Professional Service Industries, Inc.
724 Central Avenue
Jefferson, Louisiana 70121
Phone: (504) 733-9411

December 8, 2020

Coastal Protection and Restoration Authority (CPRA)
150 Terrace Avenue
Baton Rouge, Louisiana 70802

Attn: Ms. April Newman
Project Manager
Phone: (225) 342-6412
Email: April.Newman@la.gov

Re: **Geotechnical Engineering Services Data Report**
Bayou Cane Marsh Creation Project (PO-181)
St. Tammany Parish, LA
PSI Project No. 02541139-1

Dear Ms. Newman:

Professional Service Industries, Inc. (PSI), an Intertek company, is pleased to submit our Geotechnical Data Report for the above-referenced project. This report presents the results of our field exploration and laboratory testing performed for the proposed construction. A final geotechnical report will be submitted once the engineering analyses are performed.

If you have any questions pertaining to this report, please contact our office at (504) 733-9411. PSI would be pleased to continue providing geotechnical and construction material testing services throughout the construction of the project, and we look forward to working with you and your organization on this and future projects.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

STATE OF LOUISIANA
NABIL S. MIKHAIL
License No. 35300
PROFESSIONAL ENGINEER

12.8.2020

Prasoon Tiwari, P.E.(TX)
Geotechnical Department Manager

Nabil S. Mikhail, P.E., D. GE.
Chief Engineer

GEOTECHNICAL ENGINEERING SERVICES DATA REPORT

BAYOU CANE MARSH CREATION PROJECT (PO-181)
ST. TAMMANY PARISH, LA

PSI PROJECT NO. 02541139-1

PREPARED FOR

COASTAL PROTECTION AND RESTORATION AUTHORITY (CPRA)
150 TERRACE AVENUE
BATON ROUGE, LA 70802

December 8, 2020

BY

PROFESSIONAL SERVICE INDUSTRIES, INC.
724 CENTRAL AVENUE
JEFFERSON, LOUISIANA 70121
PHONE: 504-733-9411

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PROJECT INFORMATION

PROJECT AUTHORIZATION

Professional Service Industries, Inc. (PSI), an Intertek company, has completed the field and laboratory portions of a geotechnical investigation for the proposed Bayou Cane Marsh Creation Project (PO-181) in St. Tammany Parish, Louisiana. Our scope of services is outlined in PSI Proposal 0254-282343 Rev 6, dated June 4, 2020. Our geotechnical services were authorized by Mr. Jerry Carroll, P.E., Lafayette Regional Operations Manager with CPRA, by issuing a Notice to Proceed as Task #3 dated June 10, 2020 under our existing Contract No. 4400015386. A final geotechnical report will be submitted once the engineering analyses are performed.

PROJECT DESCRIPTION

Project information was provided to PSI by Ms. Bevin Barringer, P.E. of CPRA, by an email correspondence dated November 15, 2019. The project information was obtained in detail via email correspondence, in person meeting with CPRA and PSI on November 22, 2019 and a conference call on January 22,2020. The project information included scope of services for geotechnical investigation and engineering services for Bayou Cane Marsh Creation Project (PO-181) in St. Tammany Parish, Louisiana.

Based on the provided information, PSI understands that the Bayou Cane Marsh Creation Project (PO-181) is located in Region 1 of Pontchartrain. The objective of this project is to create, maintain and nourish existing deteriorating wetland areas. Approximately 384 acres of marsh will be created, and an additional 65 acres nourished by hydraulically dredging material form borrow source located in Lake Pontchartrain.

SITE LOCATION AND DESCRIPTION

The PO-181 project area is located in CWPPRA Planning Region 1 of Pontchartrain, St. Tammany Parish, along the north shore of Lake Pontchartrain between Mandeville and Lacombe on property owned by either the State of Louisiana (Fontainebleau State Park) or the Big Branch National Wildlife Refuge. The project area spans approximately six miles along the shoreline of Lake Pontchartrain and is bordered to the southeast by the existing Goose Point/Point Platte Marsh Creation Project (PO-0033) and to the west by the facilities of Fontainebleau State Park. Approximate coordinates for the center of marsh fill area of the project are shown in the Table1.

Table1: Centerline Coordinates of the PO-181 Project Area

Geographic	
Latitude (DMS)	**Longitude (DMS)**
30° 18’46.03” N	89° 59’42.42” W

The approximate site location is shown on the Site Vicinity Map included in the Appendix A, which is based on Appendix B of the CPRA Scoping document for Project (PO-181), Proposed Soil Sampling Layout and Permit Drawings.

FIELD AND LABORATORY PROCEDURES

FIELD EXPLORATION

PERMIT ACCESS

Prior to mobilizing for the field work to survey the boring locations and conduct site reconnaissance, PSI coordinated and acquired documented access permission to conduct any work at the subject site. Special Use Permit for Sabine National Wildlife Refuge was secured prior to mobilizing to the project site. Wildlife Refuge Manager for Atchafalaya, Big Branch Marsh, and Bogue Chitto NWR's and Park Manager for Fontainebleau State Park were notified at least one day prior to the mobilization to the project site.

SURVEY POSITIONING AND MAGNETOMETER SURVEY

Prior to mobilizing the drilling equipment to perform the soil borings and Cone Penetration Tests (CPT's), Chustz surveying, LLC performed survey positioning and magnetometer survey at each boring/CPT location in the marsh area and borrow area, as per CPRA guidelines. The horizontal and vertical controls for survey positioning were performed in accordance with secondary monument and data sheets presented in Appendix D of the attached Scope Document. The magnetometer survey at each boring/CPT location in the marsh and borrow area was performed to ensure there are no pipelines or obstructions in the area. The locations in the marsh area were staked in the field by the survey crew. Based on information obtained from the survey work, details for the soil boring and CPT soundings details performed in the borrow area and the marsh area are presented in Table 2 and Table 3 respectively. The survey report is presented in Appendix A.

Table 2. Soil Borings details performed in Borrow area (Datum: NAVD88 GEOID12B)

Boring Location	Northing	Easting	Mudline Elevation (ft)	Water Surface Elevation (ft)
B-1	653592.17	3692783.59	-12.47	-0.02
B-2	654296.28	3690819.59	-12.93	-0.02
B-3	652748.14	3688732.89	-13.84	-0.02
B-4	652972.28	3691044.15	-13.54	-0.02
B-5	652139.05	3693373.58	-12.61	-0.02
B-6	652775.97	3695090.92	-12.34	-0.02
B-7	650812.70	3694361.08	-12.57	-0.02
B-8	651652.76	3691569.40	-13.14	-0.02
B-9	651369.34	3689291.20	-13.99	-0.02
B-10	650982.83	3686457.33	-14.17	-0.02
B-11	649962.50	3689870.89	-13.84	-0.02
B-12	648877.69	3693540.55	-13.44	-0.02
B-13	650171.42	3692404.31	-13.62	-0.02

Note: A water depth of approximately 12 to 15 feet was recorded at boring locations in the Borrow area during our field operations.

Table 3. Soil Borings and CPT Sounding details performed in Marsh area (Datum: NAVD88 GEOID12B)

Boring Location	Northing	Easting	Mudline Elevation (ft)	Water Surface Elevation (ft)
CPT-1	669179.29	3687573.24	0.49	N/A
CPT-2/M-1*	668446.23	3688520.66	-1.34	-0.02
CPT-3	667204.22	3688435.14	-1.48	-0.02
CPT-4	666574.52	3689404.84	-1.29	-0.02
CPT-5	665842.48	3691338.72	-0.97	-0.02
CPT-6/M-2*	667154.95	3691693.24	-1.14	-0.02
CPT-7	665982.13	3692533.45	0.42	N/A
CPT-8	665918.83	3693244.47	-2.14	-0.02
CPT-9/M-3*	665644.37	3694586.10	-2.01	-0.02
CPT-10	664745.33	3695215.87	0.72	N/A
CPT-11	661903.21	3701333.28	-1.44	-0.02
CPT-12	662098.14	3702500.36	-1.49	-0.02
CPT-13/M-4*	661535.73	3703615.42	-2.75	-0.02
CPT-14	659854.65	3703024.00	-1.76	-0.02
CPT-15/M-5*	659157.35	3704594.77	-2.58	-0.02
CPT-16	657716.47	3704969.87	-0.90	-0.02
CPT-17/M-6*	656671.99	3706892.30	-2.18	-0.02
CPT-18	654174.87	3707231.95	0.29	N/A
CPT-19	653210.85	3706520.76	-0.65	-0.02
CPT-20/M-7*	653523.53	3708819.53	-1.60	-0.02
CPT-21/M-8*	651544.24	3709278.43	-0.02	-0.02
CPT-22	650266.17	3709111.32	0.46	N/A
CPT-23/M-9*	648517.00	3710354.60	0.58	N/A

* Co-located CPT sounding with soil boring

SOIL BORINGS

Based on provided information and discussion with CPRA, soil boring and CPT sounding locations were finalized. Boring Location Plans for marsh area and borrow area are attached in the Appendix B.

A total of twenty-three (23) soil borings and CPT soundings were performed for the Marsh creation area. As discussed with CPRA, the soil borings and CPT soundings were explored using an airboat mounted drilling equipment. All the borings and CPT soundings were performed between August 7 and September 2. Detailed description is mentioned below:

- Nine (9) soil borings were drilled to a depth of 20 feet below mudline continuously and then at 5 feet intervals to a depth of 40 feet below the mudline. All the soil borings in the marsh area were co-located with CPT soundings. CPT soundings co-located with soil borings are presented in the

Table 2 above. Drilling and sampling were performed in accordance with applicable ASTM Standards and the furnished Scope of Services Document.

The proposed soil borings were advanced with a 4-inch diameter rotary wash drilling method. Undisturbed samples of cohesive soils were obtained by using three-inch diameter thin-wall tube samplers (Shelby Tube) in general accordance with the procedures for "Thin-Walled Tube Geotechnical Sampling of Soils" (ASTM D1587). For cohesionless soils and semi-cohesive soils, Standard Penetration Test (SPT) was performed to obtain standard penetration values of the soil. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer falling 30 inches that is required to advance the split-barrel sampler one (1) ft. into the soil. The number of blows is recorded for each of three (3) successive increments of six (6) inches penetration. The "N" value is obtained by adding the second and third incremental numbers. The results of the standard penetration test indicate the relative density of cohesionless soils and thereby provide a basis for estimating the relative strength of the soil profile components. Samples of granular soils were obtained utilizing a two (2) inch O.D. split-barrel sampler in general accordance with procedures for "Penetration Test and Split-Barrel Sampling of Soils" (ASTM D1586). The boreholes were grouted upon their completion per LDEQ and LA DOTD regulations.

- Twenty-three (23), Cone Penetration tests to the refusal depth varying from 7 feet to 21 feet. Our CPT utilizes a 60° apex cone, 1.4-inch diameter, Type 2 electric cone penetrometer that meets ASTM D5778 specification. The soil information obtained from CPT soundings are presented in the Appendix B. The CPT was advanced to the shallow refusal depth due to the presence of the Pleistocene. Refusal prior to the depth specified occurs due to achieving maximum tip resistance, a high frictional resistance of the sleeve, or excessive tilt angle of the CPT probe. To prevent damage to the CPT, no attempt was made to advance beyond refusal depth. Due to low penetration depths for CPT soundings, a cut off value of 1.7 was used for overburden correction factors for estimating normalized soil behavior type. For cohesive soils, Shear strength (Su) was estimated using the total cone resistance (q_t) and cone factor (N_{kt}).

$$s_u = \frac{q_t - \sigma_v}{N_{kt}}$$

- N_{kt} =16, used for marsh area CPT's.

A total of thirteen (13) soil borings were performed for the borrow area. The borings were performed between September 23 to September 30. Detailed description mentioned below:

- Thirteen (13) soil borings were sampled to a depth of 20 feet below mudline continuously. Drilling and sampling were performed in accordance with applicable ASTM Standards and the furnished Scope of Services Document.

  The proposed soil borings were advanced with a 4-inch diameter rotary wash drilling method. Undisturbed samples of cohesive soils were obtained by using three-inch diameter thin-wall tube samplers (Shelby Tube) in general accordance with the procedures for "Thin-Walled Tube Geotechnical Sampling of Soils" (ASTM D1587). For cohesionless soils and semi-cohesive soils,

Standard Penetration Test (SPT) was performed to obtain standard penetration values of the soil. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer falling 30 inches that is required to advance the split-barrel sampler one (1) ft. into the soil. The number of blows is recorded for each of three (3) successive increments of six (6) inches penetration. The "N" value is obtained by adding the second and third incremental numbers. The results of the standard penetration test indicate the relative density of cohesionless soils and thereby provide a basis for estimating the relative strength of the soil profile components. Samples of granular soils were obtained utilizing a two (2) inch O.D. split-barrel sampler in general accordance with procedures for "Penetration Test and Split-Barrel Sampling of Soils" (ASTM D1586). The boreholes were grouted upon their completion per LDEQ and LA DOTD regulations.

GEOTECHNICAL LABORATORY TESTING

During the field work, the samples were identified according to boring number and depth and were transported to PSI's laboratory for classification and testing. A geotechnical laboratory testing program was developed after reviewing the field logs. The laboratory testing program was provided to CPRA for review and approval prior to testing. For borrow area borings, majority of laboratory tests were approved for borings B-02, B-04, B-06, B-08, B-10, and B-12. After approval, laboratory tests were performed in general accordance with applicable ASTM procedures and the furnished Scope Document. Laboratory testing of the obtained samples has been performed to evaluate the classification, strength and other engineering characteristics of the subsurface materials.

The Shelby tube samples were removed from the sampling tubes in the laboratory using a specially fabricated hydraulic piston-type extruder. The tube samples were extruded, classified and subjected to index and compressive strength tests. Additional estimates of shear strength were obtained through the use of a hand penetrometer (HP) and torvane (TV), respectively. The results of the laboratory tests are presented in the Boring Logs given in the Appendix B. A key to the terms and symbols used on the boring logs is also presented in Appendix B.

An overview of the scope of the laboratory testing phase for both the marsh area borings and borrow area borings are tabulated in Table 4 and Table 5 respectively below. A detailed discussion on laboratory test results is presented in subsequent sections of the data report.

Table 4. Laboratory Testing Summary for Marsh area borings

Test Method	ASTM Reference	No. of Tests performed
Moisture Content	(ASTM D2216)	126
Visual Classification	(ASTM D2488)	126
Organic Content	(ASTM D2974)	9
Atterberg limits	(ASTM D4318)	67
Percent Passing #200 sieve	(ASTM D1140)	26
Specific Gravity	(ASTM D854)	8
Total Unit Weight Determination	(ASTM D2937)	33
Unconsolidated Undrained Triaxial Test	(ASTM D2850)	33
Consolidation Test	(ASTM D2435)	8

Table 5. Laboratory Testing Summary for Borrow area borings

Test Method	ASTM Reference	No. of Tests performed
Moisture Content	(ASTM D2216)	130
Visual Classification	(ASTM D2488)	130
Atterberg limits	(ASTM D4318)	26
Hydrometer Analysis	(ASTM D7928)	6
Total Unit Weight Determination	(ASTM D2937)	25
Column Settling Test	USACE 1110-2-5027	2
Low Stress Consolidation Test	ASTM D2345 (mod.)	2

CLASSIFICATION AND INDEX TESTS

To determine the soil classification and geotechnical index properties, various classification and index tests were performed. The following classification and index tests for the marsh and borrow area were performed:

- Visual Classification (ASTM D2488)
- Moisture Content (ASTM D2216)
- Atterberg Limits (ASTM D4318)
- Percent Passing #200 sieve (ASTM D1140)
- Particle-Size Analysis and Hydrometer (ASTM D7928)
- Specific Gravity (ASTM D854)
- Organic Content (ASTM D2974)
- Total Unit Weight Determination (ASTM D2937)

1. Visual Classification
   Visual classification was performed based on ASTM D2488 and incorporated into the soil boring logs in Appendix B. It includes the description of soil color, consistency and type, and identification of variations (organics, layers, seams, etc.).

2. Moisture Content
   More than two hundred and fifty six (256) moisture content determinations (ASTM D2216) were performed in conjunction with the sample extrusion process and preparation of test specimens. Moisture content determinations were made for each extruded sample, and total densities were computed for each sample. Moisture content for each sample are included on the soil boring logs in Appendix B.

3. Atterberg Limits
   A total of ninety-three (93) Atterberg limit determinations (ASTMD4318) were performed on selected samples to assist in soil classification and to enable correlation to pertinent clay behavior properties. The Atterberg limit data consist of measured liquid limit (LL) and plastic limit (PL) values from which the plasticity index (PI = LL - PL) is derived. The individual test data are included on the boring logs in Appendix B.

4. Percent Passing #200 sieve and Hydrometer Analysis

A total of six (6) hydrometer particle size analysis tests (ASTM D7928) along with sieve analyses and 26 fines content determinations (ASTM D 1140) were performed on selected samples. The test results, in terms of percent fines (i.e., percent by dry weight finer than the U.S. No. 200 sieve size, 0.074 mm, or silt and clay fraction) are included on the soil boring logs in Appendix B. The hydrometer test with sieve analyses results are included in Appendix C.

5. Specific Gravity
   A total of eight (8) specific gravity tests based on ASTM D854 were performed on selected samples and results are included in Appendix C.

6. Organic Content
   A total of nine (9) organic tests based on ASTM D2974 were performed on selected samples. The organic content results are included in Appendix C.

7. Total Unit Weight Determination
   Total unit weights of the tube samples were computed based on (ASTM D2937) sample volume and weight measurements taken after exclusion of any materials that appeared to have been disturbed during the sampling or extrusion process.

STRENGTH TESTS

To determine the strength characteristics of the marsh area soil deposits, various compression tests and index strength tests were performed. The following tests for the selected marsh area soil samples were performed:

1. Unconsolidated-Undrained Triaxial Compression Tests
   Unconsolidated-undrained (UU) triaxial compression tests (ASTM D2850) were performed on specimens trimmed from selected samples. Results of these strength tests are included on the soil boring logs in Appendix B. Individual UU test stress-strain curves are included in Appendix D.

2. Hand penetrometer and Torvane Index Strength Tests
   Hand-operated Torvane (TV) and hand penetrometer index strength tests were performed in conjunction with the sample extrusion process and are included in soil boring logs. These test results are considered to be index strengths in that the absolute value of the measured undrained shear strength is generally not considered adequately reliable for use in design. The test results, however, are useful in identifying soil strength variability and trends with respect to depth, material type, etc.

CONSOLIDATION TESTS

To determine the stress history, stress deformation, and time rate settlement characteristics of the marsh area soil deposits, consolidation tests were performed on selected clay samples from marsh area soil borings. A total of 8 tests were performed.

Additionally, to determine the settlement criteria for the dredged soil from the borrow area, settling column tests and low stress consolidation tests were performed. A total of 2 tests each are being conducted in our geotechnical lab.

1. Consolidation Test (ASTM D2435)
   Incremental consolidation tests (ASTM D 2435) were included in the laboratory testing program to enable assessment of stress history and determination of stress history, stress deformation, and time rate settlement characteristics of the marsh clay deposits that will dictate post-construction settlement of the marsh creation area. A total of eight (8) tests were conducted.

   During each load increment, the accumulation of vertical displacement with time is measured. In general, each load increment was sustained for a period of 12 to 36 hours. The vertical displacement versus time data was evaluated using the conventional log-time and square-root time curve fitting techniques to determine the end of primary consolidation (i.e., the point in time at which dissipation of load-induced excess pore water pressures in the sample had dissipated and drained creep ensued for each load increment). The individual test results, in terms of coefficient of consolidation versus effective vertical stress and void ratio versus effective vertical stress are presented in Appendix E.

2. Settling Column Test
   Two representative composite samples were prepared using samples obtained from the nine (9) sampling locations performed within the proposed borrow area. Laboratory settling tests were performed in a 20-cm diameter graduated plexi-glass settling columns.

   A water sample from the Lake Pontchartrain was collected to obtain the salinity of the dredging site water. Salinity test was performed by gravimetric method and was also further confirmed by a digital salinity meter. The salinity of dredging site water was calculated about 2 g/l. The composite test samples were mixed with synthesized water having a salinity, in terms of total dissolved solids, of 2 g/l.

   As requested, settling column tests with two different solid concentrations, 150 g/l and 300 g/l, are being conducted in our geotechnical lab.

   Settling Colum #1 (150 g/l): The initial solids content of the settling test samples was about 13 percent, with a corresponding initial total suspended solids concentration of approximately 150 g/l. The slurry was mixed with a hand-held stirrer to provide a homogeneous sample and remove any segregation of particles which may have occurred during placement of the slurry into the column.

   Settling Colum #2 (300 g/l): The initial solids content of the settling test samples was about 25 percent, with a corresponding initial total suspended solids concentration of approximately 300 g/l. The slurry was mixed with a hand-held stirrer to provide a homogeneous sample and remove any segregation of particles which may have occurred during placement of the slurry into the column.

   A 7-foot settling column was prepared to run the tests on composite samples. The settling column tests simulate the sedimentation of a dredged material in a quiescent environment. This test

provides information regarding two types of settling regimes which occur; zone settling, and compression settling. The settling tests consist of measuring the fall of the liquid-solid interface over time. These data are plotted in terms of height of the interface over time in Appendix E.

3. Low Stress Consolidation Test (Modified ASTM D2435)
One-dimensional incremental slurry consolidation tests were performed on two (2) composite samples, with solid concentrations 150 g/l and 300 g/l, prepared from the dredge borrow area. The change in specimen height with time under each load is monitored and evaluated to characterize the one-dimensional compressibility, consolidation and drained creep properties of the sediment.

It should be noted that some differences were observed in the void ratio versus vertical effective stress relationship between the settling column and the slurry consolidation test as can be seen by the variance in void ratio for a similar vertical effective stress. This difference may be due in part to the difference in diameter of the testing equipment, which may lead to arching effects. Another possible reason for the observed discrepancy may be due in part to the salinity of the settling column. The addition of salt into the water may cause dispersion and or swelling of the clay particles, which would result in a change in void ratio.

DISCUSSION ON SUBSURFACE CONDITIONS

MARSH FILL AREA SUBSURFACE CONDITIONS

Based on the field observations, CPT soundings and results of the geotechnical laboratory testing, the soils were classified, and boring logs and CPT sounding plots were developed. A generalized subsurface profile for marsh fill area is presented in Table 6.

Table 6: Generalized Soil Profile

Approximate Elevation Range (Datum: NAVD88 GEOID12B, feet)*	Consistency/Relative Density	Material Description
1 to -8	Very Soft to Soft / Very Loose to Medium Dense	Lean Clay (CL), Fat Clay (CH), Sandy Lean Clay (CL), Organic Clay (OH), Peat (PT), Poorly Graded Sand with Clay (SP-SC), Clayey Sand (SC)
-8 to -18	Firm to Stiff/ Loose to Medium Dense	Lean Clay (CL), Fat Clay (CH), Sandy Lean Clay (CL), Poorly Graded Sand with Clay (SP-SC)
-18 to -22	Firm to Stiff / Medium Dense to Dense	Lean Clay (CL), Fat Clay (CH), Poorly Graded Sand (SP), Poorly Graded Sand with Clay (SP-SC)
-22 to -42	Firm to Stiff / Medium Dense to Very Dense	Fat Clay (CH), Sandy Lean Clay (CL), Poorly Graded Sand (SP)

**Referenced from existing mudline elevation at the boring locations performed in marsh fill area, at the time of drilling activities.*

BORROW AREA SUBSURFACE CONDITIONS

Based on the field observations and results of the geotechnical laboratory testing, the soils were classified, and boring logs were developed. A generalized subsurface profile for borrow area is presented in Table 7.

Table 7: Generalized Soil Profile

Approximate Elevation Range (Datum: NAVD88 GEOID12B, feet)*	Consistency/Relative Density	Material Description
-12 to -24	Very Soft to Very Stiff	Lean Clay (CL), Fat Clay (CH), Sandy Lean Clay (CL)
-24 to -34	Soft to Stiff / Medium Dense	Lean Clay (CL), Fat Clay (CH), Poorly Graded Sand (SP), Poorly Graded Sand with Clay (SP-SC)

**Referenced from existing mudline elevation at the boring locations performed in borrow area, at the time of drilling activities.*

The above soil profile is of generalized nature to highlight the major subsurface stratification features and material characteristics of the marsh creation area. The boring logs and CPT sounding plots included in the Appendix A should be reviewed for specific information at individual locations. These records include soil descriptions, stratification, locations of the samples, and laboratory test data. The stratification shown on the boring logs represent the conditions only at the actual boring locations. Variations may occur and should be expected between and away from boring locations. The stratification represents the approximate boundary between subsurface materials and the actual transition may be more distinct or gradual.

TOP OF PLEISTOCENE

Based on information obtained from soil borings and CPT soundings in the marsh areas, the top of Pleistocene may be established at about -8 to -10 feet elevation in the marsh creation area.

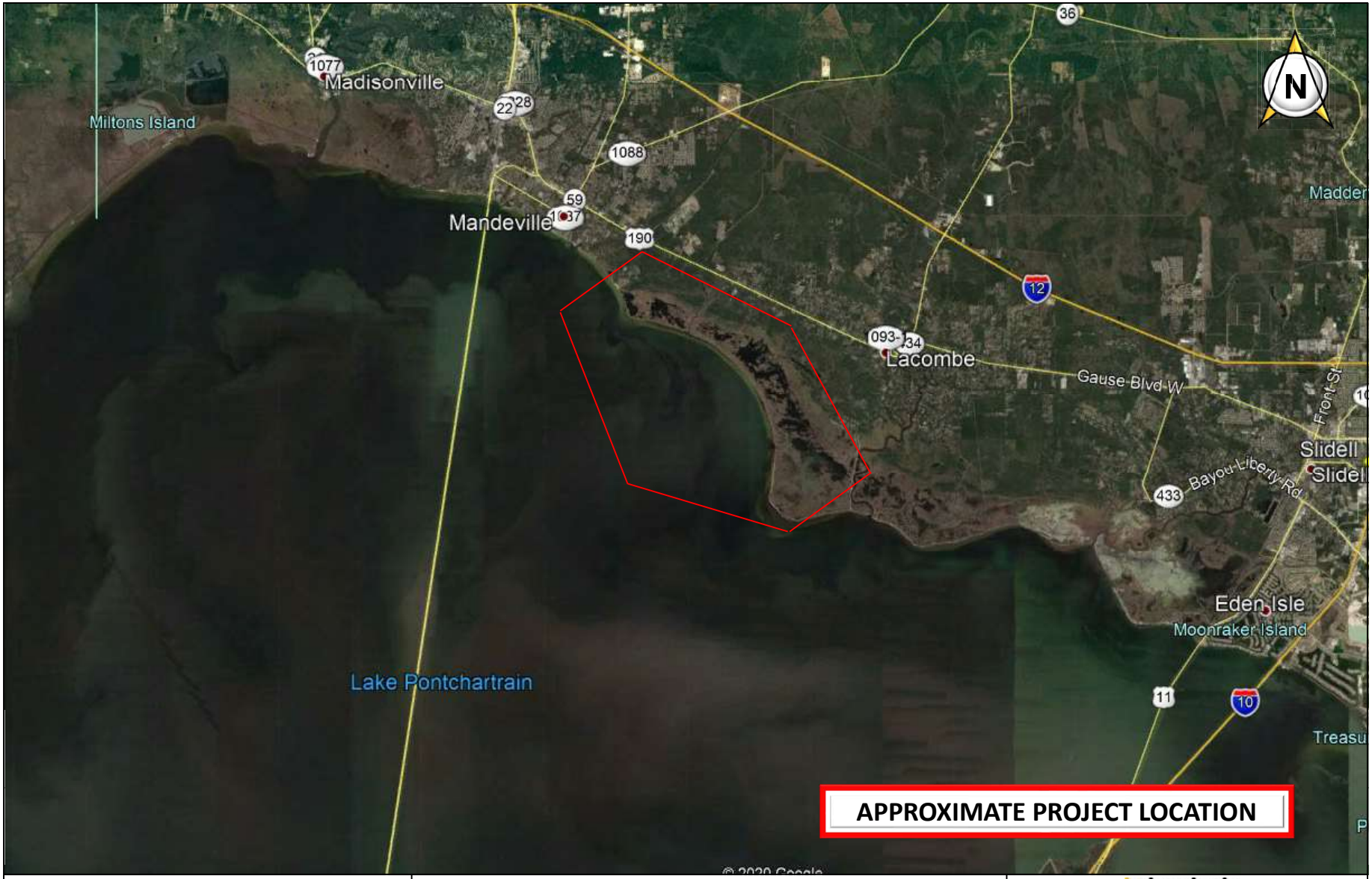
Based on information obtained from soil borings in the borrow area, the top of Pleistocene may be established at about -15 feet elevation in the borrow area.

FUTURE DESIGN REPORT

Based on furnished data from field work and Laboratory test results, soil properties will be established for the design of the proposed project and will be included in the final report.

APPENDIX A

SITE VICINITY MAP
SURVEY REPORT



GEOTECHNICAL ENGINEERING SERVICES
Bayou Cane Marsh Creation
St. Tammany Parish, Louisiana

SITE VICINITY MAP
PSI PROJECT NO.: 02541139
GOOGLE EARTH IMAGERY DATE: 1/2018

intertek psi

Survey Report

PO-181 Bayou Cane Boring Sites Survey
St. Tammany Parish, Louisiana

Prepared for Intertek-PSI
724 Central Ave.
Jefferson, LA 70121

Chustz Surveying, LLC
211 Richy Street
New Roads, LA 70760
225-638-5949

July 2020

Section 1
General Project Description

In July of 2020, Chustz Surveying was tasked by Intertek-PSI to conduct location and magnetometer surveys at 35 boring sites in St. Tammany Parish. The surveys consisted of locating the sites utilizing RTK and multibeam hydrographic methods constrained to the provided project benchmarks (PO33 SM 01 and CRMSPO-SM-11) along with a magnetometer survey.

Vicinity Map

Section 2
Data Collection

On July 6, 2020, Chustz Surveying deployed a two person crew to the site to begin the survey. First they located the provided benchmark CRMSPO-SM-11 and took photos. The crew was initially unable to locate the PO33 SM 01. They then set a temporary gauge and traveled to the sites in the lake to begin the survey. Due to bad weather, the crew was unable to return until July 13, 2020. Upon arrival, they traveled to the sites in the lake and finished the hydrographic survey. Next, utilizing two Trimble R6 GPS receivers, the crew set the base up on CRMSPO-SM-11 and set two 60D nails on site to establish temporary control points for the survey. They then moved the base to one of the nails and made an RTK tie to the other to confirm the temporary control points. The crew then ran a level loop from PO33 SM01 to the temporary gauge to establish the water surface elevation. The crew returned the next day with a third person and a Geometrics G882 cesium magnetometer and established additional control points throughout the site

while the magnetometer was set up and all systems were checked. The next day, they began locating the boring sites in the marsh area with RTK while collecting the magnetometer data. They drove ¾" pvc pipes with pink flagging into the ground at each location in the marsh. In Hypack, they set up a grid around each location to cover a 25 ft. radius for the magnetometer survey. On July 16th, the crew returned to collect the remaining magnetometer data in the lake and completed the survey that day. No significant magnetometer anomalies were detected as part of this survey.

Section 3
Data Processing

The data was transferred to our office for initial processing once the surveys were complete. The RTK data files were loaded into Trimble Business Center where they were processed and checked for correct rod and instrument heights. All RTK ties were checked to ensure they were within the allowed accuracies. The hydrographic and magnetometer data was processed in Hypack utilizing the temporary gauge readings.

Section 6
Project Summary and Conclusion

The field effort was completed ahead schedule on Thursday, July 16, 2020, and all data was processed and deliverables were completed for Friday, July 24, 2020. No safety incidents occurred as part of this work effort.

VICINITY MAP

1 inch = 3,000 feet

Reproduced from NAIP Louisiana 2013 1m Aerial Imagery

Station Name: "PO33 SM 01"

Location: From the intersection of I-12 and Hwy 434 go south 2.7 miles to Hwy 190. Turn right (west) for 0.3 miles to Hwy 434 (Lake road) for 3.4 miles to a bridge and a boat launch. The monument is 177 feet east of the centerline of Lake road, 59 feet N/E of the N/E corner of the concrete boat launch, and 13 feet westerly from the top bank of Bayou Lacome.

Monument Description: Monument is a 9/16steel rod driven to ?? feet to refusal within a 6" PVC sleeve set in concrete with protective metal accesscover stamped 'PO SM 01'

Stamping: PO SM 01

Installation Date: 2005 **Date of Survey:** 13-May-14

Monument Established By: C&C Technologies

NAD83 (2011) Epoch 2010.00 Geodetic Position

Lat: 30°16'06.92777"N
Long: 89°57'20.77295"W

NAD83 (2011) Epoch 2010.00 Datum LSZ (1702) Ft

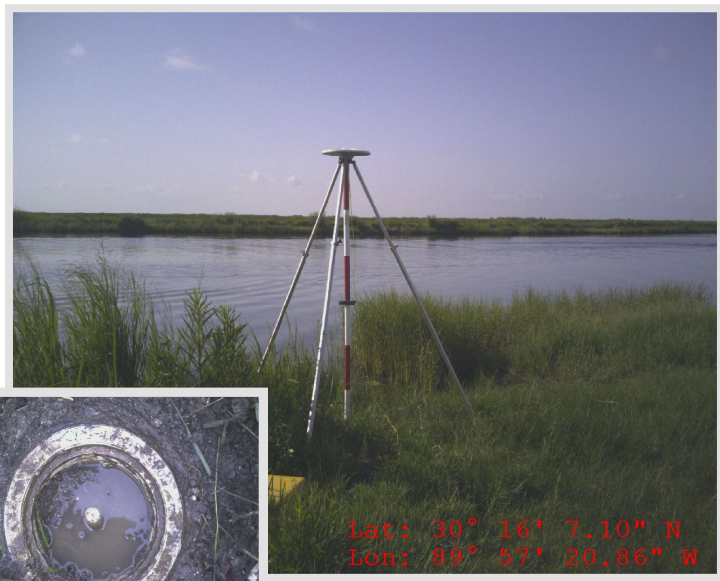
N= 645,784.85
E= 3,715,691.24

Adjusted NAVD88 Height

Elevation = 1.19 feet (0.363 mtrs)

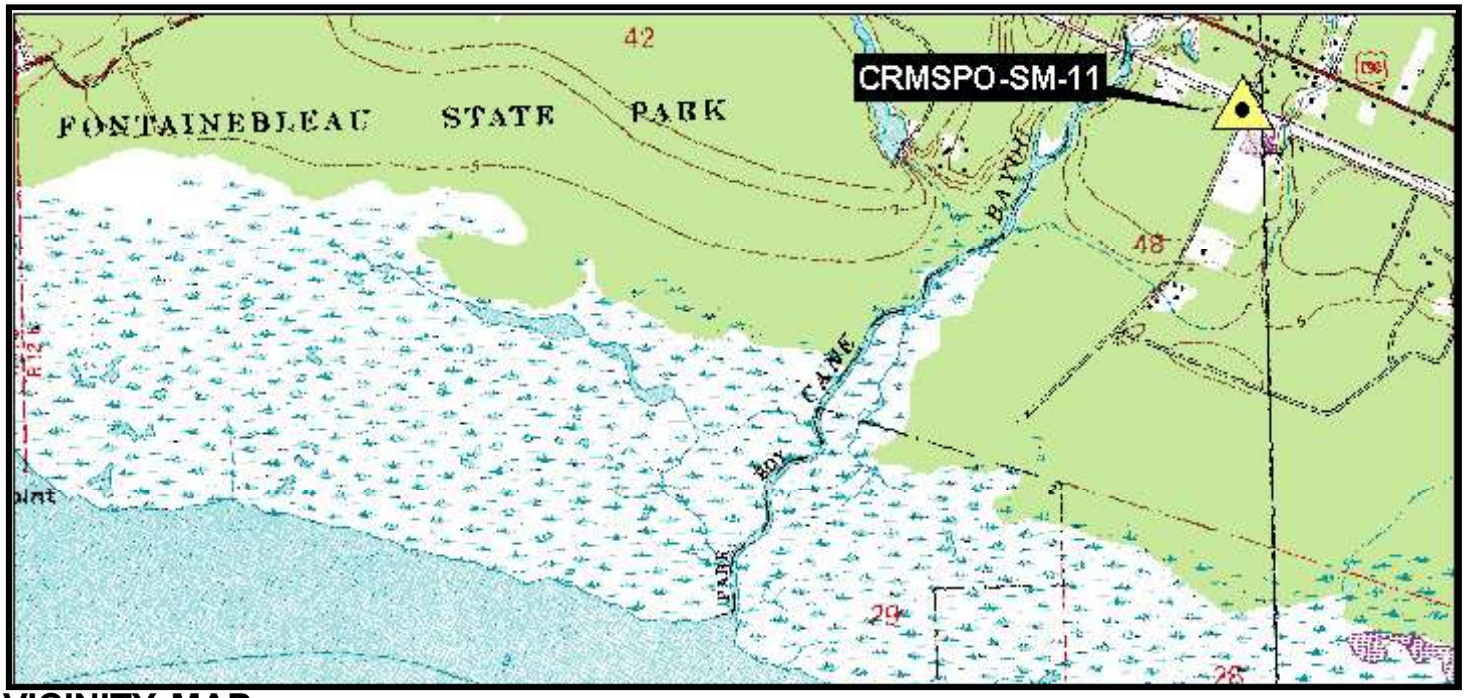
Ellipsoid Height (2011) = -26.241 mtrs.

Geoid12A Height = -26.604 mtrs.



FOR REFERENCE ONLY
LCZ Adjusted NAVD88 Height
Elevation (Geoid09)= N/A
Ellipsoid Height = N/A
Elevation (Geoid03)= 1.76 feet (0.537 mtrs)
Ellipsoid Height = -26.253 mtrs.
Elevation (Geoid99)= N/A
Ellipsoid Height = N/A

Adjusted Position Established John Chance Land Surveys, Inc. for the Coastal Protection & Restoration Authority of Louisiana



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "MANDEVILLE & LACOMBE" Quadrangle

Station Name: CRMSPO-SM-11

Monument Location: From the intersection of Hwy US Hwy 190 and the Lake Pontchartrain Causeway in Mandeville, go 6.8 miles west on Hwy 190 to Lemieux Blvd. Turn right on Lemieux Blvd. and go south 0.1 miles to a bike trail and the Monument. It is located 7' south of the centerline of a bicycle trail and 43' west of the centerline of Lemieux Blvd.

Monument Description: 9/16" steel rod driven to refusal within a 6" PVC sleeve set in concrete with protective metal access cover stamped **CRMSPO-SM-11.**

Date: July 2005

Monument Established By:
Chustz Surveying, Inc. for
Louisiana Department of
Natural Resources

Adjusted NAD 83 Geodetic Position*
Lat. 30°20'05.83357"N
Long. 90°00'02.48142"W

Adjusted NAD 1983 Datum*
LSZ (1702) Feet
N= 669750.54
E= 3701231.54

Adjusted NAVD88 (Feet) /Geoid99*
Elevation = 18.02

*** As surveyed for LaDNR CRMS project, contract NO: 2503-05-56**

PO-181 Bayou Cane Survey Locations (NAVD88-NAD83 US Survey Ft)

Site	Northing	Easting	Elevation	Water Surface	Depth
C-1	669179.29	3687573.24	0.49	-0.02	N/A
C-2/M-1	668446.23	3688520.66	-1.34	-0.02	1.32
C-3	667204.22	3688435.14	-1.48	-0.02	1.46
C-4	666574.52	3689404.84	-1.29	-0.02	1.27
C-5	665842.48	3691338.72	-0.97	-0.02	0.95
C-6/M-2	667154.95	3691693.24	-1.14	-0.02	1.12
C-7	665982.13	3692533.45	0.42	-0.02	N/A
C-8	665918.83	3693244.47	-2.14	-0.02	2.12
C-9/M-3	665644.37	3694586.10	-2.01	-0.02	1.99
C-10	664745.33	3695215.87	0.72	-0.02	N/A
C-11	661903.21	3701333.28	-1.44	-0.02	1.42
C-12	662098.14	3702500.36	-1.49	-0.02	1.47
C-13/M-4	661535.73	3703615.42	-2.75	-0.02	2.73
C-14	659854.65	3703024.00	-1.76	-0.02	1.74
C-15/M-5	659157.35	3704594.77	-2.58	-0.02	2.56
C-16	657716.47	3704969.87	-0.90	-0.02	0.88
C-17/M-6	656671.99	3706892.30	-2.18	-0.02	2.16
C-18	654174.87	3707231.95	0.29	-0.02	N/A
C-19	653210.85	3706520.76	-0.65	-0.02	0.63
C-20/M-7	653523.53	3708819.53	-1.60	-0.02	1.58
C-21/M-8	651544.24	3709278.43	-0.02	-0.02	0.00
C-22	650266.17	3709111.32	0.46	-0.02	N/A
C-23/M-9	648517.00	3710354.60	0.58	-0.02	N/A
B-1	653592.17	3692783.59	-12.47	-0.02	12.45
B-2	654296.28	3690819.59	-12.93	-0.02	12.91
B-3	652748.14	3688732.89	-13.84	-0.02	13.82
B-4	652972.28	3691044.15	-13.54	-0.02	13.52
B-5	652139.05	3693373.58	-12.61	-0.02	12.59
B-6	652775.97	3695090.92	-12.34	-0.02	12.32
B-7	650812.70	3694361.08	-12.57	-0.02	12.55
B-8	651652.76	3691569.40	-13.14	-0.02	13.12
B-9	651369.34	3689291.20	-13.99	-0.02	13.97
B-10	650982.83	3686457.33	-14.17	-0.02	14.15
B-11	649962.50	3689870.89	-13.84	-0.02	13.82
B-12	648877.69	3693540.55	-13.44	-0.02	13.42
B-13	650171.42	3692404.31	-13.62	-0.02	13.60

ALL INFORMATION SHOWN HEREON IS BASED ON EVIDENCE FOUND DURING FIELD SURVEY AND PERMITTED INFORMATION; OTHER HAZARDS/PIPELINES MAY EXIST WITHIN THE SURVEYED AREA THAT WERE NOT DISCOVERED DURING THE COURSE OF THE SURVEY.

DATES OF SURVEY 7/15/2020 & 7/16/2020

1,000 0 1,000
U.S. SURVEY FEET (1 =1,000')

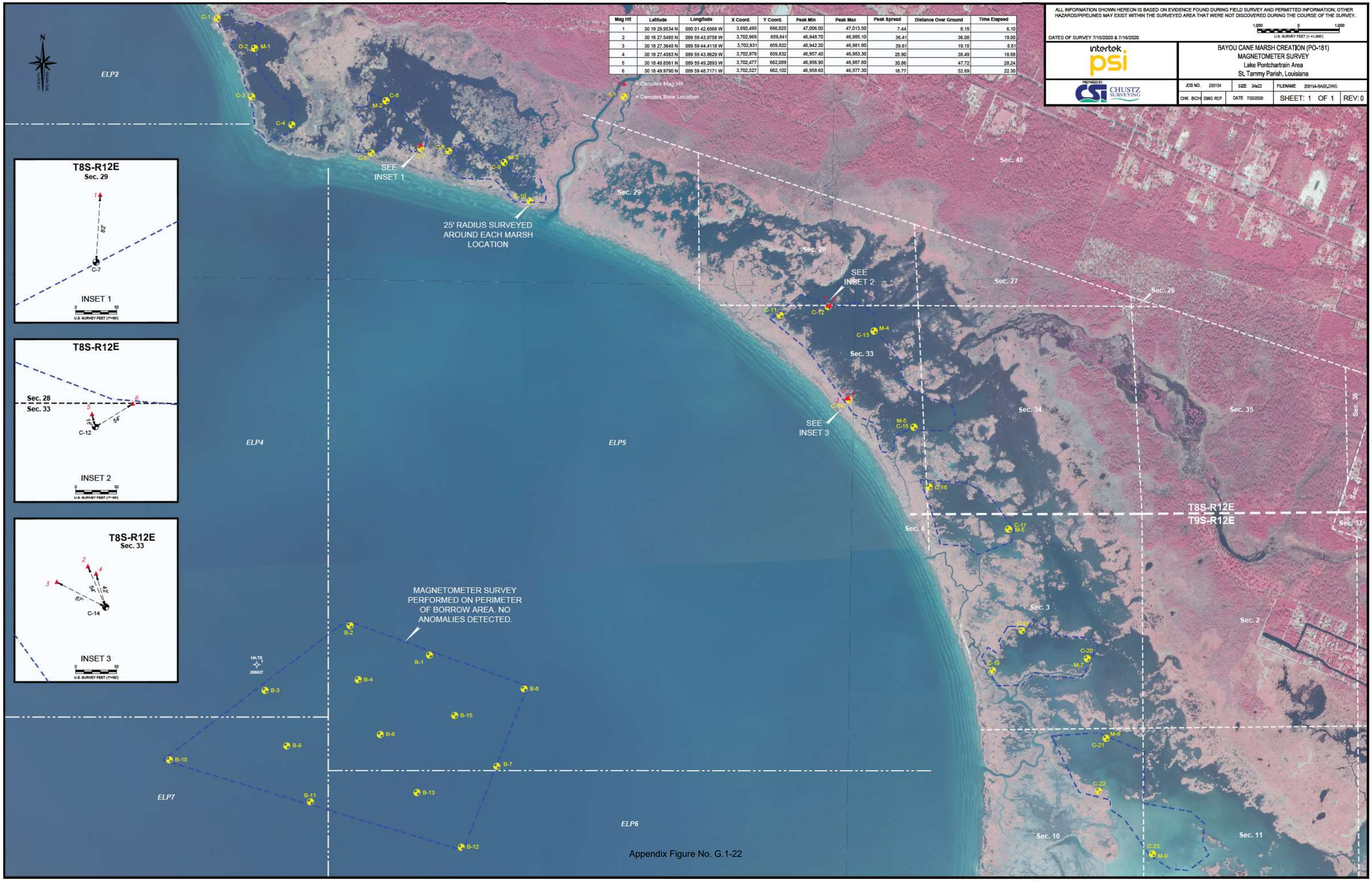
intertek psi

PREPARED BY: CHUSTZ SURVEYING

BAYOU CANE MARSH CREATION (PO-181)
MAGNETOMETER SURVEY
Lake Pontchartrain Area
St. Tammy Parish, Louisiana

JOB NO. 200154	SIZE 34x22	FILENAME 200154-BASE.DWG	
CHK BCH DWG REP	DATE 7/20/2020	SHEET: 1 OF 1	REV: 0

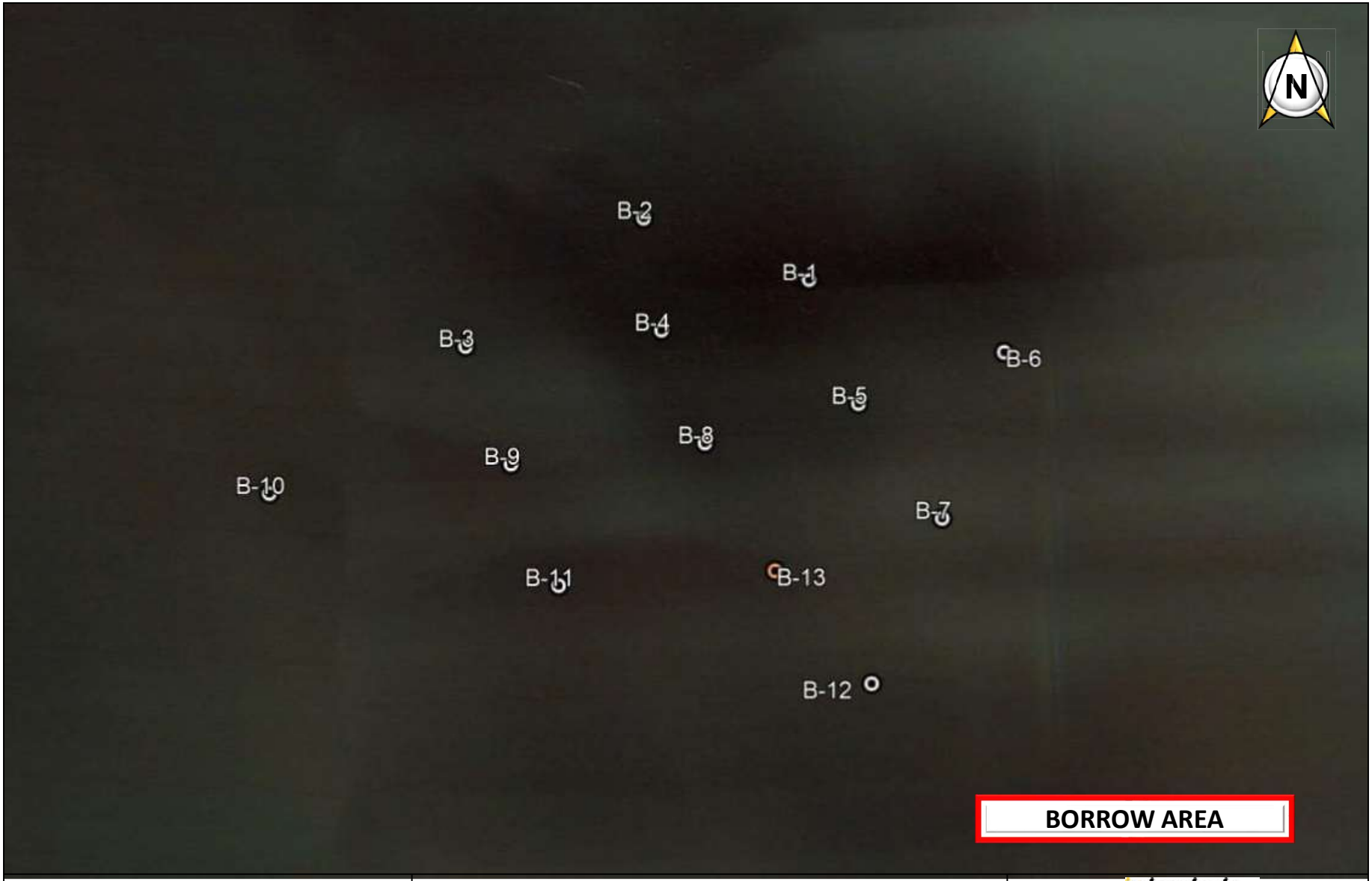
Mag Hit	Latitude	Longitude	X Coord.	Y Coord.	Peak Min	Peak Max	Peak Spread	Distance Over Ground	Time Elapsed
1	30 19 29.9534 N	090 01 42.6568 W	3,692,495	666,025	47,006.00	47,013.50	7.44	8.15	6.10
2	30 18 27.5485 N	089 59 43.9758 W	3,702,969	659,841	46,948.70	46,985.10	36.41	36.08	19.00
3	30 18 27.3648 N	089 59 44.4118 W	3,702,931	659,822	46,942.20	46,981.80	39.61	19.15	8.81
4	30 18 27.4583 N	089 59 43.8629 W	3,702,979	659,832	46,957.40	46,983.30	25.90	38.49	18.88
5	30 18 49.8561 N	089 59 49.2893 W	3,702,477	662,089	46,956.90	46,987.80	30.86	47.72	28.24
6	30 18 49.9790 N	089 59 48.7171 W	3,702,527	662,102	46,958.60	46,977.30	18.77	52.69	22.30



Appendix Figure No. G.1-22

APPENDIX B

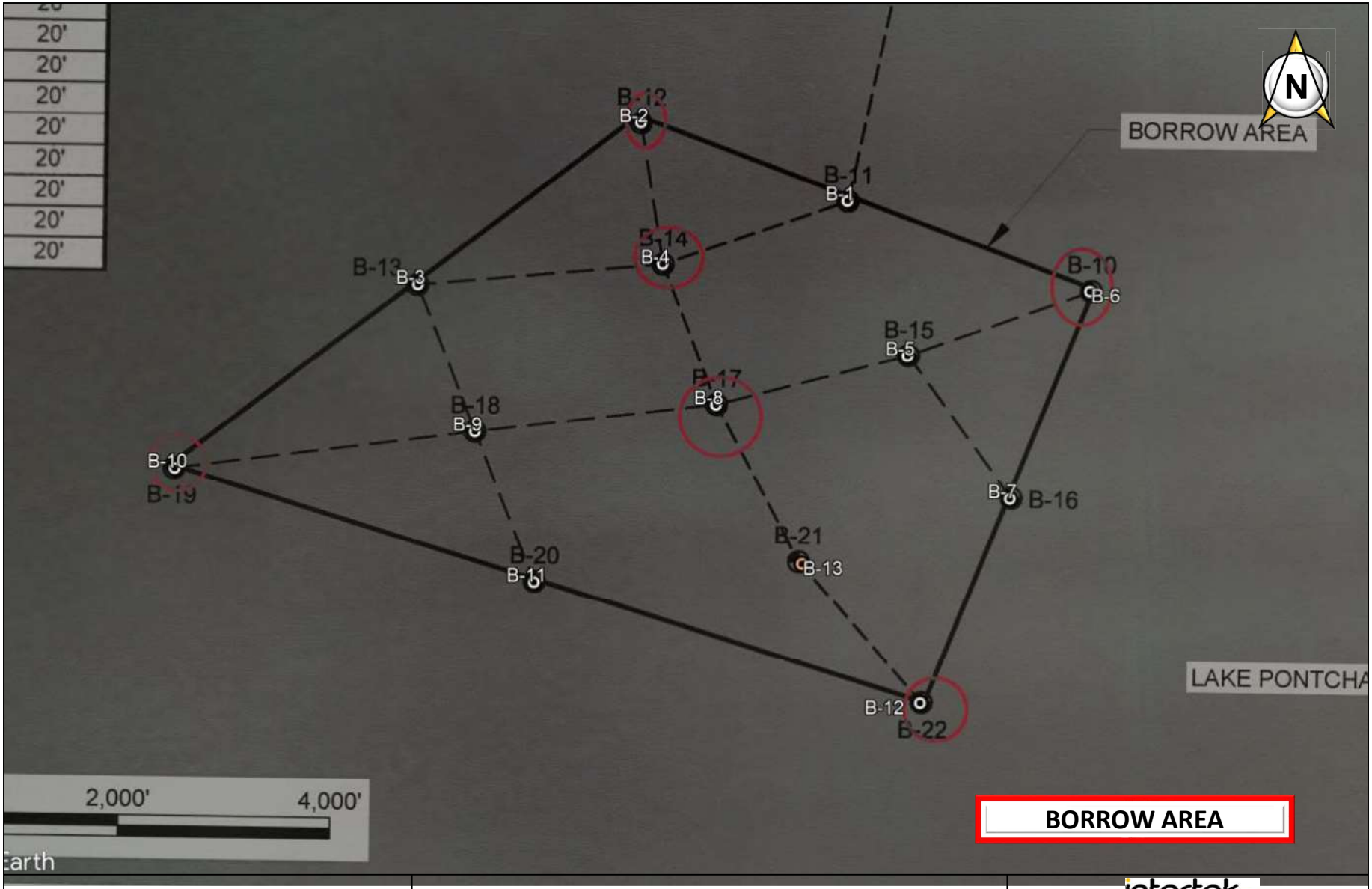
BORING LOCATION PLAN
BORING LOGS AND CPT SOUNDING PLOTS
KEY TO TERMS AND SYMBOLS USED ON BORING LOGS



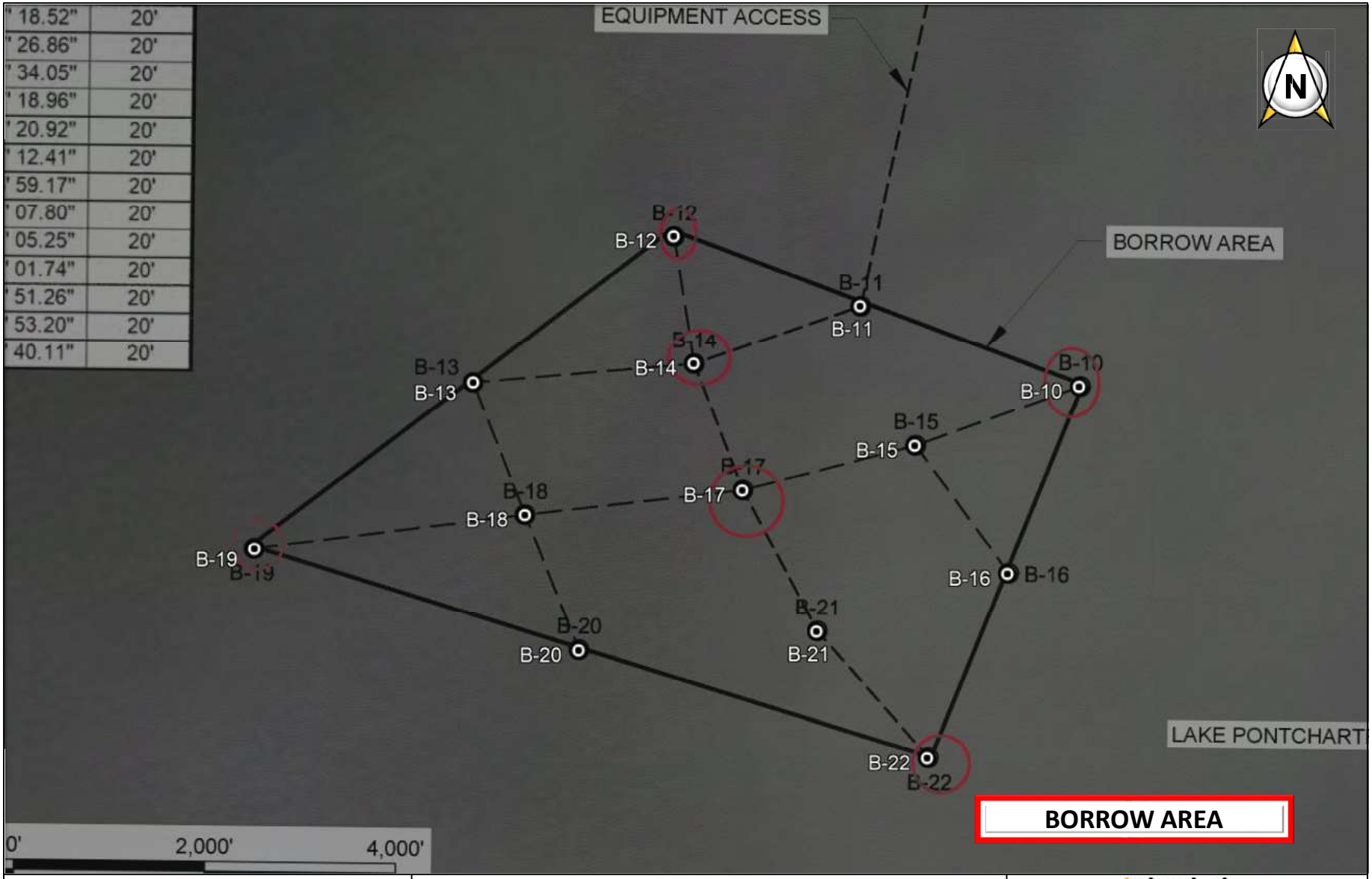
GEOTECHNICAL ENGINEERING SERVICES
Bayou Cane Marsh Creation
St. Tammany Parish, Louisiana

BORING LOCATION PLAN
PSI PROJECT NO.: 02541139
GOOGLE EARTH IMAGERY DATE: 1/2018

intertek psi



GEOTECHNICAL ENGINEERING SERVICES **Bayou Cane Marsh Creation** St. Tammany Parish, Louisiana	**BORING LOCATION PLAN** PSI PROJECT NO.: 02541139 GOOGLE EARTH IMAGERY DATE: 1/2018	intertek psi



GEOTECHNICAL ENGINEERING SERVICES **Bayou Cane Marsh Creation** St. Tammany Parish, Louisiana	**PERMITTED LOCATIONS** PSI PROJECT NO.: 02541139 GOOGLE EARTH IMAGERY DATE: 1/2018	intertek psi

GEOTECHNICAL ENGINEERING SERVICES
Bayou Cane Marsh Creation
St. Tammany Parish, Louisiana

BORING LOCATION PLAN

PSI PROJECT NO.: 02541139
GOOGLE EARTH IMAGERY DATE: 1/2018

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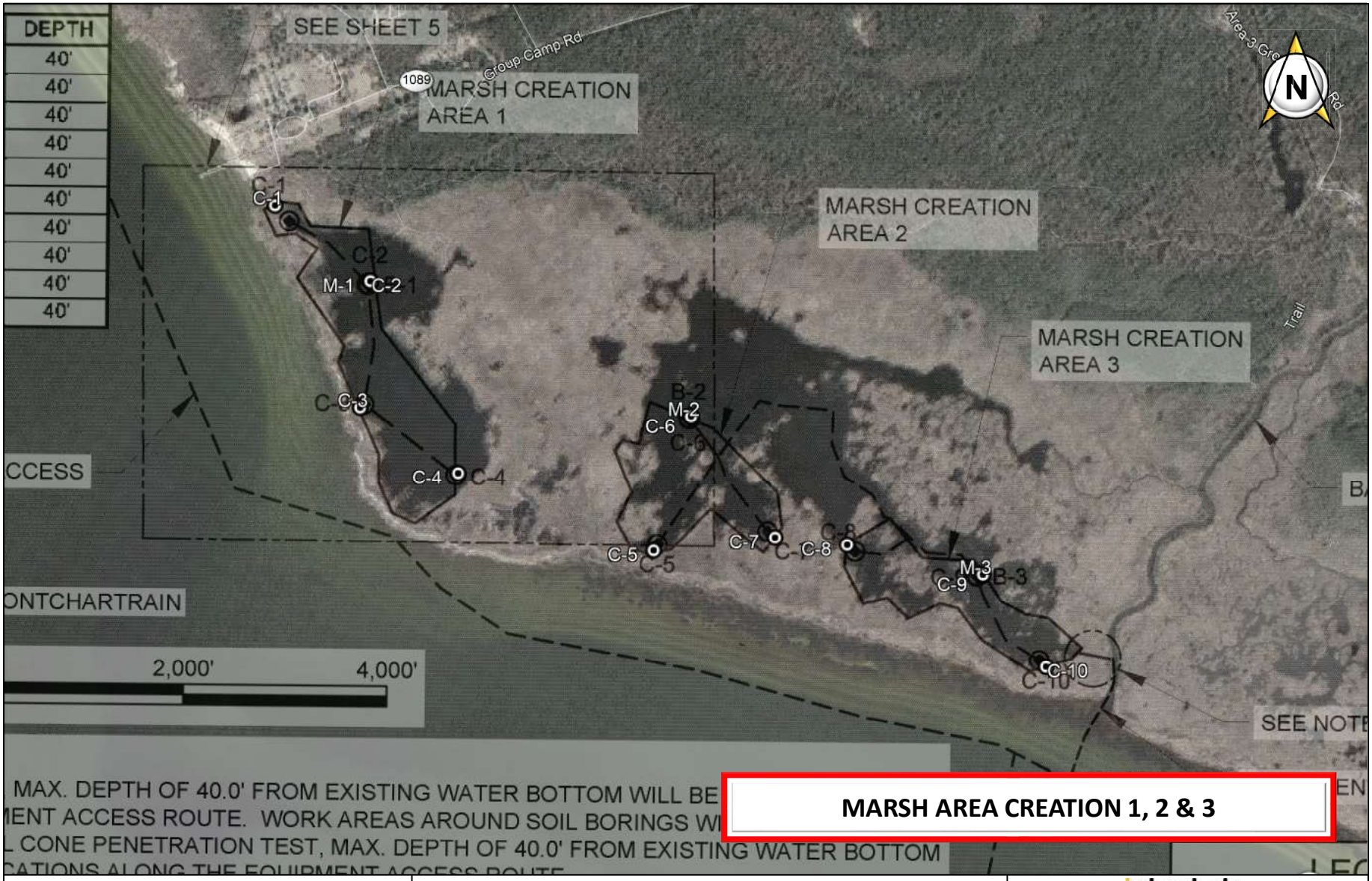
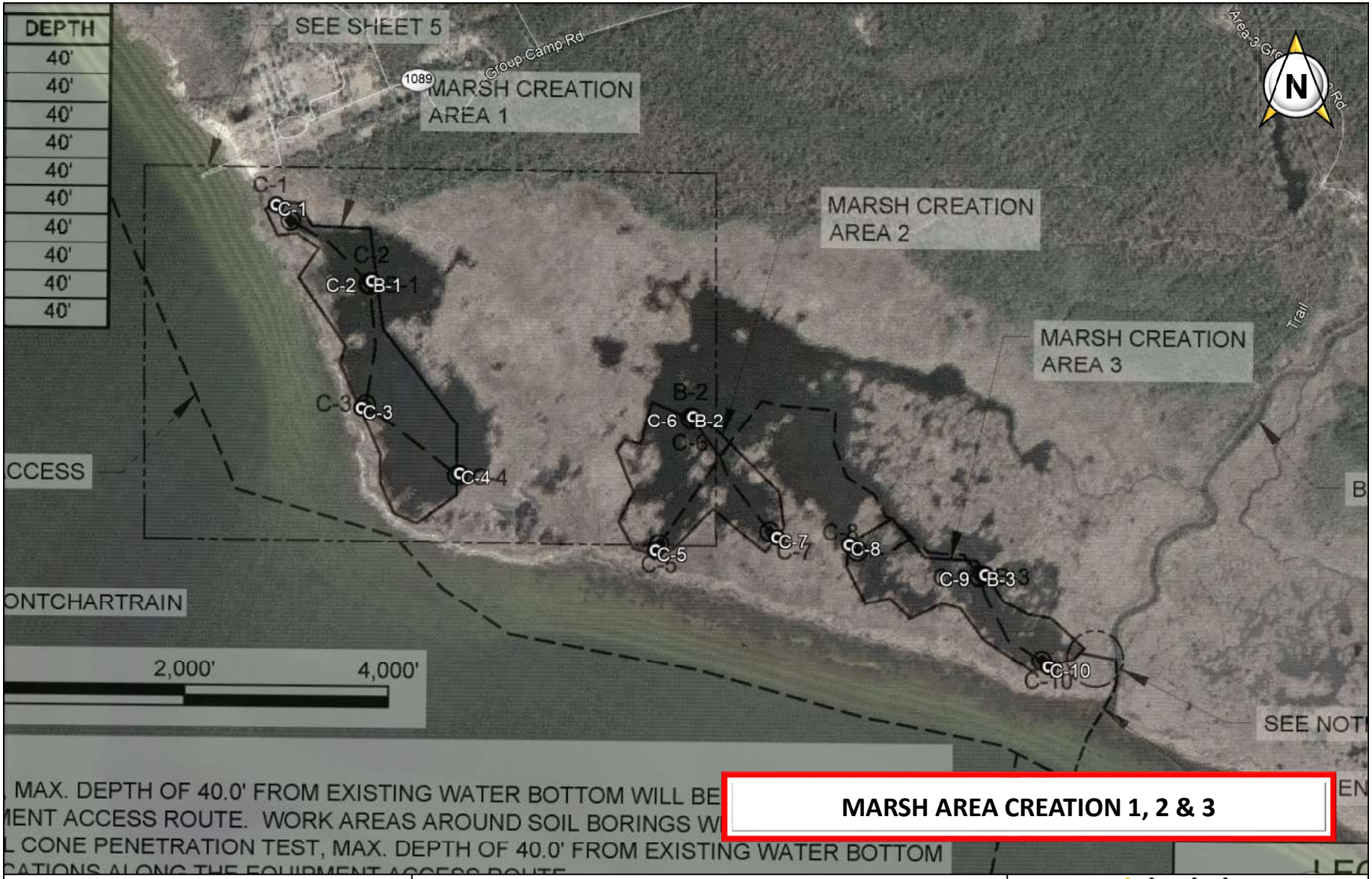


MARSH AREA CREATION 1, 2 & 3

GEOTECHNICAL ENGINEERING SERVICES **Bayou Cane Marsh Creation** St. Tammany Parish, Louisiana	**BORING LOCATION PLAN** PSI PROJECT NO.: 02541139 GOOGLE EARTH IMAGERY DATE: 1/2018	intertek psi



MARSH AREA CREATION 1, 2 & 3

GEOTECHNICAL ENGINEERING SERVICES **Bayou Cane Marsh Creation** St. Tammany Parish, Louisiana	**PERMITTED LOCATIONS** PSI PROJECT NO.: 02541139 GOOGLE EARTH IMAGERY DATE: 1/2018	intertek psi

GEOTECHNICAL ENGINEERING SERVICES
Bayou Cane Marsh Creation
St. Tammany Parish, Louisiana

BORING LOCATION PLAN

PSI PROJECT NO.: 02541139
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GEOTECHNICAL ENGINEERING SERVICES
Bayou Cane Marsh Creation
St. Tammany Parish, Louisiana

BORING LOCATION PLAN
PSI PROJECT NO.: 02541139
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GEOTECHNICAL ENGINEERING SERVICES
Bayou Cane Marsh Creation
St. Tammany Parish, Louisiana

PERMITTED LOCATIONS

PSI PROJECT NO.: 02541139
GOOGLE EARTH IMAGERY DATE: 1/2018

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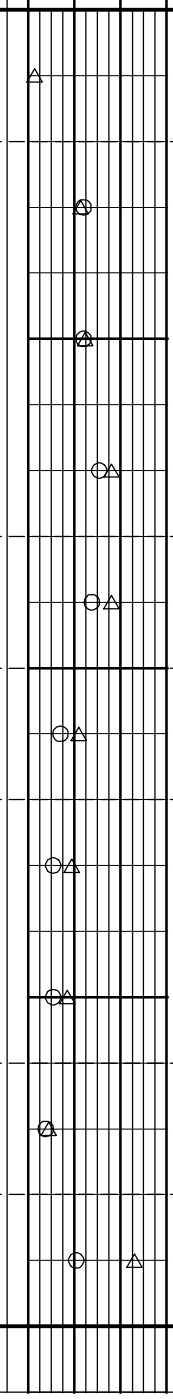
LOG OF BORING B-1

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CH		Very soft gray **FAT CLAY**, with less than 3/4" shell fragments		84	60							0.05		
2.5		CH		Stiff gray **FAT CLAY**		75	63	52	15	37		0.58		0.55		93
				- less than 3/4" shell fragments , 3 to 6 feet												
5.0						79	27					0.58		0.60		
7.5						75	33					0.75		0.88		
		CH		Stiff light gray/brown **FAT CLAY**		71	45					0.67		0.88		
10.0		CH		Firm to stiff gray **FAT CLAY**		67	44					0.33		0.53		
12.5		CH		Soft to firm gray **FAT CLAY**, with sand partings		79	45					0.25		0.45		
15.0						79	47					0.25		0.40		
		CH		Soft gray/brown **FAT CLAY**		75	45					0.17		0.20		
17.5		CH		Stiff to very stiff gray/brown **FAT CLAY**		71	49					0.50		1.13		
20.0				BORING TERMINATED AT 20 FEET												



DEPTH OF BORING: 20 FEET

DATE DRILLED: 9/25/20

NOTE: ELEVATION OF BORING: -12.47 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

JEFFERSON - LOG WITH RECOVERY - PSIHOUSTON.GDT - 12/8/20 16:49 - 0254

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Professional Service Industries, Inc.
724 Central Avenue
Jefferson Louisiana 70121
(504) 733-9411

Appendix Figure No. G.1-33

LOG OF BORING B-2

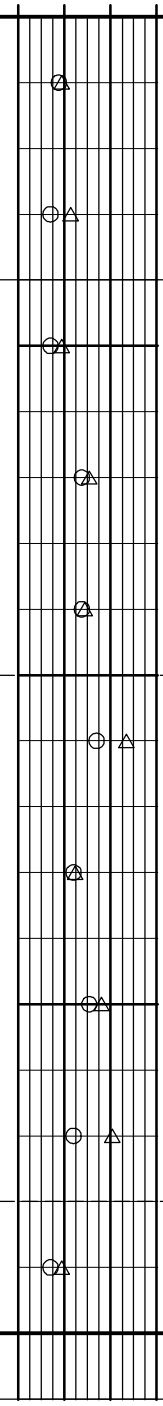
CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	USCS SYMBOL	SOIL DESCRIPTION	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
	CL	Firm to stiff gray **LEAN CLAY WITH SAND**	79	24					0.42		0.45		
2.5		- Hydrometer Results: 41.93% clay & 58.06% silt, 2 to 4 feet	71	26	44	14	30	79	0.33		0.55		99
	CH	Stiff light gray/brown **FAT CLAY**, with sand partings	71	26	50	14	36		0.33		0.45		100
5.0													
			67	24					0.67		0.75		
7.5													
			75	23	56	16	40		0.67		0.70		99
10.0													
	CH	Stiff to very stiff gray/tan **FAT CLAY**											
		- silt partings and sand pockets, 10 to 12 feet	67	35					0.83		1.15		
12.5													
		- sand partings and fine gravel pockets, 12 to 14 feet	71	36					0.58		0.60		
15.0		- silt partings, 14 to 18 feet	75	38	84	28	56		0.75		0.88		79
			83	42					0.58		1.00		
17.5													
	CH	Firm gray/tan **FAT CLAY**, with sand partings	75	46					0.33		0.45		
20.0		BORING TERMINATED AT 20 FEET											

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU



DEPTH OF BORING: 20 FEET

DATE DRILLED: 9/23/20

NOTE: ELEVATION OF BORING: -12.93 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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LOG OF BORING B-3

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CH		Firm gray **FAT CLAY**, with sand partings			26					0.33		0.43		
2.5				- sand pockets and less than 3/4" shell fragments, 2 to 3 feet			26					0.25		0.30		
		CH		Firm to stiff gray/brown **FAT CLAY**												
5.0							37					0.25		0.35		
7.5							46					0.58		0.94		
		CH		Stiff brown/gray **FAT CLAY**												
							49					0.58		1.00		
10.0							47					0.58		0.88		
		CH		Stiff gray/brown **FAT CLAY**, with silt partings												
12.5							36					0.58		0.75		
		CH		Firm to stiff gray **FAT CLAY**												
15.0				- less than 3/4" shell fragments and silt partings, 14 to 16 feet			42					0.50		0.75		
17.5				- sand pockets, 16 to 20 feet			31					0.33		0.45		
							40					0.25		0.30		
20.0				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU

0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET

DATE DRILLED: 9/23/20

NOTE: ELEVATION OF BORING: -13.84 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

JEFFERSON - LOG WITH RECOVERY - PSIHOUSTON.GDT - 12/8/20 16:49 - 0254

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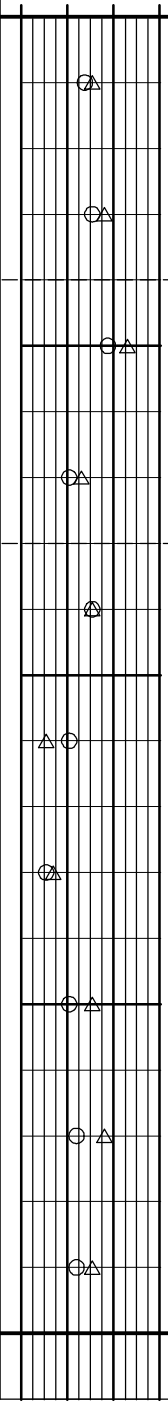
LOG OF BORING B-4

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CH		Stiff gray **FAT CLAY WITH SAND**, with sand partings												
				- Hydrometer Results: (43.65% clay & 56.34% silt), 0 to 2 feet		75	23	50	15	35	75	0.67		0.75		104
2.5						75	30					0.75		0.88		
		CH		Stiff to very stiff gray/brown **FAT CLAY**												
5.0				- sand pockets and silt partings, 4 to 6 feet		71	39	73	25	48		0.92		1.13		84
7.5						67	43					0.50		0.63		
		CH		Firm to stiff gray **FAT CLAY**												
				- silt partings, 8 to 10 feet		63	43	83	28	55		0.75		0.75		78
10.0						71	46					0.50		0.25		
12.5				- sand partings and less than 3/4" shell fragments, 12 to 14 feet		67	43					0.25		0.33		
15.0						75	49					0.50		0.75		
17.5				- trace of less than 3/4" shell fragments, 16 to 18 feet		71	44					0.58		0.88		
				- sand partings, 18 to 20 feet		50	32	52	18	34		0.58		0.75		90
20.0				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU



DEPTH OF BORING: 20 FEET
DATE DRILLED: 9/22/20
NOTE: ELEVATION OF BORING: -13.54 feet

GROUNDWATER DURING DRILLING: N /A
GROUNDWATER UPON COMPLETION: N /A
DELAYED GROUNDWATER: N / A

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724 Central Avenue
Jefferson Louisiana 70121
(504) 733-9411

LOG OF BORING B-5

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CH		Stiff gray/orange **FAT CLAY**, with sand partings		71	23					0.67		0.88		
2.5		CH		Firm to stiff gray/brown **FAT CLAY**												
				- silt partings, 2 to 4 feet		75	40					0.42		0.88		
5.0				- silt pockets , 4 to 6 feet		83	39					0.33		0.88		
7.5						75	44					0.42		0.75		
		CH		Firm to stiff gray **FAT CLAY**												
						63	42					0.33		0.88		
10.0				- sand partings, 10 to 12 feet		79	32					0.33		0.60		
12.5		SP-SC		Loose gray **POORLY GRADED SAND WITH CLAY**		75	34					0.25		0.50		
		SP		Medium dense gray/brown **POORLY GRADED SAND**, trace of clay, 14 to 16 feet	5-8-9 17	42	29									
15.0					6-8-10 18	67	26									
17.5					7-9-11 20	67	26									
20.0				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET

DATE DRILLED: 9/27/20

NOTE: ELEVATION OF BORING: -12.61 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.1-37

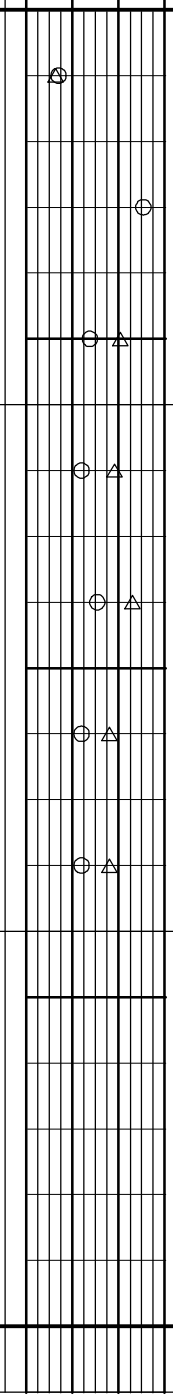
LOG OF BORING B-6

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CL		Stiff to very stiff gray **LEAN CLAY**		71	25	42	13	29		0.33		0.30		103
2.5				- sand partings, 0 to 4 feet		51	16					1.25				
5.0						75	30					0.67		1.00		
		CH		Stiff to very stiff gray **FAT CLAY WITH SAND**		83	41	68	19	49	82	0.58		0.94		83
7.5				- Hydrometer Results: (57.74% clay & 42.26% silt), 6 to 8 feet		94	38					0.75		1.13		
10.0							43	89	28	61		0.58		0.88		80
12.5							45					0.58		0.88		
		SP		Medium dense brown **POORLY GRADED SAND**	5-8-9 17	51	24									
15.0					6-9-9 18	63	25									
17.5					7-9-21 21	50	27	NP	NP	NP						
20.0				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU



DEPTH OF BORING: 20 FEET
DATE DRILLED: 9/26/20
NOTE: ELEVATION OF BORING: -12.34 feet

GROUNDWATER DURING DRILLING: N /A
GROUNDWATER UPON COMPLETION: N /A
DELAYED GROUNDWATER: N / A

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LOG OF BORING B-7

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CL		Very soft gray **SANDY LEAN CLAY**, with less than 3/4" shells fragments		67	36	32	17	15				0.03		68
2.5		CH		Firm to stiff gray **FAT CLAY**		42	29					0.67		0.88		
				- sand partings, 2 to 6 feet												
5.0						75	31					0.75		0.88		
						42	39					0.58		1.00		
7.5																
						46	40					0.58				
10.0																
						75	45							0.80		
12.5																
				- trace of less than 3/4" shell fragments, 12 to 14 feet		71	46					0.33		0.55		
15.0						67	30					0.33		0.40		
		CH		Stiff gray **FAT CLAY**, with silt partings												
						71	32					0.75				
17.5																
		SP		Medium dense brown **POORLY GRADED SAND**	7-9-13 22		29									
20.0				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET

DATE DRILLED: 9/27/20

NOTE: ELEVATION OF BORING: -12.57 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.1-39

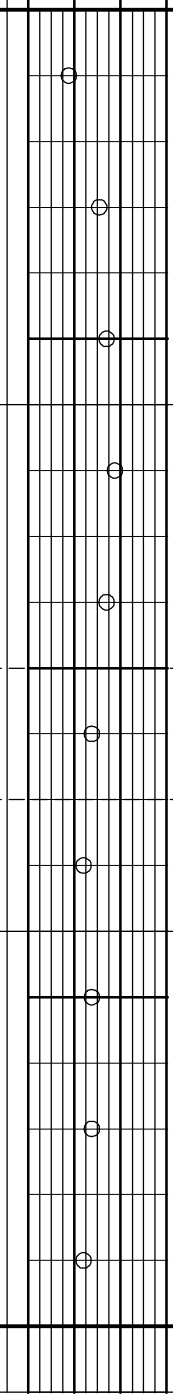
LOG OF BORING B-8

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CL		Firm to stiff gray **LEAN CLAY WITH SAND**												
				- Hydrometer Results: (44.37% clay & 55.63% silt), 0 to 2 feet		75	25	38	13	25	74	0.42				97
2.5						79	23					0.75				
5.0						75	27					0.83				
		CH		Stiff gray/tan **FAT CLAY**												
				- silt lenses, 6 to 8 feet		75	34	78	23	55		0.92				87
7.5							41					0.83				
10.0		CH		Stiff tan/gray **FAT CLAY**		79	43	76	25	51		0.67				78
12.5		CH		Stiff tan/orange **FAT CLAY**		71	43					0.58				
		CL		Stiff gray/tan **LEAN CLAY**, with sand partings												
15.0						67	31					0.67				
17.5						75	31	46	15	31		0.67				91
						71	29					0.58				
20.0				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU



DEPTH OF BORING: 20 FEET
DATE DRILLED: 9/28/20
NOTE: ELEVATION OF BORING: -13.14 feet

GROUNDWATER DURING DRILLING: N /A
GROUNDWATER UPON COMPLETION: N /A
DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.1-40

LOG OF BORING B-9

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	UC	TV	UU	DRY UNIT WEIGHT (pcf)
		CH		Firm to stiff gray **FAT CLAY**												
						71	24					0.75				
2.5						75	22					0.58				
5.0						67	36					0.75				
						75	37					0.75				
7.5						67	44					0.58				
10.0						75	45					0.42				
12.5						71	36					0.42				
15.0						67	44					0.42				
17.5						75	33					0.50				
				- silt seams, 18 to 20 feet		71	40					0.42				
20.0				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU

0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET

DATE DRILLED: 9/28/20

NOTE: ELEVATION OF BORING: -13.99 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.1-41

LOG OF BORING B-10

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CL		Stiff to very stiff gray **LEAN CLAY**												
						71	22	44	11	33		1.08				106
2.5						67	26					0.67				
				- Hydrometer Results: (39.39% clay & 60.61% silt), 4 to 6 feet												
5.0						63	28	46	17	29	94	0.50				97
						42	25					0.83				
7.5																
		CH		Stiff gray/brown **FAT CLAY**												
						67	36					0.67				
10.0																
				- silt seams, 10 to 12 feet		71	39	84	28	56		0.75				84
12.5																
						67	41					0.67				
		CH		Stiff brown **FAT CLAY**												
15.0						75	41					0.67				
						75	46	94	29	65		0.67				78
17.5																
						71	30					0.58				
20.0				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU

0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET

DATE DRILLED: 9/29/20

NOTE: ELEVATION OF BORING: -14.17 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.1-42

LOG OF BORING B-11

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CL		Firm to stiff gray **LEAN CLAY**												
						75	28					0.42		0.38		
2.5				- silt partings, 2 to 4 feet		75	25					0.58		0.40		
		CH		Firm to stiff gray **FAT CLAY**												
5.0						71	44					0.50		0.88		
						67	43					0.67		0.63		
7.5																
						58	46					0.25		0.30		
10.0																
						67	37					0.67		0.98		
12.5																
						42	45					0.67		0.75		
		CH		Firm brown **FAT CLAY**												
15.0						71	29					0.25		0.30		
				- sand partings, 16 to 18 feet		67	31					0.33		0.30		
17.5																
		SP		Medium dense brown **POORLY GRADED SAND**	7-9-12 21	67	22									
20.0				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET

DATE DRILLED: 9/29/20

NOTE: ELEVATION OF BORING: -13.84 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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LOG OF BORING B-12

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CL		Very soft gray **LEAN CLAY WITH SAND**, with less than 3/4" shell fragments - Hydrometer Results: (13.87% clay & 86.13% silt), 0 to 2 feet		71	32	38	12	26	78	0.00				101
2.5		CH		Firm gray **FAT CLAY**		67	28					0.42				
5.0						38	26	61	19	42		0.50				98
		CH		Stiff gray/brown **FAT CLAY**		75	48					0.58				
7.5						71	46	90	29	61		0.50				75
10.0						79	46					0.42				
12.5						75	46					0.67				
15.0						71	31					0.50				
		CH		Firm gray **FAT CLAY**, with sand partings		75	44	53	20	33		0.25				
17.5						71	48					0.42				73
20.0				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU

0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET

DATE DRILLED: 9/30/20

NOTE: ELEVATION OF BORING: -13.44 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.1-44

LOG OF BORING B-13

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CH		Stiff gray **FAT CLAY**, with sand partings		75	23					0.67		0.63		
2.5						67	22					0.92		1.13		
5.0						38	21					1.00		1.50		
		CH		Stiff light gray/brown **FAT CLAY**												
				- silt parting, 6 to 8 feet		42	42					0.58		0.88		
7.5																
						67	32					0.58		0.88		
10.0																
						42	41					0.50		0.88		
		CH		Stiff light gray **FAT CLAY**												
12.5						71	46					0.58		0.75		
		CH		Firm to stiff gray/brown **FAT CLAY**												
15.0						67	46					0.67		0.88		
				- sand partings, 16 to 18 feet		75	36					0.42		0.63		
17.5																
		SP		Medium dense brown **POORLY GRADED SAND**	8-10-14 24	63	23									
20.0				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET

DATE DRILLED: 9/30/20

NOTE: ELEVATION OF BORING: -13.62 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.1-45

LOG OF BORING M-1

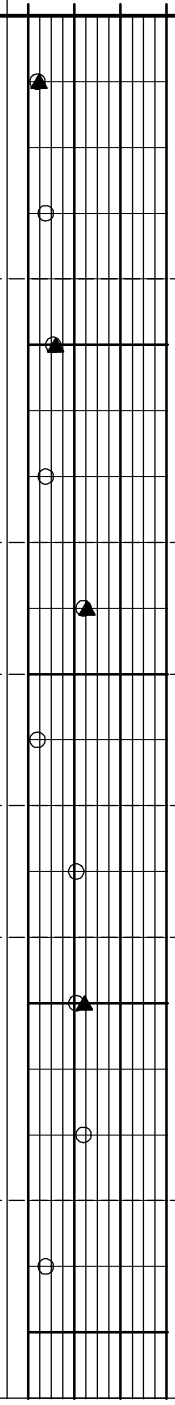
CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CL		Very soft to soft gray **LEAN CLAY**, with sand pockets - traces of organic, 0 to 2 feet		95	20	24	12	12		0.08		0.10	0.10	102
2.5						71	26					0.17				
		CL		Soft to firm light gray **SANDY LEAN CLAY**												
5.0						100	27	33	13	20		0.25			0.28	107
7.5						79	30				50	0.17				
		CL		Stiff light gray **SANDY LEAN CLAY**												
						100	24	36	16	20		0.58			0.62	100
10.0		CL		Very soft light gray/tan **LEAN CLAY**												
						100	30					0.08				
12.5		CH		Stiff tan/light gray **FAT CLAY**, with sand partings												
						77	31	66	23	43		0.50				
		CL		Stiff light gray **LEAN CLAY**, with sand partings												
15.0						38	30	44	20	24	100	0.50			0.59	92
17.5						98	28					0.58				
		CL		Soft light gray/tan **LEAN CLAY**, with sand partings												
						44	25	34	19	15		0.17				
20.0																

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU



DEPTH OF BORING: 40 FEET

DATE DRILLED: 9/2/20

NOTE: ELEVATION OF BORING: -1.34 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

JEFFERSON - LOG WITH RECOVERY - PSIHOUSTON.GDT - 12/8/20 12:42 - 0254

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Appendix Figure No. G.1-46

LOG OF BORING M-1

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
22.5																
		CH		Stiff light gray **FAT CLAY**, with sand partings and shell fragments		79	32					0.83			0.64	90
25.0																
27.5																
						79	36	67	23	44		0.83				
30.0																
32.5																
						29	40					0.83				
35.0																
37.5																
						96	32	83	27	56		0.67				
40.0				BORING TERMINATED AT 40 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 40 FEET

DATE DRILLED: 9/2/20

NOTE: ELEVATION OF BORING: -1.34 feet

JEFFERSON - LOG WITH RECOVERY - PSIHOUSTON.GDT - 12/8/20 12:42 - 0254

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Appendix Figure No. G.1-47

LOG OF BORING M-2

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		OH		Very soft dark gray/black **ORGANIC CLAY**		58	195	207	78	129				0.05	0.05	80
2.5						67	639	213	67	146						
		CL		Very soft dark gray **LEAN CLAY**			37	35	16	19						
		CH		Firm to stiff light gray **SANDY FAT CLAY**		73	23							0.50	0.74	90
5.0																
						98	35	58	16	42	61	0.42				
7.5																
		CL		Firm light gray **LEAN CLAY**, with sand pockets		81	22					0.25				
10.0																
						98	25	29	21	8		0.33			0.41	96
12.5																
						89	36					0.33				
15.0				- Possible clay stone layer, 14 to 16 feet		100	30	38	22	16						
						69	37					0.50				
17.5																
		CH		Stiff tan **FAT CLAY WITH SAND**		96	27	60	22	38	84				0.66	89
20.0																

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 40 FEET
DATE DRILLED: 8/18/20
NOTE: ELEVATION OF BORING: -1.14 feet

GROUNDWATER DURING DRILLING: N /A
GROUNDWATER UPON COMPLETION: N /A
DELAYED GROUNDWATER: N / A

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LOG OF BORING M-2

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
22.5																
		CH		Firm to stiff light gray/brown **FAT CLAY**, with silt partings and shells fragments		81	33				95	0.50				
25.0																
27.5																
						100	41	82	27	55		0.58				
30.0																
32.5																
						100	46					0.42				
35.0																
37.5																
						100	42	86	31	55		0.67				
40.0				BORING TERMINATED AT 40 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 40 FEET

DATE DRILLED: 8/18/20

NOTE: ELEVATION OF BORING: -1.14 feet

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Appendix Figure No. G.1-49

LOG OF BORING M-3

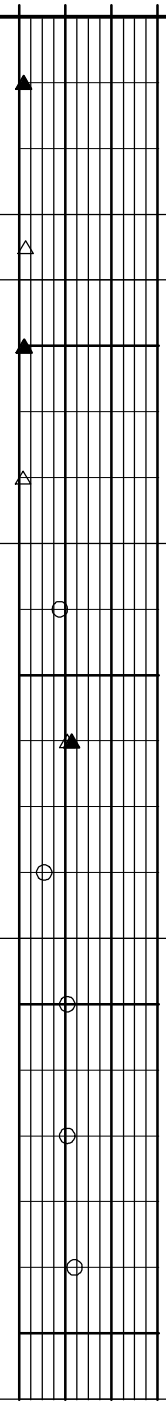
CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		OH		Very soft black **ORGANIC CLAY**		83	438	392	131	261				0.03	0.03	12
2.5																
		CL		Very soft gray **LEAN CLAY**, with sand partings		21	33							0.05		
		OH		Very soft dark gray/black **ORGANIC CLAY**		100	460	314	95	219				0.03	0.04	16
5.0																
						69	529	394	117	277				0.02		
7.5																
		CL		Firm to stiff light gray **LEAN CLAY WITH SAND**		36	21	42	12	30		0.42				
10.0																
						83	27				80			0.50	0.55	93
12.5																
				- sand partings, 12 to 14 feet		94	36	46	19	27		0.25				
		CH		Firm to stiff tan/light gray **FAT CLAY**, sand												
15.0				- sand seams, 14 to 16 feet		100	40					0.50				
				- calcareous framents, 16 to 18 feet		63	32	61	23	38		0.50				
17.5				- silt partings and calcareous fragments, 18 to 30 feet												
						69	33				97	0.58				
20.0																

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU



DEPTH OF BORING: 40 FEET

DATE DRILLED: 8/19/20

NOTE: ELEVATION OF BORING: -2.01 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.1-50

LOG OF BORING M-3

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
22.5																
			■			63	37	76	26	50		0.50				
25.0																
27.5																
			■			77	36					0.75			0.74	79
30.0																
32.5																
			■			100	38	86	30	56		0.50				
35.0																
37.5																
			■			100	49					0.42		0.45	0.45	69
40.0				BORING TERMINATED AT 40 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 40 FEET

DATE DRILLED: 8/19/20

NOTE: ELEVATION OF BORING: -2.01 feet

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Appendix Figure No. G.1-51

LOG OF BORING M-4

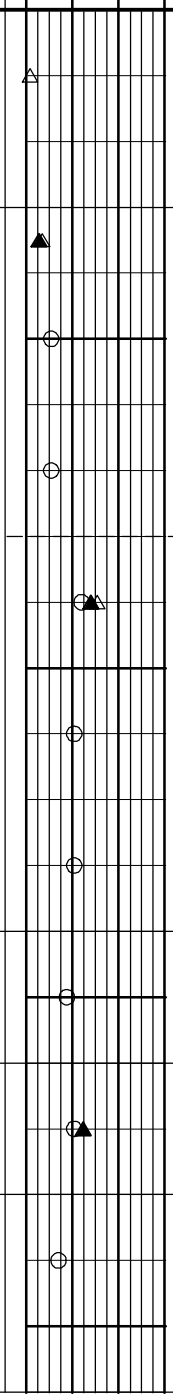
CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		OH		Very soft dark gray/black **ORGANIC CLAY**		100	659	425	114	311				0.02		
-2.5						56	45	53	21	32						
		CL		Soft to firm light gray **LEAN CLAY WITH SAND**			28	34	14	20				0.15	0.12	94
-5.0						98	26				77	0.25				
-7.5						51	33	45	15	30		0.25				
		CL		Firm to stiff light gray **LEAN CLAY WITH SAND**		83	28	49	17	32		0.58		0.75	0.68	94
-10.0						92	25				81	0.50				
-12.5				- sand partings, 12 to 14 feet		92	30					0.50				
-15.0		CH		Firm light gray **FAT CLAY**, with silt partings		90	41	58	20	38	100	0.42				
-17.5		CL		Firm to stiff light gray **LEAN CLAY**, with silt partings		31	32	36	23	13		0.50			0.60	94
-20.0		CH		Firm to stiff gray/brown **FAT CLAY**, with silt and sand partings		48	46					0.33				

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU



DEPTH OF BORING: 40 FEET

DATE DRILLED: 8/13/20

NOTE: ELEVATION OF BORING: -2.75 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.1-52

LOG OF BORING M-4

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
22.5																
			■			100	49					0.50				
25.0																
27.5																
			■	- shells, 28 to 30 feet		96	35	73	26	47		0.42				
30.0																
32.5																
			■			58	45					0.42				
35.0																
37.5																
			■	- silt partings, 38 to 40 feet		100	54	78	26	52				0.50	0.57	70
40.0				BORING TERMINATED AT 40 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 40 FEET

DATE DRILLED: 8/13/20

NOTE: ELEVATION OF BORING: -2.75 feet

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Appendix Figure No. G.1-53

LOG OF BORING M-5

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	UC	TV	UU	DRY UNIT WEIGHT (pcf)
		PT		Very soft black **PEAT**			442									
		OH		Very soft dark gray **ORGANIC CLAY**			159	135	34	101				0.05	0.04	30
2.5		CL		Very soft to soft light gray **SANDY LEAN CLAY**		64	25							0.15		
5.0						92	24	34	15	19	70	0.17				
		CL		Soft light gray **LEAN CLAY WITH SAND**		83	23					0.25				
7.5																
		CL		Stiff light gray **LEAN CLAY**, silt and trace sand		56	22	40	18	22		0.75			0.75	106
10.0						58	25				89	0.83				
12.5						92	27	41	19	22		0.50				
		CH		Firm light gray **FAT CLAY**, silt		42	32	61	22	39	100	0.33			0.39	83
15.0																
		CH		Firm to stiff light gray/tan/brown **FAT CLAY** - silt partings 16 to 20 feet		100	41					0.50				
17.5						100	40	68	25	43		0.50				
20.0																

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 40 FEET

DATE DRILLED: 8/12/20

NOTE: ELEVATION OF BORING: -2.58 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

JEFFERSON - LOG WITH RECOVERY - PSIHOUSTON.GDT - 12/8/20 12:42 - 0254

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Appendix Figure No. G.1-54

LOG OF BORING M-5

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
22.5																
						100	42					0.42				
25.0																
27.5																
						100	50	91	31	60	100				0.33	69
30.0																
32.5																
		CH		- silt partings 33 to 35 feet												
						100	54					0.42				
35.0																
37.5																
		CH		Very soft gray **FAT CLAY**												
						100	61	80	26	54		0.08				
40.0				BORING TERMINATED AT 40 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 40 FEET
DATE DRILLED: 8/12/20
NOTE: ELEVATION OF BORING: -2.58 feet

JEFFERSON - LOG WITH RECOVERY - PSIHOUSTON.GDT - 12/8/20 12:42 - 0254

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Appendix Figure No. G.1-55

LOG OF BORING M-6

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		OH		Very soft dark gray/black **ORGANIC CLAY**			69	93	31	62						
-2.5		PT		Very soft black **PEAT**		96	588									
		CL		Very soft to soft gray **SANDY LEAN CLAY**			23	32	13	19				0.15	0.14	106
-5.0				- silt seams 4 to 6 feet	0-0-1 1		31				64					
-7.5					1-2-2 4		26									
		CH		Firm to stiff light gray **FAT CLAY**, with sand pockets		60	33	54	22	32		0.33			0.44	89
-10.0						31	29				93	0.42				
-12.5						87	32	60	22	38		0.33			0.44	82
-15.0						60	33	54	21	33		0.42				
-17.5				- shell fragments, 16 to 18 feet		94	39					0.50				
-20.0						77	37	79	26	53		0.33			0.46	78

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 40 FEET

DATE DRILLED: 8/11/20

NOTE: ELEVATION OF BORING: -2.18 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.1-56

LOG OF BORING M-6

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
22.5																
			■			79	46					0.33				
25.0																
27.5																
			■	- silt seams, 28 to 30 feet		25	29	84	28	56		0.42				
30.0																
32.5																
			■			100	56					0.33				
35.0																
37.5																
			■	- shell fragments, 38 to 40 feet		90	59	88	28	60		0.33				
40.0				BORING TERMINATED AT 40 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU — 0.0 0.5 1.0 1.5

DEPTH OF BORING: 40 FEET

DATE DRILLED: 8/11/20

NOTE: ELEVATION OF BORING: -2.18 feet

JEFFERSON - LOG WITH RECOVERY - PSIHOUSTON.GDT - 12/8/20 12:42 - 0254

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Appendix Figure No. G.1-57

LOG OF BORING M-7

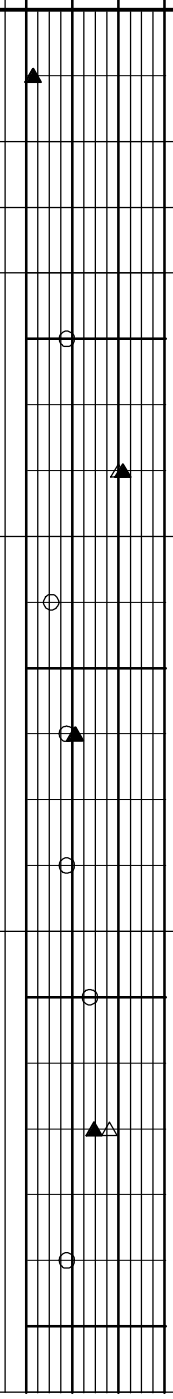
CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		OH		Very soft dark gray **ORGANIC CLAY**		65	99	54	20	34				0.05	0.06	82
2.5		PT		Very soft black **PEAT**		33	516	543	200	343						
		SC		Loose light gray/black **CLAYEY SAND**, traces of organic			21	24	16	8						
5.0		CH		Firm to stiff light gray **FAT CLAY**, with sand partings		25	34					0.42				
7.5						89	26	56	17	39				0.98	1.03	100
		CL		Firm light gray **LEAN CLAY**, with sand partings		100	28					0.25				
10.0						92	30	40	19	21	90	0.42		0.50	0.52	92
12.5						87	28					0.42				
		CH		Stiff light gray **FAT CLAY**												
15.0				- silt partings and shell fragments, 14 to 16 feet		83	32	74	25	49	100	0.67				
17.5						67	39	76	28	48				0.88	0.72	80
				- silt partings, 18 to 20 feet		98	44					0.42				
20.0																

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU



DEPTH OF BORING: 40 FEET

DATE DRILLED: 8/10/20

NOTE: ELEVATION OF BORING: -1.60 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.1-58

LOG OF BORING M-7

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
22.5																
		CH		Firm to stiff gray **FAT CLAY**												
				- silt partings, 23 to 25 feet		63	55	82	28	54		0.42				
25.0																
27.5																
						96	48					0.33				
30.0																
32.5																
				- sand pockets and shell fragments, 33 to 35 feet		92	61	78	25	53		0.33			0.22	63
35.0																
37.5																
				- sand pockets , 38 to 40 feet		85	28					0.67				
40.0				BORING TERMINATED AT 40 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 40 FEET
DATE DRILLED: 8/10/20
NOTE: ELEVATION OF BORING: -1.60 feet

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Appendix Figure No. G.1-59

LOG OF BORING M-8

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		OH		Very soft black **SANDY ORGANIC CLAY**	WOH		52	32	20	12	57					
2.5					0-0-1 1		19									
		CL		Very soft to soft gray **SANDY LEAN CLAY**	1-2-1 3		18	42	12	30						
5.0																
					WOH		25				67					
7.5																
		CL		Firm to stiff gray **SANDY LEAN CLAY**	2-2-4 6		24	40	12	28						
10.0																
					3-5-6 11		26				60					
12.5						58	24	44	18	26		0.58			0.60	95
15.0						92	27					0.33				
		CH		Firm light gray/brown **FAT CLAY**, silt partings		94	36	58	22	36		0.42			0.34	81
17.5																
						83	39				100	0.42				
20.0																

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 40 FEET

DATE DRILLED: 8/8/20

NOTE: ELEVATION OF BORING: -0.02 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.1-60

LOG OF BORING M-8

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) ○ HP ● UC △ TV ◆ MV ▲ UU (0.0 0.5 1.0 1.5)	SHEAR STRENGTH (tsf) HP	UC	TV	UU	DRY UNIT WEIGHT (pcf)
22.5																	
		CH		Soft gray **FAT CLAY**,with sand seams	1-2-2 4		46	58	27	31							
25.0																	
27.5					2-1-2 3		50										
30.0																	
32.5																	
		SC		Mwdium dense gray **CLAYEY SAND**	7-8-4 12		44				37						
35.0																	
37.5																	
		CH		Firm light gray **SANDY FAT CLAY**	3-4-4 8		41	82	25	57							
40.0				BORING TERMINATED AT 40 FEET													

DEPTH OF BORING: 40 FEET

DATE DRILLED: 8/8/20

NOTE: ELEVATION OF BORING: -0.02 feet

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LOG OF BORING M-9

CPRA PO 181

ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	UC	TV	UU	DRY UNIT WEIGHT (pcf)
		PT		Very soft black **PEAT**		29	711									
2.5		SC		Very loose **CLAYEY SAND**	2-2-1 3		18									
5.0					1-2-2 4		23				31					
7.5		SP-SC		Medium dense gray **POORLY GRADED SAND WITH CLAY**	9-10-11 21		19									
					10-13-13 26		17									
10.0		CL		Very soft to soft tan/gray **LEAN CLAY WITH SAND**	2-2-2 4		23									
12.5						33	19	36	13	23		0.08				
15.0		SP-SC		Medium dense gray **POORLY GRADED SAND WITH CLAY**	8-10-13 23		18									
17.5					10-12-15 27		22				9					
20.0		SP		Dense to very dense tan **POORLY GRADED SAND**	10-15-16 31		20									

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 40 FEET

DATE DRILLED: 8/7/20

NOTE: ELEVATION OF BORING: -0.58 feet

GROUNDWATER DURING DRILLING: N /A

GROUNDWATER UPON COMPLETION: N /A

DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.1-62

LOG OF BORING M-9

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: BAYOU CANE | PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	RECOVERY (%)	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) ○ HP ● UC △ TV ◆ MV ▲ UU (0.0 0.5 1.0 1.5)	SHEAR STRENGTH (tsf) HP	UC	TV	UU	DRY UNIT WEIGHT (pcf)
22.5																	
			X		17-50/4" 67/10"		20										
25.0																	
27.5																	
			X		15-27-29 56		18										
30.0																	
32.5																	
			X		19-23-25 48		17				1						
35.0																	
37.5																	
			X		19-25-31 56		17										
40.0				BORING TERMINATED AT 40 FEET													

DEPTH OF BORING: 40 FEET
DATE DRILLED: 8/7/20
NOTE: ELEVATION OF BORING: -0.58 feet

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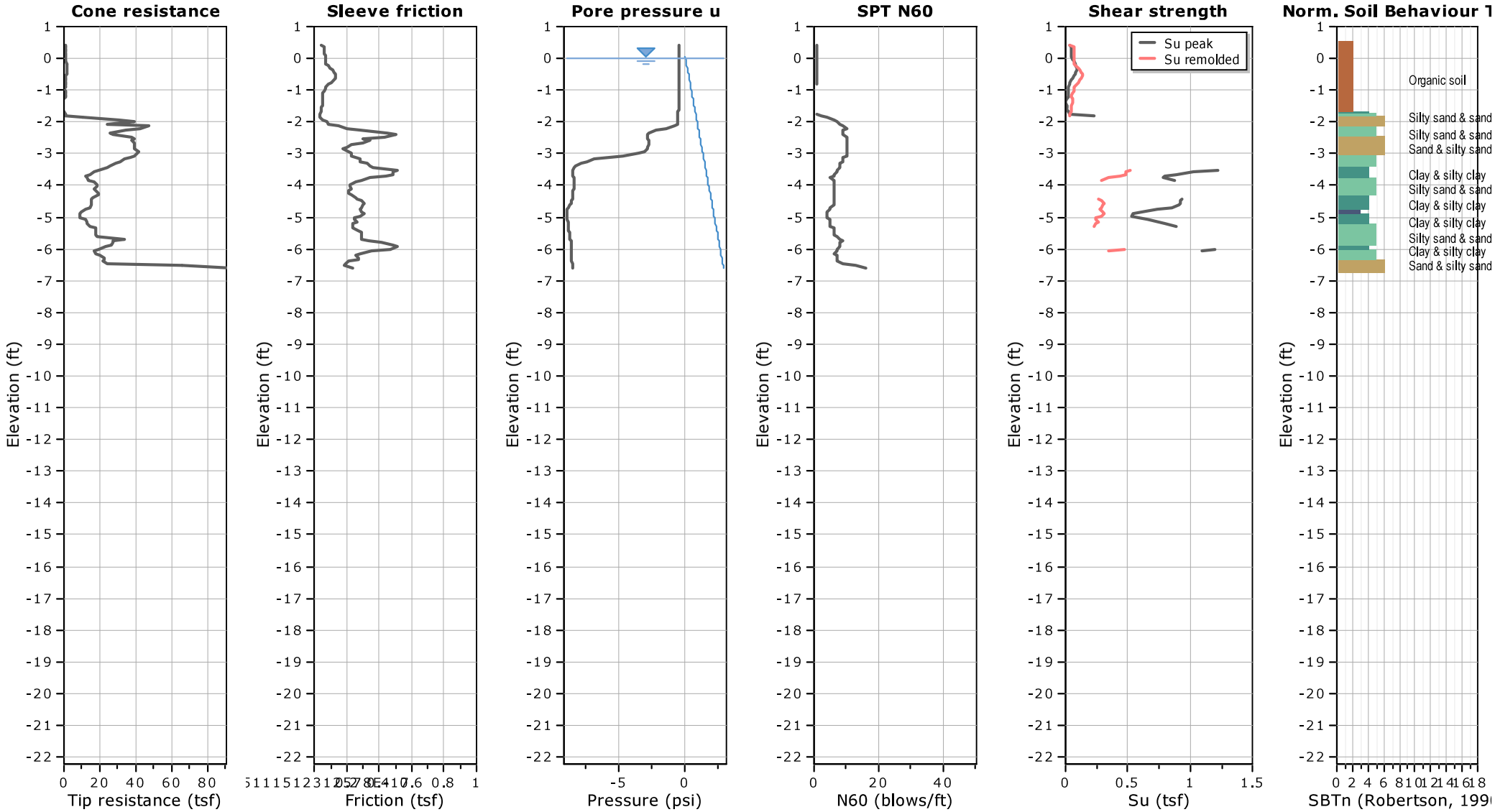
Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

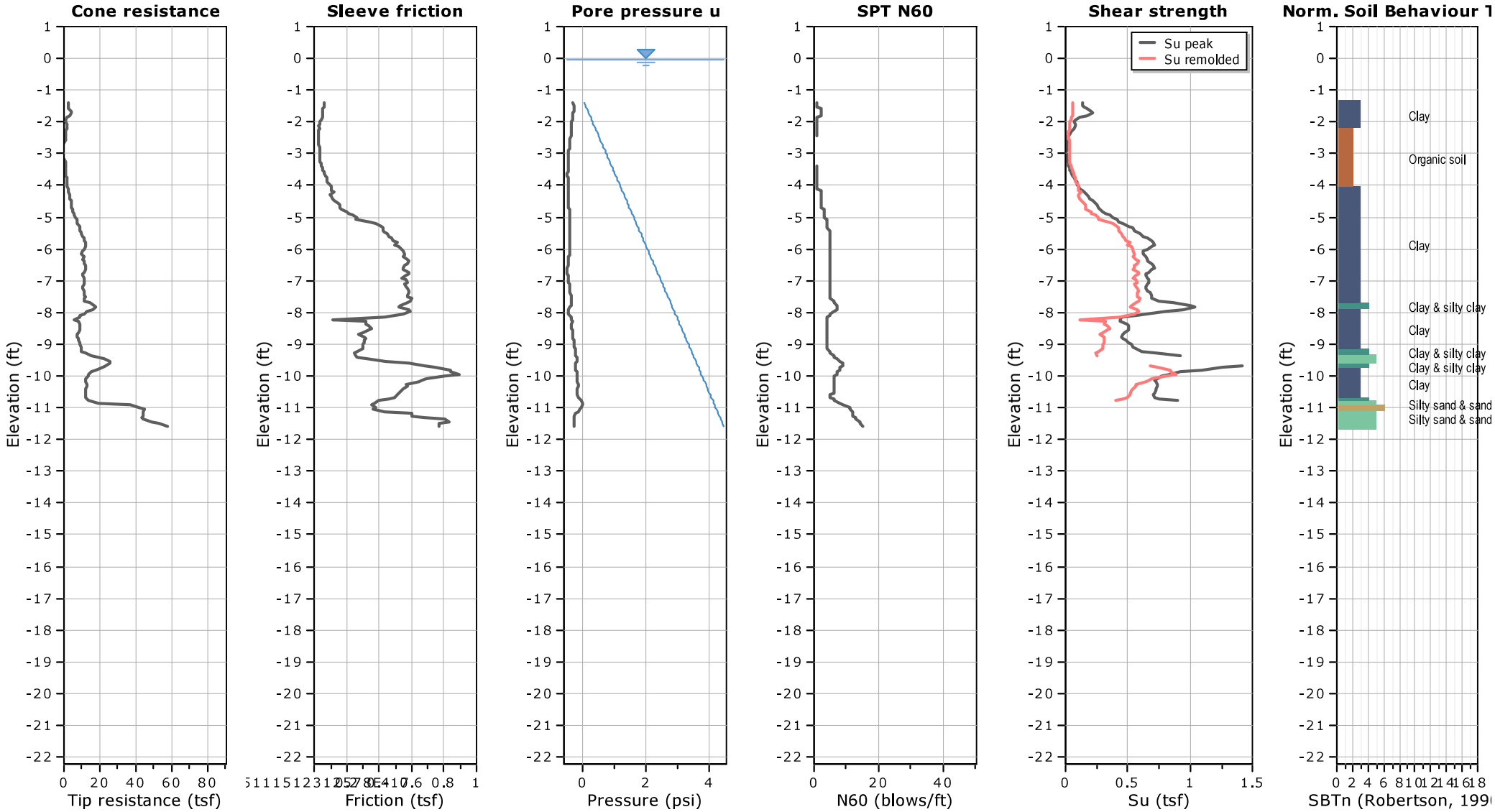
CPT: CPT-01
Total depth: 7.09 ft, Date: 9/1/2020
Surface Elevation: 0.49 ft
Coords: lat 30.333813° lon -90.044002°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-64

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

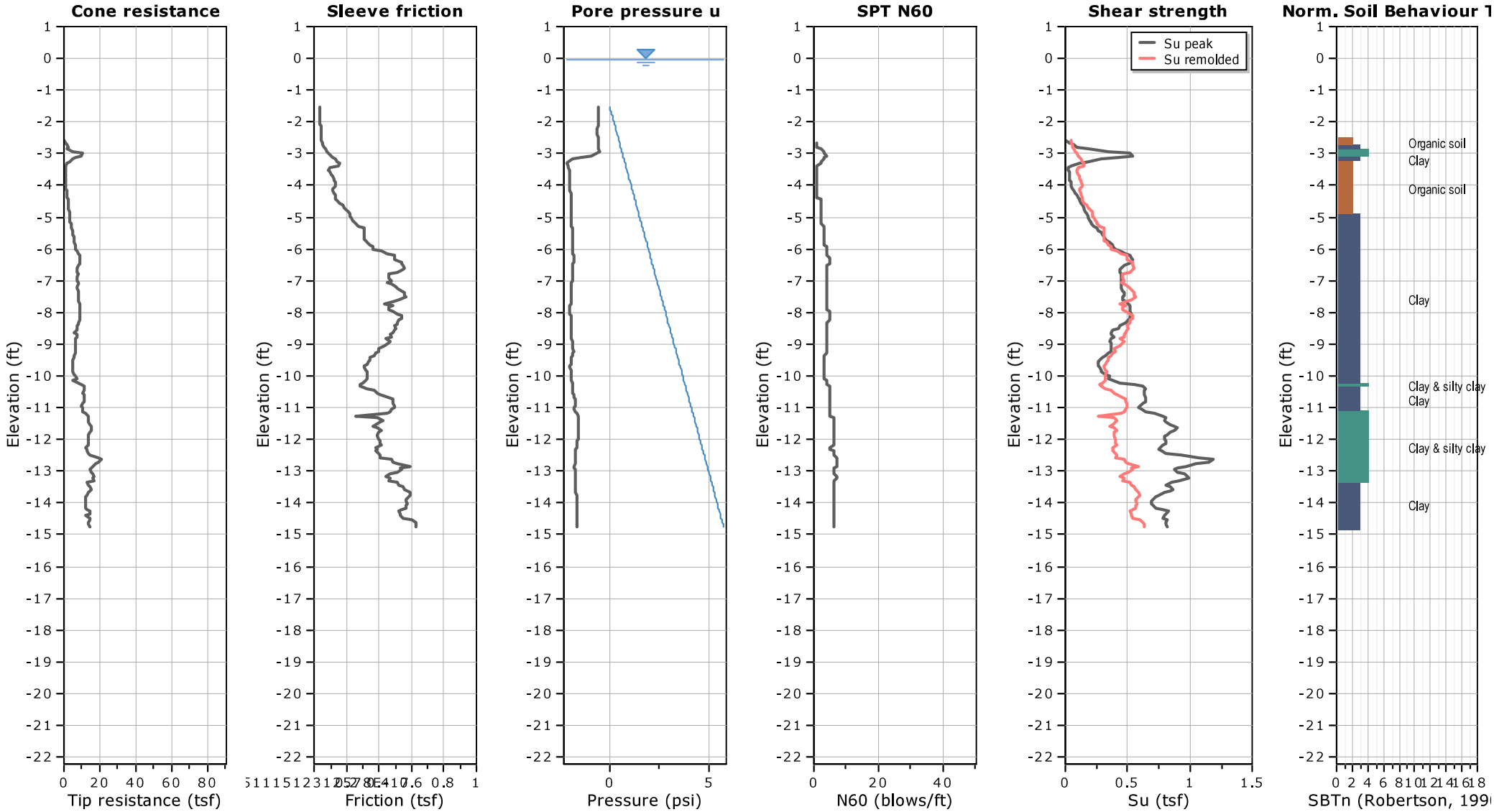
CPT: CPT-02
Total depth: 10.24 ft, Date: 9/1/2020
Surface Elevation: -1.34 ft
Coords: lat 30.331772° lon -90.041027°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-65

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

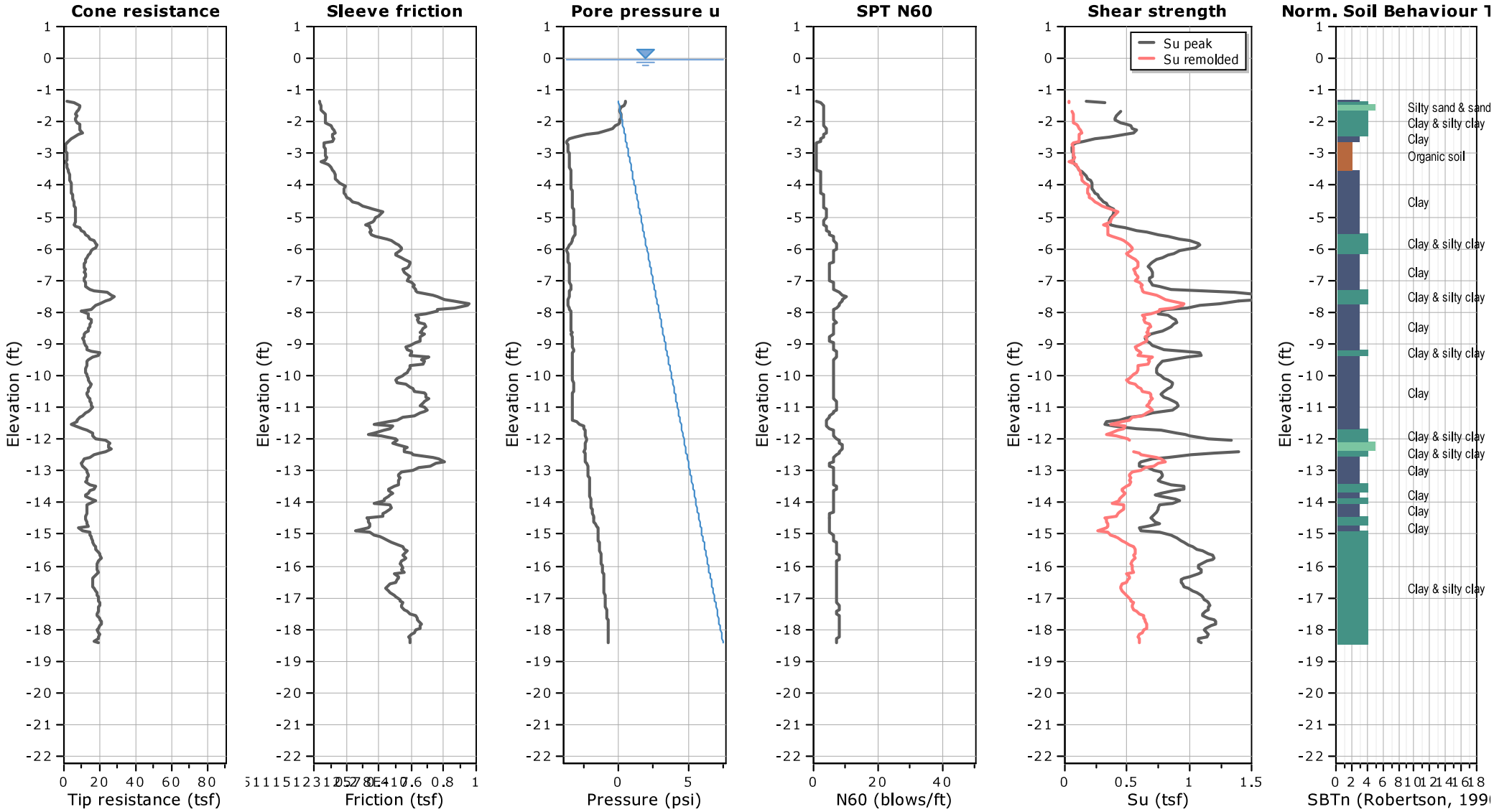
CPT: CPT-03
Total depth: 13.25 ft, Date: 9/1/2020
Surface Elevation: -1.48 ft
Coords: lat 30.328358° lon -90.041344°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-66

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

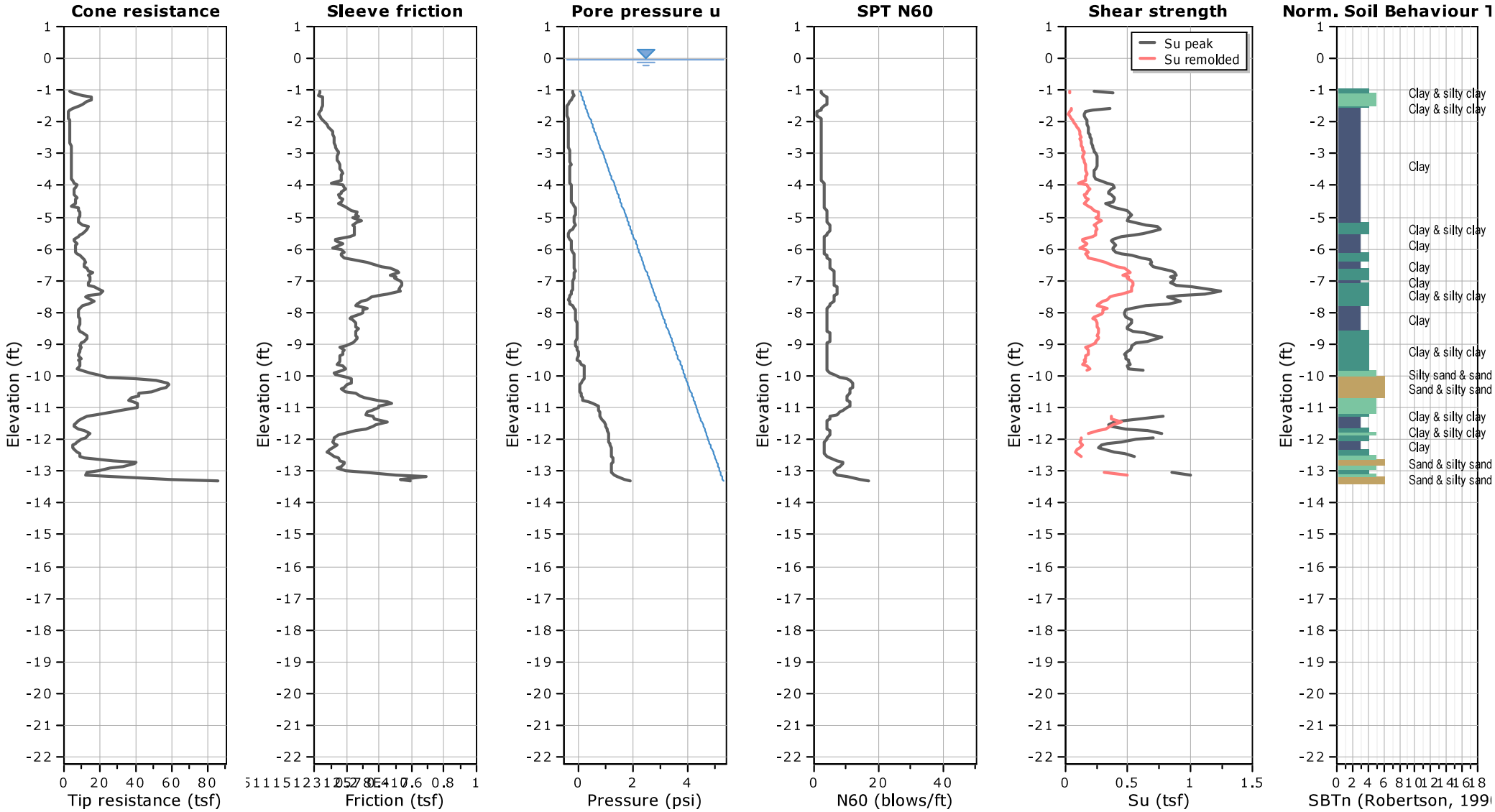
CPT: CPT-04
Total depth: 17.13 ft, Date: 9/1/2020
Surface Elevation: -1.29 ft
Coords: lat 30.3266° lon -90.038286°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-67

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

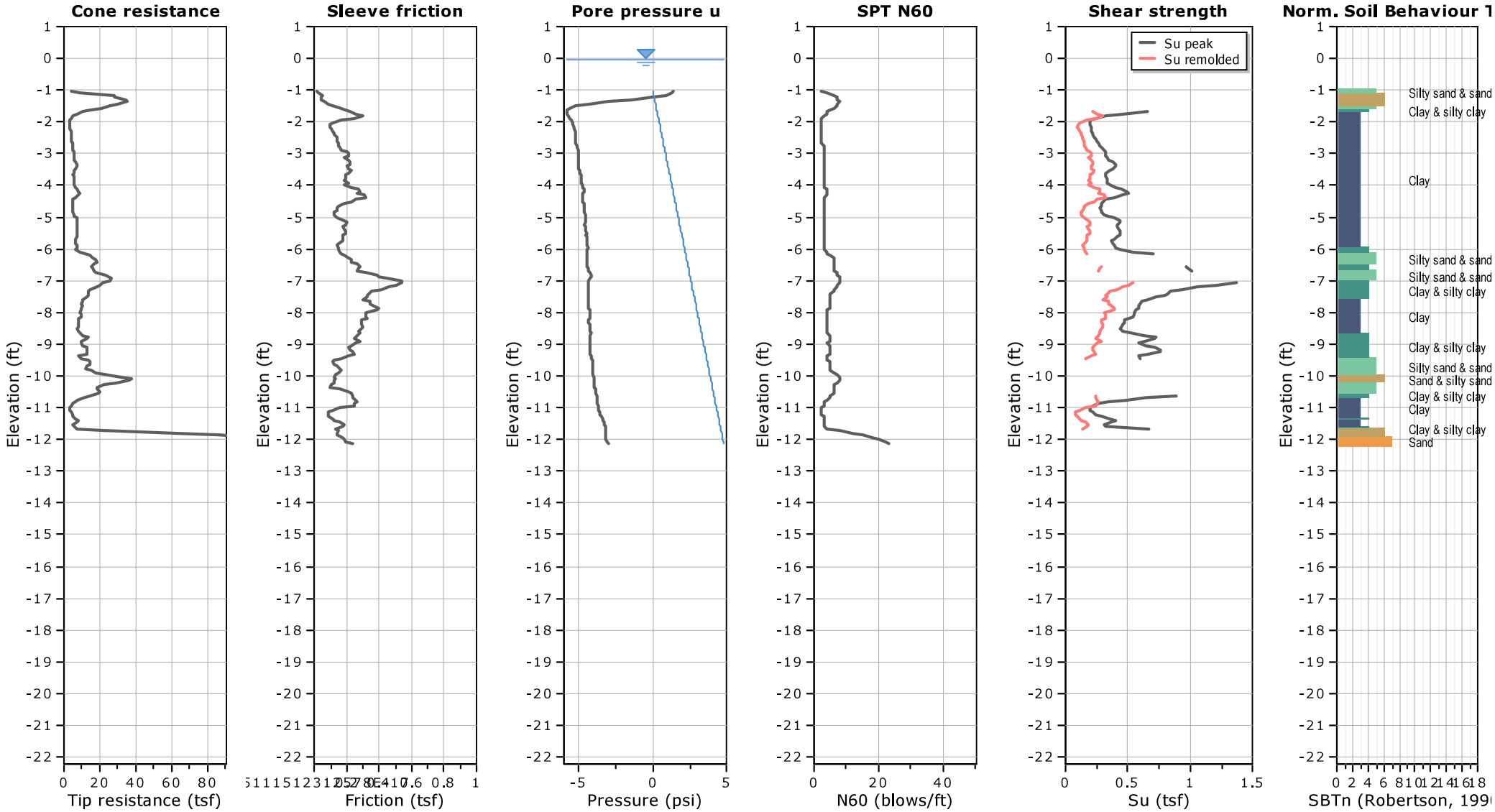
CPT: CPT-05
Total depth: 12.34 ft, Date: 8/19/2020
Surface Elevation: -0.97 ft
Coords: lat 30.324522° lon -90.032183°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-68

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

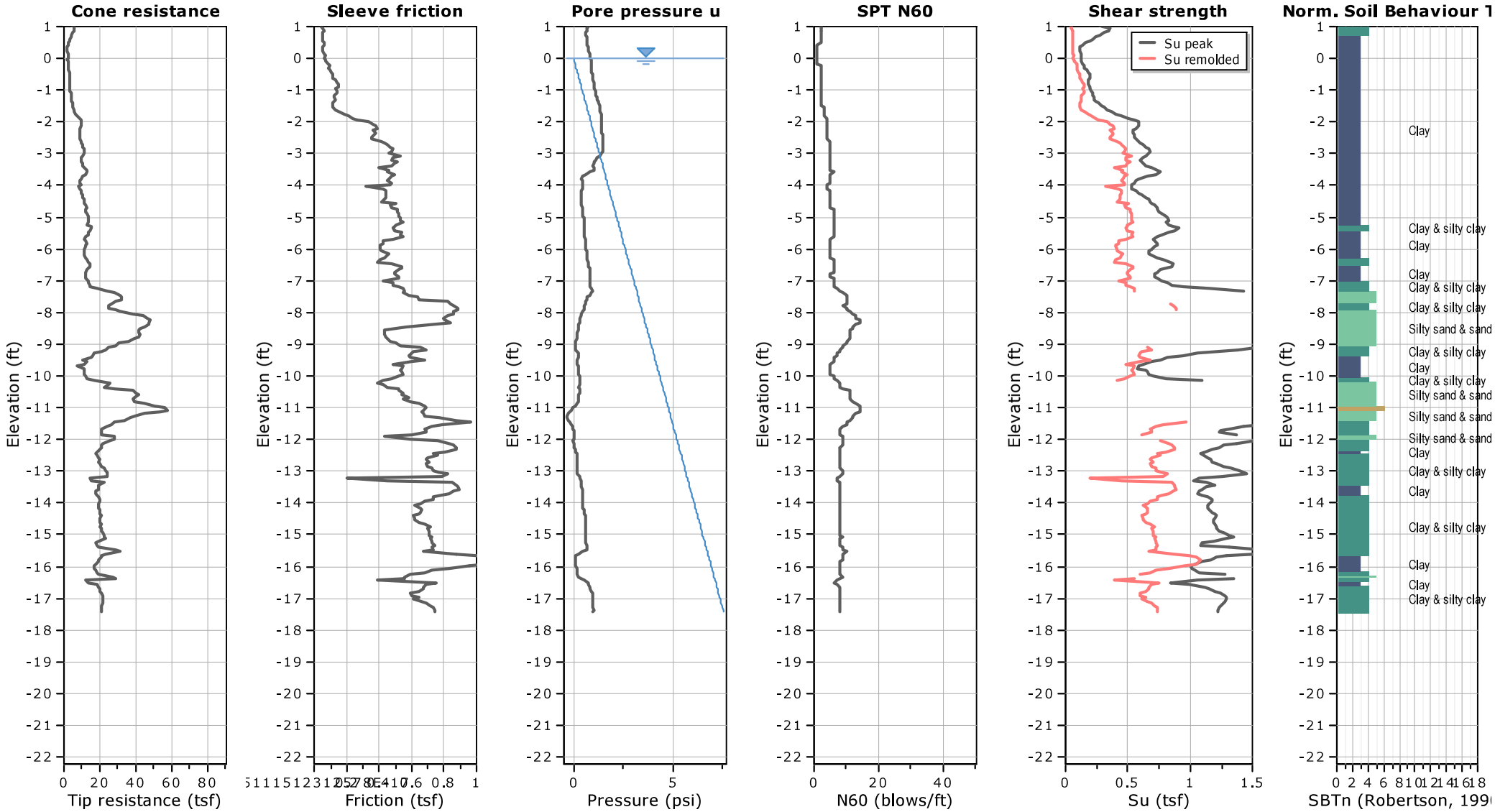
CPT: CPT-05B
Total depth: 11.15 ft, Date: 8/20/2020
Surface Elevation: -0.97 ft
Coords: lat 30.324522° lon -90.032183°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-69

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

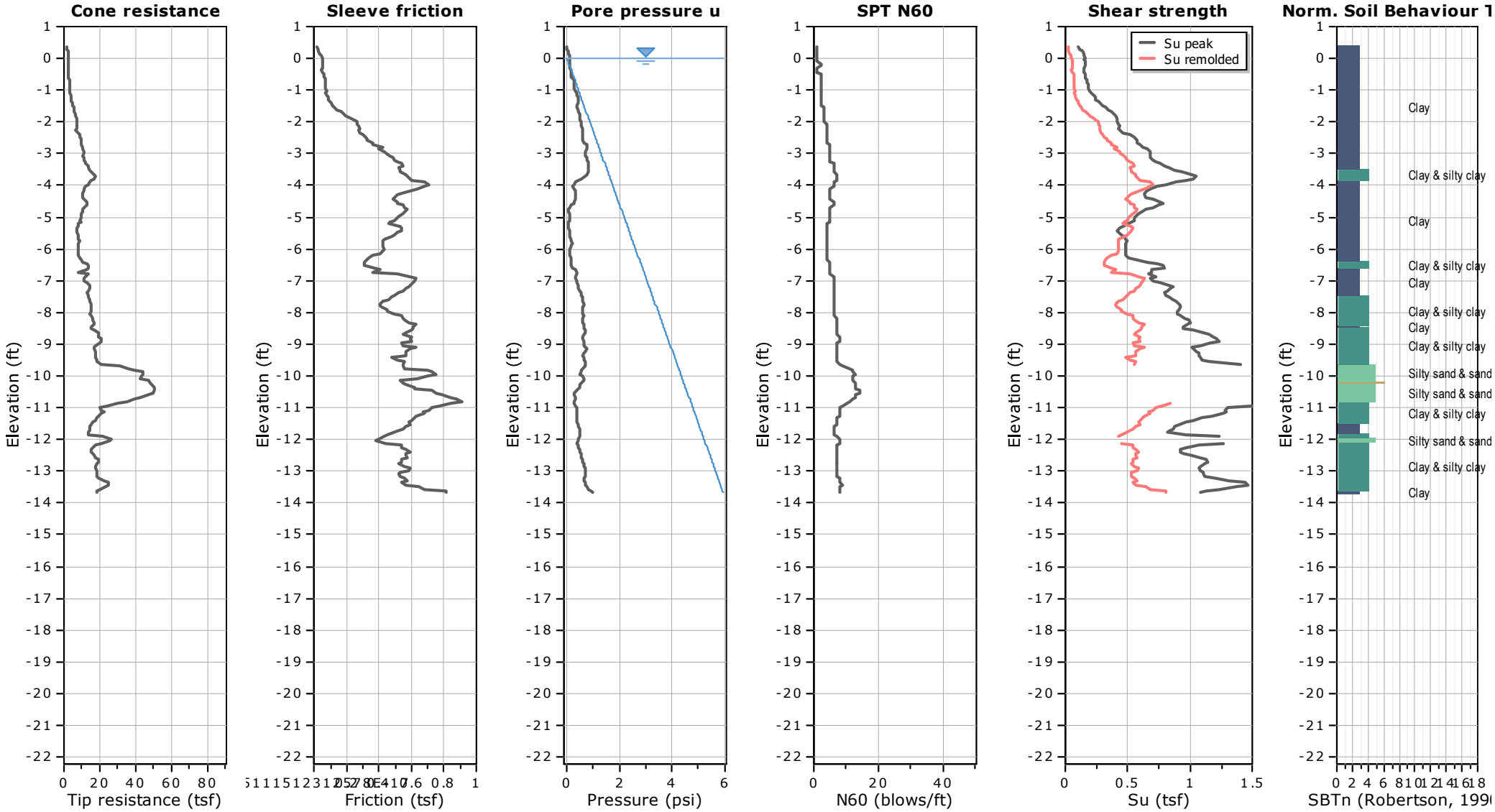
CPT: CPT-06
Total depth: 18.57 ft, Date: 8/19/2020
Surface Elevation: 1.14 ft
Coords: lat 30.328119° lon -90.031014°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-70

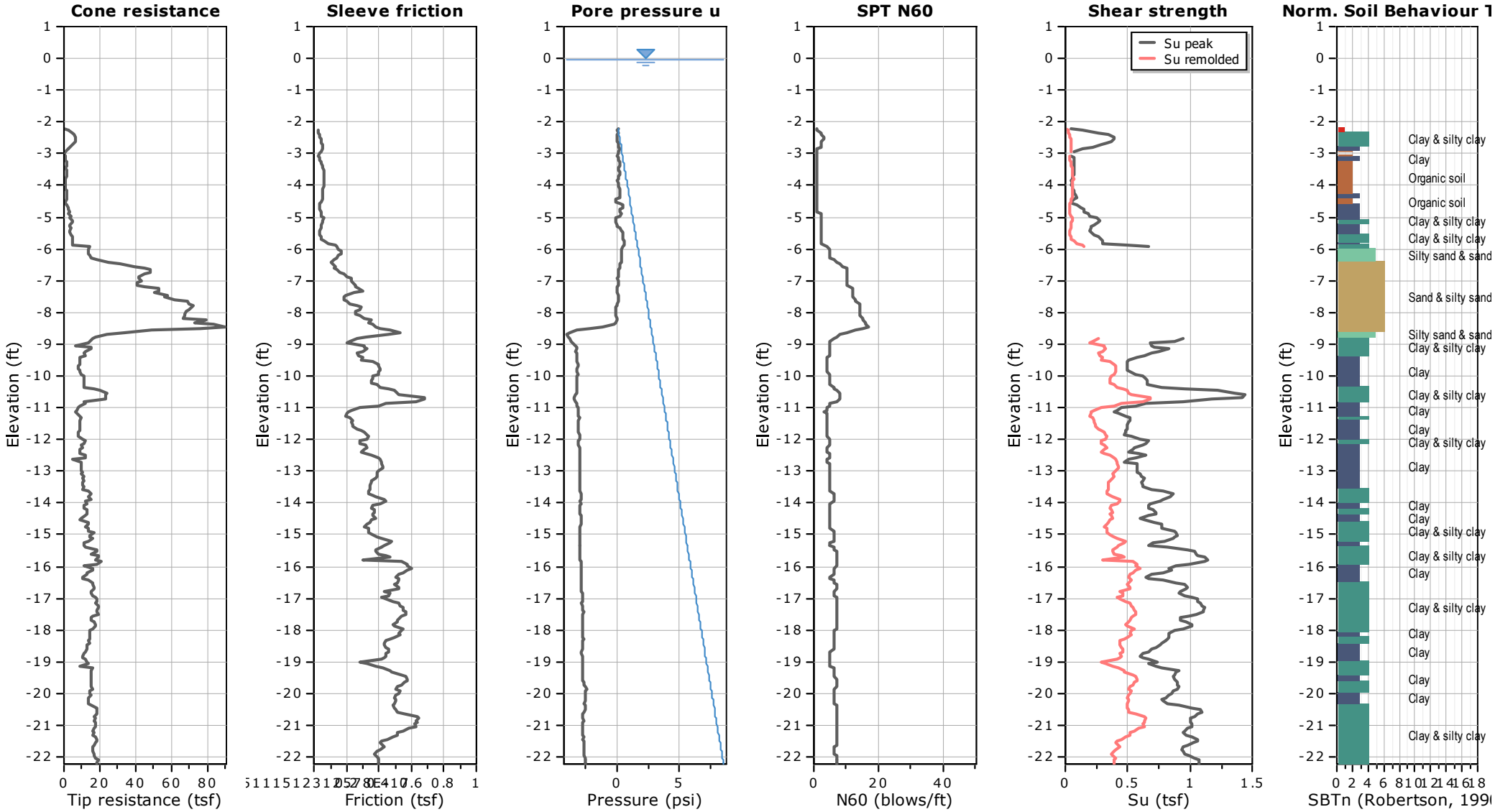
Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

CPT: CPT-07
Total depth: 14.11 ft, Date: 8/20/2020
Surface Elevation: 0.42 ft
Coords: lat 30.324869° lon -90.028394°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

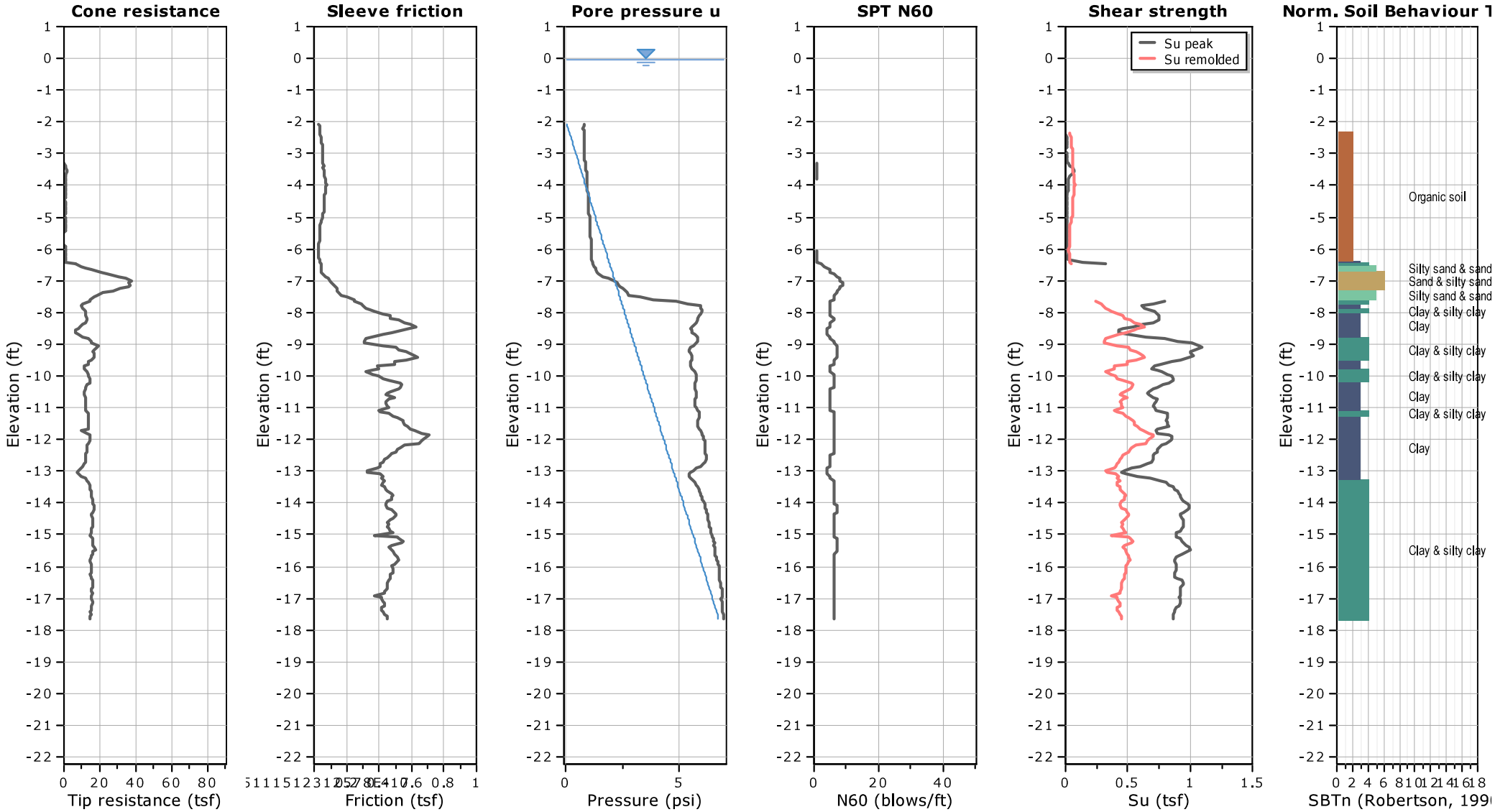
CPT: CPT-08
Total depth: 20.08 ft, Date: 8/20/2020
Surface Elevation: -2.14 ft
Coords: lat 30.324672° lon -90.026142°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-72

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

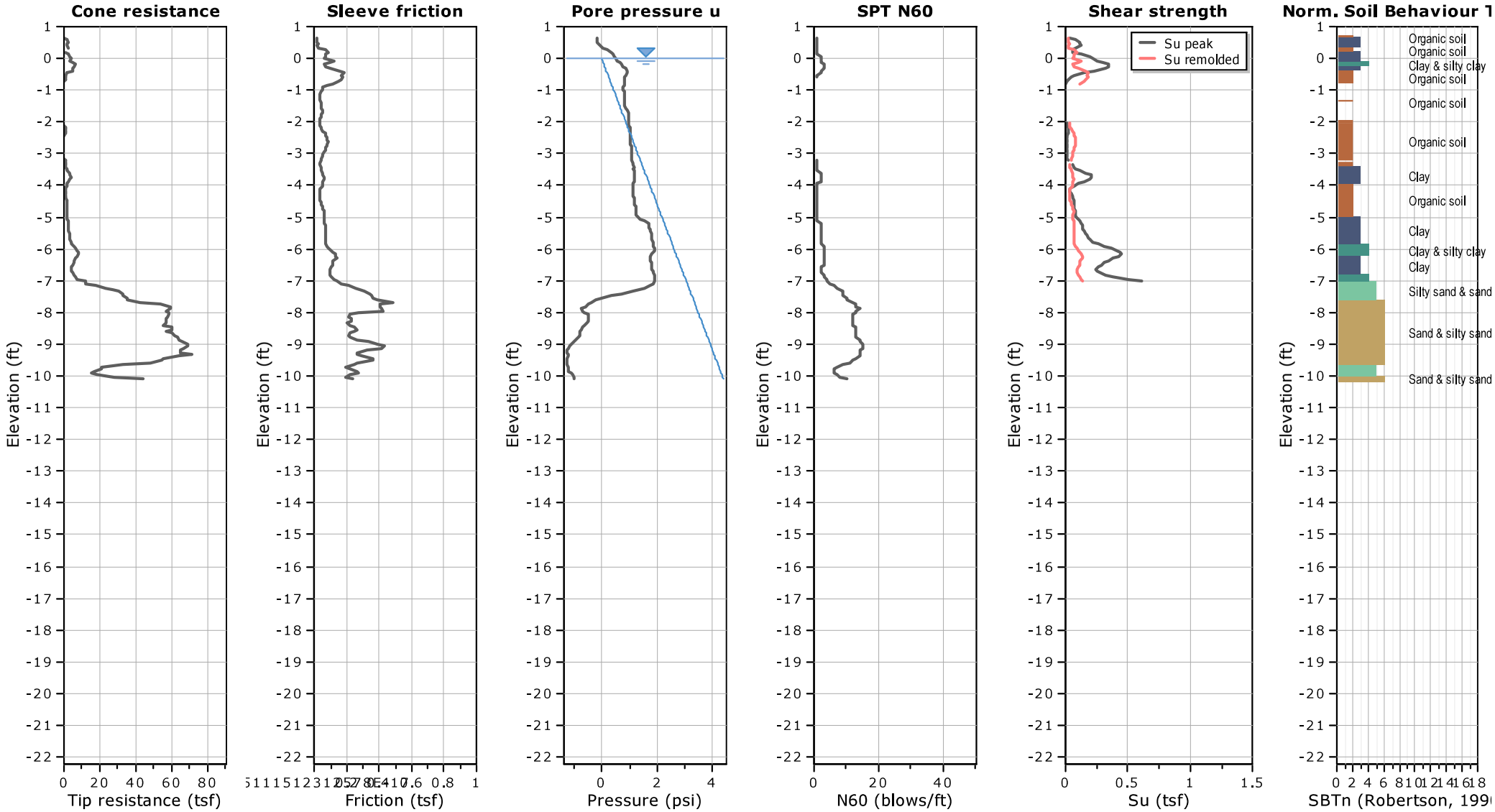
CPT: CPT-09
Total depth: 15.62 ft, Date: 9/2/2020
Surface Elevation: -2.01 ft
Coords: lat 30.323869° lon -90.021906°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-73

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

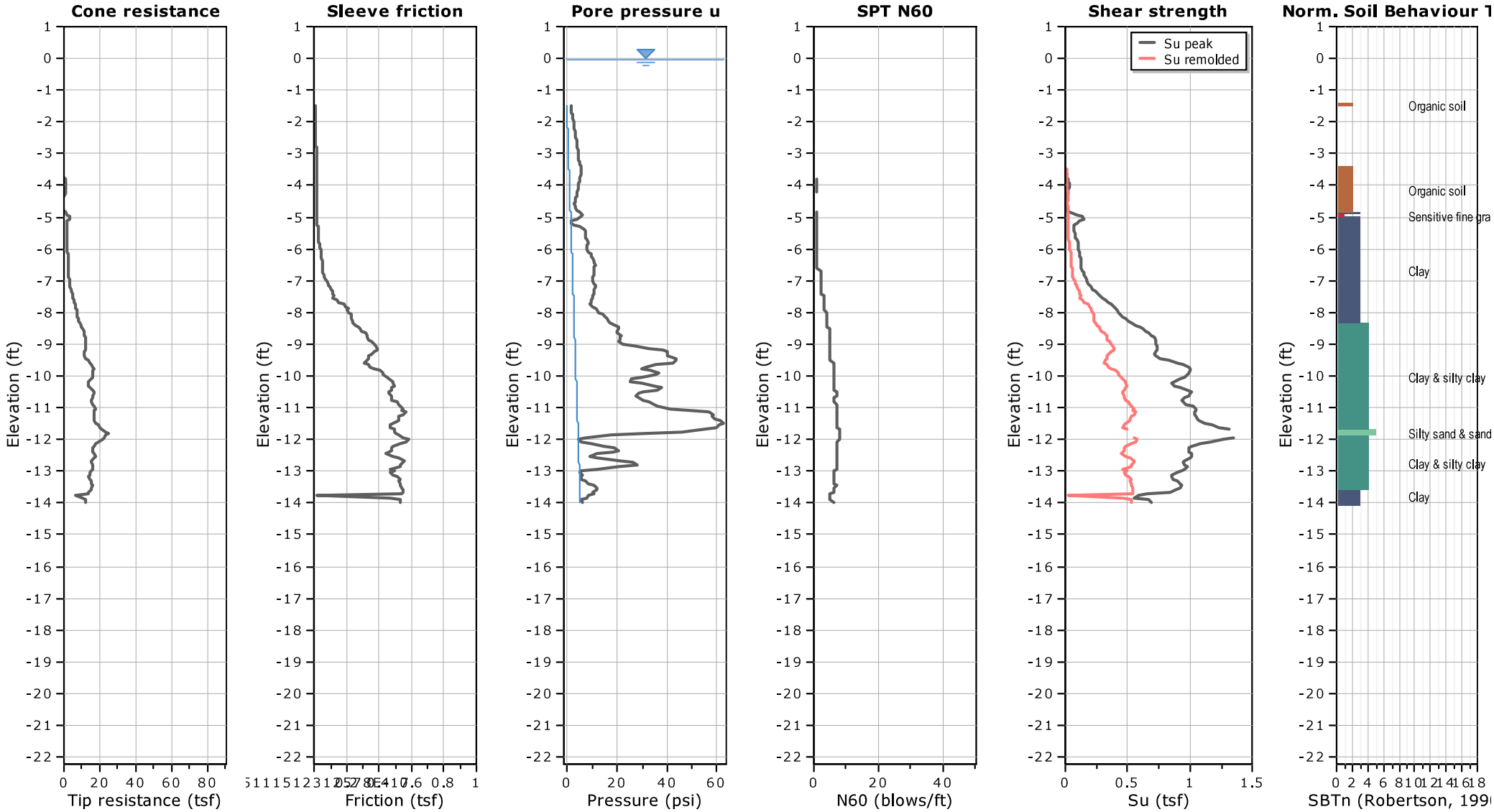
CPT: CPT-10
Total depth: 10.83 ft, Date: 9/2/2020
Surface Elevation: 0.72 ft
Coords: lat 30.321383° lon -90.019933°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-74

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

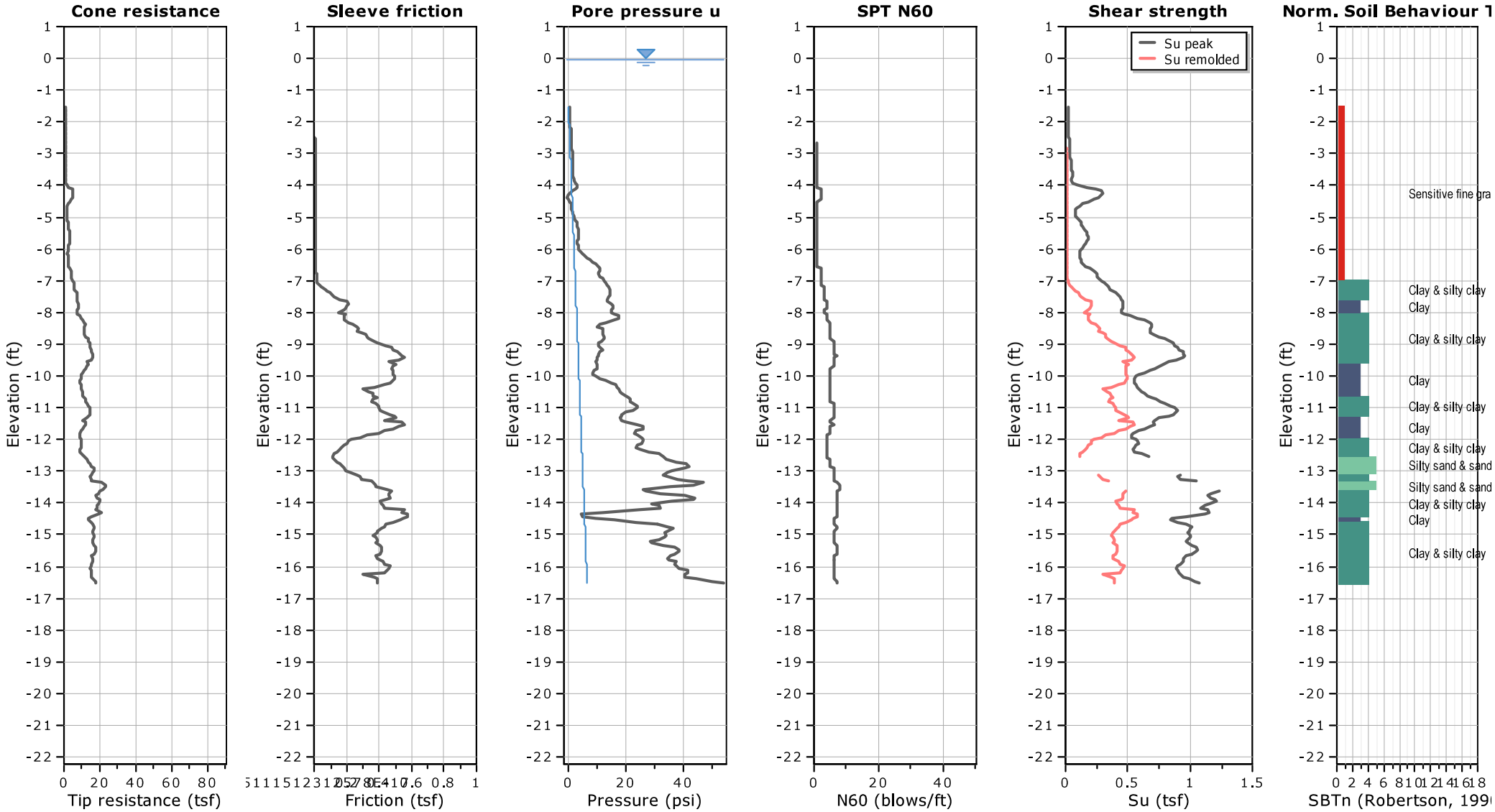
CPT: CPT-11
Total depth: 12.53 ft, Date: 9/3/2020
Surface Elevation: -1.44 ft
Coords: lat 30.313372° lon -90.000653°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-75

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

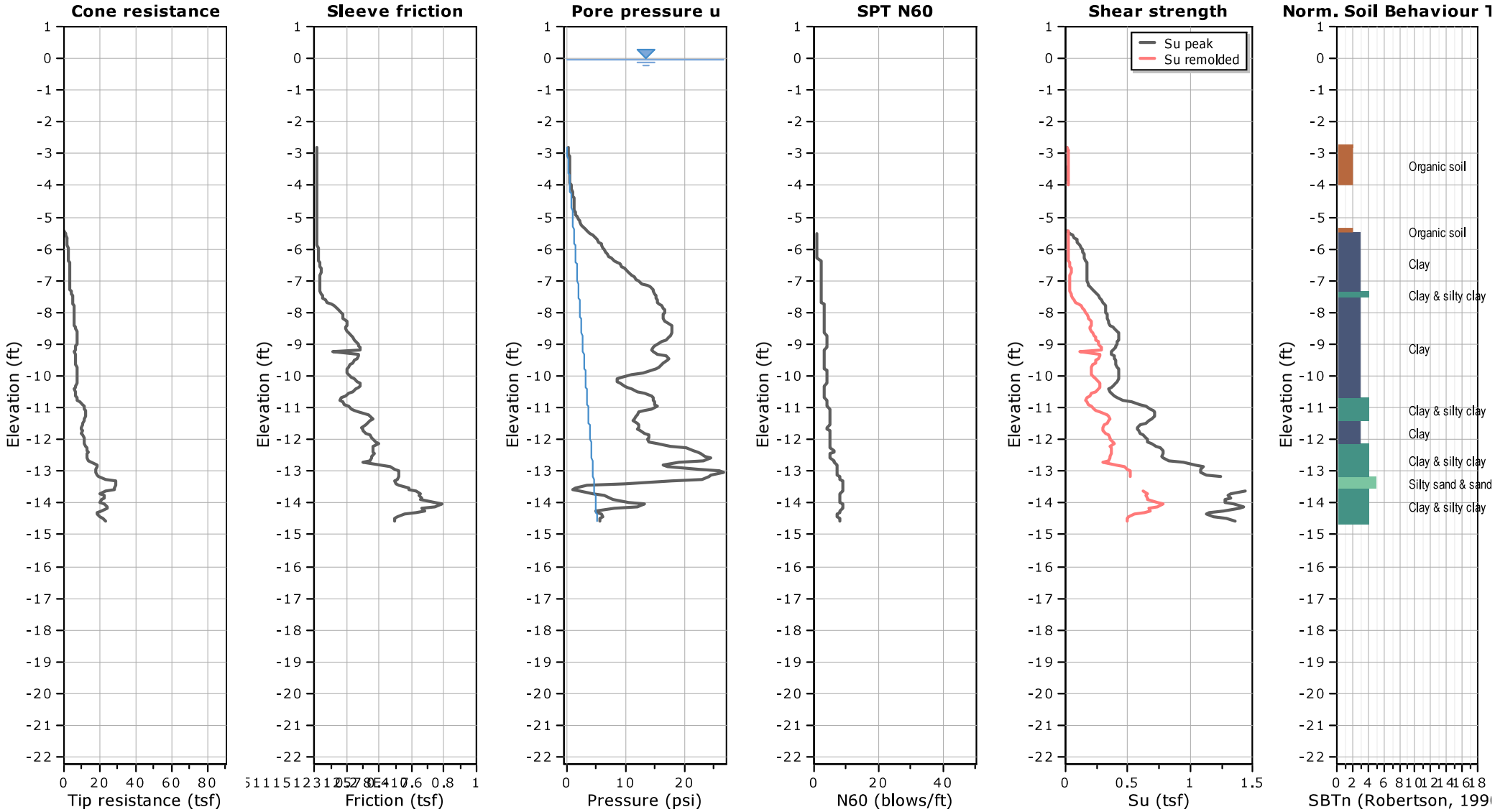
CPT: CPT-12
Total depth: 15.03 ft, Date: 9/3/2020
Surface Elevation: -1.49 ft
Coords: lat 30.313878° lon -89.996958°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-76

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

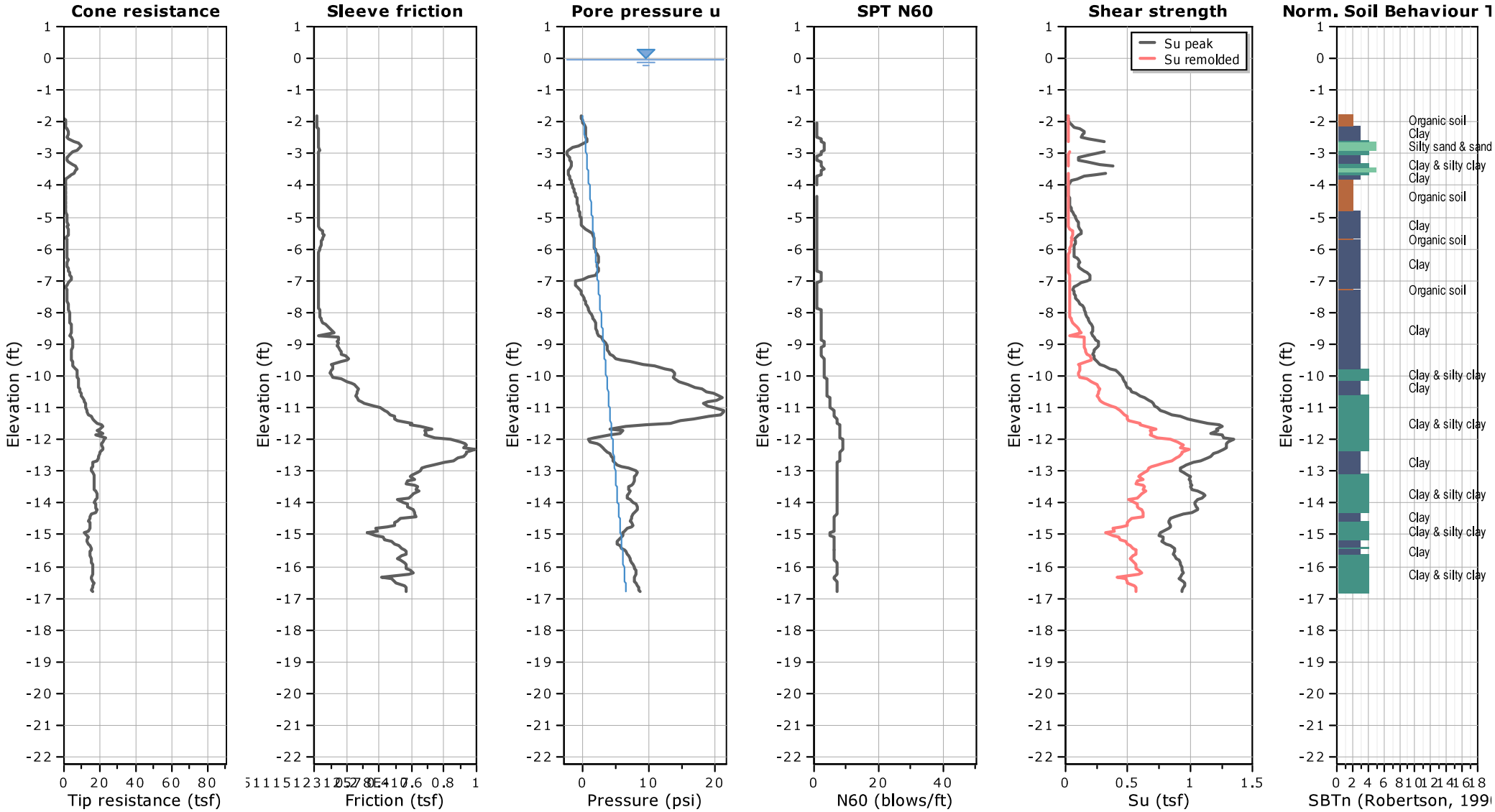
CPT: CPT-13
Total depth: 11.81 ft, Date: 9/3/2020
Surface Elevation: -2.75 ft
Coords: lat 30.312283° lon -89.993433°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-77

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

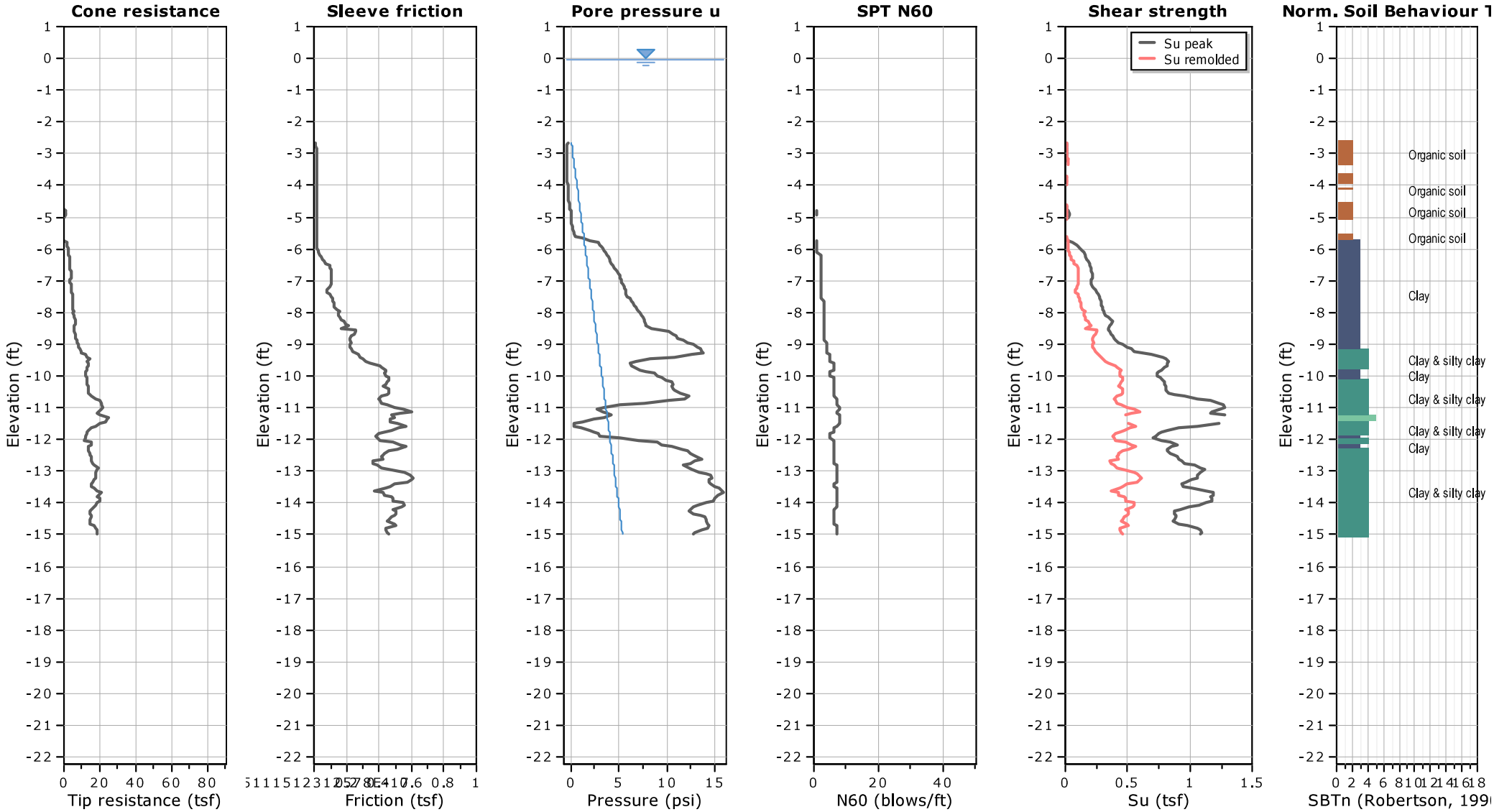
CPT: CPT-14
Total depth: 15.03 ft, Date: 9/3/2020
Surface Elevation: -1.76 ft
Coords: lat 30.307683° lon -89.995378°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-78

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

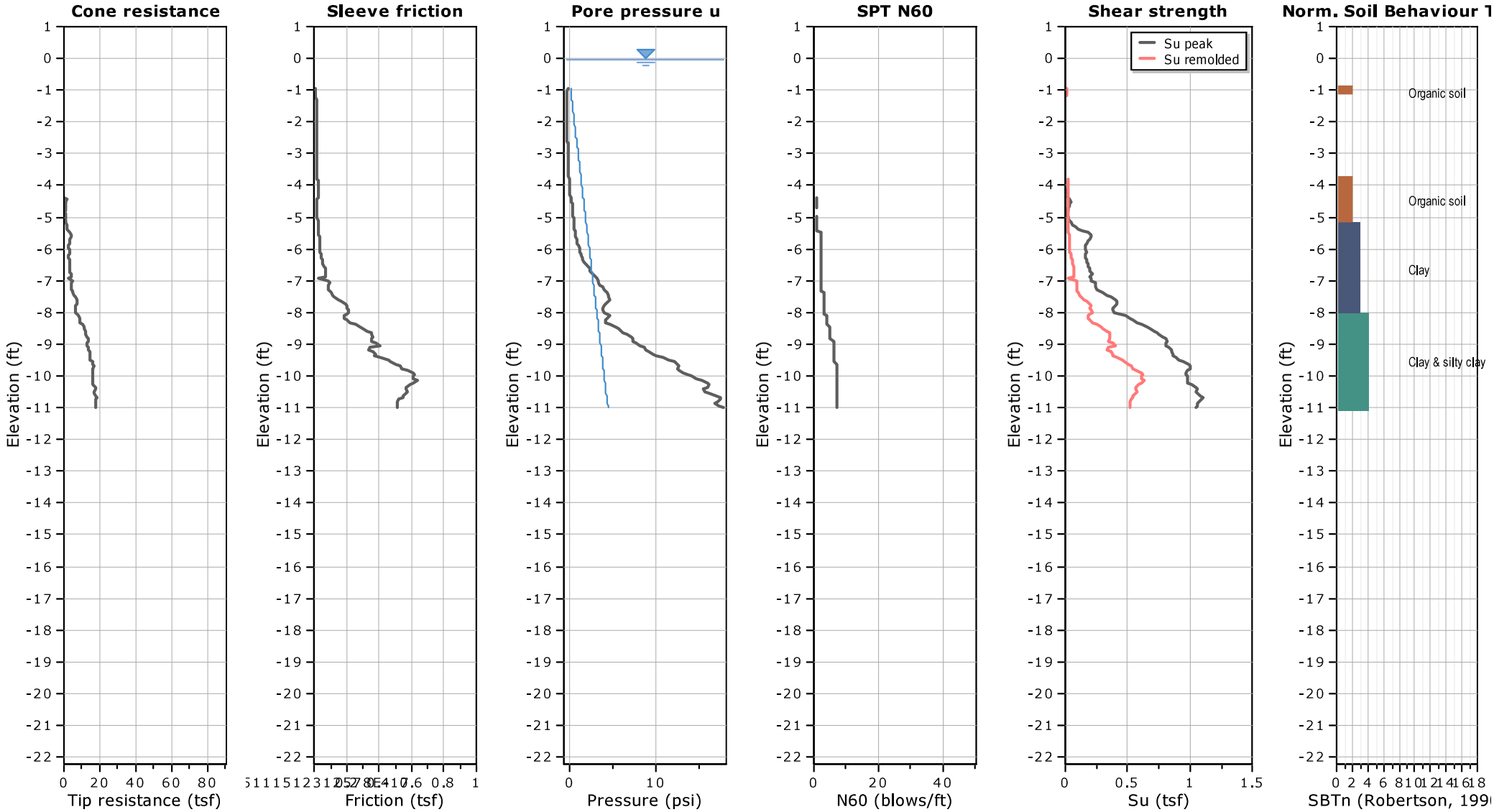
CPT: CPT-15
Total depth: 12.40 ft, Date: 9/3/2020
Surface Elevation: -2.58 ft
Coords: lat 30.305728° lon -89.990425°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-79

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

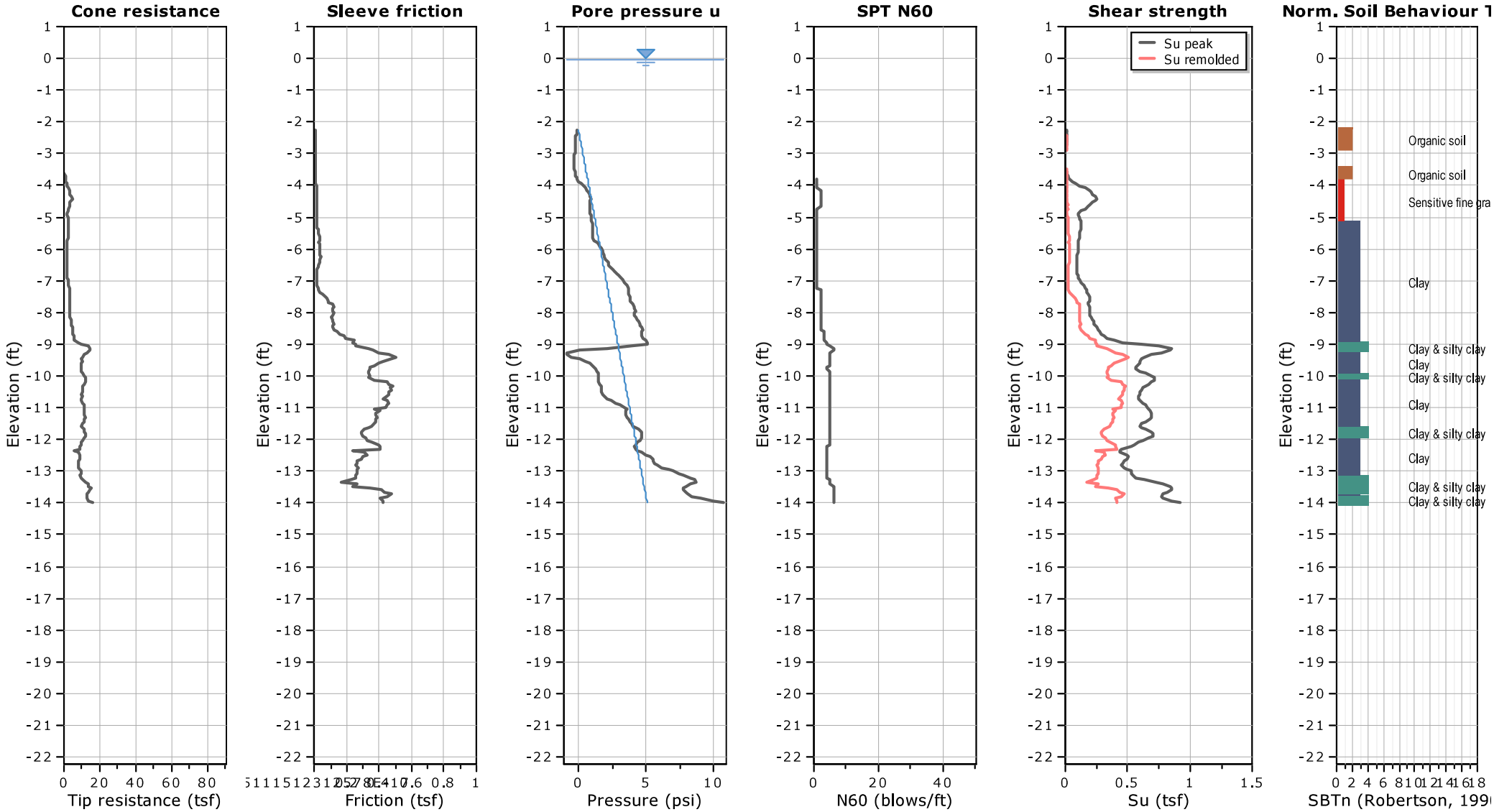
CPT: CPT-16
Total depth: 10.10 ft, Date: 9/3/2020
Surface Elevation: -0.90 ft
Coords: lat 30.301747° lon -89.989286°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-80

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

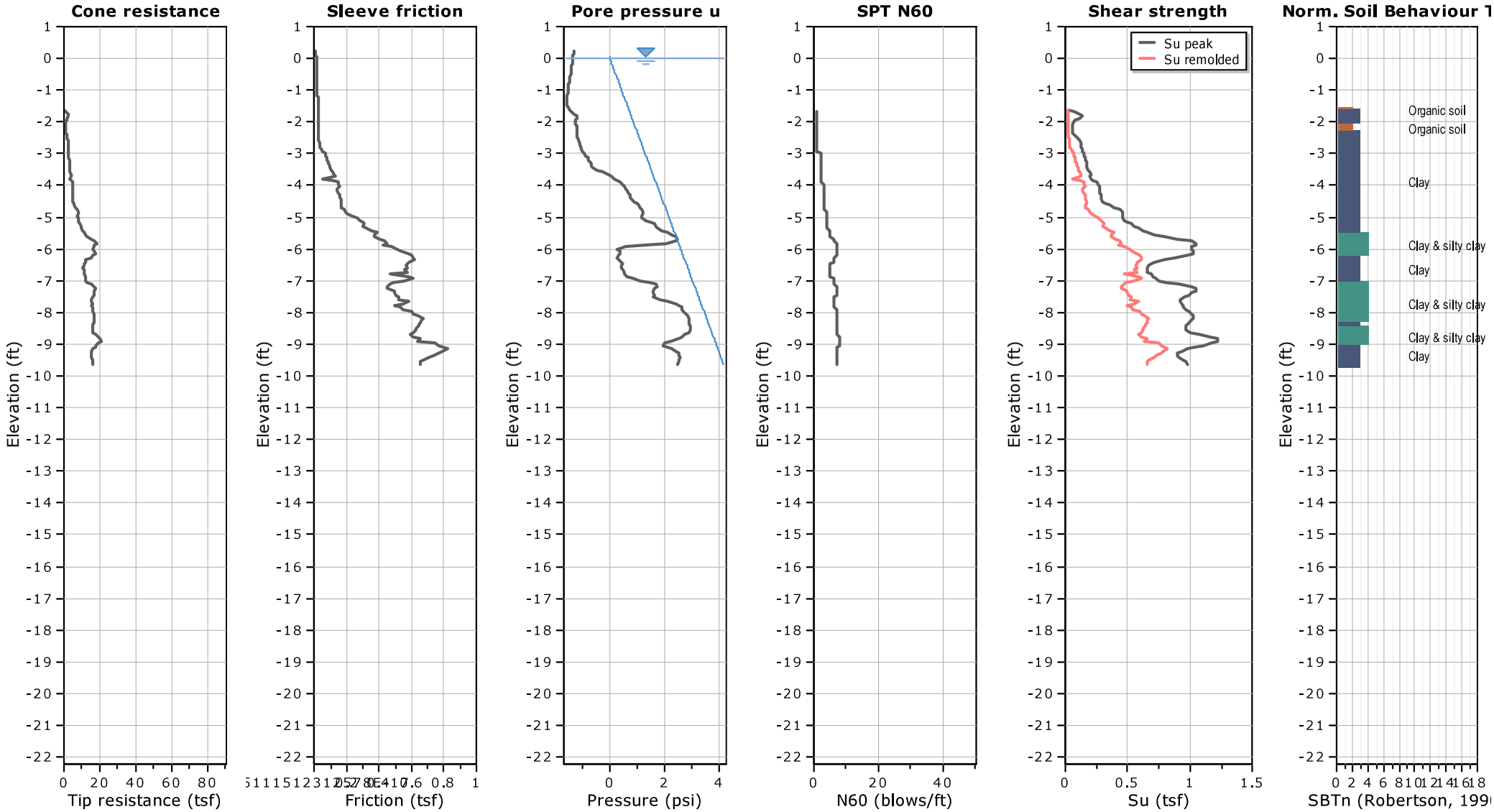
CPT: CPT-17
Total depth: 11.81 ft, Date: 9/3/2020
Surface Elevation: -2.18 ft
Coords: lat 30.298814° lon -89.983239°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-81

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

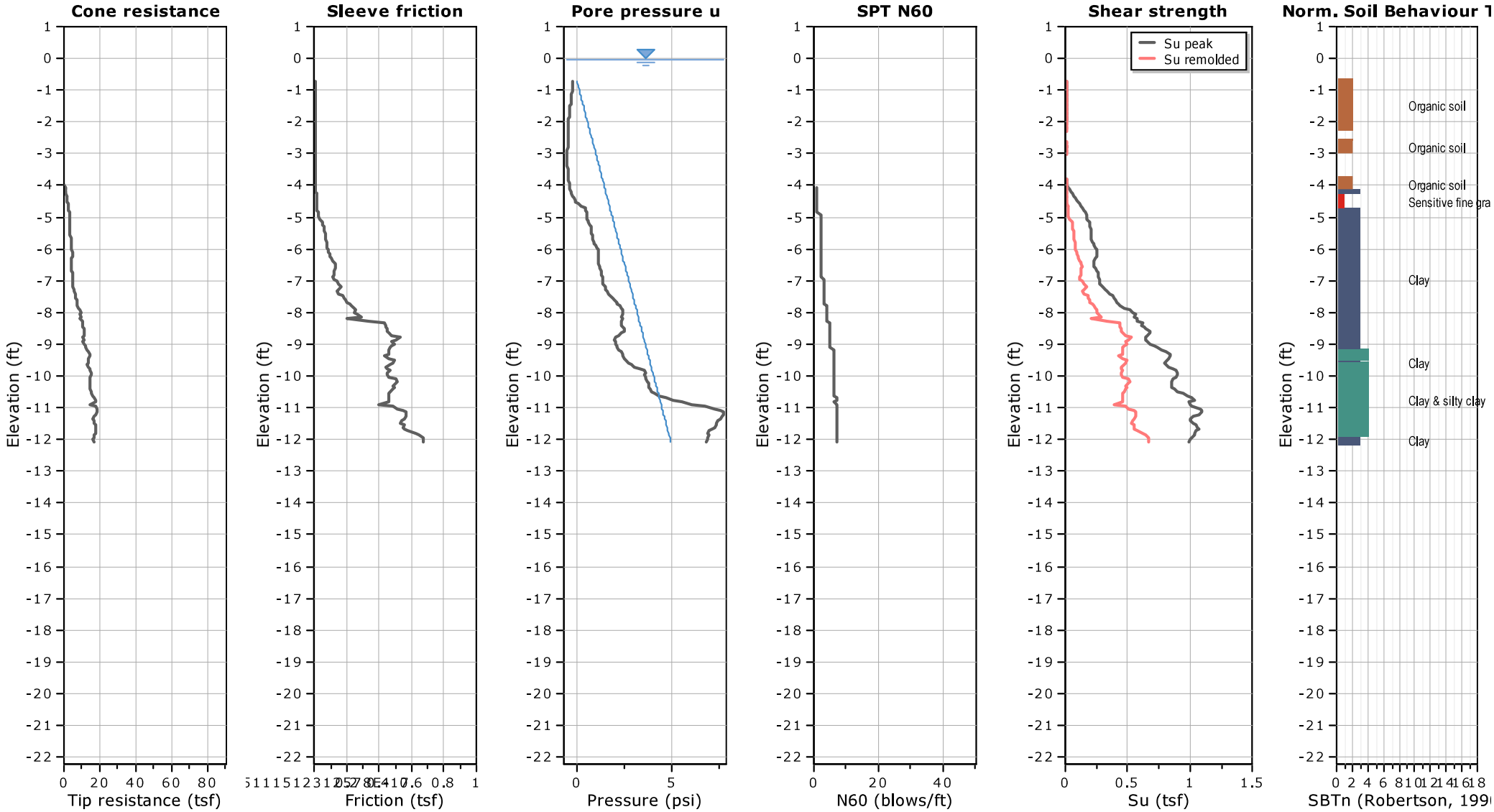
CPT: CPT-18
Total depth: 9.91 ft, Date: 9/3/2020
Surface Elevation: 0.29 ft
Coords: lat 30.291939° lon -89.982253°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-82

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

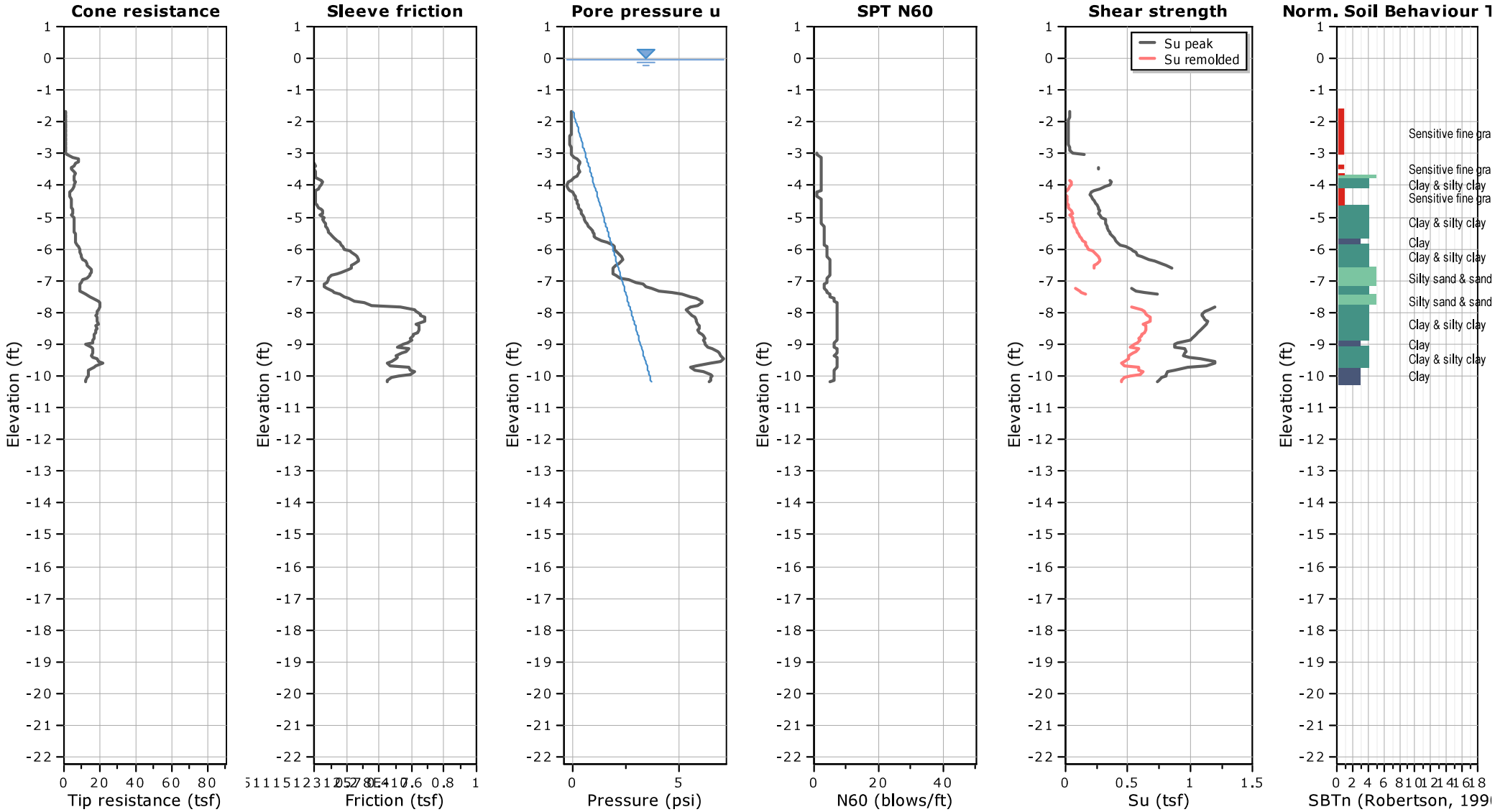
CPT: CPT-19
Total depth: 11.42 ft, Date: 9/3/2020
Surface Elevation: -0.65 ft
Coords: lat 30.289314° lon -89.984542°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-83

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

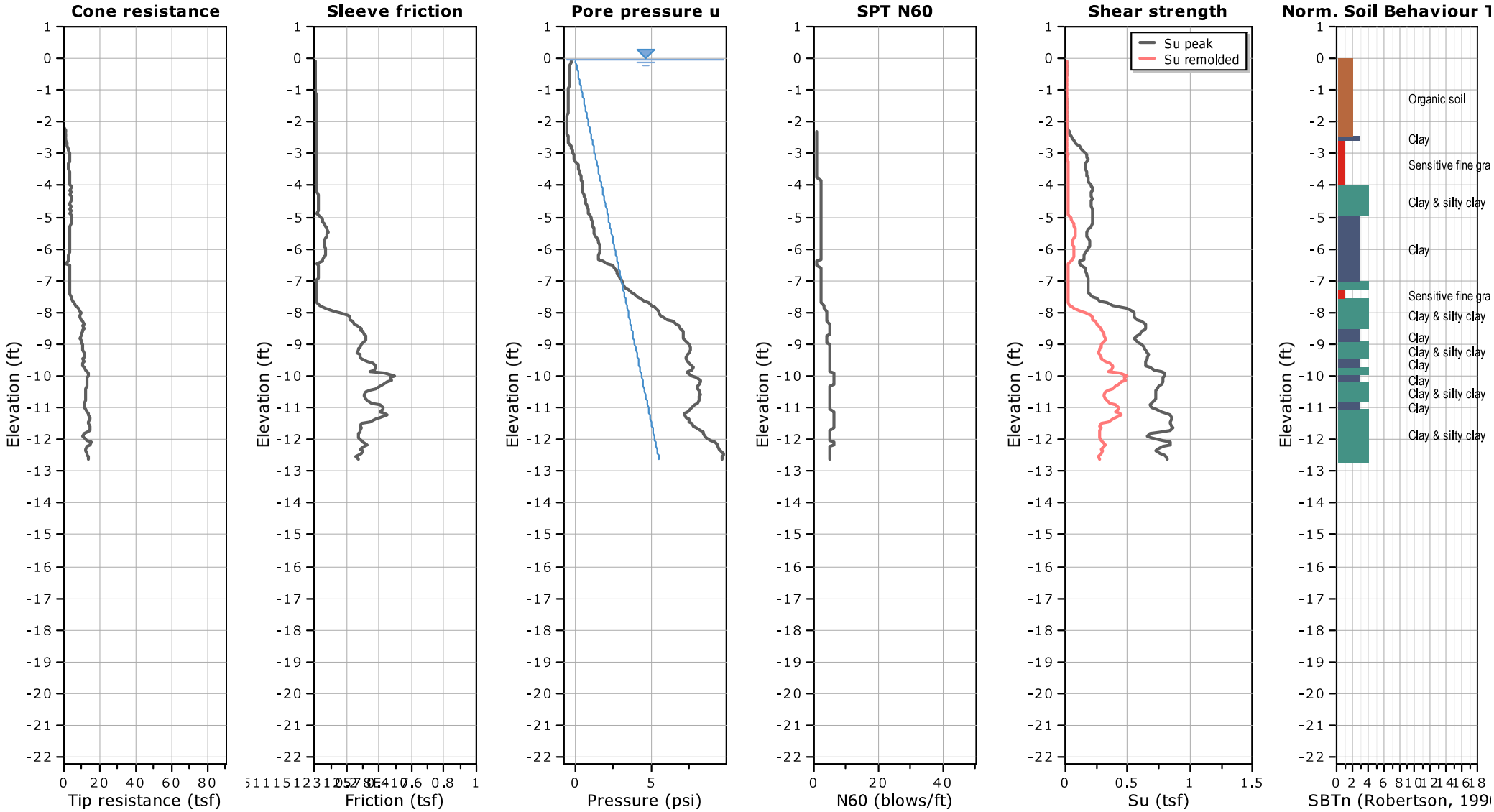
CPT: CPT-20
Total depth: 8.60 ft, Date: 9/3/2020
Surface Elevation: -1.60 ft
Coords: lat 30.290094° lon -89.977253°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-84

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

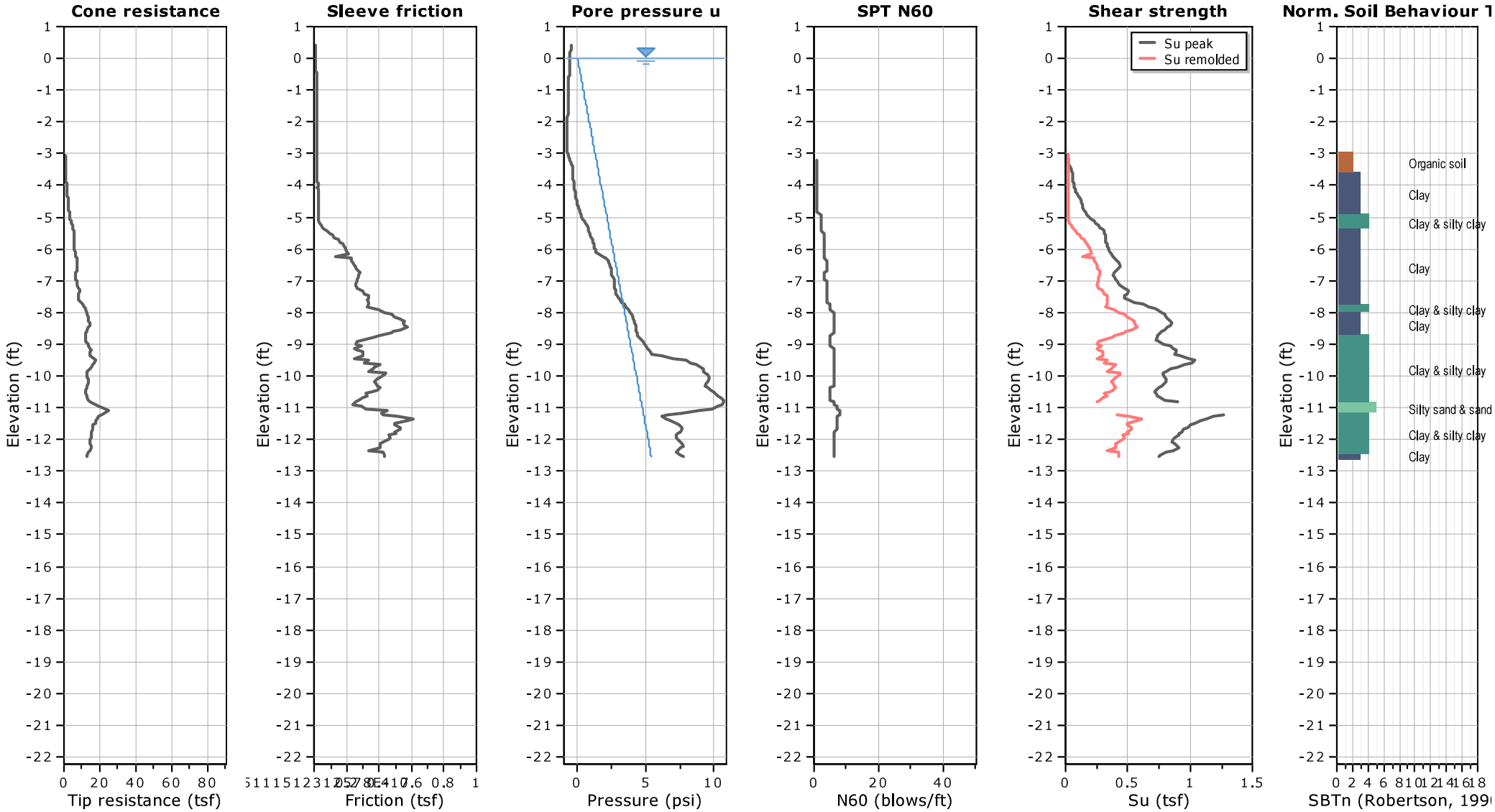
CPT: CPT-21
Total depth: 12.60 ft, Date: 9/3/2020
Surface Elevation: -0.02 ft
Coords: lat 30.284631° lon -89.975872°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-85

Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

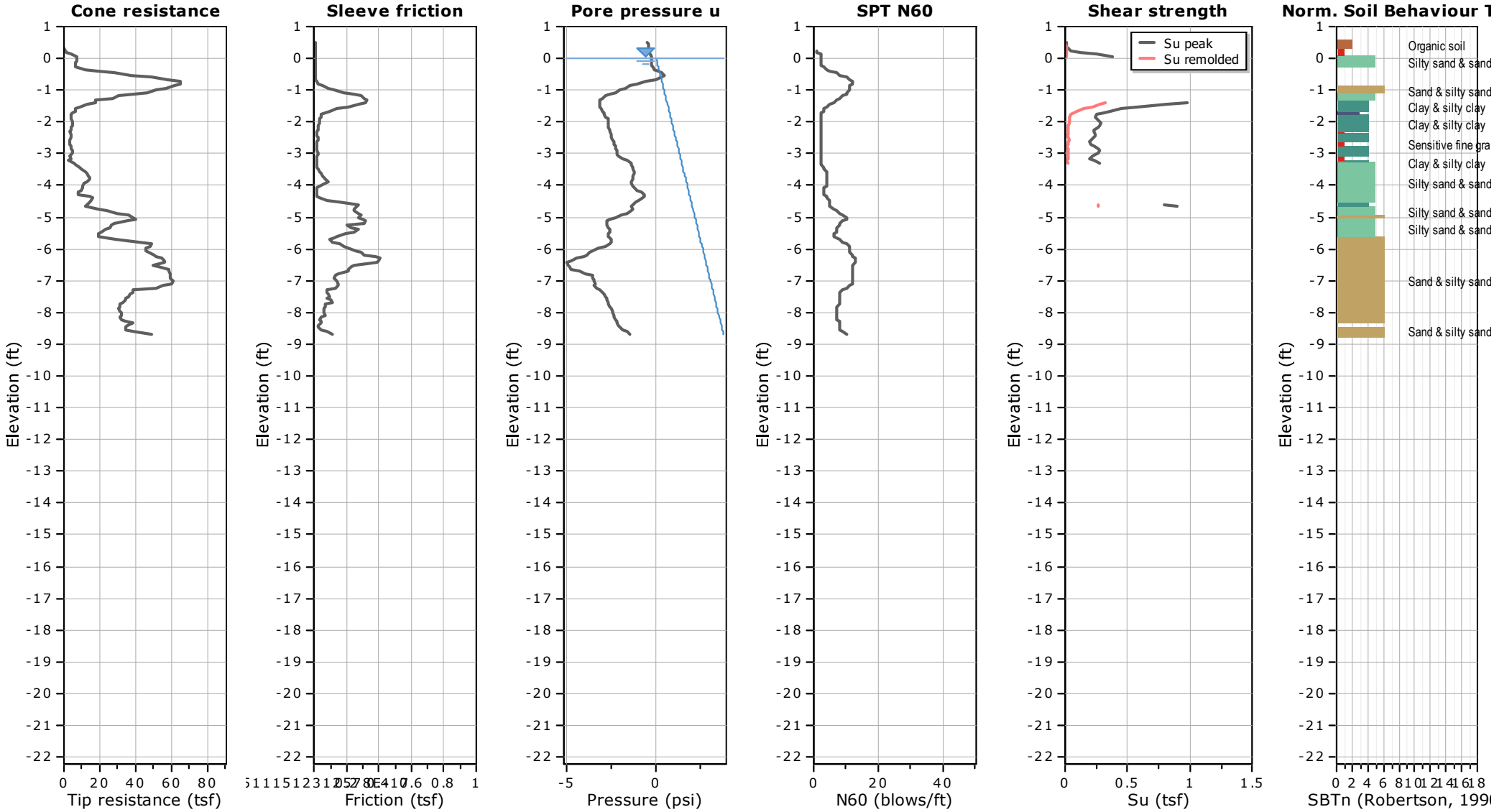
CPT: CPT-22
Total depth: 12.99 ft, Date: 9/3/2020
Surface Elevation: 0.46 ft
Coords: lat 30.281125° lon -89.976447°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.1-86

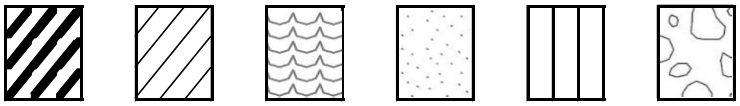
Project: 02541139 - Bayou Cane Marsh Creation
Location: St. Tammany Parish, Louisiana

CPT: CPT-23
Total depth: 9.25 ft, Date: 9/3/2020
Surface Elevation: 0.58 ft
Coords: lat 30.276283° lon -89.972572°
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



KEY TO TERMS AND SYMBOLS USED ON LOGS

SOIL TYPE

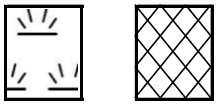


FAT CLAY | LEAN CLAY | ORGANIC CLAY | SAND | SILT | GRAVEL

SAMPLER TYPE

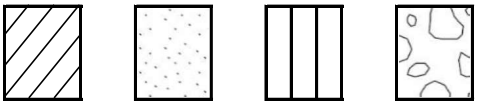
NO RECOVERY | AUGER SAMPLE | SHELBY TUBE | SPLIT SPOON

SOIL TYPE



TOPSOIL | FILL

MODIFIERS



CLAYEY | SANDY | SILTY | GRAVELY

▽ GROUNDWATER DURING DRILLING

▼ GROUNDWATER UPON COMPLETION

UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D 2487 (1980)

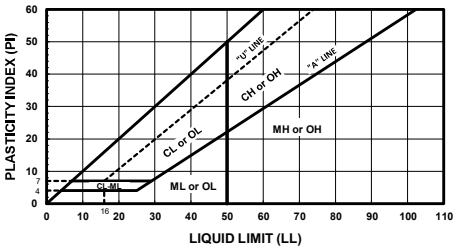
MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE-GRAINED SOILS LESS THAN 50% PASSING NO. 200 SIEVE	GRAVEL & GRAVELLY SOILS LESS THAN 50% PASSING NO. 4 SIEVE	CLEAN GRAVEL (LITTLE OR NO FINES)	GW	WELL-GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			GP	POORLY GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		WITH APPRECIABLE FINES	GM	SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN 50% PASSING NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)	SW	WELL-GRADED SAND
			SP	POORLY-GRADED SANDS
		WITH APPRECIABLE FINES	SM	SILTY SANDS
			SC	CLAYEY SANDS
FINE-GRAINED SOILS MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT < 50		ML	INORGANIC SILTS & VERY FINE SANDS, CLAYEY SILT W/ LOW PLASTICITY INDEX
			CL	INORGANIC LEAN CLAYS GRAVELLY, SANDY, OR SILTY LEAN CLAYS
			OL	ORGANIC SILTS & ORGANIC SILTY CLAYS W/LOW PLASTICITY INDEX
	SILTS AND CLAYS LIQUID LIMIT ≥ 50		MH	INORGANIC SILTS W/ HIGH PLASTICITY INDEX, ELASTIC SILTS
			CH	INORGANIC FAT CLAYS GRAVELLY, SANDY, OR SILTY FAT CLAYS
			OH	ORGANIC CLAYS OF MED TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOIL			PT	PEAT AND OTHER HIGHLY ORGANIC SOILS
UNCLASSIFIED FILL MATERIALS			ARTIFICIALLY DEPOSITED AND OTHER UNCLASSIFIED SOILS AND MAN-MADE SOIL MIXTURES	

CONSISTENCY - COHESIVE SOILS

CONSISTENCY	SHEAR STRENGTH IN TONS/FT^2
VERY SOFT	0 TO 0.125
SOFT	0.125 TO 0.25
FIRM	0.25 TO .50
STIFF	0.50 TO 1.00
VERY STIFF	1.00 TO 2.00
HARD	> 2.00 OR 2.00+

RELATIVE DENSITY - GRANULAR SOILS

DENSITY	N-VALUE (BLOWS/FT)
VERY LOOSE	0-4
LOOSE	4-9
MEDIUM DENSE	10-29
DENSE	30-49
VERY DENSE	> 50 OR 50+



ABBREVIATIONS

HP - HAND PENETROMETER

TV - MINIATURE TORVANE

UC - UNCONFINED COMPRESSION TEST

UU - UNCONSOLIDATED UNDRAINED TRAIXIAL

NOTE: BORING LOGS INDICATE SHEAR STRENGTH AS OBTAINED BY ABOVE TESTS

CLASSIFICATION OF GRANULAR SOILS

U.S. STANDARD SIEVE SIZE(S)

12" | 3" | 3/4" | 4 | 10 | 40 | 200

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

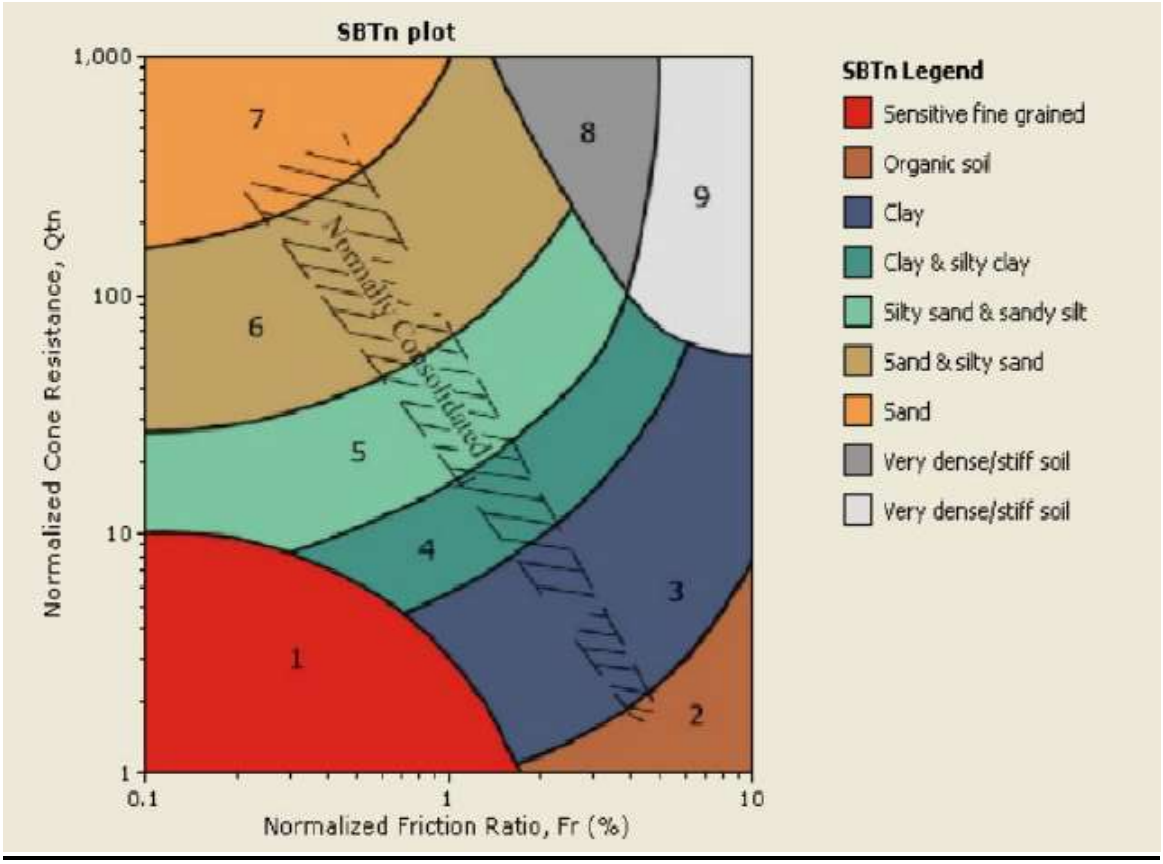
300 | 75 | 19 | 4.75 | 2.0 | 0.42 | 0.075 | 0.005

GRAIN SIZE IN MM

intertek psi

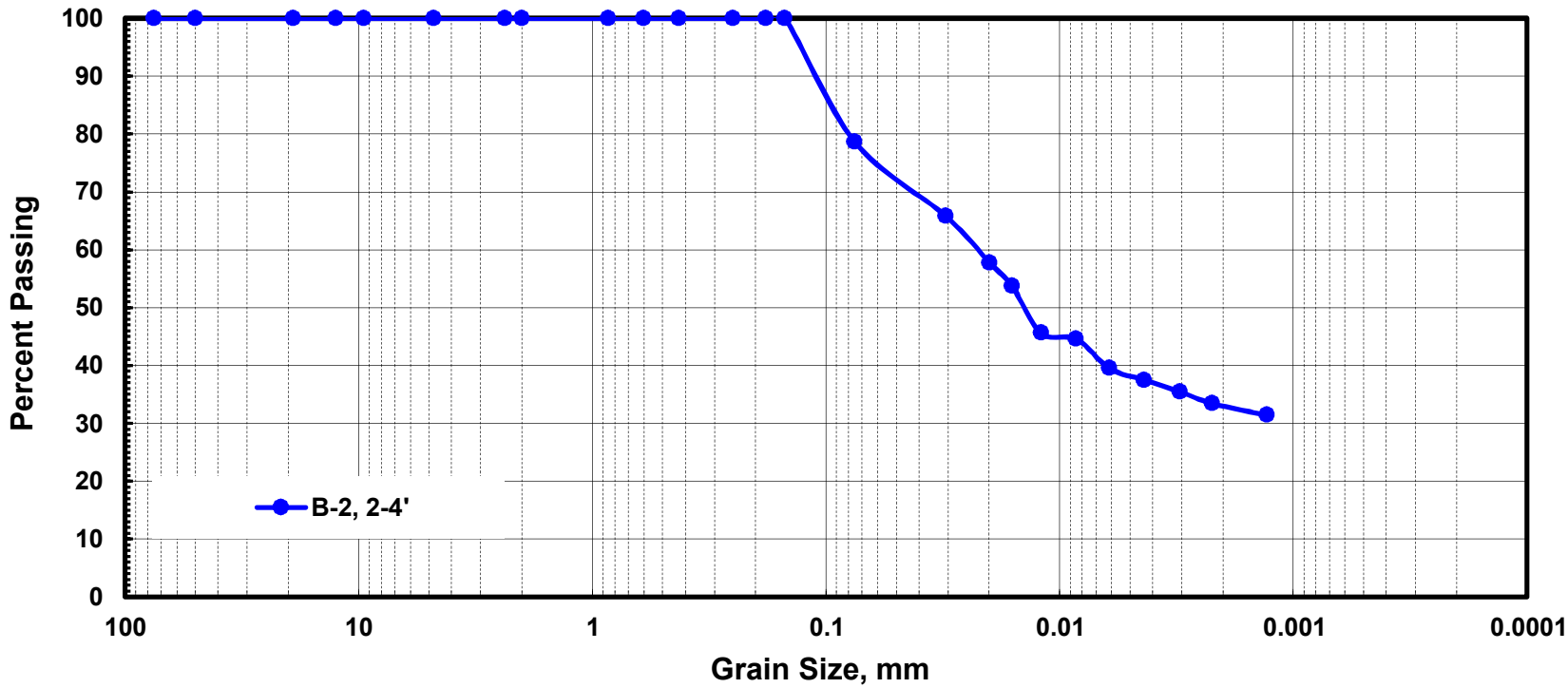
Professional Service Industries, Inc.
724 Central Avenue
Jefferson, Louisiana 70121
Phone: (504) 733-9411

CPT: NORMALIZED SOIL BEHAVIOUR TYPE LEGEND



APPENDIX C

HYDROMETER TEST RESULTS
SPECIFIC GRAVITY TEST RESULTS
ORGANIC CONTENT RESULTS



US STANDARD SIEVE SIZE

	6"	3"	3/4"	#4	#10	#40	#200	
BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE		
	152	75	19	4.75	2.0	0.425	0.075	0.002

PARTICLE SIZE IN MM

GRADATION INFORMATION	D_{10} mm	D_{30} mm	D_{50} mm	D_{60} mm	C_u (D_{60}/D_{10})	C_c $D_{30}^2/(D_{60}*D_{10})$	%Gravel Ret. #4	%Sand <#4 & >#200	%Fines Pass #200	%Clay < 0.002 mm
CPRA PO 181	NA	NA	0.0140	0.0225	NA	NA	0.00	21.42	78.58	32.95
B-2, 2-4'										
LEAN CLAY WITH SAND, GRAY										

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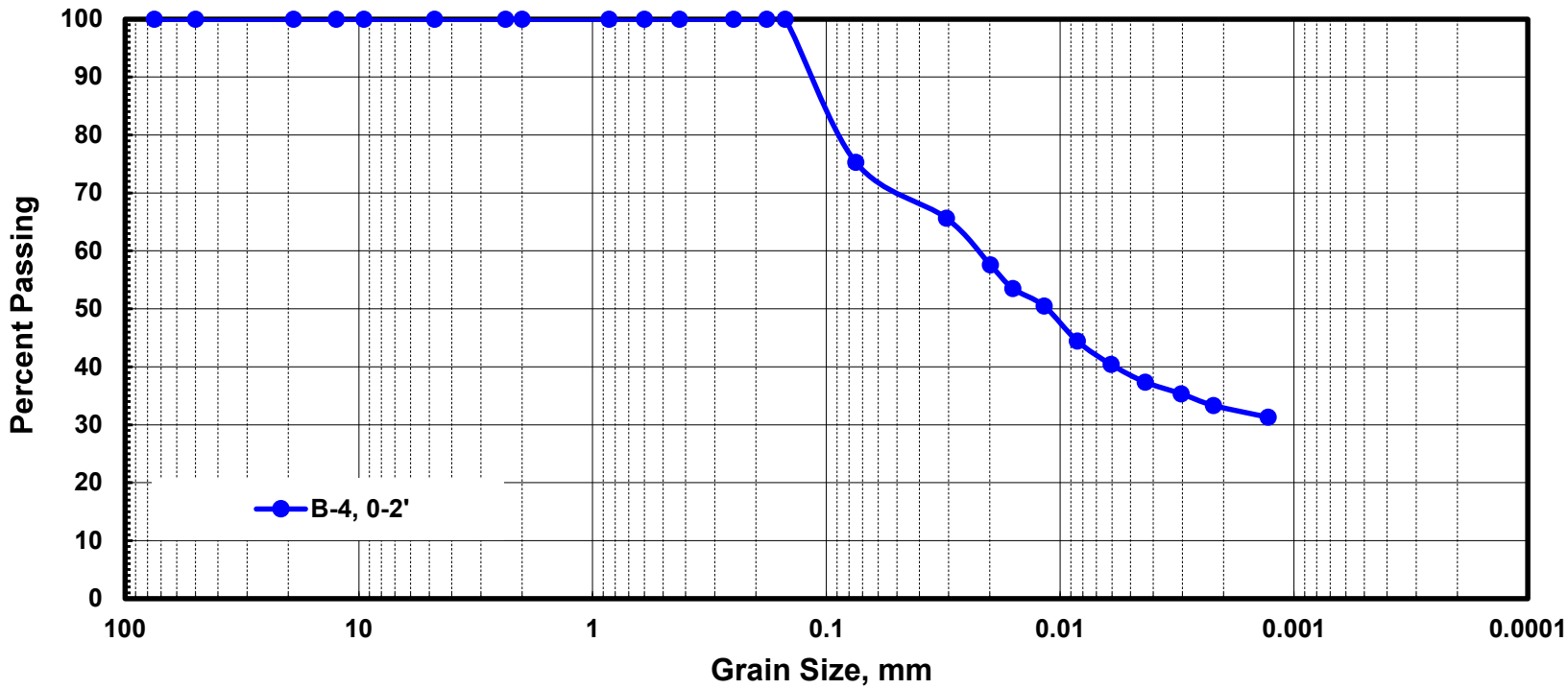
Jefferson, Texas



US STANDARD SIEVE SIZE

	6"	3"	3/4"	#4	#10	#40	#200		
BOULDERS	COBBLES	GRAVEL		SAND				SILT OR CLAY	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE			
	152	75	19	4.75	2.0	0.425	0.075		0.002

PARTICLE SIZE IN MM

GRADATION INFORMATION	D_{10} mm	D_{30} mm	D_{50} mm	D_{60} mm	C_u (D_{60}/D_{10})	C_c $D_{30}^2/(D_{60}*D_{10})$	%Gravel Ret. #4	%Sand <#4 & >#200	%Fines Pass #200	%Clay < 0.002 mm
CPRA PO 181	NA	NA	0.0114	0.0227	NA	NA	0.00	24.73	75.27	32.86
B-4, 0-2'										
FAT CLAY WITH SAND, GRAY										

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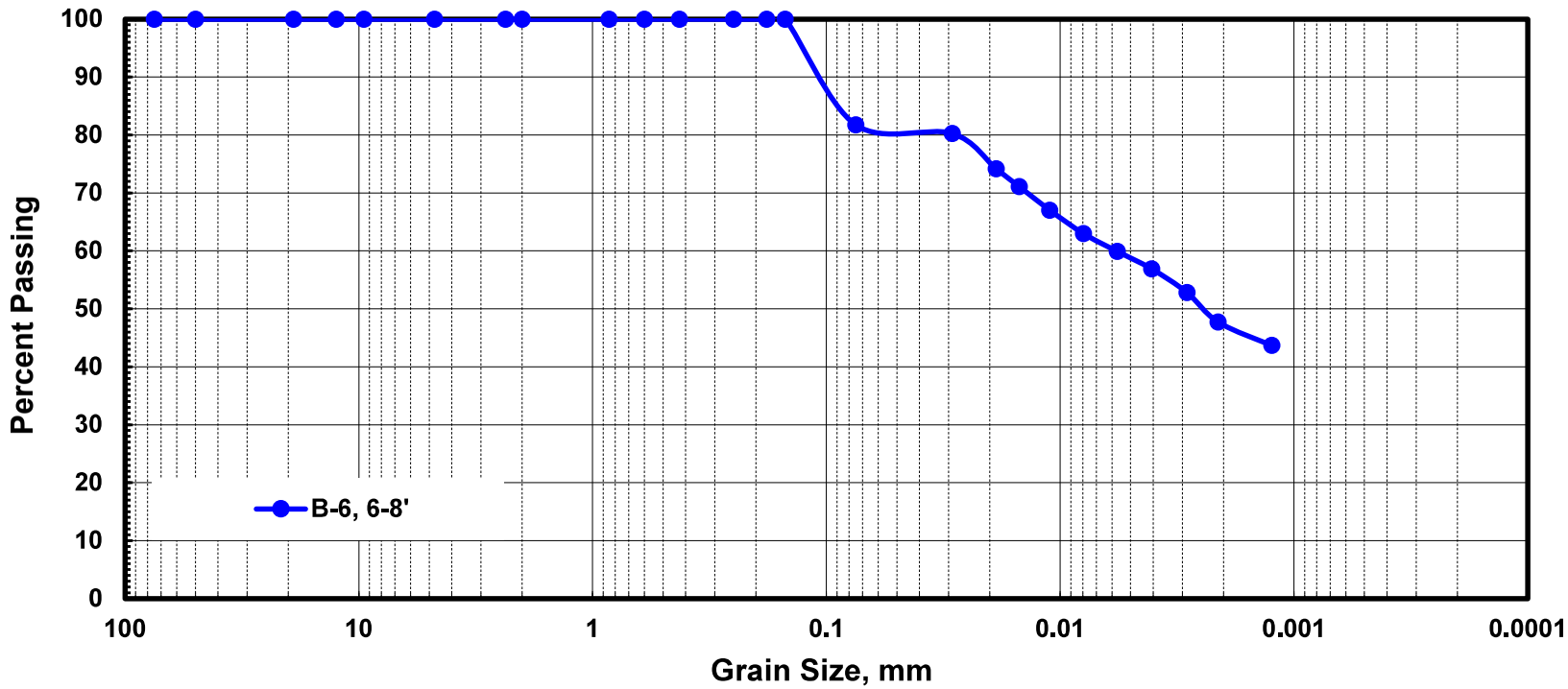

US STANDARD SIEVE SIZE

	6"	3"	3/4"	#4	#10	#40	#200		
BOULDERS	COBBLES	GRAVEL		SAND				SILT OR CLAY	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE			
	152	75	19	4.75	2.0	0.425	0.075		0.002

PARTICLE SIZE IN MM

GRADATION INFORMATION	D_{10} mm	D_{30} mm	D_{50} mm	D_{60} mm	C_u (D_{60}/D_{10})	C_c $D_{30}^2/(D_{60}*D_{10})$	%Gravel Ret. #4	%Sand <#4 & >#200	%Fines Pass #200	%Clay < 0.002 mm
CPRA PO 181	NA	NA	0.0024	0.0057	NA	NA	0.00	18.24	81.76	47.21
B-6, 6-8'										
FAT CLAY WITH SAND, GRAY										

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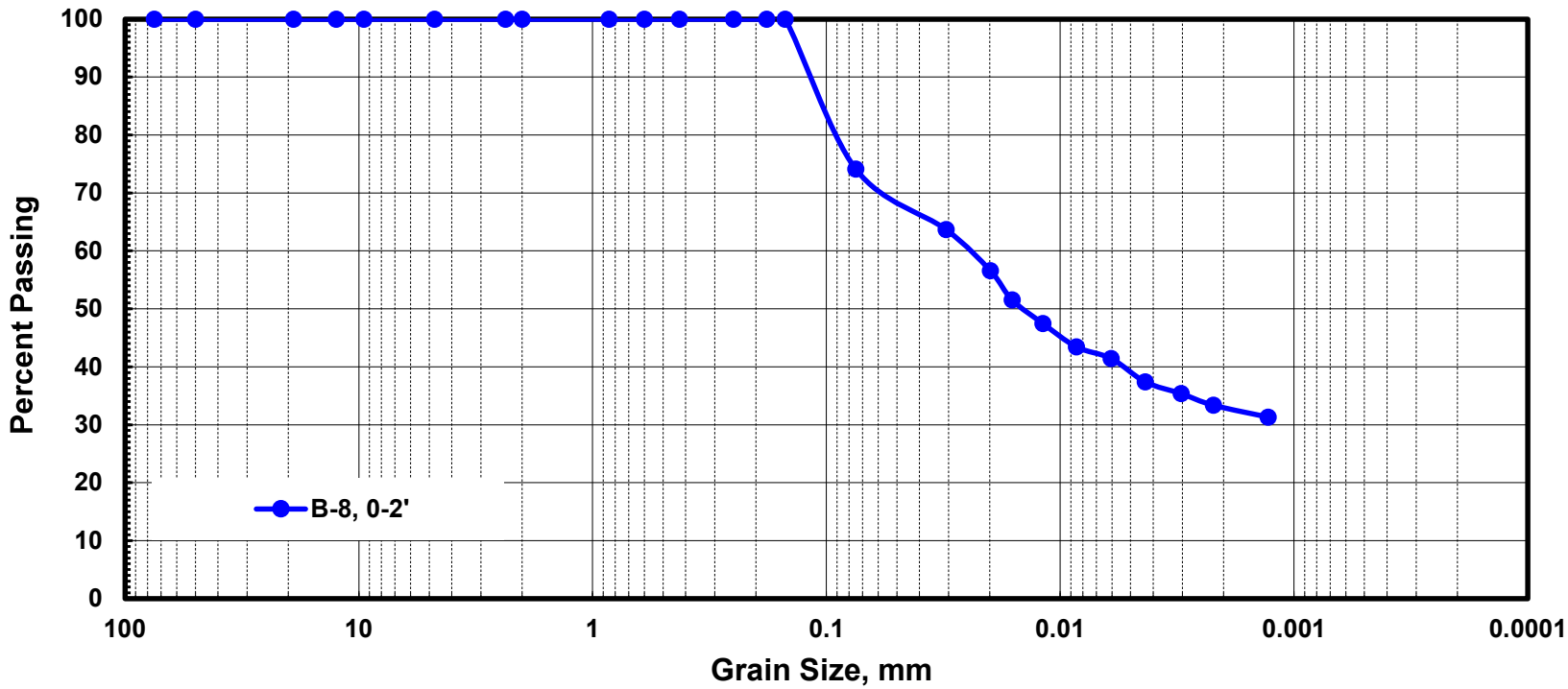
Appendix Figure No. G.1-93



US STANDARD SIEVE SIZE

	6"	3"	3/4"	#4	#10	#40	#200		
BOULDERS	COBBLES	GRAVEL		SAND				SILT OR CLAY	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE			
	152	75	19	4.75	2.0	0.425	0.075		0.002

PARTICLE SIZE IN MM

GRADATION INFORMATION	D_{10} mm	D_{30} mm	D_{50} mm	D_{60} mm	C_u (D_{60}/D_{10})	C_c $D_{30}^2/(D_{60}*D_{10})$	%Gravel Ret. #4	%Sand <#4 & >#200	%Fines Pass #200	%Clay < 0.002 mm
CPRA PO 181	NA	NA	0.0143	0.0246	NA	NA	0.00	25.89	74.11	32.88
B-8, 0-2'										
LEAN CLAY WITH SAND, GRAY										

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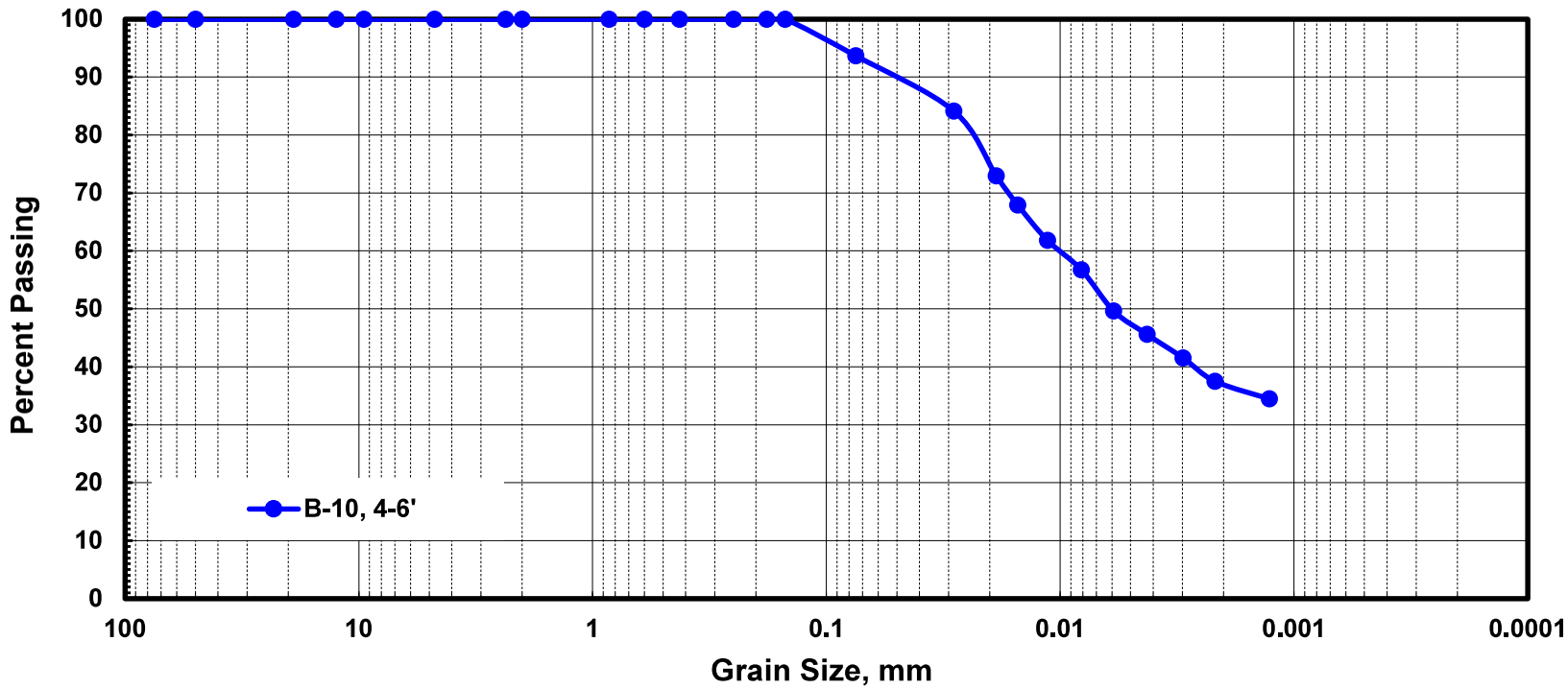

US STANDARD SIEVE SIZE

	6"	3"	3/4"	#4	#10	#40	#200		
BOULDERS	COBBLES	GRAVEL		SAND				SILT OR CLAY	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE			
	152	75	19	4.75	2.0	0.425	0.075		0.002

PARTICLE SIZE IN MM

GRADATION INFORMATION	D_{10} mm	D_{30} mm	D_{50} mm	D_{60} mm	C_u (D_{60}/D_{10})	C_c $D_{30}^2/(D_{60}*D_{10})$	%Gravel Ret. #4	%Sand <#4 & >#200	%Fines Pass #200	%Clay < 0.002 mm
CPRA PO 181	NA	NA	0.0060	0.0101	NA	NA	0.00	6.32	93.68	36.9
B-10, 4-6'										
LEAN CLAY, GRAY										

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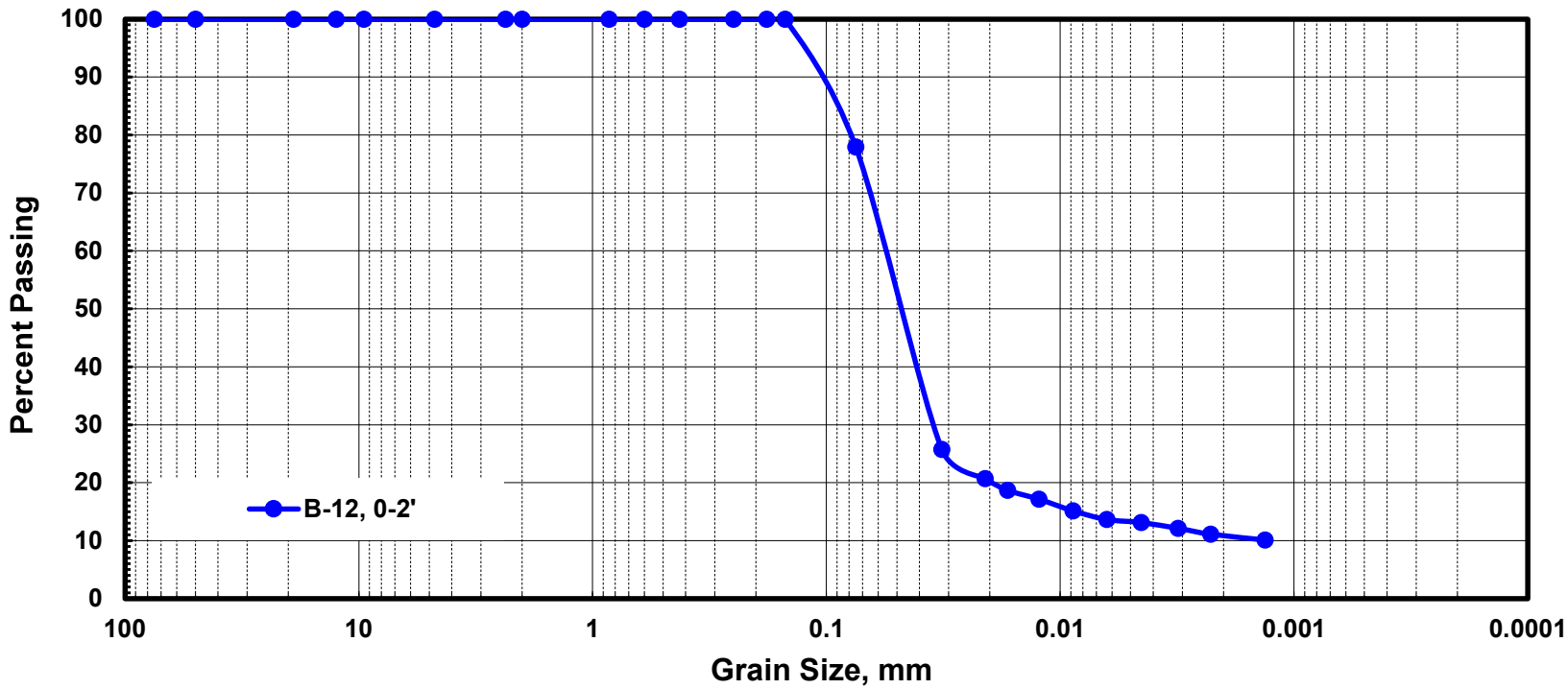
Appendix Figure No. G.1-95



US STANDARD SIEVE SIZE

	6"	3"	3/4"	#4	#10	#40	#200		
BOULDERS	COBBLES	GRAVEL		SAND				SILT OR CLAY	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE			
	152	75	19	4.75	2.0	0.425	0.075		0.002

PARTICLE SIZE IN MM

GRADATION INFORMATION	D_{10} mm	D_{30} mm	D_{50} mm	D_{60} mm	C_u (D_{60}/D_{10})	C_c $D_{30}^2/(D_{60}*D_{10})$	%Gravel Ret. #4	%Sand <#4 & >#200	%Fines Pass #200	%Clay < 0.002 mm
CPRA PO 181	NA	0.0344	0.0476	0.0560	NA	NA	0.00	22.06	77.94	10.81
B-12, 0-2'										
LEAN CLAY WITH SAND, GRAY										

intertek psi

Geotechnical Consulting Services
Jefferson, Texas

psi Information To Build On
Engineering • Consulting • Testing

Specific Gravity ASTM (D 854)

Project Name: CPRA PO 181	Checked By:		Computed By:	
Project No: 02541139	Date tested:	9/2-4/20		
Date Prepared:	Scales Control Number:		03ES254	
Tested by:	Oven Control Number:		02OV251	
Boring Number :	M-1			
Sample Number:	S-3			
Depth, feet:	4-6'			
Description of Material:				
Pyconmeter Calibration Information				
Flask ID.	17PYC254			
Calibrated Mass of Flask (Mpc), gms:	162.170			
Calibrated Volume of the Flask (Vpc), mL:	499.100			
Check for Pyconmeter Calibration				
Mass of Flask, gms(Mp):	162.10	Is Mp within 0.06g of Mpc (Y/N):		Y
Mass of Flask + Water, (Mpw,t), gms:	659.75			
Temperature of Water (Ct), deg. C:	25.4	(Temperature of Water After Cooling)		
Density of Water at Tt, (pw,ct), g/mL:	0.99694	(From Table 1 of ASTM D 854)		
Volume of the Flask (Vp), mL:	499.177	Vp = (Mpwct - Mp)/pw,ct		
Test Data (Method B)				
Mass of Flask + Water at Test (Mpw, t), gms:	659.805	(Mpw = Mp + (Vp * pw,t)		
Mass of Dry Soil (Ms), gms:	65.20			
Mass of Flask + Water + Soil, (Mpws, t), gms:	700.43			
Temperature of Water (Tt), deg. C:	25.0	(Temperature of Water+Soil After Cooling)		
Density of Water at Tt, (pw,t), g/mL:	0.99705	(From Table 1 of ASTM D 854)		
Specific gravity of Water at T, (Gt):	2.653	Gt = Ms /{Mpw,t - (Mpwst - Ms)}		
Temperature Coefficient, K:	0.99884	(From Table 1 of ASTM D 854)		
Specific gravity of soil, Gs (20 deg. C):	*2.650*	Gs (20C) = Gt * K		
Remarks:				

Appendix Figure No. G.1-97

psi Information To Build On Engineering • Consulting • Testing	Specific Gravity ASTM (D 854)			
Project Name: CPRA PO 181	Checked By:		Computed By:	
Project No: 02541139	Date tested: 9/2-4/20			
Date Prepared: 9/1/20	Scales Control Number:		03ES254	
Tested by: RB / DD	Oven Control Number:		02OV251	
Boring Number :	M-2			
Sample Number:	S-4 (M)			
Depth, feet:	6-8'			
Description of Material:	LT GR CL W/ SA			
Pyconmeter Calibration Information				
Flask ID.	17PYC254			
Calibrated Mass of Flask (Mpc), gms:	162.170			
Calibrated Volume of the Flask (Vpc), mL:	499.100			
Check for Pyconmeter Calibration				
Mass of Flask, gms(Mp):	162.12	Is Mp within 0.06g of Mpc (Y/N):		Y
Mass of Flask + Water, (Mpw,t), gms:	659.75			
Temperature of Water (Ct), deg. C:	25.4	(Temperature of Water After Cooling)		
Density of Water at Tt, (pw,ct), g/mL:	0.99694	(From Table 1 of ASTM D 854)		
Volume of the Flask (Vp), mL:	499.157	Vp = (Mpwct - Mp)/pw,ct		
Test Data (Method B)				
Mass of Flask + Water at Test (Mpw, t), gms:	659.675	(Mpw = Mp + (Vp * pw,t)		
Mass of Dry Soil (Ms), gms:	68.46			
Mass of Flask + Water + Soil, (Mpws, t), gms:	702.68			
Temperature of Water (Tt), deg. C:	26.0	(Temperature of Water+Soil After Cooling)		
Density of Water at Tt, (pw,t), g/mL:	0.99679	(From Table 1 of ASTM D 854)		
Specific gravity of Water at T, (Gt):	2.689	Gt = Ms /{Mpw,t - (Mpwst - Ms)}		
Temperature Coefficient, K:	0.99858	(From Table 1 of ASTM D 854)		
Specific gravity of soil, Gs (20 deg. C):	*2.686*	Gs (20C) = Gt * K		
Remarks:				

psi Information To Build On Engineering • Consulting • Testing	Specific Gravity ASTM (D 854)			
Project Name: CPRA PO 181	Checked By:		Computed By:	
Project No: 02541139	Date tested: 9/2-4/20			
Date Prepared: 9/1/20	Scales Control Number:		03ES254	
Tested by: RB / DD	Oven Control Number:		02OV251	
Boring Number :	M-4			
Sample Number:	S-3 (M)			
Depth, feet:	4-6'			
Description of Material:	LT GR CL W/ SA			
Pyconmeter Calibration Information				
Flask ID.	19PYC254			
Calibrated Mass of Flask (Mpc), gms:	168.230			
Calibrated Volume of the Flask (Vpc), mL:	499.090			
Check for Pyconmeter Calibration				
Mass of Flask, gms(Mp):	168.20	Is Mp within 0.06g of Mpc (Y/N):		Y
Mass of Flask + Water, (Mpw,t), gms:	665.79			
Temperature of Water (Ct), deg. C:	25.5	(Temperature of Water After Cooling)		
Density of Water at Tt, (pw,ct), g/mL:	0.99692	(From Table 1 of ASTM D 854)		
Volume of the Flask (Vp), mL:	499.127	Vp = (Mpwct - Mp)/pw,ct		
Test Data (Method B)				
Mass of Flask + Water at Test (Mpw, t), gms:	665.725	(Mpw = Mp + (Vp * pw,t)		
Mass of Dry Soil (Ms), gms:	63.71			
Mass of Flask + Water + Soil, (Mpws, t), gms:	705.71			
Temperature of Water (Tt), deg. C:	26.0	(Temperature of Water+Soil After Cooling)		
Density of Water at Tt, (pw,t), g/mL:	0.99679	(From Table 1 of ASTM D 854)		
Specific gravity of Water at T, (Gt):	2.685	Gt = Ms /{Mpw,t - (Mpwst - Ms)}		
Temperature Coefficient, K:	0.99858	(From Table 1 of ASTM D 854)		
Specific gravity of soil, Gs (20 deg. C):	*2.682*	Gs (20C) = Gt * K		
Remarks:				

Appendix Figure No. G.1-99

psi Information To Build On Engineering • Consulting • Testing	Specific Gravity ASTM (D 854)			
Project Name: CPRA PO 181	Checked By:		Computed By:	
Project No: 02541139	Date tested: 9/2-4/20			
Date Prepared:	Scales Control Number:		03ES254	
Tested by:	Oven Control Number:		02OV251	
Boring Number :	M-5			
Sample Number:	S-2			
Depth, feet:	2-4'			
Description of Material:				
Pyconmeter Calibration Information				
Flask ID.	19PYC254			
Calibrated Mass of Flask (Mpc), gms:	168.230			
Calibrated Volume of the Flask (Vpc), mL:	499.090			
Check for Pyconmeter Calibration				
Mass of Flask, gms(Mp):	168.18	Is Mp within 0.06g of Mpc (Y/N):		Y
Mass of Flask + Water, (Mpw,t), gms:	665.79			
Temperature of Water (Ct), deg. C:	25.5	(Temperature of Water After Cooling)		
Density of Water at Tt, (pw,ct), g/mL:	0.99692	(From Table 1 of ASTM D 854)		
Volume of the Flask (Vp), mL:	499.147	Vp = (Mpwct - Mp)/pw,ct		
Test Data (Method B)				
Mass of Flask + Water at Test (Mpw, t), gms:	665.855	(Mpw = Mp + (Vp * pw,t)		
Mass of Dry Soil (Ms), gms:	66.13			
Mass of Flask + Water + Soil, (Mpws, t), gms:	707.09			
Temperature of Water (Tt), deg. C:	25.0	(Temperature of Water+Soil After Cooling)		
Density of Water at Tt, (pw,t), g/mL:	0.99705	(From Table 1 of ASTM D 854)		
Specific gravity of Water at T, (Gt):	2.656	Gt = Ms /{Mpw,t - (Mpwst - Ms)}		
Temperature Coefficient, K:	0.99884	(From Table 1 of ASTM D 854)		
Specific gravity of soil, Gs (20 deg. C):	*2.653*	Gs (20C) = Gt * K		
Remarks:				

psi Information To Build On Engineering • Consulting • Testing	Specific Gravity ASTM (D 854)			
Project Name: CPRA PO 181	Checked By:		Computed By:	
Project No: 02541139	Date tested: 9/2-4/20			
Date Prepared: 9/1/20	Scales Control Number:		03ES254	
Tested by: DD	Oven Control Number:		02OV251	
Boring Number :	M-6			
Sample Number:	S-2			
Depth, feet:	2-4'			
Description of Material:				
Pyconmeter Calibration Information				
Flask ID.	23PYC254			
Calibrated Mass of Flask (Mpc), gms:	170.250			
Calibrated Volume of the Flask (Vpc), mL:	499.070			
Check for Pyconmeter Calibration				
Mass of Flask, gms(Mp):	170.25	Is Mp within 0.06g of Mpc (Y/N):		Y
Mass of Flask + Water, (Mpw,t), gms:	667.79			
Temperature of Water (Ct), deg. C:	25.4	(Temperature of Water After Cooling)		
Density of Water at Tt, (pw,ct), g/mL:	0.99694	(From Table 1 of ASTM D 854)		
Volume of the Flask (Vp), mL:	499.067	Vp = (Mpwct - Mp)/pw,ct		
Test Data (Method B)				
Mass of Flask + Water at Test (Mpw, t), gms:	667.780	(Mpw = Mp + (Vp * pw,t)		
Mass of Dry Soil (Ms), gms:	60.14			
Mass of Flask + Water + Soil, (Mpws, t), gms:	705.37			
Temperature of Water (Tt), deg. C:	25.5	(Temperature of Water+Soil After Cooling)		
Density of Water at Tt, (pw,t), g/mL:	0.99692	(From Table 1 of ASTM D 854)		
Specific gravity of Water at T, (Gt):	2.667	Gt = Ms /{Mpw,t - (Mpwst - Ms)}		
Temperature Coefficient, K:	0.99871	(From Table 1 of ASTM D 854)		
Specific gravity of soil, Gs (20 deg. C):	*2.664*	Gs (20C) = Gt * K		
Remarks:				

psi Information To Build On
Engineering • Consulting • Testing

Specific Gravity ASTM (D 854)

Project Name: CPRA PO 181	Checked By:		Computed By:	
Project No: 02541139	Date tested:	9/2-4/20		
Date Prepared:	Scales Control Number:		03ES254	
Tested by:	Oven Control Number:		02OV251	
Boring Number :	M-7			
Sample Number:	S-3 (B)			
Depth, feet:	4-6'			
Description of Material:				
Pyconmeter Calibration Information				
Flask ID.	22PYC254			
Calibrated Mass of Flask (Mpc), gms:	164.840			
Calibrated Volume of the Flask (Vpc), mL:	499.140			
Check for Pyconmeter Calibration				
Mass of Flask, gms(Mp):	164.84	Is Mp within 0.06g of Mpc (Y/N):		Y
Mass of Flask + Water, (Mpw,t), gms:	662.45			
Temperature of Water (Ct), deg. C:	25.4	(Temperature of Water After Cooling)		
Density of Water at Tt, (pw,ct), g/mL:	0.99694	(From Table 1 of ASTM D 854)		
Volume of the Flask (Vp), mL:	499.137	Vp = (Mpwct - Mp)/pw,ct		
Test Data (Method B)				
Mass of Flask + Water at Test (Mpw, t), gms:	662.749	(Mpw = Mp + (Vp * pw,t)		
Mass of Dry Soil (Ms), gms:	61.72			
Mass of Flask + Water + Soil, (Mpws, t), gms:	701.42			
Temperature of Water (Tt), deg. C:	23.0	(Temperature of Water+Soil After Cooling)		
Density of Water at Tt, (pw,t), g/mL:	0.99754	(From Table 1 of ASTM D 854)		
Specific gravity of Water at T, (Gt):	2.678	Gt = Ms /{Mpw,t - (Mpwst - Ms)}		
Temperature Coefficient, K:	0.99933	(From Table 1 of ASTM D 854)		
Specific gravity of soil, Gs (20 deg. C):	*2.676*	Gs (20C) = Gt * K		
Remarks:				

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Specific Gravity ASTM (D 854)

Project Name: CPRA PO 181	Checked By:		Computed By:	
Project No: 02541139	Date tested:	9/2-4/20		
Date Prepared:	Scales Control Number:		03ES254	
Tested by:	Oven Control Number:		02OV251	
Boring Number :	M-8			
Sample Number:	S-8			
Depth, feet:	14-16'			
Description of Material:				
Pyconmeter Calibration Information				
Flask ID.	22PYC254			
Calibrated Mass of Flask (Mpc), gms:	164.840			
Calibrated Volume of the Flask (Vpc), mL:	499.140			
Check for Pyconmeter Calibration				
Mass of Flask, gms(Mp):	164.84	Is Mp within 0.06g of Mpc (Y/N):		Y
Mass of Flask + Water, (Mpw,t), gms:	662.45			
Temperature of Water (Ct), deg. C:	25.4	(Temperature of Water After Cooling)		
Density of Water at Tt, (pw,ct), g/mL:	0.99694	(From Table 1 of ASTM D 854)		
Volume of the Flask (Vp), mL:	499.137	Vp = (Mpwct - Mp)/pw,ct		
Test Data (Method B)				
Mass of Flask + Water at Test (Mpw, t), gms:	662.505	(Mpw = Mp + (Vp * pw,t)		
Mass of Dry Soil (Ms), gms:	65.56			
Mass of Flask + Water + Soil, (Mpws, t), gms:	703.66			
Temperature of Water (Tt), deg. C:	25.0	(Temperature of Water+Soil After Cooling)		
Density of Water at Tt, (pw,t), g/mL:	0.99705	(From Table 1 of ASTM D 854)		
Specific gravity of Water at T, (Gt):	2.686	Gt = Ms /{Mpw,t - (Mpwst - Ms)}		
Temperature Coefficient, K:	0.99884	(From Table 1 of ASTM D 854)		
Specific gravity of soil, Gs (20 deg. C):	*2.683*	Gs (20C) = Gt * K		
Remarks:				

ORGANIC CONTENT

Boring No.	Depth (feet)	Organic Content (%)
M-1	0-2	1.3
M-2	0-2	31
M-3	0-2	50.3
M-4	0-2	66
M-5	0-2	61.2
M-6	0-2	8.6
M-7	0-2	5.7
M-8	2-4	0.9
M-9	0-2	47.3

APPENDIX D

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST RESULTS

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/4/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-1	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-1 (B)	**Oven:**	**10OV251**
Sample Depth:	0-2'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	TV = 0.10	**Loadcell:**	**17COM254**
Sample Description:	GR CL W/ SA	**Air Pressure (psi):**	**0.4**

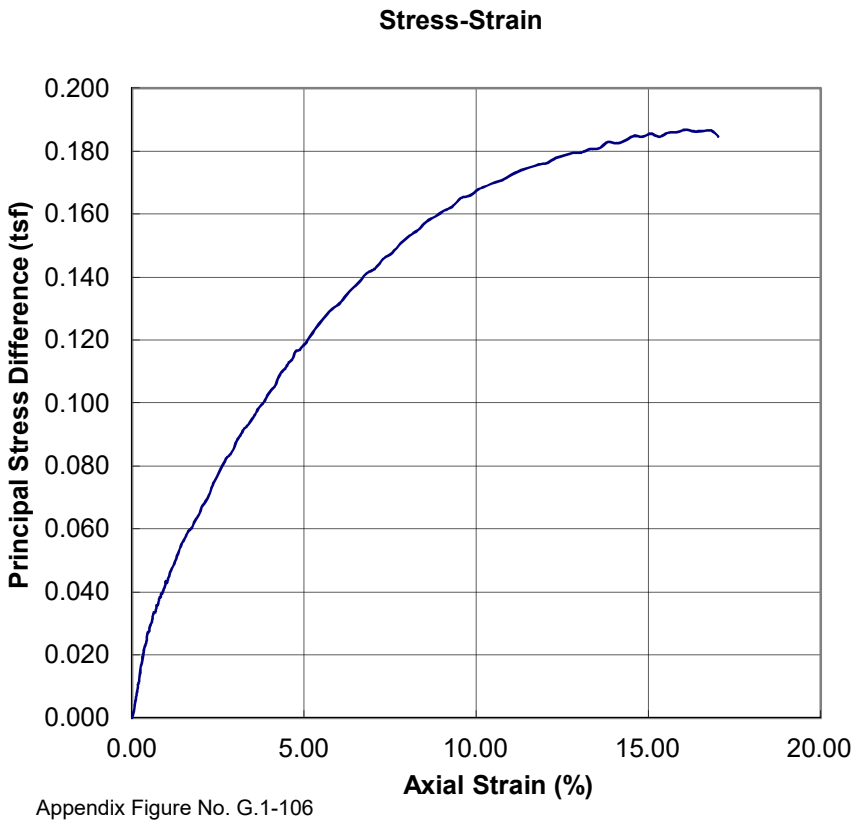
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.860	2.873	2.912	2.882	2.02
Height (in)	5.819	5.828	5.826	5.824	
	Area, ft²:	0.045	Volume, ft³:	0.022	

Moisture Content (%)			**Unit Weight**
Can Number:	60H	Wet Weight of Sample (g):	1226.77
Wt. of Can (g):	31.33	Dry Weight of Sample (g):	1010.35
Wt. of Wet Soil + Can (g):	86.03	Wet Unit Weight (pcf):	**123.0**
Wt. of Dry Soil + Can (g):	76.38	Dry Unit Weight (pcf):	**101.3**
Wt. of Dry Soil (g):	45.05		
Wt. of Water (g):	9.65		
Moisture Content (%):	**21.4**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.071**	**0.19**	**0.09**

FAILURE TYPE:

NOTE: _____



Tested By: RB
Computed By: RB
Reviewed By: _____

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Appendix Figure No. G.1-106

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/4/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-1	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-3 (B)	**Oven:**	**10OV251**
Sample Depth:	4-6'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	0.75 / 3 TV = 0.20	**Loadcell:**	**17COM254**
Sample Description:	GR CL W/ SA & SA POCKETS	**Air Pressure (psi):**	**2.0**

Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.746	2.804	2.794	2.781	2.05
Height (in)	5.690	5.693	5.706	5.696	
	Area, ft²:	0.042	Volume, ft³:	0.020	

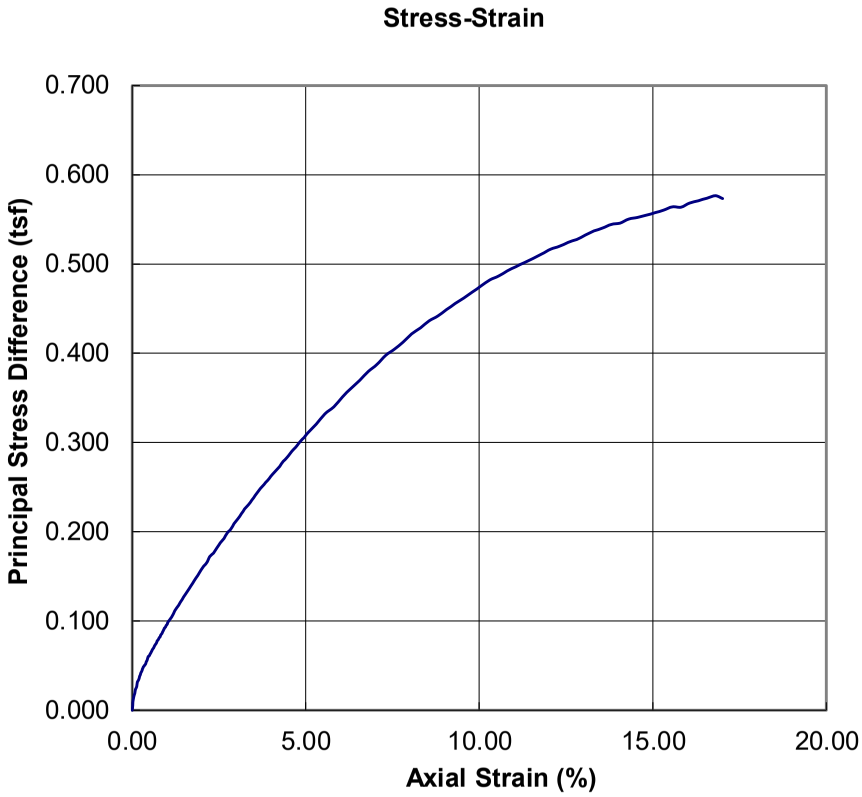
Moisture Content (%)		**Unit Weight**	
Can Number:	DB-13	Wet Weight of Sample (g):	1181.11
Wt. of Can (g):	31.45	Dry Weight of Sample (g):	970.48
Wt. of Wet Soil + Can (g):	83.88	Wet Unit Weight (pcf):	**130.0**
Wt. of Dry Soil + Can (g):	74.53	Dry Unit Weight (pcf):	**106.8**
Wt. of Dry Soil (g):	43.08		
Wt. of Water (g):	9.35		
Moisture Content (%):	**21.7**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.068**	**0.56**	**0.28**

Appendix Figure No. G-1-107

FAILURE TYPE:

NOTE: _____



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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/4/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-1	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-5 (B)	**Oven:**	**10OV251**
Sample Depth:	8-10'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.75 / 3	**Loadcell:**	**12COM254**
Sample Description:	LTGR/TN CLS	**Air Pressure (psi):**	**3.6**

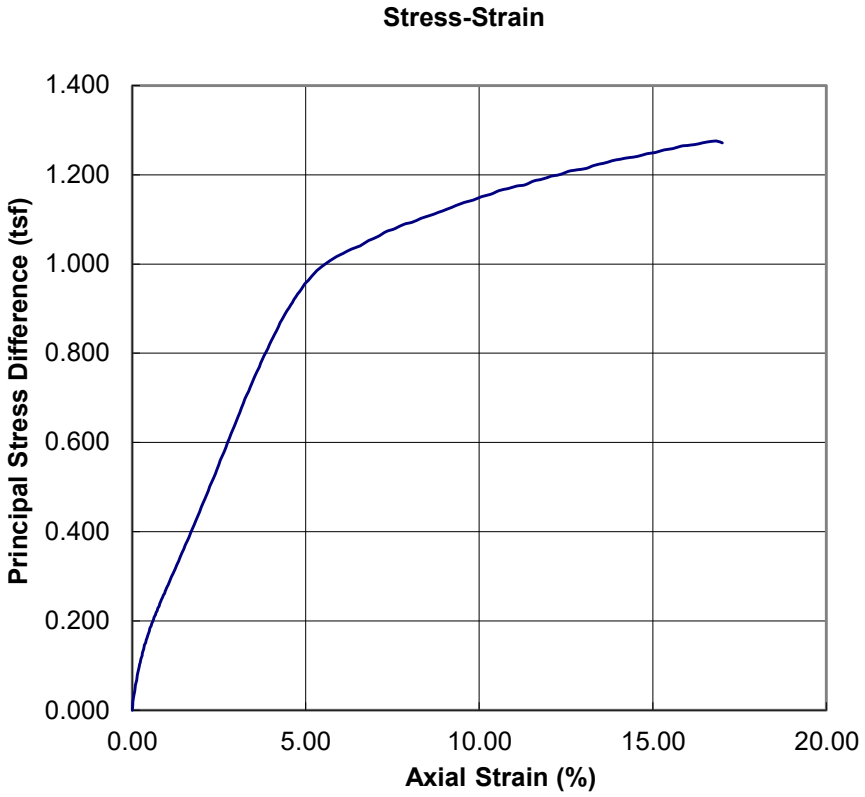
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.841	2.816	2.856	2.838	2.06
Height (in)	5.851	5.855	5.850	5.852	
	Area, ft²:	0.044	Volume, ft³:	0.021	

	Moisture Content (%)		**Unit Weight**
Can Number:	DB-1	Wet Weight of Sample (g):	1209.94
Wt. of Can (g):	31.26	Dry Weight of Sample (g):	979.66
Wt. of Wet Soil + Can (g):	83.75	Wet Unit Weight (pcf):	**124.5**
Wt. of Dry Soil + Can (g):	73.76	Dry Unit Weight (pcf):	**100.8**
Wt. of Dry Soil (g):	42.50		
Wt. of Water (g):	9.99		
Moisture Content (%):	**23.5**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.075**	**1.25**	**0.63**

FAILURE TYPE:

NOTE: _____



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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/4/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-1	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-8 (B)	**Oven:**	**10OV251**
Sample Depth:	14-16'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	2.0 / 3	**Loadcell:**	**12COM254**
Sample Description:	TN CL-ML	**Air Pressure (psi):**	**6.0**

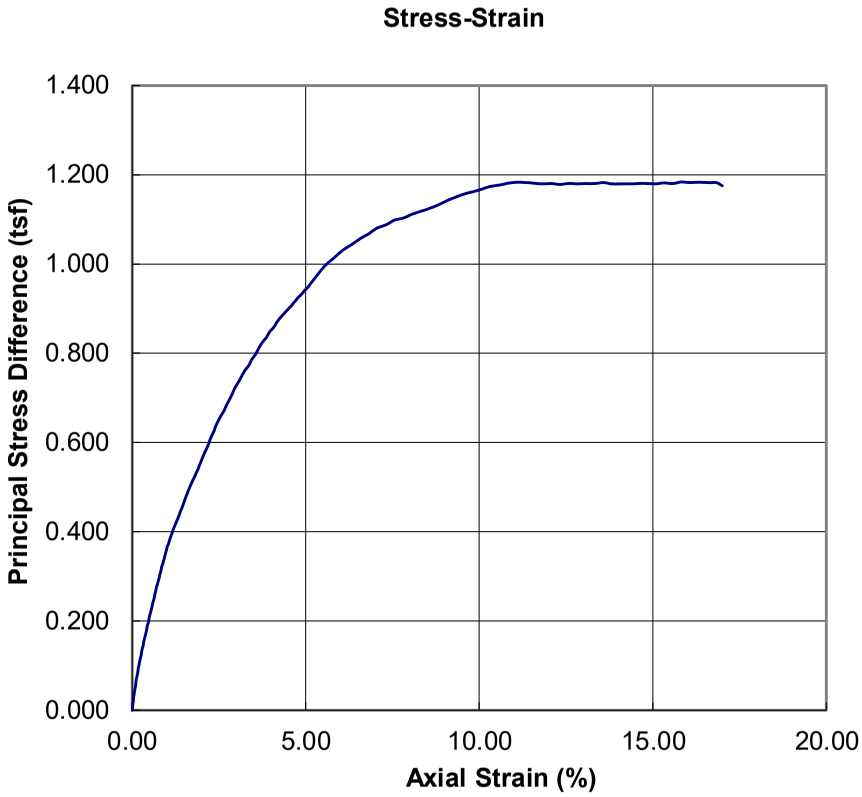
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.856	2.830	2.852	2.846	2.03
Height (in)	5.776	5.784	5.776	5.779	
	Area, ft²:	0.044	Volume, ft³:	0.021	

Moisture Content (%)		**Unit Weight**	
Can Number:	59	Wet Weight of Sample (g):	1153.04
Wt. of Can (g):	31.11	Dry Weight of Sample (g):	889.54
Wt. of Wet Soil + Can (g):	84.19	Wet Unit Weight (pcf):	**119.5**
Wt. of Dry Soil + Can (g):	72.06	Dry Unit Weight (pcf):	**92.2**
Wt. of Dry Soil (g):	40.95		
Wt. of Water (g):	12.13		
Moisture Content (%):	**29.6**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.076**	**1.18**	**0.59**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-109

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/25/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-1	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-11 (B)	**Oven:**	**10OV251**
Sample Depth:	23-25'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	2.25 / 3	**Loadcell:**	**12COM254**
Sample Description:	LTGR/TN CL W/ SA	**Air Pressure (psi):**	**9.6**

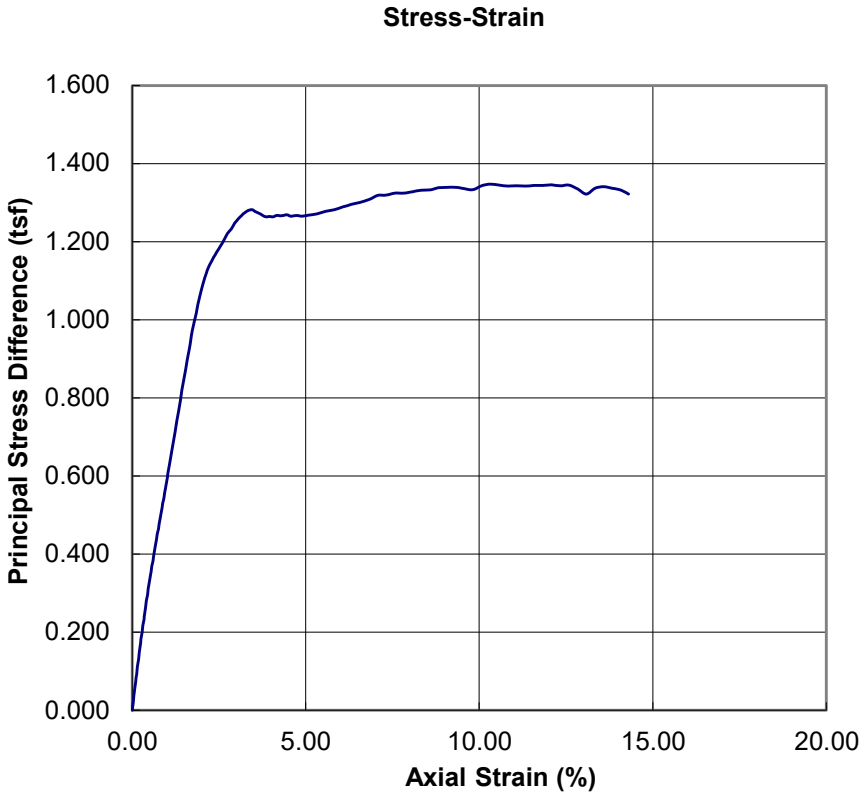
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.872	2.862	2.868	2.867	2.01
Height (in)	5.748	5.756	5.760	5.755	
	Area, ft²:	0.045	Volume, ft³:	0.022	

Moisture Content (%)		**Unit Weight**	
Can Number:	L-21	Wet Weight of Sample (g):	1158.91
Wt. of Can (g):	31.33	Dry Weight of Sample (g):	876.45
Wt. of Wet Soil + Can (g):	83.97	Wet Unit Weight (pcf):	**118.8**
Wt. of Dry Soil + Can (g):	71.14	Dry Unit Weight (pcf):	**89.9**
Wt. of Dry Soil (g):	39.81		
Wt. of Water (g):	12.83		
Moisture Content (%):	**32.2**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**3.457**	**1.28**	**0.64**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-110

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/28/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-2	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-1 (B)	**Oven:**	**10OV251**
Sample Depth:	0-2'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	TV = 0.05	**Loadcell:**	**16COM254**
Sample Description:	DKGR/BK OH W/ SAND	**Air Pressure (psi):**	**0.4**

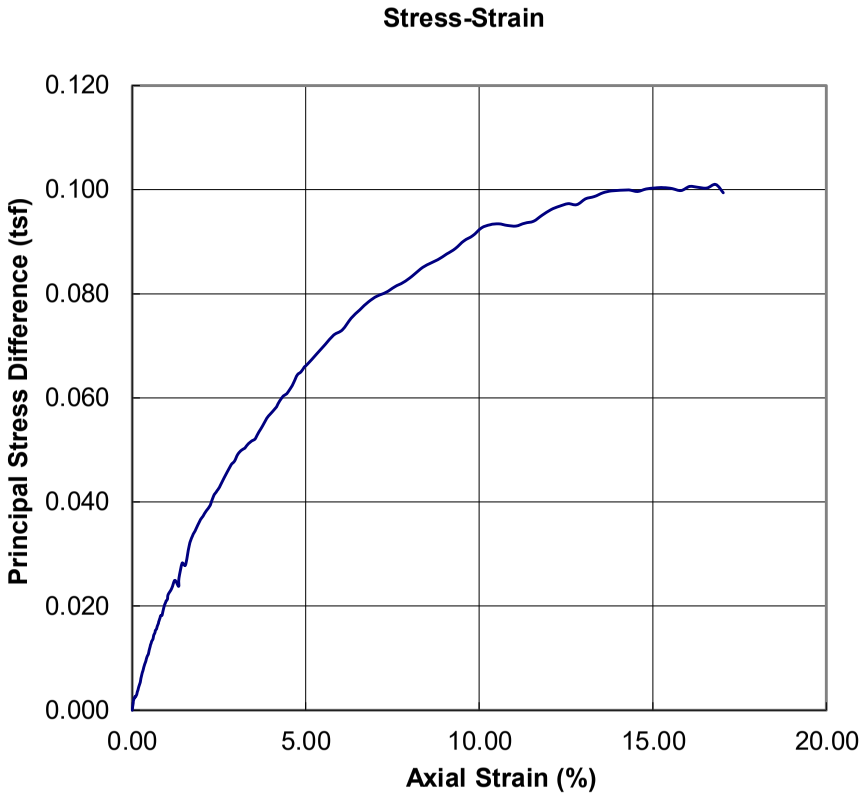
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.766	2.824	2.811	2.800	2.02
Height (in)	5.635	5.666	5.653	5.651	
	Area, ft²:	0.043	Volume, ft³:	0.020	

Moisture Content (%)		**Unit Weight**	
Can Number:	246-10	Wet Weight of Sample (g):	1019.68
Wt. of Can (g):	30.09	Dry Weight of Sample (g):	726.29
Wt. of Wet Soil + Can (g):	82.64	Wet Unit Weight (pcf):	**111.6**
Wt. of Dry Soil + Can (g):	67.52	Dry Unit Weight (pcf):	**79.5**
Wt. of Dry Soil (g):	37.43		
Wt. of Water (g):	15.12		
Moisture Content (%):	**40.4**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.063**	**0.10**	**0.05**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-111

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/28/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-2	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-3 (B)	**Oven:**	**10OV251**
Sample Depth:	4-6'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	TV = 0.50	**Loadcell:**	**17COM254**
Sample Description:	LTGR CH W/ SAND	**Air Pressure (psi):**	**2.0**

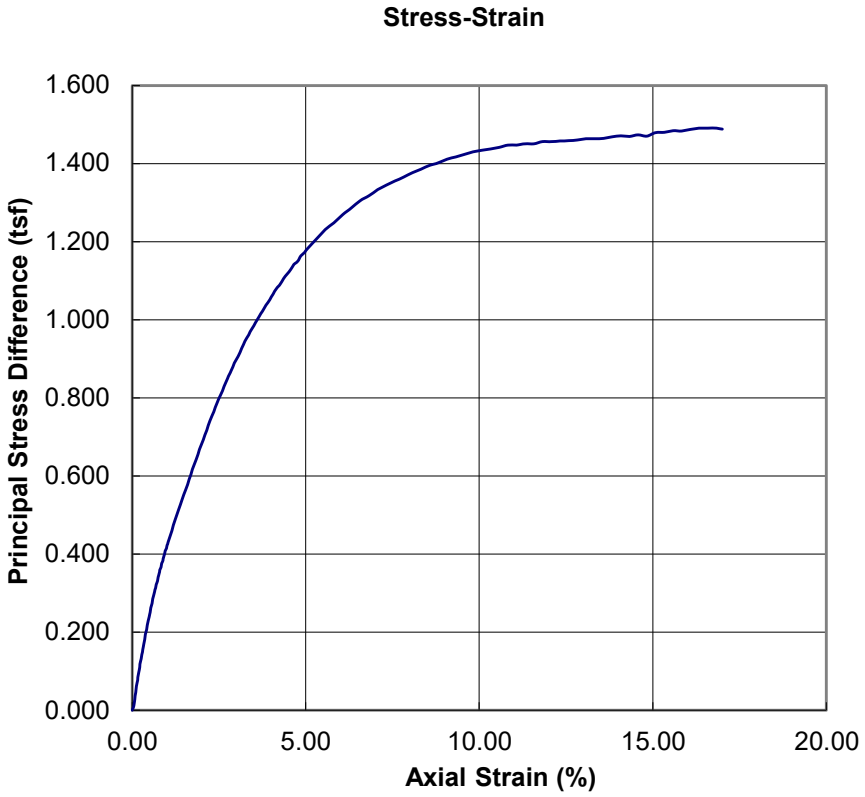
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.870	2.854	2.838	2.854	2.05
Height (in)	5.861	5.833	5.850	5.848	
	Area, ft²:	0.044	Volume, ft³:	0.022	

	Moisture Content (%)		**Unit Weight**
Can Number:	246-14	Wet Weight of Sample (g):	1175.65
Wt. of Can (g):	29.83	Dry Weight of Sample (g):	883.37
Wt. of Wet Soil + Can (g):	83.93	Wet Unit Weight (pcf):	**119.7**
Wt. of Dry Soil + Can (g):	70.48	Dry Unit Weight (pcf):	**90.0**
Wt. of Dry Soil (g):	40.65		
Wt. of Water (g):	13.45		
Moisture Content (%):	**33.1**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.083**	**1.48**	**0.74**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-112

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/28/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-2	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-6 (M)	**Oven:**	**10OV251**
Sample Depth:	10-12'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.5 / 3	**Loadcell:**	**17COM254**
Sample Description:	GR/OR CLS	**Air Pressure (psi):**	**4.4**

Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.826	2.832	2.826	2.828	2.05
Height (in)	5.806	5.806	5.804	5.805	
	Area, ft²:	0.044	Volume, ft³:	0.021	

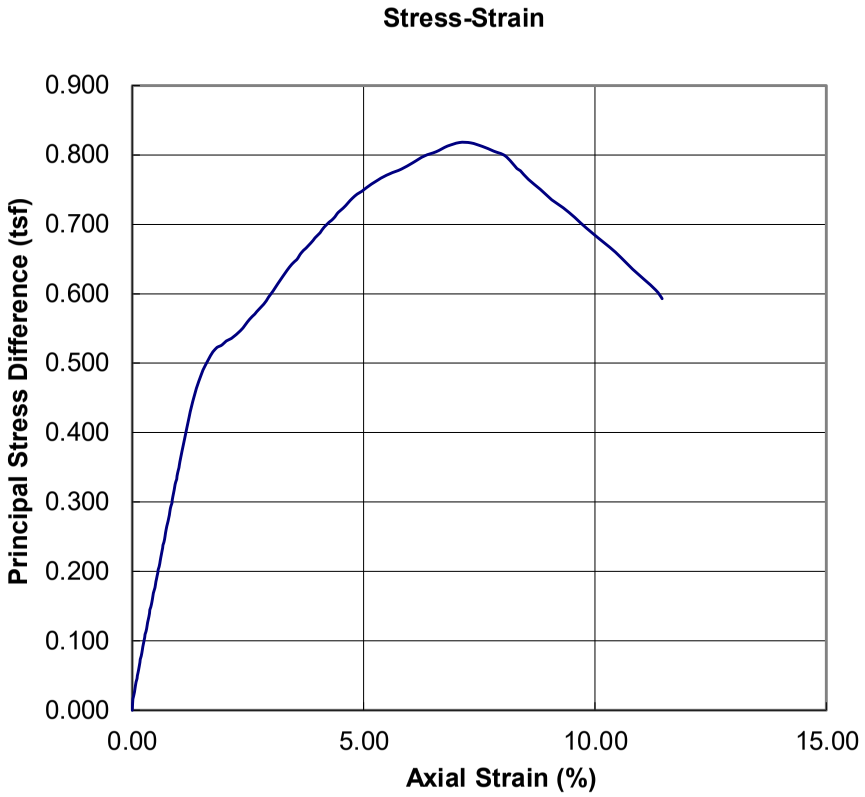
Moisture Content (%)		**Unit Weight**	
Can Number:	83	Wet Weight of Sample (g):	1178.35
Wt. of Can (g):	31.28	Dry Weight of Sample (g):	921.82
Wt. of Wet Soil + Can (g):	84.15	Wet Unit Weight (pcf):	**123.1**
Wt. of Dry Soil + Can (g):	72.64	Dry Unit Weight (pcf):	**96.3**
Wt. of Dry Soil (g):	41.36		
Wt. of Water (g):	11.51		
Moisture Content (%):	**27.8**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**7.066**	**0.82**	**0.41**

Appendix Figure No. G 1-1113

FAILURE TYPE:

NOTE: _____



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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/28/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-2	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-10 (B)	**Oven:**	**10OV251**
Sample Depth:	18-20'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.25 / 3	**Loadcell:**	**17COM254**
Sample Description:	LTGR/BR CH W/ SI PARTINGS	**Air Pressure (psi):**	**7.6**

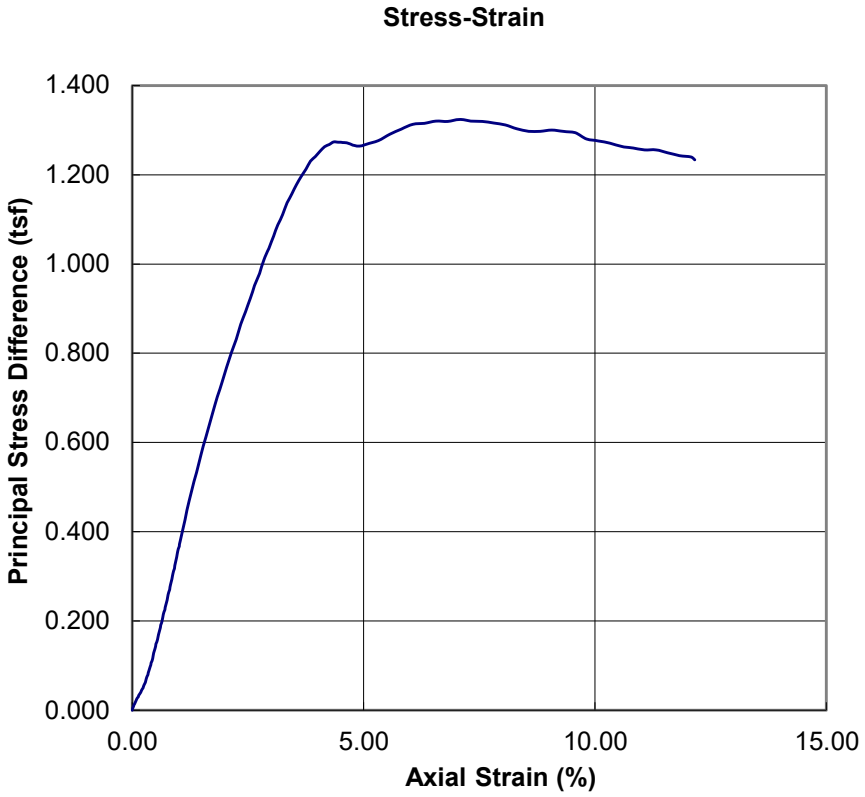
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.866	2.875	2.859	2.867	2.05
Height (in)	5.881	5.915	5.863	5.886	
	Area, ft²:	0.045	Volume, ft³:	0.022	

	Moisture Content (%)		**Unit Weight**
Can Number:	K-19	Wet Weight of Sample (g):	1179.35
Wt. of Can (g):	31.64	Dry Weight of Sample (g):	896.49
Wt. of Wet Soil + Can (g):	86.30	Wet Unit Weight (pcf):	**118.3**
Wt. of Dry Soil + Can (g):	73.19	Dry Unit Weight (pcf):	**89.9**
Wt. of Dry Soil (g):	41.55		
Wt. of Water (g):	13.11		
Moisture Content (%):	**31.6**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**7.067**	**1.32**	**0.66**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-114

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/3/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-3	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-1 (B)	**Oven:**	**10OV251**
Sample Depth:	0-2'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	TV = 0.025	**Loadcell:**	**16COM254**
Sample Description:	BK OH W/ ROOTS	**Air Pressure (psi):**	**0.4**

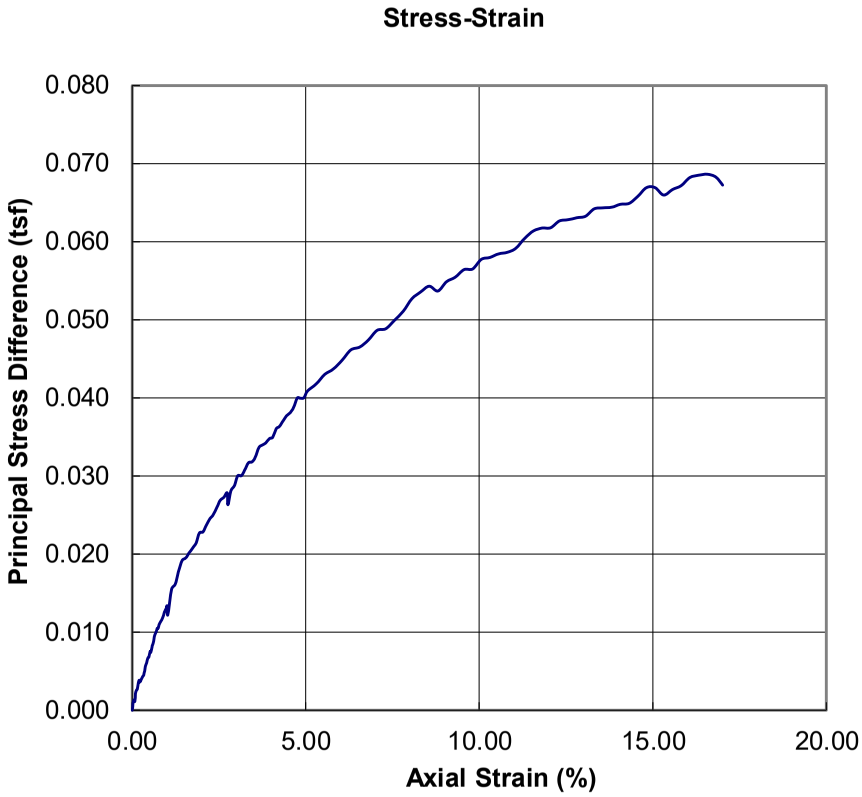
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.801	2.779	2.800	2.793	2.07
Height (in)	5.775	5.772	5.776	5.774	
	Area, ft²:	0.043	Volume, ft³:	0.020	

Moisture Content (%)		**Unit Weight**	
Can Number:	L-21	Wet Weight of Sample (g):	625.29
Wt. of Can (g):	31.32	Dry Weight of Sample (g):	114.14
Wt. of Wet Soil + Can (g):	81.83	Wet Unit Weight (pcf):	**67.3**
Wt. of Dry Soil + Can (g):	40.54	Dry Unit Weight (pcf):	**12.3**
Wt. of Dry Soil (g):	9.22		
Wt. of Water (g):	41.29		
Moisture Content (%):	**447.8**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.070**	**0.07**	**0.03**

FAILURE TYPE:

NOTE: _____



Tested By: RB
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Appendix Figure No. G 1-1 15

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/31/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-3	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-3 (B)	**Oven:**	**10OV251**
Sample Depth:	4-6'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	TV = 0.025	**Loadcell:**	**16COM254**
Sample Description:	BK OH W/ ROOTS	**Air Pressure (psi):**	**2.0**

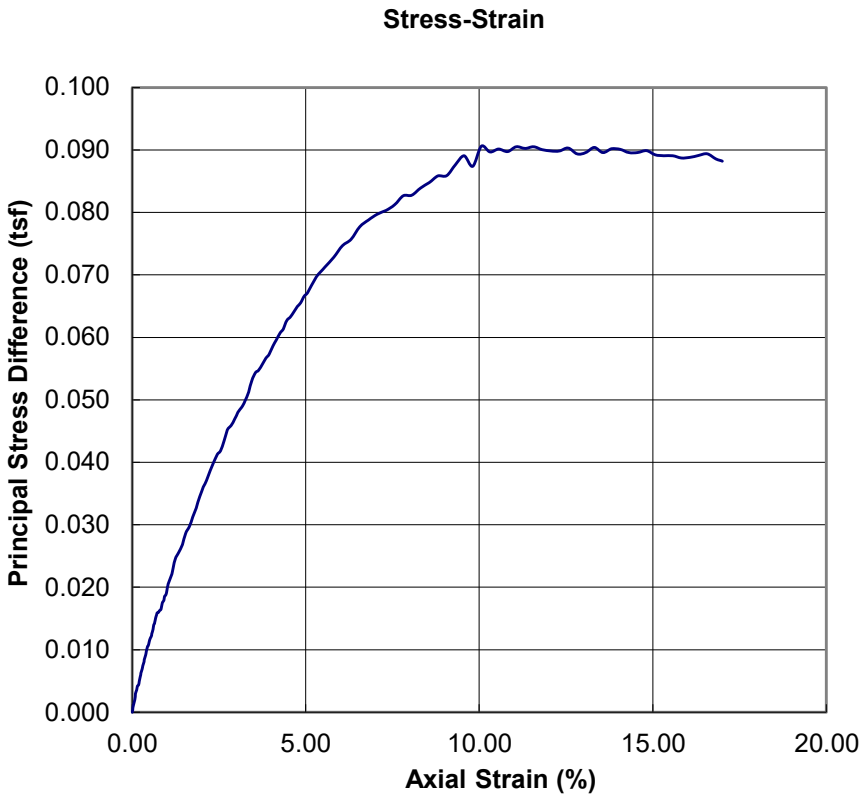
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.781	2.751	2.788	2.773	2.08
Height (in)	5.784	5.776	5.780	5.780	
	Area, ft²:	0.042	Volume, ft³:	0.020	

	Moisture Content (%)		**Unit Weight**
Can Number:	L-27	Wet Weight of Sample (g):	643.34
Wt. of Can (g):	31.23	Dry Weight of Sample (g):	150.14
Wt. of Wet Soil + Can (g):	82.35	Wet Unit Weight (pcf):	**70.2**
Wt. of Dry Soil + Can (g):	43.16	Dry Unit Weight (pcf):	**16.4**
Wt. of Dry Soil (g):	11.93		
Wt. of Water (g):	39.19		
Moisture Content (%):	**328.5**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**10.062**	**0.09**	**0.05**

FAILURE TYPE:

NOTE: _____



Tested By: RB
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Appendix Figure No. G 1-116

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/31/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-3	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-6 (B)	**Oven:**	**10OV251**
Sample Depth:	10-12'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.5 / 3 TV = 0.50	**Loadcell:**	**12COM254**
Sample Description:	LT GR CL W/ SA	**Air Pressure (psi):**	**4.4**

Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.832	2.834	2.857	2.841	2.07
Height (in)	5.887	5.877	5.888	5.884	
	Area, ft²:	0.044	Volume, ft³:	0.022	

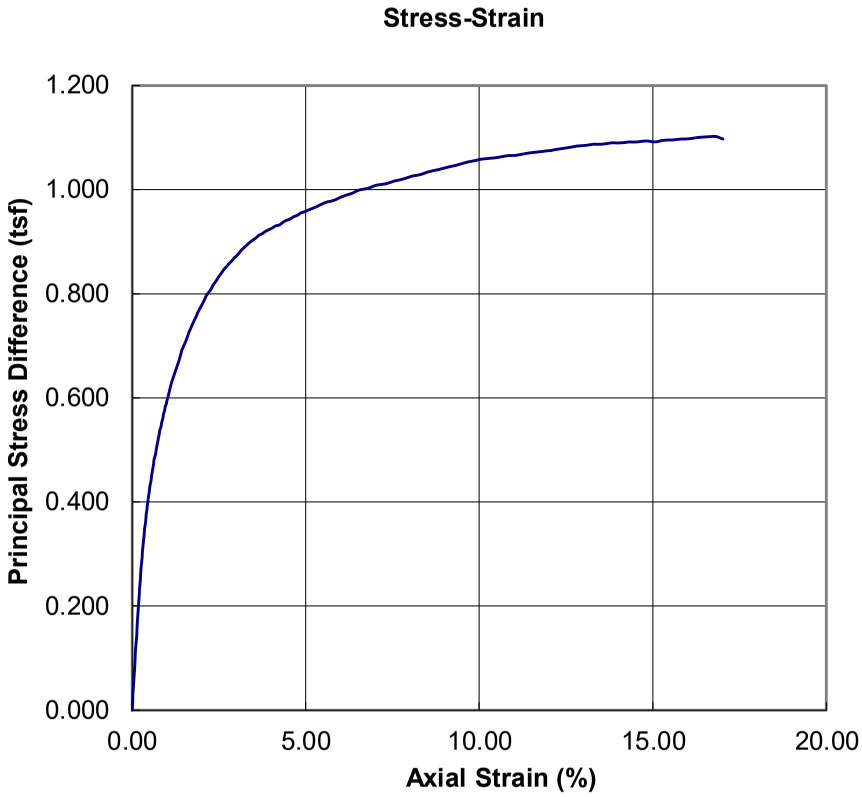
	Moisture Content (%)		Unit Weight
Can Number:	V-13	Wet Weight of Sample (g):	1178.40
Wt. of Can (g):	31.32	Dry Weight of Sample (g):	916.64
Wt. of Wet Soil + Can (g):	82.10	Wet Unit Weight (pcf):	**120.4**
Wt. of Dry Soil + Can (g):	70.82	Dry Unit Weight (pcf):	**93.6**
Wt. of Dry Soil (g):	39.50		
Wt. of Water (g):	11.28		
Moisture Content (%):	**28.6**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.060**	**1.09**	**0.55**

Appendix Figure No. G 1-117

FAILURE TYPE:

NOTE: _____



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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/25/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-3	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-12 (T)	**Oven:**	**10OV251**
Sample Depth:	28-30'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	2.25 / 3	**Loadcell:**	**12COM254**
Sample Description:	GR/BR CL W/ SI PARTINGS	**Air Pressure (psi):**	**11.6**

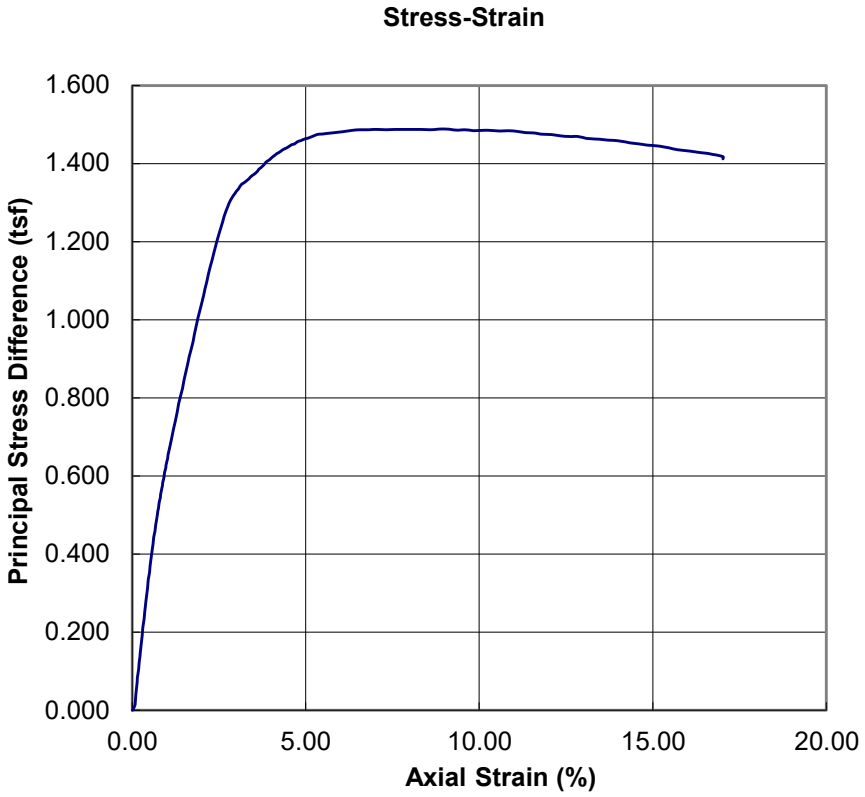
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.877	2.876	2.871	2.875	1.93
Height (in)	5.548	5.552	5.540	5.547	
	Area, ft²:	0.045	Volume, ft³:	0.021	

	Moisture Content (%)		Unit Weight
Can Number:	K-5	Wet Weight of Sample (g):	1083.48
Wt. of Can (g):	31.44	Dry Weight of Sample (g):	745.48
Wt. of Wet Soil + Can (g):	81.96	Wet Unit Weight (pcf):	**114.7**
Wt. of Dry Soil + Can (g):	66.20	Dry Unit Weight (pcf):	**78.9**
Wt. of Dry Soil (g):	34.76		
Wt. of Water (g):	15.76		
Moisture Content (%):	**45.3**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**9.080**	**1.49**	**0.74**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-118

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/31/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-3	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-14	**Oven:**	**10OV251**
Sample Depth:	38-40'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.25 / 3 TV = 0.45	**Loadcell:**	**12COM254**
Sample Description:	GR CH	**Air Pressure (psi):**	**15.6**

Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.826	2.846	2.819	2.830	2.03
Height (in)	5.734	5.742	5.735	5.737	
	Area, ft²:	0.044	Volume, ft³:	0.021	

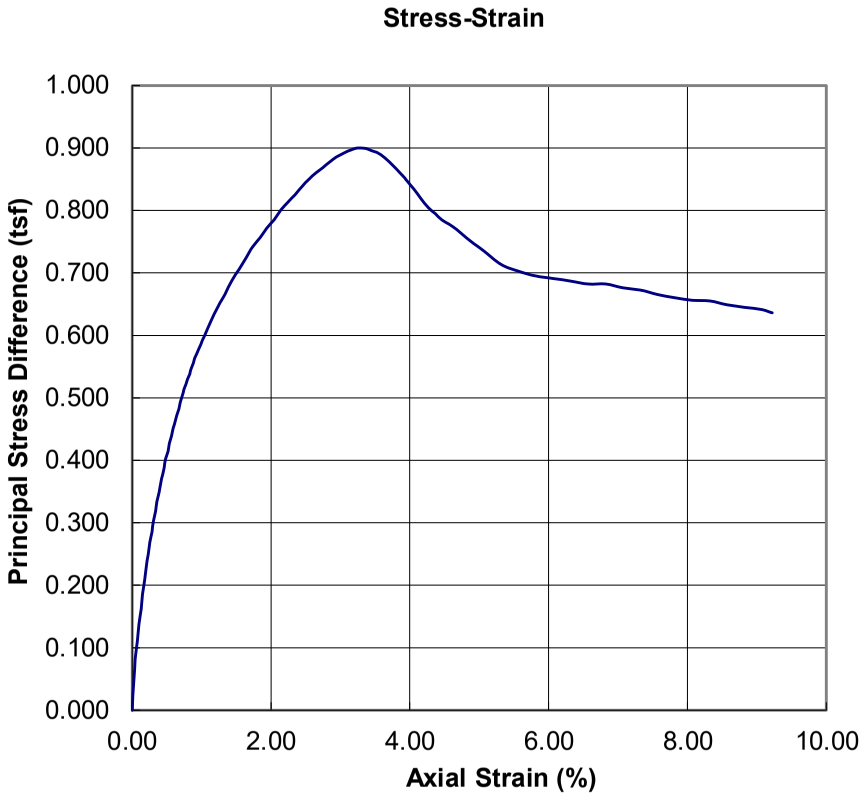
Moisture Content (%)		**Unit Weight**	
Can Number:	DB-2	Wet Weight of Sample (g):	1014.02
Wt. of Can (g):	31.41	Dry Weight of Sample (g):	656.78
Wt. of Wet Soil + Can (g):	84.12	Wet Unit Weight (pcf):	**107.0**
Wt. of Dry Soil + Can (g):	65.55	Dry Unit Weight (pcf):	**69.3**
Wt. of Dry Soil (g):	34.14		
Wt. of Water (g):	18.57		
Moisture Content (%):	**54.4**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**3.247**	**0.90**	**0.45**

Appendix Figure No. G 1-119

FAILURE TYPE:

NOTE: _____



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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/26/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-4	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-2 (B)	**Oven:**	**10OV251**
Sample Depth:	2-4'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	TV = 0.15	**Loadcell:**	**16COM254**
Sample Description:	GR CH W/ OH LAYER & SA	**Air Pressure (psi):**	**1.2**

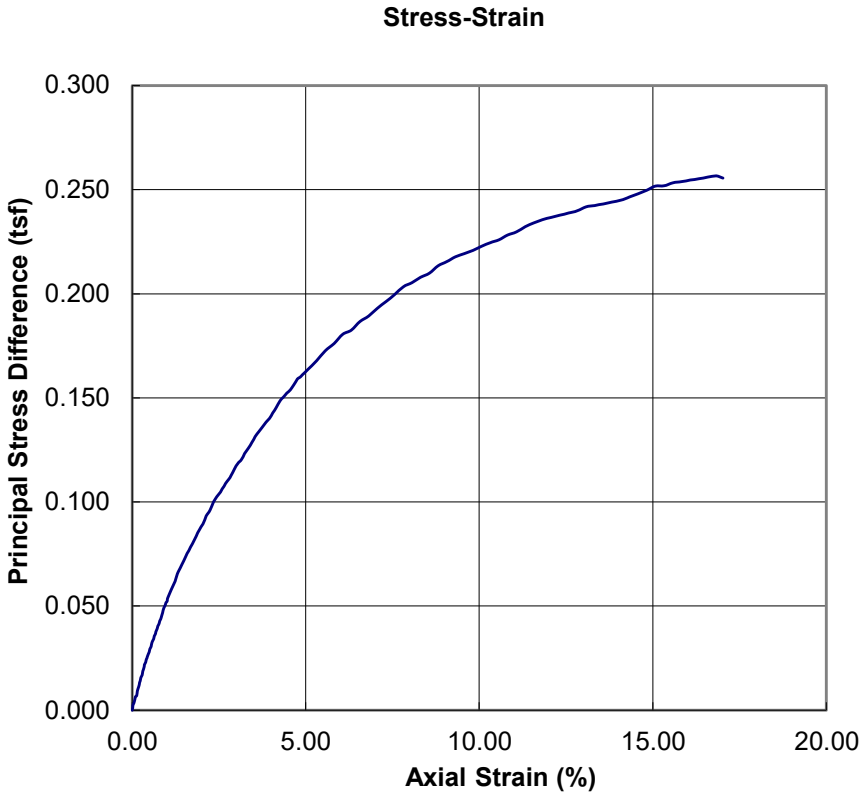
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.883	2.840	2.867	2.863	1.96
Height (in)	5.624	5.570	5.653	5.616	
	Area, ft²:	0.045	Volume, ft³:	0.021	

Moisture Content (%)		**Unit Weight**	
Can Number:	K-16	Wet Weight of Sample (g):	1142.57
Wt. of Can (g):	31.31	Dry Weight of Sample (g):	890.86
Wt. of Wet Soil + Can (g):	84.01	Wet Unit Weight (pcf):	**120.4**
Wt. of Dry Soil + Can (g):	72.40	Dry Unit Weight (pcf):	**93.9**
Wt. of Dry Soil (g):	41.09		
Wt. of Water (g):	11.61		
Moisture Content (%):	**28.3**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.080**	**0.25**	**0.13**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-120

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/27/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-4	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-5	**Oven:**	**10OV251**
Sample Depth:	8-10'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.75 / 3 TV = 0.75	**Loadcell:**	**12COM254**
Sample Description:	BLU-GR CL W/ SA	**Air Pressure (psi):**	**3.6**

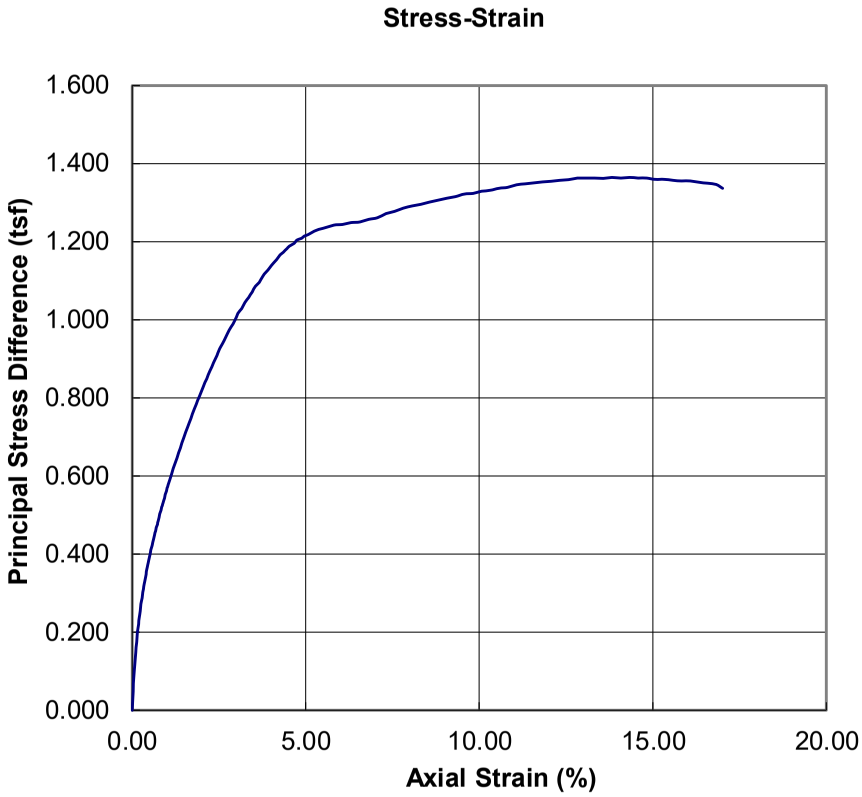
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.868	2.844	2.878	2.863	2.04
Height (in)	5.843	5.835	5.831	5.836	
	Area, ft²:	0.045	Volume, ft³:	0.022	

Moisture Content (%)		**Unit Weight**	
Can Number:	31	Wet Weight of Sample (g):	1192.89
Wt. of Can (g):	31.16	Dry Weight of Sample (g):	928.59
Wt. of Wet Soil + Can (g):	81.89	Wet Unit Weight (pcf):	**120.9**
Wt. of Dry Soil + Can (g):	70.65	Dry Unit Weight (pcf):	**94.1**
Wt. of Dry Soil (g):	39.49		
Wt. of Water (g):	11.24		
Moisture Content (%):	**28.5**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**14.327**	**1.36**	**0.68**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-121

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/27/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-4	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-9 (B)	**Oven:**	**10OV251**
Sample Depth:	16-18'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.5 / 3	**Loadcell:**	**17COM254**
Sample Description:	GR CL W/ SA	**Air Pressure (psi):**	**6.8**

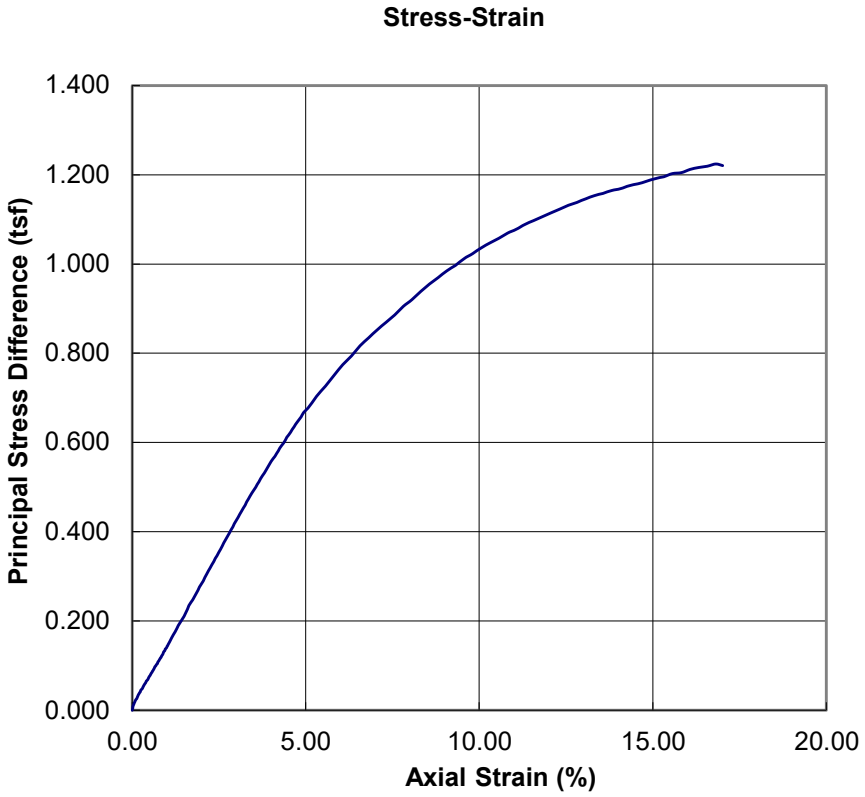
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.765	2.766	2.819	2.783	2.03
Height (in)	5.651	5.655	5.648	5.651	
	Area, ft²:	0.042	Volume, ft³:	0.020	

Moisture Content (%)		**Unit Weight**	
Can Number:	71-H	Wet Weight of Sample (g):	1114.72
Wt. of Can (g):	31.22	Dry Weight of Sample (g):	845.06
Wt. of Wet Soil + Can (g):	83.72	Wet Unit Weight (pcf):	**123.5**
Wt. of Dry Soil + Can (g):	71.02	Dry Unit Weight (pcf):	**93.6**
Wt. of Dry Soil (g):	39.80		
Wt. of Water (g):	12.70		
Moisture Content (%):	**31.9**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.069**	**1.19**	**0.60**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-122

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/26/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-4	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-14	**Oven:**	**10OV251**
Sample Depth:	38-40'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	TV = 0.50	**Loadcell:**	**17COM254**
Sample Description:	GR CH W/ SILT PARTING	**Air Pressure (psi):**	**15.6**

Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.886	2.850	2.806	2.847	2.06
Height (in)	5.880	5.870	5.876	5.875	
	Area, ft²:	0.044	Volume, ft³:	0.022	

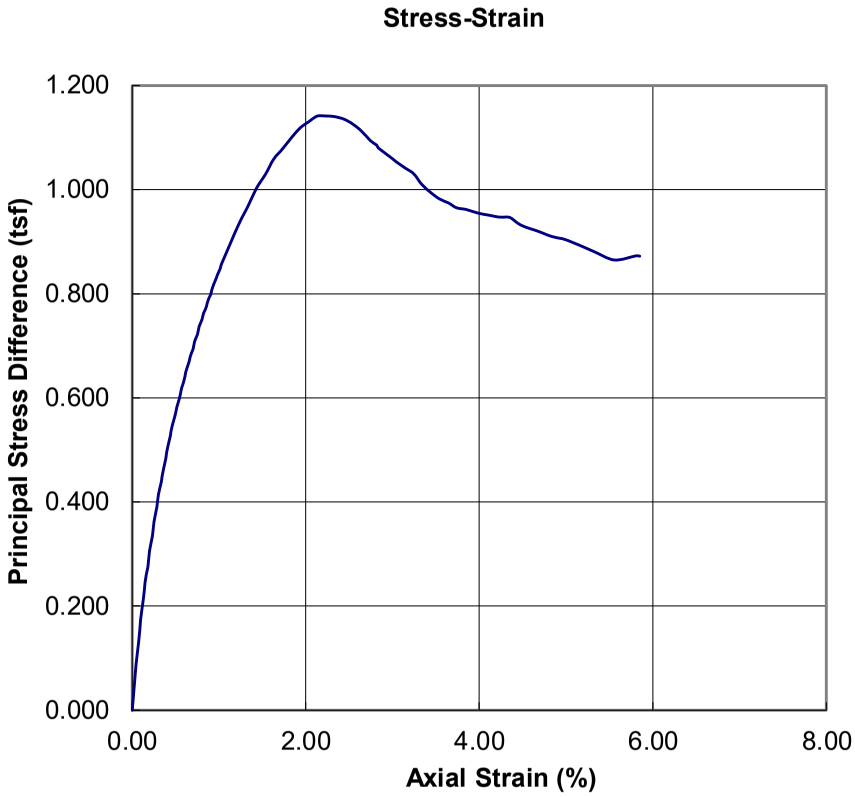
Moisture Content (%)		**Unit Weight**	
Can Number:	40H	Wet Weight of Sample (g):	1059.43
Wt. of Can (g):	30.93	Dry Weight of Sample (g):	689.65
Wt. of Wet Soil + Can (g):	82.73	Wet Unit Weight (pcf):	**107.9**
Wt. of Dry Soil + Can (g):	64.65	Dry Unit Weight (pcf):	**70.2**
Wt. of Dry Soil (g):	33.72		
Wt. of Water (g):	18.08		
Moisture Content (%):	**53.6**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**2.242**	**1.14**	**0.57**

Appendix Figure No. G 1-123

FAILURE TYPE:

NOTE: _____



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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/27/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-5	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-1 (B)	**Oven:**	**10OV251**
Sample Depth:	0-2'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	TV = 0.05	**Loadcell:**	**16COM254**
Sample Description:	DKGR/BK OH W/ PEAT	**Air Pressure (psi):**	**0.4**

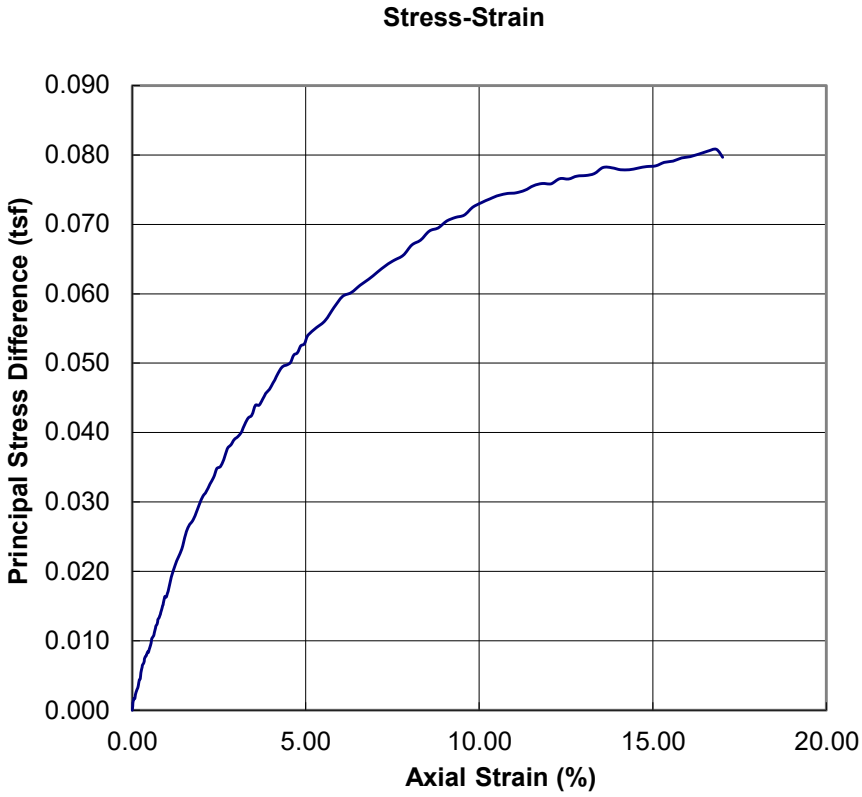
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.714	2.734	2.782	2.743	2.10
Height (in)	5.768	5.773	5.778	5.773	
	Area, ft²:	0.041	Volume, ft³:	0.020	

	Moisture Content (%)		Unit Weight
Can Number:	22	Wet Weight of Sample (g):	705.94
Wt. of Can (g):	30.77	Dry Weight of Sample (g):	272.88
Wt. of Wet Soil + Can (g):	85.02	Wet Unit Weight (pcf):	**78.8**
Wt. of Dry Soil + Can (g):	51.74	Dry Unit Weight (pcf):	**30.5**
Wt. of Dry Soil (g):	20.97		
Wt. of Water (g):	33.28		
Moisture Content (%):	**158.7**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.081**	**0.08**	**0.04**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-124

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/27/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-5	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-5 (B)	**Oven:**	**10OV251**
Sample Depth:	8-10'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	2.25 / 3	**Loadcell:**	**12COM254**
Sample Description:	LT GR CL W/ SA POCKETS	**Air Pressure (psi):**	**3.6**

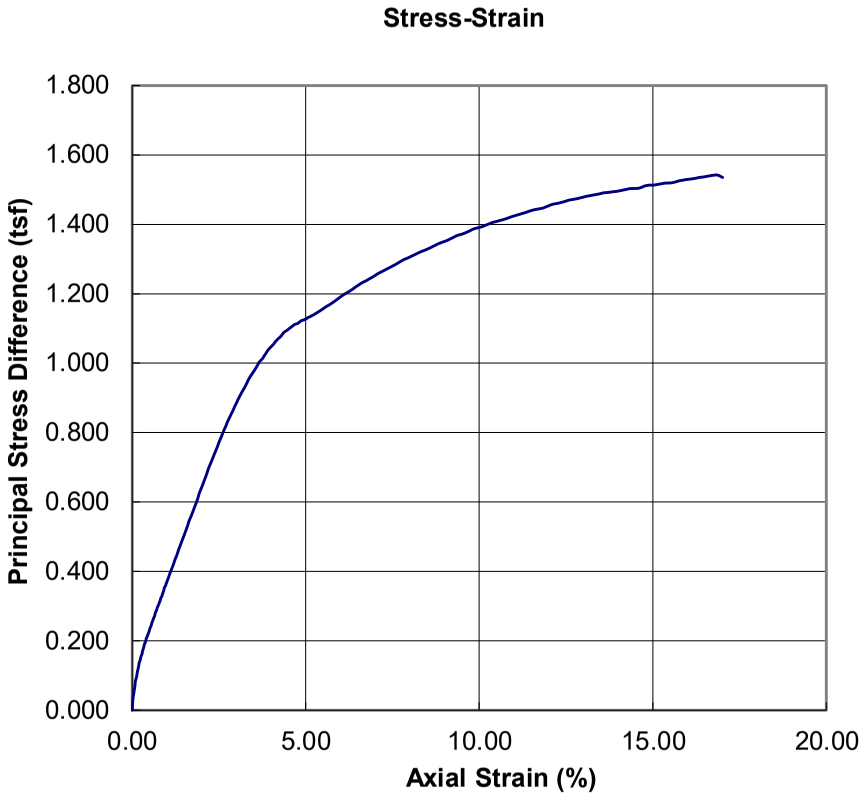
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.859	2.848	2.843	2.850	2.04
Height (in)	5.807	5.797	5.799	5.801	
	Area, ft²:	0.044	Volume, ft³:	0.021	

Moisture Content (%)		**Unit Weight**	
Can Number:	25L	Wet Weight of Sample (g):	1231.16
Wt. of Can (g):	31.28	Dry Weight of Sample (g):	1026.04
Wt. of Wet Soil + Can (g):	84.76	Wet Unit Weight (pcf):	**126.7**
Wt. of Dry Soil + Can (g):	75.85	Dry Unit Weight (pcf):	**105.6**
Wt. of Dry Soil (g):	44.57		
Wt. of Water (g):	8.91		
Moisture Content (%):	**20.0**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.084**	**1.51**	**0.76**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-125

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/27/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-5	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-8 (B)	**Oven:**	**10OV251**
Sample Depth:	14-16'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.5 / 3	**Loadcell:**	**12COM254**
Sample Description:	LTGR/BR CL W/ SA	**Air Pressure (psi):**	**6.0**

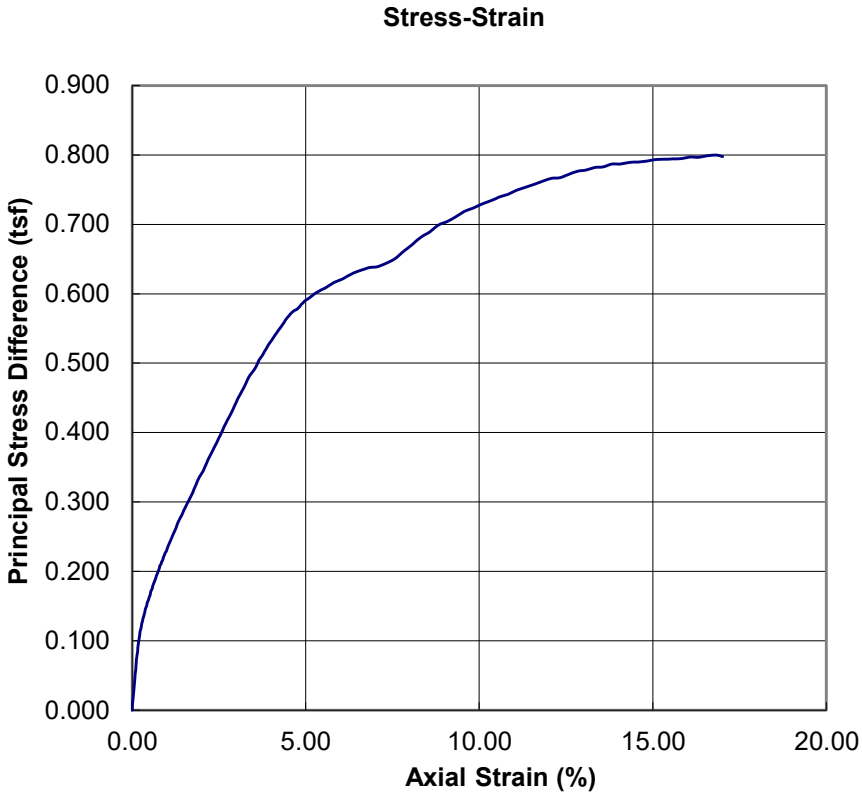
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.896	2.864	2.868	2.876	2.01
Height (in)	5.787	5.789	5.784	5.787	
	Area, ft²:	0.045	Volume, ft³:	0.022	

Moisture Content (%)		**Unit Weight**	
Can Number:	L-12	Wet Weight of Sample (g):	1143.31
Wt. of Can (g):	31.57	Dry Weight of Sample (g):	813.79
Wt. of Wet Soil + Can (g):	82.47	Wet Unit Weight (pcf):	**115.9**
Wt. of Dry Soil + Can (g):	67.80	Dry Unit Weight (pcf):	**82.5**
Wt. of Dry Soil (g):	36.23		
Wt. of Water (g):	14.67		
Moisture Content (%):	**40.5**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.076**	**0.79**	**0.40**

FAILURE TYPE:

NOTE: _____



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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**8/27/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-5	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-12	**Oven:**	**10OV251**
Sample Depth:	28-30'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	0.75 / 3 TV = 0.55	**Loadcell:**	**12COM254**
Sample Description:	GR/BR CH W/ TR SA	**Air Pressure (psi):**	**11.6**

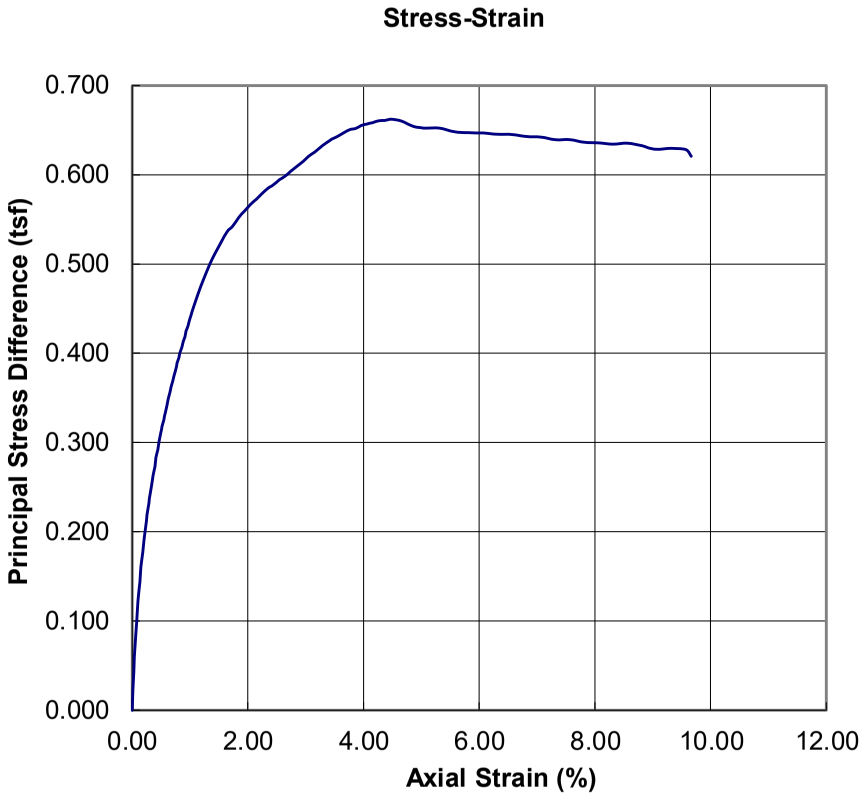
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.846	2.868	2.862	2.859	2.00
Height (in)	5.718	5.733	5.737	5.729	
	Area, ft²:	0.045	Volume, ft³:	0.021	

Moisture Content (%)		**Unit Weight**	
Can Number:	L-31	Wet Weight of Sample (g):	1018.87
Wt. of Can (g):	31.34	Dry Weight of Sample (g):	672.26
Wt. of Wet Soil + Can (g):	81.90	Wet Unit Weight (pcf):	**105.6**
Wt. of Dry Soil + Can (g):	64.70	Dry Unit Weight (pcf):	**69.6**
Wt. of Dry Soil (g):	33.36		
Wt. of Water (g):	17.20		
Moisture Content (%):	**51.6**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**4.461**	**0.66**	**0.33**

FAILURE TYPE:

NOTE: Slickenside



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Appendix Figure No. G 1-127

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/8/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-6	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-2 (B)	**Oven:**	**10OV251**
Sample Depth:	2-4'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	0.25 / 3 TV = 0.15	**Loadcell:**	**17COM254**
Sample Description:	GR CL W/ SA	**Air Pressure (psi):**	**1.2**

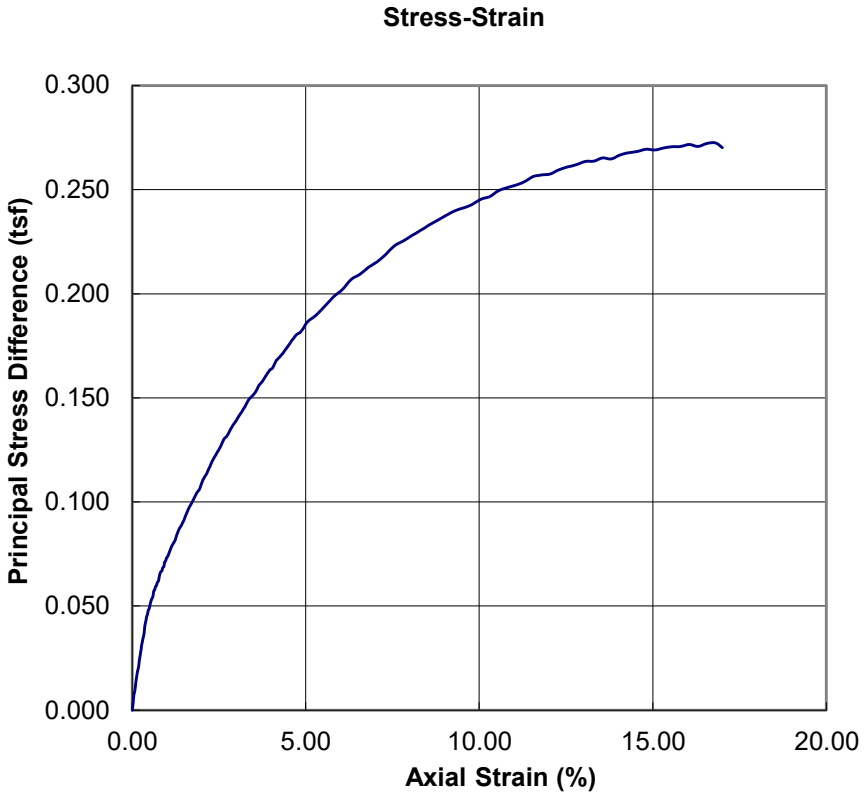
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.799	2.855	2.794	2.816	2.00
Height (in)	5.638	5.630	5.628	5.632	
	Area, ft²:	0.043	Volume, ft³:	0.020	

Moisture Content (%)		**Unit Weight**	
Can Number:	33H	Wet Weight of Sample (g):	1199.82
Wt. of Can (g):	30.84	Dry Weight of Sample (g):	974.26
Wt. of Wet Soil + Can (g):	83.82	Wet Unit Weight (pcf):	**130.3**
Wt. of Dry Soil + Can (g):	73.86	Dry Unit Weight (pcf):	**105.8**
Wt. of Dry Soil (g):	43.02		
Wt. of Water (g):	9.96		
Moisture Content (%):	**23.2**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.056**	**0.27**	**0.13**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-128

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/8/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-6	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-5 (B)	**Oven:**	**10OV251**
Sample Depth:	8-10'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.25 / 3	**Loadcell:**	**12COM254**
Sample Description:	GR/BR CL W/ SA & SA PARTINGS	**Air Pressure (psi):**	**3.6**

Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.846	2.828	2.824	2.833	1.90
Height (in)	5.364	5.373	5.375	5.371	
	Area, ft²:	0.044	Volume, ft³:	0.020	

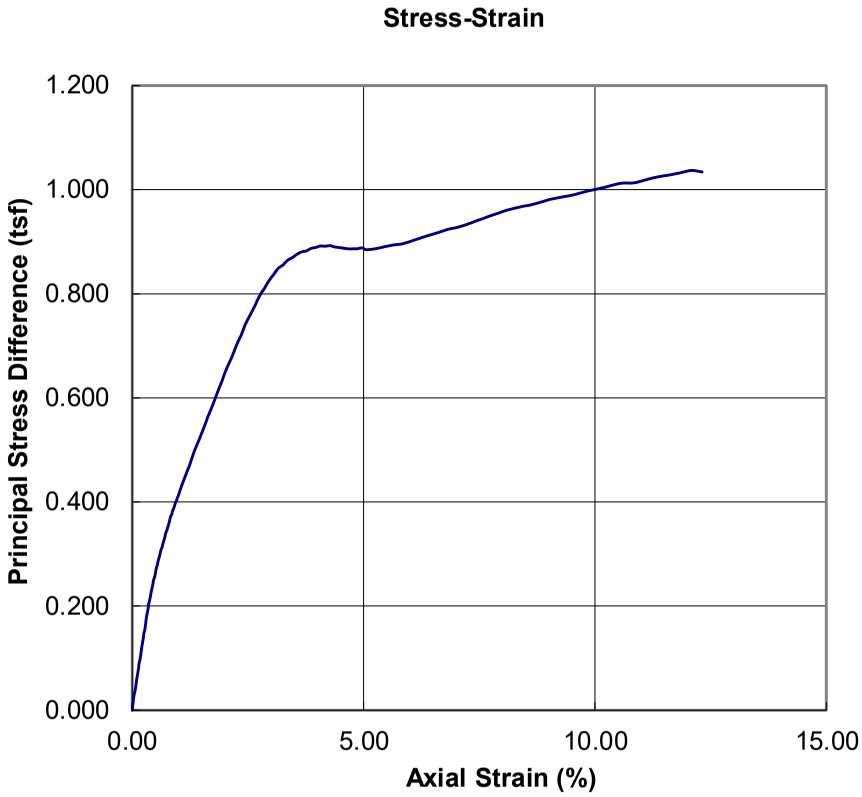
Moisture Content (%)		**Unit Weight**	
Can Number:	S-36	Wet Weight of Sample (g):	1059.44
Wt. of Can (g):	31.70	Dry Weight of Sample (g):	791.84
Wt. of Wet Soil + Can (g):	83.92	Wet Unit Weight (pcf):	**119.2**
Wt. of Dry Soil + Can (g):	70.73	Dry Unit Weight (pcf):	**89.1**
Wt. of Dry Soil (g):	39.03		
Wt. of Water (g):	13.19		
Moisture Content (%):	**33.8**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**4.269**	**0.89**	**0.45**

Appendix Figure No. G1-129

FAILURE TYPE:

NOTE: _____



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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/8/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-6	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-7 (B)	**Oven:**	**10OV251**
Sample Depth:	12-14'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.5 / 3	**Loadcell:**	**12COM254**
Sample Description:	LT GR/BR CL W/ SA & SA PARTINGS	**Air Pressure (psi):**	**5.2**

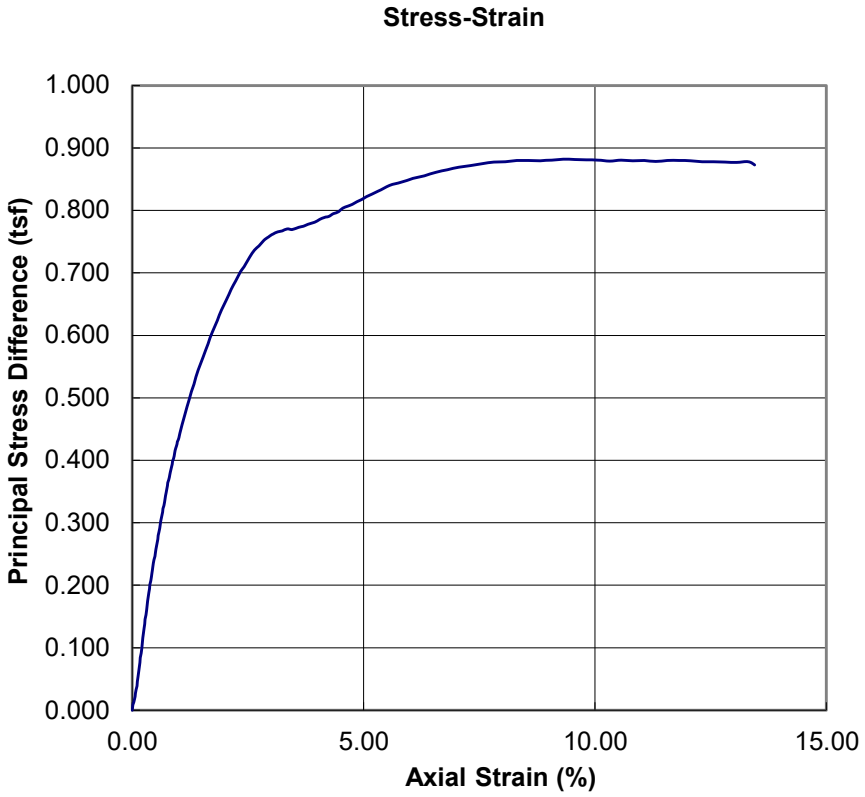
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.867	2.839	2.877	2.861	2.03
Height (in)	5.812	5.796	5.798	5.802	
	Area, ft²:	0.045	Volume, ft³:	0.022	

Moisture Content (%)		**Unit Weight**	
Can Number:	246-10	Wet Weight of Sample (g):	1097.92
Wt. of Can (g):	30.08	Dry Weight of Sample (g):	803.51
Wt. of Wet Soil + Can (g):	81.58	Wet Unit Weight (pcf):	**112.1**
Wt. of Dry Soil + Can (g):	67.77	Dry Unit Weight (pcf):	**82.1**
Wt. of Dry Soil (g):	37.69		
Wt. of Water (g):	13.81		
Moisture Content (%):	**36.6**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**9.317**	**0.88**	**0.44**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-130

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/8/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-6	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-10 (B)	**Oven:**	**10OV251**
Sample Depth:	18-20'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.25 / 3	**Loadcell:**	**17COM254**
Sample Description:	GR CH W/ SI PARTINGS	**Air Pressure (psi):**	**7.6**

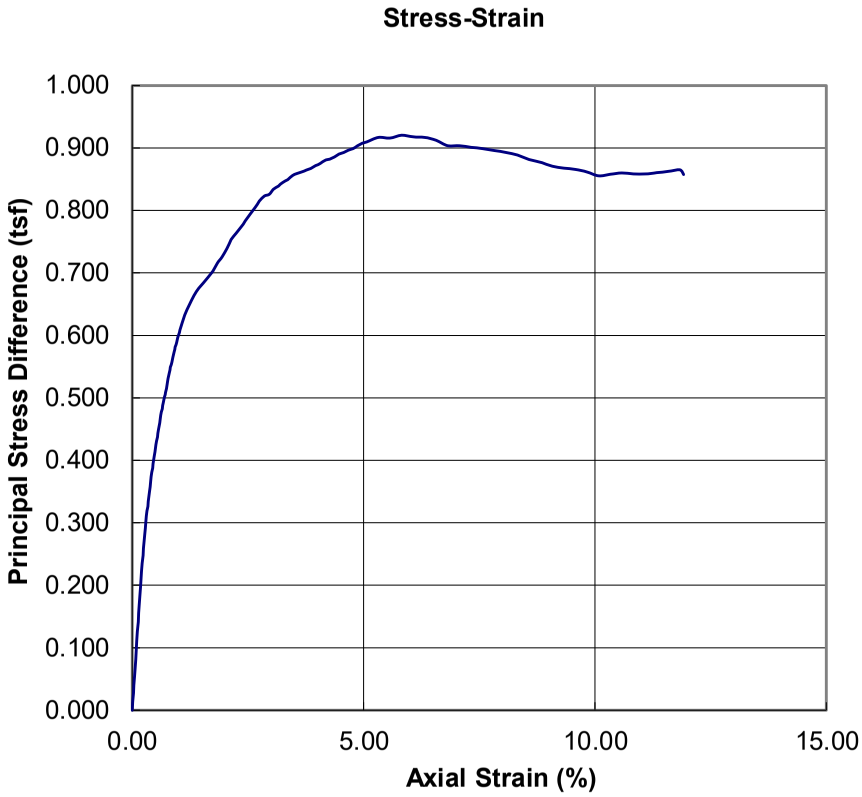
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.869	2.850	2.824	2.848	2.00
Height (in)	5.700	5.712	5.703	5.705	
	Area, ft²:	0.044	Volume, ft³:	0.021	

Moisture Content (%)		**Unit Weight**	
Can Number:	S-2	Wet Weight of Sample (g):	1064.99
Wt. of Can (g):	30.79	Dry Weight of Sample (g):	740.74
Wt. of Wet Soil + Can (g):	81.60	Wet Unit Weight (pcf):	**111.7**
Wt. of Dry Soil + Can (g):	66.13	Dry Unit Weight (pcf):	**77.7**
Wt. of Dry Soil (g):	35.34		
Wt. of Water (g):	15.47		
Moisture Content (%):	**43.8**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**5.823**	**0.92**	**0.46**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G1-131

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/8/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-7	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-1 (M)	**Oven:**	**10OV251**
Sample Depth:	0-2'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	TV = 0.05	**Loadcell:**	**16COM254**
Sample Description:	DKGR OH W/ SA	**Air Pressure (psi):**	**0.4**

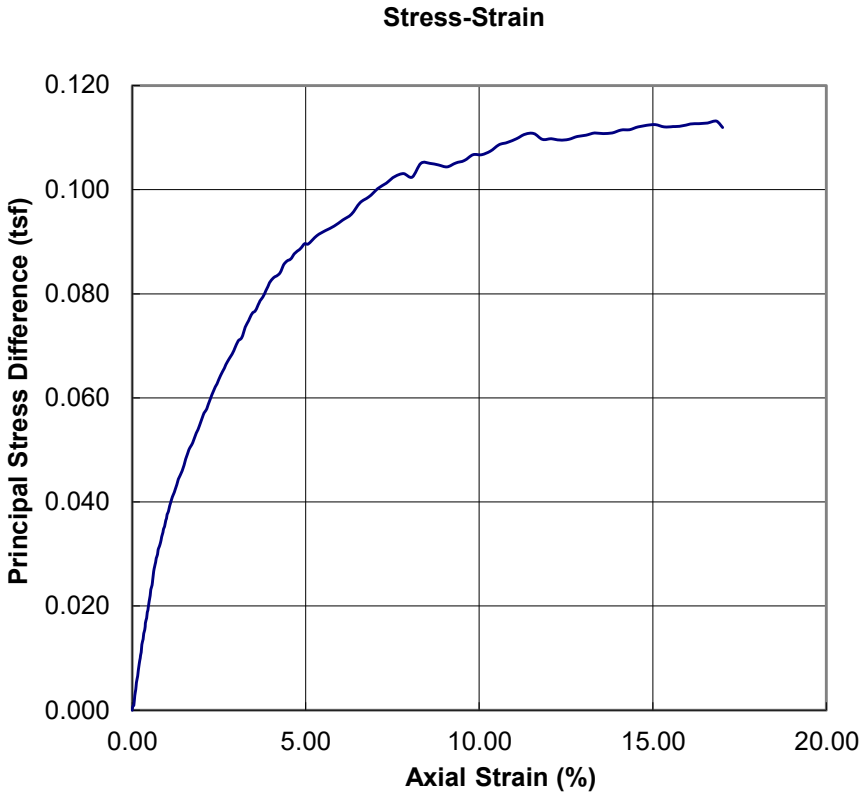
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.795	2.812	2.842	2.816	2.03
Height (in)	5.713	5.708	5.716	5.712	
	Area, ft²:	0.043	Volume, ft³:	0.021	

	Moisture Content (%)		Unit Weight
Can Number:	246-2	Wet Weight of Sample (g):	1018.98
Wt. of Can (g):	29.94	Dry Weight of Sample (g):	768.20
Wt. of Wet Soil + Can (g):	81.99	Wet Unit Weight (pcf):	**109.1**
Wt. of Dry Soil + Can (g):	69.18	Dry Unit Weight (pcf):	**82.2**
Wt. of Dry Soil (g):	39.24		
Wt. of Water (g):	12.81		
Moisture Content (%):	**32.6**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.081**	**0.11**	**0.06**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-132

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/9/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-7	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-4 (B)	**Oven:**	**10OV251**
Sample Depth:	6-8'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	TV = 0.975	**Loadcell:**	**12COM254**
Sample Description:	LTGR CL W/ SA	**Air Pressure (psi):**	**2.8**

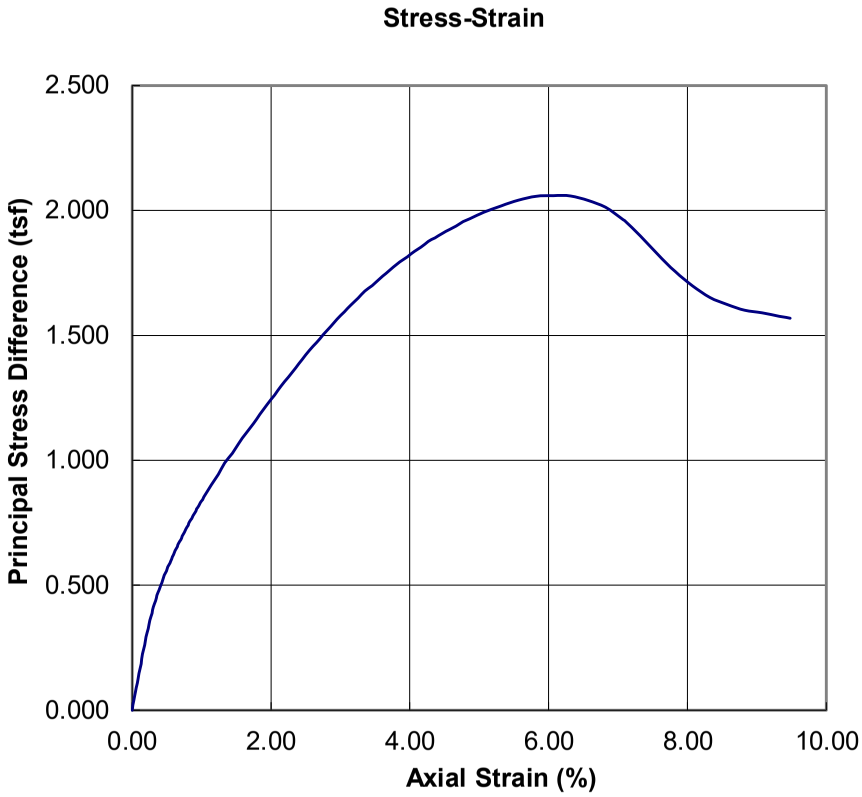
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.838	2.851	2.845	2.845	2.03
Height (in)	5.788	5.788	5.783	5.786	
	Area, ft²:	0.044	Volume, ft³:	0.021	

Moisture Content (%)		**Unit Weight**	
Can Number:	L-27	Wet Weight of Sample (g):	1197.79
Wt. of Can (g):	31.23	Dry Weight of Sample (g):	963.01
Wt. of Wet Soil + Can (g):	83.88	Wet Unit Weight (pcf):	**124.1**
Wt. of Dry Soil + Can (g):	73.56	Dry Unit Weight (pcf):	**99.8**
Wt. of Dry Soil (g):	42.33		
Wt. of Water (g):	10.32		
Moisture Content (%):	**24.4**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**6.069**	**2.06**	**1.03**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-1B3

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/9/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-7	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-6 (B)	**Oven:**	**10OV251**
Sample Depth:	10-12'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.75 / 3 TV = 0.50	**Loadcell:**	**12COM254**
Sample Description:	LTGR CL W/ SA & SA PARTINGS	**Air Pressure (psi):**	**4.4**

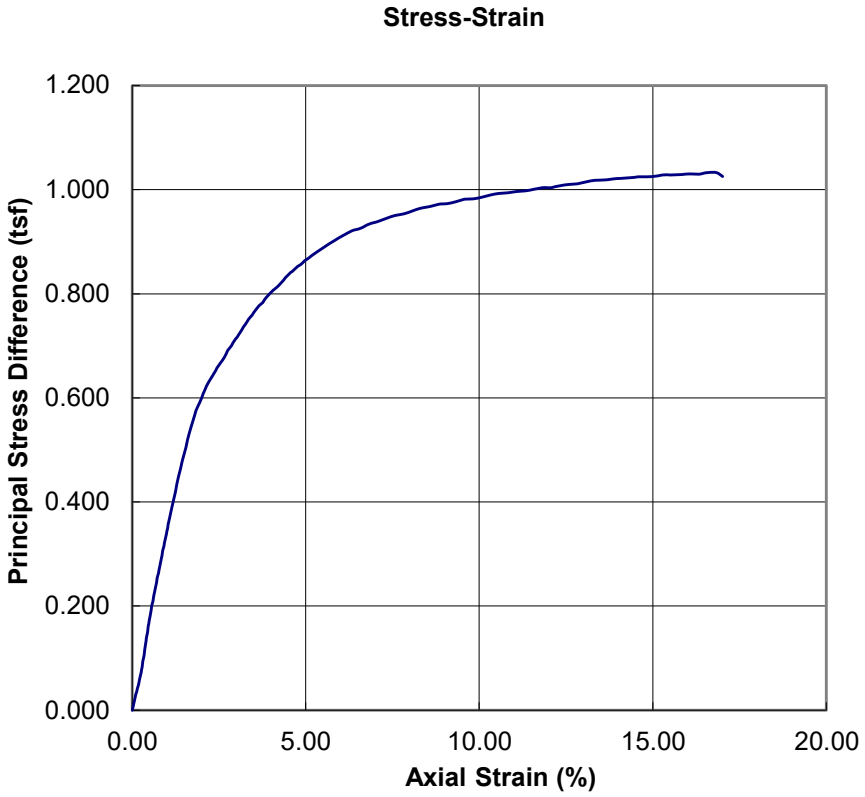
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.876	2.854	2.875	2.868	1.88
Height (in)	5.390	5.385	5.380	5.385	
	Area, ft²:	0.045	Volume, ft³:	0.020	

Moisture Content (%)		**Unit Weight**	
Can Number:	71	Wet Weight of Sample (g):	1090.34
Wt. of Can (g):	31.03	Dry Weight of Sample (g):	842.49
Wt. of Wet Soil + Can (g):	84.92	Wet Unit Weight (pcf):	**119.4**
Wt. of Dry Soil + Can (g):	72.67	Dry Unit Weight (pcf):	**92.2**
Wt. of Dry Soil (g):	41.64		
Wt. of Water (g):	12.25		
Moisture Content (%):	**29.4**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**15.084**	**1.03**	**0.51**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-134

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/9/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-7	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-9 (B)	**Oven:**	**10OV251**
Sample Depth:	16-18'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	TV = 0.875	**Loadcell:**	**12COM254**
Sample Description:	GR/BR CH W/ SI PARTINGS	**Air Pressure (psi):**	**6.8**

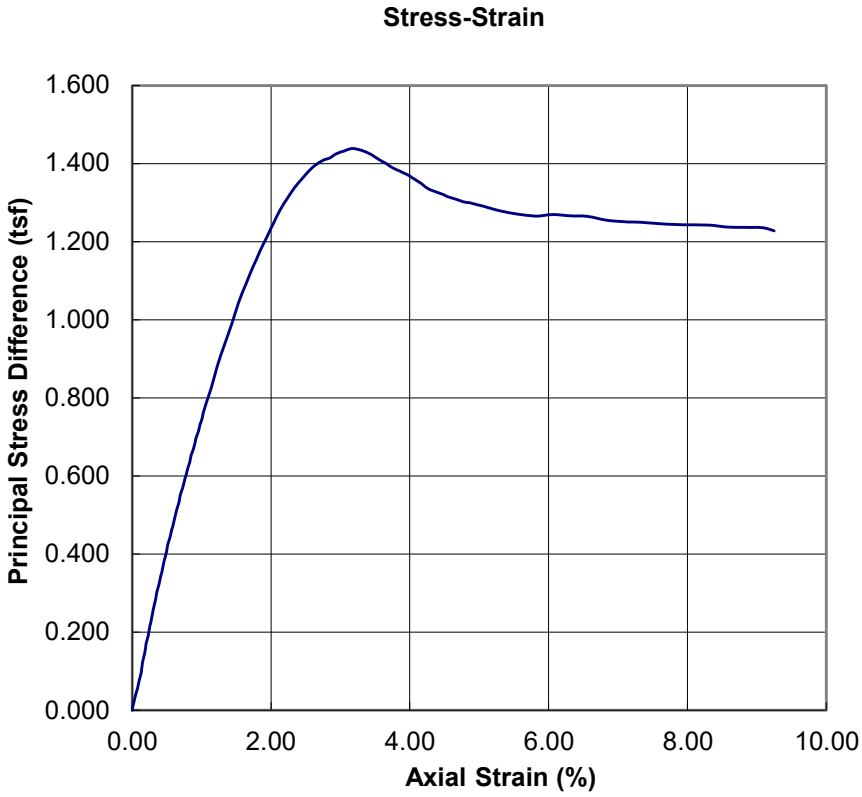
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.846	2.813	2.844	2.834	2.03
Height (in)	5.749	5.740	5.738	5.742	
	Area, ft²:	0.044	Volume, ft³:	0.021	

	Moisture Content (%)		**Unit Weight**
Can Number:	DB-18	Wet Weight of Sample (g):	1078.72
Wt. of Can (g):	31.39	Dry Weight of Sample (g):	767.36
Wt. of Wet Soil + Can (g):	83.60	Wet Unit Weight (pcf):	**113.4**
Wt. of Dry Soil + Can (g):	68.53	Dry Unit Weight (pcf):	**80.7**
Wt. of Dry Soil (g):	37.14		
Wt. of Water (g):	15.07		
Moisture Content (%):	**40.6**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**3.154**	**1.44**	**0.72**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-135

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/25/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-7	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-13 (M)	**Oven:**	**10OV251**
Sample Depth:	33-35'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	TV = 0.275	**Loadcell:**	**17COM254**
Sample Description:	GR CH	**Air Pressure (psi):**	**13.6**

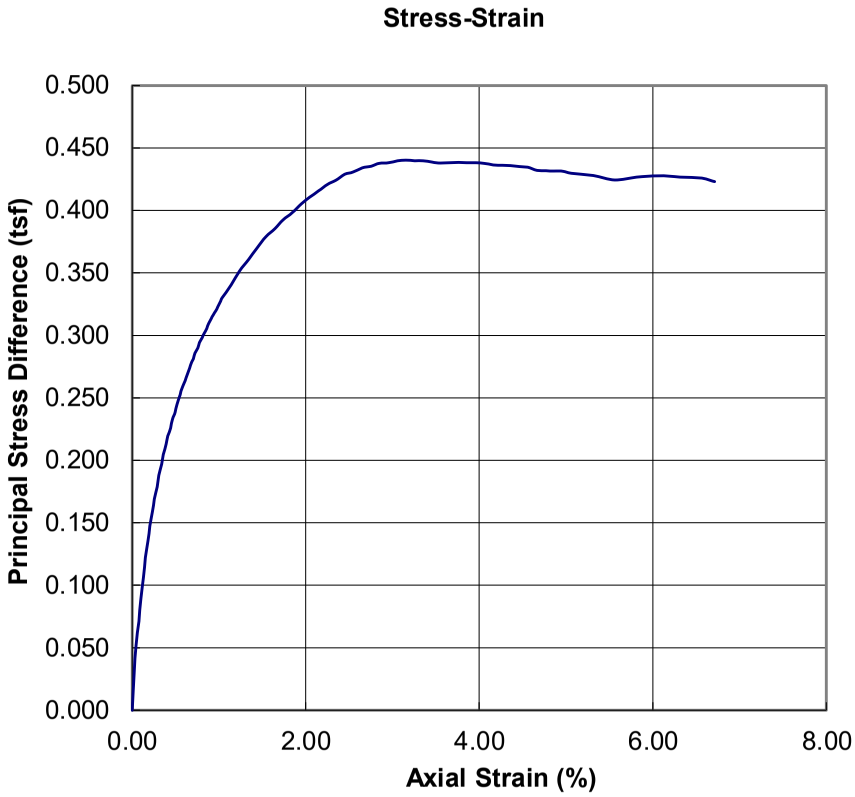
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.817	2.865	2.838	2.840	2.01
Height (in)	5.690	5.696	5.701	5.696	
	Area, ft²:	0.044	Volume, ft³:	0.021	

	Moisture Content (%)		**Unit Weight**
Can Number:	31H	Wet Weight of Sample (g):	969.55
Wt. of Can (g):	31.03	Dry Weight of Sample (g):	595.03
Wt. of Wet Soil + Can (g):	83.53	Wet Unit Weight (pcf):	**102.4**
Wt. of Dry Soil + Can (g):	63.25	Dry Unit Weight (pcf):	**62.8**
Wt. of Dry Soil (g):	32.22		
Wt. of Water (g):	20.28		
Moisture Content (%):	**62.9**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**3.153**	**0.44**	**0.22**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-1B6

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/9/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-8	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-7 (M)	**Oven:**	**10OV251**
Sample Depth:	12-14'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.75 / 3	**Loadcell:**	**12COM254**
Sample Description:	LTGR CL W/ SA	**Air Pressure (psi):**	**5.2**

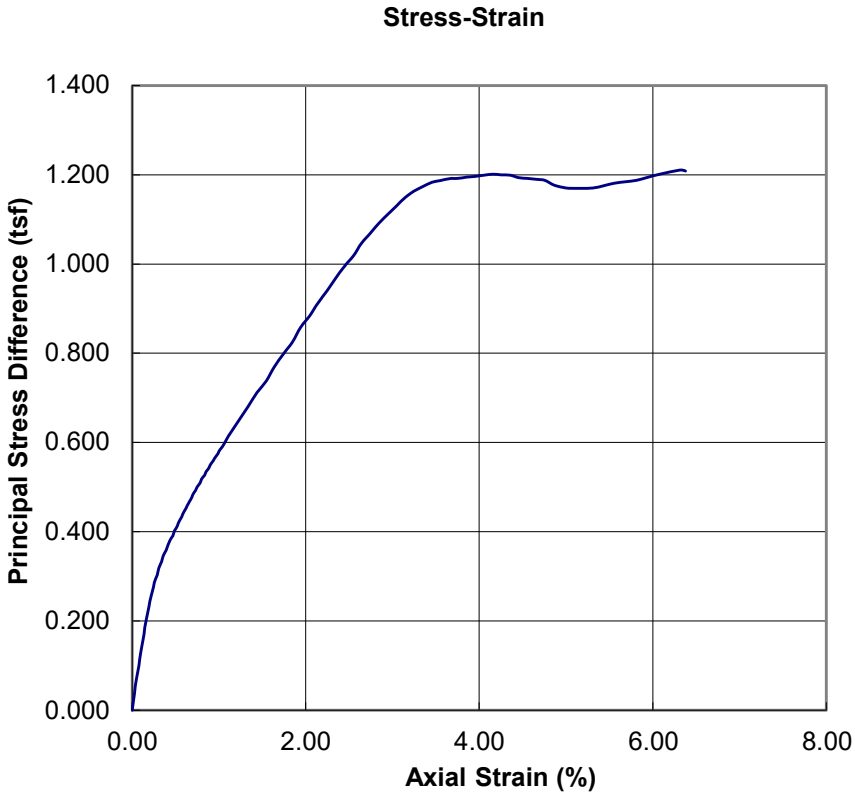
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.844	2.865	2.835	2.848	2.03
Height (in)	5.773	5.769	5.769	5.770	
	Area, ft²:	0.044	Volume, ft³:	0.021	

	Moisture Content (%)		Unit Weight
Can Number:	36	Wet Weight of Sample (g):	1184.56
Wt. of Can (g):	30.92	Dry Weight of Sample (g):	915.86
Wt. of Wet Soil + Can (g):	82.19	Wet Unit Weight (pcf):	**122.8**
Wt. of Dry Soil + Can (g):	70.56	Dry Unit Weight (pcf):	**94.9**
Wt. of Dry Soil (g):	39.64		
Wt. of Water (g):	11.63		
Moisture Content (%):	**29.3**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**4.359**	**1.20**	**0.60**

FAILURE TYPE:

NOTE: _____



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Appendix Figure No. G 1-137

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 2850

Project Name:	CPRA PO 181	**Date Tested:**	**9/9/2020**
Project No.:	02541139	**Scale:**	**03ES254**
Boring No.:	M-8	**Calipers:**	**01CAL254**
Samp. and Spec. No.:	S-9 (B)	**Oven:**	**10OV251**
Sample Depth:	16-18'	**GeoJac Station No.:**	**02GJ254**
Qp / Torvane (tsf):	1.25 / 3	**Loadcell:**	**12COM254**
Sample Description:	LTGR CH W/ SI PARTINGS	**Air Pressure (psi):**	**6.8**

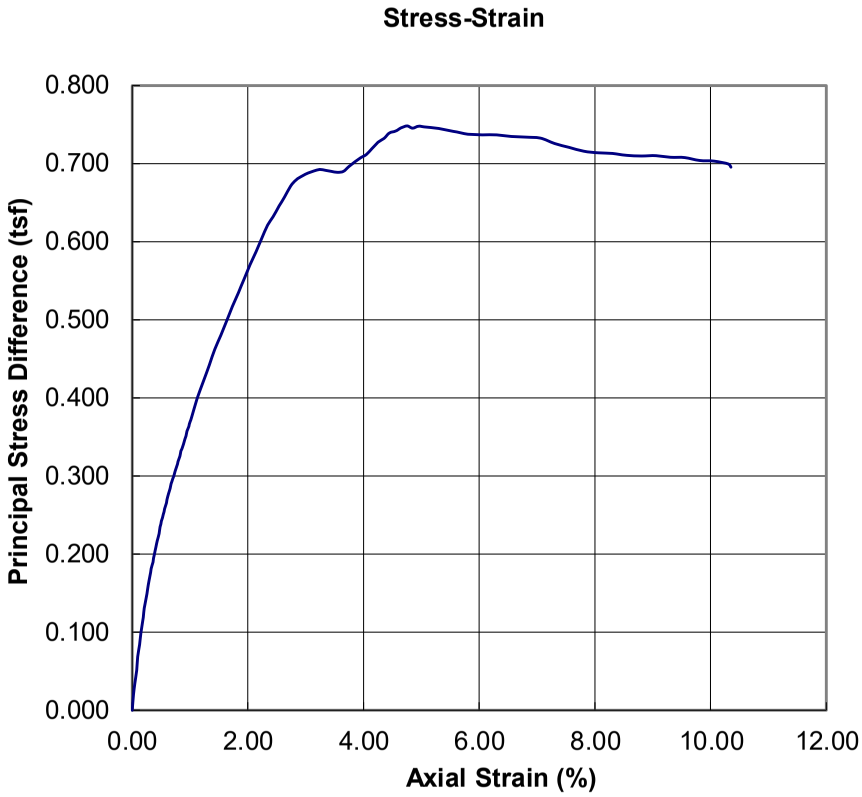
Sample Data:	1	2	3	Average	Height / Diameter Ratio (2 to 2.5)
Diameter (in)	2.831	2.852	2.806	2.830	2.04
Height (in)	5.778	5.784	5.781	5.781	
	Area, ft²:	0.044	Volume, ft³:	0.021	

Moisture Content (%)		**Unit Weight**	
Can Number:	S-23	Wet Weight of Sample (g):	1104.90
Wt. of Can (g):	30.91	Dry Weight of Sample (g):	769.98
Wt. of Wet Soil + Can (g):	81.55	Wet Unit Weight (pcf):	**115.8**
Wt. of Dry Soil + Can (g):	66.20	Dry Unit Weight (pcf):	**80.7**
Wt. of Dry Soil (g):	35.29		
Wt. of Water (g):	15.35		
Moisture Content (%):	**43.5**		

	Max Strain (≤ 15%)	Compressive Strength, tsf	Shear Strength, tsf
RESULTS:	**3.244**	**0.69**	**0.35**

FAILURE TYPE:

NOTE: _____



Tested By: RB
Computed By: RB
Reviewed By: _____

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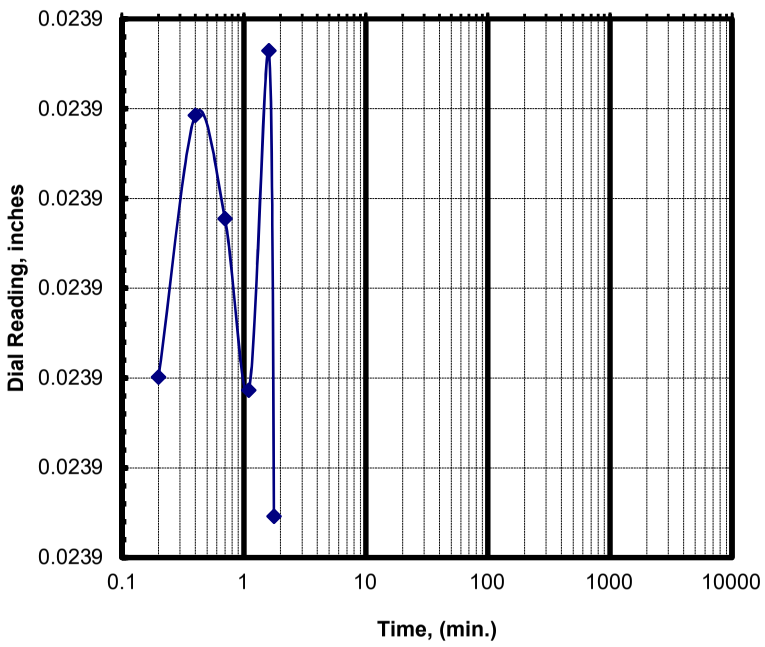
Appendix Figure No. G 1-1B8

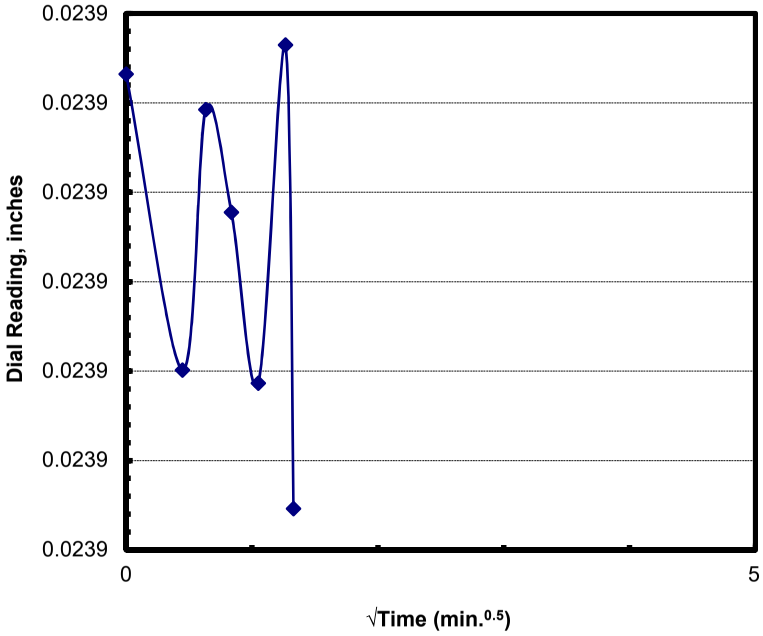
APPENDIX E

CONSOLIDATION TEST RESULTS
SETTLING COLUMN TEST AND SLURRY CONSOLIDATION TEST RESULTS

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.05 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/5/20 12:01:20 PM	0.00	0.00	0.0239
11/5/20 12:01:32 PM	0.20	0.45	0.0239
11/5/20 12:01:44 PM	0.40	0.63	0.0239
11/5/20 12:02:02 PM	0.70	0.84	0.0239
11/5/20 12:02:26 PM	1.10	1.05	0.0239
11/5/20 12:02:56 PM	1.60	1.26	0.0239
11/5/20 12:03:06 PM	1.77	1.33	0.0239



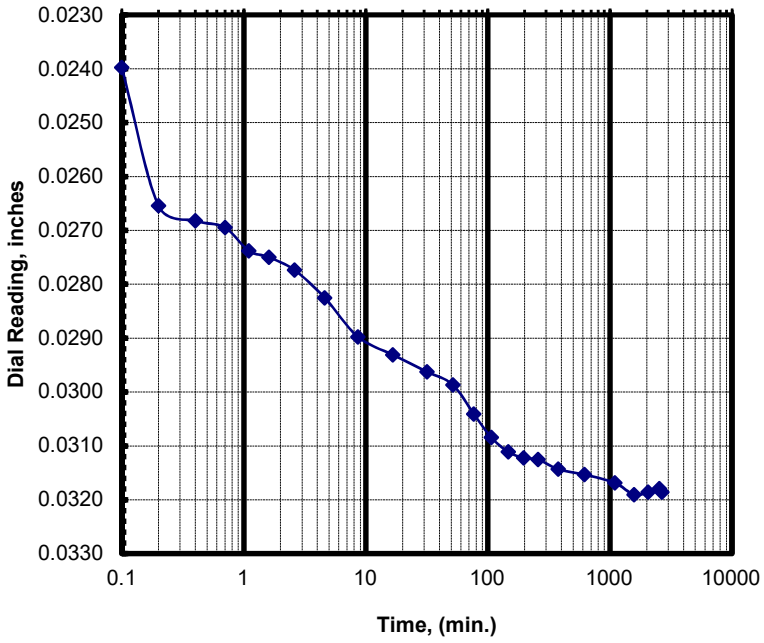


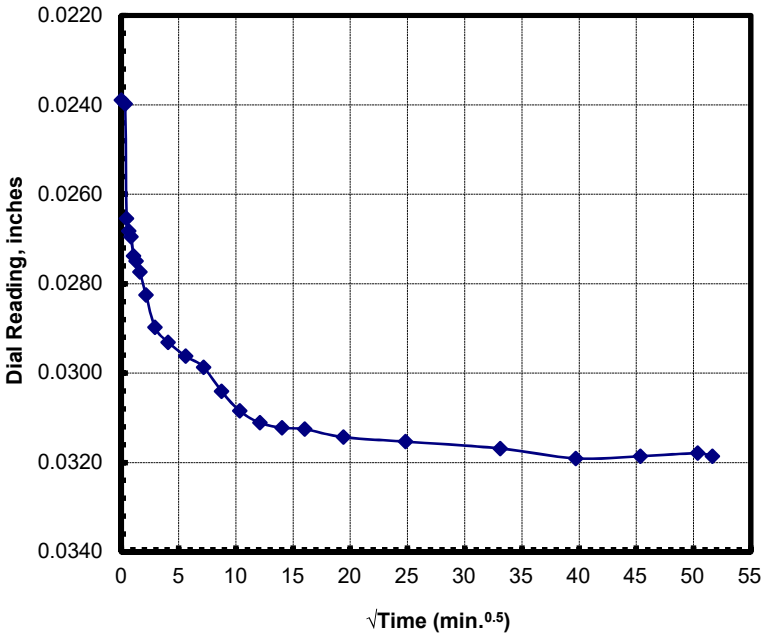
Project Number: 02541139	LL: 33	$D_{0(min)}$ (in): 0.0239	d_0 (in): 0.0239
Project Name: CPRA PO 181	PL: 13	D_{end} (in): 0.0239	d_{100} (in): 0.0239
Boring & Depth: M-1, S-3, 4-6 ft	PL: 20	Δ_{hi} (in.): 0.0000	δ_{eop} (in.): 0.0000
Sample: Light Gray SANDY LEAN CLAY	- 200 (%): NA	t_{50} (min):	t_{90} (min):

Appendix Figure No. G.1-140

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.125 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/5/20 12:03:06 PM	0.00	0.00	0.0239
11/5/20 12:03:12 PM	0.10	0.32	0.0240
11/5/20 12:03:18 PM	0.20	0.45	0.0265
11/5/20 12:03:30 PM	0.40	0.63	0.0268
11/5/20 12:03:48 PM	0.70	0.84	0.0269
11/5/20 12:04:12 PM	1.10	1.05	0.0274
11/5/20 12:04:42 PM	1.60	1.26	0.0275
11/5/20 12:05:42 PM	2.60	1.61	0.0277
11/5/20 12:07:42 PM	4.60	2.14	0.0283
11/5/20 12:11:42 PM	8.60	2.93	0.0290
11/5/20 12:19:42 PM	16.60	4.07	0.0293
11/5/20 12:34:42 PM	31.60	5.62	0.0296
11/5/20 12:54:43 PM	51.62	7.18	0.0299
11/5/20 1:19:43 PM	76.62	8.75	0.0304
11/5/20 1:49:43 PM	106.62	10.33	0.0308
11/5/20 2:29:43 PM	146.62	12.11	0.0311
11/5/20 3:19:43 PM	196.62	14.02	0.0312
11/5/20 4:19:43 PM	256.62	16.02	0.0313
11/5/20 6:19:43 PM	376.62	19.41	0.0314
11/5/20 10:19:43 PM	616.62	24.83	0.0315
11/6/20 6:19:43 AM	1096.62	33.12	0.0317
11/6/20 2:19:43 PM	1576.62	39.71	0.0319
11/6/20 10:19:43 PM	2056.62	45.35	0.0319
11/7/20 6:19:43 AM	2536.62	50.36	0.0318
11/7/20 8:30:12 AM	2667.10	51.64	0.0319

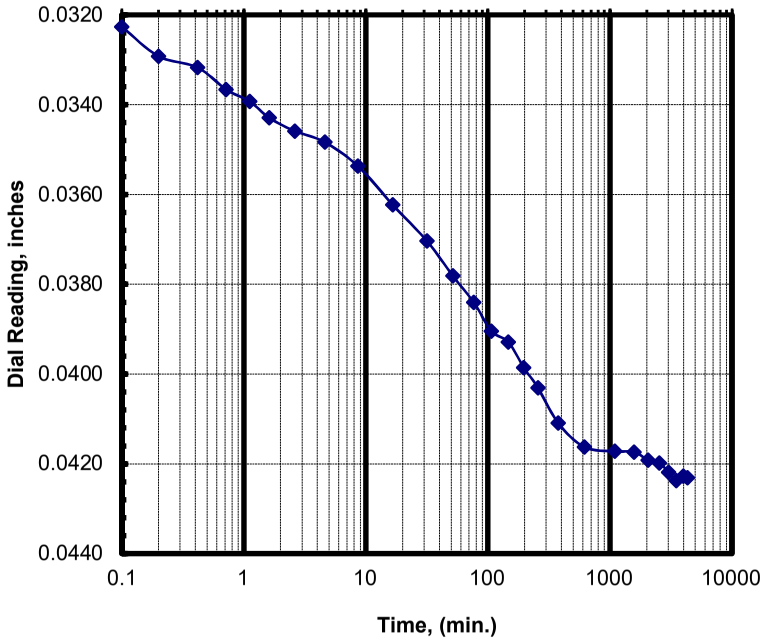


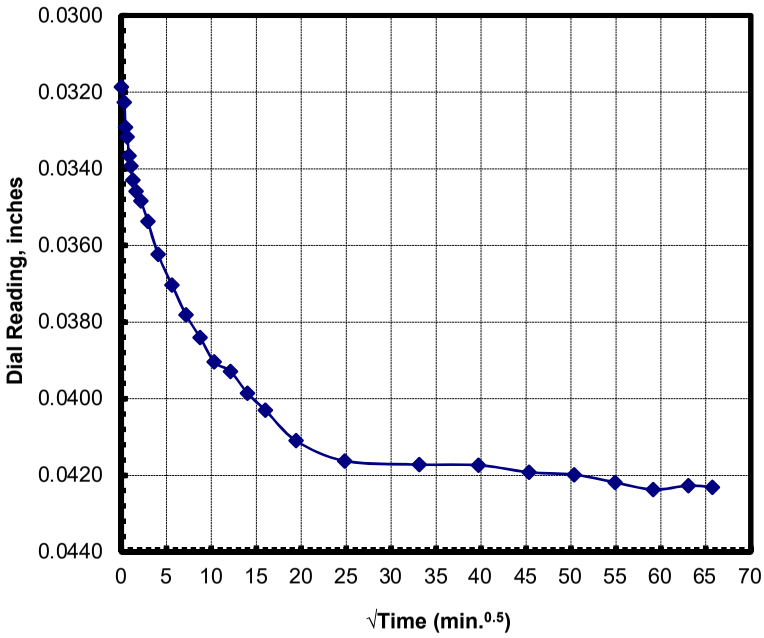


Project Number: 02541139	**LL:** 33	$D_{0(min)}$ (in): 0.0239	d_0 (in): 0.0239
Project Name: CPRA PO 181	**PL:** 13	D_{end} (in): 0.0319	d_{100} (in): 0.0291
Boring & Depth: M-1, S-3, 4-6 ft	**PL:** 20	Δ_{hi} (in.): 0.0080	δ_{eop} (in.): 0.0052
Sample: Light Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min): 0.2	t_{90} (min): 6

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.25 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/7/20 8:30:12 AM	0.00	0.00	0.0319
11/7/20 8:30:18 AM	0.10	0.32	0.0323
11/7/20 8:30:24 AM	0.20	0.45	0.0329
11/7/20 8:30:37 AM	0.42	0.65	0.0332
11/7/20 8:30:55 AM	0.72	0.85	0.0337
11/7/20 8:31:19 AM	1.12	1.06	0.0339
11/7/20 8:31:49 AM	1.62	1.27	0.0343
11/7/20 8:32:49 AM	2.62	1.62	0.0346
11/7/20 8:34:49 AM	4.62	2.15	0.0348
11/7/20 8:38:49 AM	8.62	2.94	0.0354
11/7/20 8:46:49 AM	16.62	4.08	0.0362
11/7/20 9:01:50 AM	31.63	5.62	0.0370
11/7/20 9:21:50 AM	51.63	7.19	0.0378
11/7/20 9:46:50 AM	76.63	8.75	0.0384
11/7/20 10:16:50 AM	106.63	10.33	0.0390
11/7/20 10:56:50 AM	146.63	12.11	0.0393
11/7/20 11:46:50 AM	196.63	14.02	0.0399
11/7/20 12:46:50 PM	256.63	16.02	0.0403
11/7/20 2:46:50 PM	376.63	19.41	0.0411
11/7/20 6:46:50 PM	616.63	24.83	0.0416
11/8/20 2:46:50 AM	1096.63	33.12	0.0417
11/8/20 10:46:50 AM	1576.63	39.71	0.0417
11/8/20 6:46:50 PM	2056.63	45.35	0.0419
11/9/20 2:46:50 AM	2536.63	50.37	0.0420
11/9/20 10:46:50 AM	3016.63	54.92	0.0422
11/9/20 6:46:50 PM	3496.63	59.13	0.0424
11/10/20 2:46:50 AM	3976.63	63.06	0.0423
11/10/20 8:30:17 AM	4320.08	65.73	0.0423





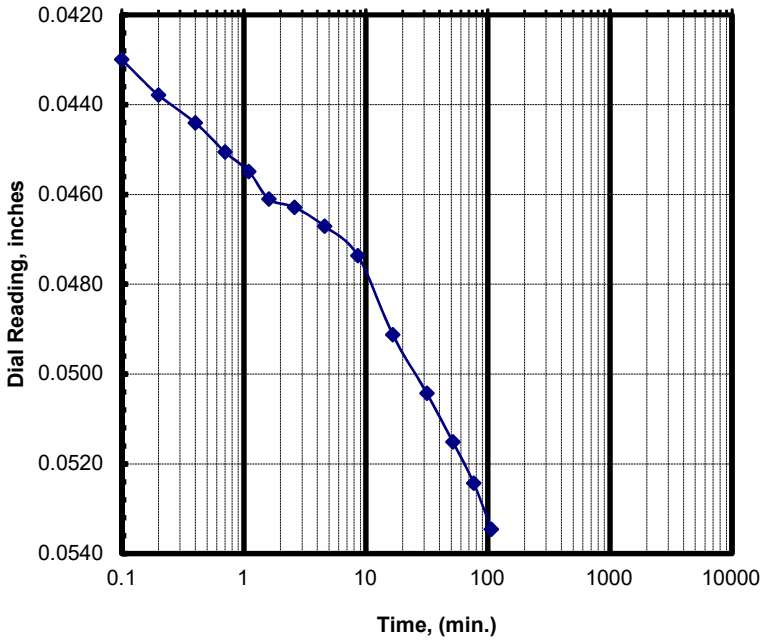
Project Number:	**02541139**	**LL: 33**	**$D_{0(min)}$ (in): 0.0319**	**d_0 (in): 0.0319**
Project Name:	**CPRA PO 181**	**PL: 13**	**D_{end} (in): 0.0423**	**d_{100} (in): 0.0388**
Boring & Depth:	**M-1, S-3, 4-6 ft**	**PL: 20**	**Δ_{hi} (in.): 0.0104**	**δ_{eop} (in.): 0.0069**
Sample:	**Light Gray SANDY LEAN CLAY**	**- 200 (%): NA**	**t_{50} (min): 8.5**	**t_{90} (min): 61**

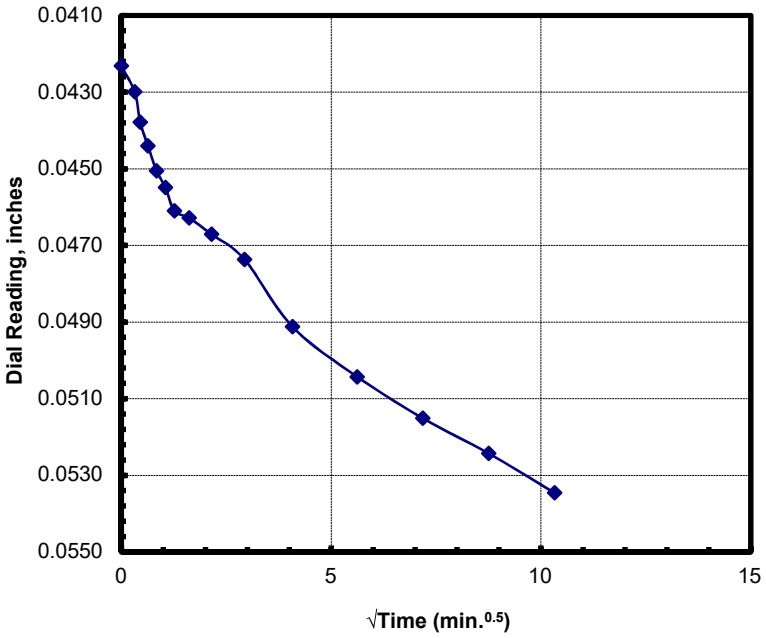
02541139 M-1 S-3 (M) 4-6'

Appendix Figure No. G.1-142

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.5 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/10/20 8:30:17 AM	0.00	0.00	0.0423
11/10/20 8:30:23 AM	0.10	0.32	0.0430
11/10/20 8:30:29 AM	0.20	0.45	0.0438
11/10/20 8:30:41 AM	0.40	0.63	0.0444
11/10/20 8:30:59 AM	0.70	0.84	0.0451
11/10/20 8:31:23 AM	1.10	1.05	0.0455
11/10/20 8:31:53 AM	1.60	1.26	0.0461
11/10/20 8:32:53 AM	2.60	1.61	0.0463
11/10/20 8:34:53 AM	4.60	2.14	0.0467
11/10/20 8:38:53 AM	8.60	2.93	0.0474
11/10/20 8:46:53 AM	16.60	4.07	0.0491
11/10/20 9:01:53 AM	31.60	5.62	0.0504
11/10/20 9:21:54 AM	51.62	7.18	0.0515
11/10/20 9:46:54 AM	76.62	8.75	0.0524
11/10/20 10:16:54 AM	106.62	10.33	0.0535

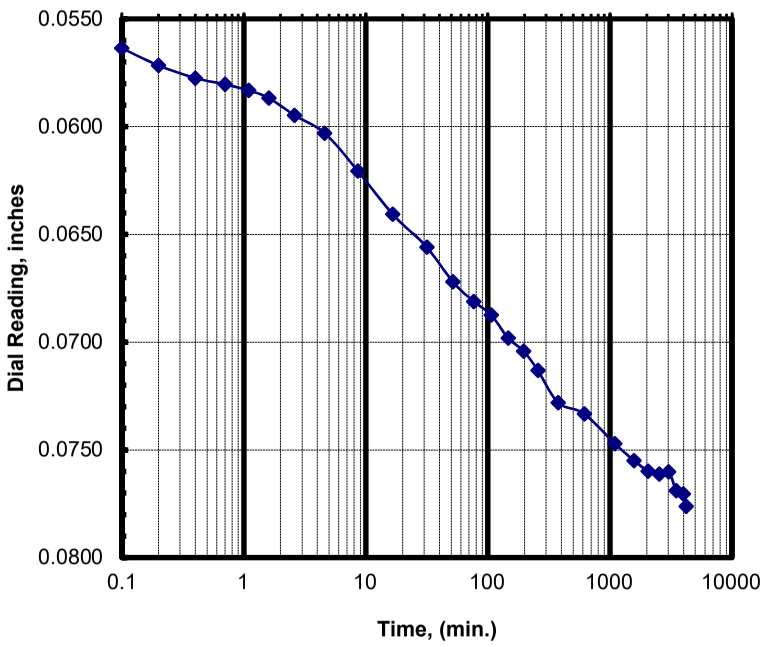


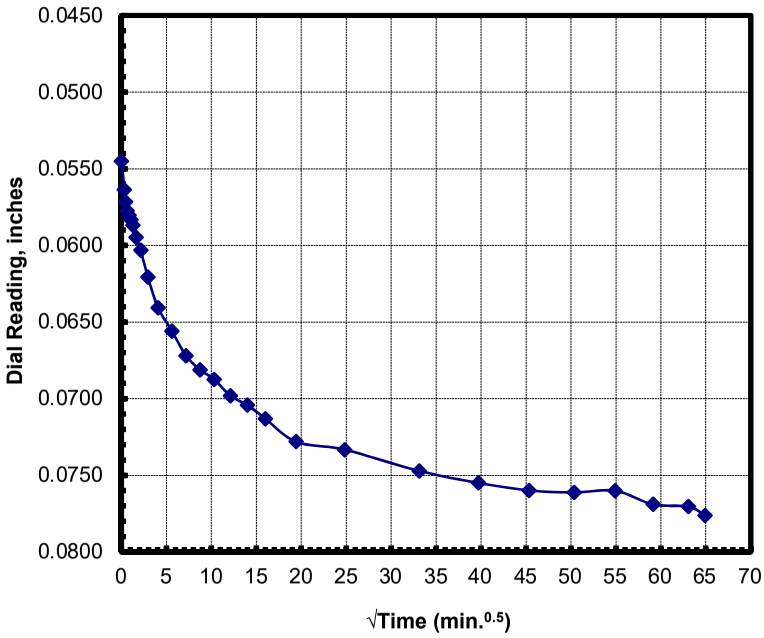


Project Number: 02541139	**LL:** 33	**$D_{0(min)}$ (in):** 0.0423	**d_0 (in):** 0.0423
Project Name: CPRA PO 181	**PL:** 13	**D_{end} (in):** 0.0535	**d_{100} (in):** 0.0496
Boring & Depth: M-1, S-3, 4-6 ft	**PL:** 20	**Δ_{hi} (in.):** 0.0111	**δ_{eop} (in.):** 0.0073
Sample: Light Gray SANDY LEAN CLAY	**- 200 (%):** NA	**t_{50} (min):** 1.5	**t_{90} (min):** 16

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/10/20 10:27:22 AM	0.00	0.00	0.0545
11/10/20 10:27:28 AM	0.10	0.32	0.0564
11/10/20 10:27:34 AM	0.20	0.45	0.0572
11/10/20 10:27:46 AM	0.40	0.63	0.0577
11/10/20 10:28:04 AM	0.70	0.84	0.0580
11/10/20 10:28:28 AM	1.10	1.05	0.0583
11/10/20 10:28:58 AM	1.60	1.26	0.0587
11/10/20 10:29:58 AM	2.60	1.61	0.0595
11/10/20 10:31:58 AM	4.60	2.14	0.0603
11/10/20 10:35:58 AM	8.60	2.93	0.0621
11/10/20 10:43:58 AM	16.60	4.07	0.0641
11/10/20 10:58:59 AM	31.62	5.62	0.0656
11/10/20 11:18:59 AM	51.62	7.18	0.0672
11/10/20 11:43:59 AM	76.62	8.75	0.0681
11/10/20 12:13:59 PM	106.62	10.33	0.0687
11/10/20 12:53:59 PM	146.62	12.11	0.0698
11/10/20 1:43:59 PM	196.62	14.02	0.0704
11/10/20 2:43:59 PM	256.62	16.02	0.0713
11/10/20 4:43:59 PM	376.62	19.41	0.0728
11/10/20 8:43:44 PM	616.37	24.83	0.0733
11/11/20 4:43:45 AM	1096.38	33.11	0.0747
11/11/20 12:43:45 PM	1576.38	39.70	0.0755
11/11/20 8:43:46 PM	2056.40	45.35	0.0760
11/12/20 4:43:46 AM	2536.40	50.36	0.0761
11/12/20 12:43:46 PM	3016.40	54.92	0.0760
11/12/20 8:43:47 PM	3496.42	59.13	0.0769
11/13/20 4:43:47 AM	3976.42	63.06	0.0770
11/13/20 8:42:42 AM	4215.33	64.93	0.0776

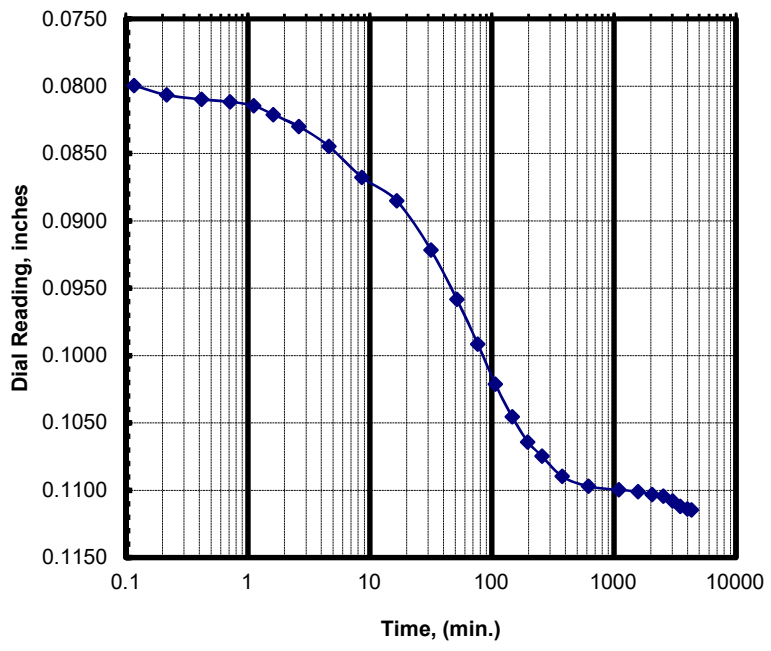


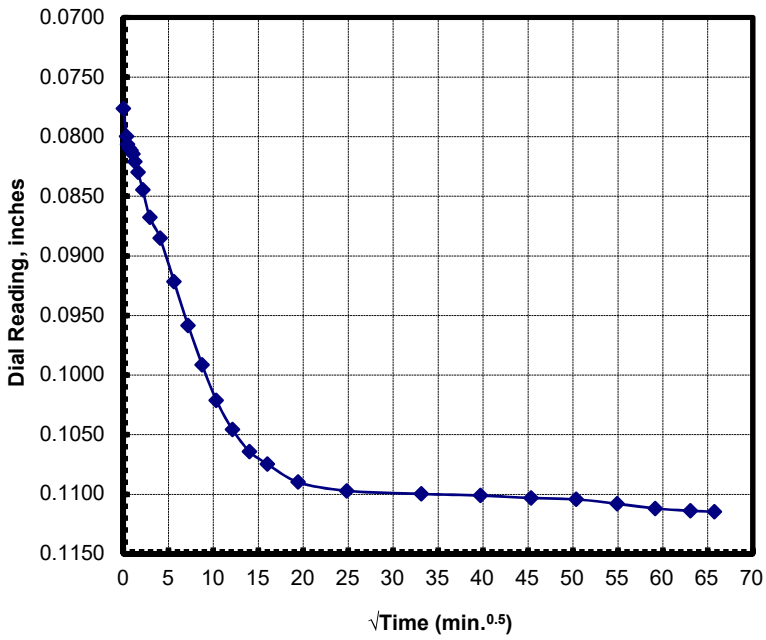


Project Number: 02541139	**LL:** 33	$D_{0(min)}$ (in): 0.0545	d_0 (in): 0.0545
Project Name: CPRA PO 181	**PL:** 13	D_{end} (in): 0.0776	d_{100} (in): 0.0730
Boring & Depth: M-1, S-3, 4-6 ft	**PL:** 20	Δ_{hi} (in.): 0.0231	δ_{eop} (in.): 0.0185
Sample: Light Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min): 15	t_{90} (min): 260

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/13/20 8:42:42 AM	0.00	0.00	0.0776
11/13/20 8:42:49 AM	0.12	0.34	0.0800
11/13/20 8:42:55 AM	0.22	0.47	0.0807
11/13/20 8:43:07 AM	0.42	0.65	0.0810
11/13/20 8:43:25 AM	0.72	0.85	0.0812
11/13/20 8:43:49 AM	1.12	1.06	0.0814
11/13/20 8:44:19 AM	1.62	1.27	0.0821
11/13/20 8:45:19 AM	2.62	1.62	0.0830
11/13/20 8:47:19 AM	4.62	2.15	0.0845
11/13/20 8:51:19 AM	8.62	2.94	0.0868
11/13/20 8:59:19 AM	16.62	4.08	0.0885
11/13/20 9:14:19 AM	31.62	5.62	0.0922
11/13/20 9:34:19 AM	51.62	7.18	0.0958
11/13/20 9:59:19 AM	76.62	8.75	0.0991
11/13/20 10:29:19 AM	106.62	10.33	0.1021
11/13/20 11:09:20 AM	146.63	12.11	0.1046
11/13/20 11:59:20 AM	196.63	14.02	0.1064
11/13/20 12:59:20 PM	256.63	16.02	0.1075
11/13/20 2:59:20 PM	376.63	19.41	0.1090
11/13/20 6:59:20 PM	616.63	24.83	0.1097
11/14/20 2:59:21 AM	1096.65	33.12	0.1100
11/14/20 10:59:21 AM	1576.65	39.71	0.1101
11/14/20 6:59:22 PM	2056.67	45.35	0.1103
11/15/20 2:59:22 AM	2536.67	50.37	0.1104
11/15/20 10:59:23 AM	3016.68	54.92	0.1108
11/15/20 6:59:23 PM	3496.68	59.13	0.1112
11/16/20 2:59:24 AM	3976.70	63.06	0.1114
11/16/20 8:42:43 AM	4320.02	65.73	0.1115

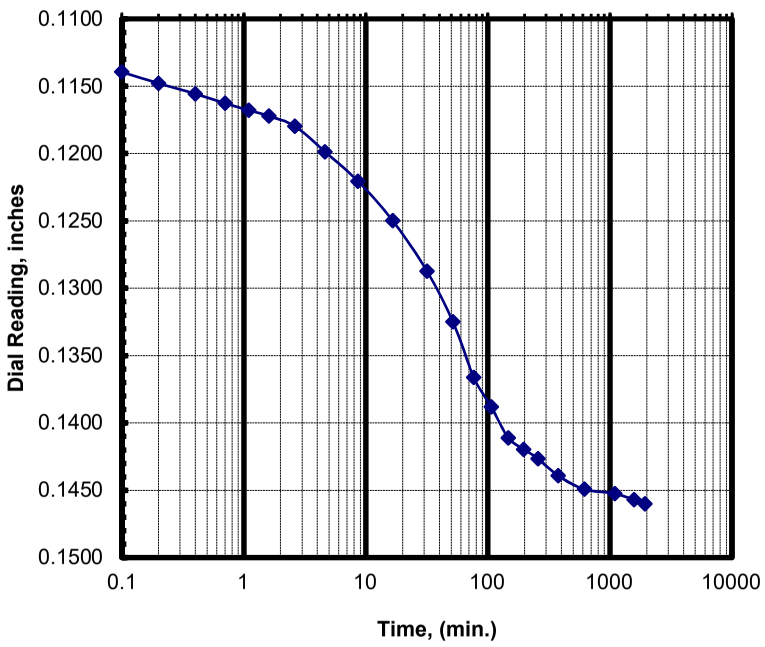


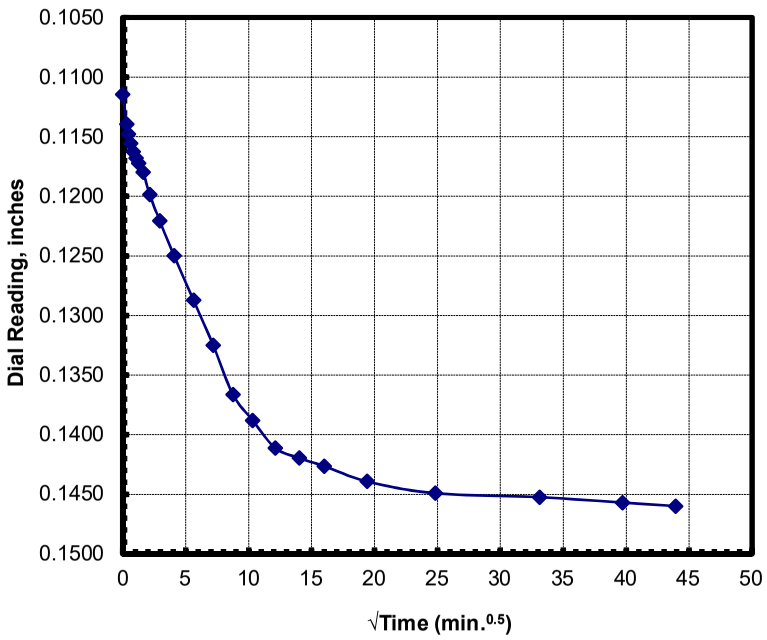


Project Number: 02541139	**LL:** 33	$D_{0(min)}$ (in): 0.0776	d_0 (in): 0.0776
Project Name: CPRA PO 181	**PL:** 13	D_{end} (in): 0.1115	d_{100} (in): 0.1091
Boring & Depth: M-1, S-3, 4-6 ft	**PL:** 20	Δ_{hi} (in.): 0.0338	δ_{eop} (in.): 0.0315
Sample: Light Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min): 39	t_{90} (min): 185

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/16/20 8:42:43 AM	0.00	0.00	0.1115
11/16/20 8:42:49 AM	0.10	0.32	0.1139
11/16/20 8:42:55 AM	0.20	0.45	0.1148
11/16/20 8:43:07 AM	0.40	0.63	0.1156
11/16/20 8:43:25 AM	0.70	0.84	0.1163
11/16/20 8:43:49 AM	1.10	1.05	0.1168
11/16/20 8:44:19 AM	1.60	1.26	0.1172
11/16/20 8:45:20 AM	2.62	1.62	0.1180
11/16/20 8:47:20 AM	4.62	2.15	0.1199
11/16/20 8:51:20 AM	8.62	2.94	0.1221
11/16/20 8:59:20 AM	16.62	4.08	0.1250
11/16/20 9:14:20 AM	31.62	5.62	0.1287
11/16/20 9:34:20 AM	51.62	7.18	0.1325
11/16/20 9:59:20 AM	76.62	8.75	0.1366
11/16/20 10:29:20 AM	106.62	10.33	0.1388
11/16/20 11:09:20 AM	146.62	12.11	0.1411
11/16/20 11:59:20 AM	196.62	14.02	0.1420
11/16/20 12:59:20 PM	256.62	16.02	0.1426
11/16/20 2:59:20 PM	376.62	19.41	0.1439
11/16/20 6:59:21 PM	616.63	24.83	0.1449
11/17/20 2:59:21 AM	1096.63	33.12	0.1452
11/17/20 10:59:21 AM	1576.63	39.71	0.1457
11/17/20 4:52:41 PM	1929.97	43.93	0.1460



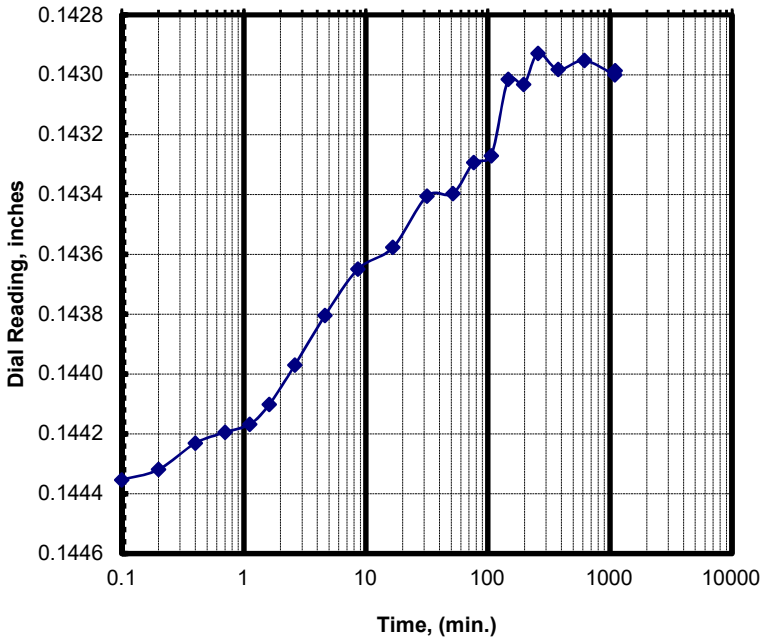


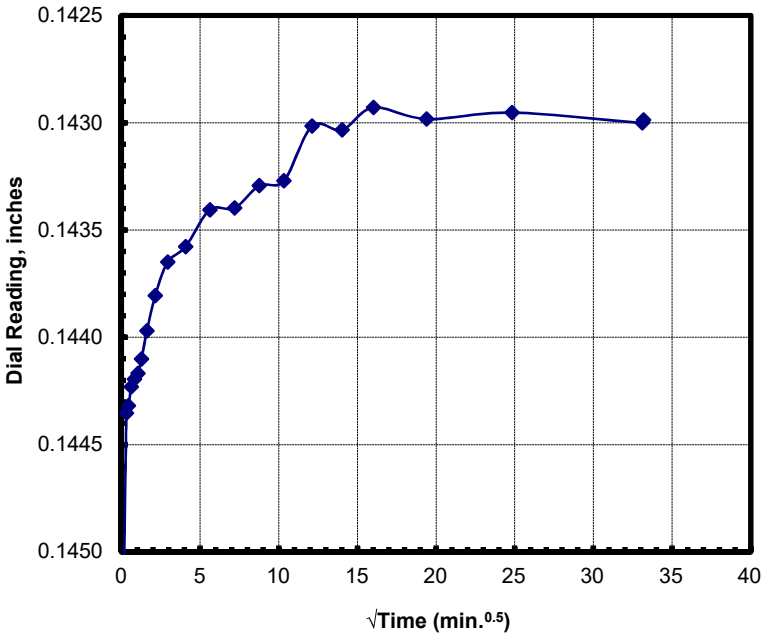
Project Number: 02541139	**LL:** 33	$D_{0(min)}$ (in): 0.1115	d_0 (in): 0.1115
Project Name: CPRA PO 181	**PL:** 13	D_{end} (in): 0.1460	d_{100} (in): 0.1438
Boring & Depth: M-1, S-3, 4-6 ft	**PL:** 20	Δ_{hi} (in.): 0.0345	δ_{eop} (in.): 0.0323
Sample: Light Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min): 27	t_{90} (min): 130

Appendix Figure No. G.1-146

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/17/20 4:52:41 PM	0.00	0.00	0.1460
11/17/20 4:52:47 PM	0.10	0.32	0.1444
11/17/20 4:52:53 PM	0.20	0.45	0.1443
11/17/20 4:53:05 PM	0.40	0.63	0.1442
11/17/20 4:53:23 PM	0.70	0.84	0.1442
11/17/20 4:53:48 PM	1.12	1.06	0.1442
11/17/20 4:54:18 PM	1.62	1.27	0.1441
11/17/20 4:55:18 PM	2.62	1.62	0.1440
11/17/20 4:57:18 PM	4.62	2.15	0.1438
11/17/20 5:01:18 PM	8.62	2.94	0.1436
11/17/20 5:09:18 PM	16.62	4.08	0.1436
11/17/20 5:24:18 PM	31.62	5.62	0.1434
11/17/20 5:44:18 PM	51.62	7.18	0.1434
11/17/20 6:09:18 PM	76.62	8.75	0.1433
11/17/20 6:39:18 PM	106.62	10.33	0.1433
11/17/20 7:19:18 PM	146.62	12.11	0.1430
11/17/20 8:09:18 PM	196.62	14.02	0.1430
11/17/20 9:09:18 PM	256.62	16.02	0.1429
11/17/20 11:09:18 PM	376.62	19.41	0.1430
11/18/20 3:09:19 AM	616.63	24.83	0.1430
11/18/20 11:09:19 AM	1096.63	33.12	0.1430
11/18/20 11:14:35 AM	1101.90	33.19	0.1430

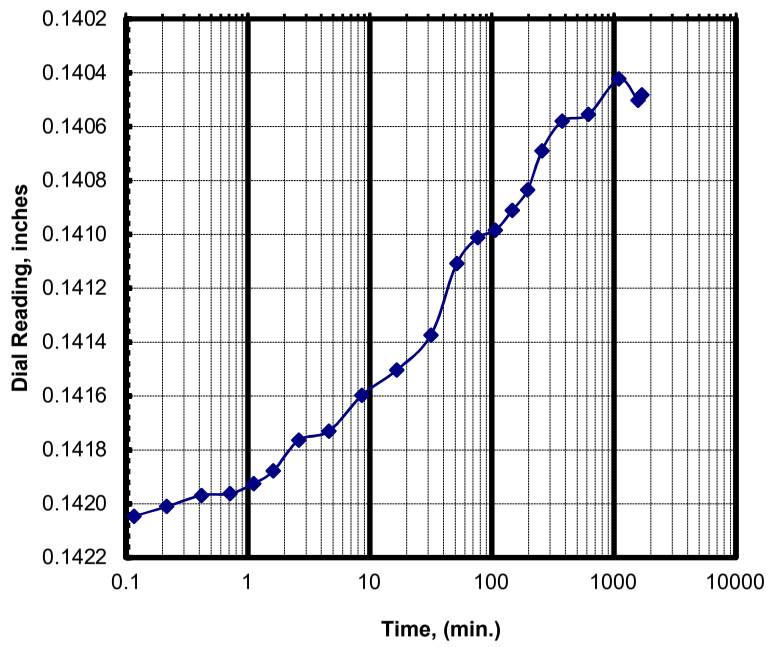


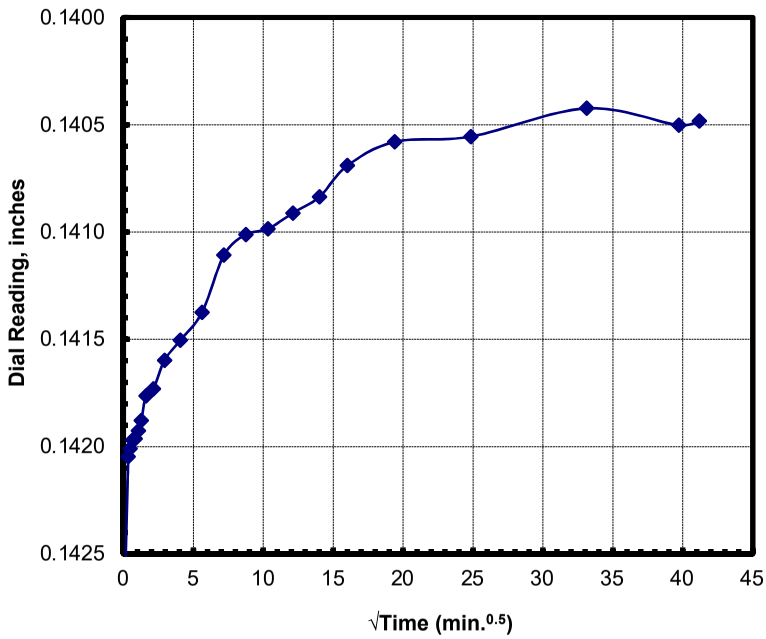


Project Number: 02541139	**LL:** 33	$D_{0(min)}$ (in): 0.1460	d_0 (in): 0.1460
Project Name: CPRA PO 181	**PL:** 13	D_{end} (in): 0.1430	d_{100} (in): 0.1430
Boring & Depth: M-1, S-3, 4-6 ft	**PL:** 20	Δ_{hi} (in.): -0.0030	δ_{eop} (in.): -0.0030
Sample: Light Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min):	t_{90} (min):

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/18/20 11:14:35 AM	0.00	0.00	0.1430
11/18/20 11:14:42 AM	0.12	0.34	0.1420
11/18/20 11:14:48 AM	0.22	0.47	0.1420
11/18/20 11:15:00 AM	0.42	0.65	0.1420
11/18/20 11:15:18 AM	0.72	0.85	0.1420
11/18/20 11:15:42 AM	1.12	1.06	0.1419
11/18/20 11:16:12 AM	1.62	1.27	0.1419
11/18/20 11:17:12 AM	2.62	1.62	0.1418
11/18/20 11:19:12 AM	4.62	2.15	0.1417
11/18/20 11:23:12 AM	8.62	2.94	0.1416
11/18/20 11:31:12 AM	16.62	4.08	0.1415
11/18/20 11:46:12 AM	31.62	5.62	0.1414
11/18/20 12:06:12 PM	51.62	7.18	0.1411
11/18/20 12:31:12 PM	76.62	8.75	0.1410
11/18/20 1:01:12 PM	106.62	10.33	0.1410
11/18/20 1:41:12 PM	146.62	12.11	0.1409
11/18/20 2:31:13 PM	196.63	14.02	0.1408
11/18/20 3:31:13 PM	256.63	16.02	0.1407
11/18/20 5:31:13 PM	376.63	19.41	0.1406
11/18/20 9:31:13 PM	616.63	24.83	0.1406
11/19/20 5:31:14 AM	1096.65	33.12	0.1404
11/19/20 1:31:15 PM	1576.67	39.71	0.1405
11/19/20 3:30:29 PM	1695.90	41.18	0.1405





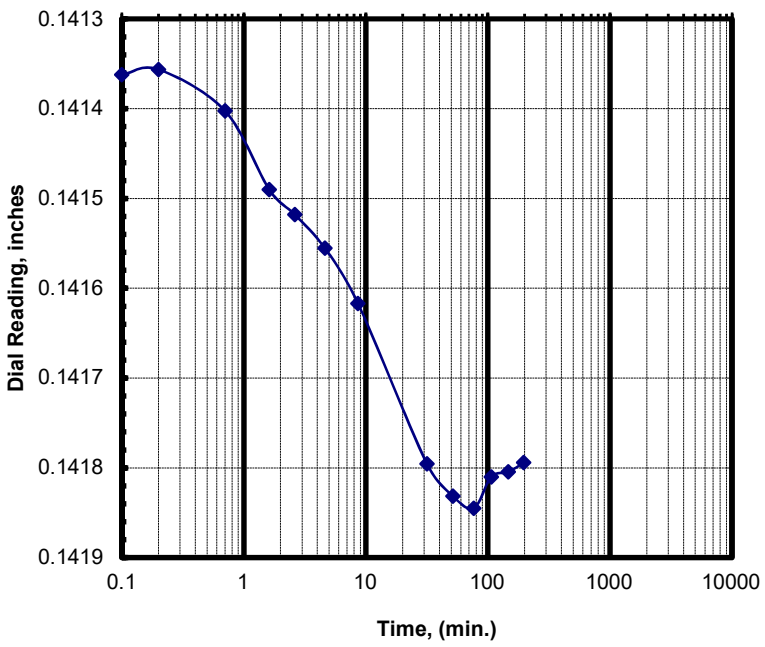
Project Number:	02541139	LL: 33	$D_{0(min)}$ (in): 0.1430	d_0 (in): 0.1430
Project Name:	CPRA PO 181	PL: 13	D_{end} (in): 0.1405	d_{100} (in): 0.1405
Boring & Depth:	M-1, S-3, 4-6 ft	PL: 20	Δ_{hi} (in.): -0.0025	δ_{eop} (in.): -0.0025
Sample:	Light Gray SANDY LEAN CLAY	- 200 (%): NA	t_{50} (min):	t_{90} (min):

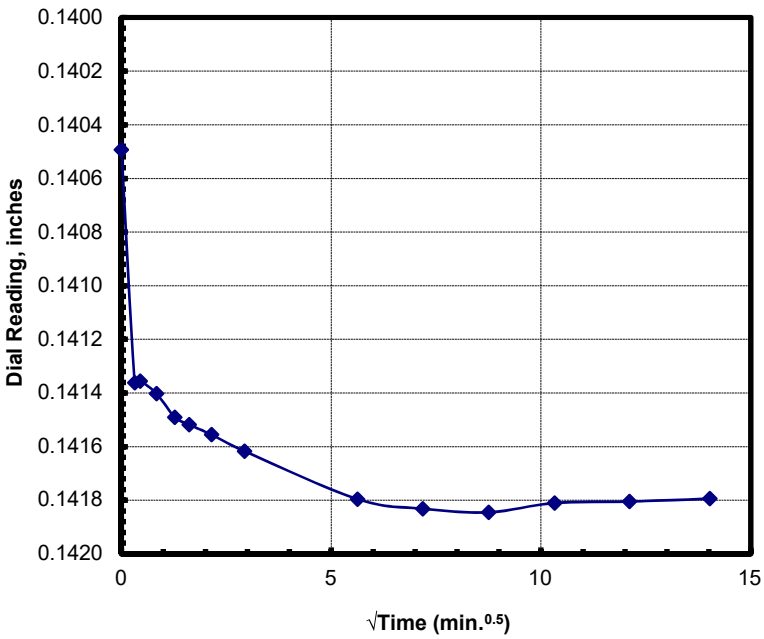
02541139 M-1 S-3 (M) 4-6'

Appendix Figure No. G.1-148

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/19/20 3:30:29 PM	0.00	0.00	0.1405
11/19/20 3:30:35 PM	0.10	0.32	0.1414
11/19/20 3:30:41 PM	0.20	0.45	0.1414
11/19/20 3:30:53 PM	0.40	0.63	0.1414
11/19/20 3:31:11 PM	0.70	0.84	0.1414
11/19/20 3:31:36 PM	1.12	1.06	0.1415
11/19/20 3:32:06 PM	1.62	1.27	0.1415
11/19/20 3:33:06 PM	2.62	1.62	0.1415
11/19/20 3:35:06 PM	4.62	2.15	0.1416
11/19/20 3:39:06 PM	8.62	2.94	0.1416
11/19/20 3:47:06 PM	16.62	4.08	0.1417
11/19/20 4:02:06 PM	31.62	5.62	0.1418
11/19/20 4:22:06 PM	51.62	7.18	0.1418
11/19/20 4:47:06 PM	76.62	8.75	0.1418
11/19/20 5:17:06 PM	106.62	10.33	0.1418
11/19/20 5:57:06 PM	146.62	12.11	0.1418
11/19/20 6:47:07 PM	196.63	14.02	0.1418
11/19/20 7:47:07 PM	256.63	16.02	0.1417
11/19/20 9:47:07 PM	376.63	19.41	0.1418
11/20/20 1:47:07 AM	616.63	24.83	0.1418
11/20/20 9:47:08 AM	1096.65	33.12	0.1418
11/20/20 11:23:03 AM	1192.57	34.53	0.1418

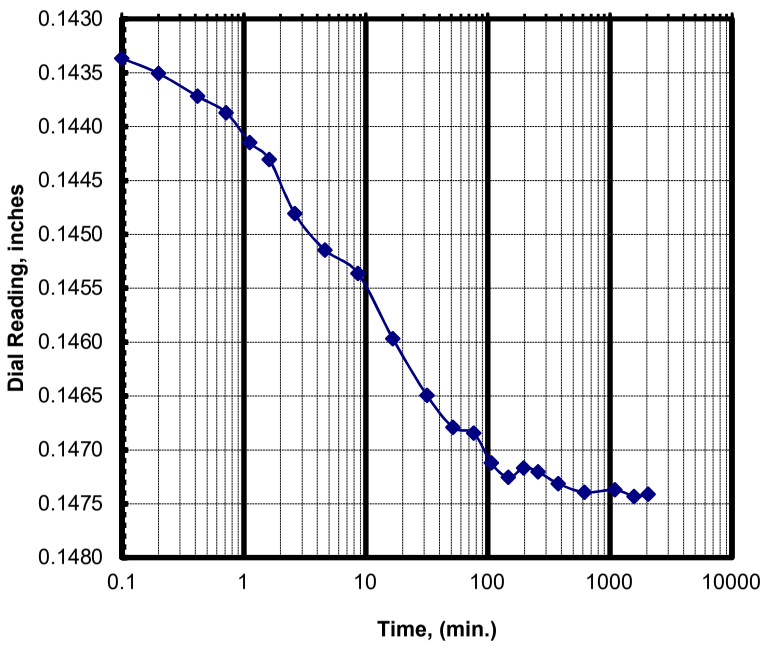


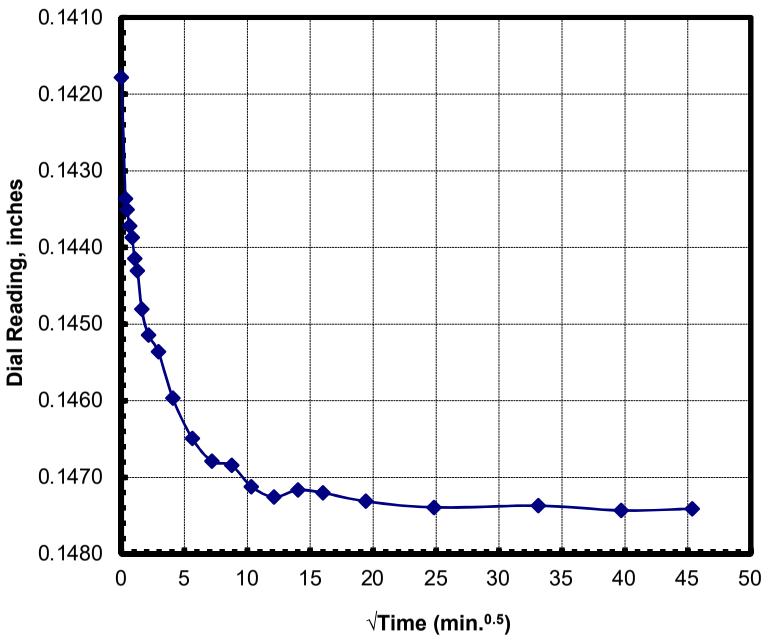


Project Number: 02541139	**LL:** 33	$D_{0(min)}$ (in): 0.1405	d_0 (in): 0.1405
Project Name: CPRA PO 181	**PL:** 13	D_{end} (in): 0.1418	d_{100} (in): 0.1418
Boring & Depth: M-1, S-3, 4-6 ft	**PL:** 20	Δ_{hi} (in.): 0.0013	δ_{eop} (in.): 0.0013
Sample: Light Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min):	t_{90} (min):

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/20/20 11:23:03 AM	0.00	0.00	0.1418
11/20/20 11:23:09 AM	0.10	0.32	0.1434
11/20/20 11:23:15 AM	0.20	0.45	0.1435
11/20/20 11:23:28 AM	0.42	0.65	0.1437
11/20/20 11:23:46 AM	0.72	0.85	0.1439
11/20/20 11:24:10 AM	1.12	1.06	0.1441
11/20/20 11:24:40 AM	1.62	1.27	0.1443
11/20/20 11:25:40 AM	2.62	1.62	0.1448
11/20/20 11:27:40 AM	4.62	2.15	0.1451
11/20/20 11:31:40 AM	8.62	2.94	0.1454
11/20/20 11:39:40 AM	16.62	4.08	0.1460
11/20/20 11:54:40 AM	31.62	5.62	0.1465
11/20/20 12:14:40 PM	51.62	7.18	0.1468
11/20/20 12:39:40 PM	76.62	8.75	0.1468
11/20/20 1:09:40 PM	106.62	10.33	0.1471
11/20/20 1:49:41 PM	146.63	12.11	0.1473
11/20/20 2:39:41 PM	196.63	14.02	0.1472
11/20/20 3:39:41 PM	256.63	16.02	0.1472
11/20/20 5:39:41 PM	376.63	19.41	0.1473
11/20/20 9:39:41 PM	616.63	24.83	0.1474
11/21/20 5:39:41 AM	1096.63	33.12	0.1474
11/21/20 1:39:42 PM	1576.65	39.71	0.1474
11/21/20 9:39:42 PM	2056.65	45.35	0.1474
11/22/20 5:39:43 AM	2536.67	50.37	0.1475
11/22/20 12:03:14 PM	2920.18	54.04	0.1476



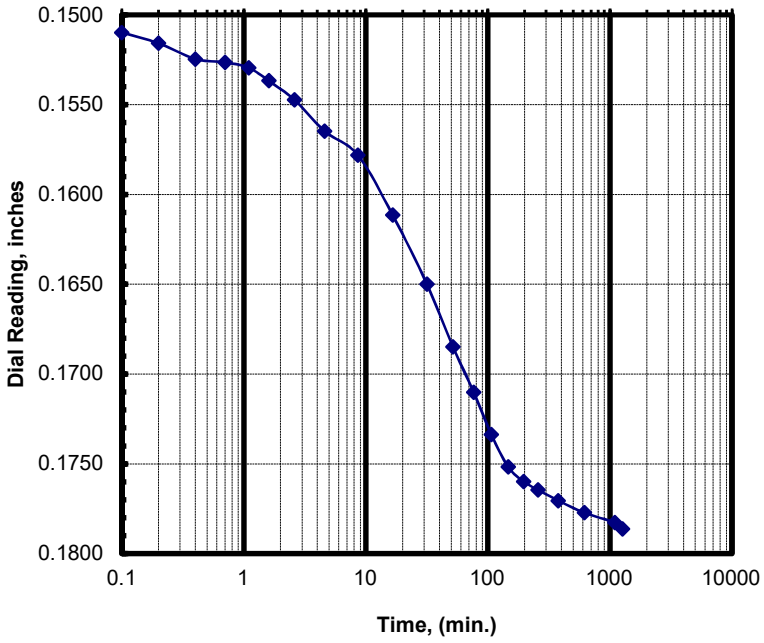


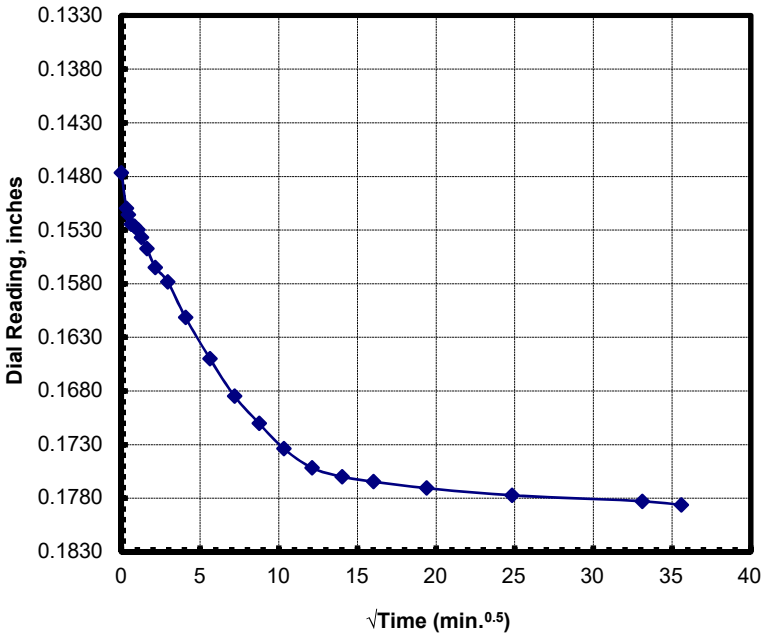
Project Number: 02541139	LL: 33	$D_{0(min)}$ (in): 0.1418	d_0 (in): 0.1418
Project Name: CPRA PO 181	PL: 13	D_{end} (in): 0.1476	d_{100} (in): 0.1472
Boring & Depth: M-1, S-3, 4-6 ft	PL: 20	Δ_{hi} (in.): 0.0059	δ_{eop} (in.): 0.0054
Sample: Light Gray SANDY LEAN CLAY	- 200 (%): NA	t_{50} (min):	t_{90} (min):

Appendix Figure No. G.1-150

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 8 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/22/20 12:03:15 PM	0.00	0.00	0.1476
11/22/20 12:03:21 PM	0.10	0.32	0.1510
11/22/20 12:03:27 PM	0.20	0.45	0.1516
11/22/20 12:03:39 PM	0.40	0.63	0.1525
11/22/20 12:03:57 PM	0.70	0.84	0.1526
11/22/20 12:04:21 PM	1.10	1.05	0.1530
11/22/20 12:04:51 PM	1.60	1.26	0.1537
11/22/20 12:05:51 PM	2.60	1.61	0.1547
11/22/20 12:07:51 PM	4.60	2.14	0.1565
11/22/20 12:11:51 PM	8.60	2.93	0.1578
11/22/20 12:19:51 PM	16.60	4.07	0.1612
11/22/20 12:34:51 PM	31.60	5.62	0.1650
11/22/20 12:54:51 PM	51.60	7.18	0.1685
11/22/20 1:19:51 PM	76.60	8.75	0.1710
11/22/20 1:49:52 PM	106.62	10.33	0.1734
11/22/20 2:29:52 PM	146.62	12.11	0.1752
11/22/20 3:19:52 PM	196.62	14.02	0.1760
11/22/20 4:19:52 PM	256.62	16.02	0.1765
11/22/20 6:19:52 PM	376.62	19.41	0.1770
11/22/20 10:19:52 PM	616.62	24.83	0.1777
11/23/20 6:19:53 AM	1096.63	33.12	0.1783
11/23/20 9:10:15 AM	1267.00	35.59	0.1786

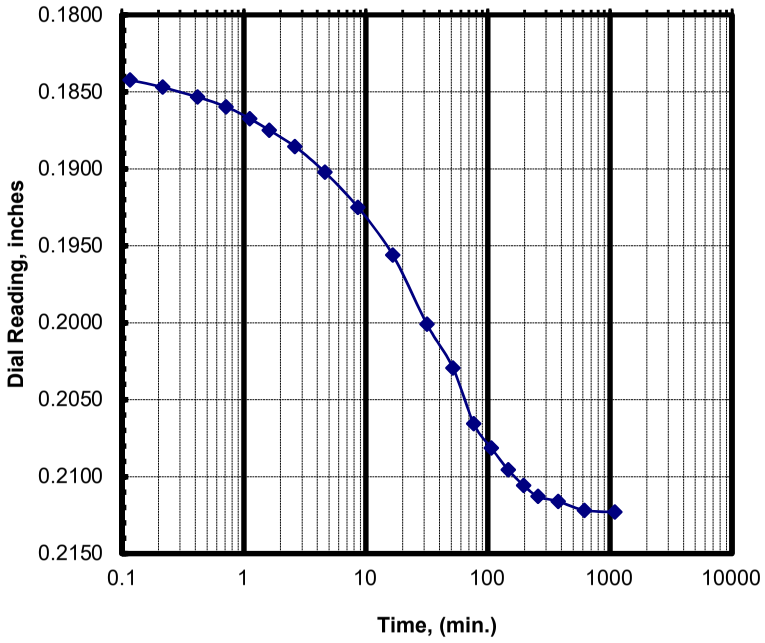


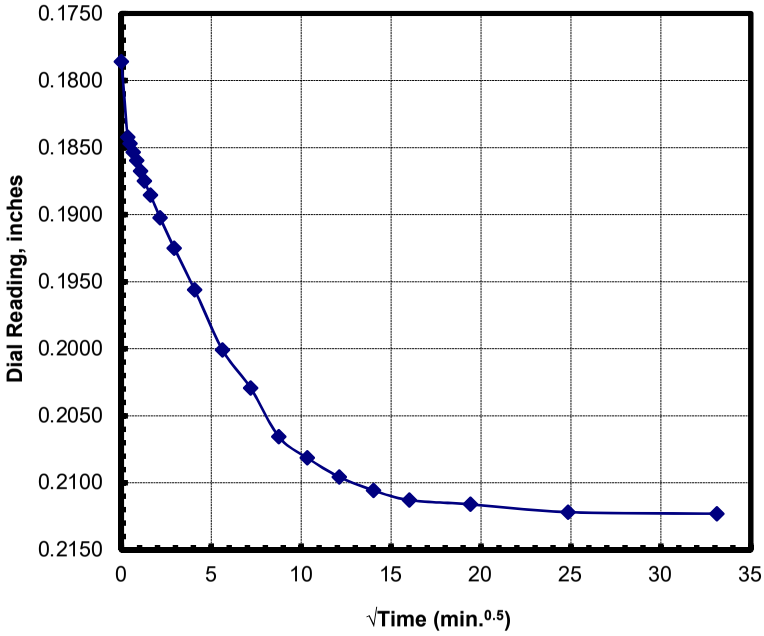


Project Number: 02541139	**LL:** 33	$D_{0(min)}$ (in): 0.1476	d_0 (in): 0.1476
Project Name: CPRA PO 181	**PL:** 13	D_{end} (in): 0.1786	d_{100} (in): 0.1758
Boring & Depth: M-1, S-3, 4-6 ft	**PL:** 20	Δ_{hi} (in.): 0.0310	δ_{eop} (in.): 0.0282
Sample: Light Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min): 18	t_{90} (min): 100

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 16 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/23/20 9:10:15 AM	0.00	0.00	0.1786
11/23/20 9:10:22 AM	0.12	0.34	0.1842
11/23/20 9:10:28 AM	0.22	0.47	0.1847
11/23/20 9:10:40 AM	0.42	0.65	0.1853
11/23/20 9:10:58 AM	0.72	0.85	0.1860
11/23/20 9:11:22 AM	1.12	1.06	0.1867
11/23/20 9:11:52 AM	1.62	1.27	0.1875
11/23/20 9:12:52 AM	2.62	1.62	0.1885
11/23/20 9:14:52 AM	4.62	2.15	0.1902
11/23/20 9:18:52 AM	8.62	2.94	0.1925
11/23/20 9:26:52 AM	16.62	4.08	0.1956
11/23/20 9:41:52 AM	31.62	5.62	0.2001
11/23/20 10:01:52 AM	51.62	7.18	0.2029
11/23/20 10:26:52 AM	76.62	8.75	0.2066
11/23/20 10:56:53 AM	106.63	10.33	0.2081
11/23/20 11:36:53 AM	146.63	12.11	0.2096
11/23/20 12:26:53 PM	196.63	14.02	0.2106
11/23/20 1:26:53 PM	256.63	16.02	0.2113
11/23/20 3:26:53 PM	376.63	19.41	0.2116
11/23/20 7:26:53 PM	616.63	24.83	0.2122
11/24/20 3:26:54 AM	1096.65	33.12	0.2123



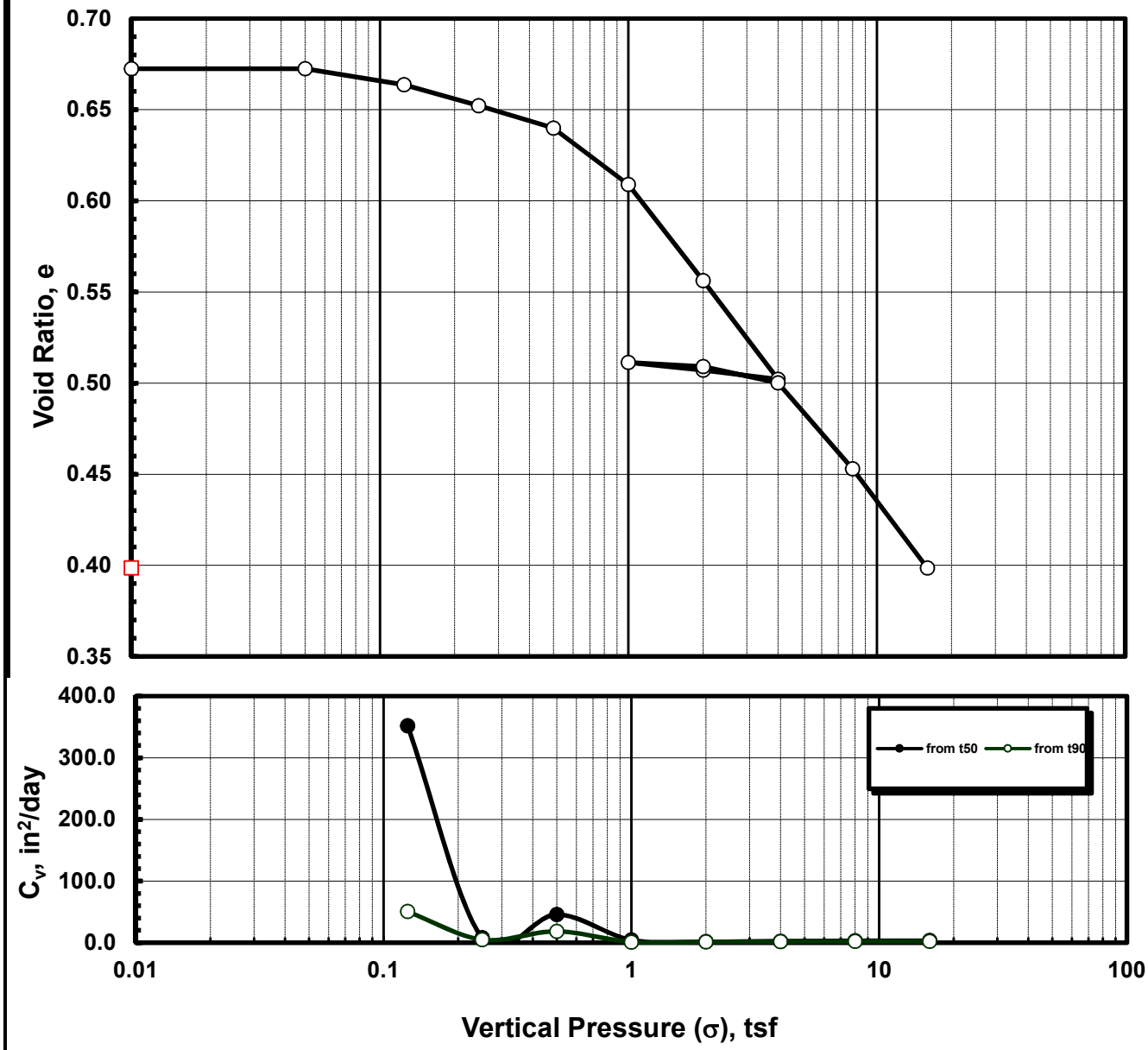


Project Number: 02541139	**LL:** 33	$D_{0(min)}$ (in): 0.1786	d_0 (in): 0.1786
Project Name: CPRA PO 181	**PL:** 13	D_{end} (in): 0.2123	d_{100} (in): 0.2111
Boring & Depth: M-1, S-3, 4-6 ft	**PL:** 20	Δ_{hi} (in.): 0.0337	δ_{eop} (in.): 0.0325
Sample: Light Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min): 15	t_{90} (min): 95

02541139 M-1 S-3 (M) 4-6'

Appendix Figure No. G.1-152

CONSOLIDATION TEST RESULTS - ASTM D 2435

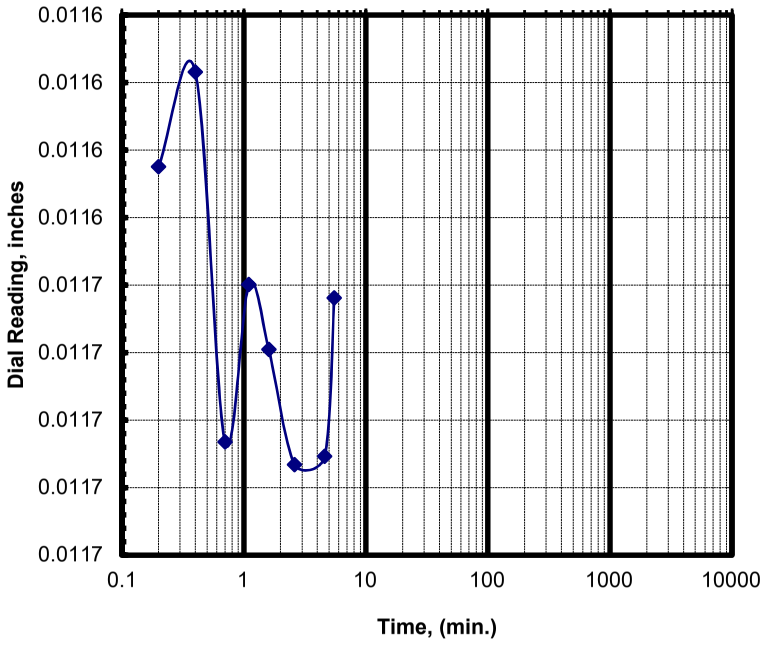


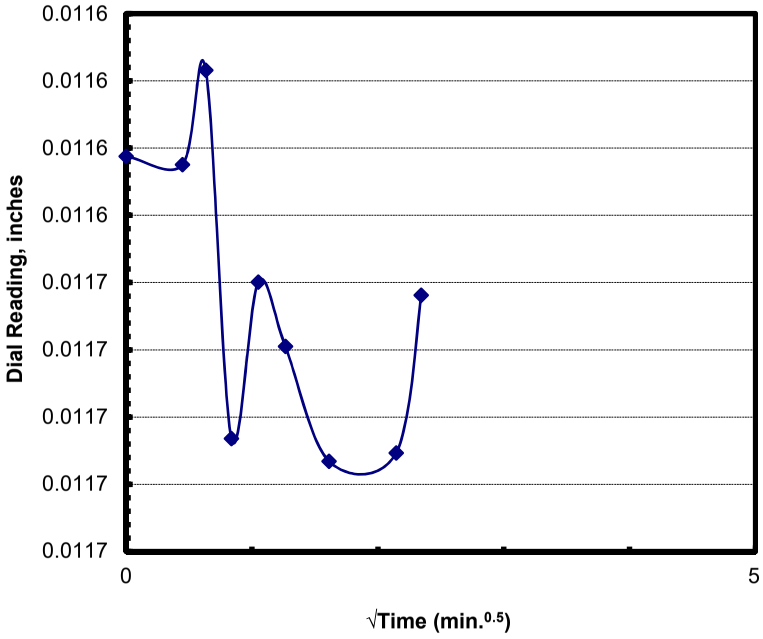
Sample Condition	Before	After	Consolidation Parameters	
Moisture Content, %:	24.9%	15.0%	Overburden Pressure, tsf:	0.2
Sample Height, in.:	0.9990	0.8353	Preconsolidation Pressure, tsf:	0.8
Void Ratio, e:	0.6725	0.3985	Compression Index, (Cc):	0.181
Unit Weight, pcf:	98.9	118.2	Re-Compression Index, (Cr)	0.019
Degree of Saturation:	0.98	1.00	Swell Index, Cs:	-

Project Number:	02541139	Liquid Limit:	33	Hand Pen:	0.15 tsf
Project Name	CPRA PO 181	Plastic Limit:	13	-200 %:	NA
Boring No.:	M-1	Plasticity Index:	20	SPG:	2.65
Sample ID, Depth:	S-3, 4-6 ft	Classification:	Light Gray SANDY LEAN CLAY		

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.05 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/2/20 3:17:51 PM	0.00	0.00	0.0116
12/2/20 3:18:03 PM	0.20	0.45	0.0116
12/2/20 3:18:15 PM	0.40	0.63	0.0116
12/2/20 3:18:33 PM	0.70	0.84	0.0117
12/2/20 3:18:57 PM	1.10	1.05	0.0117
12/2/20 3:19:27 PM	1.60	1.26	0.0117
12/2/20 3:20:27 PM	2.60	1.61	0.0117
12/2/20 3:22:27 PM	4.60	2.14	0.0117
12/2/20 3:23:21 PM	5.50	2.35	0.0117





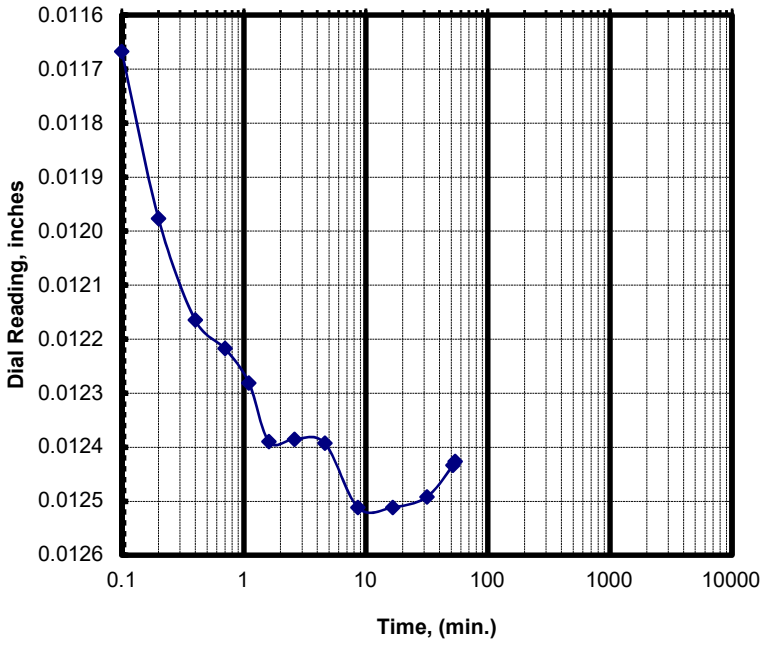
Project Number: 02541139	LL: 58	$D_{0(min)}$ (in): 0.0116	d_0 (in): 0.0116
Project Name: CPRA PO 181	PL: 16	D_{end} (in): 0.0117	d_{100} (in): 0.0117
Boring & Depth: M-2, S-4, 6-8 ft	PL: 42	Δ_{hi} (in.): 0.0000	δ_{eop} (in.): 0.0000
Sample: Gray SANDY FAT CLAY (CH)	- 200 (%): 61	t_{50} (min):	t_{90} (min):

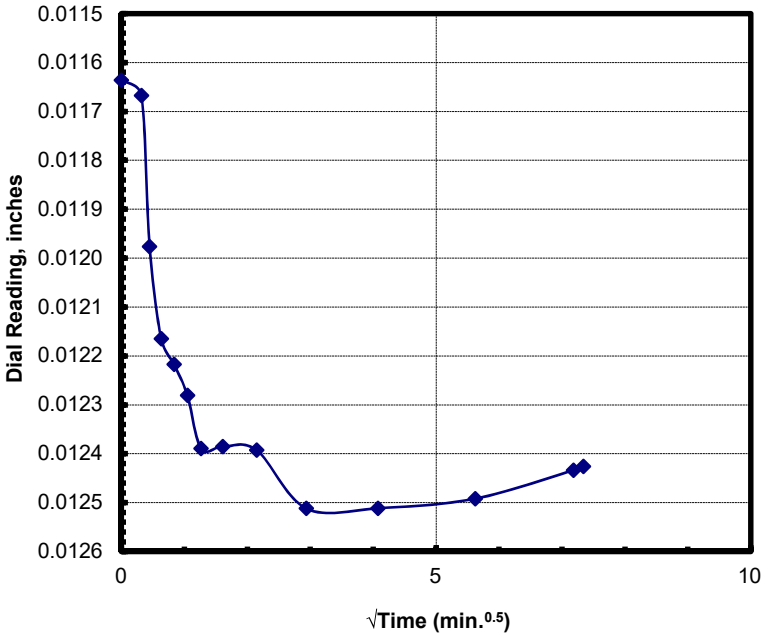
02541139 M-2 S-4 (M) 6-8' (NEW) RR

Appendix Figure No. G.1-154

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.125 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/2/20 3:23:22 PM	0.00	0.00	0.0116
12/2/20 3:23:28 PM	0.10	0.32	0.0117
12/2/20 3:23:34 PM	0.20	0.45	0.0120
12/2/20 3:23:46 PM	0.40	0.63	0.0122
12/2/20 3:24:04 PM	0.70	0.84	0.0122
12/2/20 3:24:28 PM	1.10	1.05	0.0123
12/2/20 3:24:58 PM	1.60	1.26	0.0124
12/2/20 3:25:58 PM	2.60	1.61	0.0124
12/2/20 3:27:59 PM	4.62	2.15	0.0124
12/2/20 3:31:59 PM	8.62	2.94	0.0125
12/2/20 3:39:59 PM	16.62	4.08	0.0125
12/2/20 3:54:59 PM	31.62	5.62	0.0125
12/2/20 4:14:59 PM	51.62	7.18	0.0124
12/2/20 4:17:14 PM	53.87	7.34	0.0124

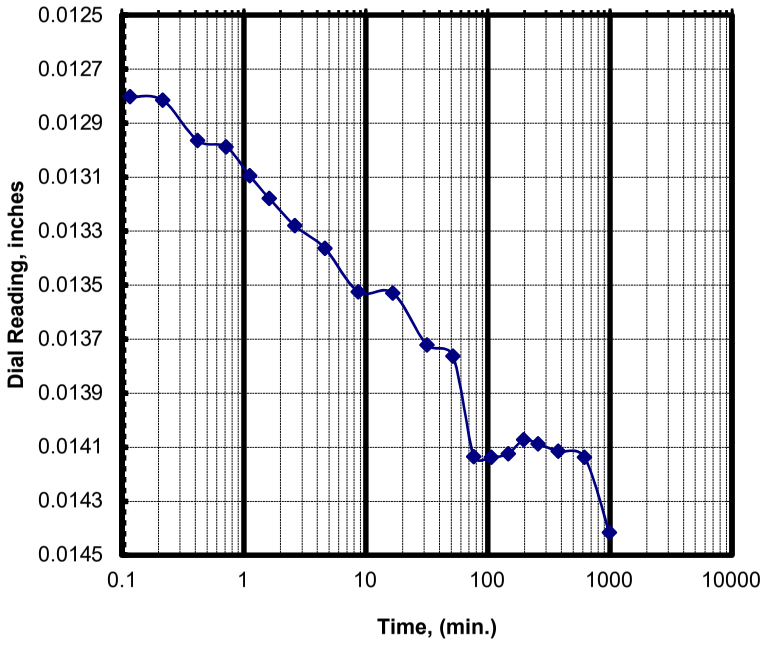


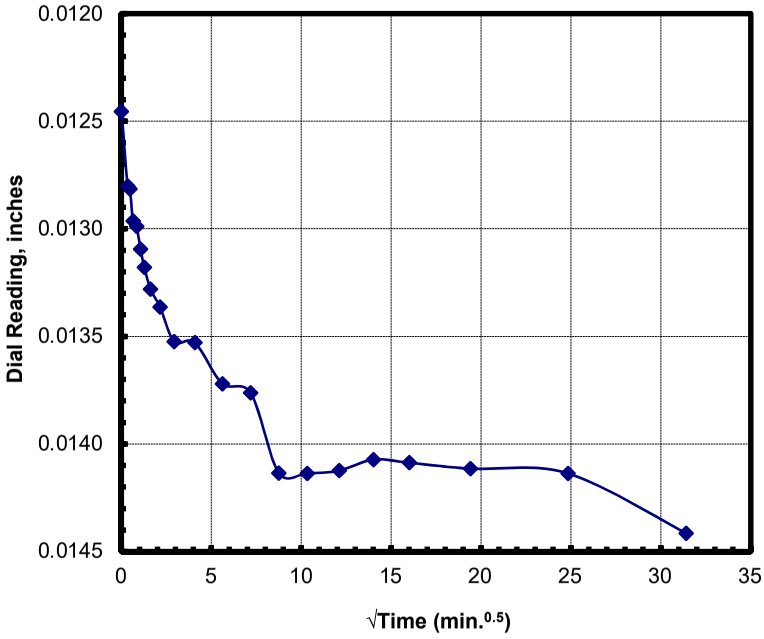


Project Number: 02541139	**LL:** 58	$D_{0(min)}$ (in): 0.0116	d_0 (in): 0.0116
Project Name: CPRA PO 181	**PL:** 16	D_{end} (in): 0.0124	d_{100} (in): 0.0124
Boring & Depth: M-2, S-4, 6-8 ft	**PL:** 42	Δ_{hi} (in.): 0.0008	δ_{eop} (in.): 0.0008
Sample: Gray SANDY FAT CLAY (CH)	**- 200 (%):** 61	t_{50} (min): 0.21	t_{90} (min): 1.2

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.25 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/2/20 4:17:14 PM	0.00	0.00	0.0125
12/2/20 4:17:21 PM	0.12	0.34	0.0128
12/2/20 4:17:27 PM	0.22	0.47	0.0128
12/2/20 4:17:39 PM	0.42	0.65	0.0130
12/2/20 4:17:57 PM	0.72	0.85	0.0130
12/2/20 4:18:21 PM	1.12	1.06	0.0131
12/2/20 4:18:51 PM	1.62	1.27	0.0132
12/2/20 4:19:51 PM	2.62	1.62	0.0133
12/2/20 4:21:51 PM	4.62	2.15	0.0134
12/2/20 4:25:52 PM	8.63	2.94	0.0135
12/2/20 4:33:52 PM	16.63	4.08	0.0135
12/2/20 4:48:52 PM	31.63	5.62	0.0137
12/2/20 5:08:52 PM	51.63	7.19	0.0138
12/2/20 5:33:52 PM	76.63	8.75	0.0141
12/2/20 6:03:52 PM	106.63	10.33	0.0141
12/2/20 6:43:53 PM	146.65	12.11	0.0141
12/2/20 7:33:53 PM	196.65	14.02	0.0141
12/2/20 8:33:53 PM	256.65	16.02	0.0141
12/2/20 10:33:53 PM	376.65	19.41	0.0141
12/3/20 2:33:53 AM	616.65	24.83	0.0141
12/3/20 8:44:07 AM	986.88	31.41	0.0144





Project Number:	**02541139**	**LL: 58**	**$D_{0(min)}$ (in): 0.0125**	**d_0 (in): 0.0125**
Project Name:	**CPRA PO 181**	**PL: 16**	**D_{end} (in): 0.0144**	**d_{100} (in): 0.0136**
Boring & Depth:	**M-2, S-4, 6-8 ft**	**PL: 42**	**Δ_{hi} (in.): 0.0020**	**δ_{eop} (in.): 0.0011**
Sample:	**Gray SANDY FAT CLAY (CH)**	**- 200 (%): 61**	**t_{50} (min): 0.79**	**t_{90} (min): 7.9**

02541139 M-2 S-4 (M) 6-8' (NEW) RR

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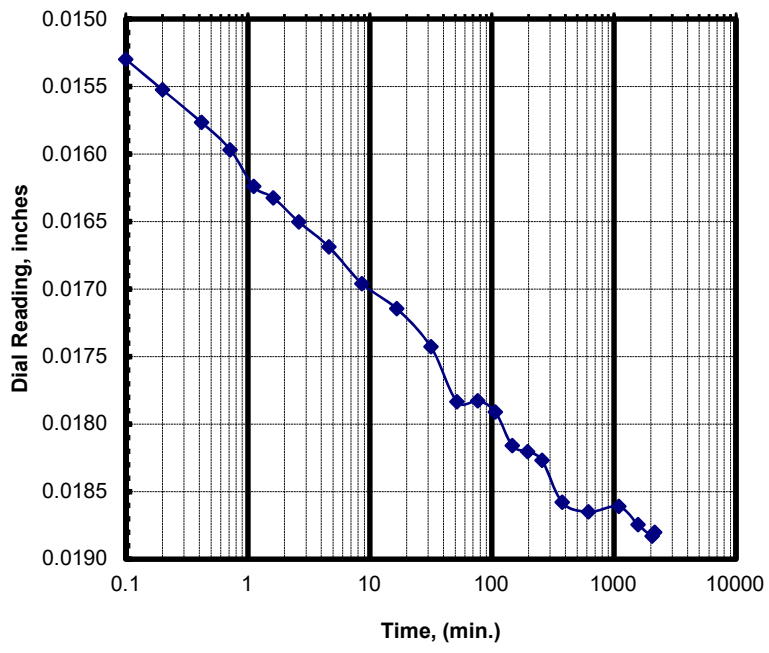
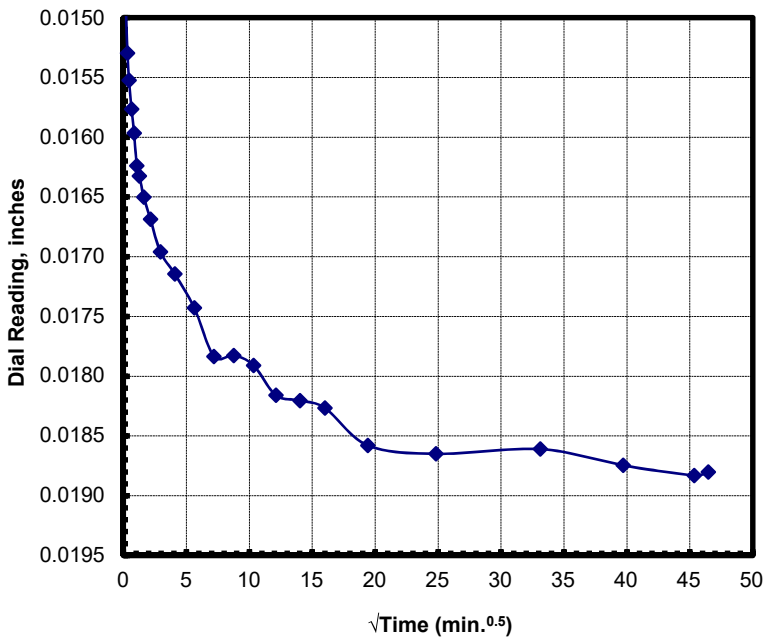
CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.5 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/3/20 8:44:07 AM	0.00	0.00	0.0144
12/3/20 8:44:13 AM	0.10	0.32	0.0153
12/3/20 8:44:19 AM	0.20	0.45	0.0155
12/3/20 8:44:32 AM	0.42	0.65	0.0158
12/3/20 8:44:50 AM	0.72	0.85	0.0160
12/3/20 8:45:14 AM	1.12	1.06	0.0162
12/3/20 8:45:44 AM	1.62	1.27	0.0163
12/3/20 8:46:44 AM	2.62	1.62	0.0165
12/3/20 8:48:44 AM	4.62	2.15	0.0167
12/3/20 8:52:44 AM	8.62	2.94	0.0170
12/3/20 9:00:44 AM	16.62	4.08	0.0171
12/3/20 9:15:44 AM	31.62	5.62	0.0174
12/3/20 9:35:45 AM	51.63	7.19	0.0178
12/3/20 10:00:45 AM	76.63	8.75	0.0178
12/3/20 10:30:45 AM	106.63	10.33	0.0179
12/3/20 11:10:45 AM	146.63	12.11	0.0182
12/3/20 12:00:45 PM	196.63	14.02	0.0182
12/3/20 1:00:46 PM	256.65	16.02	0.0183
12/3/20 3:00:46 PM	376.65	19.41	0.0186
12/3/20 7:00:46 PM	616.65	24.83	0.0186
12/4/20 3:00:47 AM	1096.67	33.12	0.0186
12/4/20 11:00:47 AM	1576.67	39.71	0.0187
12/4/20 7:00:48 PM	2056.68	45.35	0.0188
12/4/20 8:44:11 PM	2160.07	46.48	0.0188

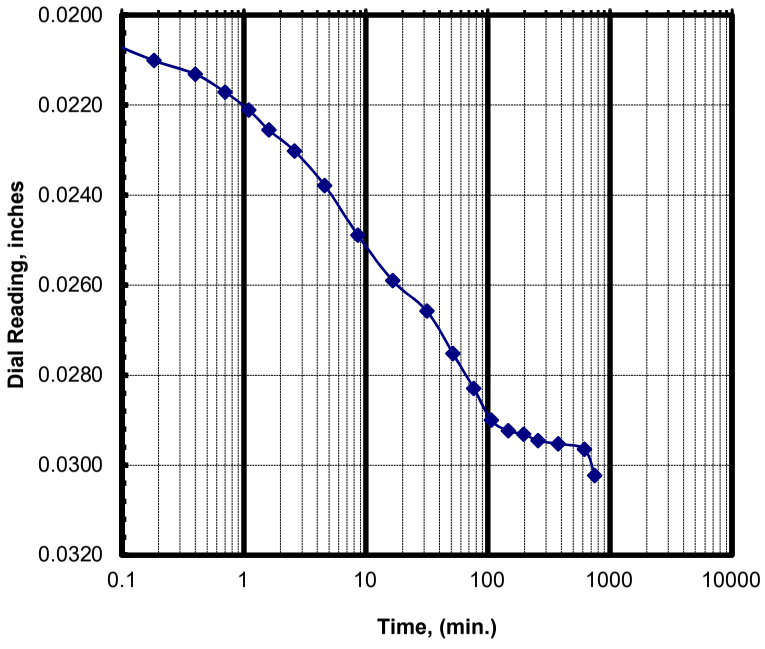


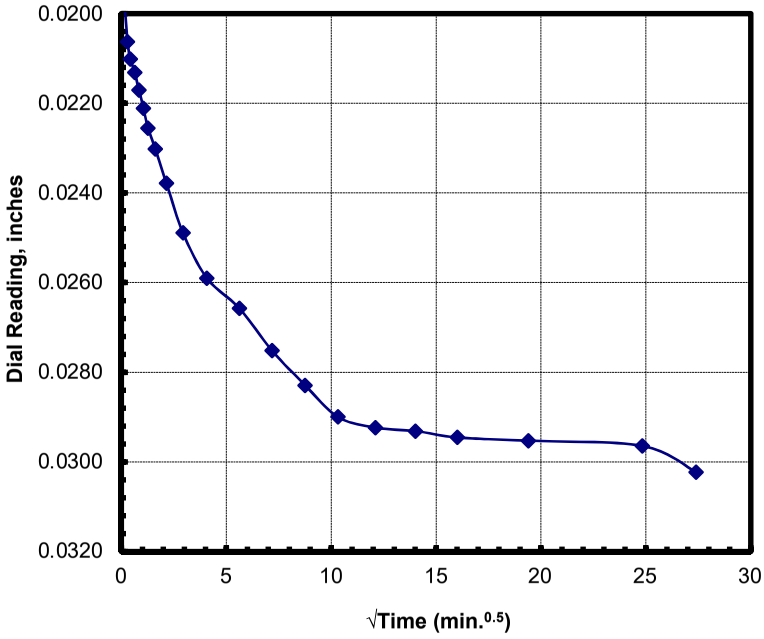


Project Number: 02541139	**LL:** 58	$D_{0(min)}$ **(in):** 0.0144	d_0 **(in):** 0.0144
Project Name: CPRA PO 181	**PL:** 16	D_{end} **(in):** 0.0188	d_{100} **(in):** 0.0178
Boring & Depth: M-2, S-4, 6-8 ft	**PL:** 42	Δ_{hi} **(in.):** 0.0044	δ_{eop} **(in.):** 0.0034
Sample: Gray SANDY FAT CLAY (CH)	**- 200 (%):** 61	t_{50} **(min):** 0.9	t_{90} **(min):** 35

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/4/20 8:44:12 PM	0.00	0.00	0.0188
12/4/20 8:44:17 PM	0.08	0.29	0.0206
12/4/20 8:44:23 PM	0.18	0.43	0.0210
12/4/20 8:44:36 PM	0.40	0.63	0.0213
12/4/20 8:44:54 PM	0.70	0.84	0.0217
12/4/20 8:45:18 PM	1.10	1.05	0.0221
12/4/20 8:45:48 PM	1.60	1.26	0.0226
12/4/20 8:46:48 PM	2.60	1.61	0.0230
12/4/20 8:48:48 PM	4.60	2.14	0.0238
12/4/20 8:52:48 PM	8.60	2.93	0.0249
12/4/20 9:00:48 PM	16.60	4.07	0.0259
12/4/20 9:15:48 PM	31.60	5.62	0.0266
12/4/20 9:35:48 PM	51.60	7.18	0.0275
12/4/20 10:00:48 PM	76.60	8.75	0.0283
12/4/20 10:30:48 PM	106.60	10.32	0.0290
12/4/20 11:10:48 PM	146.60	12.11	0.0292
12/5/20 12:00:48 AM	196.60	14.02	0.0293
12/5/20 1:00:49 AM	256.62	16.02	0.0295
12/5/20 3:00:49 AM	376.62	19.41	0.0295
12/5/20 7:00:49 AM	616.62	24.83	0.0296
12/5/20 9:14:41 AM	750.48	27.39	0.0302





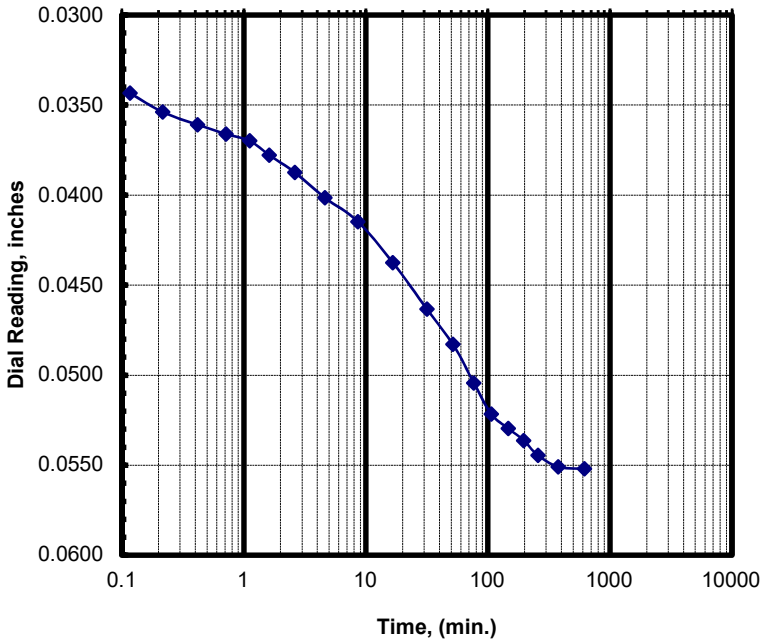
Project Number: 02541139	**LL:** 58	$D_{0(min)}$ (in): 0.0188	d_0 (in): 0.0188
Project Name: CPRA PO 181	**PL:** 16	D_{end} (in): 0.0302	d_{100} (in): 0.0292
Boring & Depth: M-2, S-4, 6-8 ft	**PL:** 42	Δ_{hi} (in.): 0.0115	δ_{eop} (in.): 0.0104
Sample: Gray SANDY FAT CLAY (CH)	**- 200 (%):** 61	t_{50} (min): 5.2	t_{90} (min): 72

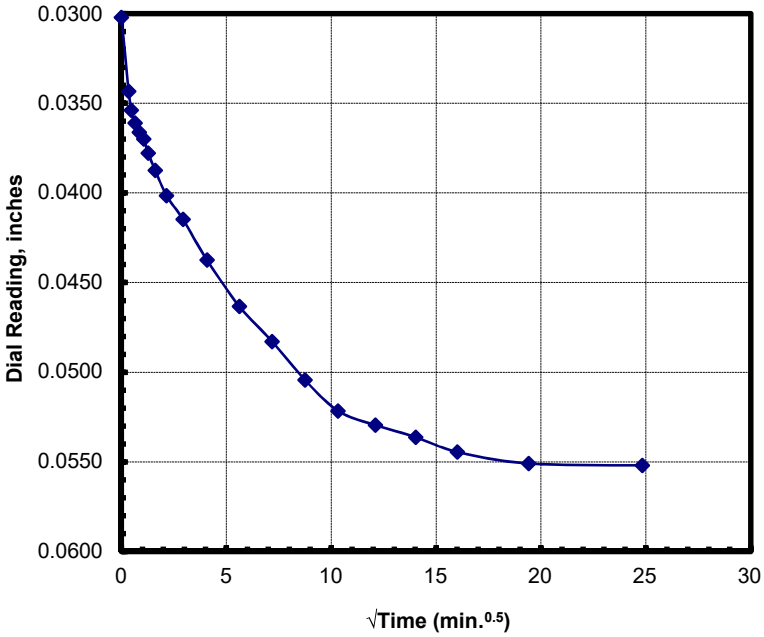
02541139 M-2 S-4 (M) 6-8' (NEW) RR

Appendix Figure No. G.1-158

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/5/20 9:14:41 AM	0.00	0.00	0.0302
12/5/20 9:14:48 AM	0.12	0.34	0.0343
12/5/20 9:14:54 AM	0.22	0.47	0.0354
12/5/20 9:15:06 AM	0.42	0.65	0.0361
12/5/20 9:15:24 AM	0.72	0.85	0.0366
12/5/20 9:15:48 AM	1.12	1.06	0.0370
12/5/20 9:16:18 AM	1.62	1.27	0.0378
12/5/20 9:17:18 AM	2.62	1.62	0.0387
12/5/20 9:19:18 AM	4.62	2.15	0.0401
12/5/20 9:23:18 AM	8.62	2.94	0.0415
12/5/20 9:31:18 AM	16.62	4.08	0.0437
12/5/20 9:46:19 AM	31.63	5.62	0.0463
12/5/20 10:06:19 AM	51.63	7.19	0.0483
12/5/20 10:31:19 AM	76.63	8.75	0.0504
12/5/20 11:01:19 AM	106.63	10.33	0.0522
12/5/20 11:41:19 AM	146.63	12.11	0.0530
12/5/20 12:31:19 PM	196.63	14.02	0.0536
12/5/20 1:31:19 PM	256.63	16.02	0.0544
12/5/20 3:31:19 PM	376.63	19.41	0.0551
12/5/20 7:31:20 PM	616.65	24.83	0.0552

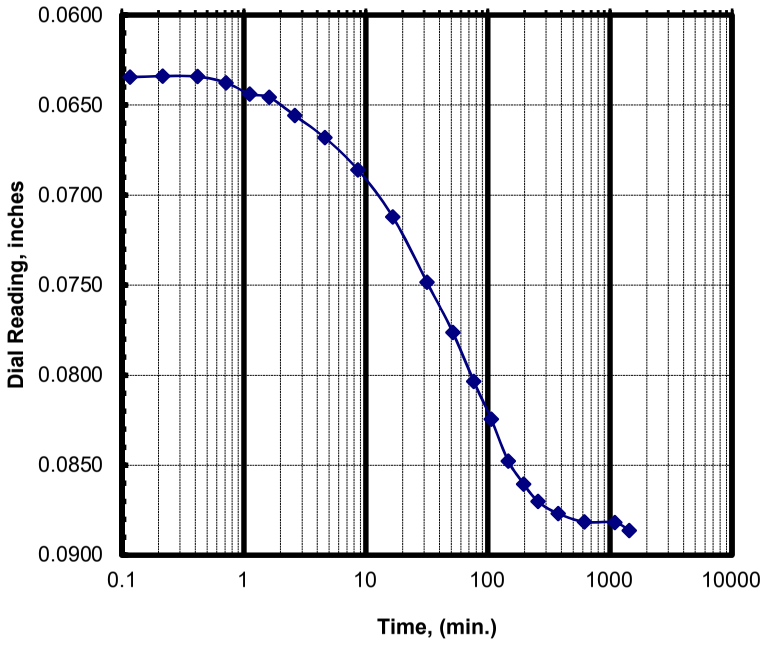


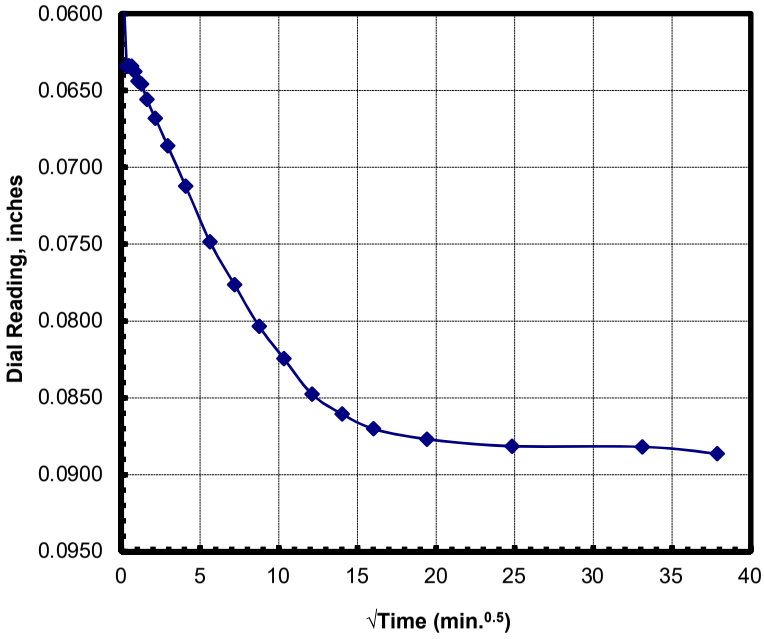


Project Number: 02541139	**LL:** 58	$D_{0(min)}$ **(in):** 0.0302	d_0 **(in):** 0.0302
Project Name: CPRA PO 181	**PL:** 16	D_{end} **(in):** 0.0552	d_{100} **(in):** 0.0550
Boring & Depth: M-2, S-4, 6-8 ft	**PL:** 42	Δ_{hi} **(in.):** 0.0250	δ_{eop} **(in.):** 0.0248
Sample: Gray SANDY FAT CLAY (CH)	**- 200 (%):** 61	t_{50} **(min):** 11	t_{90} **(min):** 110

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/7/20 9:16:27 AM	0.00	0.00	0.0552
12/7/20 9:16:34 AM	0.12	0.34	0.0634
12/7/20 9:16:40 AM	0.22	0.47	0.0634
12/7/20 9:16:52 AM	0.42	0.65	0.0634
12/7/20 9:17:10 AM	0.72	0.85	0.0638
12/7/20 9:17:34 AM	1.12	1.06	0.0644
12/7/20 9:18:04 AM	1.62	1.27	0.0646
12/7/20 9:19:04 AM	2.62	1.62	0.0656
12/7/20 9:21:04 AM	4.62	2.15	0.0668
12/7/20 9:25:04 AM	8.62	2.94	0.0686
12/7/20 9:33:05 AM	16.63	4.08	0.0712
12/7/20 9:48:05 AM	31.63	5.62	0.0748
12/7/20 10:08:05 AM	51.63	7.19	0.0776
12/7/20 10:33:05 AM	76.63	8.75	0.0803
12/7/20 11:03:05 AM	106.63	10.33	0.0824
12/7/20 11:43:05 AM	146.63	12.11	0.0848
12/7/20 12:33:06 PM	196.65	14.02	0.0860
12/7/20 1:33:06 PM	256.65	16.02	0.0870
12/7/20 3:33:06 PM	376.65	19.41	0.0877
12/7/20 7:33:07 PM	616.67	24.83	0.0881
12/8/20 3:33:07 AM	1096.67	33.12	0.0882
12/8/20 9:10:49 AM	1434.37	37.87	0.0886





Project Number:	**02541139**	**LL: 58**	**$D_{0(min)}$ (in): 0.0552**	**d_0 (in): 0.0552**
Project Name:	**CPRA PO 181**	**PL: 16**	**D_{end} (in): 0.0886**	**d_{100} (in): 0.0875**
Boring & Depth:	**M-2, S-4, 6-8 ft**	**PL: 42**	**Δ_{hi} (in.): 0.0372**	**δ_{eop} (in.): 0.0323**
Sample:	**Gray SANDY FAT CLAY (CH)**	**- 200 (%): 61**	**t_{50} (min): 18**	**t_{90} (min): 145**

02541139 M-2 S-4 (M) 6-8' (NEW) RR

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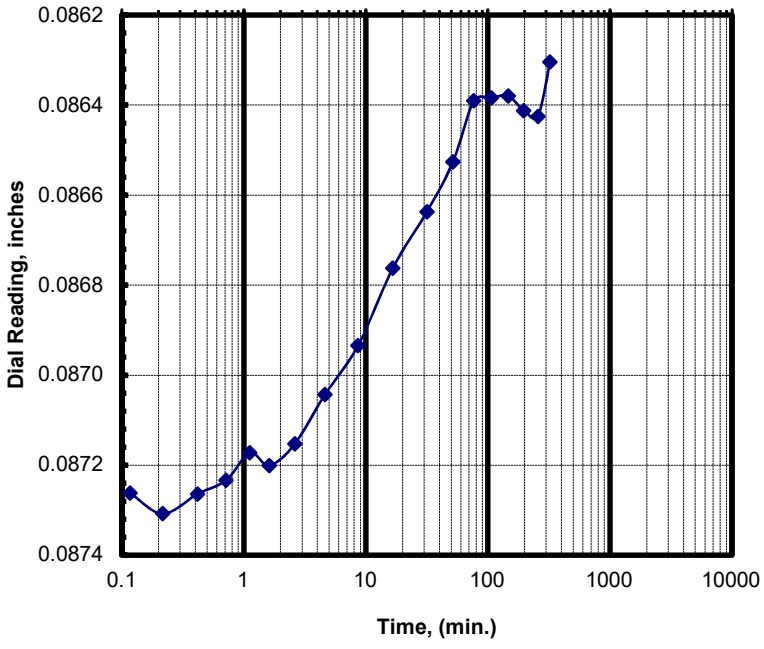
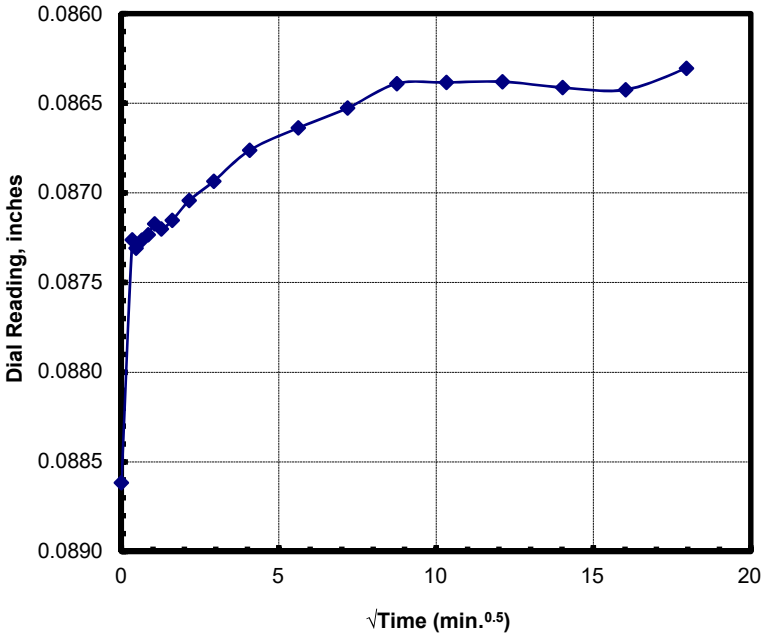
Appendix Figure No. G.1-160

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/8/20 9:10:49 AM	0.00	0.00	0.0886
12/8/20 9:10:56 AM	0.12	0.34	0.0873
12/8/20 9:11:02 AM	0.22	0.47	0.0873
12/8/20 9:11:14 AM	0.42	0.65	0.0873
12/8/20 9:11:32 AM	0.72	0.85	0.0872
12/8/20 9:11:56 AM	1.12	1.06	0.0872
12/8/20 9:12:26 AM	1.62	1.27	0.0872
12/8/20 9:13:26 AM	2.62	1.62	0.0872
12/8/20 9:15:26 AM	4.62	2.15	0.0870
12/8/20 9:19:26 AM	8.62	2.94	0.0869
12/8/20 9:27:26 AM	16.62	4.08	0.0868
12/8/20 9:42:26 AM	31.62	5.62	0.0866
12/8/20 10:02:27 AM	51.63	7.19	0.0865
12/8/20 10:27:27 AM	76.63	8.75	0.0864
12/8/20 10:57:27 AM	106.63	10.33	0.0864
12/8/20 11:37:27 AM	146.63	12.11	0.0864
12/8/20 12:27:27 PM	196.63	14.02	0.0864
12/8/20 1:27:27 PM	256.63	16.02	0.0864
12/8/20 2:33:13 PM	322.40	17.96	0.0863

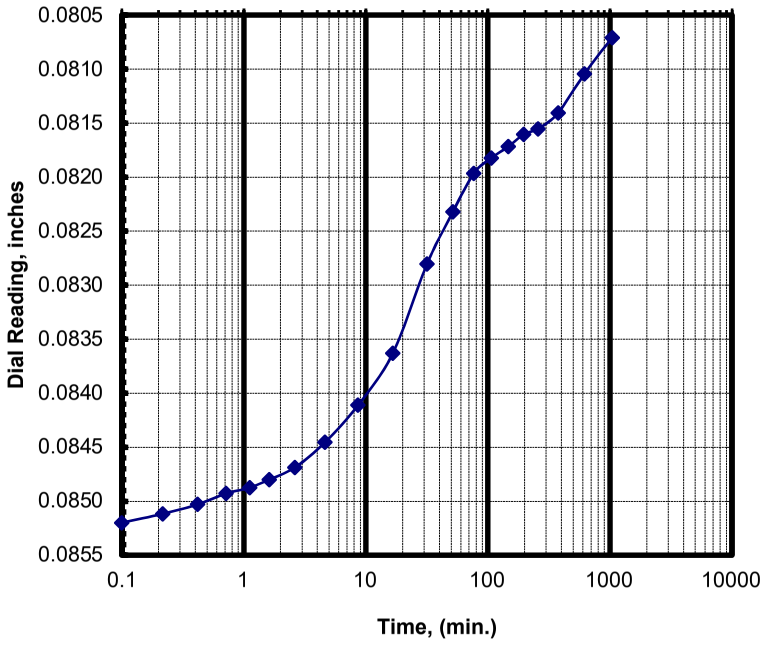


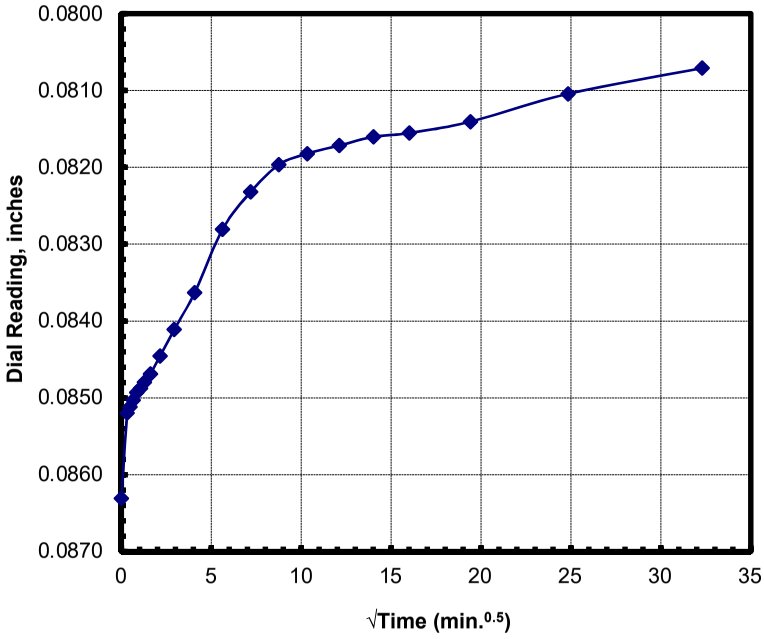


Project Number: 02541139	**LL: 58**	**$D_{0(min)}$ (in): 0.0886**	**d_0 (in): 0.0886**
Project Name: CPRA PO 181	**PL: 16**	**D_{end} (in): 0.0863**	**d_{100} (in): 0.0863**
Boring & Depth: M-2, S-4, 6-8 ft	**PL: 42**	**Δ_{hi} (in.): -0.0023**	**δ_{eop} (in.): -0.0023**
Sample: Gray SANDY FAT CLAY (CH)	**- 200 (%): 61**	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/8/20 2:33:13 PM	0.00	0.00	0.0863
12/8/20 2:33:19 PM	0.10	0.32	0.0852
12/8/20 2:33:26 PM	0.22	0.47	0.0851
12/8/20 2:33:38 PM	0.42	0.65	0.0850
12/8/20 2:33:56 PM	0.72	0.85	0.0849
12/8/20 2:34:20 PM	1.12	1.06	0.0849
12/8/20 2:34:50 PM	1.62	1.27	0.0848
12/8/20 2:35:50 PM	2.62	1.62	0.0847
12/8/20 2:37:50 PM	4.62	2.15	0.0845
12/8/20 2:41:50 PM	8.62	2.94	0.0841
12/8/20 2:49:50 PM	16.62	4.08	0.0836
12/8/20 3:04:51 PM	31.63	5.62	0.0828
12/8/20 3:24:51 PM	51.63	7.19	0.0823
12/8/20 3:49:51 PM	76.63	8.75	0.0820
12/8/20 4:19:51 PM	106.63	10.33	0.0818
12/8/20 4:59:51 PM	146.63	12.11	0.0817
12/8/20 5:49:51 PM	196.63	14.02	0.0816
12/8/20 6:49:52 PM	256.65	16.02	0.0816
12/8/20 8:49:52 PM	376.65	19.41	0.0814
12/9/20 12:49:52 AM	616.65	24.83	0.0810
12/9/20 7:56:12 AM	1042.98	32.30	0.0807



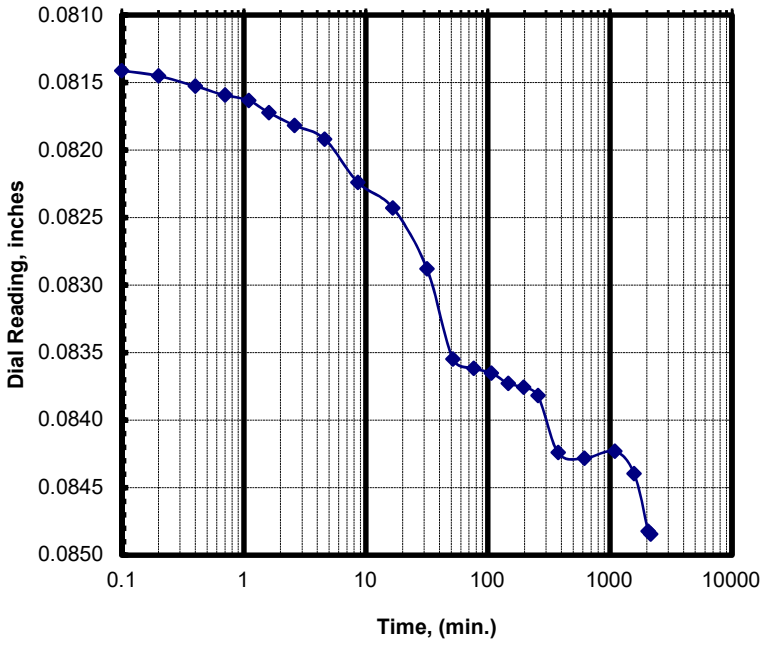


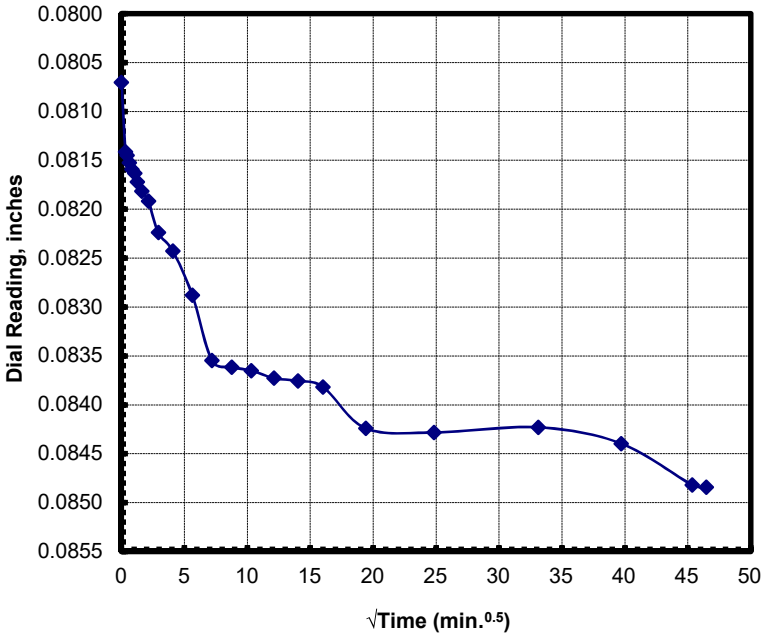
Project Number: 02541139	LL: 58	$D_{0(min)}$ (in): 0.0863	d_0 (in): 0.0863
Project Name: CPRA PO 181	PL: 16	D_{end} (in): 0.0807	d_{100} (in): 0.0807
Boring & Depth: M-2, S-4, 6-8 ft	PL: 42	Δ_{hi} (in.): -0.0056	δ_{eop} (in.): -0.0056
Sample: Gray SANDY FAT CLAY (CH)	- 200 (%): 61	t_{50} (min):	t_{90} (min):

Appendix Figure No. G.1-162

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/9/20 7:56:13 AM	0.00	0.00	0.0807
12/9/20 7:56:19 AM	0.10	0.32	0.0814
12/9/20 7:56:25 AM	0.20	0.45	0.0815
12/9/20 7:56:37 AM	0.40	0.63	0.0815
12/9/20 7:56:55 AM	0.70	0.84	0.0816
12/9/20 7:57:19 AM	1.10	1.05	0.0816
12/9/20 7:57:49 AM	1.60	1.26	0.0817
12/9/20 7:58:49 AM	2.60	1.61	0.0818
12/9/20 8:00:49 AM	4.60	2.14	0.0819
12/9/20 8:04:49 AM	8.60	2.93	0.0822
12/9/20 8:12:50 AM	16.62	4.08	0.0824
12/9/20 8:27:50 AM	31.62	5.62	0.0829
12/9/20 8:47:50 AM	51.62	7.18	0.0835
12/9/20 9:12:50 AM	76.62	8.75	0.0836
12/9/20 9:42:50 AM	106.62	10.33	0.0837
12/9/20 10:22:50 AM	146.62	12.11	0.0837
12/9/20 11:12:50 AM	196.62	14.02	0.0838
12/9/20 12:12:50 PM	256.62	16.02	0.0838
12/9/20 2:12:51 PM	376.63	19.41	0.0842
12/9/20 6:12:51 PM	616.63	24.83	0.0843
12/10/20 2:12:51 AM	1096.63	33.12	0.0842
12/10/20 10:12:52 AM	1576.65	39.71	0.0844
12/10/20 6:12:52 PM	2056.65	45.35	0.0848
12/10/20 7:56:24 PM	2160.18	46.48	0.0848

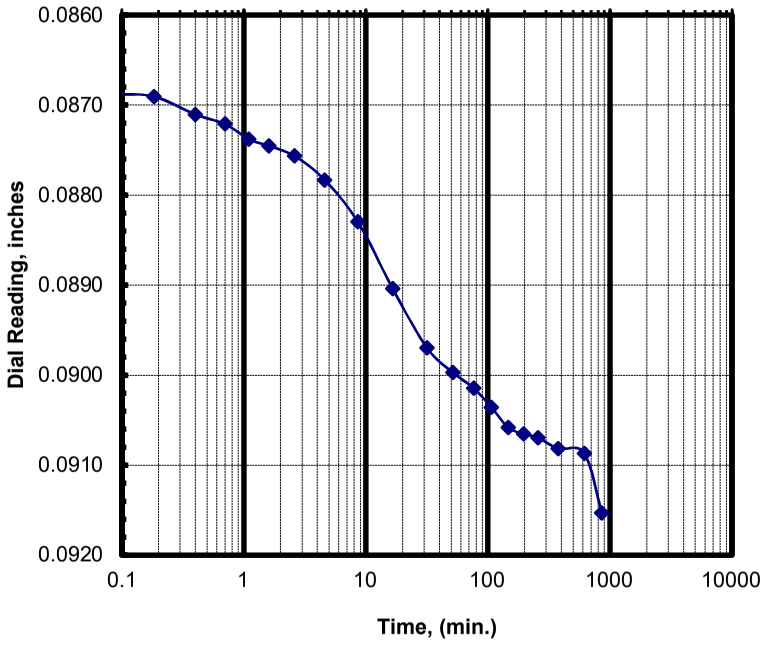


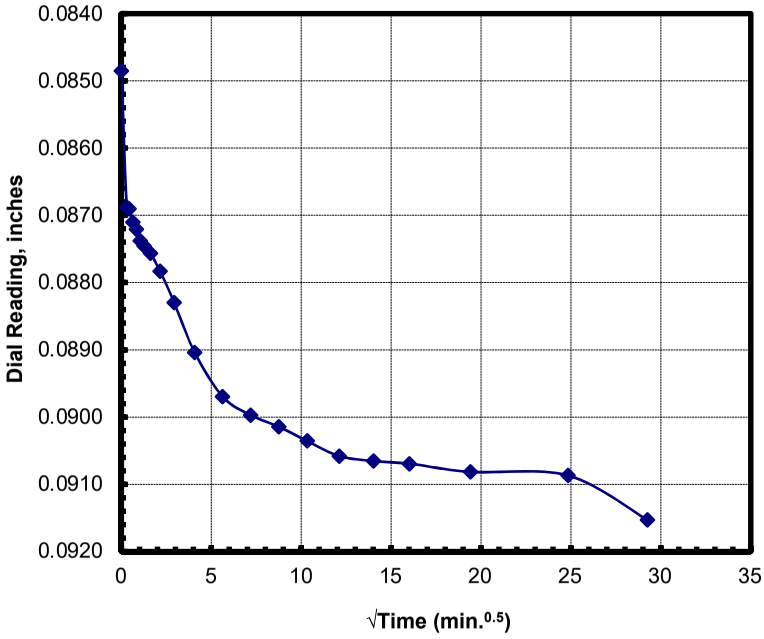


Project Number: 02541139	**LL:** 58	$D_{0(min)}$ **(in):** 0.0807	d_0 **(in):** 0.0807
Project Name: CPRA PO 181	**PL:** 16	D_{end} **(in):** 0.0848	d_{100} **(in):** 0.0836
Boring & Depth: M-2, S-4, 6-8 ft	**PL:** 42	Δ_{hi} **(in.):** 0.0041	δ_{eop} **(in.):** 0.0029
Sample: Gray SANDY FAT CLAY (CH)	**- 200 (%):** 61	t_{50} **(min):**	t_{90} **(min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/10/20 7:56:25 PM	0.00	0.00	0.0849
12/10/20 7:56:30 PM	0.08	0.29	0.0869
12/10/20 7:56:36 PM	0.18	0.43	0.0869
12/10/20 7:56:49 PM	0.40	0.63	0.0871
12/10/20 7:57:07 PM	0.70	0.84	0.0872
12/10/20 7:57:31 PM	1.10	1.05	0.0874
12/10/20 7:58:01 PM	1.60	1.26	0.0875
12/10/20 7:59:01 PM	2.60	1.61	0.0876
12/10/20 8:01:01 PM	4.60	2.14	0.0878
12/10/20 8:05:01 PM	8.60	2.93	0.0883
12/10/20 8:13:01 PM	16.60	4.07	0.0890
12/10/20 8:28:02 PM	31.62	5.62	0.0897
12/10/20 8:48:02 PM	51.62	7.18	0.0900
12/10/20 9:13:02 PM	76.62	8.75	0.0901
12/10/20 9:43:02 PM	106.62	10.33	0.0904
12/10/20 10:23:02 PM	146.62	12.11	0.0906
12/10/20 11:13:02 PM	196.62	14.02	0.0907
12/11/20 12:13:02 AM	256.62	16.02	0.0907
12/11/20 2:13:03 AM	376.63	19.41	0.0908
12/11/20 6:13:03 AM	616.63	24.83	0.0909
12/11/20 10:12:12 AM	855.78	29.25	0.0915

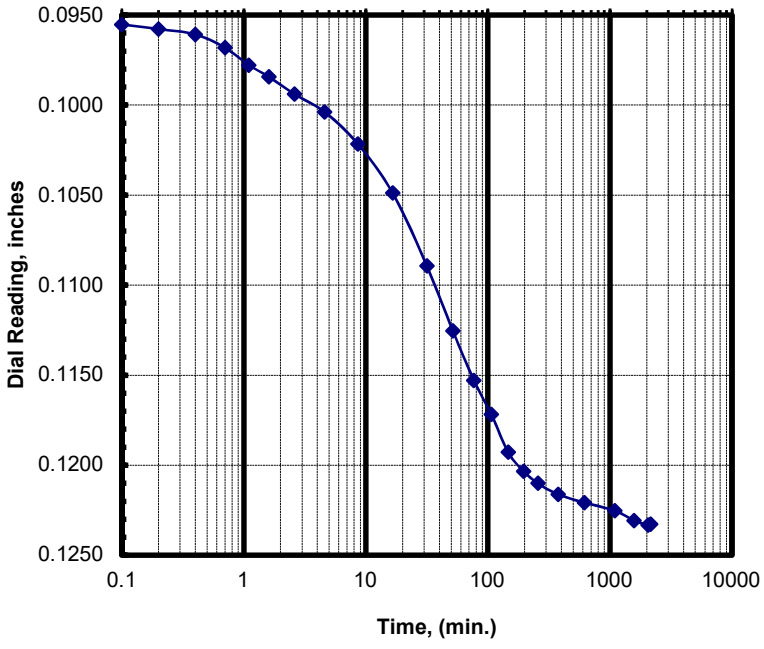


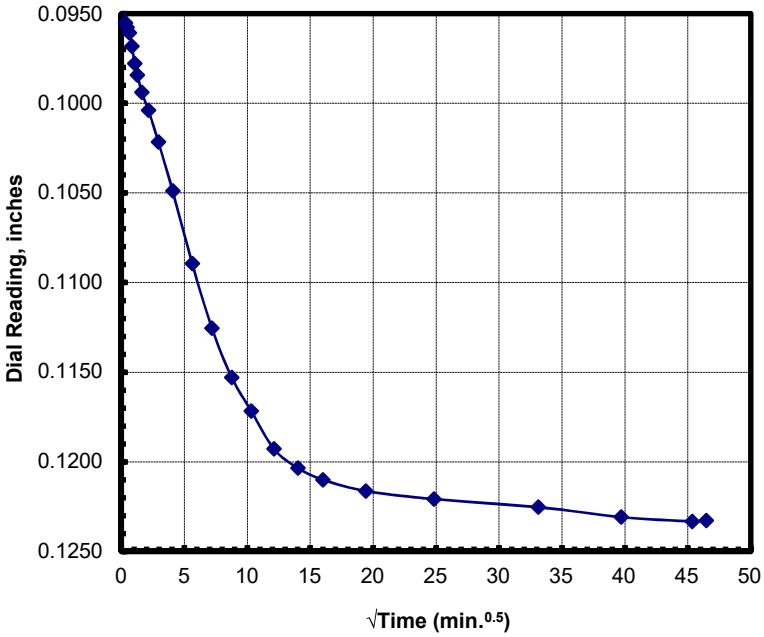


Project Number: 02541139	**LL:** 58	$D_{0(min)}$ (in): 0.0849	d_0 (in): 0.0849
Project Name: CPRA PO 181	**PL:** 16	D_{end} (in): 0.0915	d_{100} (in): 0.0904
Boring & Depth: M-2, S-4, 6-8 ft	**PL:** 42	Δ_{hi} (in.): 0.0067	δ_{eop} (in.): 0.0055
Sample: Gray SANDY FAT CLAY (CH)	**- 200 (%):** 61	t_{50} (min):	t_{90} (min):

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 8 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/11/20 10:12:13 AM	0.00	0.00	0.0915
12/11/20 10:12:19 AM	0.10	0.32	0.0955
12/11/20 10:12:25 AM	0.20	0.45	0.0958
12/11/20 10:12:37 AM	0.40	0.63	0.0961
12/11/20 10:12:55 AM	0.70	0.84	0.0968
12/11/20 10:13:19 AM	1.10	1.05	0.0978
12/11/20 10:13:49 AM	1.60	1.26	0.0984
12/11/20 10:14:49 AM	2.60	1.61	0.0994
12/11/20 10:16:49 AM	4.60	2.14	0.1004
12/11/20 10:20:49 AM	8.60	2.93	0.1022
12/11/20 10:28:49 AM	16.60	4.07	0.1049
12/11/20 10:43:50 AM	31.62	5.62	0.1089
12/11/20 11:03:50 AM	51.62	7.18	0.1125
12/11/20 11:28:50 AM	76.62	8.75	0.1153
12/11/20 11:58:50 AM	106.62	10.33	0.1172
12/11/20 12:38:50 PM	146.62	12.11	0.1193
12/11/20 1:28:50 PM	196.62	14.02	0.1203
12/11/20 2:28:50 PM	256.62	16.02	0.1210
12/11/20 4:28:50 PM	376.62	19.41	0.1216
12/11/20 8:28:51 PM	616.63	24.83	0.1221
12/12/20 4:28:51 AM	1096.63	33.12	0.1225
12/12/20 12:28:51 PM	1576.63	39.71	0.1231
12/12/20 8:29:40 PM	2057.45	45.36	0.1233
12/12/20 10:12:39 PM	2160.43	46.48	0.1233

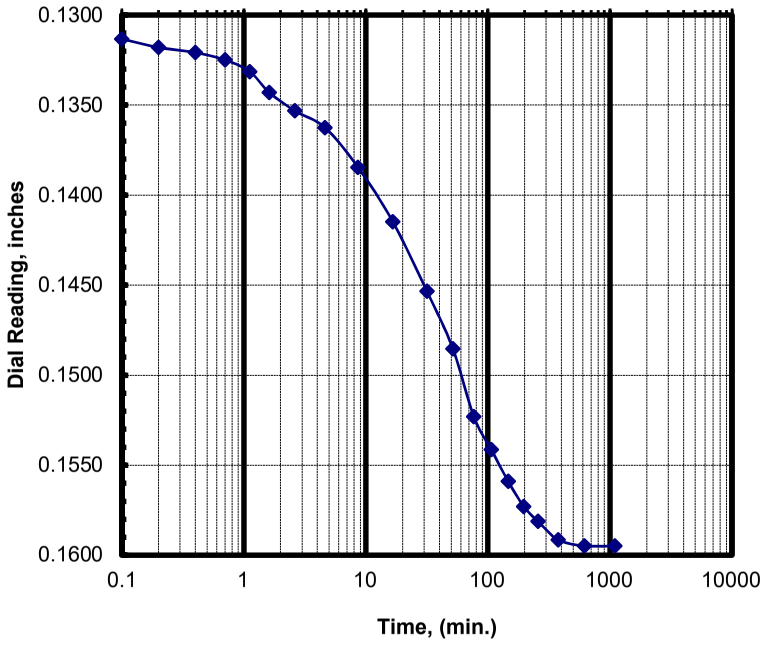


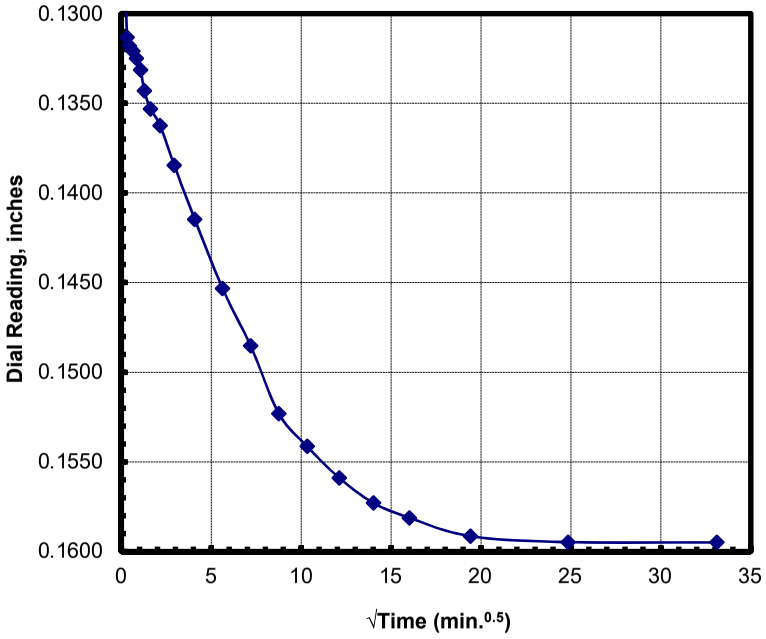


Project Number: 02541139	**LL: 58**	**$D_{0(min)}$ (in): 0.0915**	**d_0 (in): 0.0915**
Project Name: CPRA PO 181	**PL: 16**	**D_{end} (in): 0.1233**	**d_{100} (in): 0.1211**
Boring & Depth: M-2, S-4, 6-8 ft	**PL: 42**	**Δ_{hi} (in.): 0.0317**	**δ_{eop} (in.): 0.0296**
Sample: Gray SANDY FAT CLAY (CH)	**- 200 (%): 61**	**t_{50} (min): 21**	**t_{90} (min): 120**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 16 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/14/20 9:46:01 AM	0.00	0.00	0.1233
12/14/20 9:46:07 AM	0.10	0.32	0.1313
12/14/20 9:46:13 AM	0.20	0.45	0.1318
12/14/20 9:46:25 AM	0.40	0.63	0.1321
12/14/20 9:46:43 AM	0.70	0.84	0.1325
12/14/20 9:47:08 AM	1.12	1.06	0.1331
12/14/20 9:47:38 AM	1.62	1.27	0.1343
12/14/20 9:48:38 AM	2.62	1.62	0.1353
12/14/20 9:50:38 AM	4.62	2.15	0.1362
12/14/20 9:54:38 AM	8.62	2.94	0.1385
12/14/20 10:02:38 AM	16.62	4.08	0.1415
12/14/20 10:17:38 AM	31.62	5.62	0.1453
12/14/20 10:37:38 AM	51.62	7.18	0.1485
12/14/20 11:02:39 AM	76.63	8.75	0.1523
12/14/20 11:32:39 AM	106.63	10.33	0.1541
12/14/20 12:12:39 PM	146.63	12.11	0.1559
12/14/20 1:02:39 PM	196.63	14.02	0.1573
12/14/20 2:02:39 PM	256.63	16.02	0.1581
12/14/20 4:02:39 PM	376.63	19.41	0.1591
12/14/20 8:02:39 PM	616.63	24.83	0.1595
12/15/20 4:02:40 AM	1096.65	33.12	0.1595

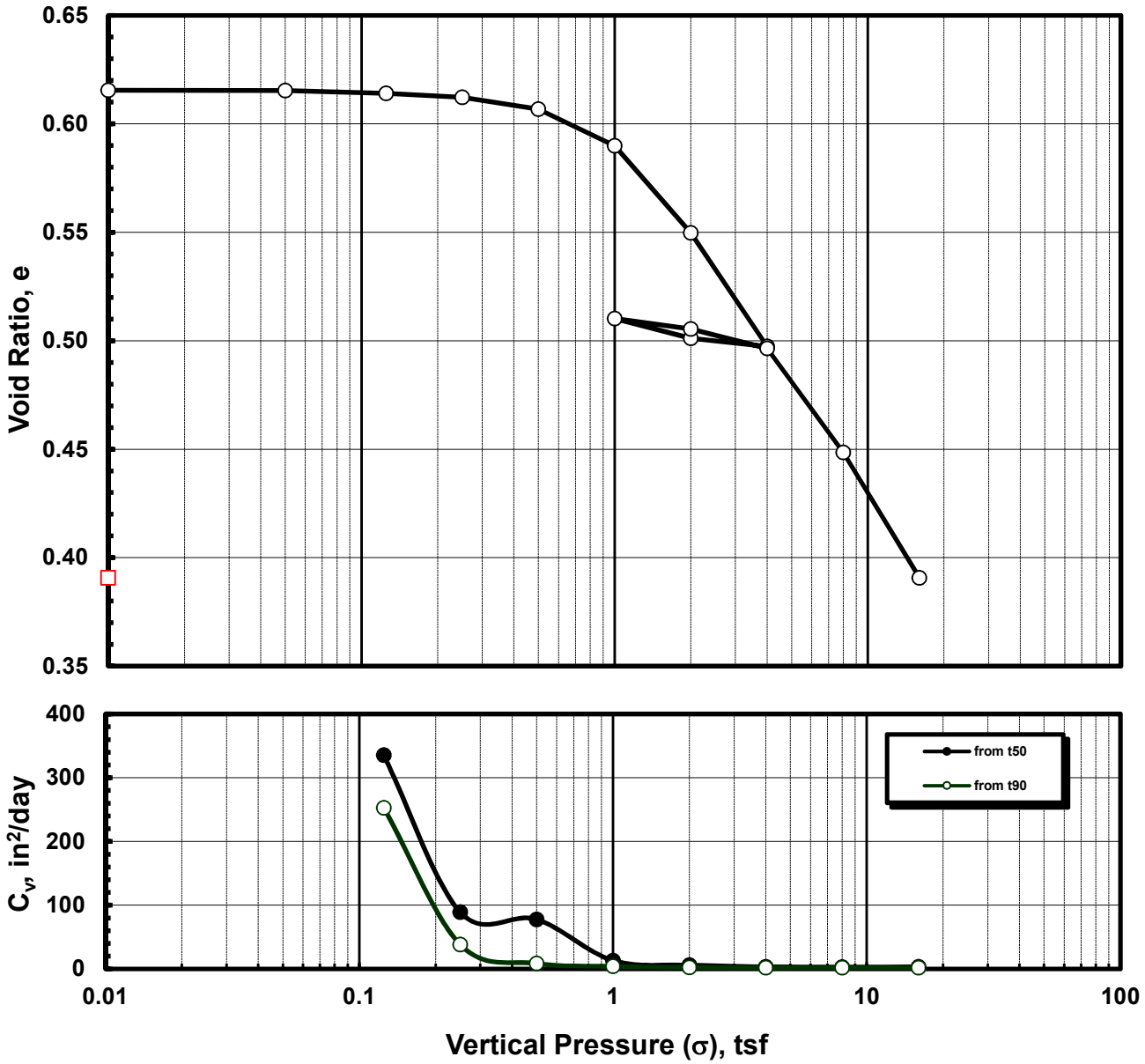




Project Number:	02541139	LL: 58	$D_{0(min)}$ (in): 0.1233	d_0 (in): 0.1233
Project Name:	CPRA PO 181	PL: 16	D_{end} (in): 0.1595	d_{100} (in): 0.1590
Boring & Depth:	M-2, S-4, 6-8 ft	PL: 42	Δ_{hi} (in.): 0.0465	δ_{eop} (in.): 0.0357
Sample:	Gray SANDY FAT CLAY (CH)	- 200 (%): 61	t_{50} (min): 17	t_{90} (min): 130

Appendix Figure No. G.1-166

CONSOLIDATION TEST RESULTS - ASTM D 2435

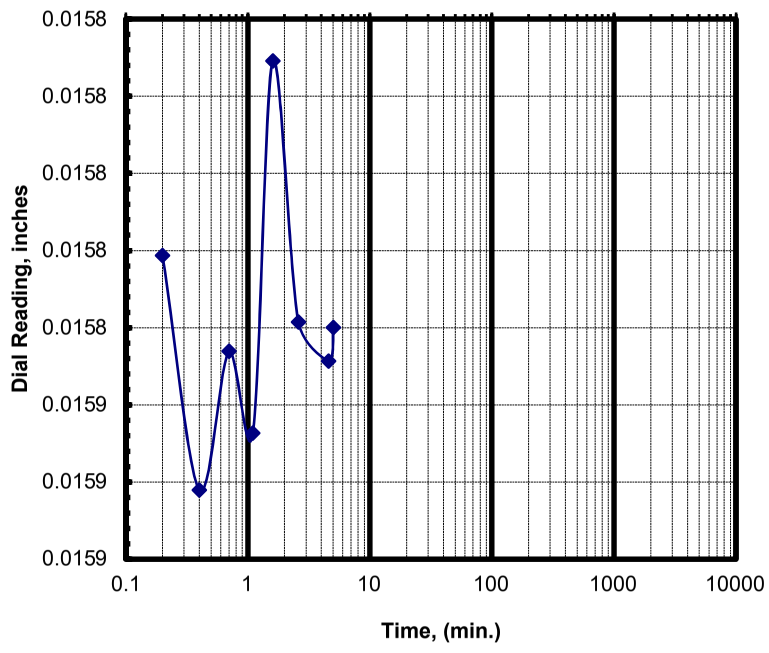


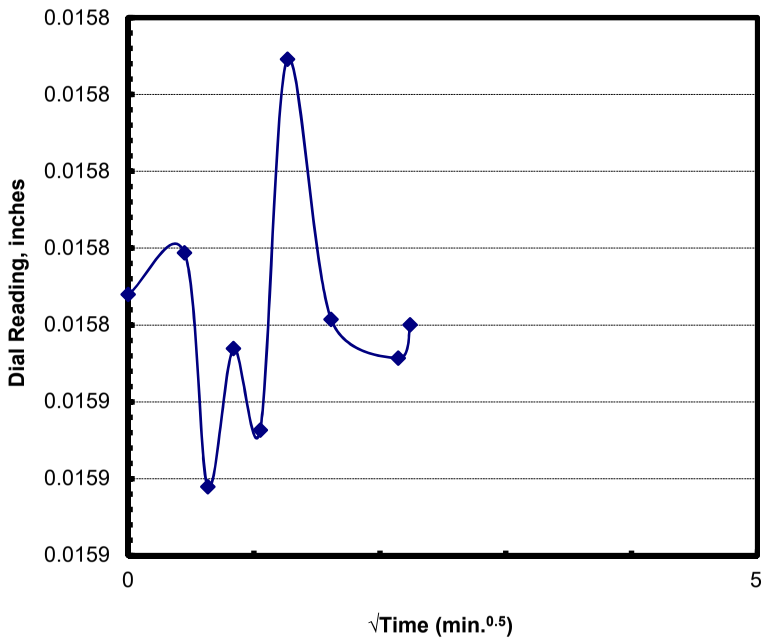
Sample Condition	Before	After	Consolidation Parameters	
Moisture Content, %:	22.0%	14.5%	Overburden Pressure, tsf:	0.2
Sample Height, in.:	0.9970	0.8583	Preconsolidation Pressure, tsf:	1.3
Void Ratio, e:	0.6155	0.3907	Compression Index, (Cc):	0.192
Unit Weight, pcf:	103.8	120.5	Re-Compression Index, (Cr)	0.023
Degree of Saturation:	0.96	1.00	Swell Index, Cs:	-

Project Number:	02541139	Liquid Limit:	58	Hand Pen:	0.55 tsf
Project Name	CPRA PO 181	Plastic Limit:	16	-200 %:	61
Boring No.:	M-2	Plasticity Index:	42	SPG:	2.686
Sample ID, Depth:	S-4, 6-8 ft	Classification:	Gray SANDY FAT CLAY (CH)		

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.05 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/8/20 10:28:44 AM	0.00	0.00	0.0158
12/8/20 10:28:56 AM	0.20	0.45	0.0158
12/8/20 10:29:08 AM	0.40	0.63	0.0159
12/8/20 10:29:26 AM	0.70	0.84	0.0158
12/8/20 10:29:50 AM	1.10	1.05	0.0159
12/8/20 10:30:20 AM	1.60	1.26	0.0158
12/8/20 10:31:20 AM	2.60	1.61	0.0158
12/8/20 10:33:20 AM	4.60	2.14	0.0158
12/8/20 10:33:45 AM	5.02	2.24	0.0158



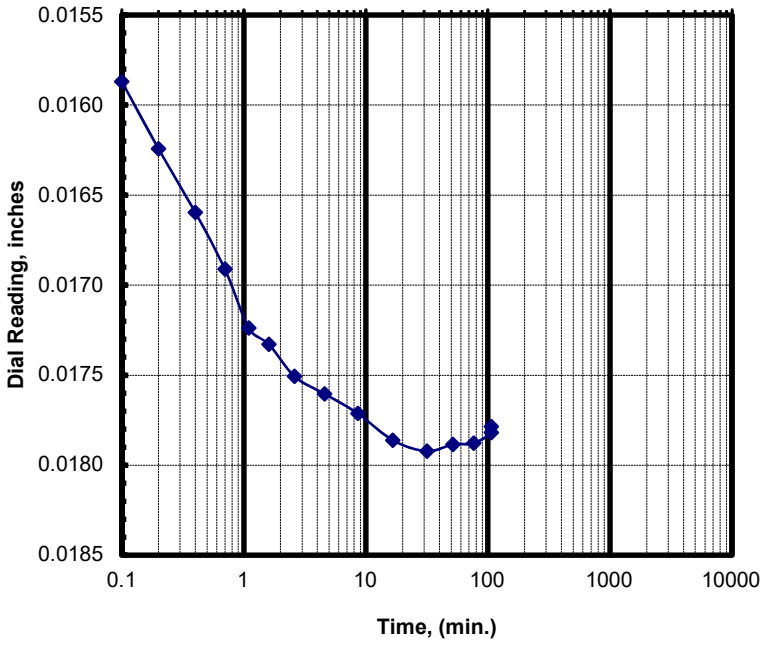


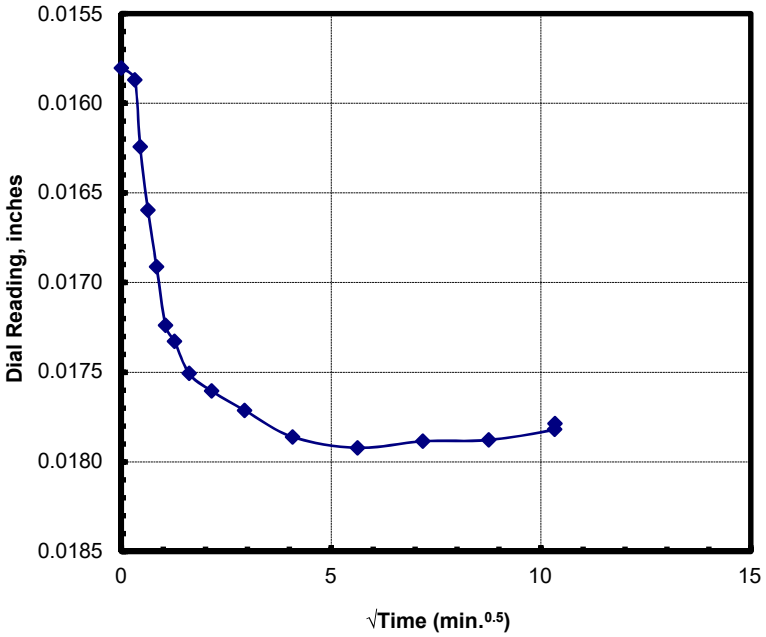
Project Number: 02541139	LL: NA	$D_{0(min)}$ (in): 0.0158	d_0 (in): 0.0158
Project Name: CPRA PO 181	PL: NA	D_{end} (in): 0.0158	d_{100} (in): 0.0158
Boring & Depth: M-4, S-3, 4-6 ft	PL: NA	Δ_{hi} (in.): 0.0000	δ_{eop} (in.): 0.0000
Sample: Gray LEAN CLAY WITH SAND	- 200 (%): 77	t_{50} (min):	t_{90} (min):

Appendix Figure No. G.1-168

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.125 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/8/20 10:33:45 AM	0.00	0.00	0.0158
12/8/20 10:33:51 AM	0.10	0.32	0.0159
12/8/20 10:33:57 AM	0.20	0.45	0.0162
12/8/20 10:34:09 AM	0.40	0.63	0.0166
12/8/20 10:34:27 AM	0.70	0.84	0.0169
12/8/20 10:34:51 AM	1.10	1.05	0.0172
12/8/20 10:35:21 AM	1.60	1.26	0.0173
12/8/20 10:36:21 AM	2.60	1.61	0.0175
12/8/20 10:38:21 AM	4.60	2.14	0.0176
12/8/20 10:42:22 AM	8.62	2.94	0.0177
12/8/20 10:50:22 AM	16.62	4.08	0.0179
12/8/20 11:05:22 AM	31.62	5.62	0.0179
12/8/20 11:25:22 AM	51.62	7.18	0.0179
12/8/20 11:50:22 AM	76.62	8.75	0.0179
12/8/20 12:20:22 PM	106.62	10.33	0.0178
12/8/20 12:20:29 PM	106.73	10.33	0.0178

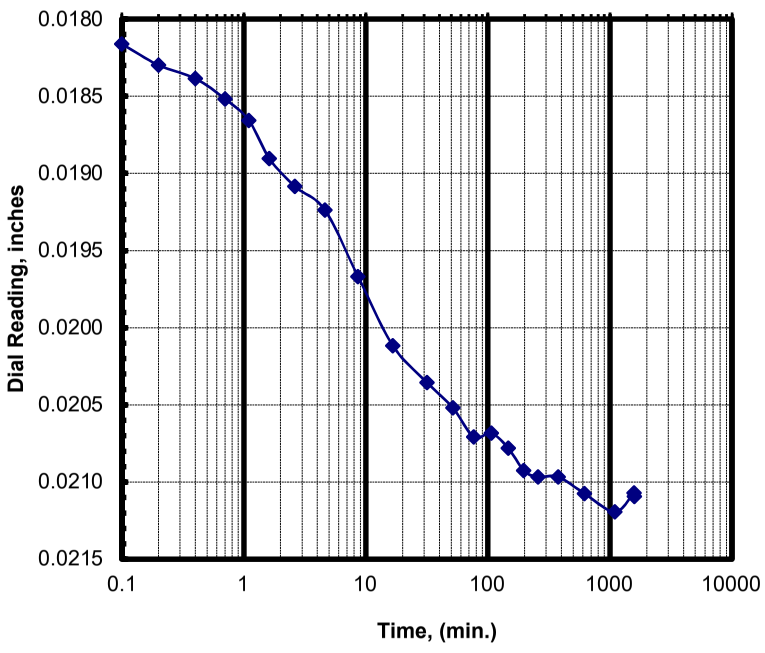


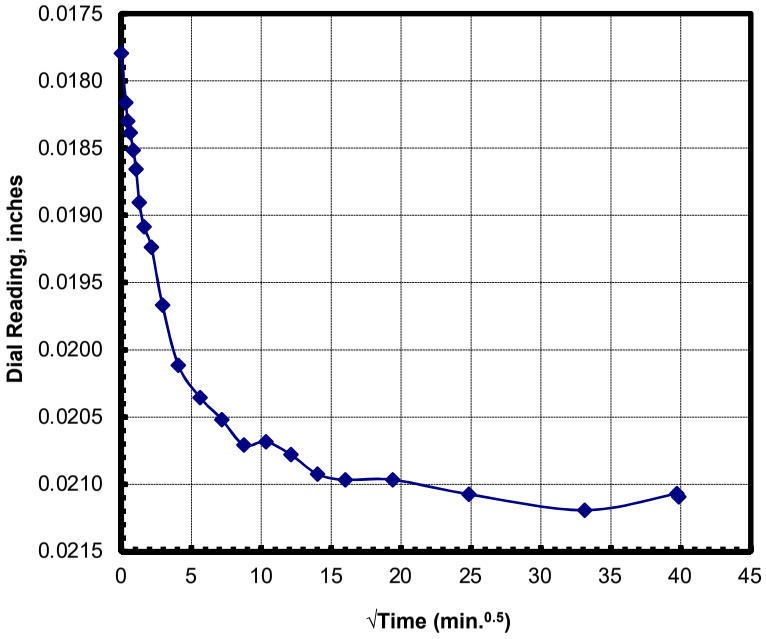


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0158	d_0 (in): 0.0158
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.0178	d_{100} (in): 0.0178
Boring & Depth: M-4, S-3, 4-6 ft	**PL:** NA	Δ_{hi} (in.): 0.0020	δ_{eop} (in.): 0.0020
Sample: Gray LEAN CLAY WITH SAND	**- 200 (%):** 77	t_{50} (min): 0.59	t_{90} (min): 4.7

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.25 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/8/20 12:20:29 PM	0.00	0.00	0.0178
12/8/20 12:20:35 PM	0.10	0.32	0.0182
12/8/20 12:20:41 PM	0.20	0.45	0.0183
12/8/20 12:20:53 PM	0.40	0.63	0.0184
12/8/20 12:21:11 PM	0.70	0.84	0.0185
12/8/20 12:21:35 PM	1.10	1.05	0.0187
12/8/20 12:22:06 PM	1.62	1.27	0.0189
12/8/20 12:23:06 PM	2.62	1.62	0.0191
12/8/20 12:25:06 PM	4.62	2.15	0.0192
12/8/20 12:29:06 PM	8.62	2.94	0.0197
12/8/20 12:37:06 PM	16.62	4.08	0.0201
12/8/20 12:52:06 PM	31.62	5.62	0.0204
12/8/20 1:12:06 PM	51.62	7.18	0.0205
12/8/20 1:37:06 PM	76.62	8.75	0.0207
12/8/20 2:07:06 PM	106.62	10.33	0.0207
12/8/20 2:47:06 PM	146.62	12.11	0.0208
12/8/20 3:37:06 PM	196.62	14.02	0.0209
12/8/20 4:37:06 PM	256.62	16.02	0.0210
12/8/20 6:37:06 PM	376.62	19.41	0.0210
12/8/20 10:37:07 PM	616.63	24.83	0.0211
12/9/20 6:37:07 AM	1096.63	33.12	0.0212
12/9/20 2:37:08 PM	1576.65	39.71	0.0211
12/9/20 2:48:24 PM	1587.92	39.85	0.0211





Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0178	d_0 (in): 0.0178
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.0211	d_{100} (in): 0.0205
Boring & Depth: M-4, S-3, 4-6 ft	**PL:** NA	Δ_{hi} (in.): 0.0033	δ_{eop} (in.): 0.0027
Sample: Gray LEAN CLAY WITH SAND	**- 200 (%):** 77	t_{50} (min): 2.7	t_{90} (min): 20

02541139 M-4 S-3 (M) 4-6' (NEW) (combined) RR

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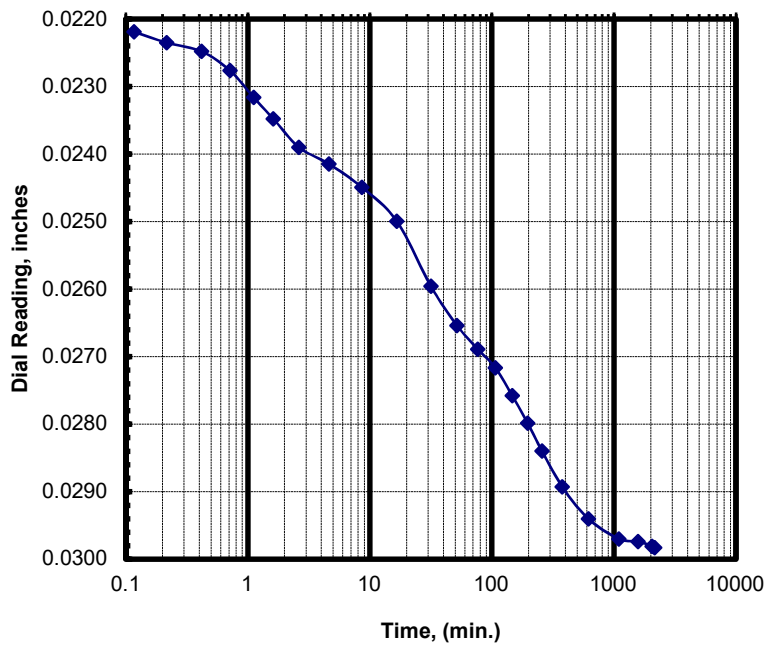
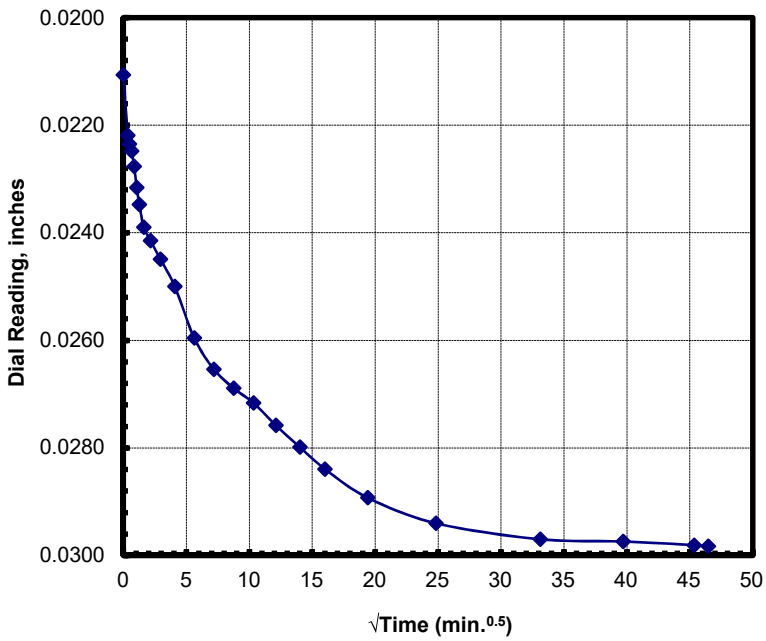
CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.5 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/9/20 2:48:24 PM	0.00	0.00	0.0211
12/9/20 2:48:31 PM	0.12	0.34	0.0222
12/9/20 2:48:37 PM	0.22	0.47	0.0224
12/9/20 2:48:49 PM	0.42	0.65	0.0225
12/9/20 2:49:07 PM	0.72	0.85	0.0228
12/9/20 2:49:31 PM	1.12	1.06	0.0232
12/9/20 2:50:01 PM	1.62	1.27	0.0235
12/9/20 2:51:01 PM	2.62	1.62	0.0239
12/9/20 2:53:01 PM	4.62	2.15	0.0241
12/9/20 2:57:01 PM	8.62	2.94	0.0245
12/9/20 3:05:01 PM	16.62	4.08	0.0250
12/9/20 3:20:01 PM	31.62	5.62	0.0260
12/9/20 3:40:01 PM	51.62	7.18	0.0265
12/9/20 4:05:02 PM	76.63	8.75	0.0269
12/9/20 4:35:02 PM	106.63	10.33	0.0272
12/9/20 5:15:02 PM	146.63	12.11	0.0276
12/9/20 6:05:02 PM	196.63	14.02	0.0280
12/9/20 7:05:02 PM	256.63	16.02	0.0284
12/9/20 9:05:02 PM	376.63	19.41	0.0289
12/10/20 1:05:02 AM	616.63	24.83	0.0294
12/10/20 9:05:03 AM	1096.65	33.12	0.0297
12/10/20 5:05:03 PM	1576.65	39.71	0.0297
12/11/20 1:05:04 AM	2056.67	45.35	0.0298
12/11/20 2:48:42 AM	2160.30	46.48	0.0298





Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.0211**	**d_0 (in): 0.0211**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.0298**	**d_{100} (in): 0.0264**
Boring & Depth: M-4, S-3, 4-6 ft	**PL: NA**	**Δ_{hi} (in.): 0.0088**	**δ_{eop} (in.): 0.0053**
Sample: Gray LEAN CLAY WITH SAND	**- 200 (%): 77**	**t_{50} (min): 2**	**t_{90} (min): 30**

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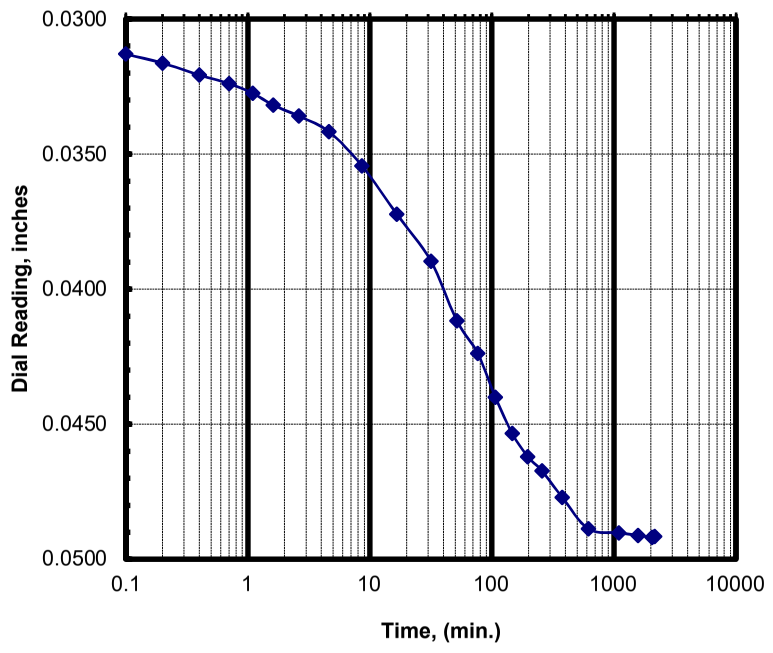
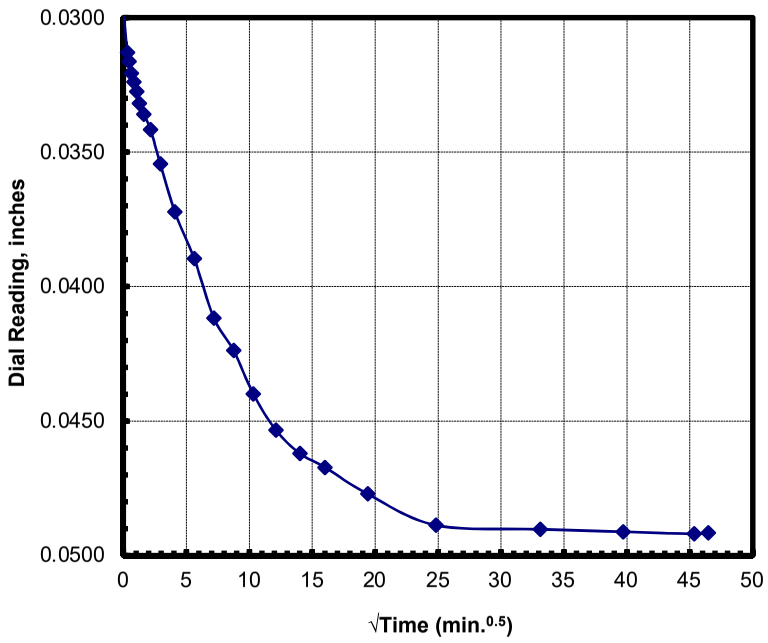
02541139 M-4 S-3 (M) 4-6' (NEW) (combined) RR

Appendix Figure No. G.1-171

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/11/20 2:48:42 AM	0.00	0.00	0.0298
12/11/20 2:48:48 AM	0.10	0.32	0.0313
12/11/20 2:48:54 AM	0.20	0.45	0.0316
12/11/20 2:49:06 AM	0.40	0.63	0.0321
12/11/20 2:49:24 AM	0.70	0.84	0.0324
12/11/20 2:49:48 AM	1.10	1.05	0.0328
12/11/20 2:50:19 AM	1.62	1.27	0.0332
12/11/20 2:51:19 AM	2.62	1.62	0.0336
12/11/20 2:53:19 AM	4.62	2.15	0.0342
12/11/20 2:57:19 AM	8.62	2.94	0.0354
12/11/20 3:05:19 AM	16.62	4.08	0.0372
12/11/20 3:20:19 AM	31.62	5.62	0.0390
12/11/20 3:40:19 AM	51.62	7.18	0.0412
12/11/20 4:05:19 AM	76.62	8.75	0.0424
12/11/20 4:35:19 AM	106.62	10.33	0.0440
12/11/20 5:15:19 AM	146.62	12.11	0.0453
12/11/20 6:05:19 AM	196.62	14.02	0.0462
12/11/20 7:05:19 AM	256.62	16.02	0.0467
12/11/20 9:05:20 AM	376.63	19.41	0.0477
12/11/20 1:05:20 PM	616.63	24.83	0.0489
12/11/20 9:05:21 PM	1096.65	33.12	0.0490
12/12/20 5:05:21 AM	1576.65	39.71	0.0491
12/12/20 1:05:21 PM	2056.65	45.35	0.0492
12/12/20 2:48:56 PM	2160.23	46.48	0.0492





Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.0298**	**d_0 (in): 0.0298**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.0492**	**d_{100} (in): 0.0488**
Boring & Depth: M-4, S-3, 4-6 ft	**PL: NA**	**Δ_{hi} (in.): 0.0193**	**δ_{eop} (in.): 0.0190**
Sample: Gray LEAN CLAY WITH SAND	**- 200 (%): 77**	**t_{50} (min): 35**	**t_{90} (min): 280**

02541139 M-4 S-3 (M) 4-6' (NEW) (combined) RR

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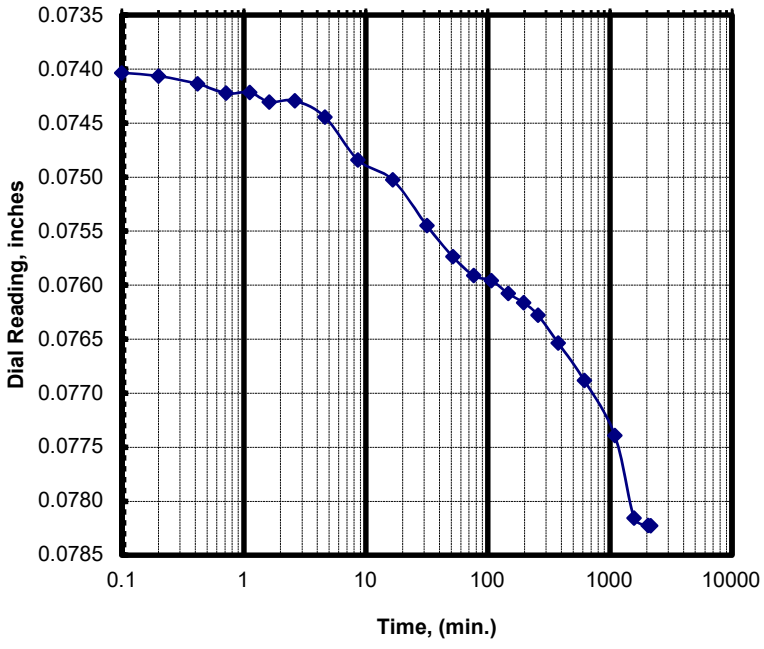
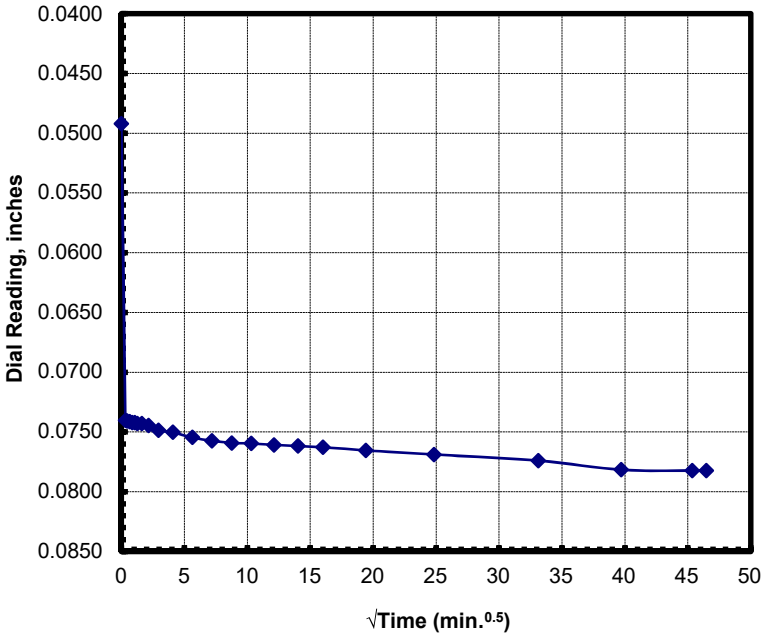
CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/14/20 9:38:08 AM	0.00	0.00	0.0492
12/14/20 9:38:14 AM	0.10	0.32	0.0740
12/14/20 9:38:20 AM	0.20	0.45	0.0741
12/14/20 9:38:33 AM	0.42	0.65	0.0741
12/14/20 9:38:51 AM	0.72	0.85	0.0742
12/14/20 9:39:15 AM	1.12	1.06	0.0742
12/14/20 9:39:45 AM	1.62	1.27	0.0743
12/14/20 9:40:45 AM	2.62	1.62	0.0743
12/14/20 9:42:45 AM	4.62	2.15	0.0744
12/14/20 9:46:45 AM	8.62	2.94	0.0748
12/14/20 9:54:45 AM	16.62	4.08	0.0750
12/14/20 10:09:45 AM	31.62	5.62	0.0754
12/14/20 10:29:45 AM	51.62	7.18	0.0757
12/14/20 10:54:45 AM	76.62	8.75	0.0759
12/14/20 11:24:45 AM	106.62	10.33	0.0760
12/14/20 12:04:45 PM	146.62	12.11	0.0761
12/14/20 12:54:45 PM	196.62	14.02	0.0762
12/14/20 1:54:46 PM	256.63	16.02	0.0763
12/14/20 3:54:46 PM	376.63	19.41	0.0765
12/14/20 7:54:46 PM	616.63	24.83	0.0769
12/15/20 3:54:46 AM	1096.63	33.12	0.0774
12/15/20 11:54:47 AM	1576.65	39.71	0.0782
12/15/20 7:54:47 PM	2056.65	45.35	0.0782
12/15/20 9:38:30 PM	2160.37	46.48	0.0782





Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.0492**	**d_0 (in): 0.0492**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.0782**	**d_{100} (in): 0.0759**
Boring & Depth: M-4, S-3, 4-6 ft	**PL: NA**	**Δ_{hi} (in.): 0.0076**	**δ_{eop} (in.): 0.0267**
Sample: Gray LEAN CLAY WITH SAND	**- 200 (%): 77**	**t_{50} (min): 17**	**t_{90} (min): 50**

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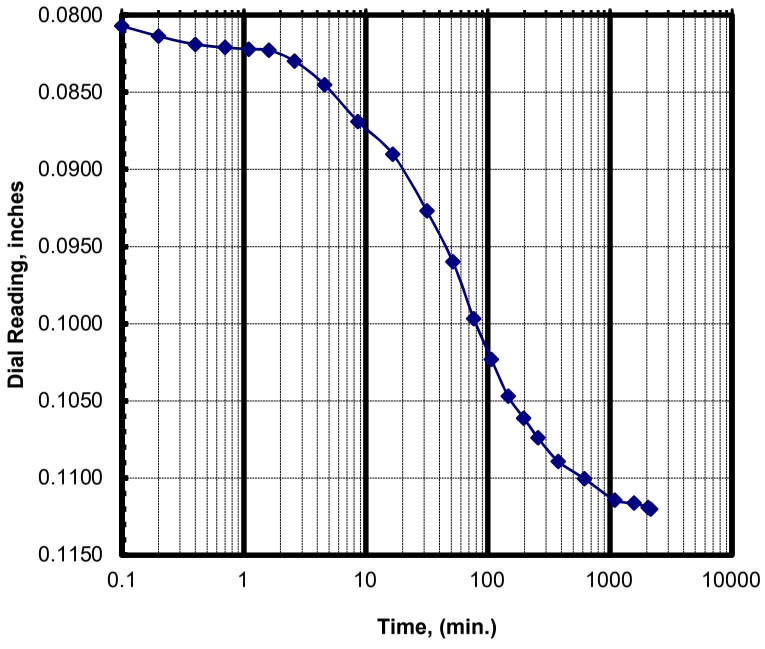
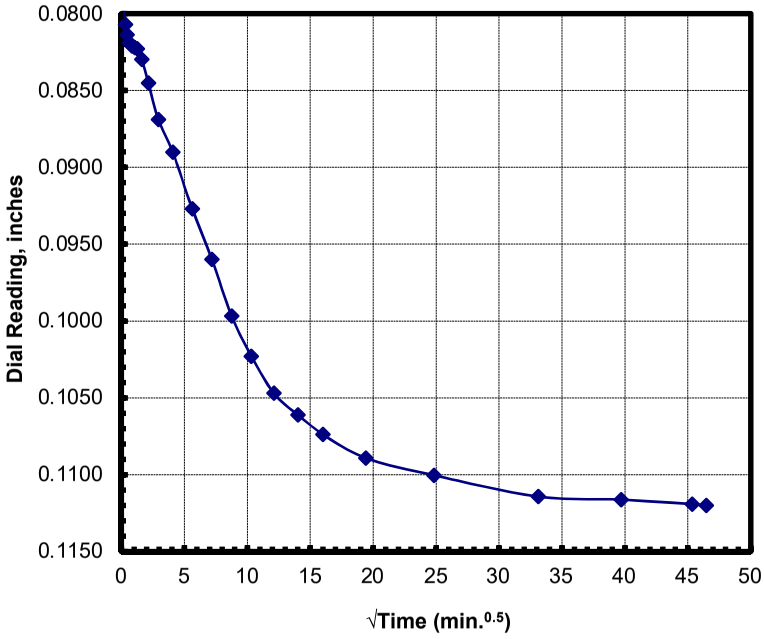
02541139 M-4 S-3 (M) 4-6' (NEW) (combined) RR

Appendix Figure No. G.1-173

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/15/20 9:38:30 PM	0.00	0.00	0.0782
12/15/20 9:38:36 PM	0.10	0.32	0.0807
12/15/20 9:38:42 PM	0.20	0.45	0.0814
12/15/20 9:38:54 PM	0.40	0.63	0.0819
12/15/20 9:39:12 PM	0.70	0.84	0.0821
12/15/20 9:39:36 PM	1.10	1.05	0.0822
12/15/20 9:40:06 PM	1.60	1.26	0.0823
12/15/20 9:41:06 PM	2.60	1.61	0.0830
12/15/20 9:43:06 PM	4.60	2.14	0.0845
12/15/20 9:47:06 PM	8.60	2.93	0.0869
12/15/20 9:55:06 PM	16.60	4.07	0.0890
12/15/20 10:10:07 PM	31.62	5.62	0.0927
12/15/20 10:30:07 PM	51.62	7.18	0.0960
12/15/20 10:55:07 PM	76.62	8.75	0.0997
12/15/20 11:25:07 PM	106.62	10.33	0.1023
12/16/20 12:05:07 AM	146.62	12.11	0.1047
12/16/20 12:55:07 AM	196.62	14.02	0.1061
12/16/20 1:55:07 AM	256.62	16.02	0.1074
12/16/20 3:55:07 AM	376.62	19.41	0.1089
12/16/20 7:55:07 AM	616.62	24.83	0.1100
12/16/20 3:55:08 PM	1096.63	33.12	0.1114
12/16/20 11:55:08 PM	1576.63	39.71	0.1116
12/17/20 7:55:09 AM	2056.65	45.35	0.1119
12/17/20 9:38:51 AM	2160.35	46.48	0.1120





Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0782	d_0 (in): 0.0782
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.1120	d_{100} (in): 0.1098
Boring & Depth: M-4, S-3, 4-6 ft	**PL:** NA	Δ_{hi} (in.): 0.0338	δ_{eop} (in.): 0.0316
Sample: Gray LEAN CLAY WITH SAND	**- 200 (%):** 77	t_{50} (min): 40	t_{90} (min): 210

02541139 M-4 S-3 (M) 4-6' (NEW) (combined) RR

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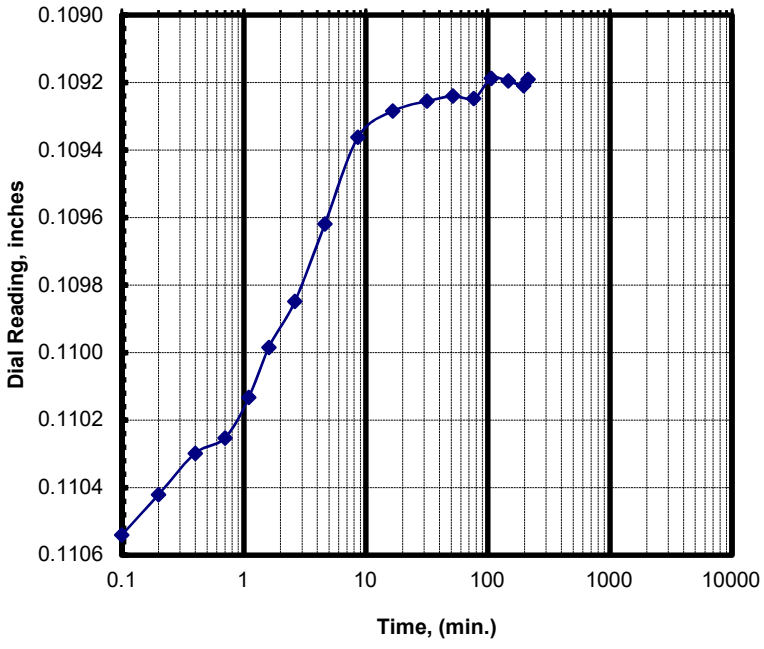
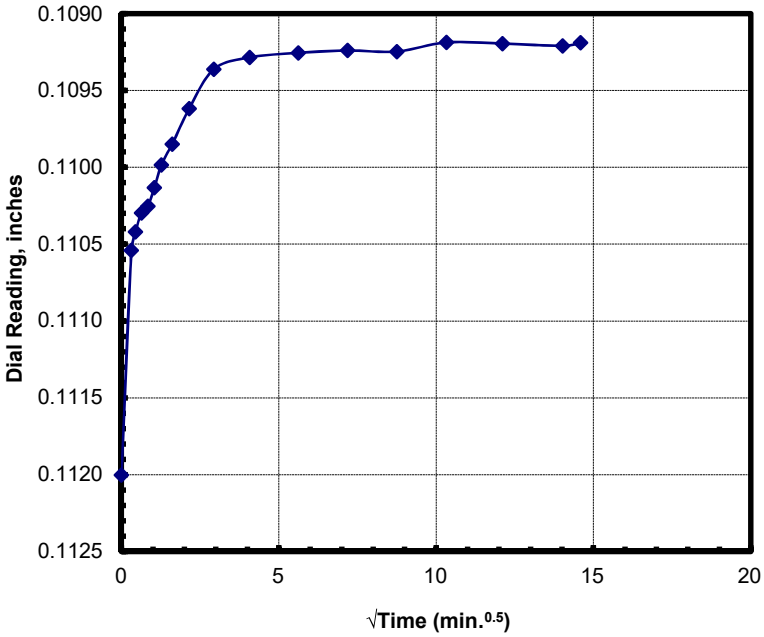
Appendix Figure No. G.1-174

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/17/20 9:38:51 AM	0.00	0.00	0.1120
12/17/20 9:38:57 AM	0.10	0.32	0.1105
12/17/20 9:39:03 AM	0.20	0.45	0.1104
12/17/20 9:39:15 AM	0.40	0.63	0.1103
12/17/20 9:39:33 AM	0.70	0.84	0.1103
12/17/20 9:39:57 AM	1.10	1.05	0.1101
12/17/20 9:40:27 AM	1.60	1.26	0.1100
12/17/20 9:41:28 AM	2.62	1.62	0.1098
12/17/20 9:43:28 AM	4.62	2.15	0.1096
12/17/20 9:47:28 AM	8.62	2.94	0.1094
12/17/20 9:55:28 AM	16.62	4.08	0.1093
12/17/20 10:10:28 AM	31.62	5.62	0.1093
12/17/20 10:30:28 AM	51.62	7.18	0.1092
12/17/20 10:55:28 AM	76.62	8.75	0.1092
12/17/20 11:25:28 AM	106.62	10.33	0.1092
12/17/20 12:05:28 PM	146.62	12.11	0.1092
12/17/20 12:55:29 PM	196.63	14.02	0.1092
12/17/20 1:11:47 PM	212.93	14.59	0.1092

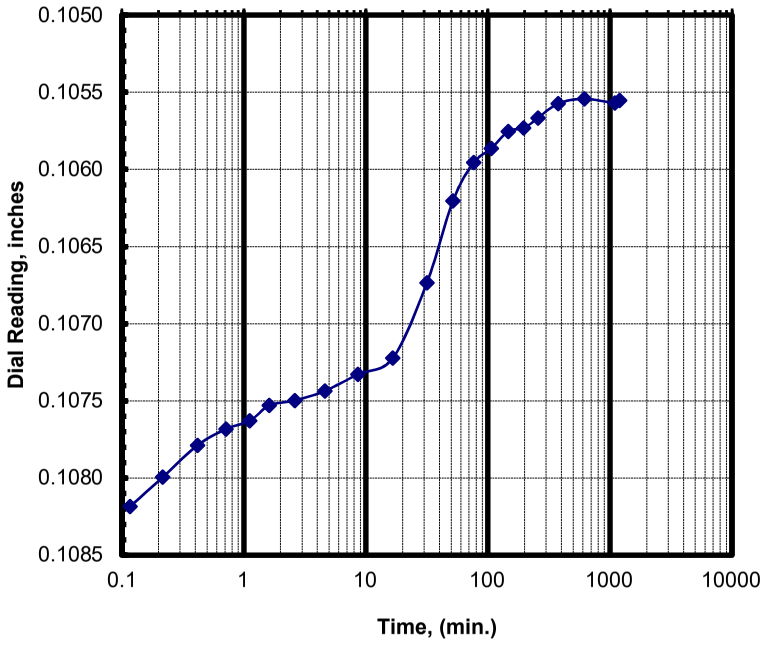


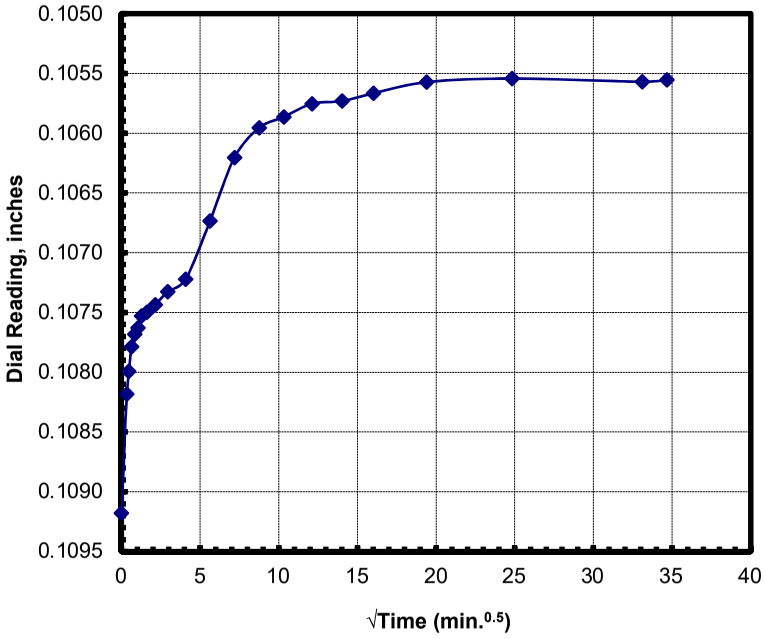


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.1120**	**d_0 (in): 0.1120**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.1092**	**d_{100} (in): 0.1092**
Boring & Depth: M-4, S-3, 4-6 ft	**PL: NA**	**Δ_{hi} (in.): -0.0028**	**δ_{eop} (in.): -0.0028**
Sample: Gray LEAN CLAY WITH SAND	**- 200 (%): 77**	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/17/20 1:11:47 PM	0.00	0.00	0.1092
12/17/20 1:11:54 PM	0.12	0.34	0.1082
12/17/20 1:12:00 PM	0.22	0.47	0.1080
12/17/20 1:12:12 PM	0.42	0.65	0.1078
12/17/20 1:12:30 PM	0.72	0.85	0.1077
12/17/20 1:12:54 PM	1.12	1.06	0.1076
12/17/20 1:13:24 PM	1.62	1.27	0.1075
12/17/20 1:14:24 PM	2.62	1.62	0.1075
12/17/20 1:16:24 PM	4.62	2.15	0.1074
12/17/20 1:20:24 PM	8.62	2.94	0.1073
12/17/20 1:28:24 PM	16.62	4.08	0.1072
12/17/20 1:43:24 PM	31.62	5.62	0.1067
12/17/20 2:03:24 PM	51.62	7.18	0.1062
12/17/20 2:28:24 PM	76.62	8.75	0.1060
12/17/20 2:58:24 PM	106.62	10.33	0.1059
12/17/20 3:38:25 PM	146.63	12.11	0.1058
12/17/20 4:28:25 PM	196.63	14.02	0.1057
12/17/20 5:28:25 PM	256.63	16.02	0.1057
12/17/20 7:28:25 PM	376.63	19.41	0.1056
12/17/20 11:28:25 PM	616.63	24.83	0.1055
12/18/20 7:28:26 AM	1096.65	33.12	0.1056
12/18/20 9:14:20 AM	1202.55	34.68	0.1056





Project Number: 02541139	**LL:** NA	**$D_{0(min)}$ (in):** 0.1092	**d_0 (in):** 0.1092
Project Name: CPRA PO 181	**PL:** NA	**D_{end} (in):** 0.1056	**d_{100} (in):** 0.1056
Boring & Depth: M-4, S-3, 4-6 ft	**PL:** NA	**Δ_{hi} (in.):** -0.0036	**δ_{eop} (in.):** -0.0036
Sample: Gray LEAN CLAY WITH SAND	**- 200 (%):** 77	**t_{50} (min):**	**t_{90} (min):**

02541139 M-4 S-3 (M) 4-6' (NEW) (combined) RR

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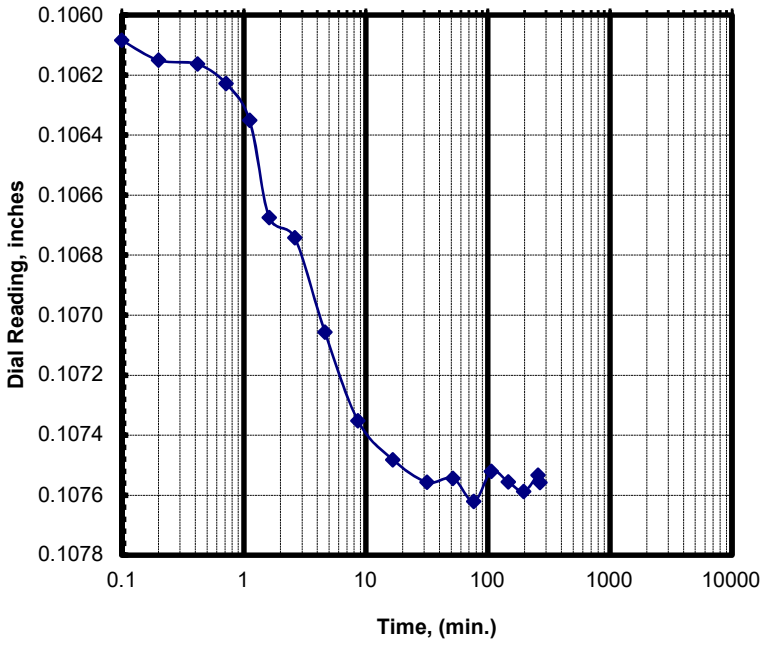
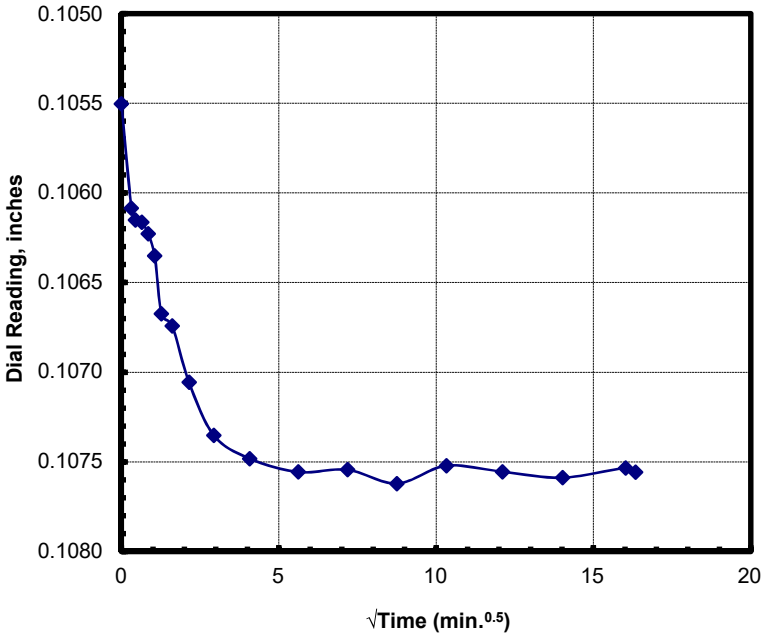
CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/18/20 9:14:20 AM	0.00	0.00	0.1055
12/18/20 9:14:26 AM	0.10	0.32	0.1061
12/18/20 9:14:32 AM	0.20	0.45	0.1062
12/18/20 9:14:45 AM	0.42	0.65	0.1062
12/18/20 9:15:03 AM	0.72	0.85	0.1062
12/18/20 9:15:27 AM	1.12	1.06	0.1064
12/18/20 9:15:57 AM	1.62	1.27	0.1067
12/18/20 9:16:57 AM	2.62	1.62	0.1067
12/18/20 9:18:57 AM	4.62	2.15	0.1071
12/18/20 9:22:57 AM	8.62	2.94	0.1074
12/18/20 9:30:57 AM	16.62	4.08	0.1075
12/18/20 9:45:57 AM	31.62	5.62	0.1076
12/18/20 10:05:57 AM	51.62	7.18	0.1075
12/18/20 10:30:57 AM	76.62	8.75	0.1076
12/18/20 11:00:57 AM	106.62	10.33	0.1075
12/18/20 11:40:57 AM	146.62	12.11	0.1076
12/18/20 12:30:58 PM	196.63	14.02	0.1076
12/18/20 1:30:58 PM	256.63	16.02	0.1075
12/18/20 1:41:24 PM	267.07	16.34	0.1076

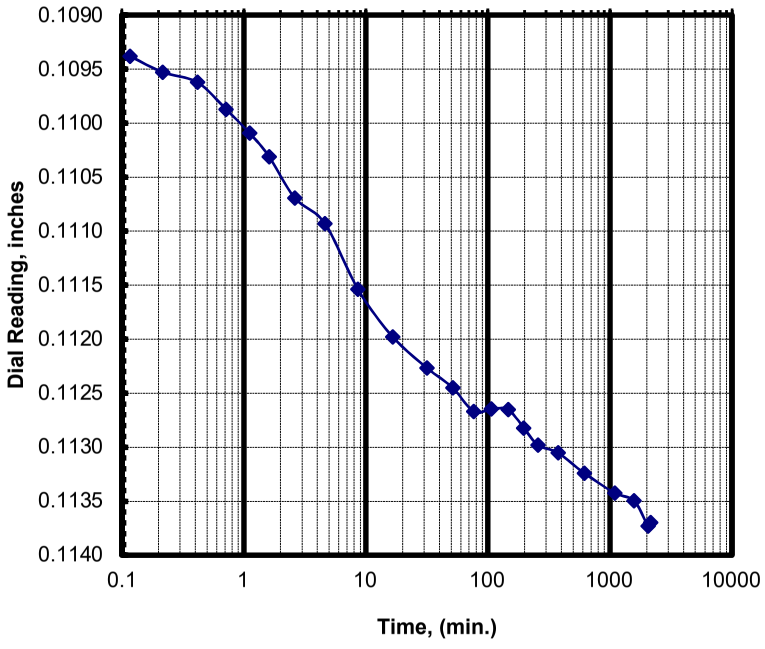


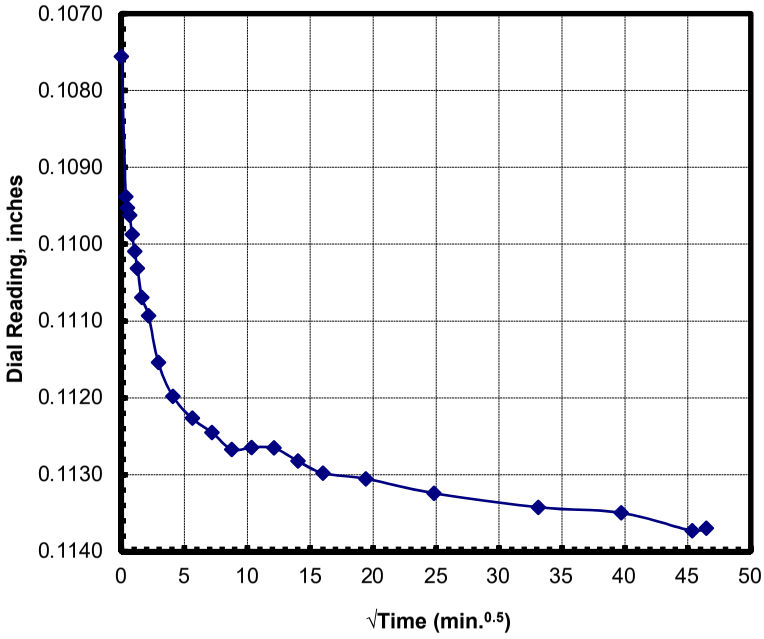


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.1055**	**d_0 (in): 0.1055**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.1076**	**d_{100} (in): 0.1075**
Boring & Depth: M-4, S-3, 4-6 ft	**PL: NA**	**Δ_{hi} (in.): 0.0021**	**δ_{eop} (in.): 0.0020**
Sample: Gray LEAN CLAY WITH SAND	**- 200 (%): 77**	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/18/20 1:41:24 PM	0.00	0.00	0.1076
12/18/20 1:41:31 PM	0.12	0.34	0.1094
12/18/20 1:41:37 PM	0.22	0.47	0.1095
12/18/20 1:41:49 PM	0.42	0.65	0.1096
12/18/20 1:42:07 PM	0.72	0.85	0.1099
12/18/20 1:42:31 PM	1.12	1.06	0.1101
12/18/20 1:43:01 PM	1.62	1.27	0.1103
12/18/20 1:44:01 PM	2.62	1.62	0.1107
12/18/20 1:46:01 PM	4.62	2.15	0.1109
12/18/20 1:50:01 PM	8.62	2.94	0.1115
12/18/20 1:58:01 PM	16.62	4.08	0.1120
12/18/20 2:13:01 PM	31.62	5.62	0.1123
12/18/20 2:33:01 PM	51.62	7.18	0.1125
12/18/20 2:58:02 PM	76.63	8.75	0.1127
12/18/20 3:28:02 PM	106.63	10.33	0.1126
12/18/20 4:08:02 PM	146.63	12.11	0.1127
12/18/20 4:58:02 PM	196.63	14.02	0.1128
12/18/20 5:58:02 PM	256.63	16.02	0.1130
12/18/20 7:58:02 PM	376.63	19.41	0.1131
12/18/20 11:58:03 PM	616.65	24.83	0.1132
12/19/20 7:58:03 AM	1096.65	33.12	0.1134
12/19/20 3:58:03 PM	1576.65	39.71	0.1135
12/19/20 11:58:04 PM	2056.67	45.35	0.1137
12/20/20 1:41:25 AM	2160.02	46.48	0.1137



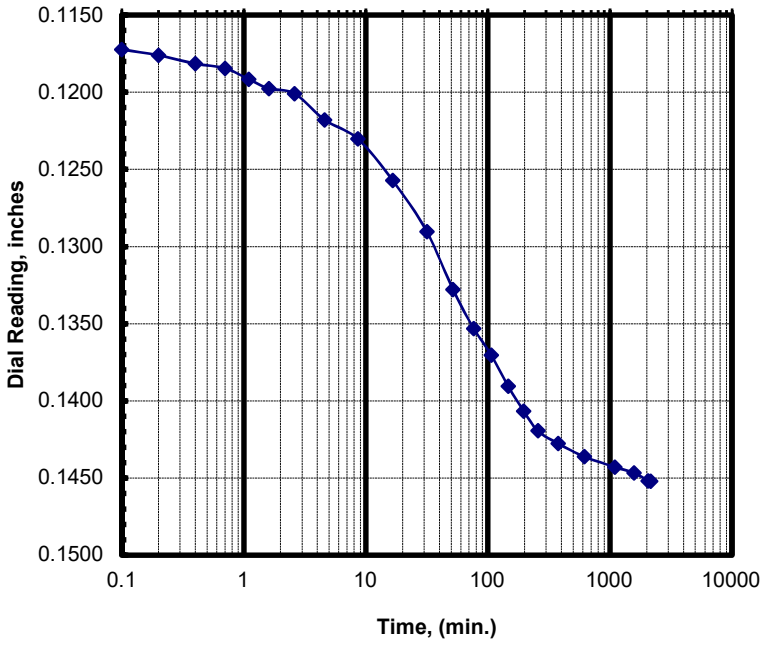


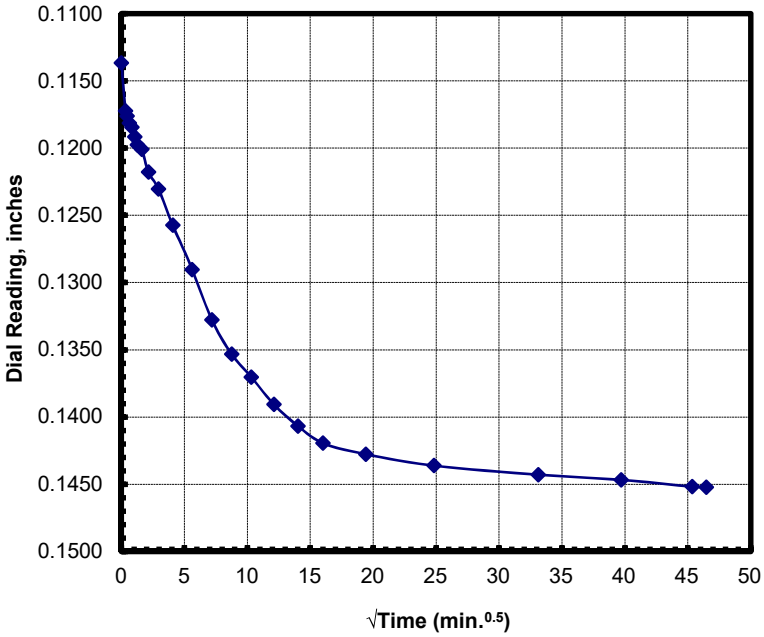
Project Number: 02541139	**LL:** NA	**$D_{0(min)}$ (in):** 0.1076	**d_0 (in):** 0.1076
Project Name: CPRA PO 181	**PL:** NA	**D_{end} (in):** 0.1137	**d_{100} (in):** 0.1126
Boring & Depth: M-4, S-3, 4-6 ft	**PL:** NA	**Δ_{hi} (in.):** 0.0061	**δ_{eop} (in.):** 0.0050
Sample: Gray LEAN CLAY WITH SAND	**- 200 (%):** 77	**t_{50} (min):**	**t_{90} (min):**

Appendix Figure No. G.1-178

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 8 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/20/20 1:41:25 AM	0.00	0.00	0.1137
12/20/20 1:41:31 AM	0.10	0.32	0.1172
12/20/20 1:41:37 AM	0.20	0.45	0.1176
12/20/20 1:41:49 AM	0.40	0.63	0.1181
12/20/20 1:42:07 AM	0.70	0.84	0.1185
12/20/20 1:42:31 AM	1.10	1.05	0.1192
12/20/20 1:43:01 AM	1.60	1.26	0.1198
12/20/20 1:44:01 AM	2.60	1.61	0.1201
12/20/20 1:46:01 AM	4.60	2.14	0.1218
12/20/20 1:50:01 AM	8.60	2.93	0.1230
12/20/20 1:58:01 AM	16.60	4.07	0.1257
12/20/20 2:13:01 AM	31.60	5.62	0.1290
12/20/20 2:33:02 AM	51.62	7.18	0.1328
12/20/20 2:58:02 AM	76.62	8.75	0.1353
12/20/20 3:28:02 AM	106.62	10.33	0.1370
12/20/20 4:08:02 AM	146.62	12.11	0.1391
12/20/20 4:58:02 AM	196.62	14.02	0.1407
12/20/20 5:58:02 AM	256.62	16.02	0.1419
12/20/20 7:58:02 AM	376.62	19.41	0.1428
12/20/20 11:58:03 AM	616.63	24.83	0.1436
12/20/20 7:58:03 PM	1096.63	33.12	0.1443
12/21/20 3:58:04 AM	1576.65	39.71	0.1447
12/21/20 11:58:04 AM	2056.65	45.35	0.1452
12/21/20 1:41:26 PM	2160.02	46.48	0.1452

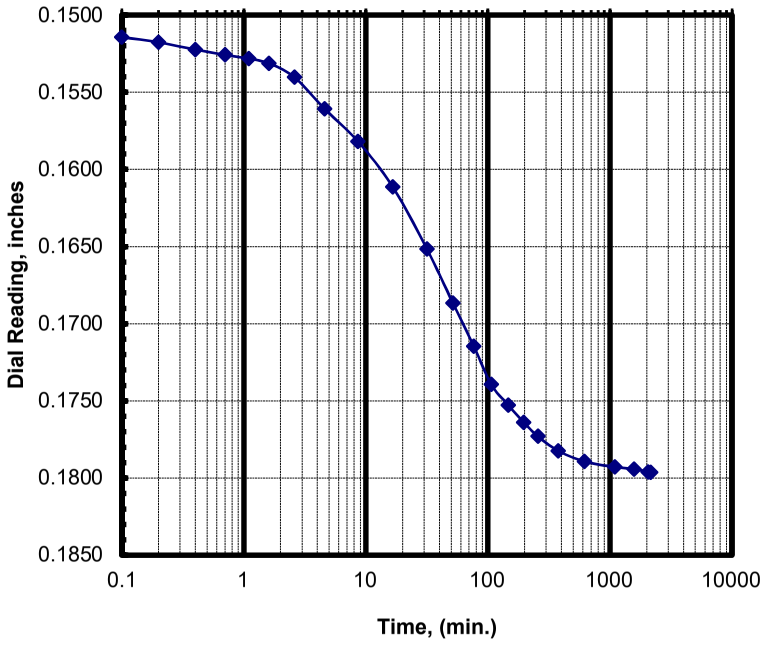


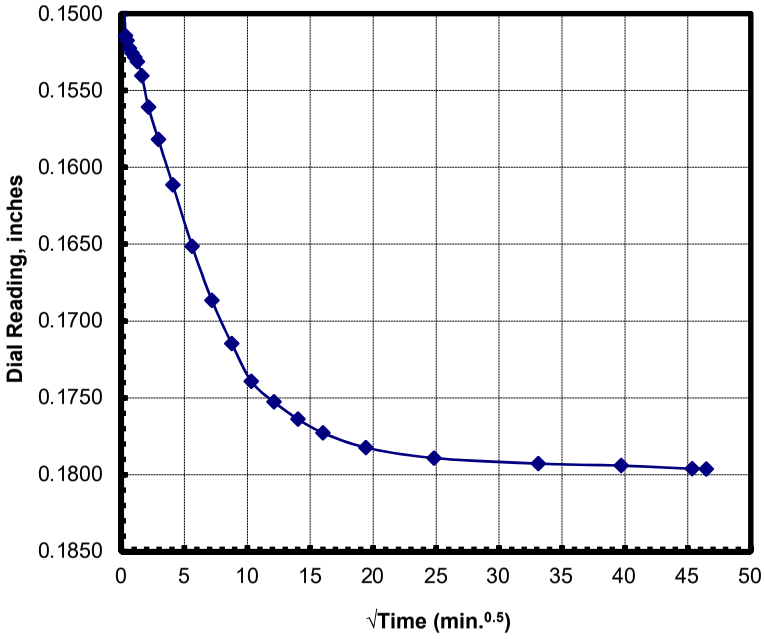


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.1137**	**d_0 (in): 0.1137**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.1452**	**d_{100} (in): 0.1429**
Boring & Depth: M-4, S-3, 4-6 ft	**PL: NA**	**Δ_{hi} (in.): 0.0315**	**δ_{eop} (in.): 0.0292**
Sample: Gray LEAN CLAY WITH SAND	**- 200 (%): 77**	**t_{50} (min): 29**	**t_{90} (min): 180**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 16 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/21/20 1:41:26 PM	0.00	0.00	0.1452
12/21/20 1:41:32 PM	0.10	0.32	0.1514
12/21/20 1:41:38 PM	0.20	0.45	0.1518
12/21/20 1:41:50 PM	0.40	0.63	0.1522
12/21/20 1:42:08 PM	0.70	0.84	0.1526
12/21/20 1:42:32 PM	1.10	1.05	0.1528
12/21/20 1:43:02 PM	1.60	1.26	0.1531
12/21/20 1:44:02 PM	2.60	1.61	0.1540
12/21/20 1:46:02 PM	4.60	2.14	0.1561
12/21/20 1:50:02 PM	8.60	2.93	0.1582
12/21/20 1:58:02 PM	16.60	4.07	0.1611
12/21/20 2:13:02 PM	31.60	5.62	0.1651
12/21/20 2:33:03 PM	51.62	7.18	0.1687
12/21/20 2:58:03 PM	76.62	8.75	0.1715
12/21/20 3:28:03 PM	106.62	10.33	0.1739
12/21/20 4:08:03 PM	146.62	12.11	0.1753
12/21/20 4:58:03 PM	196.62	14.02	0.1764
12/21/20 5:58:03 PM	256.62	16.02	0.1773
12/21/20 7:58:03 PM	376.62	19.41	0.1782
12/21/20 11:58:04 PM	616.63	24.83	0.1789
12/22/20 7:58:04 AM	1096.63	33.12	0.1793
12/22/20 3:58:05 PM	1576.65	39.71	0.1794
12/22/20 11:58:05 PM	2056.65	45.35	0.1796
12/23/20 1:41:52 AM	2160.43	46.48	0.1796

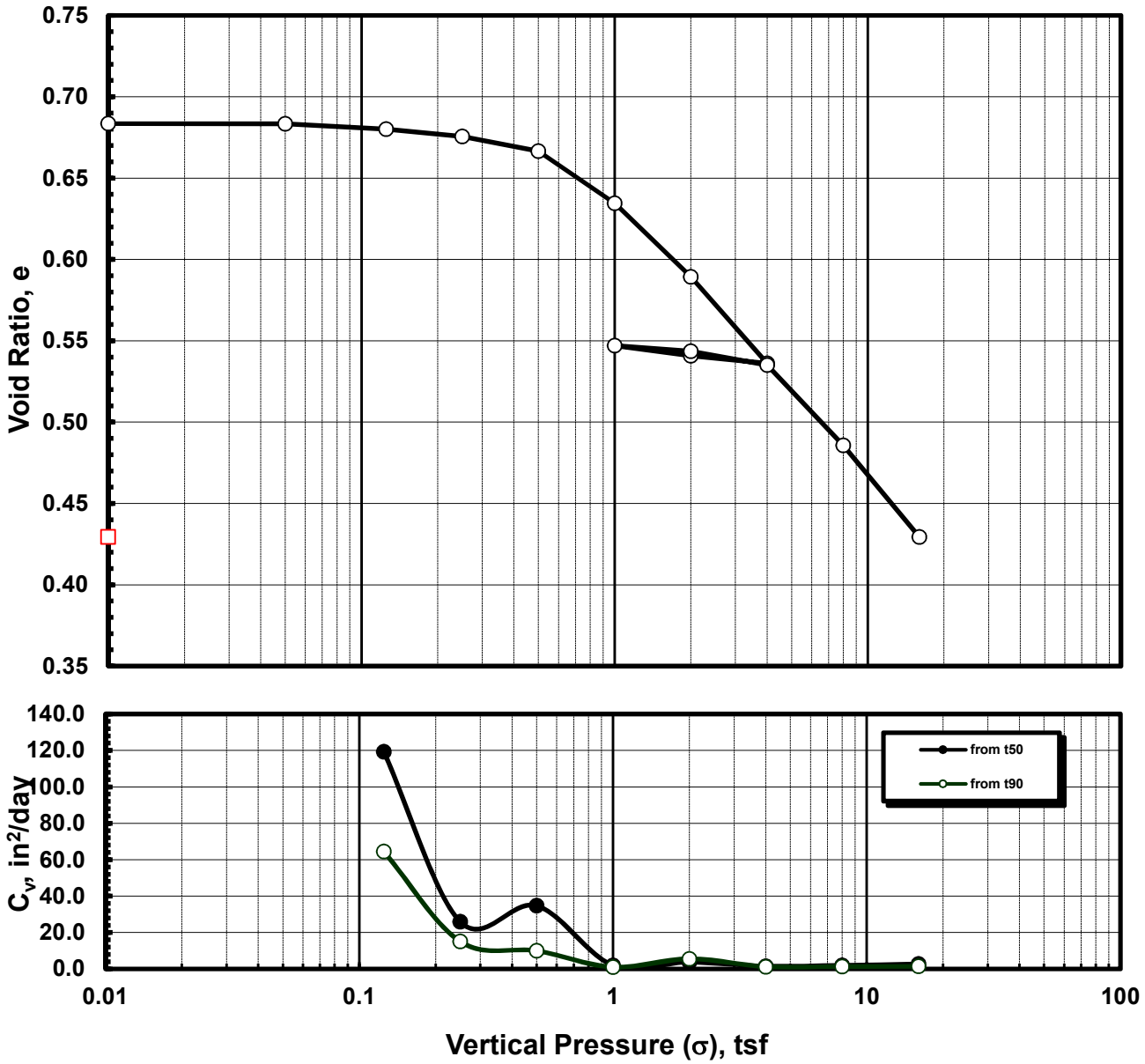




Project Number:	**02541139**	**LL: NA**	**$D_{0(min)}$ (in): 0.1452**	**d_0 (in): 0.1452**
Project Name:	**CPRA PO 181**	**PL: NA**	**D_{end} (in): 0.1796**	**d_{100} (in): 0.1786**
Boring & Depth:	**M-4, S-3, 4-6 ft**	**PL: NA**	**Δ_{hi} (in.): 0.0344**	**δ_{eop} (in.): 0.0334**
Sample:	**Gray LEAN CLAY WITH SAND**	**- 200 (%): 77**	**t_{50} (min): 19**	**t_{90} (min): 160**

Appendix Figure No. G.1-180

CONSOLIDATION TEST RESULTS - ASTM D 2435

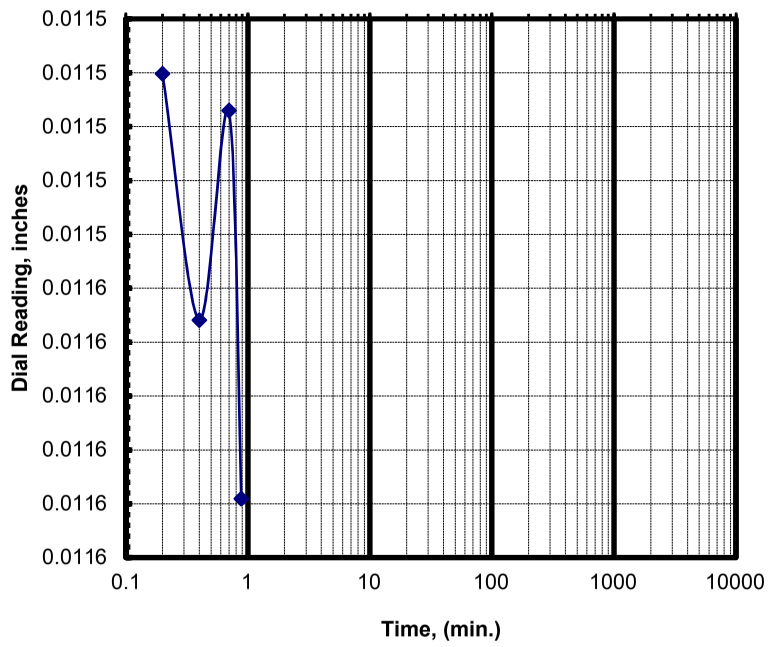


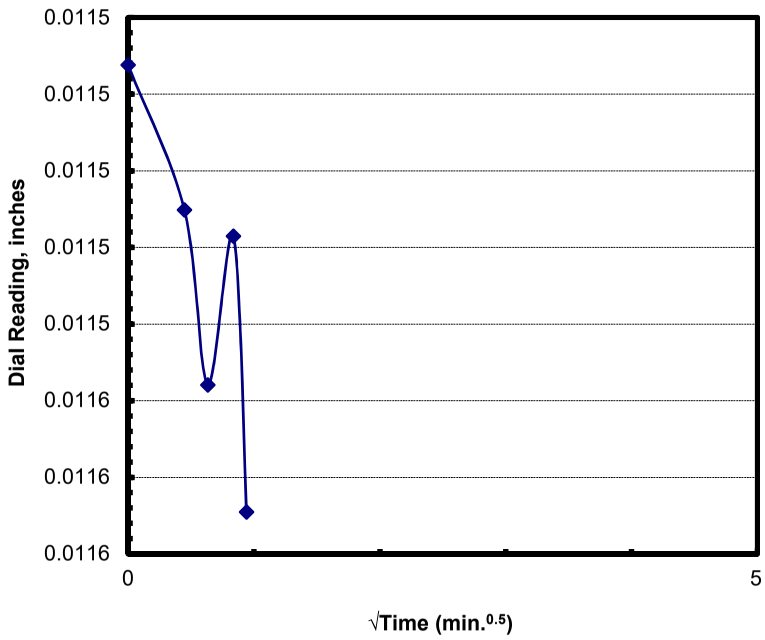
Sample Condition	Before	After	Consolidation Parameters	
Moisture Content, %:	25.2%	16.0%	Overburden Pressure, tsf:	0.2
Sample Height, in.:	0.9970	0.8465	Preconsolidation Pressure, tsf:	0.9
Void Ratio, e:	0.6835	0.4293	Compression Index, (Cc):	0.187
Unit Weight, pcf:	99.4	117.1	Re-Compression Index, (Cr)	0.020
Degree of Saturation:	0.99	1.00	Swell Index, Cs:	-

Project Number:	02541139	Liquid Limit:	NA	Hand Pen:	0.25 tsf
Project Name	CPRA PO 181	Plastic Limit:	NA	-200 %:	77
Boring No.:	M-4	Plasticity Index:	NA	SPG:	2.682
Sample ID, Depth:	S-3, 4-6 ft	Classification:	Gray LEAN CLAY WITH SAND		

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.05 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
10/13/20 1:51:24 PM	0.00	0.00	0.0115
10/13/20 1:51:36 PM	0.20	0.45	0.0115
10/13/20 1:51:48 PM	0.40	0.63	0.0116
10/13/20 1:52:06 PM	0.70	0.84	0.0115
10/13/20 1:52:17 PM	0.88	0.94	0.0116



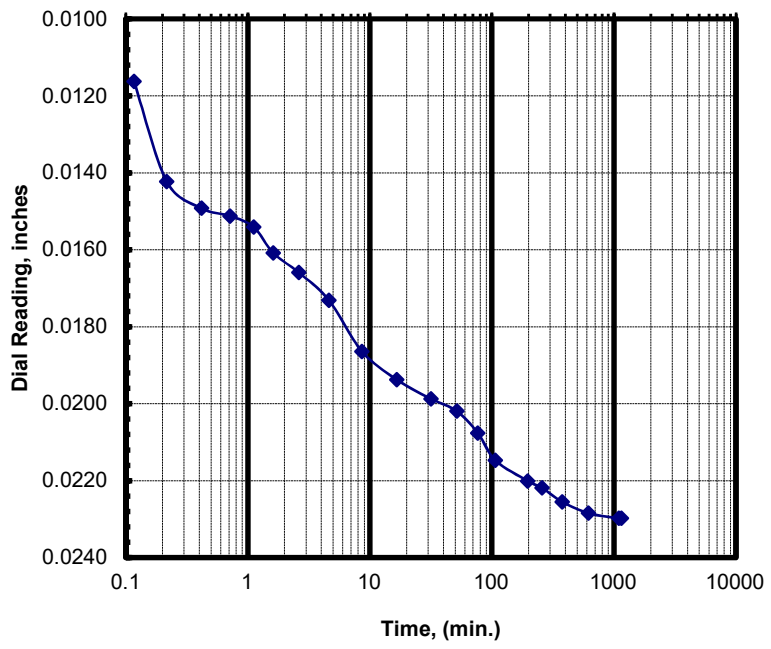


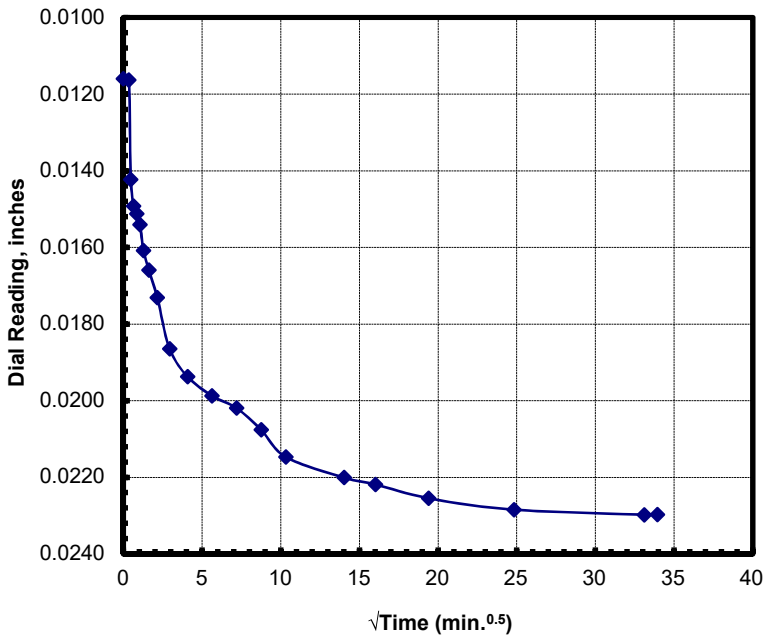
Project Number: 02541139	LL: NA	$D_{0(min)}$ (in): 0.0115	d_0 (in): 0.0115
Project Name: CPRA PO 181	PL: NA	D_{end} (in): 0.0116	d_{100} (in): 0.0116
Boring & Depth: M-5, S-2, 2-4 ft	PL: NA	Δ_{hi} (in.): 0.0001	δ_{eop} (in.): 0.0001
Sample: Sandy Lean Clay (CL), Light Gray	- 200 (%): NA	t_{50} (min):	t_{90} (min):

Appendix Figure No. G.1-182

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.125 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
10/13/20 1:52:17 PM	0.00	0.00	0.0116
10/13/20 1:52:24 PM	0.12	0.34	0.0116
10/13/20 1:52:30 PM	0.22	0.47	0.0142
10/13/20 1:52:42 PM	0.42	0.65	0.0149
10/13/20 1:53:00 PM	0.72	0.85	0.0151
10/13/20 1:53:24 PM	1.12	1.06	0.0154
10/13/20 1:53:54 PM	1.62	1.27	0.0161
10/13/20 1:54:54 PM	2.62	1.62	0.0166
10/13/20 1:56:54 PM	4.62	2.15	0.0173
10/13/20 2:00:54 PM	8.62	2.94	0.0186
10/13/20 2:08:54 PM	16.62	4.08	0.0194
10/13/20 2:23:54 PM	31.62	5.62	0.0199
10/13/20 2:43:54 PM	51.62	7.18	0.0202
10/13/20 3:08:54 PM	76.62	8.75	0.0208
10/13/20 3:38:54 PM	106.62	10.33	0.0215
10/13/20 4:18:54 PM	146.62	12.11	0.0223
10/13/20 5:08:54 PM	196.62	14.02	0.0220
10/13/20 6:08:54 PM	256.62	16.02	0.0222
10/13/20 8:08:54 PM	376.62	19.41	0.0225
10/14/20 12:08:55 AM	616.63	24.83	0.0228
10/14/20 8:08:55 AM	1096.63	33.12	0.0230
10/14/20 9:04:01 AM	1151.73	33.94	0.0230

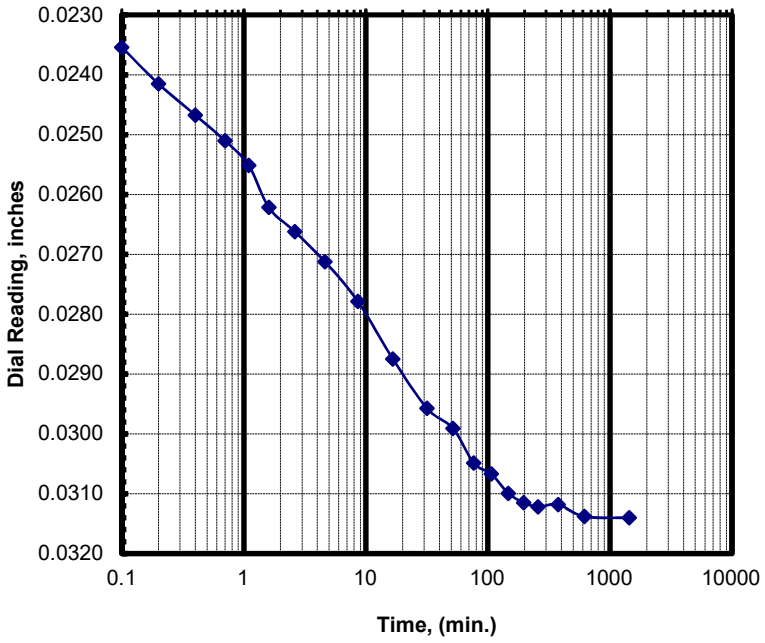


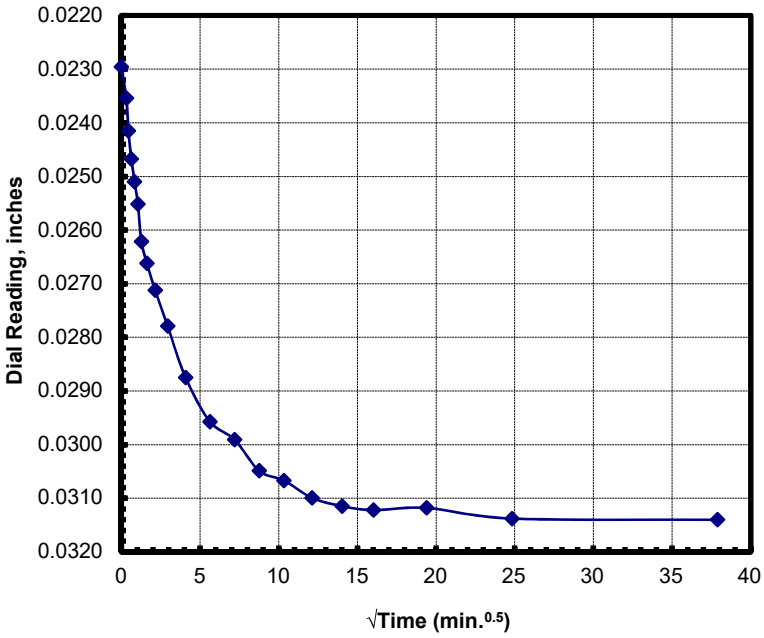


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.0116**	**d_0 (in): 0.0116**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.0230**	**d_{100} (in): 0.0192**
Boring & Depth: M-5, S-2, 2-4 ft	**PL: NA**	**Δ_{hi} (in.): 0.0114**	**δ_{eop} (in.): 0.0076**
Sample: Sandy Lean Clay (CL), Light Gray	**- 200 (%): NA**	**t_{50} (min): 1**	**t_{90} (min): 7.7**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.25 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
10/14/20 9:04:01 AM	0.00	0.00	0.0230
10/14/20 9:04:07 AM	0.10	0.32	0.0235
10/14/20 9:04:13 AM	0.20	0.45	0.0242
10/14/20 9:04:25 AM	0.40	0.63	0.0247
10/14/20 9:04:43 AM	0.70	0.84	0.0251
10/14/20 9:05:07 AM	1.10	1.05	0.0255
10/14/20 9:05:37 AM	1.60	1.26	0.0262
10/14/20 9:06:38 AM	2.62	1.62	0.0266
10/14/20 9:08:38 AM	4.62	2.15	0.0271
10/14/20 9:12:38 AM	8.62	2.94	0.0278
10/14/20 9:20:38 AM	16.62	4.08	0.0287
10/14/20 9:35:38 AM	31.62	5.62	0.0296
10/14/20 9:55:38 AM	51.62	7.18	0.0299
10/14/20 10:20:38 AM	76.62	8.75	0.0305
10/14/20 10:50:38 AM	106.62	10.33	0.0307
10/14/20 11:30:38 AM	146.62	12.11	0.0310
10/14/20 12:20:38 PM	196.62	14.02	0.0311
10/14/20 1:20:38 PM	256.62	16.02	0.0312
10/14/20 3:20:38 PM	376.62	19.41	0.0312
10/14/20 7:20:38 PM	616.62	24.83	0.0314
10/15/20 3:20:39 AM	1096.63	33.12	0.0312
10/15/20 9:00:07 AM	1436.10	37.90	0.0314

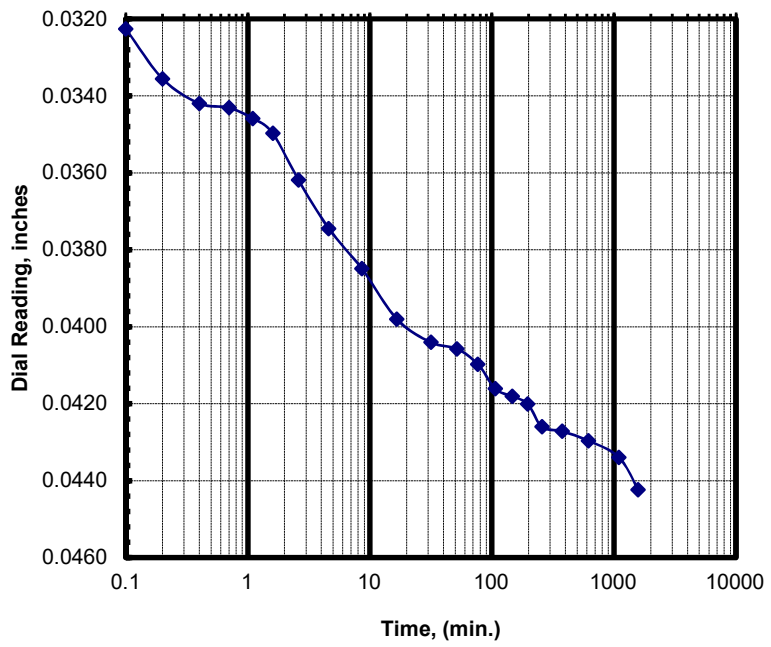


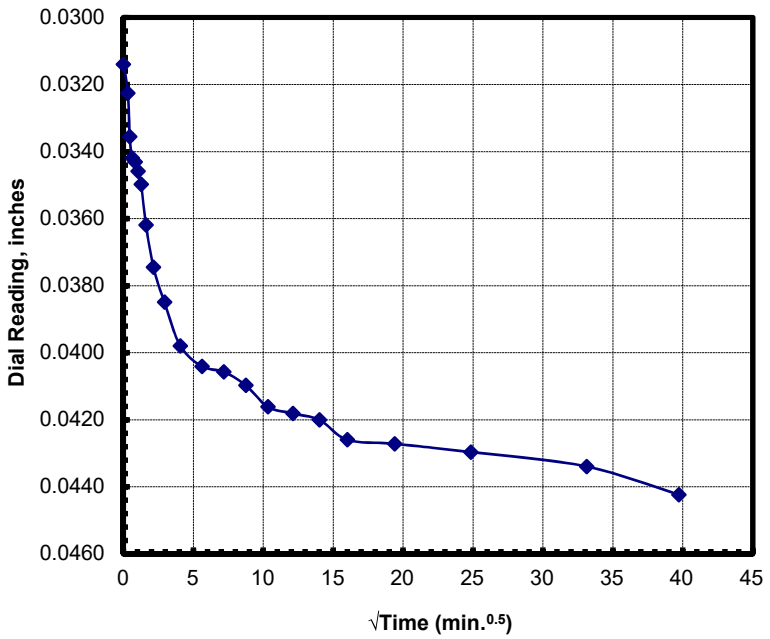


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0230	d_0 (in): 0.0230
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.0314	d_{100} (in): 0.0308
Boring & Depth: M-5, S-2, 2-4 ft	**PL:** NA	Δ_{hi} (in.): 0.0084	δ_{eop} (in.): 0.0078
Sample: Sandy Lean Clay (CL), Light Gray	**- 200 (%):** NA	t_{50} (min): 3.7	t_{90} (min): 57

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.5 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
10/15/20 9:00:08 AM	0.00	0.00	0.0314
10/15/20 9:00:14 AM	0.10	0.32	0.0323
10/15/20 9:00:20 AM	0.20	0.45	0.0336
10/15/20 9:00:32 AM	0.40	0.63	0.0342
10/15/20 9:00:50 AM	0.70	0.84	0.0343
10/15/20 9:01:14 AM	1.10	1.05	0.0346
10/15/20 9:01:44 AM	1.60	1.26	0.0350
10/15/20 9:02:44 AM	2.60	1.61	0.0362
10/15/20 9:04:44 AM	4.60	2.14	0.0374
10/15/20 9:08:44 AM	8.60	2.93	0.0385
10/15/20 9:16:44 AM	16.60	4.07	0.0398
10/15/20 9:31:44 AM	31.60	5.62	0.0404
10/15/20 9:51:44 AM	51.60	7.18	0.0406
10/15/20 10:16:44 AM	76.60	8.75	0.0410
10/15/20 10:46:45 AM	106.62	10.33	0.0416
10/15/20 11:26:45 AM	146.62	12.11	0.0418
10/15/20 12:16:45 PM	196.62	14.02	0.0420
10/15/20 1:16:45 PM	256.62	16.02	0.0426
10/15/20 3:16:45 PM	376.62	19.41	0.0427
10/15/20 7:16:45 PM	616.62	24.83	0.0430
10/16/20 3:16:46 AM	1096.63	33.12	0.0434
10/16/20 11:16:46 AM	1576.63	39.71	0.0442
10/16/20 12:44:11 PM	1664.05	40.79	0.0439

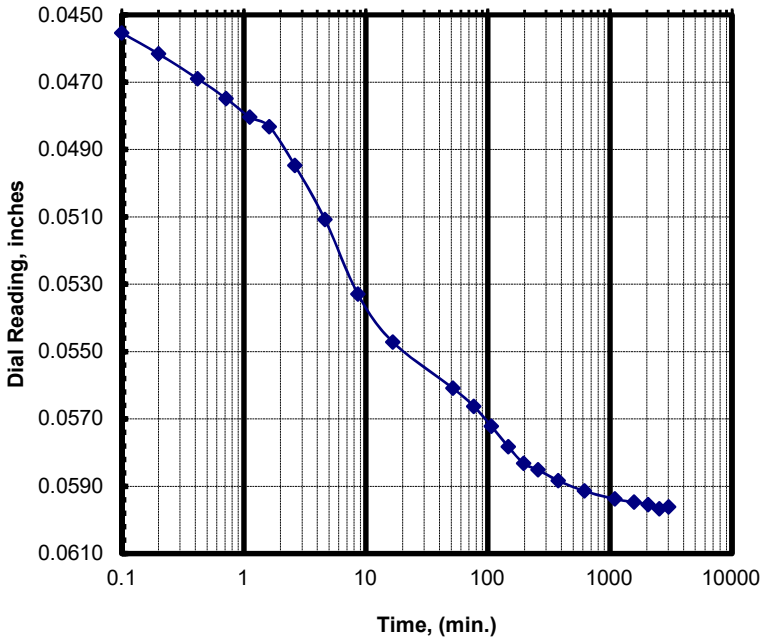


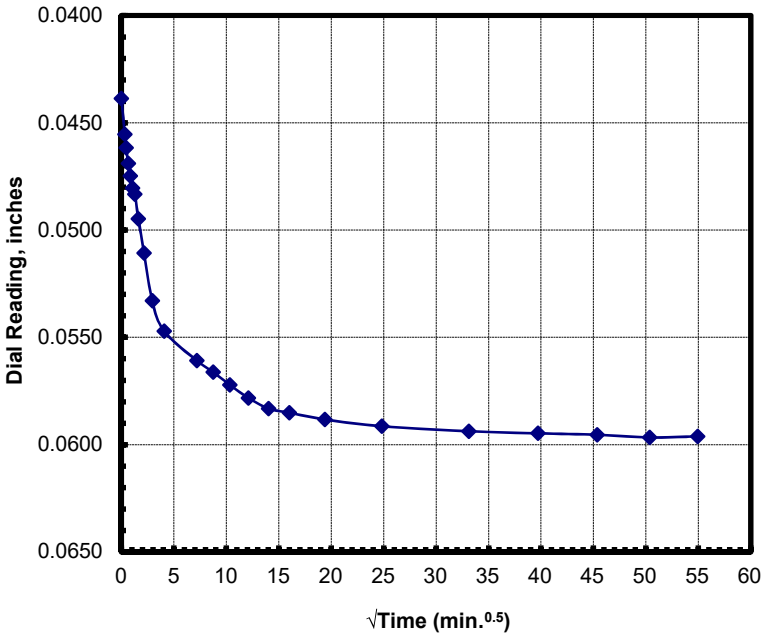


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.0314**	**d_0 (in): 0.0314**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.0439**	**d_{100} (in): 0.0415**
Boring & Depth: M-5, S-2, 2-4 ft	**PL: NA**	**Δ_{hi} (in.): 0.0125**	**δ_{eop} (in.): 0.0101**
Sample: Sandy Lean Clay (CL), Light Gray	**- 200 (%): NA**	**t_{50} (min): 2.9**	**t_{90} (min): 32**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
10/16/20 12:44:11 PM	0.00	0.00	0.0439
10/16/20 12:44:17 PM	0.10	0.32	0.0455
10/16/20 12:44:23 PM	0.20	0.45	0.0462
10/16/20 12:44:36 PM	0.42	0.65	0.0469
10/16/20 12:44:54 PM	0.72	0.85	0.0475
10/16/20 12:45:18 PM	1.12	1.06	0.0480
10/16/20 12:45:48 PM	1.62	1.27	0.0483
10/16/20 12:46:48 PM	2.62	1.62	0.0495
10/16/20 12:48:48 PM	4.62	2.15	0.0511
10/16/20 12:52:48 PM	8.62	2.94	0.0533
10/16/20 1:00:48 PM	16.62	4.08	0.0547
10/16/20 1:15:48 PM	31.62	5.62	0.0560
10/16/20 1:35:48 PM	51.62	7.18	0.0561
10/16/20 2:00:48 PM	76.62	8.75	0.0566
10/16/20 2:30:48 PM	106.62	10.33	0.0572
10/16/20 3:10:48 PM	146.62	12.11	0.0578
10/16/20 4:00:48 PM	196.62	14.02	0.0583
10/16/20 5:00:48 PM	256.62	16.02	0.0585
10/16/20 7:00:49 PM	376.63	19.41	0.0588
10/16/20 11:00:49 PM	616.63	24.83	0.0591
10/17/20 7:00:49 AM	1096.63	33.12	0.0594
10/17/20 3:00:50 PM	1576.65	39.71	0.0595
10/17/20 11:00:50 PM	2056.65	45.35	0.0595
10/18/20 7:00:50 AM	2536.65	50.37	0.0597
10/18/20 3:00:51 PM	3016.67	54.92	0.0596
10/18/20 11:00:51 PM	3496.67	59.13	0.0600
10/19/20 7:00:45 AM	3976.57	63.06	0.0601

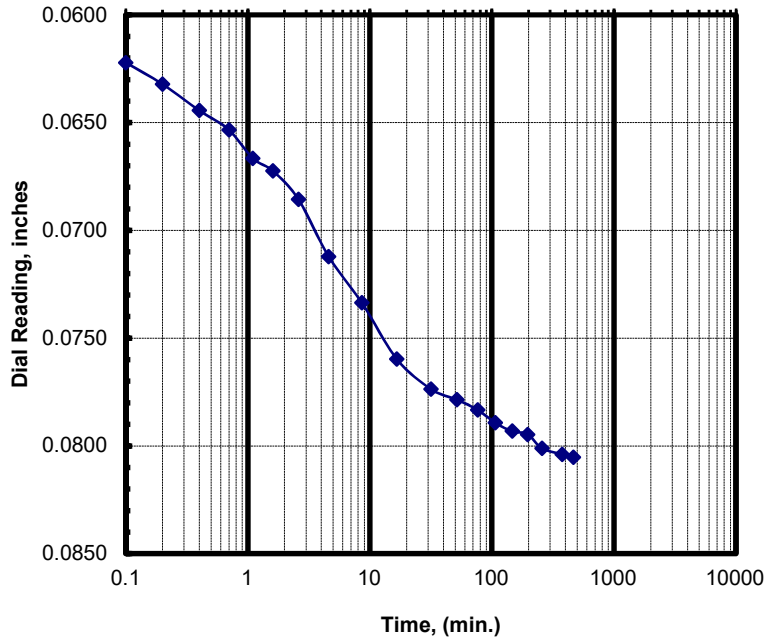


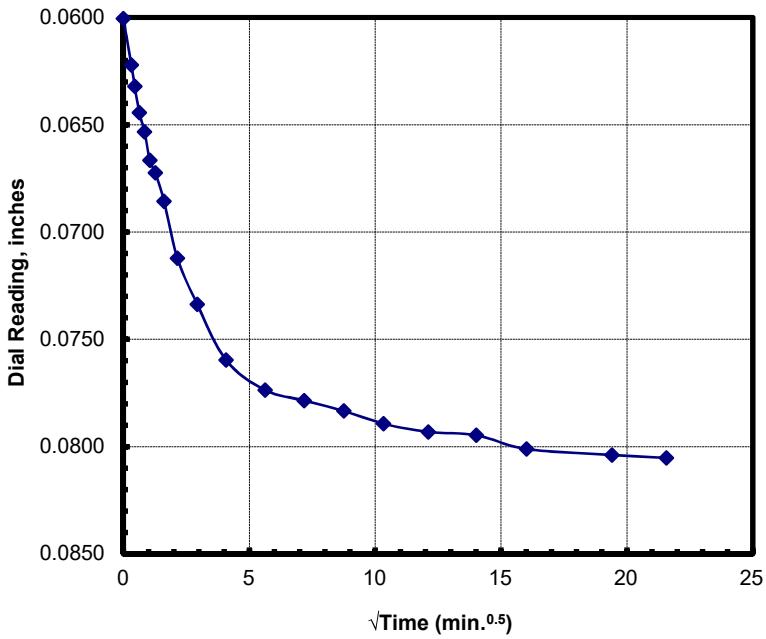


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.0439**	**d_0 (in): 0.0439**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.0601**	**d_{100} (in): 0.0563**
Boring & Depth: M-5, S-2, 2-4 ft	**PL: NA**	**Δ_{hi} (in.): 0.0162**	**δ_{eop} (in.): 0.0124**
Sample: Sandy Lean Clay (CL), Light Gray	**- 200 (%): NA**	**t_{50} (min): 3.2**	**t_{90} (min): 20**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
10/19/20 7:00:46 AM	0.00	0.00	0.0601
10/19/20 7:00:52 AM	0.10	0.32	0.0622
10/19/20 7:00:58 AM	0.20	0.45	0.0632
10/19/20 7:01:10 AM	0.40	0.63	0.0644
10/19/20 7:01:28 AM	0.70	0.84	0.0653
10/19/20 7:01:52 AM	1.10	1.05	0.0667
10/19/20 7:02:22 AM	1.60	1.26	0.0672
10/19/20 7:03:22 AM	2.60	1.61	0.0686
10/19/20 7:05:22 AM	4.60	2.14	0.0712
10/19/20 7:09:22 AM	8.60	2.93	0.0734
10/19/20 7:17:22 AM	16.60	4.07	0.0760
10/19/20 7:32:22 AM	31.60	5.62	0.0774
10/19/20 7:52:22 AM	51.60	7.18	0.0779
10/19/20 8:17:22 AM	76.60	8.75	0.0783
10/19/20 8:47:22 AM	106.60	10.32	0.0789
10/19/20 9:27:23 AM	146.62	12.11	0.0793
10/19/20 10:17:23 AM	196.62	14.02	0.0795
10/19/20 11:17:23 AM	256.62	16.02	0.0801
10/19/20 1:17:23 PM	376.62	19.41	0.0804
10/19/20 2:45:47 PM	465.02	21.56	0.0805

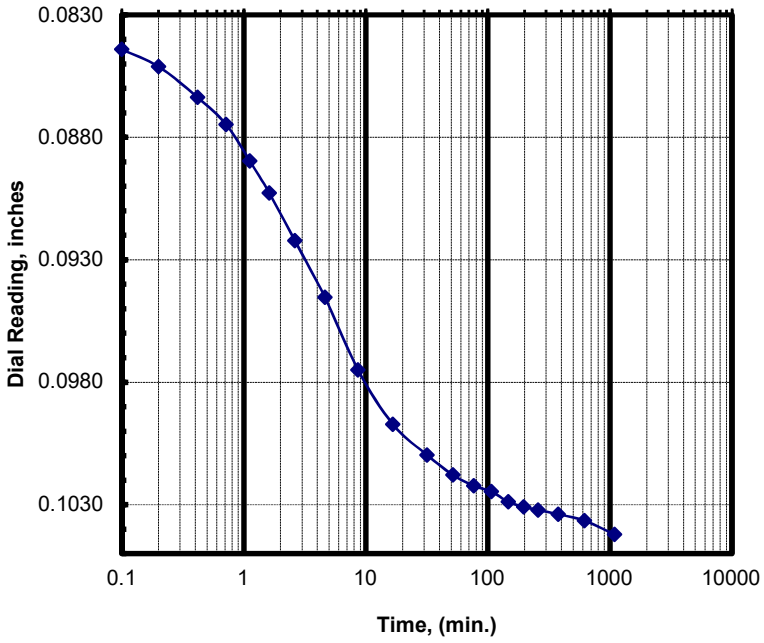


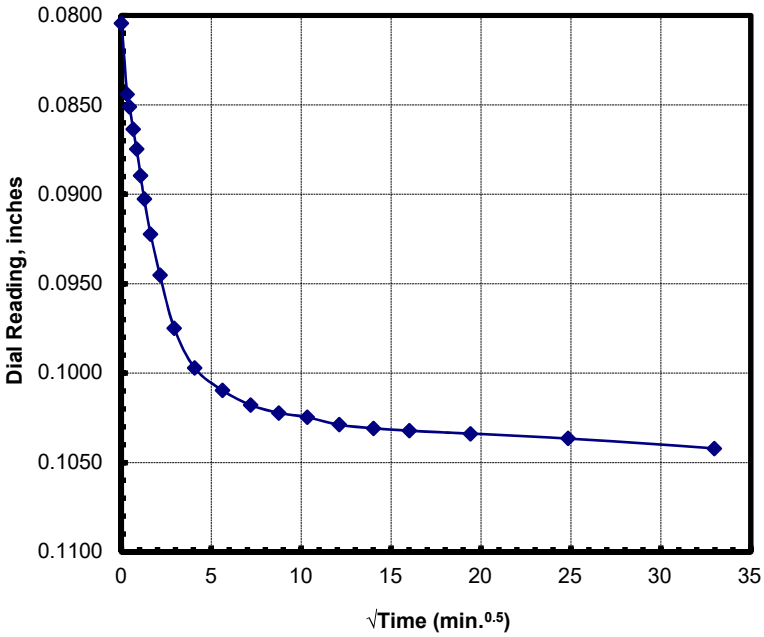


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.0601**	**d_0 (in): 0.0601**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.0805**	**d_{100} (in): 0.0771**
Boring & Depth: M-5, S-2, 2-4 ft	**PL: NA**	**Δ_{hi} (in.): 0.0205**	**δ_{eop} (in.): 0.0170**
Sample: Sandy Lean Clay (CL), Light Gray	**- 200 (%): NA**	**t_{50} (min): 2.6**	**t_{90} (min): 15**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
10/19/20 2:45:47 PM	0.00	0.00	0.0804
10/19/20 2:45:53 PM	0.10	0.32	0.0844
10/19/20 2:45:59 PM	0.20	0.45	0.0851
10/19/20 2:46:12 PM	0.42	0.65	0.0864
10/19/20 2:46:30 PM	0.72	0.85	0.0875
10/19/20 2:46:54 PM	1.12	1.06	0.0890
10/19/20 2:47:24 PM	1.62	1.27	0.0903
10/19/20 2:48:24 PM	2.62	1.62	0.0922
10/19/20 2:50:24 PM	4.62	2.15	0.0945
10/19/20 2:54:24 PM	8.62	2.94	0.0975
10/19/20 3:02:24 PM	16.62	4.08	0.0997
10/19/20 3:17:24 PM	31.62	5.62	0.1010
10/19/20 3:37:24 PM	51.62	7.18	0.1018
10/19/20 4:02:24 PM	76.62	8.75	0.1022
10/19/20 4:32:24 PM	106.62	10.33	0.1025
10/19/20 5:12:24 PM	146.62	12.11	0.1029
10/19/20 6:02:24 PM	196.62	14.02	0.1031
10/19/20 7:02:24 PM	256.62	16.02	0.1032
10/19/20 9:02:25 PM	376.63	19.41	0.1034
10/20/20 1:02:25 AM	616.63	24.83	0.1037
10/20/20 8:52:44 AM	1086.95	32.97	0.1042

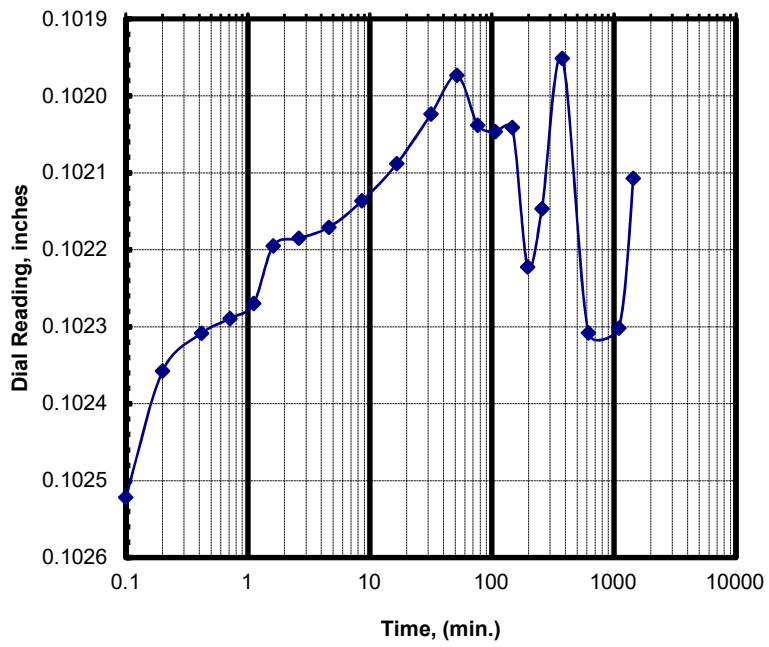


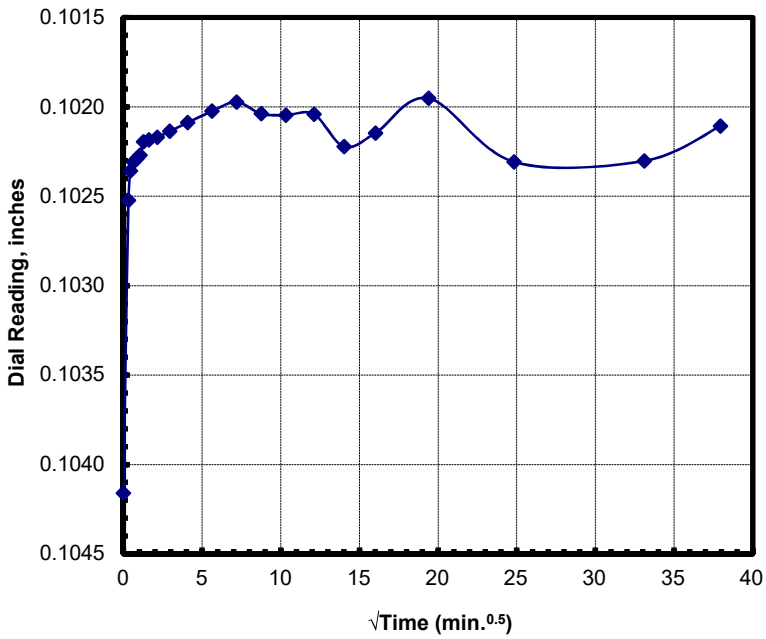


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0804	d_0 (in): 0.0804
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.1042	d_{100} (in): 0.1012
Boring & Depth: M-5, S-2, 2-4 ft	**PL:** NA	Δ_{hi} (in.): 0.0238	δ_{eop} (in.): 0.0208
Sample: Sandy Lean Clay (CL), Light Gray	**- 200 (%):** NA	t_{50} (min): 1.8	t_{90} (min): 14

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
10/20/20 8:52:44 AM	0.00	0.00	0.1042
10/20/20 8:52:50 AM	0.10	0.32	0.1025
10/20/20 8:52:56 AM	0.20	0.45	0.1024
10/20/20 8:53:09 AM	0.42	0.65	0.1023
10/20/20 8:53:27 AM	0.72	0.85	0.1023
10/20/20 8:53:51 AM	1.12	1.06	0.1023
10/20/20 8:54:21 AM	1.62	1.27	0.1022
10/20/20 8:55:21 AM	2.62	1.62	0.1022
10/20/20 8:57:21 AM	4.62	2.15	0.1022
10/20/20 9:01:21 AM	8.62	2.94	0.1021
10/20/20 9:09:21 AM	16.62	4.08	0.1021
10/20/20 9:24:21 AM	31.62	5.62	0.1020
10/20/20 9:44:21 AM	51.62	7.18	0.1020
10/20/20 10:09:21 AM	76.62	8.75	0.1020
10/20/20 10:39:21 AM	106.62	10.33	0.1020
10/20/20 11:19:21 AM	146.62	12.11	0.1020
10/20/20 12:09:21 PM	196.62	14.02	0.1022
10/20/20 1:09:21 PM	256.62	16.02	0.1021
10/20/20 3:09:22 PM	376.63	19.41	0.1020
10/20/20 7:09:22 PM	616.63	24.83	0.1023
10/21/20 3:09:22 AM	1096.63	33.12	0.1023
10/21/20 8:52:42 AM	1439.97	37.95	0.1021

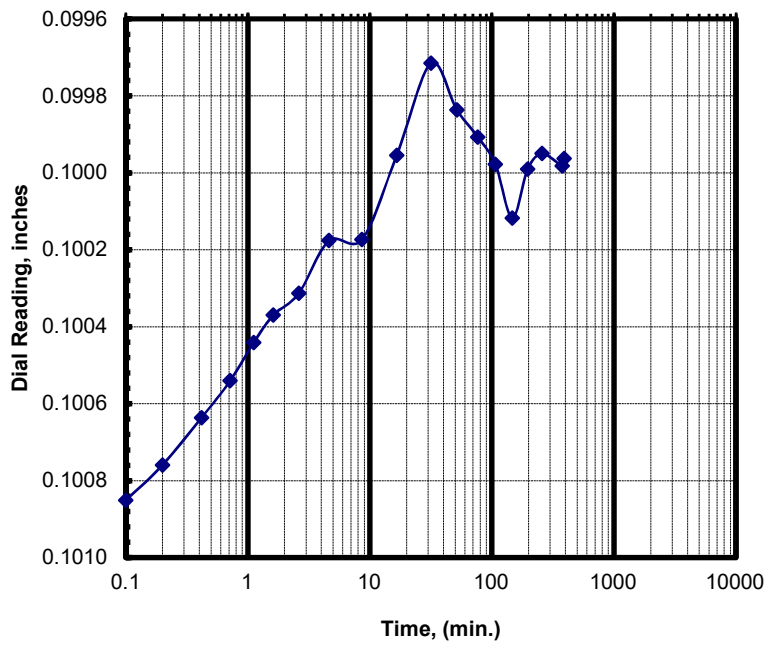


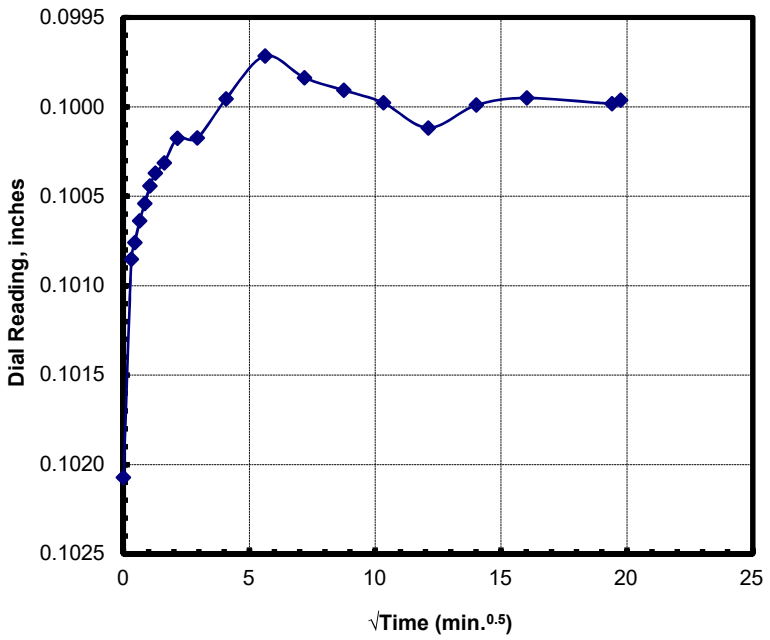


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.1042**	**d_0 (in): 0.1042**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.1021**	**d_{100} (in): 0.1021**
Boring & Depth: M-5, S-2, 2-4 ft	**PL: NA**	**Δ_{hi} (in.): -0.0021**	**δ_{eop} (in.): -0.0021**
Sample: Sandy Lean Clay (CL), Light Gray	**- 200 (%): NA**	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
10/21/20 8:52:42 AM	0.00	0.00	0.1021
10/21/20 8:52:48 AM	0.10	0.32	0.1009
10/21/20 8:52:54 AM	0.20	0.45	0.1008
10/21/20 8:53:07 AM	0.42	0.65	0.1006
10/21/20 8:53:25 AM	0.72	0.85	0.1005
10/21/20 8:53:49 AM	1.12	1.06	0.1004
10/21/20 8:54:19 AM	1.62	1.27	0.1004
10/21/20 8:55:19 AM	2.62	1.62	0.1003
10/21/20 8:57:19 AM	4.62	2.15	0.1002
10/21/20 9:01:19 AM	8.62	2.94	0.1002
10/21/20 9:09:19 AM	16.62	4.08	0.1000
10/21/20 9:24:19 AM	31.62	5.62	0.0997
10/21/20 9:44:19 AM	51.62	7.18	0.0998
10/21/20 10:09:19 AM	76.62	8.75	0.0999
10/21/20 10:39:20 AM	106.63	10.33	0.1000
10/21/20 11:19:20 AM	146.63	12.11	0.1001
10/21/20 12:09:20 PM	196.63	14.02	0.1000
10/21/20 1:09:20 PM	256.63	16.02	0.0999
10/21/20 3:09:20 PM	376.63	19.41	0.1000
10/21/20 3:22:42 PM	390.00	19.75	0.1000

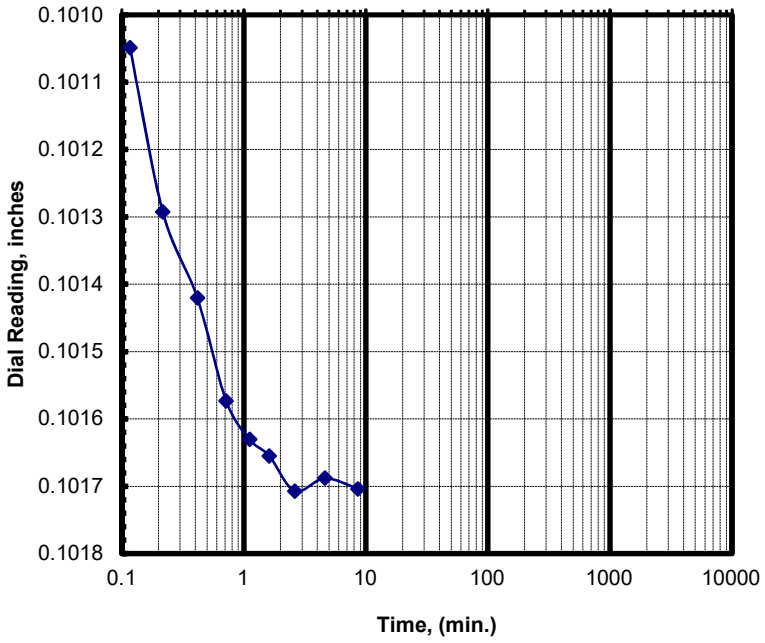


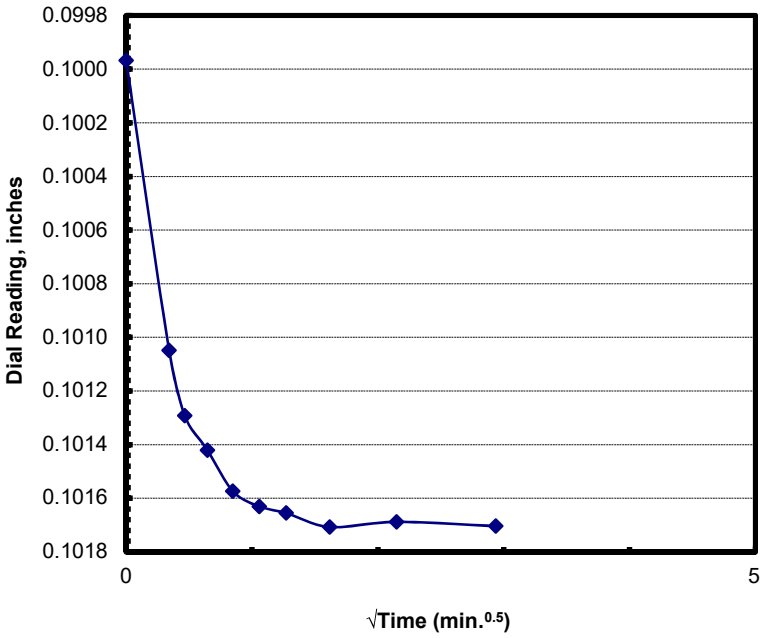


Project Number: 02541139	**LL:** NA	**$D_{0(min)}$ (in):** 0.1021	**d_0 (in):** 0.1021
Project Name: CPRA PO 181	**PL:** NA	**D_{end} (in):** 0.1000	**d_{100} (in):** 0.1000
Boring & Depth: M-5, S-2, 2-4 ft	**PL:** NA	**Δ_{hi} (in.):** -0.0021	**δ_{eop} (in.):** -0.0021
Sample: Sandy Lean Clay (CL), Light Gray	**- 200 (%):** NA	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
10/21/20 3:22:42 PM	0.00	0.00	0.1000
10/21/20 3:22:49 PM	0.12	0.34	0.1010
10/21/20 3:22:55 PM	0.22	0.47	0.1013
10/21/20 3:23:07 PM	0.42	0.65	0.1014
10/21/20 3:23:25 PM	0.72	0.85	0.1016
10/21/20 3:23:49 PM	1.12	1.06	0.1016
10/21/20 3:24:19 PM	1.62	1.27	0.1017
10/21/20 3:25:19 PM	2.62	1.62	0.1017
10/21/20 3:27:19 PM	4.62	2.15	0.1017
10/21/20 3:31:19 PM	8.62	2.94	0.1017
10/21/20 3:39:19 PM	16.62	4.08	0.1019
10/21/20 3:54:19 PM	31.62	5.62	0.1018
10/21/20 4:14:19 PM	51.62	7.18	0.1019
10/21/20 4:39:19 PM	76.62	8.75	0.1018
10/21/20 5:09:19 PM	106.62	10.33	0.1018
10/21/20 5:10:46 PM	108.07	10.40	0.1018

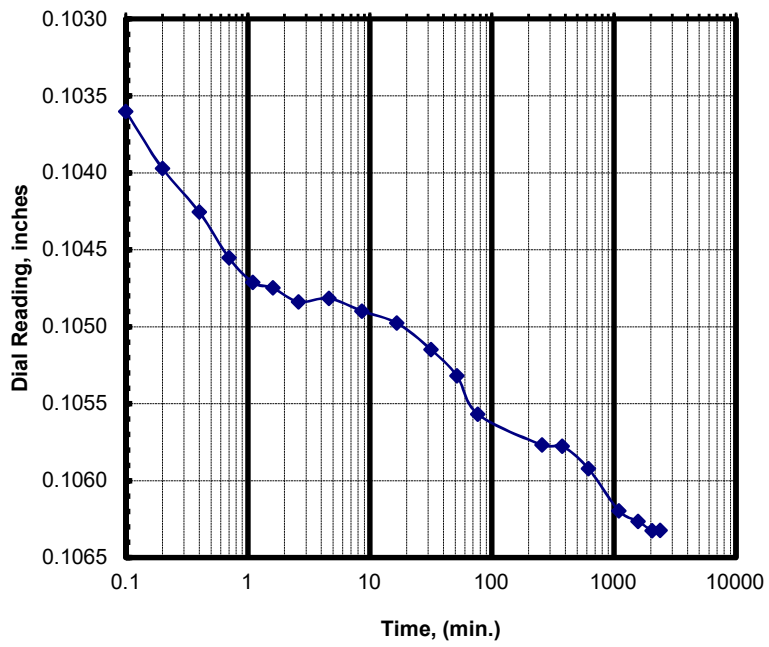


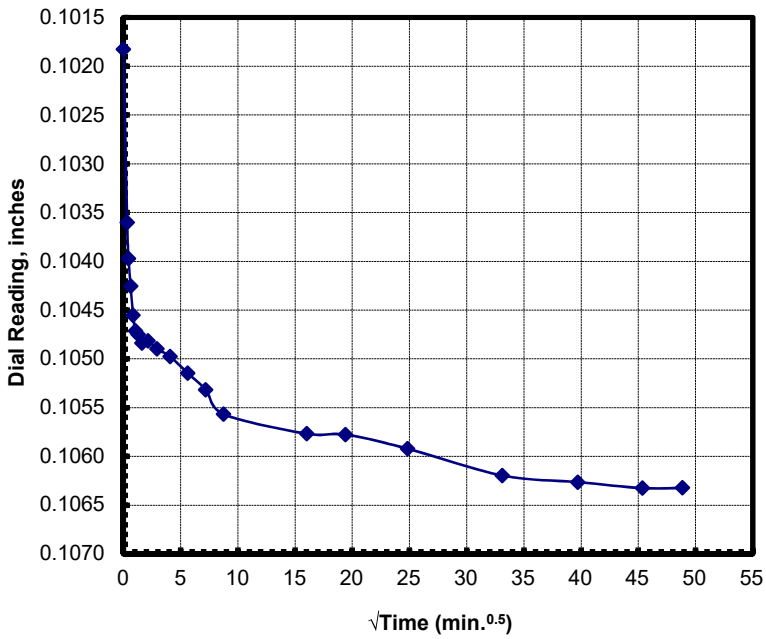


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.1000**	**d_0 (in): 0.1000**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.1018**	**d_{100} (in): 0.1017**
Boring & Depth: M-5, S-2, 2-4 ft	**PL: NA**	**Δ_{hi} (in.): 0.0019**	**δ_{eop} (in.): 0.0018**
Sample: Sandy Lean Clay (CL), Light Gray	**- 200 (%): NA**	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
10/21/20 5:10:46 PM	0.00	0.00	0.1018
10/21/20 5:10:52 PM	0.10	0.32	0.1036
10/21/20 5:10:58 PM	0.20	0.45	0.1040
10/21/20 5:11:10 PM	0.40	0.63	0.1043
10/21/20 5:11:28 PM	0.70	0.84	0.1046
10/21/20 5:11:52 PM	1.10	1.05	0.1047
10/21/20 5:12:22 PM	1.60	1.26	0.1047
10/21/20 5:13:22 PM	2.60	1.61	0.1048
10/21/20 5:15:23 PM	4.62	2.15	0.1048
10/21/20 5:19:23 PM	8.62	2.94	0.1049
10/21/20 5:27:23 PM	16.62	4.08	0.1050
10/21/20 5:42:23 PM	31.62	5.62	0.1051
10/21/20 6:02:23 PM	51.62	7.18	0.1053
10/21/20 6:27:23 PM	76.62	8.75	0.1056
10/21/20 6:57:23 PM	106.62	10.33	0.1050
10/21/20 7:37:24 PM	146.63	12.11	0.1053
10/21/20 8:27:24 PM	196.63	14.02	0.1054
10/21/20 9:27:24 PM	256.63	16.02	0.1058
10/21/20 11:27:24 PM	376.63	19.41	0.1058
10/22/20 3:27:24 AM	616.63	24.83	0.1059
10/22/20 11:27:25 AM	1096.65	33.12	0.1062
10/22/20 7:27:25 PM	1576.65	39.71	0.1063
10/23/20 3:27:25 AM	2056.65	45.35	0.1063
10/23/20 8:58:17 AM	2387.52	48.86	0.1063

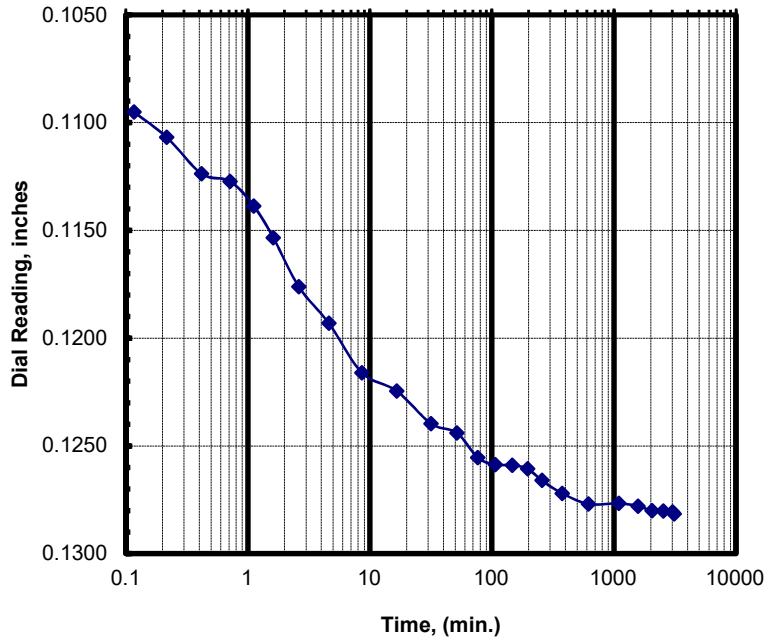


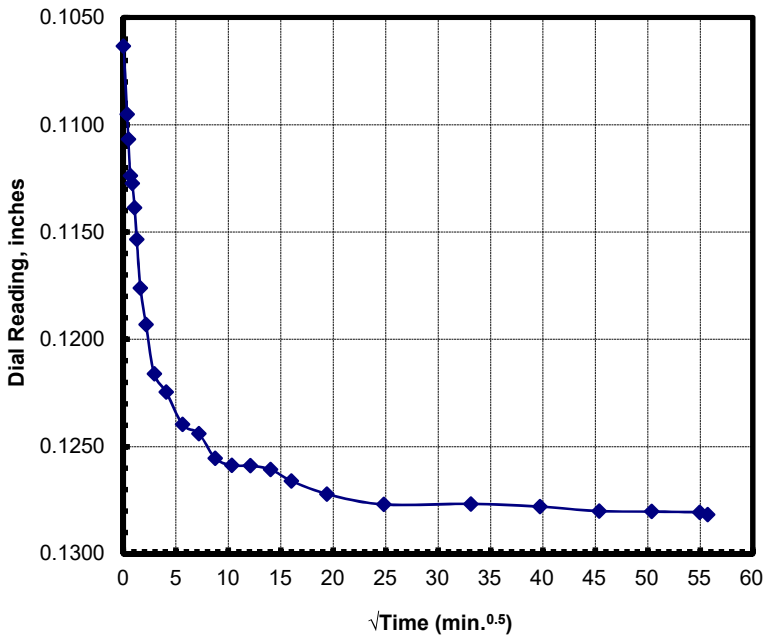


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.1018**	**d_0 (in): 0.1018**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.1063**	**d_{100} (in): 0.1052**
Boring & Depth: M-5, S-2, 2-4 ft	**PL: NA**	**Δ_{hi} (in.): 0.0045**	**δ_{eop} (in.): 0.0034**
Sample: Sandy Lean Clay (CL), Light Gray	**- 200 (%): NA**	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 8 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
10/23/20 8:58:17 AM	0.00	0.00	0.1063
10/23/20 8:58:24 AM	0.12	0.34	0.1095
10/23/20 8:58:30 AM	0.22	0.47	0.1107
10/23/20 8:58:42 AM	0.42	0.65	0.1124
10/23/20 8:59:00 AM	0.72	0.85	0.1127
10/23/20 8:59:24 AM	1.12	1.06	0.1139
10/23/20 8:59:54 AM	1.62	1.27	0.1153
10/23/20 9:00:54 AM	2.62	1.62	0.1176
10/23/20 9:02:54 AM	4.62	2.15	0.1193
10/23/20 9:06:54 AM	8.62	2.94	0.1216
10/23/20 9:14:54 AM	16.62	4.08	0.1225
10/23/20 9:29:54 AM	31.62	5.62	0.1240
10/23/20 9:49:54 AM	51.62	7.18	0.1244
10/23/20 10:14:55 AM	76.63	8.75	0.1255
10/23/20 10:44:55 AM	106.63	10.33	0.1259
10/23/20 11:24:55 AM	146.63	12.11	0.1259
10/23/20 12:14:55 PM	196.63	14.02	0.1261
10/23/20 1:14:55 PM	256.63	16.02	0.1266
10/23/20 3:14:55 PM	376.63	19.41	0.1272
10/23/20 7:14:55 PM	616.63	24.83	0.1277
10/24/20 3:14:56 AM	1096.65	33.12	0.1277
10/24/20 11:14:56 AM	1576.65	39.71	0.1278
10/24/20 7:14:57 PM	2056.67	45.35	0.1280
10/25/20 3:14:57 AM	2536.67	50.37	0.1280
10/25/20 11:14:58 AM	3016.68	54.92	0.1281
10/25/20 12:42:10 PM	3103.88	55.71	0.1282

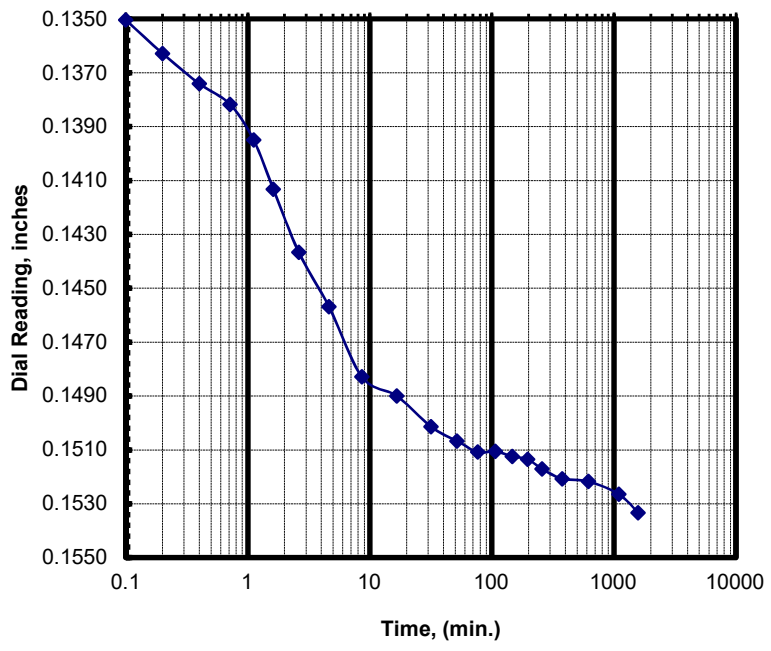


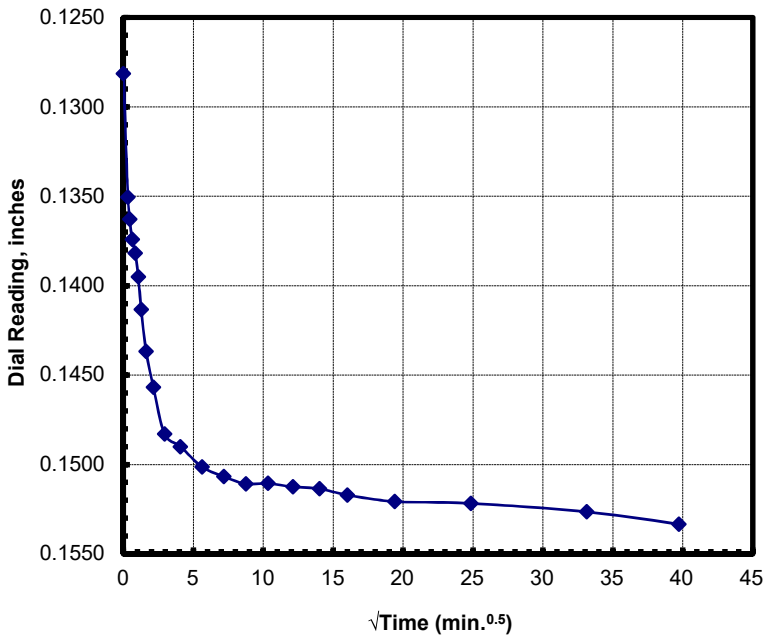


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.1063	d_0 (in): 0.1063
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.1282	d_{100} (in): 0.1243
Boring & Depth: M-5, S-2, 2-4 ft	**PL:** NA	Δ_{hi} (in.): 0.0218	δ_{eop} (in.): 0.0180
Sample: Sandy Lean Clay (CL), Light Gray	**- 200 (%):** NA	t_{50} (min): 1.7	t_{90} (min): 17

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 16 tsf

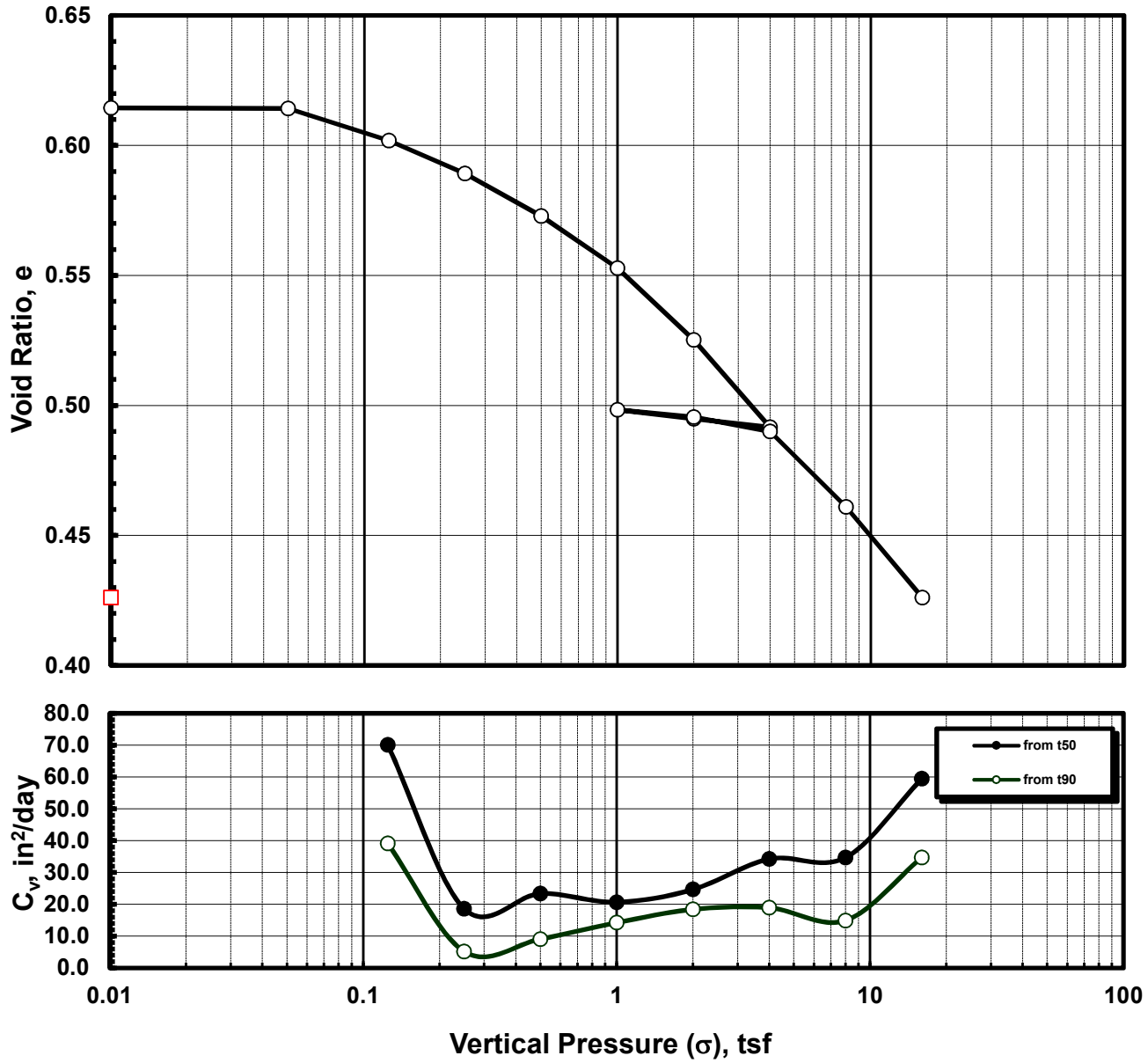
Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
10/25/20 12:42:10 PM	0.00	0.00	0.1281
10/25/20 12:42:16 PM	0.10	0.32	0.1350
10/25/20 12:42:22 PM	0.20	0.45	0.1363
10/25/20 12:42:34 PM	0.40	0.63	0.1374
10/25/20 12:42:53 PM	0.72	0.85	0.1382
10/25/20 12:43:17 PM	1.12	1.06	0.1395
10/25/20 12:43:47 PM	1.62	1.27	0.1413
10/25/20 12:44:47 PM	2.62	1.62	0.1437
10/25/20 12:46:47 PM	4.62	2.15	0.1457
10/25/20 12:50:47 PM	8.62	2.94	0.1483
10/25/20 12:58:47 PM	16.62	4.08	0.1490
10/25/20 1:13:47 PM	31.62	5.62	0.1501
10/25/20 1:33:47 PM	51.62	7.18	0.1507
10/25/20 1:58:47 PM	76.62	8.75	0.1511
10/25/20 2:28:47 PM	106.62	10.33	0.1511
10/25/20 3:08:47 PM	146.62	12.11	0.1512
10/25/20 3:58:47 PM	196.62	14.02	0.1514
10/25/20 4:58:47 PM	256.62	16.02	0.1517
10/25/20 6:58:47 PM	376.62	19.41	0.1521
10/25/20 10:58:47 PM	616.62	24.83	0.1522
10/26/20 6:58:48 AM	1096.63	33.12	0.1526
10/26/20 2:58:48 PM	1576.63	39.71	0.1533





Project Number: 02541139	**LL:** NA	**$D_{0(min)}$ (in):** 0.1281	**d_0 (in):** 0.1281
Project Name: CPRA PO 181	**PL:** NA	**D_{end} (in):** 0.1533	**d_{100} (in):** 0.1497
Boring & Depth: M-5, S-2, 2-4 ft	**PL:** NA	**Δ_{hi} (in.):** 0.0252	**δ_{eop} (in.):** 0.0216
Sample: Sandy Lean Clay (CL), Light Gray	**- 200 (%):** NA	**t_{50} (min):** 0.95	**t_{90} (min):** 7

CONSOLIDATION TEST RESULTS - ASTM D 2435

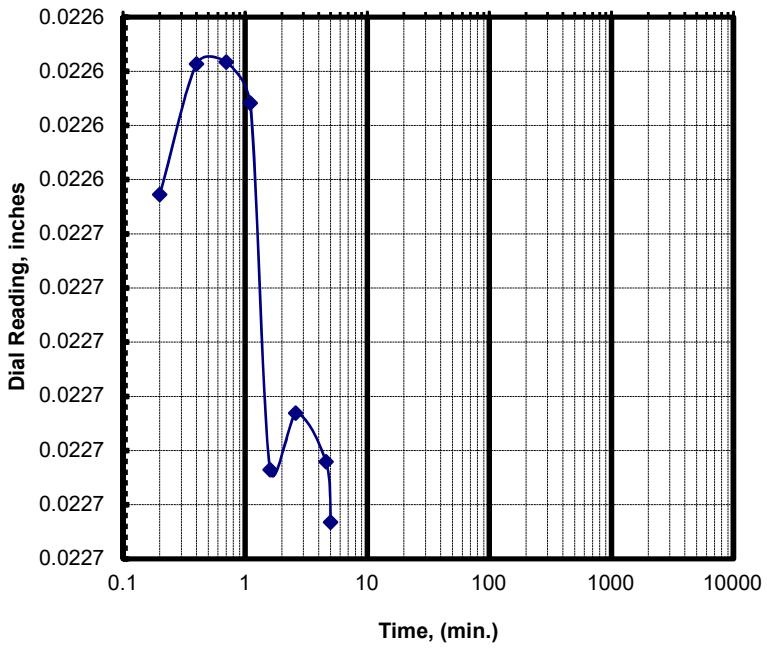


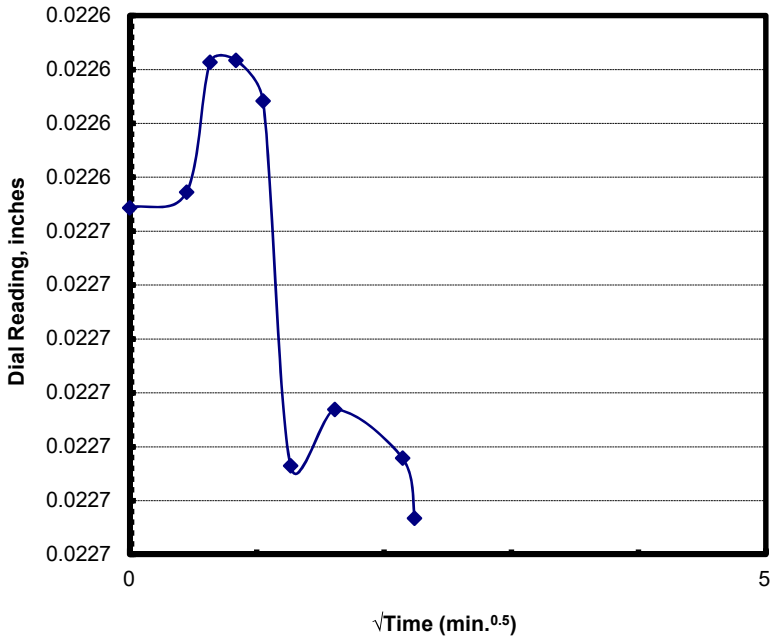
Sample Condition	Before	After	Consolidation Parameters	
Moisture Content, %:	23.1%	16.1%	Overburden Pressure, tsf:	0.2
Sample Height, in.:	0.9980	0.8816	Preconsolidation Pressure, tsf:	0.8
Void Ratio, e:	0.6144	0.4261	Compression Index, (Cc):	0.039
Unit Weight, pcf:	102.5	116.1	Re-Compression Index, (Cr)	0.014
Degree of Saturation:	1.00	1.00	Swell Index, Cs:	-

Project Number:	02541139	Liquid Limit:	NA	Hand Pen:	0.20 tsf
Project Name	CPRA PO 181	Plastic Limit:	NA	-200 %:	NA
Boring No.:	M-5	Plasticity Index:	NA	SPG:	2.653
Sample ID, Depth:	S-2, 2-4 ft	Classification:	Sandy Lean Clay (CL), Light Gray		

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.05 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/24/20 10:49:16 AM	0.00	0.00	0.0226
11/24/20 10:49:28 AM	0.20	0.45	0.0226
11/24/20 10:49:40 AM	0.40	0.63	0.0226
11/24/20 10:49:58 AM	0.70	0.84	0.0226
11/24/20 10:50:22 AM	1.10	1.05	0.0226
11/24/20 10:50:52 AM	1.60	1.26	0.0227
11/24/20 10:51:52 AM	2.60	1.61	0.0227
11/24/20 10:53:52 AM	4.60	2.14	0.0227
11/24/20 10:54:17 AM	5.02	2.24	0.0227

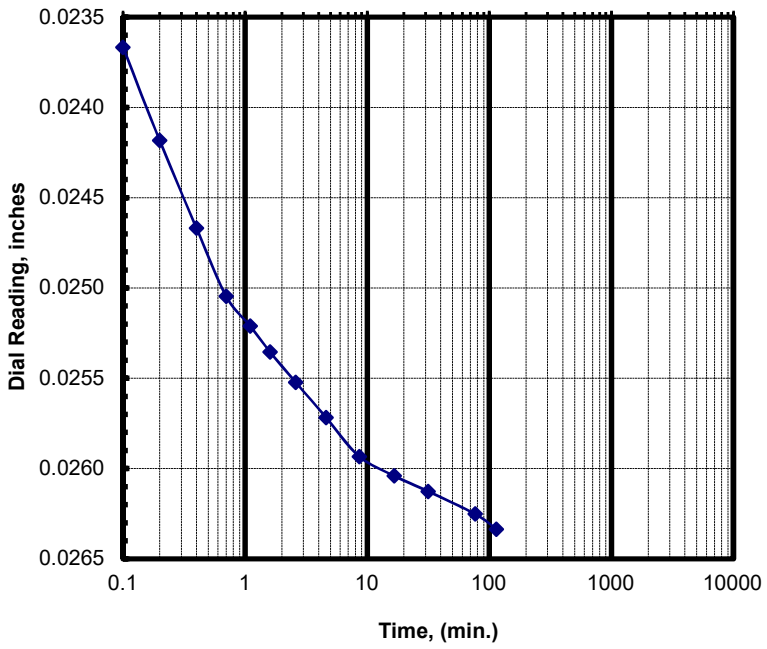


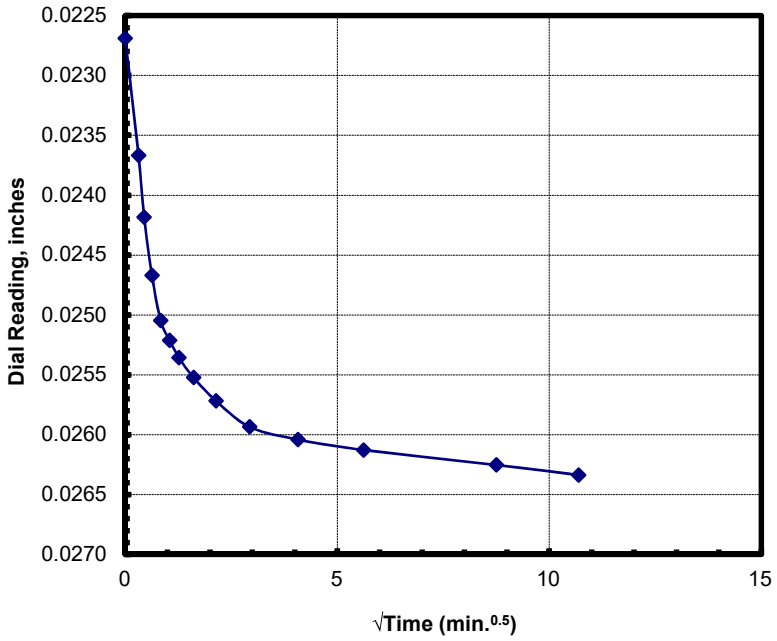


Project Number: 02541139	**LL:** 54	$D_{0(min)}$ **(in):** 0.0226	d_0 **(in):** 0.0226
Project Name: CPRA PO 181	**PL:** 22	D_{end} **(in):** 0.0227	d_{100} **(in):** 0.0227
Boring & Depth: M-6, S-5, 8-10 ft	**PL:** 32	Δ_{hi} **(in.):** 0.0001	δ_{eop} **(in.):** 0.0001
Sample: Gray FAT CLAY	**- 200 (%):** NA	t_{50} **(min):**	t_{90} **(min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.125 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/24/20 10:54:17 AM	0.00	0.00	0.0227
11/24/20 10:54:23 AM	0.10	0.32	0.0237
11/24/20 10:54:29 AM	0.20	0.45	0.0242
11/24/20 10:54:41 AM	0.40	0.63	0.0247
11/24/20 10:54:59 AM	0.70	0.84	0.0250
11/24/20 10:55:23 AM	1.10	1.05	0.0252
11/24/20 10:55:53 AM	1.60	1.26	0.0254
11/24/20 10:56:53 AM	2.60	1.61	0.0255
11/24/20 10:58:53 AM	4.60	2.14	0.0257
11/24/20 11:02:53 AM	8.60	2.93	0.0259
11/24/20 11:10:53 AM	16.60	4.07	0.0260
11/24/20 11:25:53 AM	31.60	5.62	0.0261
11/24/20 11:45:53 AM	51.60	7.18	0.0263
11/24/20 12:10:53 PM	76.60	8.75	0.0263
11/24/20 12:40:53 PM	106.60	10.32	0.0262
11/24/20 12:48:36 PM	114.32	10.69	0.0263

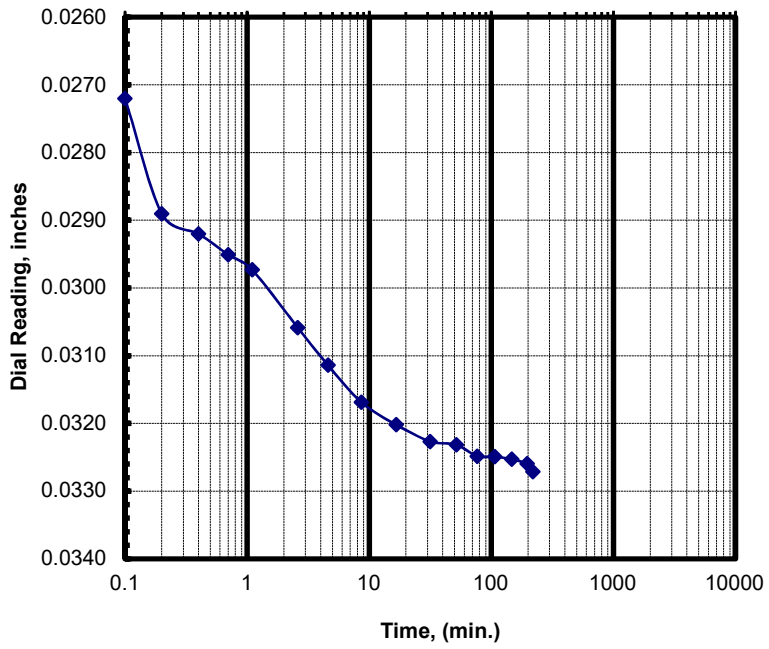


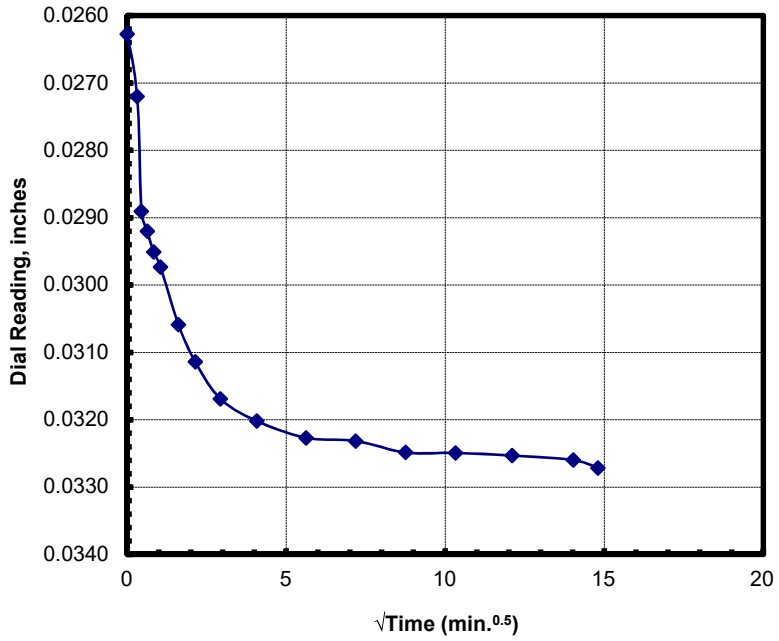


Project Number: 02541139	**LL:** 54	$D_{0(min)}$ (in): 0.0227	d_0 (in): 0.0227
Project Name: CPRA PO 181	**PL:** 22	D_{end} (in): 0.0263	d_{100} (in): 0.0259
Boring & Depth: M-6, S-5, 8-10 ft	**PL:** 32	Δ_{hi} (in.): 0.0036	δ_{eop} (in.): 0.0032
Sample: Gray FAT CLAY	**- 200 (%):** NA	t_{50} (min): 0.24	t_{90} (min): 3.2

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.25 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/24/20 12:48:36 PM	0.00	0.00	0.0263
11/24/20 12:48:42 PM	0.10	0.32	0.0272
11/24/20 12:48:48 PM	0.20	0.45	0.0289
11/24/20 12:49:00 PM	0.40	0.63	0.0292
11/24/20 12:49:18 PM	0.70	0.84	0.0295
11/24/20 12:49:42 PM	1.10	1.05	0.0297
11/24/20 12:50:12 PM	1.60	1.26	0.0298
11/24/20 12:51:12 PM	2.60	1.61	0.0306
11/24/20 12:53:12 PM	4.60	2.14	0.0311
11/24/20 12:57:12 PM	8.60	2.93	0.0317
11/24/20 1:05:12 PM	16.60	4.07	0.0320
11/24/20 1:20:12 PM	31.60	5.62	0.0323
11/24/20 1:40:13 PM	51.62	7.18	0.0323
11/24/20 2:05:13 PM	76.62	8.75	0.0325
11/24/20 2:35:13 PM	106.62	10.33	0.0325
11/24/20 3:15:13 PM	146.62	12.11	0.0325
11/24/20 4:05:13 PM	196.62	14.02	0.0326
11/24/20 4:27:37 PM	219.02	14.80	0.0327

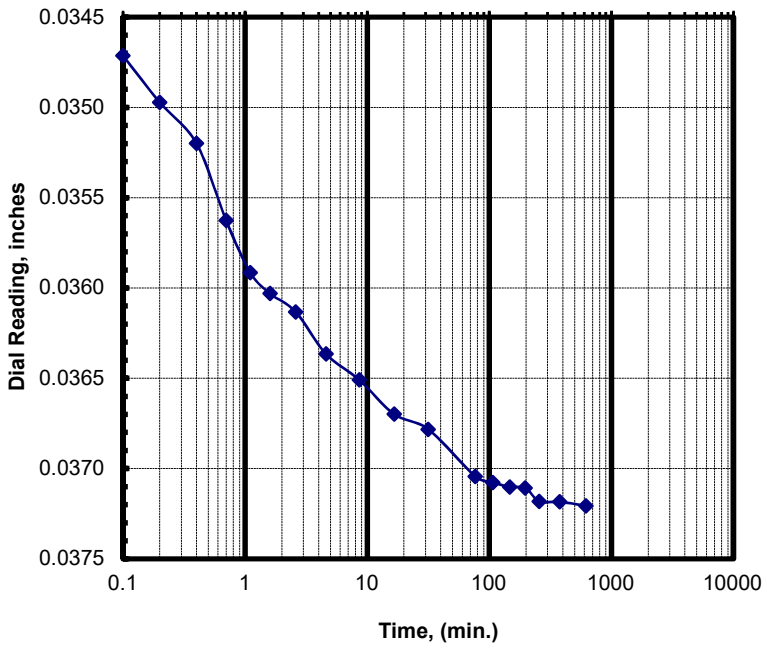


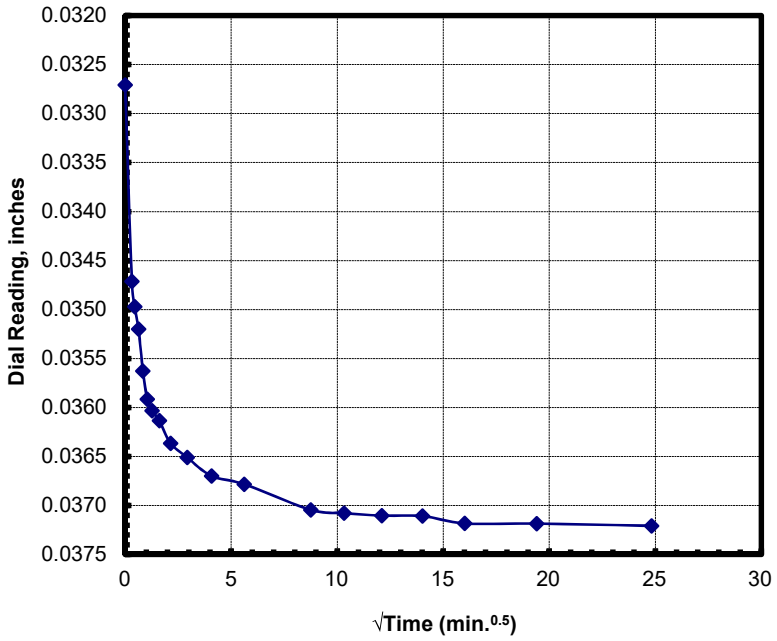


Project Number: 02541139	**LL:** 54	$D_{0(min)}$ (in): 0.0263	d_0 (in): 0.0263
Project Name: CPRA PO 181	**PL:** 22	D_{end} (in): 0.0327	d_{100} (in): 0.0320
Boring & Depth: M-6, S-5, 8-10 ft	**PL:** 32	Δ_{hi} (in.): 0.0064	δ_{eop} (in.): 0.0057
Sample: Gray FAT CLAY	**- 200 (%):** NA	t_{50} (min): 0.27	t_{90} (min): 5.9

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.5 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/24/20 4:27:38 PM	0.00	0.00	0.0327
11/24/20 4:27:44 PM	0.10	0.32	0.0347
11/24/20 4:27:50 PM	0.20	0.45	0.0350
11/24/20 4:28:02 PM	0.40	0.63	0.0352
11/24/20 4:28:20 PM	0.70	0.84	0.0356
11/24/20 4:28:44 PM	1.10	1.05	0.0359
11/24/20 4:29:14 PM	1.60	1.26	0.0360
11/24/20 4:30:14 PM	2.60	1.61	0.0361
11/24/20 4:32:14 PM	4.60	2.14	0.0364
11/24/20 4:36:14 PM	8.60	2.93	0.0365
11/24/20 4:44:15 PM	16.62	4.08	0.0367
11/24/20 4:59:15 PM	31.62	5.62	0.0368
11/24/20 5:19:15 PM	51.62	7.18	0.0371
11/24/20 5:44:15 PM	76.62	8.75	0.0370
11/24/20 6:14:15 PM	106.62	10.33	0.0371
11/24/20 6:54:15 PM	146.62	12.11	0.0371
11/24/20 7:44:15 PM	196.62	14.02	0.0371
11/24/20 8:44:15 PM	256.62	16.02	0.0372
11/24/20 10:44:15 PM	376.62	19.41	0.0372
11/25/20 2:44:16 AM	616.63	24.83	0.0372
11/25/20 7:41:21 AM	913.72	30.23	0.0375

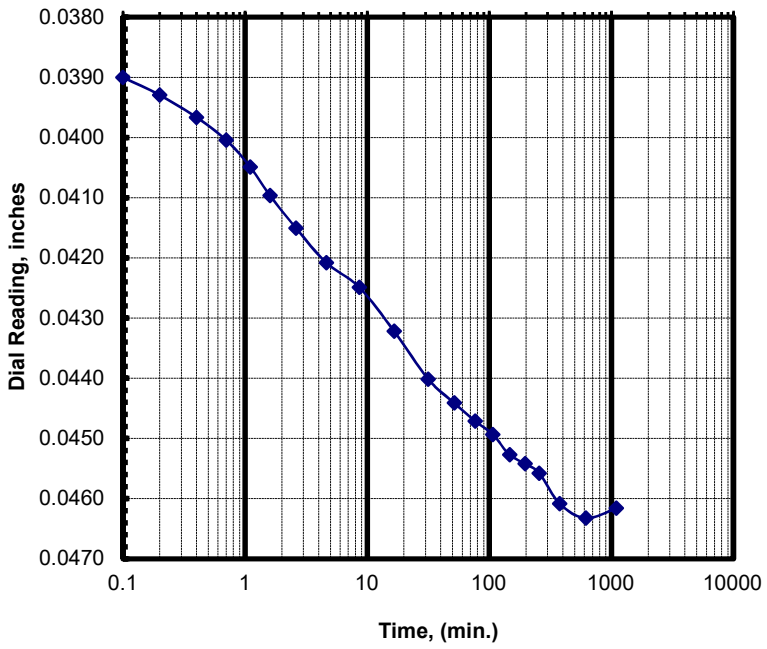


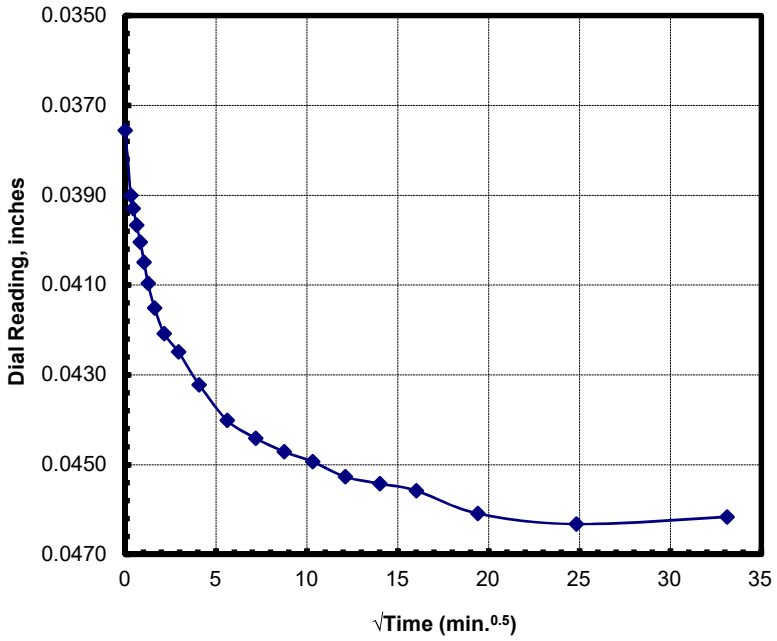


Project Number: 02541139	**LL:** 54	$D_{0(min)}$ (in): 0.0327	d_0 (in): 0.0327
Project Name: CPRA PO 181	**PL:** 22	D_{end} (in): 0.0375	d_{100} (in): 0.0371
Boring & Depth: M-6, S-5, 8-10 ft	**PL:** 32	Δ_{hi} (in.): 0.0048	δ_{eop} (in.): 0.0044
Sample: Gray FAT CLAY	**- 200 (%):** NA	t_{50} (min): 1	t_{90} (min): 40

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/25/20 7:41:21 AM	0.00	0.00	0.0376
11/25/20 7:41:27 AM	0.10	0.32	0.0390
11/25/20 7:41:33 AM	0.20	0.45	0.0393
11/25/20 7:41:45 AM	0.40	0.63	0.0397
11/25/20 7:42:03 AM	0.70	0.84	0.0400
11/25/20 7:42:27 AM	1.10	1.05	0.0405
11/25/20 7:42:57 AM	1.60	1.26	0.0410
11/25/20 7:43:58 AM	2.62	1.62	0.0415
11/25/20 7:45:58 AM	4.62	2.15	0.0421
11/25/20 7:49:58 AM	8.62	2.94	0.0425
11/25/20 7:57:58 AM	16.62	4.08	0.0432
11/25/20 8:12:58 AM	31.62	5.62	0.0440
11/25/20 8:32:58 AM	51.62	7.18	0.0444
11/25/20 8:57:58 AM	76.62	8.75	0.0447
11/25/20 9:27:58 AM	106.62	10.33	0.0449
11/25/20 10:07:58 AM	146.62	12.11	0.0453
11/25/20 10:57:58 AM	196.62	14.02	0.0454
11/25/20 11:57:58 AM	256.62	16.02	0.0456
11/25/20 1:57:59 PM	376.63	19.41	0.0461
11/25/20 5:57:59 PM	616.63	24.83	0.0463
11/26/20 1:57:59 AM	1096.63	33.12	0.0462
11/26/20 9:58:00 AM	1576.65	39.71	0.0463
11/26/20 5:58:00 PM	2056.65	45.35	0.0462
11/26/20 7:41:32 PM	2160.18	46.48	0.0462

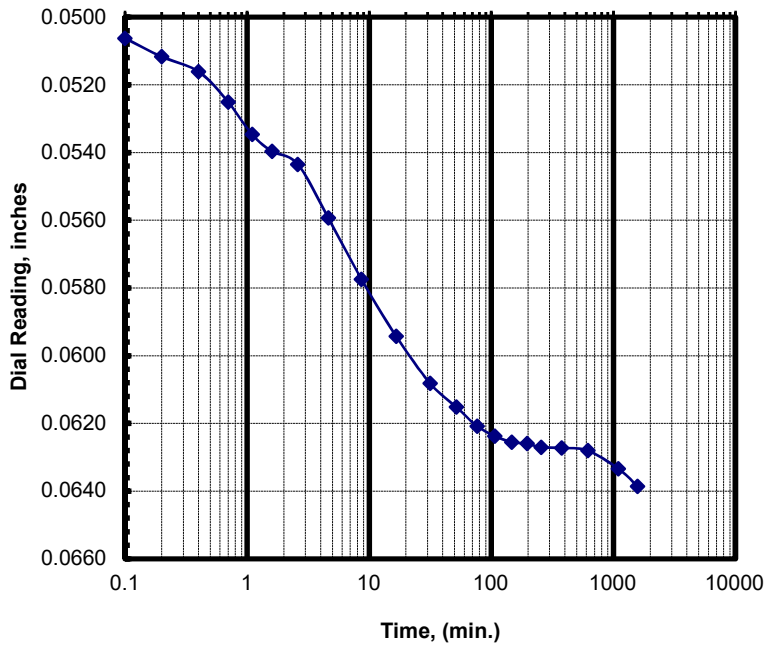


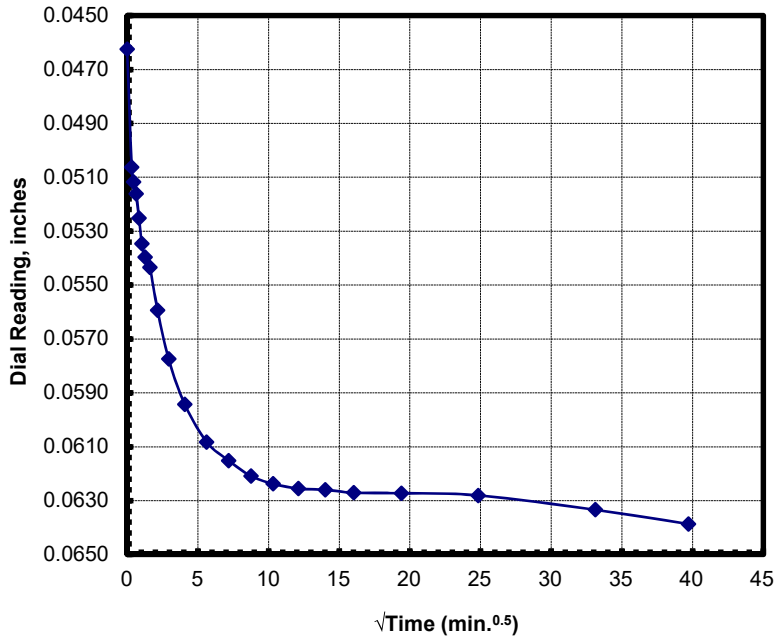


Project Number: 02541139	**LL:** 54	**$D_{0(min)}$ (in):** 0.0376	**d_0 (in):** 0.0376
Project Name: CPRA PO 181	**PL:** 22	**D_{end} (in):** 0.0462	**d_{100} (in):** 0.0450
Boring & Depth: M-6, S-5, 8-10 ft	**PL:** 32	**Δ_{hi} (in.):** 0.0087	**δ_{eop} (in.):** 0.0074
Sample: Gray FAT CLAY	**- 200 (%):** NA	**t_{50} (min):** 2.2	**t_{90} (min):** 43

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/26/20 7:41:32 PM	0.00	0.00	0.0462
11/26/20 7:41:38 PM	0.10	0.32	0.0506
11/26/20 7:41:44 PM	0.20	0.45	0.0512
11/26/20 7:41:56 PM	0.40	0.63	0.0516
11/26/20 7:42:14 PM	0.70	0.84	0.0525
11/26/20 7:42:38 PM	1.10	1.05	0.0535
11/26/20 7:43:08 PM	1.60	1.26	0.0540
11/26/20 7:44:08 PM	2.60	1.61	0.0543
11/26/20 7:46:09 PM	4.62	2.15	0.0559
11/26/20 7:50:09 PM	8.62	2.94	0.0577
11/26/20 7:58:09 PM	16.62	4.08	0.0594
11/26/20 8:13:09 PM	31.62	5.62	0.0608
11/26/20 8:33:09 PM	51.62	7.18	0.0615
11/26/20 8:58:09 PM	76.62	8.75	0.0621
11/26/20 9:28:09 PM	106.62	10.33	0.0624
11/26/20 10:08:09 PM	146.62	12.11	0.0626
11/26/20 10:58:09 PM	196.62	14.02	0.0626
11/26/20 11:58:09 PM	256.62	16.02	0.0627
11/27/20 1:58:09 AM	376.62	19.41	0.0627
11/27/20 5:58:10 AM	616.63	24.83	0.0628
11/27/20 1:58:10 PM	1096.63	33.12	0.0633
11/27/20 9:58:11 PM	1576.65	39.71	0.0639
11/28/20 5:58:11 AM	2056.65	45.35	0.0639
11/28/20 7:41:38 AM	2160.10	46.48	0.0639

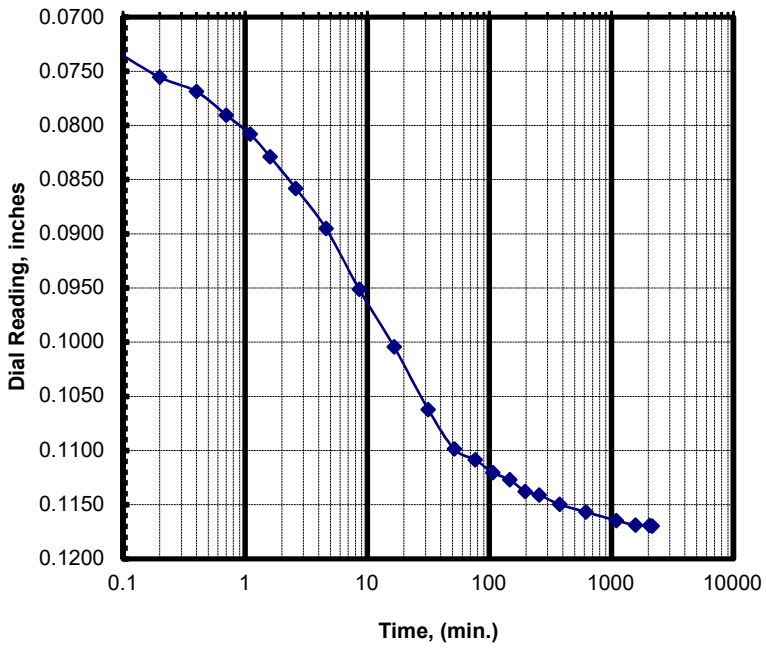


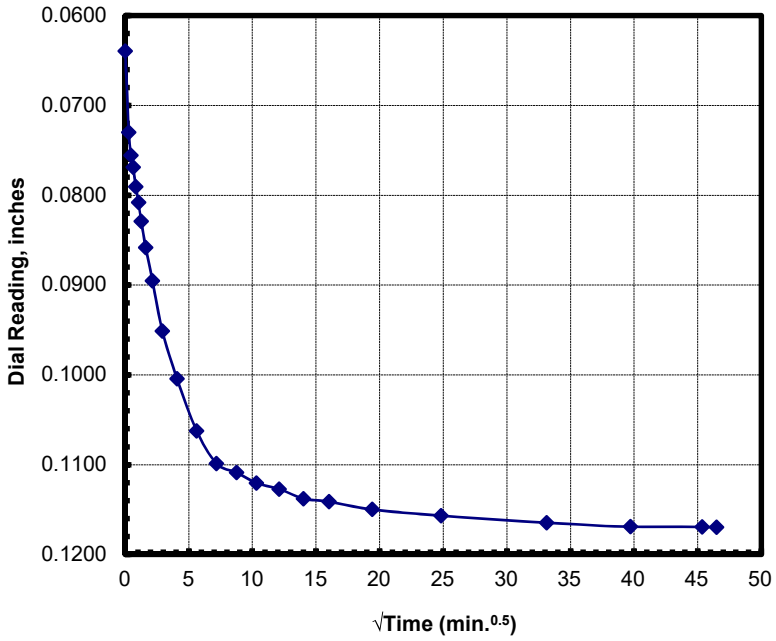


Project Number: 02541139	**LL:** 54	$D_{0(min)}$ **(in):** 0.0462	d_0 **(in):** 0.0462
Project Name: CPRA PO 181	**PL:** 22	D_{end} **(in):** 0.0639	d_{100} **(in):** 0.0624
Boring & Depth: M-6, S-5, 8-10 ft	**PL:** 32	Δ_{hi} **(in.):** 0.0177	δ_{eop} **(in.):** 0.0162
Sample: Gray FAT CLAY	**- 200 (%):** NA	t_{50} **(min):** 2.6	t_{90} **(min):** 31

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/28/20 7:41:39 AM	0.00	0.00	0.0639
11/28/20 7:41:44 AM	0.08	0.29	0.0730
11/28/20 7:41:51 AM	0.20	0.45	0.0755
11/28/20 7:42:03 AM	0.40	0.63	0.0769
11/28/20 7:42:21 AM	0.70	0.84	0.0790
11/28/20 7:42:45 AM	1.10	1.05	0.0808
11/28/20 7:43:15 AM	1.60	1.26	0.0829
11/28/20 7:44:15 AM	2.60	1.61	0.0858
11/28/20 7:46:15 AM	4.60	2.14	0.0895
11/28/20 7:50:15 AM	8.60	2.93	0.0951
11/28/20 7:58:15 AM	16.60	4.07	0.1004
11/28/20 8:13:15 AM	31.60	5.62	0.1062
11/28/20 8:33:15 AM	51.60	7.18	0.1099
11/28/20 8:58:15 AM	76.60	8.75	0.1109
11/28/20 9:28:15 AM	106.60	10.32	0.1120
11/28/20 10:08:15 AM	146.60	12.11	0.1127
11/28/20 10:58:15 AM	196.60	14.02	0.1138
11/28/20 11:58:16 AM	256.62	16.02	0.1141
11/28/20 1:58:16 PM	376.62	19.41	0.1150
11/28/20 5:58:16 PM	616.62	24.83	0.1157
11/29/20 1:58:17 AM	1096.63	33.12	0.1165
11/29/20 9:58:17 AM	1576.63	39.71	0.1169
11/29/20 5:58:18 PM	2056.65	45.35	0.1169
11/29/20 7:41:50 PM	2160.18	46.48	0.1170

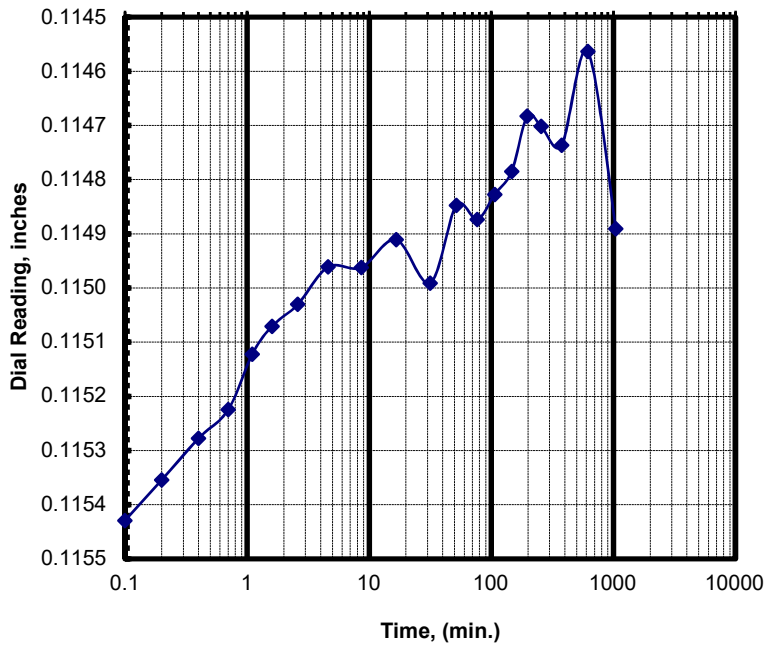


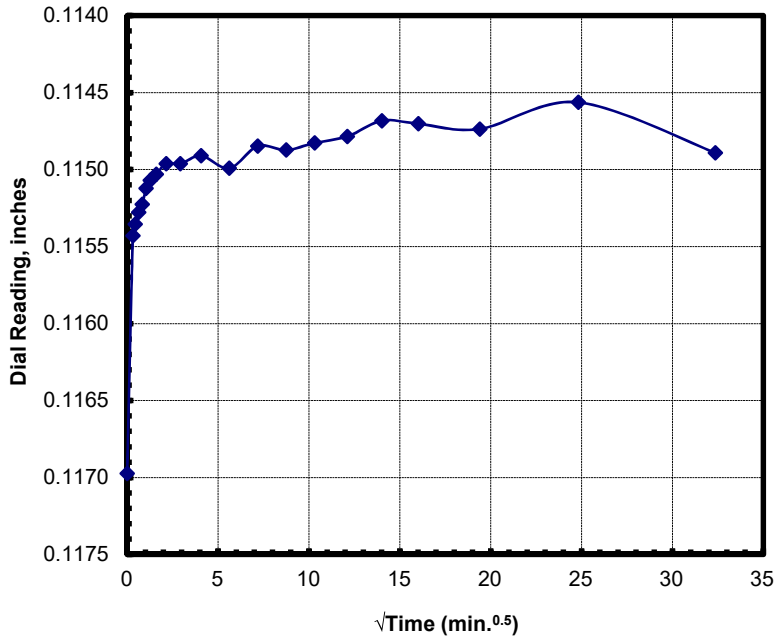


Project Number: 02541139	**LL:** 54	$D_{0(min)}$ (in): 0.0639	d_0 (in): 0.0639
Project Name: CPRA PO 181	**PL:** 22	D_{end} (in): 0.1170	d_{100} (in): 0.1160
Boring & Depth: M-6, S-5, 8-10 ft	**PL:** 32	Δ_{hi} (in.): 0.0530	δ_{eop} (in.): 0.0521
Sample: Gray FAT CLAY	**- 200 (%):** NA	t_{50} (min): 4	t_{90} (min): 40

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/29/20 7:41:50 PM	0.00	0.00	0.1170
11/29/20 7:41:56 PM	0.10	0.32	0.1154
11/29/20 7:42:02 PM	0.20	0.45	0.1154
11/29/20 7:42:14 PM	0.40	0.63	0.1153
11/29/20 7:42:32 PM	0.70	0.84	0.1152
11/29/20 7:42:56 PM	1.10	1.05	0.1151
11/29/20 7:43:26 PM	1.60	1.26	0.1151
11/29/20 7:44:26 PM	2.60	1.61	0.1150
11/29/20 7:46:26 PM	4.60	2.14	0.1150
11/29/20 7:50:26 PM	8.60	2.93	0.1150
11/29/20 7:58:26 PM	16.60	4.07	0.1149
11/29/20 8:13:27 PM	31.62	5.62	0.1150
11/29/20 8:33:27 PM	51.62	7.18	0.1148
11/29/20 8:58:27 PM	76.62	8.75	0.1149
11/29/20 9:28:27 PM	106.62	10.33	0.1148
11/29/20 10:08:27 PM	146.62	12.11	0.1148
11/29/20 10:58:27 PM	196.62	14.02	0.1147
11/29/20 11:58:27 PM	256.62	16.02	0.1147
11/30/20 1:58:27 AM	376.62	19.41	0.1147
11/30/20 5:58:28 AM	616.63	24.83	0.1146
11/30/20 1:08:48 PM	1046.97	32.36	0.1149

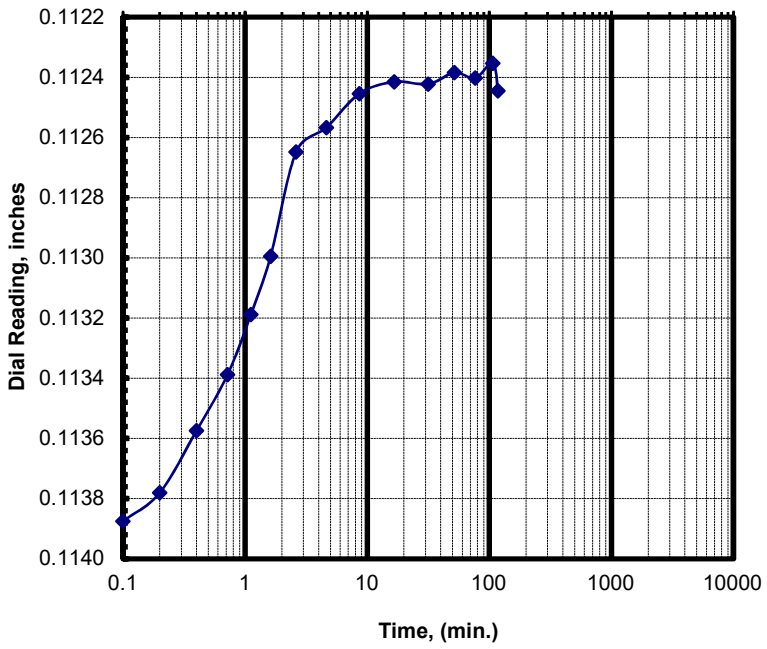


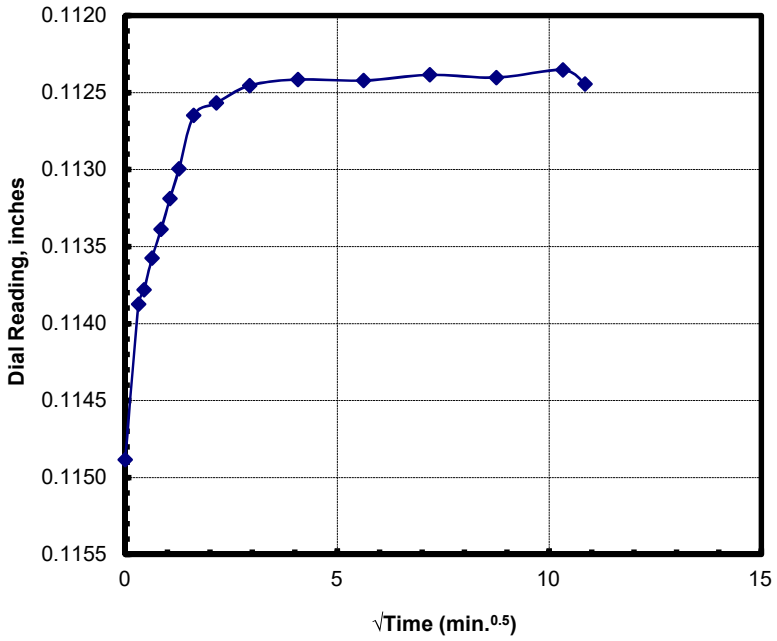


Project Number: 02541139	**LL:** 54	$D_{0(min)}$ **(in):** 0.1170	d_0 **(in):** 0.1170
Project Name: CPRA PO 181	**PL:** 22	D_{end} **(in):** 0.1149	d_{100} **(in):** 0.1146
Boring & Depth: M-6, S-5, 8-10 ft	**PL:** 32	Δ_{hi} **(in.):** -0.0021	δ_{eop} **(in.):** -0.0024
Sample: Gray FAT CLAY	**- 200 (%):** NA	t_{50} **(min):**	t_{90} **(min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/30/20 1:08:48 PM	0.00	0.00	0.1149
11/30/20 1:08:54 PM	0.10	0.32	0.1139
11/30/20 1:09:00 PM	0.20	0.45	0.1138
11/30/20 1:09:12 PM	0.40	0.63	0.1136
11/30/20 1:09:31 PM	0.72	0.85	0.1134
11/30/20 1:09:55 PM	1.12	1.06	0.1132
11/30/20 1:10:25 PM	1.62	1.27	0.1130
11/30/20 1:11:25 PM	2.62	1.62	0.1126
11/30/20 1:13:25 PM	4.62	2.15	0.1126
11/30/20 1:17:25 PM	8.62	2.94	0.1125
11/30/20 1:25:25 PM	16.62	4.08	0.1124
11/30/20 1:40:25 PM	31.62	5.62	0.1124
11/30/20 2:00:25 PM	51.62	7.18	0.1124
11/30/20 2:25:26 PM	76.63	8.75	0.1124
11/30/20 2:55:26 PM	106.63	10.33	0.1124
11/30/20 3:06:22 PM	117.57	10.84	0.1124

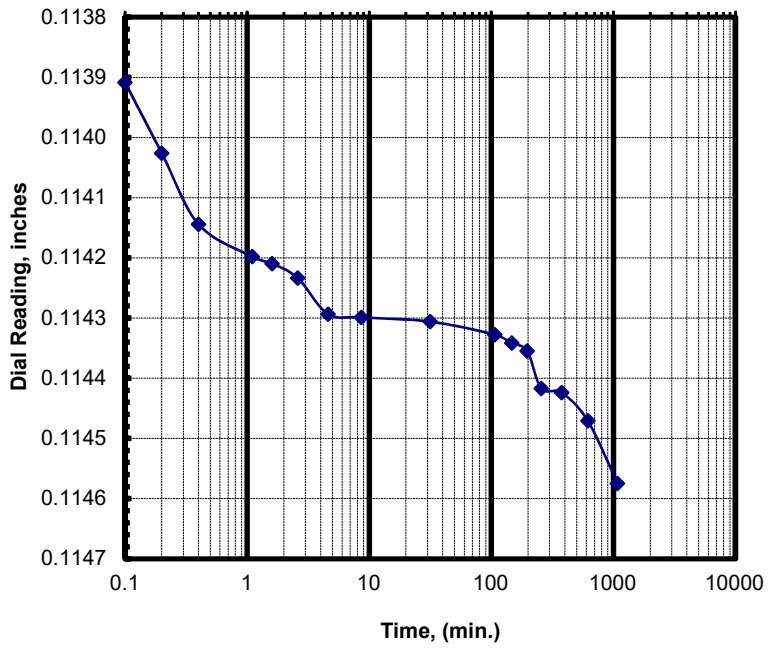


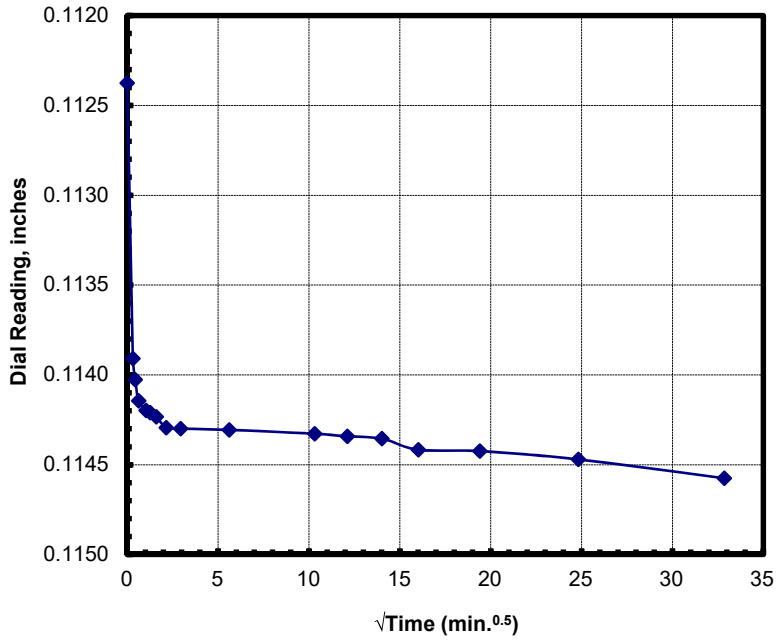


Project Number: 02541139	**LL:** 54	$D_{0(min)}$ (in): 0.1149	d_0 (in): 0.1149
Project Name: CPRA PO 181	**PL:** 22	D_{end} (in): 0.1124	d_{100} (in): 0.1124
Boring & Depth: M-6, S-5, 8-10 ft	**PL:** 32	Δ_{hi} (in.): -0.0024	δ_{eop} (in.): -0.0024
Sample: Gray FAT CLAY	**- 200 (%):** NA	t_{50} (min):	t_{90} (min):

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/30/20 3:06:23 PM	0.00	0.00	0.1124
11/30/20 3:06:29 PM	0.10	0.32	0.1139
11/30/20 3:06:35 PM	0.20	0.45	0.1140
11/30/20 3:06:47 PM	0.40	0.63	0.1141
11/30/20 3:07:05 PM	0.70	0.84	0.1142
11/30/20 3:07:29 PM	1.10	1.05	0.1142
11/30/20 3:07:59 PM	1.60	1.26	0.1142
11/30/20 3:08:59 PM	2.60	1.61	0.1142
11/30/20 3:10:59 PM	4.60	2.14	0.1143
11/30/20 3:15:00 PM	8.62	2.94	0.1143
11/30/20 3:23:00 PM	16.62	4.08	0.1143
11/30/20 3:38:00 PM	31.62	5.62	0.1143
11/30/20 3:58:00 PM	51.62	7.18	0.1144
11/30/20 4:23:00 PM	76.62	8.75	0.1144
11/30/20 4:53:00 PM	106.62	10.33	0.1143
11/30/20 5:33:00 PM	146.62	12.11	0.1143
11/30/20 6:23:00 PM	196.62	14.02	0.1144
11/30/20 7:23:00 PM	256.62	16.02	0.1144
11/30/20 9:23:00 PM	376.62	19.41	0.1144
12/1/20 1:23:01 AM	616.63	24.83	0.1145
12/1/20 9:05:28 AM	1079.08	32.85	0.1146

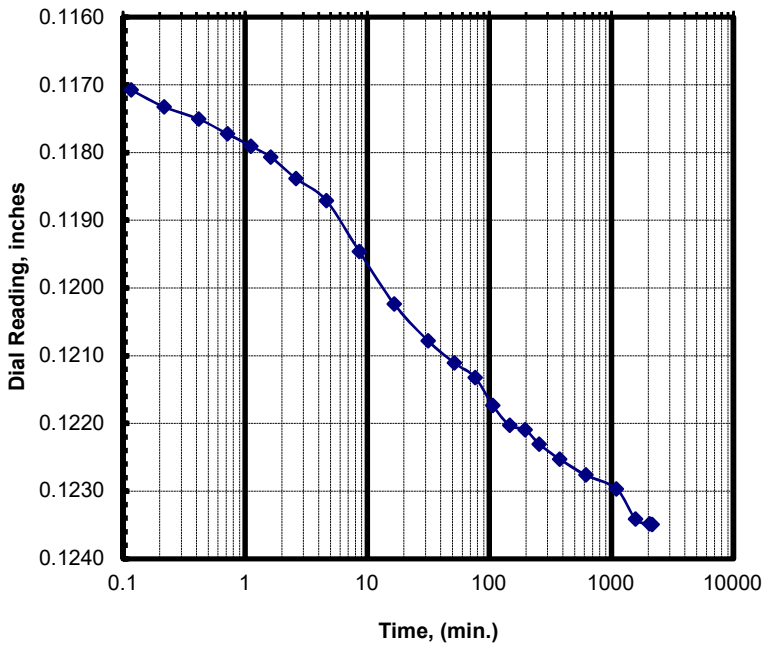


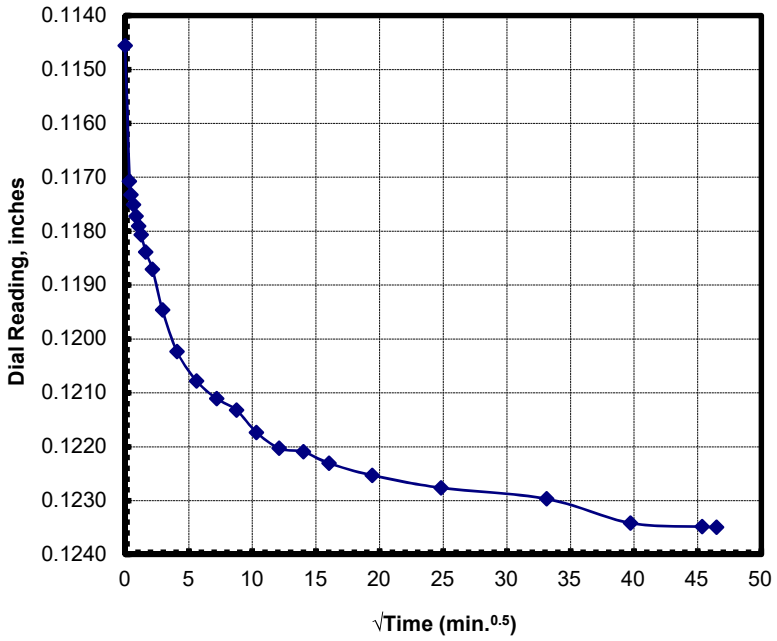


Project Number: 02541139	**LL:** 54	$D_{0(min)}$ **(in):** 0.1124	d_0 **(in):** 0.1124
Project Name: CPRA PO 181	**PL:** 22	D_{end} **(in):** 0.1146	d_{100} **(in):** 0.1143
Boring & Depth: M-6, S-5, 8-10 ft	**PL:** 32	Δ_{hi} **(in.):** 0.0022	δ_{eop} **(in.):** 0.0019
Sample: Gray FAT CLAY	**- 200 (%):** NA	t_{50} **(min):**	t_{90} **(min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/1/20 9:05:28 AM	0.00	0.00	0.1146
12/1/20 9:05:35 AM	0.12	0.34	0.1171
12/1/20 9:05:41 AM	0.22	0.47	0.1173
12/1/20 9:05:53 AM	0.42	0.65	0.1175
12/1/20 9:06:11 AM	0.72	0.85	0.1177
12/1/20 9:06:35 AM	1.12	1.06	0.1179
12/1/20 9:07:05 AM	1.62	1.27	0.1181
12/1/20 9:08:05 AM	2.62	1.62	0.1184
12/1/20 9:10:05 AM	4.62	2.15	0.1187
12/1/20 9:14:05 AM	8.62	2.94	0.1195
12/1/20 9:22:05 AM	16.62	4.08	0.1202
12/1/20 9:37:05 AM	31.62	5.62	0.1208
12/1/20 9:57:05 AM	51.62	7.18	0.1211
12/1/20 10:22:05 AM	76.62	8.75	0.1213
12/1/20 10:52:05 AM	106.62	10.33	0.1217
12/1/20 11:32:06 AM	146.63	12.11	0.1220
12/1/20 12:22:06 PM	196.63	14.02	0.1221
12/1/20 1:22:06 PM	256.63	16.02	0.1223
12/1/20 3:22:06 PM	376.63	19.41	0.1225
12/1/20 7:22:06 PM	616.63	24.83	0.1228
12/2/20 3:22:07 AM	1096.65	33.12	0.1230
12/2/20 11:22:07 AM	1576.65	39.71	0.1234
12/2/20 7:22:08 PM	2056.67	45.35	0.1235
12/2/20 9:05:32 PM	2160.07	46.48	0.1235

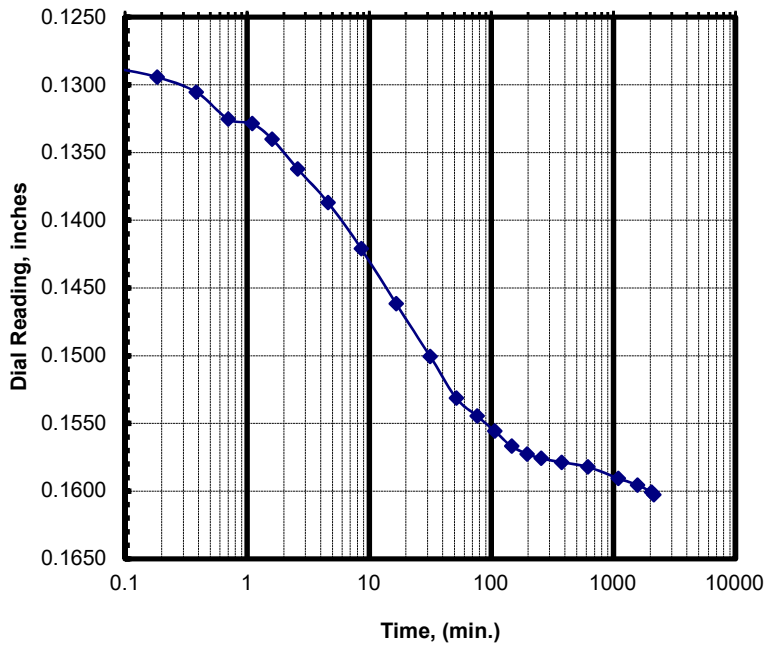


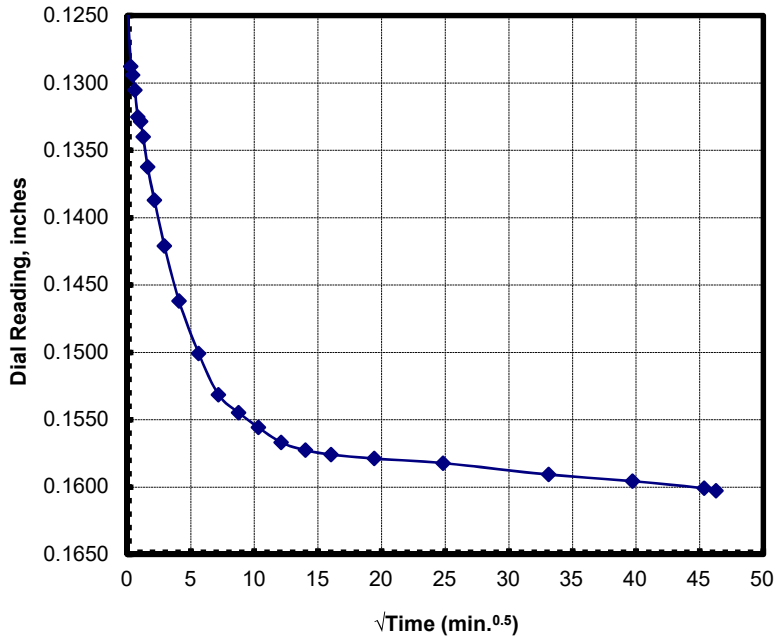


Project Number: 02541139	**LL:** 54	$D_{0(min)}$ **(in):** 0.1146	d_0 **(in):** 0.1146
Project Name: CPRA PO 181	**PL:** 22	D_{end} **(in):** 0.1235	d_{100} **(in):** 0.1210
Boring & Depth: M-6, S-5, 8-10 ft	**PL:** 32	Δ_{hi} **(in.):** 0.0089	δ_{eop} **(in.):** 0.0064
Sample: Gray FAT CLAY	**- 200 (%):** NA	t_{50} **(min):**	t_{90} **(min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 8 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/2/20 9:05:33 PM	0.00	0.00	0.1235
12/2/20 9:05:38 PM	0.08	0.29	0.1288
12/2/20 9:05:44 PM	0.18	0.43	0.1294
12/2/20 9:05:56 PM	0.38	0.62	0.1305
12/2/20 9:06:15 PM	0.70	0.84	0.1325
12/2/20 9:06:39 PM	1.10	1.05	0.1329
12/2/20 9:07:09 PM	1.60	1.26	0.1340
12/2/20 9:08:09 PM	2.60	1.61	0.1362
12/2/20 9:10:09 PM	4.60	2.14	0.1387
12/2/20 9:14:09 PM	8.60	2.93	0.1421
12/2/20 9:22:09 PM	16.60	4.07	0.1462
12/2/20 9:37:09 PM	31.60	5.62	0.1501
12/2/20 9:57:09 PM	51.60	7.18	0.1531
12/2/20 10:22:09 PM	76.60	8.75	0.1545
12/2/20 10:52:10 PM	106.62	10.33	0.1556
12/2/20 11:32:10 PM	146.62	12.11	0.1567
12/3/20 12:22:10 AM	196.62	14.02	0.1573
12/3/20 1:22:10 AM	256.62	16.02	0.1576
12/3/20 3:22:10 AM	376.62	19.41	0.1579
12/3/20 7:22:11 AM	616.63	24.83	0.1582
12/3/20 3:22:11 PM	1096.63	33.12	0.1591
12/3/20 11:22:12 PM	1576.65	39.71	0.1595
12/4/20 7:22:12 AM	2056.65	45.35	0.1601
12/4/20 8:46:43 AM	2141.17	46.27	0.1603

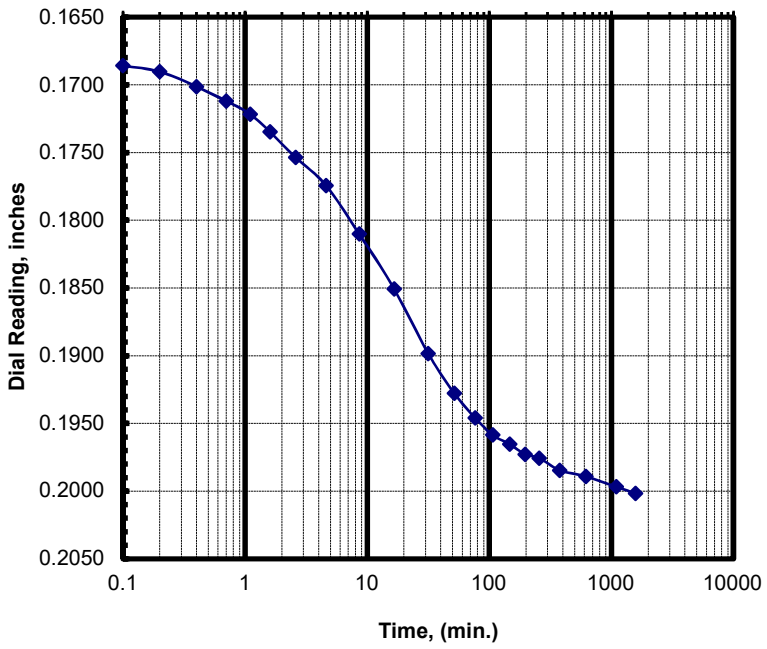


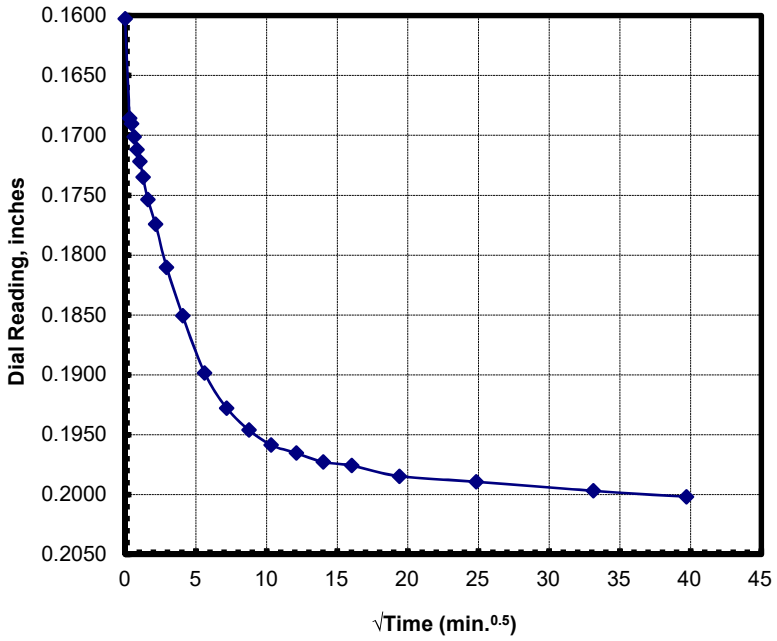


Project Number: 02541139	**LL:** 54	$D_{0(min)}$ (in): 0.1235	d_0 (in): 0.1235
Project Name: CPRA PO 181	**PL:** 22	D_{end} (in): 0.1603	d_{100} (in): 0.1560
Boring & Depth: M-6, S-5, 8-10 ft	**PL:** 32	Δ_{hi} (in.): 0.0368	δ_{eop} (in.): 0.0325
Sample: Gray FAT CLAY	**- 200 (%):** NA	t_{50} (min): 5.6	t_{90} (min): 49

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 16 tsf

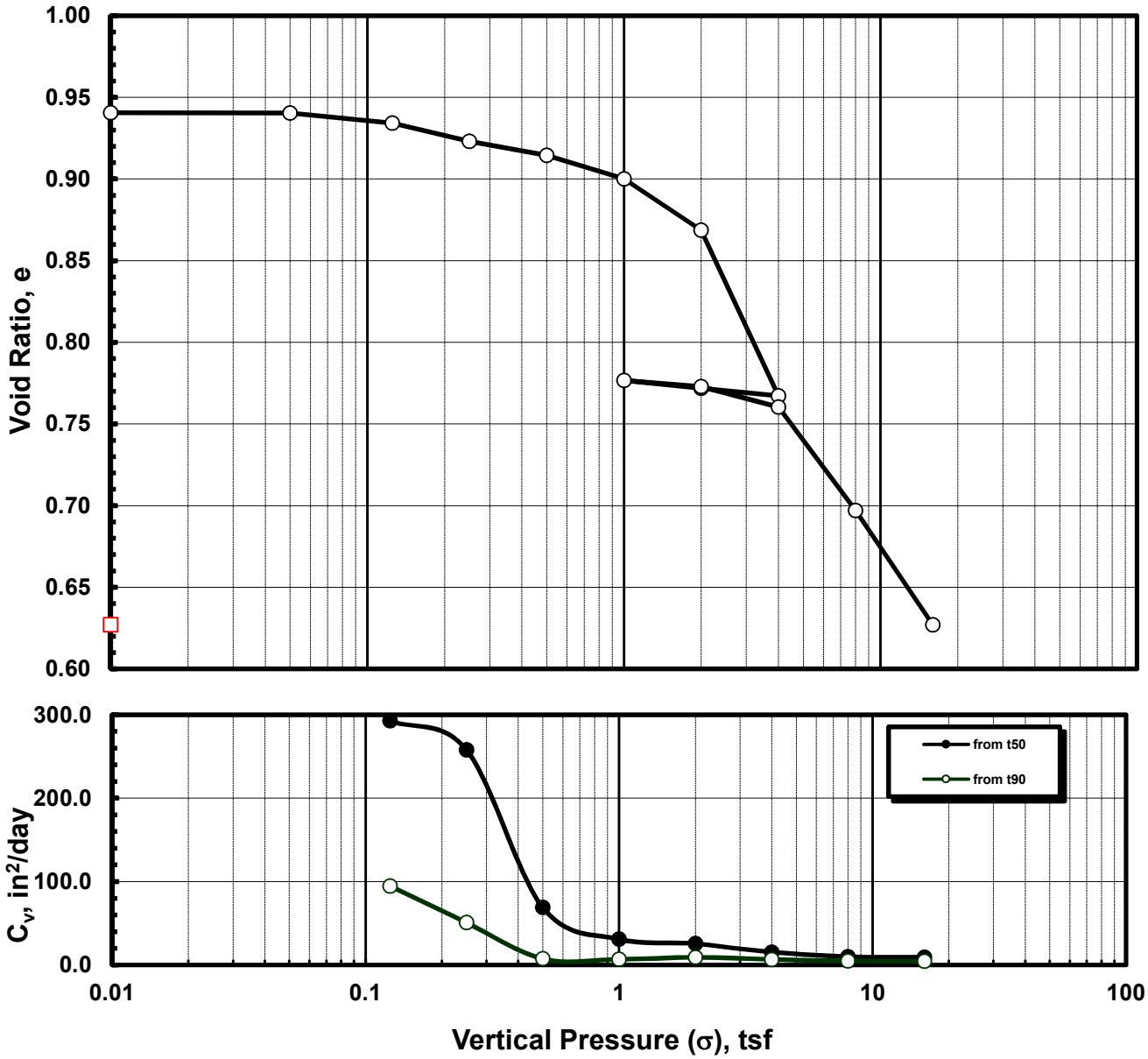
Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
12/4/20 8:46:44 AM	0.00	0.00	0.1603
12/4/20 8:46:50 AM	0.10	0.32	0.1686
12/4/20 8:46:56 AM	0.20	0.45	0.1690
12/4/20 8:47:08 AM	0.40	0.63	0.1701
12/4/20 8:47:26 AM	0.70	0.84	0.1712
12/4/20 8:47:50 AM	1.10	1.05	0.1722
12/4/20 8:48:20 AM	1.60	1.26	0.1735
12/4/20 8:49:20 AM	2.60	1.61	0.1754
12/4/20 8:51:20 AM	4.60	2.14	0.1774
12/4/20 8:55:20 AM	8.60	2.93	0.1810
12/4/20 9:03:20 AM	16.60	4.07	0.1851
12/4/20 9:18:20 AM	31.60	5.62	0.1898
12/4/20 9:38:21 AM	51.62	7.18	0.1928
12/4/20 10:03:21 AM	76.62	8.75	0.1946
12/4/20 10:33:21 AM	106.62	10.33	0.1959
12/4/20 11:13:21 AM	146.62	12.11	0.1965
12/4/20 12:03:21 PM	196.62	14.02	0.1973
12/4/20 1:03:21 PM	256.62	16.02	0.1976
12/4/20 3:03:21 PM	376.62	19.41	0.1985
12/4/20 7:03:22 PM	616.63	24.83	0.1989
12/5/20 3:03:22 AM	1096.63	33.12	0.1997
12/5/20 11:03:23 AM	1576.65	39.71	0.2002





Project Number: 02541139	**LL:** 54	$D_{0(min)}$ (in): 0.1603	d_0 (in): 0.1603
Project Name: CPRA PO 181	**PL:** 22	D_{end} (in): 0.2002	d_{100} (in): 0.1963
Boring & Depth: M-6, S-5, 8-10 ft	**PL:** 32	Δ_{hi} (in.): 0.0399	δ_{eop} (in.): 0.0360
Sample: Gray FAT CLAY	**- 200 (%):** NA	t_{50} (min): 5.6	t_{90} (min): 49

CONSOLIDATION TEST RESULTS - ASTM D 2435

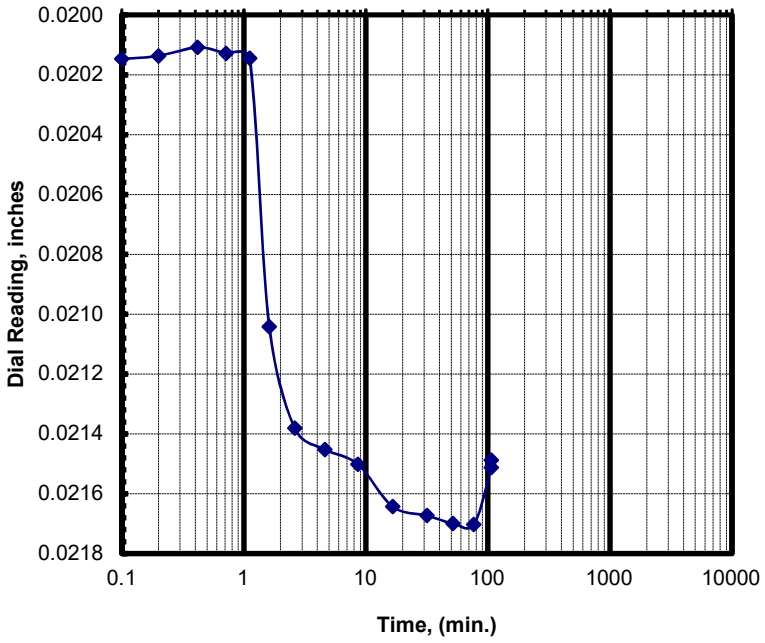


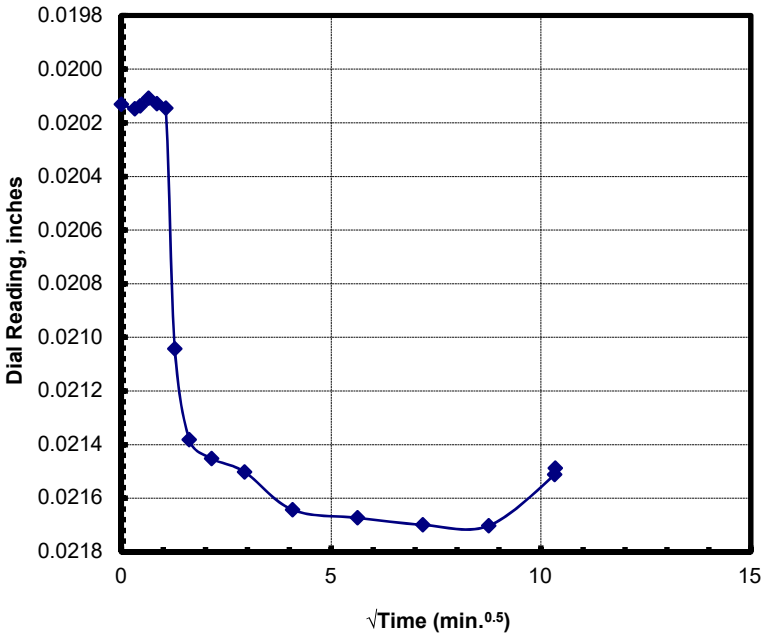
Sample Condition	Before	After	Consolidation Parameters	
Moisture Content, %:	33.2%	23.3%	Overburden Pressure, tsf:	0.3
Sample Height, in.:	0.9970	0.8359	Preconsolidation Pressure, tsf:	1.5
Void Ratio, e:	0.9406	0.6270	Compression Index, (Cc):	0.268
Unit Weight, pcf:	86.8	103.6	Re-Compression Index, (Cr)	0.027
Degree of Saturation:	0.95	1.00	Swell Index, Cs:	-

Project Number:	02541139	Liquid Limit:	54	Hand Pen:	0.25 tsf
Project Name	CPRA PO 181	Plastic Limit:	22	-200 %:	NA
Boring No.:	M-6	Plasticity Index:	32	SPG:	2.7
Sample ID, Depth:	S-5, 8-10 ft	Classification:	Gray FAT CLAY		

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.125 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/13/20 11:19:18 AM	0.00	0.00	0.0201
11/13/20 11:19:24 AM	0.10	0.32	0.0201
11/13/20 11:19:30 AM	0.20	0.45	0.0201
11/13/20 11:19:43 AM	0.42	0.65	0.0201
11/13/20 11:20:01 AM	0.72	0.85	0.0201
11/13/20 11:20:25 AM	1.12	1.06	0.0201
11/13/20 11:20:55 AM	1.62	1.27	0.0210
11/13/20 11:21:55 AM	2.62	1.62	0.0214
11/13/20 11:23:55 AM	4.62	2.15	0.0215
11/13/20 11:27:55 AM	8.62	2.94	0.0215
11/13/20 11:35:55 AM	16.62	4.08	0.0216
11/13/20 11:50:56 AM	31.63	5.62	0.0217
11/13/20 12:10:56 PM	51.63	7.19	0.0217
11/13/20 12:35:56 PM	76.63	8.75	0.0217
11/13/20 1:05:56 PM	106.63	10.33	0.0215
11/13/20 1:06:10 PM	106.87	10.34	0.0215

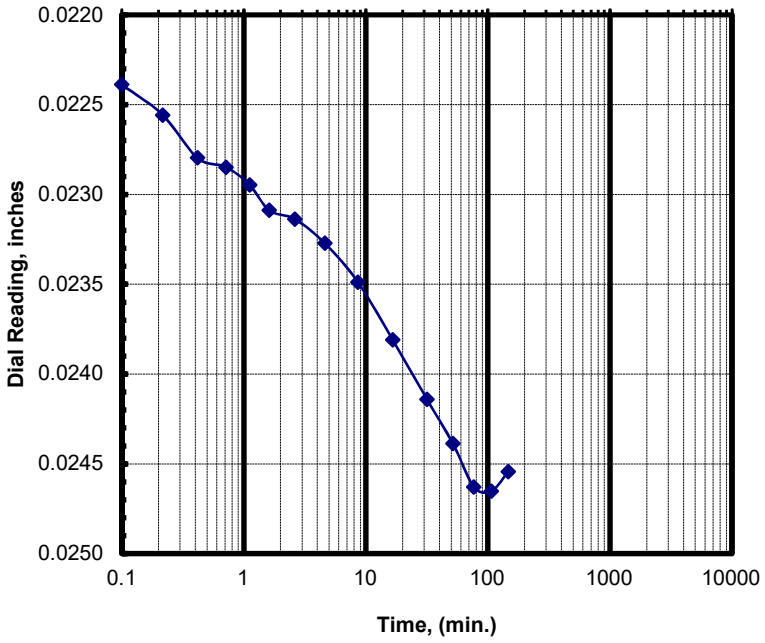


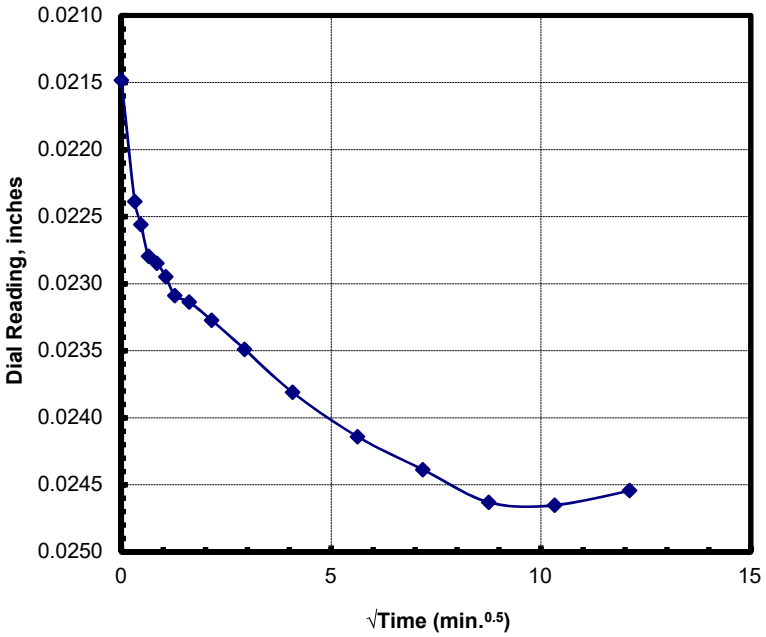


Project Number: 02541139	**LL:** NA	**$D_{0(min)}$ (in):** 0.0201	**d_0 (in):** 0.0201
Project Name: CPRA PO 181	**PL:** NA	**D_{end} (in):** 0.0215	**d_{100} (in):** 0.0215
Boring & Depth: M-7, S-3, 4-6 ft	**PL:** NA	**Δ_{hi} (in.):** 0.0014	**δ_{eop} (in.):** 0.0014
Sample: Light Gray FAT CLAY	**- 200 (%):** NA	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.25 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/13/20 1:06:10 PM	0.00	0.00	0.0215
11/13/20 1:06:16 PM	0.10	0.32	0.0224
11/13/20 1:06:23 PM	0.22	0.47	0.0226
11/13/20 1:06:35 PM	0.42	0.65	0.0228
11/13/20 1:06:53 PM	0.72	0.85	0.0228
11/13/20 1:07:17 PM	1.12	1.06	0.0229
11/13/20 1:07:47 PM	1.62	1.27	0.0231
11/13/20 1:08:47 PM	2.62	1.62	0.0231
11/13/20 1:10:47 PM	4.62	2.15	0.0233
11/13/20 1:14:47 PM	8.62	2.94	0.0235
11/13/20 1:22:47 PM	16.62	4.08	0.0238
11/13/20 1:37:48 PM	31.63	5.62	0.0241
11/13/20 1:57:48 PM	51.63	7.19	0.0244
11/13/20 2:22:48 PM	76.63	8.75	0.0246
11/13/20 2:52:49 PM	106.65	10.33	0.0247
11/13/20 3:32:49 PM	146.65	12.11	0.0245
11/13/20 4:22:49 PM	196.65	14.02	0.0244
11/13/20 4:22:59 PM	196.82	14.03	0.0244

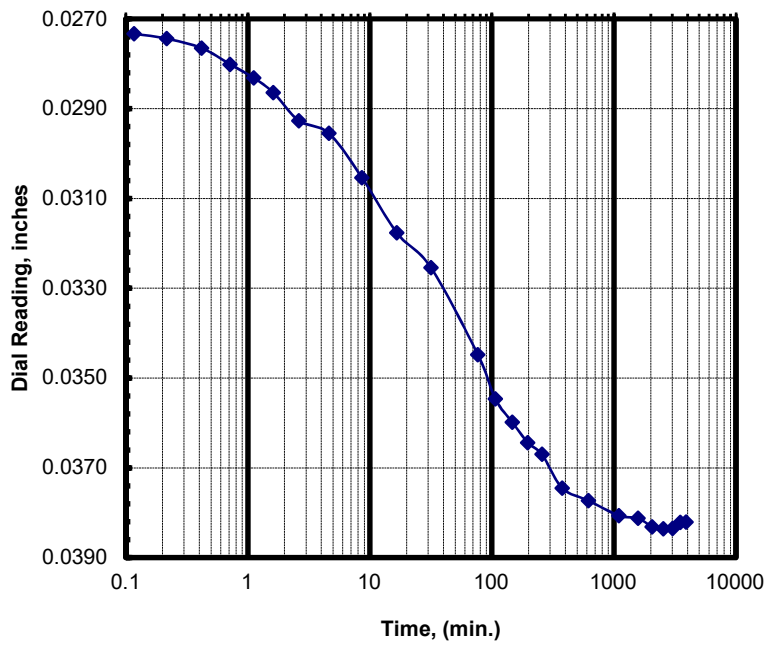


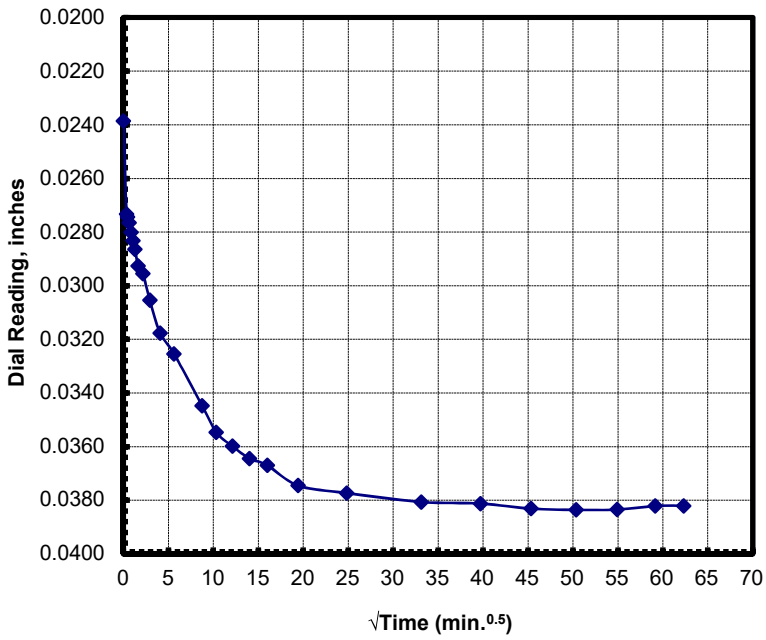


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.0215**	**d_0 (in): 0.0215**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.0244**	**d_{100} (in): 0.0246**
Boring & Depth: M-7, S-3, 4-6 ft	**PL: NA**	**Δ_{hi} (in.): 0.0029**	**δ_{eop} (in.): 0.0031**
Sample: Light Gray FAT CLAY	**- 200 (%): NA**	**t_{50} (min): 1.7**	**t_{90} (min): 43**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.5 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/13/20 4:25:34 PM	0.00	0.00	0.0239
11/13/20 4:25:41 PM	0.12	0.34	0.0273
11/13/20 4:25:47 PM	0.22	0.47	0.0274
11/13/20 4:25:59 PM	0.42	0.65	0.0277
11/13/20 4:26:17 PM	0.72	0.85	0.0280
11/13/20 4:26:41 PM	1.12	1.06	0.0283
11/13/20 4:27:11 PM	1.62	1.27	0.0286
11/13/20 4:28:11 PM	2.62	1.62	0.0293
11/13/20 4:30:11 PM	4.62	2.15	0.0295
11/13/20 4:34:11 PM	8.62	2.94	0.0305
11/13/20 4:42:12 PM	16.63	4.08	0.0318
11/13/20 4:57:12 PM	31.63	5.62	0.0325
11/13/20 5:17:12 PM	51.63	7.19	0.0331
11/13/20 5:42:12 PM	76.63	8.75	0.0345
11/13/20 6:12:12 PM	106.63	10.33	0.0355
11/13/20 6:52:13 PM	146.65	12.11	0.0360
11/13/20 7:42:13 PM	196.65	14.02	0.0364
11/13/20 8:42:13 PM	256.65	16.02	0.0367
11/13/20 10:42:13 PM	376.65	19.41	0.0374
11/14/20 2:42:13 AM	616.65	24.83	0.0377
11/14/20 10:42:14 AM	1096.67	33.12	0.0381
11/14/20 6:42:14 PM	1576.67	39.71	0.0381
11/15/20 2:42:15 AM	2056.68	45.35	0.0383
11/15/20 10:42:16 AM	2536.70	50.37	0.0384
11/15/20 6:42:16 PM	3016.70	54.92	0.0383
11/16/20 2:42:17 AM	3496.72	59.13	0.0382
11/16/20 9:08:40 AM	3883.10	62.31	0.0382

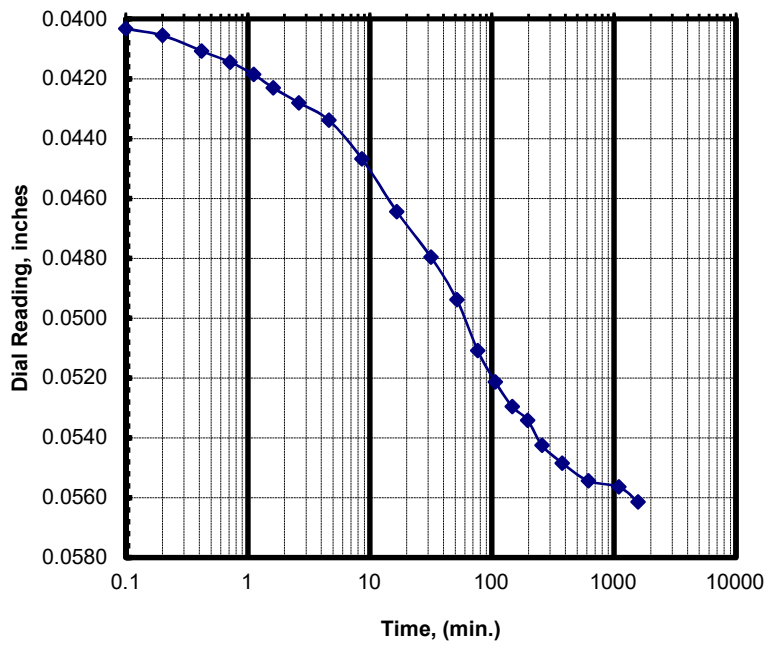


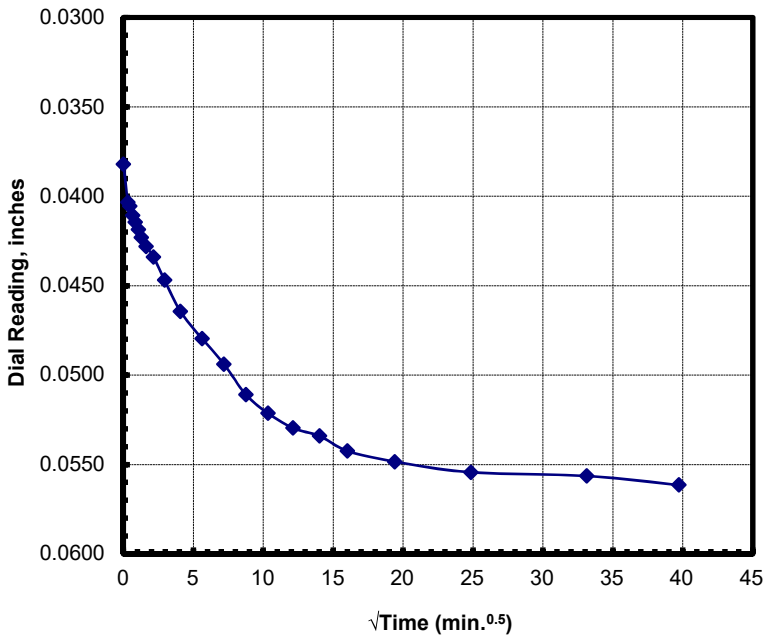


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.0239**	**d_0 (in): 0.0239**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.0382**	**d_{100} (in): 0.0374**
Boring & Depth: M-7, S-3, 4-6 ft	**PL: NA**	**Δ_{hi} (in.): 0.0143**	**δ_{eop} (in.): 0.0135**
Sample: Light Gray FAT CLAY	**- 200 (%): NA**	**t_{50} (min): 8.9**	**t_{90} (min): 150**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/16/20 9:08:41 AM	0.00	0.00	0.0382
11/16/20 9:08:47 AM	0.10	0.32	0.0403
11/16/20 9:08:53 AM	0.20	0.45	0.0406
11/16/20 9:09:06 AM	0.42	0.65	0.0411
11/16/20 9:09:24 AM	0.72	0.85	0.0414
11/16/20 9:09:48 AM	1.12	1.06	0.0419
11/16/20 9:10:18 AM	1.62	1.27	0.0423
11/16/20 9:11:18 AM	2.62	1.62	0.0428
11/16/20 9:13:18 AM	4.62	2.15	0.0434
11/16/20 9:17:18 AM	8.62	2.94	0.0447
11/16/20 9:25:18 AM	16.62	4.08	0.0464
11/16/20 9:40:18 AM	31.62	5.62	0.0480
11/16/20 10:00:18 AM	51.62	7.18	0.0494
11/16/20 10:25:18 AM	76.62	8.75	0.0511
11/16/20 10:55:19 AM	106.63	10.33	0.0521
11/16/20 11:35:19 AM	146.63	12.11	0.0530
11/16/20 12:25:19 PM	196.63	14.02	0.0534
11/16/20 1:25:19 PM	256.63	16.02	0.0542
11/16/20 3:25:19 PM	376.63	19.41	0.0548
11/16/20 7:25:20 PM	616.65	24.83	0.0554
11/17/20 3:25:20 AM	1096.65	33.12	0.0556
11/17/20 11:25:20 AM	1576.65	39.71	0.0561
11/17/20 4:25:10 PM	1876.48	43.32	0.0567

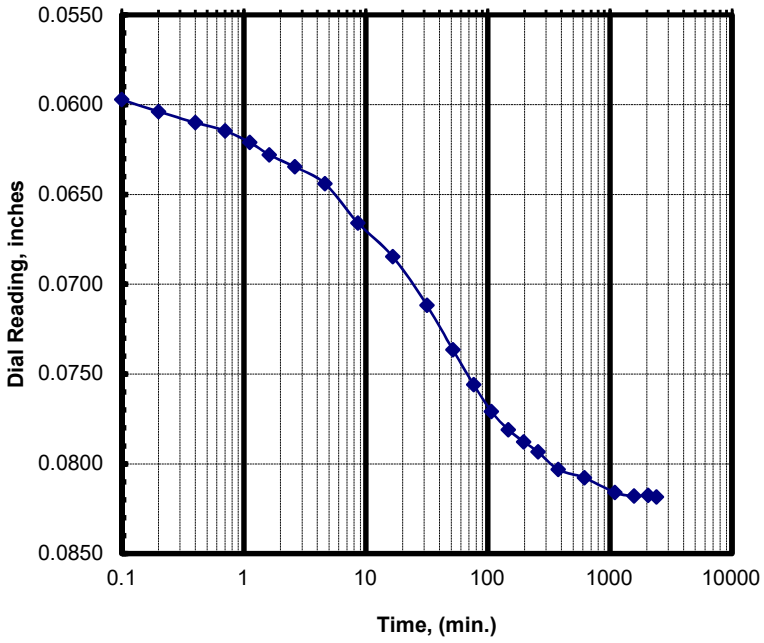


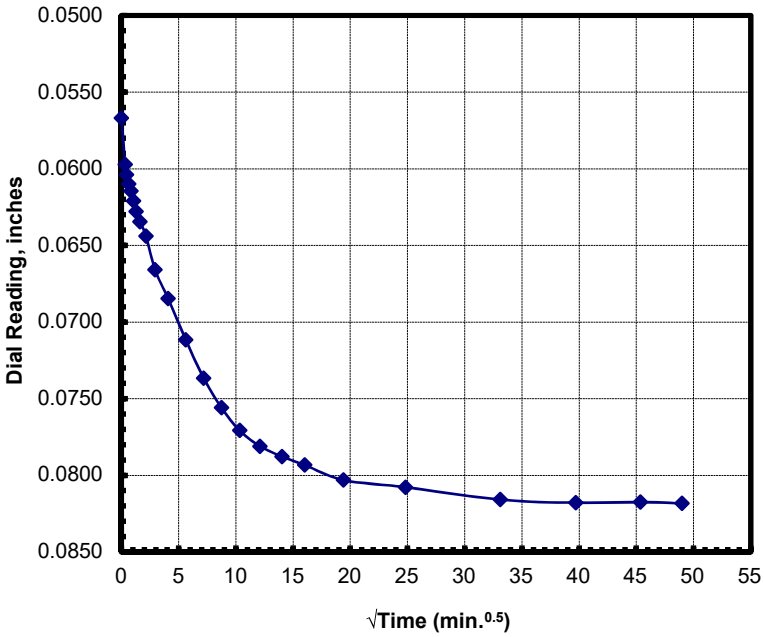


Project Number: 02541139	**LL:** NA	**$D_{0(min)}$ (in):** 0.0382	**d_0 (in):** 0.0382
Project Name: CPRA PO 181	**PL:** NA	**D_{end} (in):** 0.0567	**d_{100} (in):** 0.0552
Boring & Depth: M-7, S-3, 4-6 ft	**PL:** NA	**Δ_{hi} (in.):** 0.0185	**δ_{eop} (in.):** 0.0170
Sample: Light Gray FAT CLAY	**- 200 (%):** NA	**t_{50} (min):** 18	**t_{90} (min):** 200

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/17/20 4:25:11 PM	0.00	0.00	0.0567
11/17/20 4:25:17 PM	0.10	0.32	0.0597
11/17/20 4:25:23 PM	0.20	0.45	0.0604
11/17/20 4:25:35 PM	0.40	0.63	0.0610
11/17/20 4:25:53 PM	0.70	0.84	0.0615
11/17/20 4:26:18 PM	1.12	1.06	0.0621
11/17/20 4:26:48 PM	1.62	1.27	0.0628
11/17/20 4:27:48 PM	2.62	1.62	0.0635
11/17/20 4:29:48 PM	4.62	2.15	0.0644
11/17/20 4:33:48 PM	8.62	2.94	0.0666
11/17/20 4:41:48 PM	16.62	4.08	0.0685
11/17/20 4:56:48 PM	31.62	5.62	0.0712
11/17/20 5:16:48 PM	51.62	7.18	0.0737
11/17/20 5:41:49 PM	76.63	8.75	0.0756
11/17/20 6:11:49 PM	106.63	10.33	0.0771
11/17/20 6:51:49 PM	146.63	12.11	0.0781
11/17/20 7:41:49 PM	196.63	14.02	0.0788
11/17/20 8:41:49 PM	256.63	16.02	0.0793
11/17/20 10:41:49 PM	376.63	19.41	0.0803
11/18/20 2:41:50 AM	616.65	24.83	0.0808
11/18/20 10:41:50 AM	1096.65	33.12	0.0816
11/18/20 6:41:51 PM	1576.67	39.71	0.0818
11/19/20 2:41:51 AM	2056.67	45.35	0.0817
11/19/20 8:26:11 AM	2401.00	49.00	0.0818

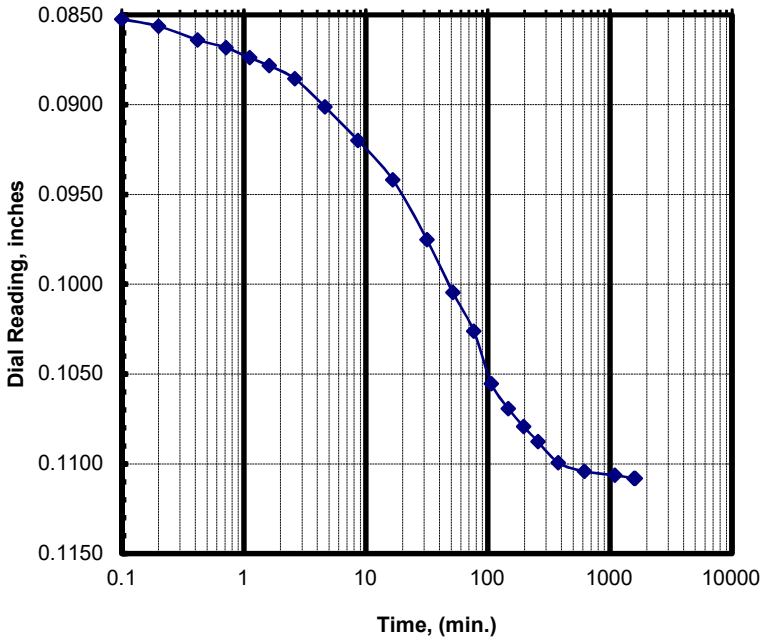


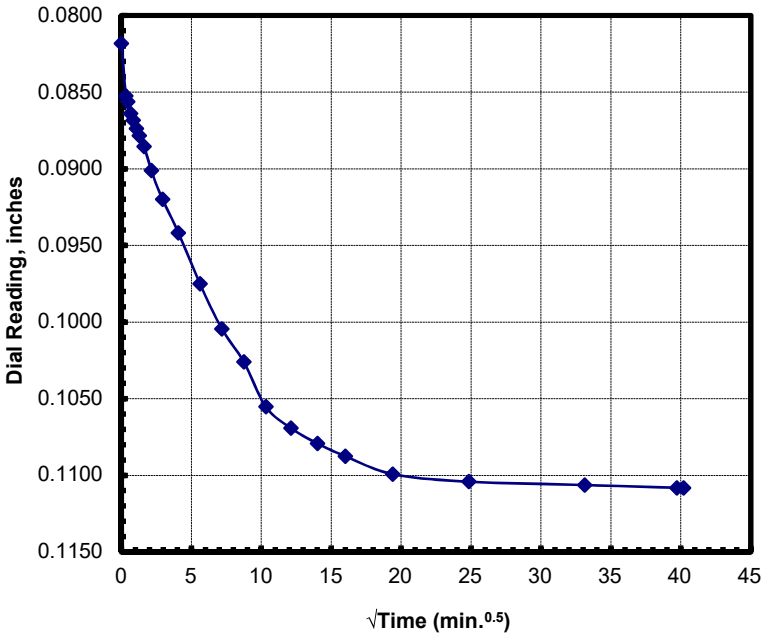


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.0567**	**d_0 (in): 0.0567**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.0818**	**d_{100} (in): 0.0803**
Boring & Depth: M-7, S-3, 4-6 ft	**PL: NA**	**Δ_{hi} (in.): 0.0252**	**δ_{eop} (in.): 0.0236**
Sample: Light Gray FAT CLAY	**- 200 (%): NA**	**t_{50} (min): 17**	**t_{90} (min): 120**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/19/20 8:26:11 AM	0.00	0.00	0.0818
11/19/20 8:26:17 AM	0.10	0.32	0.0852
11/19/20 8:26:23 AM	0.20	0.45	0.0856
11/19/20 8:26:36 AM	0.42	0.65	0.0864
11/19/20 8:26:54 AM	0.72	0.85	0.0868
11/19/20 8:27:18 AM	1.12	1.06	0.0874
11/19/20 8:27:48 AM	1.62	1.27	0.0878
11/19/20 8:28:48 AM	2.62	1.62	0.0886
11/19/20 8:30:48 AM	4.62	2.15	0.0901
11/19/20 8:34:48 AM	8.62	2.94	0.0920
11/19/20 8:42:48 AM	16.62	4.08	0.0942
11/19/20 8:57:48 AM	31.62	5.62	0.0975
11/19/20 9:17:48 AM	51.62	7.18	0.1005
11/19/20 9:42:49 AM	76.63	8.75	0.1026
11/19/20 10:12:49 AM	106.63	10.33	0.1055
11/19/20 10:52:49 AM	146.63	12.11	0.1069
11/19/20 11:42:49 AM	196.63	14.02	0.1079
11/19/20 12:42:49 PM	256.63	16.02	0.1088
11/19/20 2:42:49 PM	376.63	19.41	0.1099
11/19/20 6:42:50 PM	616.65	24.83	0.1104
11/20/20 2:42:50 AM	1096.65	33.12	0.1106
11/20/20 10:42:50 AM	1576.65	39.71	0.1108
11/20/20 11:21:45 AM	1615.57	40.19	0.1108

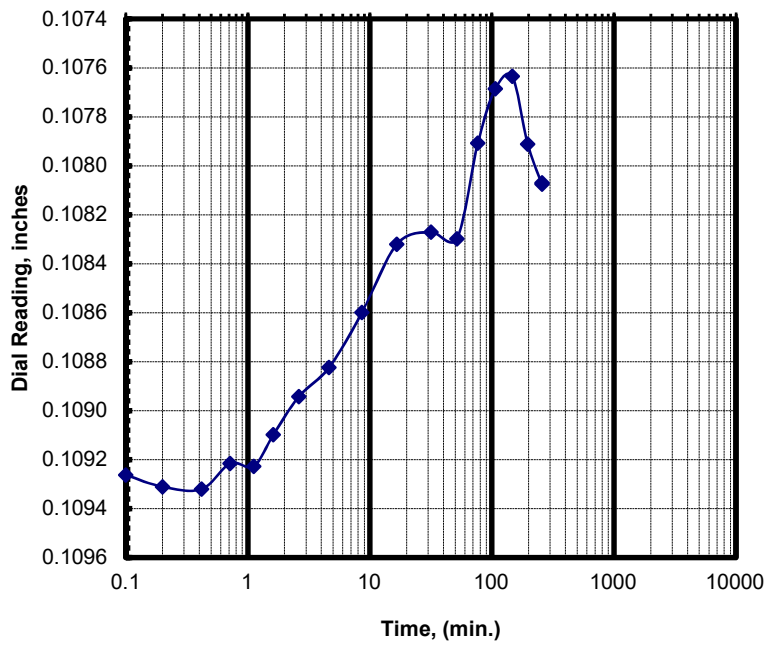


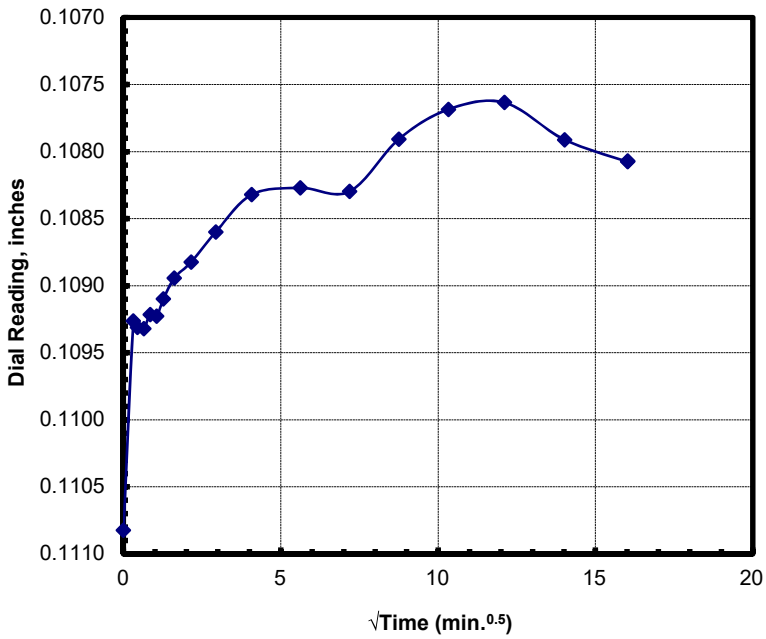


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0818	d_0 (in): 0.0818
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.1108	d_{100} (in): 0.1098
Boring & Depth: M-7, S-3, 4-6 ft	**PL:** NA	Δ_{hi} (in.): 0.0290	δ_{eop} (in.): 0.0280
Sample: Light Gray FAT CLAY	**- 200 (%):** NA	t_{50} (min): 22	t_{90} (min): 150

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/20/20 11:21:45 AM	0.00	0.00	0.1108
11/20/20 11:21:51 AM	0.10	0.32	0.1093
11/20/20 11:21:57 AM	0.20	0.45	0.1093
11/20/20 11:22:10 AM	0.42	0.65	0.1093
11/20/20 11:22:28 AM	0.72	0.85	0.1092
11/20/20 11:22:52 AM	1.12	1.06	0.1092
11/20/20 11:23:22 AM	1.62	1.27	0.1091
11/20/20 11:24:22 AM	2.62	1.62	0.1089
11/20/20 11:26:22 AM	4.62	2.15	0.1088
11/20/20 11:30:22 AM	8.62	2.94	0.1086
11/20/20 11:38:22 AM	16.62	4.08	0.1083
11/20/20 11:53:22 AM	31.62	5.62	0.1083
11/20/20 12:13:23 PM	51.63	7.19	0.1083
11/20/20 12:38:23 PM	76.63	8.75	0.1079
11/20/20 1:08:23 PM	106.63	10.33	0.1077
11/20/20 1:48:23 PM	146.63	12.11	0.1076
11/20/20 2:38:24 PM	196.65	14.02	0.1079
11/20/20 3:38:24 PM	256.65	16.02	0.1081
11/20/20 3:38:37 PM	256.87	16.03	0.1081

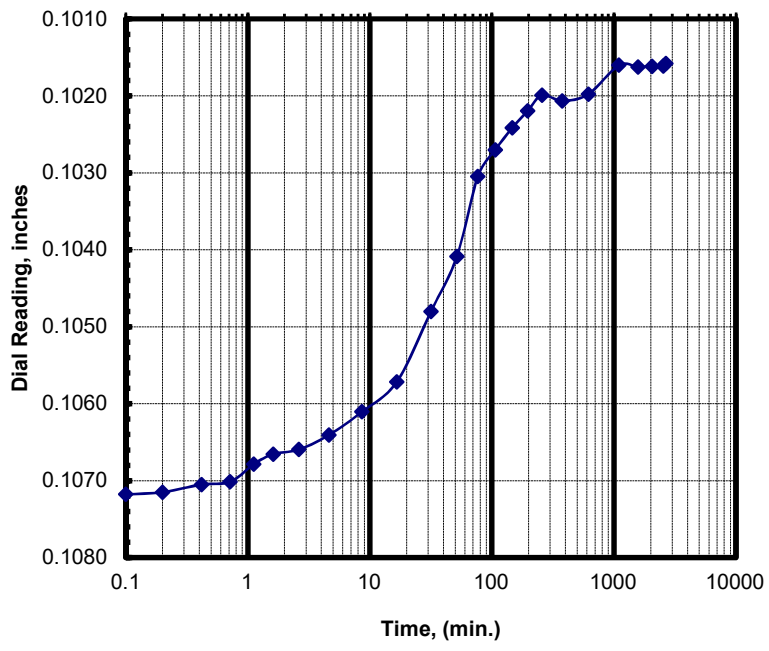


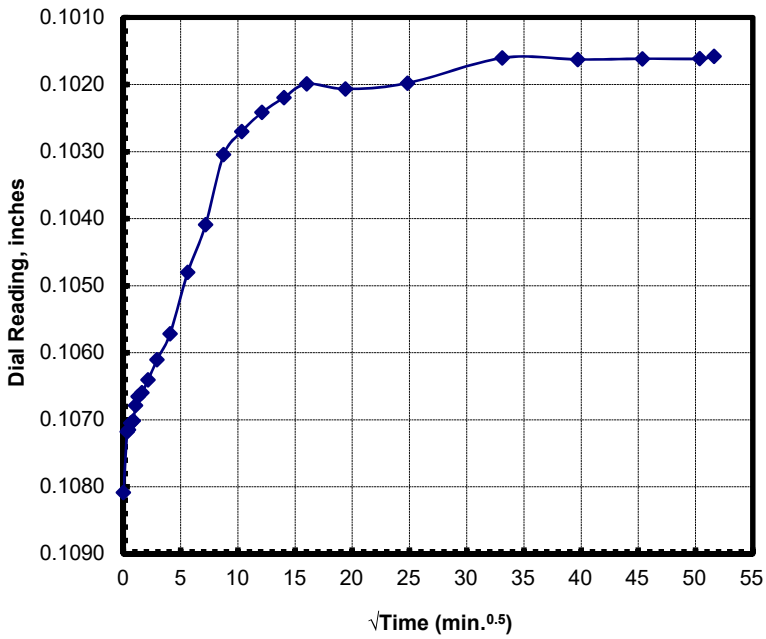


Project Number: 02541139	**LL:** NA	**$D_{0(min)}$ (in):** 0.1108	**d_0 (in):** 0.1108
Project Name: CPRA PO 181	**PL:** NA	**D_{end} (in):** 0.1081	**d_{100} (in):** 0.1081
Boring & Depth: M-7, S-3, 4-6 ft	**PL:** NA	**Δ_{hi} (in.):** -0.0028	**δ_{eop} (in.):** -0.0028
Sample: Light Gray FAT CLAY	**- 200 (%):** NA	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/20/20 3:38:37 PM	0.00	0.00	0.1081
11/20/20 3:38:43 PM	0.10	0.32	0.1072
11/20/20 3:38:49 PM	0.20	0.45	0.1071
11/20/20 3:39:02 PM	0.42	0.65	0.1070
11/20/20 3:39:20 PM	0.72	0.85	0.1070
11/20/20 3:39:44 PM	1.12	1.06	0.1068
11/20/20 3:40:14 PM	1.62	1.27	0.1067
11/20/20 3:41:14 PM	2.62	1.62	0.1066
11/20/20 3:43:14 PM	4.62	2.15	0.1064
11/20/20 3:47:14 PM	8.62	2.94	0.1061
11/20/20 3:55:14 PM	16.62	4.08	0.1057
11/20/20 4:10:15 PM	31.63	5.62	0.1048
11/20/20 4:30:15 PM	51.63	7.19	0.1041
11/20/20 4:55:15 PM	76.63	8.75	0.1030
11/20/20 5:25:15 PM	106.63	10.33	0.1027
11/20/20 6:05:15 PM	146.63	12.11	0.1024
11/20/20 6:55:15 PM	196.63	14.02	0.1022
11/20/20 7:55:15 PM	256.63	16.02	0.1020
11/20/20 9:55:15 PM	376.63	19.41	0.1021
11/21/20 1:55:16 AM	616.65	24.83	0.1020
11/21/20 9:55:16 AM	1096.65	33.12	0.1016
11/21/20 5:55:16 PM	1576.65	39.71	0.1016
11/22/20 1:55:17 AM	2056.67	45.35	0.1016
11/22/20 9:55:17 AM	2536.67	50.37	0.1016
11/22/20 12:02:51 PM	2664.23	51.62	0.1016

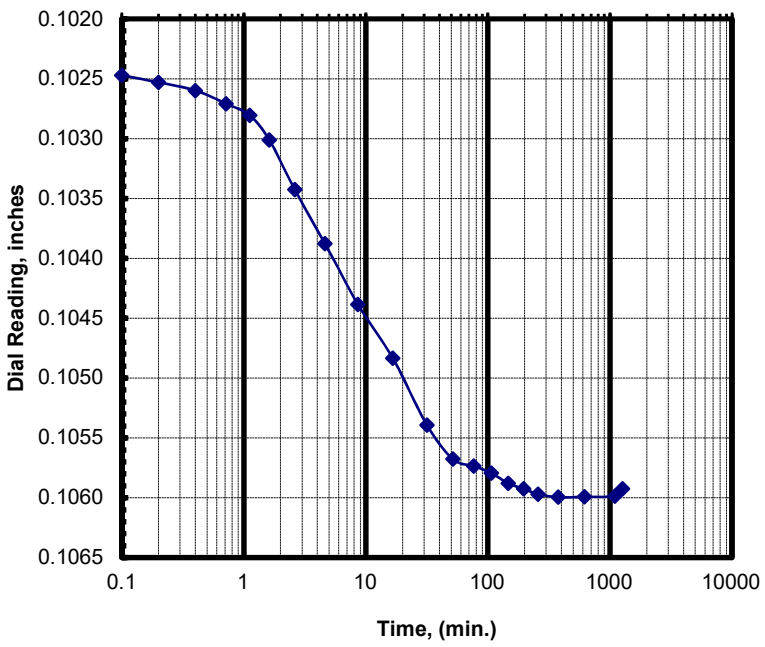


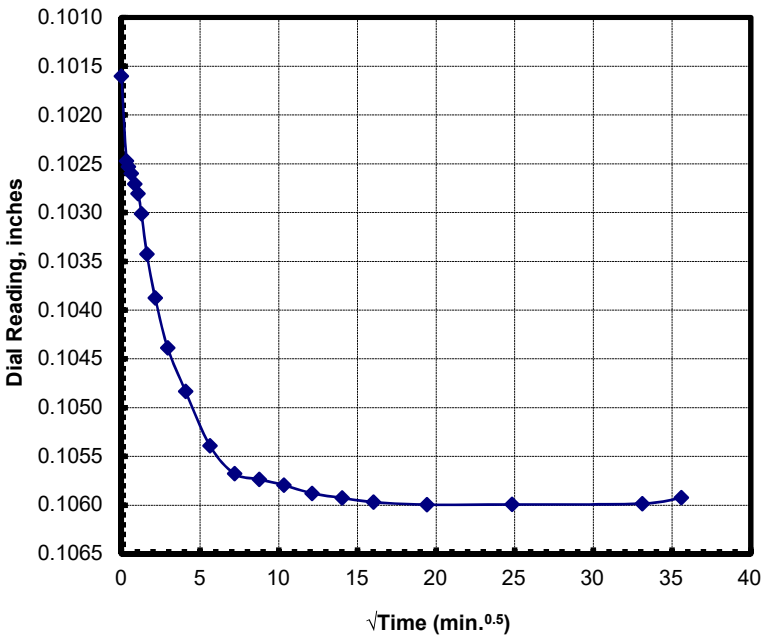


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.1081	d_0 (in): 0.1081
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.1016	d_{100} (in): 0.1016
Boring & Depth: M-7, S-3, 4-6 ft	**PL:** NA	Δ_{hi} (in.): -0.0065	δ_{eop} (in.): -0.0065
Sample: Light Gray FAT CLAY	**- 200 (%):** NA	t_{50} (min):	t_{90} (min):

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/22/20 12:02:51 PM	0.00	0.00	0.1016
11/22/20 12:02:57 PM	0.10	0.32	0.1025
11/22/20 12:03:03 PM	0.20	0.45	0.1025
11/22/20 12:03:15 PM	0.40	0.63	0.1026
11/22/20 12:03:34 PM	0.72	0.85	0.1027
11/22/20 12:03:58 PM	1.12	1.06	0.1028
11/22/20 12:04:28 PM	1.62	1.27	0.1030
11/22/20 12:05:28 PM	2.62	1.62	0.1034
11/22/20 12:07:28 PM	4.62	2.15	0.1039
11/22/20 12:11:28 PM	8.62	2.94	0.1044
11/22/20 12:19:28 PM	16.62	4.08	0.1048
11/22/20 12:34:28 PM	31.62	5.62	0.1054
11/22/20 12:54:29 PM	51.63	7.19	0.1057
11/22/20 1:19:29 PM	76.63	8.75	0.1057
11/22/20 1:49:29 PM	106.63	10.33	0.1058
11/22/20 2:29:29 PM	146.63	12.11	0.1059
11/22/20 3:19:29 PM	196.63	14.02	0.1059
11/22/20 4:19:29 PM	256.63	16.02	0.1060
11/22/20 6:19:30 PM	376.65	19.41	0.1060
11/22/20 10:19:30 PM	616.65	24.83	0.1060
11/23/20 6:19:31 AM	1096.67	33.12	0.1060
11/23/20 9:09:13 AM	1266.37	35.59	0.1059

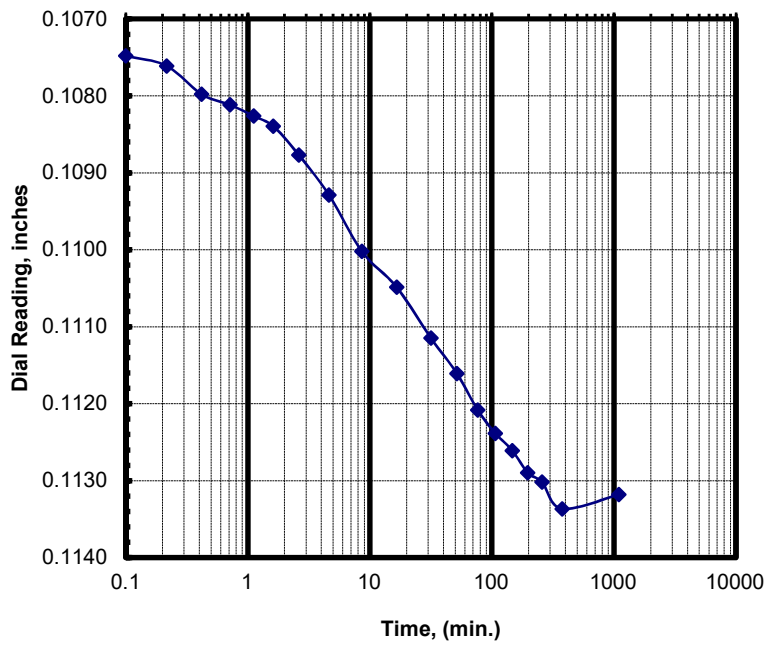


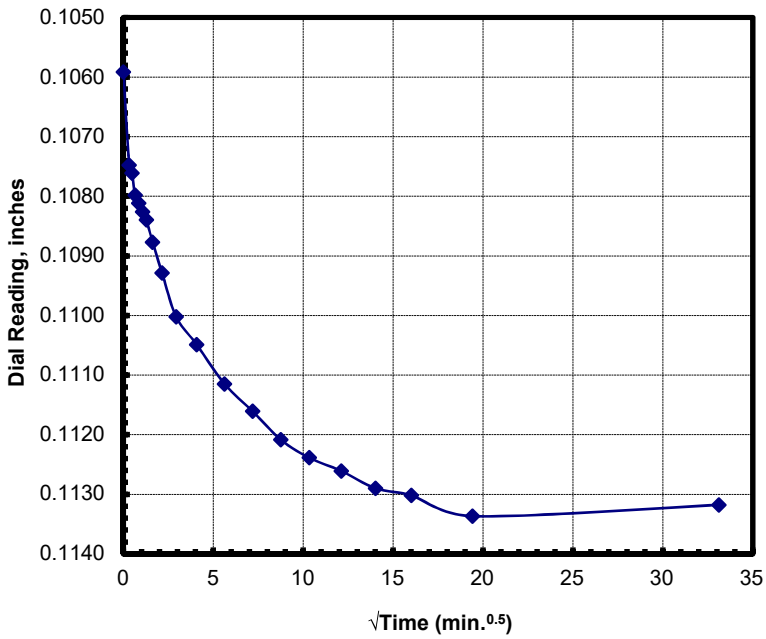


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.1016**	**d_0 (in): 0.1016**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.1059**	**d_{100} (in): 0.1059**
Boring & Depth: M-7, S-3, 4-6 ft	**PL: NA**	**Δ_{hi} (in.): 0.0043**	**δ_{eop} (in.): 0.0043**
Sample: Light Gray FAT CLAY	**- 200 (%): NA**	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/23/20 9:09:13 AM	0.00	0.00	0.1059
11/23/20 9:09:19 AM	0.10	0.32	0.1075
11/23/20 9:09:26 AM	0.22	0.47	0.1076
11/23/20 9:09:38 AM	0.42	0.65	0.1080
11/23/20 9:09:56 AM	0.72	0.85	0.1081
11/23/20 9:10:20 AM	1.12	1.06	0.1083
11/23/20 9:10:50 AM	1.62	1.27	0.1084
11/23/20 9:11:50 AM	2.62	1.62	0.1088
11/23/20 9:13:50 AM	4.62	2.15	0.1093
11/23/20 9:17:50 AM	8.62	2.94	0.1100
11/23/20 9:25:50 AM	16.62	4.08	0.1105
11/23/20 9:40:50 AM	31.62	5.62	0.1111
11/23/20 10:00:50 AM	51.62	7.18	0.1116
11/23/20 10:25:50 AM	76.62	8.75	0.1121
11/23/20 10:55:51 AM	106.63	10.33	0.1124
11/23/20 11:35:51 AM	146.63	12.11	0.1126
11/23/20 12:25:51 PM	196.63	14.02	0.1129
11/23/20 1:25:51 PM	256.63	16.02	0.1130
11/23/20 3:25:51 PM	376.63	19.41	0.1134
11/23/20 7:25:51 PM	616.63	24.83	0.1131
11/24/20 3:25:52 AM	1096.65	33.12	0.1132
11/24/20 11:25:53 AM	1576.67	39.71	0.1135
11/24/20 11:45:02 AM	1595.82	39.95	0.1136

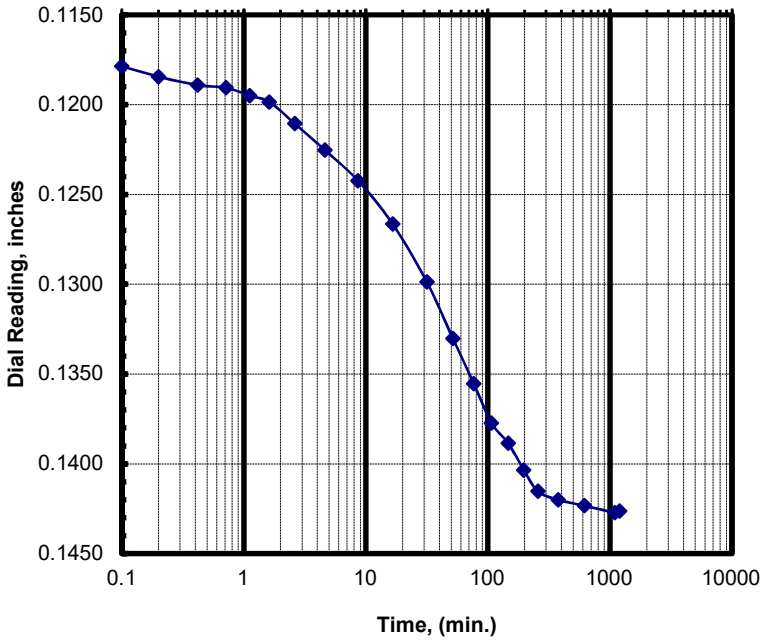


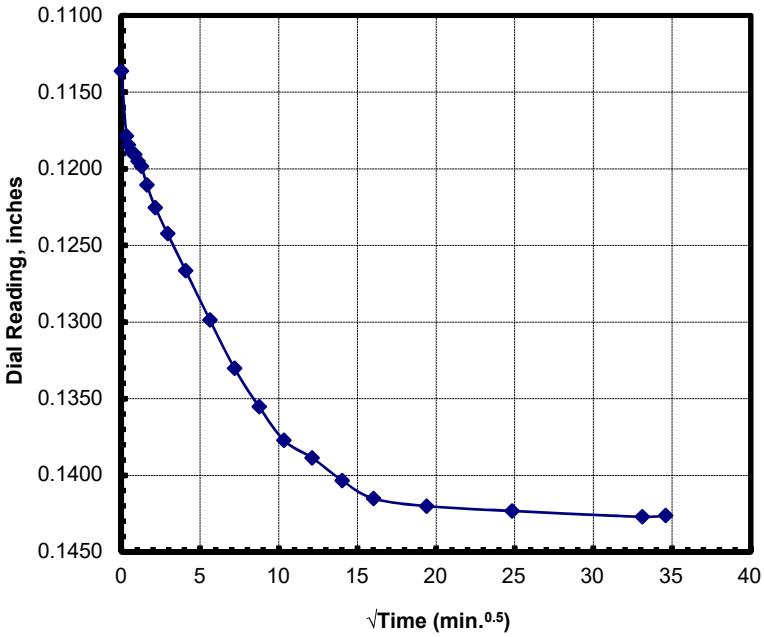


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.1059**	**d_0 (in): 0.1059**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.1136**	**d_{100} (in): 0.1129**
Boring & Depth: M-7, S-3, 4-6 ft	**PL: NA**	**Δ_{hi} (in.): 0.0077**	**δ_{eop} (in.): 0.0070**
Sample: Light Gray FAT CLAY	**- 200 (%): NA**	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 8 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/24/20 11:45:02 AM	0.00	0.00	0.1136
11/24/20 11:45:08 AM	0.10	0.32	0.1179
11/24/20 11:45:14 AM	0.20	0.45	0.1184
11/24/20 11:45:27 AM	0.42	0.65	0.1189
11/24/20 11:45:45 AM	0.72	0.85	0.1191
11/24/20 11:46:09 AM	1.12	1.06	0.1195
11/24/20 11:46:39 AM	1.62	1.27	0.1198
11/24/20 11:47:39 AM	2.62	1.62	0.1211
11/24/20 11:49:39 AM	4.62	2.15	0.1225
11/24/20 11:53:39 AM	8.62	2.94	0.1242
11/24/20 12:01:39 PM	16.62	4.08	0.1267
11/24/20 12:16:39 PM	31.62	5.62	0.1299
11/24/20 12:36:40 PM	51.63	7.19	0.1330
11/24/20 1:01:40 PM	76.63	8.75	0.1355
11/24/20 1:31:40 PM	106.63	10.33	0.1377
11/24/20 2:11:40 PM	146.63	12.11	0.1389
11/24/20 3:01:40 PM	196.63	14.02	0.1403
11/24/20 4:01:40 PM	256.63	16.02	0.1415
11/24/20 6:01:40 PM	376.63	19.41	0.1420
11/24/20 10:01:41 PM	616.65	24.83	0.1423
11/25/20 6:01:41 AM	1096.65	33.12	0.1427
11/25/20 7:40:57 AM	1195.92	34.58	0.1426

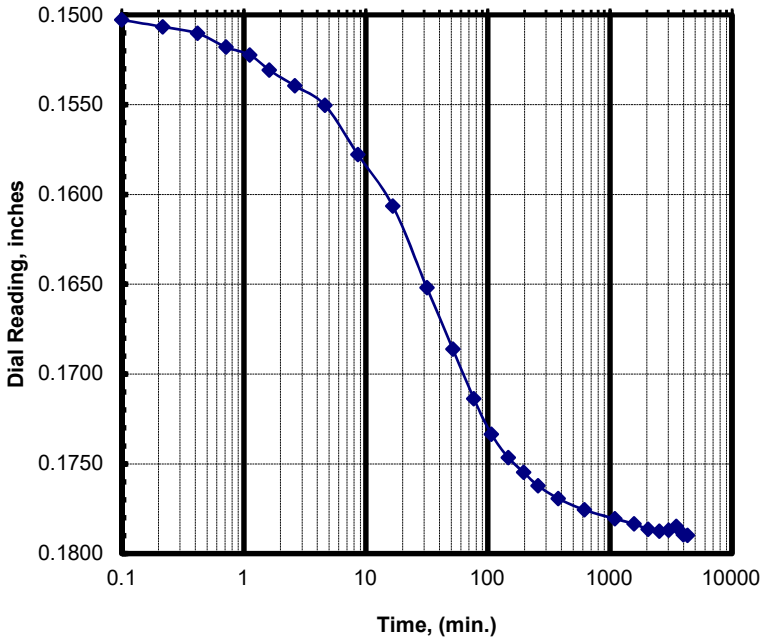


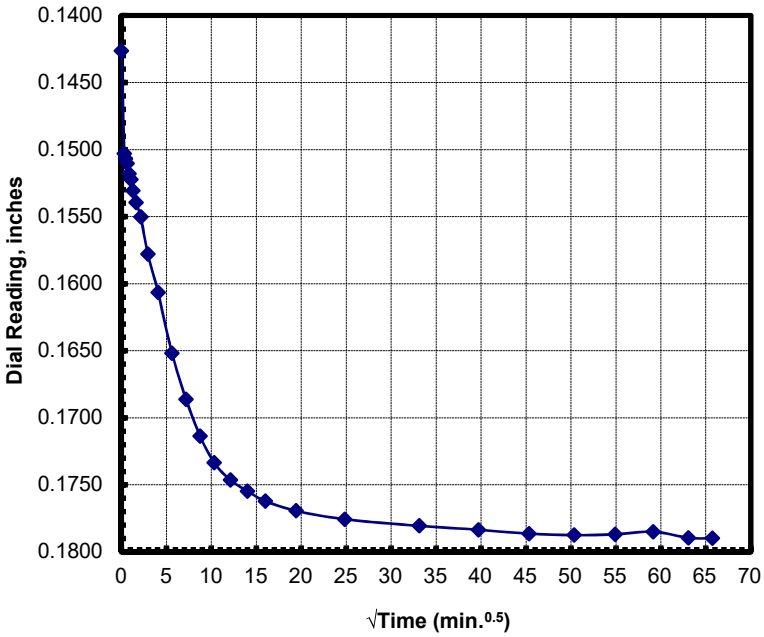


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.1136	d_0 (in): 0.1136
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.1426	d_{100} (in): 0.1415
Boring & Depth: M-7, S-3, 4-6 ft	**PL:** NA	Δ_{hi} (in.): 0.0290	δ_{eop} (in.): 0.0279
Sample: Light Gray FAT CLAY	**- 200 (%):** NA	t_{50} (min): 20	t_{90} (min): 140

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 16 tsf

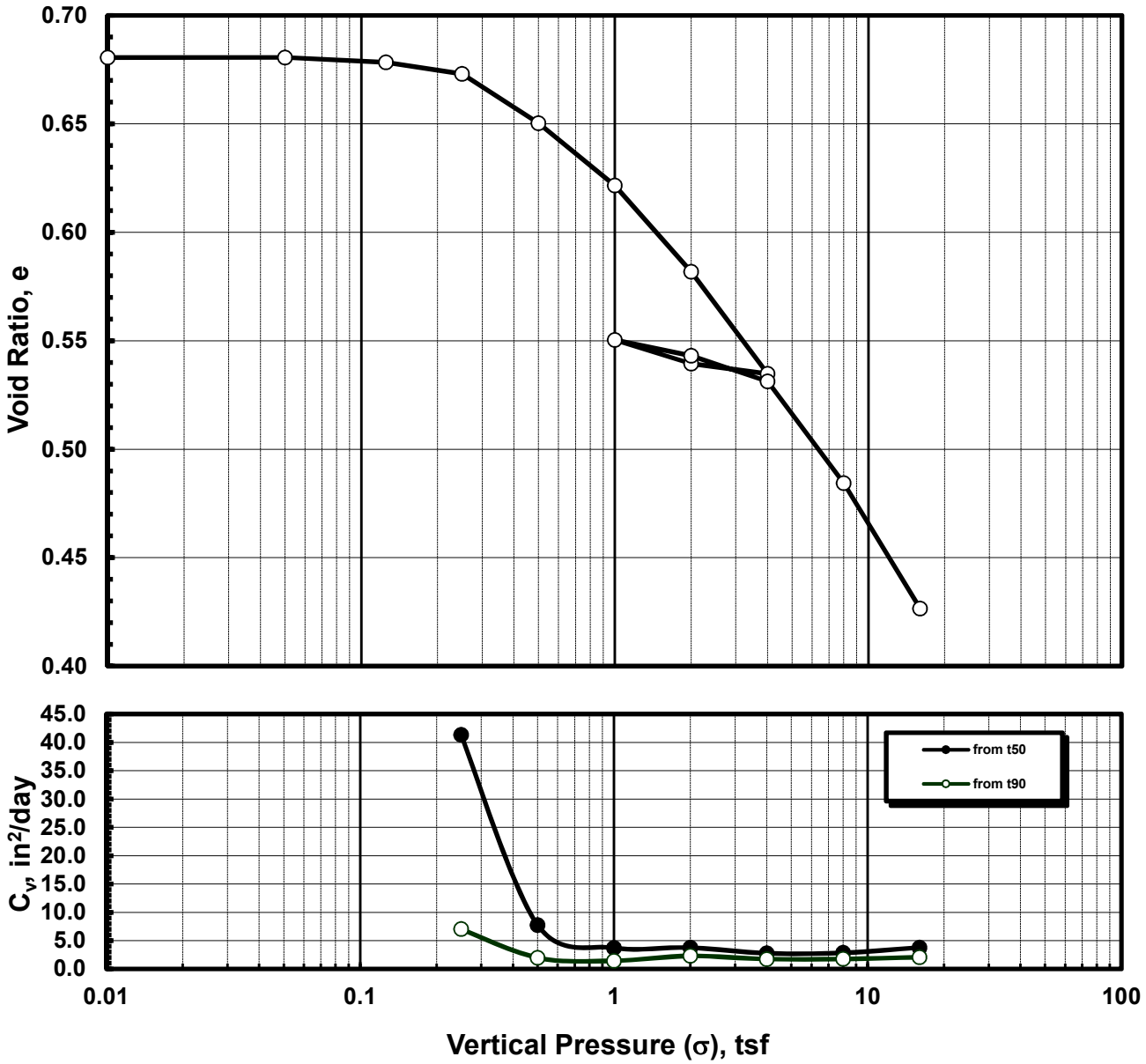
Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/25/20 7:40:58 AM	0.00	0.00	0.1426
11/25/20 7:41:04 AM	0.10	0.32	0.1503
11/25/20 7:41:11 AM	0.22	0.47	0.1507
11/25/20 7:41:23 AM	0.42	0.65	0.1510
11/25/20 7:41:41 AM	0.72	0.85	0.1518
11/25/20 7:42:05 AM	1.12	1.06	0.1522
11/25/20 7:42:35 AM	1.62	1.27	0.1531
11/25/20 7:43:35 AM	2.62	1.62	0.1540
11/25/20 7:45:35 AM	4.62	2.15	0.1550
11/25/20 7:49:35 AM	8.62	2.94	0.1578
11/25/20 7:57:35 AM	16.62	4.08	0.1606
11/25/20 8:12:35 AM	31.62	5.62	0.1652
11/25/20 8:32:36 AM	51.63	7.19	0.1686
11/25/20 8:57:36 AM	76.63	8.75	0.1714
11/25/20 9:27:36 AM	106.63	10.33	0.1733
11/25/20 10:07:36 AM	146.63	12.11	0.1746
11/25/20 10:57:36 AM	196.63	14.02	0.1755
11/25/20 11:57:36 AM	256.63	16.02	0.1762
11/25/20 1:57:37 PM	376.65	19.41	0.1769
11/25/20 5:57:37 PM	616.65	24.83	0.1776
11/26/20 1:57:37 AM	1096.65	33.12	0.1781
11/26/20 9:57:38 AM	1576.67	39.71	0.1783
11/26/20 5:57:38 PM	2056.67	45.35	0.1786
11/27/20 1:57:39 AM	2536.68	50.37	0.1787
11/27/20 9:57:39 AM	3016.68	54.92	0.1787
11/27/20 5:57:40 PM	3496.70	59.13	0.1785
11/28/20 1:57:40 AM	3976.70	63.06	0.1789
11/28/20 7:41:23 AM	4320.42	65.73	0.1790





Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.1426	d_0 (in): 0.1426
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.1790	d_{100} (in): 0.1770
Boring & Depth: M-7, S-3, 4-6 ft	**PL:** NA	Δ_{hi} (in.): 0.0363	δ_{eop} (in.): 0.0344
Sample: Light Gray FAT CLAY	**- 200 (%):** NA	t_{50} (min): 14	t_{90} (min): 110

CONSOLIDATION TEST RESULTS - ASTM D 2435

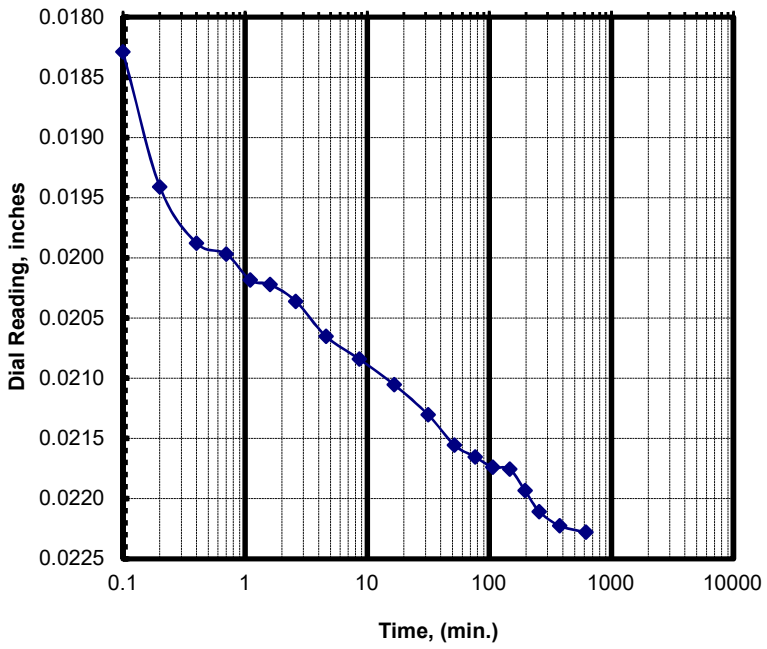


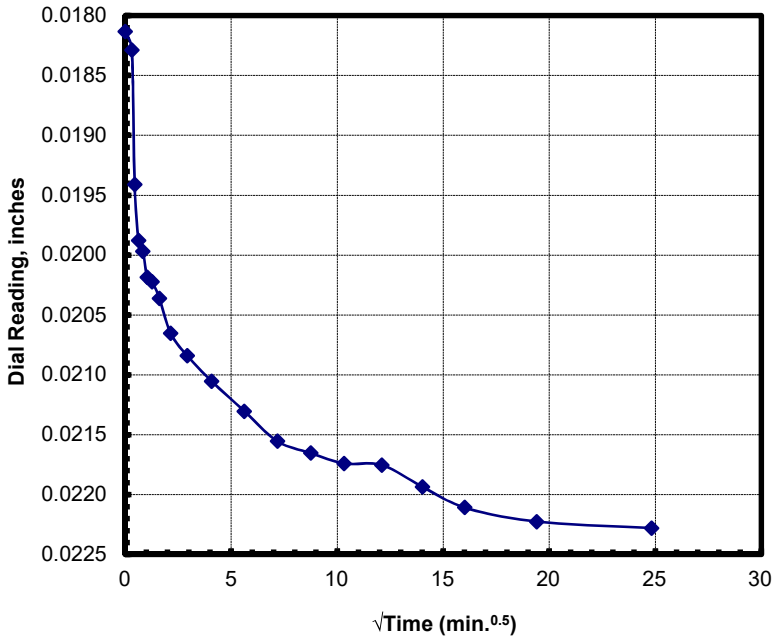
Sample Condition	Before	After	Consolidation Parameters	
Moisture Content, %:	24.6%	15.8%	Overburden Pressure, tsf:	0.2
Sample Height, in.:	0.9980	0.8471	Preconsolidation Pressure, tsf:	1.0
Void Ratio, e:	0.6806	0.4265	Compression Index, (Cc):	0.192
Unit Weight, pcf:	100.2	118.1	Re-Compression Index, (Cr)	0.024
Degree of Saturation:	0.97	1.00	Swell Index, Cs:	-

Project Number:	02541139	Liquid Limit:	NA	Hand Pen:	0.20 tsf
Project Name	CPRA PO 181	Plastic Limit:	NA	-200 %:	NA
Boring No.:	M-7	Plasticity Index:	NA	SPG:	2.7
Sample ID, Depth:	S-3, 4-6 ft	Classification:	Light Gray FAT CLAY		

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.125 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/5/20 1:37:38 PM	0.00	0.00	0.0181
11/5/20 1:37:44 PM	0.10	0.32	0.0183
11/5/20 1:37:50 PM	0.20	0.45	0.0194
11/5/20 1:38:02 PM	0.40	0.63	0.0199
11/5/20 1:38:20 PM	0.70	0.84	0.0200
11/5/20 1:38:44 PM	1.10	1.05	0.0202
11/5/20 1:39:14 PM	1.60	1.26	0.0202
11/5/20 1:40:14 PM	2.60	1.61	0.0204
11/5/20 1:42:14 PM	4.60	2.14	0.0207
11/5/20 1:46:14 PM	8.60	2.93	0.0208
11/5/20 1:54:14 PM	16.60	4.07	0.0211
11/5/20 2:09:14 PM	31.60	5.62	0.0213
11/5/20 2:29:14 PM	51.60	7.18	0.0216
11/5/20 2:54:14 PM	76.60	8.75	0.0217
11/5/20 3:24:14 PM	106.60	10.32	0.0217
11/5/20 4:04:14 PM	146.60	12.11	0.0218
11/5/20 4:54:15 PM	196.62	14.02	0.0219
11/5/20 5:54:15 PM	256.62	16.02	0.0221
11/5/20 7:54:15 PM	376.62	19.41	0.0222
11/5/20 11:54:15 PM	616.62	24.83	0.0223
11/6/20 7:54:15 AM	1096.62	33.12	0.0228
11/6/20 3:54:15 PM	1576.62	39.71	0.0233
11/6/20 11:54:15 PM	2056.62	45.35	0.0230
11/7/20 7:54:15 AM	2536.62	50.36	0.0224
11/7/20 8:29:57 AM	2572.32	50.72	0.0228

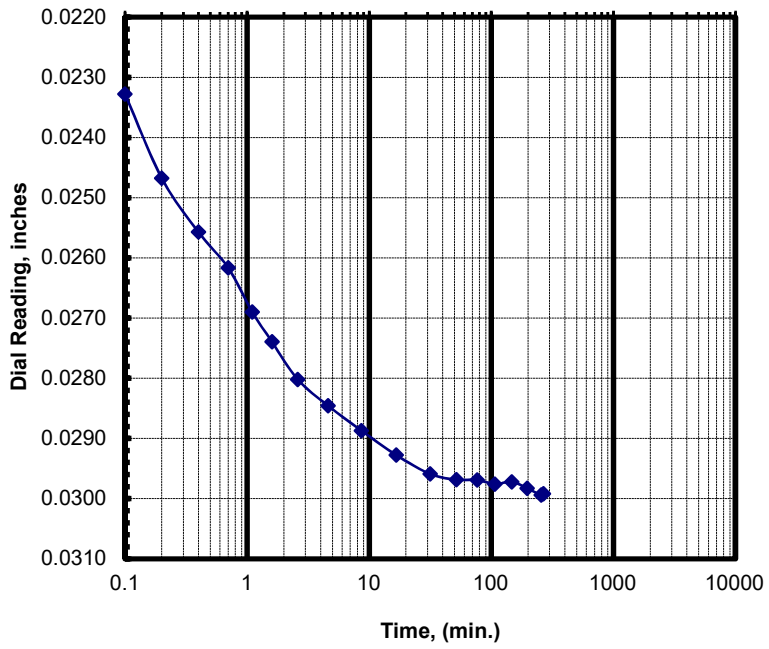


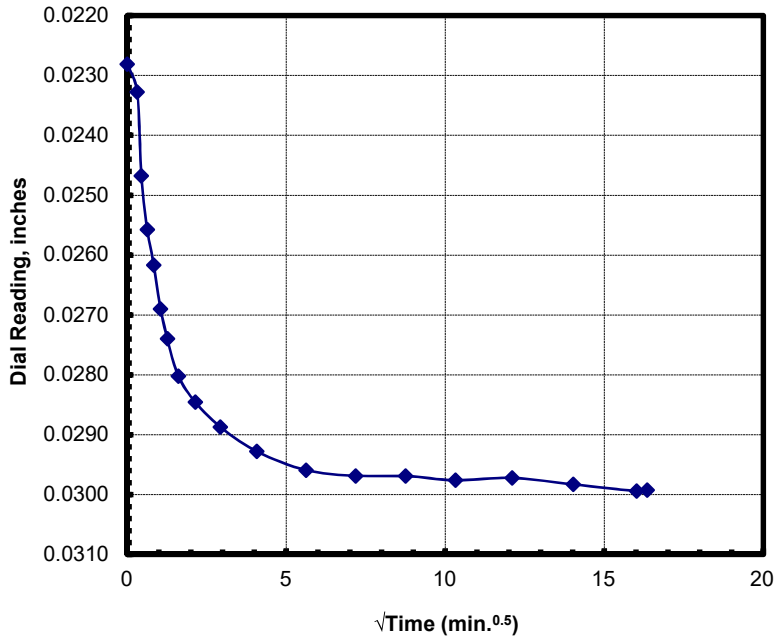


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0181	d_0 (in): 0.0181
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.0228	d_{100} (in): 0.0218
Boring & Depth: M-8, S-8, 14-16 ft	**PL:** NA	Δ_{hi} (in.): 0.0047	δ_{eop} (in.): 0.0037
Sample: Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min): 0.73	t_{90} (min): 39

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.25 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/7/20 8:29:58 AM	0.00	0.00	0.0228
11/7/20 8:30:04 AM	0.10	0.32	0.0233
11/7/20 8:30:10 AM	0.20	0.45	0.0247
11/7/20 8:30:22 AM	0.40	0.63	0.0256
11/7/20 8:30:40 AM	0.70	0.84	0.0262
11/7/20 8:31:04 AM	1.10	1.05	0.0269
11/7/20 8:31:34 AM	1.60	1.26	0.0274
11/7/20 8:32:34 AM	2.60	1.61	0.0280
11/7/20 8:34:34 AM	4.60	2.14	0.0285
11/7/20 8:38:34 AM	8.60	2.93	0.0289
11/7/20 8:46:34 AM	16.60	4.07	0.0293
11/7/20 9:01:34 AM	31.60	5.62	0.0296
11/7/20 9:21:35 AM	51.62	7.18	0.0297
11/7/20 9:46:35 AM	76.62	8.75	0.0297
11/7/20 10:16:35 AM	106.62	10.33	0.0298
11/7/20 10:56:35 AM	146.62	12.11	0.0297
11/7/20 11:46:35 AM	196.62	14.02	0.0298
11/7/20 12:46:35 PM	256.62	16.02	0.0299
11/7/20 12:57:10 PM	267.20	16.35	0.0299

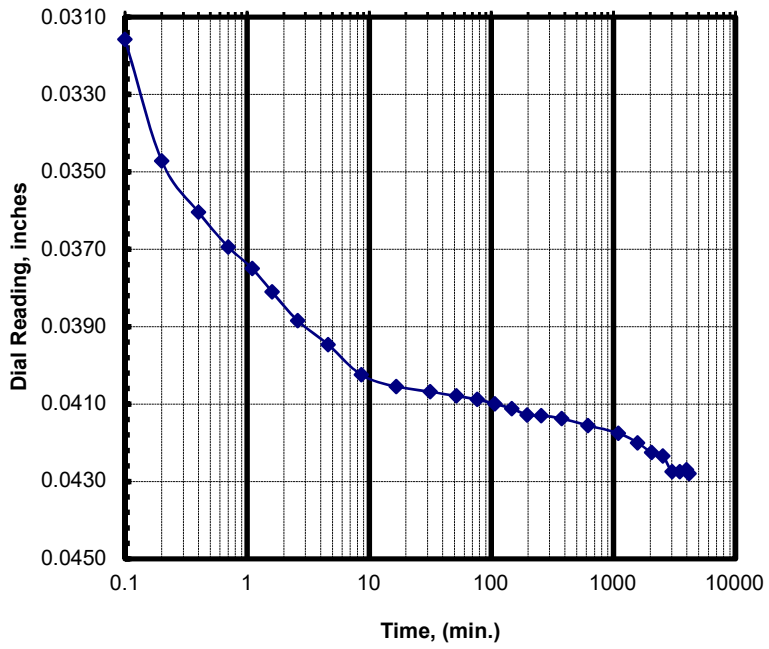


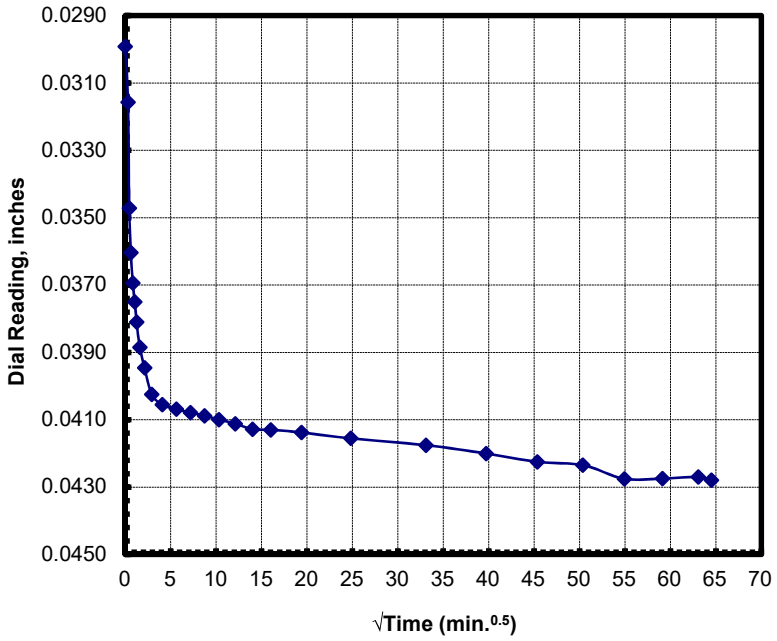


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.0228**	**d_0 (in): 0.0228**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.0299**	**d_{100} (in): 0.0294**
Boring & Depth: M-8, S-8, 14-16 ft	**PL: NA**	**Δ_{hi} (in.): 0.0071**	**δ_{eop} (in.): 0.0066**
Sample: Gray SANDY LEAN CLAY	**- 200 (%): NA**	**t_{50} (min): 0.68**	**t_{90} (min): 6.6**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.5 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/7/20 12:57:11 PM	0.00	0.00	0.0299
11/7/20 12:57:17 PM	0.10	0.32	0.0316
11/7/20 12:57:23 PM	0.20	0.45	0.0347
11/7/20 12:57:35 PM	0.40	0.63	0.0360
11/7/20 12:57:53 PM	0.70	0.84	0.0369
11/7/20 12:58:17 PM	1.10	1.05	0.0375
11/7/20 12:58:47 PM	1.60	1.26	0.0381
11/7/20 12:59:47 PM	2.60	1.61	0.0388
11/7/20 1:01:47 PM	4.60	2.14	0.0395
11/7/20 1:05:47 PM	8.60	2.93	0.0402
11/7/20 1:13:47 PM	16.60	4.07	0.0405
11/7/20 1:28:47 PM	31.60	5.62	0.0407
11/7/20 1:48:47 PM	51.60	7.18	0.0408
11/7/20 2:13:47 PM	76.60	8.75	0.0409
11/7/20 2:43:47 PM	106.60	10.32	0.0410
11/7/20 3:23:47 PM	146.60	12.11	0.0411
11/7/20 4:13:47 PM	196.60	14.02	0.0413
11/7/20 5:13:47 PM	256.60	16.02	0.0413
11/7/20 7:13:48 PM	376.62	19.41	0.0414
11/7/20 11:13:48 PM	616.62	24.83	0.0416
11/8/20 7:13:48 AM	1096.62	33.12	0.0418
11/8/20 3:13:48 PM	1576.62	39.71	0.0420
11/8/20 11:13:48 PM	2056.62	45.35	0.0422
11/9/20 7:13:48 AM	2536.62	50.36	0.0423
11/9/20 3:13:48 PM	3016.62	54.92	0.0427
11/9/20 11:13:48 PM	3496.62	59.13	0.0427
11/10/20 7:13:48 AM	3976.62	63.06	0.0427
11/10/20 10:19:32 AM	4162.35	64.52	0.0428

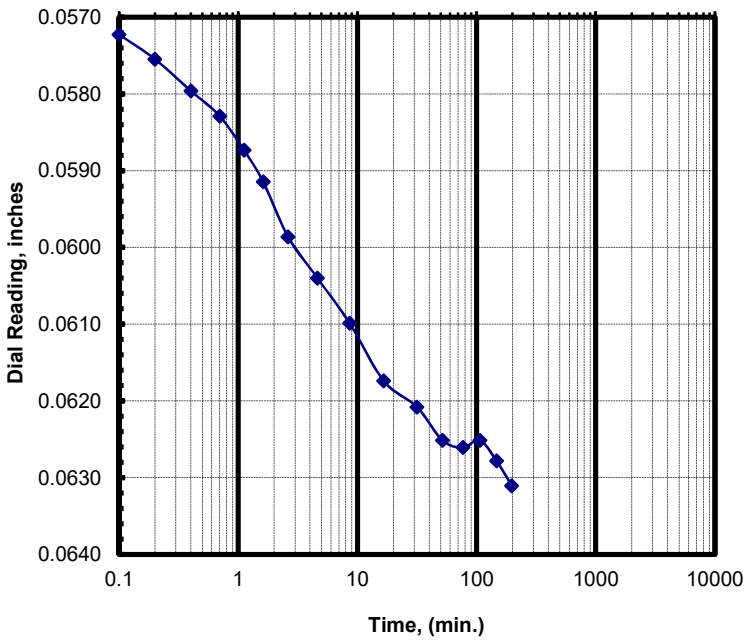


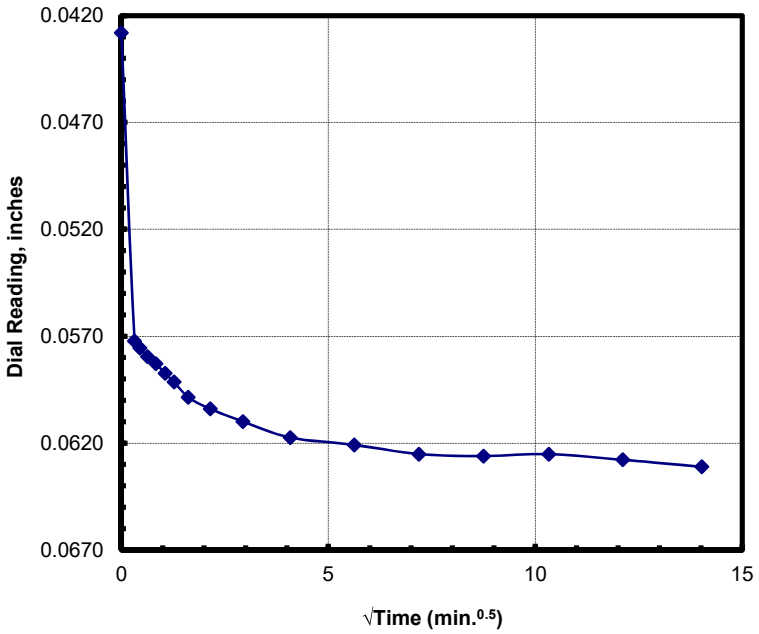


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0299	d_0 (in): 0.0299
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.0428	d_{100} (in): 0.0403
Boring & Depth: M-8, S-8, 14-16 ft	**PL:** NA	Δ_{hi} (in.): 0.0129	δ_{eop} (in.): 0.0104
Sample: Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min): 0.22	t_{90} (min): 3.9

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/10/20 10:25:32 AM	0.00	0.00	0.0428
11/10/20 10:25:38 AM	0.10	0.32	0.0572
11/10/20 10:25:44 AM	0.20	0.45	0.0575
11/10/20 10:25:56 AM	0.40	0.63	0.0580
11/10/20 10:26:14 AM	0.70	0.84	0.0583
11/10/20 10:26:39 AM	1.12	1.06	0.0587
11/10/20 10:27:09 AM	1.62	1.27	0.0591
11/10/20 10:28:09 AM	2.62	1.62	0.0599
11/10/20 10:30:09 AM	4.62	2.15	0.0604
11/10/20 10:34:09 AM	8.62	2.94	0.0610
11/10/20 10:42:09 AM	16.62	4.08	0.0617
11/10/20 10:57:09 AM	31.62	5.62	0.0621
11/10/20 11:17:09 AM	51.62	7.18	0.0625
11/10/20 11:42:09 AM	76.62	8.75	0.0626
11/10/20 12:12:09 PM	106.62	10.33	0.0625
11/10/20 12:52:09 PM	146.62	12.11	0.0628
11/10/20 1:42:09 PM	196.62	14.02	0.0631
11/10/20 2:42:09 PM	256.62	16.02	0.0633
11/10/20 4:42:09 PM	376.62	19.41	0.0636
11/10/20 8:41:55 PM	616.38	24.83	0.0636
11/11/20 4:41:55 AM	1096.38	33.11	0.0640
11/11/20 8:55:40 AM	1350.13	36.74	0.0641

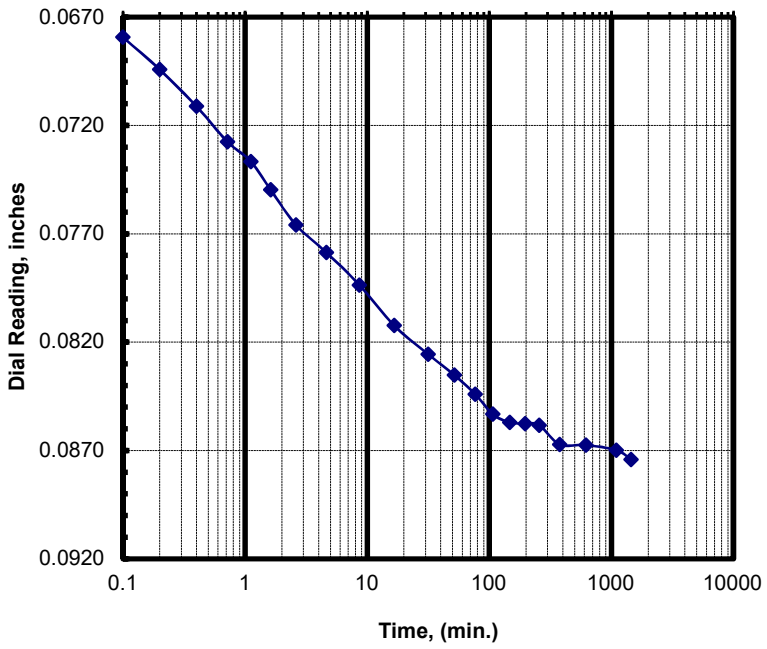


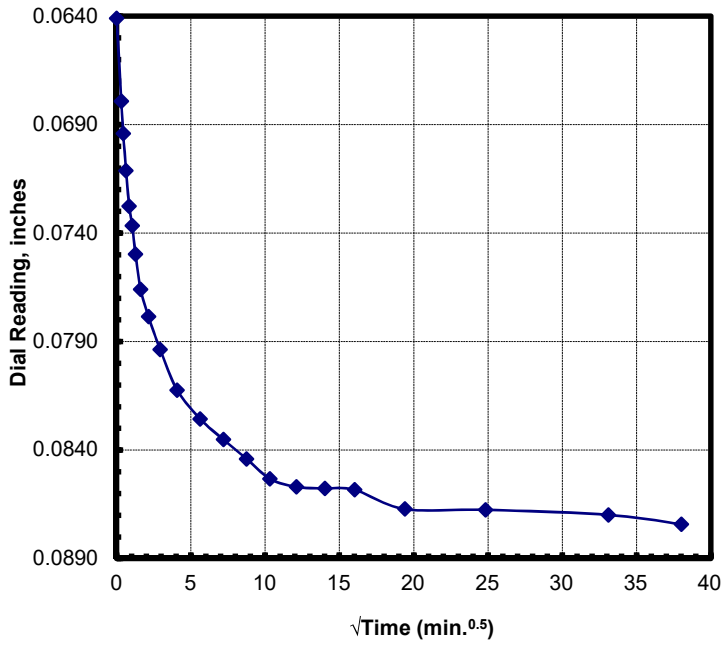


Project Number:	**02541139**	**LL: NA**	**$D_{0(min)}$ (in): 0.0393**	**d_0 (in): 0.0428**
Project Name:	**CPRA PO 181**	**PL: NA**	**D_{end} (in): 0.0641**	**d_{100} (in): 0.0626**
Boring & Depth:	**M-8, S-8, 14-16 ft**	**PL: NA**	**Δ_{hi} (in.): 0.0248**	**δ_{eop} (in.): 0.0198**
Sample:	**Gray SANDY LEAN CLAY**	**- 200 (%): NA**	**t_{50} (min): 2.5**	**t_{90} (min): 31**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/11/20 8:55:40 AM	0.00	0.00	0.0641
11/11/20 8:55:46 AM	0.10	0.32	0.0679
11/11/20 8:55:52 AM	0.20	0.45	0.0694
11/11/20 8:56:04 AM	0.40	0.63	0.0711
11/11/20 8:56:23 AM	0.72	0.85	0.0728
11/11/20 8:56:47 AM	1.12	1.06	0.0737
11/11/20 8:57:17 AM	1.62	1.27	0.0750
11/11/20 8:58:17 AM	2.62	1.62	0.0766
11/11/20 9:00:17 AM	4.62	2.15	0.0779
11/11/20 9:04:17 AM	8.62	2.94	0.0794
11/11/20 9:12:17 AM	16.62	4.08	0.0812
11/11/20 9:27:17 AM	31.62	5.62	0.0826
11/11/20 9:47:17 AM	51.62	7.18	0.0835
11/11/20 10:12:17 AM	76.62	8.75	0.0844
11/11/20 10:42:17 AM	106.62	10.33	0.0853
11/11/20 11:22:17 AM	146.62	12.11	0.0857
11/11/20 12:12:17 PM	196.62	14.02	0.0858
11/11/20 1:12:17 PM	256.62	16.02	0.0858
11/11/20 3:12:18 PM	376.63	19.41	0.0867
11/11/20 7:12:18 PM	616.63	24.83	0.0867
11/12/20 3:12:18 AM	1096.63	33.12	0.0870
11/12/20 9:01:18 AM	1445.63	38.02	0.0874

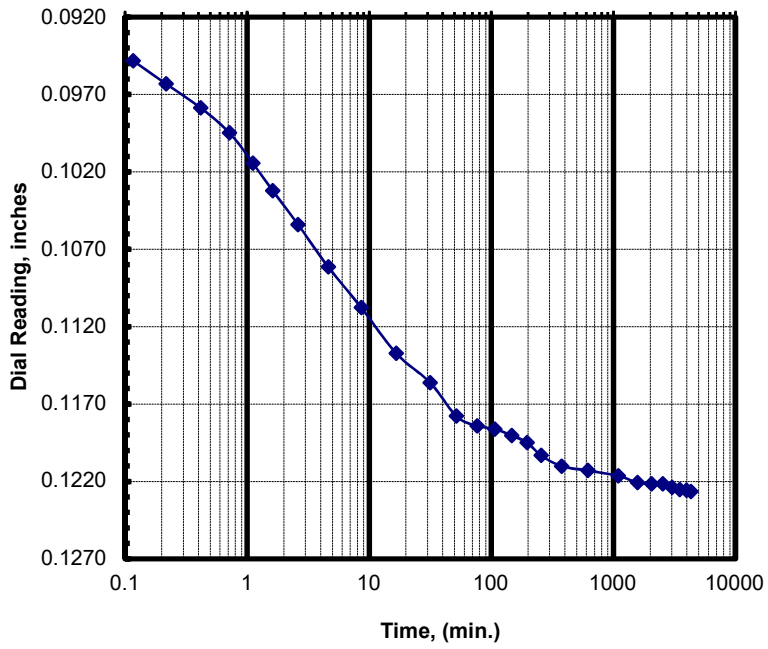


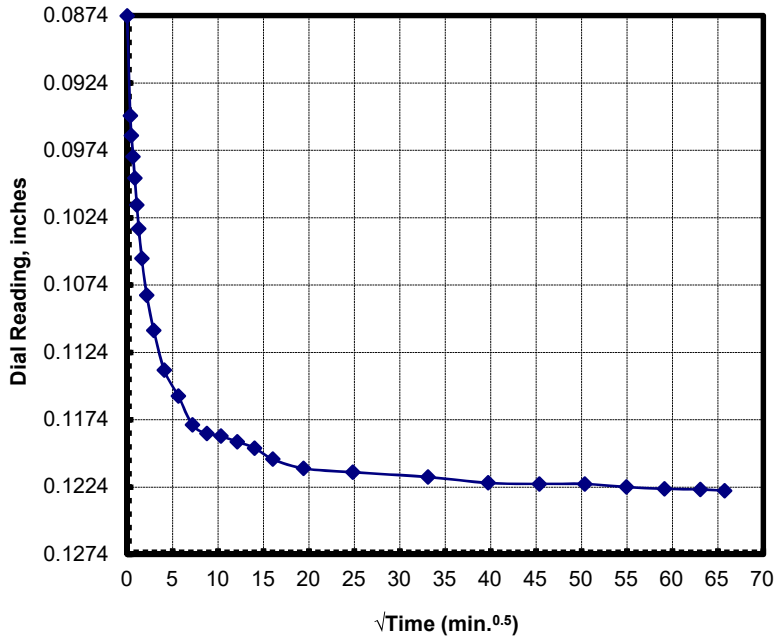


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0641	d_0 (in): 0.0641
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.0874	d_{100} (in): 0.0852
Boring & Depth: M-8, S-8, 14-16 ft	**PL:** NA	Δ_{hi} (in.): 0.0233	δ_{eop} (in.): 0.0211
Sample: Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min): 1.6	t_{90} (min): 46

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/12/20 9:01:18 AM	0.00	0.00	0.0874
11/12/20 9:01:25 AM	0.12	0.34	0.0948
11/12/20 9:01:31 AM	0.22	0.47	0.0963
11/12/20 9:01:43 AM	0.42	0.65	0.0979
11/12/20 9:02:01 AM	0.72	0.85	0.0995
11/12/20 9:02:25 AM	1.12	1.06	0.1014
11/12/20 9:02:55 AM	1.62	1.27	0.1032
11/12/20 9:03:55 AM	2.62	1.62	0.1054
11/12/20 9:05:55 AM	4.62	2.15	0.1081
11/12/20 9:09:55 AM	8.62	2.94	0.1108
11/12/20 9:17:55 AM	16.62	4.08	0.1137
11/12/20 9:32:56 AM	31.63	5.62	0.1156
11/12/20 9:52:56 AM	51.63	7.19	0.1178
11/12/20 10:17:56 AM	76.63	8.75	0.1184
11/12/20 10:47:56 AM	106.63	10.33	0.1186
11/12/20 11:27:56 AM	146.63	12.11	0.1190
11/12/20 12:17:56 PM	196.63	14.02	0.1195
11/12/20 1:17:56 PM	256.63	16.02	0.1203
11/12/20 3:17:56 PM	376.63	19.41	0.1210
11/12/20 7:17:56 PM	616.63	24.83	0.1213
11/13/20 3:17:57 AM	1096.65	33.12	0.1216
11/13/20 11:17:57 AM	1576.65	39.71	0.1221
11/13/20 7:17:58 PM	2056.67	45.35	0.1222
11/14/20 3:17:58 AM	2536.67	50.37	0.1222
11/14/20 11:17:59 AM	3016.68	54.92	0.1224
11/14/20 7:17:59 PM	3496.68	59.13	0.1225
11/15/20 3:18:00 AM	3976.70	63.06	0.1226
11/15/20 9:01:33 AM	4320.25	65.73	0.1227

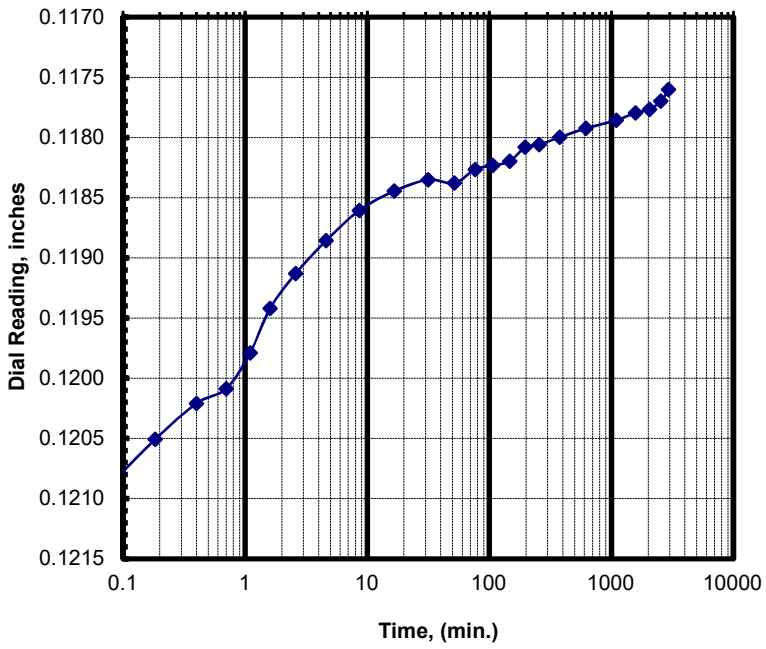


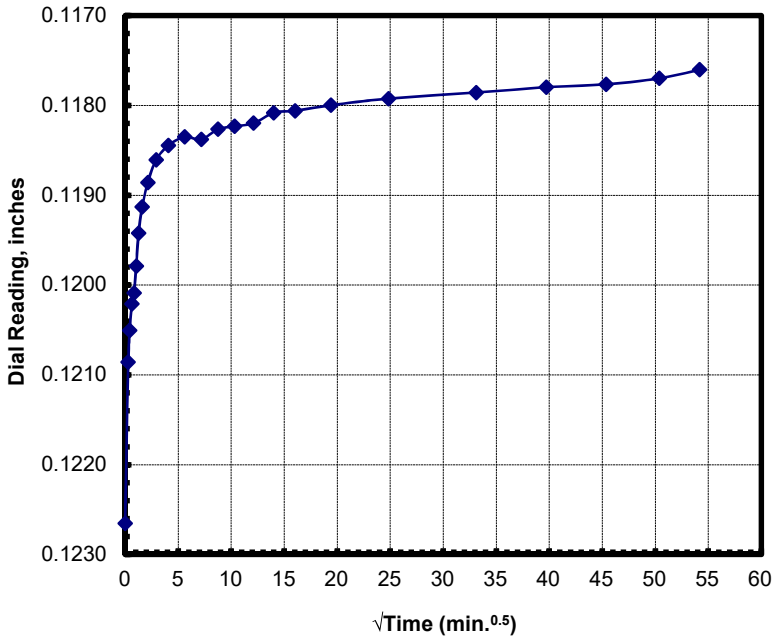


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ **(in):** 0.0874	d_0 **(in):** 0.0874
Project Name: CPRA PO 181	**PL:** NA	D_{end} **(in):** 0.1227	d_{100} **(in):** 0.1180
Boring & Depth: M-8, S-8, 14-16 ft	**PL:** NA	Δ_{hi} **(in.):** 0.0352	δ_{eop} **(in.):** 0.0306
Sample: Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} **(min):** 1.4	t_{90} **(min):** 22

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/15/20 9:01:34 AM	0.00	0.00	0.1227
11/15/20 9:01:39 AM	0.08	0.29	0.1209
11/15/20 9:01:45 AM	0.18	0.43	0.1205
11/15/20 9:01:58 AM	0.40	0.63	0.1202
11/15/20 9:02:16 AM	0.70	0.84	0.1201
11/15/20 9:02:40 AM	1.10	1.05	0.1198
11/15/20 9:03:10 AM	1.60	1.26	0.1194
11/15/20 9:04:10 AM	2.60	1.61	0.1191
11/15/20 9:06:10 AM	4.60	2.14	0.1189
11/15/20 9:10:10 AM	8.60	2.93	0.1186
11/15/20 9:18:10 AM	16.60	4.07	0.1184
11/15/20 9:33:10 AM	31.60	5.62	0.1184
11/15/20 9:53:10 AM	51.60	7.18	0.1184
11/15/20 10:18:10 AM	76.60	8.75	0.1183
11/15/20 10:48:10 AM	106.60	10.32	0.1182
11/15/20 11:28:10 AM	146.60	12.11	0.1182
11/15/20 12:18:10 PM	196.60	14.02	0.1181
11/15/20 1:18:10 PM	256.60	16.02	0.1181
11/15/20 3:18:11 PM	376.62	19.41	0.1180
11/15/20 7:18:11 PM	616.62	24.83	0.1179
11/16/20 3:18:12 AM	1096.63	33.12	0.1179
11/16/20 11:18:12 AM	1576.63	39.71	0.1178
11/16/20 7:18:13 PM	2056.65	45.35	0.1178
11/17/20 3:18:13 AM	2536.65	50.37	0.1177
11/17/20 9:58:19 AM	2936.75	54.19	0.1176

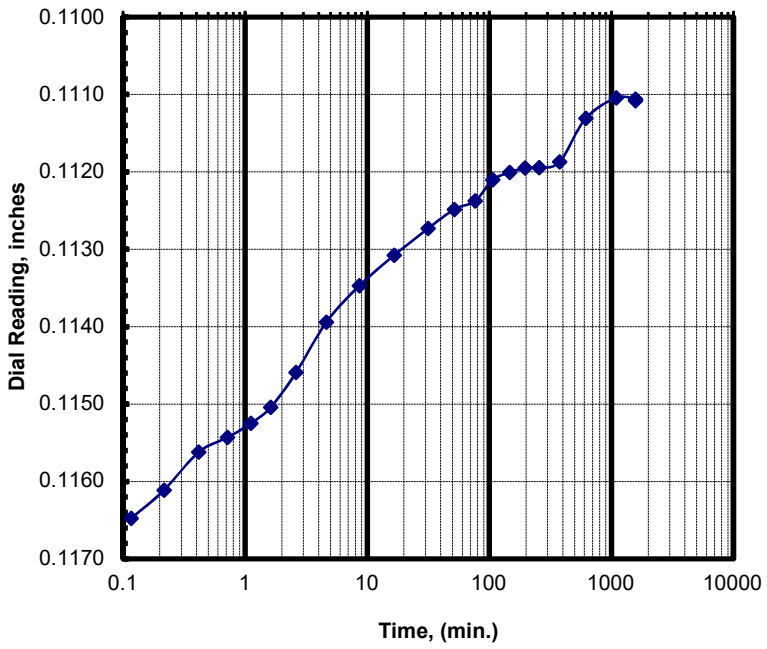


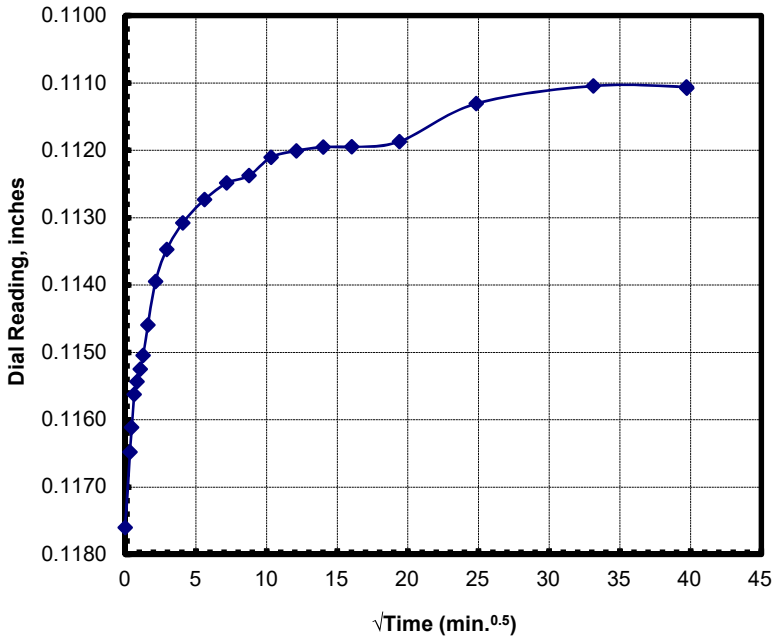


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.1227**	**d_0 (in): 0.1227**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.1176**	**d_{100} (in): 0.1179**
Boring & Depth: M-8, S-8, 14-16 ft	**PL: NA**	**Δ_{hi} (in.): -0.0050**	**δ_{eop} (in.): -0.0048**
Sample: Gray SANDY LEAN CLAY	**- 200 (%): NA**	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/17/20 9:58:19 AM	0.00	0.00	0.1176
11/17/20 9:58:26 AM	0.12	0.34	0.1165
11/17/20 9:58:32 AM	0.22	0.47	0.1161
11/17/20 9:58:44 AM	0.42	0.65	0.1156
11/17/20 9:59:02 AM	0.72	0.85	0.1154
11/17/20 9:59:26 AM	1.12	1.06	0.1152
11/17/20 9:59:56 AM	1.62	1.27	0.1150
11/17/20 10:00:56 AM	2.62	1.62	0.1146
11/17/20 10:02:56 AM	4.62	2.15	0.1139
11/17/20 10:06:56 AM	8.62	2.94	0.1135
11/17/20 10:14:56 AM	16.62	4.08	0.1131
11/17/20 10:29:56 AM	31.62	5.62	0.1127
11/17/20 10:49:56 AM	51.62	7.18	0.1125
11/17/20 11:14:56 AM	76.62	8.75	0.1124
11/17/20 11:44:57 AM	106.63	10.33	0.1121
11/17/20 12:24:57 PM	146.63	12.11	0.1120
11/17/20 1:14:57 PM	196.63	14.02	0.1120
11/17/20 2:14:57 PM	256.63	16.02	0.1119
11/17/20 4:14:57 PM	376.63	19.41	0.1119
11/17/20 8:14:58 PM	616.65	24.83	0.1113
11/18/20 4:14:58 AM	1096.65	33.12	0.1110
11/18/20 12:14:59 PM	1576.67	39.71	0.1111
11/18/20 12:16:54 PM	1578.58	39.73	0.1111

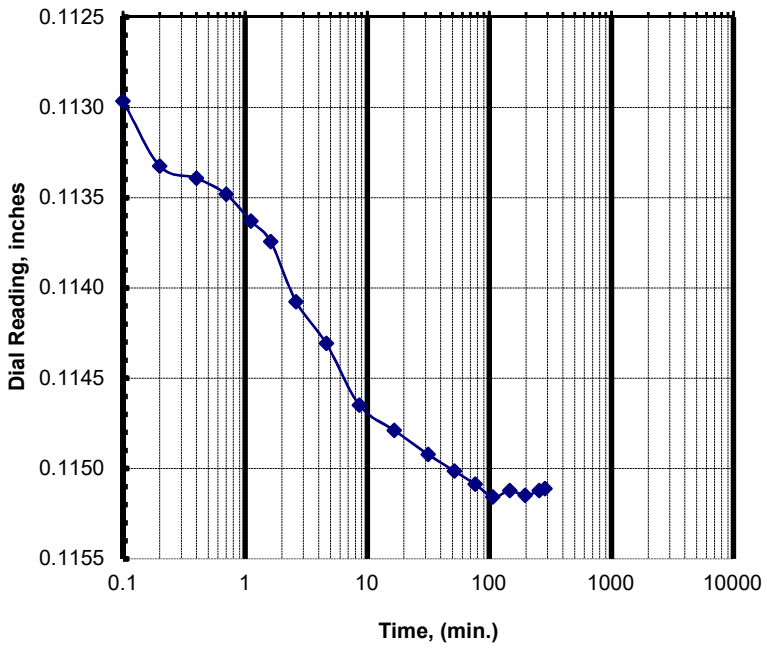


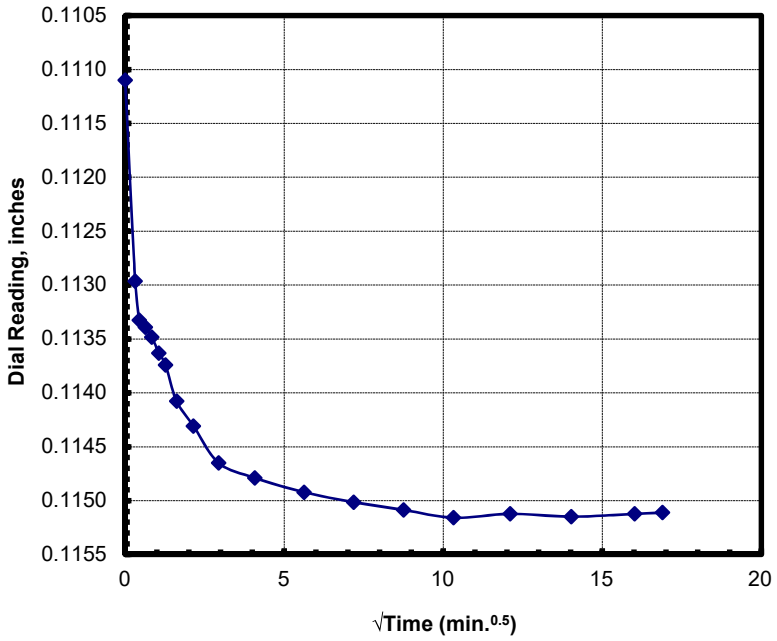


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ **(in):** 0.1176	d_0 **(in):** 0.1176
Project Name: CPRA PO 181	**PL:** NA	D_{end} **(in):** 0.1111	d_{100} **(in):** 0.1119
Boring & Depth: M-8, S-8, 14-16 ft	**PL:** NA	Δ_{hi} **(in.):** -0.0065	δ_{eop} **(in.):** -0.0057
Sample: Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} **(min):**	t_{90} **(min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/18/20 12:16:54 PM	0.00	0.00	0.1111
11/18/20 12:17:00 PM	0.10	0.32	0.1130
11/18/20 12:17:06 PM	0.20	0.45	0.1133
11/18/20 12:17:18 PM	0.40	0.63	0.1134
11/18/20 12:17:36 PM	0.70	0.84	0.1135
11/18/20 12:18:01 PM	1.12	1.06	0.1136
11/18/20 12:18:31 PM	1.62	1.27	0.1137
11/18/20 12:19:31 PM	2.62	1.62	0.1141
11/18/20 12:21:31 PM	4.62	2.15	0.1143
11/18/20 12:25:31 PM	8.62	2.94	0.1146
11/18/20 12:33:31 PM	16.62	4.08	0.1148
11/18/20 12:48:31 PM	31.62	5.62	0.1149
11/18/20 1:08:31 PM	51.62	7.18	0.1150
11/18/20 1:33:31 PM	76.62	8.75	0.1151
11/18/20 2:03:31 PM	106.62	10.33	0.1152
11/18/20 2:43:31 PM	146.62	12.11	0.1151
11/18/20 3:33:31 PM	196.62	14.02	0.1151
11/18/20 4:33:32 PM	256.63	16.02	0.1151
11/18/20 5:02:13 PM	285.32	16.89	0.1151

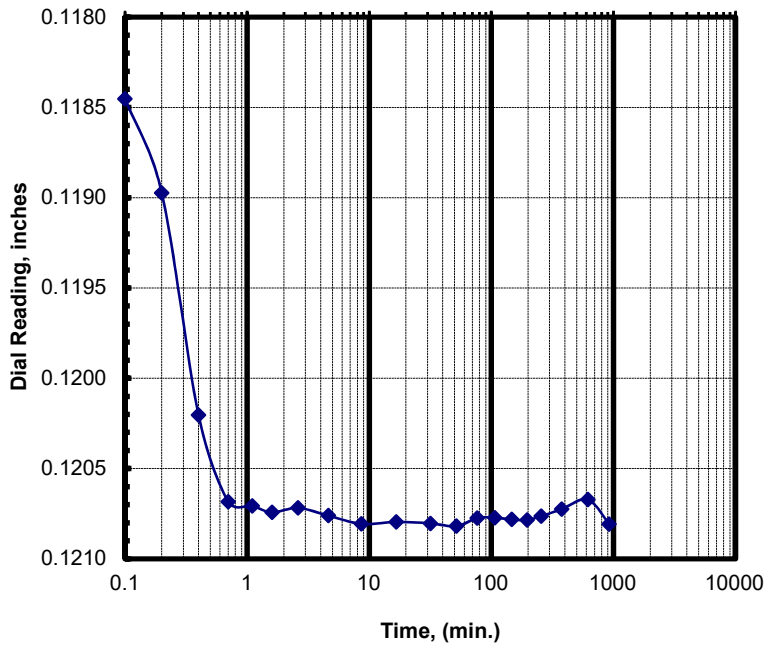


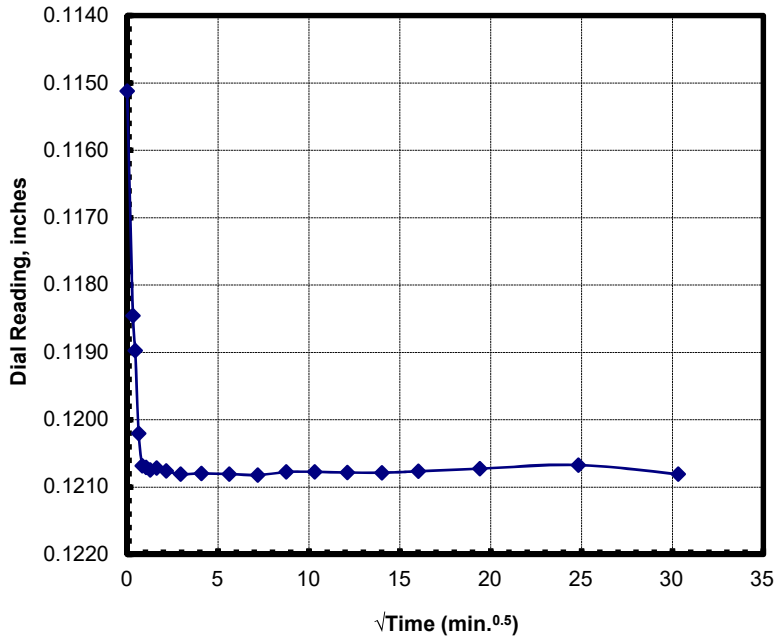


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.1111	d_0 (in): 0.1111
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.1151	d_{100} (in): 0.1150
Boring & Depth: M-8, S-8, 14-16 ft	**PL:** NA	Δ_{hi} (in.): 0.0040	δ_{eop} (in.): 0.0039
Sample: Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min):	t_{90} (min):

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/18/20 5:02:14 PM	0.00	0.00	0.1151
11/18/20 5:02:20 PM	0.10	0.32	0.1185
11/18/20 5:02:26 PM	0.20	0.45	0.1190
11/18/20 5:02:38 PM	0.40	0.63	0.1202
11/18/20 5:02:56 PM	0.70	0.84	0.1207
11/18/20 5:03:20 PM	1.10	1.05	0.1207
11/18/20 5:03:50 PM	1.60	1.26	0.1207
11/18/20 5:04:51 PM	2.62	1.62	0.1207
11/18/20 5:06:51 PM	4.62	2.15	0.1208
11/18/20 5:10:52 PM	8.63	2.94	0.1208
11/18/20 5:18:52 PM	16.63	4.08	0.1208
11/18/20 5:33:53 PM	31.65	5.63	0.1208
11/18/20 5:53:53 PM	51.65	7.19	0.1208
11/18/20 6:18:53 PM	76.65	8.75	0.1208
11/18/20 6:48:53 PM	106.65	10.33	0.1208
11/18/20 7:28:54 PM	146.67	12.11	0.1208
11/18/20 8:18:54 PM	196.67	14.02	0.1208
11/18/20 9:18:54 PM	256.67	16.02	0.1208
11/18/20 11:18:54 PM	376.67	19.41	0.1207
11/19/20 3:18:56 AM	616.70	24.83	0.1207
11/19/20 8:21:18 AM	919.07	30.32	0.1208

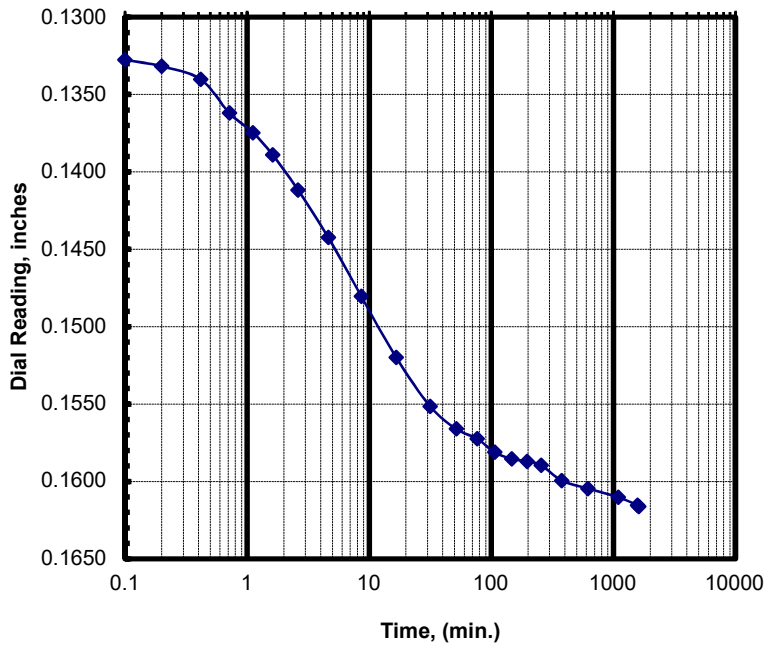


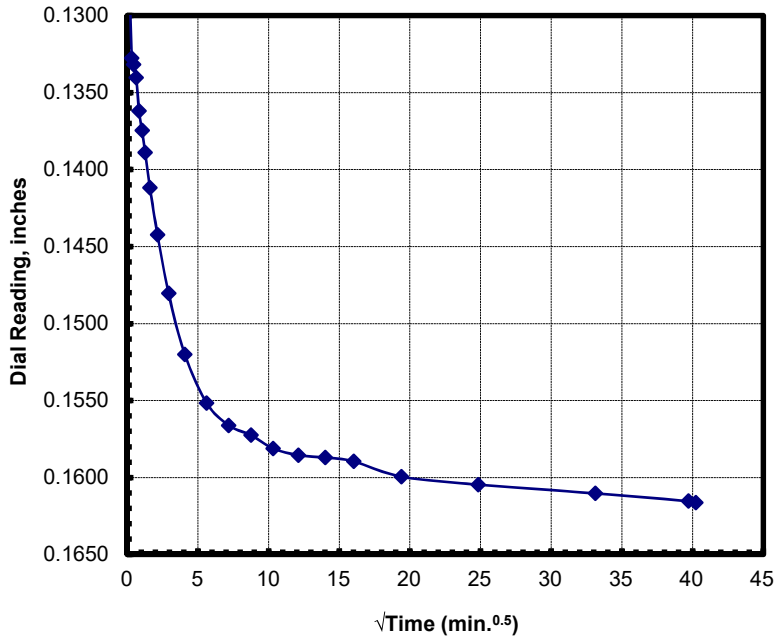


Project Number: 02541139	**LL: NA**	**$D_{0(min)}$ (in): 0.1151**	**d_0 (in): 0.1151**
Project Name: CPRA PO 181	**PL: NA**	**D_{end} (in): 0.1208**	**d_{100} (in): 0.1207**
Boring & Depth: M-8, S-8, 14-16 ft	**PL: NA**	**Δ_{hi} (in.): 0.0057**	**δ_{eop} (in.): 0.0056**
Sample: Gray SANDY LEAN CLAY	**- 200 (%): NA**	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 8 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/19/20 8:24:11 AM	0.00	0.00	0.1119
11/19/20 8:24:17 AM	0.10	0.32	0.1328
11/19/20 8:24:23 AM	0.20	0.45	0.1332
11/19/20 8:24:36 AM	0.42	0.65	0.1340
11/19/20 8:24:54 AM	0.72	0.85	0.1362
11/19/20 8:25:18 AM	1.12	1.06	0.1375
11/19/20 8:25:48 AM	1.62	1.27	0.1389
11/19/20 8:26:48 AM	2.62	1.62	0.1412
11/19/20 8:28:48 AM	4.62	2.15	0.1442
11/19/20 8:32:48 AM	8.62	2.94	0.1480
11/19/20 8:40:48 AM	16.62	4.08	0.1520
11/19/20 8:55:48 AM	31.62	5.62	0.1552
11/19/20 9:15:48 AM	51.62	7.18	0.1566
11/19/20 9:40:48 AM	76.62	8.75	0.1572
11/19/20 10:10:49 AM	106.63	10.33	0.1581
11/19/20 10:50:49 AM	146.63	12.11	0.1585
11/19/20 11:40:49 AM	196.63	14.02	0.1587
11/19/20 12:40:49 PM	256.63	16.02	0.1589
11/19/20 2:40:49 PM	376.63	19.41	0.1599
11/19/20 6:40:50 PM	616.65	24.83	0.1605
11/20/20 2:40:50 AM	1096.65	33.12	0.1610
11/20/20 10:40:51 AM	1576.67	39.71	0.1615
11/20/20 11:22:21 AM	1618.17	40.23	0.1616

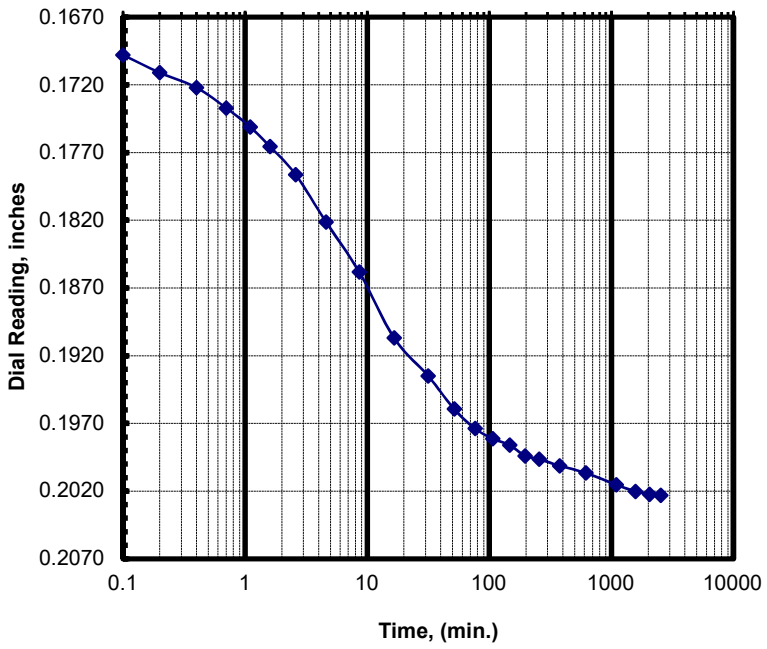


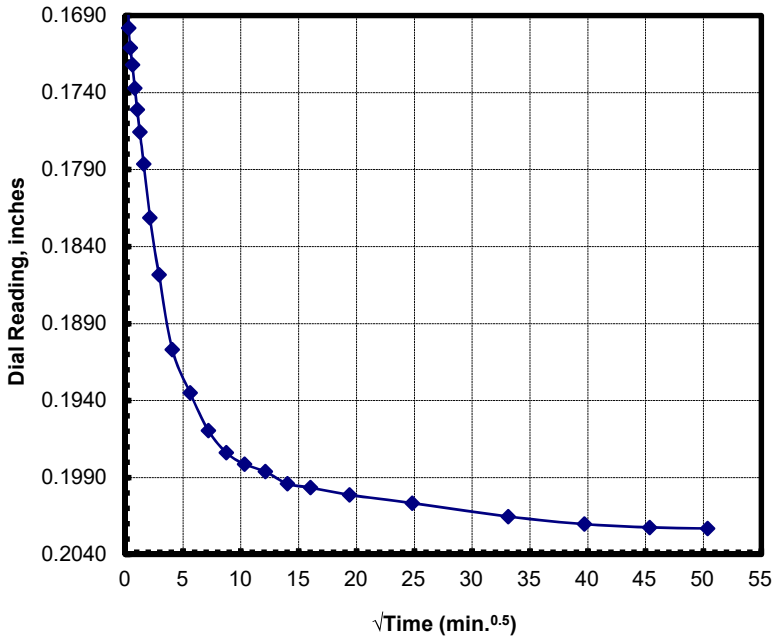


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.1208	d_0 (in): 0.1208
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.1616	d_{100} (in): 0.1573
Boring & Depth: M-8, S-8, 14-16 ft	**PL:** NA	Δ_{hi} (in.): 0.0497	δ_{eop} (in.): 0.0365
Sample: Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min): 1.8	t_{90} (min): 22

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 16 tsf

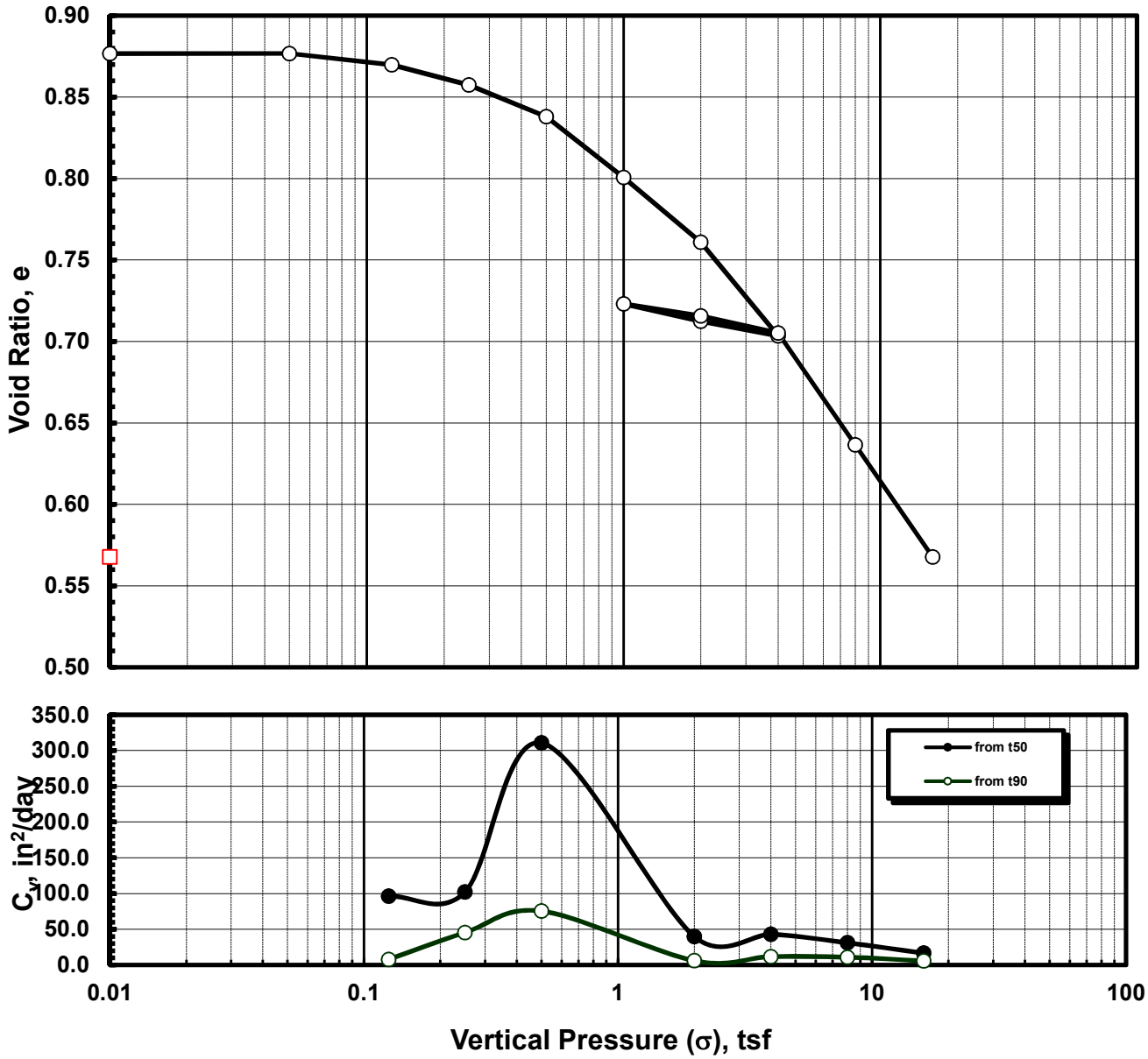
Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
11/20/20 11:22:22 AM	0.00	0.00	0.1616
11/20/20 11:22:28 AM	0.10	0.32	0.1698
11/20/20 11:22:34 AM	0.20	0.45	0.1711
11/20/20 11:22:46 AM	0.40	0.63	0.1722
11/20/20 11:23:04 AM	0.70	0.84	0.1737
11/20/20 11:23:28 AM	1.10	1.05	0.1751
11/20/20 11:23:58 AM	1.60	1.26	0.1766
11/20/20 11:24:58 AM	2.60	1.61	0.1786
11/20/20 11:26:58 AM	4.60	2.14	0.1821
11/20/20 11:30:58 AM	8.60	2.93	0.1858
11/20/20 11:38:58 AM	16.60	4.07	0.1907
11/20/20 11:53:58 AM	31.60	5.62	0.1935
11/20/20 12:13:58 PM	51.60	7.18	0.1959
11/20/20 12:38:58 PM	76.60	8.75	0.1974
11/20/20 1:08:58 PM	106.60	10.32	0.1981
11/20/20 1:48:59 PM	146.62	12.11	0.1986
11/20/20 2:38:59 PM	196.62	14.02	0.1994
11/20/20 3:38:59 PM	256.62	16.02	0.1997
11/20/20 5:38:59 PM	376.62	19.41	0.2001
11/20/20 9:38:59 PM	616.62	24.83	0.2007
11/21/20 5:39:00 AM	1096.63	33.12	0.2015
11/21/20 1:39:00 PM	1576.63	39.71	0.2020
11/21/20 9:39:01 PM	2056.65	45.35	0.2022
11/22/20 5:39:01 AM	2536.65	50.37	0.2023





Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.1616	d_0 (in): 0.1616
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.2023	d_{100} (in): 0.1981
Boring & Depth: M-8, S-8, 14-16 ft	**PL:** NA	Δ_{hi} (in.): 0.0407	δ_{eop} (in.): 0.0365
Sample: Gray SANDY LEAN CLAY	**- 200 (%):** NA	t_{50} (min): 3.1	t_{90} (min): 39

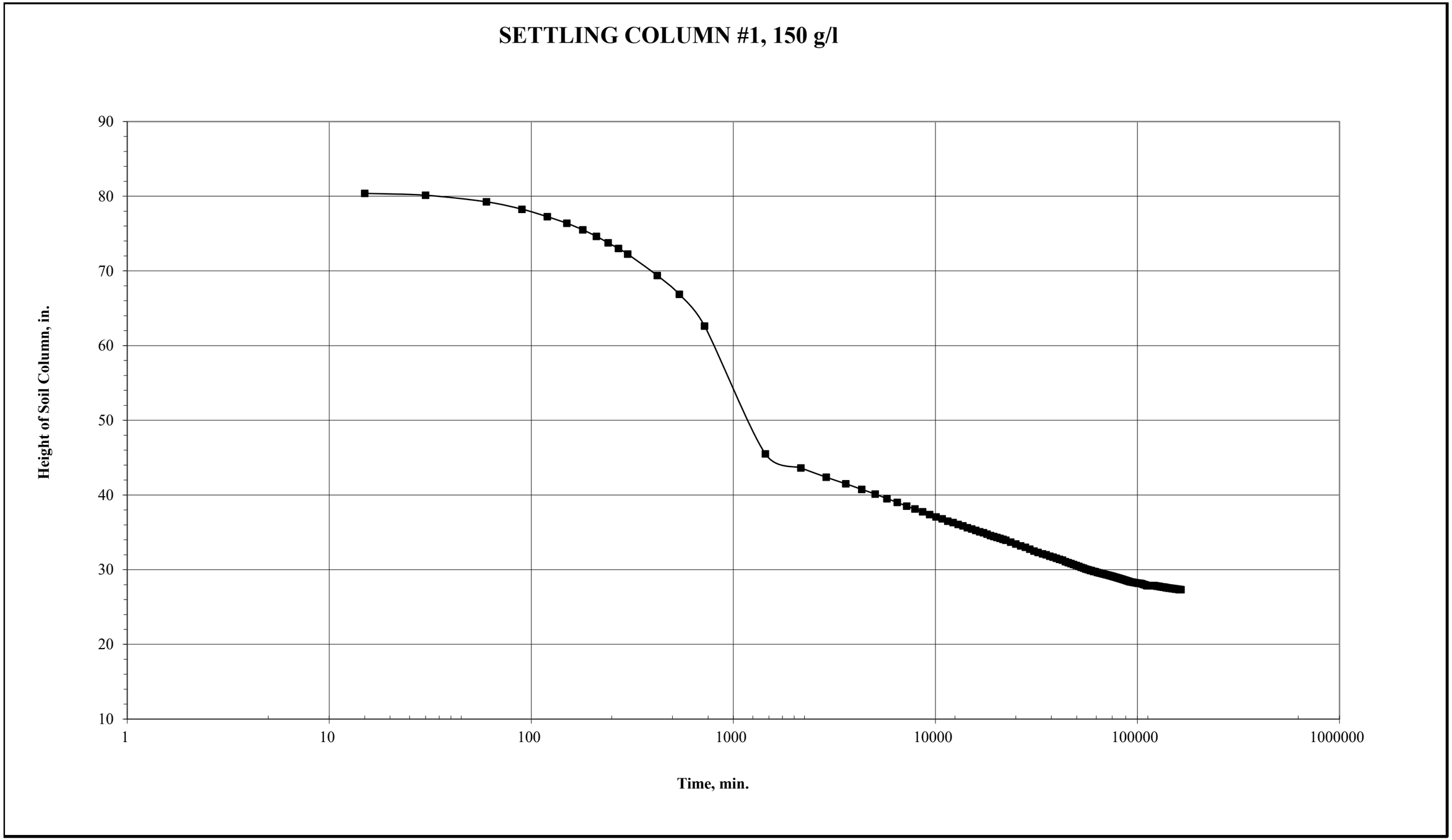
CONSOLIDATION TEST RESULTS - ASTM D 2435

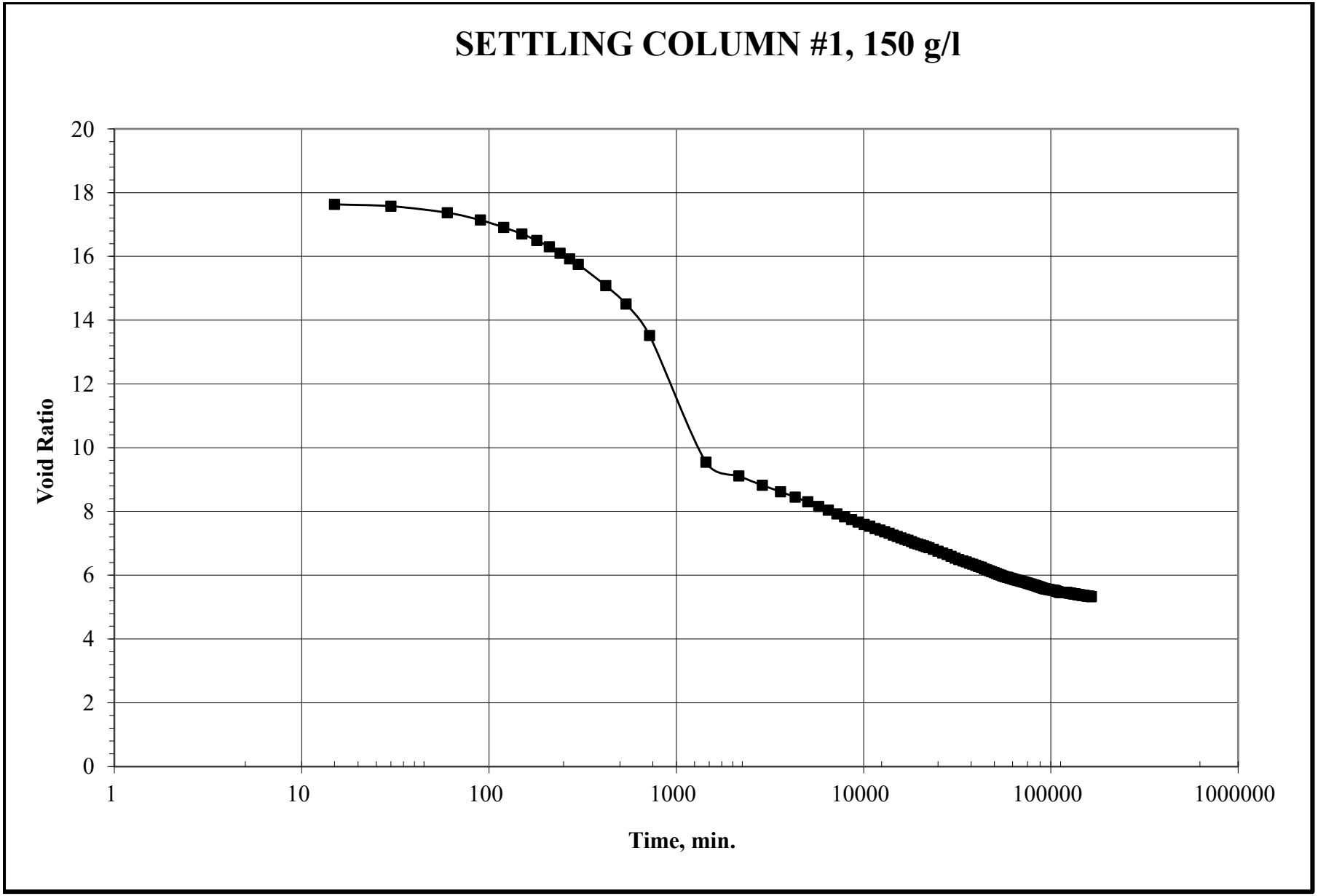


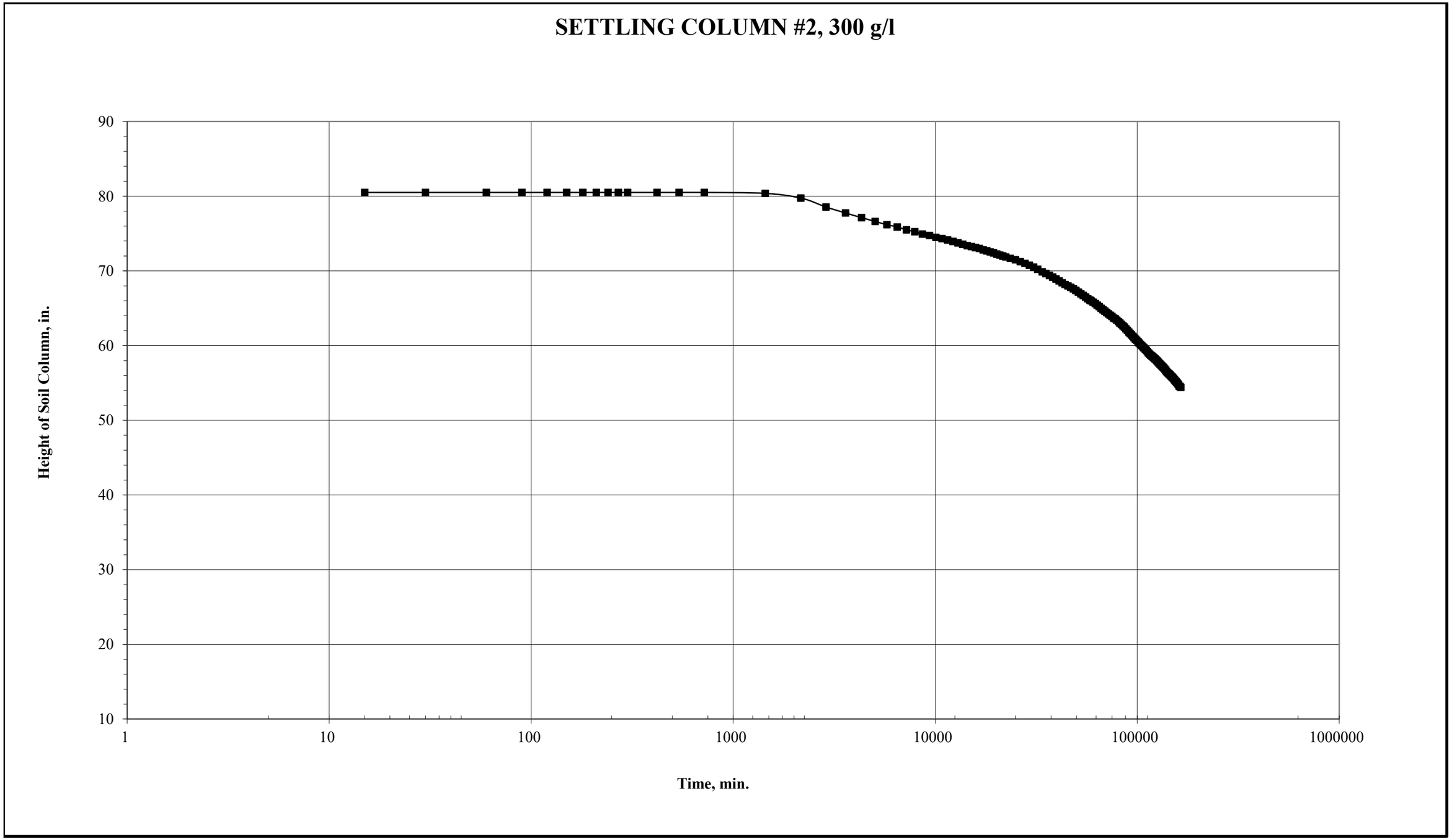
Sample Condition	Before	After	Consolidation Parameters	
Moisture Content, %:	29.4%	21.2%	Overburden Pressure, tsf:	0.5
Sample Height, in.:	0.9970	0.8328	Preconsolidation Pressure, tsf:	1.0
Void Ratio, e:	0.8768	0.5677	Compression Index, (Cc):	0.228
Unit Weight, pcf:	89.2	106.8	Re-Compression Index, (Cr)	0.030
Degree of Saturation:	0.90	1.00	Swell Index, Cs:	-

Project Number:	02541139	Liquid Limit:	NA	Hand Pen:	0.50 tsf
Project Name	CPRA PO 181	Plastic Limit:	NA	-200 %:	NA
Boring No.:	M-8	Plasticity Index:	NA	SPG:	2.683
Sample ID, Depth:	S-8, 14-16 ft	Classification:	Gray SANDY LEAN CLAY		

Appendix Figure No. G.1-236


SETTLING COLUMN #1, 150 g/l
Height of Soil Column, in.
90
80
70
60
50
40
30
20
10
1
10
100
1000
10000
100000
1000000
Time, min.


SETTLING COLUMN #1, 150 g/l
Void Ratio
20
18
16
14
12
10
8
6
4
2
0
1
10
100
1000
10000
100000
1000000
Time, min.


SETTLING COLUMN #2, 300 g/l
Height of Soil Column, in.
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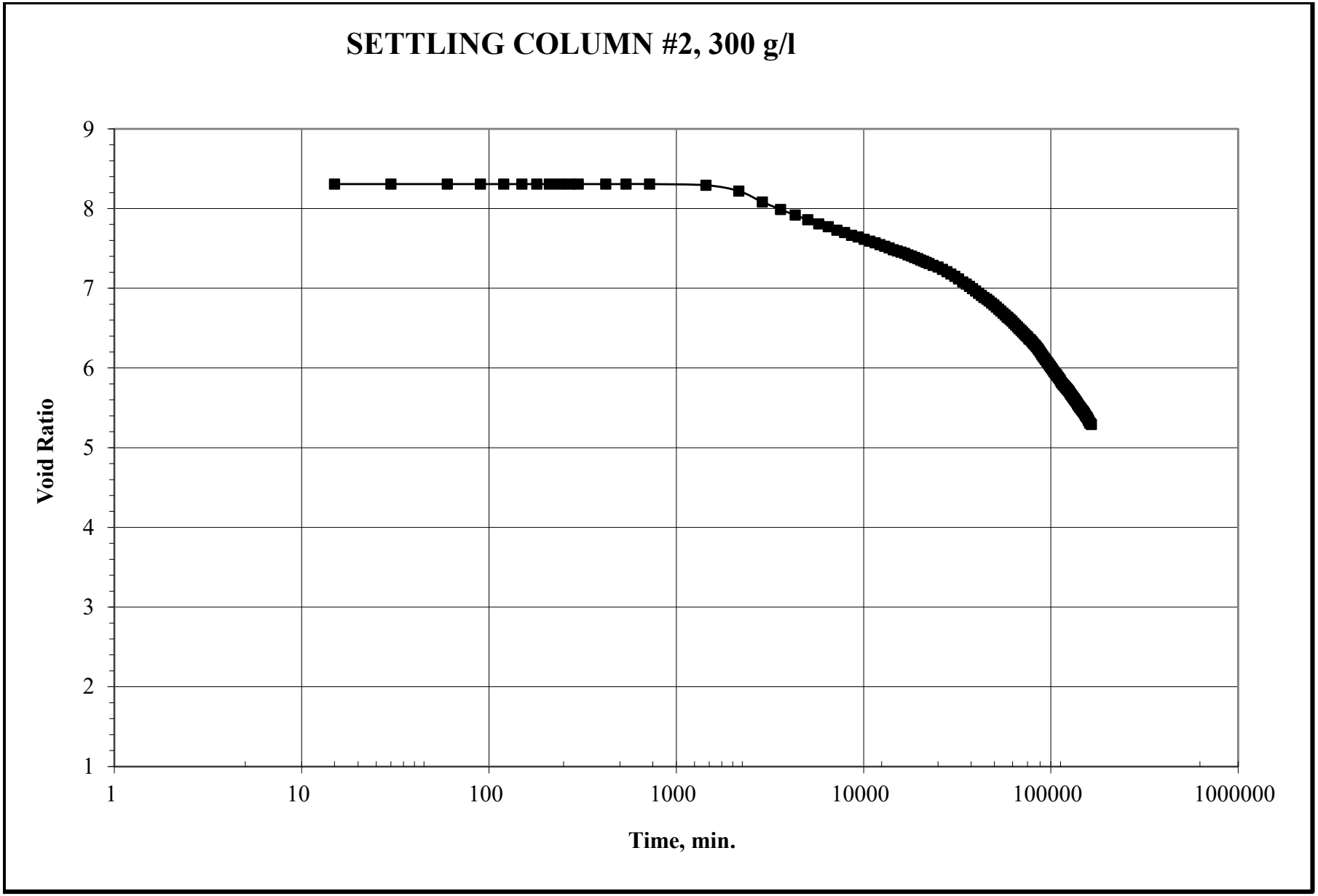
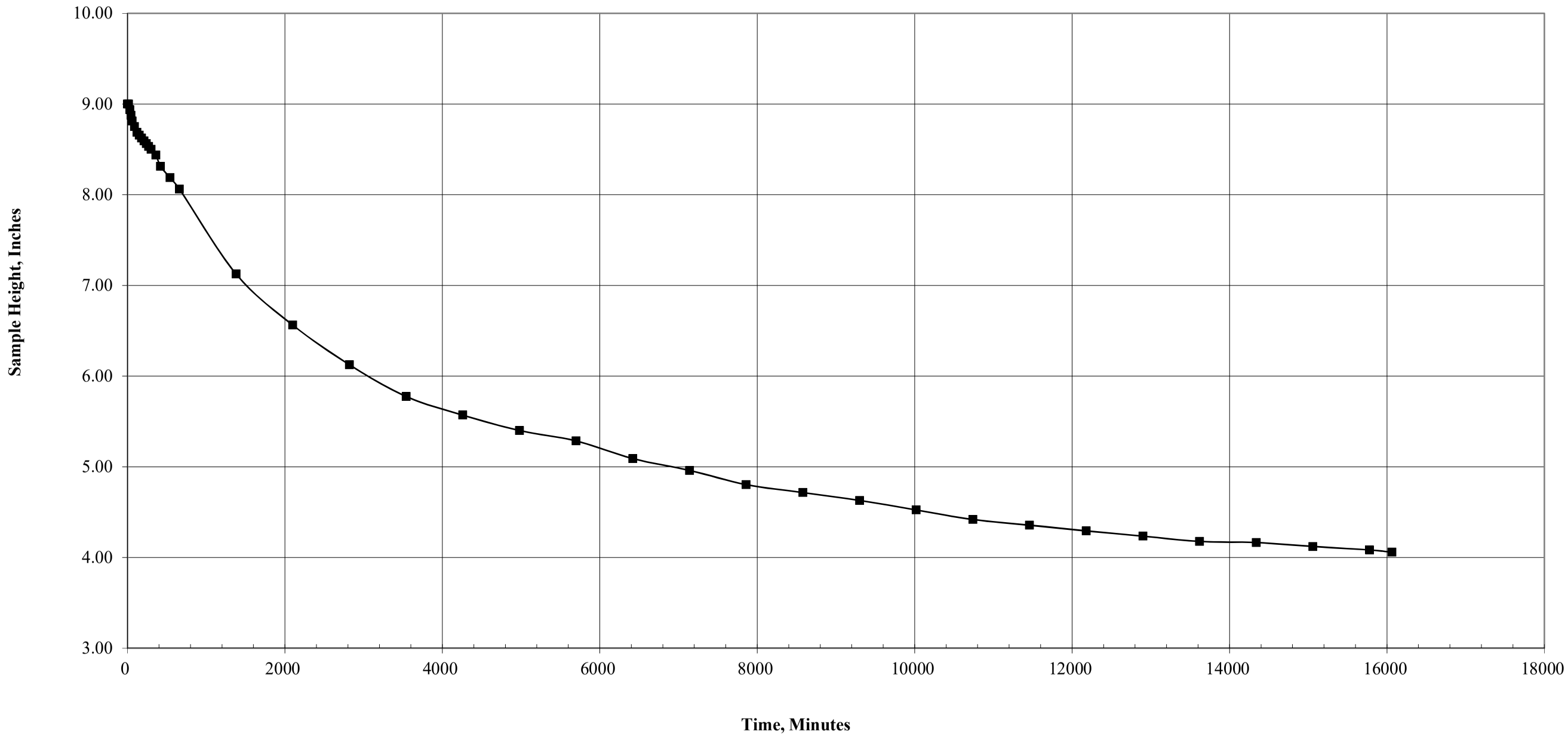
80
70
60
50
40
30
20
10
1
10
100
1000
10000
100000
1000000
Time, min.

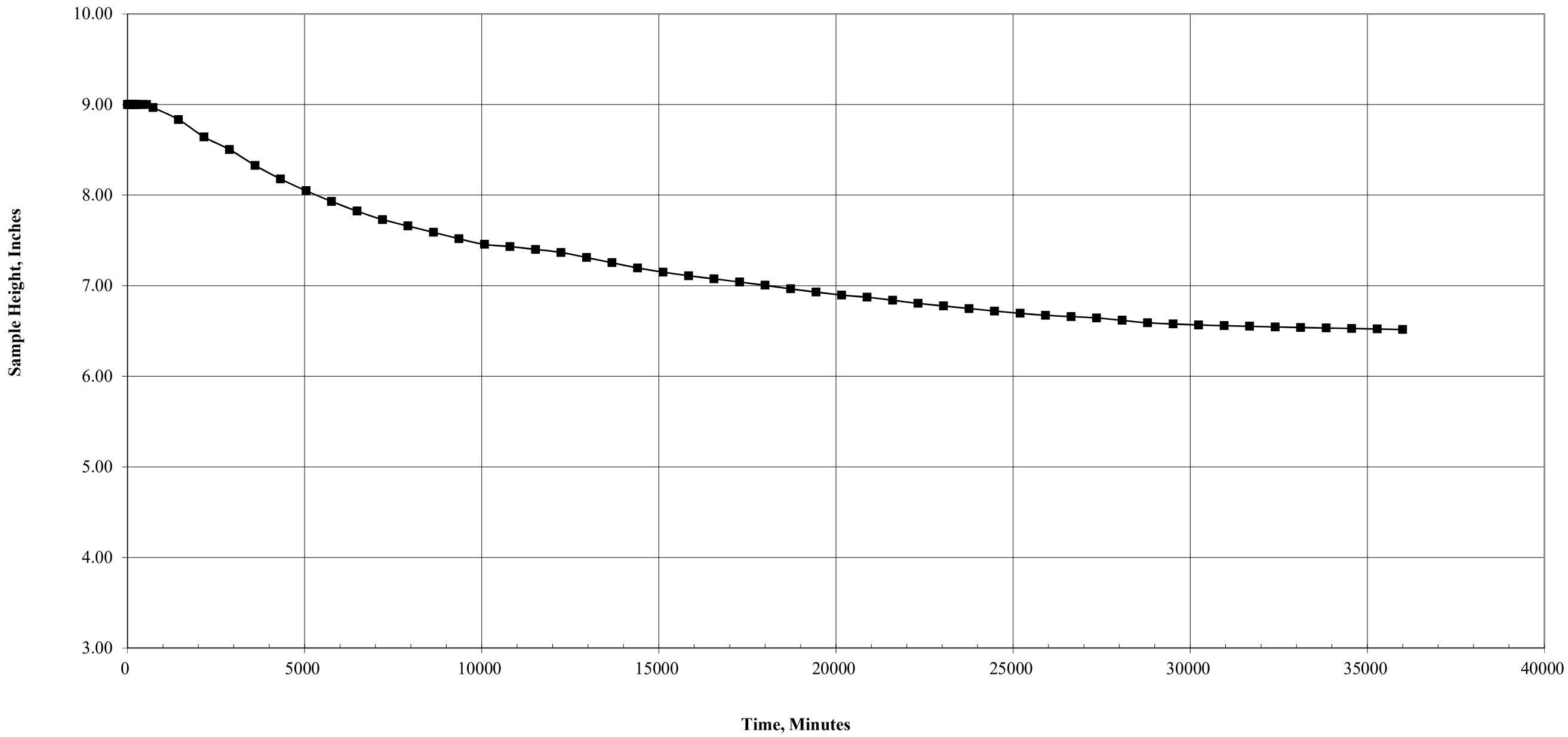


Appendix Figure No. G.1-240

SELF-WEIGHT TEST#1, 150 g/l
Initial Sample Consolidation



SELF-WEIGHT TEST#2, 300 g/l
Initial Sample Consolidation



Appendix Figure No. G.1-242

Professional Service Industries, Inc.
724 Central Avenue
Jefferson, Louisiana 70121
Phone: (504) 733-9411

November 8, 2021

Coastal Protection and Restoration Authority (CPRA)
150 Terrace Avenue
Baton Rouge, Louisiana 70802

Attn: Ms. April Newman
Project Manager
Phone: (225) 342-6412
Email: April.Newman@la.gov

Re: **Geotechnical Engineering Services Data Report**
Bayou Cane Marsh Creation Project (PO-181)
St. Tammany Parish, LA
PSI Project No. 02541139-1 Addendum #1

Dear Ms. Newman:

Professional Service Industries, Inc. (PSI), an Intertek company, is pleased to submit our Geotechnical Data Report for the above-referenced project. This report presents the results of our field exploration and laboratory testing performed for the proposed construction. A final geotechnical report will be submitted once the engineering analyses are performed.

If you have any questions pertaining to this report, please contact our office at (504) 733-9411. PSI would be pleased to continue providing geotechnical and construction material testing services throughout the construction of the project, and we look forward to working with you and your organization on this and future projects.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

STATE OF LOUISIANA
NABIL S. MIKHAIL
License No. 35300
PROFESSIONAL ENGINEER

11.8.2021

Prasoon Tiwari, P.E. (TX)
Geotechnical Department Manager

Nabil S. Mikhail, P.E., D. GE.
Chief Engineer

GEOTECHNICAL ENGINEERING SERVICES DATA REPORT

BAYOU CANE MARSH CREATION PROJECT (PO-181)
ST. TAMMANY PARISH, LA

PSI PROJECT NO. 02541139-1

PREPARED FOR

COASTAL PROTECTION AND RESTORATION AUTHORITY (CPRA)
150 TERRACE AVENUE
BATON ROUGE, LA 70802

November 16, 2021

BY

PROFESSIONAL SERVICE INDUSTRIES, INC.
724 CENTRAL AVENUE
JEFFERSON, LOUISIANA 70121
PHONE: 504-733-9411

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1. PROJECT INFORMATION

1.1. PROJECT AUTHORIZATION

Professional Service Industries, Inc. (PSI), an Intertek company, has completed the field and laboratory portions of a geotechnical investigation for the proposed Bayou Cane Marsh Creation Project (PO-181) in St. Tammany Parish, Louisiana. Our scope of services is outlined in PSI Proposal 0254-332404- Addendum #2, dated May 13, 2021. Our geotechnical services were authorized by Mr. Jerry Carroll, P.E., Lafayette Regional Operations Manager with CPRA, by issuing a Notice to Proceed as Task #3 dated May 25, 2021 under our existing Contract No. 4400015386. A final geotechnical report will be submitted once the engineering analyses are performed.

1.2. PROJECT DESCRIPTION

In addition to the services that were proposed in PSI's original Proposal Number 0254-282343 Rev.6, CPRA has requested additional geotechnical services for the Bayou Cane Marsh Creation Project (PO-181). Ms. April Newman with CPRA provided scope for these additional services in email correspondences dated December 17, 2020 and May 3, 2021. The project information included scope of services for geotechnical investigation and engineering services for Bayou Cane Marsh Creation Project (PO-181) in St. Tammany Parish, Louisiana.

A modified version of the original permitting documents (dated December 2020) pertaining to the additional CPT soundings was provided to PSI by Ms. April Newman in an email correspondence dated December 17, 2020. Based on the modified permitting document, PSI understood that seven (7) additional CPT soundings are required to support the potential expansion of Marsh Creation Area-2 through Marsh Creation Area-6.

In addition to these seven (7) CPT soundings, additional boring and Cone Penetration Test (CPT) locations for Marsh Creation Area -7 and new borrow area were also included in the scope and information was provided to PSI by Ms. April Newman of CPRA in an email correspondence dated May 3, 2021. A Google Earth file presenting additional borings and CPT soundings was provided to PSI.

Based on the provided information, PSI understands that one (1) soil boring and three (3) CPT soundings in the marsh area are required to support the potential expansion of Marsh Creation Area -7. Six (6) soil borings in the Lake Pontchartrain area are required to explore the new borrow area for this project.

1.3. SITE LOCATION AND DESCRIPTION

The PO-181 project area is located in CWPPRA Planning Region 1 of Pontchartrain, St. Tammany Parish, along the north shore of Lake Pontchartrain between Mandeville and Lacombe on property owned by either the State of Louisiana (Fontainebleau State Park) or the Big Branch National Wildlife Refuge. The project area spans approximately six miles along the shoreline of Lake Pontchartrain and is bordered to the southeast by the existing Goose Point/Point Platte Marsh Creation Project (PO-0033) and to the west by the facilities of Fontainebleau State Park. Approximate coordinates for the center of marsh fill area of the project are shown in the **Table 1**.

Table 1: Centerline Coordinates of the PO-181 Project Area

Latitude (DMS)	Longitude (DMS)
30° 18'46.03" N	89° 59'42.42" W

The approximate site location is shown on the Site Vicinity Map included in the **Appendix A**, which is based on Appendix B of the CPRA Scoping document for Project (PO-181), Proposed Soil Sampling Layout and Permit Drawings.

2. FIELD AND LABORATORY PROCEDURES

2.1. FIELD EXPLORATION

2.1.1. PERMIT ACCESS

Prior to mobilizing for the field work to survey the boring locations and conduct site reconnaissance, PSI coordinated and acquired documented access permissions to conduct any work at the subject site. A Special Use Permit for Sabine National Wildlife Refuge was secured prior to mobilizing to the project site. Wildlife Refuge Manager for Atchafalaya, Big Branch Marsh, and Bogue Chitto NWR's and Park Manager for Fontainebleau State Park were notified at least one day prior to the mobilization to the project site.

2.1.2. SURVEY POSITIONING AND MAGNETOMETER SURVEY

Prior to mobilizing the drilling equipment to perform the soil borings and Cone Penetration Tests (CPT's), Chustz surveying, LLC performed survey positioning and magnetometer survey at each boring/CPT location in the marsh area and borrow area, as per CPRA guidelines. The horizontal and vertical controls for survey positioning were performed in accordance with secondary monument and data sheets presented in Appendix D of the attached Scope Document. The magnetometer survey at each boring/CPT location in the marsh and borrow area was performed to ensure there are no pipelines or obstructions in the area. The locations in the marsh area were staked in the field by the survey crew. Based on information obtained from the survey work, details for the soil borings and CPT soundings details performed in the borrow area and the marsh area are presented in **Table 2** and **Table 3** respectively. The survey report is presented in **Appendix A**.

Table 2: Soil Borings details performed in Borrow area (Datum: NAVD88 GEOID12B)

Boring Location	Northing	Easting	Mudline Elevation (ft)	Water Surface Elevation (ft)
B-29	656677.18	3698381.97	-12.34	0.15
B-31	658345.27	3699211.64	-11.61	0.15
B-40	658408.23	3696787.19	-12.45	0.15
B-50	659294.35	3694769.91	-13.09	0.15
B-54	660589.97	3694205.99	-11.37	0.15
B-56	658852.89	3693376.93	-13.37	0.15

Note: A water depth of approximately 11 to 13 feet was recorded at boring locations in the Borrow area during our field operations.

Table 3: Soil Borings and CPT Sounding details performed in Marsh area (Datum: NAVD88 GEOID12B)

Boring Location	Northing	Easting	Mudline Elevation (ft)	Water Surface Elevation (ft)
C-38	667840.42	3691807.23	-1.49	0.15
C-39	667322.60	3692674.56	-1.53	0.15
C-40	666694.31	3692750.53	-1.63	0.15
C-41	662583.11	3703037.87	-2.91	0.15
C-42	661126.44	3704753.21	-1.12	0.15
C-43	655140.26	3707793.74	-1.43	0.15
C-44	654804.73	3708765.89	-1.68	0.15
C-46	649343.42	3711958.38	-2.13	0.15
C-47	650534.68	3712057.87	0.74	0.15
C-48	651024.22	3710687.76	-1.13	0.15
M-10	650022.94	3710882.72	-2.09	0.15

2.1.3. SOIL BORINGS & CPTS

Based on furnished information and discussions with CPRA, the soil boring and CPT sounding locations were established. Boring Location Plans for marsh area and borrow area are attached in **Appendix B**.

A total of eleven (11) soil boring and CPT soundings were performed for the marsh creation area. As discussed with CPRA, the soil boring and CPT soundings were explored using airboat mounted drilling equipment. All the soil borings and CPT soundings were performed between July 30 and August 4, 2021. Detailed descriptions of these activities are provided below:

- One (1) soil boring was drilled to a depth of 20 feet below mudline continuously and then at 5 feet intervals to a depth of 40 feet below the mudline. Drilling and sampling were performed in accordance with applicable ASTM Standards and the furnished Scope of Services Document.

  The soil boring was advanced with a 4-inch diameter bit using the rotary wash drilling method. Undisturbed samples of cohesive soils were obtained by using three-inch diameter thin-wall tube

samplers (Shelby Tube) in general accordance with the procedures for "Thin-Walled Tube Geotechnical Sampling of Soils" (ASTM D1587). For cohesionless soils and semi-cohesive soils, Standard Penetration Test (SPT) was performed to obtain standard penetration values of the soil. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer falling 30 inches that is required to advance the split-barrel sampler one (1) ft. into the soil. The number of blows is recorded for each of three (3) successive increments of six (6) inches penetration. The "N" value is obtained by adding the second and third incremental numbers. The results of the standard penetration test indicate the relative density of cohesionless soils and thereby provide a basis for estimating the relative strength of the soil profile components. Samples of granular soils were obtained utilizing a two (2) inch O.D. split-barrel sampler in general accordance with procedures for "Penetration Test and Split-Barrel Sampling of Soils" (ASTM D1586). The boreholes were grouted upon their completion per LDEQ and LA DOTD regulations.

- Ten (10) Cone Penetration Test (CPT) soundings were conducted to a refusal depth varying from 7 feet to 17 feet. Our CPT utilizes a 60° apex cone, 1.4-inch diameter, Type 2 electric cone penetrometer that meets ASTM D5778 specification. The soil information obtained from CPT soundings are presented in the **Appendix B**. The CPT was advanced to the shallow refusal depth due to the presence of the Pleistocene clays and relatively thick sand deposits. Refusal prior to the depth specified occurs due to achieving maximum tip resistance, a high frictional resistance of the sleeve, or excessive tilt angle of the CPT probe. To prevent damage to the CPT, no attempt was made to advance beyond refusal depth. Due to low penetration depths for CPT soundings, a cut off value of 1.7 was used for overburden correction factors for estimating normalized soil behavior type. For cohesive soils, Shear strength (Su) was estimated using the total cone resistance (q_t) and cone factor (N_{kt}). An N_{kt} value equal to 16, used for marsh area CPT's.

$$s_u = \frac{q_t - \sigma_v}{N_{kt}}$$

A total of six (6) soil borings were performed for the borrow area. The borings were performed between July 8 to July 10. Detailed descriptions of these activities are provided below:

- Six (6) soil borings were sampled to a depth of 20 feet below mudline continuously. Drilling and sampling were performed in accordance with applicable ASTM Standards and the furnished Scope of Services Document.

  The proposed soil borings were advanced with a 4-inch diameter rotary wash drilling method. Undisturbed samples of cohesive soils were obtained by using three-inch diameter thin-wall tube samplers (Shelby Tube) in general accordance with the procedures for "Thin-Walled Tube Geotechnical Sampling of Soils" (ASTM D1587). For cohesionless soils and semi-cohesive soils, Standard Penetration Test (SPT) was performed to obtain standard penetration values of the soil. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer falling 30 inches that is required to advance the split-barrel sampler one (1) ft. into the soil. The number of blows is recorded for each of three (3) successive increments of six (6) inches penetration. The "N" value is obtained by adding the second and third incremental numbers. The results of the standard penetration test indicate the relative density of cohesionless soils and

thereby provide a basis for estimating the relative strength of the soil profile components. Samples of granular soils were obtained utilizing a two (2) inch O.D. split-barrel sampler in general accordance with procedures for "Penetration Test and Split-Barrel Sampling of Soils" (ASTM D1586). The boreholes were grouted upon their completion per LDEQ and LA DOTD regulations.

2.2. GEOTECHNICAL LABORATORY TESTING

During the field work, the samples were identified according to boring number and depth and were transported to PSI's laboratory for classification and testing. A geotechnical laboratory testing program was developed after reviewing the field logs. The laboratory testing program was provided to CPRA for review and approval prior to testing. After approval, laboratory tests were performed in general accordance with applicable ASTM procedures and the furnished Scope Document. Laboratory testing of the obtained samples has been performed to evaluate the classification, strength and other engineering characteristics of the subsurface materials.

The Shelby tube samples were removed from the sampling tubes in the laboratory using a specially fabricated hydraulic piston-type extruder. The tube samples were extruded, classified and subjected to index and compressive strength tests. Additional estimates of shear strength were obtained through the use of a hand penetrometer (HP) and Torvane (TV), respectively. The results of the laboratory tests are presented in the Boring Logs given in the **Appendix B**. A key to the terms and symbols used on the boring logs is also presented in **Appendix B**.

An overview of the scope of the laboratory testing phase for both the marsh area borings and borrow area borings are tabulated in **Table 4** and **Table 5** respectively below. A detailed discussion on laboratory test results is presented in subsequent sections of the data report.

Table 4: Laboratory Testing Summary for Marsh area borings

Test Method	ASTM Reference	No. of Tests performed
Moisture Content	(ASTM D2216)	14
Visual Classification	(ASTM D2488)	14
Organic Content	(ASTM D2974)	1
Atterberg limits	(ASTM D4318)	4
Percent Passing #200 sieve	(ASTM D1140)	6
Specific Gravity	(ASTM D854)	1
Consolidation Test	(ASTM D2435)	1

Table 5: Laboratory Testing Summary for Borrow area borings

Test Method	ASTM Reference	No. of Tests performed
Moisture Content	(ASTM D2216)	60
Visual Classification	(ASTM D2488)	60
Atterberg limits	(ASTM D4318)	12
Hydrometer Analysis	(ASTM D7928)	6
Total Unit Weight Determination	(ASTM D2937)	12
Column Settling Test	USACE 1110-2-5027	1
Low Stress Consolidation Test	ASTM D2345 (mod.)	1

2.2.1. CLASSIFICATION AND INDEX TESTS

To determine the soil classification and geotechnical index properties, various classification and index tests were performed. The following classification and index tests for the marsh and borrow area were performed:

- Visual Classification (ASTM D2488)
- Moisture Content (ASTM D2216)
- Atterberg Limits (ASTM D4318)
- Percent Passing #200 sieve (ASTM D1140)
- Particle-Size Analysis and Hydrometer (ASTM D7928)
- Specific Gravity (ASTM D854)
- Organic Content (ASTM D2974)
- Total Unit Weight Determination (ASTM D2937)

1. Visual Classification
   Visual classification was performed based on ASTM D2488 and incorporated into the soil boring logs in **Appendix B**. It includes the description of soil color, consistency and type, and identification of variations (organics, layers, seams, etc.).

2. Moisture Content
   More than seventy-four (74) moisture content determinations (ASTM D2216) were performed in conjunction with the sample extrusion process and preparation of test specimens. Moisture content determinations were made for each extruded sample, and total densities were computed for each sample. Moisture content for each sample are included on the soil boring logs in **Appendix B**.

3. Atterberg Limits
   A total of sixteen (16) Atterberg limit determinations (ASTMD4318) were performed on selected samples to assist in soil classification and to enable correlation to pertinent clay behavior properties. The Atterberg limit data consist of measured liquid limit (LL) and plastic limit (PL) values from which the plasticity index (PI = LL - PL) is derived. The individual test data are included on the boring logs in **Appendix B**.

4. Percent Passing #200 sieve and Hydrometer Analysis
   A total of six (6) hydrometer particle size analysis tests (ASTM D7928) along with sieve analyses and six (6) fines content determinations (ASTM D 1140) were performed on selected samples. The test results, in terms of percent fines (i.e., percent by dry weight finer than the U.S. No. 200 sieve size, 0.074 mm, or silt and clay fraction) are included on the soil boring logs in **Appendix B**. The hydrometer test with sieve analyses results are included in **Appendix C**.

5. Specific Gravity
   A total of one (1) specific gravity tests based on ASTM D854 were performed on selected samples and results are included in **Appendix C.**

6. Organic Content
   A total of one (1) organic tests based on ASTM D2974 were performed on selected samples. The organic content results are included in **Appendix C**.

7. Total Unit Weight Determination
   Total unit weights of the tube samples were computed based on (ASTM D2937) sample volume and weight measurements taken after exclusion of any materials that appeared to have been disturbed during the sampling or extrusion process.

2.2.2. STRENGTH TESTS

To determine the strength characteristics of the marsh area soil deposits, various compression tests and index strength tests were performed. The following tests for the selected marsh area soil samples were performed:

1. Hand penetrometer and Torvane Index Strength Tests
   Hand-operated Torvane (TV) and hand penetrometer index strength tests were performed in conjunction with the sample extrusion process and are included in soil boring logs. These test results are considered to be index strengths in that the absolute value of the measured undrained shear strength is generally not considered adequately reliable for use in design. The test results, however, are useful in identifying soil strength variability and trends with respect to depth, material type, etc.

2.2.3. CONSOLIDATION TESTS

To determine the stress history, stress deformation, and time rate settlement characteristics of the marsh area soil deposits, one (1) consolidation test was performed on selected clay samples from marsh area soil borings.

1. Consolidation Test (ASTM D2435)
   Incremental consolidation tests (ASTM D 2435) were included in the laboratory testing program to enable assessment of stress history and determination of stress history, stress deformation, and time rate settlement characteristics of the marsh clay deposits that will dictate post-construction settlement of the marsh creation area. one (1) consolidation test was conducted for M-10 soil boring sample.

During each load increment, the accumulation of vertical displacement with time is measured. In general, each load increment was sustained for a period of 12 to 36 hours. The vertical displacement versus time data was evaluated using the conventional log-time and square-root time curve fitting techniques to determine the end of primary consolidation (i.e., the point in time at which dissipation of load-induced excess pore water pressures in the sample had dissipated and drained creep ensued for each load increment). The individual test results, in terms of coefficient of consolidation versus effective vertical stress and void ratio versus effective vertical stress are presented in **Appendix D**.

2. Settling Column Test
   One representative composite sample was prepared using samples obtained from the sampling locations performed within the proposed new borrow area. As requested, a settling column test with a concentration of 150g/l was performed in our geotechnical lab. As mentioned in the original Geotechnical Data Report (GDR) The settling tests consist of measuring the fall of the liquid-solid interface over time.

   It should be noted that a settling column test with 150g/l concentration was also performed using the samples obtained from the previously selected borrow area and was presented in the original GDR dated December 8, 2020. The data obtained from both the settling column i.e. liquid-solid interface points over a period time, was plotted together to compare the soil settlement behavior from the two different borrow areas.

   Based on the comparison of these two settling column tests, it can be concluded that the soil settlement behavior is similar for the soil with similar concentration from both the borrow areas. These data are plotted in terms of height of the interface over time in **Appendix E**.

3. DISCUSSION ON SUBSURFACE CONDITIONS

3.1. MARSH FILL AREA SUBSURFACE CONDITIONS

Based on the field observations, CPT soundings and results of the geotechnical laboratory testing, the soils were classified, and boring log and CPT sounding plots were developed.

Seven (7) additional CPT soundings (C-38 thru C-44) were performed to support the potential expansion of Marsh Creation Area-2 through Marsh Creation Area-6.

Based on the soil classification results, it can be concluded that the soil properties are in agreement with the soil data obtained from the previously performed soil borings and CPTs in the Marsh Creation Area-2 through Marsh Creation Area-6. Therefore, the original design properties utilized for these marsh areas will be implemented in the final Geotechnical Engineering Report. A generalized subsurface profile for marsh fill area is presented in **Table 6**.

Table 6: Generalized Soil Profile (CPT Soundings C-38 thru C-44)

Approximate Elevation Range (NAVD88 GEOID12B, feet)*	Consistency/Relative Density	Material Description
-1.5 to -5.5		Sensitive Fine-Grained Material
-2 to -10	Firm to Very Stiff	Clay and Silty Clay
-9.5 to -10.5		Sand and Silty Sand

**Referenced from existing mudline elevation at the boring locations performed in marsh fill area, at the time of drilling activities.*

One (1) soil boring (M-10) and three (3) CPT soundings (C-46 thru C-48) were performed to support the potential expansion of Marsh Creation Area -7. Based on the soil classification results, it can be concluded that the soil properties are in agreement with the soil data obtained from the previously performed soil boring M-9 and CPT-23 in the Marsh Creation Area-7. Therefore, the original design properties utilized for this marsh area will be implemented in the final Geotechnical Engineering Report.

A generalized subsurface profile for marsh fill area is presented in **Table** 6**7**.

Table 7: Generalized Soil Profile (CPT Soundings C-46 thru C-48 & Boring M-10)

Approximate Elevation Range (NAVD88 GEOID12B, feet)*	Consistency/Relative Density	Material Description
0 to -3.5	Very Soft	Peat/ Sand and Silty Sand
-3 to -5		Clay and Silty Clay
-5 to -40	Medium Dense	Poorly Graded Sand with Silt (SP-SM) and Poorly Graded Sand (SP)

**Referenced from existing mudline elevation at the boring locations performed in marsh fill area, at the time of drilling activities.*

3.2. BORROW AREA SUBSURFACE CONDITIONS

Based on the field observations and results of the geotechnical laboratory testing, the soils were classified, and boring logs were developed. A generalized subsurface profile for borrow area is presented in **Table 8**.

Table 8: Generalized Soil Profile (Borrow Area)

Approximate Elevation Range (NAVD88 GEOID12B, feet)*	Consistency/Relative Density	Material Description**
-12 to -32**	Very Soft to Very Stiff	Fat Clay (CH), Sandy Fat Clay (CH), Lean Clay (CL), Fat Clay with Sand (CH)

**Referenced from existing mudline elevation at the boring locations performed in borrow area, at the time of drilling activities.*
***Silty Sand was observed in borehole B-29 from El. -16 to E. -18 feet below grade.*

Based on the soil classification results from these additional borings, the data confirms that this area is similar to that encountered previously in our original borrow area investigation. Furthermore, comparing the results from the settling column tests as well as the self-weight consolidation tests, it can be concluded that the soil settlement behavior for the soils obtained from the new borrow area is similar to the soil sampled in the original borrow area.

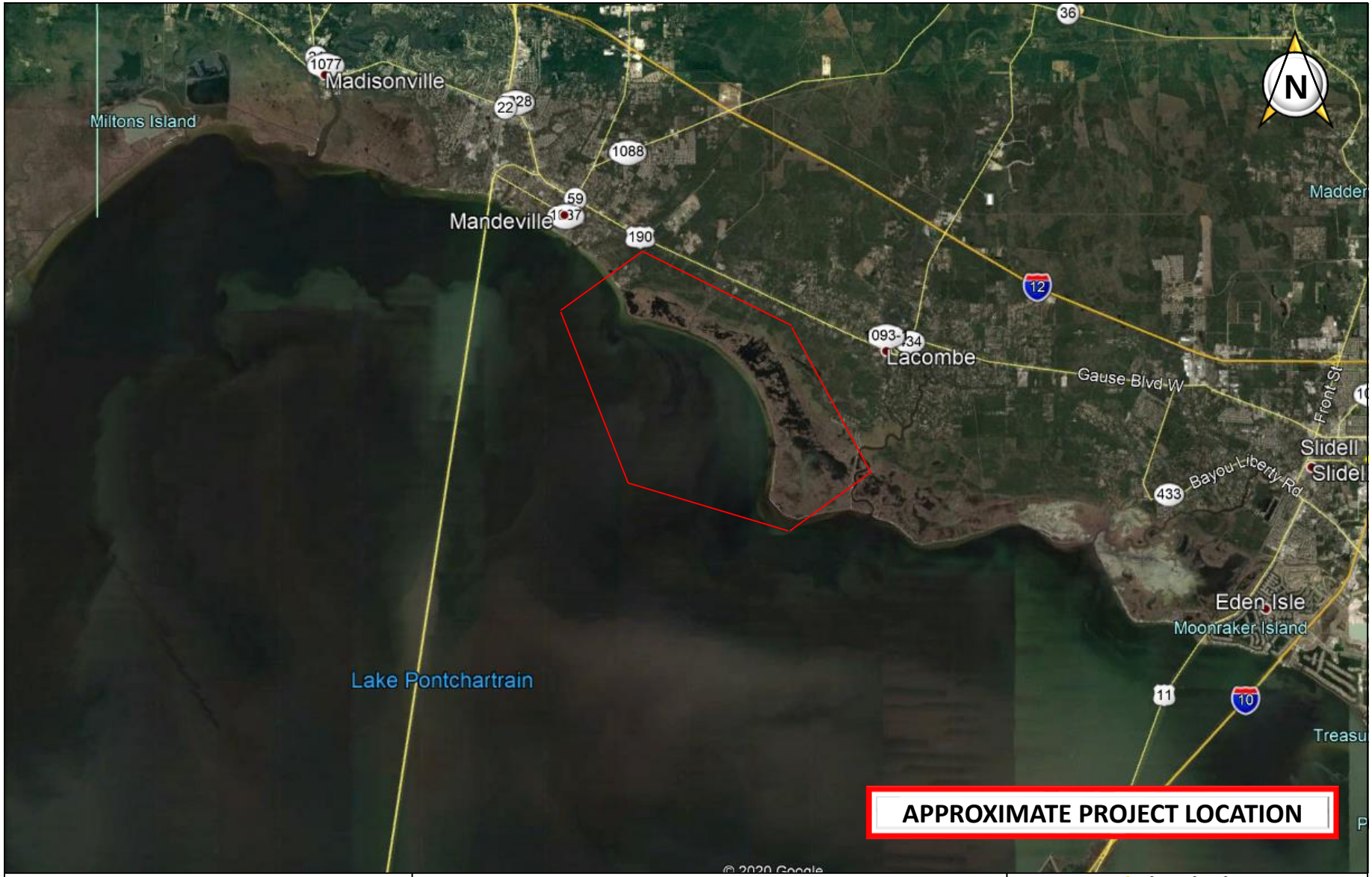
The above soil profile is of generalized nature to highlight the major subsurface stratification features and material characteristics of the marsh creation area. The boring logs and CPT sounding plots included in the **Appendix A** should be reviewed for specific information at individual locations. These records include soil descriptions, stratification, locations of the samples, and laboratory test data. The stratification shown on the boring logs represent the conditions only at the actual boring locations. Variations may occur and should be expected between and away from boring locations. The stratification represents the approximate boundary between subsurface materials and the actual transition may be more distinct or gradual.

3.3. FUTURE DESIGN REPORT

Based on the results from our field work and Laboratory test results it was concluded that the classification of the new borrow area samples are in agreement with the original borrow area exploration, and that the compressibility and sedimentation properties of these materials are also in agreement. Therefore, the original design properties utilized for the borrow area will be implemented in the final Geotechnical Engineering Report. Similarly, the data obtained within the marsh creation area was found to be in agreement with the soil data obtained from the previously performed soil borings and CPTs in the Marsh Creation Area-2 through Marsh Creation Area-6. Therefore, the original design properties utilized for these marsh areas will also be implemented in the final Geotechnical Engineering Report.

APPENDIX A

SITE VICINITY MAP
SURVEY REPORT



GEOTECHNICAL ENGINEERING SERVICES
Bayou Cane Marsh Creation
St. Tammany Parish, Louisiana

SITE VICINITY MAP

PSI PROJECT NO.: 02541139 Addendum #1
GOOGLE EARTH IMAGERY DATE: 11/2019

Appendix Figure No. G.2-16

intertek psi

Survey Report

PO-181 Bayou Cane Boring Sites Survey
St. Tammany Parish, Louisiana

Prepared for Intertek-PSI
724 Central Ave.
Jefferson, LA 70121

Chustz Surveying, LLC
211 Richy Street
New Roads, LA 70760
225-638-5949

June 2021

Section 1
General Project Description

In June of 2021, Chustz Surveying was tasked by Intertek-PSI to conduct location and magnetometer surveys at 17 boring sites in St. Tammany Parish. The surveys consisted of locating the sites utilizing RTK and multibeam hydrographic methods constrained to the provided project benchmarks (PO33 SM 01 and CRMSPO-SM-11) along with a magnetometer survey.

Vicinity Map

Section 2
Data Collection

On June 16, 2021, Chustz Surveying deployed two crews to the site to begin the survey. The first crew located a previously set 60D nail and the provided benchmark PO33 SM01. Next, utilizing two Trimble R10 GPS receivers, the crew set the base up on

the 60D nail and tied to PO33 SM01 to verify the control. Utilizing a Topcon ATG3 level, the other crew then ran a 3rd Order level loop from PO33 SM01 to the water surface and back to establish a temporary gauge for processing the hydrographic data. They then began the hydrographic and magnetometer data collection in the lake from aboard our 28 foot survey vessel equipped with an R2Sonic 2022 multibeam system and a Geometrics G882 cesium magnetometer. While the lake portion of the job was underway, the other crew began locating the boring sites in the marsh. They drove ¾" pvc pipes with pink flagging into the ground at each location in the marsh. In Hypack, they set up a grid around each location to cover a 25 ft. radius for the magnetometer survey and conducted that as well. Both crews completed the work that day and the data was transferred to the office for processing. No significant magnetometer anomalies were detected as part of this survey.

Section 3
Data Processing

The data was transferred to our office for initial processing once the surveys were complete. The RTK data files were loaded into Trimble Business Center where they were processed and checked for correct rod and instrument heights. All RTK ties were checked to ensure they were within the allowed accuracies. The hydrographic and magnetometer data was processed in Hypack utilizing the temporary gauge readings.

Section 6
Project Summary and Conclusion

The field effort was completed ahead schedule on Wednesday, June 16, 2021, and all data was processed and deliverables were completed for Tuesday, June 22, 2021. No safety incidents occurred as part of this work effort.

VICINITY MAP

1 inch = 3,000 feet

Reproduced from NAIP Louisiana 2013 1m Aerial Imagery

Station Name: "PO33 SM 01"

Location: From the intersection of I-12 and Hwy 434 go south 2.7 miles to Hwy 190. Turn right (west) for 0.3 miles to Hwy 434 (Lake road) for 3.4 miles to a bridge and a boat launch. The monument is 177 feet east of the centerline of Lake road, 59 feet N/E of the N/E corner of the concrete boat launch, and 13 feet westerly from the top bank of Bayou Lacome.

Monument Description: Monument is a 9/16steel rod driven to ?? feet to refusal within a 6" PVC sleeve set in concrete with protective metal accesscover stamped 'PO SM 01'

Stamping: PO SM 01

Installation Date: 2005 **Date of Survey:** 13-May-14

Monument Established By: C&C Technologies

NAD83 (2011) Epoch 2010.00 Geodetic Position

Lat: 30°16'06.92777"N
Long: 89°57'20.77295"W

NAD83 (2011) Epoch 2010.00 Datum LSZ (1702) Ft

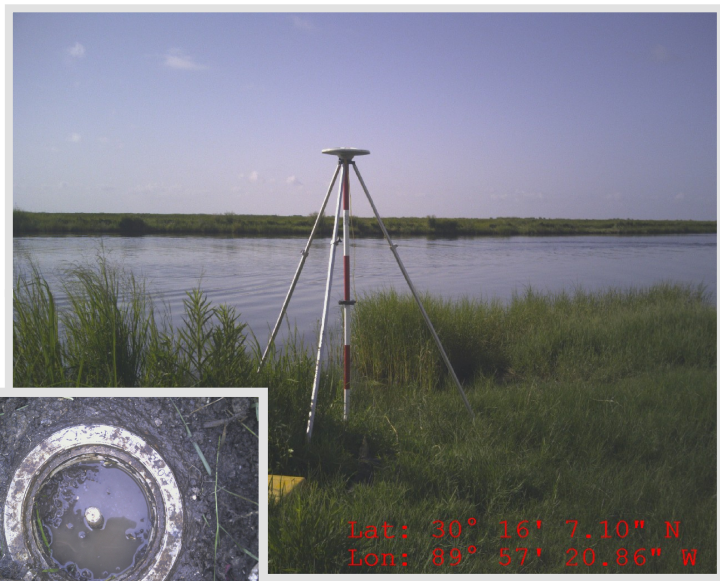
N= 645,784.85
E= 3,715,691.24

Adjusted NAVD88 Height

Elevation = 1.19 feet (0.363 mtrs)

Ellipsoid Height (2011) = -26.241 mtrs.

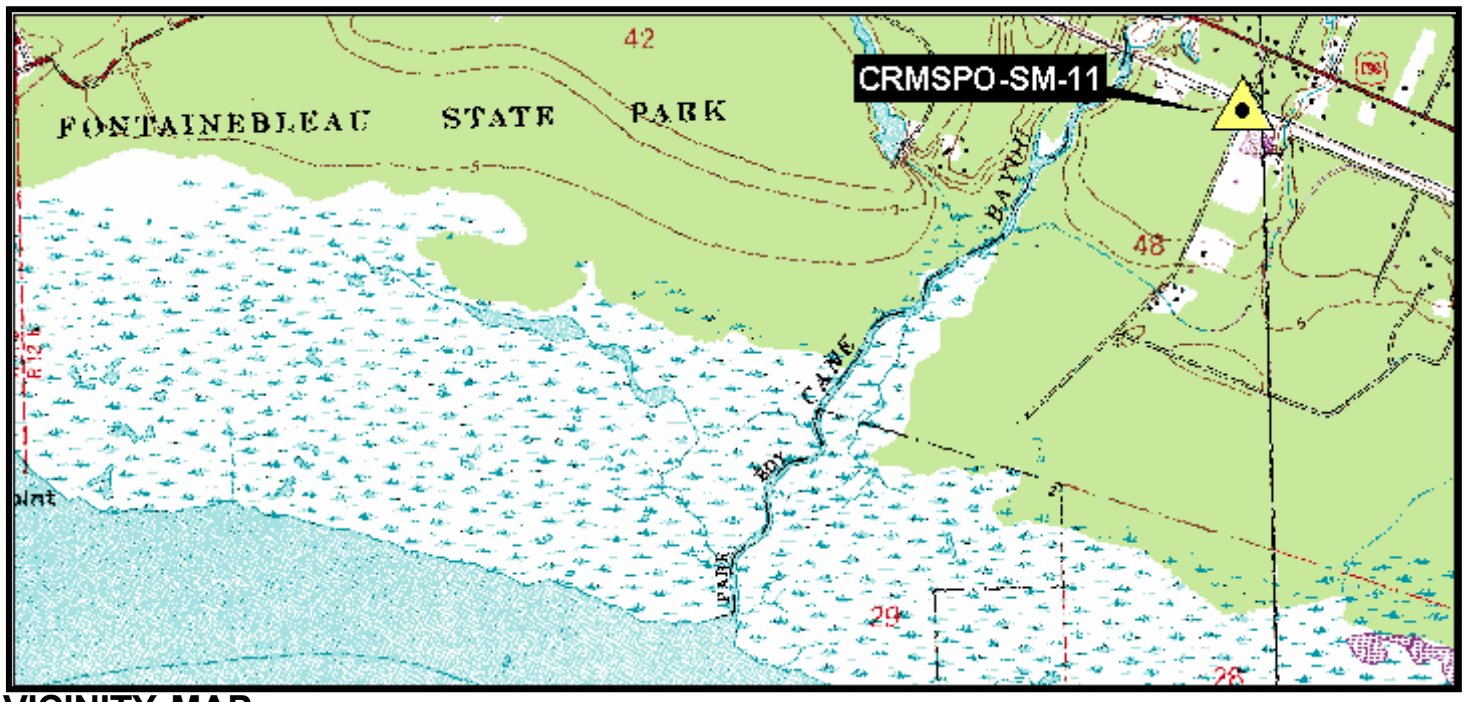
Geoid12A Height = -26.604 mtrs.



FOR REFERENCE ONLY
LCZ Adjusted NAVD88 Height
Elevation (Geoid09)= N/A
Ellipsoid Height = N/A
Elevation (Geoid03)= 1.76 feet (0.537 mtrs)
Ellipsoid Height = -26.253 mtrs.
Elevation (Geoid99)= N/A
Ellipsoid Height = N/A

Appendix Figure No. G.2-20

Adjusted Position Established John Chance Land Surveys, Inc. for the Coastal Protection & Restoration Authority of Louisiana



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "MANDEVILLE & LACOMBE" Quadrangle

Station Name: CRMSPO-SM-11

Monument Location: From the intersection of Hwy US Hwy 190 and the Lake Pontchartrain Causeway in Mandeville, go 6.8 miles west on Hwy 190 to Lemieux Blvd. Turn right on Lemieux Blvd. and go south 0.1 miles to a bike trail and the Monument. It is located 7' south of the centerline of a bicycle trail and 43' west of the centerline of Lemieux Blvd.

Monument Description: 9/16" steel rod driven to refusal within a 6" PVC sleeve set in concrete with protective metal access cover stamped **CRMSPO-SM-11.**

Date: July 2005

Monument Established By:
Chustz Surveying, Inc. for
Louisiana Department of
Natural Resources

Adjusted NAD 83 Geodetic Position*
Lat. 30°20'05.83357"N
Long. 90°00'02.48142"W

Adjusted NAD 1983 Datum*
LSZ (1702) Feet
N= 669750.54
E= 3701231.54

Adjusted NAVD88 (Feet) /Geoid99*
Elevation = 18.02

*** As surveyed for LaDNR CRMS project, contract NO: 2503-05-56**

PO-181 Bayou Cane Survey Locations (NAVD88-NAD83 US Survey Ft)

Site	Northing	Easting	Elevation	Water Surface	Depth
B-29	656677.18	3698381.97	-12.34	0.15	-12.19
B-31	658345.27	3699211.64	-11.61	0.15	-11.46
B-40	658408.23	3696787.19	-12.45	0.15	-12.30
B-50	659294.35	3694769.91	-13.09	0.15	-12.94
B-54	660589.97	3694205.99	-11.37	0.15	-11.22
B-56	658852.89	3693376.93	-13.37	0.15	-13.22
C-38	667840.42	3691807.23	-1.49	0.15	-1.34
C-39	667322.60	3692674.56	-1.53	0.15	-1.38
C-40	666694.31	3692750.53	-1.63	0.15	-1.48
C-41	662583.11	3703037.87	-2.91	0.15	-2.76
C-42	661126.44	3704753.21	-1.12	0.15	-0.97
C-43	655140.26	3707793.74	-1.43	0.15	-1.28
C-44	654804.73	3708765.89	-1.68	0.15	-1.53
C-46	649343.42	3711958.38	-2.13	0.15	-1.98
C-47	650534.68	3712057.87	0.74	0.15	0.89
C-48	651024.22	3710687.76	-1.13	0.15	-0.98
M-10	650022.94	3710882.72	-2.09	0.15	-1.94

ALL INFORMATION SHOWN HEREON IS BASED ON EVIDENCE FOUND DURING FIELD SURVEY AND PERMITTED INFORMATION; OTHER HAZARDS/PIPELINES MAY EXIST WITHIN THE SURVEYED AREA THAT WERE NOT DISCOVERED DURING THE COURSE OF THE SURVEY.

DATES OF SURVEY 08/16/2021

1,000 0 1,000
U.S. SURVEY FEET (1"=1,000')

PREPARED FOR: intertek psi

CHUSTZ SURVEYING, LLC
211 Richy St. New Roads, LA 70760
Office: (225) 638-5949

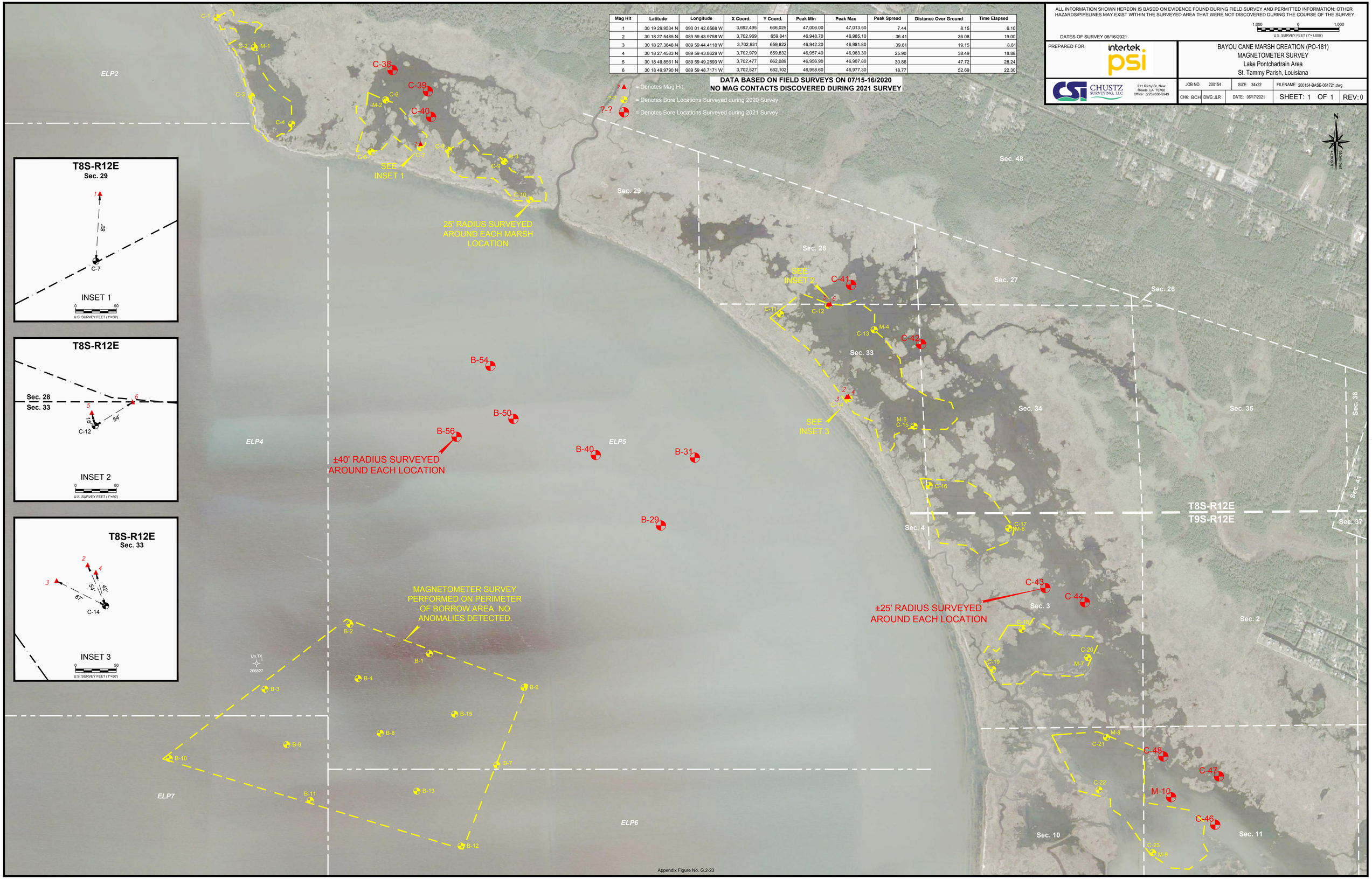
BAYOU CANE MARSH CREATION (PO-181)
MAGNETOMETER SURVEY
Lake Pontchartrain Area
St. Tammy Parish, Louisiana

JOB NO. 200154	SIZE: 34x22	FILENAME: 200154-BASE-061721.dwg	
CHK: BCH DWG: JLR	DATE: 06/17/2021	SHEET: 1 OF 1	REV: 0

Mag Hit	Latitude	Longitude	X Coord.	Y Coord.	Peak Min	Peak Max	Peak Spread	Distance Over Ground	Time Elapsed
1	30 19 29.9534 N	090 01 42.6568 W	3,692,495	666,025	47,006.00	47,013.50	7.44	8.15	6.10
2	30 18 27.5485 N	089 59 43.9758 W	3,702,969	659,841	46,948.70	46,985.10	36.41	36.08	19.00
3	30 18 27.3648 N	089 59 44.4118 W	3,702,931	659,822	46,942.20	46,981.80	39.61	19.15	8.81
4	30 18 27.4583 N	089 59 43.8629 W	3,702,979	659,832	46,957.40	46,983.30	25.90	38.49	18.88
5	30 18 49.8561 N	089 59 49.2893 W	3,702,477	662,089	46,956.90	46,987.80	30.86	47.72	28.24
6	30 18 49.9790 N	089 59 48.7171 W	3,702,527	662,102	46,958.60	46,977.30	18.77	52.69	22.30

DATA BASED ON FIELD SURVEYS ON 07/15-16/2020
NO MAG CONTACTS DISCOVERED DURING 2021 SURVEY

? ▲ = Denotes Mag Hit
= Denotes Bore Locations Surveyed during 2020 Survey
?-? = Denotes Bore Locations Surveyed during 2021 Survey



Appendix Figure No. G.2-23

APPENDIX B

BORING LOCATION PLAN
BORING LOGS AND CPT SOUNDING PLOTS
KEY TO TERMS AND SYMBOLS USED ON BORING LOGS

GEOTECHNICAL ENGINEERING SERVICES

Bayou Cane Marsh Creation

St. Tammany Parish, Louisiana

BORING LOCATION PLAN

PSI PROJECT NO.: 02541139 Addendum #1

GOOGLE EARTH IMAGERY DATE: 11/2019

Appendix Figure No. G.2-25

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GEOTECHNICAL ENGINEERING SERVICES

Bayou Cane Marsh Creation

St. Tammany Parish, Louisiana

BORING LOCATION PLAN

PSI PROJECT NO.: 02541139 Addendum #1

GOOGLE EARTH IMAGERY DATE: 11/2019

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GEOTECHNICAL ENGINEERING SERVICES

Bayou Cane Marsh Creation

St. Tammany Parish, Louisiana

BORING LOCATION PLAN

PSI PROJECT NO.: 02541139 Addendum #1

GOOGLE EARTH IMAGERY DATE: 11/2019

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GEOTECHNICAL ENGINEERING SERVICES

Bayou Cane Marsh Creation

St. Tammany Parish, Louisiana

BORING LOCATION PLAN

PSI PROJECT NO.: 02541139 Addendum #1

GOOGLE EARTH IMAGERY DATE: 11/2019

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Northing: 650022.94
Easting: 3710882.72
* Values are approximate

LOG OF BORING M-10

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

LOCATION: BAYOU CANE

TYPE OF BORING: WET ROTARY

PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	MOISTURE CONTENT (%)	LIQUID LIMIT LL	PLASTIC LIMIT PL	PLASTICITY INDEX PI	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) MV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		PT		Very soft black/gray **PEAT**, sand layer												
				- Organic Content: 22.3%, 0 to 2 feet		443	321	119	202				0.02			
		SM		Loose Gray/black **SILTY SAND**, peat layer		21				21			0.02			
		SM		Loose gray **SILTY SAND**, with clay pockets												
5						19	NP	NP	NP	28	0.33					
						17	NP	NP	NP	18	0.17					
						22	NP	NP	NP		0.33					
10				- with clay pockets		21				20						
		SP-SM		Medium dense gray **POORLY GRADED SAND WITH SILT**	3-5-6	24										
					11											
15					3-5-5	22										
					10											
					6-7-8	22				7						
					15											
					6-9-9	20										
20					18											

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 40 FEET
DATE DRILLED: 7/30/21
NOTE: ELEVATION OF BORING: -2.09 feet

GROUNDWATER DURING DRILLING: N /A
GROUNDWATER UPON COMPLETION: N /A
DELAYED GROUNDWATER: N / A

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Jefferson Louisiana 70121
(504) 733-9411

Appendix Figure No. G.2-29

Northing: 650022.94
Easting: 3710882.72
* Values are approximate

LOG OF BORING M-10

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

LOCATION: BAYOU CANE

TYPE OF BORING: WET ROTARY

PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) ○ HP ● UC △ TV ◆ MV ▲ UU (0.0 0.5 1.0 1.5)	SHEAR STRENGTH (tsf) HP	UC	TV	MV	UU	DRY UNIT WEIGHT (pcf)
		SP		Medium dense gray **POORLY GRADED SAND**													
			X		6-9-8	26											
					17												
25																	
			X		7-8-9	24				2							
					17												
30																	
			X		7-7-10	22											
					17												
35																	
			X		7-9-12	22											
					21												
40				BORING TERMINATED AT 40 FEET													

DEPTH OF BORING: 40 FEET
DATE DRILLED: 7/30/21
NOTE: ELEVATION OF BORING: -2.09 feet

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Appendix Figure No. G.2-30

Northing: 656677.18
Easting: 3698381.97
* Values are approximate

LOG OF BORING B-29

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

LOCATION: BAYOU CANE

TYPE OF BORING: WET ROTARY

PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	UC	TV	MV	UU	DRY UNIT WEIGHT (pcf)
		CH		Very soft dark gray **FAT CLAY**, with silt seams and shell fragments		66							0.10			
						45	58	16	42				0.05			67
		SM		Dark gray **SILTY SAND**, with shell fragments of 2 to 3 inch long												
5				- Hydrometer Results (47.91% fines): 11.42% clay & 36.49% silt, 4 to 6 feet		30							0.05			
		CH		Very soft gray/tan **FAT CLAY**, with shell fragments		37							0.10			
						39							0.05			
10		CH		Soft to firm light gray **FAT CLAY**		45	72	21	51		0.25					78
						44					0.25					
15						45					0.50					
						50					0.17					
						39					0.42					
20				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU — 0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET
DATE DRILLED: 7/8/21
NOTE: ELEVATION OF BORING: -12.34 feet

GROUNDWATER DURING DRILLING: N /A
GROUNDWATER UPON COMPLETION: N /A
DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.2-31

Northing: 658345.27
Easting: 3699211.64
* Values are approximate

LOG OF BORING B-31

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

LOCATION: BAYOU CANE

TYPE OF BORING: WET ROTARY

PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	MOISTURE CONTENT (%)	LIQUID LIMIT LL	PLASTIC LIMIT PL	PLASTICITY INDEX PI	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	UC	TV	MV	UU	DRY UNIT WEIGHT (pcf)
		CH		Very soft gray **SANDY FAT CLAY**, with shell fragments		53							0.01			
		CH		Firm to very stiff gray/brown **FAT CLAY**		42					1.08					
5				- Hydrometer Results (98.57% fines): 43.86% clay & 54.71% silt, 4 to 6 feet		38					0.83					
				- with silt partings, 4 to 10 feet		39	81	26	55		0.58					84
						37					0.50					
10						46					0.50					
						45					0.42					
15				- with silt partings, 14 to 20 feet		45	90	29	61		0.58					76
						28					0.58					
						31					0.33					
20				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET
DATE DRILLED: 7/8/21
NOTE: ELEVATION OF BORING: -11.61 feet

GROUNDWATER DURING DRILLING: N /A
GROUNDWATER UPON COMPLETION: N /A
DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.2-32

Northing: 658408.23
Easting: 3696787.19
* Values are approximate

LOG OF BORING B-40

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

LOCATION: BAYOU CANE

TYPE OF BORING: WET ROTARY

PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	MOISTURE CONTENT (%)	LIQUID LIMIT LL	PLASTIC LIMIT PL	PLASTICITY INDEX PI	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) MV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CH		Soft gray **FAT CLAY**, with silt pockets and shell fragments		50					0.17					
		CH		Firm to stiff brown/gray **FAT CLAY**, with silt partings		43					0.42					
				- Hydrometer Results (99.92% fines): 74.29% clay & 25.63% silt, 2 to 4 feet												
5						46	80	25	55		0.50					76
						48					0.58					
						35					0.42					
10																
				- with sand seams and shell fragments, 10 to 12 feet		35					0.25					
		CH		Soft gray **FAT CLAY**, with silt partings		49	74	21	53		0.17					75
15						36					0.17					
						40							0.15			
		CH		Stiff gray **FAT CLAY**, with silt partings		31					0.67					
20				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU — 0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET
DATE DRILLED: 7/8/21
NOTE: ELEVATION OF BORING: -12.45 feet

GROUNDWATER DURING DRILLING: N /A
GROUNDWATER UPON COMPLETION: N /A
DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.2-33

Northing: 659294.35
Easting: 3694769.91
* Values are approximate

LOG OF BORING B-50

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

LOCATION: BAYOU CANE

TYPE OF BORING: WET ROTARY

PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	MOISTURE CONTENT (%)	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	UC	TV	MV	UU	DRY UNIT WEIGHT (pcf)
		CL		Stiff gray **LEAN CLAY**		17	36	11	25		0.67					114
		CH		Firm brown/gray **FAT CLAY WITH SAND**		26					0.50					
5				- Hydrometer Results (75.99% fines): 29.52% clay & 46.47% silt, 4 to 6 feet		43					0.50					
						44					0.50					
		CH		Soft brown/gray **FAT CLAY**		35	65	19	46		0.17					86
10		CH		Firm to stiff brown/gray **FAT CLAY**		48					0.50					
						31					0.25					
15						55					0.25					
				- with silt partings and shell fragments, 16 to 20 feet		53					0.42					
						53					0.25					
20				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU; 0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET
DATE DRILLED: 7/10/21
NOTE: ELEVATION OF BORING: -13.09 feet

GROUNDWATER DURING DRILLING: N /A
GROUNDWATER UPON COMPLETION: N /A
DELAYED GROUNDWATER: N / A

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Appendix Figure No. G.2-34

Northing: 660589.97
Easting: 3694205.99
* Values are approximate

LOG OF BORING B-54

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

LOCATION: BAYOU CANE

TYPE OF BORING: WET ROTARY

PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	MOISTURE CONTENT (%)	LIQUID LIMIT LL	PLASTIC LIMIT PL	PLASTICITY INDEX PI	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	UC	TV	MV	UU	DRY UNIT WEIGHT (pcf)
		CH		Firm to stiff brown/gray **FAT CLAY**, with silt partings - Hydrometer Results (90.61% fines): 28.47% clay &62.14% silt, 0 to 2 feet		27					0.58					
						34	62	20	42		0.50					87
5						37					0.50					
						37					0.58					
						35					0.67					
10						45	86	22	64		0.25					77
						45					0.50					
15						48					0.67					
						54					0.58					
						51					0.50					
20				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU — 0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET
DATE DRILLED: 7/10/21
NOTE: ELEVATION OF BORING: -11.37 feet

GROUNDWATER DURING DRILLING: N /A
GROUNDWATER UPON COMPLETION: N /A
DELAYED GROUNDWATER: N / A

JEFFERSON - FULL SPT AND MV V2 (N/E) - - 11/2/21 09:20 - 0254

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Appendix Figure No. G.2-35

Northing: 658852.89
Easting: 3693376.93
* Values are approximate

LOG OF BORING B-56

CPRA PO 181
ST. TAMMANY PARISH, LOUISIANA

LOCATION: BAYOU CANE

TYPE OF BORING: WET ROTARY

PSI Project No.: 02541139

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	MOISTURE CONTENT (%)	LIQUID LIMIT LL	PLASTIC LIMIT PL	PLASTICITY INDEX PI	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf) HP	SHEAR STRENGTH (tsf) UC	SHEAR STRENGTH (tsf) TV	SHEAR STRENGTH (tsf) MV	SHEAR STRENGTH (tsf) UU	DRY UNIT WEIGHT (pcf)
		CH		Firm to stiff gray **FAT CLAY**, with silt partings												
				- with shell fragments, 0 to 2 feet		30					0.50					
				- Hydrometer Results (97.5% fines): 51.08% clay & 46.42% silt, 2 to 4 feet		38					0.58					
5						41	75	24	51		0.50					79
						35					0.50					
						36					0.58					
10						51	72	28	44		0.25					73
						35					0.58					
15						66					0.33					
						50					0.25					
						55					0.25					
20				BORING TERMINATED AT 20 FEET												

SHEAR STRENGTH (tsf): ○ HP ● UC △ TV ◆ MV ▲ UU — 0.0 0.5 1.0 1.5

DEPTH OF BORING: 20 FEET
DATE DRILLED: 7/9/21
NOTE: ELEVATION OF BORING: -13.37 feet

GROUNDWATER DURING DRILLING: N /A
GROUNDWATER UPON COMPLETION: N /A
DELAYED GROUNDWATER: N / A

JEFFERSON - FULL SPT AND MV V2 (N/E) - - 11/2/21 09:20 - 0254

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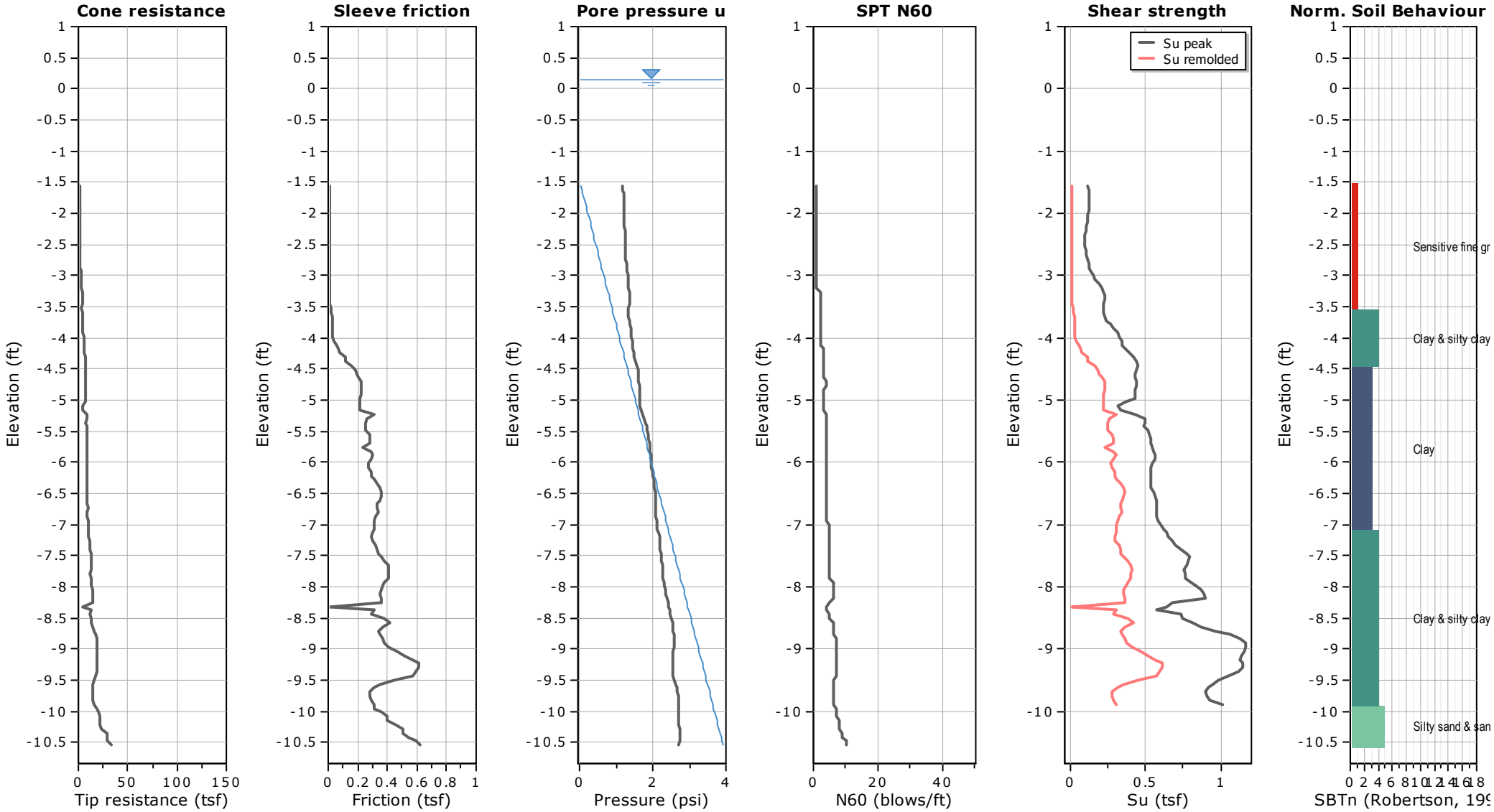
Jefferson Louisiana 70121
(504) 733-9411

Appendix Figure No. G.2-36

Project: 02541139 - Bayou Cane Marsh Creation Project
Location: St. Tammany Parish, Louisiana

CPT: C-38
Total depth: 9.06 ft, Date: 8/4/2021
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.2-37

CPT: C-39

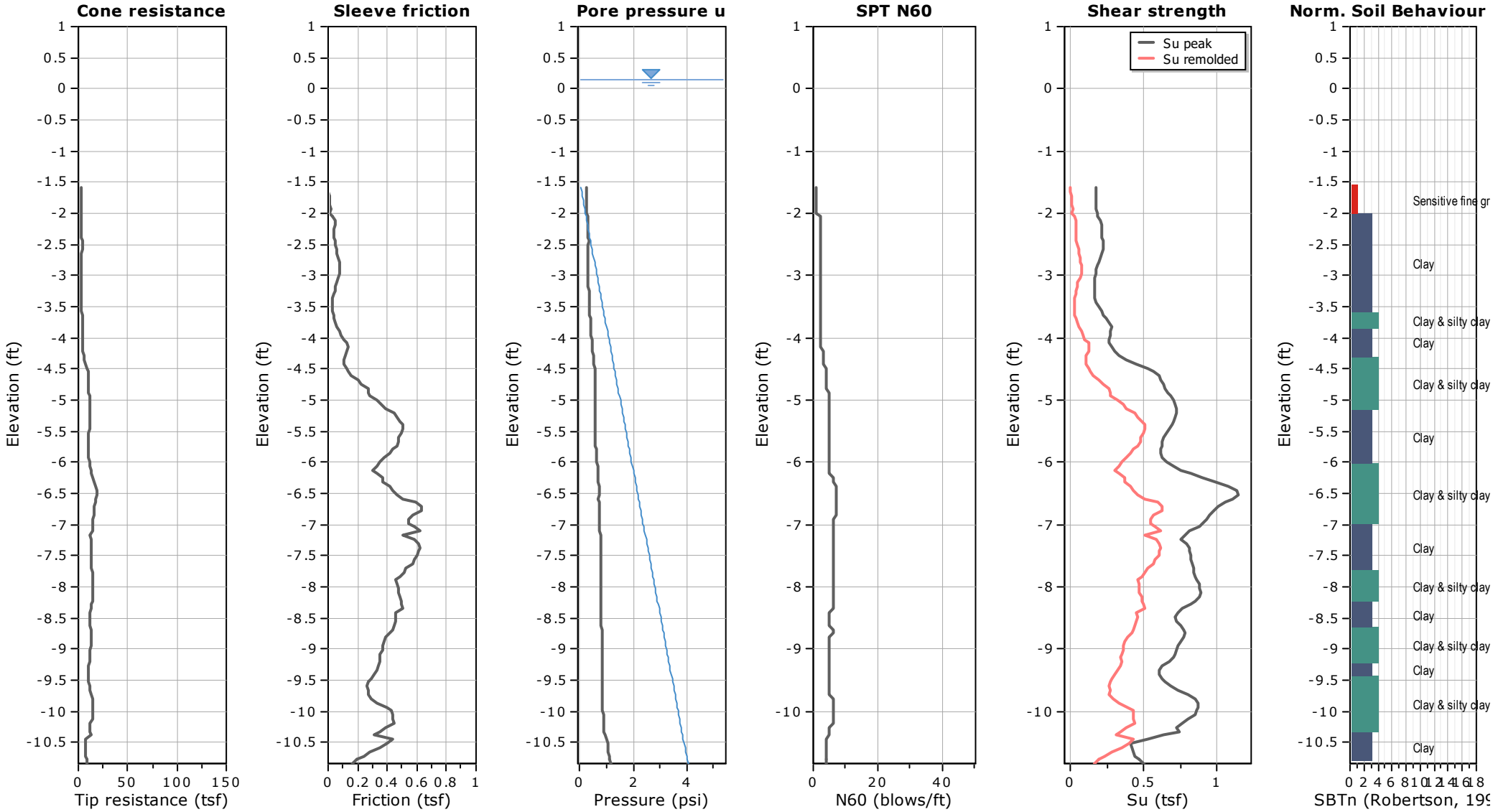
Total depth: 12.34 ft, Date: 8/4/2021

Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer

Cone Operator: Charley Baker

Project: 02541139 - Bayou Cane Marsh Creation Project

Location: St. Tammany Parish, Louisiana



Appendix Figure No. G.2-38

CPT: C-40

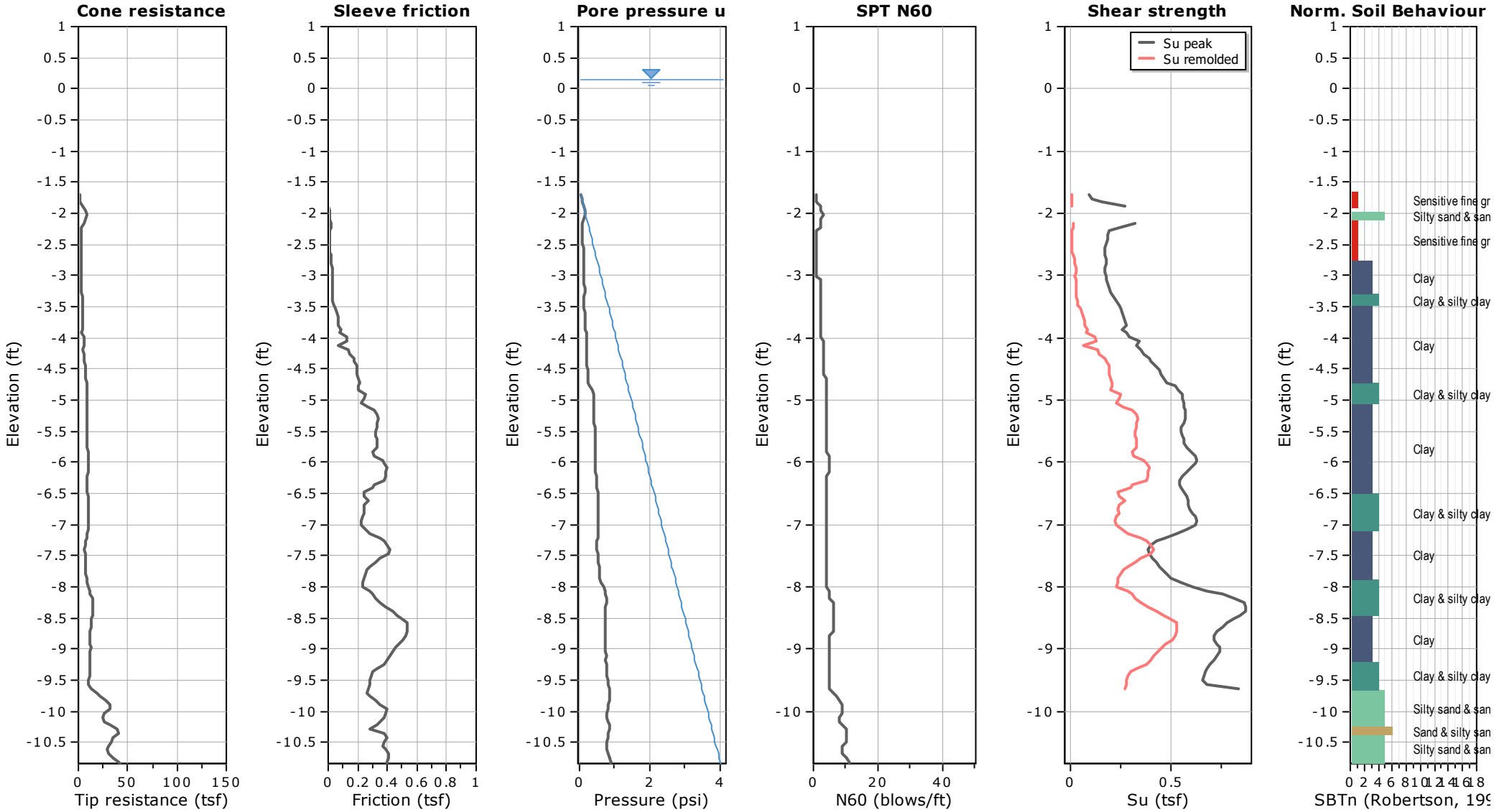
Total depth: 9.38 ft, Date: 8/4/2021

Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer

Cone Operator: Charley Baker

Project: **02541139 - Bayou Cane Marsh Creation Project**

Location: **St. Tammany Parish, Louisiana**



Appendix Figure No. G.2-39

CPT: C-41

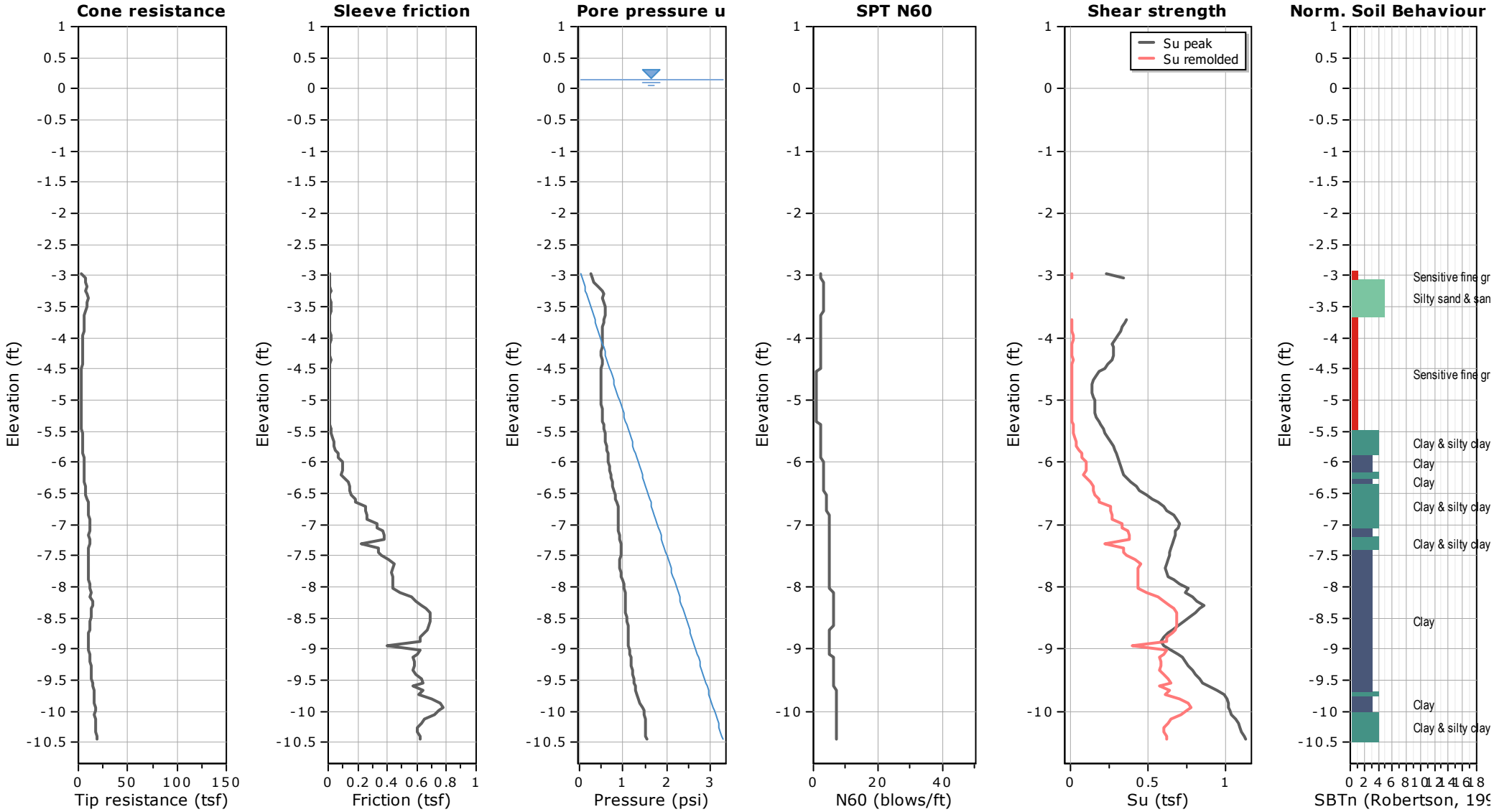
Total depth: 7.55 ft, Date: 8/4/2021

Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer

Cone Operator: Charley Baker

Project: **02541139 - Bayou Cane Marsh Creation Project**

Location: **St. Tammany Parish, Louisiana**



Appendix Figure No. G.2-40

CPT: C-42

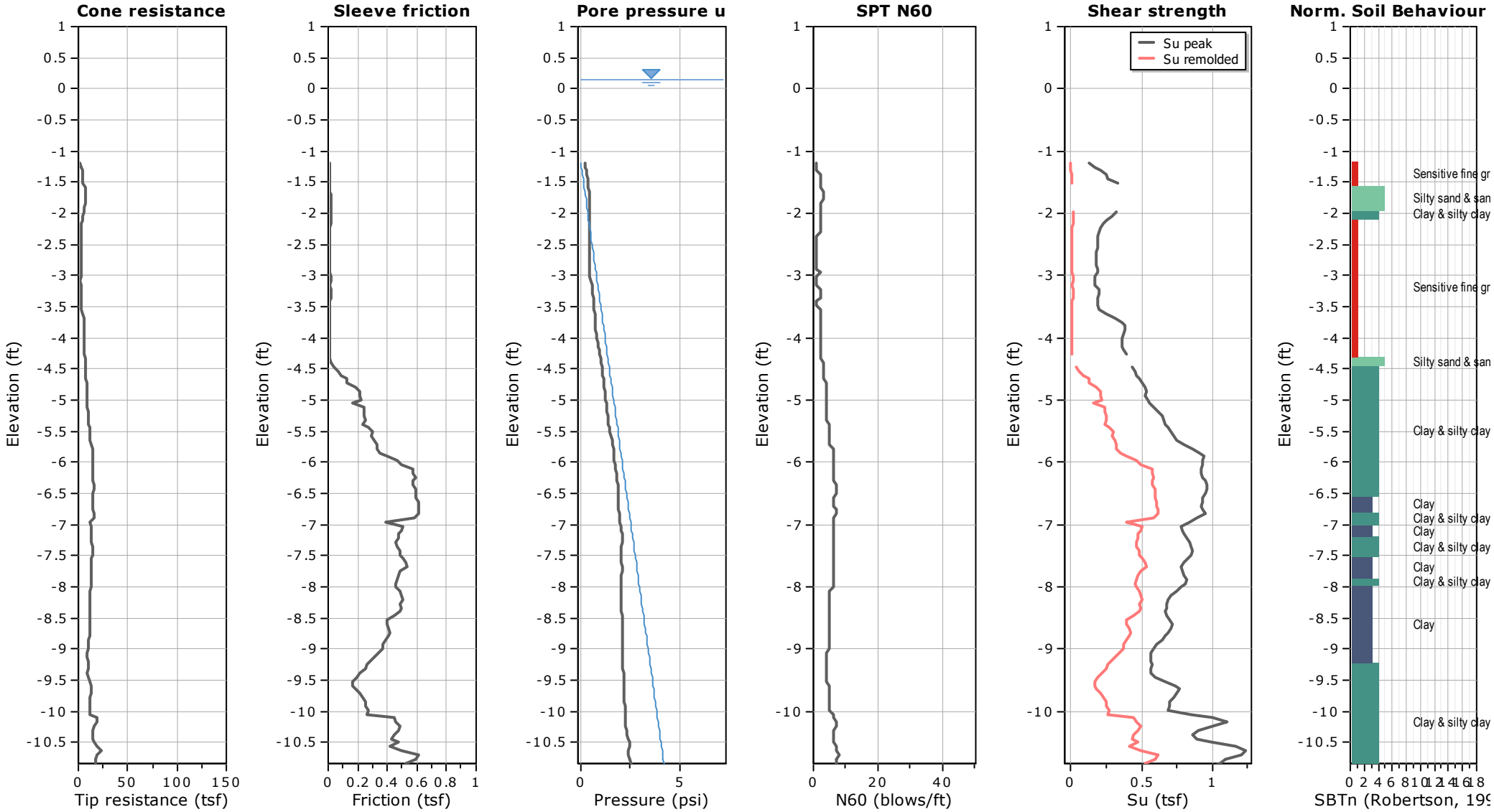
Total depth: 16.60 ft, Date: 8/4/2021

Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer

Cone Operator: Charley Baker

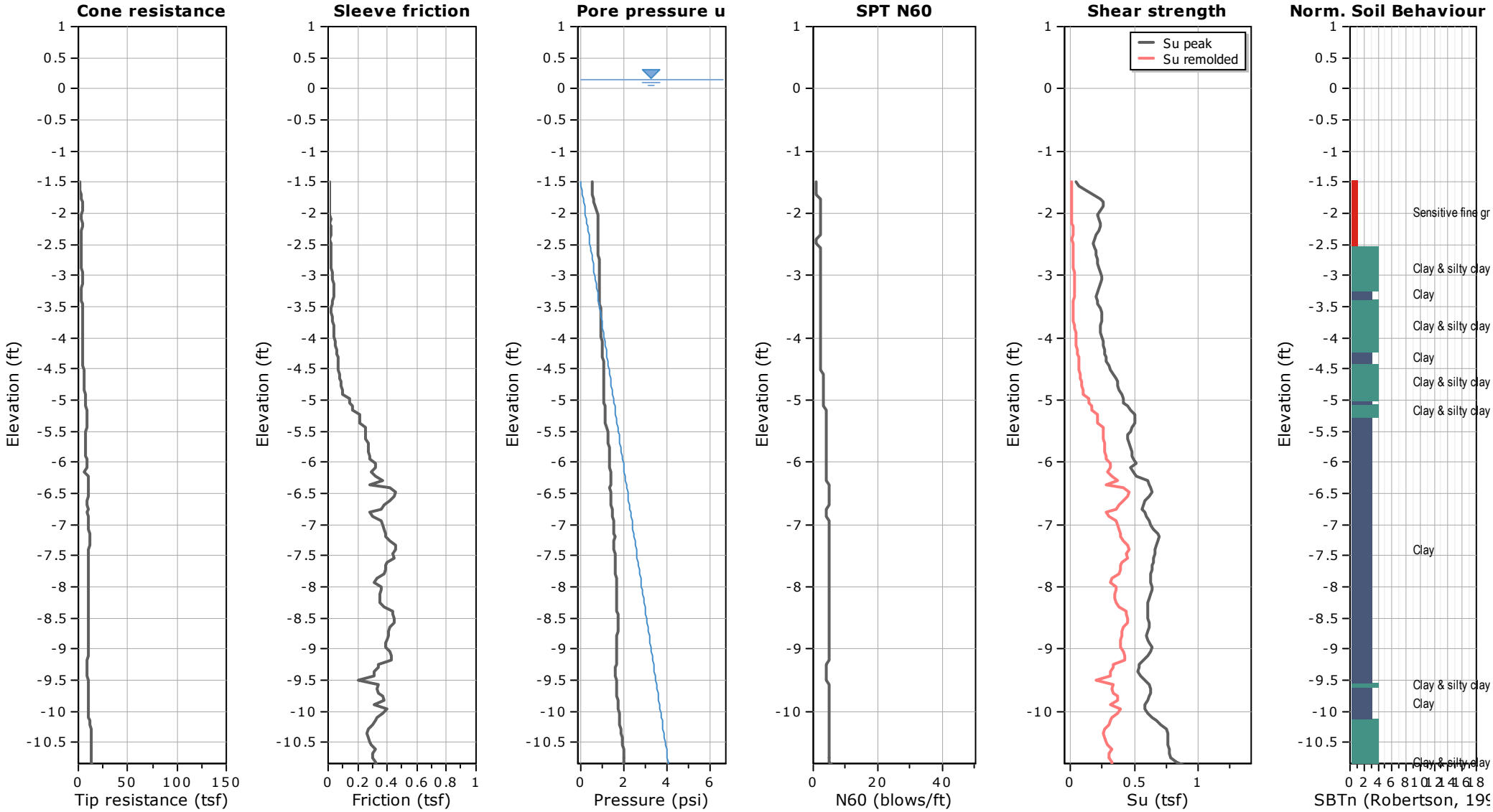
Project: 02541139 - Bayou Cane Marsh Creation Project

Location: St. Tammany Parish, Louisiana



Project: 02541139 - Bayou Cane Marsh Creation Project
Location: St. Tammany Parish, Louisiana

CPT: C-43
Total depth: 15.22 ft, Date: 8/4/2021
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



CPT: C-44

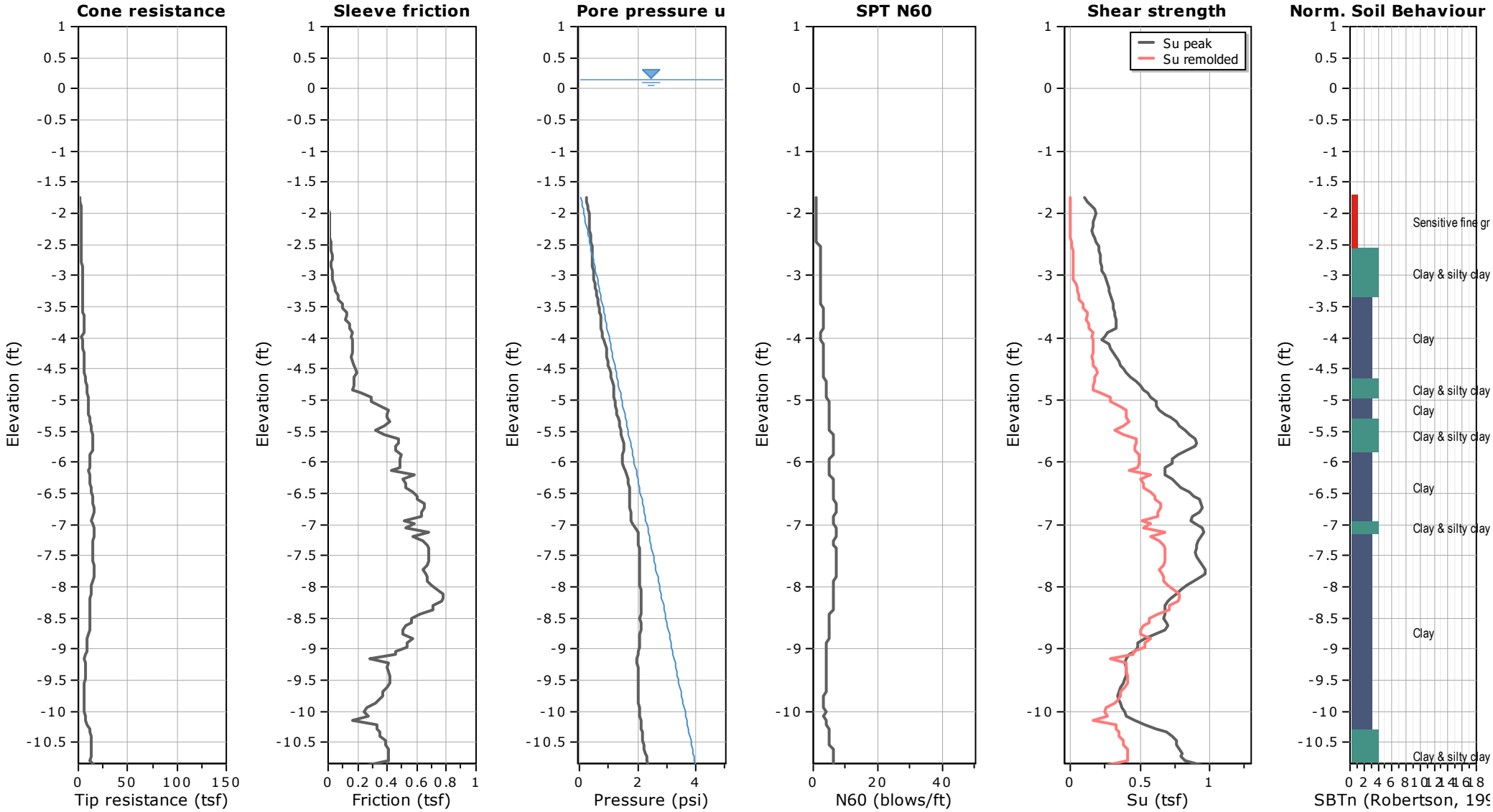
Total depth: 11.35 ft, Date: 8/4/2021

Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer

Cone Operator: Charley Baker

Project: 02541139 - Bayou Cane Marsh Creation Project

Location: St. Tammany Parish, Louisiana



CPT: C-46

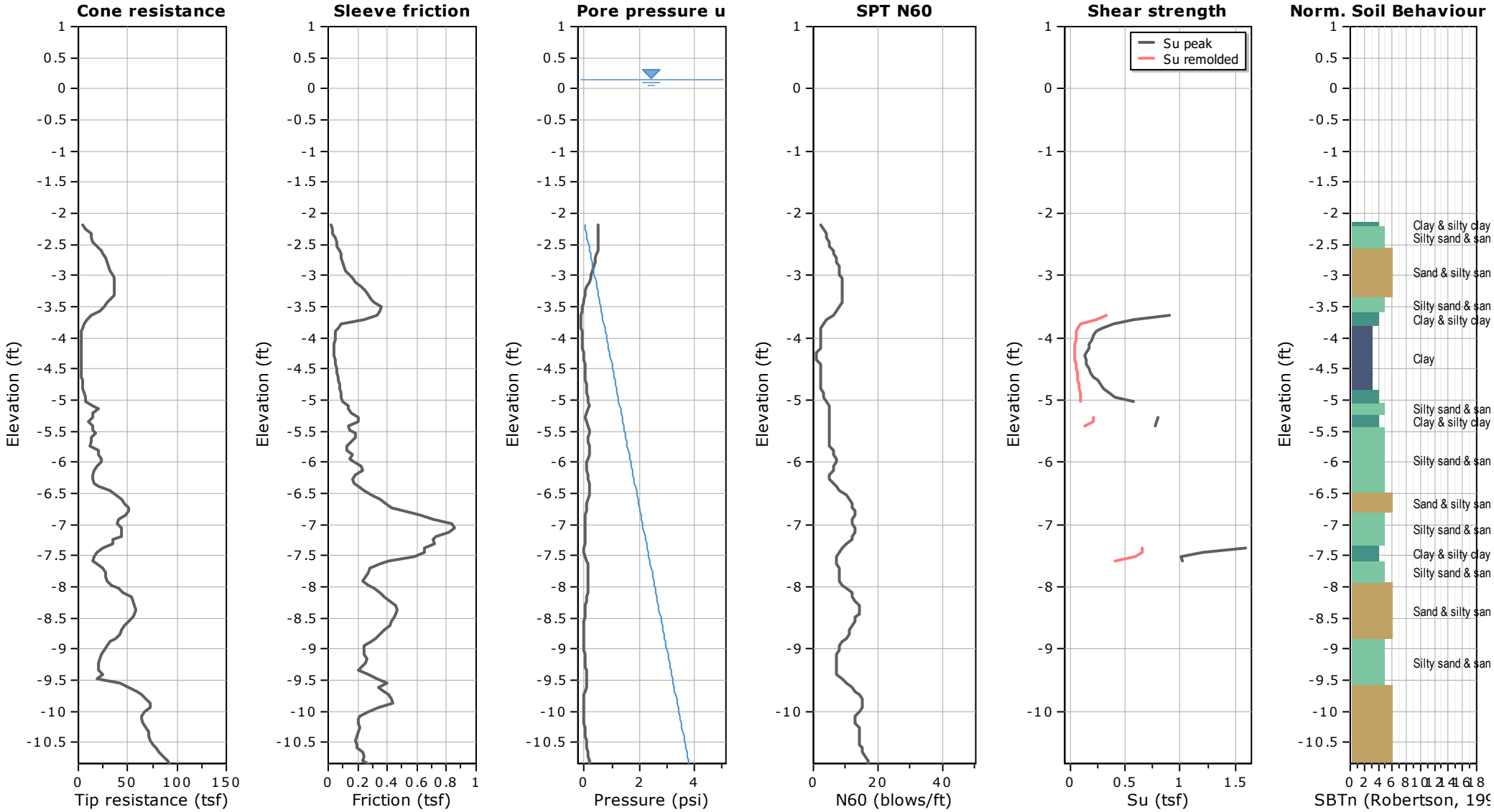
Total depth: 11.55 ft, Date: 7/31/2021

Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer

Cone Operator: Charley Baker

Project: 02541139 - Bayou Cane Marsh Creation Project

Location: St. Tammany Parish, Louisiana



CPT: C-47

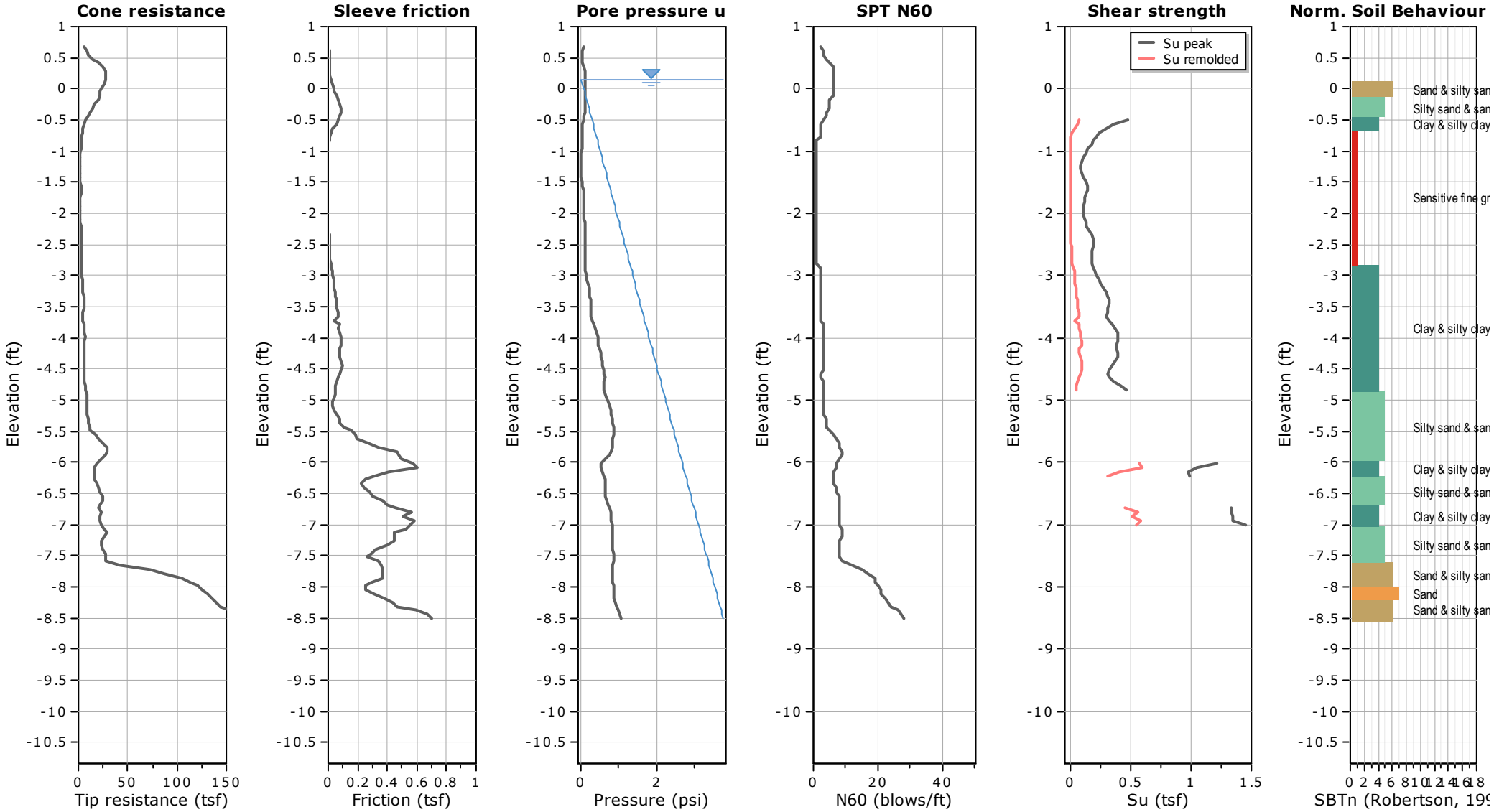
Total depth: 9.25 ft, Date: 7/31/2021

Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer

Cone Operator: Charley Baker

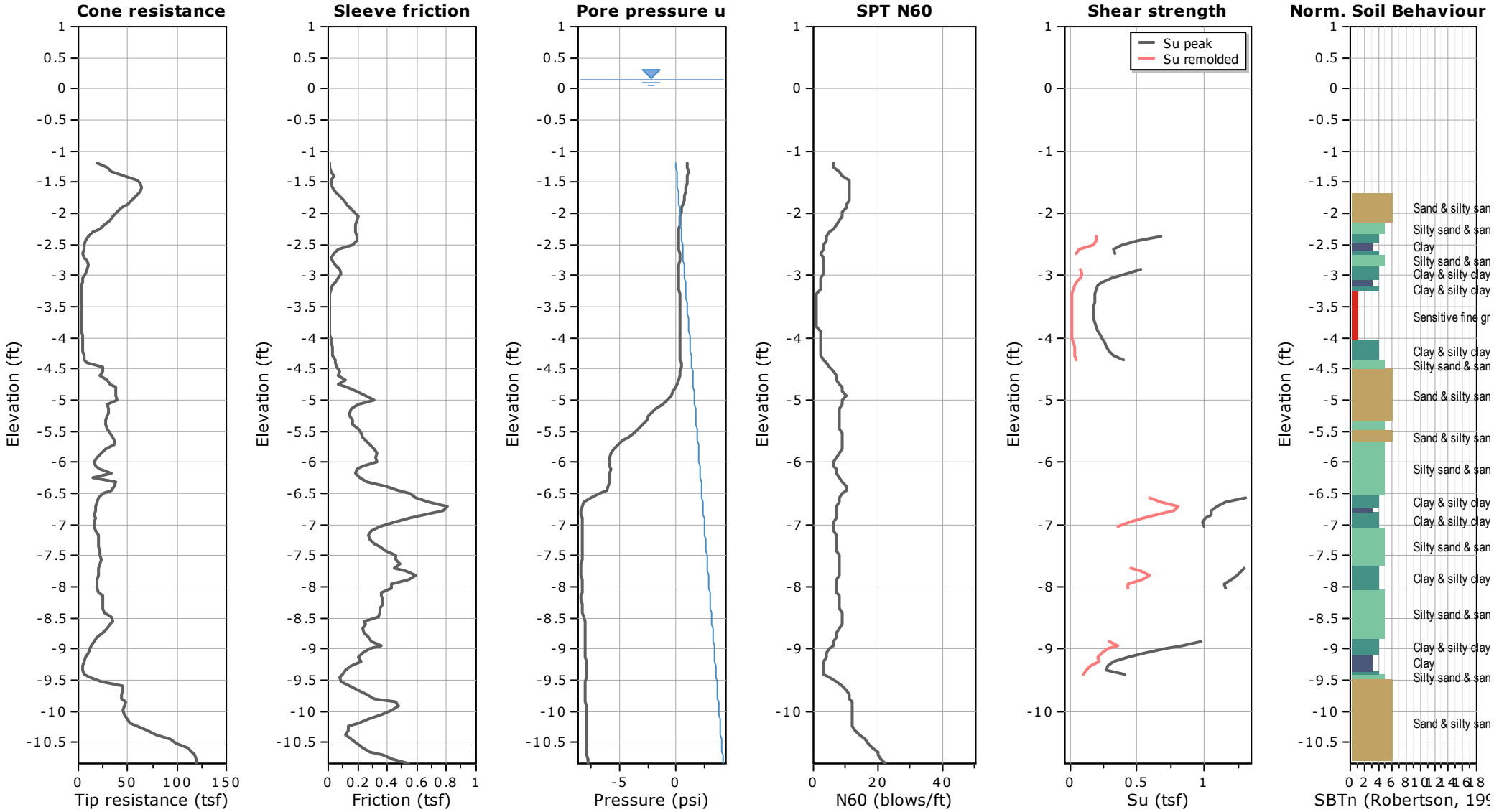
Project: **02541139 - Bayou Cane Marsh Creation Project**

Location: **St. Tammany Parish, Louisiana**



Project: 02541139 - Bayou Cane Marsh Creation Project
Location: St. Tammany Parish, Louisiana

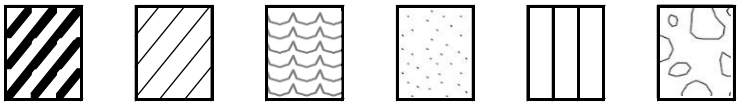
CPT: C-48
Total depth: 9.71 ft, Date: 8/4/2021
Cone Type: 60° 1.4" Diam. Type 2 Electric Cone Penetrometer
Cone Operator: Charley Baker



Appendix Figure No. G.2-46

KEY TO TERMS AND SYMBOLS USED ON LOGS

SOIL TYPE

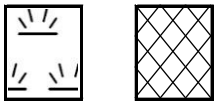


FAT CLAY | LEAN CLAY | ORGANIC CLAY | SAND | SILT | GRAVEL

SAMPLER TYPE

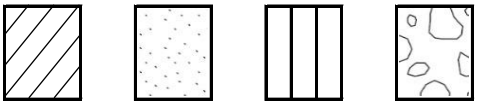
NO RECOVERY | AUGER SAMPLE | SHELBY TUBE | SPLIT SPOON

SOIL TYPE



TOPSOIL | FILL

MODIFIERS



CLAYEY | SANDY | SILTY | GRAVELY

▽ GROUNDWATER DURING DRILLING

▼ GROUNDWATER UPON COMPLETION

UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D 2487 (1980)

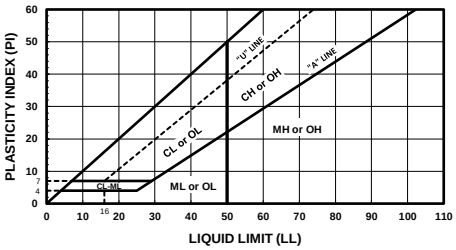
MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE-GRAINED SOILS LESS THAN 50% PASSING NO. 200 SIEVE	GRAVEL & GRAVELLY SOILS LESS THAN 50% PASSING NO. 4 SIEVE	CLEAN GRAVEL (LITTLE OR NO FINES)	GW	WELL-GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			GP	POORLY GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		WITH APPRECIABLE FINES	GM	SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN 50% PASSING NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)	SW	WELL-GRADED SAND
			SP	POORLY-GRADED SANDS
		WITH APPRECIABLE FINES	SM	SILTY SANDS
			SC	CLAYEY SANDS
FINE-GRAINED SOILS MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT < 50		ML	INORGANIC SILTS & VERY FINE SANDS, CLAYEY SILT W/ LOW PLASTICITY INDEX
			CL	INORGANIC LEAN CLAYS GRAVELLY, SANDY, OR SILTY LEAN CLAYS
			OL	ORGANIC SILTS & ORGANIC SILTY CLAYS W/LOW PLASTICITY INDEX
	SILTS AND CLAYS LIQUID LIMIT ≥ 50		MH	INORGANIC SILTS W/ HIGH PLASTICITY INDEX, ELASTIC SILTS
			CH	INORGANIC FAT CLAYS GRAVELLY, SANDY, OR SILTY FAT CLAYS
			OH	ORGANIC CLAYS OF MED TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOIL			PT	PEAT AND OTHER HIGHLY ORGANIC SOILS
UNCLASSIFIED FILL MATERIALS			ARTIFICIALLY DEPOSITED AND OTHER UNCLASSIFIED SOILS AND MAN-MADE SOIL MIXTURES	

CONSISTENCY - COHESIVE SOILS

CONSISTENCY	SHEAR STRENGTH IN TONS/FT^2
VERY SOFT	0 TO 0.125
SOFT	0.125 TO 0.25
FIRM	0.25 TO .50
STIFF	0.50 TO 1.00
VERY STIFF	1.00 TO 2.00
HARD	> 2.00 OR 2.00+

RELATIVE DENSITY - GRANULAR SOILS

DENSITY	N-VALUE (BLOWS/FT)
VERY LOOSE	0-4
LOOSE	4-9
MEDIUM DENSE	10-29
DENSE	30-49
VERY DENSE	> 50 OR 50+



ABBREVIATIONS

HP - HAND PENETROMETER

TV - MINIATURE TORVANE

UC - UNCONFINED COMPRESSION TEST

UU - UNCONSOLIDATED UNDRAINED TRAIXIAL

NOTE: BORING LOGS INDICATE SHEAR STRENGTH AS OBTAINED BY ABOVE TESTS

CLASSIFICATION OF GRANULAR SOILS

U.S. STANDARD SIEVE SIZE(S)

12" | 3" | 3/4" | 4 | 10 | 40 | 200

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

300 | 75 | 19 | 4.75 | 2.0 | 0.42 | 0.075 | 0.005

GRAIN SIZE IN MM

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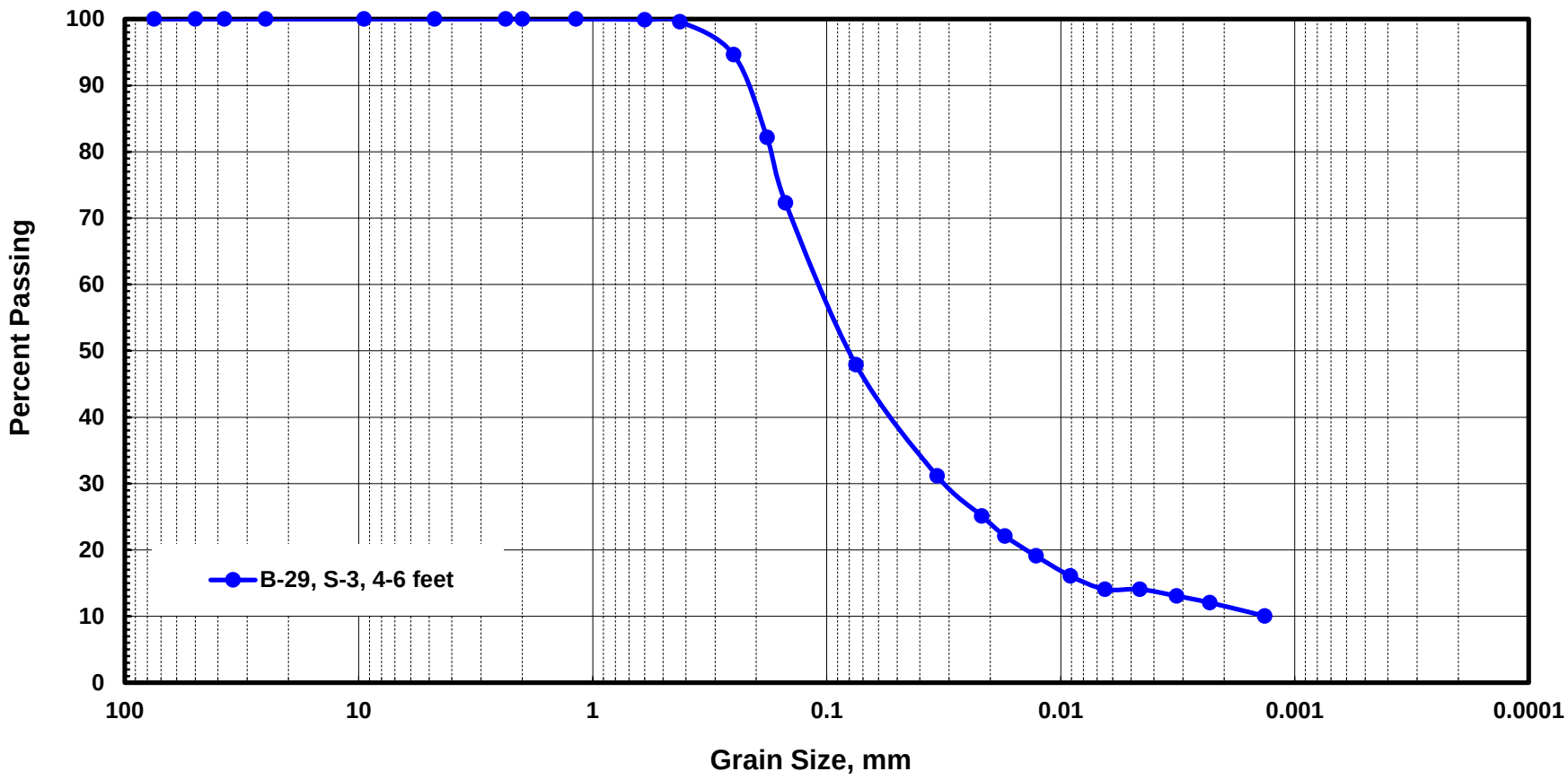
Jefferson, Louisiana 70121
Phone: (504) 733-9411

APPENDIX C

HYDROMETER TEST RESULTS
SPECIFIC GRAVITY TEST RESULTS
ORGANIC CONTENT RESULTS



GRADATION INFORMATION	D_{10} mm	D_{30} mm	D_{50} mm	D_{60} mm	C_u (D_{60}/D_{10})	C_c $D_{30}^2/(D_{60}*D_{10})$	%Gravel Ret. #4	%Sand <#4 & >#200	%Fines Pass #200	%Silt 0.075 mm < S > 0.002 mm	%Clay < 0.002 mm
B-29, S-3, 4-6 feet	NA	0.0310	0.0796	0.1057	NA	NA	0.0%	52.09	47.91	36.49	11.42
CPRA PO 181											
Silty Sand (SM), Dark Gray											

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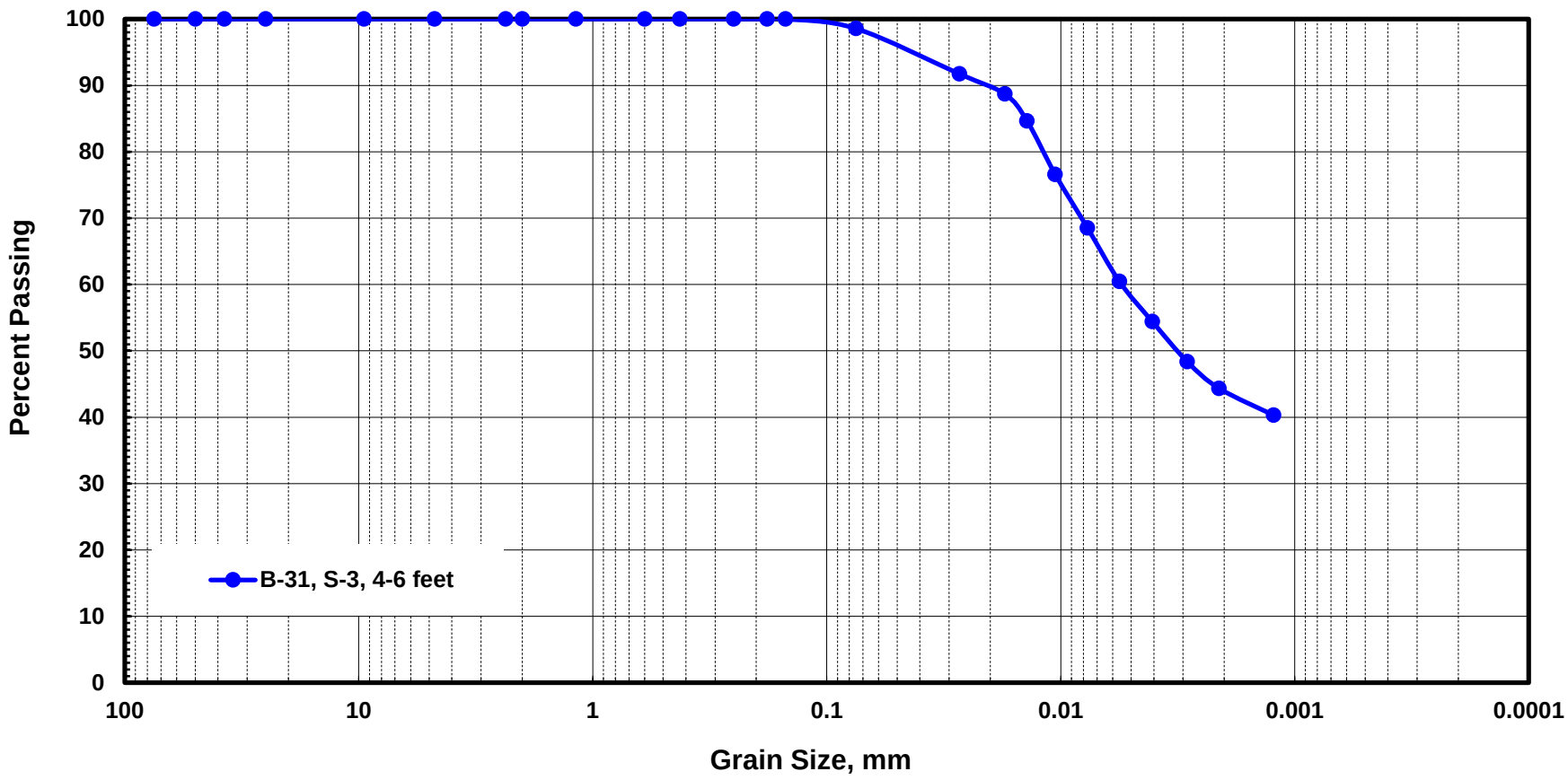
Appendix Figure No. G.2-49



GRADATION INFORMATION	D_{10} mm	D_{30} mm	D_{50} mm	D_{60} mm	C_u (D_{60}/D_{10})	C_c $D_{30}^2/(D_{60}*D_{10})$	%Gravel Ret. #4	%Sand <#4 & >#200	%Fines Pass #200	%Silt 0.075 mm < S > 0.002 mm	%Clay < 0.002 mm
B-31, S-3, 4-6 feet	NA	NA	0.0032	0.0055	NA	NA	0.0%	1.43	98.57	54.71	43.86
CPRA PO 181											
Fat Clay (CH), Gray/Brown											

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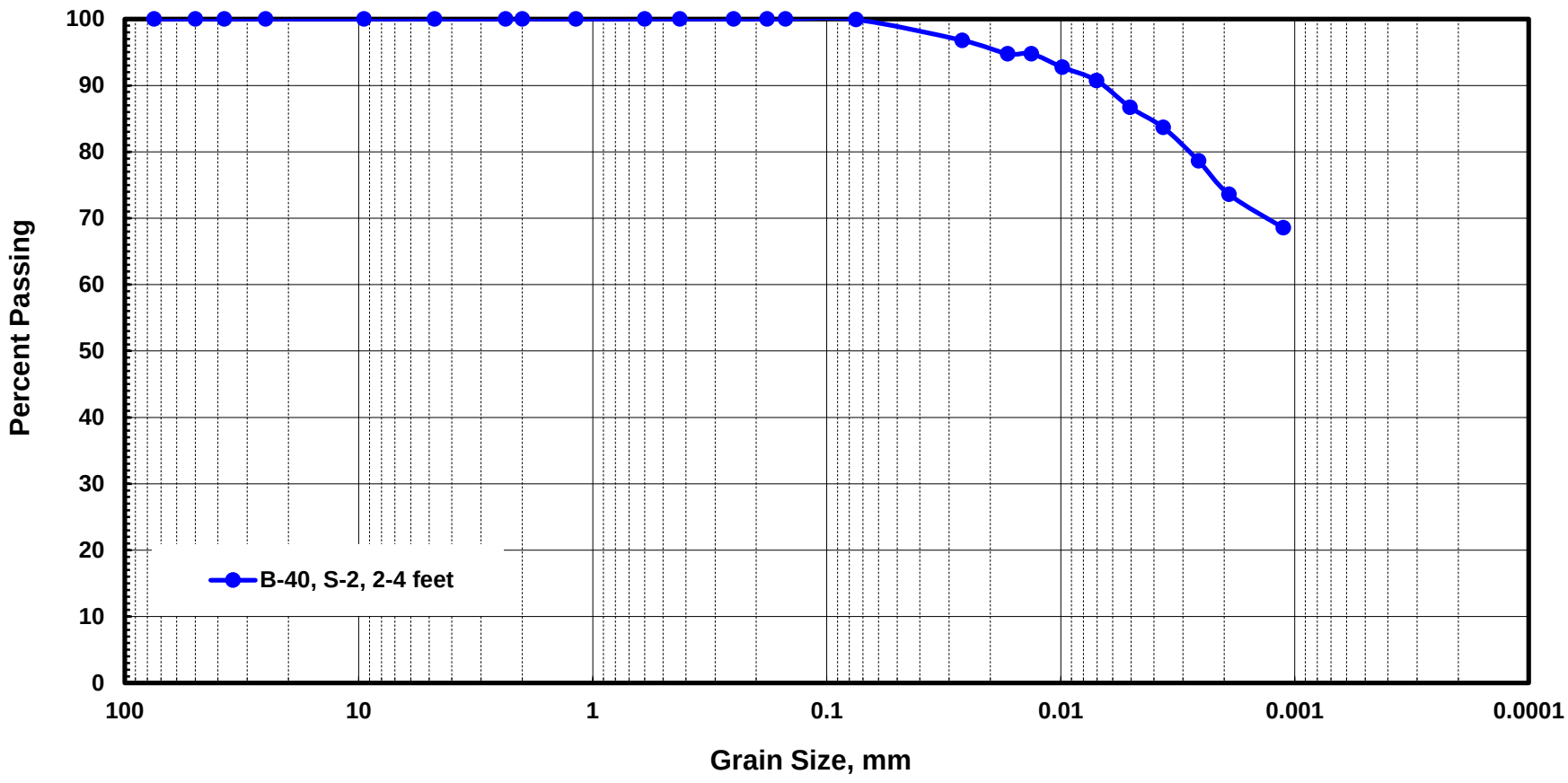

GRADATION INFORMATION	D_{10} mm	D_{30} mm	D_{50} mm	D_{60} mm	C_u (D_{60}/D_{10})	C_c $D_{30}^2/(D_{60}*D_{10})$	%Gravel Ret. #4	%Sand <#4 & >#200	%Fines Pass #200	%Silt 0.075 mm < S > 0.002 mm	%Clay < 0.002 mm
B-40, S-2, 2-4 feet	NA	NA	NA	NA	NA	NA	0.0%	0.08	99.92	25.63	74.29
CPRA PO 181											
Fat Clay (CH), Brown/Gray											

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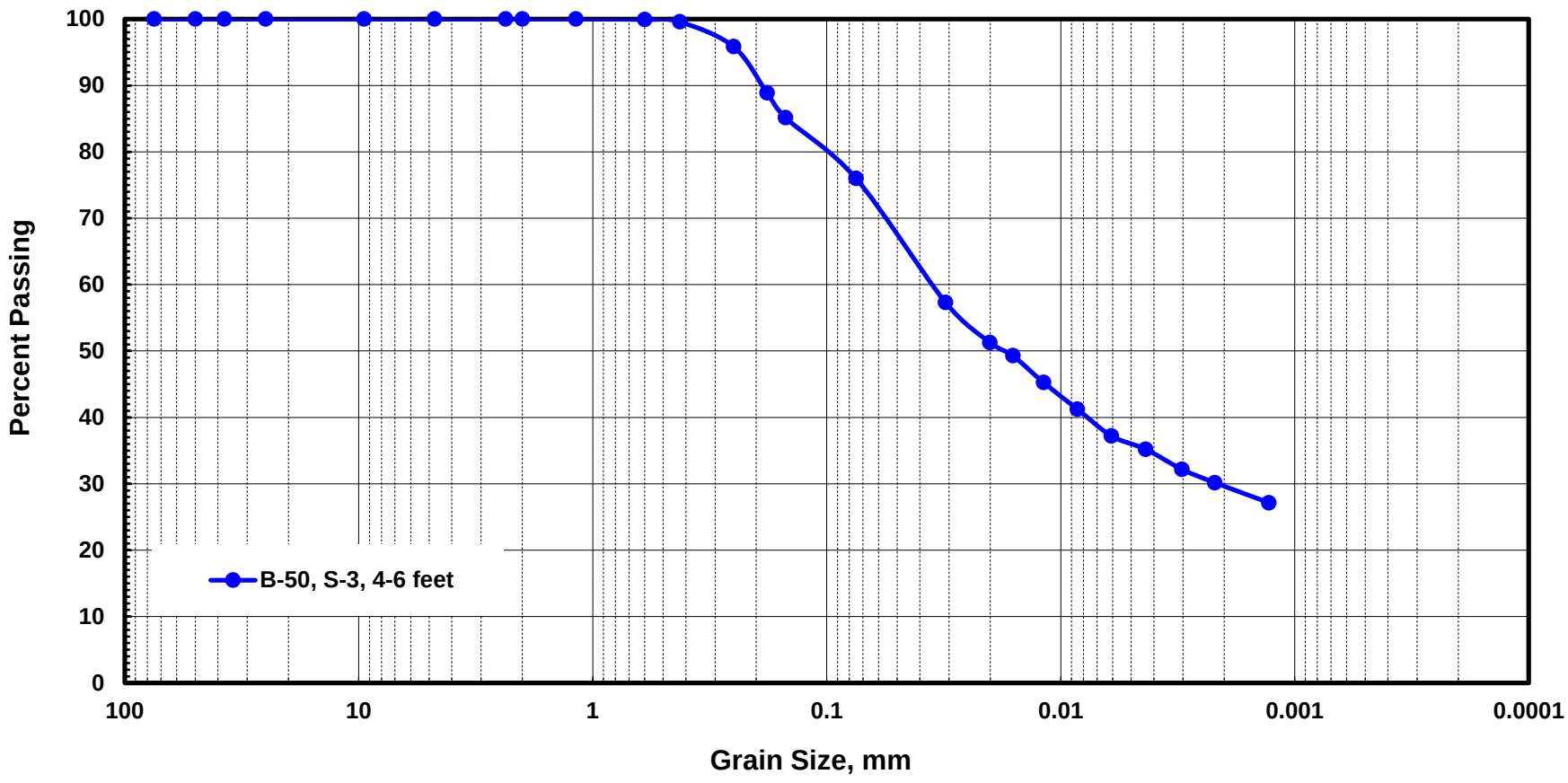

GRADATION INFORMATION	D_{10} mm	D_{30} mm	D_{50} mm	D_{60} mm	C_u (D_{60}/D_{10})	C_c $D_{30}^2/(D_{60}*D_{10})$	%Gravel Ret. #4	%Sand <#4 & >#200	%Fines Pass #200	%Silt 0.075 mm < S > 0.002 mm	%Clay < 0.002 mm
B-50, S-3, 4-6 feet	NA	0.0021	0.0174	0.0353	NA	NA	0.0%	24.01	75.99	46.47	29.52
CPRA PO 181											
Fat Clay with Sand (CH), Brown/Gray											

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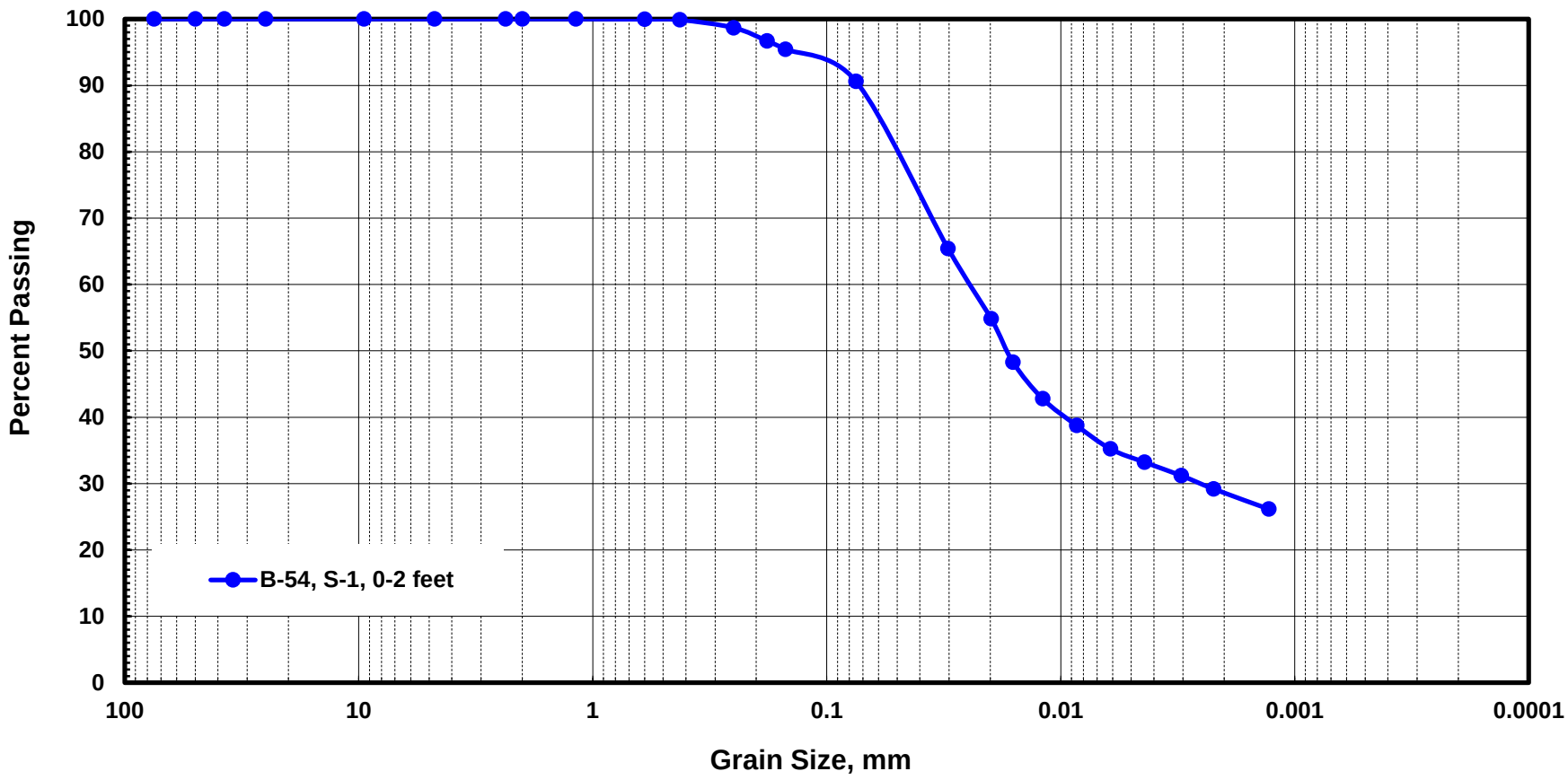

GRADATION INFORMATION	D_{10} mm	D_{30} mm	D_{50} mm	D_{60} mm	C_u (D_{60}/D_{10})	C_c $D_{30}^2/(D_{60}*D_{10})$	%Gravel Ret. #4	%Sand <#4 & >#200	%Fines Pass #200	%Silt 0.075 mm < S > 0.002 mm	%Clay < 0.002 mm
B-54, S-1, 0-2 feet	NA	0.0025	0.0169	0.0244	NA	NA	0.0%	9.39	90.61	62.14	28.47
CPRA PO 181											
Fat Clay (CH), Brown/Gray											

intertek psi

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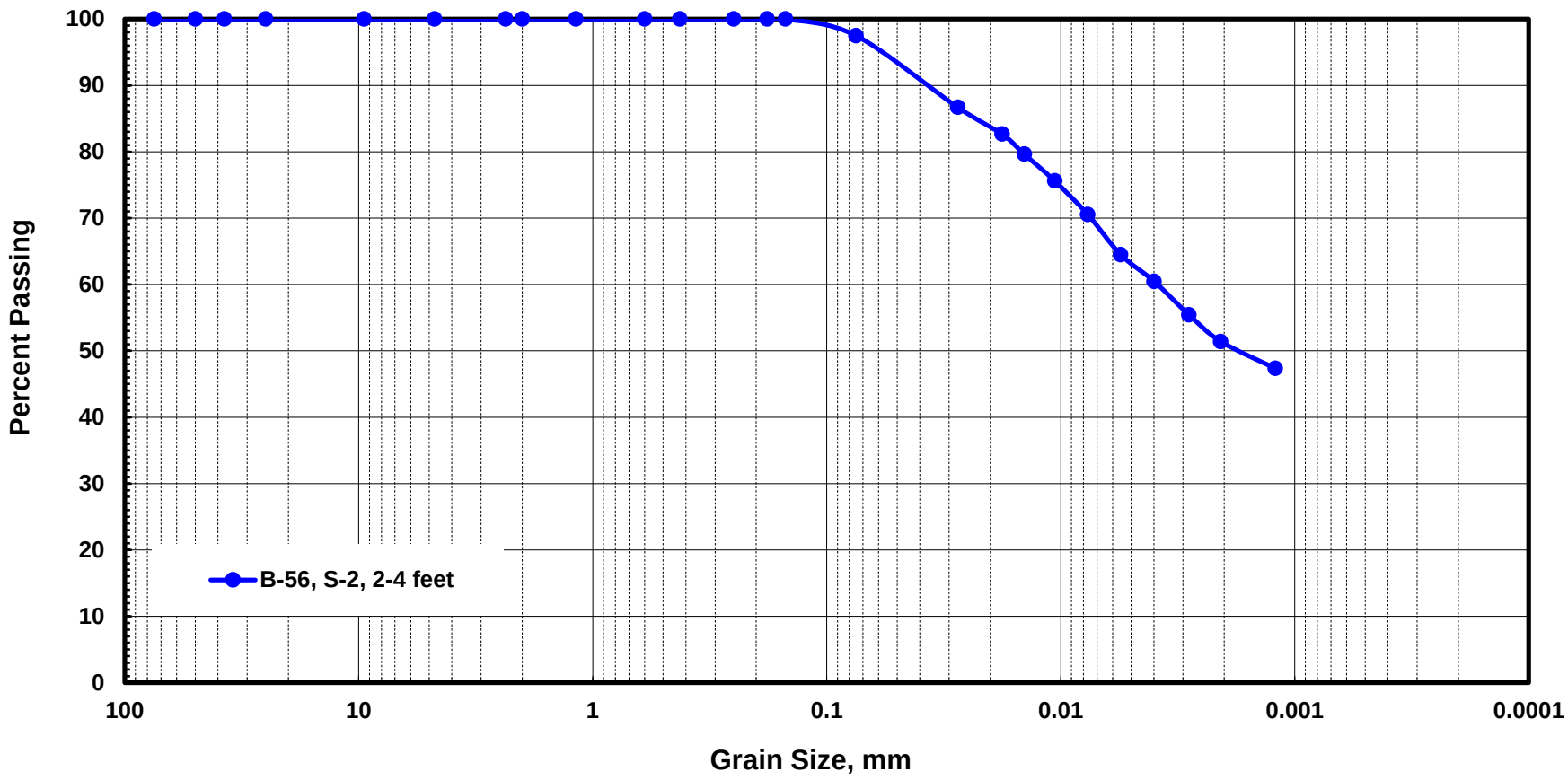
Jefferson, Louisiana



GRADATION INFORMATION	D_{10} mm	D_{30} mm	D_{50} mm	D_{60} mm	C_u (D_{60}/D_{10})	C_c $D_{30}^2/(D_{60}*D_{10})$	%Gravel Ret. #4	%Sand <#4 & >#200	%Fines Pass #200	%Silt 0.075 mm < S > 0.002 mm	%Clay < 0.002 mm
B-56, S-2, 2-4 feet	**NA**	**NA**	**0.0017**	**0.0039**	**NA**	**NA**	**0.0%**	**2.5**	**97.5**	**46.42**	**51.08**
CPRA PO 181											
Fat Clay (CH), Gray											

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Jefferson, Louisiana

Appendix Figure No. G.2-54

intertek psi	Specific Gravity ASTM D854			
Project Name: CPRA PO 181	Checked By:		Computed By:	
Project No: 02541139	Date tested:			
Date Prepared:	Scales Control Number:		03ES254	
Tested by: DD	Oven Control Number:		02OV251	
Boring Number :	M-10			
Sample Number:	S-3			
Depth, feet:	4-6' (B)			
Percent passing No. 4 sieve:	100%			
Description of Material:	Gray Silty Sand (SM)			
Pyconmeter Calibration Information				
Flask ID.	22PYC254			
Calibrated Mass of Flask (Mpc), gms:	164.840			
Calibrated Volume of the Flask (Vpc), mL:	499.140			
Check for Pyconmeter Calibration				
Mass of Flask, gms(Mp):	164.82	Is Mp within 0.06g of Mpc (Y/N):		Y
Mass of Flask + Water, (Mpw,t), gms:	662.45			
Temperature of Water (Ct), deg. C:	25.4	(Temperature of Water After Cooling)		
Density of Water at Tt, (pw,ct), g/mL:	0.99694	(From Table 1 of ASTM D 854)		
Volume of the Flask (Vp), mL:	499.157	Vp = (Mpwct - Mp)/pw,ct		
Test Data (Method B)				
Mass of Flask + Water at Test (Mpw, t), gms:	662.126	(Mpw = Mp + (Vp * pw,t)		
Mass of Dry Soil (Ms), gms:	100.81			
Mass of Flask + Water + Soil, (Mpws, t), gms:	725.15			
Temperature of Water (Tt), deg. C:	27.8	(Temperature of Water+Soil After Cooling)		
Density of Water at Tt, (pw,t), g/mL:	0.99629	(From Table 1 of ASTM D 854)		
Specific gravity of Water at T, (Gt):	2.668	Gt = Ms /{Mpw,t - (Mpwst - Ms)}		
Temperature Coefficient, K:	0.99808	(From Table 1 of ASTM D 854)		
Specific gravity of soil, Gs (20 deg. C):	*2.663*	Gs (20C) = Gt * K		
Remarks:				

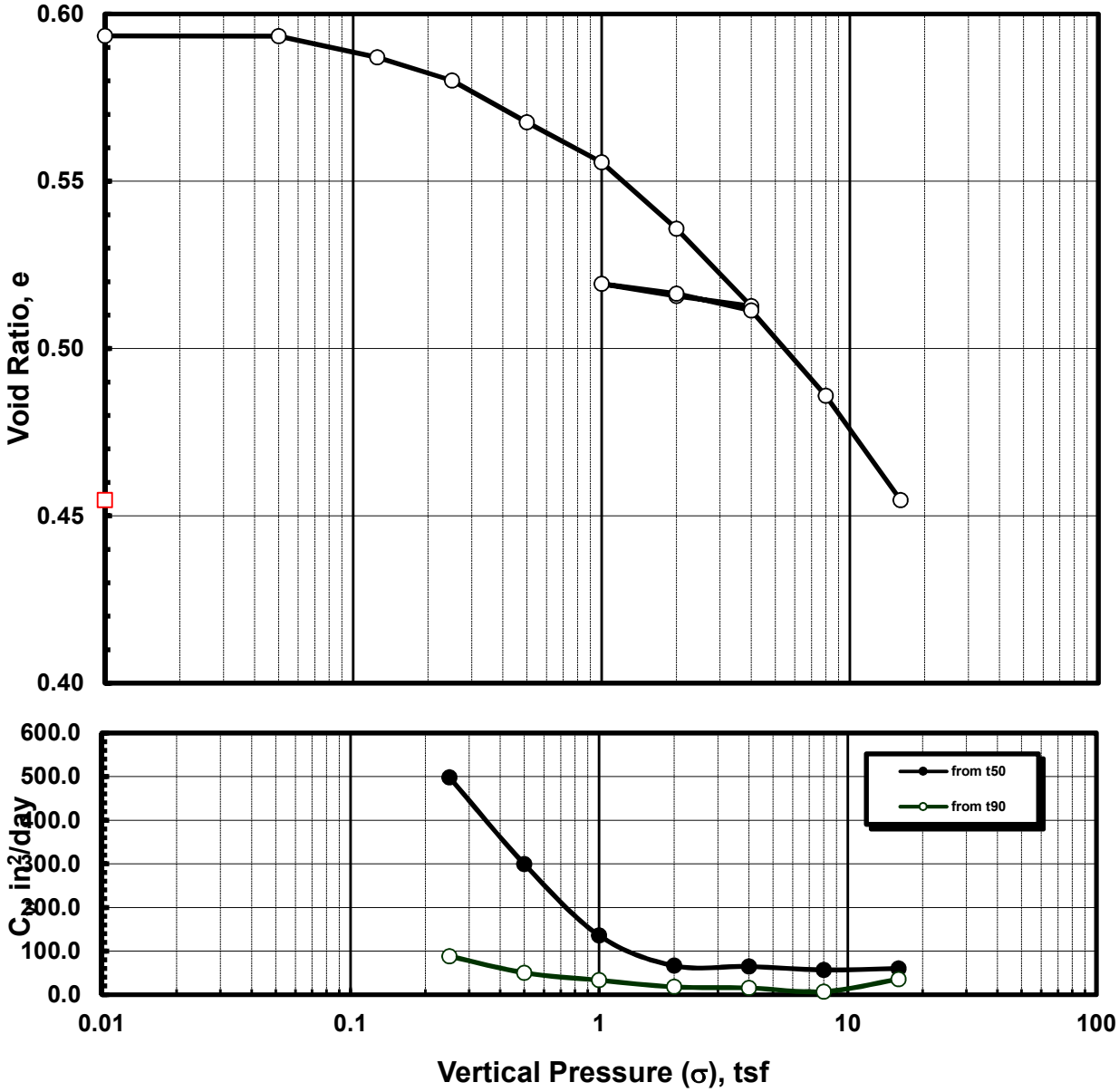
ORGANIC CONTENT

Boring No.	Depth (feet)	Organic Content (%)
M-10	1 to 2 feet	22.3%

APPENDIX D

CONSOLIDATION TEST RESULTS
SETTLING COLUMN TEST
SLURRY CONSOLIDATION TEST RESULTS

CONSOLIDATION TEST RESULTS - ASTM D 2435

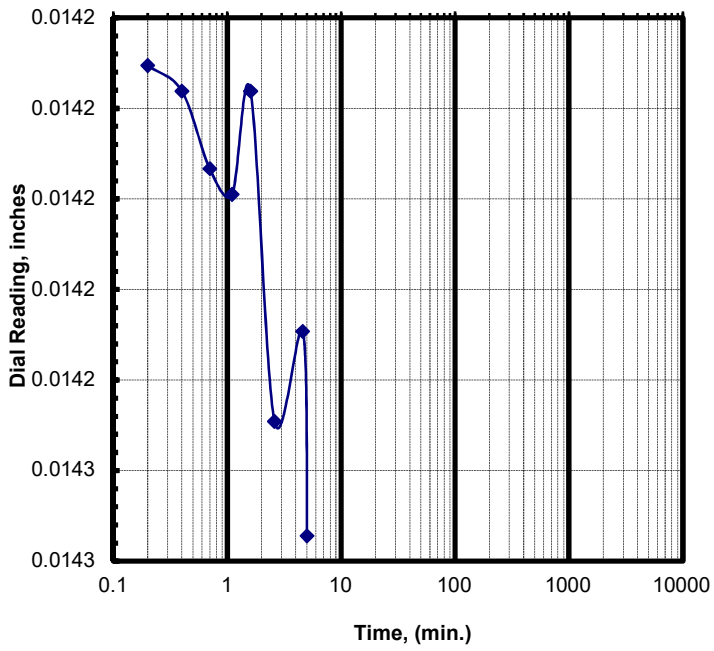


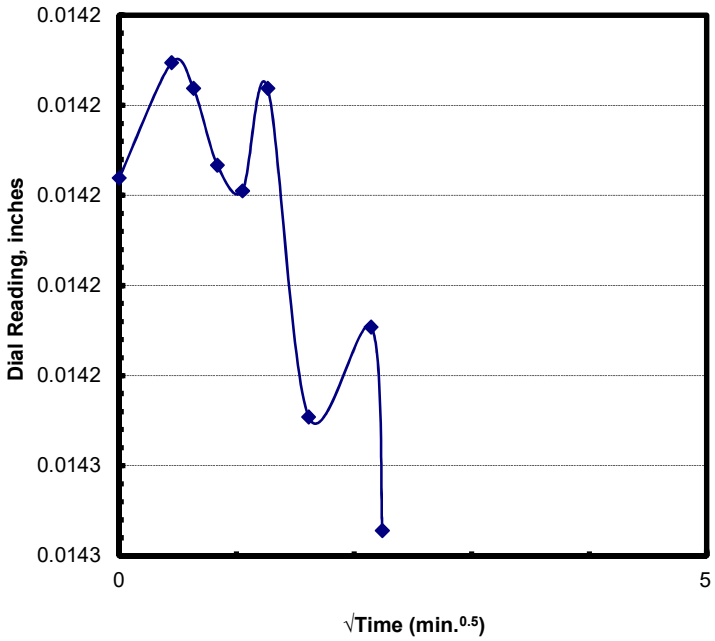
Sample Condition	Before	After	Consolidation Parameters	
Moisture Content, %:	19.3%	16.8%	Overburden Pressure, tsf:	0.2
Sample Height, in.:	0.9980	0.9111	Preconsolidation Pressure, tsf:	1.1
Void Ratio, e:	0.5935	0.4547	Compression Index, (Cc):	0.103
Unit Weight, pcf:	105.7	115.8	Re-Compression Index, (Cr)	0.010
Degree of Saturation:	0.88	1.00	Swell Index, Cs:	-

Project Number:	02541139	Liquid Limit:	NA	Hand Pen:	0.33 tsf
Project Name	CPRA PO 181	Plastic Limit:	NA	-200 %:	NA
Boring No.:	M-10	Plasticity Index:	NA	SPG:	2.7
Sample ID, Depth:	S-3, 4-6 ft	Classification:	Clayey Sand (SC), Gray		

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.05 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
8/4/21 9:53:33 AM	0.00	0.00	0.0142
8/4/21 9:53:45 AM	0.20	0.45	0.0142
8/4/21 9:53:57 AM	0.40	0.63	0.0142
8/4/21 9:54:15 AM	0.70	0.84	0.0142
8/4/21 9:54:39 AM	1.10	1.05	0.0142
8/4/21 9:55:09 AM	1.60	1.26	0.0142
8/4/21 9:56:09 AM	2.60	1.61	0.0142
8/4/21 9:58:09 AM	4.60	2.14	0.0142
8/4/21 9:58:34 AM	5.02	2.24	0.0143

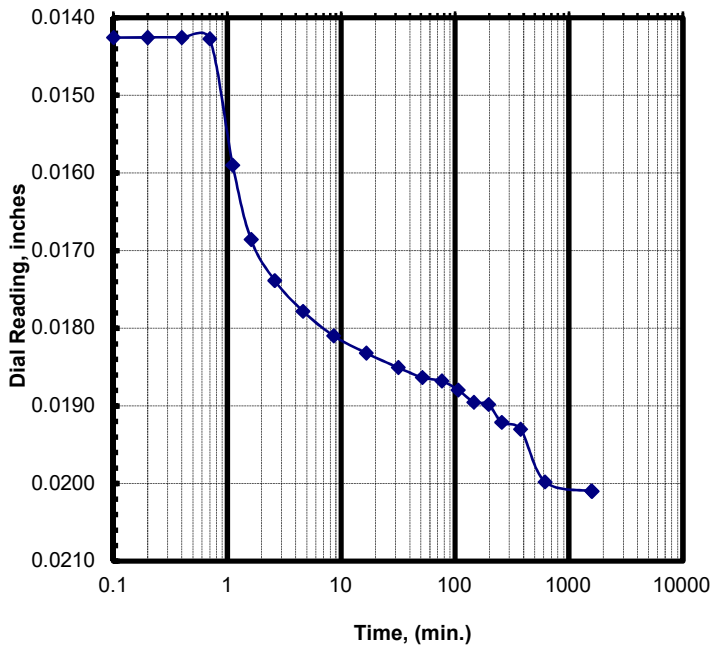


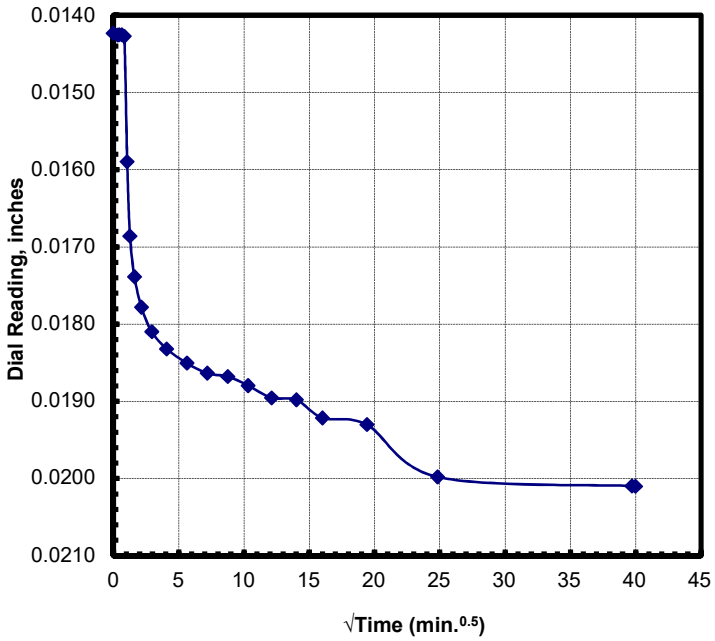


Project Number: 02541139	**LL:** NA	**$D_{0(min)}$ (in):** 0.0142	**d_0 (in):** 0.0142
Project Name: CPRA PO 181	**PL:** NA	**D_{end} (in):** 0.0143	**d_{100} (in):** 0.0143
Boring & Depth: M-10, S-3, 4-6 ft	**PL:** NA	**Δ_{hi} (in.):** 0.0001	**δ_{eop} (in.):** 0.0001
Sample: Clayey Sand (SC), Gray	**- 200 (%):** NA	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.125 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
8/4/21 9:58:34 AM	0.00	0.00	0.0142
8/4/21 9:58:40 AM	0.10	0.32	0.0143
8/4/21 9:58:46 AM	0.20	0.45	0.0143
8/4/21 9:58:58 AM	0.40	0.63	0.0143
8/4/21 9:59:16 AM	0.70	0.84	0.0143
8/4/21 9:59:41 AM	1.12	1.06	0.0159
8/4/21 10:00:11 AM	1.62	1.27	0.0169
8/4/21 10:01:11 AM	2.62	1.62	0.0174
8/4/21 10:03:11 AM	4.62	2.15	0.0178
8/4/21 10:07:11 AM	8.62	2.94	0.0181
8/4/21 10:15:11 AM	16.62	4.08	0.0183
8/4/21 10:30:11 AM	31.62	5.62	0.0185
8/4/21 10:50:11 AM	51.62	7.18	0.0186
8/4/21 11:15:11 AM	76.62	8.75	0.0187
8/4/21 11:45:11 AM	106.62	10.33	0.0188
8/4/21 12:25:12 PM	146.63	12.11	0.0190
8/4/21 1:15:12 PM	196.63	14.02	0.0190
8/4/21 2:15:12 PM	256.63	16.02	0.0192
8/4/21 4:15:12 PM	376.63	19.41	0.0193
8/4/21 8:15:12 PM	616.63	24.83	0.0200
8/5/21 4:15:13 AM	1096.65	33.12	0.0206
8/5/21 12:15:13 PM	1576.65	39.71	0.0201
8/5/21 12:36:31 PM	1597.95	39.97	0.0201

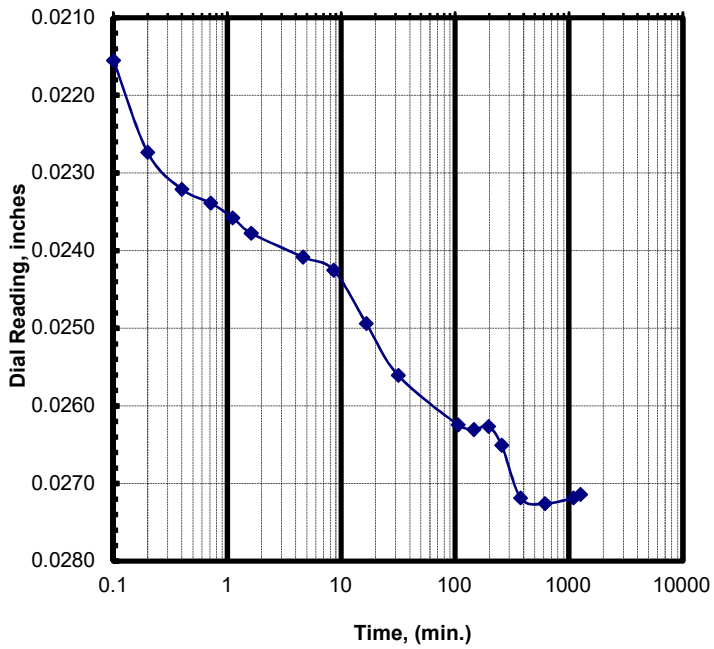


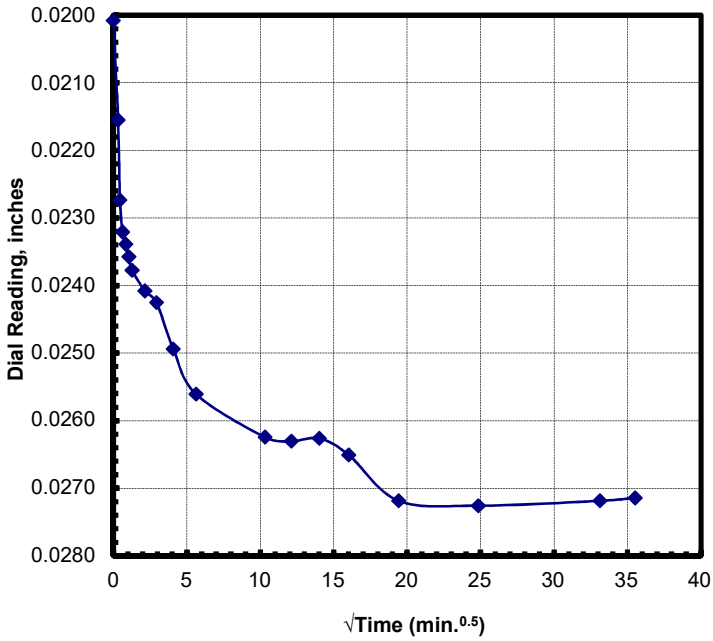


Project Number:	**02541139**	**LL: NA**	**$D_{0(min)}$ (in): 0.0142**	**d_0 (in): 0.0142**
Project Name:	**CPRA PO 181**	**PL: NA**	**D_{end} (in): 0.0201**	**d_{100} (in): 0.0182**
Boring & Depth:	**M-10, S-3, 4-6 ft**	**PL: NA**	**Δ_{hi} (in.): 0.0059**	**δ_{eop} (in.): 0.0040**
Sample:	**Clayey Sand (SC), Gray**	**- 200 (%): NA**	**t_{50} (min): 1.2**	**t_{90} (min): 4.8**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.25 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
8/5/21 12:36:31 PM	0.00	0.00	0.0201
8/5/21 12:36:37 PM	0.10	0.32	0.0215
8/5/21 12:36:43 PM	0.20	0.45	0.0227
8/5/21 12:36:55 PM	0.40	0.63	0.0232
8/5/21 12:37:14 PM	0.72	0.85	0.0234
8/5/21 12:37:38 PM	1.12	1.06	0.0236
8/5/21 12:38:08 PM	1.62	1.27	0.0238
8/5/21 12:39:08 PM	2.62	1.62	0.0240
8/5/21 12:41:08 PM	4.62	2.15	0.0241
8/5/21 12:45:08 PM	8.62	2.94	0.0243
8/5/21 12:53:08 PM	16.62	4.08	0.0249
8/5/21 1:08:08 PM	31.62	5.62	0.0256
8/5/21 1:28:08 PM	51.62	7.18	0.0256
8/5/21 1:53:08 PM	76.62	8.75	0.0258
8/5/21 2:23:08 PM	106.62	10.33	0.0262
8/5/21 3:03:08 PM	146.62	12.11	0.0263
8/5/21 3:53:08 PM	196.62	14.02	0.0263
8/5/21 4:53:08 PM	256.62	16.02	0.0265
8/5/21 6:53:08 PM	376.62	19.41	0.0272
8/5/21 10:53:09 PM	616.63	24.83	0.0273
8/6/21 6:53:09 AM	1096.63	33.12	0.0272
8/6/21 9:38:31 AM	1262.00	35.52	0.0271

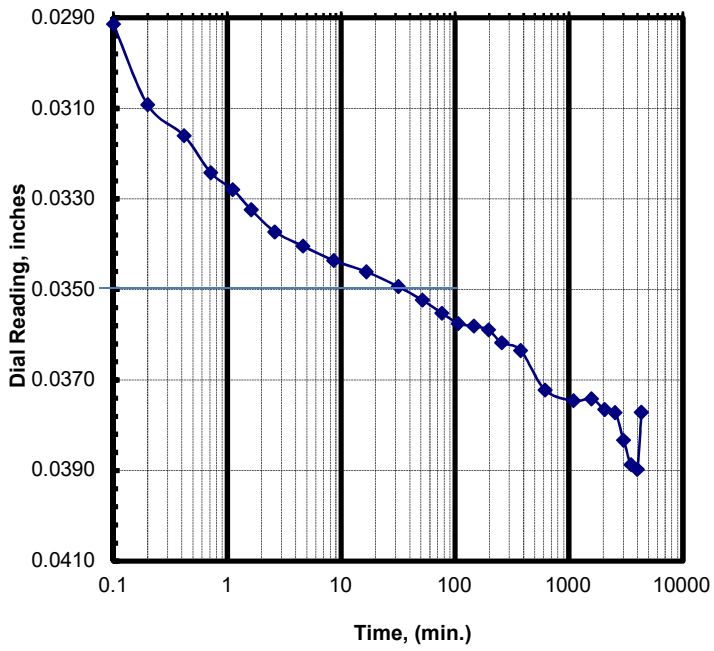


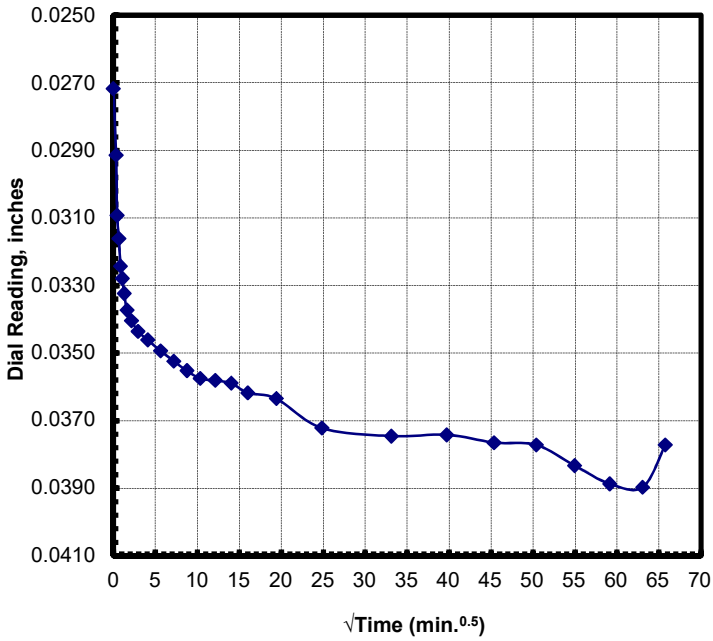


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0201	d_0 (in): 0.0201
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.0271	d_{100} (in): 0.0244
Boring & Depth: M-10, S-3, 4-6 ft	**PL:** NA	Δ_{hi} (in.): 0.0071	δ_{eop} (in.): 0.0043
Sample: Clayey Sand (SC), Gray	**- 200 (%):** NA	t_{50} (min): 0.14	t_{90} (min): 3.4

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 0.5 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
8/6/21 9:38:31 AM	0.00	0.00	0.0272
8/6/21 9:38:37 AM	0.10	0.32	0.0291
8/6/21 9:38:43 AM	0.20	0.45	0.0309
8/6/21 9:38:56 AM	0.42	0.65	0.0316
8/6/21 9:39:14 AM	0.72	0.85	0.0324
8/6/21 9:39:38 AM	1.12	1.06	0.0328
8/6/21 9:40:08 AM	1.62	1.27	0.0332
8/6/21 9:41:08 AM	2.62	1.62	0.0337
8/6/21 9:43:08 AM	4.62	2.15	0.0340
8/6/21 9:47:08 AM	8.62	2.94	0.0344
8/6/21 9:55:08 AM	16.62	4.08	0.0346
8/6/21 10:10:08 AM	31.62	5.62	0.0349
8/6/21 10:30:08 AM	51.62	7.18	0.0352
8/6/21 10:55:09 AM	76.63	8.75	0.0355
8/6/21 11:25:09 AM	106.63	10.33	0.0357
8/6/21 12:05:09 PM	146.63	12.11	0.0358
8/6/21 12:55:09 PM	196.63	14.02	0.0359
8/6/21 1:55:09 PM	256.63	16.02	0.0362
8/6/21 3:55:09 PM	376.63	19.41	0.0363
8/6/21 7:55:10 PM	616.65	24.83	0.0372
8/7/21 3:55:10 AM	1096.65	33.12	0.0375
8/7/21 11:55:10 AM	1576.65	39.71	0.0374
8/7/21 7:55:11 PM	2056.67	45.35	0.0376
8/8/21 3:55:11 AM	2536.67	50.37	0.0377
8/8/21 11:55:12 AM	3016.68	54.92	0.0383
8/8/21 7:55:12 PM	3496.68	59.13	0.0389
8/9/21 3:55:13 AM	3976.70	63.06	0.0390
8/9/21 9:38:36 AM	4320.08	65.73	0.0377

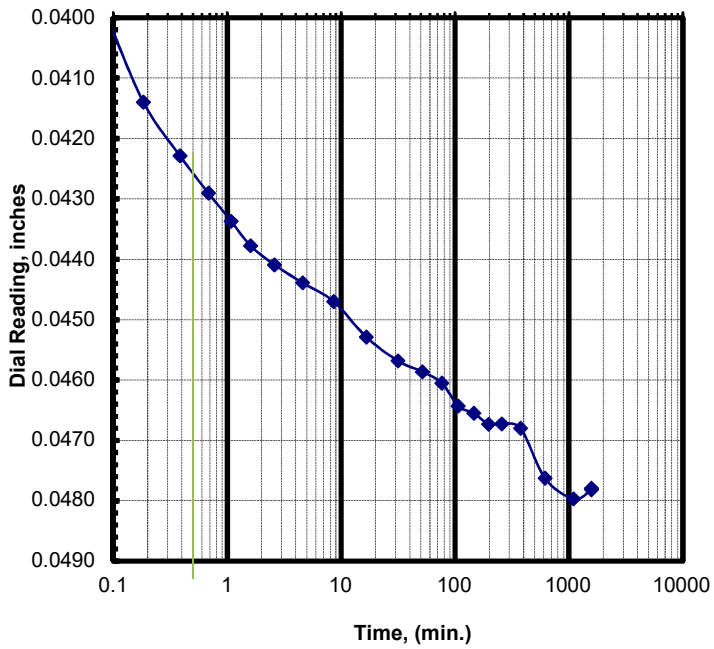


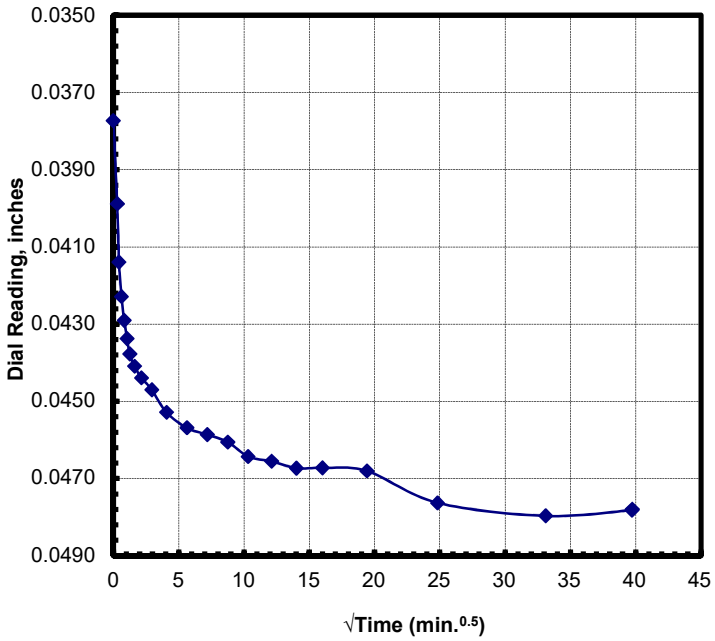


Project Number:	**02541139**	**LL: NA**	**$D_{0(min)}$ (in): 0.0272**	**d_0 (in): 0.0272**
Project Name:	**CPRA PO 181**	**PL: NA**	**D_{end} (in): 0.0377**	**d_{100} (in): 0.0350**
Boring & Depth:	**M-10, S-3, 4-6 ft**	**PL: NA**	**Δ_{hi} (in.): 0.0105**	**δ_{eop} (in.): 0.0078**
Sample:	**Clayey Sand (SC), Gray**	**- 200 (%): NA**	**t_{50} (min): 0.23**	**t_{90} (min): 5.9**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
8/9/21 9:38:37 AM	0.00	0.00	0.0377
8/9/21 9:38:42 AM	0.08	0.29	0.0399
8/9/21 9:38:48 AM	0.18	0.43	0.0414
8/9/21 9:39:00 AM	0.38	0.62	0.0423
8/9/21 9:39:18 AM	0.68	0.83	0.0429
8/9/21 9:39:42 AM	1.08	1.04	0.0434
8/9/21 9:40:13 AM	1.60	1.26	0.0438
8/9/21 9:41:13 AM	2.60	1.61	0.0441
8/9/21 9:43:13 AM	4.60	2.14	0.0444
8/9/21 9:47:13 AM	8.60	2.93	0.0447
8/9/21 9:55:13 AM	16.60	4.07	0.0453
8/9/21 10:10:13 AM	31.60	5.62	0.0457
8/9/21 10:30:13 AM	51.60	7.18	0.0459
8/9/21 10:55:13 AM	76.60	8.75	0.0461
8/9/21 11:25:13 AM	106.60	10.32	0.0464
8/9/21 12:05:13 PM	146.60	12.11	0.0466
8/9/21 12:55:14 PM	196.62	14.02	0.0467
8/9/21 1:55:14 PM	256.62	16.02	0.0467
8/9/21 3:55:14 PM	376.62	19.41	0.0468
8/9/21 7:55:14 PM	616.62	24.83	0.0476
8/10/21 3:55:15 AM	1096.63	33.12	0.0480
8/10/21 11:55:15 AM	1576.63	39.71	0.0478
8/10/21 11:56:47 AM	1578.17	39.73	0.0478

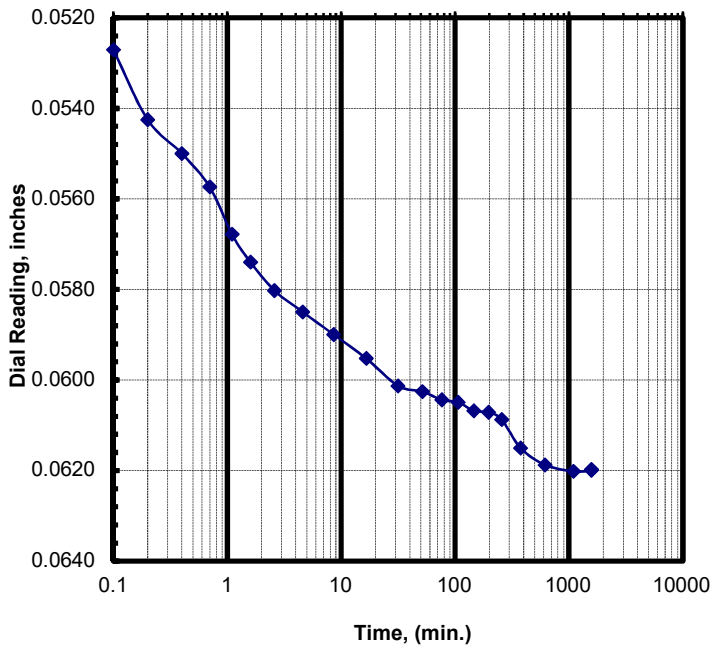


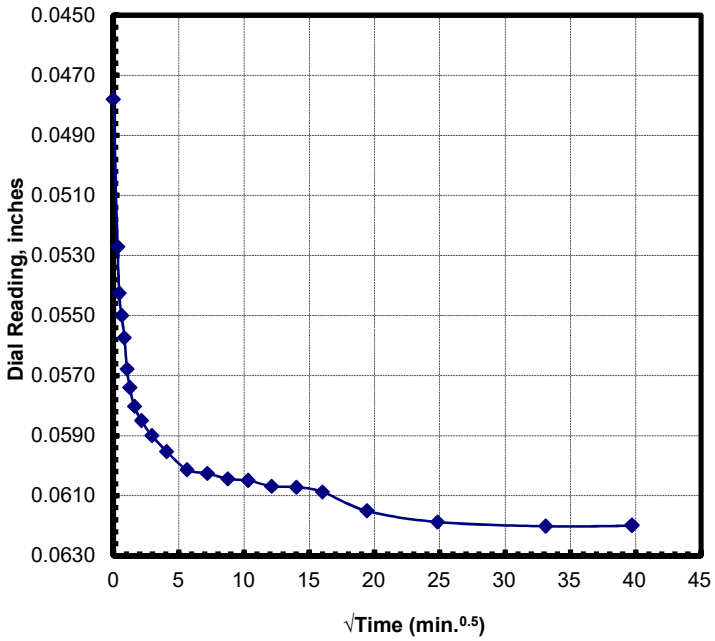


Project Number:	**02541139**	**LL: NA**	**$D_{0(min)}$ (in): 0.0377**	**d_0 (in): 0.0377**
Project Name:	**CPRA PO 181**	**PL: NA**	**D_{end} (in): 0.0478**	**d_{100} (in): 0.0452**
Boring & Depth:	**M-10, S-3, 4-6 ft**	**PL: NA**	**Δ_{hi} (in.): 0.0101**	**δ_{eop} (in.): 0.0075**
Sample:	**Clayey Sand (SC), Gray**	**- 200 (%): NA**	**t_{50} (min): 0.5**	**t_{90} (min): 8.8**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
8/10/21 11:56:48 AM	0.00	0.00	0.0478
8/10/21 11:56:54 AM	0.10	0.32	0.0527
8/10/21 11:57:00 AM	0.20	0.45	0.0543
8/10/21 11:57:12 AM	0.40	0.63	0.0550
8/10/21 11:57:30 AM	0.70	0.84	0.0557
8/10/21 11:57:54 AM	1.10	1.05	0.0568
8/10/21 11:58:24 AM	1.60	1.26	0.0574
8/10/21 11:59:24 AM	2.60	1.61	0.0580
8/10/21 12:01:24 PM	4.60	2.14	0.0585
8/10/21 12:05:24 PM	8.60	2.93	0.0590
8/10/21 12:13:24 PM	16.60	4.07	0.0595
8/10/21 12:28:24 PM	31.60	5.62	0.0601
8/10/21 12:48:24 PM	51.60	7.18	0.0603
8/10/21 1:13:24 PM	76.60	8.75	0.0604
8/10/21 1:43:24 PM	106.60	10.32	0.0605
8/10/21 2:23:25 PM	146.62	12.11	0.0607
8/10/21 3:13:25 PM	196.62	14.02	0.0607
8/10/21 4:13:25 PM	256.62	16.02	0.0609
8/10/21 6:13:25 PM	376.62	19.41	0.0615
8/10/21 10:13:25 PM	616.62	24.83	0.0619
8/11/21 6:13:26 AM	1096.63	33.12	0.0620
8/11/21 2:13:26 PM	1576.63	39.71	0.0620
8/11/21 2:14:32 PM	1577.73	39.72	0.0620

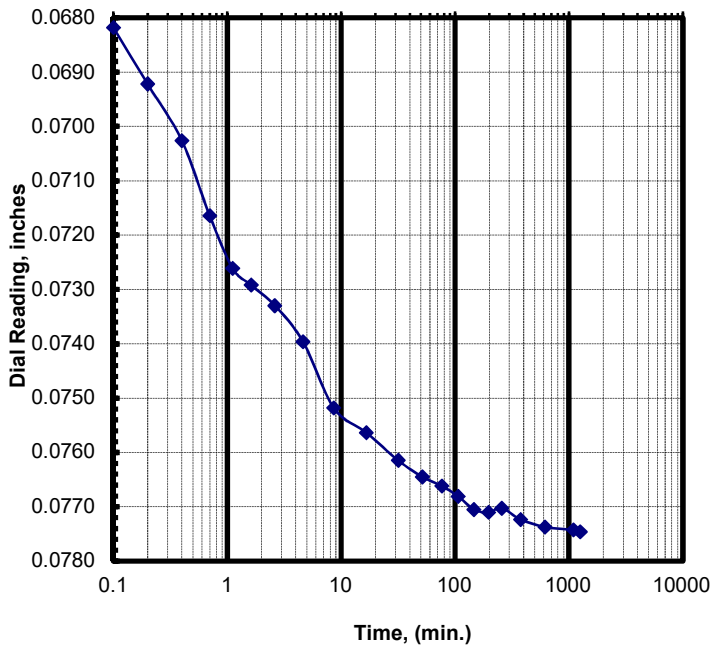


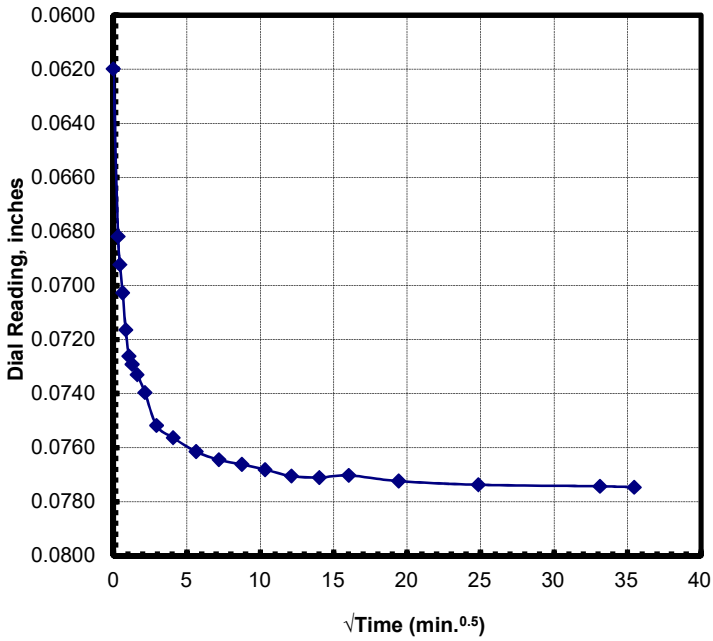


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0478	d_0 (in): 0.0478
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.0620	d_{100} (in): 0.0602
Boring & Depth: M-10, S-3, 4-6 ft	**PL:** NA	Δ_{hi} (in.): 0.0142	δ_{eop} (in.): 0.0124
Sample: Clayey Sand (SC), Gray	**- 200 (%):** NA	t_{50} (min): 1	t_{90} (min): 16

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
8/11/21 2:14:33 PM	0.00	0.00	0.0620
8/11/21 2:14:39 PM	0.10	0.32	0.0682
8/11/21 2:14:45 PM	0.20	0.45	0.0692
8/11/21 2:14:57 PM	0.40	0.63	0.0703
8/11/21 2:15:15 PM	0.70	0.84	0.0716
8/11/21 2:15:40 PM	1.12	1.06	0.0726
8/11/21 2:16:10 PM	1.62	1.27	0.0729
8/11/21 2:17:10 PM	2.62	1.62	0.0733
8/11/21 2:19:10 PM	4.62	2.15	0.0740
8/11/21 2:23:10 PM	8.62	2.94	0.0752
8/11/21 2:31:10 PM	16.62	4.08	0.0756
8/11/21 2:46:10 PM	31.62	5.62	0.0761
8/11/21 3:06:10 PM	51.62	7.18	0.0764
8/11/21 3:31:10 PM	76.62	8.75	0.0766
8/11/21 4:01:10 PM	106.62	10.33	0.0768
8/11/21 4:41:10 PM	146.62	12.11	0.0770
8/11/21 5:31:11 PM	196.63	14.02	0.0771
8/11/21 6:31:11 PM	256.63	16.02	0.0770
8/11/21 8:31:11 PM	376.63	19.41	0.0772
8/12/21 12:31:11 AM	616.63	24.83	0.0774
8/12/21 8:31:11 AM	1096.63	33.12	0.0774
8/12/21 11:12:00 AM	1257.45	35.46	0.0775

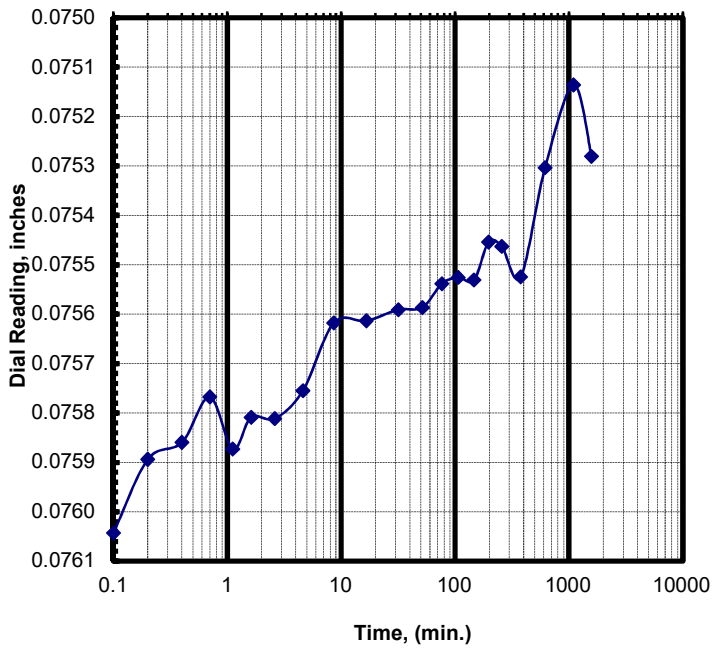


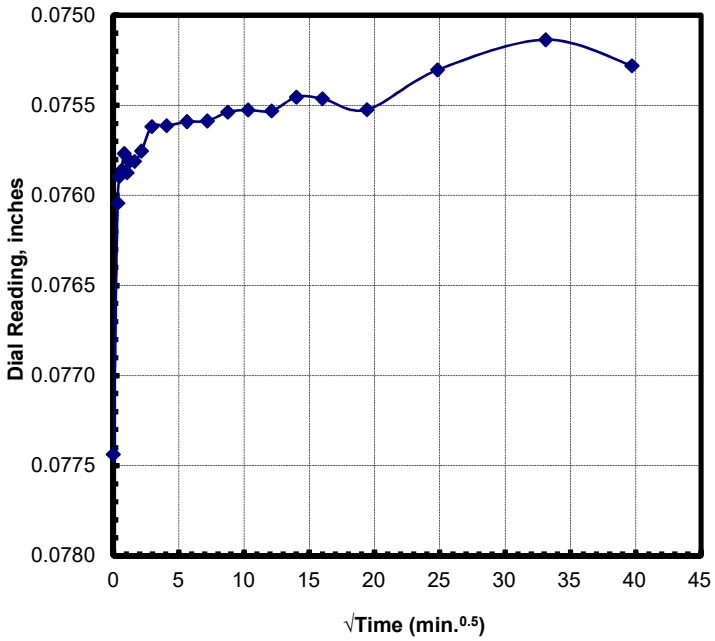


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0620	d_0 (in): 0.0620
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.0775	d_{100} (in): 0.0765
Boring & Depth: M-10, S-3, 4-6 ft	**PL:** NA	Δ_{hi} (in.): 0.0155	δ_{eop} (in.): 0.0145
Sample: Clayey Sand (SC), Gray	**- 200 (%):** NA	t_{50} (min): 1	t_{90} (min): 18

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
8/12/21 11:12:01 AM	0.00	0.00	0.0774
8/12/21 11:12:07 AM	0.10	0.32	0.0760
8/12/21 11:12:13 AM	0.20	0.45	0.0759
8/12/21 11:12:25 AM	0.40	0.63	0.0759
8/12/21 11:12:43 AM	0.70	0.84	0.0758
8/12/21 11:13:08 AM	1.12	1.06	0.0759
8/12/21 11:13:38 AM	1.62	1.27	0.0758
8/12/21 11:14:38 AM	2.62	1.62	0.0758
8/12/21 11:16:38 AM	4.62	2.15	0.0758
8/12/21 11:20:38 AM	8.62	2.94	0.0756
8/12/21 11:28:38 AM	16.62	4.08	0.0756
8/12/21 11:43:38 AM	31.62	5.62	0.0756
8/12/21 12:03:38 PM	51.62	7.18	0.0756
8/12/21 12:28:38 PM	76.62	8.75	0.0755
8/12/21 12:58:39 PM	106.63	10.33	0.0755
8/12/21 1:38:39 PM	146.63	12.11	0.0755
8/12/21 2:28:39 PM	196.63	14.02	0.0755
8/12/21 3:28:39 PM	256.63	16.02	0.0755
8/12/21 5:28:39 PM	376.63	19.41	0.0755
8/12/21 9:28:39 PM	616.63	24.83	0.0753
8/13/21 5:28:40 AM	1096.65	33.12	0.0751
8/13/21 1:28:40 PM	1576.65	39.71	0.0753
8/13/21 9:28:41 PM	2056.67	45.35	0.0758
8/14/21 5:28:41 AM	2536.67	50.37	0.0759
8/14/21 9:50:28 AM	2798.45	52.90	0.0755

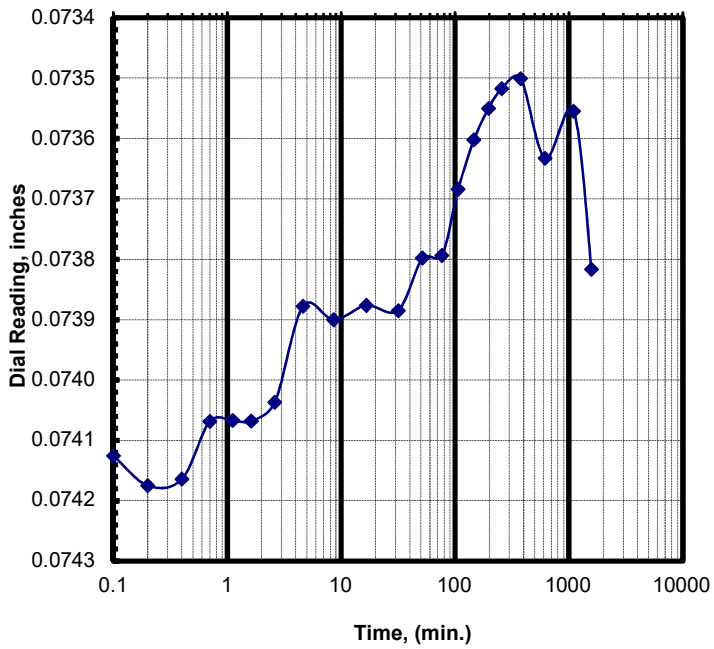


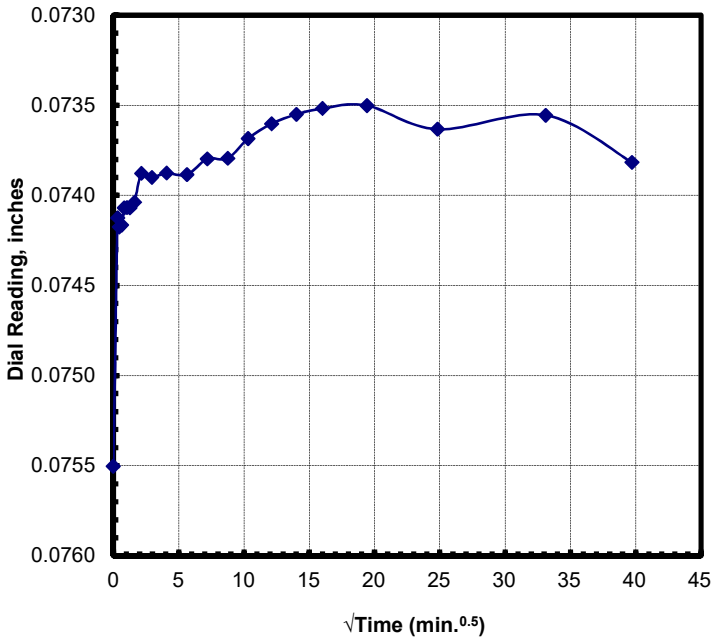


Project Number: 02541139	**LL:** NA	**$D_{0(min)}$ (in):** 0.0774	**d_0 (in):** 0.0774
Project Name: CPRA PO 181	**PL:** NA	**D_{end} (in):** 0.0755	**d_{100} (in):** 0.0755
Boring & Depth: M-10, S-3, 4-6 ft	**PL:** NA	**Δ_{hi} (in.):** -0.0019	**δ_{eop} (in.):** -0.0019
Sample: Clayey Sand (SC), Gray	**- 200 (%):** NA	**t_{50} (min):**	**t_{90} (min):**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 1 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
8/14/21 9:50:29 AM	0.00	0.00	0.0755
8/14/21 9:50:35 AM	0.10	0.32	0.0741
8/14/21 9:50:41 AM	0.20	0.45	0.0742
8/14/21 9:50:53 AM	0.40	0.63	0.0742
8/14/21 9:51:11 AM	0.70	0.84	0.0741
8/14/21 9:51:36 AM	1.12	1.06	0.0741
8/14/21 9:52:06 AM	1.62	1.27	0.0741
8/14/21 9:53:06 AM	2.62	1.62	0.0740
8/14/21 9:55:06 AM	4.62	2.15	0.0739
8/14/21 9:59:06 AM	8.62	2.94	0.0739
8/14/21 10:07:06 AM	16.62	4.08	0.0739
8/14/21 10:22:06 AM	31.62	5.62	0.0739
8/14/21 10:42:06 AM	51.62	7.18	0.0738
8/14/21 11:07:06 AM	76.62	8.75	0.0738
8/14/21 11:37:06 AM	106.62	10.33	0.0737
8/14/21 12:17:07 PM	146.63	12.11	0.0736
8/14/21 1:07:07 PM	196.63	14.02	0.0736
8/14/21 2:07:07 PM	256.63	16.02	0.0735
8/14/21 4:07:07 PM	376.63	19.41	0.0735
8/14/21 8:07:07 PM	616.63	24.83	0.0736
8/15/21 4:07:07 AM	1096.63	33.12	0.0736
8/15/21 12:07:08 PM	1576.65	39.71	0.0738
8/15/21 8:07:08 PM	2056.65	45.35	0.0738
8/16/21 4:07:09 AM	2536.67	50.37	0.0741
8/16/21 9:07:03 AM	2836.57	53.26	0.0732

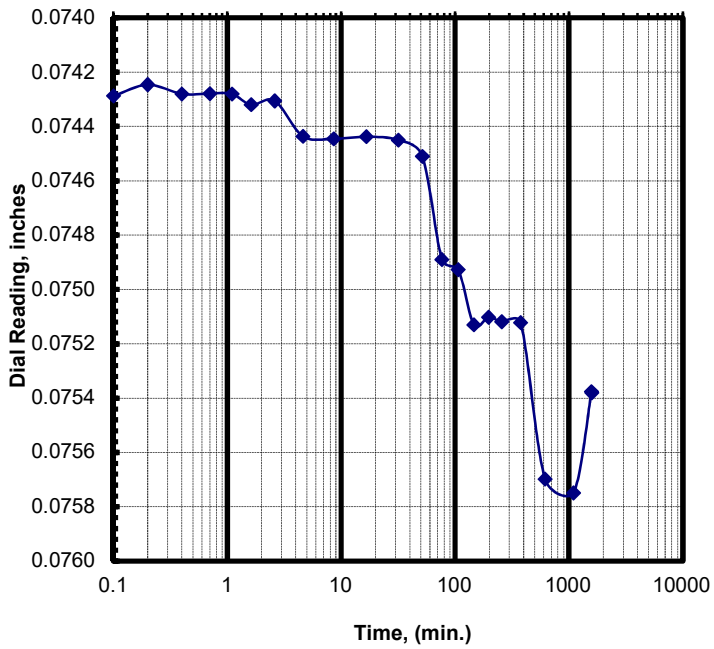


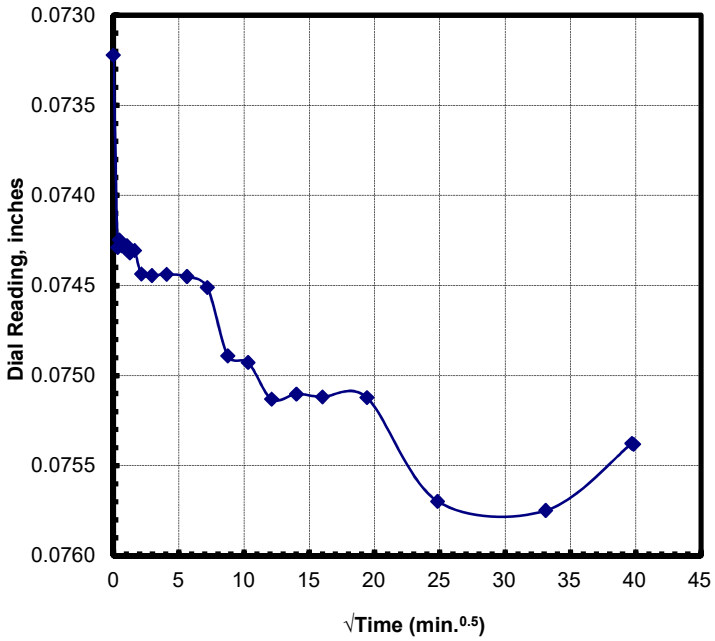


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0755	d_0 (in): 0.0755
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.0732	d_{100} (in): 0.0732
Boring & Depth: M-10, S-3, 4-6 ft	**PL:** NA	Δ_{hi} (in.): -0.0023	δ_{eop} (in.): -0.0023
Sample: Clayey Sand (SC), Gray	**- 200 (%):** NA	t_{50} (min):	t_{90} (min):

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 2 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
8/16/21 9:07:03 AM	0.00	0.00	0.0732
8/16/21 9:07:09 AM	0.10	0.32	0.0743
8/16/21 9:07:15 AM	0.20	0.45	0.0742
8/16/21 9:07:27 AM	0.40	0.63	0.0743
8/16/21 9:07:45 AM	0.70	0.84	0.0743
8/16/21 9:08:09 AM	1.10	1.05	0.0743
8/16/21 9:08:40 AM	1.62	1.27	0.0743
8/16/21 9:09:40 AM	2.62	1.62	0.0743
8/16/21 9:11:40 AM	4.62	2.15	0.0744
8/16/21 9:15:40 AM	8.62	2.94	0.0744
8/16/21 9:23:40 AM	16.62	4.08	0.0744
8/16/21 9:38:40 AM	31.62	5.62	0.0744
8/16/21 9:58:40 AM	51.62	7.18	0.0745
8/16/21 10:23:40 AM	76.62	8.75	0.0749
8/16/21 10:53:40 AM	106.62	10.33	0.0749
8/16/21 11:33:40 AM	146.62	12.11	0.0751
8/16/21 12:23:40 PM	196.62	14.02	0.0751
8/16/21 1:23:40 PM	256.62	16.02	0.0751
8/16/21 3:23:41 PM	376.63	19.41	0.0751
8/16/21 7:23:41 PM	616.63	24.83	0.0757
8/17/21 3:23:41 AM	1096.63	33.12	0.0757
8/17/21 11:23:42 AM	1576.65	39.71	0.0754
8/17/21 11:34:28 AM	1587.42	39.84	0.0754

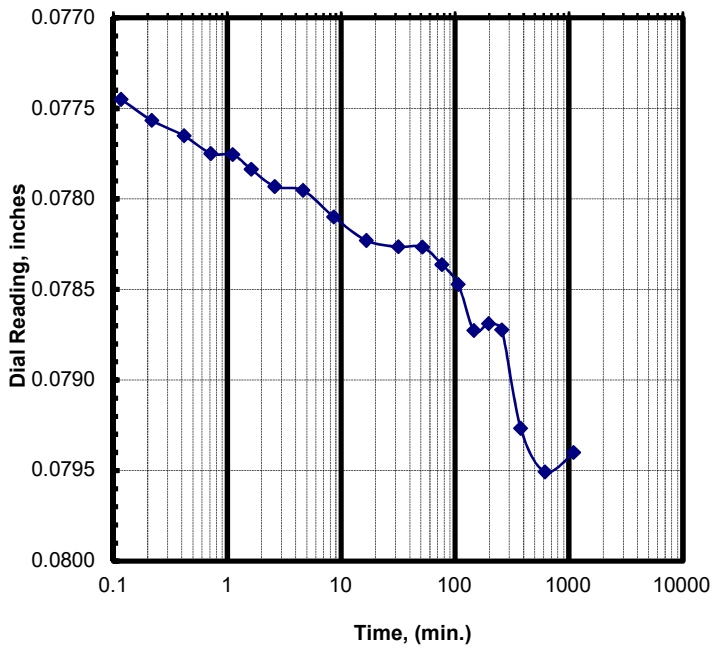


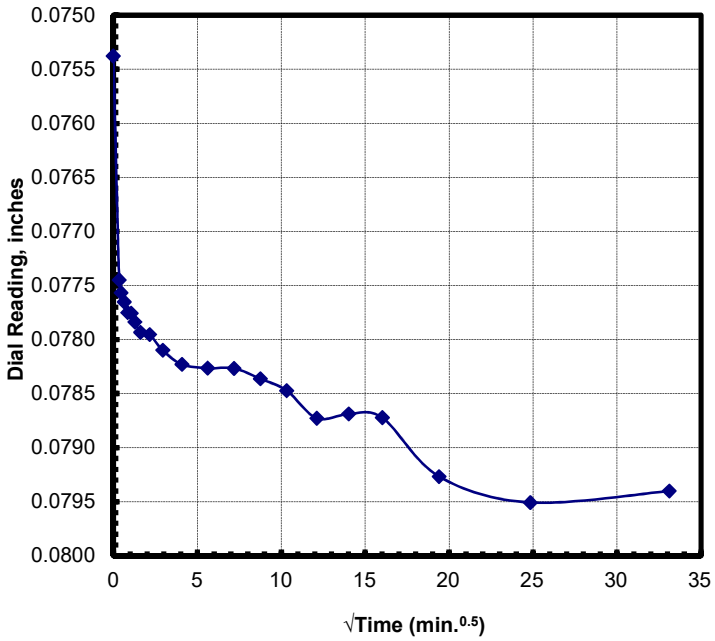


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0732	d_0 (in): 0.0732
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.0754	d_{100} (in): 0.0751
Boring & Depth: M-10, S-3, 4-6 ft	**PL:** NA	Δ_{hi} (in.): 0.0022	δ_{eop} (in.): 0.0019
Sample: Clayey Sand (SC), Gray	**- 200 (%):** NA	t_{50} (min):	t_{90} (min):

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 4 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
8/17/21 11:34:28 AM	0.00	0.00	0.0754
8/17/21 11:34:35 AM	0.12	0.34	0.0774
8/17/21 11:34:41 AM	0.22	0.47	0.0776
8/17/21 11:34:53 AM	0.42	0.65	0.0777
8/17/21 11:35:11 AM	0.72	0.85	0.0777
8/17/21 11:35:35 AM	1.12	1.06	0.0778
8/17/21 11:36:05 AM	1.62	1.27	0.0778
8/17/21 11:37:05 AM	2.62	1.62	0.0779
8/17/21 11:39:05 AM	4.62	2.15	0.0780
8/17/21 11:43:05 AM	8.62	2.94	0.0781
8/17/21 11:51:05 AM	16.62	4.08	0.0782
8/17/21 12:06:05 PM	31.62	5.62	0.0783
8/17/21 12:26:06 PM	51.63	7.19	0.0783
8/17/21 12:51:06 PM	76.63	8.75	0.0784
8/17/21 1:21:06 PM	106.63	10.33	0.0785
8/17/21 2:01:06 PM	146.63	12.11	0.0787
8/17/21 2:51:06 PM	196.63	14.02	0.0787
8/17/21 3:51:06 PM	256.63	16.02	0.0787
8/17/21 5:51:06 PM	376.63	19.41	0.0793
8/17/21 9:51:07 PM	616.65	24.83	0.0795
8/18/21 5:51:07 AM	1096.65	33.12	0.0794
8/18/21 1:51:07 PM	1576.65	39.71	0.0791
8/18/21 1:58:14 PM	1583.77	39.80	0.0792

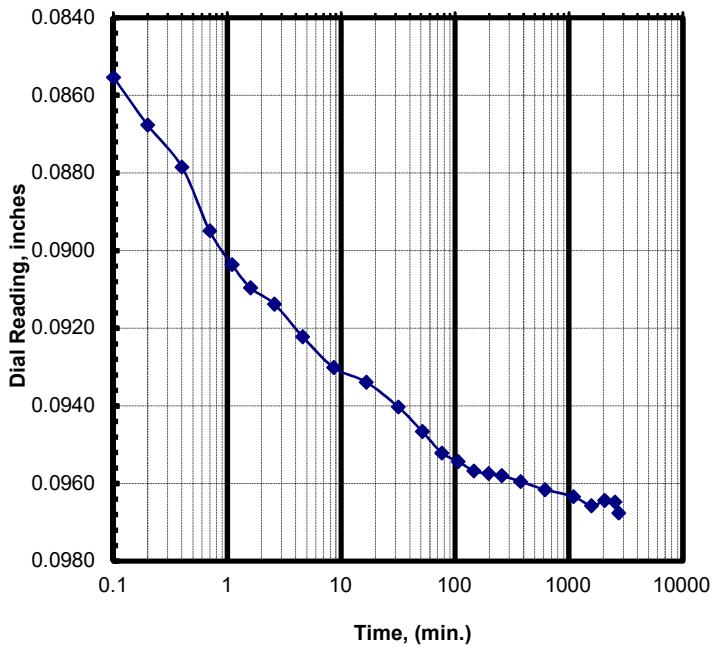


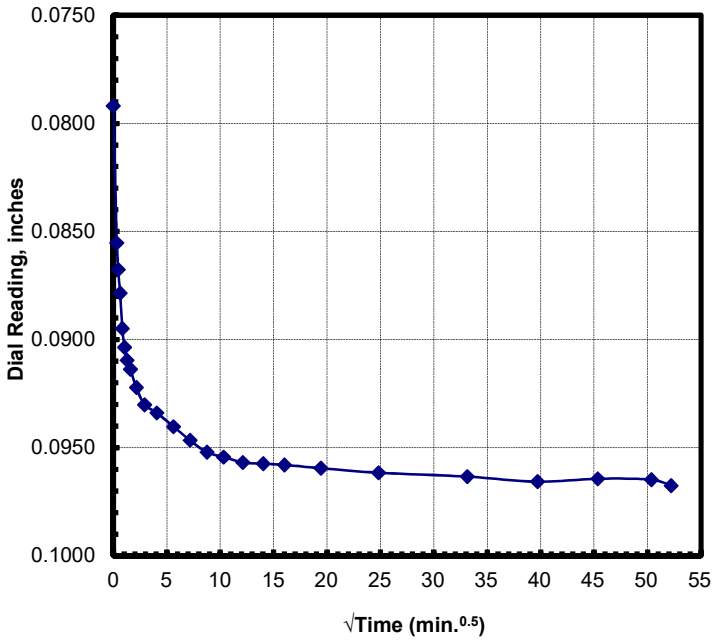


Project Number: 02541139	**LL:** NA	$D_{0(min)}$ (in): 0.0754	d_0 (in): 0.0754
Project Name: CPRA PO 181	**PL:** NA	D_{end} (in): 0.0792	d_{100} (in): 0.0785
Boring & Depth: M-10, S-3, 4-6 ft	**PL:** NA	Δ_{hi} (in.): 0.0038	δ_{eop} (in.): 0.0031
Sample: Clayey Sand (SC), Gray	**- 200 (%):** NA	t_{50} (min):	t_{90} (min):

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 8 tsf

Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
8/18/21 1:58:15 PM	0.00	0.00	0.0792
8/18/21 1:58:21 PM	0.10	0.32	0.0855
8/18/21 1:58:27 PM	0.20	0.45	0.0868
8/18/21 1:58:39 PM	0.40	0.63	0.0878
8/18/21 1:58:57 PM	0.70	0.84	0.0895
8/18/21 1:59:21 PM	1.10	1.05	0.0904
8/18/21 1:59:51 PM	1.60	1.26	0.0910
8/18/21 2:00:51 PM	2.60	1.61	0.0914
8/18/21 2:02:51 PM	4.60	2.14	0.0922
8/18/21 2:06:51 PM	8.60	2.93	0.0930
8/18/21 2:14:52 PM	16.62	4.08	0.0934
8/18/21 2:29:52 PM	31.62	5.62	0.0940
8/18/21 2:49:52 PM	51.62	7.18	0.0947
8/18/21 3:14:52 PM	76.62	8.75	0.0952
8/18/21 3:44:52 PM	106.62	10.33	0.0954
8/18/21 4:24:52 PM	146.62	12.11	0.0957
8/18/21 5:14:52 PM	196.62	14.02	0.0957
8/18/21 6:14:53 PM	256.63	16.02	0.0958
8/18/21 8:14:53 PM	376.63	19.41	0.0959
8/19/21 12:14:53 AM	616.63	24.83	0.0962
8/19/21 8:14:53 AM	1096.63	33.12	0.0963
8/19/21 4:14:54 PM	1576.65	39.71	0.0966
8/20/21 12:14:54 AM	2056.65	45.35	0.0964
8/20/21 8:14:55 AM	2536.67	50.37	0.0965
8/20/21 11:25:25 AM	2727.17	52.22	0.0968

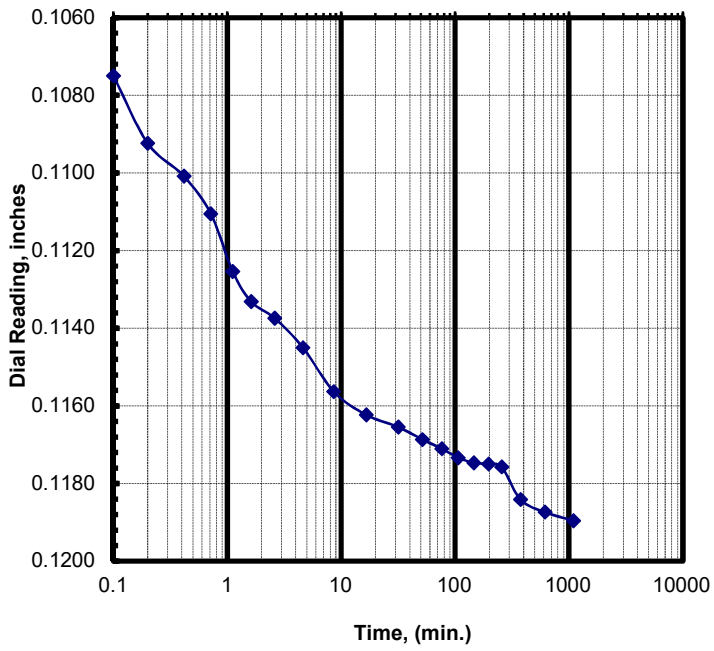


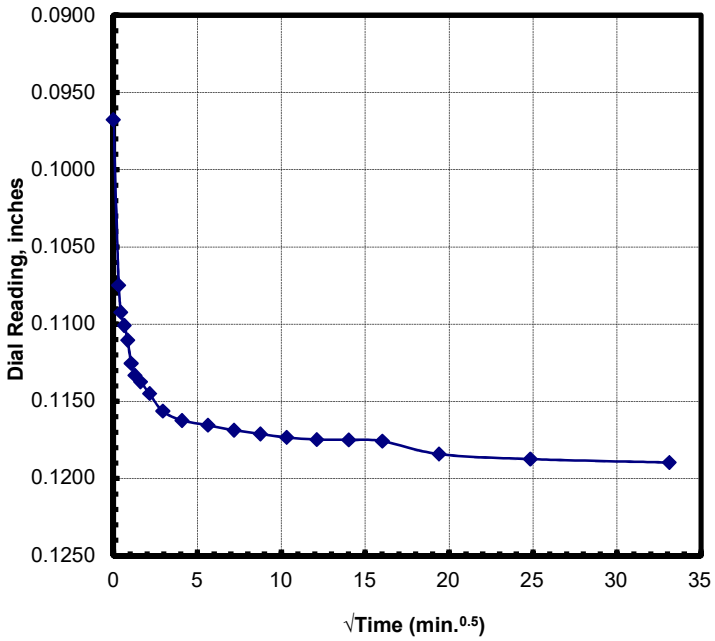


Project Number:	**02541139**	**LL: NA**	**$D_{0(min)}$ (in): 0.0792**	**d_0 (in): 0.0792**
Project Name:	**CPRA PO 181**	**PL: NA**	**D_{end} (in): 0.0968**	**d_{100} (in): 0.0952**
Boring & Depth:	**M-10, S-3, 4-6 ft**	**PL: NA**	**Δ_{hi} (in.): 0.0176**	**δ_{eop} (in.): 0.0160**
Sample:	**Clayey Sand (SC), Gray**	**- 200 (%): NA**	**t_{50} (min): 1.1**	**t_{90} (min): 38**

CONSOLIDATION TEST RESULTS - ASTM D 2435
t50 & t90 Curves for the Vertical Stress of 16 tsf

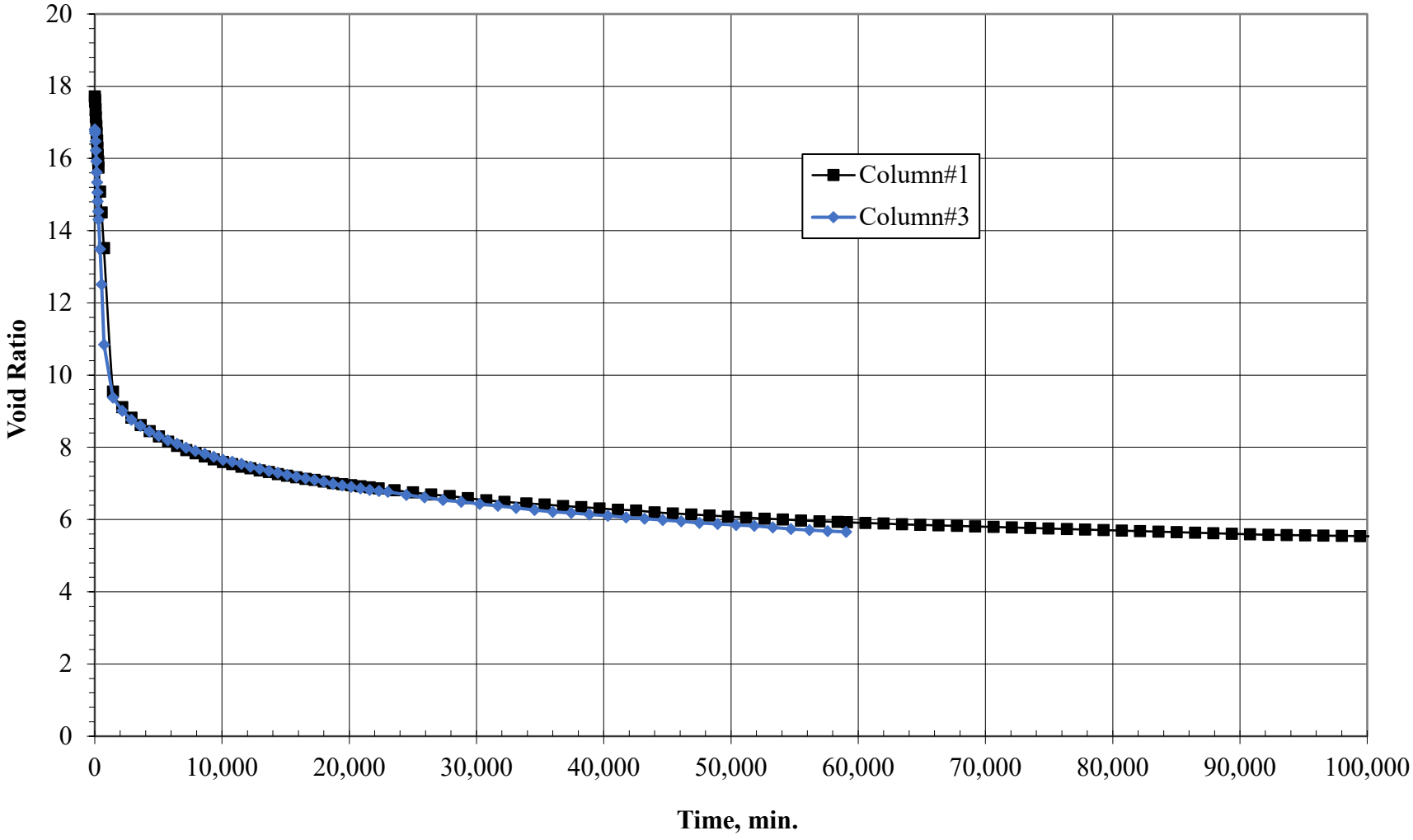
Date & Time	Elaspsed Time (min)	Sqrt(Time) $min^{0.5}$	Dial inches
8/20/21 11:25:26 AM	0.00	0.00	0.0968
8/20/21 11:25:32 AM	0.10	0.32	0.1075
8/20/21 11:25:38 AM	0.20	0.45	0.1092
8/20/21 11:25:51 AM	0.42	0.65	0.1101
8/20/21 11:26:09 AM	0.72	0.85	0.1110
8/20/21 11:26:33 AM	1.12	1.06	0.1125
8/20/21 11:27:03 AM	1.62	1.27	0.1133
8/20/21 11:28:03 AM	2.62	1.62	0.1137
8/20/21 11:30:03 AM	4.62	2.15	0.1145
8/20/21 11:34:03 AM	8.62	2.94	0.1156
8/20/21 11:42:04 AM	16.63	4.08	0.1162
8/20/21 11:57:04 AM	31.63	5.62	0.1165
8/20/21 12:17:04 PM	51.63	7.19	0.1169
8/20/21 12:42:04 PM	76.63	8.75	0.1171
8/20/21 1:12:04 PM	106.63	10.33	0.1173
8/20/21 1:52:04 PM	146.63	12.11	0.1175
8/20/21 2:42:04 PM	196.63	14.02	0.1175
8/20/21 3:42:04 PM	256.63	16.02	0.1176
8/20/21 5:42:05 PM	376.65	19.41	0.1184
8/20/21 9:42:05 PM	616.65	24.83	0.1187
8/21/21 5:42:05 AM	1096.65	33.12	0.1190





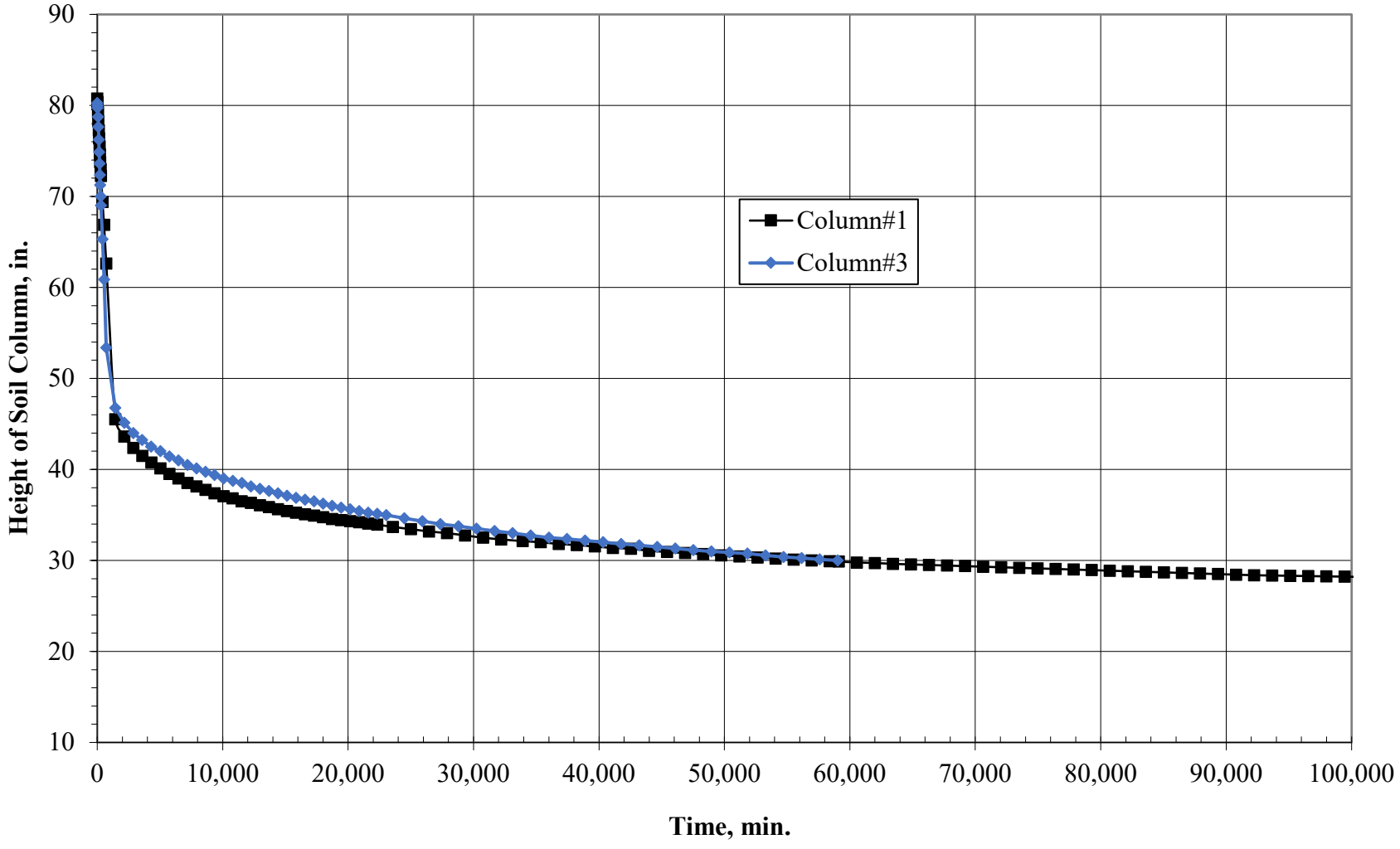
Project Number:	**02541139**	**LL: NA**	**$D_{0(min)}$ (in): 0.0968**	**d_0 (in): 0.0968**
Project Name:	**CPRA PO 181**	**PL: NA**	**D_{end} (in): 0.1190**	**d_{100} (in): 0.1163**
Boring & Depth:	**M-10, S-3, 4-6 ft**	**PL: NA**	**Δ_{hi} (in.): 0.0222**	**δ_{eop} (in.): 0.0195**
Sample:	**Clayey Sand (SC), Gray**	**- 200 (%): NA**	**t_{50} (min): 1**	**t_{90} (min): 7.3**

SETTLING COLUMN TEST RESULTS

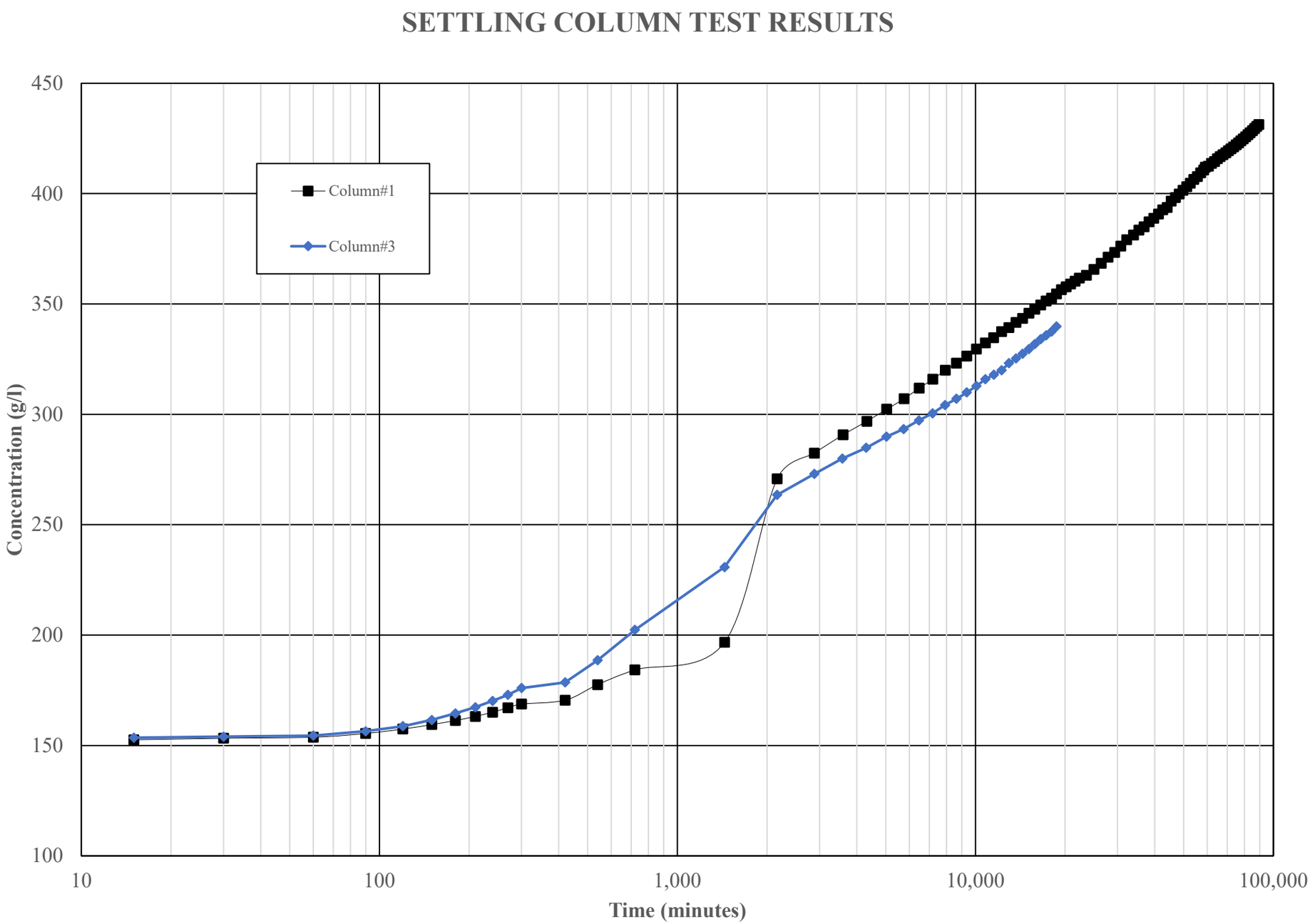


Appendix Figure No. G.2-72

SETTLING COLUMN TEST RESULTS



Appendix Figure No. G.2-73



Appendix Figure No. G.2-74

SELF-WEIGHT TESTS
Initial Sample Consolidation