

**REPORT OF
GEOTECHNICAL INVESTIGATION**

EPPERSON RANCH – PARK PLACE LAGOON

Pasco County, Florida

**PREPARED FOR:
EPPERSON RANCH, LLC**
2502 N. Rocky Point Drive, Suite 1050
Tampa, Florida 33607

FES PROJECT NO.: 15-2689

July 23, 2015

PREPARED BY:



2734 Causeway Center Drive
Tampa, Florida 33619

July 23, 2015

Mr. Mike Lawson
Epperson Ranch, LLC
2502 N. Rocky Point Drive, Suite 1050
Tampa, Florida 33607

**RE: Report of Geotechnical Investigation
Epperson Ranch – Park Place Lagoon
Pasco County, Florida
FES Project No.: 15-2689**

Dear Mr. Lawson:

Faulkner Engineering Services, Inc. (FES) has completed a geotechnical investigation for the referenced project. We provided our services in general accordance with our proposal number P15-4211, dated June 17, 2015. The purpose of our investigation was to explore the subsurface soil and groundwater conditions within the planned Crystal Lagoon area to evaluate the potential for sinkhole activity. This report summarizes our field investigation and presents our findings and conclusions.

PROJECT INFORMATION

The Epperson Ranch – Park Place is a planned residential development located west of Curley road and south of Elam Road, within Sections 27, 34, Township 25 South, and Range 20 East, in Pasco County, Florida. The general site location is shown on **Figure 1**.

A Crystal Lagoon will be constructed as part of the residential development and there is concern about the potential for sinkhole activity within the area of the lagoon. Water Resource Associates, Inc. (WRA), the project hydrology professionals, arranged for a ground penetrating radar (GPR) study of the Crystal Lagoon area. The GPR study was performed by GeoView, Inc. The results of the GPR study revealed six (6) anomalies that GeoView opined as minor features. A geotechnical investigation was requested to confirm the results of the GPR study and further evaluate the potential for sinkhole development in the area of the Crystal Lagoon. Additionally, we were also requested to verify if the construction of the lagoon would induce additional stress on the subsurface soils below the proposed bottom of the lagoon.

Soil Survey Review

Soil survey information from “Soil Survey of Pasco County, Florida”, as prepared by the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS, formerly the Soil Conservation Service) of the subject property was reviewed as part of the investigation. The USDA-SCS soil map of the project area is shown in **Appendix A** along with soil unit legends. The soil units identified within the project areas are described below:

- *Pomona fine sand (Map Unit Symbol 2)* –The NRCS describes this soil unit as nearly flat with gentle slopes, poorly drained, and located on flatwoods on marine terraces. The soils in this unit generally have a surface layer of fine sand to a depth of 52 inches below ground surface (bgs) followed by fine sandy loam to a depth of 50 inches (bgs) underlain by fine sand to a depth of 80 inches (bgs). The NRCS indicates the seasonal high groundwater table (SHGWT) for this soil unit is at a depth of 6 to 18 inches (bgs).

- *Palmetto-Zephyr-Sellers complex (Map unit Symbol 60)* – The NRCS defines the Palmetto soil unit as nearly level, poorly drained and located on driveways on marine terraces. The NRCS indicates this soil unit typically has a surface layer of fine sand to a depth of 46 inches (bgs) underlain by sandy clay loam to a depth of 80 inches (bgs). The NRCS indicates the SHGWT for this soil unit is at a depth of 0 to 30 inches (bgs) and the soil unit is frequently ponded. The NRCS describes the Sellers soil unit as nearly level to gently sloping, very poorly drained, and located on flats on marine terraces, and depressions on marine terraces. The NRCS indicates this soil unit typically has a surface layer of mucky loamy fine sand to a depth of 5 inches (bgs), underlain by fine sand to a depth of 80 inches (bgs). The NRCS indicates the SHGWT is at the ground surface and the soil unit is frequently ponded. The NRCS describes the Zephyr soil unit as near level to gently sloping, very poorly drained, and located in depressions on marine terraces. The NRCS indicates this soil unit typically has a surface layer of muck to a depth of 5 inches (bgs), underlain by fine sand to a depth of 22 inches (bgs), followed by sandy clay loam to a depth of 59 inches (bgs), followed by loamy fine sand to a depth of 80 inches (bgs). The NRCS indicates the SHGWT is at the ground surface and the soil unit is frequently ponded.

The NRCS soil classifications are based on interpretation of a combination of factors including but not limited to aerial photographs and widely spaced hand auger borings. Borders shown on the map included in **Appendix A**, between mapping units are approximate, and the transitions between soil units will be gradual. In addition to various minor inclusions within a mapped soil unit, areas of dissimilar soils can also occur. However, the soil survey provides a good basis for an initial evaluation of shallow soil conditions in the area, and can provide an indication of various historic activities such as development, mining and filling operations at the site.

SUBSURFACE INVESTIGATION

Field Investigation

During our field investigation, ten (10) standard penetration test (SPT) borings were advanced to depths of approximately 50 feet to 90 feet (bgs) at the locations selected by WRA within the planned lagoon area and GPR revealed anomalies. The fieldwork was performed on June 25 through July 1, 2015 using a truck accessible CME-550 drilling equipment, operated by J&R Precision Drilling, Inc. The procedures used by FES for field sampling and testing were in general accordance with ASTM procedures, industry standards of care and established geotechnical engineering practice.

An engineering technician from FES, experienced in soil sampling and classifications, was onsite during the fieldwork to monitor the drilling and also perform a brief cursory site reconnaissance, noting pertinent site and topographic features as well as surface indicators of soil conditions. The SPT borings (B-1 through B-10) were located in the field by FES personnel by using a handheld GPS unit. The GPS coordinates for the boring locations were provided by WRA. A boring location map is included as **Figure 2**.

The SPT borings were performed utilizing continuous sampling methods within the first 10 feet and every 5 feet thereafter until the termination depths of the borings, employing wet rotary drilling techniques to keep the hole from collapsing due to groundwater intrusion. The drillers collected soil samples using a 1.4-inch I.D. split barrel sampler driven by an automatic hammer system with a 140-pound hammer falling a distance of 30 inches, in general accordance with standard penetration test procedures (ASTM D1586). Upon completion, each borehole was backfilled to surface with cement grout.

Detailed descriptions of the soils encountered during the field exploration are presented on the attached Boring Logs in **Appendix B**.

Soil Sample Handling and Classification

FES field personnel classified the soils obtained from the field sampling techniques using standard visual manual methods in accordance with ASTM D2488. The samples recovered from the SPT borings were placed in sealed containers to retain moisture and transported to the FES soils laboratory accredited by Construction Materials Engineering Council, Inc., (CMEC) for further evaluation and testing. To further aid in classification using ASTM D2487 and evaluation of geotechnical engineering properties, laboratory testing for index properties was performed on select soil samples collected during the field sampling. The laboratory testing performed was in general accordance with appropriate sections of ASTM D1140, material finer than the No. 200 mesh sieve, ASTM D2216, water content, and ASTM D4318, Atterberg Limits. The laboratory test results were in general accordance with field classification of the soils except some soils were reclassified based on the fines content from laboratory testing. The laboratory test results and the soil classifications were reviewed by a Professional Geotechnical Engineer. The results from the laboratory testing are presented on the boring logs contained in **Appendix B**.

FINDINGS

Subsurface Conditions

General Soil Profile

The subsurface stratigraphy at the project site is illustrated in the soil boring logs shown in **Appendix B**. The profiles were developed using field data from the SPT borings. The computer generated boring profiles should imply no increased accuracy. Based on this data, four subsurface units, or strata, were identified at the site as described below.

| | |
|-----------|---|
| Stratum 1 | SAND, SAND with clay, SAND with silt; very loose to medium dense, gray, brown fine grained quartz with clay, silt USCS classification = SP, SP-SC, SP-SM |
| Stratum 2 | CLAYEY SAND, SILTY SAND; very loose to dense, brown, greenish gray, gray, fine grained quartz, variably clayey, silty with occasional limestone USCS classification = SC, SM |
| Stratum 3 | CLAY, SILT; very soft to hard, greenish gray, light gray, variably sandy, occasional limestone, calcareous USCS classification = CL, CH, MH |
| Stratum 4 | LIMESTONE; light brown, light gray, with occasional calcareous clay |

Stratum 1 occurs as the surficial stratum in all the borings and typically extends from ground surface to depths ranging from 2 feet to 38 feet (bgs). Stratum 1 also occurs interbedded with Stratum 2 and Stratum 3 occasionally. This soil unit consisted of sand, sand with clay, and sand with silt with SPT "N" values ranging from 3 to 16 indicating very loose to medium dense relative density.

Stratum 2 occurs below Stratum 1 in all borings and interbedded with Stratum 1 and Stratum 3 occasionally at depths ranging from 2 feet to 84 feet (bgs). This soil unit consisted of clayey sand and silty sand with SPT "N" values ranging from 1 to 41 indicating very loose to very dense relative density.

Stratum 3 occurs below Stratum 1 and 2 and interbedded with Stratum 2 and 4 in all borings at depths ranging from 2 feet to 75 feet (bgs). This soil unit consisted of clay, silt with SPT "N" values ranging from 0 (weight-of-hammer/weight-of-rod, WOH/WOR) to refusal blow count of 50 blows for 2 inches indicating very soft to hard consistency.

Stratum 4 occurs below Stratum 3 and occasionally interbedded with Stratum 2 and 3 at depths ranging from 38 feet to boring termination depth of 90 feet (bgs). This stratum consisted of limestone with SPT "N" values ranging from 6 to refusal blow counts of 50 blows for 2 inches.

The conditions presented above highlight the major subsurface stratifications encountered during our field investigation of the site. More detailed descriptions of the materials encountered are provided in **Appendix B**. A soil classification key sheet is also included as **Appendix C**. It should be understood that subsurface conditions will vary across this site and between boring locations. Changes in subsurface strata may be more gradual than indicated.

Groundwater

Groundwater was encountered in the SPT borings at depths ranging from approximately 2.2 to 7.5 feet (bgs). Groundwater levels will fluctuate with time due to seasonal rainfall and locally heavy precipitation events; therefore, future groundwater levels may be encountered at depths different from those indicated by our borings.

The SHGWT is typically encountered during late summer following the rainy season. Several factors can affect the seasonal high groundwater level such as drainage characteristics of the soils; land surface elevation; and relief points such as lakes, rivers and swamps. Based on our experience, the soil indicators exposed in our borings (when encountered), evaluating existing groundwater levels and review of the soil survey for Pasco County, we estimate the seasonal high groundwater levels at this site may likely be encountered at depths ranging from approximately 0 to 5.0 feet (bgs).

CONCLUSIONS

Our geotechnical engineering evaluation of the areas investigated and our conclusions with respect to the planned Epperson Ranch – Park Place Lagoon are based on our site observations and the field exploratory data obtained from our borings. It is our opinion that active sinkhole conditions are not present at the areas explored within the planned Crystal Lagoon.

The SPT boring data indicated a generally similar lithology with surficial sandy soils overlying semi-confining to confining soils (clayey sand, clay and silt) followed by limestone bedrock. The overburden soils appear intact with no evidence of eroding/raveling into the underlying strata. Significant WOH/WOR events occurred in borings B-4 (43.5'-50.5') and B-6 (38.5'-48.5') within clay soils above the limestone surface. The WOH/WOR events occur when the SPT sampler advances by the weight of hammer or drill rod without the need for the hammer drop.

The WOH/WOR events at the above mentioned locations occurred in what appears to be poorly or unconsolidated clayey soils near the limestone surface. The laboratory tests indicated that the soft clayey soils at the WOH/WOR zones had natural moisture contents close to the liquid limit, indicating that the soils are existing in a semi-solid to liquid state. The clay strata appears to be overlain by competent, intact overburden soils that, as described above, do not appear to be eroding/raveling into the underlying soils. In addition, the clay strata overlies what the SPT data suggests is competent limestone and evidenced by the SPT blow counts.

Loss of drilling fluid circulation was observed in borings B-1, B-3, B-4, B-5, B-8, and B-9 near stratum interfaces, which is common, or within the limestone bedrock. Florida limestone is commonly porous and loss of drilling fluid circulation within or below the top of limestone is very common and not considered an indicator of sinkhole activity without other conditions associated with sinkhole activity such as erosion of the upper soils, voids etc.

We do not expect the construction of the lagoon to induce any additional stress on the subsurface soils. Assuming a saturated soil unit weight of 125 pounds per cubic foot (pcf), and the natural groundwater table to be at or near the ground surface, the effective stress at the bottom of the lagoon would be approximately equal to the stress induced by the added water, with a unit weight of 62.4 pcf, in the lagoon at the lagoon bottom. The above is true based on the assumption that the operating water level in the lagoon is approximately the same or lower than the pre-construction natural ground level.

LIMITATIONS

This report has been prepared for the exclusive use of **Epperson Ranch, LLC** and their designers for the specific application to the project previously discussed. Our conclusions have been rendered using generally accepted standards of geotechnical engineering and geology practice in the state of Florida. No other warranty is expressed or implied.

Our conclusions are based on the design information furnished to us, the data obtained from the previously described subsurface exploration, and our experience. They do not reflect variations in the subsurface conditions that are likely to exist in the region of our borings and in unexplored areas of the site. These variations are due to the inherent variability of the subsurface conditions in this geologic region. Should variations become apparent during construction, it will be necessary to re-evaluate our conclusions and recommendations based upon our on-site observations of the conditions.

The scope of our services does not include any environmental assessments or investigations for the possible presence of hazardous or toxic materials in the soil, groundwater or surface water within or in the general vicinity of the site studied. Any statements made in this report or shown on the test boring logs regarding unusual subsurface conditions and/or composition, odor, staining, origin or other characteristics of the surface and/or subsurface materials are strictly for the information of our client and may or may not be indicative of an environmental problem.

CLOSING

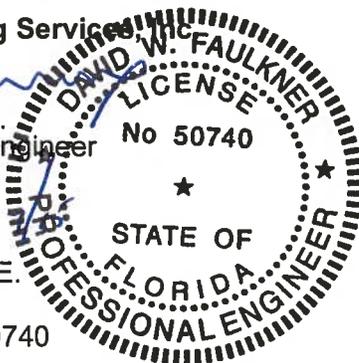
Faulkner Engineering Services, Inc. appreciates the opportunity to be of service to **Epperson Ranch, LLC** by providing these geotechnical consulting services and we look forward to assisting you through project completion. If you have any questions concerning this report, please do not hesitate to contact the undersigned.

Sincerely,

Faulkner Engineering Services, Inc.


Pavan K. Kolukula, E.I.
Senior Geotechnical Engineer


David W. Faulkner, P.E.
President
Florida License No. 50740

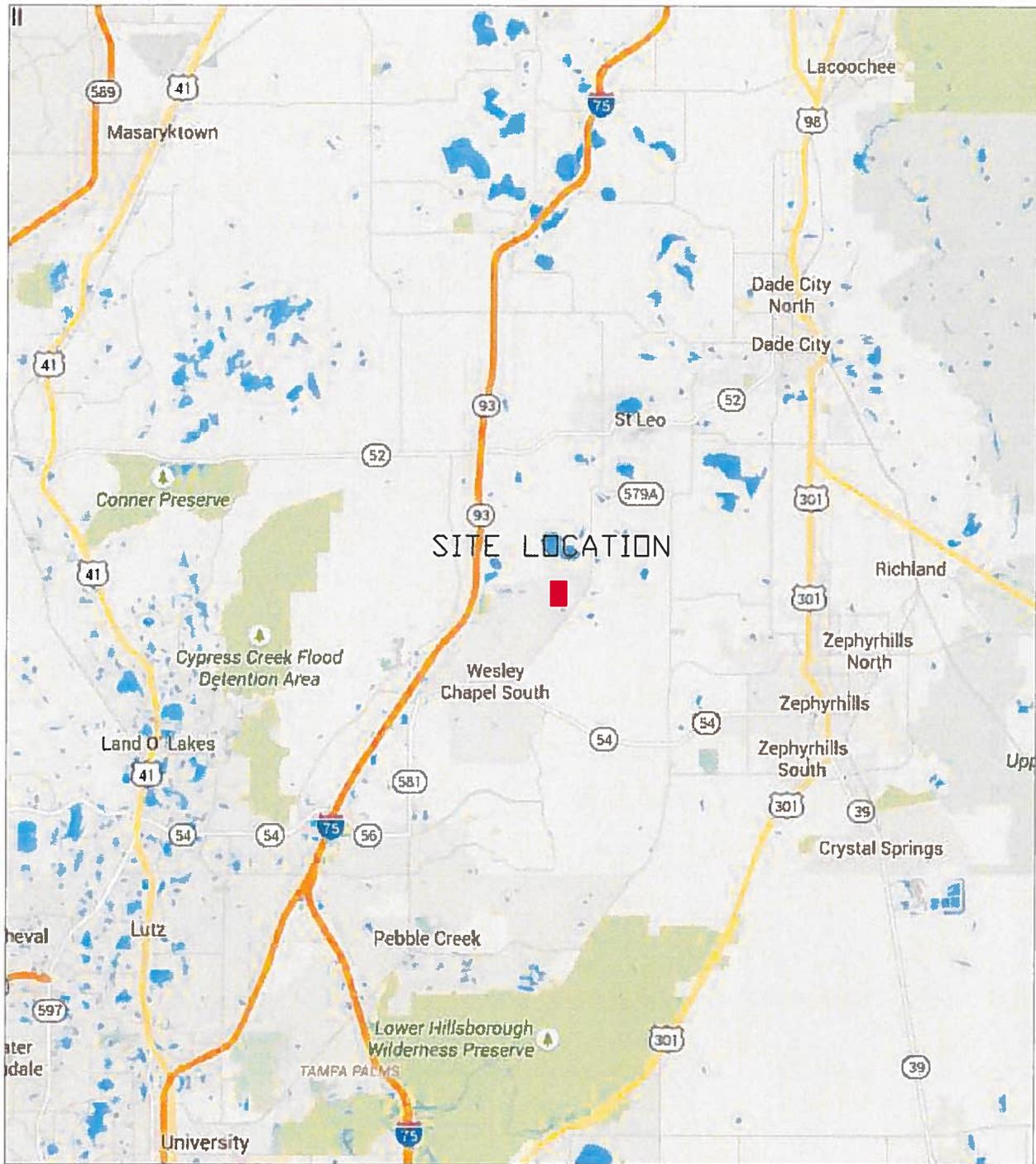


CC: Mr. Michael Alfieri, P.G. P. Hg., CGWP (WRA Engineering)

Attachments: Figure 1: Site Location Map
Figure 2: Boring Location Plan

Appendix A: Soil Survey
Appendix B: Logs of Soil Borings
Appendix C: Key to Soil Classification

SITE LOCATION MAP



Geotechnical Engineers
Construction Material Testing

2734 Causeway Center Dr
Tampa, Florida 33619
PHONE: 813.621.8168
FAX: 813.621.8232
www.faulknereng.com

**Epperson Ranch -
Park Place Lagoon**

N.T.S.

DATE
07.20.15

JOB NO.
15-2689

DRAWN: PK
CHKD: DF

FIGURE 1

BORING LOCATION PLAN



LEGEND

 SPT BORING
 B-1



Geotechnical Engineers
 Construction Material Testing
 2734 Causeway Center Dr
 Tampa, Florida 33619
 PHONE: 813.621.8168
 FAX: 813.621.8232
 www.faulknereng.com

**Epperson Ranch -
 Park Place Lagoon**

N.T.S.

DATE
 07.20.15

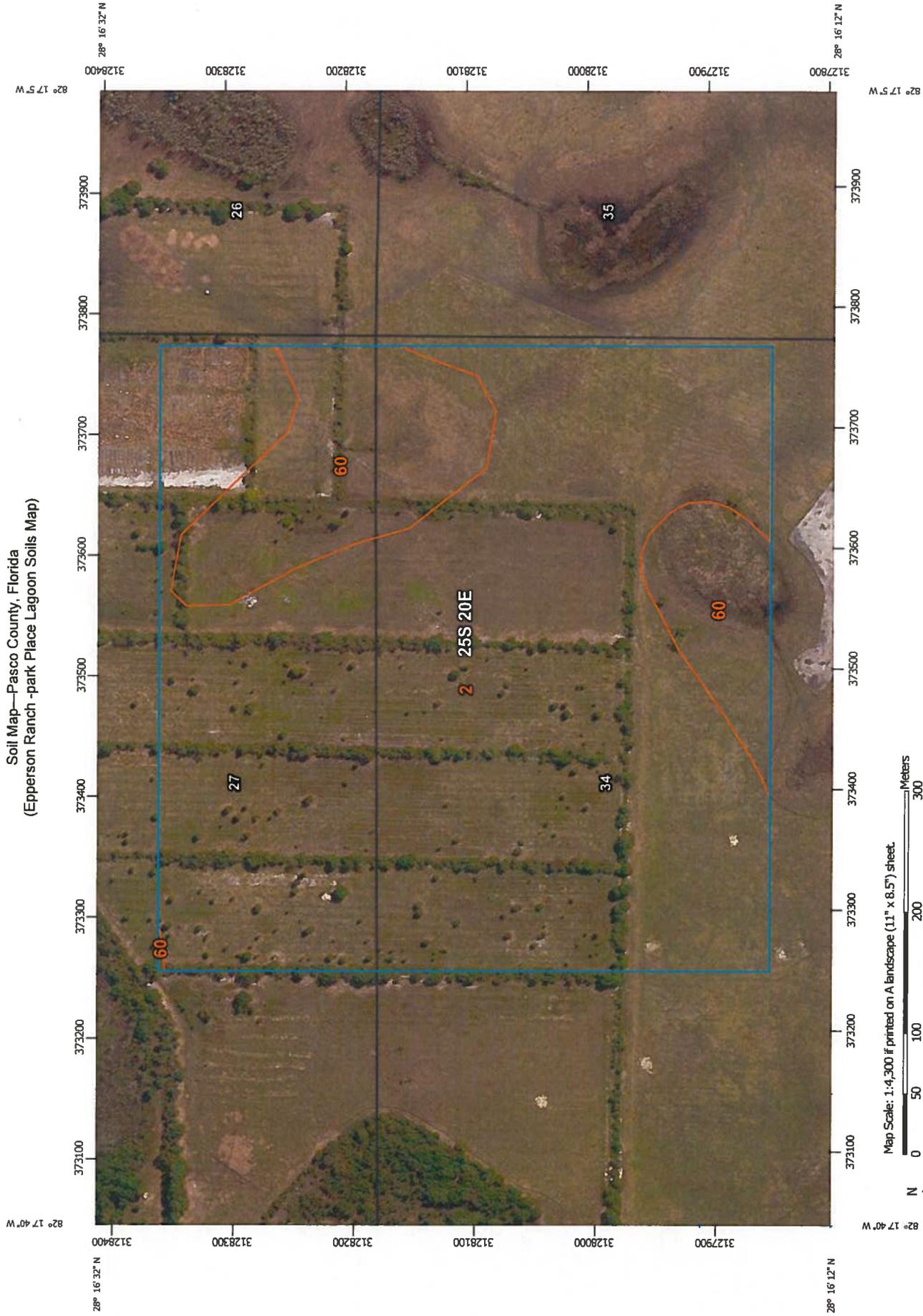
JOB NO.
 15-2689

DRAWN: PK
 CHKD: DF

FIGURE 2

APPENDIX A
Soil Survey Map

Soil Map—Pasco County, Florida
(Epperson Ranch -park Place Lagoon Soils Map)



Map Scale: 1:4,300 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

| | | | |
|--|------------------------|--|-------------------------|
| | Area of Interest (AOI) | | Soil Area |
| | Soils | | Stony Spot |
| | Soil Map Unit Polygons | | Very Stony Spot |
| | Soil Map Unit Lines | | Wet Spot |
| | Soil Map Unit Points | | Other |
| | Special Point Features | | Special Line Features |
| | Blowout | | Political Features |
| | Borrow Pit | | PLSS Township and Range |
| | Clay Spot | | PLSS Section |
| | Closed Depression | | Water Features |
| | Gravel Pit | | Streams and Canals |
| | Gravelly Spot | | Transportation |
| | Landfill | | Rails |
| | Lava Flow | | Interstate Highways |
| | Marsh or swamp | | US Routes |
| | Mine or Quarry | | Major Roads |
| | Miscellaneous Water | | Local Roads |
| | Perennial Water | | Background |
| | Rock Outcrop | | Aerial Photography |
| | Saline Spot | | |
| | Sandy Spot | | |
| | Severely Eroded Spot | | |
| | Sinkhole | | |
| | Slide or Slip | | |
| | Sodic Spot | | |

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pasco County, Florida
Survey Area Data: Version 11, Sep 23, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 18, 2015—Mar 28, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

| Pasco County, Florida (FL101) | | | |
|------------------------------------|---------------------------------|--------------|----------------|
| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
| 2 | Pomona fine sand | 53.2 | 81.7% |
| 60 | Palmetto-Zephyr-Sellers complex | 11.9 | 18.3% |
| Totals for Area of Interest | | 65.1 | 100.0% |

APPENDIX B
Logs of Soil Borings

DRILL HOLE LOG

BORING NO.: B-1

PROJECT: Epperson Ranch-Park Place Lagoon

PROJECT NO.: 15-2689

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | | | | | | | | |
|-------|---|------|--|--------|-----|---------------------------|-------|------------------------|----|----|----|----|----|--|--|--|--|--|--|---------|---------|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | | | | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | | | | | | | | |
| |  | | | | | | | | | | | | | | | | | | | | |
| 40 |  | | LIMESTONE with calcareous clay (50 blows/4 inches) Loss of circulation at 39 ft | ▲ | 11 | 3 4 50 | 50/4" | | | | | | | | | | | | | 50/4" ● | |
| 45 |  | | (50 blows/3 inches) | ▲ | 12 | | 50/3" | | | | | | | | | | | | | | 50/3" ● |
| 50 |  | | Regained circulation at 47 ft with calcareous clay (50 blows/3 inches) | ▲ | 13 | | 50/3" | | | | | | | | | | | | | | 50/3" ● |
| 55 | | | End of Boring | | | | | | | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | | | | | | | | | | |
| 65 | | | | | | | | | | | | | | | | | | | | | |
| 70 | | | | | | | | | | | | | | | | | | | | | |
| 75 | | | | | | | | | | | | | | | | | | | | | |



DRILL HOLE LOG

BORING NO.: B-2

Project No.: 15-2689

Date: 6-25-2015

Project: Epperson Ranch-Park Place Lagoon

Client: Epperson Ranch, LLC

Location: Pasco County, Florida

Driller: J & R Precision Drilling

Drill Rig: CME-550

Depth to Water > Initial ∇ :

Elevation: N/A

Logged By: JC

At Completion ∇ : 6.0'

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | |
|-------|------------------|-------|--|------------|-----|---------------------------|----|------------------------|----|----|----|----|----|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 |
| 0 | [Dotted pattern] | SP | Loose, gray, fine SAND | [Triangle] | 1 | 3 | 9 | | | | | | |
| | | | 4 | | | | | | | | | | |
| | | | Brown | | 2 | 3 | | | | | | | |
| | | | | | | 4 | | | | | | | |
| | | | | | | 5 | | | | | | | |
| 5 | [Dotted pattern] | SP-SM | Medium-Dense, brown, fine SAND with silt | [Triangle] | 3 | 6 | 13 | | | | | | |
| | | | 7 | | | | | | | | | | |
| | | | | | | 6 | | | | | | | |
| | | | | | | 6 | | | | | | | |
| | | | | | | 6 | | | | | | | |
| | | | | | | 8 | | | | | | | |
| | | | | | | 8 | | | | | | | |
| | | | | | | 9 | | | | | | | |
| 10 | [Diagonal lines] | SC | Loose, gray, clayey SAND | [Triangle] | 4 | 3 | 10 | | | | | | |
| | | | 4 | | | | | | | | | | |
| | | | Medium-Dense | | 5 | 6 | | | | | | | |
| | | | | | | 8 | | | | | | | |
| | | | | | | 8 | | | | | | | |
| | | | | | | 9 | | | | | | | |
| 15 | [Diagonal lines] | CL | Stiff, light gray CLAY | [Triangle] | 7 | 8 | 25 | | | | | | |
| | | | 12 | | | | | | | | | | |
| | | | | | | 13 | | | | | | | |
| | | | | | | 4 | | | | | | | |
| | | | | | | 6 | | | | | | | |
| | | | | | | 9 | | | | | | | |
| 20 | [Diagonal lines] | CL | Stiff, light gray CLAY | [Triangle] | 8 | 4 | 12 | | | | | | |
| | | | 5 | | | | | | | | | | |
| | | | | | | 7 | | | | | | | |
| | | | | | | 4 | | | | | | | |
| | | | | | | 5 | | | | | | | |
| | | | | | | 7 | | | | | | | |
| 25 | [Diagonal lines] | SC | Loose, light gray, clayey SAND | [Triangle] | 9 | 3 | 9 | | | | | | |
| | | | 4 | | | | | | | | | | |
| | | | | | | 5 | | | | | | | |
| | | | | | | 3 | | | | | | | |
| | | | | | | 4 | | | | | | | |
| | | | | | | 5 | | | | | | | |
| 30 | [Diagonal lines] | CL | Medium, light gray CLAY | [Triangle] | 10 | 3 | 7 | | | | | | |
| | | | 3 | | | | | | | | | | |
| | | | | | | 4 | | | | | | | |
| | | | | | | 3 | | | | | | | |
| | | | | | | 4 | | | | | | | |
| 35 | | | | | | 3 | | | | | | | |
| | | | | | | 4 | | | | | | | |

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG

BORING NO.: B-2

PROJECT: Epperson Ranch-Park Place Lagoon

PROJECT NO.: 15-2689

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | | | | |
|-------|---|------|---|--------|-----|---------------------------|----|------------------------|----|----|----|----|----|--|--|--|--|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | | | | |
| 40 | (Weight of Hammer (WOH): 38.5-39') MC:34.8%, LL:43%, PI:31 | | | ▲ | 11 | 0 2 3 | 5 | | | | | | | | | | |
| 45 | | | | ▲ | 12 | 0 2 4 | 6 | | | | | | | | | | |
| 50 | | | | ▲ | 13 | 3 3 4 | 7 | | | | | | | | | | |
| 55 | | | | ▲ | 14 | 2 2 3 | 5 | | | | | | | | | | |
| 60 | | MH | Very Dense, calcareous SILT with trace of limestone and desiccated clay | ▲ | 15 | 13 20 33 | 53 | | | | | | | | | | |
| 65 | ■ ■ ■ ■ | | LIMESTONE with calcareous silt and trace of dessicated clay | ▲ | 16 | 19 38 26 | 64 | | | | | | | | | | |
| 70 | ■ ■ ■ ■ | | | ▲ | 17 | 9 11 27 | 38 | | | | | | | | | | |
| 75 | | CL | Hard, bluish gray, dessicated CLAY with trace of rock fragments | ▲ | 18 | 9 11 30 | 41 | | | | | | | | | | |
| | | | End of Boring | | | | | | | | | | | | | | |

Project: Epperson Ranch-Park Place Lagoon
Client: Epperson Ranch, LLC
Location: Pasco County, Florida
Driller: J & R Precision Drilling
Drill Rig: CME-550
Depth to Water > Initial ∇ :

Elevation: N/A
Logged By: JC

At Completion ∇ : 3.0

| Depth | Soil Symbols | USCS | Description | Sample Type | Sample No. | Standard Penetration Test | | | | | | | | | | |
|-------|--------------|-------|---|-------------|------------|---------------------------|----|------------------------|----|----|----|----|----|--|--|--|
| | | | | | | Blows | N | Penetration Resistance | | | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | | | |
| 0 | | SP | Loose, gray, fine SAND | | 1 | 2 3 3 | 6 | | | | | | | | | |
| | | SP-SM | Loose, dark brown, fine SAND with silt and trace of roots | | 2 | 4 6 6 | 12 | | | | | | | | | |
| | | SP | Medium-Dense, brown, fine SAND | | 3 | 2 2 3 | 5 | | | | | | | | | |
| 5 | | SC | Loose, gray, clayey SAND | | 4 | 3 5 6 | 11 | | | | | | | | | |
| | | | Medium-Dense | | 5 | 4 6 9 | 15 | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | |
| | | CL | Stiff, gray CLAY | | 6 | 3 4 6 | 10 | | | | | | | | | |
| 15 | | | Medium, bluish gray | | 7 | 2 4 4 | 8 | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | |
| | | SP-SC | Loose, light gray, fine SAND with clay | | 8 | 33 4 6 | 10 | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | |
| | | SC | Loose, gray, clayey SAND | | 9 | 3 4 5 | 9 | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | |
| | | SP-SC | Medium-Dense, light gray, fine SAND with clay | | 10 | 5 7 8 | 15 | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | | |

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG

BORING NO.: B-3

PROJECT: Epperson Ranch-Park Place Lagoon

PROJECT NO.: 15-2689

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | | | |
|-------|--------------|------|---|--------|-------------|---------------------------|---|------------------------|----|----|----|----|----|--|--|--|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | | | |
| 40 | [Symbol] | SC | Very Loose, light gray, clayey SAND with cemented sand (Weight of Hammer (WOH): 38.5-39.5') MC:44.7%, -200:48.4%, LL:51%, PI:33 | 11 | 0 0 1 | 1 | | | | | | | | | | |
| 45 | [Symbol] | CH | Very Soft, light gray CLAY (Weight of Hammer (WOH): 44.5-45') MC:67.3%, -200:74.3%, LL:77%, PI:55 Loss of circulation at 48' | 12 | 1 1 0 | 1 | | | | | | | | | | |
| 50 | [Symbol] | | LIMESTONE with calcareous clay (1 Blow/12 inches) | 13 | 4 5 1 | 6 | | | | | | | | | | |
| 55 | [Symbol] | | With calcareous silt (50 Blows/4 inches) | 14 | | 50/4" | | | | | | | | | | |
| 60 | [Symbol] | MH | Calcareous SILT with limestone (50 Blows/5 inches) End of Boring | 15 | | 50/5" | | | | | | | | | | |
| 65 | | | | | | | | | | | | | | | | |
| 70 | | | | | | | | | | | | | | | | |
| 75 | | | | | | | | | | | | | | | | |

Project: Epperson Ranch-Park Place Lagoon

Client: Epperson Ranch, LLC

Location: Pasco County, Florida

Driller: J & R Precision Drilling

Drill Rig: CME-550

Depth to Water > Initial ∇ :

Elevation: N/A

Logged By: JC

At Completion ∇ : 7.5'

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | | | | | | |
|-------|---------------------|------|----------------------------------|----------------------------------|-------------|---------------------------|----|------------------------|----|----|----|----|----|--|--|--|--|--|--|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | | | | | | |
| 0 | [Dotted pattern] | SP | Loose, gray, fine SAND | ▲ | 1 | 1 | 5 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | Medium-Dense, brown | | 2 | 4 5 8 | 13 | | | | | | | | | | | | |
| 5 | [Diagonal hatching] | SC | Medium-Dense, brown, clayey SAND | ▲ | 3 | 5 7 7 | 14 | | | | | | | | | | | | |
| | | | | | Loose, gray | | 4 | 2 3 3 | 6 | | | | | | | | | | |
| | | | Medium-Dense | | 5 | 8 12 12 | 24 | | | | | | | | | | | | |
| | | | Loose | | 6 | 3 4 6 | 10 | | | | | | | | | | | | |
| | | | Medium-Dense | | 7 | 3 6 7 | 13 | | | | | | | | | | | | |
| | | | Loose | | 8 | 4 4 4 | 8 | | | | | | | | | | | | |
| | | | Medium-Dense | | 9 | 3 4 5 | 9 | | | | | | | | | | | | |
| | | | Loose | | 10 | 2 3 4 | 7 | | | | | | | | | | | | |
| 35 | | | CL | Medium, light greenish gray CLAY | | | | | | | | | | | | | | | |

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG

BORING NO.: B-4

PROJECT: Epperson Ranch-Park Place Lagoon

PROJECT NO.: 15-2689

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | | | | | |
|-------|---------------------|------|--|--------|-----|---------------------------|-------|---|--|--|--|--|--|--|--|--|--|--|
| | | | | Type | No. | Blows | N | Penetration Resistance 10 20 30 40 60 80 | | | | | | | | | | |
| 40 | [Diagonal Hatching] | | Light gray, calcareous | ▲ | 11 | 1 2 3 | 5 | | | | | | | | | | | |
| 45 | | | (Weight of Hammer (WOH): 43.5'-50.5') Loss of circulation at 43' MC:45.6%, LL:47%, PI:31 | ▲ | 12 | 0 0 0 | 0 | | | | | | | | | | | |
| 55 | [Vertical Lines] | MH | Dense, calcareous SILT Regained circulation at 53' | ▲ | 13 | 5 19 15 | 34 | | | | | | | | | | | |
| 60 | | | With limestone | ▲ | 14 | 6 12 21 | 33 | | | | | | | | | | | |
| 65 | | | LIMESTONE with calcareous silt | ▲ | 15 | 33 46 39 | 85 | | | | | | | | | | | |
| 70 | [Brick Pattern] | | (50 blows for 2 inches) | ▲ | 16 | 10 31 50 | 50/2" | | | | | | | | | | | |
| 75 | | | | | | | | | | | | | | | | | | |

Project: Epperson Ranch-Park Place Lagoon

Client: Epperson Ranch, LLC

Location: Pasco County, Florida

Driller: J & R Precision Drilling

Drill Rig: CME-550

Depth to Water > Initial :

Elevation: N/A

Logged By: JC

At Completion : 2.2'

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | | | | | | |
|-------|--------------|-------|--|--------|-----|---------------------------|----|------------------------|----|----|----|----|----|--|--|--|--|--|--|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | | | | | | |
| 0 | | SP | Loose, gray, fine SAND | ▲ | 1 | 2 4 6 | 10 | | | | | | | | | | | | |
| | | SP-SM | Loose, brown, fine SAND with silt Medium-Dense | ▲ | 2 | 2 3 3 | 6 | | | | | | | | | | | | |
| 5 | | SC | Medium-Dense, gray, clayey SAND Dense | ▲ | 3 | 3 4 7 | 11 | | | | | | | | | | | | |
| | | | | ▲ | 4 | 11 14 14 | 28 | | | | | | | | | | | | |
| | | | | ▲ | 5 | 11 14 19 | 33 | | | | | | | | | | | | |
| 15 | | CL | Stiff, bluish gray CLAY | ▲ | 6 | 4 4 6 | 10 | | | | | | | | | | | | |
| 20 | | | | ▲ | 7 | 4 6 7 | 13 | | | | | | | | | | | | |
| 25 | | SP-SC | Medium-Dense, light bluish gray, fine SAND with clay | ▲ | 8 | 4 4 7 | 11 | | | | | | | | | | | | |
| 30 | | CL | Medium, greenish gray, sandy CLAY | ▲ | 9 | 2 2 5 | 7 | | | | | | | | | | | | |
| 35 | | | | ▲ | 10 | 0 2 2 | 4 | | | | | | | | | | | | |

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG

BORING NO.: B-5

PROJECT: Epperson Ranch-Park Place Lagoon

PROJECT NO.: 15-2689

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | |
|-------|----------------------------|------|--|--------|-----|---------------------------|-------|------------------------|----|----|----|----|----|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 |
| 40 | [Diagonal Hatching] | CH | calcareous, sandy with trace limestone Soft, orange sandy CLAY | ▲ | 11 | 2 2 2 | 4 | | | | | | |
| 45 | | | Very Soft (Weight of Hammer (WOH):43.5-44.5') MC:92.3, LL:68, PI:43 | | | | | | | | | | |
| 50 | [Vertical Dotted Hatching] | SM | Very Loose, orange, silty SAND | ▲ | 13 | 2 1 2 | 3 | | | | | | |
| 55 | [Brick Pattern] | | Pale brown, weathered LIMESTONE with calcareous silt | ▲ | 14 | 31 21 17 | 38 | | | | | | |
| 60 | | | (50 Blows/2 inches) | ▲ | 15 | 8 30 50 | 50/2" | 50/2" | | | | | |
| 65 | | | With bluish gray, clayey SAND (50 Blows/2 inches) | ▲ | 16 | 50/2" | 50/2" | | | | | | |
| 70 | [Diagonal Hatching] | CL | Hard, bluish gray, desiccated CLAY | ▲ | 17 | 11 14 20 | 34 | | | | | | |
| 75 | [Diagonal Hatching] | SC | Medium-Dense, bluish gray, desiccated clayey SAND | ▲ | 18 | 11 11 17 | 28 | | | | | | |

Project: Epperson Ranch-Park Place Lagoon

Client: Epperson Ranch, LLC

Location: Pasco County, Florida

Driller: J & R Precision Drilling

Drill Rig: CME-550

Depth to Water > Initial ∇ :

Elevation: N/A

Logged By: JC

At Completion ∇ : 2.0

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | | | |
|-------|--------------|-------|--|--------|-----|---------------------------|----|------------------------|----|----|----|----|----|--|--|--|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | | | |
| 0 | | SP-SM | Medium-Dense, dark gray, SAND with silt with minor organics | | 1 | 2 4 8 | 12 | | | | | | | | | |
| | | SP-CL | Medium-Dense, gray, fine SAND Medium, gray CLAY | | 2 | 4 3 3 | 6 | | | | | | | | | |
| 5 | | SC | Medium-Dense, gray, clayey SAND | | 3 | 4 7 8 | 15 | | | | | | | | | |
| | | | | | 4 | 10 10 10 | 20 | | | | | | | | | |
| | | | | | 5 | 10 13 11 | 24 | | | | | | | | | |
| 15 | | CL | Stiff, greenish gray CLAY | | 6 | 4 4 5 | 9 | | | | | | | | | |
| 20 | | SC | Loose, yellowish brown, clayey SAND | | 7 | 3 4 5 | 9 | | | | | | | | | |
| 25 | | CL | Medium, bluish gray CLAY | | 8 | 2 2 3 | 5 | | | | | | | | | |
| 30 | | SC | Medium, bluish gray, clayey SAND -200:20.6%, MC:29.7%, LL:35, PI:24 | | 9 | 1 1 2 | 3 | | | | | | | | | |
| 35 | | | Loose, light gray | | 10 | 1 1 2 | 3 | | | | | | | | | |

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG

BORING NO.: B-6

PROJECT: Epperson Ranch-Park Place Lagoon

PROJECT NO.: 15-2689

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | |
|-------|--------------|------|--|--------|----------------|---------------------------|---|------------------------|----|----|----|----|----|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 |
| 40 | | CH | Very Loose, yellowish brown weathered CLAY with trace of limestone (Weight of Rod (WOR): 38.5-40.5') (Weight of Hammer (WOH): 40.5-46.5') (Weight of Rod (WOR): 46.5-48.5') MC:42%, LL:54, PI:40 | 11 | 0 0 0 | 0 | | | | | | | |
| 45 | | | | | | | | | | | | | |
| 50 | | | Weathered LIMESTONE with desiccated silt Loss of circulation at 48.5' | 14 | 9 13 30 | 43 | | | | | | | |
| 55 | | | (50 Blows/3 inches) Regained partial circulation at 56' | 15 | 19 27 50 | 50/3" | | | | | | | |
| 60 | | | (50 blows/5 inches) | 16 | | 50/5" | | | | | | | |
| 65 | | | End of Boring | | | | | | | | | | |
| 70 | | | | | | | | | | | | | |
| 75 | | | | | | | | | | | | | |

Project: Epperson Ranch-Park Place Lagoon

Client: Epperson Ranch, LLC

Location: Pasco County, Florida

Driller: J & R Precision Drilling

Drill Rig: CME-550

Depth to Water > Initial ∇ :

Elevation: N/A

Logged By: JC

At Completion ∇ : 7.2'

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | |
|-------|---------------------|-------|-------------------------------------|--------|-----|---------------------------|----|------------------------|----|----|----|----|----|--|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | |
| 0 | [Dotted pattern] | SP | Loose, gray, fine SAND | ▲ | 1 | 2 3 6 | 9 | | | | | | | |
| | | | Medium-Dense, brown | | 2 | 5 7 9 | | 16 | | | | | | |
| | | | Light brown | | 3 | 6 7 9 | | 16 | | | | | | |
| 5 | [Diagonal hatching] | SC | Medium-Dense, gray, clayey SAND | ▲ | 4 | 6 7 10 | 17 | | | | | | | |
| | | | With chert rock | | 5 | 7 12 13 | | 25 | | | | | | |
| | | | | | 6 | 6 8 9 | | 17 | | | | | | |
| 15 | [Diagonal hatching] | CL | Very Stiff, bluish gray CLAY | ▲ | 7 | 4 8 9 | 17 | | | | | | | |
| | | | | | 8 | 2 2 5 | | 7 | | | | | | |
| | | | | | 9 | 3 3 6 | | 9 | | | | | | |
| 25 | [Dotted pattern] | SP-SC | Loose, yellowish brown, clayey SAND | ▲ | 10 | 4 4 5 | 9 | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| 30 | [Diagonal hatching] | CL | Stiff, bluish gray CLAY | ▲ | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | |

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG

BORING NO.: B-7

PROJECT: Epperson Ranch-Park Place Lagoon

PROJECT NO.: 15-2689

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | | | | |
|-------|---------------------|------|--|--------|-----|---------------------------|-------|------------------------|----|----|----|----|----|--|--|--|--|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | | | | |
| 40 | [Diagonal Hatching] | | Soft, gray with trace of rock | ▲ | 11 | 1 2 2 | 4 | | | | | | | | | | |
| 45 | [Vertical Lines] | MH | Loose, calcareous SILT with trace of limestone | ▲ | 12 | 1 2 2 | 4 | | | | | | | | | | |
| 50 | [Brick Pattern] | | LIMESTONE with calcareous clay | ▲ | 13 | 10 6 15 | 21 | | | | | | | | | | |
| 55 | [Brick Pattern] | | (50 Blows/5 inches) | ▲ | 14 | | 50/5" | | | | | | | | | | |
| 60 | [Brick Pattern] | | No recovery | ▲ | 15 | | 50/2" | | | | | | | | | | |
| 60 | | | End of Boring | | | | | | | | | | | | | | |
| 65 | | | | | | | | | | | | | | | | | |
| 70 | | | | | | | | | | | | | | | | | |
| 75 | | | | | | | | | | | | | | | | | |

Project: Epperson Ranch-Park Place Lagoon
Client: Epperson Ranch, LLC
Location: Pasco County, Florida
Driller: J & R Precision Drilling
Drill Rig: CME-550
Depth to Water > Initial ∇ :

Elevation: N/A
Logged By: JC

At Completion ∇ : 6.7'

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | | | | |
|-------|--------------|-------|--|--------|-----|---------------------------|---|------------------------|----|----|----|----|----|--|--|--|--|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | | | | |
| 0 | | SP | Loose, gray, fine SAND | | 1 | 1 | | | | | | | | | | | |
| | | | | | 2 | 2 | | | | | | | | | | | |
| | | | | | 4 | 4 | | | | | | | | | | | |
| | | SP-SM | Loose, brown, fine SAND with silt | | 2 | 3 | | | | | | | | | | | |
| | | | | | 4 | 4 | | | | | | | | | | | |
| | | | | | 4 | 4 | | | | | | | | | | | |
| 5 | | SC | Medium-Dense, gray, clayey SAND | | 3 | 6 | | | | | | | | | | | |
| | | | | | 4 | 8 | | | | | | | | | | | |
| | | | | | 4 | 10 | | | | | | | | | | | |
| | | | | | 5 | 13 | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | |
| | | | Light gray | | 6 | 14 | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | |
| | | | | | 7 | 6 | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | |
| | | | Loose | | 8 | 3 | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | |
| | | | | | 9 | 2 | | | | | | | | | | | |
| 30 | | CL | Soft, bluish gray CLAY with trace of limestone | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | Loose, calcareous | | 10 | 3 | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | | | |

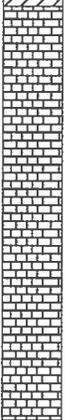
This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG

BORING NO.: B-8

PROJECT: Epperson Ranch-Park Place Lagoon

PROJECT NO.: 15-2689

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | | | | | | |
|-------|---|------|----------------------------|--------|-----|---------------------------|-------|------------------------|----|----|----|----|----|--|--|--|--|--|--|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | | | | | | |
| |  | | Loss of circulation at 38' | | | | | | | | | | | | | | | | |
| 40 |  | | LIMESTONE | ▲ | 11 | 1 36 10 | 46 | | | | | | | | | | | | |
| 45 | | | (50 Blows/3 inches) | ▲ | 12 | | 50/3" | | | | | | | | | | | | |
| 50 | | | (50 Blows/2 inches) | ▲ | 13 | | 50/2" | | | | | | | | | | | | |
| 55 | | | End of Boring | | | | | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | | | | | | | | |
| 65 | | | | | | | | | | | | | | | | | | | |
| 70 | | | | | | | | | | | | | | | | | | | |
| 75 | | | | | | | | | | | | | | | | | | | |

Project: Epperson Ranch-Park Place Lagoon

Client: Epperson Ranch, LLC

Location: Pasco County, Florida

Driller: J & R Precision Drilling

Drill Rig: CME-550

Depth to Water > Initial ∇ :

Elevation: N/A

Logged By: JC

At Completion ∇ : 6.7'

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | | | |
|-------|--------------|-------|---|--------|-----|---------------------------|----|------------------------|----|----|----|----|----|--|--|--|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | | | |
| 0 | | SP | Medium-Dense, gray, fine SAND | | 1 | 2 6 6 | 12 | | | | | | | | | |
| | | SC | Medium-Dense, gray, clayey SAND | | 2 | 6 8 9 | 17 | | | | | | | | | |
| 5 | | CL | Very Stiff, gray CLAY | | 3 | 8 12 13 | 25 | | | | | | | | | |
| | | SC | Dense, gray, clayey SAND | | 4 | 10 15 17 | 32 | | | | | | | | | |
| | | | Medium-Dense | | 5 | 8 8 10 | 18 | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | |
| | | CL | Stiff, light gray CLAY | | 6 | 4 6 9 | 15 | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | |
| | | SC | Medium-Dense, light gray, clayey SAND with trace of rock | | 7 | 6 6 7 | 13 | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | |
| | | SP-SC | Medium-Dense, light gray, fine SAND with clay and trace of rock | | 8 | 5 7 9 | 16 | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | |
| | | CH | Medium, light gray CLAY | | 9 | 2 2 4 | 6 | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | |
| | | | Yellowish brown CLAY with rock | | 10 | 3 3 4 | 7 | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | | |

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG

BORING NO.: B-9

PROJECT: Epperson Ranch-Park Place Lagoon

PROJECT NO.: 15-2689

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | | | |
|-------|---------------------|------|--|--------|-----|---------------------------|-------|------------------------|----|----|----|----|----|--|--|-------|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | | | |
| 40 | [Diagonal Hatching] | | Loss of circulation at 38' (Weight of Hammer (WOH): 38.5'-40.5' MC:56.7%, LL:55%, PI:41 Regained partial circulation at 41' | ▲ | 11 | 0 0 0 | 0 | | | | | | | | | |
| 45 | [Brick Pattern] | | LIMESTONE with calcareous silt (50 Blows/3 inches) | ▲ | 12 | 45 16 50 | 50/3" | | | | | | | | | 50/3" |
| 50 | [Brick Pattern] | | (50 Blows/3 inches) | ▲ | 13 | | 50/3" | | | | | | | | | 50/3" |
| 55 | | | End of Boring | | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | | | | | |
| 65 | | | | | | | | | | | | | | | | |
| 70 | | | | | | | | | | | | | | | | |
| 75 | | | | | | | | | | | | | | | | |

Project: Epperson Ranch-Park Place Lagoon

Client: Epperson Ranch, LLC

Location: Pasco County, Florida

Driller: J & R Precision Drilling

Drill Rig: CME-550

Depth to Water > Initial ∇ :

Elevation: N/A

Logged By: JC

At Completion ∇ : 6.7'

| Depth | Soil Symbols | USCS | Description | Sample | | Standard Penetration Test | | | | | | | | | | |
|-------|--------------|-------|---|--------|-----|---------------------------|----|------------------------|----|----|----|----|----|--|--|--|
| | | | | Type | No. | Blows | N | Penetration Resistance | | | | | | | | |
| | | | | | | | | 10 | 20 | 30 | 40 | 60 | 80 | | | |
| 0 | | SP | Loose, gray, fine SAND | | 1 | 2 3 3 | 6 | | | | | | | | | |
| | | SP-SM | Loose, brown, fine SAND with silt | | 2 | 3 3 4 | 7 | | | | | | | | | |
| 5 | | SC | Loose, gray, clayey SAND | | 3 | 3 3 3 | 6 | | | | | | | | | |
| | | | Medium-Dense | | 4 | 4 8 11 | 19 | | | | | | | | | |
| | | | | | 5 | 10 13 13 | 26 | | | | | | | | | |
| 15 | | CL | Loose | | 6 | 2 3 4 | 7 | | | | | | | | | |
| 20 | | SP | Very Loose, gray, fine SAND with cemented sands | | 7 | 1 1 2 | 3 | | | | | | | | | |
| 25 | | SC | Loose, gray, clayey SAND with trace of rock | | 8 | 2 3 3 | 6 | | | | | | | | | |
| 30 | | | Very Loose, light gray MC:28.2%, -200:27.4%, LL:37%, PI:26 | | 9 | 1 1 2 | 3 | | | | | | | | | |
| 35 | | CL | Stiff, gray CLAY | | 10 | 3 5 4 | 9 | | | | | | | | | |

This information pertains only to this boring and should not be interpreted as being indicative of the site.

KEY TO SYMBOLS

Symbol Description

Strata symbols



Poorly graded sand



Poorly graded sand
with silt



Clayey sand



Poorly graded sand
with clay



Low plasticity
clay



Limestone



Elastic silt



High plasticity
clay



Silty sand

Misc. Symbols



Water table at
boring completion



Boring continues

Soil Samplers



Standard penetration test

Notes:

1. Exploratory boring were performed using a 2-inch diameter split barrel sampler driven by a 140 lbs hammer (In accordance with ASTM D1586)
2. These logs are subject to the limitations, conclusions, and recommendations in this report.

APPENDIX C

Key to Soil Classification

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

| Major Division | Group Symbol | Laboratory Classification Data | | Soil Description |
|---|--------------|--------------------------------|--|---|
| | | Finer than No. 200 Sieve % | Supplementary Requirements | |
| Coarse-Grained | GW | 0 - 5* | $C_u \geq 4$ and $1 \leq C_c \leq 3$ | Well-Graded Gravels, Sandy Gravels |
| | GP | 0 - 5* | $C_u < 4$ and / or $1 > C_c > 3$ | Gap-Graded or Uniform Gravels, Sandy Gravels |
| | GM | 12 or More* | $PI < 4$ or Below A-Line | Silty Gravels, Silty Sandy Gravels |
| | GC | 12 of More* | $PI \geq 7$ and On or Above A-Line | Clayey Gravels, Clayey Sandy Gravels |
| (Over 50% by Weight Coarser than No. 200 Sieve) | SW | 0 - 5* | $C_u \geq 6$ and $1 \leq C_c \leq 3$ | Well-Graded Sands, Gravelly Sands |
| | SP | 0 - 5* | $C_u < 6$ and / or $1 > C_c > 3$ | Gap-Graded or Uniform Sands, Gravelly Sands |
| | SM | 12 or More* | $PI < 4$ or Below A-Line | Silty Sands, Silty Gravelly Sands |
| | SC | 12 of More* | $PI \geq 7$ and On or Above A-Line | Clayey Sands, Clayey Gravelly Sands |
| Fine-Grained | ML | | Plasticity Chart | Silts, Very Fine Sands, Silty or Clayey Fine Sands, Micaceous Silts |
| | CL | | Plasticity Chart | Low Plasticity Clays, Sandy or Silty Clays |
| (Over 50% by Weight Finer than No. 200 Sieve) | OL | | Plasticity Chart, Organic Odor or Color | Organic Silts and Clays of Low Plasticity |
| | MH | | Plasticity Chart | Micaceous Silts, Diatomaceous Silts, Volcanic Ash |
| Soils with Fibrous Organic Matter | CH | | Plasticity Chart | Highly Plastic Clays and Sandy Clays |
| | OH | | Plasticity Chart, Organic Odor or Color | Organic Silts and Clays of High Plasticity |
| | PT | | Fibrous Organic Matter, Will Char, Burn, or Glow | Peat, Sandy Peats, and Clayey Peat |

*For Soils having 5 to 12 percent passing the No. 200 Sieve, use a dual symbol such as GW-GC.