EXHIBIT 22 - ENVIRONMENTAL ASSESSMENT OF WETLANDS AND ENDANGERED SPECIES

ENVIRONMENTAL ASSESSMENT OF WETLANDS AND THREATENED AND ENDANGERED SPECIES REPORT

FOR THE

OLLA INDUSTRIAL SITE

Prepared for:
Meyer, Meyer, LaCroix & Hixson, Inc.
Mr. Jacob Dillehay, P.E.
100 Engineer Place
Alexandria, Louisiana 71303

Prepared by:

1300 West Government Street
Pensacola, Florida 32502

Project No. 2003.001
January 2015

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1. INTRODUCTION

This report presents the findings of an Environmental Assessment (EA) conducted on behalf of Meyer, Meyer, LaCroix & Hixson (MMLH) for the Town of Olla, Louisiana. Biome Consulting Group, LLC. (Biome) has prepared this EA in conformance with US Army Corps of Engineers (CE), Federal Fish and Wildlife (FWS) and Louisiana Department of Wildlife and Fisheries (LDWF) standards, practices and procedures as outlined in the most current guidelines. The Town of Olla is seeking certification in the Louisiana Economic Development (LED) program for an approximately 50 acre tract of land.

It is anticipated that the site will be used for industrial purposes. The findings in this report satisfy the requisite LED certification guidelines as listed under section L of the LED application.

1.1 Objectives

The specific objectives of this EA are to:

- Conduct jurisdictional determinations in accordance with CE Section 404 guidelines;
- Field delineate jurisdictional waters and wetlands;
- GPS locate jurisdictional areas and prepare representative graphics;
- Conduct field review of the Site for the presence of listed species;
- List federal and state threatened and endangered (TE) plant and animal species with known records of occurrence in the project vicinity;
- Identify species habitat requirements and describe the distributions and habitat use of TE species presently occurring in the project vicinity.

1.2 Study Area

The study area, herein known as “the Site” consists of approximately 50 acres of land, owned by the Town of Olla, as displayed in the figures of this report. The Site lies in northwestern corner of La Salle Parish and within the town limits of Olla. It is positioned in Section 34, Township 11-North, Range 2-East with a central location near 92°15'32.48"W longitude and 31°53'33.72"N latitude (NAD 1983 UTM Zone 15N). The Site is bound to the north by State Route 124, to the east by undeveloped land and the Missouri Pacific Railroad, to the west by undeveloped land, and to the south by undeveloped land. It is irregularly shaped but the Site boundaries are visibly discernible in the field. Obvious land use changes clearly mark the Site’s boundary. Access is gained via State Route 124 to the north. There are no fences or obstructions limiting access to the site.

The Site is characterized as maintained pasture with a wetland drain entering the center of the southern property boundary. The site was used for silviculture until sometime between 2007

and 2009 when it was converted to pasture. The current conditions of the site are depicted in the 2013 aerial photograph in figures 2 & 3. Storm water runoff generally sheds into swales that lead to a main shallow drain at the south central portion of the site. The elevation on the site ranges between 130 feet at the south central Site boundary and 162 feet at the northeast Site boundary, as depicted in figures 4 & 5. Erosion is controlled by seeded turf grasses such as Bahia grass and Bermuda grass. Routine mowing of this area has provided a competitive advantage for the turf and in turn has maintained erosional stability throughout the Site.

2. STUDY METHODS

Listed species and their habitats which are known to occur in La Salle Parish (Table 1.) and which are protected under Louisiana Title 56 and the United States Endangered Species Act (ESA) of 1973 (7 U.S.C. §1531 et seq.) were carefully investigated. Although species with a recorded occurrence in La Salle Parish were given special attention, all listed species were considered during the site reconnaissance. Threatened species represent plants and animals that are likely to become endangered within the foreseeable future throughout all or a significant portion of their range. Endangered species are considered those plants and animals that have become so rare that they are in danger of becoming extinct.

Jurisdictional wetlands and other waters determinations were conducted in accordance with the Regional Supplement to the *Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region* (Version 2.0). Jurisdictional areas were field delineated with glow pink survey flagging tape and pin flags. Each flagged point was alpha-numerically labeled and subsequently located using a handheld, sub-meter accurate Trimble GEO XT GPS unit. Data collected during the field survey were imported into an ArcMap GIS for the generation of report graphics. Routine CE wetland data sheets that establish an analytical basis for the upland and wetland determination were completed in the field and finalized in *Wetforms*® digital format. These are provided in Attachment 1. Representative site photographs which depict the visual conditions at the time of the site survey are displayed in Attachment 2.

2.1 Review of Existing Information

Species were investigated according to the study approaches recommended by state and federal agencies and the latest, most up to date literature. Tabular listings of TE species with known records of occurrence in the study area were reviewed in the following government databases:

- Louisiana Natural Heritage Program
- Louisiana Department of Wildlife and Fisheries
- Louisiana Department of Natural Resources SONRIS

- Nature Serve Explorer
- US Fish and Wildlife (FWS)
- Untied States Department of Agriculture (USDA) Natural Conservation Resources Conservation Service: Plants Database
- United States Geological (USGS) Survey: National Wetland Inventory
- USGS: Earth Resources Observation and Science (EROS) Center

Other key sources of information and data used in performing this study included but were not limited to the following:

- LSU Atlas: The Louisiana Statewide GIS database
- USDA historic aerials
- USDA Natural Resource Conservation Service Soil data
- USGS topographic quadrangles
- USDA National Elevation Data, 2 meter or better
- Digital Elevation Models
- Historic Aerials
- Noni Map View
- Bing Aerials
- Google Aerials

2.2 Listed Species Field Reconnaissance Survey

This report provides specific information within the project area, its natural communities, and its capacity to support listed species known to occur in La Salle Parish. Field reconnaissance review was conducted during the month of January 2015. Pedestrian transects at varying intervals according to species type and habitat makeup were utilized to adequately cover the entire Site. Data collected during the field reconnaissance phase of the study was documented using a handheld sub-meter accurate Trimble XT, 2008 series, GPS unit. These data were compiled and expressed in the report graphics.

Field notes were recorded and digital photographs of the general nature of the Site along with any observed species were captured. A series of color, black & white and infrared aerial photographs and raster data ranging from 1998 to 2014 were carefully studied prior to field survey. USGS topographic quadrangles were also utilized to identify representative elevation conditions and land use improvements in the general vicinity. Remote sensing techniques were employed to evaluate potential habitat or vegetative community types that would be indicative of adequate or sustaining habitat for listed species. Identifying occurrences of TE aquatic species also considered data base queries of previously recorded terrestrial and aquatic surveys by the FWS and other sources.

3. PROTECTED SPECIES

A request to LDWF staff regarding a query of the state database relative to know occurrences of listed species or species of special concern in La Salle Parish was sent on January 12, 2015. We are currently waiting for a response and will forward the information on as soon as we receive any correspondence from LDWF.

3.1 Plant Species

The issue of listed plants is treated slightly differently than animals with prime interest being afforded to federally listed species. Under this heading there is only one species listed by either the State or USFWS. This species is known as Earth-fruit (Geocarpon minimum) and is associated with bare soil where competition is very limited. The Earth-fruit is most often seen in the margin of bare soil "slicks" in saline prairies. Both the Earth-fruit and its' preferred habitat are absent on the project site; therefore, the development of the Site will "Not Effect" this species.

3.2 Aquatic Species

There are no species listed as threatened or endangered by the State or FWS under this category. Furthermore, none of the rare species in this category would be expected to reside on the Site.

3.3 Wildlife Species

3.3.1 Federally Protected Species

Red-cockaded woodpecker (*Picoides borealis*) – Listed as Endangered by both State and USFWS. This species is a relatively small woodpecker with prominent white bars. The crown, nape and back of the neck are black and there is a black line from the bill down to the side of the neck. The cheeks, side of the neck and throat are white and there is a white eyebrow line. The tail is black with white on the outer features and the underside is white with black streaks on the flanks. The males have an inconspicuous red mark on each side of the crown. This species is found in longleaf pine forests and in mixed pine-upland hardwood forest with little or no hardwood mid-story. Good habitat consists of pine stands with trees 22.9 cm and larger in diameter at breast height. Pine stands with or without out adequate management do not occur near the site. Therefore habitat is not present on the Site and development activities will "Not Effect" the Red-Cockaded woodpecker.

Louisiana Pine Snake (*Pituophis ruthveni*) – A candidate for listing by the FWS and not listed by the State. This snake is a pale tan with a row of large black or brown blotches down the back and a smaller series on either side. The underside is whitish with obscure brown spotting. The

tip of the snout is point and the snake's scales are keeled and in 27 to 33 rows. This species is typical of sandy, well drained soils, often associated with open pine forests and xeric sandhills with a well-developed grassy understory. Although this species is not protected by either state or federal law at this time, suitable habitat does not exist on Site to support this species. Development activities on the site will "Not Effect" the Louisiana pine snake.

3.3.2 State Protected Species

Bald Eagle (*Haliaeetus leucocephalus)* – The Bald eagle (Haliaeetus leucocephalus) is protected only by the State since the FWS delisted this species from the Endangered Species Act in 2007. The Bald eagle is however, afforded protection under the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act and the Lacey Act. Due to the location and types of activities of the proposed activity, the proposed action will "Not Effect" the Bald eagle. Conifer species old and tall enough to support an eagle nest do not occur on or nearby the Site. Additionally a review of the project area did not reveal any signs of active or inactive nesting sites.

4. JURISDICTIONAL WETLANDS AND OTHER WATERS

4.1 US Army Corps of Engineers

Technical guidelines outlined in the US Army Corps of Engineers Wetlands Delineation Manual (1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0) were applied in the field for determining the presence and location of jurisdictional wetlands and waters on and near the Site.

Section 404 of the Clean Water Act (33 USC 1344) requires authorization from the Secretary of the Army, acting through the Corps of Engineers, for the discharge of dredged or fill material into all waters of the United States, including wetlands. Discharges of fill material generally include, without limitation: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; dams and dikes; artificial islands; property protection or reclamation devices such as riprap, groins, seawalls, breakwaters, and revetments; beach nourishment; levees; fill for intake and outfall pipes and sub-aqueous utility lines; fill associated with the creation of ponds; and any other work involving the discharge of fill or dredged material. A Corps permit is required whether the work is permanent or temporary.

The basic premise of the dredge and fill program is to ensure that no discharge of dredged or fill material may be permitted if: (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the nation's waters would be significantly degraded. What this

implies is a Section 404 permit application must reflect that to the extent practicable the following below sequential review has been met.

1. Reasonably avoided all wetland impacts
2. Minimized potential impacts on wetlands and
3. Provide compensation for any remaining unavoidable impacts.

Jurisdictional evaluation of the entire Site revealed a jurisdictional feature that makes up the headwaters of Waterhole Branch. The jurisdictional area consists of approximately 0.46 acres of disturbed, low quality wetlands that are vegetated with a dominance of ruderal species as depicted in Figure 3. Soils underlying this system maintain hydric soil conditions through a long hydro period that extends into the dry season. A dark matrix with a Munsell chroma of less than 2 and numerous concentrations of redox formations on living pore linings was clearly evident. Significant contemporary diffuse redox boundaries were present near the surface with and without living root channels.

Jurisdictional analysis of the maintained pasture site was completed using historic aerials, two foot LIDAR data (Figure 4), Digital Elevation Models (Figure 5) and the NRCS La Salle Parish Soil Survey (Figure 6). After reviewing the information, prior to the Site visit, Bosso-Imhof determined the low lying contours and somewhat poorly drained soils needed further investigation. Our field reconnaissance located several wetland indicators in the bottoms of the swales encroaching on the Site from the south central property boundary. However, the wetland indicators are lost as the soil transitions from the somewhat poorly drained Frizzle series to the moderately well drained Shatta Series. In figure 3, the 2013 aerial photograph with the overlain jurisdiction boundary depicts the size and shape of the federally regulated wetlands. The remaining, non-jurisdictional portion of the site is dominated by upland pasture grasses and well drained soils.

5. SUMMARY AND CONCLUSIONS

Extensive review and survey reconnaissance of the Site revealed that it is unsuitable for any State or Federal listed plant or animal species. The disturbed nature and habitat makeup of the Site is not conducive for listed species nesting or foraging habitat. Development of the approximately 50 acre Site will “Not Affect” any species currently listed or species potentially listed in the near future as threatened or endangered. The overall disturbed nature of the project area through maintenance mowing and historic silvicultural activities and the dominance of silvicultural activities on the adjacent lands are not conducive to supporting listed plant and animal species. Of the state and federally listed animal species, no occurrences were documented, nor expected on the project site. Although their absence from the site cannot be guaranteed, the likelihood of occurrence is exceedingly low.

A jurisdictional feature meeting Section 404 wetland criteria was identified and delineated on the Site. It occupies approximately 0.46 acres of the Site. Dredge and/or fill activities

waterward of the jurisdictional limits will require CE permitting review prior to conducting such activities.

Based on the information gathered during the performance of the this Environmental Assessment, it is our best profession opinion that development of the the approximately 50 acre Olla Industrial Site will neither effect state or federally listed species nor provide negative consequences to the environment.

Prepared by:

Patrick Imhof
Environmental Scientist

February 8, 2015
Date

6. REFERENCES

Field Guide to the Rare Plants of Florida
by Linda G. Chafin, Botanist with Jean C. Putnam Hancock, Botanical Illustrator and Gil Nelson, Ph.D., Graphic Designer and Chief Photographer

FWS Integrated Wildlife Habitat Ranking System 2009

FWS Critical Habitat Mapper, Louisiana Data layer

Godfrey Robert K. Aquatic and wetland plants of southeastern United States: Dicotyledons University of Georgia Press, Athens, GA 30602 1981

Godfrey Robert K. Aquatic and wetland plants of southeastern United States: Monocotyledons University of Georgia Press, Athens, GA 30602 1979

Louisiana Department of Wildlife and Fisheries, Natural Heritage Program

Nature Serve Website

U.S. Department of Agriculture aerial photographs

U.S. Department of Agriculture, Natural Resource Conservation Services: Soil Survey of La Salle Parish, 1991

U.S. Geological Survey, Alexandria Topographical Quadrangle. Revised 1983.

TABLE 1.

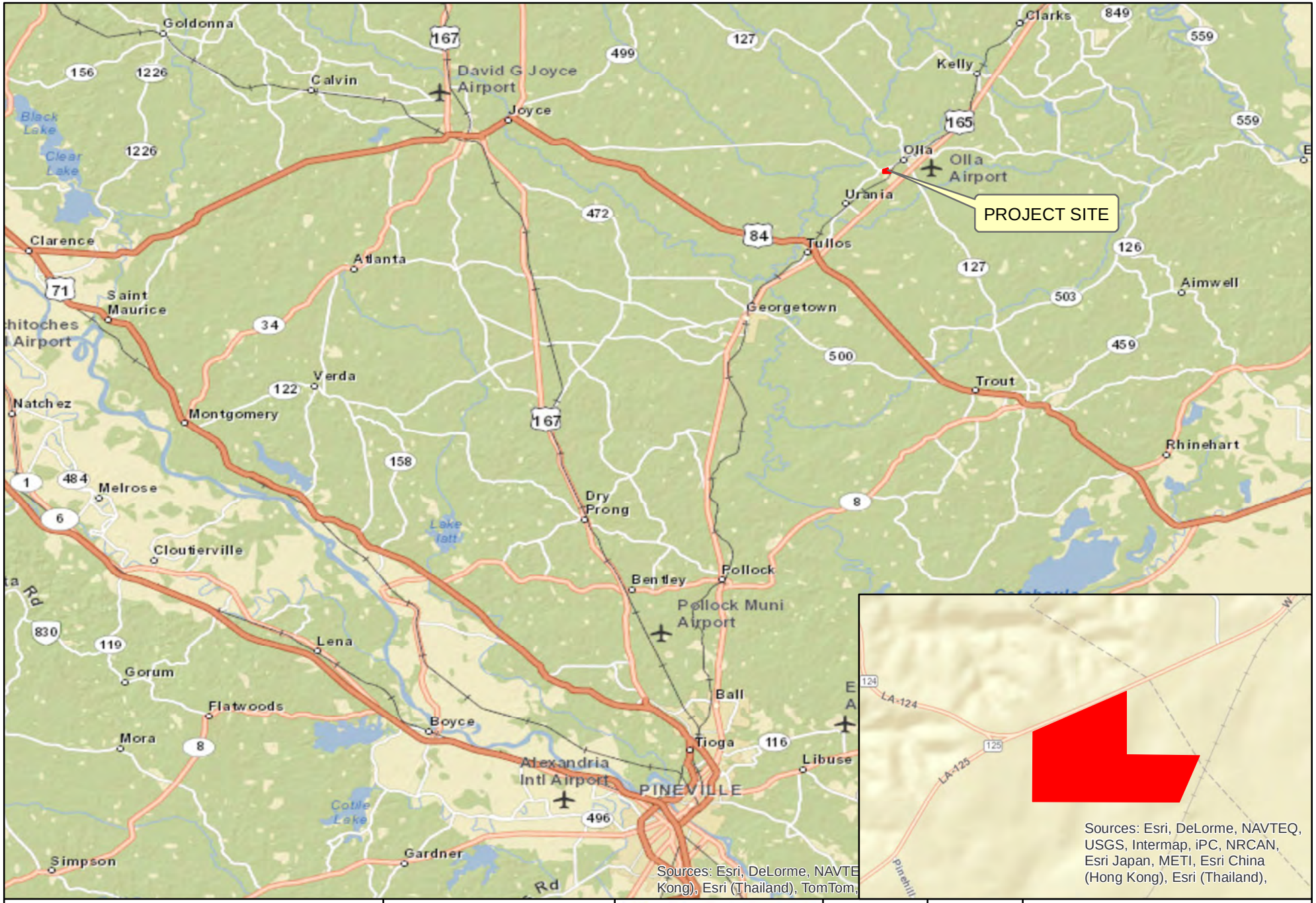
LDWF

LIST OF SPECIES

Table 1:
Louisiana Department of Wildlife and Fisheries Rare, Threathened and Endangered Species Occurring in LaSalle Parish January 2015

Scientific Name	Common Name	State Status	Federal Status
Agalinis skinneriana	Skinner's purple false foxglove		
Asio flammeus	Short-eared Owl		
Burmannia biflora	Northern Burmannia		
Canis rufus	Red Wolf		
Carex microdonta	Little Tooth Sedge		
Cypripedium kentuckiense	Southern Lady's-slipper		
Dichanthelium strigosum var. glabrescens	Roughhair Witchgrass		
Echinaceae purpurea	Purple Coneflower		
Fallicambarus dissitus	Pine Hills Crawfish		
Faxonella creaseri	Ouachita Fencing Crawfish		
Geocarpon minimum	Earth-fruit		T
Haliaeetus leucocephalus	Bald Eagle	E	Delisted
Houstonia purpurea var. calycosa	Purple Bluet		
Lobelia flaccidifolia	Coastal Plain Lobelia		
Picoides borealis	Red-cockaded Woodpecker	E	E
Pituophis ruthveni	Louisiana Pine Snake		C
Plethodon kisatchie	Louisiana Slimy Salamander		
Polyodon spathula	Paddlefish		
Pteronotropis hubbsi	Bluehead Shiner		
Seiurus motacilla	Louisiana Waterthrush		
Stellaria alsine	Chickweed		

C = Candidate, T = Listed Threatened, E = Listed Endangered



OLLA INDUSTRIAL SITE
L.E.D. CERTIFICATION
50 ACRE TRACT
OLLA, LOUISIANA

Legend

PROJECT SITE

biome Consulting Group
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FIGURE 1

LOCATION MAP

N W E S

ENVIRONMENTAL ASSESSMENT

DRAWN BY: MAR | JANUARY 19, 2015

34,000 17,000 0 34,000 Feet

OLLA INDUSTRIAL SITE
L.E.D. CERTIFICATION
50 ACRE TRACT
OLLA, LOUISIANA

Legend

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FIGURE 2

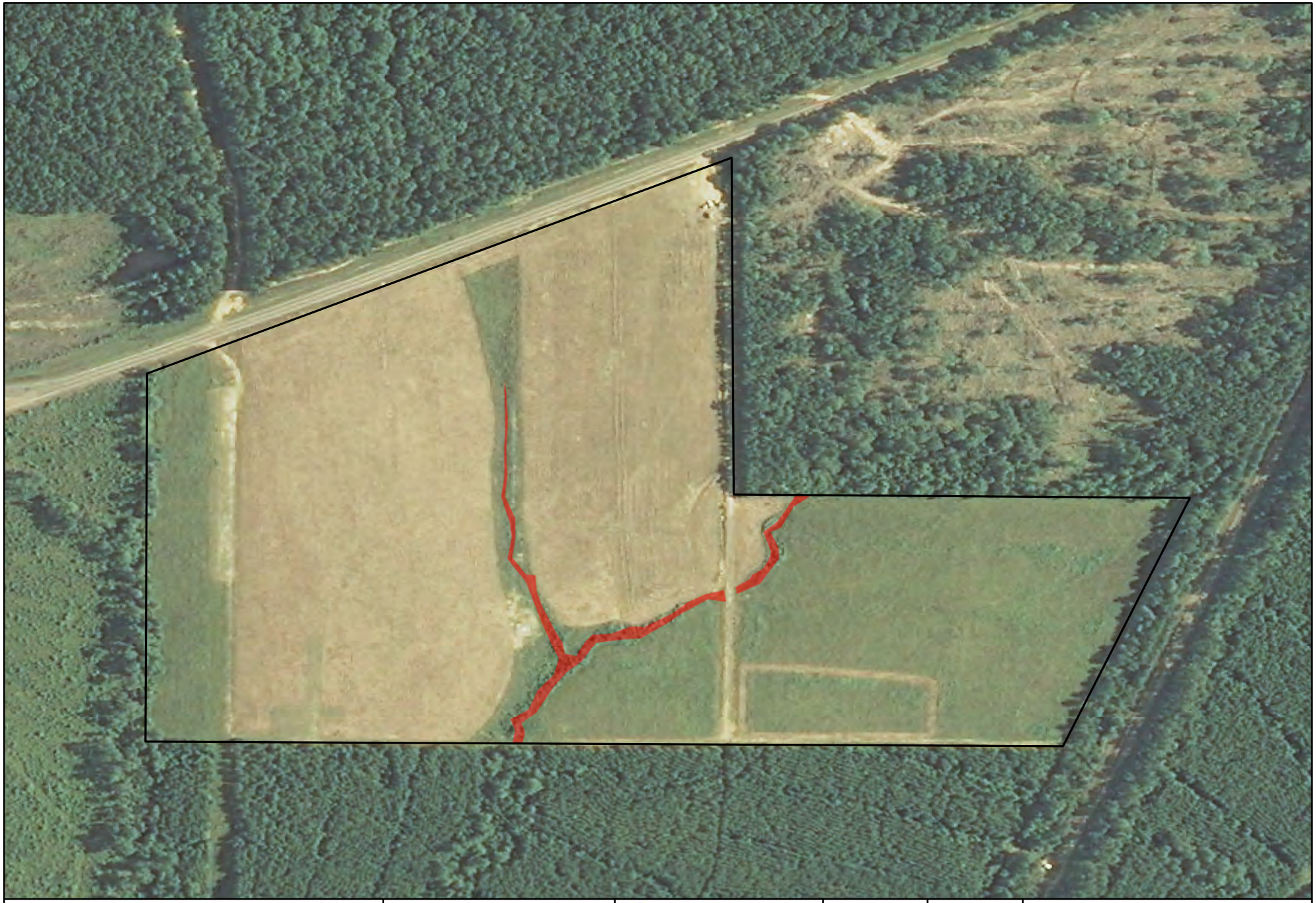
2013 AERIAL PHOTOGRAPH

N
W E
S

ENVIRONMENTAL ASSESSMENT

DRAWN BY: MAR | JANUARY 19, 2015

290 145 0 290 Feet



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L.E.D. CERTIFICATION
50 ACRE TRACT
OLLA, LOUISIANA

Legend

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JURISDICTIONAL

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FIGURE 3

JURISDICTION 2013 AERIAL

N
W E
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ENVIRONMENTAL ASSESSMENT

DRAWN BY: MAR | JANUARY 19, 2015

290 145 0 290 Feet

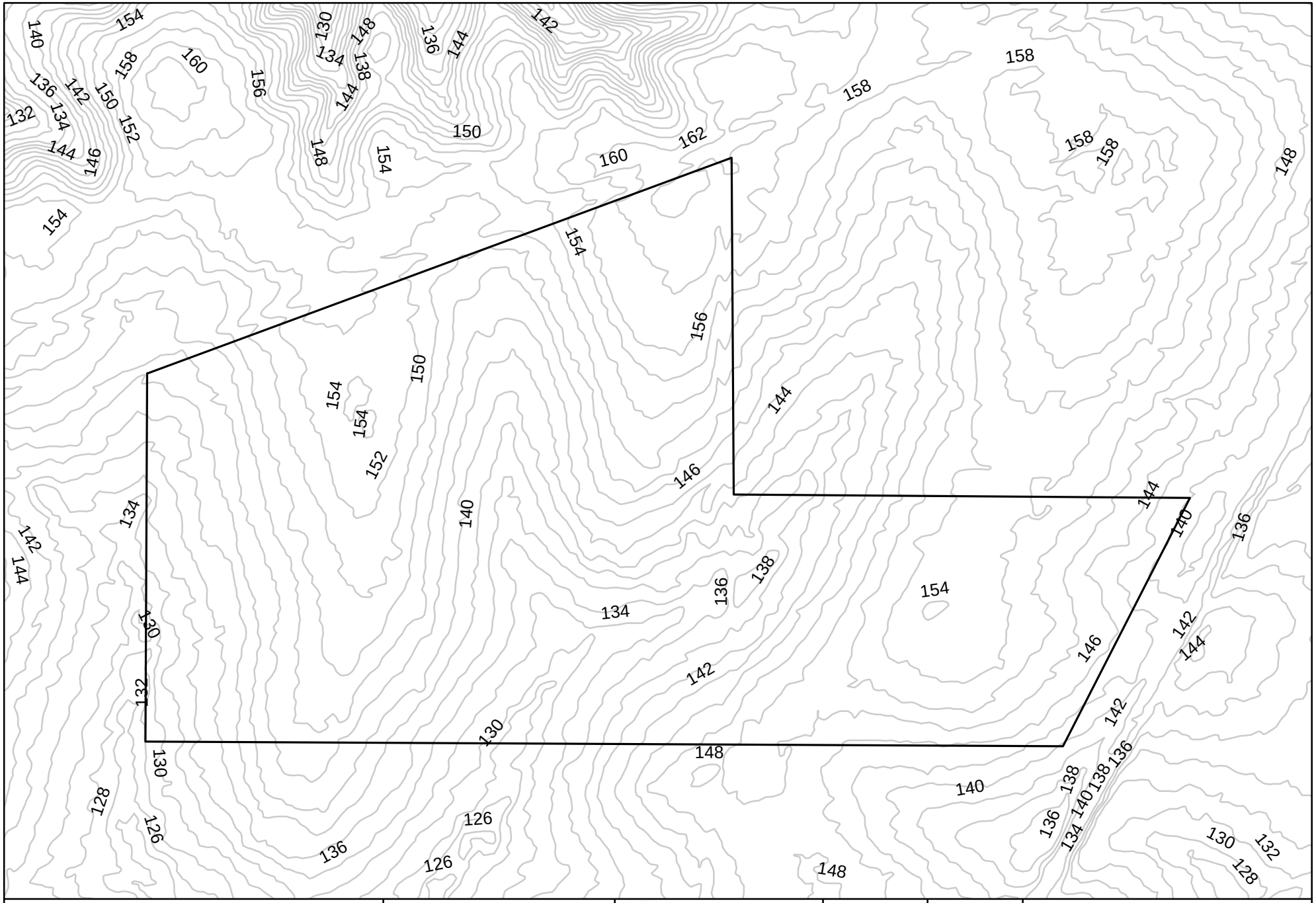
OLLA INDUSTRIAL SITE
L.E.D. CERTIFICATION
50 ACRE TRACT
OLLA, LOUISIANA
Legend
PROJECT SITE
biome
Consulting Group
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FIGURE 4
2' LIDAR
N
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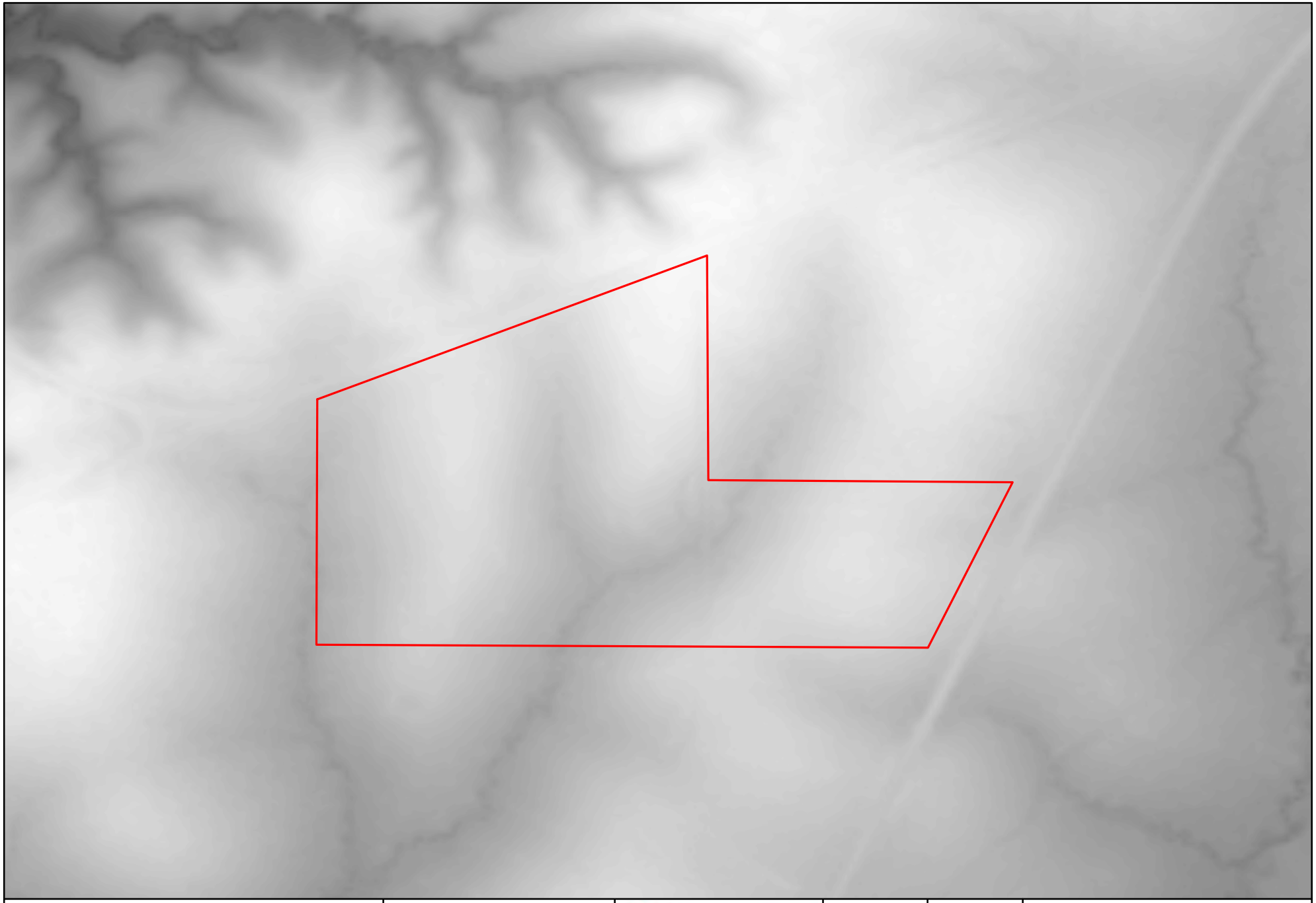
ENVIRONMENTAL ASSESSMENT
DRAWN BY: MAR
JANUARY 19, 2015
290 145 0 290 Feet



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L.E.D. CERTIFICATION
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OLLA, LOUISIANA

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FIGURE 5

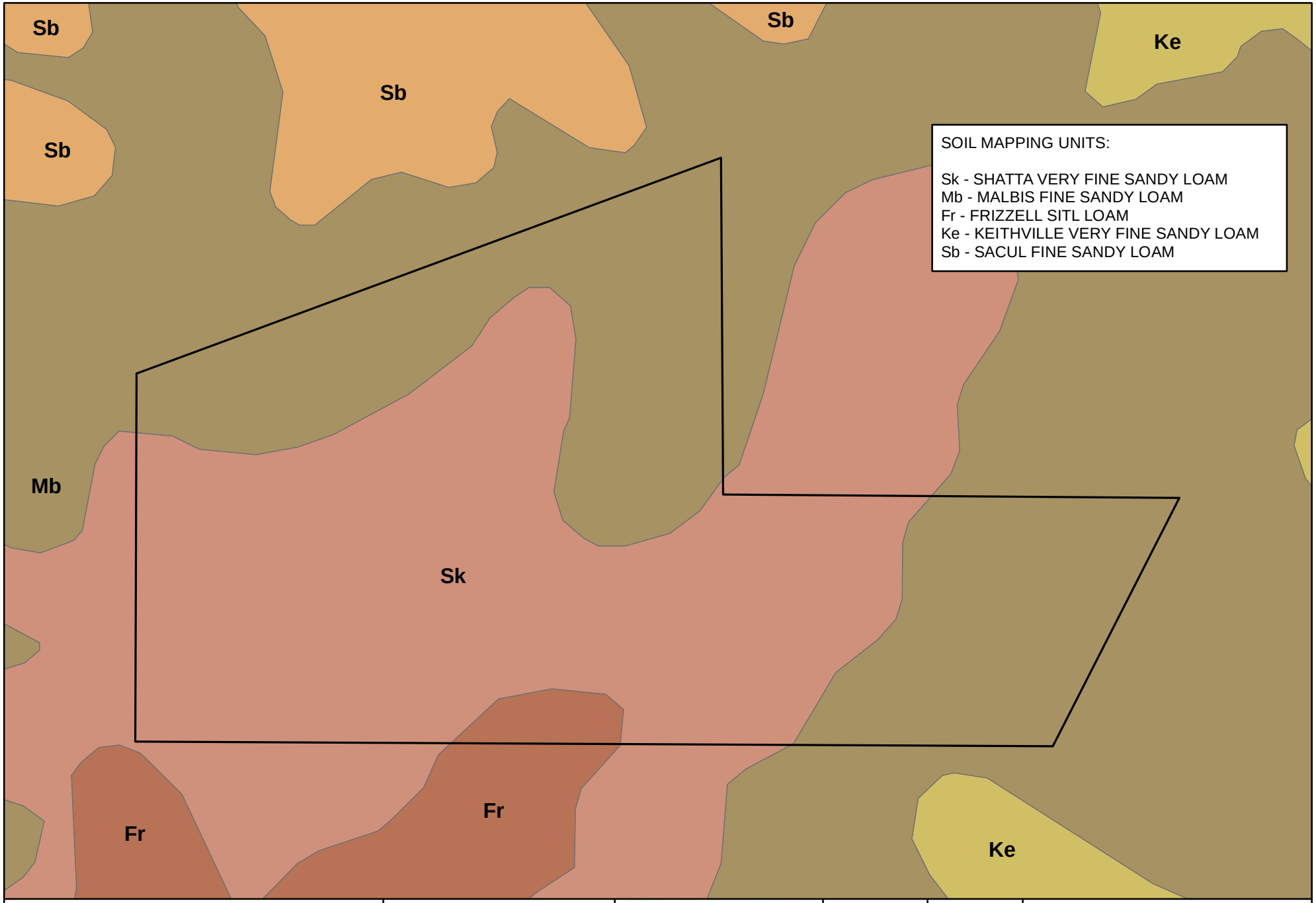
3 METER D.E.M.

N
W E
S

ENVIRONMENTAL ASSESSMENT

DRAWN BY: MAR | JANUARY 19, 2015

440 220 0 440 Feet



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L.E.D. CERTIFICATION
50 ACRE TRACT
OLLA, LOUISIANA

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FIGURE 6

NRCS SOILS

N
W E
S

ENVIRONMENTAL ASSESSMENT

DRAWN BY: MAR | JANUARY 19, 2015

290 145 0 290 Feet

ATTACHMENTS 1:

LDWF Data Base Search Report

ATTACHMENT 2:

CE Routine Wetland Data Sheets

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Olla LED **City/County:** La Salle **Sampling Date:** 14-Jan-15

Applicant/Owner: Town of Olla **State:** LA **Sampling Point:** 1

Investigator(s): Pat Imhof **Section, Township, Range:** S 34 T 11N R 2E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** convex **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR P **Lat.:** 31°53'35.805"N **Long.:** 92°15'40.863"W **Datum:** NAD 83 UT

Soil Map Unit Name: Dothan, Fine Sandy Loam **NWI classification:** UPL

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

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

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
Data point located on a mowed and maintained upland pasture.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:
No hydrologic indicators present. Water sheds downslope quickly to offsite drainage feature.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: 1

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size: 25')				
1. Cynodon dactylon	60	☑	61.9%	FACU
2. Sporobolus indicus	20	☑	20.6%	FACU
3. Andropogon virginicus	10	☐	10.3%	FAC
4. Solidago altissima	3	☐	3.1%	FACU
5. Smilax glauca	1	☐	1.0%	FAC
6. Cirsium carolinianum	1	☐	1.0%	UPL
7. Pseudognaphalium stramineum	1	☐	1.0%	FAC
8. Dichondra carolinensis	1	☐	1.0%	FAC
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 48.5	20% of Total Cover: 19.4	97	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	13	x 3 =	39	
FACU species	83	x 4 =	332	
UPL species	1	x 5 =	5	
Column Totals:	97	(A)	376	(B)

Prevalence Index = B/A = 3.876

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - 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.**

Definition of 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.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

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 ◉

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

Well maintained upland pasture.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc²	Texture	Remarks
0-5	10YR	4/3	100						Silt Loam	Brown
5-7	10YR	5/3	90	10YR	4/6				Loam	Dark Brown
7-14	10YR	7/2	50	10YR	4/6				Clay Loam	Light gray

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ 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 ◉

Remarks:

No hydric soil indicators present.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Olla LED **City/County:** La Salle **Sampling Date:** 14-Jan-15

Applicant/Owner: Town of Olla **State:** LA **Sampling Point:** 2

Investigator(s): Pat Imhof **Section, Township, Range:** S 34 T 11N R 2E

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR P **Lat.:** 31°53'28.40"N **Long.:** 92°15'33.87"W **Datum:** NAD 83 UT

Soil Map Unit Name: Shatt very fine sandy loam **NWI classification:** UPL

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
Well drained pasture on hill slope.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	0
Water Table Present?	Yes ○ No ◉	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: 2

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size: 25')				
1. Cynodon dactylon	60	☑	75.9%	FACU
2. Andropogon virginicus	10	☐	12.7%	FAC
3. Cyperus rotundus	5	☐	6.3%	FAC
4. Sporobolus indicus	2	☐	2.5%	FACU
5. Dichanthelium oligosanthes	1	☐	1.3%	FACU
6. Rubus trivialis	1	☐	1.3%	FACU
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 39.5	20% of Total Cover: 15.8	79	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	15	x 3 =	45	
FACU species	64	x 4 =	256	
UPL species	0	x 5 =	0	
Column Totals:	79 (A)		301	(B)

Prevalence Index = B/A = 3.810

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - 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.**

Definition of 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.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

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 ◉

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

Well maintained upland pasture.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc²	Texture	Remarks
0-6	10YR	4/3	100					Silt Loam	Dark Brown
6-13	10YR	3/2	100					Loam	Very dark grayish brown

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ 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 ◉

Remarks:

Plowed soil that displays mixing of surface horizons. No hydric soils indicators present within upper 12" of soil profile.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Olla LED **City/County:** La Salle **Sampling Date:** 14-Jan-15

Applicant/Owner: Town of Olla **State:** LA **Sampling Point:** 3

Investigator(s): Pat Imhof **Section, Township, Range:** S 34 T 11N R 2E

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 5.0 % / 2.9 °

Subregion (LRR or MLRA): LRR P **Lat.:** 31°53'29.133"N **Long.:** 92°15'40.612"W **Datum:** NAD 83 UT

Soil Map Unit Name: Shatt very fine sandy loam **NWI classification:** UPL

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
Data point located on a mowed and maintained upland pasture.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:
No hydrologic indicators present.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: 3

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size: 25')				
1. Cynodon dactylon	50	☑	69.4%	FACU
2. Andropogon virginicus	5	☐	6.9%	FAC
3. Ambrosia artemisiifolia	10	☐	13.9%	FACU
4. Helianthus divaricatus	3	☐	4.2%	UPL
5. Solidago altissima	2	☐	2.8%	FACU
6. Vaccinium arboreum	1	☐	1.4%	FACU
7. Gnaphalium obtusifolium	1	☐	1.4%	UPL
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 36	20% of Total Cover: 14.4	72	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	5	x 3 =	15	
FACU species	63	x 4 =	252	
UPL species	4	x 5 =	20	
Column Totals:	72	(A)	287	(B)

Prevalence Index = B/A = 3.986

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - 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.**

Definition of 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.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

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 ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc²	Texture	Remarks
0-8	10YR	4/3	100						Silt Loam	Brown
8-13	10YR	5/3	95	7.5YR	4/6	5	C	M	Silt Loam	Brown

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ 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 ◉

Remarks:

Brown silty loam.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Olla LED **City/County:** La Salle **Sampling Date:** 14-Jan-15

Applicant/Owner: Town of Olla **State:** LA **Sampling Point:** 4

Investigator(s): Pat Imhof **Section, Township, Range:** S 34 T 11N R 2E

Landform (hillslope, terrace, etc.): Channel (active) **Local relief (concave, convex, none):** convex **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR P **Lat.:** 31°53'29.133"N **Long.:** 92°15'40.612"W **Datum:** NAD 83 UT

Soil Map Unit Name: Frizzell Silt Loam **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
Natural drainage swale that receives overland flow and seepage from upland hillsides. Hydroperiod adequate to support hydrophytes and hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ◉ No ○	Depth (inches):	5
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

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

Aerial photos, USGS Quadrangle

Remarks:

Wet weather, ephemeral flowing channel that supports littoral zone of hydrophytes.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: 4

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size: 25')				
1. Salix caroliniana	5	☑	100.0%	OBL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 2.5	20% of Total Cover: 1	5	= Total Cover	
Herb Stratum (Plot size: 25')				
1. Ludwigia repens	25	☑	44.6%	OBL
2. Juncus coriaceus	15	☑	26.8%	FACW
3. Cyperus rotundus	5	☐	8.9%	FAC
4. Persicaria pensylvanica	5	☐	8.9%	FACW
5. Rumex floridanus	2	☐	3.6%	FACW
6. Smilax laurifolia	2	☐	3.6%	FACW
7. Andropogon glomeratus	2	☐	3.6%	FACW
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 28	20% of Total Cover: 11.2	56	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (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	30	x 1 =	30	
FACW species	26	x 2 =	52	
FAC species	5	x 3 =	15	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	61 (A)		97	(B)

Prevalence Index = B/A = 1.590

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - 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.**

Definition of 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.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

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 ○

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

Herbaceous littoral zone wetland along the banks of a shallow channel.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc²	Texture	Remarks
0-5	10YR	4/2	95	10YR	5/4	5	C	PL	Clay Loam	Dark (Black)
5-11	10YR	5/2	95	10YR	5/4	5	C	M	Loam	Grayish brown

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ 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 ○

Remarks:

F6 and F13 clearly met. Hydric soil.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Olla LED **City/County:** La Salle **Sampling Date:** 14-Jan-15

Applicant/Owner: Town of Olla **State:** LA **Sampling Point:** 5

Investigator(s): Pat Imhof **Section, Township, Range:** S 34 T 11N R 2E

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 5.0 % / 2.9 °

Subregion (LRR or MLRA): LRR P **Lat.:** 31°53'40.99"N **Long.:** 92°15'28.74"W **Datum:** NAD 83 UT

Soil Map Unit Name: Malbis Fiine Sandy Loam **NWI classification:** UPL

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
Hillslope pasture that is maintained by mowing.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	0
Water Table Present?	Yes ○ No ◉	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:
No hydrologic indicators present.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: 5

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size: 25')				
1. Cynodon dactylon	75	☑	70.8%	FACU
2. Sporobolus indicus	10	☐	9.4%	FACU
3. Andropogon virginicus	5	☐	4.7%	FAC
4. Geranium carolinianum	5	☐	4.7%	UPL
5. Cyperus esculentus	4	☐	3.8%	FAC
6. Dichondra argentea	4	☐	3.8%	UPL
7. Oxalis articulata	3	☐	2.8%	UPL
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 53	20% of Total Cover: 21.2	106	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	9	x 3 =	27	
FACU species	85	x 4 =	340	
UPL species	12	x 5 =	60	
Column Totals:	106 (A)		427	(B)

Prevalence Index = B/A = 4.028

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - 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.**

Definition of 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.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

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 ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc²	Texture	Remarks
0-8	10YR	4/3	100					Silt Loam	Brown
8-13	10YR	6/6	100					Fine Sandy Loam	Yellow-brown

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ 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 ◉

Remarks:

Well drained soil with deep water table.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Olla LED **City/County:** La Salle **Sampling Date:** 14-Jan-15

Applicant/Owner: Town of Olla **State:** LA **Sampling Point:** 6

Investigator(s): Pat Imhof **Section, Township, Range:** S 34 T 11N R 2E

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 5.0 % / 2.9 °

Subregion (LRR or MLRA): LRR P **Lat.:** 31°53'28.61"N **Long.:** 92°15'25.06"W **Datum:** NAD 83 UT

Soil Map Unit Name: Malbis Fiine Sandy Loam **NWI classification:** UPL

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
Hillslope pasture that is maintained by mowing.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	0
Water Table Present?	Yes ○ No ◉	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:
No hydrologic indicators present.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: 6

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size: 25')				
1. Cynodon dactylon	75	☑	68.8%	FACU
2. Sporobolus indicus	10	☐	9.2%	FACU
3. Andropogon virginicus	5	☐	4.6%	FAC
4. Geranium carolinianum	5	☐	4.6%	UPL
5. Cyperus esculentus	4	☐	3.7%	FAC
6. Dichondra argentea	4	☐	3.7%	UPL
7. Oxalis articulata	3	☐	2.8%	UPL
8. Dichanthelium oligosanthes	2	☐	1.8%	FACU
9. Quercus falcata	1	☐	0.9%	FACU
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 54.5	20% of Total Cover: 21.8	109	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	9	x 3 =	27	
FACU species	88	x 4 =	352	
UPL species	12	x 5 =	60	
Column Totals:	109 (A)		439	(B)

Prevalence Index = B/A = 4.028

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - 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.**

Definition of 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.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

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 ◉

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

Upland pasture turf grasses and weeds.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 6

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc²	Texture	Remarks
0-7	10YR	4/2	100					Fine Sandy Loam	Dark grayish
7-14	10YR	5/6	100					Fine Sandy Loam	Yellow-brown

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ 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 ◉

Remarks:

Well drained soil with deep water table.

ATTACHMENT 3:

Site Photographs

Photograph No. 1 – View from the northwest corner of the subject site facing northeast.

Photograph No. 2 – View from the northwest corner of the subject site looking south along the western property boundary.

Photograph No. 3 – View from the southwest corner of the subject site looking north along the western property boundary.

Photograph No. 4 – View from the south side of the subject site facing north.

Photograph No. 5 – View from the south side of the subject site facing north along a dirt road.

Photograph No. 6 – View from the northwest corner of the subject site facing south along the eastern property boundary.

Photograph No. 7 – View from the interior of the subject site depicting un-cleared vegetation, facing the western property boundary.

Photograph No. 8 – View from east side of the subject site facing the western property boundary.

Photograph No. 9 – View from the north side of the subject site facing the southern property boundary.

Photograph No. 10 – View of typical vegetation located on adjacent properties.