Geotechnical Summary
Hydrogeological Summary
Groundwater Mitigation Plan

Crystal River Borrow Pit
6580 West Calvary Lane
Beverly Hills, Florida

Prepared for:

George L. Southworth
PO Box 16966
Tampa, Florida 33687

Prepared by:

CES
CREATIVE ENVIRONMENTAL SOLUTIONS
GEOLOGISTS | ENGINEERS | ENVIRONMENTAL SCIENTISTS

February 22, 2025

Purpose

The purpose of this report is to document the suitability of the site as a source of fill, to establish the hydrogeological setting of the site, and to evaluate potential onsite and offsite impacts on the underlying aquifer resulting from mining operations on the site.

Prospecting Summary

Creative Environmental Solutions contracted Southern Drilling Solutions (SDS) to perform the drilling services for this project. On September 3rd and 4th, 2024 CES supervised fourteen (14) Direct Push Technology (DPT) borings. The borings were logged by a geologist. The borings ranged in depth from ten (10) to forty (40) feet below land surface (ft-bls). The drillhole locations are illustrated on the attached map. The boring logs are attached to this report as well. Four (4) of the borings were converted to piezometers for water level monitoring purposes.

The borings all encountered sand at land surface that persisted to depths ranging from 7 to more 35 feet below land surface (ft-bls). The sands were underlain by clayey sediments and in some cases dolomitic limestone (with no intervening clay).

Representative samples of the sand recovered from the borings were analyzed as necessary for minus (-) 200 content and Atterberg limits (clayey soils). The data indicated the soil is well suited as a source of structural fill for FDOP projects.

Use of soil from this site should be guided by FDOT Index 120-001. Both A-3 and A-2-4 are considered select soils by FDOT. The A-3 soils encountered on this site appear to be suitable for use on FDOT projects, including embankments, when used in accordance with Index 120-001. The A-2-4 soils appear be suitable for use on FDOT projects, including embankments, when used in accordance with Index 120-001; however, these soils may hold moisture and may be difficult to compact, so it may be best if they are used above the water table.

Topography

According to the USGS Crystal River, FL quadrangle map of 1954, the elevation varies from less than 10 ft (NGVD 1929) in the southwest part of the site to just over 30 ft- in the northeast part. Less than ½ mile

to the east the land rises to 50 ft, and then further east to more than 100 ft. The elevations to the west of the site are generally 10 ft or less. A topographic survey is included in the mining permit application.

Geology

All of Citrus County is underlain by a vast thickness of limestone (Groundwater Resource Availability Inventory: Citrus County, FL, SFWWMD, 1987). The uppermost limestone unit in the county is the Suwannee Limestone, below which is the Ocala Limestone and then the Avon Park Limestone. In the central part of the county, there is a layer of clay atop the limestone and a layer of sand atop the clay. On the east and west edges of the county, the limestone is close to the surface. According to the Geologic Map of Citrus County prepared by the Florida Geological Survey (FGS), the uppermost geologic unit in the study area is the Quaternary dunes, described as thick sands with dune morphology. The onsite drilling program confirmed the occurrence of thick sand.

Hydrogeology

There are two aquifers in Citrus County—the Floridan that is county-wide and the overlying surficial aquifer that is only present in the central part of the county. The surficial aquifer occurs in the surficial sands and the Floridan aquifer in the deeper limestone units. The two aquifers may be separated by the low-permeability clays, though usually they are in direct hydraulic communication because the clays are discontinuous.

In the project area, the uppermost aquifer is the surficial. Water levels measured in onsite piezometers found the water table onsite varies from 8 to 25 ft-bls. The elevation of the water table varies from approximately 4 to 7 ft NAD88. Groundwater flow in the surficial aquifer is generally toward the southwest. A water table contour map is attached.

The elevation of the potentiometric surface of the Floridan aquifer in the project area is approximately 3 to 5 ft NAD88 based on the Potentiometric Surface Maps of the Upper Floridan Aquifer published 2017 and earlier by SWFWMD. These maps indicate that groundwater flow in the upper Floridan aquifer across the County is generally from east to west.

The water levels in the site piezometers were similar to those predicted for the Floridan aquifer in this location. This suggests the two aquifers are in hydraulic communication. This notion is supported by the borings that penetrated sand and then limestone, with no intervening clay (or low-permeability soils).

Well Survey

The area to the east of the site occupied by Pine Ridge is served by Citrus County Utilities. Homes within 1,000 ft of the proposed excavation that may be connected to private wells are identified in the following table and shown on the attached map.

Address	Owner Name
6889 W. Wicker St.	Jackson, Julianne
3937 N. Buckhorn Dr.	Paley, Norman
4759 N. Mattox Pt.	Dudley, Steven
7035 W. Hodges Ln.	Douglas, Rebecca
4510 N. Ellen Pt.	Kelly, Bobbie
3855 N. Brookshire Pt.	Magill, Charles; Jackson, Julianne
6854 W. Sentinel Post Path	Davidson, Warren
6742 W. Sentinel Post Path	Cox, Joe
6618 W. Sentinel Post Path	Wagner, Steven
6454 W. Corral Pt.	West, Jeffrey

Contaminated Sites Nearby

The FDEP Contamination Locator map was reviewed to identify the locations of known releases of petroleum, dry-cleaner solvents and other contaminants on and near the site. The closest reported discharge is 11,700 ft to the southwest of the site. This is the Metals Industries site, ERIC_13250, located at 8409 NE Crystal Street in Crystal River. This site and two others in Crystal River are down gradient of the project site.

Mining Plan

The borrow pit will be approximately 150 acres in size. The excavation will not come closer than 500 feet to adjoining property owners.

The excavation activities will intersect the water table of the surficial aquifer; however, the underlying clayey soil will not be excavated, meaning the excavation will not impinge on the underlying Floridan aquifer. Dewatering will not be conducted without first obtaining a Water Use Permit from the SWFWMD.

The material will not be sorted or graded onsite, so process water will not be generated. Water treatment chemicals (e.g., flocculants) will not be used during mining.

Potential for Impact

The mining operation is not expected to significantly affect groundwater levels onsite or offsite. For this reason, water levels in nearby wetlands and drinking water or irrigation wells will not be impacted.

The mining operation will not introduce any chemicals to the aquifer. For this reason, there is no significant potential for contaminating nearby wells.

The contaminated sites that are almost two miles to the southwest of the project site will not have any effect on or be affected by the mining operation due to the long distance away and the direction of groundwater flow.

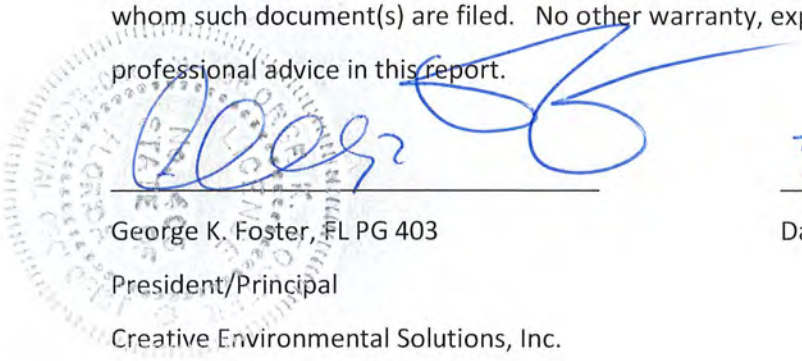
Mitigation Plan

The applicant is fully prepared to investigate any complaints of offsite impacts. If offsite impacts related to mining are confirmed, the mining plan will be modified to eliminate the impacts.

Professional Geologist Certification

This document has been reviewed by George K. Foster of Creative Environmental Solutions, Inc. (CES), Brooksville, Florida, and appears to comply with the current standards and practices in the field of geology in the State of Florida. CES's professional services have been performed using the degree of care and skill ordinarily exercised under similar circumstances by other professionals practicing in this field. The certification of geologic work contained herein applies only to the original sealed document(s), and specifically does not pertain to any copies of this document or any portion thereof including mylars, linen, sepia or other materials which can be changed by the entity or entities with

whom such document(s) are filed. No other warranty, expressed or implied, is made as to the professional advice in this report.



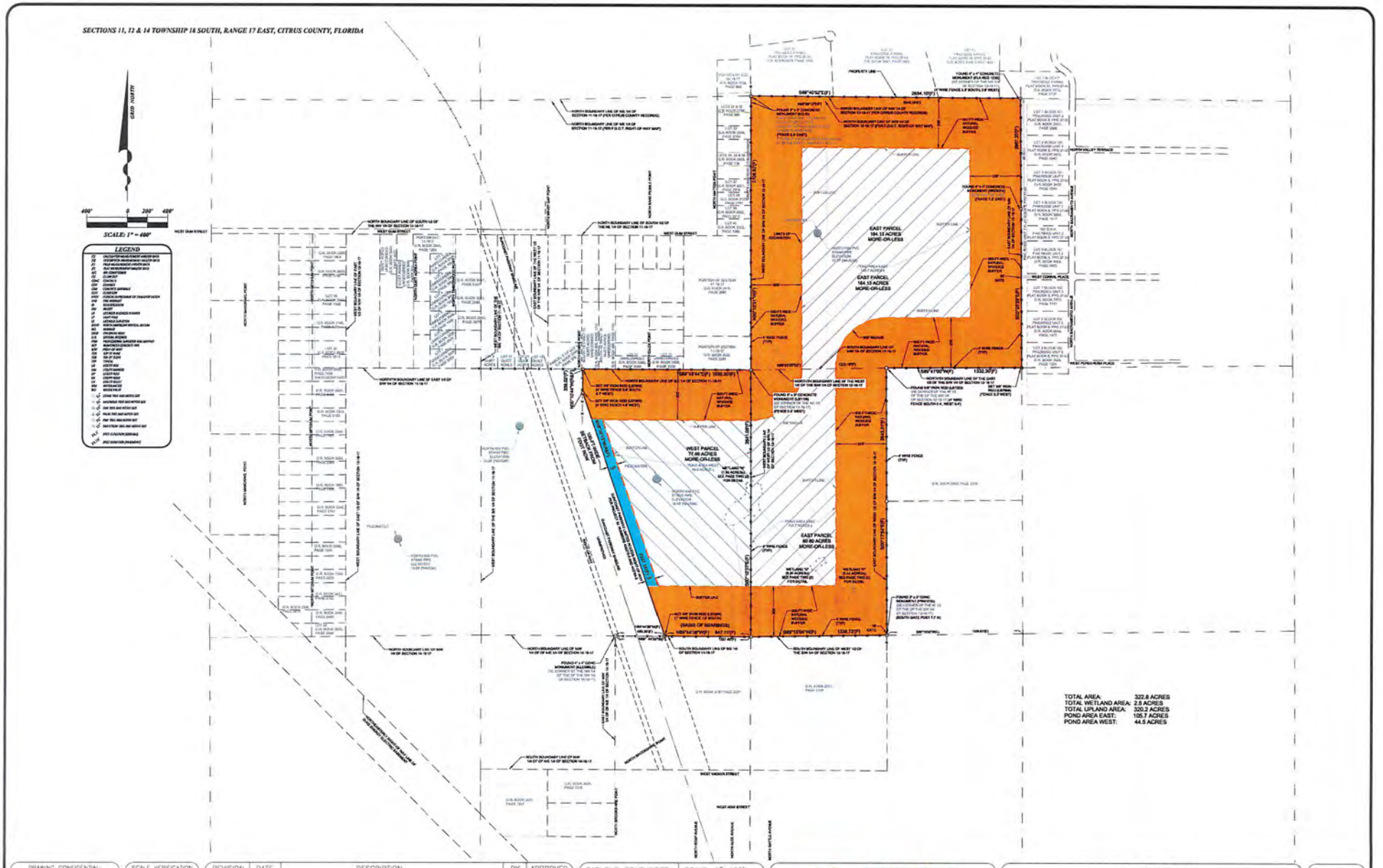
3/7/25

George K. Foster, FL PG 403 — Date of signature

President/Principal

Creative Environmental Solutions, Inc.

FIGURES



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SCALE VERIFICATION
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING
USE TO VERIFY FIGURE

REVISION	DATE	DESCRIPTION	BY	APPROVED

CAD FILE: SOUTHWORTH	SCALE: 1"=400'
DRAWN BY: T.TRAYNHAM	DATE: 02-28-25
CHECKED BY:	DATE:
APPROVED BY:	DATE:

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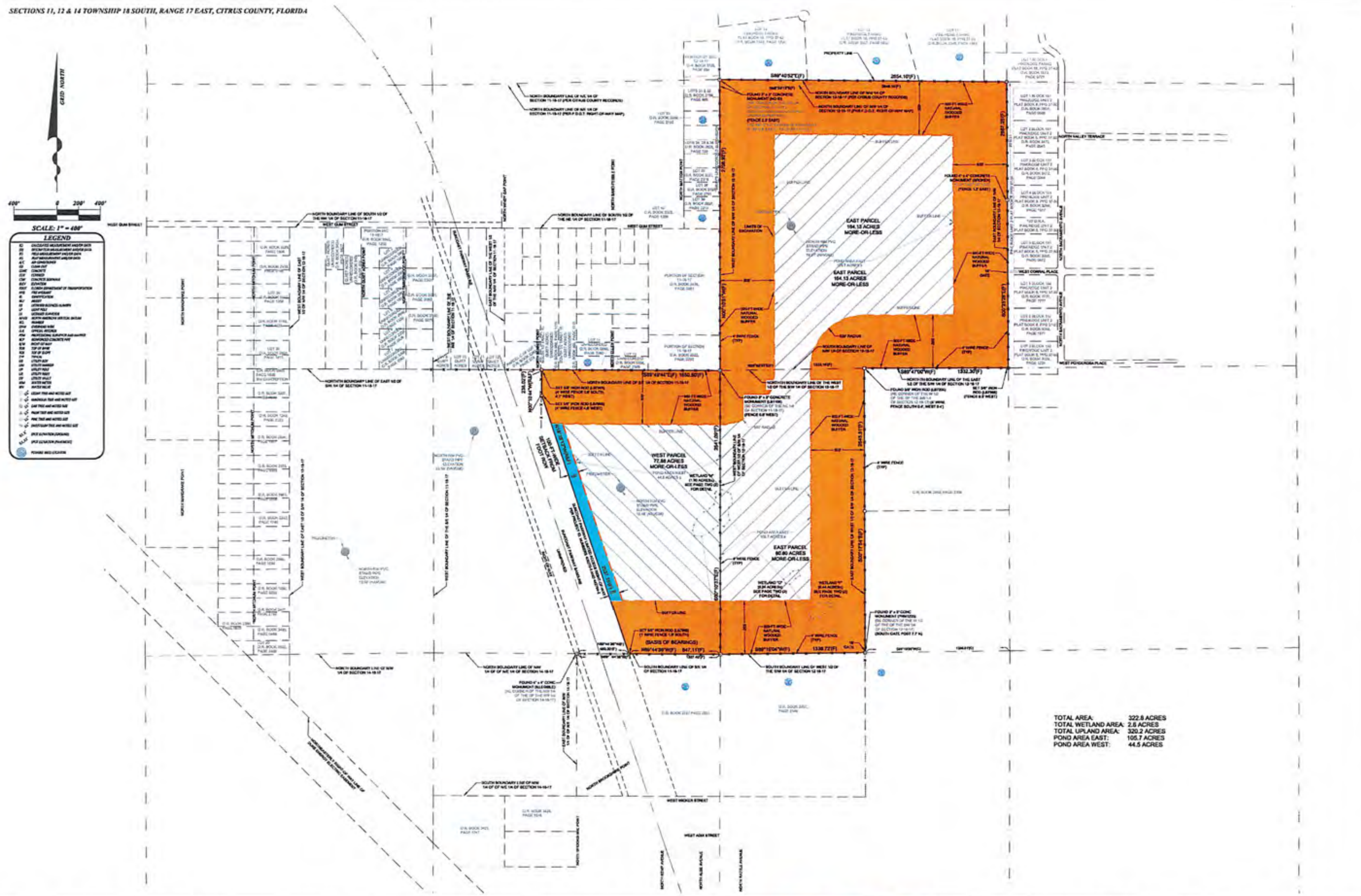
SITE PLAN

PROJECT: CRYSTAL RIVER BORROW PIT
APPLICANT: GEORGE L. SOUTHWORTH

PROJECT No. 24-124

SHEET 1 of 1

SECTIONS 11, 12 & 14 TOWNSHIP 18 SOUTH, RANGE 17 EAST, CITRUS COUNTY, FLORIDA



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REVISION	DATE	DESCRIPTION	BY	APPROVED

CAD FILE: RES_PW	SCALE: 1"=400'
DRAWN BY: T.TRAYNHAM	DATE: 03-03-25
CHECKED BY:	DATE:
APPROVED BY:	DATE:

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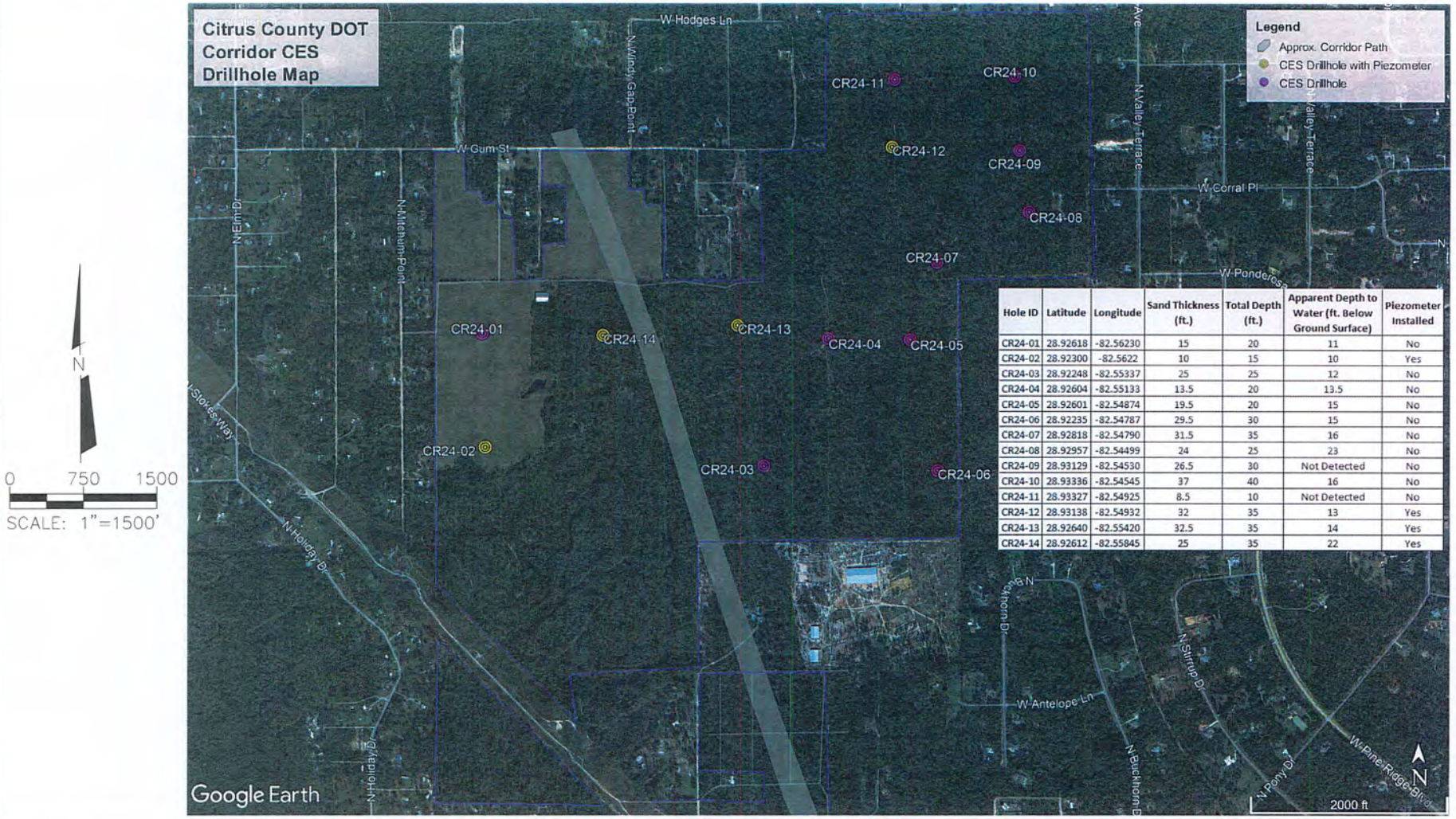
RESIDENTIAL POTABLE WELLS

PROJECT: CRYSTAL RIVER BORROW PIT
APPLICANT: GEORGE L. SOUTHWORTH

PROJECT No. 24-124

SHEET 1 of 1

P:\SOUTHWORTH\CRYSTAL RIVER--PROGENY SAND MINE\CES DPT BORINGS\CADD\SITE MAP.DWG DRAWN BY: T. TRAYNHAM CES JOB #24-124



Hole ID	Latitude	Longitude	Sand Thickness (ft.)	Total Depth (ft.)	Apparent Depth to Water (ft. Below Ground Surface)	Piezometer Installed
CR24-01	28.92618	-82.56230	15	20	11	No
CR24-02	28.92300	-82.5622	10	15	10	Yes
CR24-03	28.92248	-82.55337	25	25	12	No
CR24-04	28.92604	-82.55133	13.5	20	13.5	No
CR24-05	28.92601	-82.54874	19.5	20	15	No
CR24-06	28.92235	-82.54787	29.5	30	15	No
CR24-07	28.92818	-82.54790	31.5	35	16	No
CR24-08	28.92957	-82.54499	24	25	23	No
CR24-09	28.93129	-82.54530	26.5	30	Not Detected	No
CR24-10	28.93336	-82.54545	37	40	16	No
CR24-11	28.93327	-82.54925	8.5	10	Not Detected	No
CR24-12	28.93138	-82.54932	32	35	13	Yes
CR24-13	28.92640	-82.55420	32.5	35	14	Yes
CR24-14	28.92612	-82.55845	25	35	22	Yes

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Brooksville, Florida 34601
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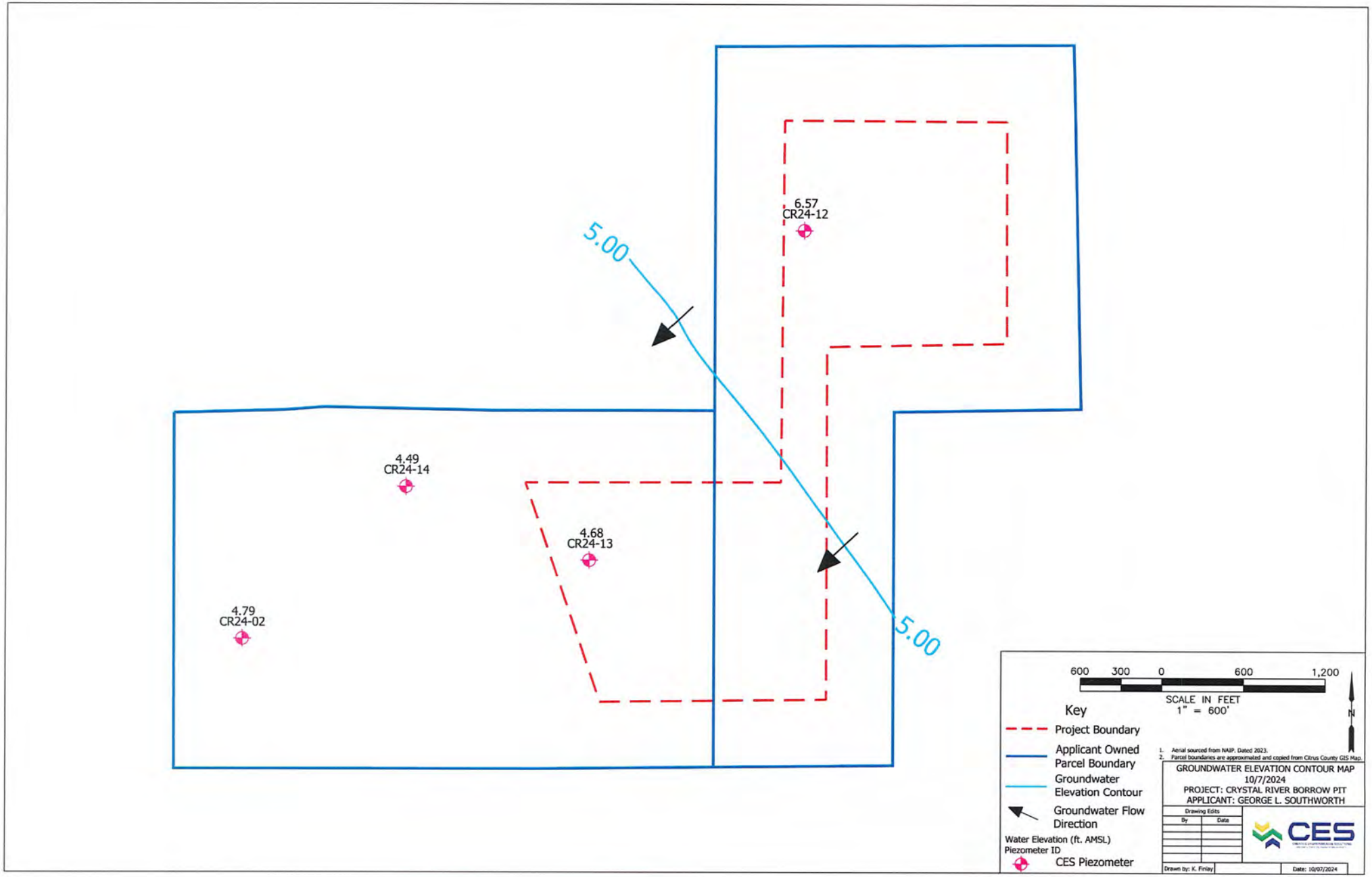
DRILLING LOCATION MAP
PROJECT: CRYSTAL RIVER BORROW PIT
APPLICANT: GEORGE L. SOUTHWORTH


6.57
CR24-12
5.00
4.49
CR24-14
4.68
CR24-13
4.79
CR24-02
5.00
600 300 0 600 1,200
SCALE IN FEET
1" = 600'
N
Key
Project Boundary
Applicant Owned Parcel Boundary
Groundwater Elevation Contour
Groundwater Flow Direction
Water Elevation (ft. AMSL)
Piezometer ID
CES Piezometer
1. Aerial sourced from NAIP. Dated 2023.
2. Parcel boundaries are approximated and copied from Citrus County GIS Map.
GROUNDWATER ELEVATION CONTOUR MAP
10/7/2024
PROJECT: CRYSTAL RIVER BORROW PIT
APPLICANT: GEORGE L. SOUTHWORTH
Drawing Edits
By
Date
CES
Drawn by: K. Finlay
Date: 10/07/2024

BORING LOGS

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Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number:	Permit Number:	FDEP Facility Identification Number:
CR24-01	28.92618, -82.56230	
Site Name:	**Borehole Start Date:** 8/3/24 **Start Time:** 0825 ☒ AM ☐ PM	
CITRUS CO. CORRIDOR DOT	**End Date:** **End Time:** ☐ AM ☐ PM	
Environmental Contractor:	**Geologist's Name:**	**Environmental Technician's Name:**
Creative Environmental Solutions	K.F.-LAY	

Drilling Company:	Pavement Thickness (in):	Borehole Diameter (in):	Borehole Depth (feet):
So. DR. SOL.			20'

Drilling Method(s):	Apparent Borehole DTW in feet (from soil moisture content):	Measured Well DTW in feet (after water recharges in well):	OVA (list model and check type):
HA + DPT	11'		NA ☐ FID ☐ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-2'	100%			1	0': SAND, LT GRAY, V.F W/ ORGANICS		D	
					2	1': SAND, LT TAN, V.F		D	
					3				
					4				
	2-5'	100%			5				
DPT					6				
					7				
					8				
					9				
	5-10	60%			10	9.7': CONT FROM 1', V.SL. CLAY		D	
					11	10': MOIST/WET			
					12	~11': SILT, CLAY & SAND, BUFF WHITE, MOD. FIRM		M/W	
					13				
					14				
	10-15	60%			15				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

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BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date: 8/3/24
CB24-01			End Date: 8/3/24

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
	15-20'				16	15-20': SILT, TAN W/ DOLOMITE PIECES		W	
					17				
					18				
					19				
					20	REFUSAL AT 20'		W	
					21				
					22	END OF BORING 20'			
					23				
					24				
					25				
					26				
					27				
					28				
					29				
					30				
					31				
					32				
					33				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

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Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number: CL24-02	Permit Number: 28.92300, -82.56220	FDEP Facility Identification Number:
Site Name: CITRUS CO. DOT CORRIDOR	Borehole Start Date: Start Time: 0925 ☒ AM ☐ PM End Date: End Time: 0945 ☒ AM ☐ PM	
Environmental Contractor: Creative Environmental Solutions	Geologist's Name: K. FINLAY	Environmental Technician's Name:
Drilling Company: SO. D. SOL.	Pavement Thickness (in): 0"	Borehole Diameter (in):
Borehole Depth (feet): 15'		
Drilling Method(s): HA/DPT	Apparent Borehole DTW in feet (from soil moisture content): 7'	Measured Well DTW in feet (after water recharges in well):
OVA (list model and check type): ☐ FID ☐ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA NA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-2'	100%			1	0': SAND, TAN, V.F, FINE ROOTS PRESENT	D'		
					2		1		
					3				
					4				
					5				
	2-5'	100%			6	~7' SILT, SAND & CLAY, TAN, W/	D 6'		
DPT					7	DOLO. FRAGMENTS,	M 7'		
					8				
					9				
	5-10	75%			10	10' DIFFICULT DRILLING,	W		
					11	SILT, SAND & LIMESTONE FRAGMENTS, BUFF TAN			
					12				
					13				
					14				
	10-15'	100%			15	END OF BORING 15'	W		

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

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Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number: CR24-03	Permit Number: 28.92248, -82.55337	FDEP Facility Identification Number:
Site Name: CITRUS CO. DOT CORRIDOR	Borehole Start Date: 8/3/24 Start Time: 1035 ☒ AM ☐ PM End Date: 8/3/24 End Time: 1100 ☐ AM ☐ PM	
Environmental Contractor: Creative Environmental Solutions	Geologist's Name: K.F. LAY	Environmental Technician's Name:

Drilling Company: SDS	Pavement Thickness (in):	Borehole Diameter (in):	Borehole Depth (feet): 25'
Drilling Method(s): HA / DPT	Apparent Borehole DTW in feet (from soil moisture content): 12 ft+	Measured Well DTW in feet (after water recharges in well):	OVA (list model and check type): ☐ FID ☐ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-2'				1	0': SAND, LT BROWN GRAY, V.F		D	0-2
					2	1': SAND, TAN, V.F, LIGHTER W/ DEPTH			
					3				
					4				
DPT	2-5'				5			D	2-5'
					6				
					7				
					8				
					9				
	5-10'				10	10.5': SAND, BUFF WHITE, V.F-F, WET		D	5-10
					11				
					12			W ~12'	
					13				
					14				
	10-15'	90%			15				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

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Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date:
CB24-03			End Date:

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DPT	15-20				16	Cont FROM 10.5'		W	15-20
					17				
					18				
					19				
					20				
					21				
					22				
					23				
					24				
					25	24': Sand, WHITE, VF-F			
	20-25				26	END OF BORING 25'		W	20-25
					27				
					28				
					29				
					30				
					31				
					32				
					33				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

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Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number: C224-04	Permit Number: 28.92604, -82.55133	FDEP Facility Identification Number:
Site Name: CITRUS CO. DOT COMPLEX	Borehole Start Date: 8/3/24 Start Time: 1135 ☒ AM ☐ PM End Date: End Time: 1205 ☐ AM ☒ PM	
Environmental Contractor: Creative Environmental Solutions	Geologist's Name: K.F. LAM	Environmental Technician's Name:
Drilling Company: SDS	Pavement Thickness (in):	Borehole Diameter (in):
Borehole Depth (feet): 20'		
Drilling Method(s): HA/DPT	Apparent Borehole DTW in feet (from soil moisture content):	Measured Well DTW in feet (after water recharges in well):
OVA (list model and check type): ☐ FID ☐ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-2'	100%			1	0': SAND, TAN, V.F, RARE FINE ROOTS		D	0-2'
					2				
					3				
					4				
	2-5'	100%			5	5': SAND, LT TAN, V.F-F		D	2-5'
DPT					6				
					7				
					8				
					9				
	5-10	80%			10			D	5-10'
					11				
					12				
	10-15	100%			13	~13.5': CLAYEY SAND TRANSITIONS INTO SANDY CLAY W/DEPTH, TAN GRAY, MOD. FIRM		W 13.5'	10-13.5'
					14				
					15				13.5-20'

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date:
CB24-DP			End Date:

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DPT	15-20	80%			16	Cont. Flow ~13.5'		W	13.5-20'
					17	SANDY CLAY, TAN GRAY			
					18				
					19				
					20				
					21				
					22				
					23				
					24				
					25				
					26				
					27				
					28				
					29				
					30				
					31				
					32				
					33				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES
CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number: CB24-06	Permit Number: 28.92235, -82.54787	FDEP Facility Identification Number:
Site Name: CITRUS CO. DOT	Borehole Start Date: 8/4/24 Start Time: 0745 ☒ AM ☐ PM End Date: End Time: 0825 ☒ AM ☐ PM	
Environmental Contractor: Creative Environmental Solutions	Geologist's Name: K.F.-LAM	Environmental Technician's Name:
Drilling Company: SDS	Pavement Thickness (in):	Borehole Diameter (in):
Borehole Depth (feet): 30		
Drilling Method(s): HA/DPT	Apparent Borehole DTW in feet (from soil moisture content):	Measured Well DTW in feet (after water recharges in well):
OVA (list model and check type): ☐ FID ☐ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-2'	100%			1	0': SAND & ORGANICS, LT GRAY, V.F 1': SAND, LT TAN, V.F		D	0-2'
					2			D	2-5'
	2-5'	100%			5	5': CONTINUED FROM 1'			
DPT					10	~10': SAND BECOMING LIGHTER IN COLOR		D	5-10'
	10-15'	75%			15			D	

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date: 8/4/24
CB24-06			End Date: 8/4/24

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DPT	15-20	60%			16	15': SAND, V. LT TAN, WET, LOOSE		W 15'	15-20'
					17				
					18				
					19				
	20-25	90%			20			W	20-25
					21				
					22				
					23				
					24				
	25-30	90%			25				
					26				
					27				
					28				
					29	29.5': SILTY SAND, LT BROWN 50% SILT/SAND, V.F		W	25-30'
					30				
					31	TERMINATED AT 30' DRILLER/HELPER REPORTS CLAY BEFORE GEO CORE IT, DRILLER STOPS RIG & PULLS RODS			
					32				
					33				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES
CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number: C224-07	Permit Number: 28.92818, -82.54790	FDEP Facility Identification Number:
Site Name:	Borehole Start Date: 8/4/24 Start Time: 0900 ☒ AM ☐ PM End Date: End Time: 0940 ☒ AM ☐ PM	
Environmental Contractor: Creative Environmental Solutions	Geologist's Name: K. FINLAY	Environmental Technician's Name:
Drilling Company: SOS	Pavement Thickness (in):	Borehole Diameter (in):
Borehole Depth (feet): 35		
Drilling Method(s): HA/DPT	Apparent Borehole DTW in feet (from soil moisture content):	Measured Well DTW in feet (after water recharges in well):
OVA (list model and check type): ☐ FID ☐ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-2	100%			1	0': SAND W/ ORGANICS, LT GRAY, V.F		D	0-2'
					2	0.5': SAND, LT TAN, V.F			
	2-5	100%			3				
					4			D	2-5'
5'					5	5': SAND, V.LT TAN, V.F			
DPT	5-10	60%			6				
					7			D	5-10'
					8				
					9				
	10-15	90%			10				
					11				
					12				
					13	13': CLAYEY SAND, ORANGE / BROWN, L.., MOD. FIR...		D	10-15'
					14				
					15				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES
CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date: 8/4/24
CB24-07			End Date: 8/4/24

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DPT	15-20	60%			16	15': SAND, TAN, V.F-F, WET AT 16'		W 16'	15-20'
					17				
					18				
					19				
	20-25	100%			20	" "		W	20-25
					21				
					22				
					23				
					24				
	25-30	100%			25			W	25-30
					26	26.5': SAND, LT BROWN, V.F, SL. SILTY			
					27				
					28				
					29				
	30-35'	100%			30				
					31	31.5': SANDY CLAY, BUFF WHITE, 50% SAND/CLAY		W	30-31.5
					32	V.F SAND			31.5-35
					33	TOTAL DEPTH 35'			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number: CR24-08	Permit Number: 28.92957, -82.54499		FDEP Facility Identification Number:
Site Name: Citrus Co. DOT Corridor	Borehole Start Date: 8/4/24 Start Time: 0950 ☒ AM ☐ PM	End Date: End Time: 1028 ☒ AM ☐ PM	
Environmental Contractor: Creative Environmental Solutions	Geologist's Name:		Environmental Technician's Name:
Drilling Company: SDS	Pavement Thickness (in):	Borehole Diameter (in):	Borehole Depth (feet): 25'
Drilling Method(s): HA / DPT	Apparent Borehole DTW in feet (from soil moisture content):	Measured Well DTW in feet (after water recharges in well):	OVA (list model and check type): ☐ FID ☐ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-2'	100%			1	0' SAND w/ ORGANICS, GRAY, V.F		D	0-2'
					2	1': SAND, V. LT TAN, V.F		D	
	2-5	100%			3				2-5'
					4				
5'					5	" "			
DPT	5-10	70%			6			D	5-10'
					7				
					8				
					9			D	10-15'
	10-15	85%			10	" "			
					11				
					12				
					13				
					14				
					15				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES
CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date:
C224-08			End Date:

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DPT	15-20	85%			16	Cont. FROM 1': SAND V.LT TAN, V.F		D	15-20'
					17				
					18				
					19				
					20				
					21				
					22				
					23				
					24	24': SAND W/ SILT & CLAY		M 23'	
	20-25	95%			25	TAN BROWN, FIRMING W/ DEPTH, LESS SAND W/ DEPTH			20-25'
					26				
					27	TOTAL DEPTH 25			
					28				
					29				
					30				
					31				
					32				
					33				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES
CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number: C224-09	Permit Number: 28.93129, -82.54530	FDEP Facility Identification Number:
Site Name: CITRUS Co. DOT Corridor	Borehole Start Date: 8/4/24 Start Time: 1110 ☒ AM ☐ PM End Date: End Time: ☐ AM ☐ PM	
Environmental Contractor: Creative Environmental Solutions	Geologist's Name: K. F. LAY	Environmental Technician's Name:
Drilling Company: SDS	Pavement Thickness (in):	Borehole Diameter (in):
Borehole Depth (feet): 30'		
Drilling Method(s): HA/DPT	Apparent Borehole DTW in feet (from soil moisture content):	Measured Well DTW in feet (after water recharges in well):
OVA (list model and check type): ☐ FID ☐ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-5'	100%			1	0': SAND W/ORGANICS, GRAY, V.F 0.5': SAND, V. LT TAN, V.F		D	0-5'
					2				
					3				
					4				
					5				
DPT	5-10	80%			6			D	5-10'
					7	7-10': FEW 1cm BROWN SILT BEDS			
					8				
					9				
	10-15	80%			10			D	10-15'
					11				
					12				
					13				
					14				
					15				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES
CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date:
CB24-09			End Date:

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DPT	15-20	80%			16	CONT FROM 0.5': SAND, V.LT TAN, V.F (W/O SILT BEDS NOW)		D	15-20'
					17				
					18				
					19				
					20				
					21				
					22				
					23				
	20-25'	80%			24	23.5': SAND, BUFF WHITE, V.F GR.		D	20-26.5'
					25				
					26	26.5': CLAY, TAN ORANGE, FIRM, 25% SAND COMPONENT; CLAY NOT SAMPLED		D	
	25-30	100%			27				
					28				
					29				
					30	TOTAL DEPTH 30'			
					31				
					32				
					33				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number: CR24-10	Permit Number: 28.93336, -82.54545	FDEP Facility Identification Number:
Site Name: CITRUS Co DOT Collocation	Borehole Start Date: 8/4/24 Start Time: 1150 ☒ AM ☐ PM End Date: End Time: 1237 ☐ AM ☒ PM	
Environmental Contractor: Creative Environmental Solutions	Geologist's Name: K. FinLAY	Environmental Technician's Name:
Drilling Company:	Pavement Thickness (in): / Borehole Diameter (in):	Borehole Depth (feet): 40
Drilling Method(s):	Apparent Borehole DTW in feet (from soil moisture content): 16 / Measured Well DTW in feet (after water recharges in well):	OVA (list model and check type): ☐ FID ☐ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-5'	100%			1	0': SAND w/ ORGANICS, BROWN GRAY,		D	0-5'
					2	1': SAND, VLT TAN, V.F			
					3				
					4				
DPT	5-10'	60%			5	" "		D	5-10'
					6				
					7				
					8				
					9				
	10-15'	80%			10	CONTINUED SAND FROM 1'		D	10-15'
					11				
					12				
					13				
					14				
					15				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES
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Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date:
CR24-10			End Date:

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DPT	15-20	80%			16	WET AT 16'		W 16'	15-20'
					17				
					18	18.5': SAND W/ORGANICS, BROWN, V.F GR.			
					19				
					20			W	20-25'
	20-25				21				
					22				
					23				
					24				
					25	" "			
	25-30	100%			26			W	25-30'
					27				
					28				
					29				
	30-35	90%			30				30-35
					31				
					32				
					33				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES
CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date: 8/4/24
C224-10			End Date:

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DPT	30-35	90%			34	33.5': SAND, BUFF WHITE, V.F		W	30-35
					35				
					36				
					37	37': CLAY, BUFF WHITE		W	35-40
					38				
					39	38.3': SAND W/ CLAY, ORANGE & WHITE, V.F			
	35-40	95%			40	TOTAL DEPTH 40'			
					41				
					42				
					43				
					44				
					45				
					46				
					47				
					48				
					49				
					50				
					51				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES
CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number: CR24-11	Permit Number: 28.93327, -82.54925	FDEP Facility Identification Number:
Site Name: CITRUS CO. DOT BORINGS	Borehole Start Date: 8/4/24 Start Time: 1330 ☐ AM ☒ PM End Date: End Time: 1345 ☐ AM ☐ PM	
Environmental Contractor: Creative Environmental Solutions	Geologist's Name: K. FINLAY	Environmental Technician's Name:
Drilling Company: SDS	Pavement Thickness (in):	Borehole Diameter (in):
Borehole Depth (feet): 10'		
Drilling Method(s): HA/DPT	Apparent Borehole DTW in feet (from soil moisture content):	Measured Well DTW in feet (after water recharges in well):
OVA (list model and check type): ☐ FID ☐ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-5	100%			1	0': SAND w/ORGANICS, GRAY, V.F		D	0-5
					2	1': SAND, V.LT TAN, V.F			
					3				
					4				
					5				
DPT					6				
					7				
	5-10	80%			8	8.5': CLAY, TAN TO BUFF WHITE, FIRM, H. PLASTIC		D	5-8.5'
					9				
					10	TOTAL DEPTH 10'			
					11				
					12				
					13				
					14				
					15				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number: C224-12	Permit Number: 28.93138, -82.54932	FDEP Facility Identification Number:
Site Name: CITRUS Co DOT	Borehole Start Date: 8/4/24 Start Time: 1400 ☐ AM ☒ PM End Date: End Time: 1440 ☐ AM ☒ PM	
Environmental Contractor: Creative Environmental Solutions	Geologist's Name: K. FINLAY	Environmental Technician's Name:
Drilling Company:	Pavement Thickness (in):	Borehole Diameter (in):
Borehole Depth (feet): 35'		
Drilling Method(s): HA/DPT	Apparent Borehole DTW in feet (from soil moisture content): 13'	Measured Well DTW in feet (after water recharges in well):
OVA (list model and check type): ☐ FID ☐ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-5	100%			1	0': SAND W/ORGANICS, DARK BROWN, V.F		D	0-5'
					2	1.5': SAND, LT TAN, V.F			
					3				
					4				
	5-10	60%			5	5': CONTINUED FROM 1.5'		D	5-10'
DPT					6				
					7				
					8				
					9				
					10				
					11				
					12	12': SAND W/ SILT, TAN-LT BROWN,			
	10-15	70%			13	~20% SILT, WET AT 13'		W 13	10-15
					14				
					15				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES
CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date:
CE24-12			End Date:

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DPT	15-20	100%			16	15': SAND, V.LT TAN, V.F, WET		W	15-20
					17				
					18				
					19				
	20-25	100%			20			W	20-25
					21				
					22				
					23				
					24	23.8': SAND W/ ORGANICS, BROWN, V.F			
	25-30	100%			25			W	25-30
					26				
					27				
					28				
					29	1" PVC SET 5'			
					30	SCREEN 18-23'			
					31				
	30-35	100%			32	32': SANDY SILT, BROWN GRAY, V.F, 75% SILT		W	30-35
					33				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

TOTAL DEPTH 35'

CES
CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number: C224-13	Permit Number: 28.92464, -82.55420	FDEP Facility Identification Number:
Site Name: Citrus Co. Corridor	Borehole Start Date: 8/4 Start Time: 1523 ☐ AM ☒ PM End Date: 8/4/24 End Time: 1555 ☐ AM ☐ PM	
Environmental Contractor: Creative Environmental Solutions	Geologist's Name: K. Finlay	Environmental Technician's Name:
Drilling Company: SDS	Pavement Thickness (in):	Borehole Diameter (in): Borehole Depth (feet): 35'
Drilling Method(s): HA/DPT	Apparent Borehole DTW in feet (from soil moisture content): 14'	Measured Well DTW in feet (after water recharges in well): OVA (list model and check type): ☐ FID ☐ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-5'	100%			1	0': SAND w/ ORGANICS, GRAY, V.F		D	0-5'
					2	0.5' SAND, LT TAN, V.F			
					3				
					4				
					5	" "		D	5-10'
DT	5-10	70%			6				
					7				
					8				
					9				
					10				
					11				
	10-15	70%			12				
					13	" " SL. WET AT 14'			10-15
					14			W 14	
					15				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES
CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date:
CR24-13		CITRUS CO. DOT	End Date:

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DPT	15-20	70%			16				15-20
					17	17.5' SILTY SAND, TAN		W	
					18	TO BUFF WHITE, V.F			
					19				
	20-25	100%			20			W	20-25
					21				
					22				
					23				
					24				
	25-30	100%			25	" "		W	25-30
					26				
					27				
					28	1" PVC INSTALLED			
					29	SCREEN 15-20'			
					30	(20' TOTAL)		W	NOT SAMPLED
	30-35	50%			31	32.5' CLAY + SILT,			
					32	BROWN + ORANGE, MINOR SAND, POOR QUALITY, NOT SAMPLED LOW PLASTICITY			
					33	TOTAL DEPTH 35			

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES
CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number: CR24-14	Permit Number: 28.92612, -82.55845	FDEP Facility Identification Number:
Site Name: CITRUS CO. CORR. #2	Borehole Start Date: 8/4/24 Start Time: 1635 ☐ AM ☐ PM End Date: End Time: 1705 ☐ AM ☐ PM	
Environmental Contractor: Creative Environmental Solutions	Geologist's Name: K. FINLAY	Environmental Technician's Name:
Drilling Company: SJS	Pavement Thickness (in):	Borehole Diameter (in): Borehole Depth (feet): 35'
Drilling Method(s): HA/DPT	Apparent Borehole DTW in feet (from soil moisture content):	Measured Well DTW in feet (after water recharges in well): OVA (list model and check type): ☐ FID ☐ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-5'	100%			1	0': SAND, V. LT TAN, V.F		D	0-5
					2				
					3				
					4				
DPT	5-10	70%			5	" "		D	5-10
					6				
					7				
					8				
					9				
					10				
					11				
	10-15	80%			12	12': SAND SILT, ORANGE		D	10-15
					13	BROWN, 1" CLAY AT UPPER			
					14	CONTACT			
					15				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date:
CD24-14			End Date:

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DPT	15-20	90%			16	15.5': SAND, BUFF WHITE, V.F, 1" CLAY AT TOP CONTACT		D	15-20
					17				
					18				
					19				
	20-25				20	~20': BECOMING SILTY SAND (~20% SILT)			
					21				
					22	WET AT 22'		W 22	20-25'
					23				
					24				
					25	~25': SILTY SAND.			
					26	BUFF TAN, V.F			
	25-30	100%			27	≥40% SILT, PARTS MOD. FIRM		W	25-30
					28				
					29				
					30	1" PVC SET SCREEN @ 19.5-24.5'			
					31				
	30-35	100%			32	TOTAL DEPTH 35'			30-35'
					33				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number: CR24-05	Permit Number: 28.92601, -82.54874	FDEP Facility Identification Number:
Site Name: Citrus Co. DOT	Borehole Start Date: 8/3/24 Start Time: 1340 ☐ AM ☒ PM End Date: End Time: 1400 ☐ AM ☒ PM	
Environmental Contractor: Creative Environmental Solutions	Geologist's Name: K. Finlay	Environmental Technician's Name:
Drilling Company: SSS	Pavement Thickness (in):	Borehole Diameter (in): / Borehole Depth (feet):
Drilling Method(s): HA/DPT	Apparent Borehole DTW in feet (from soil moisture content):	Measured Well DTW in feet (after water recharges in well): / OVA (list model and check type): ☐ FID ☐ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☐ Backfill ☐ Stockpile ☐ Other (describe)

(describe if other or multiple items are checked)

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-2	100%			1	0': SAND, TAN, V.F		D	0-2'
					2				
					3				2-5'
	2-5'	100%			4				
					5	5': SAND, V. LT TAN, V. F-F		D	5-10'
DPT	5-10	60%			6				
					7				
					8				
					9				
					10	~10': BECOMING LIGHTER W/DEPTH			
	10-15	70%			11			M	10-15'
					12				
					13				
					14	14.7': SILTY SAND, TAN ORANGE, V.F-F			
					15				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

CES
CREATIVE ENVIRONMENTAL SOLUTIONS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date: 8/3/24
CQ24-05			End Date: 8/3/24

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DPT	15-20	95%			16	WET AT 15' 15': SAND, BUFF WHITE ORANGE, WET, V.F-F			
					17				
					18				
					19	19.5': CLAY, BUFF WHITE NOT SAMPLED, FIRM		W	15-19.5 ft
					20				
					21				
					22	TOTAL DEPTH 20'			
					23				
					24				
					25				
					26				
					27				
					28				
					29				
					30				
					31				
					32				
					33				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings, Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated