources: Adjacent to open water & PER wetland.			

Forest Resources at Sample Site			
Closure/Density	Canopy (> 50%) 3	Midstory (20-50%) 5	Understory (<20%) 4
1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%			
Dominant Species of Mature Trees	Boxelder, Green ash, black willow		
% Trees w/ Exfoliating Bark	10	30	50
Size Composition of Live Trees (%)	Small (3-8 in) 70	Med (9-15 in) 15	Large (>15 in) 15
No. of Suitable Snags	0		

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:	Very small stand of trees in a field. Good foraging habitat adjacent & good roost trees available.
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Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations; understory/midstory/canopy; examples of potential suitable snags and live trees; water sources

APPENDIX A: PHASE 1 HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area

A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description	
Sample Site No.(s):	26

Water Resources at Sample Site			
Stream Type (# and length)	Ephemeral	Intermittent	Perennial
Pools/Ponds (# and size)	Open and accessible to bats?		
Wetlands (approx. ac.)	Permanent	Seasonal	
Describe existing condition of water sources: <i>Mostly dry</i>			

Forest Resources at Sample Site			
Closure/Density	Canopy (> 50')	Midstory (20-50')	Understory (<20')
	2	10	5
Dominant Species of Mature Trees	Eastern redcedar, sugarberry, Osage orange		
% Trees w/ Exfoliating Bark	10	10	5
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (>15 in)
	80	15	5
No. of Suitable Snags	0		

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:	<i>Mostly too dense for foraging but has good edge that opens to shrub area that's good for foraging.</i>
-----------------------------	---

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations; understory/midstory/canopy; examples of potential suitable snags and live trees; water sources

APPENDIX F

BAT ACOUSTIC SURVEY REPORT



Date: September 10, 2021
Finalized October 12, 2021

Mr. Nathan Rogers
Origis Energy
800 Brickell Avenue, Suite
1000 Miami, Florida 33131

Project	Northern Long-eared Bat (NLEB) Presence/Absence Survey at Optimist Solar.
Town	West Point, MS
Suitable Forested Habitat	513 acres
Surveyor Name/Firm	Hal Mitchell, Clinton Parrish / Tetra Tech, Inc.
Nights of Detector Operation	August 4-15, 2021
# of Detectors/Total Detector-nights	8 Detectors / 77 Detector-nights
Survey Results	Northern Long-eared Bat: NOT DETECTED

Dear Mr. Rogers,

This report contains summary results of the northern long-eared bat (*Myotis septentrionalis*, NLEB) summer presence/absence survey performed for Optimist Solar (Project) located near the town of West Point, MS. Acoustic detectors deployed by Tetra Tech, Inc. (Tetra Tech) did not detect the presence of NLEB. Three bat passes were classified as the federally threatened NLEB by analysis software, but presence was not confirmed during manual vetting. The potential presence of nine species were detected at the Project during the survey including big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), northern yellow bat (*Lasiurus intermedius*), Seminole bat (*Lasiurus seminolus*), little brown bat (*Myotis lucifugus*), tri-colored bat (*Perimyotis subflavus*), evening bat (*Nycticeius humeralis*), and Brazilian free-tailed bat (*Tadarida brasiliensis*).

The following memo provides a summary of the survey. Appendix A includes Project detector maps and photographs illustrating site conditions and microphone orientation. Appendix B includes a summary of Maximum Likelihood Estimates (MLE), and Appendix C includes resumes for relevant staff members involved with the Project.

Tetra Tech, Inc.

451 Presumpscot Street, Portland, Maine 04103
Tel 207.358.2400 Fax 207.879.9481 www.tetrattech.com

1.0 Project Description

The Project entails development of a utility-scale solar farm and associated infrastructure in Clay County, Mississippi on approximately 2,947 acres of land immediately north and east of the town of West Point, MS. (Figure 1; Project Area).

The Project Area is drained by Spring Creek, McGee Creek, and Town Creek and is predominantly made up of cropland and pastureland, shrub-scrub, as well as emergent and forested wetlands. Land within the Project area is characterized by gently rolling hills, with elevation ranging from approximately 190 feet above mean sea level (amsl) to approximately 260 feet amsl. Residential and commercial development occurs immediately to the south and west in the town of West Point, MS. Agriculturally dominated lands transition to contiguous forest two miles east of the Project along the Tombigbee River. Dominant tree species within the Project Area include sugar berry (*Celtis laevigata*), eastern red cedar (*Juniperus virginiana*), winged elm (*Ulmus alata*), shagbark hickory (*Carya ovata*), black willow (*Salix nigra*), and oak species (*Quercus spp.*). Protected lands in the immediate vicinity are limited to recreational areas and campgrounds along the Tombigbee River to the east and Tibbee Creek to the south. Large, protected tracts include the Tombigbee National Forest 20 miles to the northwest and 25 miles to the southwest as well as Noxubee National Wildlife Refuge 20 miles to the southwest.

2.0 Methods

The summer presence/absence survey was conducted in accordance with the U.S. Fish and Wildlife Service (USFWS) Range-Wide Indiana Bat Survey Guidelines (USFWS 2020a). The Indiana bat Summer Survey Guidance can be used for northern long-eared bat presence/probable absence Surveys (USFWS 2020b). The guidelines were not updated for 2021 and 2020 Guidelines still apply. This survey utilized a two-phased approach: Phase 1, desktop and field-based habitat assessments, and Phase 2, acoustic surveys. Tetra Tech deployed full spectrum acoustic detectors during Phase 2, and the resulting data was processed using Kaleidoscope Pro version 4.2.0 (Wildlife Acoustics, Inc.). Qualified Tetra Tech personnel carried out all phases of the survey. Specific roles are summarized in Table 1; resumes for relevant staff are provided in Appendix C.

Table 1. Personnel Involved in NLEB Acoustic Presence/Absence Surveys and Analyses for Optimist Solar, West Point, MS (August 2021).

Personnel	Desktop Analysis	Field Assessment	Detector Deployment	Acoustic Analysis	Qualitative Analysis
Hal Mitchell Wildlife Biologist	X	X	X		
Clinton Parrish Wildlife Biologist				X	X

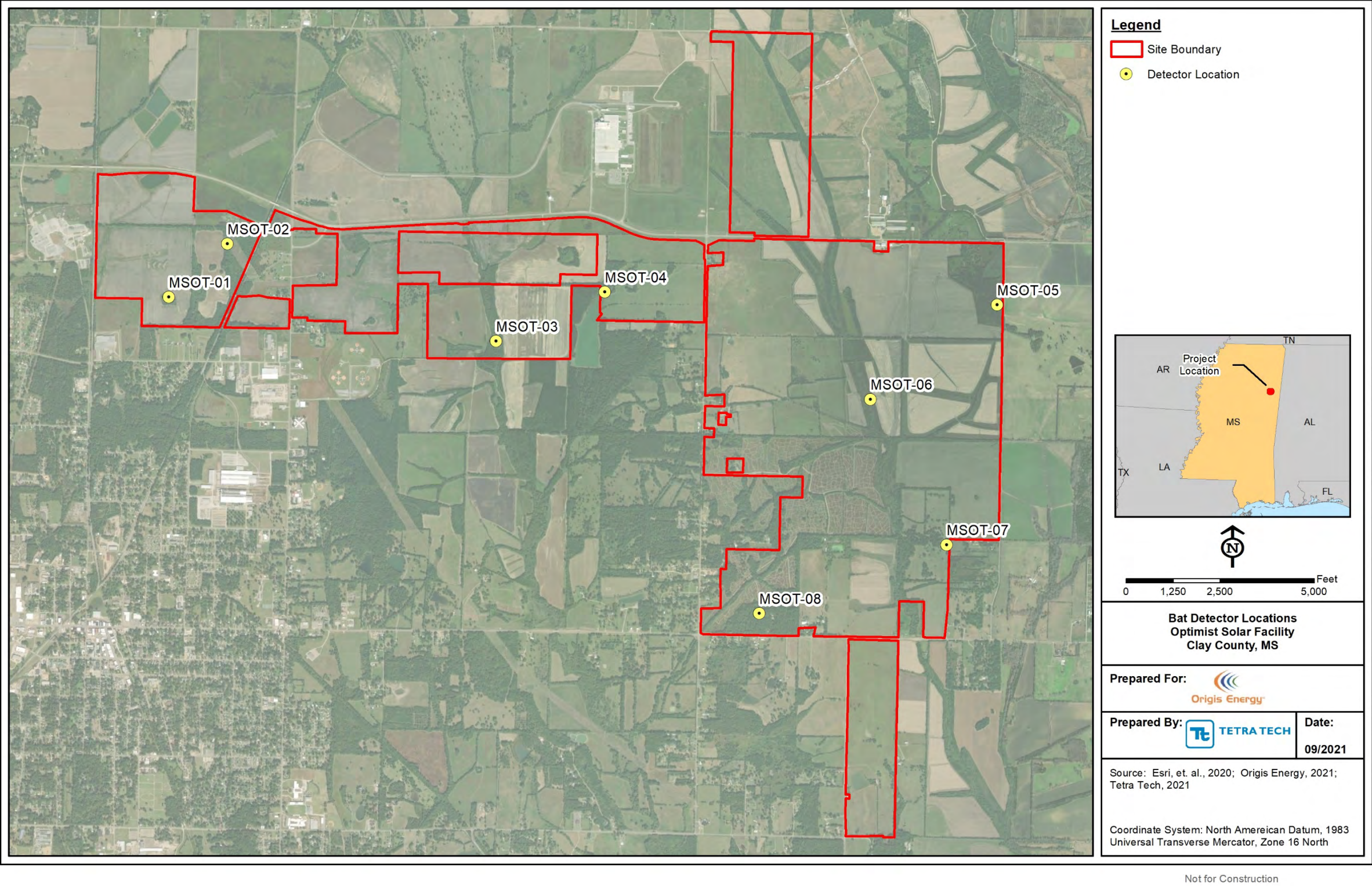


Figure 1. Locations of Acoustic Detectors Deployed at Optimist Solar.

2.1 Habitat Assessment

2.1.1 Bat Habitat Assessment

Prior to the NLEB survey, Tetra Tech performed a complete bat habitat assessment which included desktop land cover analysis to identify suitable bat habitat within the proposed Project Area and field-based habitat surveys to confirm the desktop findings (Tetra Tech 2021). Potentially suitable habitats were identified using satellite imagery within the Project Area. Soil and topographical maps were also examined to identify any potential karst or other features that could serve as potential hibernacula (e.g., sinkholes). The field-based habitat assessment was conducted on March 23-26 and July 19-20, 2021. All potentially suitable areas within the Project area were visited on foot to delineate and quantify potential NLEB summer roosting habitat. Additionally, foraging habitat and potential winter habitat were recorded. All man-made structures within NLEB potential roosting habitat were considered possible roost structures. The potentially suitable roosting habitats were ranked (high, medium, low quality) based on the availability of water, foraging opportunities, forest structure, solar exposure, and presence of potential roost trees (PRTs). Representative photographs of PRTs were taken and any forested areas containing PRTs were designated as potential roosting habitat for NLEB. No known caves or underground mines were known to occur in the area.

The desktop analysis identified 513.1 acres of forested habitat that would be assessed in the field. There were 25 distinct woodlots that were used to assign quality ratings. This habitat assessment resulted in 137.7 acres of high quality possible roosting habitat, 266.1 acres of medium quality possible roosting habitat, and 109.2 acres of low quality possible roosting habitat. Additionally, 21 forested areas contained areas with suitable water resources that could be utilized by bats. No winter habitat was identified within the Project Area.

The Range-wide Indiana Bat Survey Guidelines indicate that for non-linear projects, one site or two detector locations are required per 123 acres of suitable habitat. Based on the 513 acres identified as suitable habitat in the Bat Habitat Assessment, it was determined that four sites or eight detector stations were required operate for a total of 32 detector nights to meet the guidelines.

2.1.2 NLEB Presence/Absence Survey Assessment

On August 4, 2021, Tetra Tech deployed full spectrum acoustic detectors in woodlots previously identified as high-quality habitat in the Bat Habitat Assessment. General habitat descriptions are provided in Table 2. A complete, stand-alone Bat Habitat Assessment for this Project is available (Tetra Tech 2021).

Table 2. Detector Station Descriptions and Survey Data for Optimist Solar.

Detector Station	Suitable NLEB Habitat	Description	Woodlot ID (From Habitat Assessment)	GPS Coordinates	Microphone Orientation	Survey Dates (night of)	Level of Effort (detector nights)
MSOT-01	Yes	Station located adjacent to a 0.5-acre wooded pond within a crop field. Pond likely stays open year-round.	3	33.631300, - 88.643663	200	8/4-8/15	12
MSOT-02	Yes	Station located along transmission line corridor that borders a mature forested wetland.	4	33.635269, - 88.638598	45	8/4-8/12	9
MSOT-03	Yes	Station located within open, midstory forest adjacent to McGee Creek, which may serve as a potential travel and foraging corridor. Microphone oriented towards creek.	25	33.628460, - 88.614975	100	8/4-8/15	12
MSOT-04	Yes	Station located at interface of a mature upland stand and a large 20-acre pond. Likely a transition location from roosting to foraging habitat.	10	33.632176, - 88.605523	200	8/4-8/14	11
MSOT-05	Yes	Station located within an opening adjacent to a small stream within a red cedar dominated stand.	14	33.631680, - 88.571189	270	8/4-8/15	0
MSOT-06	Yes	Station located along two-track within riparian corridor of Spring Creek.	13	33.624578, - 88.582166	180	8/4-8/13	10
MSOT-07	Yes	Station located along a fence row and adjacent to old barn. Site was selected for potential bat occupancy in barn.	20	33.614082, - 88.575286	300	8/4-8/14	11
MSOT-08	Yes	Station located adjacent to small pond within a forested area. Numerous shagbark hickory in area along with several snags; roosting and foraging opportunities abound.	21	33.608849, - 88.591565	120	8/4-8/15	12

2.2 Acoustic Surveys

2.2.1 Detector Type

Wildlife Acoustics Song Meter-3 BAT ultrasonic bat detectors equipped with SMM-U1 microphones were used for the duration of the survey effort. Detectors were set to record from an hour before sunset to an hour after sunrise (approximately 7:53 PM–6:08 AM) in full-spectrum mode, and files were saved in .WAV format on internal SD cards.

The detectors were fully waterproof and were powered by internal D cell batteries. Each detector and microphone were tested prior to deployment with a Wildlife Acoustics Ultrasonic Calibrator to ensure equipment was functioning properly and device sensitivity was within the manufacturer's suggested thresholds. A "chirp field test" with a Titley chirper was used to confirm all connections were sound and that the microphones registered high frequency noise once the detectors were set. Tetra Tech performed this test again at demobilization to ensure microphones were functioning while they were deployed. Log files were reviewed when units were pulled to verify proper functioning for the duration of the survey.

2.2.2 Detector Deployment

Eight detectors were micro-sited in suitable habitat for NLEB within the Project Area to ensure potential habitats were sampled in accordance with the USFWS Range-wide Indiana Bat Survey Guidelines. Detectors were deployed on August 4, 2021 and were retrieved on August 16, 2021. Detectors were deployed along potential flyways near open water and wetlands, canopy gaps created by two track roads, and woodland edges.

Microphones were mounted at a minimum height of nine feet to avoid ground vegetation and to elevate the cone of detection. Microphones were oriented in line with suspected flight paths to increase the number of call pulses and quality of recordings. Therefore, specific orientation was determined by microsite conditions (Appendix A includes station conditions and photographs illustrating detector orientation).

2.2.3 Weather Requirements

Weather requirements outlined in the USFWS Range-Wide Indiana Bat Survey Guidelines (temperatures remain above 50 degrees Fahrenheit, no precipitation that exceeds 30 minutes, and sustained wind speed less than 9 miles/hour) must be met during the first five hours of the survey period for at least four detector-nights for valid survey results. Weather history in hourly increments was reviewed from the closest weather station to the Project that had data on temperature, wind speed, wind gusts, precipitation rate, and precipitation accumulation. This ensured that the guidelines were met for a valid survey night (Weather Underground 2021).

2.2.4 Acoustic Analysis

Tetra Tech analyzed the recorded data according to the USFWS Range-Wide Indiana Bat Survey Guideline recommendations. Data was filtered and analyzed using Kaleidoscope Pro version 4.2.0, using the classifier "Bats of North America 4.2.0" for species of bats in Mississippi at the 0 Balanced "Neutral" sensitivity level. The Indiana bat classifier was not enabled for this analysis because the

Project Area is outside the species range (USFWS 2019, MSBWG 2020). Signals of interest ranged from 16–120 kilohertz, lasting 2–500 milliseconds, with a minimum of two call pulses. Full spectrum .WAV files were converted to zero-crossing using a division ratio of eight. All files, auto-classified as NLEB (n=3) and southeastern myotis (n=8) were subsequently manually reviewed using SonoBat v 4.2.0 (a low volume of auto-classifications allowed for complete review).

In addition, a subsample of auto-classified files were spot checked to confirm species presence, but not all files were reviewed therefore all auto-classifications were not all manually confirmed. In cases where manual confirmation was not made, the “Overall Evaluation” of probable species presence defaulted to MLE predictions by the software. Bat passes auto-classified as “No ID” were recordings software recognized as a bat but could not identify it to species level. These “No ID” auto-classifications were filtered by characteristic frequency (Fc), and those with an Fc greater than or equal to 35 kilohertz were labeled “unidentified high frequency bat species” and those with and Fc less than 35 kilohertz were labeled “unidentified low frequency bat species.” Results were summarized by station and by night.

3.0 Results

The desktop and field-based habitat assessments revealed approximately 513 acres of suitable NLEB habitat within the Project Area. Based on the results of the habitat assessment, Tetra Tech deployed eight detectors targeting NLEB for 12 detector nights each, August 6–11, 2021 for a total of 77 detector-nights. Three detectors were operational all survey period while batteries died on the remainder of the units two to three days before units were pulled. It was determined after the survey that one of the units was erroneously configured so that it recorded hourly ambient noise rather than nightly triggered ultrasonic bat calls. Weather conditions were met on all but two survey nights (August 12 and 15) when winds associated with thunderstorms exceeded nine miles per hour during the first five hours of the survey (Table 3). Despite these outages and two non-qualifying weather nights, the level of survey effort was over twice the required minimum effort (32 detector nights).

Table 3. Summary of Weather Information during the First 5 Hours of each Survey Night at Optimist Solar, West Point, MS ¹ (August 4–15, 2021).

Survey Night	Temperature Range (Fahrenheit)	Wind Range (mph)	Precipitation	Qualifying Night
4-Aug	68–81	3–6	none	Y
5-Aug	75–84	0–5	none	Y
6-Aug	78–82	0–5	none	Y
7-Aug	73–86	0–3	none	Y
8-Aug	76–85	5–8	none	Y
9-Aug	79–88	3–8	none	Y
10-Aug	80–89	0–7	none	Y

11-Aug	74-75	6-9	none	Y
12-Aug	76-88	0-12	none, thunder	N
13-Aug	74-80	0-8	none	Y
14-Aug	74-86	0-9	none, thunder	Y
15-Aug	73-81	0-22	lt. rain, thunder	N

¹The nearest weather station with nightly records was the Golden Triangle Regional Airport (KGTR; Weather Underground 2021)

Interpreting results solely on the number of species' bat passes by software auto-classification can be misleading, as there are varying levels of confidence associated each classification. MLEs are used as a secondary measure to determine likelihood of species presence by incorporating known error rates for each species classifier within the software. In most cases, manual review of bat passes by experienced biologists serves as the most accurate method for species identification. MLEs indicate that 10 of the Mississippi bat species (big brown bat, eastern red bat, hoary bat, northern yellow bat, Seminole bat, southeastern myotis [*Myotis austroriparius*], little brown bat, evening bat, tri-colored bat, and Brazilian free-tailed bat) are likely present within the Project Area (Table 4). Manual review did not confirm the presence of northern long eared-bat, Brazilian free-tailed bat, evening bat, hoary bat, little brown bat, northern yellow bat, Seminole bat, or southeastern myotis.

Tetra Tech recorded 22,590 total bat passes at the seven stations during the nights of August 4–15, 2021 (Table 5). Overall, nine species were likely to occur in the Project Area, with 22 percent of the activity by Unidentified high frequency species, followed by tri-colored bat (19 percent), big brown bat (13 percent), Seminole and unidentified low frequency species (10 percent each), evening bat (8 percent), hoary bat (6 percent), eastern red bat (5 percent), little brown bat (3 percent), and northern yellow bat and Brazilian free-tailed bat (2 percent each). Three bat passes were classified as NLEB by analysis software and all were determined to be a feeding buzz by an unidentified high frequency species. Eight bat passes were classified as southeastern myotis by analysis software and were determined to be unidentified high frequency species during manual vetting.

Table 4. Summary of Species Presence by Kaleidoscope Pro at Optimist Solar.

Species	MLE Prediction ¹	Qualitative Analysis	Overall Evaluation
Big brown bat	Present	Present	Present
Brazilian free-tailed bat	Present	Not Confirmed	Present
Eastern red bat	Present	Present	Present
Evening bat	Present	Not Confirmed	Present
Hoary Bat	Present	Not Confirmed	Present
Little brown bat	Present	Not Confirmed	Present
Northern long-eared bat	Absent	Absent	Absent
Northern yellow bat	Present	Not Confirmed	Present
Seminole bat	Present	Not Confirmed	Present
Southeastern myotis	Present	Absent	Absent

Rafinesque's big-eared bat	Absent	Absent	Absent
Tri-colored bat	Present	Present	Present
1. Based on probability of presence for any site on any night. See Appendix B for complete listing of MLEs by site/night.			

Table 5. Summary of Bat Passes Recorded at Optimist Solar.

Station	Date	Big brown bat	Eastern red bat	Hoary Bat	Northern yellow bat	Seminole bat	Little brown bat	Evening bat	Tri-colored bat	Brazilian free-tailed bat	Unidentified high frequency species	Unidentified low-frequency species	Grand Total
Project Total		2,971	1,124	1,370	494	2,313	669	1,761	4,262	450	4,882	2,294	22,590
MSOT-01	Station Total	319	156	941	198	1,102	49	147	110	79	435	985	4,521
	4-Aug	31	43	313	25	160	12	23	42	9	79	145	882
	5-Aug	35	21	61	26	105	3	26	14	4	70	89	454
	6-Aug	22	3	43	11	38	5	6	1	8	15	44	196
	7-Aug	41	4	172	19	48	5	5	12	4	22	108	440
	8-Aug	22	7	39	23	43	0	6	4	2	21	80	247
	9-Aug	64	7	74	9	57	4	7	3	2	27	79	333
	10-Aug	25	8	52	7	72	2	3	2	1	23	61	256
	11-Aug	8	10	42	28	123	2	6	4	17	36	106	382
	12-Aug	25	16	39	21	98	2	10	4	8	30	88	341
	13-Aug	20	22	60	13	186	6	22	5	14	38	84	470
	14-Aug	25	15	43	11	145	4	28	17	9	62	82	441
	15-Aug	1	0	3	5	27	4	5	2	1	12	19	79
MSOT-02	Station Total	55	80	13	14	13	170	81	77	7	175	22	707
	4-Aug	11	33	4	4	8	49	27	15	1	57	4	213
	5-Aug	14	9	3	2	1	11	6	14	2	11	6	79
	6-Aug	8	5	1	3	1	12	3	11	2	17	4	67
	7-Aug	5	16	3	4	2	5	22	12	1	17	1	88
	8-Aug	4	3	1	0	1	9	10	6	0	8	4	46
	9-Aug	4	5	0	1	0	5	11	10	0	18	0	54
	10-Aug	2	8	0	0	0	65	0	4	1	33	2	115
	11-Aug	4	1	0	0	0	13	2	3	0	13	1	37
	12-Aug	3	0	1	0	0	1	0	2	0	1	0	8
MSOT-03	Station Total	245	45	82	48	4	69	31	974	10	654	154	2,316
	4-Aug	18	7	2	3	2	12	5	313	1	108	10	481
	5-Aug	47	9	5	10	0	8	6	307	2	153	18	565
	6-Aug	34	8	8	2	0	7	5	297	0	138	14	513
	7-Aug	21	2	9	4	0	3	3	5	0	73	18	138
	8-Aug	10	3	7	1	0	5	0	41	2	31	11	111
	9-Aug	12	0	11	8	1	7	1	4	2	40	15	101
	10-Aug	21	0	6	3	1	2	3	2	0	30	10	78
	11-Aug	10	0	3	2	0	2	1	1	2	23	11	55
	12-Aug	15	6	13	6	0	13	0	3	1	51	18	126
	13-Aug	6	7	10	3	0	7	1	1	0	5	13	53
	14-Aug	33	2	2	4	0	1	5	0	0	1	10	58
	15-Aug	18	1	6	2	0	2	1	0	0	1	6	37
MSOT-04	Station Total	245	419	98	108	792	151	312	2,727	301	2,496	533	8,182
	4-Aug	47	101	15	14	200	29	72	325	28	492	121	1,444
	5-Aug	36	34	11	14	63	12	30	256	19	160	38	673
	6-Aug	16	24	7	5	67	3	24	280	11	303	35	775
	7-Aug	19	46	10	5	85	9	28	214	25	272	53	766
	8-Aug	20	25	7	18	53	11	26	287	35	184	45	711
	9-Aug	17	21	10	2	34	12	12	262	30	114	37	551
	10-Aug	23	40	9	16	53	26	21	205	29	206	40	668
	11-Aug	9	32	5	3	69	10	25	240	43	364	30	830
	12-Aug	19	31	10	5	79	19	27	177	44	125	55	591
	13-Aug	17	43	7	4	73	17	29	337	24	149	33	733
	14-Aug	22	22	7	22	16	3	18	144	13	127	46	440
MSOT-06	Station Total	47	31	25	15	12	98	14	42	7	85	43	419
	4-Aug	6	7	1	1	2	20	3	5	1	24	2	72
	5-Aug	6	2	0	0	1	4	0	3	0	3	6	25
	6-Aug	6	1	1	1	1	4	0	9	0	7	4	34
	7-Aug	5	4	1	4	4	7	1	6	2	8	5	47
	8-Aug	5	3	2	1	0	17	1	6	0	15	5	55
	9-Aug	4	2	4	3	0	4	6	3	0	7	1	34
	10-Aug	4	2	5	0	1	15	0	5	0	4	5	41

MSOT-06	Date	Big brown bat	Eastern red bat	Hoary Bat	Northern yellow bat	Seminole bat	Little brown bat	Evening bat	Tri-colored bat	Brazilian free-tailed bat	Unidentified high frequency species	Unidentified low-frequency species	Grand Total
	11-Aug	4	5	1	1	0	5	0	1	1	2	5	25
	12-Aug	3	4	5	3	2	18	3	3	2	9	6	58
	13-Aug	4	1	5	1	1	4	0	1	1	6	4	28
MSOT-07	Station Total	55	64	10	10	56	46	70	46	5	137	34	533
	4-Aug	8	21	0	0	15	12	14	10	2	31	9	122
	5-Aug	3	2	2	0	1	5	2	7	0	11	2	35
	6-Aug	4	8	0	0	7	4	6	20	0	14	0	63
	7-Aug	7	4	0	2	6	3	11	1	0	28	4	66
	8-Aug	6	3	1	1	8	1	8	2	0	6	5	41
	9-Aug	3	2	2	2	2	2	1	3	0	4	3	24
	10-Aug	9	0	1	1	1	2	3	0	0	8	0	25
	11-Aug	0	2	3	1	3	3	0	0	1	2	0	15
	12-Aug	4	5	0	2	8	8	11	2	0	17	5	62
	13-Aug	4	10	0	1	2	4	12	1	1	11	2	48
	14-Aug	7	7	1	0	3	2	2	0	1	5	4	32
MSOT-08	Station Total	2005	329	201	101	334	86	1,106	286	41	900	523	5,912
	4-Aug	199	23	143	13	49	2	91	21	12	48	127	728
	5-Aug	258	53	7	14	58	12	151	42	3	158	81	837
	6-Aug	91	36	2	6	34	10	88	50	7	104	27	455
	7-Aug	207	36	3	17	34	11	179	17	3	116	49	672
	8-Aug	212	42	1	12	31	17	99	28	4	98	50	594
	9-Aug	159	36	3	9	24	11	143	17	2	98	24	526
	10-Aug	198	36	3	7	21	4	94	28	0	103	27	521
	11-Aug	165	17	15	6	29	9	76	16	3	53	28	417
	12-Aug	80	18	1	7	17	6	56	31	1	38	18	273
	13-Aug	158	23	2	8	17	3	69	22	3	51	33	389
	14-Aug	141	2	20	0	16	1	41	14	2	18	42	297
	15-Aug	137	7	1	2	4	0	19	0	1	15	17	203

4.0 Conclusion

4.1 NLEB

Three bat passes were auto classified as the federally threatened NLEB by Kaleidoscope Pro software, but species presence was not confirmed through manual vetting. MLE values generated by the software indicate that presence of NLEB was unlikely for any site night over the duration of the survey period. See Appendix B for a complete listing of MLEs by site night. Given that no NLEBs were manually confirmed while following the USFWS Range-Wide Indiana Bat Survey Guidelines, it is unlikely that the Project will negatively impact the NLEB. The USFWS final 4(d) rule prohibits incidental take within a hibernaculum and tree removal activities occurring within a 1/4-mile of a known NLEB hibernaculum at any time of the year and tree removal activities within 150 feet of a known occupied maternity roost tree during pup season (June 1 to July 31) (USFWS 2016). Avoiding tree removal activities when possible may also improve foraging and roosting opportunities for this species if populations recover.

4.2 Other Bats

A high proportion of recorded bat passes were classified as unidentified high frequency species. Most of these passes were autoclassified as “No identification (NoID)” by Kaleidoscope Pro software which we then classified into low frequency or high frequency groups based on frequency centers for each recording. In addition, many of the manually reviewed auto-classified passes were determined to be unidentified high frequency species. Feeding bats exhibit rapid call pulses as they home in on prey and are mostly indistinguishable among species (Corcoran and Conner 2003). High densities or groups of interspecific foraging bats leads to increasing acoustic interference (Gillam 2007). Detector locations were positioned in travel and feeding corridors and it is likely that many of the recordings may have been feeding buzzes leading to a higher level of misidentifications by software.

The degree of manual vetting to confirm species presence is dictated by the USFWS Range-Wide Indiana Bat Survey Guidelines with a focus on NLEB. Reviewing all bat species to confirm species presence was beyond this scope of work and MLEs were referred to for overall species evaluation. It is possible that several species may be misrepresented. For example, records suggest that northern yellow bat and little brown bat are possibly extirpated from the state of Mississippi (MSBWG 2020).

4.3 Recommendations

This acoustic survey suggests that the federally threatened NLEB was not present at the Project Area and it is unlikely the project would negatively impact the species. Restriction of tree clearing to outside of the summer activity period would reduce the risk for other bat species as well. In addition, the majority of bat passes (93% of the total recorded) were made at stations adjacent to ponds and streams suggesting concentrated areas of bat use and highlighting the importance of these resources within the Project Area. Avoiding impacts to wetland and open water sources that serve as foraging areas would further minimize overall impacts to all bats within the Project Area.

5.0 References

- Corcoran, A.J. and Conner, W.E., 2014. Bats jamming bats: food competition through sonar interference. *Science*, 346(6210), pp.745-747.
- Mississippi Bat Working Group (MSBWG). 2020. Mississippi Bat Conservation Strategy. Mississippi Bat Working Group. Jackson, Mississippi. Available online at: <https://msbats.org/wp-content/uploads/MSBatConservationStrategy20200810.pdf>
- Tetra Tech 2021. Bat Habitat Assessment. Origis Energy. Optimist Solar + Battery Energy Storage System. Clay County, Mississippi. July 23, 2001.
- United States Fish and Wildlife Service (USFWS). 2016. Endangered and Threatened Wildlife and Plants; Threatened Species Status for the Northern Long-Eared Bat with 4(d) Rule. Federal Register 80(63): 17974-18033. Available online at: <https://www.fws.gov/Midwest/endangered/mammals/nleb/pdf/FRnlebFinal4dRule14Jan2016.pdf>
- _____. 2019. Indiana Bat Range Map. Available online: <https://www.fws.gov/midwest/endangered/mammals/inba/RangeMapINBA.html>
- _____. 2020a. Range-wide Indiana Bat Summer Survey Guidelines. March 2020. 65pp. Available online at: <https://www.wildlife.state.nh.us/nongame/documents/endangered-threatened-wildlife-nh.pdf>
- _____. 2020b. Midwest Region Endangered Species. Northern Long-Eared Bat (*Myotis septentrionalis*) Available online at: <https://www.fws.gov/midwest/endangered/mammals/nleb/>
- Weather Underground. 2021 PWS data for Columbus, MS. Available online at: <https://www.wunderground.com/history/daily/us/ms/columbus/KGTR/>

**APPENDIX A. STATION CONDITIONS AND DETECTOR
ORIENTATION PHOTOGRAPHS**

PHOTOGRAPHIC RECORD

Company: MS Solar 7, LLC

Project: Optimist Solar



Photo No.: 01

Station: MSOT-01

Date: August 4, 2021

Comments: Station located adjacent to a 0.5-acre wooded pond located within a crop field. Pond likely stays open year-round.

PHOTOGRAPHIC RECORD

Company: MS Solar 7, LLC

Project: Optimist Solar



Photo No.: 02

Station: MSOT-02

Date: August 4, 2021

Comments: Station located along transmission line corridor that borders a mature forested wetland. Microphone oriented towards open water wetland.

PHOTOGRAPHIC RECORD

Company: MS Solar 7, LLC

Project: Optimist Solar



Photo No.: 03

Station: MSOT-03

Date: August 4, 2021

Comments: Station located within open midstory forest adjacent to McGee Creek, which may serve as a potential travel and foraging corridor. Microphone oriented towards creek.

PHOTOGRAPHIC RECORD

Company: MS Solar 7, LLC

Project: Optimist Solar



Photo No.: 04

Station: MSOT-04

Date: August 4, 2021

Comments: Station located at interface of a mature upland stand and a large 20-acre pond. Likely a transition location from roosting to foraging habitat. Microphone oriented along forest edge.

PHOTOGRAPHIC RECORD

Company: MS Solar 7, LLC

Project: Optimist Solar



Photo No.: 05

Station: MSOT-05

Date: August 4, 2021

Comments: Station located within an opening adjacent to a small stream within a red cedar dominated stand.

PHOTOGRAPHIC RECORD

Company: MS Solar 7, LLC

Project: Optimist Solar



Photo No.: 06

Station: MSOT-06

Date: August 4, 2021

Comments: Station located along two-track road within a riparian corridor of Spring Creek.

PHOTOGRAPHIC RECORD

Company: MS Solar 7, LLC

Project: Optimist Solar



Photo No.: 07

Station: MSOT-07

Date: August 4, 2021

Comments: Station located along a fencerow and adjacent to old barn. Site was selected for potential bat occupancy in barn.

PHOTOGRAPHIC RECORD

Company: MS Solar 7, LLC

Project: Optimist Solar



Photo No.: 08

Station: MSOT-08

Date: August 4, 2021

Comments: Station located adjacent to small pond within a forested area. Numerous shagbark hickory in area along with several snags; roosting and foraging opportunities abound.

APPENDIX B. MAXIMUM LIKELIHOOD ESTIMATES (MLE) SUMMARY

Summary of Maximum Likelihood Estimates (MLEs) for Species Presence by Kaleidoscope Pro at Optimist Solar.

Station	Date	Townsend's big-eared bat	Big brown bat	Eastern red bat	Hoary Bat	Northern yellow bat	Seminole bat	Southeastern myotis	Little brown bat	Northern long-eared bat	Evening bat	Tri-colored bat	Brazilian free-tailed bat
Overall		1.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	1.00	0.00	0.00	0.00
MSOT-01	4-Aug	1.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	1.00	1.00	0.00	1.00
	5-Aug	1.00	0.00	0.45	0.00	0.00	0.00	1.00	0.53	1.00	1.00	0.36	1.00
	6-Aug	1.00	0.00	1.00	0.00	0.02	0.00	1.00	0.00	1.00	1.00	1.00	0.99
	7-Aug	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
	8-Aug	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.99	1.00
	9-Aug	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.01	1.00	1.00	1.00	1.00
	10-Aug	1.00	0.00	1.00	0.00	0.57	0.00	1.00	0.10	1.00	1.00	1.00	1.00
	11-Aug	1.00	0.51	1.00	0.00	0.00	0.00	1.00	0.06	1.00	1.00	1.00	0.03
	12-Aug	1.00	0.00	0.83	0.00	0.00	0.00	1.00	0.42	1.00	1.00	1.00	0.99
	13-Aug	1.00	0.00	1.00	0.00	0.15	0.00	1.00	0.00	1.00	1.00	1.00	0.51
	14-Aug	1.00	0.00	1.00	0.00	0.30	0.00	1.00	0.02	1.00	1.00	0.39	0.88
	15-Aug	1.00	0.88	1.00	0.01	0.01	0.00	1.00	0.00	1.00	1.00	1.00	0.96
MSOT-02	4-Aug	1.00	0.00	0.00	0.05	0.30	1.00	0.00	0.00	1.00	0.07	0.00	1.00
	5-Aug	1.00	0.00	0.00	0.23	1.00	1.00	1.00	0.00	0.63	0.84	0.00	0.77
	6-Aug	1.00	0.00	0.01	0.89	0.52	1.00	1.00	0.00	1.00	1.00	0.00	0.43
	7-Aug	1.00	0.01	0.00	0.05	0.06	1.00	0.02	0.70	1.00	0.00	0.00	1.00
	8-Aug	1.00	0.00	0.09	0.52	1.00	1.00	0.02	0.00	1.00	0.00	0.00	1.00
	9-Aug	1.00	0.00	0.00	1.00	0.86	1.00	1.00	0.08	1.00	0.01	0.00	1.00
	10-Aug	1.00	0.05	0.33	1.00	1.00	1.00	1.00	0.00	0.98	1.00	0.01	0.37

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	11-Aug	1.00	0.00	0.93	1.00	1.00	1.00	1.00	0.00	1.00	0.46	0.00	1.00
	12-Aug	1.00	0.00	1.00	0.41	1.00	1.00	1.00	0.33	1.00	1.00	0.00	1.00
MSOT-03	4-Aug	1.00	0.00	0.00	0.71	0.91	1.00	1.00	1.00	1.00	1.00	0.00	1.00
	5-Aug	1.00	0.00	0.00	0.51	0.37	1.00	1.00	1.00	1.00	1.00	0.00	1.00
	6-Aug	1.00	0.00	0.00	0.01	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
	7-Aug	1.00	0.00	0.09	0.00	0.79	1.00	1.00	0.11	1.00	0.42	0.00	1.00
	8-Aug	1.00	0.00	0.02	0.00	1.00	1.00	1.00	0.40	1.00	1.00	0.00	0.93
	9-Aug	1.00	0.00	1.00	0.00	0.01	0.26	1.00	0.00	1.00	0.98	0.00	1.00
	10-Aug	1.00	0.00	1.00	0.02	0.99	0.35	1.00	0.07	1.00	0.21	0.05	1.00
	11-Aug	1.00	0.00	1.00	0.13	0.93	1.00	1.00	0.03	1.00	0.38	0.10	0.62
	12-Aug	1.00	0.00	0.00	0.00	0.10	1.00	1.00	0.00	1.00	1.00	0.01	1.00
	13-Aug	1.00	0.00	0.00	0.00	0.23	1.00	1.00	0.00	1.00	1.00	0.49	1.00
	14-Aug	1.00	0.00	0.07	1.00	1.00	1.00	1.00	0.68	1.00	0.04	1.00	1.00
	15-Aug	1.00	0.00	0.39	0.01	1.00	1.00	1.00	0.07	1.00	0.76	1.00	1.00
MSOT-04	4-Aug	1.00	0.00	0.00	0.00	1.00	0.00	1.00	0.96	1.00	1.00	0.00	0.00
	5-Aug	1.00	0.00	0.00	0.00	0.36	0.00	1.00	1.00	1.00	1.00	0.00	0.00
	6-Aug	1.00	0.00	0.01	0.01	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00
	7-Aug	1.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00
	8-Aug	1.00	0.00	0.00	0.25	0.14	0.00	1.00	1.00	1.00	1.00	0.00	0.00
	9-Aug	1.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00
	10-Aug	1.00	0.00	0.00	0.04	0.19	0.00	1.00	0.00	1.00	1.00	0.00	0.00
	11-Aug	1.00	0.16	0.00	0.51	1.00	0.00	0.02	1.00	1.00	1.00	0.00	0.00
	12-Aug	1.00	0.00	0.00	0.02	1.00	0.00	1.00	0.31	1.00	1.00	0.00	0.00
	13-Aug	1.00	0.00	0.00	0.05	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00
	14-Aug	1.00	0.00	0.00	0.06	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00
MSOT-06	4-Aug	1.00	0.00	0.01	0.73	1.00	0.92	1.00	0.00	1.00	1.00	0.00	0.81
	5-Aug	1.00	0.00	0.21	1.00	1.00	0.88	1.00	0.01	1.00	1.00	0.00	1.00
	6-Aug	1.00	0.00	0.69	0.71	0.98	0.64	1.00	0.03	1.00	1.00	0.00	1.00
	7-Aug	1.00	0.00	0.09	0.80	0.14	0.19	1.00	0.00	1.00	1.00	0.00	0.38
	8-Aug	1.00	0.00	0.22	0.17	0.93	1.00	1.00	0.00	1.00	1.00	0.00	1.00

Optimist Solar
NLEB Presence/Absence Survey

	9-Aug	1.00	0.01	0.12	0.00	0.11	1.00	1.00	0.02	1.00	0.02	0.00	1.00
	10-Aug	1.00	0.00	0.63	0.00	1.00	0.79	1.00	0.00	1.00	1.00	0.00	1.00
	11-Aug	1.00	0.00	0.00	0.60	0.93	1.00	1.00	0.00	1.00	1.00	0.36	0.72
	12-Aug	1.00	0.12	0.10	0.00	0.19	0.71	1.00	0.00	1.00	0.95	0.04	0.73
	13-Aug	1.00	0.01	0.70	0.00	0.88	0.64	1.00	0.00	1.00	1.00	0.31	1.00
MSOT-07	4-Aug	1.00	0.00	0.00	1.00	1.00	0.02	1.00	0.01	1.00	1.00	0.00	0.51
	5-Aug	1.00	0.00	0.20	0.07	1.00	0.87	1.00	0.01	1.00	0.95	0.00	1.00
	6-Aug	1.00	0.00	0.00	1.00	1.00	0.09	1.00	0.62	1.00	1.00	0.00	1.00
	7-Aug	1.00	0.00	0.15	1.00	0.73	0.04	1.00	0.20	1.00	0.06	0.95	1.00
	8-Aug	1.00	0.00	0.49	0.72	1.00	0.00	1.00	0.82	1.00	0.44	0.60	1.00
	9-Aug	1.00	0.02	0.25	0.11	0.29	0.43	1.00	0.29	1.00	1.00	0.01	1.00
	10-Aug	1.00	0.00	1.00	0.86	1.00	0.36	1.00	0.03	1.00	0.15	1.00	1.00
	11-Aug	1.00	1.00	0.38	0.00	0.55	0.19	1.00	0.03	1.00	1.00	1.00	0.87
	12-Aug	1.00	0.00	0.14	1.00	0.50	0.01	1.00	0.00	1.00	0.17	0.65	1.00
	13-Aug	1.00	0.00	0.00	1.00	0.93	1.00	0.02	0.39	1.00	0.04	0.79	0.69
	14-Aug	1.00	0.00	0.00	0.72	1.00	0.87	1.00	0.74	1.00	1.00	1.00	0.89
MSOT-08	4-Aug	1.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00
	5-Aug	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.95	1.00	0.00	0.00	1.00
	6-Aug	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.97	1.00	0.00	0.00	0.71
	7-Aug	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.85	1.00	0.00	0.00	1.00
	8-Aug	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.11	1.00	0.00	0.00	1.00
	9-Aug	1.00	0.00	0.00	1.00	1.00	0.06	1.00	0.79	1.00	0.00	0.00	1.00
	10-Aug	1.00	0.00	0.00	1.00	1.00	0.05	1.00	1.00	1.00	0.00	0.00	1.00
	11-Aug	1.00	0.00	0.00	0.19	1.00	0.00	1.00	0.16	1.00	0.00	0.00	1.00
	12-Aug	1.00	0.00	0.00	1.00	1.00	0.01	1.00	0.94	1.00	0.00	0.00	1.00
	13-Aug	1.00	0.00	0.00	1.00	1.00	0.02	1.00	1.00	1.00	0.00	0.00	1.00
	14-Aug	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00
	15-Aug	1.00	0.00	0.00	1.00	1.00	0.62	1.00	1.00	1.00	0.00	1.00	1.00

APPENDIX C. RELEVANT STAFF RESUMES

EXPERIENCE SUMMARY

Mr. Parrish is a biologist with over 18 years of experience conducting wildlife and habitat projects throughout the Northeast and Western U.S. His responsibilities have included working as the lead wildlife biologist on a wide variety of terrestrial and aquatic projects with an emphasis with a particular emphasis on bat acoustic monitoring, avian ecology, habitat assessment, and avian response to wind development. Mr. Parrish has conducted over 40 northern long-eared bat presence absence studies comprised of over 175 detector stations in Connecticut, Maine, Massachusetts, Michigan, Pennsylvania, and New Hampshire. In addition, Mr. Parrish serves as equipment manager and one of the lead analysts for Tetra Tech's bat program. Mr. Parrish is involved in all stages of acoustic bat surveys including: habitat assessment, deployment, analysis, manual vetting, and report preparation. Mr. Parrish regularly participates in bat acoustic workshops to remain current with changing protocols, survey techniques and advances in hardware and software. Mr. Parrish has strong writing and data analysis skills and conducts analysis and reports for a majority of projects he participates in. Mr. Parrish is proficient with data management and analysis using Microsoft Access, geographic information system, and the program R.

RELEVANT PROJECT EXPERIENCE

Wildlife Biologist, TRC, NLEB Presence/Absence Habitat Assessment and Detector Deployment, Proposed Solar Development, Fitzwilliam, NH. Mr. Parrish deployed 6 acoustic bat detectors as part of a NLEB Presence/Absence Survey. The NLEB Presence/Absence survey followed the 2020 Range-wide Indiana Bat Summer Survey Guidelines. Mr. Parrish was responsible for selecting survey locations, deploying detectors, completing habitat assessments, conducting checks, confirming manual vetting results, managing acoustic recordings, and preparing a report with results of the survey.

Wildlife Biologist, Patriot Renewables, NLEB Presence/Absence Habitat Assessment and Detector Deployment, Multiple Wind facilities, ME.

Deployed 25 SM4 detectors at proposed wind/solar facility in 2021 for a NLEB presence absence survey. Deployed 30 SM4 detectors at proposed wind/solar facility in 2020 for a NLEB presence absence survey. Deployed 15 SM4 detectors at proposed wind facility in 2018 for a NLEB presence absence survey. Four detectors were deployed in the project area in 2016 to determine the species composition, activity levels, and potential presence of threatened or endangered species. Deployed 14 SM3 detectors in 2015 for a NLEB presence absence survey. Habitat assessments completed with each project and methodology followed all phases of current NLEB Guidelines All data was processed using an approved version of Kaleidoscope Pro and recordings were manually reviewed using SonoBat v. 3.2 or 4.2 at sites where high frequency or Myotis calls were auto classified. Results of activity levels by species and time of year were presented in a report.

EDUCATION

M.S., Biology, Plymouth State University, 2013

B.S., Environmental Biology, Plymouth State University, 2003

AREAS OF EXPERTISE

- Avian Ecology
- Bat and Avian Acoustic Surveys
- Water and Stream Sampling and Assessments
- Benthic Invertebrate Sampling
- Biological Assessments

PROFESSIONAL AFFILIATIONS

- The Wildlife Society, New England Chapter
- Rocky Mountain Elk Foundation

TRAINING AND CERTIFICATIONS

- Wilderness First Aid, Freeport, ME (2018)
- International Bat Echolocation Symposium, Tucson, AZ (2017)
- Bat Acoustic Survey Techniques and Analysis, BCM, Canoe Creek, PA (2015)
- GIS Certificate, University of Idaho (2012)
- Aquatic Invasive Species Detection and Prevention (2010)
- NEPA Training (2010)

OFFICE LOCATION

Portland, ME

YEARS OF EXPERIENCE

18

YEARS WITH FIRM

8

Wildlife Biologist, USACE, NLEB Presence/Absence Habitat Assessment and Detector Deployment, Tobyhanna Army Depot, PA. 2019 Deployed 20 SM4 detectors in 2019 and conducted habitat assessments at each location according to USFWS 2019 Indiana Bat Summer Survey Guidelines. Analyzed bat acoustic data, manually vetted recordings to confirm species presence, summarized results and prepared report.

Data Analyst and Reviewer, Multiple National Wildlife Refuge Acoustic Bat Monitoring Projects. 2013 - 2018 – **USFWS.** One of two Tetra Tech employees responsible for manually vetting acoustic bat recordings in an effort to determine the occupancy of Threatened or Endangered bat species on National Wildlife Refuge (NWR) lands. Automated classifications were summarized and qualitatively vetted (i.e., manually reviewed on a spectrogram) to determine accuracy of automated classification. Mr. Parrish worked closely with the client on a vetting protocol to meet the shifting goals of the client, which is now to determine presence of Threatened or Endangered species, allowing for more statistically robust measures of occupancy. Reviewed and summarized data/results from 12 NWRs from 2012, 28 NWRs from 2013, and 18 NWRs from 2015.

Wildlife Biologist, NextEra, NLEB Presence/Absence Habitat Assessment and Detector Deployment, Various Solar Projects, CT, ME, NH. 2016–2018. Deployed 26 SM3 and SM4 Bat detectors for six independent projects and conducted habitat assessments at each location according to USFWS Indiana Bat Summer Survey Guidelines. Analyzed bat acoustic data, manually vetted recordings to confirm species presence and summarized data for reports.

Wildlife Biologist, Ranger Solar, NLEB Presence/Absence Habitat Assessment and Detector Deployment, Various Solar Projects, CT, ME, NH. 2016–2017. Deployed 32 SM3 and SM4 Bat detectors for six independent projects and conducted habitat assessments at each location according to USFWS Indiana Bat Summer Survey Guidelines in 2016 and 2017. Analyzed bat acoustic data, manually vetted recordings to confirm species presence and summarized data for reports.

Wildlife Biologist, US Marine Corp, NLEB Presence/Absence Habitat Assessment and Detector Deployment, MI. Deployed four SM3 detectors in 2016 and conducted habitat assessments at each location according to USFWS 2016 Indiana Bat Summer Survey Guidelines. Analyzed bat acoustic data and manually vetted *Myotis* spp. Summarized data for report.

Wildlife Biologist, CES, Inc., NLEB Presence/Absence Habitat Assessment and Detector Deployment, Utility Corridor, ME. Deployed seven SM3 detectors in 2015 and conducted habitat assessments at each location according to USFWS 2015 Indiana Bat Summer Survey Guidelines. Analyzed bat acoustic data and manually vetted *Myotis* spp. Summarized data for report.

Wildlife Biologist, MassDOT, NLEB Presence/Absence Habitat Assessment and Detector Deployment, Various Road and Bridge Improvement Projects, MA. Deployed 10 detectors in 2015 and conducted habitat assessments at each location according to USFWS 2015 Indiana Bat Summer Survey Guidelines. In addition, analyzed bat acoustic data from 17 additional projects (57 bat detectors) with Kaleidoscope Pro and manually vetted calls with Sonobat software. Summarized data for reports.

Wildlife Biologist, MaineDOT, NLEB Presence/Absence Habitat Assessment and Detector Deployment, Various Road and Bridge Improvement Projects, ME. Deployed 13 detectors in 2015 and conducted habitat assessments at each location according to USFWS 2015 Indiana Bat Summer Survey Guidelines. Analyzed bat acoustic data with Kaleidoscope Pro and manually vetted calls with Sonobat software. Summarized data for reports. In addition, conducted bridge surveys for bats and created protocol for surveying for bats at bridges using a FLIR thermal camera.

Wildlife Biologist, Eolian, NLEB Presence/Absence Habitat Assessment and Detector Deployment, Small Scale Wind Development, ME. Deployed six SM2 and SM3 detectors in 2014 and conducted habitat assessments at each location according to USFWS 2014 Indiana Bat Summer Survey Guidelines. Analyzed bat acoustic data and manually vetted *Myotis* spp. Summarized data for report.

Wildlife Biologist, Pioneer Green, NLEB Presence/Absence Habitat Assessment and Detector Deployment, Small Scale Wind Development, CT and MD. Deployed 20 SM2 and SM3 detectors in 2014 and conducted habitat assessments at each location according to USFWS 2014 Indiana Bat Summer Survey Guidelines. Analyzed bat acoustic data and manually vetted *Myotis* spp. Summarized data for report.

Wildlife Biologist, Commercial Wind Projects, Bat Acoustic Monitoring, Multiple locations throughout the country 2013-Present. Mr. Parrish has been involved with Tetra Tech's bat program since 2013 and has been

participated in over 70 bat acoustic bat projects. Mr. Parrish deploys long-term detector set ups, trains personnel on detector operation and protocols, selects sampling locations, manages and analyzes acoustic data, and prepares reports. Mr. Parrish serves as bat equipment manager and provides logistical support for planning acoustic deployments. Commercial wind projects have been in Maine, Maryland, North Dakota, South Dakota Nebraska, Colorado, Kansas, Oklahoma, Texas, Oregon, Iowa, and Alberta Canada.

Wildlife Biologist, Kinder Morgan, Ecological Assessment of Bats, Birds, and Small Mammals, Bearfort Mountain Natural Area, NJ. Four detectors were deployed in the project area to determine the species composition, activity levels, and potential presence of threatened or endangered species. Deployment scenarios adhered to the *2015 Range-Wide Indiana Bat Summer Survey Guidelines*. All data was processed using an approved version of Kaleidoscope Pro and recordings were manually reviewed using SonoBat v. 3.2 at sites where high frequency or Myotis calls were auto classified. Results of activity levels by species and time of year were presented in a report.

Baseline Bat Survey, – U.S. Department of the Navy, Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic, VA and NJ2014. Deployed 16 acoustic bat detectors at three naval stations in the Norfolk, Virginia area, and at a Navy installation in New Jersey. Responsible for managing all incoming acoustic recordings and acting as the lead data analyst for generating results for survey reports.

Baseline Bat Survey, Camp Edwards, MA 2014-2015 – Massachusetts Army National Guard- Collected information on the species richness, activity levels, and spatio-temporal use patterns of bats. Passive acoustic bat monitors were used to record calls, which were analyzed using two software programs. Conducted statistical analysis examining spatial and temporal relationships and presented results in a final report.

EXPERIENCE SUMMARY

Mr. Mitchell has over 15 years of experience working on avian survey projects across the United States. He has worked in a variety of capacities including breeding bird surveys, raptor nest surveys, eagle use surveys, avian use surveys, lek surveys, avian compliance monitoring, bat acoustic surveys, bat habitat surveys, and threatened and endangered species surveys. Hal primarily works in the wind industry but has also performed wildlife related survey tasks on solar, electrical, and oil/gas transmission projects. He has completed ecological and environmental services across various habitats throughout the country.

RELEVANT PROJECT EXPERIENCE

Wildlife Biologist, March 2017–August 2020

Capital Power, Avian and Bat Surveys, Confidential Project, ND

Task lead over avian surveys. Prepared protocols and relative information for field staff to conduct avian use, eagle use, eagle roost, and lek surveys. Prepared avian use, eagle use, eagle roost, and lek reports for the Project. Prepared the Bird and Bat Conservation strategy report for the Project. Also helped deploy acoustic bat detectors on site.

Wildlife Biologist, January 2017–April 2017

Invenergy, Bird and Bat Conservation Strategy, Santa Rita Wind Energy Project, TX

Prepared the impact assessment section for various federally threatened and endangered species that may be encountered within the project area for the Bird and Bat Conservation Strategy (BBCS) with other Tetra Tech biologists. Each species assessment describes the likelihood of each species occurring within the Project Area, potential time of year the species may be encountered, reasons for each species needing federal protection, and possible impacts from the project development.

Wildlife Biologist, April 2019–April 2020

ENGIE, Avian Baseline Surveys, Las Lomas Wind Project, TX

Task lead over avian surveys. Prepared protocols and relative information for field staff to conduct avian use and eagle use surveys. Prepared avian use and eagle use reports for the Project. Also conducted ground-based raptor nest surveys at the Project. A bird and bat conservation strategy was also developed for this Project.

Wildlife Biologist, August 2017–August 2018

United States Airforce, Bat Acoustic Analysis, Confidential Projects, US

Conducted comprehensive acoustic analysis of recorded data from 18 military installations across the United States. Analysis included identification and collection of voucher recordings for concurrence.

Wildlife Biologist, July 2017

Avangrid Renewables LLC, Bat Habitat Assessment Report, Pontotoc Wind Energy Project, KS

Prepared desktop assessment of bat habitat and likelihoods of occurrence for certain bat species within the Project. This report addressed concerns regarding the federally protected northern long-eared bat.

EDUCATION

BS, Wildlife and Fisheries Science, Mississippi State University, 2010

AREA OF EXPERTISE

Avian surveys
Avian compliance monitoring
Bat acoustic and habitat surveys

REGISTRATIONS/ CERTIFICATIONS

Certified Wildlife Biologist®, 2020

TRAINING

40-Hour HAZWOPER, Number 754912663, 2015
8-hour HAZWOPER Refresher, 2020
First Aid/CPR/AED Training, American Red Cross, 2019
Bat Acoustic Survey Methods Training, Bat Survey Solutions, LLC., 2017
ATV Operational Safety Training, ATV Safety Institute, 2006

OFFICE

Denver, CO

YEARS OF EXPERIENCE

15

YEARS WITHIN FIRM

4

Wildlife Biologist, January 2021**EDF Renewables, Gopher Tortoise Surveys, Confidential Project, GA**

Conducted line transect surveys in suitable gopher tortoise habitat. Documented the burrows by assessing occupation, morphometrics of the burrow, and location.

Wildlife Biologist, January 2021–Present**RWE Renewables, Avian Baseline Surveys, Confidential Project, IL**

Task lead over avian surveys. Prepared protocols and relative information for field staff to conduct avian use and eagle use surveys. Will prepare avian use and eagle use reports for the Project.

Wildlife Biologist, August 2020**EDF Renewables, Site Visit and Wetland Delineation, Confidential Project, MS**

Conducted wetland delineations following the U.S. Army Corp of Engineers (USACE) wetland delineation manual protocols. Coordinated with the Farm Service Agency (FSA) and USACE for jurisdictional determination for the Project.

Wildlife Biologist, March 2020**Confidential Client, Greater and Lesser Prairie Chicken Surveys, Confidential Project, KS**

Conducted lek surveys and assessed habitat suitability for the federal threatened lesser prairie-chicken according to Western Association of Fish and Wildlife Agencies (WAFWA) guidelines and protocols.

Wildlife Biologist, February 2020**Multiple Clients, Aerial Raptor Nest Surveys, Four Projects, IN and KS**

Conducted aerial raptor nest surveys on two projects in Indiana and Kansas via helicopter. These surveys included searches for rookeries and eagle prey bases. Memos were also written discussing the survey results.

Wildlife Biologist, November 2019**Soldier Creek Wind Project LLC., Wetland Delineations, Soldier Creek Wind Project, KS**

Conducted wetland delineations following the USACE wetland delineation manual protocols. Coordinated with the FSA and USACE for jurisdictional determination for the Project.

Wildlife Biologist, August 2019–Present**North Hills Wind Project LLC., Avian Baseline Surveys, North Hills Wind Project**

Task lead over avian surveys. Prepared protocols and relative information for field staff to conduct avian use and eagle use surveys. Prepared avian use and eagle use reports for the Project.

Wildlife Biologist, August 2019–September 2019**Cherry Valley PV I, Wetland Delineation, Cherry Valley Solar Project, AR**

Conducted wetland delineations following the USACE wetland delineation manual protocols. Coordinated with the FSA and USACE for jurisdictional determination for the Project.

Wildlife Biologist, August 2019–July 2020**RWE Renewables Americas LLC., Avian Baseline Surveys, Gibson Projects, IN**

Task lead over avian surveys. Prepared protocols and relative information for field staff to conduct avian use and eagle use surveys. Prepared avian use and eagle use reports for the Project. Also conducted aerial raptor nest surveys at the Project.

Wildlife Biologist, April 2019–November 2019**EDPR, Terrestrial Visual Encounter Survey, Rye Patch Solar Project, NV**

Conducted terrestrial visual encounter survey to document any wildlife or habitats that should be avoided. This also required checking historic locations of protected species and conducting greater sage-grouse surveys. Report detailing the findings was also written.

Wildlife Biologist, March 2019–May 2019**Multiple Clients, Aerial Raptor Nest Surveys, Five Projects, NM IA and KS**

Conducted aerial raptor nest surveys on two projects in New Mexico, Iowa, and Kansas via helicopter. These surveys included searches for rookeries and eagle prey bases. Memos were also written discussing the survey results.

Wildlife Biologist, February 2019–Current**Sempra Renewables, Avian Baseline Surveys, Confidential Project**

Task lead over avian surveys. Prepared protocols and relative information for field staff to conduct avian use and eagle use surveys. Prepared avian use and eagle use reports for the Project.

Wildlife Biologist, January 2019–April 2020**Mountain Valley Pipeline LLC., Wetland Delineations, Mountain Valley Pipeline Project, WV**

Conducted wetland delineations following the USACE wetland delineation manual protocols. Coordinated with the FSA and Corp for jurisdictional determination for the Project.

Wildlife Biologist, October 2018–December 2020**Confidential Client, Wetland Delineation, Searcy Solar, AR**

Conducted wetland delineations following the USACE wetland delineation manual protocols. Coordinated with the FSA and Corp for jurisdictional determination for the Project.

Wildlife Biologist, September 2018**Confidential Client, Phase I Site Assessment, Searcy Solar, AR**

Phase I Site Assessment and habitat characterization at the Searcy Solar Project. Areas included vast wetland areas and numerous industrial complexes.

Wildlife Biologist, September 2018–October 2018**EDPR, Site Characterization Studies, Five Confidential Projects, NV**

Prepared the Site Characterization Studies for five solar energy projects. Issues addressed in the Site Characterization Studies focused on those likely to be addressed during the environmental review and permitting process and include evaluating the potential of federal and state threatened and endangered species, native habitats, and natural areas of interest (such as wetlands).

Wildlife Biologist, June 2018–June 2019**Pattern Energy, Eagle Use Surveys, Pole Canyon Wind Target Area, CO**

Task lead over avian surveys. Prepared protocols and relative information for field staff to conduct avian use and eagle use surveys. Prepared avian use and eagle use reports for the Project.

Wildlife Biologist, June 2018–June 2019**Confidential Client, Baseline Wildlife Surveys, Cerro Gordo Wind Energy Project, IA**

Task lead over avian surveys. Prepared protocols and relative information for field staff to conduct avian use and eagle use surveys. Prepared avian use and eagle use reports for the Project. This also included a habitat assessment and reporting for the Dakota skipper and Poweshiek skipperling.

Wildlife Biologist, February 2018–May 2018**Multiple Clients, Aerial Raptor Nest Surveys, Confidential Projects, TX and KS**

Conducted aerial raptor nest surveys on two projects in Texas and Kansas via helicopter. These surveys included searches for rookeries and eagle prey bases. Memos were also written discussing the survey results.

Wildlife Biologist, September 2017**Sempra Renewables, Habitat Characterization Study, Confidential Project, KS**

Conducted a thorough habitat analysis of the Project. This included determining native versus disturbed grasslands, assessing wetlands for use by whooping cranes, and other potential threatened and endangered species habitats within the Project.

Wildlife Biologist, July 2017**Amadeus Wind, LLC, Site Characterization Study, Amadeus Wind Energy Project, TX**

Prepared the Site Characterization Study for Amadeus Wind Energy Project. Issues addressed in the Site Characterization Study focus on those likely to be addressed during the environmental review and permitting process and include evaluating the potential of federal and state threatened and endangered species, native habitats, and natural areas of interest (such as wetlands).