IFB 37843
Addendum 1

GEOTECHNICAL DATA REPORT

Black Creek Water Resource Development Project

Raw Water Transmission Main

St. John's River Water Management District

June 2022

CDM Smith

St. John's River Water Management District

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Geotechnical Data Report

June 2022

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Table of Contents

Section 1 - Introduction

1.1 Project Description 1-1
1.2 Purpose and Scope 1-1
1.3 Elevation Datum 1-1
1.4 Report Limitations 1-2

Section 2 - Site and Subsurface Conditions

2.1 Site Conditions 2-1
2.1.1 General 2-1
2.1.2 Regional Geology 2-1
2.2 Subsurface Exploration Program 2-1
2.2.1 Test Borings 2-1
2.3 Geotechnical Laboratory Test Results 2-3
2.4 Corrosion Potential Laboratory Testing 2-3
2.5 Expected Variations in Subsurface Conditions 2-8

Tables

Table 2-1 Summary of Geotechnical Laboratory Index Test Results 2-4

Appendices

Appendix A – CSI Geo Boring Logs
Appendix B – CDM Smith Boring Logs
Appendix C – Geotechnical Laboratory Testing Results

Section 1
Introduction

1.1 Project Description

The CDM Smith project team has been retained by the St. Johns River Water Management District to provide design and permitting services associated with the Black Creek Water Resource Development Project (Black Creek) in Clay County, Florida. As part of these services, CDM Smith performed a geotechnical investigation and prepared this data report summarizing our investigation and findings. The proposed project improvements will consist of:

- An Intake Structure in Black Creek;
- An Intake Pump Station;
- 18.5 miles of Raw Water Line, including trenchless crossings; and
- A Recharge Area.

This data report provides geotechnical data and laboratory testing for the raw water line only. The raw water line will be installed by open-cut from the intake to the recharge area, with the exception of two (2) trenchless road crossings and two (2) Horizontal Directional Drill (HDD) wetland/creek crossings.

1.2 Purpose and Scope

The purpose of this report is to summarize the subsurface conditions for the proposed improvements. Specifically, the scope of work included the following:

- Review available subsurface information;
- Drill geotechnical test borings for the proposed improvements for the purpose of gathering information on the subsurface conditions and obtaining soil samples for laboratory testing;
- Conduct laboratory testing to assist with classification and estimating engineering properties of the soils encountered; and
- Prepare this geotechnical data report presenting CDM Smith's findings, including data collected as part of this investigation.

Test borings drilled for the raw water line installation consist of one hundred and one (101) test borings for open-cut, eighteen (18) test borings at the HDD crossing locations, and three (3) test borings at one of the pipe jacking locations

1.3 Elevation Datum

All elevations noted herein are reported in feet and referenced to the North American Vertical Datum of 1988 (NAVD 88).

1.4 Report Limitations

This report has been prepared for the exclusive use of the Black Creek Water Resource Development Project (Black Creek) in Clay County, Florida as understood at this time and described in this report. The data presented in this report are based on subsurface conditions encountered at the time of CDM Smith's study and on experience and engineering judgement. While the data provided in this report is based on investigations and test data, they should not be interpreted as a guarantee or warranty that the conditions encountered during construction will be completely as described. Furthermore, CDM Smith cannot be held responsible for the interpretation by others of the data contained herein.

This report has been prepared in accordance with generally accepted engineering practices. No other warranty, express or implied, is made.

Section 2
Site and Subsurface Conditions

2.1 Site Conditions

2.1.1 General

The Black Creek Water Resource Development Project (Black Creek) is located in Clay County, Florida. The project alignment runs west along State Road 16 from Penney Farms to the intersection with State Road 21. The alignment then runs south along State Road 21 to Treat Road. The surrounding area is primarily rural, with areas to the west of State Road 21 consisting of a military base. The ground surface at the site has existing grades ranging from El. 36 to El. 99 along State Road 16, El. 67 to El. 230 along State Road 21, and El. 136 to El. 175 along Treat Road.

2.1.2 Regional Geology

According to USGS geologic maps, Pliocene Age Cypresshead Formation sediments are to be expected to be the predominate strata within the project area. These sediments consist of unconsolidated to poorly consolidated, fine- to coarse-grained, variably clayey to clean quartz sand. In soil samples, the soils are often characterized by fine-grained sand with thin layers of clay dispersed throughout. The middle portion of the transmission line will encounter Quaternary Age Trail Ridge Sands. These are unconsolidated to slightly indurate, fine- to medium-grained quartz sands.

2.2 Subsurface Exploration Program

2.2.1 Test Borings

To investigate subsurface conditions along the pipeline, a total of one hundred and one (101) test borings (PB-1 through PB-101) were drilled for the pipeline, eighteen (18) test borings were drilled for the HDD crossings, and three (3) test borings were drilled for one of the pipe jacking crossings. The borings were drilled by Independent Drilling, Inc. of Leesburg, Florida between August 29th, 2017 and December 29th, 2017. The approximate locations of test borings are shown on the Contract Drawings.

The open-cut pipeline test borings were observed and logged by CDM Smith's geotechnical subcontractor, CSI Geo, Inc. (CSI Geo), of Jacksonville, Florida. Test boring logs prepared by CSI Geo, including 5 HDD borings that were added after the initial field program was completed, are included in **Appendix A**. Test borings for trenchless crossings (pipe jacking and HDD) completed during the initial field program were observed and logged by a CDM Smith geotechnical engineer. Test boring logs prepared by CDM Smith are included in **Appendix B.**

The test borings were drilled using ATV-mounted, truck-mounted, or track drill rig, depending upon the access conditions at the test boring location. Test borings were typically advanced using mud rotary to the specified depths, which ranged from 12 to 60 feet below the existing ground surface. Split-spoon sampling was conducted continuously from ground surface to 10 feet below ground surface, and at 5-foot intervals thereafter to the depth of boring.

Split-spoon samples were collected in accordance with ASTM D1586 (2-inch-diameter sampler driven 24 inches by blows from a 140-pound hammer falling freely for a 30-inch drop). The number of blows

required to drive the sampler each 6-inch increment was recorded. The Standard Penetration Resistance (N-value) was calculated as the sum of the blows over the second and third 6-inch increments of penetration. A CDM Smith geotechnical engineer or a CSI Geo representative visually classified the soil samples recovered in the field in general accordance with the ASTM D2488 and noted the Unified Soil Classification System (USCS) designation. Representative soil samples from each split spoon were collected and stored in jars for subsequent review and laboratory testing.

Groundwater levels at the test boring locations were estimated from the condition of samples obtained and by observed water levels within a borehole at the time of drilling. All test borings were backfilled with soil cuttings or grout.

2.3 Geotechnical Laboratory Testing

Geotechnical laboratory testing was conducted on selected soil samples as follows:

- Sixty-four (64) grain size analyses in accordance with ASTM D422;
- Twenty-two (22) hydrometer analyses in accordance with ASTM D422;
- Nine (9) organic content analyses in accordance with ASTM D5084;
- Thirteen (13) percent passing the #200 sieve analyses in accordance with ASTM D1140;
- Forty-four (44) Atterberg limits tests in accordance with ASTM D4318;
- One hundred and one (101) moisture content determination analyses in accordance with ASTM D2216; and
- One (1) one dimensional consolidation analysis in accordance with ASTM D2435.

A summary of the geotechnical laboratory test results is included in **Table 2-1** and test results are included in **Appendix C.**

2.4 Corrosion Potential Laboratory Testing

Laboratory testing was conducted on soil samples within the pipeline horizon and surface water samples as follows:

- Twenty-three (23) pH analyses in accordance with ASTM D1293;
- Twenty-three (23) resistivity analyses in accordance with ASTM D1125;
- Twenty-three (23) sulfate analyses in accordance with ASTM D516; and
- Twenty-three (23) chloride analyses in accordance with ASTM D512.

Soil samples were tested at a frequency of approximately 1 per mile along the pipeline route. Surface water samples were taken from Black Creek and the creeks along the project route. Test results are included in Appendix C.

St. Johns River Water Management District
Black Creek Water Resource Development Project
Clay County, FL

Table 2-1
Summary of Geotechnical Laboratory Test Results - Index Testing

Test Boring Number	Sample No.	Sample Depth (ft.)			USCS Classification	Moisture Content[1] (%)	Organic Content[2] (%)	Atterberg Limits[3]			Sieve Analysis[4]			Consolidation Test[5]	
								Liquid Limit	Plastic Limit	Plasticity Index	% Gravel	% Sand	% Fines	C_c	Cr
Open Cut Pipeline															
PB-8	S-3	4	-	6	SP-SM	18.61	-	-	-	-	0	92	8	-	-
PB-13	S-4	6	-	8	SC	19.23	-	-	-	-	0	60	40	-	-
PB-15	S-3	4	-	6	SP-SM	23.90	-	-	-	-	0	95	5	-	-
PB-17	S-3	4	-	6	SM	21.75	-	-	-	-	-	-	20	-	-
PB-19	S-3	4	-	6	SM	20.29	-	-	-	-	-	-	22	-	-
PB-21	S-3	4	-	6	CH	31.71	-	61	24	37	-	-	76	-	-
PB-23	S-5	8	-	10	SP-SM	23.86	-	-	-	-	0	94	6	-	-
PB-25	S-3	4	-	6	SP-SM	21.24	-	-	-	-	0	90	10	-	-
PB-28	S-4	6	-	8	SC	14.43	-	32	18	14	-	-	26	-	-
PB-29	S-3	4	-	6	SC	16.75	-	-	-	-	-	-	27	-	-
PB-32	S-3	4	-	6	SC	15.44	-	-	-	-	-	-	25	-	-
PB-34	S-3	4	-	6	SP-SM	15.79	-	-	-	-	0	88	12	-	-
PB-37	S-5	8	-	10	SM	18.62	-	-	-	-	-	-	22	-	-
PB-41	S-2	2	-	4	SM	18.60	-	-	-	-	0	87	13	-	-
PB-43	S-4	6	-	8	SC	17.26	-	37	21	16	-	-	28	-	-
PB-45	S-2	2	-	4	SM	16.36	1	-	-	-	-	-	12	-	-
PB-51	S-2	2	-	4	SP-SM	20.08	2	-	-	-	0	91	9	-	-
PB-55	S-2	2	-	4	SP-SM	12.36	2	-	-	-	0	94	6	-	-
PB-58	S-1	0	-	2	SP	3.42	1	-	-	-	-	-	4	-	-
PB-61	S-3	4	-	6	SP	19.93	-	-	-	-	0	96	4	-	-

Notes:

1 Moisture content tests were performed in accordance with ASTM D 2216.
2 Organic content tests were performed in accordance with ASTM 5 5084.
3 Atterberg Limit tests were performed in accordance with ASTM D 4318.
4 Sieve analyses performed in accordance with ASTM D 422.
5 Consolidation test performed in accordance with ASTM D2435

Abbreviations:

-	Test Not Performed	SC	Clayey Sand	PT	Peat
NP	Non Plastic	SP-SM	Sand with Silt	SP-SC	Sand with Clay
SP	Poorly Graded Sand	CH	Fat Clay	MH	Elastic Silt
SM	Silty Sand	CL	Lean Clay	ML	Low Plasticity Silt

Test Boring Number	Sample No.	Sample Depth (ft.)			USCS Classification	Moisture Content[1] (%)	Organic Content[2] (%)	Atterberg Limits[3]			Sieve Analysis[4]			Consolidation Test[5]	
								Liquid Limit	Plastic Limit	Plasticity Index	% Gravel	% Sand	% Fines	C_c	Cr
PB-64	S-5	8	-	10	SP	18.63	-	-	-	-	0	96	4	-	-
PB-67	S-2	2	-	4	SP-SM	21.68	-	-	-	-	0	94	6	-	-
PB-69	S-1	0	-	2	PT	22.96	5	-	-	-	-	-	7	-	-
PB-72	S-6	10	-	12	SP	3.63	-	-	-	-	0	98	2	-	-
PB-75	S-2	2	-	4	SP	3.20	-	-	-	-	0	97	3	-	-
PB-77	S-2	2	-	4	SP	2.91	-	-	-	-	0	97	3	-	-
PB-81	S-2	2	-	4	SP	3.84	1	-	-	-	0	97	3	-	-
PB-84	S-1	0	-	2	SP	3.79	-	-	-	-	0	96	4	-	-
PB-87	S-1	0	-	2	SP-SM	3.82	2	-	-	-	-	-	6	-	-
PB-88	S-2	2	-	4	SP	3.35	1	-	-	-	0	97	3	-	-
PB-90	S-1	0	-	2	SP	7.40	4	-	-	-	-	-	4	-	-
PB-93	S-3	4	-	6	SP	3.61	-	-	-	-	0	98	2	-	-
PB-95	S-3	4	-	6	SP	3.21	-	-	-	-	0	99	1	-	-
PB-97	S-1	0	-	2	SP	3.69	1	-	-	-	-	-	4	-	-
PB-100	S-2	2	-	4	SP	3.90	-	-	-	-	0	99	1	-	-
HDD															
HDD-1	S-5	8	-	10	SM	25.42	-	-	-	-	0	87	13	-	-
HDD-1	S-7	18.5	-	20	CL	10.22	-	-	-	-	-	-	53	-	-
HDD-1	S-8	23.5	-	25	SM	40.72	-	NP	NP	NP	-	-	13	-	-
HDD-1	S-9	28.5	-	30	SP-SM	41.89	-	NP	NP	NP	19	72	9	-	-
HDD-1	S-10	33.5	-	35	SM	34.36	-	-	-	-	0	86	14	-	-
HDD-2	S-6	13.5	-	15	SM	31.67	-	-	-	-	0	81	19	-	-
HDD-2	S-7	18.5	-	20	SM	26.60	-	NP	NP	NP	-	-	21	-	-
HDD-2	S-10	28.5	-	30	SC	27.24	-	39	19	20	-	-	20	-	-
HDD-2	S-12	38.5	-	40	SM	28.09	-	30	27	3	0	65	35	-	-
HDD-2	S-15	53.5	-	55	SC	27.75	-	40	24	16	0	54	46	-	-

Notes:

1. Moisture content tests were performed in accordance with ASTM D 2216.
2. Organic content tests were performed in accordance with ASTM 5 5084.
3. Atterberg Limit tests were performed in accordance with ASTM D 4318.
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Abbreviations:

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Test Boring Number	Sample No.	Sample Depth (ft.)			USCS Classification	Moisture Content[1] (%)	Organic Content[2] (%)	Atterberg Limits[3]			Sieve Analysis[4]			Consolidation Test[5]	
								Liquid Limit	Plastic Limit	Plasticity Index	% Gravel	% Sand	% Fines	C_c	Cr
HDD-3	S-5	8	-	10	SM	41.70	-	-	-	-	0	81	19	-	-
HDD-3	S-10	23.5	-	25	SM	32.04	-	39	29	10	-	-	40	-	-
HDD-3	S-12	33.5	-	35	MH	19.25	-	51	35	16	-	-	58	-	-
HDD-3	S-13	38.5	-	40	SM	19.84	-	33	28	5	-	-	44	-	-
HDD-3	S-15	48.5	-	50	SC	36.69	-	51	21	30	0	77	23	-	-
HDD-4	S-5	8	-	10	SP	24.10	-	-	-	-	0	96	4	-	-
HDD-4	S-8	23.5	-	25	SM	37.03	-	40	28	12	0	63	37	-	-
HDD-4	S-9	28.5	-	30	SP-SM	34.27	-	-	-	-	6	83	11	-	-
HDD-5	S-6	13.5	-	15	SP-SM	11.84	-	-	-	-	0	95	5	-	-
HDD-5	S-9	28.5	-	30.0	SM	34.23	-	45	29	16	0	68	32	-	-
HDD-5	S-10	33.5	-	35.0	SM	39.41	-	53	44	9	-	-	37	-	-
HDD-6	S-5	8.0	-	10.0	SP-SM	22.52	-	-	-	-	0	96	4	-	-
HDD-6	S-7	18.5	-	20.0	CL	30.24	-	44	25	19	-	-	62	-	-
HDD-6	S-8	23.5	-	25.0	SM	36.45	-	-	-	-	-	-	14	-	-
HDD-6	S-12	33.5	-	35.0	SM	33.29	-	46	31	15	-	-	46	-	-
HDD-6	S-14	43.5	-	45.0	SM	34.44	-	-	-	-	0	76	24	-	-
HDD-6	S-15	48.5	-	50.0	MH	50.81	-	91	73	18	0	26	74	-	-
HDD-7	S-7	18.5	-	20.0	SP	19.87	-	-	-	-	0	98	2	-	-
HDD-7	S-13	43.5	-	45.0	SM	28.35	-	45	36	9	0	52	48	-	-
HDD-8	S-5	8.0	-	10.0	SP-SC	15.24	-	-	-	-	0	89	11	-	-
HDD-8	S-8	23.5	-	25.0	SC	28.06	-	NP	NP	NP	6	75	19	-	-
HDD-8	S-9	28.5	-	30.0	SM	33.72	-	37	27	10	0	74	26	-	-
HDD-9	S-5	8.0	-	10.0	SM	20.46	-	-	-	-	0	88	12	-	-
HDD-9	S-7	18.5	-	20.0	SM	55.62	-	38	28	10	0	62	38	-	-
HDD-9	S-8	23.5	-	25.0	CH	36.41	-	-	-	-	0	26	74	-	-

Notes:

1. Moisture content tests were performed in accordance with ASTM D 2216.
2. Organic content tests were performed in accordance with ASTM 5 5084.
3. Atterberg Limit tests were performed in accordance with ASTM D 4318.
4. Sieve analyses performed in accordance with ASTM D 422.
5. Consolidation test performed in accordance with ASTM D2435

Abbreviations:

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Test Boring Number	Sample No.	Sample Depth (ft.)			USCS Classification	Moisture Content[1] (%)	Organic Content[2] (%)	Atterberg Limits[3]			Sieve Analysis[4]			Consolidation Test[5]	
								Liquid Limit	Plastic Limit	Plasticity Index	% Gravel	% Sand	% Fines	C_c	Cr
HDD-10	S-6	13.5	-	15.0	SM	31.51	-	-	-	-	0	87	13	-	-
HDD-10	S-8	23.5	-	25.0	SC	22.23	-	-	-	-	6	73	21	-	-
HDD-10	S-13	43.5	-	45.0	SM	31.41	-	66	51	15	6	60	34	-	-
HDD-11	S-5	8.0	-	10.0	SC	23.29	-	-	-	-	0	75	25	-	-
HDD-11	S-6	13.5	-	15.0	SC	32.21	-	39	21	18	-	-	22	-	-
HDD-11	S-9	28.5	-	30.0	SM	28.11	-	45	37	8	-	-	41	-	-
HDD-11	S-15	48.5	-	50.0	SC	28.76	-	55	28	27	0	77	23	-	-
HDD-12	S-6	13.5	-	15.0	SP-SM	21.95	-	-	-	-	0	89	11	-	-
HDD-12	S-8	22.0	-	23.5	SM	43.01	-	57	43	14	-	-	42	-	-
HDD-12	S-12	33.5	-	35.0	SM	33.97	-	62	42	20	0	81	19	-	-
HDD-13	S-6	12.0	-	13.5	SP	25.55	-	-	-	-	0	97	3	-	-
HDD-13	S-7	13.5	-	15.0	SP	29.74	-	-	-	-	-	-	2	-	-
HDD-13	S-10	23.5	-	25.0	SM	40.50	-	53	36	17	7	57	36	-	-
HDD-14	S-12	43.5	-	45.0	-	34.48	-	60	35	25	-	-	-	-	-
HDD-14	S-13	48.5	-	50.0	-	37.43	-	-	-	-	0	56	44	-	-
HDD-14	S-14	53.5	-	55.0	-	34.63	-	54	39	15	-	-	-	-	-
HDD-15	S-10	33.5	-	35.0	-	38.50	-	38	17	21	-	-	-	-	-
HDD-15	S-11	38.5	-	40.0	-	34.40	-	32	19	13	-	-	-	-	-
HDD-15	S-12	43.5	-	45.0	-	44.60	-	35	22	13	-	-	-	-	-
HDD-16	S-9	28.5	-	30.0	-	22.36	-	NP	NP	NP	-	-	-	-	-
HDD-16	S-11	38.5	-	40.0	-	20.47	-	-	-	-	0	92	8	-	-
HDD-16	S-12	43.5	-	45.0	-	22.33	-	-	-	-	0	91	9	-	-
HDD-16	S-13	48.5	-	50.0	-	49.24	-	57	22	35	-	-	-	-	-
HDD-17	S-8	23.5	-	25.0	-	21.59	-	-	-	-	0	84	16	-	-
HDD-17	UD	31.0	-	33.0	CH	52.7	-	88	25	63	-	-	-	0.49	0.12
HDD-17	S-10	33.5	-	35.0	-	66.83	-	101	57	44	-	-	-	-	-
HDD-17	S-11	38.5	-	4.0	-	84.38	-	112	43	69	-	-	-	-	-

Notes:

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2. Organic content tests were performed in accordance with ASTM 5 5084.
3. Atterberg Limit tests were performed in accordance with ASTM D 4318.
4. Sieve analyses performed in accordance with ASTM D 422.
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								Liquid Limit	Plastic Limit	Plasticity Index	% Gravel	% Sand	% Fines	C_c	Cr
HDD-18	S-8	23.5	-	25.0	-	28.25	-				0	95	5	-	-
HDD-18	S-10	33.5	-	35.0	-	80.28	-	109	37	72	-	-	-	-	-
HDD-18	S-11	38.5	-	40.0	-	88.39	-	104	32	72	-	-	-	-	-
HDD-18	S-12	43.5	-	45.0	-	33.73	-	NP	NP	NP	-	-	-	-	-
Pipe Jacking															
JB-1	S-5	8.0	-	10.0	SM	21.39	-	-	-	-	0	85	15	-	-
JB-1	S-6	13.5	-	15.0	SM	19.96	-	-	-	-	0	88	12	-	-
JB-2	S-6	13.5	-	15.0	SP-SM	18.57	-	-	-	-	0	90	10	-	-
JB-3	S-5	8.0	-	10.0	SM	25.58	-	-	-	-	0	88	12	-	-
JB-3	S-8	18.5	-	20.0	SP-SM	21.57	-	-	-	-	0	92	8	-	-
JB-3	S-10	29.5	-	30.0	CH	35.24	-	61	19	42	-	-	67	-	-

Notes:

1 Moisture content tests were performed in accordance with ASTM D 2216.

2 Organic content tests were performed in accordance with ASTM 5 5084.

3 Atterberg Limit tests were performed in accordance with ASTM D 4318.

4 Sieve analyses performed in accordance with ASTM D 422.

5 Consolidation test performed in accordance with ASTM D2435

Abbreviations:

-	Test Not Performed	SC	Clayey Sand	PT	Peat
NP	Non Plastic	SP-SM	Sand with Silt	SP-SC	Sand with Clay
SP	Poorly Graded Sand	CH	Fat Clay	MH	Elastic Silt
SM	Silty Sand	CL	Lean Clay	ML	Low Plasticity Silt

2.5 Expected Variations in Subsurface Conditions

The general subsurface conditions presented herein is based on soil and groundwater conditions observed at the test boring locations. However, subsurface conditions may vary between test boring locations.

Water levels measured in the test borings should not necessarily be considered to represent stabilized groundwater levels. In addition, water levels are expected to fluctuate with season, temperature, climate, construction in the area, and other factors.

Appendix A

CSI Geo Boring Logs

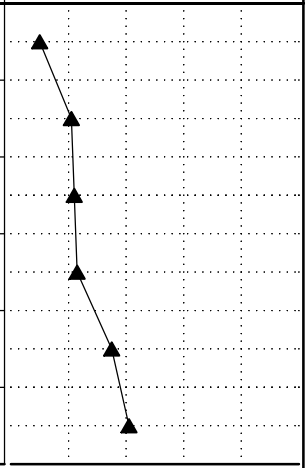
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-1

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/29/17 **COMPLETED** 8/29/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	LIGHT BROWN FINE SAND (SP)	3	4	6	8	10
		2		6	8	13	14	21
5		3		10	11	11	13	22
		4	BROWN FINE SAND (SP)	11	11	12	13	23
		5		12	17	18	21	35
10		6		17	19	22	32	41

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-2

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/29/17 **COMPLETED** 8/29/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP) WITH TRACE OF ROOTS	2	2	3	3	5
		2	▽	3	4	5	5	9
5		3	▼	4	4	5	6	9
		4	LIGHT BROWN FINE SAND (SP)	5	6	6	6	12
		5		5	7	7	8	14
10		6		8	9	10	10	19

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

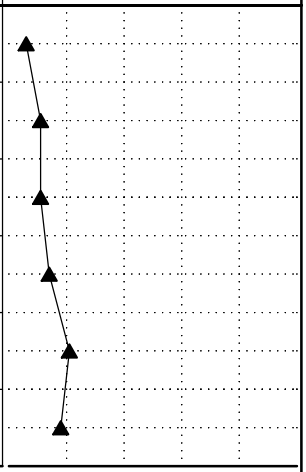
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-3

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/29/17 **COMPLETED** 8/29/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 5.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.50 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP) WITH TRACE OF ROOTS	2	2	4	3	6
		2		3	5	6	6	11
5		3 ▽		5	5	6	7	11
		4 ▼	LIGHT BROWN FINE SAND (SP)	7	7	7	9	14
		5		8	10	11	10	21
10		6		9	9	9	9	18

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

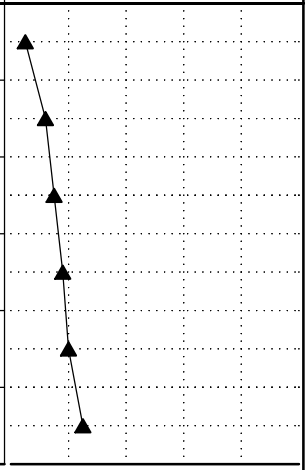
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-4

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/29/17 **COMPLETED** 8/29/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 6.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 8.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP) WITH TRACE OF ROOTS	3	2	3	4	5
		2		5	6	6	7	12
5		3		6	8	7	7	15
		4	BROWN TO LIGHT BROWN FINE SAND (SP)	7	9	9	9	18
		5		8	9	11	12	20
10		6		10	12	13	13	25

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

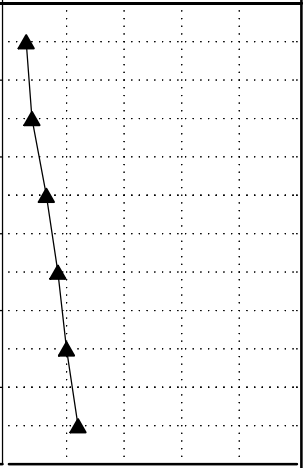
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-5

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/29/17 **COMPLETED** 8/29/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP) WITH TRACE OF ROOTS	2	3	3	3	6
		2	▽	3	4	4	6	8
5		3	▼	5	6	7	7	13
		4	LIGHT BROWN FINE SAND (SP)	6	8	9	10	17
		5		9	10	10	11	20
10		6		10	12	12	13	24

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

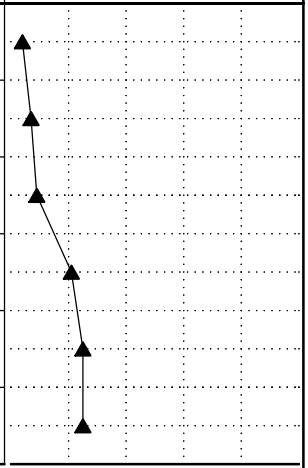
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-6

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/29/17 **COMPLETED** 8/29/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.50 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN FINE SAND (SP) WITH TRACE OF ROOTS	2	2	2	2	4
		2	▽ BROWN TO LIGHT BROWN FINE SAND (SP)	2	3	4	3	7
5		3		4	4	5	8	9
		4	▼ BROWN SILTY FINE SAND (SM)	9	10	11	11	21
10		5	REDDISH BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	10	12	13	14	25
		6		12	12	13	15	25

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

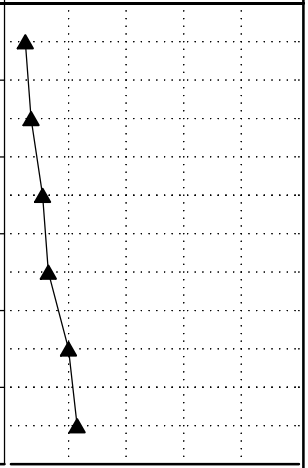
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-7

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/29/17 **COMPLETED** 8/29/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.50 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP) WITH TRACE OF LIMEROCK FRAGMENTS	2	2	3	2	5
		2	▽	3	3	4	5	7
5		3	LIGHT BROWN FINE SAND (SP)	4	5	6	7	11
		4	▼	5	6	7	7	13
10		5	BROWN FINE SAND (SP)	8	10	10	11	20
		6		10	11	12	14	23

▲ SPT N VALUE ▲
20 40 60 80



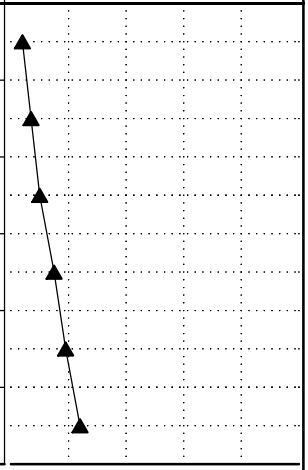
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-8

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/29/17 **COMPLETED** 8/29/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP) WITH TRACE OF ROOTS	2	2	2	3	4
		2		3	3	4	5	7
5		3	LIGHT BROWN TO BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	4	5	5	5	10
		4		6	7	8	8	15
		5		8	9	10	10	19
10		6		10	11	13	14	24



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-9

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/29/17 **COMPLETED** 8/29/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.50 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN FINE SAND (SP) WITH TRACE OF ROOTS	2	3	2	3	5
		2	▽ BROWN FINE SAND (SP) WITH TRACE OF LIMEROCK FRAGMENTS	3	4	4	5	8
5		3		4	5	5	6	10
		4	▼ LIGHT BROWN FINE SAND (SP)	5	6	7	8	13
		5		6	8	10	10	18
10		6		9	11	12	14	23

▲ SPT N VALUE ▲
20 40 60 80

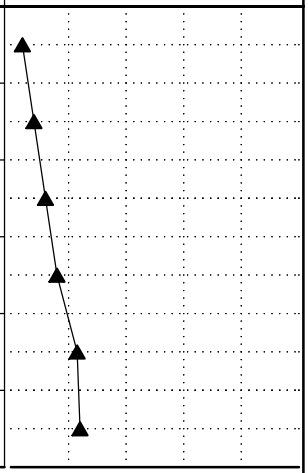
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-10

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/29/17 **COMPLETED** 8/29/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN FINE SAND (SP) WITH TRACE OF LIMEROCK FRAGMENTS	2	2	2	3	4
		2	BROWN FINE SAND (SP)	3	4	4	5	8
5		3		4	6	6	7	12
		4		6	8	8	10	16
		5	BROWN TO LIGHT BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	9	11	12	13	23
10		6		10	11	13	13	24



Boring Terminated at 12.0 feet.

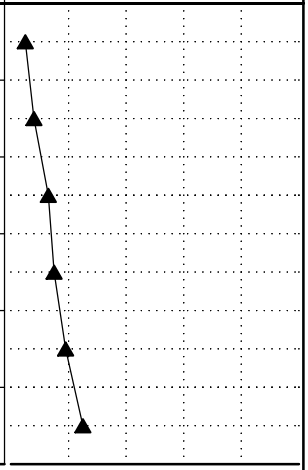
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-11

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/30/17 **COMPLETED** 8/30/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN FINE SAND (SP) WITH TRACE OF LIMEROCK FRAGMENTS	2	2	3	3	5
		2		2	4	4	5	8
5		3		5	6	7	7	13
		4	DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	7	7	8	9	15
10		5		8	9	10	12	19
		6		11	12	13	13	25

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

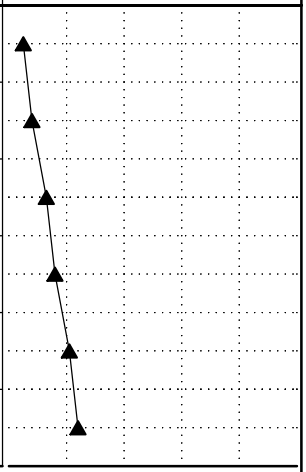
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-12

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/30/17 **COMPLETED** 8/30/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.50 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	2	2	3	4	5
		2	▽	3	4	4	4	8
5		3		5	6	7	8	13
		4	▼	7	8	8	9	16
		5		9	10	11	10	21
10		6		10	12	12	13	24

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

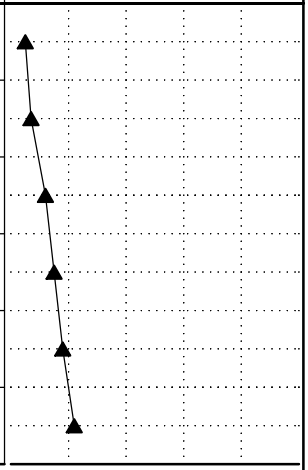
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-13

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/30/17 **COMPLETED** 8/30/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY FINE SAND (SP) WITH TRACE OF ROOTS AND ORGANICS	1	2	3	3	5
		2	▽ BROWN FINE SAND (SP) WITH TRACE OF LIMEROCK FRAGMENTS	3	3	4	6	7
5		3	▼	5	6	6	7	12
		4	BROWN CLAYEY FINE SAND (SC)	6	7	8	9	15
		5		8	8	10	11	18
10		6	LIGHT BROWN FINE SAND (SP)	10	10	12	13	22

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

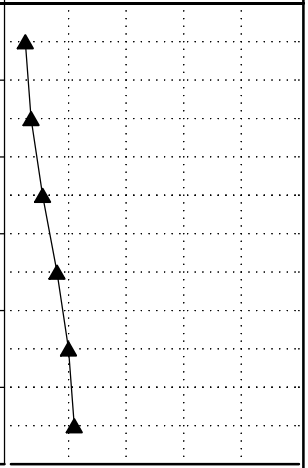
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-14

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/30/17 **COMPLETED** 8/30/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.50 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY FINE SAND (SP) WITH TRACE OF ROOTS AND ORGANICS	2	2	3	4	5
		2	BROWN FINE SAND (SP) ▽	3	3	4	6	7
5		3	DARK GRAY SLIGHTLY SILTY FINE SAND (SP-SM)	4	5	6	7	11
		4	BROWN FINE SAND (SP) ▼	6	8	8	8	16
		5	DARK GRAY SLIGHTLY SILTY FINE SAND (SP-SM)	8	9	11	12	20
10		6	BROWN SILTY FINE SAND (SM)	10	10	12	13	22

▲ SPT N VALUE ▲
20 40 60 80



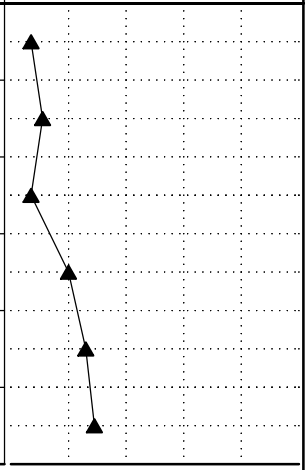
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-15

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/30/17 **COMPLETED** 8/30/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 3.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY FINE SAND (SP)	2	3	4	4	7
		2 ▽		5	5	6	5	11
5		3 ▼	DARK BROWN TO BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	3	3	4	5	7
		4		6	9	11	12	20
		5		10	12	14	14	26
10		6		13	14	15	14	29



Boring Terminated at 12.0 feet.

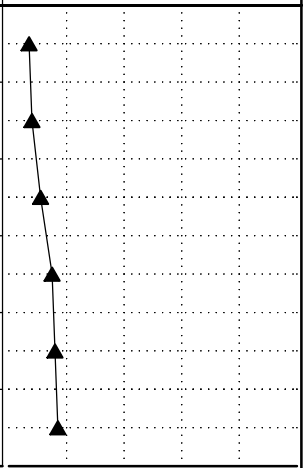
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-16

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/30/17 **COMPLETED** 8/30/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 3.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1 ▽	DARK GRAY FINE SAND (SP)	2	3	4	5	7
		2 ▼		3	4	4	4	8
5		3	DARK BROWN TO BROWN FINE SAND (SP)	4	5	6	7	11
		4		5	7	8	9	15
		5		6	7	9	10	16
10		6		7	8	9	9	17

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

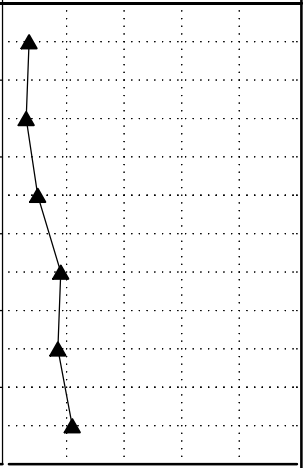
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-17

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/30/17 **COMPLETED** 8/30/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 3.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY FINE SAND (SP)	2	3	4	4	7
		2		2	2	4	3	6
5		3	LIGHT BROWN SILTY FINE SAND (SM)	3	4	6	6	10
		4		7	8	10	10	18
		5		8	8	9	11	17
10		6		10	11	11	12	22

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

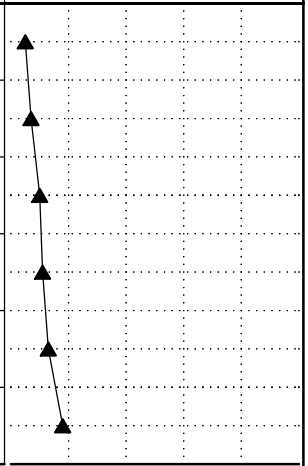
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-18

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/30/17 **COMPLETED** 8/30/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 3.00 ft
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0	1	DARK BROWN FINE SAND (SP)	2	2	3	4	5
	2		4	3	4	6	7
5	3	LIGHT BROWN SILTY FINE SAND (SM)	3	4	6	6	10
	4		4	5	6	8	11
	5		4	6	7	7	13
10	6	LIGHT BROWN FINE SAND (SP)	7	8	10	12	18

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

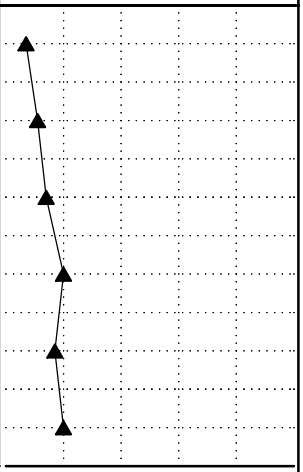
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-19

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/30/17 **COMPLETED** 8/30/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 5.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	LIGHT BROWN SILTY FINE SAND (SM)	2	3	4	6	7
		2		4	5	6	8	11
5		3		7	7	7	9	14
		4		8	9	11	10	20
		5		8	7	10	9	17
10		6	LIGHT BROWN FINE SAND (SP)	9	10	10	19	20

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

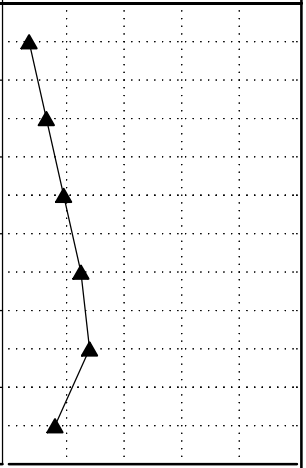
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-20

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/31/17 **COMPLETED** 8/31/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY FINE SAND (SP) WITH TRACE OF ROOTS	2	3	4	6	7
		2	REDDISH BROWN SANDY CLAY (CH)	5	6	7	7	13
5		3		8	9	10	12	19
		4	DARK GRAY SILTY FINE SAND (SM)	10	12	13	13	25
		5		11	13	15	10	28
10		6		9	8	8	9	16

▲ SPT N VALUE ▲
20 40 60 80



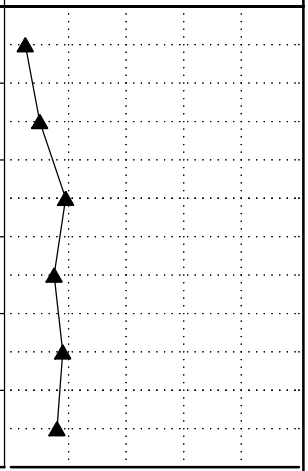
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-21

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/31/17 **COMPLETED** 8/31/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 3.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN TO DARK GRAY FINE SAND (SP) WITH TRACE OF LIMEROCK FRAGMENTS	1	2	3	3	5
		2	▽ BROWN SANDY CLAY (CH)	3	4	6	8	10
5		3	▼	8	9	10	12	19
		4	BROWN FINE SAND (SP)	7	7	8	7	15
		5	DARK GRAY SLIGHTLY SILTY FINE SAND (SP-SM)	6	8	10	9	18
10		6	DARK GRAY SILTY FINE SAND (SM)	8	8	8	10	16



Boring Terminated at 12.0 feet.

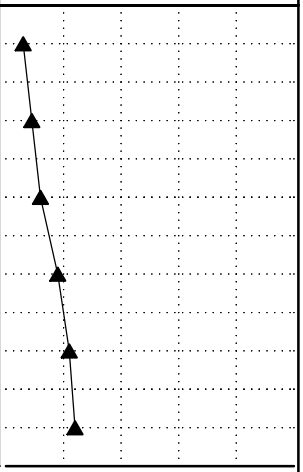
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-22

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/31/17 **COMPLETED** 8/31/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN TO LIGHT BROWN FINE SAND (SP)	2	3	3	4	6
		2	▽	3	4	5	6	9
5		3	▼	5	6	6	7	12
		4		6	8	10	11	18
		5		10	10	12	13	22
10		6	LIGHT BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	11	11	13	14	24

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

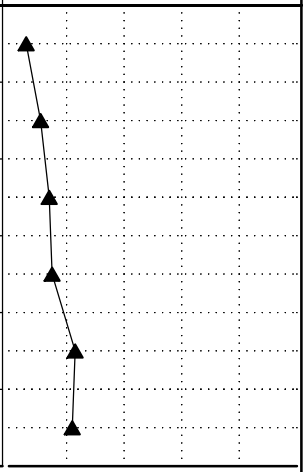
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-23

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/31/17 **COMPLETED** 8/31/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY FINE SAND (SP) WITH TRACE OF ROOTS	2	3	3	4	6
		2	LIGHT BROWN FINE SAND (SP)	4	5	6	6	11
5		3		4	6	8	8	14
		4	BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	6	7	8	10	15
		5		10	11	12	14	23
10		6		9	10	12	13	22

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

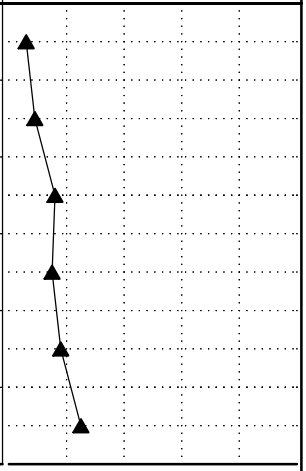
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-24

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/31/17 **COMPLETED** 8/31/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	LIGHT GRAY TO BROWN FINE SAND (SP)	2	3	3	3	6
		2		3	4	5	5	7
5		3	BROWN TO LIGHT BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	6	7	9	8	16
		4		5	7	8	10	15
		5		8	9	9	11	18
10		6		10	12	13	14	25

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

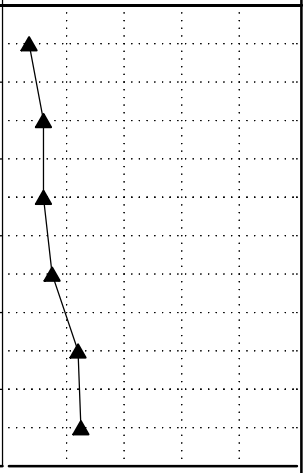
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-25

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/31/17 **COMPLETED** 8/31/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY FINE SAND (SP)	2	3	4	5	7
		2		4	6	6	7	12
5		3	LIGHT BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	6	5	7	8	12
		4		7	7	8	10	15
10		5		10	11	13	12	24
		6		11	12	13	13	25

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

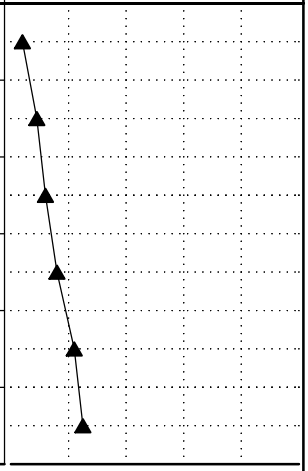
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-26

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/31/17 **COMPLETED** 8/31/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 5.00 ft
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0							
	1	GRAY FINE SAND (SP)	2	2	2	3	4
	2		3	4	5	4	9
5	3		5	6	6	8	12
	4	LIGHT BROWN TO DARK BROWN FINE SAND (SP)	6	7	9	10	16
	5		10	10	12	13	22
10	6	LIGHT BROWN SILTY FINE SAND (SM)	10	12	13	13	25

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-27

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/31/17 **COMPLETED** 8/31/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 3.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 5.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY TO DARK BROWN FINE SAND (SP)	2	3	3	4	6
		2 ▽		3	3	4	5	7
5		3 ▼		4	5	6	6	11
		4	LIGHT BROWN CLAYEY FINE SAND (SC)	4	6	7	8	13
		5		6	8	9	9	17
10		6		8	10	10	12	20

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

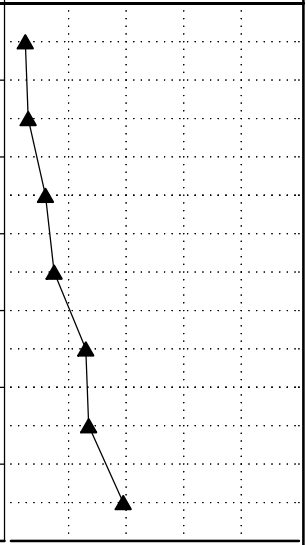
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-28

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/31/17 **COMPLETED** 8/31/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 3.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY FINE SAND (SP) WITH TRACE OF LIMEROCK FRAGMENTS	2	2	3	2	5
		2	DARK GRAY SLIGHTLY SILTY FINE SAND (SP-SM)	2	3	3	4	6
5		3		4	6	6	7	12
		4	REDDISH BROWN CLAYEY FINE SAND (SC)	6	7	8	10	15
		5		10	12	14	13	26
10		6		12	13	14	14	27
		7		15	18	21	23	39

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 14.0 feet.

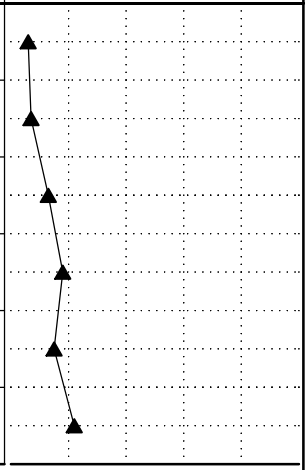
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-29

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/31/17 **COMPLETED** 8/31/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP)	2	3	3	4	6
		2		3	3	4	6	7
5		3	REDDISH BROWN CLAYEY FINE SAND (SC)	5	6	7	6	13
		4		7	8	10	11	18
		5		8	7	8	8	15
10		6		9	10	12	14	22

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-30

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 8/31/17 **COMPLETED** 8/31/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP) WITH TRACE OF ROOTS	2	3	3	3	6
		2	LIGHT BROWN SLIGHTLY SILTY FINE SAND (SP-SM) WITH TRACE OF CLAY SEAMS ▽	3	4	5	4	9
5		3	▼	5	6	8	8	14
		4	REDDISH BROWN CLAYEY FINE SAND (SC)	7	9	10	10	19
		5		11	12	12	13	24
10		6		10	12	14	16	26

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

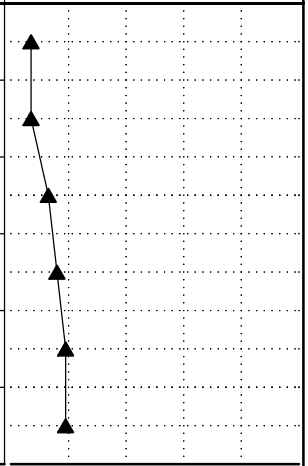
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-31

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/5/17 **COMPLETED** 9/5/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY FINE SAND (SP) WITH TRACE OF ROOTS	2	3	4	4	7
		2	LIGHT BROWN FINE SAND (SP)	3	3	4	5	7
5		3	▽ ▼	5	6	7	7	13
		4		6	8	8	10	16
		5	REDDISH BROWN CLAYEY FINE SAND (SC)	7	9	10	11	19
10		6		8	9	10	12	19

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

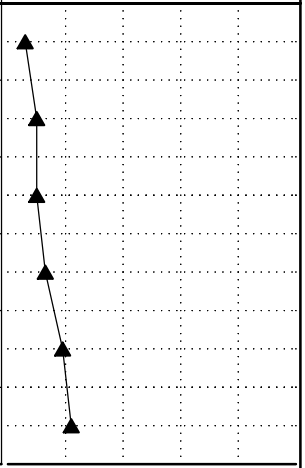
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-32

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/5/17 **COMPLETED** 9/5/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY FINE SAND (SP) WITH TRACE OF LIMEROCK FRAGMENTS	2	3	3	4	6
		2	LIGHT BROWN FINE SAND (SP)	3	4	6	5	10
5		3	▽ ▼ REDDISH BROWN CLAYEY FINE SAND (SC)	4	5	5	6	10
		4		4	6	7	8	13
		5		7	9	10	12	19
10		6		10	10	12	13	22

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-33

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/19/17 **COMPLETED** 9/19/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 2.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY SLIGHTLY SILTY FINE SAND (SP-SM)	1	2	3	3	5
		2	LIGHT BROWN FINE SAND (SP)	2	3	4	4	7
5		3		2	4	3	4	7
		4	DARK BROWN SILTY FINE SAND (SM)	3	3	4	3	7
		5	GRAY AND BROWN FINE SAND (SP)	4	6	6	7	12
10		6		6	8	10	11	18

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-34

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/19/17 **COMPLETED** 9/19/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 3.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	TOPSOIL	2	2	3	4	5
		1	GRAY SILTY FINE SAND (SM)					
		2		3	4	4	4	8
5		3		3	5	5	7	10
		4	BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	3	3	4	5	7
		5		4	6	6	8	12
10		6		6	8	9	9	17

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

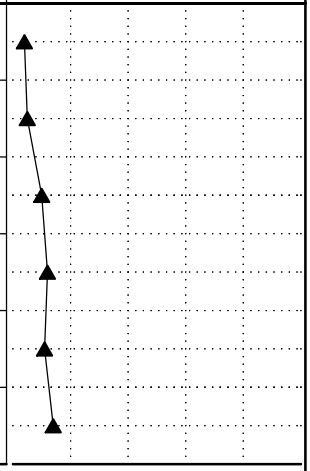
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-35

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/19/17 **COMPLETED** 9/19/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY SILTY FINE SAND (SM) WITH TRACE OF ROOTS	2	1	3	4	4
		2	GRAY SLIGHTLY SILTY FINE SAND (SP-SM)	2	2	3	5	5
5		3	LIGHT GRAY FINE SAND (SP)	4	5	5	6	10
		4		4	5	7	7	12
10		5	TAN AND ORANGE CLAYEY FINE SAND (SC)	4	4	7	8	11
		6	GRAY FINE SAND (SP)	5	6	8	10	14

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-36

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/19/17 **COMPLETED** 9/19/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 3.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY FINE SAND (SP) WITH TRACE OF ROOTS	1	2	2	2	4
		2		2	3	4	3	7
5		3		2	3	3	5	6
		4	DARK BROWN FINE SAND (SP)	3	4	4	5	8
		5		3	5	5	6	10
10		6		5	5	7	7	12

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

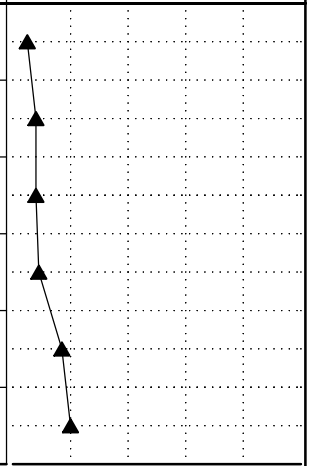
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-37

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/19/17 **COMPLETED** 9/19/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	GRAY SLIGHTLY SILTY FINE SAND (SP-SM) WITH TRACE OF ROOTS	2	2	3	2	5
		2	LIGHT GRAY FINE SAND (SP)	2	3	5	4	8
5		3		3	4	4	5	8
		4		3	5	4	6	9
10		5	LIGHT GRAY SILTY FINE SAND (SM) WITH FEW CLAY SEAMS	5	7	10	11	17
		6	DARK GRAY SLIGHTLY SILTY FINE SAND (SP-SM)	8	9	11	13	20

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

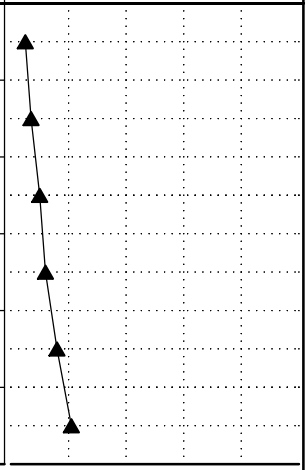
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-38

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/19/17 **COMPLETED** 9/19/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	GRAY FINE SAND (SP) WITH TRACE OF ROOTS	2	3	2	4	5
		2	GRAY FINE SAND (SP)	3	3	4	6	7
5		3	LIGHT BROWN FINE SAND (SP)	4	4	6	7	10
		4		5	5	7	9	12
		5		7	8	8	9	16
10		6		8	10	11	10	21

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

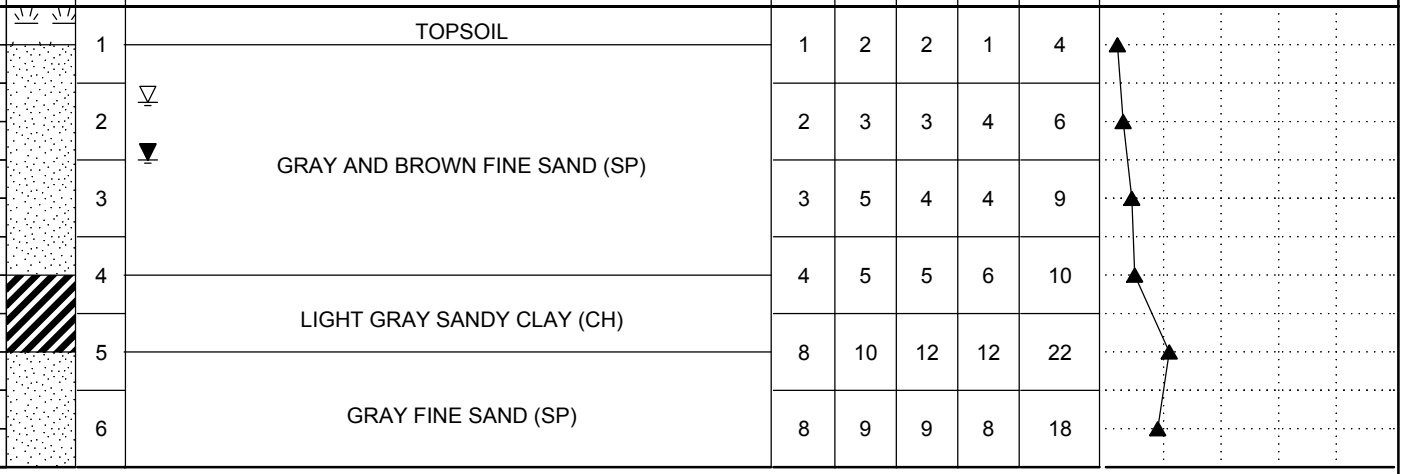
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-39

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/19/17 **COMPLETED** 9/19/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0	1	TOPSOIL	1	2	2	1	4
	2	GRAY AND BROWN FINE SAND (SP)	2	3	3	4	6
5	3		3	5	4	4	9
	4		4	5	5	6	10
	5	LIGHT GRAY SANDY CLAY (CH)	8	10	12	12	22
10	6	GRAY FINE SAND (SP)	8	9	9	8	18

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-40

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/21/17 **COMPLETED** 9/21/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY SILTY FINE SAND (SM) WITH TRACE OF ORGANICS	2	2	3	4	5
		2	DARK GRAY FINE SAND (SP)	2	3	5	5	8
5		3		4	6	6	5	12
		4	LIGHT GRAY SANDY CLAY (CH)	5	8	12	13	20
		5		10	11	10	10	21
10		6	LIGHT GRAY FINE SAND (SP)	8	10	9	9	19

▲ SPT N VALUE ▲
20 40 60 80

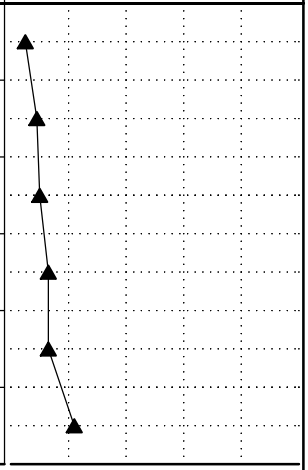
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-41

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/21/17 **COMPLETED** 9/21/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY SILTY FINE SAND (SM)	2	3	2	4	5
		2		3	5	4	4	9
5		3		3	4	6	6	10
		4	LIGHT GRAY FINE SAND (SP)	5	6	7	8	13
		5	LIGHT GRAY SANDY CLAY (CH)	6	6	7	8	13
10		6	LIGHT GRAY FINE SAND (SP)	7	10	12	12	22



Boring Terminated at 12.0 feet.

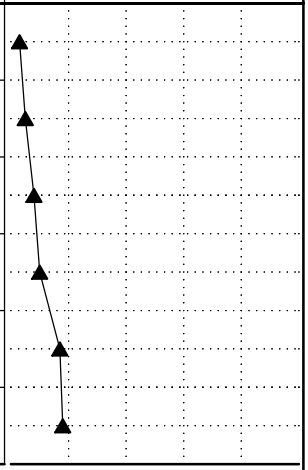
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-42

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/21/17 **COMPLETED** 9/21/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	GRAY FINE SAND (SP) WITH TRACE OF ROOTS	1	1	2	3	3
		2	▽ ▼ DARK GRAY FINE SAND (SP)	2	2	3	4	5
5		3		3	4	4	5	8
		4	BROWN AND DARK GRAY FINE SAND (SP)	5	4	6	6	10
		5		7	8	9	8	17
10		6		8	8	10	11	18

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

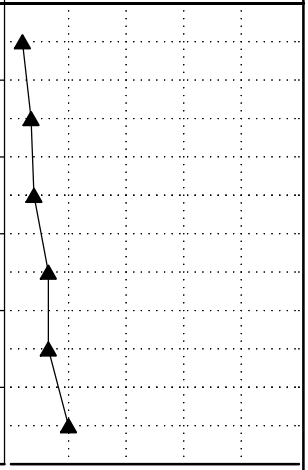
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-43

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/21/17 **COMPLETED** 9/21/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	GRAY FINE SAND (SP) WITH TRACE OF ROOTS	2	1	3	3	4
		2	TAN AND ORANGE SLIGHTLY SILTY FINE SAND (SP-SM)	3	3	4	5	7
5		3		3	4	4	5	8
		4	TAN AND ORANGE CLAYEY FINE SAND (SC)	5	6	7	8	13
		5	TAN FINE SAND (SP)	7	7	6	9	13
10		6		8	10	10	10	20

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

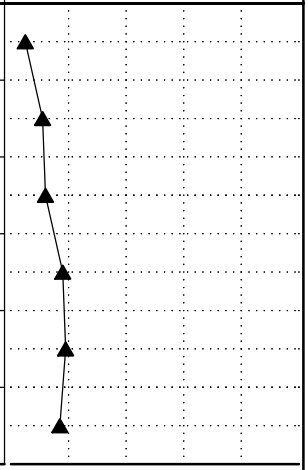
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-44

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/21/17 **COMPLETED** 9/21/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY FINE SAND (SP) WITH TRACE OF ROOTS	1	2	3	3	5
		2	TAN FINE SAND (SP)	4	5	6	6	11
5		3	TAN AND ORANGE CLAYEY FINE SAND (SC)	4	5	7	7	12
		4	TAN AND ORANGE SANDY CLAY (CH)	6	8	10	12	18
		5		7	9	10	11	19
10		6	TAN FINE SAND (SP)	6	7	10	10	17

▲ SPT N VALUE ▲
20 40 60 80



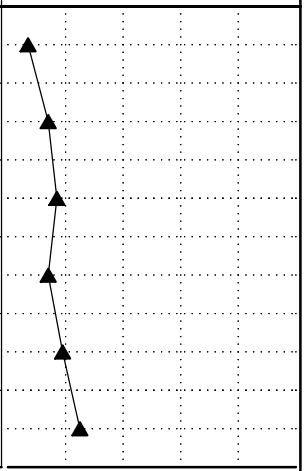
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-45

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/21/17 **COMPLETED** 9/21/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	TOPSOIL	2	3	4	4	7
		2	DARK GRAY SILTY FINE SAND (SM) WITH TRACE OF ROOTS	4	6	8	8	14
5		3	TAN FINE SAND (SP)	6	7	10	9	17
		4	TAN FINE SAND (SP) WITH TRACE OF CLAY SEAMS	4	6	8	10	14
		5	TAN FINE SAND (SP)	6	8	11	12	19
10		6		9	12	13	15	25



Boring Terminated at 12.0 feet.

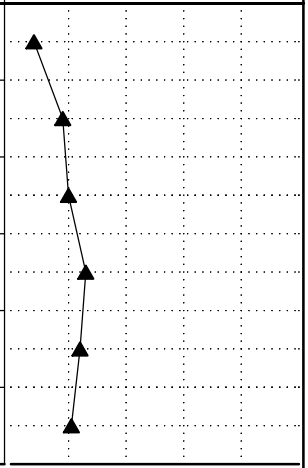
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-46

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/22/17 **COMPLETED** 9/22/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 5.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	LIGHT BROWN AND YELLOWISH RED CLAYEY FINE SAND (SC)	2	5	3	3	8
		2		4	8	10	10	18
5		3		8	10	10	12	20
		4		12	12	14	16	26
		5		10	12	12	15	24
10		6		8	9	12	13	21

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-47

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/22/17 **COMPLETED** 9/22/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	GRAY AND DARK GRAY SLIGHTLY SILTY FINE SAND (SP-SM)	2	2	3	2	5
		2		2	3	3	3	6
5		3		1	2	2	2	4
		4	BROWN AND DARK BROWN FINE SAND (SP)	2	3	3	3	6
		5		2	4	5	5	9
10		6		4	6	6	7	12

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-48

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/22/17 **COMPLETED** 9/22/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	1	2	3	3	5
		2		2	2	4	3	6
5		3		3	4	5	5	9
		4	DARK BROWN FINE SAND (SP)	4	3	5	6	8
		5		5	5	6	7	11
10		6		5	7	8	10	15

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

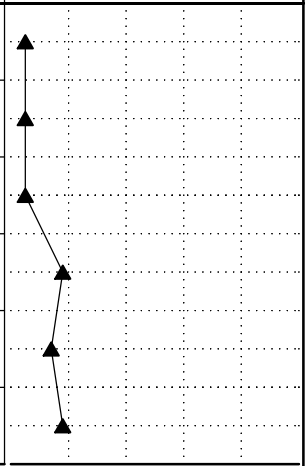
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-49

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/22/17 **COMPLETED** 9/22/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 3.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN AND LIGHT BROWN FINE SAND	2	2	3	3	5
		2		3	3	2	4	5
5		3		2	1	4	5	5
		4		6	8	10	11	18
		5	DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	6	7	7	8	14
10		6		7	9	9	9	18

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

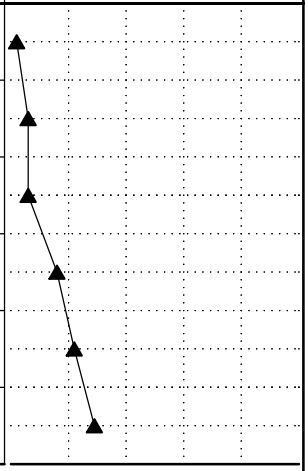
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-50

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/22/17 **COMPLETED** 9/22/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN AND DARK BROWN FINE SAND (SP)	2	1	1	2	2
		2 ▽		2	3	3	4	6
5		3 ▼		2	2	4	6	6
		4		6	8	8	10	16
		5		9	10	12	15	22
10		6		11	13	16	14	29

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

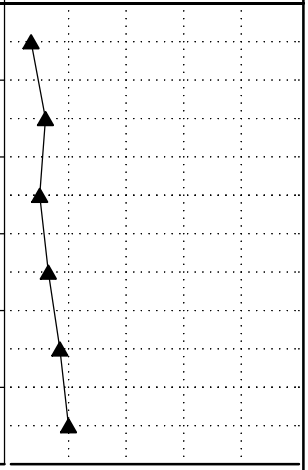
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-51

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/25/17 **COMPLETED** 9/25/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN AND BROWN SLIGHTLY SILTY FINE SAND (SP-SM) WITH TRACE OF ROOTS	2	3	4	6	7
		2		3	5	7	7	12
5		3		4	4	6	6	10
		4		4	5	8	9	13
		5		6	7	10	11	17
10		6		4	8	12	11	20

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-52

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/25/17 **COMPLETED** 9/25/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	LIGHT GRAY AND DARK GRAY FINE SAND (SP)	1	3	3	4	6
		2		3	5	5	5	10
5		3		4	4	6	7	10
		4	DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	3	7	10	9	17
		5		5	6	8	8	14
10		6		6	8	10	11	18

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-53

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/25/17 **COMPLETED** 9/25/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 5.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 7.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY AND LIGHT GRAY SLIGHTLY SILTY FINE SAND (SP-SM)	2	3	4	5	7
		2		2	4	5	6	9
5		3 ▽	DARK BROWN FINE SAND (SP)	3	3	6	6	9
		4 ▼		5	7	9	9	16
		5		6	8	10	11	18
10		6		8	9	10	10	19

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

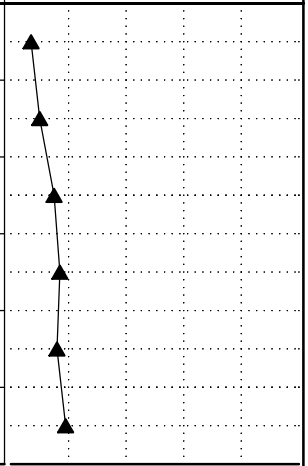
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-54

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/26/17 **COMPLETED** 9/26/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 5.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN AND DARK BROWN FINE SAND (SP)	2	4	3	6	7
		2		3	4	6	7	10
5		3	LIGHT BROWN FINE SAND (SP)	5	7	8	8	15
		4		4	9	8	9	17
		5		6	7	9	11	16
10		6		8	9	10	12	19

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

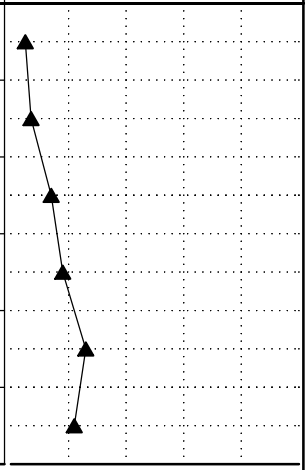
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-55

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/26/17 **COMPLETED** 9/26/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 5.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	LIGHT BROWN AND DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM) WITH TRACE OF ROOTS	1	2	3	4	5
		2		3	3	4	5	7
5		3		4	6	8	9	14
		4	TAN AND LIGHT BROWN FINE SAND (SP)	6	8	10	12	18
		5		8	12	14	16	26
10		6		8	10	12	15	22

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

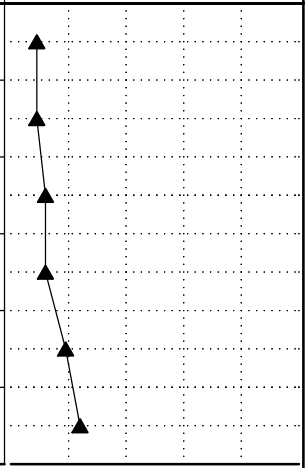
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-56

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/26/17 **COMPLETED** 9/26/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 5.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	LIGHT BROWN AND BROWN FINE SAND (SP)	2	4	5	6	9
		2		4	3	6	6	9
5		3		3	5	7	8	12
		4		5	6	6	8	12
10		5		7	9	10	12	19
		6		10	11	13	13	24

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-57

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/26/17 **COMPLETED** 9/26/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 5.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)	▲ SPT N VALUE ▲ 20 40 60 80
0		1	BROWN FINE SAND (SP)	1	1	2	2	3	
		2		2	3	3	3	6	
5		3	▽ ▼	2	3	3	2	6	
		4		2	2	2	3	4	
		5	DARK BROWN FINE SAND (SP)	2	3	2	4	5	
10		6		2	3	4	3	7	

Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-58

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/26/17 **COMPLETED** 9/26/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL 4.00 ft
LOGGED BY BM **CHECKED BY** NA
GWT 4.50 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN AND BROWN FINE SAND (SP) WITH TRACE OF ROOTS	1	1	1	2	2
		2		2	2	3	2	5
5		3	LIGHT BROWN FINE SAND (SP)	2	2	2	2	4
		4		2	3	2	3	5
		5		2	3	4	4	7
10		6	DARK BROWN FINE SAND (SP)	3	2	3	4	5

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-59

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/26/17 **COMPLETED** 9/26/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 5.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.50 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	GRAY FINE SAND (SP)	1	2	3	2	5
		2		3	2	2	4	4
5		3	LIGHT BROWN FINE SAND (SP)	2	3	4	4	7
		4		3	2	2	3	4
		5	DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	3	2	2	4	4
10		6		3	4	4	4	8

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-60

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/26/17 **COMPLETED** 9/26/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 5.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 7.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP)	1	2	2	3	4
		2		3	3	2	2	5
5		3 ▽		3	4	3	3	7
		4 ▼	DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	2	2	2	3	4
		5		2	3	4	4	7
10		6		3	3	4	5	7

▲ SPT N VALUE ▲
20 40 60 80

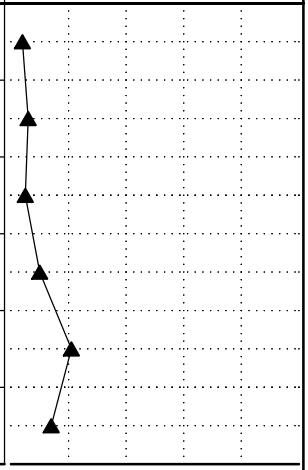
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-61

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/26/17 **COMPLETED** 9/26/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 4.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.50 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY AND BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	1	2	2	2	4
		2		2	3	3	3	6
5		3	BROWN FINE SAND (SP)	2	2	3	2	5
		4		4	4	6	6	10
10		5	DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	7	11	10	12	21
		6		5	6	8	11	14



Boring Terminated at 12.0 feet.

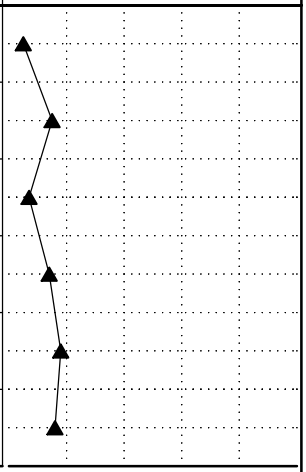
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-62

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/27/17 **COMPLETED** 9/27/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 0.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 1.50 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	2	3	2	3	5
		2		6	8	7	6	15
5		3		4	3	4	4	7
		4		5	6	8	8	14
		5		5	8	10	8	18
10		6		6	7	9	11	16

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

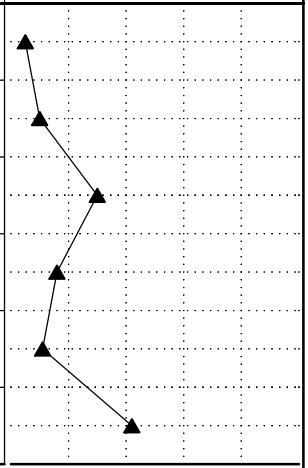
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-63

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/27/17 **COMPLETED** 9/27/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 2.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	GRAY FINE SAND (SP)	2	2	3	3	5
		2	DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	4	3	7	12	10
5		3		10	13	17	21	30
		4	BROWN FINE TO MEDIUM SAND (SP)	6	8	8	10	16
		5		4	5	6	8	11
10		6		10	18	24	30	42

▲ SPT N VALUE ▲
20 40 60 80



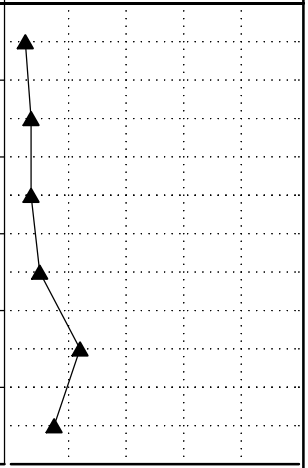
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-64

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/27/17 **COMPLETED** 9/27/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 3.50 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	LIGHT GRAY FINE SAND (SP)	1	2	3	4	5
		2		3	3	4	4	7
5		3	TAN FINE SAND (SP)	2	3	4	5	7
		4		2	4	6	7	10
10		5	BLACK FINE SAND (SP) WITH HARDPAN	10	12	12	14	24
		6	DARK BROWN FINE TO MEDIUM SAND (SP)	4	6	9	11	15



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-65

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/27/17 **COMPLETED** 9/27/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 3.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	LIGHT GRAY FINE SAND (SP)	2	3	3	3	6
		2		3	4	4	5	8
5		3		2	3	5	7	8
		4		3	3	5	6	8
10		5	BLACK SILTY FINE SAND (SM) WITH TRACE OF CLAY SEAMS	2	1	1	2	2
		6	LIGHT GRAY FINE TO MEDIUM SAND (SP)	7	12	13	12	25

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

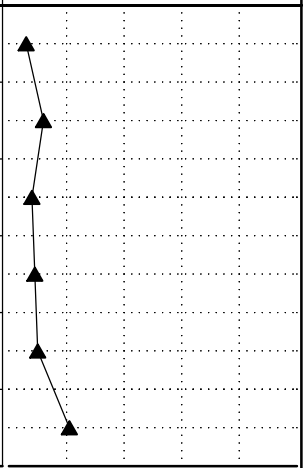
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-66

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/27/17 **COMPLETED** 9/27/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 3.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	LIGHT GRAY FINE SAND (SP)	2	3	3	5	6
		2		5	6	6	7	12
5		3		2	3	5	5	8
		4		2	4	5	6	9
		5		2	3	7	8	10
10		6	DARK GRAY SILTY FINE SAND (SM)	6	10	11	13	21

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

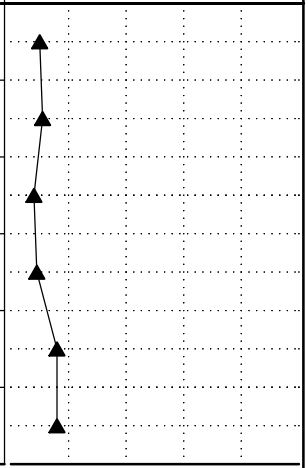
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-67

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/27/17 **COMPLETED** 9/27/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 2.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 3.00 ft
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0	1	TOPSOIL / TRACE OF WOOD AND ROOTS GRAY FINE SAND (SP)	3	5	5	6	10
	2	DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	5	5	6	8	11
5	3	LIGHT GRAY FINE SAND (SP)	2	3	5	6	8
	4		2	4	5	7	9
	5		4	6	10	15	16
10	6		5	7	9	16	16

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

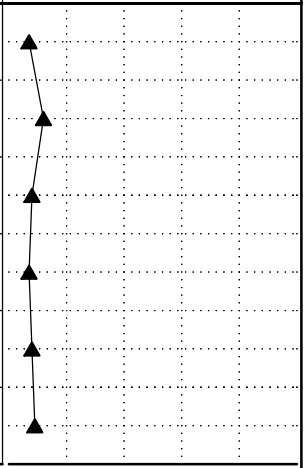
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-68

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/27/17 **COMPLETED** 9/27/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL 1.50 ft
LOGGED BY BM **CHECKED BY** NA
GWT 2.00 ft
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0	1	TOPSOIL / WITH TRACE OF ROCKS AND ROOTS DARK GRAY FINE SAND (SP)	2	3	4	8	7
	2	LIGHT GRAY FINE SAND (SP)	7	6	6	5	12
5	3		2	4	4	5	8
	4	DARK GRAY FINE SAND (SP)	3	3	4	5	7
	5		2	3	5	6	8
10	6		2	4	5	6	9

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

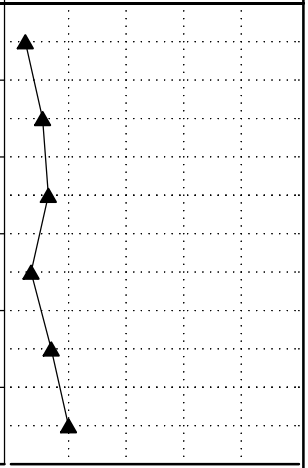
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-69

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/27/17 **COMPLETED** 9/27/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 1.50 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	▽▼ DARK GRAY SLIGHTLY SILTY FINE SAND (PT) WITH FEW ROOTS	2	1	4	6	5
		2	BLACK SILTY FINE SAND (SM)	6	3	8	9	11
5		3	DARK BROWN AND BLACK SLIGHTLY SILTY FINE SAND (SP-SM)	4	6	7	5	13
		4		2	2	5	6	7
		5		5	6	8	9	14
10		6		5	8	12	12	20

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-70

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/27/17 **COMPLETED** 9/27/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 2.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)	▲ SPT N VALUE ▲ 20 40 60 80
0		1	▽ ▼ LIGHT GRAY FINE SAND (SP)	1	2	2	3	4	
		2		2	2	3	4	5	
5		3		2	3	3	2	6	
		4	DARK GRAY SLIGHTLY SILTY FINE SAND (SP-SM)	2	3	3	4	6	
10		5		2	2	3	4	5	
		6		2	1	3	3	4	

Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-71

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/28/17 **COMPLETED** 9/28/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 5.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 6.00 ft
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	GRAY AND BROWN FINE SAND (SP)	3	3	4	3	7
		2		3	3	2	2	5
5		3 ▽ ▼	LIGHT BROWN FINE SAND (SP)	2	1	2	2	3
		4		2	2	3	4	5
10		5	LIGHT GRAY FINE SAND (SP)	3	3	3	4	6
		6		3	4	4	5	8

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 12.0 feet.

SPT (PENETRATION BLOWS) W/OUT ELEV. - GINT STD US LAB.GDT - 12/6/17 12:52 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\BLACK CREEK.GPJ

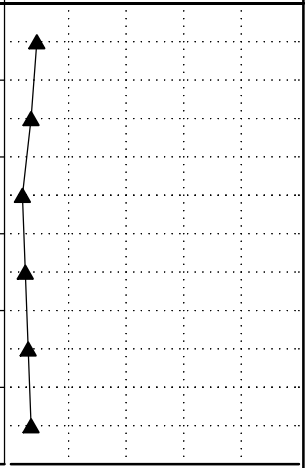
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-72

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/28/17 **COMPLETED** 9/28/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	TOPSOIL	5	5	4	4	9
		2	GRAY AND BROWN FINE SAND (SP)	5	4	3	3	7
5		3	ORANGE AND BROWN FINE SAND (SP)	2	2	2	2	4
		4		2	2	3	2	5
		5		2	3	3	3	6
10		6	LIGHT BROWN FINE SAND (SP)	3	3	4	5	7

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

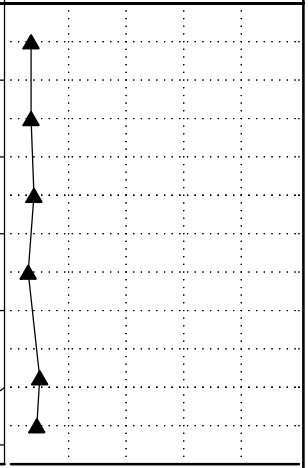
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-73

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/28/17 **COMPLETED** 9/28/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	TAN FINE SAND (SP)	2	4	3	3	7
		2		2	4	3	2	7
5		3		3	4	4	5	8
		4		4	3	3	3	6
10		5		5	6	4	5	10
		6	BROWN AND GRAY SLIGHTLY SILTY FINE SAND (SP-SM)	4	4	5	8	9

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-74

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/28/17 **COMPLETED** 9/28/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)	▲ SPT N VALUE ▲ 20 40 60 80
0		1	TAN AND YELLOW FINE SAND (SP)	2	3	4	3	7	
		2		2	3	4	4	7	
5		3		3	4	4	4	8	
		4		3	4	5	4	9	
		5		5	4	5	5	9	
10		6		4	4	4	5	8	

Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-75

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/28/17 **COMPLETED** 9/28/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)	▲ SPT N VALUE ▲ 20 40 60 80
0		1	BROWN AND TAN FINE SAND (SP)	3	3	4	3	7	
		2		1	2	2	2	4	
5		3		2	2	2	2	4	
		4		2	2	2	3	4	
		5		2	2	3	3	5	
10		6		3	2	2	3	4	

Boring Terminated at 12.0 feet.

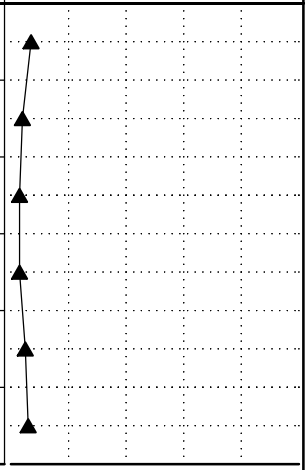
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-76

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/28/17 **COMPLETED** 9/28/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	ORANGE AND TAN FINE SAND (SP)	2	3	4	5	7
		2		4	2	2	3	4
5		3		2	1	2	2	3
		4		2	2	1	2	3
		5		2	2	3	2	5
10		6	WHITE FINE SAND (SP)	3	2	4	4	6

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

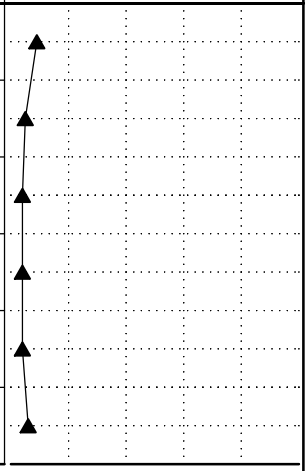
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-77

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/28/17 **COMPLETED** 9/28/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	GRAY FINE SAND (SP)	3	4	5	5	9
		2	TAN FINE SAND (SP)	3	2	3	2	5
5		3		2	2	2	2	4
		4		3	2	2	2	4
		5		3	2	2	3	4
10		6		4	3	3	3	6

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
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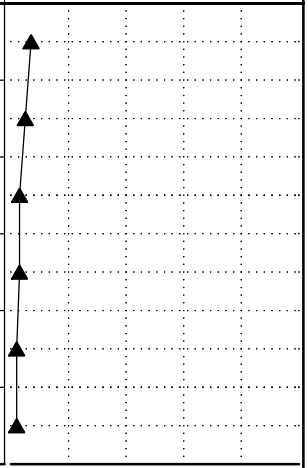
Fax: 904-645-0057

SPT BORING NO. PB-78

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/28/17 **COMPLETED** 9/28/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	GRAY AND BROWN FINE SAND (SP)	2	4	3	2	7
		2	ORANGE AND TAN FINE SAND (SP)	3	3	2	2	5
5		3		2	2	1	2	3
		4		2	1	2	1	3
		5		2	1	1	1	2
10		6		2	1	1	2	2



Boring Terminated at 12.0 feet.

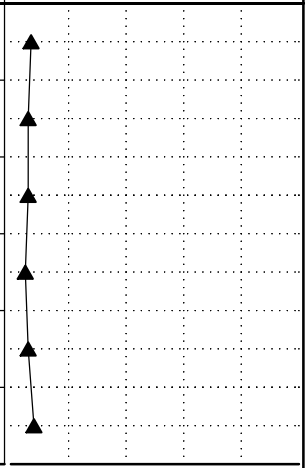
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-79

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 9/28/17 **COMPLETED** 9/28/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK GRAY SLIGHTLY SILTY FINE SAND (SP-SM)	2	3	4	5	7
		2	ORANGE AND TAN FINE SAND (SP)	4	3	3	3	6
5		3		2	3	3	2	6
		4		3	2	3	3	5
		5		2	3	3	3	6
10		6	TAN AND BROWN FINE SAND (SP)	3	4	4	5	8

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

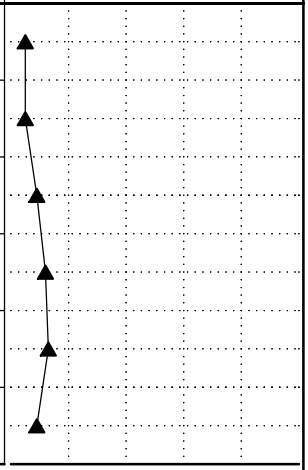
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-80

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/11/17 **COMPLETED** 10/11/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWNISH YELLOW FINE SAND (SP)	2	2	3	2	5
		2		3	3	2	4	5
5		3		3	4	5	5	9
		4	LIGHT BROWN AND BROWN (SP)	4	6	6	6	12
		5		4	6	7	7	13
10		6		5	5	4	6	9

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

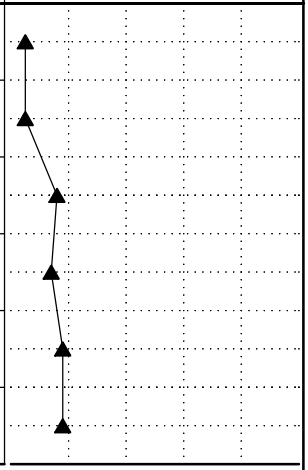
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-81

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/11/17 **COMPLETED** 10/11/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWNISH YELLOW FINE SAND (SP) WITH TRACE OF ROOTS	1	2	3	4	5
		2		2	2	3	3	5
5		3	LIGHT BROWN FINE SAND (SP)	4	6	10	12	16
		4		6	6	8	11	14
		5		10	9	9	11	18
10		6		8	9	9	10	18

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

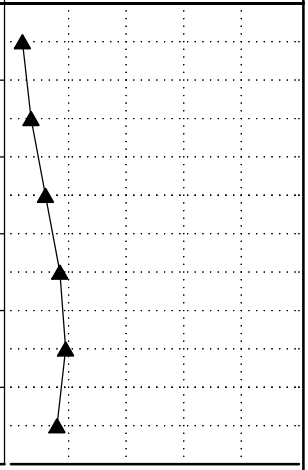
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-82

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/11/17 **COMPLETED** 10/11/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP)	2	1	3	3	4
		2		2	3	4	6	7
5		3		4	5	7	8	12
		4	BROWNISH YELLOW FINE SAND (SP)	6	8	9	10	17
		5		7	9	10	12	19
10		6		9	8	8	10	16

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

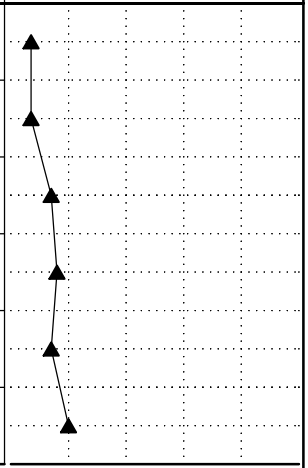
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-83

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/11/17 **COMPLETED** 10/11/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN FINE SAND (SP)	2	3	4	6	7
		2		2	3	4	4	7
5		3	BROWNISH YELLOW FINE SAND (SP)	5	6	8	8	14
		4		5	7	9	10	16
		5		6	6	8	11	14
10		6		9	10	10	11	20

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

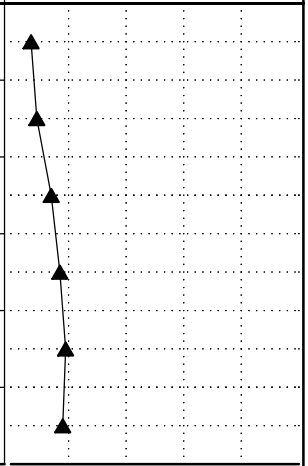
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-84

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP)	2	3	4	6	7
		2		2	4	5	6	9
5		3		5	7	7	9	14
		4		8	8	9	8	17
		5		7	9	10	12	19
10		6		8	8	10	11	18

▲ SPT N VALUE ▲
20 40 60 80



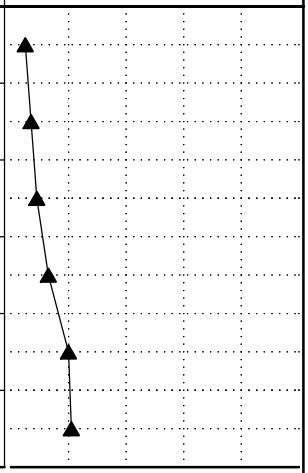
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-85

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0	1	BROWN FINE SAND (SP)	2	3	2	4	5
	2		3	3	4	6	7
5	3	BROWNISH YELLOW FINE SAND (SP)	4	4	5	7	9
	4		4	6	7	7	13
	5		8	10	10	12	20
10	6	LIGHT BROWN AND BROWN FINE SAND (SP)	8	10	11	12	21



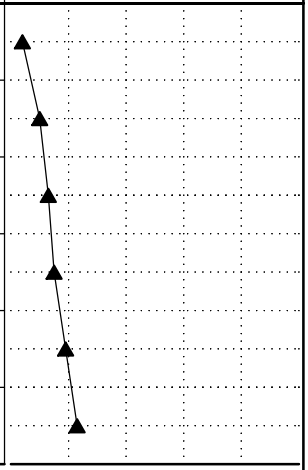
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-86

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/11/17 **COMPLETED** 10/11/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP)	2	2	2	3	4
		2		3	4	6	6	10
5		3	BROWNISH YELLOW FINE SAND (SP)	5	6	7	9	13
		4		5	7	8	10	15
		5		10	9	10	11	19
10		6	LIGHT BROWN FINE SAND (SP)	9	12	11	12	23



Boring Terminated at 12.0 feet.

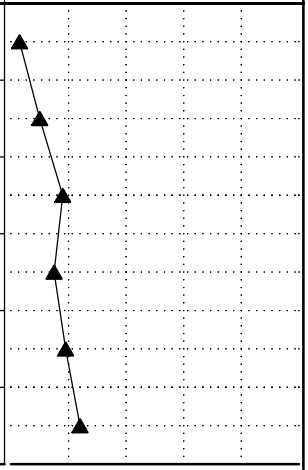
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-87

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/11/17 **COMPLETED** 10/11/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM) WITH TRACE OF ROOTS	1	1	2	3	3
		2		3	4	6	7	10
5		3	BROWNISH YELLOW FINE SAND (SP)	6	8	10	11	18
		4		7	7	8	7	15
		5		8	9	10	11	19
10		6	LIGHT BROWN FINE AND (SP)	10	11	13	14	24

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

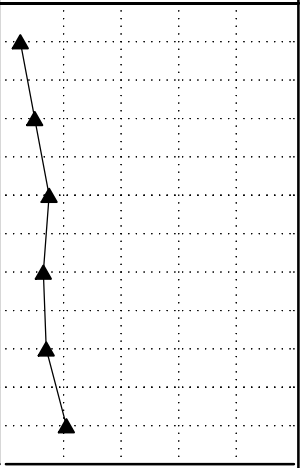
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-88

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN FINE SAND (SP) WITH TRACE OF ROOTS	1	2	3	4	5
		2		3	4	6	6	10
5		3		5	7	8	8	15
		4	BROWN FINE SAND (SP)	5	6	7	8	13
		5		7	7	7	9	14
10		6		8	10	11	13	21

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

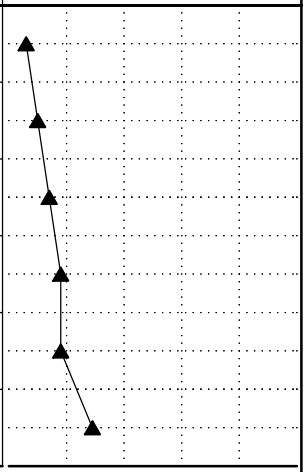
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-89

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN FINE SAND (SP) WITH TRACE OF ROOTS	2	3	3	4	6
		2		3	4	6	7	10
5		3	DARK BROWN AND BROWN FINE SAND (SP)	4	6	8	8	14
		4		7	9	9	9	18
		5	BROWN FINE SAND (SP)	7	8	10	10	18
10		6		10	13	16	17	29

▲ SPT N VALUE ▲
20 40 60 80



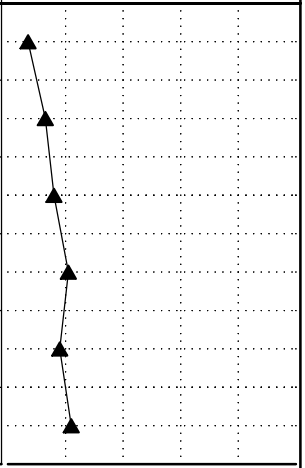
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-90

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	DARK BROWN FINE SAND (SP) WITH TRACE OF ROOTS	2	3	4	5	7
		2		4	6	7	7	13
5		3	BROWN FINE SAND (SP)	5	8	8	9	16
		4		8	10	11	13	21
		5	BROWNISH YELLOW FINE SAND (SP)	10	9	9	11	18
10		6		10	10	12	14	22



Boring Terminated at 12.0 feet.

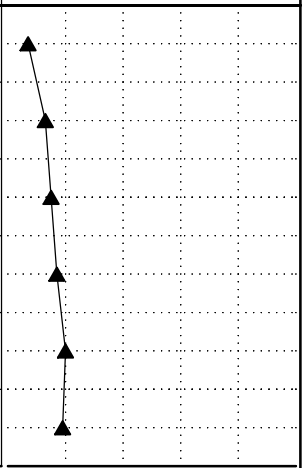
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-91

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP) WITH TRACE OF ROOTS	2	3	4	3	7
		2		4	6	7	7	13
5		3		7	7	8	9	15
		4	BROWN AND LIGHT BROWN FINE SAND (SP)	8	8	9	11	17
		5		9	10	10	12	20
10		6		9	9	10	11	19

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

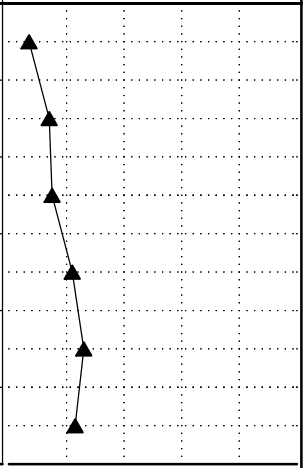
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-92

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP)	3	4	3	5	7
		2		4	6	8	8	14
5		3	LIGHT BROWN FINE SAND (SP)	5	7	8	10	15
		4		9	10	12	14	22
		5		10	12	14	13	26
10		6		9	11	12	12	23

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

CSI Geo, Inc.
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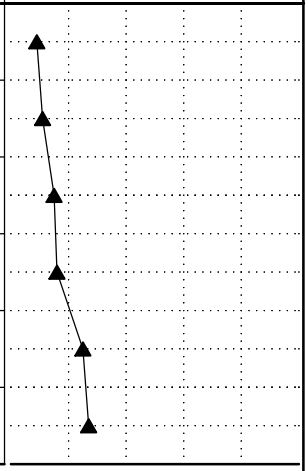
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-93

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP)	3	5	4	4	9
		2		4	6	5	5	11
5		3	LIGHT BROWN FINE SAND (SP)	5	7	8	9	15
		4		7	7	9	10	16
		5		8	12	13	15	25
10		6		10	12	15	14	27

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

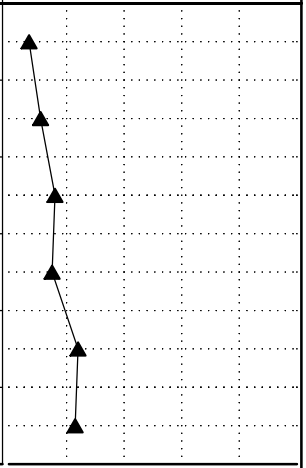
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-94

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP) WITH TRACE OF LIMEROCK FRAGMENTS AND ROOTS	2	3	4	4	7
		2	ORANGE AND BROWN FINE SAND (SP)	4	5	6	7	11
5		3		6	8	8	8	16
		4		7	7	8	9	15
		5		10	11	13	12	24
10		6		10	11	12	12	23

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

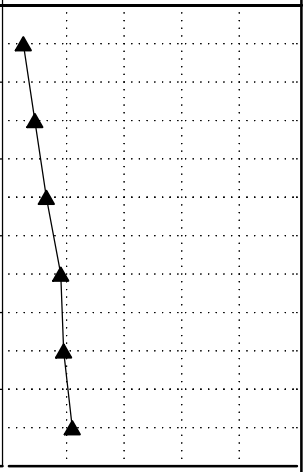
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-95

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN TO REDDISH BROWN FINE SAND (SP)	1	2	3	5	5
		2		4	4	5	5	9
5		3	ORANGE AND BROWN FINE SAND (SP)	4	6	7	7	13
		4		7	8	10	11	18
		5		10	10	9	11	19
10		6		12	11	11	13	22

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

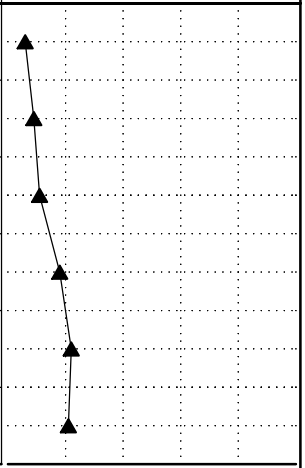
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-96

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP)	2	3	3	4	6
		2	ORANGE AND BROWN FINE SAND (SP)	3	4	5	5	9
5		3		3	5	6	6	11
		4		7	8	10	11	18
		5		10	10	12	13	22
10		6		9	10	11	13	21

▲ SPT N VALUE ▲
20 40 60 80



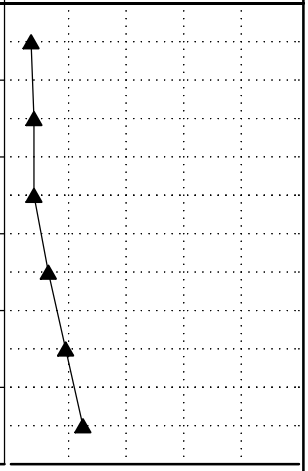
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-97

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN FINE SAND (SP) WITH TRACE OF ROOTS	2	3	4	5	7
		2	ORANGE AND BROWN FINE SAND (SP)	4	4	4	4	8
5		3		4	3	5	6	8
		4		5	6	7	8	13
		5		7	9	10	10	19
10		6		10	12	13	15	25



Boring Terminated at 12.0 feet.

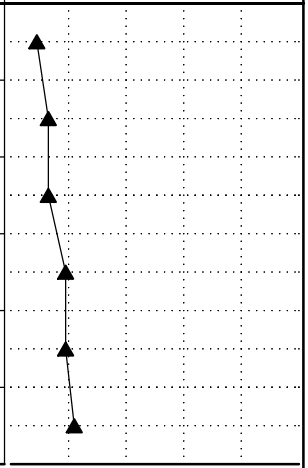
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-98

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN TO LIGHT BROWN FINE SAND (SP)	3	4	5	5	9
		2		4	6	7	8	13
5		3		6	6	7	7	13
		4		8	9	10	10	19
		5		8	8	11	12	19
10		6		10	11	11	13	22

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 12.0 feet.

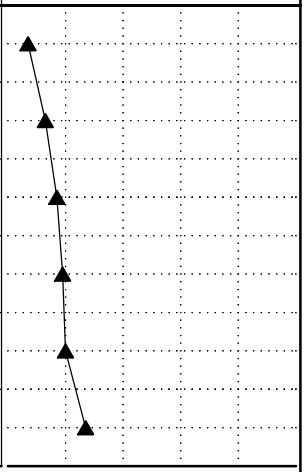
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-99

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN TO LIGHT BROWN FINE SAND (SP)	2	3	4	6	7
		2		5	6	7	8	13
5		3		8	8	9	8	17
		4		7	9	10	10	19
		5		8	9	11	13	20
10		6		10	12	15	16	27

▲ SPT N VALUE ▲
20 40 60 80



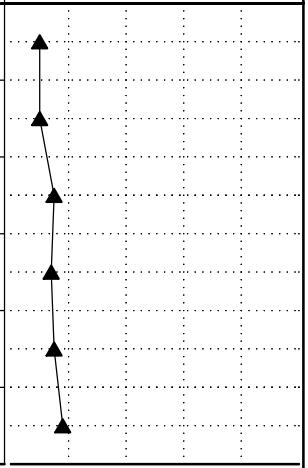
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-100

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/12/17 **COMPLETED** 10/12/17
GROUND ELEVATION _____ **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	BROWN TO LIGHT BROWN FINE SAND (SP)	3	4	6	5	10
		2		5	5	5	5	10
5		3		6	7	8	8	15
		4		7	7	7	9	14
		5		6	7	8	10	15
10		6		8	8	10	13	18



Boring Terminated at 12.0 feet.

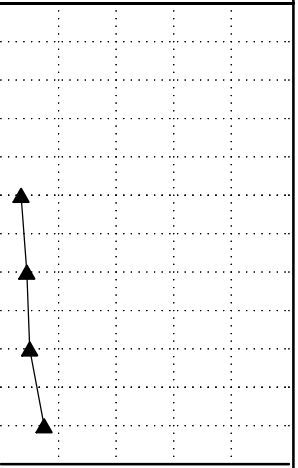
CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. PB-101

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 10/20/17 **COMPLETED** 10/20/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
ESHWL ---
LOGGED BY BM **CHECKED BY** NA
GWT --- GNE
NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0		1	GRAY FINE SAND (SP)	-	-	-	-	H.A.
		2		-	-	-	-	H.A.
5		3		2	3	4	3	7
		4		2	3	6	4	5
		5		4	5	5	7	10
10		6		7	7	8	10	15

▲ SPT N VALUE ▲
20 40 60 80



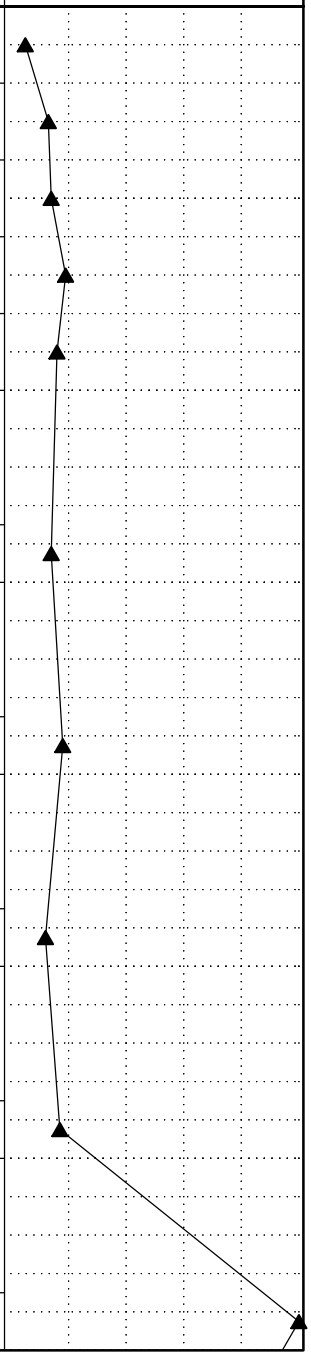
Boring Terminated at 12.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. HDD-14

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 12/28/17 **COMPLETED** 12/28/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 6.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 9.00 ft
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0	1	BROWN FINE SAND (SP)	2	2	3	4	5
	2	RED AND BROWN SANDY CLAY (CL)	5	6	7	7	13
5	3		6	6	8	8	14
	4		7	9	10	12	19
10	5	LIGHT GRAY CLAYEY FINE SAND (SC)	6	8	8	10	16
	6		6	6	8		14
15							
20	7	GRAY SANDY CLAY (CH)	7	8	10		18
25	8		4	5	7		12
30	9		8	9	8		17
35	10	GRAY SANDY CLAY (CH) WITH TRACE OF SHELL FRAGMENTS	10	22	50/0"		50/0"



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CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

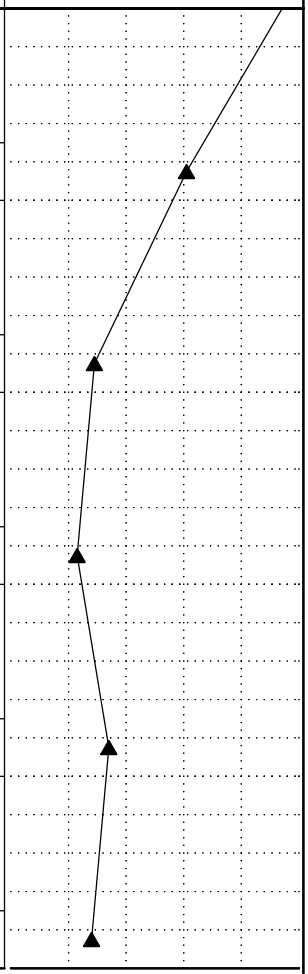
SPT BORING NO. HDD-14

CLIENT CDM Smith, Inc. **PROJECT NAME** Black Creek Water Resource Development Project

PROJECT NUMBER 71-17-127-01 **PROJECT LOCATION** Clay County, Florida

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
35								
40		11	GRAY SANDY CLAY (CH) WITH TRACE OF SHELL FRAGMENTS *(continued)*	15	30	31		61
45		12		10	13	16		29
50		13	GRAY SILTY FINE SAND (SM)	10	11	12		23
55		14	GRAY SANDY CLAY (CH)	8	15	19		34
60		15		12	13	15		28

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 60.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. HDD-15

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 12/27/17 **COMPLETED** 12/27/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 2.50 ft
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0	1	BROWN FINE SAND (SP)	2	3	3	3	6
	2	GRAY AND BROWN SANDY CLAY (CL)	3	4	5	5	9
5	3	GRAY SANDY CLAY (CL)	4	6	6	7	12
	4		6	8	9	10	17
	5		7	7	9	9	16
10							
15	6	BROWN CLAYEY FINE SAND (SC)	6	7	8		15
20	7		10	10	12		22
25	8	GREENISH GRAY CLAY (CL)	3	5	8		13
30	9		4	6	9		15
35	10		5	5	8		13

▲ SPT N VALUE ▲
20 40 60 80

SPT (PENETRATION BLOWS) W/OUT ELEV. - GINT STD US LAB.GDT - 12/28/17 15:14 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\BLACK CREEK.GPJ

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CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

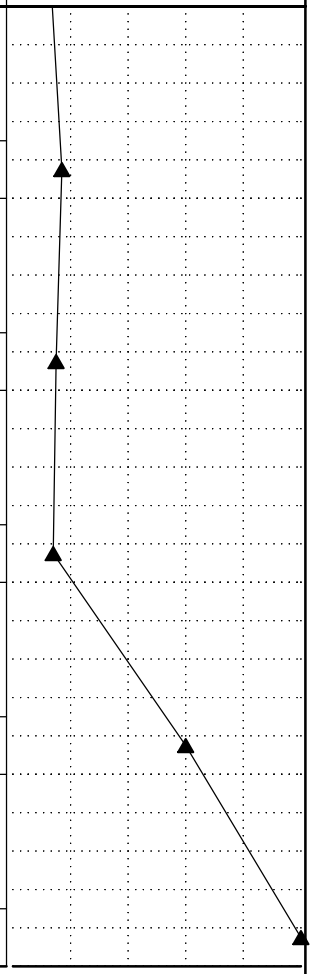
SPT BORING NO. HDD-15

CLIENT CDM Smith, Inc. **PROJECT NAME** Black Creek Water Resource Development Project

PROJECT NUMBER 71-17-127-01 **PROJECT LOCATION** Clay County, Florida

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
35								
		11	GREENISH GRAY CLAY (CL) *(continued)*	7	8	9		17
40								
		12		8	7	8		15
45								
		13		4	6	8		14
50								
		14	GREENISH GRAY SANDY CLAY (CL) WITH TRACE OF SHELL FRAGMENTS	15	28	32		60
55								
		15		14	60	50/5"		50/5"
60								

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 60.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. HDD-16

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 12/27/17 **COMPLETED** 12/27/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 2.50 ft
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0	1	BROWN AND GRAY FINE SAND (SP)	2	2	2	2	4
	2		2	3	4	3	7
5	3		3	3	4	4	7
	4		5	7	8	8	15
	5		6	8	8	8	16
10							
	6	DARK BROWN SLIGHTLY SILTY FINE SAND (SP-SM)	6	7	9		16
15							
	7	GREENISH GRAY CLAYEY FINE SAND (SC)	3	3	4		7
20							
	8	GREENISH GRAY SANDY CLAY (CL)	2	2	2		4
25	UD		-	-	-	-	-
	9		6	8	10		18
30							
	10	GRAY FINE SAND (SP)	4	8	12		20
35							

▲ SPT N VALUE ▲
20 40 60 80

SPT (PENETRATION BLOWS) W/OUT ELEV. - GINT STD US LAB.GDT - 12/27/17 14:21 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\BLACK CREEK.GPJ

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CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. HDD-16

CLIENT CDM Smith, Inc.

PROJECT NAME Black Creek Water Resource Development Project

PROJECT NUMBER 71-17-127-01

PROJECT LOCATION Clay County, Florida

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
35								
40		11	GRAY FINE SAND (SP) *(continued)*	7	8	10		18
45		12		8	10	11		21
50		13		2	2	4		6
55		14	DARK GRAY SANDY CLAY (CL)	12	15	17		32
60		15		10	13	16		29

▲ SPT N VALUE ▲
20 40 60 80

Boring Terminated at 60.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. HDD-17

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 12/26/17 **COMPLETED** 12/26/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 1.50 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 4.50 ft
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0	1	DARK TO LIGHT GRAY FINE SAND (SP)	2	2	2	4	4
	2		4	3	3	5	6
5	3		2	3	3	4	6
	4		1	1	1	1	2
	5		3	5	7	11	12
10							
	6	DARK GRAY CLAYEY FINE SAND (SC)	3	3	4		7
15							
	7		8	5	6		11
20							
	8	DARK BROWN FINE SAND (SP)	13	12	5		17
25							
	9	GREENISH GRAY SANDY CLAY (CL)	2	2	3		5
30							
	UD		-	-	-		-
	10		3	2	3		5
35							

▲ SPT N VALUE ▲
20 40 60 80

SPT (PENETRATION BLOWS) W/OUT ELEV. - GINT STD US LAB.GDT - 12/26/17 15:41 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\BLACK CREEK.GPJ

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CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

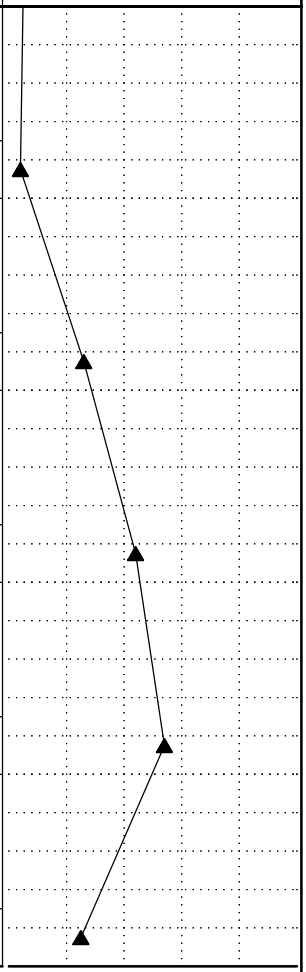
SPT BORING NO. HDD-17

CLIENT CDM Smith, Inc. **PROJECT NAME** Black Creek Water Resource Development Project

PROJECT NUMBER 71-17-127-01 **PROJECT LOCATION** Clay County, Florida

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
35								
		11	GREENISH GRAY SANDY CLAY (CL) *(continued)*	2	1	3		4
40								
		12		6	11	15		26
45								
		13		14	16	28		44
50								
		14		15	20	34		54
55								
		15		12	11	14		25
60								

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 60.0 feet.

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. HDD-18

CLIENT CDM Smith, Inc.
PROJECT NAME Black Creek Water Resource Development Project
PROJECT NUMBER 71-17-127-01
PROJECT LOCATION Clay County, Florida
DATE STARTED 12/26/17 **COMPLETED** 12/26/17
GROUND ELEVATION **HOLE SIZE** 3.0 inches
DRILLING CONTRACTOR CSI Geo, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Auto Hammer
▽ **ESHWL** 7.00 ft
LOGGED BY BM **CHECKED BY** NA
▼ **GWT** 9.00 ft
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
0	1	TAN AND DARK GRAY FINE SAND (SP)	1	3	4	3	7
	2	LIGHT GRAY AND BROWN CLAYEY FINE SAND (SC)	2	3	5	5	8
5	3		2	4	4	5	8
	4 ▽		4	4	4	5	8
	5 ▼		4	5	4	6	9
10		TAN SLIGHTLY SILTY FINE SAND (SP-SM)					
	6		9	6	3		9
15							
	7	DARK BROWN SANDY CLAY (CL)	3	5	4		9
20							
	8	GRAY FINE SAND (SP)	9	11	18		29
25							
	9	GREENISH GRAY SANDY CLAY (CL)	2	1	1		2
30							
35	10		6	3	3		6

▲ SPT N VALUE ▲
20 40 60 80

(Continued Next Page)

CSI Geo, Inc.
2394 St. Johns Bluff Road
Jacksonville, FL 32246
Telephone: 904-641-1993
Fax: 904-645-0057

SPT BORING NO. HDD-18

CLIENT CDM Smith, Inc.

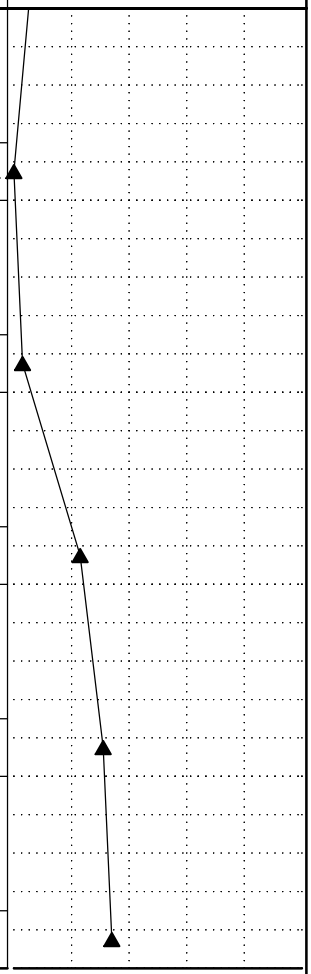
PROJECT NAME Black Creek Water Resource Development Project

PROJECT NUMBER 71-17-127-01

PROJECT LOCATION Clay County, Florida

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	1st 6"	2nd 6"	3rd 6"	4th 6"	(N VALUE)
35								
40		11	GREENISH GRAY SANDY CLAY (CL) *(continued)*	1/8"	-	W.O.H.		W.O.H.
45		12		1	1	2		3
50		13		12	7	16		23
55		14	GRAY CLAYEY FINE SAND (SC)	10	10	21		31
60		15		8	14	20		34

▲ SPT N VALUE ▲
20 40 60 80



Boring Terminated at 60.0 feet.

Appendix B

CDM Smith Boring Logs

CDM Smith

BOREHOLE LOG
HDD-1

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 69
Drilling Method/Rig: Mud Rotary/BR-2500
Total Depth (ft.): 40
Drillers: Shannon
Depth to Initial Water Level (ft-bgs): 2'
Drilling Date: Start: 9-28-17 **End:** 9-28-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: N/A
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			69.0					
			0					
AU	S-1	24/0						
AU	S-2	24/0						
SPT	S-3	24/20	64.0 / 5	5	2 2 3 6			Brown Fine Silty SAND (SM), Loose, Wet.
SPT	S-4	24/10		14	5 8 6 8		SM	Tan Fine Silty SAND (SM), Loose, Wet.
SPT	S-5	24/12		16	9 8 8 10			Brown Fine Silty SAND (SM), Loose, Wet.
			59.0 / 10					
SPT	S-6	18/18	54.0	22	7 11 11			Gray Fine Silty SAND (SM), Medium Dense, Wet.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.

Reviewed by: JAC **Date:** 10-13-17

CDM Smith

BOREHOLE LOG
HDD-1

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			54.0 / 15		16		SM	
SPT	S-7	18/18		15	3 5 10		CL	Gray CLAY (CL), Some Shell, Low Plasticity, Stiff to Very Stiff, Wet.
			49.0 / 20					
SPT	S-8	18/18		33	11 13 20		SM	Olive Green, Silty SAND (SM), Trace Shell, Dense, Moist.
			44.0 / 25					
SPT	S-9	11/11		>50	13 50/5"		SP-SM	Gray SAND (SP-SM), with Silt , Very Dense, Moist.
			39.0 / 30					
SPT	S-10	18/18		15	7 6 9		SM	Olive Green, Silty SAND (SM), Medium Dense, Moist.
			34.0 / 35					
					22		CL	

BOREHOLE BLACK CREEK FORMATTING - BJG LOGS.GPJ CDM_CORP.GDT 1/15/18

CDM Smith

BOREHOLE LOG
HDD-1

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
SPT	S-11	18/18	29.0 / 40	48	21 27		CL	Olive Green CLAY (CL), Little Sand, Hard, Moist.
								Boring Terminated at 40 Feet Below Ground Surface.
			24.0 / 45					
			19.0 / 50					
			14.0 / 55					
			9.0 / 60					

CDM Smith

BOREHOLE LOG
HDD-2

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 63
Drilling Method/Rig: Mud Rotary/BR-2500
Total Depth (ft.): 60
Drillers: Taylor
Depth to Initial Water Level (ft-bgs): 4'
Drilling Date: Start: 9-28-17 **End:** 9-28-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: PP
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			63.0					
			0					
AU	S-1	24/0					SP	
AU	S-2	24/0						
SPT	S-3	24/20	58.0 / 5	8	2, 5, 3, 3			Gray Fine SAND (SP), Poorly Graded, Loose, Wet.
SPT	S-4	24/24		14	4, 5, 9, 13		CH	Gray Sandy CLAY (CH), High Plasticity, Stiff, Wet.
SPT	S-5	24/24		44	15, 21, 23, 30			Gray Fine Silty SAND (SM), Dense, Wet.
			53.0 / 10				SM	
SPT	S-6	18/16		6	6, 4, 2			Dark Brown Fine Silty SAND (SM), Loose, Wet.
			48.0					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
- HSA - Hollow Stem Auger
- SSA - Solid Stem Auger
- HA - Hand Auger
- AR - Air Rotary
- DTR - Dual Tube Rotary
- FR - Foam Rotary
- MR - Mud Rotary
- RC - Reverse Circulation
- CT - Cable Tool
- JET - Jetting
- D - Driving
- DTC - Drill Through Casing

SAMPLING TYPES:
- AS - Auger/Grab Sample
- CS - California Sampler
- BX - 1.5" Rock Core
- NX - 2.1" Rock Core
- GP - Geoprobe
- HP - Hydro Punch
- SS - Split Spoon
- ST - Shelby Tube
- WS - Wash Sample

OTHER:
- AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.
PP = Pocket Pen

Reviewed by: JAC **Date:** 10-13-17

BOREHOLE BLACK CREEK FORMATTING - BJG LOGS.GPJ CDM_CORP.GDT 1/15/18

CDM Smith

BOREHOLE LOG
HDD-2

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			48.0 / 15				SM	
SPT	S-7	18/18		60	10 15 45			Gray and Black Speckled Silty SAND (SM), Very Dense, Moist.
			43.0 / 20					
SPT	S-8	5/5		>50	50/5"		SC	Gray and Black Speckled Fine to Coarse Clayey SAND (SC), Trace Shell, Well Graded, Very Dense, Moist.
SPT	S-9	18/18		35	34 11 24		CH	Gray CLAY (CH), Some Rock Fragments, High Plasticity, Hard, Moist.
			38.0 / 25				SC	
SPT	S-10	18/18		15	6 6 9			Olive Green, Clayey SAND (SC), Medium Dense, Wet. PP = 3.0 tsf
			33.0 / 30					
SPT	S-11	18/18		34	13 13 19			Gray and Black Speckled Silty SAND (SM), Dense, Moist. PP = 2.0 tsf
			28.0 / 35				SM	
					27			

CDM Smith

BOREHOLE LOG
HDD-2

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
SPT	S-12	12/12	23.0 / 40	>50	50/6"		SM	Gray and Black Speckled Silty SAND (SM), Trace Shell, Very Dense, Moist.
SPT	S-13	18/18	18.0 / 45	71	15 38 33		SM	Gray and Black Speckled Silty SAND (SM), Very Dense, Moist.
SPT	S-14	18/18	13.0 / 50	35	10 15 20		SC	Olive Green, Clayey SAND (SC), Dense, Moist.
SPT	S-15	18/18	8.0 / 55	25	11 12 13		SC	Olive Green Clayey SAND (SC), Medium Dense, Moist. PP = 3.0 tsf
SPT	S-16	18/18	3.0 / 60	30	9 12 18		SC	Olive Green, Clayey SAND (SC), Medium Dense to Dense, Moist.
								Boring Terminated at 60 Feet Below Ground Surface.

CDM Smith

BOREHOLE LOG
HDD-3

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 61
Drilling Method/Rig: Mud Rotary/BR-2500
Total Depth (ft.): 60
Drillers: Taylor & Shannon
Depth to Initial Water Level (ft-bgs): 8'
Drilling Date: Start: 9-27-17 **End:** 9-27-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: PP
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			61.0					
AU	S-1	24/0	0				SP	Brown and Tan Fine SAND (SP), Moist.
AU	S-2	24/0						
SPT	S-3	24/24	56.0 / 5	5	2 2 3 3			Tan and Orange SAND (SP), Little Clay, Poorly Graded, Loose, Moist.
SPT	S-4	24/24		5	2 3 2 2			Gray Fine SAND (SP), Poorly Graded, Loose, Moist. PP = 0.5 tsf
							OH	Black CLAY (OH), High Plasticity, Loose, Moist to Wet (Muck).
SPT	S-5	24/24	51.0 / 10	12	2 7 5 7		SM	Gray and Black Silty SAND (SM), Trace Wood, Medium Dense, Wet.
SPT	S-6	18/16	46.0	7	5 4 3			Gray Fine Silty SAND (SM), Little Clay, Loose, Wet.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
- HSA - Hollow Stem Auger
- SSA - Solid Stem Auger
- HA - Hand Auger
- AR - Air Rotary
- DTR - Dual Tube Rotary
- FR - Foam Rotary
- MR - Mud Rotary
- RC - Reverse Circulation
- CT - Cable Tool
- JET - Jetting
- D - Driving
- DTC - Drill Through Casing

SAMPLING TYPES:
- AS - Auger/Grab Sample
- CS - California Sampler
- BX - 1.5" Rock Core
- NX - 2.1" Rock Core
- GP - Geoprobe
- HP - Hydro Punch
- SS - Split Spoon
- ST - Shelby Tube
- WS - Wash Sample

OTHER:
- AGS - Above Ground Surface

REMARKS

Hammer weight = 140 pounds, drop height = 30 inches
Split spoon = 2 inches OD, 24 inches long
Surface elevations noted are approximate based upon survey contours.
PP = Pocket Pen

Reviewed by: JAC **Date:** 10-13-17

CDM Smith

BOREHOLE LOG
HDD-3

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			46.0 / 15				SM	
							GW	Gray Sandy GRAVEL (GW), Some Shell, Well Graded, Medium Dense, Wet, Angular, Elongated.
SPT	S-7	18/18		13	8 7 6			
SPT	S-8	18/16		25	11 9 16		SC	Gray and Black Speckled Clayey Sand (SC), Medium Dense, Wet.
			41.0 / 20					
							SM	Gray and Black Speckled Silty SAND (SM), Dense, Wet.
SPT	S-9	18/18		50	13 12 38			
SPT	S-10	18/18		38	43 15 23			Gray Silty SAND (SM), Trace Rock Fragments, Dense, Moist. PP = 3.0 tsf
			36.0 / 25					
							MH	
SPT	S-11	18/18		22	8 10 12			Olive Green Sandy SILT (MH), High Plasticity, Very Stiff, Moist.
			31.0 / 30					
SPT	S-12	18/18		26	9 10 16			Olive Green Sandy SILT (MH), High Plasticity, Very Stiff, Moist. PP = 2.5 tsf
			26.0 / 35					
							SM	
					15			

CDM Smith

BOREHOLE LOG
HDD-3

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
SPT	S-13	18/18	21.0 / 40	75	25 50		SM	Gray and Black Speckled Silty SAND (SM), Very Dense, Moist, Partially Cemented.
SPT	S-14	18/18	16.0 / 45	28	8 11 17		SC	Olive Green Clayey SAND (SC), Medium Dense, Wet.
SPT	S-15	18/18	11.0 / 50	17	7 6 11			Olive Green Clayey SAND (SC), Medium Dense, Wet.
SPT	S-16	18/18	6.0 / 55	28	9 13 15			Olive Green Clayey SAND (SC), Medium Dense, Wet.
SPT	S-17	18/18	1.0 / 60	24	7 11 13			Olive Green Clayey SAND (SC), Medium Dense, Wet.
								Boring Terminated at 60 Feet Below Ground Surface.

CDM Smith

BOREHOLE LOG
HDD-4

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 68
Drilling Method/Rig: Mud Rotary/BR-2500
Total Depth (ft.): 40
Drillers: Shannon
Depth to Initial Water Level (ft-bgs): 2'
Drilling Date: Start: 9-27-17 **End:** 9-27-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: PP
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			68.0 0					
SPT	S-1	24/23		8	2 3 5 6		SP	Gray and Tan Fine SAND (SP), Poorly Graded, Loose, Moist.
SPT	S-2	24/20		7	4 3 4 7		SC	Gray and Orange Clayey SAND (SC), Loose, Wet.
SPT	S-3	24/24	63.0 5	14	7 7 7 8		SP	Tan and Reddish Orange, Fine SAND (SP), Little Clay, Medium Dense, Wet.
SPT	S-4	24/24		17	6 7 10 13		SC	Gray and Tan Clayey SAND (SC), Medium Dense, Wet.
SPT	S-5	24/24	58.0 10	23	7 9 14 11		SP	Gray and Orange Fine to Medium SAND (SP), Poorly Graded, Medium Dense, Wet.
SPT	S-6	18/18	53.0	3	2 1 2		SM	Dark Gray Silty SAND (SM), Very Loose, Wet. PP = 0.5 tsf

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
- HSA - Hollow Stem Auger
- SSA - Solid Stem Auger
- HA - Hand Auger
- AR - Air Rotary
- DTR - Dual Tube Rotary
- FR - Foam Rotary
- MR - Mud Rotary
- RC - Reverse Circulation
- CT - Cable Tool
- JET - Jetting
- D - Driving
- DTC - Drill Through Casing

SAMPLING TYPES:
- AS - Auger/Grab Sample
- CS - California Sampler
- BX - 1.5" Rock Core
- NX - 2.1" Rock Core
- GP - Geoprobe
- HP - Hydro Punch
- SS - Split Spoon
- ST - Shelby Tube
- WS - Wash Sample

OTHER:
- AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.
PP = Pocket Pen

Reviewed by: JAC **Date:** 10-13-17

CDM Smith

BOREHOLE LOG
HDD-4

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			53.0 / 15					
SPT	S-7	18/18		49	17 29 20		SM	Gray and Black Speckled Silty SAND (SM), Dense, Moist.
			48.0 / 20					
SPT	S-8	18/18		33	8 14 19			Gray and Black Speckled Silty SAND (SM), Dense, Moist.
			43.0 / 25					
SPT	S-9	18/18		17	6 7 10		SP-SM	Dark Gray SAND (SP-SM), with Silt, Trace Gravel, Poorly Graded, Medium Dense, Wet.
			38.0 / 30					
SPT	S-10	18/18		75	11 24 51		CH	Gray and Black Speckled CLAY (CH), Little Sand, Trace Rock Fragments, High Plasticity, Hard, Moist.
			33.0 / 35					
					12			

CDM Smith

BOREHOLE LOG
HDD-4

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
SPT	S-11	18/18	28.0 / 40	55	23 32		CH	
								Boring Terminated at 40 Feet Below Ground Surface.
			23.0 / 45					
			18.0 / 50					
			13.0 / 55					
			8.0 / 60					

CDM Smith

BOREHOLE LOG
HDD-5

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 51
Drilling Method/Rig: Mud Rotary/BR-2500
Total Depth (ft.): 40
Drillers: Shannon
Depth to Initial Water Level (ft-bgs): 3.5'
Drilling Date: Start: 10-4-17 **End:** 10-4-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: PP
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			51.0 0					
AU	S-1	24/0					SP	Light Gray Fine SAND (SP), Poorly Graded.
AU	S-2	24/0						Dark Brown Fine SAND (SP), Trace Clay, Poorly Graded.
SPT	S-3	24/20	46.0 5	2	1 1 1 2			Tan Fine SAND (SP), Poorly Graded, Very Loose, Wet.
SPT	S-4	24/18		10	1 2 8 8			Dark Gray Fine SAND (SP), Poorly Graded, Medium Dense, Wet.
SPT	S-5	24/24		3	6 2 1 6			Dark Gray Fine SAND (SP), Poorly Graded, Very Loose, Wet.
			41.0 10					
SPT	S-6	18/12	36.0	23	11 14 9		SP-SM	Dark Brown Fine SAND (SP-SM), with Silt, Poorly Graded, Medium Dense, Wet.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.
PP = Pocket Pen

Reviewed by: JAC **Date:** 10-13-17

CDM Smith

BOREHOLE LOG
HDD-5

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			36.0 / 15				SP-SM	
SPT	S-7	18/18	31.0 / 20	18	7 8 10		CH	Yellowish Gray CLAY (CH), Some Sand, High Plasticity, Very Stiff, Moist.
SPT	S-8	18/18	26.0 / 25	49	14 24 25			Yellowish Gray, CLAY (CH), Little Sand, High Plasticity, Hard, Moist.
SPT	S-9	18/18	21.0 / 30	32	7 14 18		SM	Gray Silty SAND (SM), Dense, Moist. PP = 4.25 tsf
SPT	S-10	18/18	16.0 / 35	29	7 12 17			Olive Green Silty SAND (SM), Medium Dense, Moist.
					10		SP	Olive Green Fine SAND (SP), Little Silt, Poorly Graded, Dense, Moist.

CDM Smith

BOREHOLE LOG
HDD-5

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
SPT	S-11	18/18	11.0 40	35	12 23		SP	
			6.0 45					Boring Terminated at 40 Feet Below Ground Surface.
			1.0 50					
			-4.0 55					
			-9.0 60					

CDM Smith

BOREHOLE LOG
HDD-6

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 49
Drilling Method/Rig: Mud Rotary/BR-2500
Total Depth (ft.): 60
Drillers: Shannon
Depth to Initial Water Level (ft-bgs): 8'
Drilling Date: Start: 10-4-17 **End:** 10-4-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: PP
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			49.0 0					
AU	S-1	24/0					SP	Dark Brown Fine SAND (SP), Poorly Graded, Moist.
AU	S-2	24/0						Tan Fine SAND (SP), Poorly Graded, Moist.
SPT	S-3	24/16	44.0 5	5	1 2 3 2			Tan Fine SAND (SP), Poorly Graded, Loose, Moist.
SPT	S-4	24/20		4	2 2 2 2			Tannish Gray Fine SAND (SP), Poorly Graded, Loose, Moist to Wet.
SPT	S-5	24/24		25	4 7 18 16		SP-SM	Brownish Gray Fine SAND (SP-SM), with Silt, Poorly Graded, Medium Dense, Wet.
			39.0 10					
SPT	S-6	18/15	34.0	5	2 2 3		SW	Gray Fine to Medium SAND (SW), Trace Clay, Well Graded, Loose, Wet.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.
PP = Pocket Pen

Reviewed by: JAC **Date:** 10-13-17

CDM Smith

BOREHOLE LOG
HDD-6

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			34.0 / 15				SW	
SPT	S-7	18/18		33	9 16 17		CL	Greenish Gray CLAY (CL), Low Plasticity, Hard, Moist.
			29.0 / 20					
SPT	S-8	5/5		>50	50/5"		SM	Gray and Light Gray Silty SAND (SM), Very Dense, Moist.
			24.0 / 25					
SPT	S-9	18/18		50	12 24 26			Gray Silty SAND (SM), Dense, Moist.
SPT	S-10	18/18		42	9 16 26			Gray Silty SAND (SM), Dense, Moist.
			19.0 / 30					
SPT	S-11	18/18		24	9 10 14			Dark Gray Silty SAND (SM), Medium Dense, Moist. PP = 4.0 tsf
SPT	S-12	18/18		29	10 13 16			Dark Gray Silty SAND (SM), Medium Dense, Moist.
			14.0 / 35					
					10			

CDM Smith

BOREHOLE LOG
HDD-6

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
SPT	S-13	18/18	9.0	54	21 33		SM	Dark Gray Silty SAND (SM), Very Dense, Moist. PP = 1.75 tsf
			40					
SPT	S-14	18/18	4.0	37	10 14 23			Olive Green Silty SAND (SM), Dense, Moist.
			45					
SPT	S-15	18/18	-1.0	24	6 10 14		MH	Olive Green Sandy SILT (MH), High Plasticity, Very Stiff, Moist, Lightly Cemented.
			50					
SPT	S-16	18/18	-6.0	26	9 11 15			Olive Green Sandy SILT (MH), High Plasticity, Very Stiff, Moist, Lightly Cemented.
			55					
SPT	S-17	5/5		>50	50/5"		SW	Light Gray Fine to Medium SAND (SW), Trace Clay, Well Graded, Very Dense, Moist.
			-11.0					
			60					Boring Terminated at 60 Feet Below Ground Surface.

CDM Smith

BOREHOLE LOG
HDD-7

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 48
Drilling Method/Rig: Mud Rotary/BR-2500
Total Depth (ft.): 60
Drillers: Shannon
Depth to Initial Water Level (ft-bgs): 4'
Drilling Date: Start: 10-5-17 **End:** 10-5-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: PP
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			48.0					
AU	S-1	24/0	0				SP	Dark Brown Fine SAND (SP), Poorly Graded, Dry.
AU	S-2	24/0						Dark Brown Fine SAND (SP), Poorly Graded, Moist.
SPT	S-3	24/12	43.0 / 5	3	2 2 1 1			Dark Brown Fine SAND (SP), Poorly Graded, Very Loose, Wet.
SPT	S-4	24/20		3	1 1 2 3		SC	Orange Clayey SAND (SC), Very Loose, Wet.
SPT	S-5	24/24		9	3 4 5 4		SP	Tan Fine SAND (SP), Trace Clay, Poorly Graded, Very Loose, Wet. Brown Fine SAND (SP), Poorly Graded, Loose, Wet.
			38.0 / 10					
SPT	S-6	18/18	33.0	2	0 1 1			Dark Brown Fine SAND (SP), Poorly Graded, Very Loose, Wet.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.
PP = Pocket Pen

Reviewed by: JAC **Date:** 10-13-17

CDM Smith

BOREHOLE LOG
HDD-7

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			33.0 / 15				SP	
SPT	S-7	18/18		56	18 22 34			Gray Fine to Medium SAND (SP), Poorly Graded, Very Dense, Wet.
			28.0 / 20					
SPT	S-8	18/15		44	18 21 23		CL	Gray and Black Sandy CLAY (CL), Low Plasticity, Hard, Moist.
			23.0 / 25					
SPT	S-9	7/7		>50	48 50/1"		CH	Gray and Black Speckled CLAY (CH), Trace Sand, High Plasticity, Hard, Moist.
SPT	S-10	17/17		>50	24 29 50/5"		SC	Gray and Black Speckled Clayey Fine to Coarse SAND (SC), Well Graded, Very Dense, Moist.
			18.0 / 30					
SPT	S-11	18/18		57	10 21 36		SM	Olive Green Silty SAND (SM), Very Dense, Moist. PP = 1.75 tsf
			13.0 / 35					
					14			

CDM Smith

BOREHOLE LOG
HDD-7

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
SPT	S-12	18/18	8.0 / 40	53	23 30		SM	Olive Green Silty SAND (SM), Very Dense, Moist.
SPT	S-13	17/17	3.0 / 45	>50	17 39 50/5"			Olive Green Silty SAND (SM), Very Dense, Moist. PP = 3.0 tsf
SPT	S-14	18/18	-2.0 / 50	22	7 9 13			Olive Green Silty SAND (SM), Medium Dense, Moist. PP = 2.0 tsf
SPT	S-15	18/18	-7.0 / 55	26	13 11 15			Olive Green Silty SAND (SM), Medium Dense, Moist.
SPT	S-16	18/18	-12.0 / 60	47	12 18 29			Olive Green Silty SAND (SM), Dense, Moist. PP = 2.25 tsf
								Boring Terminated at 60 Feet Below Ground Surface.

CDM Smith

BOREHOLE LOG
HDD-8

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 53
Drilling Method/Rig: Mud Rotary/BR-2500
Total Depth (ft.): 40
Drillers: Shannon
Depth to Initial Water Level (ft-bgs): 3.5'
Drilling Date: Start: 10-5-17 **End:** 10-5-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: PP
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			53.0					
AU	S-1	24/0	0				SP	Dark Brown Fine SAND (SP), Poorly Graded, Moist.
AU	S-2	24/0						Dark Brown Fine SAND (SP), Poorly Graded, Wet.
SPT	S-3	24/24	48.0 / 5	9	2 4 5 6			Dark Brown Fine SAND (SP), Trace Wood, Poorly Graded, Loose, Wet.
SPT	S-4	24/24		45	6 20 25 27			Brown Fine SAND (SP), Trace Wood, Poorly Graded, Dense, Wet.
SPT	S-5	24/24	43.0 / 10	33	17 20 13 13		SP-SM	Gray Fine SAND (SP-SC), with Clay, Poorly Graded, Dense, Wet.
SPT	S-6	8/8		>50	17 50/2"		SC	Gray Clayey SAND (SC), Very Dense, Moist.
			38.0					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
- HSA - Hollow Stem Auger
- SSA - Solid Stem Auger
- HA - Hand Auger
- AR - Air Rotary
- DTR - Dual Tube Rotary
- FR - Foam Rotary
- MR - Mud Rotary
- RC - Reverse Circulation
- CT - Cable Tool
- JET - Jetting
- D - Driving
- DTC - Drill Through Casing

SAMPLING TYPES:
- AS - Auger/Grab Sample
- CS - California Sampler
- BX - 1.5" Rock Core
- NX - 2.1" Rock Core
- GP - Geoprobe
- HP - Hydro Punch
- SS - Split Spoon
- ST - Shelby Tube
- WS - Wash Sample

OTHER:
- AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.
PP = Pocket Pen

Reviewed by: JAC **Date:** 10-13-17

BOREHOLE BLACK CREEK FORMATTING - BJG LOGS.GPJ CDM_CORP.GDT 1/15/18

CDM Smith

BOREHOLE LOG
HDD-8

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			38.0 15					
SPT	S-7	18/18		91	18 41 50		SC	Greenish Clayey SAND (SC), Very Dense, Moist. PP = 2.25 tsf
			33.0 20					
SPT	S-8	15/15		100	18 50 50/3"			Gray and Olive Green Clayey SAND (SC), Very Dense, Moist.
			28.0 25					
SPT	S-9	5/5		>50	50/5"		SM	Gray Silty SAND (SM), Very Dense, Dry, Lightly Cemented. PP = 4.5 tsf
			23.0 30					
SPT	S-10	18/18		32	11 14 18		CL	Olive Green CLAY (CL), Little Sand, Low Plasticity, Hard, Moist, Lightly Cemented.
			18.0 35					
SPT	S-11	3/1		>50	50/3"		CH	

CDM Smith

BOREHOLE LOG
HDD-8

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			13.0 / 40				CH	Gray and Black Speckled CLAY (CH), High Plasticity, Hard, Dry, Moderately Cemented.
								Boring Terminated at 40 Feet Below Ground Surface.
			8.0 / 45					
			3.0 / 50					
			-2.0 / 55					
			-7.0 / 60					

CDM Smith

BOREHOLE LOG
HDD-9

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 73
Drilling Method/Rig: Mud Rotary/BR-2500
Total Depth (ft.): 30
Drillers: Shannon
Depth to Initial Water Level (ft-bgs): 2'
Drilling Date: Start: 10-2-17 **End:** 10-2-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: PP
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			73.0					
			0				SP	Brown Fine SAND (SP), Poorly Graded, Topsoil.
AU	S-1	24/0					CH	Brown CLAY (CH).
AU	S-2	24/0						
SPT	S-3	24/18	68.0 5	18	6 8 10 12			Gray and Orange CLAY (CH), High Plasticity, Very Stiff, Wet. PP = 1.0 tsf
SPT	S-4	24/16		16	4 6 10 11			Gray CLAY (CH), Trace Sand, High Plasticity, Very Stiff, Wet.
SPT	S-5	24/20		19	7 9 10 13		SM	Gray Fine Silty SAND (SM), Medium Dense, Wet.
			63.0 10					
SPT	S-6	18/15	58.0	9	3 4 5			Gray Silty SAND (SM), Loose, Wet.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
- HSA - Hollow Stem Auger
- SSA - Solid Stem Auger
- HA - Hand Auger
- AR - Air Rotary
- DTR - Dual Tube Rotary
- FR - Foam Rotary
- MR - Mud Rotary
- RC - Reverse Circulation
- CT - Cable Tool
- JET - Jetting
- D - Driving
- DTC - Drill Through Casing

SAMPLING TYPES:
- AS - Auger/Grab Sample
- CS - California Sampler
- BX - 1.5" Rock Core
- NX - 2.1" Rock Core
- GP - Geoprobe
- HP - Hydro Punch
- SS - Split Spoon
- ST - Shelby Tube
- WS - Wash Sample

OTHER:
- AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.
PP = Pocket Pen

Reviewed by: JAC **Date:** 10-13-17

CDM Smith

BOREHOLE LOG
HDD-9

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			58.0 15				SM	
SPT	S-7	18/12		3	3 1 2			Gray Silty SAND (SM), Very Loose, Wet.
			53.0 20					
							CH	Gray CLAY (CH), Trace Sand, High Plasticity, Medium Stiff, Wet.
SPT	S-8	18/18		8	2 2 6			
			48.0 25				SC	Gray Clayey Fine SAND (SC), Loose, Wet.
							SW	
SPT	S-9	14/12		>50	14 4 50/2"			Gray Fine to Coarse SAND (SW), Trace Clay, Well Graded, Very Dense, Wet.
			43.0 30					Boring Terminated at 30 Feet Below Ground Surface.
			38.0 35					

CDM Smith

BOREHOLE LOG
HDD-10

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 64
Drilling Method/Rig: Mud Rotary/BR-2500
Total Depth (ft.): 50
Drillers: Shannon
Depth to Initial Water Level (ft-bgs): 4'
Drilling Date: Start: 10-3-17 **End:** 10-3-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: PP
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			64.0					
AU	S-1	24/0	0				SP	Brown Fine SAND (SP), Poorly Graded, Moist.
AU	S-2	24/0					CL	Reddish Brown CLAY (CL), Low Plasticity, Moist.
SPT	S-3	24/20	59.0 5	6	2 2 4 4			Orange and Tan Sandy CLAY (CL), Low Plasticity, Medium Stiff, Wet.
SPT	S-4	24/24		2	0 1 1 1			Dark Brown Sandy CLAY (CL), Low Plasticity, Very Soft, Wet.
SPT	S-5	24/24		5	1 2 3 3		SP	Dark Brown Fine SAND (SP), Trace Clay, Trace Organic Material, Poorly Graded, Loose, Wet.
			54.0 10					
SPT	S-6	18/18	49.0	8	3 5 3		SM	Gray Fine Silty SAND (SM), Loose, Wet.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
- HSA - Hollow Stem Auger
- SSA - Solid Stem Auger
- HA - Hand Auger
- AR - Air Rotary
- DTR - Dual Tube Rotary
- FR - Foam Rotary
- MR - Mud Rotary
- RC - Reverse Circulation
- CT - Cable Tool
- JET - Jetting
- D - Driving
- DTC - Drill Through Casing

SAMPLING TYPES:
- AS - Auger/Grab Sample
- CS - California Sampler
- BX - 1.5" Rock Core
- NX - 2.1" Rock Core
- GP - Geoprobe
- HP - Hydro Punch
- SS - Split Spoon
- ST - Shelby Tube
- WS - Wash Sample

OTHER:
- AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.
PP = Pocket Pen

Reviewed by: JAC **Date:** 10-13-17

CDM Smith

BOREHOLE LOG
HDD-10

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			49.0 15				SM	
SPT	S-7	18/16	44.0 20	8	6 5 3		GW	Gray and White GRAVEL sized Shell Fragments (GW), Some Sand, Loose, Wet.
SPT	S-8	17/17	39.0 25	>50	9 9 50/5"		SC	Gray Fine to Medium Clayey SAND (SC), Very Dense, Wet.
SPT	S-9	15/15		>50	22 26 50/3"			Gray Fine to Coarse Clayey SAND (SC), Trace Shell, Very Dense, Wet.
SPT	S-10	18/14	34.0 30	68	18 27 41		SM	Gray Silty SAND (SM), Trace Shell, Very Dense, Wet.
SPT	S-11	18/18	29.0 35	30	12 13 17			Gray Silty SAND (SM), Medium Dense to Dense, Moist. PP = 4.5 tsf
					38			

CDM Smith

BOREHOLE LOG
HDD-10

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
SPT	S-12	18/18	24.0 / 40	65	29 36		SM	Gray and Black Speckled Silty SAND (SM), Very Dense, Dry.
SPT	S-13	18/18	19.0 / 45	77	21 27 50/5"			Gray and Black Speckled Silty SAND (SM), Very Dense, Dry.
SPT	S-14	11/11	14.0 / 50	>50	14 50/5"			Gray and Black Speckled Silty SAND (SM), Very Dense, Dry.
			9.0 / 55					Boring Terminated at 50 Feet Below Ground Surface.
			4.0 / 60					

CDM Smith

BOREHOLE LOG
HDD-11

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 73
Drilling Method/Rig: Mud Rotary/BR-2500
Total Depth (ft.): 50
Drillers: Shannon
Depth to Initial Water Level (ft-bgs): 4'
Drilling Date: Start: 9-29-17 **End:** 9-29-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: PP
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			73.0					
AU	S-1	24/0	0				SP	Orange Fine SAND (SP), Poorly Graded, Moist.
AU	S-2	24/0						
SPT	S-3	24/24	68.0 / 5	11	7 5 6 8		SC	Orange and Tan Clayey SAND (SC), Medium Dense, Wet.
SPT	S-4	24/24		29	9 12 17 21			Orange Fine Clayey SAND (SC), Medium Dense, Wet.
SPT	S-5	24/24	63.0 / 10	24	8 12 12 12			Tan and Orange Fine Clayey SAND (SC), Medium Dense, Wet.
SPT	S-6	18/18	58.0	5	6 3 2			Tan and Orange Clayey SAND (SC), Loose, Wet.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.
PP = Pocket Pen

Reviewed by: JAC **Date:** 10-13-17

CDM Smith

BOREHOLE LOG
HDD-11

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			58.0 15				SC	
SPT	S-7	18/12		41	3 2 39			Tan and Orange Clayey SAND (SC), Little Shell, Dense, Wet, Lightly Cemented.
			53.0 20					
SPT	S-8	18/18		52	22 22 30		SM	Gray Silty SAND (SM), Very Dense, Moist. PP = 4.5 tsf
			48.0 25					
SPT	S-9	16/16		>50	28 49 50/4"			Gray Silty SAND (SM), Very Dense, Moist.
			43.0 30					
SPT	S-10	10/10		>50	44 50/4"			Gray and Black Speckled Clayey SAND (SC), Very Dense, Moist.
SPT	S-11	18/18		83	25 43 40			Gray and Black Speckled Clayey SAND (SC), Very Dense, Moist.
			38.0 35				SC	
SPT	S-12	14/14		>50	31 37 50/2"			Gray and Black Speckled Clayey SAND (SC), Very Dense, Moist.
					18			

BOREHOLE BLACK CREEK FORMATTING - BJG LOGS.GPJ CDM_CORP.GDT 1/15/18

CDM Smith

BOREHOLE LOG
HDD-11

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
SPT	S-13	18/18	33.0 / 40	67	22 45		SC	Gray and Black Speckled Clayey SAND (SC), Very Dense, Moist.
SPT	S-14	18/18	28.0 / 45	34	12 16 18			Gray and Black Sandy Clayey SAND (SC), Dense, Moist.
SPT	S-15	18/18	23.0 / 50	29	8 12 17			Gray and Black Clayey SAND (SC), Medium Dense, Moist.
			18.0 / 55					Boring Terminated at 50 Feet Below Ground Surface.
			13.0 / 60					

CDM Smith

BOREHOLE LOG
HDD-12

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 61
Drilling Method/Rig: Mud Rotary/BR-2500
Total Depth (ft.): 60
Drillers: Shannon
Depth to Initial Water Level (ft-bgs): 10'
Drilling Date: Start: 10-3-17 **End:** 10-3-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: PP
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			61.0					
			0				SP	Brown Fine SAND (SP), Poorly Graded, Moist, Topsoil.
AU	S-1	24/0					SC	Orange and Tan Clayey SAND (SC), Moist.
AU	S-2	24/0						
SPT	S-3	24/14	56.0 5	1	1 0 1 1		SP	Reddish Orange Fine SAND (SP), Some Clay, Poorly Graded, Very Loose, Moist.
SPT	S-4	24/18		2	1 1 1 2		CL	Reddish Orange CLAY (CL), Some Sand, Low Plasticity, Soft, Moist.
SPT	S-5	24/18		4	2 2 2 2			Reddish Orange CLAY (CL), Some Sand, Low Plasticity, Soft, Moist. PP = 0.5 tsf
			51.0 10				SP-SM	
SPT	S-6	18/14	46.0	95	40 47 48			Gray Fine SAND (SP-SM), with Silt, Poorly Graded, Dense, Wet.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.
PP = Pocket Pen

Reviewed by: JAC **Date:** 10-13-17

BOREHOLE BLACK CREEK FORMATTING - BJG LOGS.GPJ CDM_CORP.GDT 1/15/18

CDM Smith

BOREHOLE LOG
HDD-12

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			46.0 / 15				SP-SM	
SPT	S-7	18/18		55	16 21 34		SM	Gray Silty SAND (SM), Very Dense, Dry. PP = 4.5 tsf
			41.0 / 20					
SPT	S-8	18/18		40	12 14 26			Gray Silty SAND, Dense, Dry. PP = 4.5 tsf
SPT	S-9	11/11		>50	28 50/5"			Gray Silty SAND (SM), Very Dense, Dry.
			36.0 / 25					
SPT	S-10	13/13		>50	29 27 50/1"			Gray Silty SAND (SM), Very Dense, Dry. PP = 3.0 tsf
SPT	S-11	18/18	31.0 / 30	63	13 22 41			Gray and Black Speckled Silty SAND (SM), Very Dense, Dry.
SPT	S-12	15/13		>50	14 21 50/3"			Dark Gray Silty SAND (SM), Very Dense, Dry.
			26.0 / 35					
					13			

CDM Smith

BOREHOLE LOG
HDD-12

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
SPT	S-13	18/18	21.0 / 40	61	22 39		SM	Dark Gray Silty SAND (SM), Very Dense, Dry.
SPT	S-14	18/18	16.0 / 45	28	9 12 16			Olive Green Silty SAND (SM), Medium Dense, Moist.
SPT	S-15	18/18	11.0 / 50	44	12 18 26			Olive Green Silty SAND (SM), Dense, Moist.
SPT	S-16	17/17	6.0 / 55	>50	21 33 50/5"		CH	Gray Sandy CLAY (CH), High Plasticity, Hard, Moist.
SPT	S-17	18/18	1.0 / 60	47	14 17 30			Gray Sandy CLAY (CH), High Plasticity, Hard, Moist.
								Boring Terminated at 60 Feet Below Ground Surface.

CDM Smith

BOREHOLE LOG
HDD-13

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 70
Drilling Method/Rig: Mud Rotary/BR-2500
Total Depth (ft.): 30
Drillers: Shannon
Depth to Initial Water Level (ft-bgs): 4'
Drilling Date: Start: 9-29-17 **End:** 9-29-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: N/A
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			70.0					
			0					
AU	S-1	24/0						Brown Fine SAND (SP), Poorly Graded, Moist.
AU	S-2	24/0						
SPT	S-3	24/20	65.0 / 5	5	3 2 3 3			Gray and Dark Gray Fine SAND (SP), Poorly Graded, Loose, Wet.
SPT	S-4	24/24		31	6 11 20 26		SP	Tan Fine SAND (SP), Poorly Graded, Dense, Wet.
SPT	S-5	24/24		46	5 20 26 36			Gray Fine SAND (SP), Poorly Graded, Dense, Wet.
			60.0 / 10					
SPT	S-6	18/16		34	17 18 16			Dark Gray Fine SAND (SP), Poorly Graded, Dense, Wet.
SPT	S-7	18/15		24	6 11 13			Gray and Black Fine SAND (SP), Little Wood, Poorly Graded, Medium Dense, Wet.
			55.0					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
- HSA - Hollow Stem Auger
- SSA - Solid Stem Auger
- HA - Hand Auger
- AR - Air Rotary
- DTR - Dual Tube Rotary
- FR - Foam Rotary
- MR - Mud Rotary
- RC - Reverse Circulation
- CT - Cable Tool
- JET - Jetting
- D - Driving
- DTC - Drill Through Casing

SAMPLING TYPES:
- AS - Auger/Grab Sample
- CS - California Sampler
- BX - 1.5" Rock Core
- NX - 2.1" Rock Core
- GP - Geoprobe
- HP - Hydro Punch
- SS - Split Spoon
- ST - Shelby Tube
- WS - Wash Sample

OTHER:
- AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.

Reviewed by: JAC **Date:** 10-13-17

CDM Smith

BOREHOLE LOG
HDD-13

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			55.0 15				SP	
SPT	S-8	18/18		11	3 3 8			Gray Fine SAND (SP), Poorly Graded, Medium Dense, Wet.
SPT	S-9	18/18		69	18 20 49			Gray Silty SAND (SM), Very Dense, Moist.
			50.0 20					
SPT	S-10	14/14		>50	26 49 50/2"		SM	Gray and Black Speckled Silty SAND (SM), Very Dense, Moist.
			45.0 25					
SPT	S-11	18/15		60	22 21 39			Gray and Black Speckled Silty SAND (SM), Very Dense, Moist.
			40.0 30					Boring Terminated at 30 Feet Below Ground Surface.
			35.0 35					

CDM Smith

BOREHOLE LOG
JB-1

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 97
Drilling Method/Rig: Mud Rotary/MST-800
Total Depth (ft.): 25
Drillers: Shannon
Depth to Initial Water Level (ft-bgs): 2'
Drilling Date: Start: 10-6-01 **End:** 10-6-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: N/A
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			97.0					
AU	S-1	24/0	0				SP	Light Gray Fine SAND (SP), Poorly Graded, Moist. Dark Brown Fine SAND (SP), Poorly Graded, Moist.
AU	S-2	24/0					SC	Tan Clayey SAND (SC), Wet.
SPT	S-3	24/24	92.0 5	13	3 5 8 9		SM	Tan Fine Silty SAND (SM), Trace Clay, Medium Dense, Wet.
SPT	S-4	24/24		19	10 9 10 10			Light Gray Fine Silty SAND (SM), Medium Dense, Wet.
SPT	S-5	24/18		2	2 1 1 1			Brown Fine Silty SAND (SM), Very Loose, Wet.
			87.0 10					
SPT	S-6	18/15		5	3 2 3			Brown Fine Silty SAND (SM), Loose, Wet.
			82.0					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
- HSA - Hollow Stem Auger
- SSA - Solid Stem Auger
- HA - Hand Auger
- AR - Air Rotary
- DTR - Dual Tube Rotary
- FR - Foam Rotary
- MR - Mud Rotary
- RC - Reverse Circulation
- CT - Cable Tool
- JET - Jetting
- D - Driving
- DTC - Drill Through Casing

SAMPLING TYPES:
- AS - Auger/Grab Sample
- CS - California Sampler
- BX - 1.5" Rock Core
- NX - 2.1" Rock Core
- GP - Geoprobe
- HP - Hydro Punch
- SS - Split Spoon
- ST - Shelby Tube
- WS - Wash Sample

OTHER:
- AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.

Reviewed by: JAC **Date:** 10-13-17

CDM Smith

BOREHOLE LOG
JB-1

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			82.0 15					
SPT	S-7	18/15		7	3 3 4			Brown Fine Silty SAND (SM), Loose, Wet.
SPT	S-8	18/12		8	3 3 5			Brown Fine Silty SAND (SM), Loose, Wet.
			77.0 20				SM	
SPT	S-9	18/12		8	4 4 4			Brown Fine Silty SAND (SM), Loose, Wet.
			72.0 25					Boring Terminated at 25 Feet Below Ground Surface.
			67.0 30					
			62.0 35					

CDM Smith

BOREHOLE LOG
JB-2

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 97
Drilling Method/Rig: Mud Rotary/Truck Rig
Total Depth (ft.): 30
Drillers: Shannon
Depth to Initial Water Level (ft-bgs): 4'
Drilling Date: Start: 9-6-17 **End:** 9-6-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: N/A
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			97.0					
SPT	S-1	24/18	0	7	2 3 4 4		SP	Dark Brown Fine SAND (SP), Poorly Graded, Loose, Moist.
SPT	S-2	24/24		7	5 5 2 3			Dark Brown Fine SAND (SP), Little Clay, Poorly Graded, Loose, Moist.
SPT	S-3	24/24	92.0 5	12	3 5 7 7		SC	Tan Clayey SAND (SC), Medium Dense, Moist.
SPT	S-4	24/24		9	3 4 5 6		SP	Tan Fine SAND (SP), Trace Clay, Poorly Graded, Medium Dense, Wet.
SPT	S-5	24/24		10	3 5 5 5			Tan Fine SAND (SP), Poorly Graded, Medium Dense, Wet.
			87.0 10					
SPT	S-6	18/18	82.0	2	1 1 1		SP-SM	Tan Fine SAND (SP-SM), with Silt, Trace Clay, Poorly Graded, Very Loose, Wet.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.

Reviewed by: JAC **Date:** 10-13-17

CDM Smith

BOREHOLE LOG
JB-2

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			82.0 15					
SPT	S-7	18/18		4	1 2 2		SP	Tan Fine SAND (SP), Trace Clay, Poorly Graded, Loose, Wet.
SPT	S-8	18/18		9	3 4 5			Tan Fine SAND (SP), Poorly Graded, Medium Dense, Wet.
			77.0 20					
SPT	S-9	18/18		12	4 5 7			Tan Fine SAND (SP), Poorly Graded, Medium Dense, Wet.
			72.0 25					
SPT	S-10	18/18		2	2 1 1		CH	Gray CLAY (CH), Some Sand, High Plasticity, Soft, Wet.
			67.0 30					Boring Terminated at 30 Feet Below Ground Surface.
			62.0 35					

CDM Smith

BOREHOLE LOG
JB-3

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Drilling Contractor: Independent Drilling Inc.
Surface Elevation (ft.): 97
Drilling Method/Rig: Mud Rotary/Truck Rig
Total Depth (ft.): 45
Drillers: Shaun M.
Depth to Initial Water Level (ft-bgs): 5'
Drilling Date: Start: 9-6-17 **End:** 9-6-17
Abandonment Method: Grout.
Borehole Coordinates:
Field Screening Instrument: PP
See Boring Location Plan
Logged By: KNA

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			97.0					
			0					
SPT	S-1	24/12		8	1 3 5 7		SM	Gray and Dark Gray Silty SAND (SM), Loose, Moist.
SPT	S-2	24/24		4	2 2 2 5		SC	Tan, Clayey SAND (SC), loose, moist.
SPT	S-3	24/24	92.0 5	11	4 4 7 8		SM	Tan Fine Silty SAND (SM), Medium Dense, Moist to Wet.
SPT	S-4	24/24		10	3 4 6 6			Tan Fine Silty SAND (SM), Medium Dense, Wet.
SPT	S-5	24/24		9	1 5 4 3			Tan Fine Silty SAND (SM), Medium Dense, Wet.
			87.0 10					
SPT	S-6	18/18		5	2 3 2			Tan Fine Silty SAND (SM), Loose, Wet.
			82.0					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Hammer weight = 140 lbs, Hammer drop height = 30 in.,
Spoon Size = 2 in. OD and 24 in. length.
Surface elevations noted are approximate based upon survey contours.
PP = Pocket Pen

Reviewed by: JAC **Date:** 10-13-17

CDM Smith

BOREHOLE LOG
JB-3

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
			82.0 / 15					
SPT	S-7	18/18		8	3 4 4		SM	Tan Fine Silty SAND (SM), Loose, Wet.
SPT	S-8	18/18		11	4 5 6		SP-SM	Tan Fine SAND (SP-SM), with Silt, Poorly Graded, Medium Dense, Wet.
			77.0 / 20					
SPT	S-9	18/18		15	6 7 8			Tan Fine SAND (SP-SM), with Silt, Poorly Graded, Medium Dense, Wet.
			72.0 / 25					
SPT	S-10	18/18		5	0 2 3		CH	Gray CLAY (CH), Trace Sand, High Plasticity, Firm, Wet. PP = 1.5 tsf
			67.0 / 30					
SPT	S-11	18/18		4	1 2 2			Gray Sandy CLAY (CH), High Plasticity, Firm, Wet. PP = 1.25 tsf
			62.0 / 35					
					0			

CDM Smith

BOREHOLE LOG
JB-3

Client: Clay County, Florida
Project Name: Black Creek Water Resource Development
Project Location: Clay County, Florida
Project Number: 9247-221208

Sample Type	Sample Number	Sample Adv/Rec (inches)	Elev. Depth (ft.)	N-Value	Blows per 6-in	Graphic Log	USCS Designation	Material Description
SPT	S-12	18/18	57.0 / 40	3	1 2		CH	Dark Gray CLAY (CH), High Plasticity, Soft to Firm, Wet. PP = 0.5 tsf
SPT	S-13	18/14	52.0 / 45	38	15 18 20		SP	Gray Fine SAND (SP), Poorly Graded, Dense, Wet.
			47.0 / 50					Boring Terminated at 45 Feet Below Ground Surface.
			42.0 / 55					
			37.0 / 60					

Appendix C

Geotechnical Laboratory Testing Results

SUMMARY OF LABORATORY TEST RESULTS

Black Creek Water Resource Development Project
Clay County, Florida

Boring No.	Sample No.	Approximate Depth (ft)	Natural Moisture Content (%)	Organic Content (%)	Percent Passing Sieve Size (%)						Atterberg Limits		Soil Classification Symbol
					#4	#10	#40	#60	#100	#200	LL	PI	
PB-8	3	4.0 - 6.0	19		100	100	99	97	47	8			SP-SM
PB-13	4	6.0 - 8.0	19		100	100	100	98	68	40			SC
PB-15	3	4.0 - 6.0	24		100	98	97	95	54	5			SP-SM
PB-17	3	4.0 - 6.0	22							20			SM
PB-19	3	4.0 - 6.0	20							22			SM
PB-21	3	4.0 - 6.0	32							76	61	37	CH
PB-23	5	8.0 - 10.0	24		100	100	100	98	58	6			SP-SM
PB-25	3	4.0 - 6.0	21		100	100	100	97	63	10			SP-SM
PB-28	4	6.0 - 8.0	14							26	32	14	SC
PB-29	3	4.0 - 6.0	17							27			SC
PB-32	3	4.0 - 6.0	15							25			SC
PB-34	3	4.0 - 6.0	16		100	100	98	94	56	12			SP-SM
PB-37	5	8.0 - 10.0	19							22			SM
PB-41	2	2.0 - 4.0	19		100	100	99	94	60	13			SM
PB-43	4	6.0 - 8.0	17							28	37	16	SC
PB-45	2	2.0 - 4.0	16	1						12			SM
PB-51	2	2.0 - 4.0	20	2	100	100	99	91	26	9			SP-SM
PB-55	2	2.0 - 4.0	12	2	100	98	88	70	20	6			SP-SM

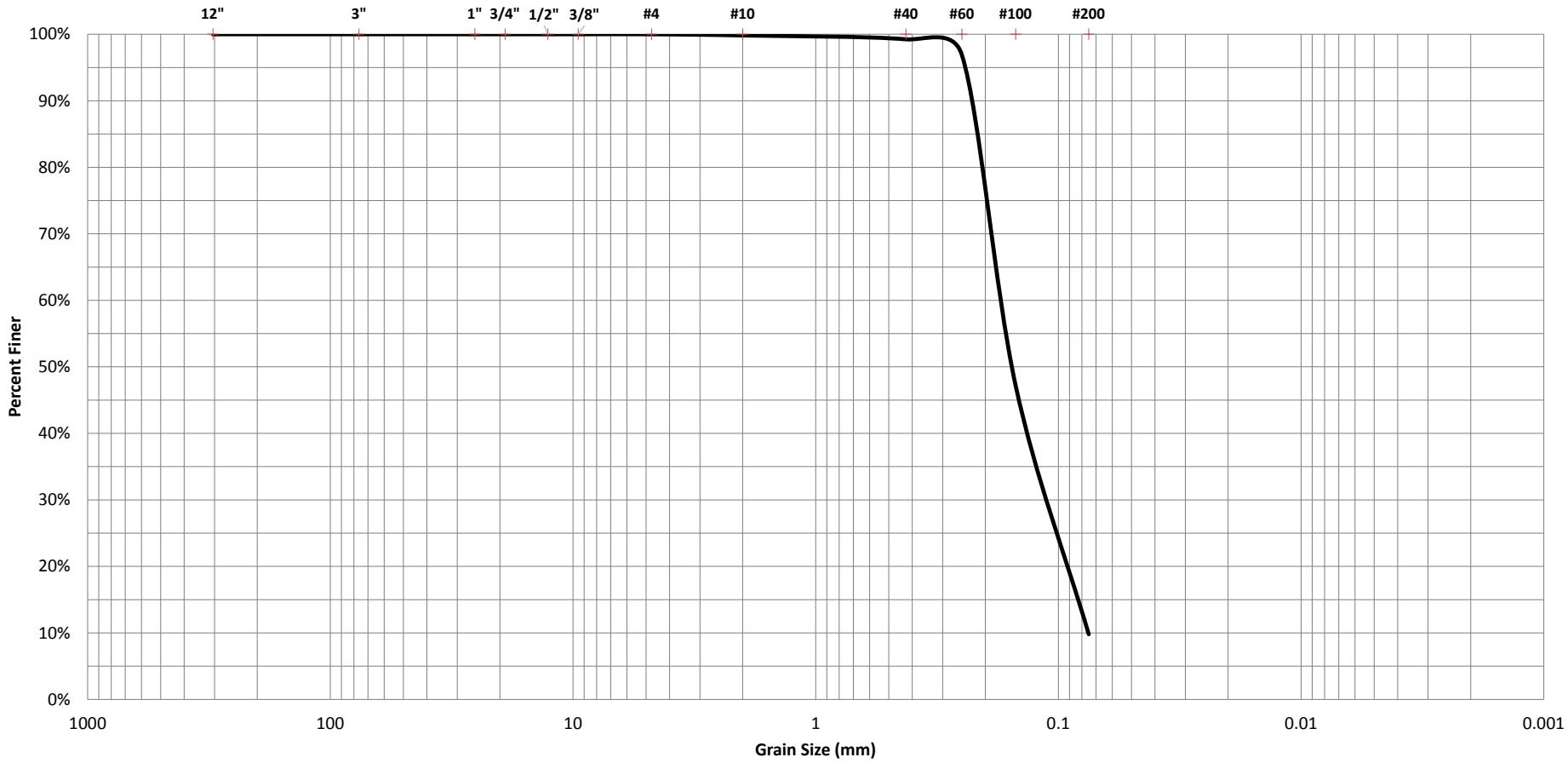
SUMMARY OF LABORATORY TEST RESULTS

Black Creek Water Resource Development Project
Clay County, Florida

Boring No.	Sample No.	Approximate Depth (ft)	Natural Moisture Content (%)	Organic Content (%)	Percent Passing Sieve Size (%)						Atterberg Limits		Soil Classification Symbol
					#4	#10	#40	#60	#100	#200	LL	PI	
PB-58	1	0.0 - 2.0	3	1						4			SP
PB-61	3	4.0 - 6.0	20		100	100	83	47	11	4			SP
PB-64	5	8.0 - 10.0	19		100	100	91	41	12	4			SP
PB-67	2	2.0 - 4.0	22		100	100	84	32	8	6			SP-SM
PB-69	1	0.0 - 2.0	23	5						7			PT
PB-72	6	10.0 - 12.0	4		100	95	81	36	7	2			SP
PB-75	2	2.0 - 4.0	3		100	100	86	34	7	3			SP
PB-77	2	2.0 - 4.0	3		100	100	88	36	6	3			SP
PB-81	2	2.0 - 4.0	4	1	100	100	86	41	10	3			SP
PB-84	1	0.0 - 2.0	4		100	100	80	37	11	4			SP
PB-87	1	0.0 - 2.0	4	2						6			SP-SM
PB-88	2	2.0 - 4.0	3	1	100	99	77	28	6	3			SP
PB-90	1	0.0 - 2.0	7	4						4			SP
PB-93	3	4.0 - 6.0	4		100	99	66	28	9	2			SP
PB-95	3	4.0 - 6.0	3		100	100	87	39	5	1			SP
PB-97	1	0.0 - 2.0	4	1						4			SP
PB-100	2	2.0 - 4.0	4		100	100	86	39	4	1			SP

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



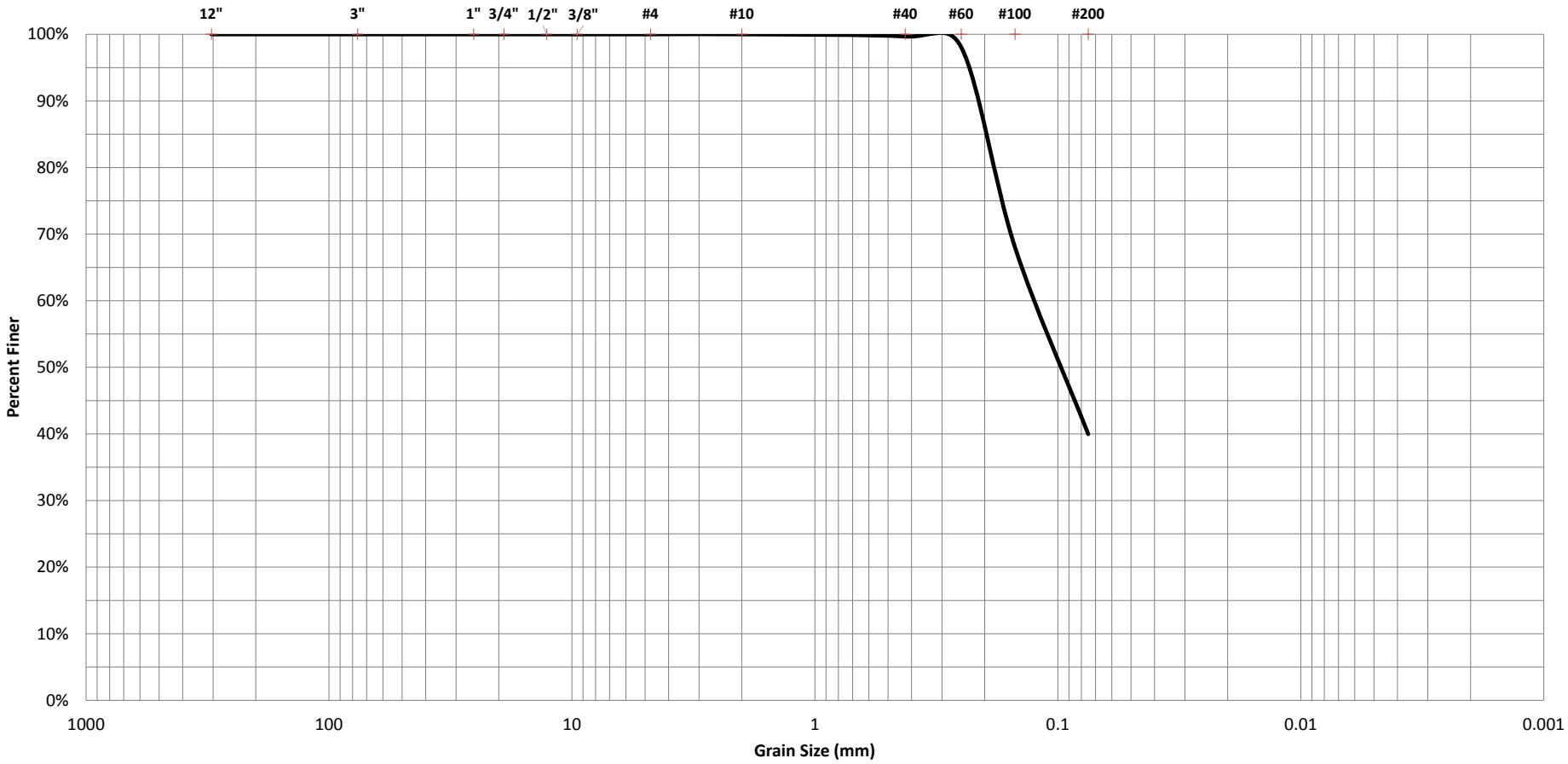
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-8 (3)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	4-6

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
19	-	-	-	LIGHT BROWN TO BROWN SLIGHTLY SILTY FINE SAND	SP-SM	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



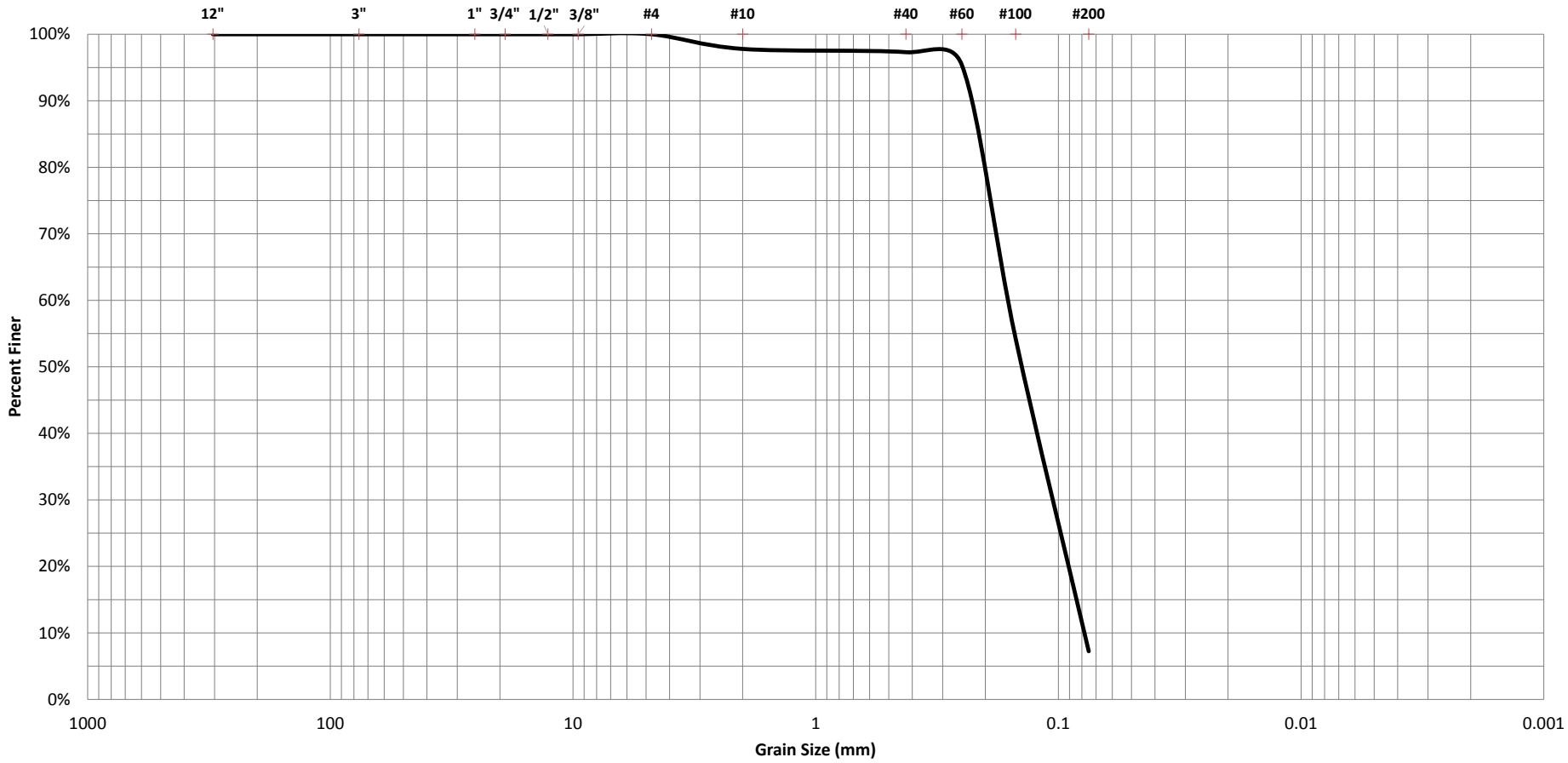
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-13 (4)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	6-8

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
19	-	-	-	BROWN CLAYEY FINE SAND	SC	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



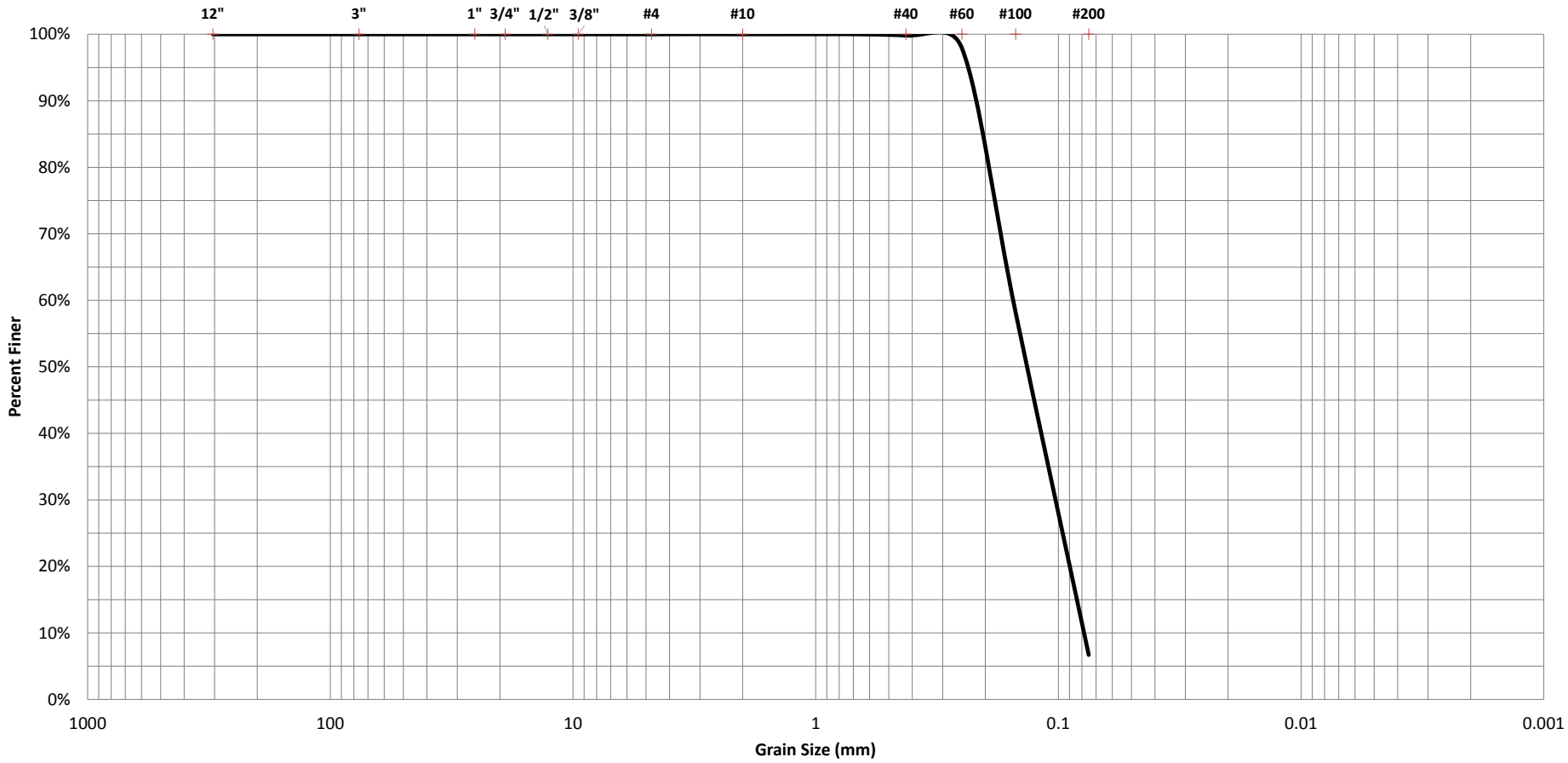
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-15 (3)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	4-6

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
24	-	-	-	DARK BROWN TO BROWN SLIGHTLY SILTY FINE SAND	SP-SM	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



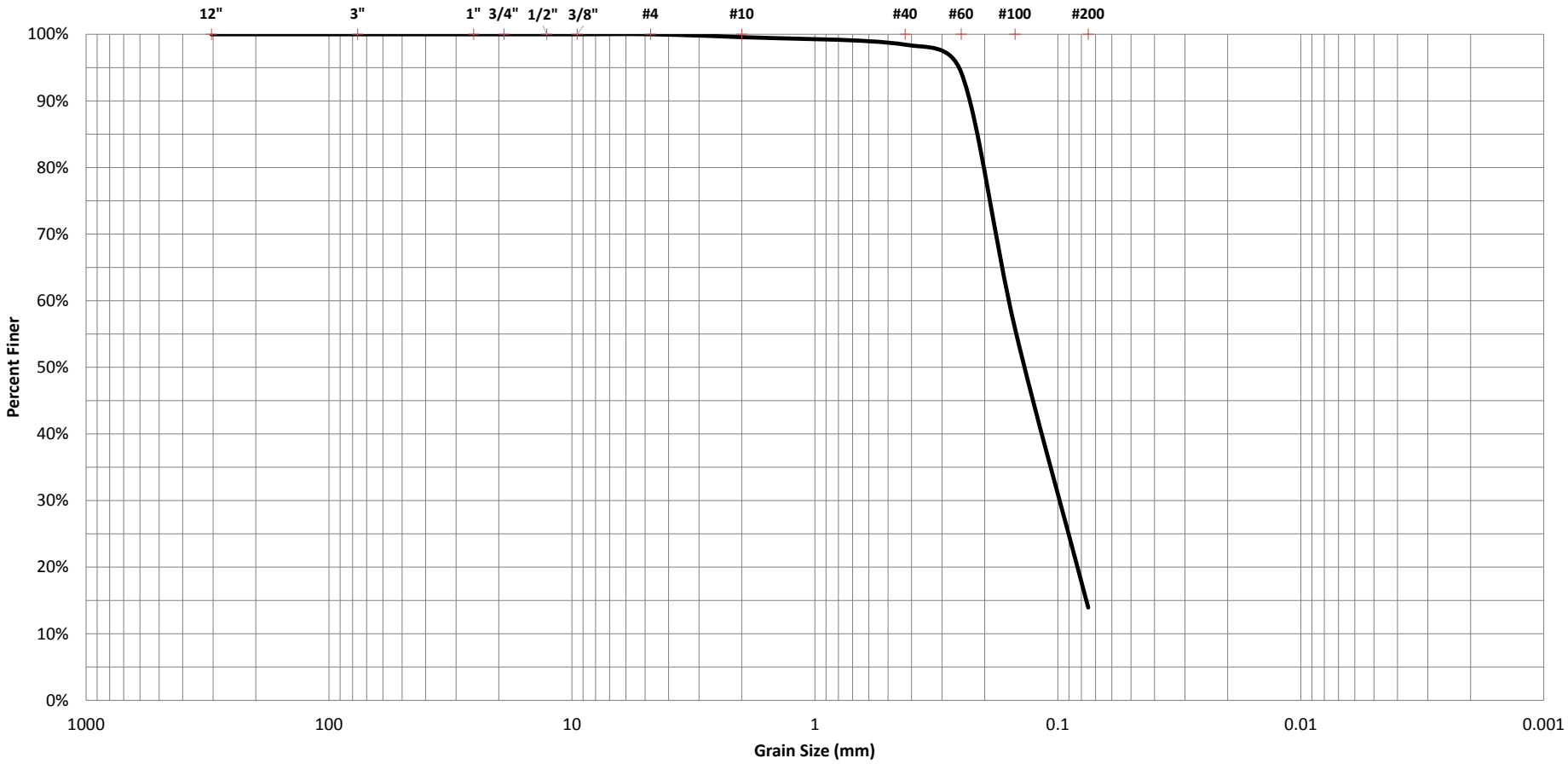
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-23 (5)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	8-10

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
24	-	-	-	BROWN SLIGHTLY SILTY FINE SAND	SP-SM	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



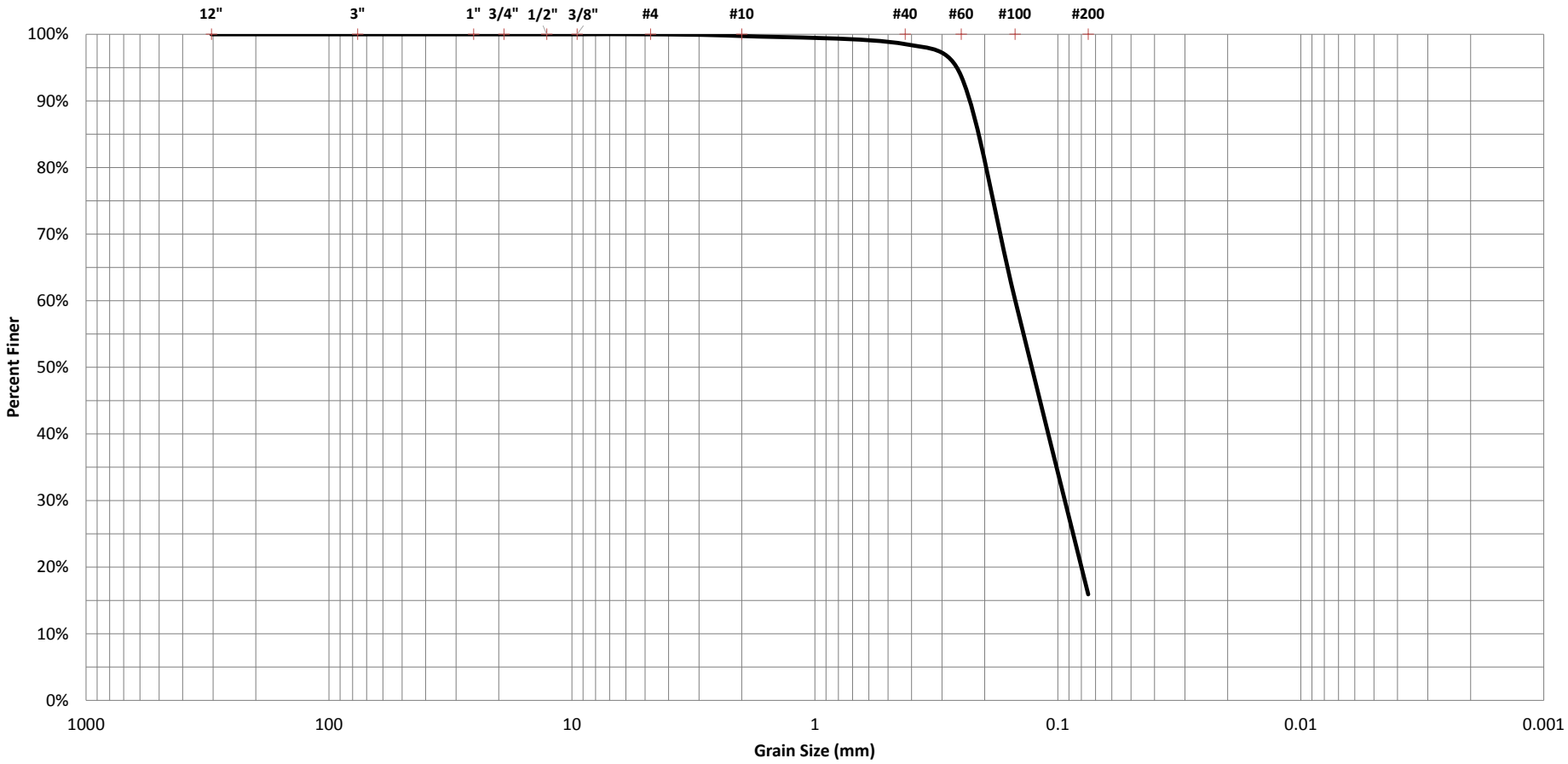
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-34 (3)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	4-6

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
16	-	-	-	BROWN SLIGHTLY SILTY FINE SAND	SP-SM	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



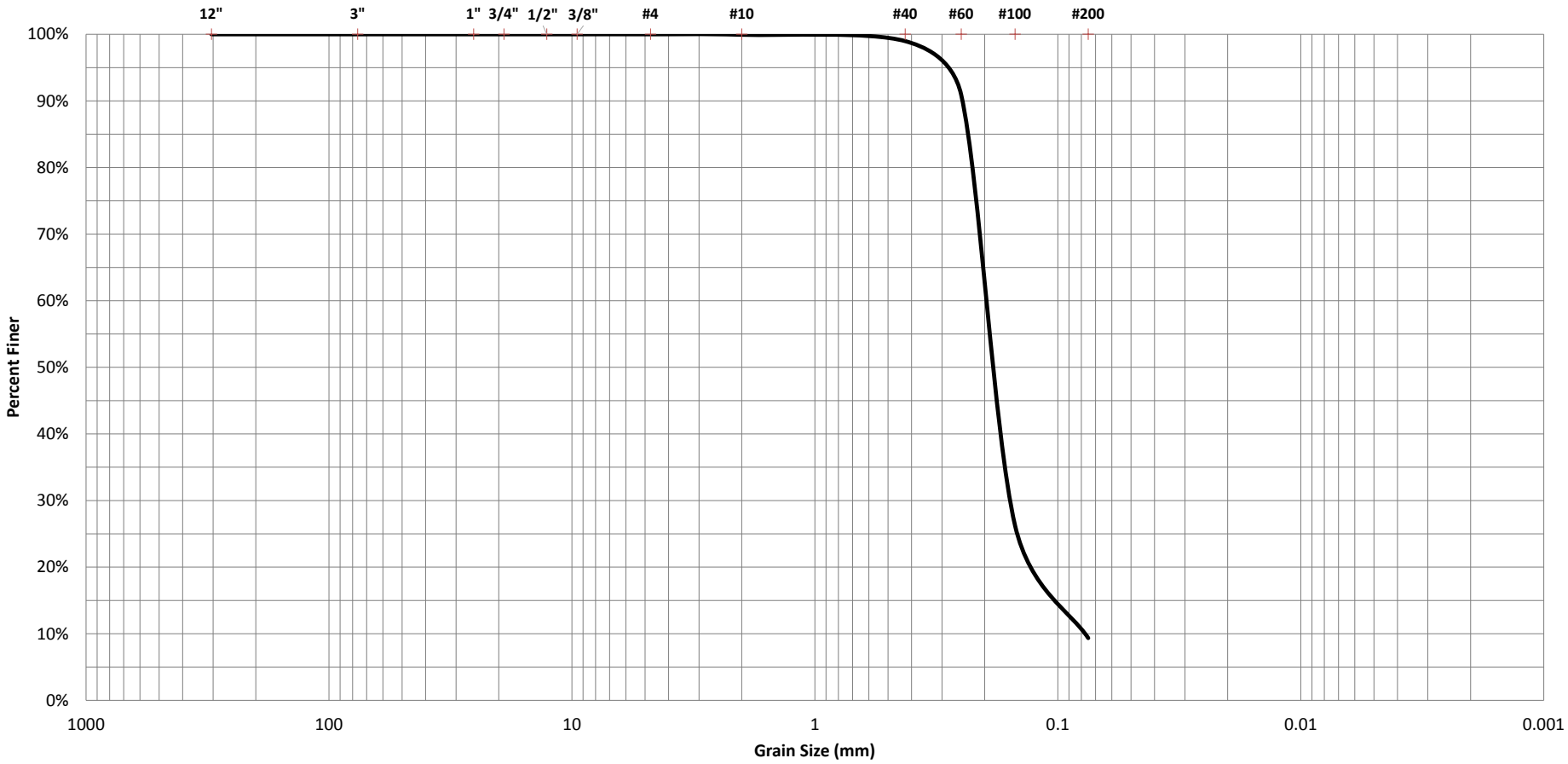
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-41 (2)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	2-4

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
19	-	-	-	DARK GRAY SILTY FINE SAND	SM	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



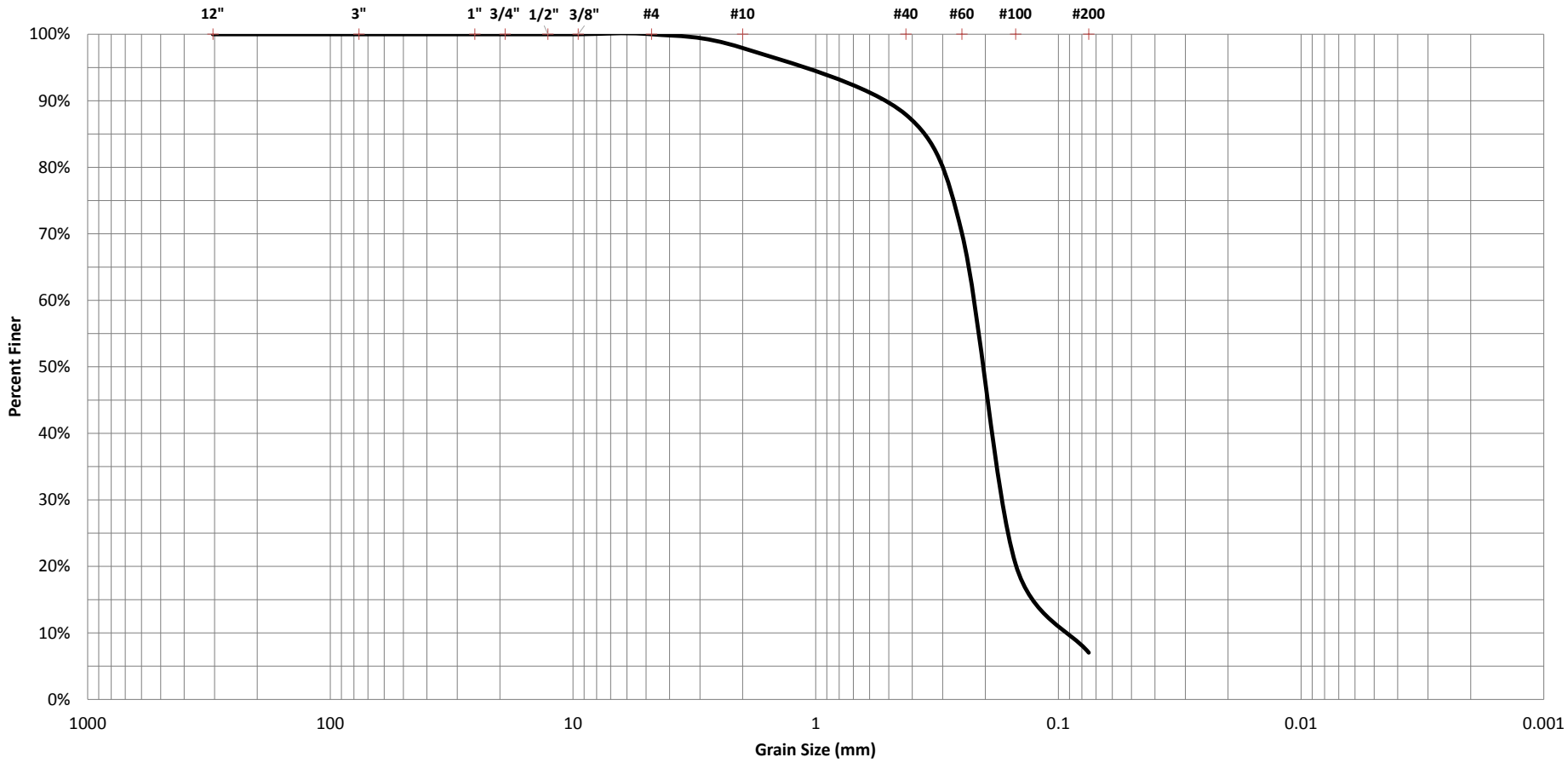
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-51 (2)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	2-4

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
20	-	-	-	DARK BROWN AND BROWN SLIGHTLY SILTY FINE SAND WITH TRACE OF ROOTS	SP-SM	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



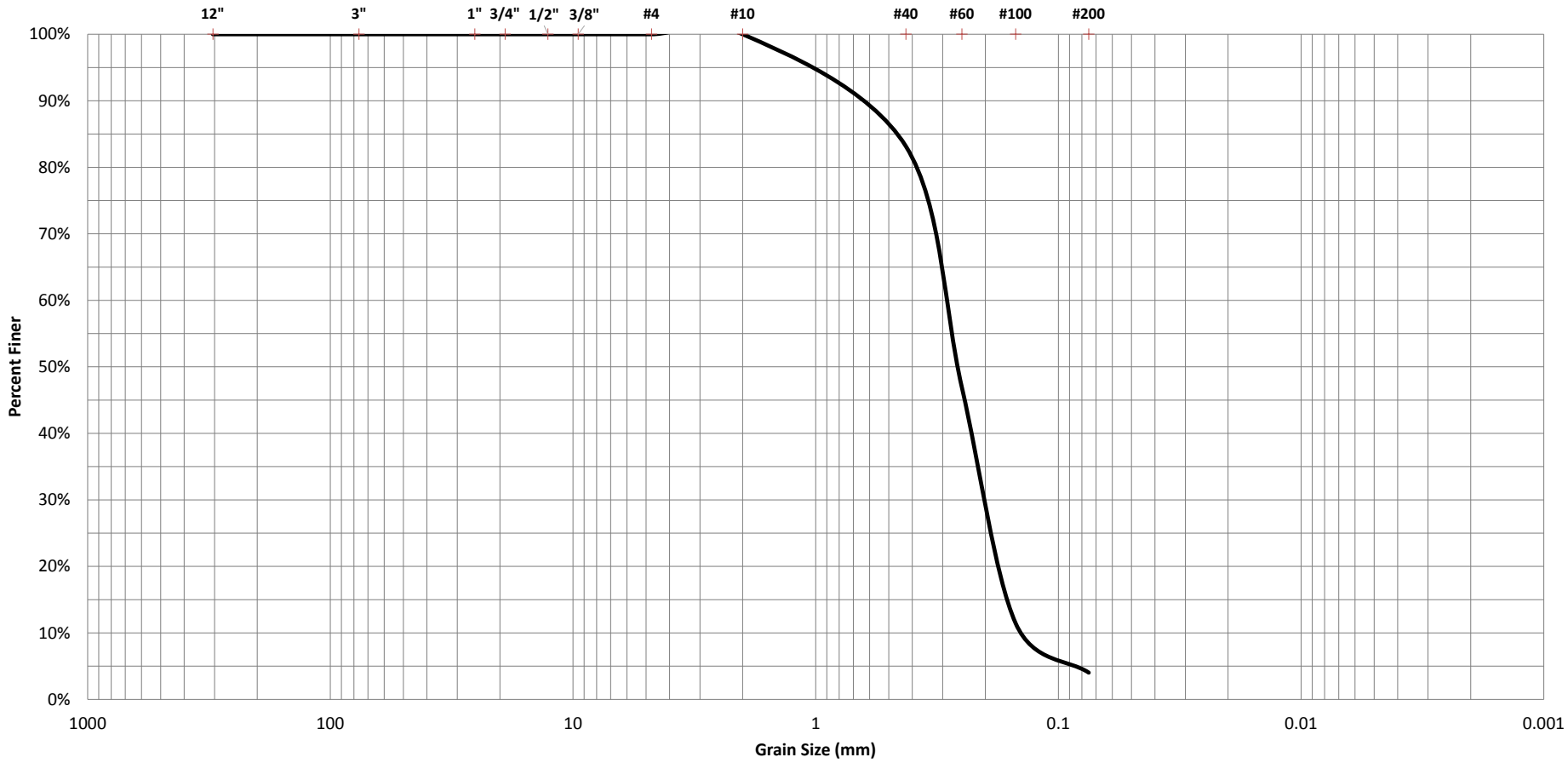
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-55 (2)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	2-4

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
12	-	-	-	LIGHT BROWN AND DARK BROWN SLIGHTLY SILTY FINE SAND	SP-SM	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



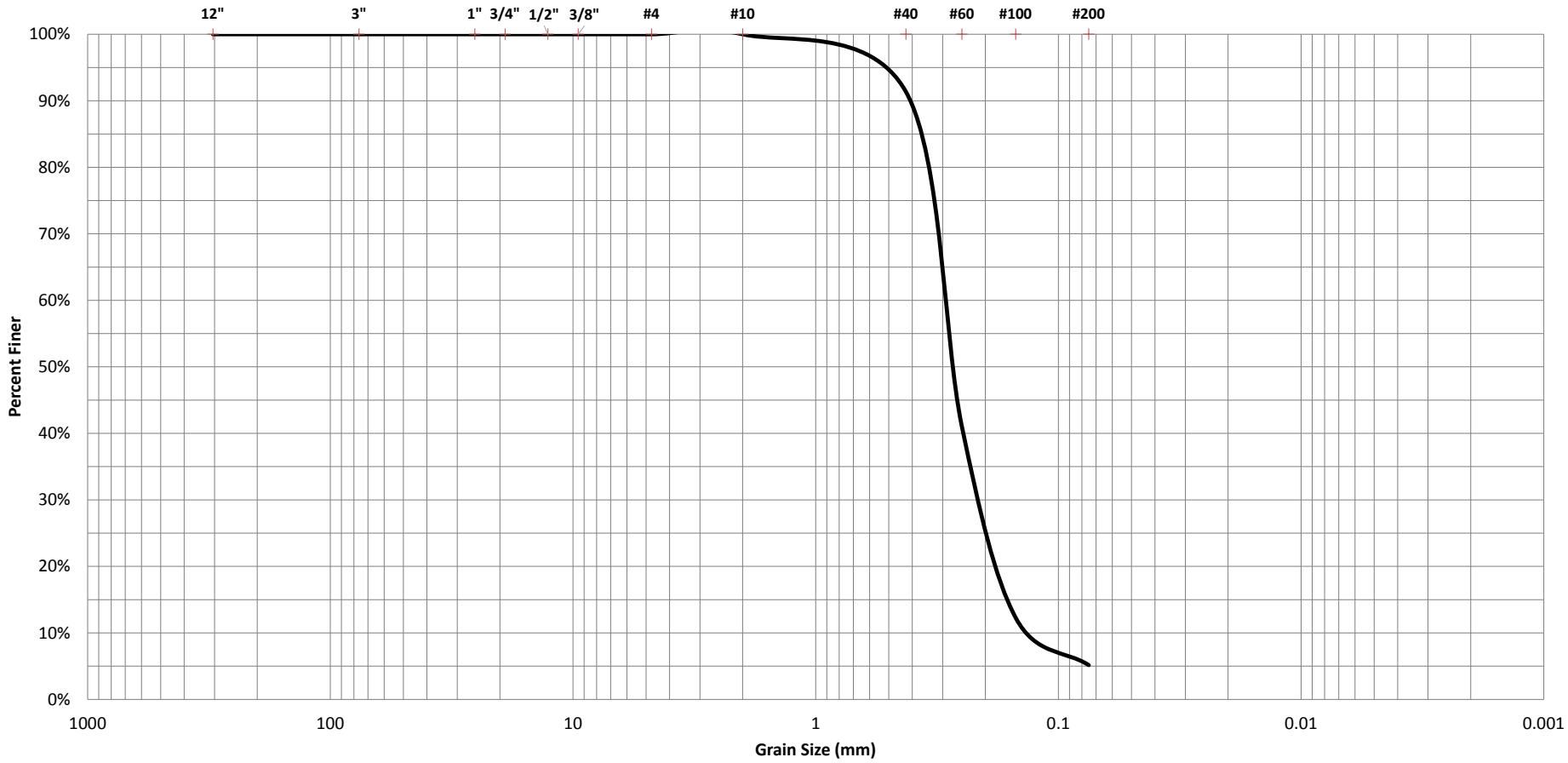
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-61 (3)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	4-6

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
20	-	-	-	DARK BROWN SLIGHTLY SILTY FINE SAND	SP-SM	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



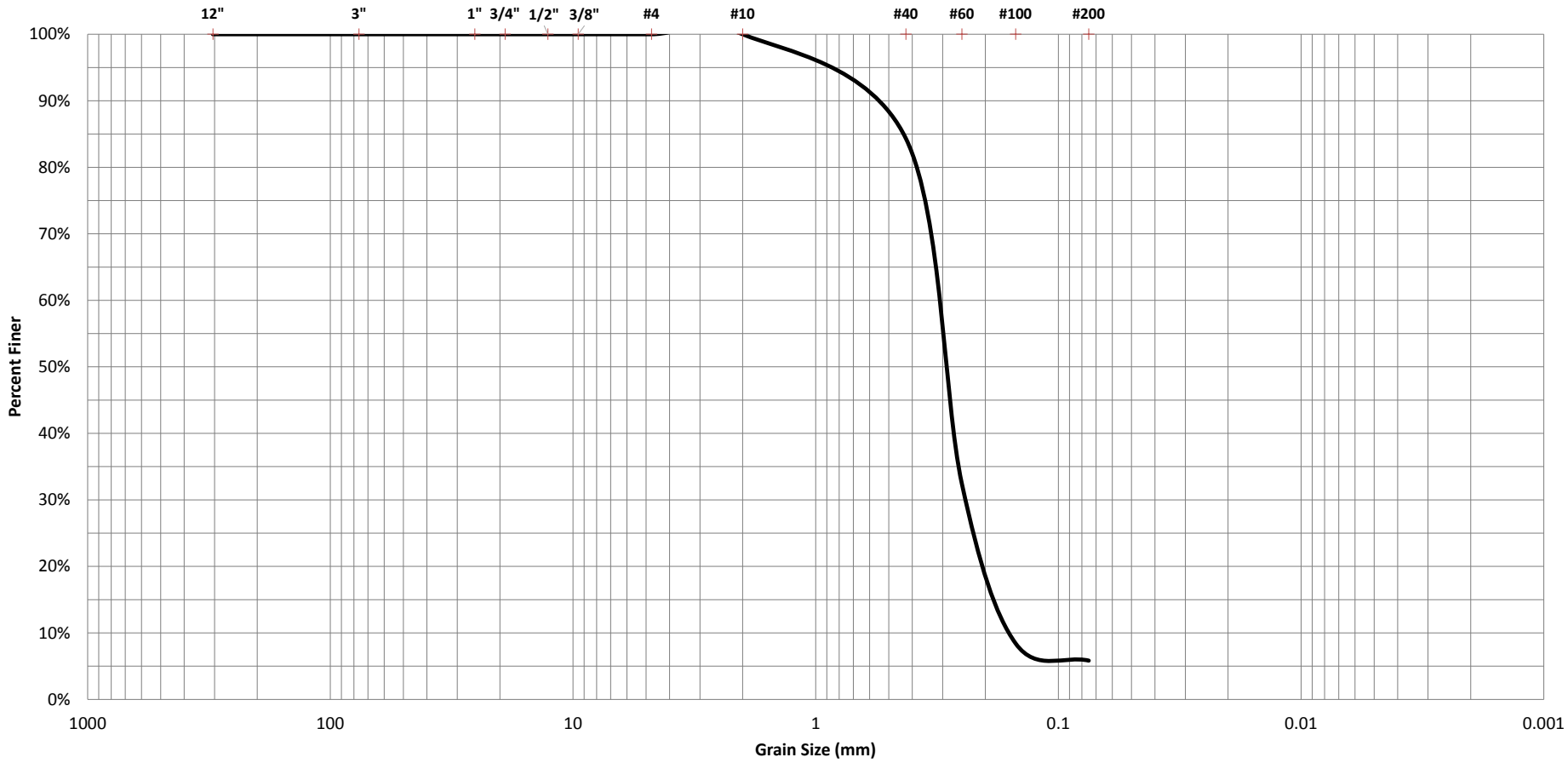
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-64 (5)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	8-10

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
19	-	-	-	DARK BROWN FINE TO MEDIUM SAND	SP	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



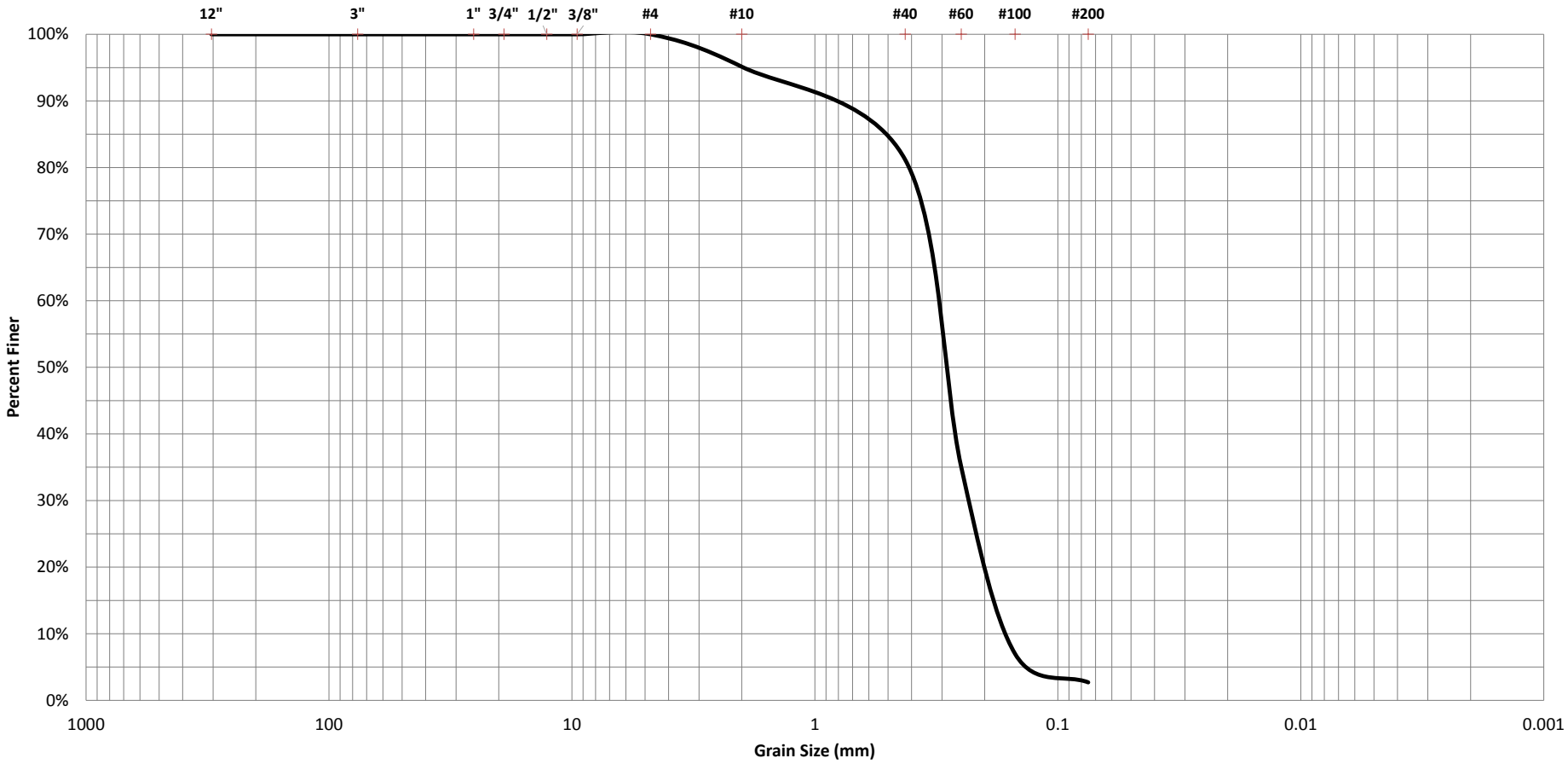
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-67 (2)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	2-4

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
22	-	-	-	DARK BROWN SLIGHTLY SILTY FINE SAND	SP-SM	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



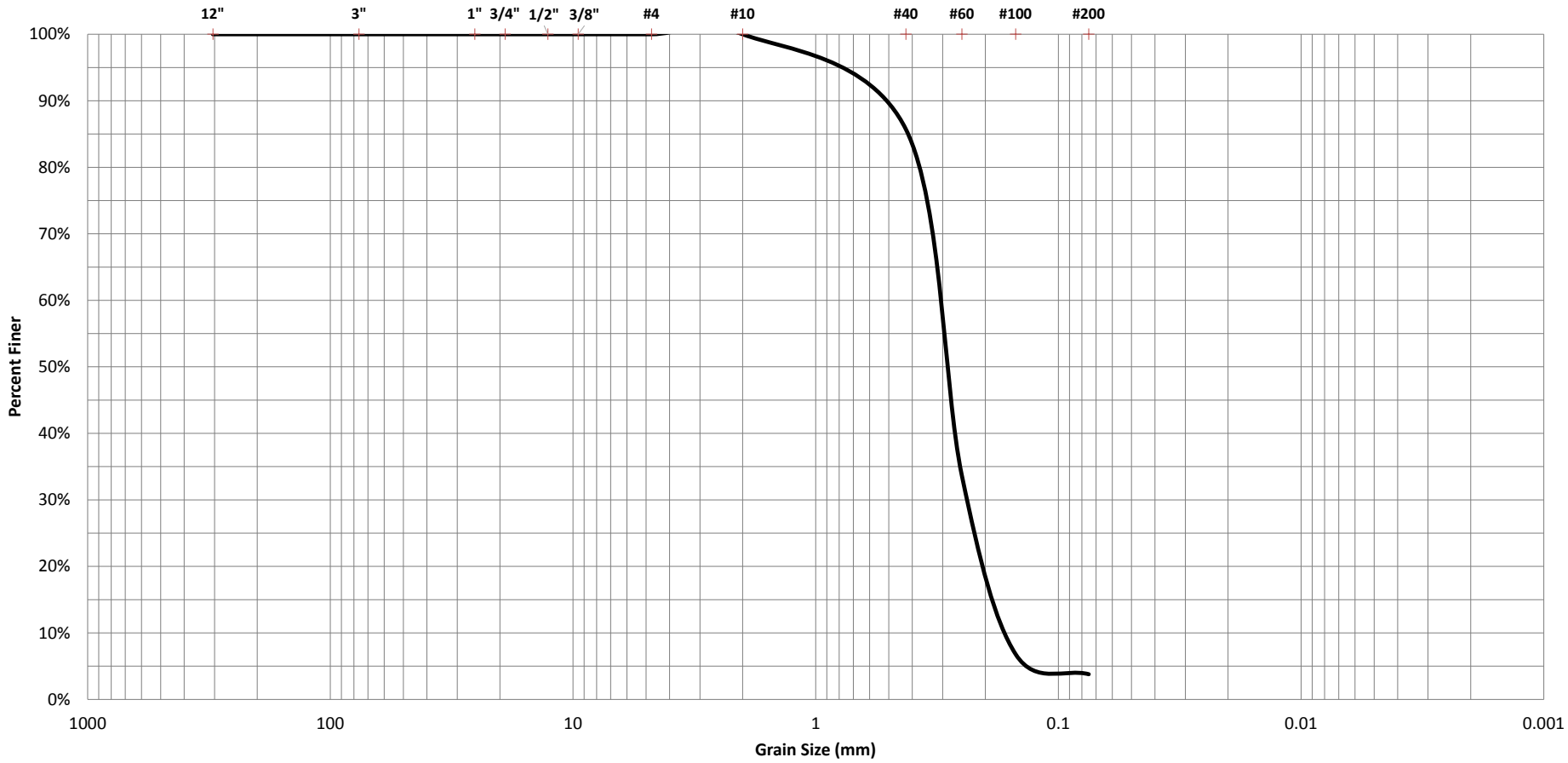
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-72 (6)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	10-12

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
4	-	-	-	LIGHT BROWN FINE SAND	SP	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



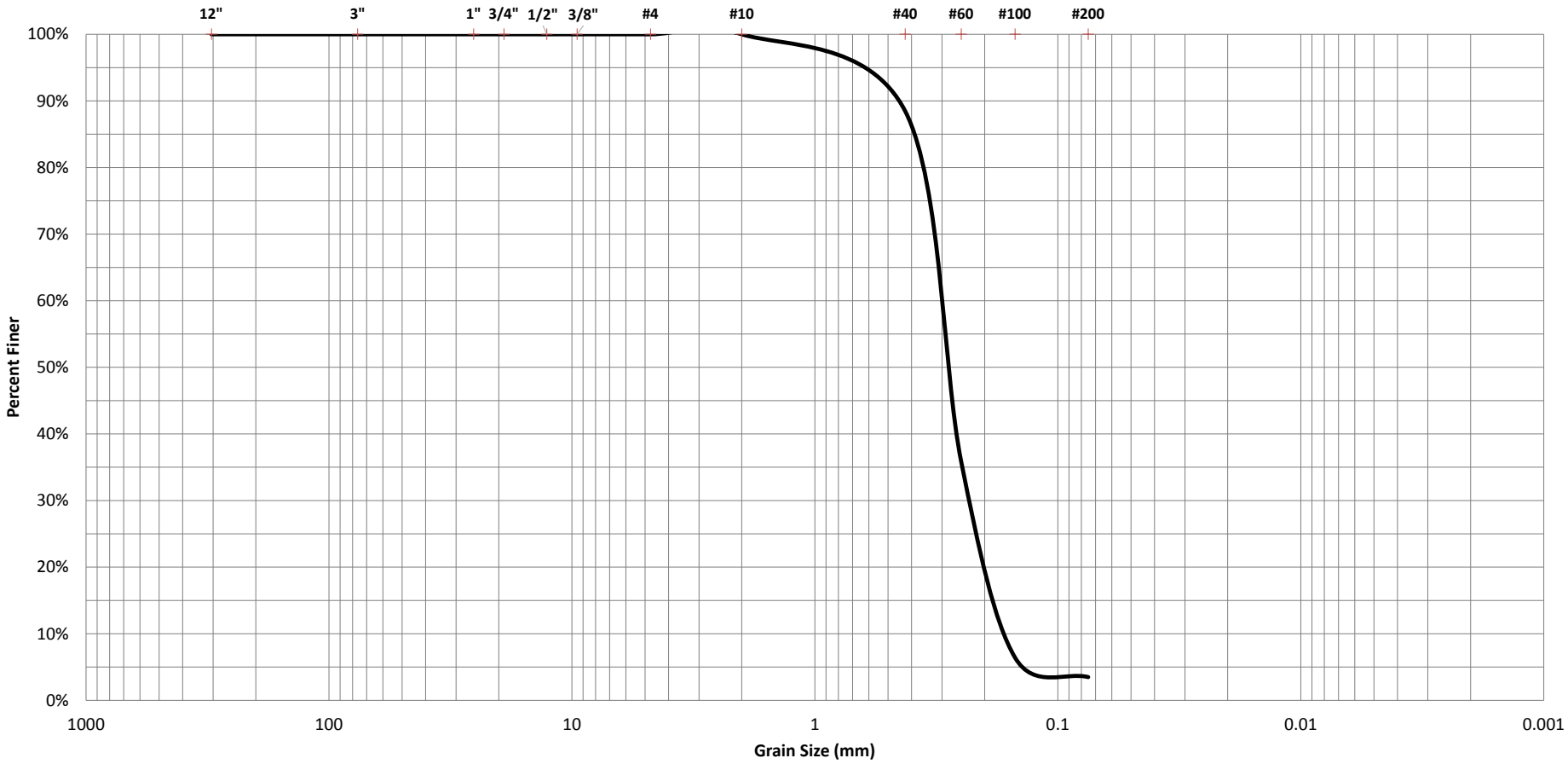
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-75 (2)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	2-4

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
3	-	-	-	BROWN AND TAN FINE SAND	SP	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



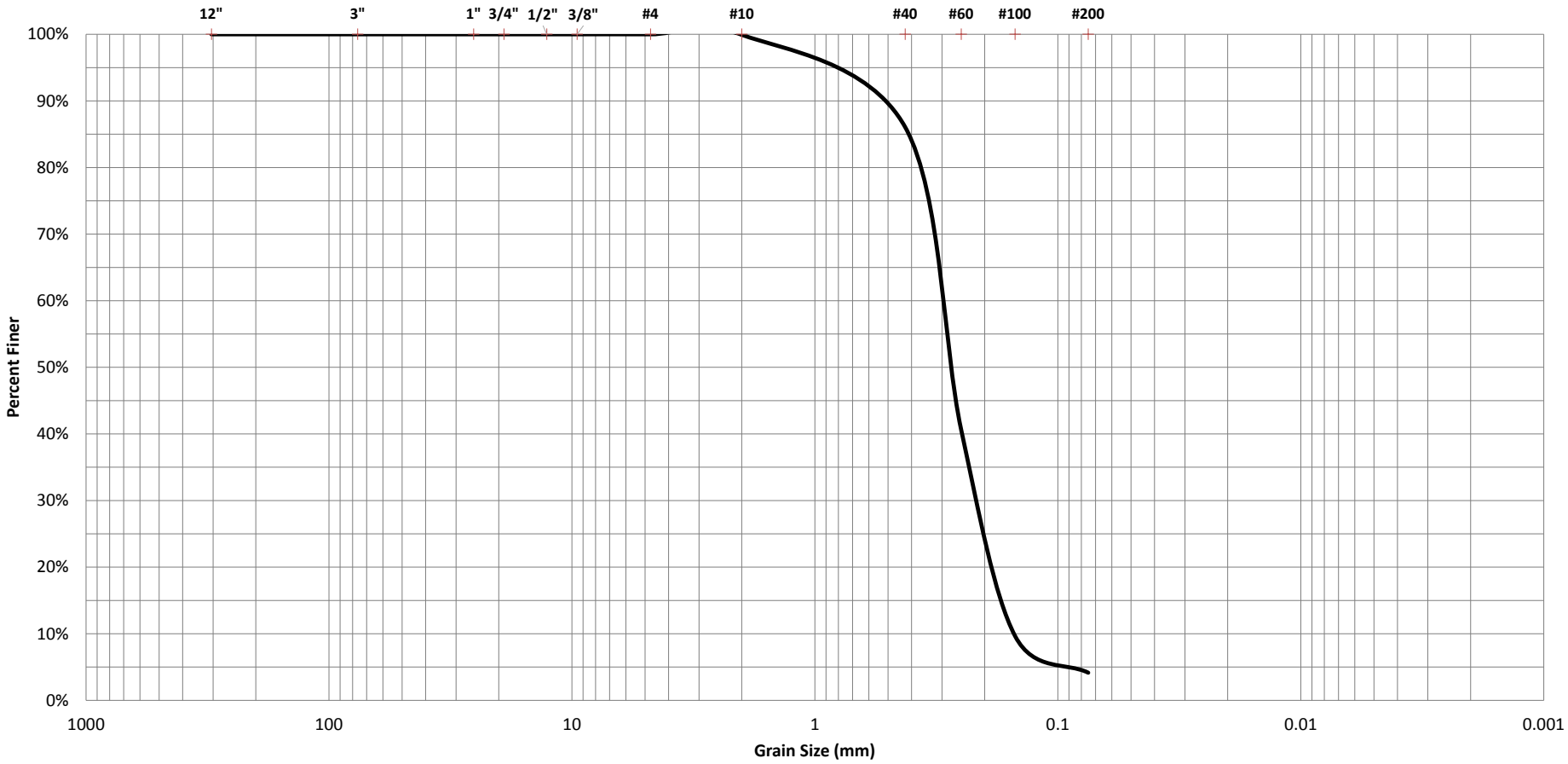
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-77 (2)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	2-4

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
3	-	-	-	TAN FINE SAND	SP	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



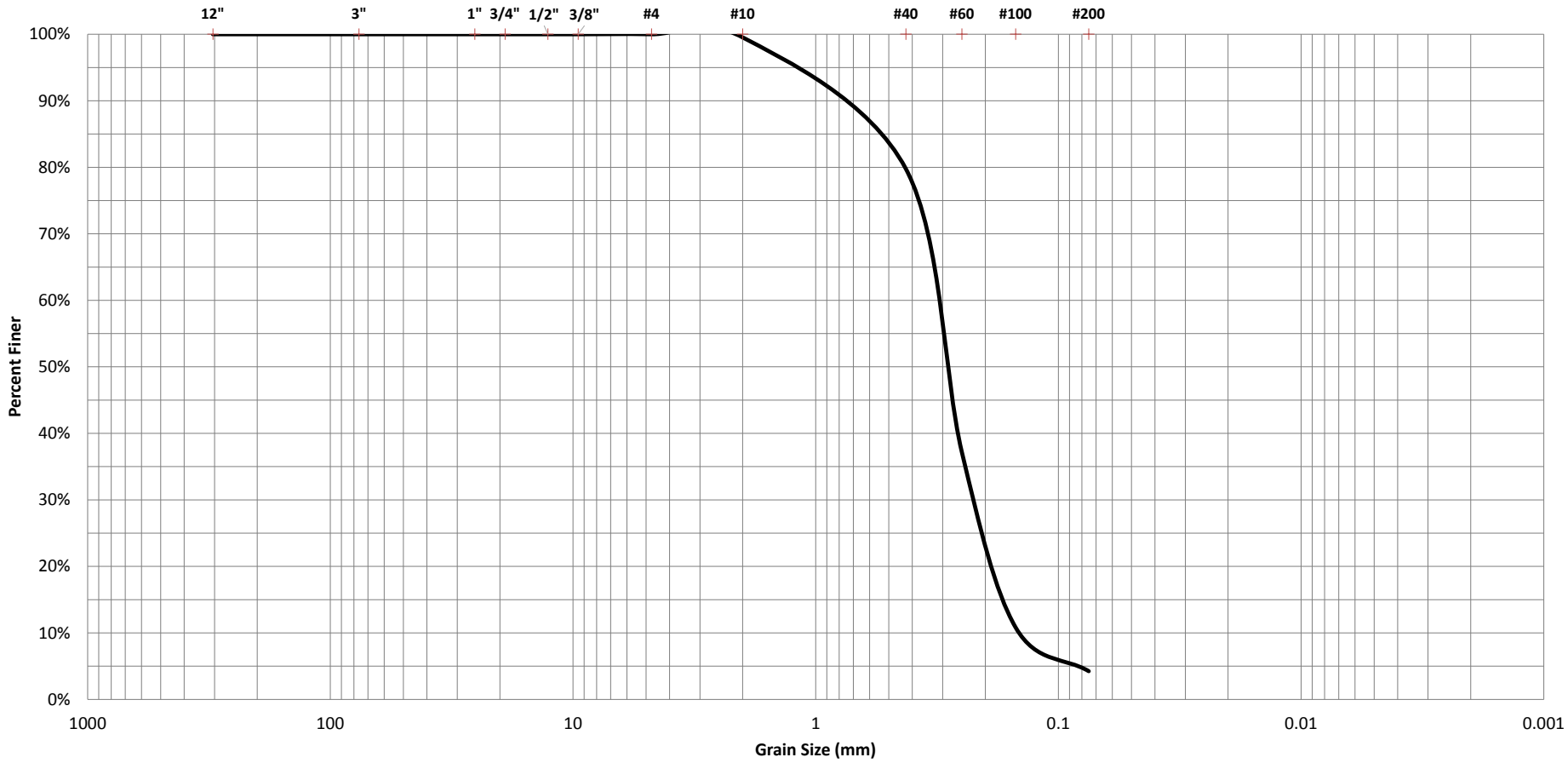
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-81 (2)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	2-4

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
4	-	-	-	LIGHT BROWN FINE SAND	SP	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



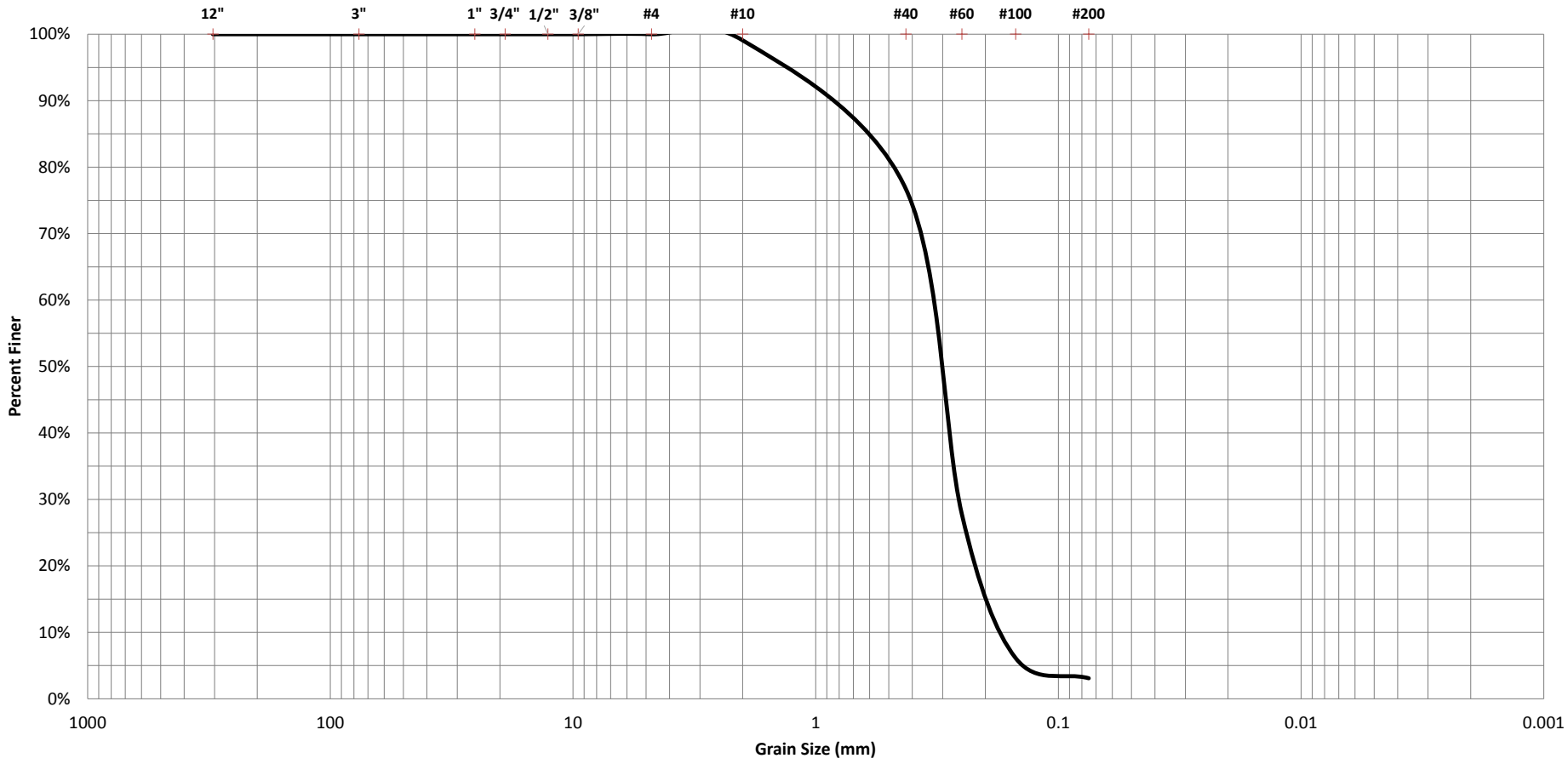
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-84 (1)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	0-2

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
4	-	-	-	BROWN FINE SAND	SP	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



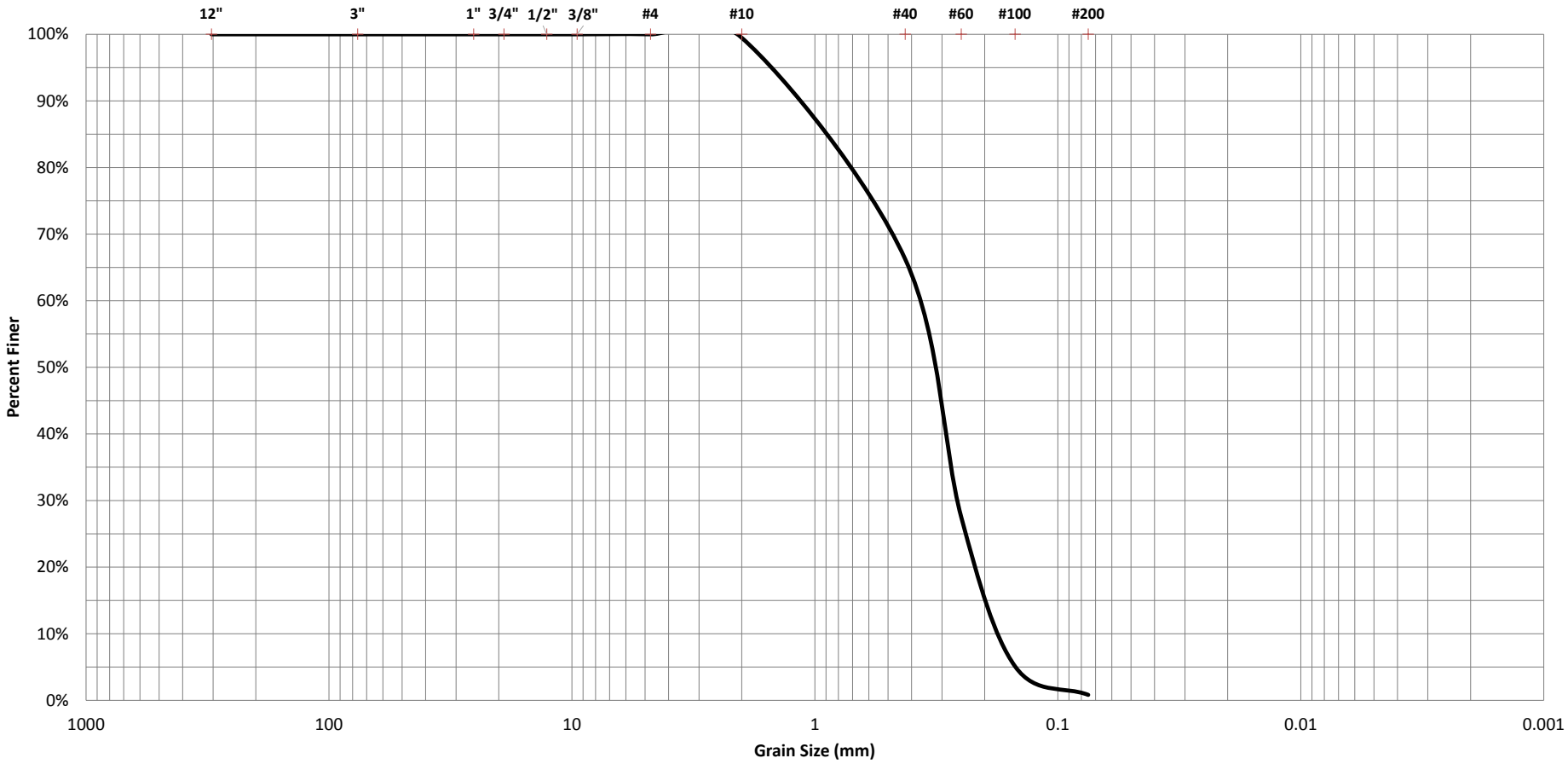
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-88 (2)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	2-4

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
3	-	-	-	BROWN FINE SAND	SP	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



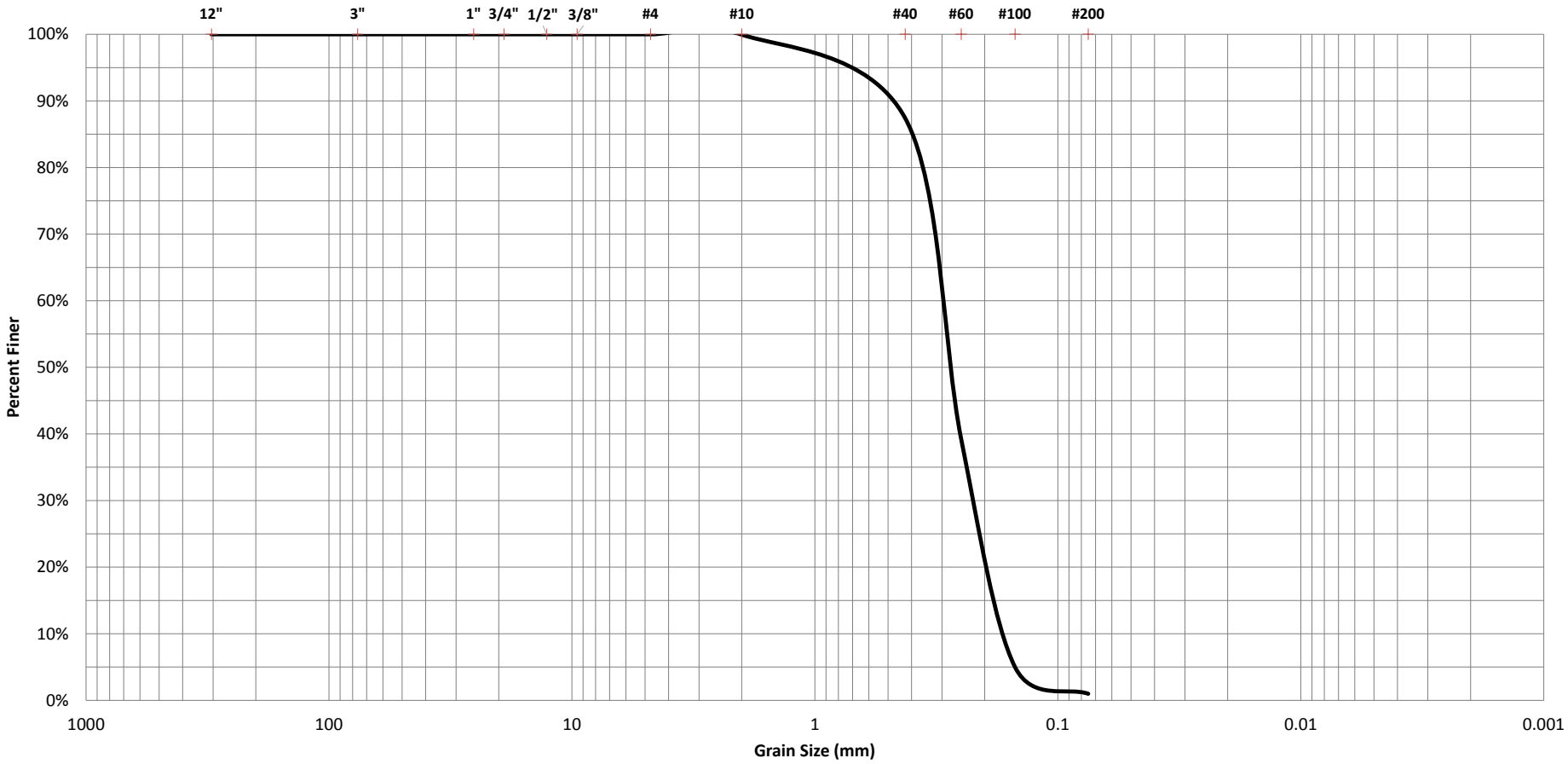
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-93 (3)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	4-6

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
4	-	-	-	LIGHT BROWN FINE SAND	SP	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



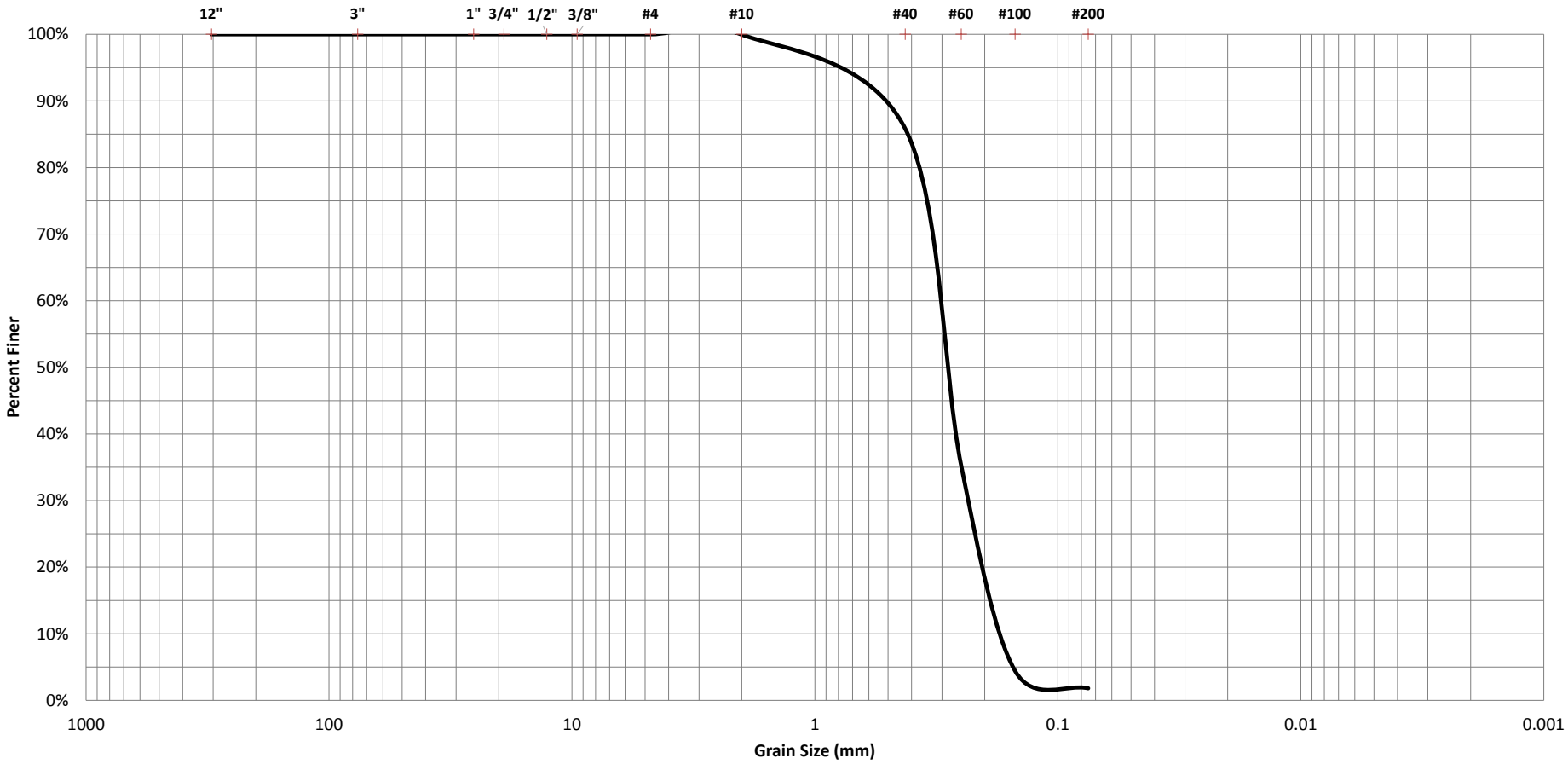
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-95 (3)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	4-6

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
3	-	-	-	ORANGE AND BROWN FINE SAND	SP	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



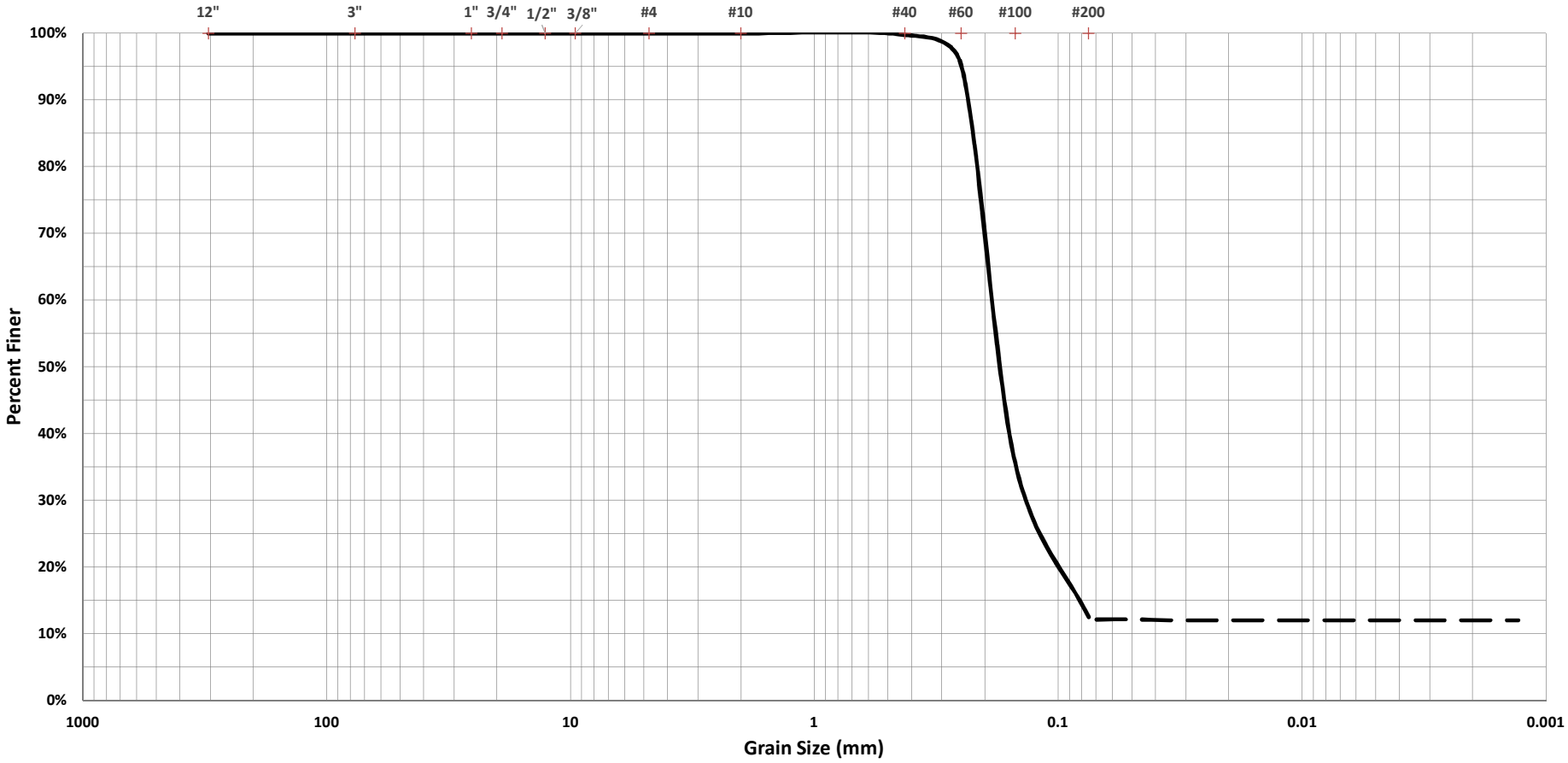
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	PB-100 (2)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	2-4

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
4	-	-	-	BROWN TO LIGHT BROWN FINE SAND	SP	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



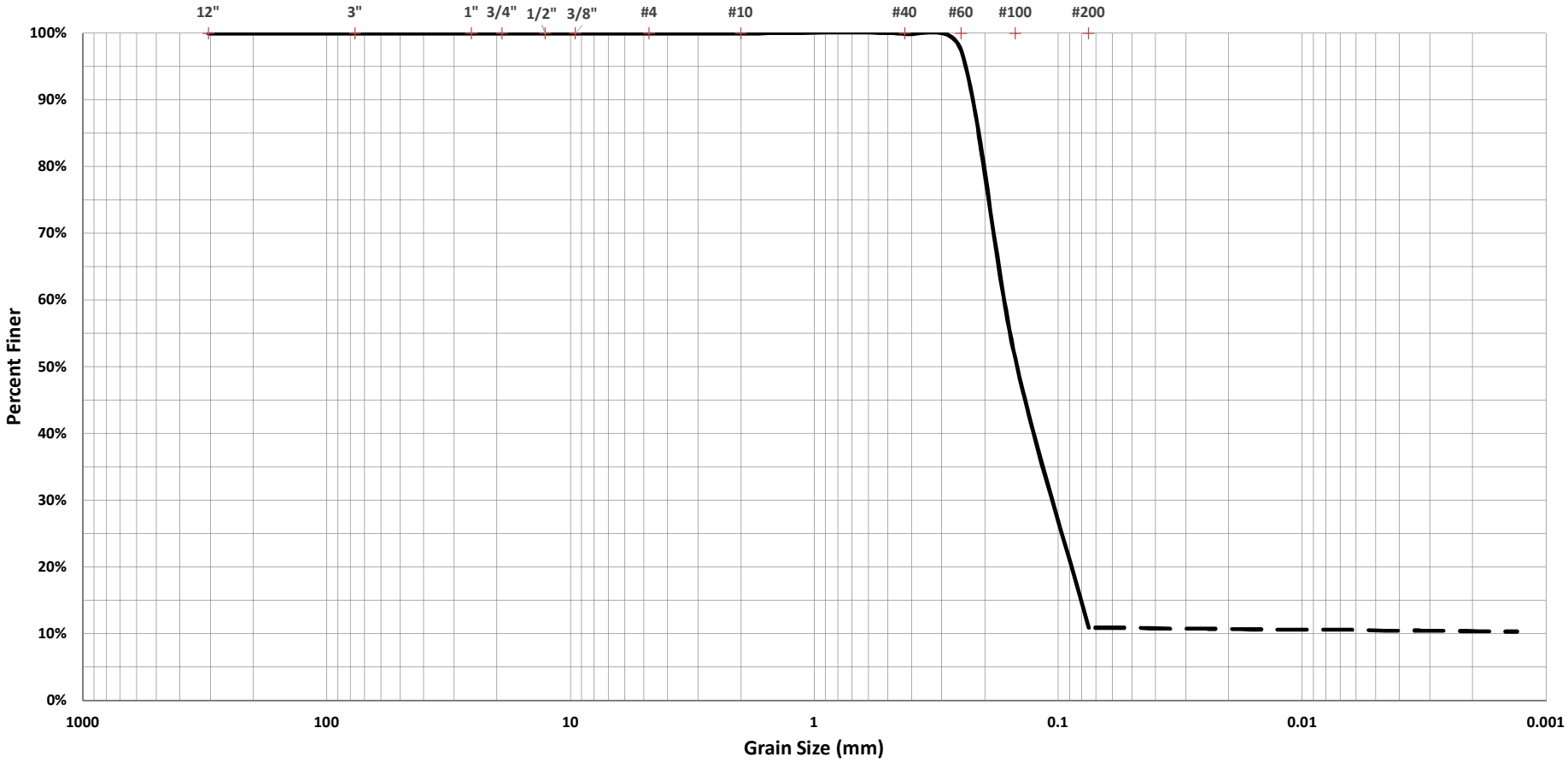
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	JB-1 (6)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	13.5-15

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
20	-	-	-	-	-	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



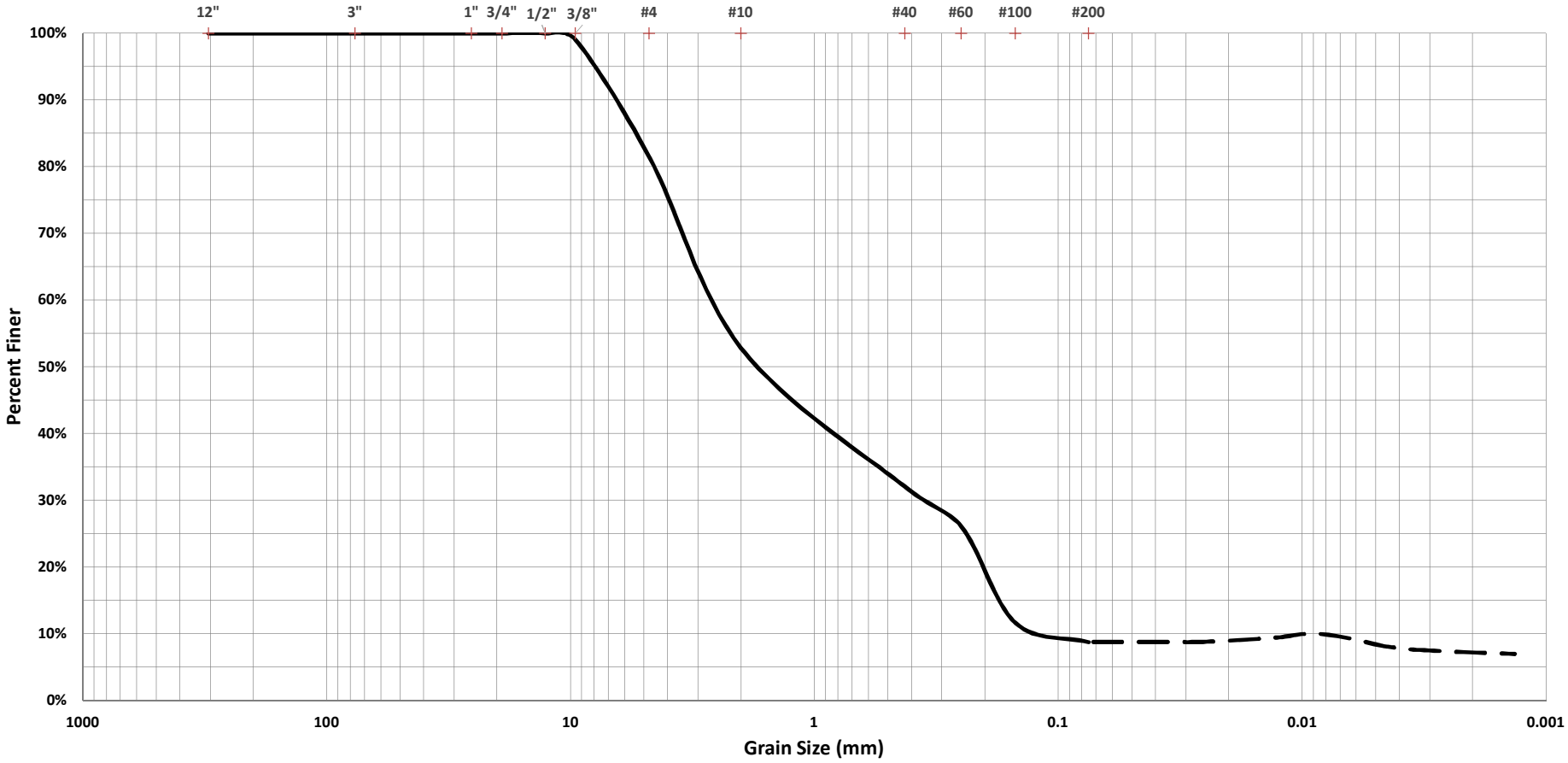
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	JB-2 (6)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	13.5-15

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
19	-	-	-	-	-	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



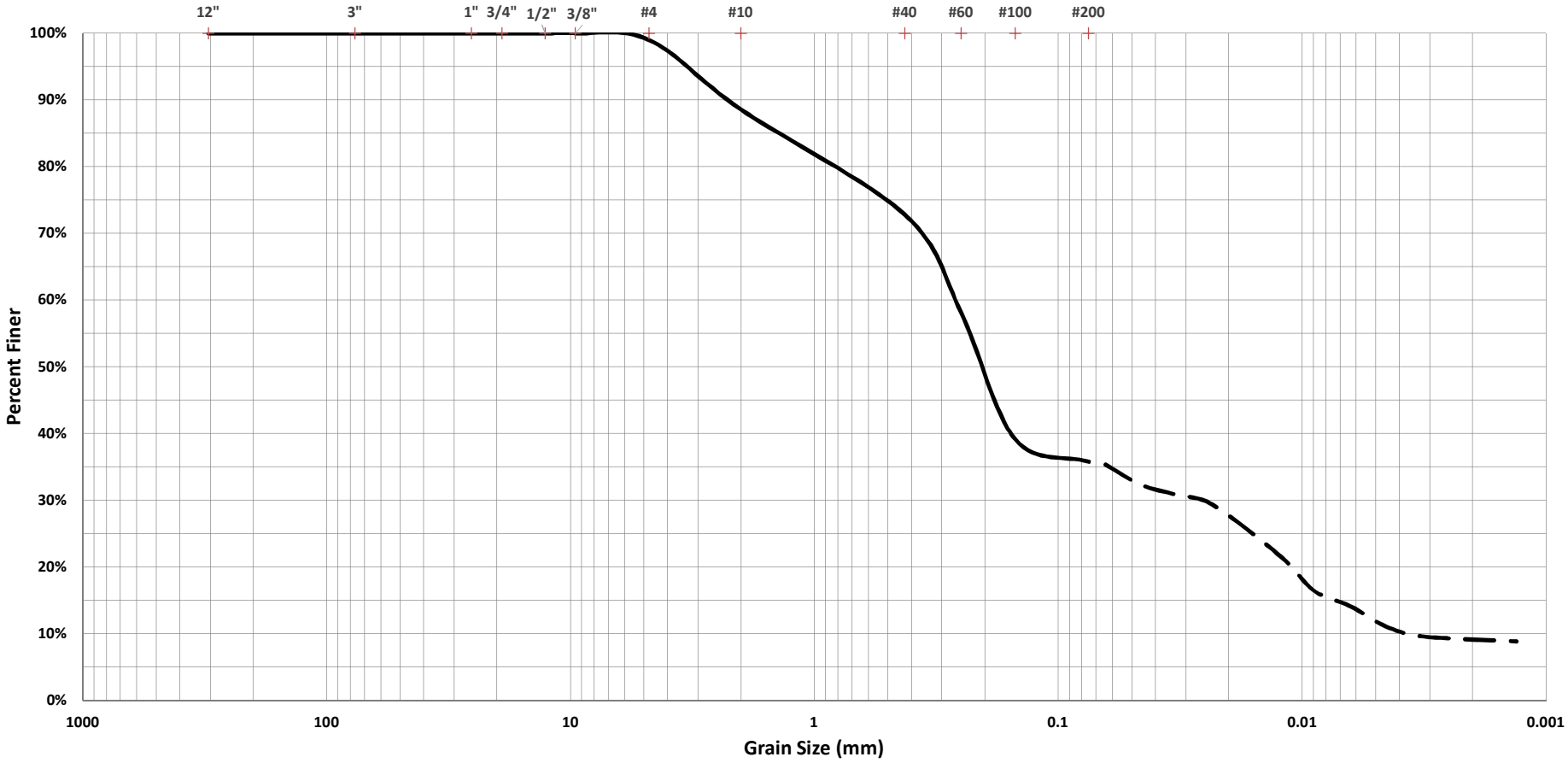
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	HDD-1 (9)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	28.5-30

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
42	-	-	-	-	-	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



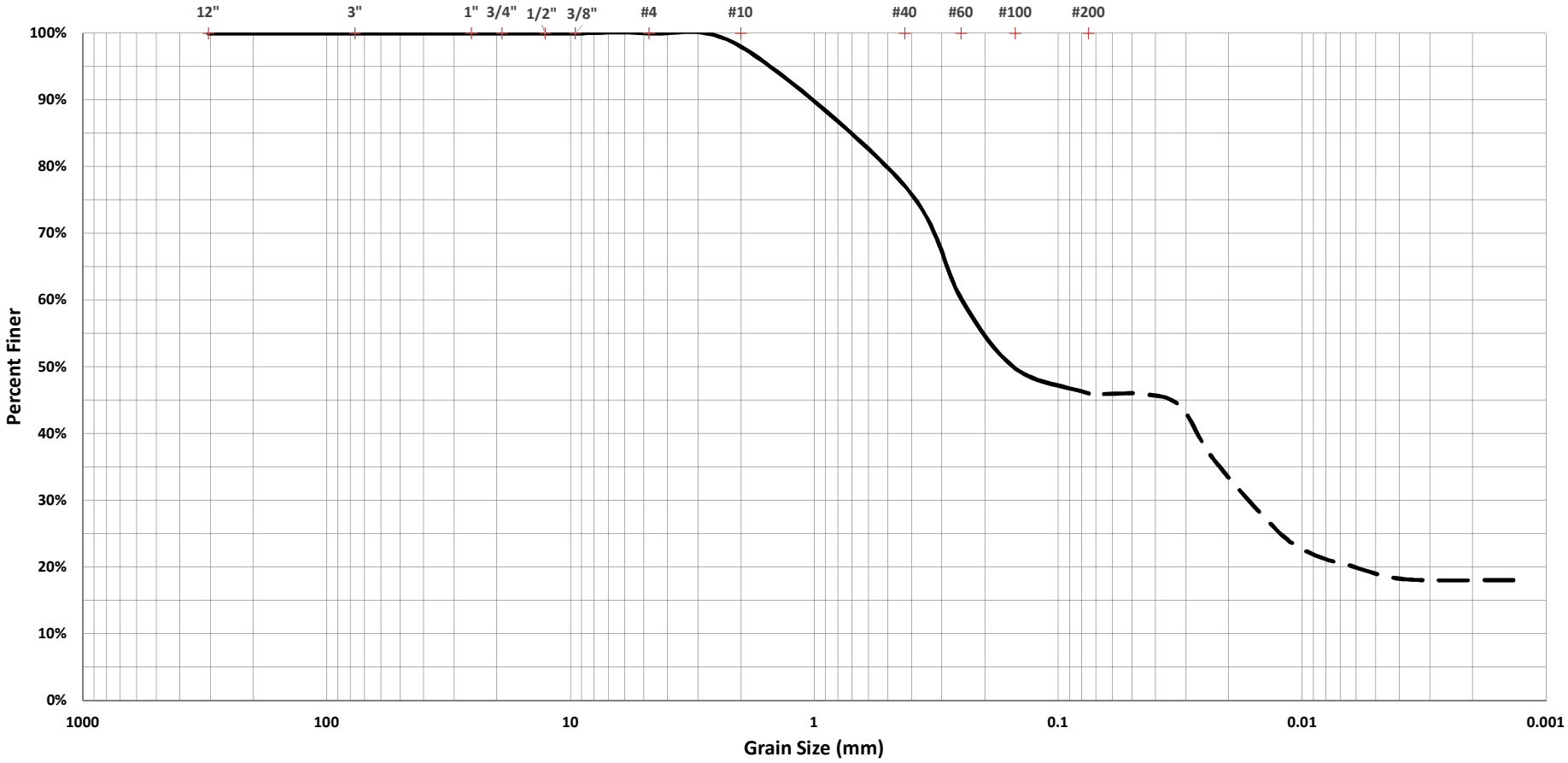
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	HDD-2 (12)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	38.5-40

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
28	-	-	-	-	-	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



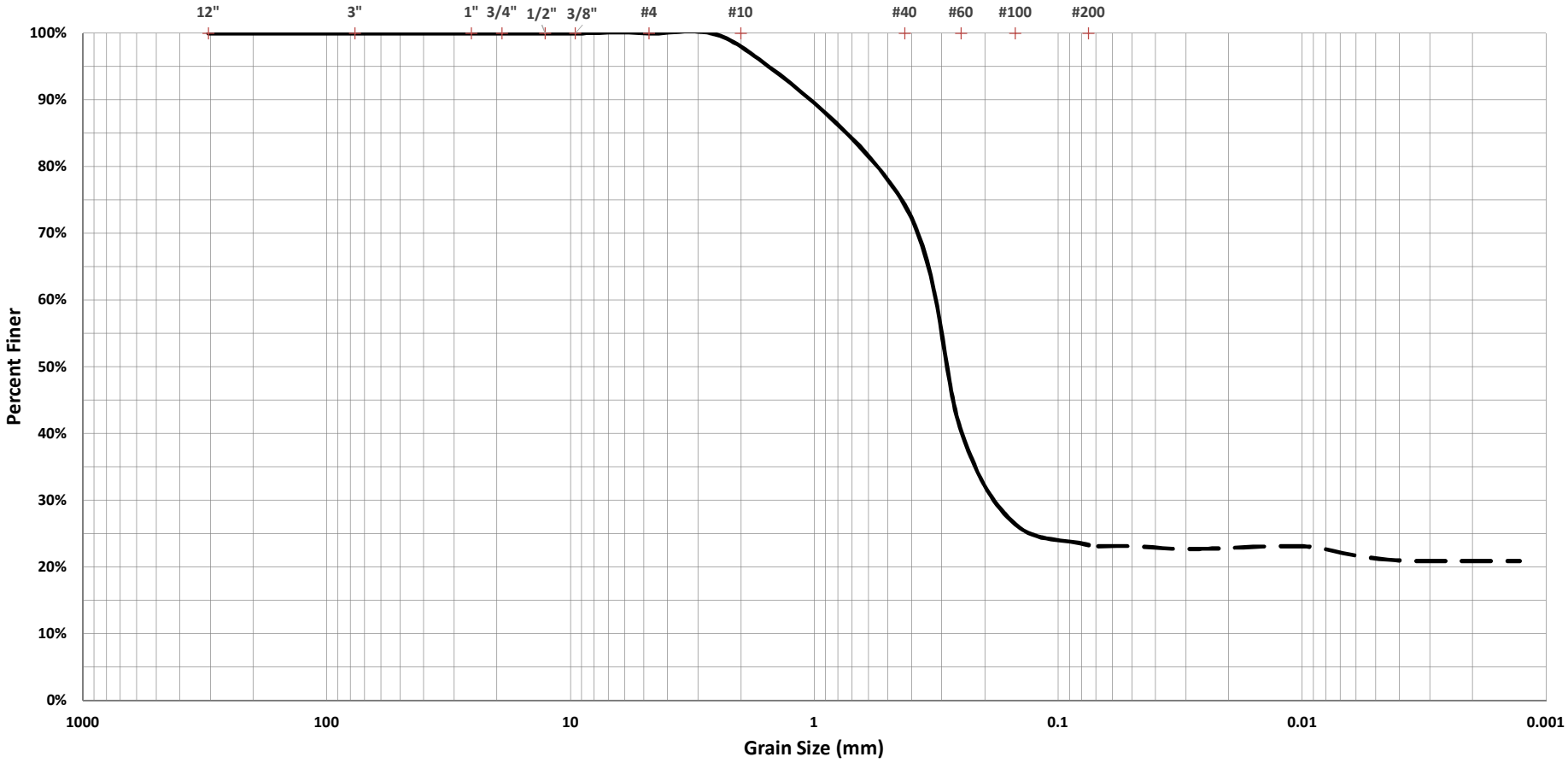
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	HDD-2 (15)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	53.5-55

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
28	-	-	-	-	-	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



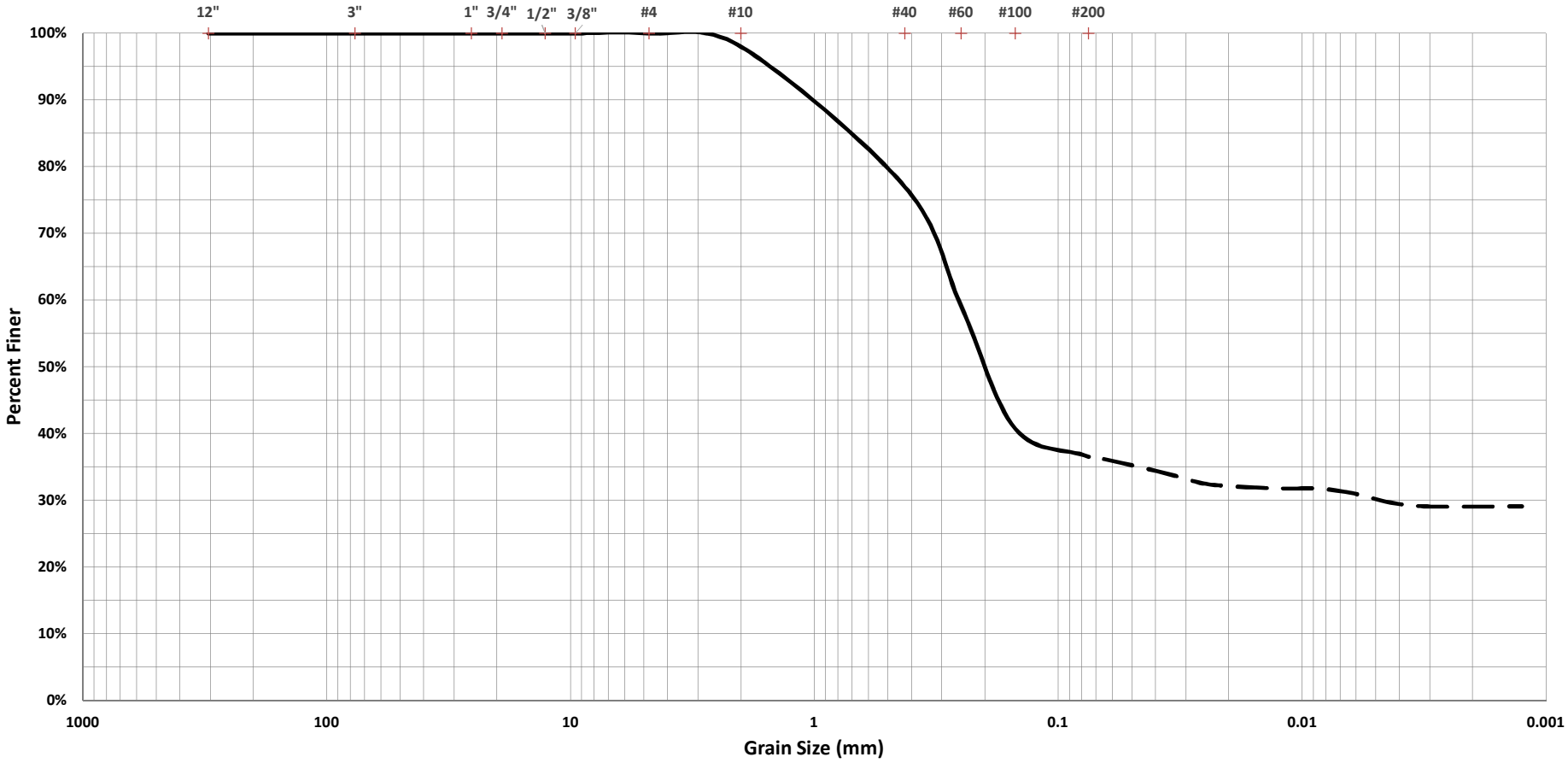
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	HDD-3 (15)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	48.5-50

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
37	-	-	-	-	-	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



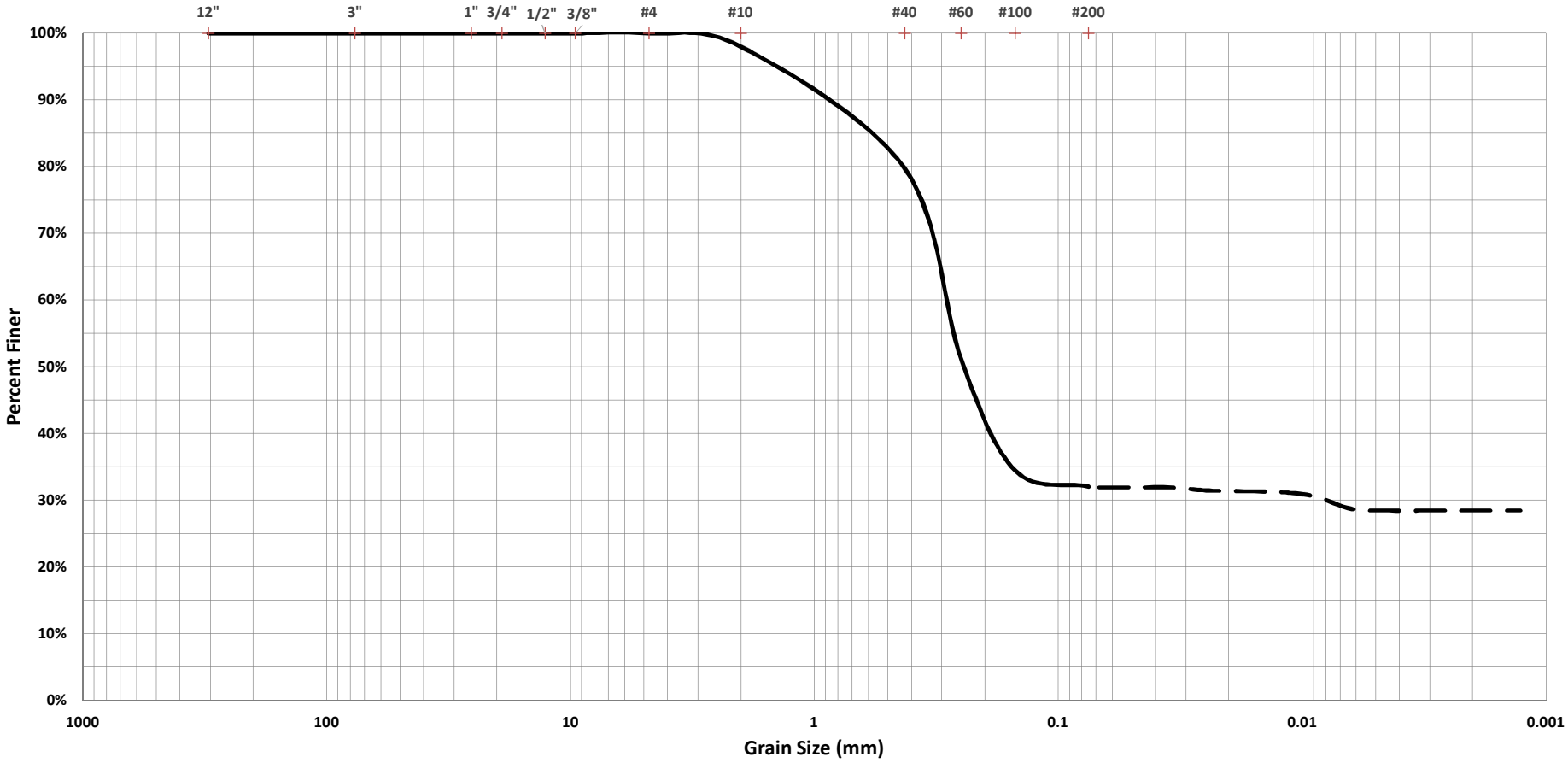
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	HDD-4 (8)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	23.5-25

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
37	-	-	-	-	-	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



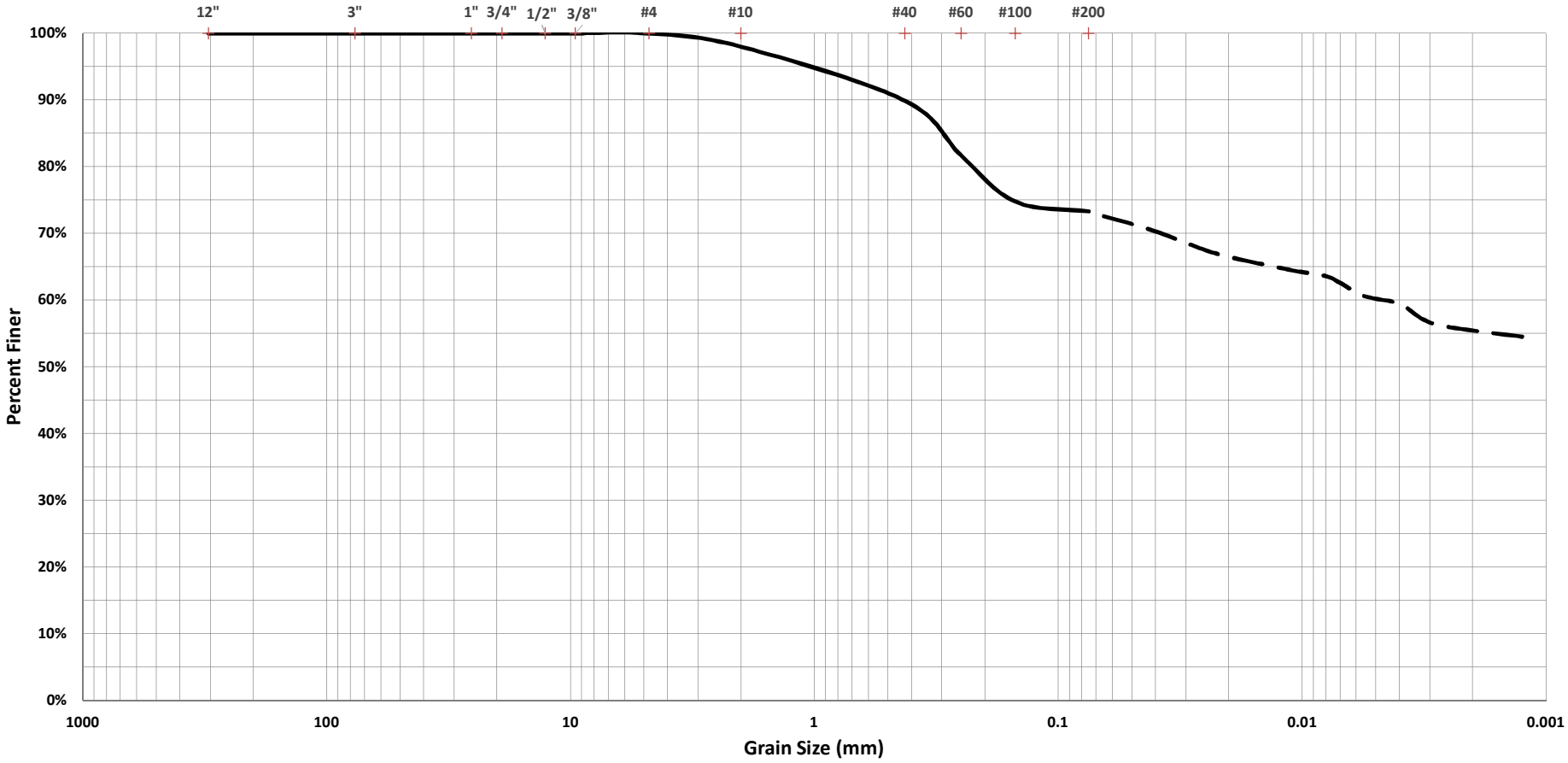
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	HDD-5 (9)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	28.5-30

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
34	-	-	-	-	-	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES



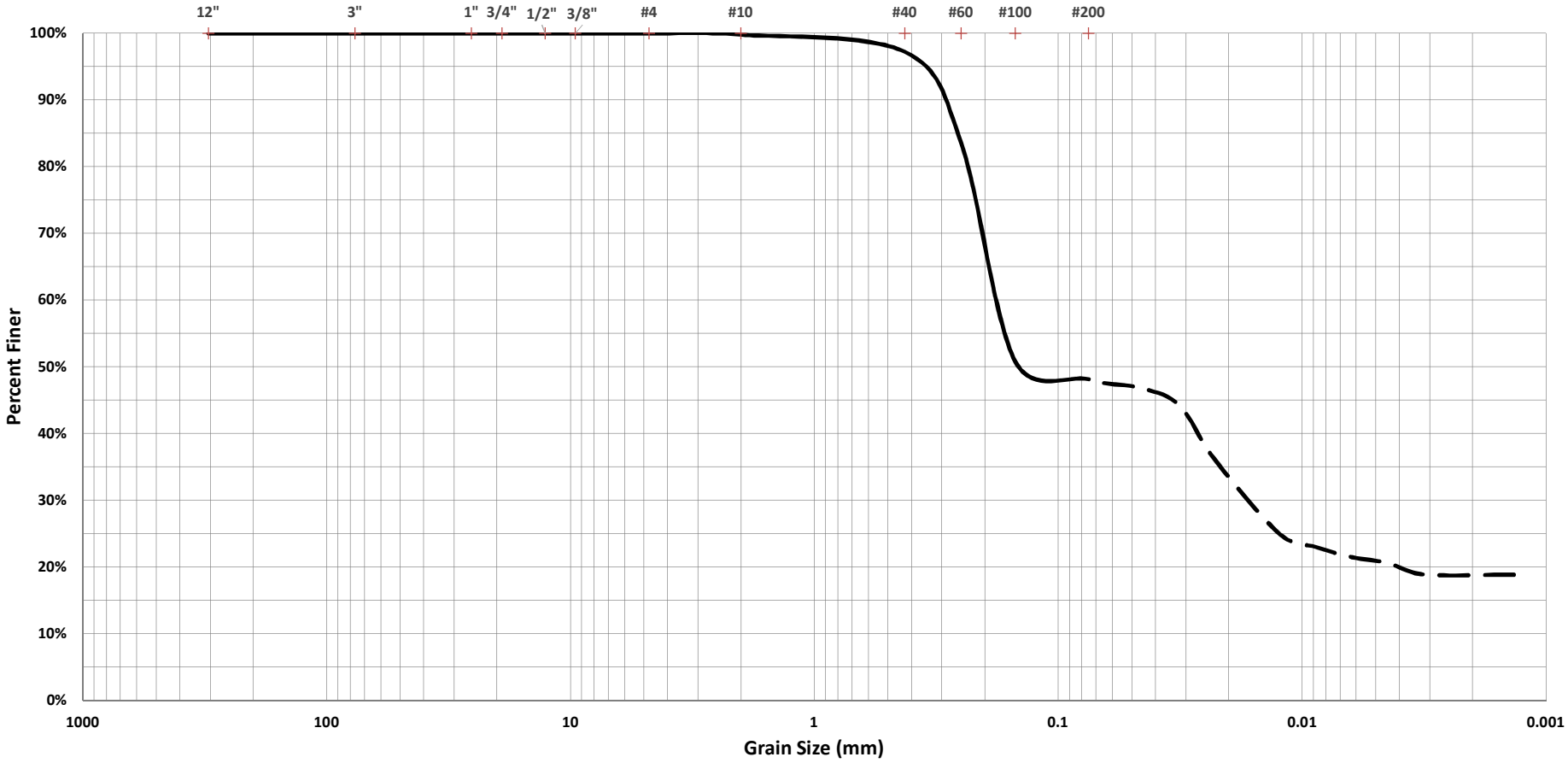
BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	HDD-6 (15)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	48.5-50

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
34	-	-	-	-	-	

GRAIN SIZE DISTRIBUTION GRAPH

US STANDARD SIEVE SIZES

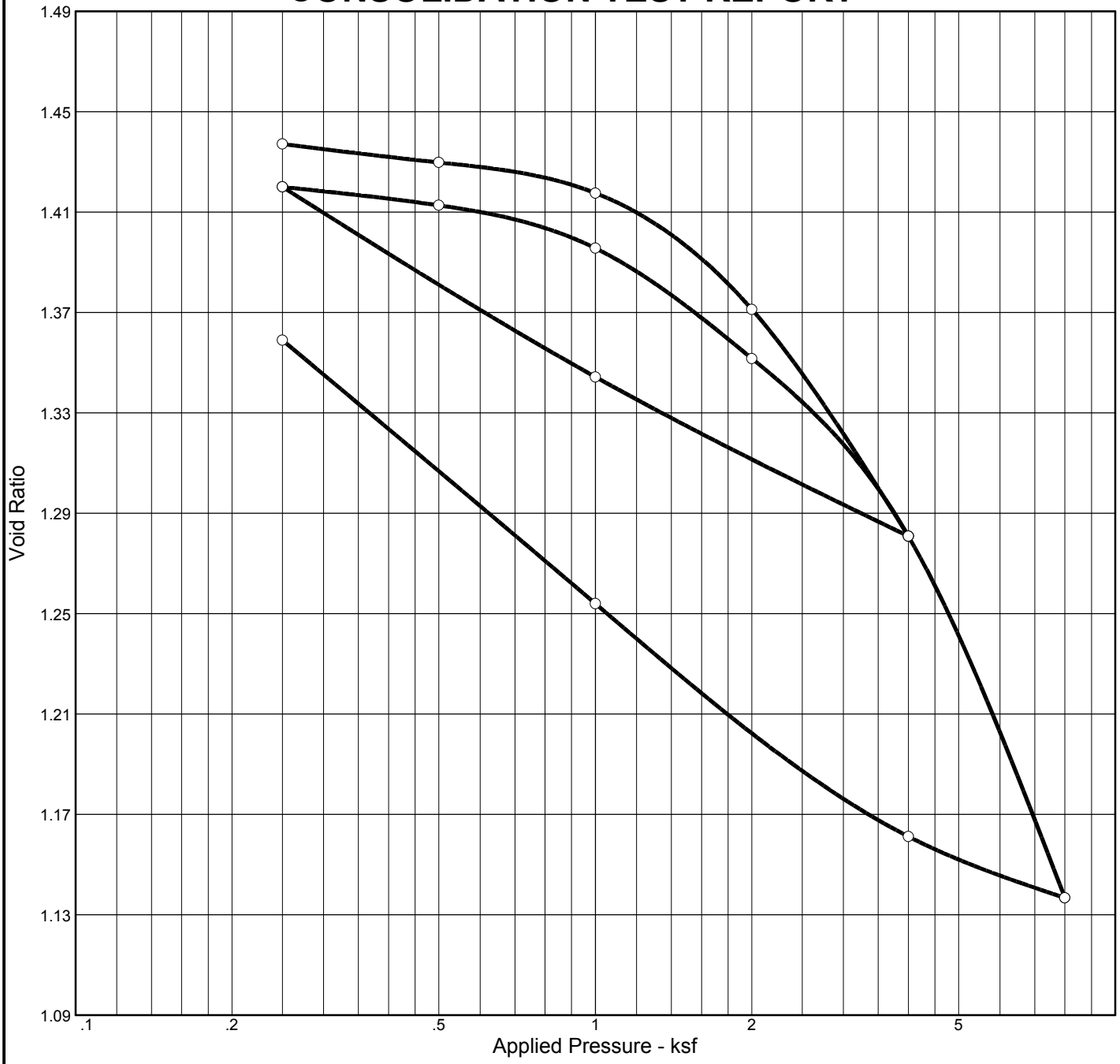


BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

PROJECT NAME:	Black Creek Water Resource Development Project	**BORING NO. / SAMPLE NO.:**	HDD-7 (13)
CSI GEO PROJECT NUMBER:	71-17-127-01	**DEPTH (FT.) :**	43.5-45

W%	LL	PL	PI	DESCRIPTION / CLASSIFICATION		CSI Geo, Inc.
28	-	-	-	-	-	

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P_c (ksf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
96.8 %	52.7 %	67.7	88	63	2.65		2.33	0.49	0.12	1.442

MATERIAL DESCRIPTION	USCS	AASHTO
Gray CLAY	CH	

Project No. 711712701 **Client:** CDM Smith, Inc.

Project: Black Creek Water Resource Development Project

Source: **Sample No.:** HDD-17 **Elev./Depth:** 31-33

CSI GEO, Inc.

Jacksonville, Florida

Remarks:

Percent Passing -200 Sieve : 95%

Figure

SUMMARY OF LABORATORY TEST RESULTS

Black Creek Water Resource Development Project
Clay County, Florida

Boring No.	Sample No.	Approximate Depth (ft)	Natural Moisture Content (%)	Organic Content (%)	Percent Passing Sieve Size (%)						Atterberg Limits		Soil Classification Symbol
					#4	#10	#40	#60	#100	#200	LL	PI	
HDD-1	5	8.0 - 10.0	25		100	100	97	77	17	13			SM
HDD-1	7	18.5 - 20.0	10							53			CL
HDD-1	8	23.5 - 25.0	41							13	NP	NP	SM
HDD-1	9	28.5 - 30.0	42		81	53	32	26	12	9	NP	NP	SP-SM
HDD-1	10	33.5 - 35.0	34		100	99	86	54	22	14			SM
HDD-2	6	13.5 - 15.0	32		100	100	99	95	43	19			SM
HDD-2	7	18.5 - 20.0	27							21	NP	NP	SM
HDD-2	10	28.5 - 30.0	27							20	39	20	SC
HDD-2	12	38.5 - 40.0	28		100	89	73	58	39	35	30	3	SM
HDD-2	15	53.5 - 55.0	28		100	98	77	60	50	46	40	16	SC
HDD-3	5	8.0 - 10.0	42		100	99	96	92	51	19			SM
HDD-3	10	23.5 - 25.0	32							40	39	10	SM
HDD-3	12	33.5 - 35.0	19							58	51	16	MH
HDD-3	13	38.5 - 40.0	20							44	33	5	SM
HDD-3	15	48.5 - 50.0	37		100	100	74	40	26	23	51	30	SC
HDD-4	5	8.0 - 10.0	24		100	100	100	71	6	4			SP
HDD-4	8	23.5 - 25.0	37		100	92	77	59	41	36	40	12	SM
HDD-4	9	28.5 - 30.0	34		94	93	70	42	17	11			SP-SM
HDD-5	6	13.5 - 15.0	12		100	100	96	62	12	5			SP-SM
HDD-5	9	28.5 - 30.0	34		100	100	80	51	34	32	45	16	SM
HDD-5	10	33.5 - 35.0	39							37	53	9	SM
HDD-6	5	8.0 - 10.0	23		100	100	100	96	38	4			SP-SM
HDD-6	7	18.5 - 20.0	30							62	44	19	CL
HDD-6	8	23.5 - 20.0	36							14			SM

SUMMARY OF LABORATORY TEST RESULTS

Black Creek Water Resource Development Project
Clay County, Florida

Boring No.	Sample No.	Approximate Depth (ft)	Natural Moisture Content (%)	Organic Content (%)	Percent Passing Sieve Size (%)						Atterberg Limits		Soil Classification Symbol
					#4	#10	#40	#60	#100	#200	LL	PI	
HDD-6	12	33.5 - 35.0	33							46	46	15	SM
HDD-6	14	43.5 - 45.0	34		100	100	93	75	36	24			SM
HDD-6	15	48.5 - 50.0	51		100	97	90	82	75	73	91	18	MH
HDD-7	7	18.5 - 20.0	20		100	100	94	41	6	2			SP
HDD-7	13	43.5 - 45.0	28		100	100	97	83	51	48	45	9	SM
HDD-8	5	8.0 - 10.0	15		100	100	94	61	24	11			SP-SC
HDD-8	8	23.5 - 25.0	28		94	80	59	46	25	19	NP	NP	SC
HDD-8	9	28.5 - 30.0	34		100	87	75	62	32	26	37	10	SM
HDD-9	5	8.0 - 10.0	20		100	100	92	69	22	12			SM
HDD-9	7	18.5 - 20.0	56		100	100	100	99	97	38	38	10	SM
HDD-9	8	23.5 - 25.0	36		100	98	92	89	78	74			CH
HDD-10	6	13.5 - 15.0	32		100	100	100	99	95	13			SM
HDD-10	8	23.5 - 25.0	22		94	79	37	30	25	21			SC
HDD-10	13	43.5 - 45.0	31		94	78	56	44	34	34	66	15	SM
HDD-11	5	8.0 - 10.0	23		100	100	100	100	58	25			SC
HDD-11	6	13.5 - 15.0	32							22	39	18	SC
HDD-11	9	28.5 - 30.0	28							41	45	8	SM
HDD-11	15	48.5 - 50.0	29		100	98	80	58	35	23	55	27	SC
HDD-12	6	13.5 - 15.0	22		100	99	93	74	23	11			SP-SM
HDD-12	8	22.0 - 23.5	43							42	57	14	SM
HDD-12	12	33.5 - 35.0	34		100	94	83	76	34	19	62	20	SM

SUMMARY OF LABORATORY TEST RESULTS

Black Creek Water Resource Development Project
Clay County, Florida

Boring No.	Sample No.	Approximate Depth (ft)	Natural Moisture Content (%)	Organic Content (%)	Percent Passing Sieve Size (%)						Atterberg Limits		Soil Classification Symbol
					#4	#10	#40	#60	#100	#200	LL	PI	
HDD-13	6	12.0 - 13.5	26		100	100	100	94	25	3			SP
HDD-13	7	13.5 - 15.0	30							2			SP
HDD-13	10	23.5 - 25.0	41		93	80	58	52	40	36	53	17	SM
HDD-14	12	43.5 - 45.0	34								60	25	
HDD-14	13	48.5 - 50.0	37		100	99	91	74	48	44			
HDD-14	14	53.5 - 55.0	35								54	15	
HDD-15	10	33.5 - 35.0	39								38	21	
HDD-15	11	38.5 - 40.0	34								32	13	
HDD-15	12	43.5 - 45.0	45								35	13	
HDD-16	9	28.5 - 30.0	22								NP	NP	
HDD-16	11	38.5 - 40.0	20		100	100	99	86	18	8			
HDD-16	12	43.5 - 45.0	22		100	100	98	78	17	9			
HDD-16	13	48.5 - 50.0	49								57	35	
HDD-17	8	23.5 - 25.0	22		100	100	100	97	47	16			
HDD-17	UD	In Progress											
HDD-17	10	33.5 - 35.0	67								101	44	
HDD-17	11	38.5 - 4.0	84								112	69	
HDD-18	8	23.5 - 25.0	28		100	100	100	100	34	5			
HDD-18	10	33.5 - 35.0	80								109	72	
HDD-18	11	38.5 - 40.0	88								104	72	
HDD-18	12	43.5 - 45.0	34								NP	NP	

SUMMARY OF LABORATORY TEST RESULTS

Black Creek Water Resource Development Project
Clay County, Florida

Jack & Bore Borings

Boring No.	Sample No.	Approximate Depth (ft)	Natural Moisture Content (%)	Organic Content (%)	Percent Passing Sieve Size (%)						Atterberg Limits		Soil Classification Symbol
					#4	#10	#40	#60	#100	#200	LL	PI	
JB-1	5	8.0 - 10.0	21		100	100	100	99	63	15			SM
JB-1	6	13.5 - 15.0	20		100	100	100	95	36	12			SM
JB-2	6	13.5 - 15.0	19		100	100	100	97	51	10			SP-SM
JB-3	5	8.0 - 10.0	26		100	100	100	98	58	12			SM
JB-3	8	18.5 - 20.0	22		100	100	100	96	44	8			SP-SM
JB-3	10	29.5 - 30.0	35							67	61	42	CH

ENVIRONMENTAL CORROSION TEST RESULTS

Black Creek Water Resource Development Project
Clay County, Florida

Sample No.	Depth (ft)	pH (S.U.)[a]	Resistivity (ohm-cm)	Sulfates (ppm)	Chlorides (ppm)	Environmental Classification (Substructures)	
						Steel	Concrete
PB-1	4.0 - 8.0	6.9	35,100	30	60	Moderately Aggressive	Slightly Aggressive
PB-6	4.0 - 8.0	7.2	39,800	33	120	Slightly Aggressive	Slightly Aggressive
PB-11	4.0 - 8.0	7.3	17,600	U[b]	60	Slightly Aggressive	Slightly Aggressive
PB-15	4.0 - 8.0	7.1	33,100	U	60	Slightly Aggressive	Slightly Aggressive
PB-17	4.0 - 8.0	6.8	12,200	57	180	Moderately Aggressive	Slightly Aggressive
PB-23	4.0 - 8.0	6.7	18,700	3	120	Moderately Aggressive	Slightly Aggressive
PB-28	4.0 - 8.0	7.5	9,600	9	120	Slightly Aggressive	Slightly Aggressive
PB-34	4.0 - 8.0	7.1	15,330	3	300	Slightly Aggressive	Slightly Aggressive
PB-41	4.0 - 8.0	6.5	23,390	9	180	Moderately Aggressive	Slightly Aggressive
PB-47	4.0 - 8.0	7.0	78,500	3	180	Slightly Aggressive	Slightly Aggressive
PB-53	4.0 - 8.0	7.3	24,710	U	180	Slightly Aggressive	Slightly Aggressive
PB-59	4.0 - 8.0	8.7	34,430	U	180	Slightly Aggressive	Slightly Aggressive
PB-65	4.0 - 8.0	8.5	41,620	U	180	Slightly Aggressive	Slightly Aggressive
PB-71	4.0 - 8.0	8.6	61,400	33	180	Slightly Aggressive	Slightly Aggressive
PB-77	4.0 - 8.0	8.6	112,900	48	180	Slightly Aggressive	Slightly Aggressive
PB-83	4.0 - 8.0	8.5	40,500	24	180	Slightly Aggressive	Slightly Aggressive
PB-88	4.0 - 8.0	8.6	267,700	33	180	Slightly Aggressive	Slightly Aggressive
PB-94	4.0 - 8.0	8.7	233,800	63	240	Slightly Aggressive	Slightly Aggressive
PB-99	4.0 - 8.0	8.5	204,000	24	180	Slightly Aggressive	Slightly Aggressive
Creek at HDD 1	WATER	8.5	17,100	U	80	Slightly Aggressive	Slightly Aggressive
Creek at HDD 2	WATER	8.4	17,740	U	100	Slightly Aggressive	Slightly Aggressive
Creek at HDD 3	WATER	8.0	19,990	U	60	Slightly Aggressive	Slightly Aggressive
BLACK CREEK	WATER	7.9	26,700	3	80	Slightly Aggressive	Slightly Aggressive

Notes: [a]S.U. : pH standard units
[b]U: Compound tested for but not detected