GEOTECHNICAL INVESTIGATION
100-Year Design - 100% EAR
WEST BANK H.P.P.
HWY 45 Levee

April 2008

Introduction

This report contains the results of geotechnical designs performed for the proposed Westbank & Vicinity Hurricane Protection Project, Hwy 45 Levee enlargement. This investigation was performed to raise all Westbank H.P.P. levees to the 100 year design elevations by year 2057. The Westbank H.P.P. total protection length runs approximately 18 miles and is located South and West of New Orleans, Louisiana.

Specifically, this report is not intended to present a detailed, final geotechnical analysis for this project, but rather present the ongoing design alternatives for the subject levee section as technical backup for the Engineering Alternatives Report (EAR).

Recommended alternatives will require a final design, and a significant shift of the levee may require additional soil investigation as required by regulation.

The EAR will assess the alternatives at this design phase and present the alternatives to the Project Manager, who will help choose which alternative(s) to recommend for further analyses and design.

The earthwork alternative enlargement consists of a 10-foot wide levee crown with 1V on 4H side slopes, with the enlargement shifted towards the floodside. Wave berms are not necessary and stability berms are not necessary. At this time, it is unknown where the fill material will be obtained. All levee fill shall be compacted to 90% maximum dry density as per ASTM 698 with a moisture content between 5% above optimum and 3% below.

Other alternatives include construction of I-Wall or L-Wall utilizing the existing earthen levee section.

Reference is made to Westwego to Harvey Canal, Louisiana, DM #1, General Design Supplement No. 2. For this report, elevations are all in NAVD 88 datum unless otherwise noted. The required 2057 design elevation is 14.0 with a SWL of elev. 10.5 (The Engineering Division FTL and the Project Manager should confirm this before proceeding with the designs presented in this report). Station numbers are approximate and should be modified to fit existing protection elements.

This report covers the soils, foundation investigation and conditions, and the design for the crown elevation and side slopes of the earthen levee. For stability reasons, the levee will require a floodside levee enlargement.

This report applies only to this specific project and any changes in the configuration and location of this project may invalidate the conclusions and recommendations contained herein unless the changes have been reviewed and verified in writing. Recommendations and conclusions contained in this report are somewhat subjective and, therefore, should not be included in contract plans and specifications without review and consent.

History

The Hwy 45 levee was constructed in 1991 through1992 (November). The Hwy 45 Levee reach was constructed well floodside of the existing protection (LA Hwy 45). The Hwy 45 levee was constructed approximately 600 feet floodside of LA hwy 45. The Hwy 45 levee was designed for all compacted fill; however, construction concerns of field personnel modified construction to using uncompacted fill for the bottom half and compacted fill for the top half. The levee was constructed using adjacent borrow from the Hwy 45 borrow pit, located floodside of the levee. Final construction elevation was about 14.2 NGVD on average, with approximately 2 to 3 feet of construction settlement. Since construction (15 years), settlement at the crown has been in the range of 1½ to 2½ feet.

Field Investigations

A total of thirty-two (32) new undisturbed (5-in) borings were drilled for this levee reach, including centerline, floodside toe and protected side toe borings. The undisturbed borings were drilled to various depths, ranging from 70 to 90 feet. Twenty-two (22) borings drilled prior to the initial enlargement, ranging from 50 to 100 feet. The locations of all borings and CPTs are shown on Plates 2 and 3. The new undisturbed borings designated with a "WWHC-" prefix were drilled in Feb and Mar of 2007 for the purpose of 100 year protection design. Initial general type and undisturbed borings designated with an "HL" or "HLC" prefix were drilled in 1987 (HL-) and 1990 (HLC-). Plotted soil borings and testing can be found on in the Appendix. Undisturbed samples retrieved from these borings were in cohesive and semi-cohesive soils using a 5-inch diameter thin wall-sampling barrel. The samples were then classified and representative portions were preserved for laboratory testing.

For the current study, thirty-four (34) CPTs were obtained, most drilled to depths of about 70 feet and some drilled to 90 foot depths, including centerline, floodside toe and protected side toe borings. See the Appendix for CPT results.

Surveys for the current study consist of levee cross sections and were taken in 2006 (Survey No. 07-057). The survey cross sections were taken at 200 ft intervals throughout the reach. Extended surveys through the inside drainage canal and through the existing floodside borrow pits were taken on 600 foot intervals.

Laboratory Tests

For the undisturbed borings, visual classifications were made on all samples obtained from soil borings. Moisture content determinations were made on all cohesive soil samples. Shear strength tests included Unconfined Compression (UCT) tests and Unconsolidated Undrained (Q) tests. Liquid and plastic limits were determined on selected samples. Organic Matter Content tests were also performed on selected undisturbed samples. The results of these tests are summarized in the Appendix. Testing results were not available for a few of the borings at the time of this report. Consolidation tests have not been completed for any borings at this time (design phase) while the A-E laboratory (FFEB) awaits 4-inch consolidation rings.

Soil Conditions

The Hwy 45 Levee reach rests upon the Barataria ridge (Bayou Des Familles) and thus is atypical of most Westbank reaches that rest upon marsh deposits. Soil stratification is consistent throughout the proposed levee enlargement. From the Oak Cove levee tie-in to approximately 1000' north of the 10" Shell pipeline crossing, there are predominately fat clays with small layers of lean clays, both of which exhibit soft to medium consistency. From that point south, a large silty sand/sand deposit appears below approximate elevation -35, with a thickness of about 40 to 50 feet. This sand layer plays out at the bottom of the reach at the last turn near the V-Levee tie-in.

Miscellaneous Information

(Note: Aug 2009 - Both Pipelines will be directional drilled about 270 feet below the levee and an earthen levee will be constructed in lieu of T-wall)

Two pipeline crossings are currently being addressed by Relocations Section. The pipelines are owned by Chevron (22-inch, formally owned by Shell Oil) and Enterprise (10-inch, formally owned by Texaco). Currently the pipelines cross under a T-Wall constructed just after the first lift of the levee. For cost estimating purposes, a preliminary T-wall was analyzed for the pipelines (Plate 11). Preliminary stability analyses preclude an all earth alternative since current conditions (proximity of inside drainage ditches and floodside borrow pits) do not allow for a minimum factor-of-safety of 1.5 (MOP) required for pipeline crossings.

Soil Design Parameters

For the Hwy 45 levee (Sta. 426+xx to Sta. 575+xx), unit weights and shear strengths were based on new boring data with testing, historical boring data with testing, and Cone Penetrometer data.

Plates 4 and 5 present a composite plot of the variation of shear strength and unit weight with depth in the foundation beneath the centerline of the levee. The unit weights and shear strengths shown on this plot were obtained from laboratory tests performed on samples obtained from the recent undisturbed sample borings obtained for the current study. Increased shear strengths under the centerline of the existing levee foundation are reflective of consolidation and dissipation of excess pore water pressures from the initial levee construction. The design shear strengths were based upon laboratory Unconfined Compression Tests (UCT) and Unconsolidated Undrained (Q) triaxial tests. Additional design considerations were given to C/P lines and CPT data; however, neither appreciably weighed into adjusting the shear strength design lines. The wet unit weights were based upon laboratory dry densities and moisture contents.

New levee toe undisturbed boring data as well as CPT and historical borings were analyzed to generate composite plots of the variation of shear strength and unit weight with depth in the foundation near the Protected side and Floodside levee toes. The shear data from the floodside and protected sides were similar and thus combined to produce one shear strength and density plot for the toe data for either side of the levee. C over P' values for C/L reaches were based on pressure ratios obtained from Boussinesq Coefficients.

Design (General)

This project reach consist of 2 distinct levee reaches due to foundation soil differences. The northern half of the project has a foundation consisting predominately of fat clays. The southern half has a foundation of about 35 feet of fat clay underlain by a large silt and sand layer. A sensitivity analysis was performed, and as expected, an all clay foundation was more critical, and thus the design of the levee was based on an all clay foundation. One reach was chosen for analysis based on the soil tests results.

A seepage analysis was analyzed for the sand foundation as discussed later in this report.

The Hwy 45 design reach requires a design elevation of 14 NAVD88 with a Still Water Level (SWL) of 10.5 NAVD88 for the year 2057 Hydraulic requirements. No wave berms are required as long as a 1V on 4H slope up to elevation 14 is present. The Engineering Division FTL and the Project Manager should confirm this before proceeding with the design. Due to stability constrictions based on the required Spencer's analysis, a maximum gross elevation of 14.5 that includes a ½ foot overbuild of the crown was more critical and controlled the design.

Three alternatives were analyzed for this EAR. They are

(1) All earthen levee section.
(2) Existing earthen levee section with I-Wall.
(3) Existing earthen levee section with L-Wall.

First lift design plans (initial lift) are included in the Appendix.

Stability Analyses

Stability analyses and design sections are presented on Plates 6 and 7. Stability was determined by the following criteria adopted during the period of this design (Dec 07-Jan 08).

A) LMVD Method of Planes (MOP) for a Safety Factor of 1.3 required (if Spencer's is run)

Case (1) – Protected Side Analysis, Still water level (EL. +10.5 NAVD88), inside canal water level at EL. -10.0 NAVD88 (Obtained from initial lift analysis, No updated "Parish Master Drainage Plan").

Case (2) – Floodside Analysis, Low water level (natural ground level on both sides). Floodside water will vary from 0 to +4 due to tidal flow.

Stability analyses using Method of Planes allowed for a straddle enlargement to elev. 16.0. However, the UTEXAS4 Spencer's analysis required a maximum crown elevation of 14.5 in addition to a floodside shift of the levee enlargement. Consequently, the MOP analyses were reanalyzed using the UTEXAS4 section that controlled the levee design. See Plate 6 for MOP results.

B) LMVD Method of Planes (MOP) for a Safety Factor of 1.2 required (if Spencer's is run)

Case (1) – Protected Side Analysis, Water to Top of Crown (EL. +14.5 NAVD88), inside canal water level at EL. -10.0 NAVD88 (Obtained from initial lift analysis, No updated "Parish Master Drainage Plan").

C) Spencer Analysis (UTEXAS4, beta version for varying densities values in strata). Factor of Safety of 1.5 required.

Case (1) – Protected Side Analysis, Still water level (EL. +10.5 NAVD88), inside canal water level at EL. -10.0 NAVD88 (Obtained from initial lift analysis, No updated "Parish Master Drainage Plan" which was requested).

Case (2) – Protected Side Analysis, water to top of crown (EL. +14.5 NAVD88), inside canal water level at EL. -10.0 NAVD88 (Obtained from initial lift analysis,

No updated "Parish Master Drainage Plan" which was requested).

Case (3) – Floodside Analysis, Low water level (natural ground level on both sides). Floodside water will vary from 0 to +4 due to tidal flow.

Stability Results:

The following chart presents the results of the runs for the levee sections of the Hwy 45 levee with a crown elevation of 14.5 NAVD88.

Stability Method	Stability Case	Water Level	Req'd F.S.	Obtained F.S.
MOP	Prot. Side	SWL	1.3	1.39
MOP	Prot. Side	WTC	1.2	1.36
MOP	Floodside	Low Water	1.3	>1.4
UTEXAS4 (Spencer)	Prot. Side	SWL	1.5	1.48*
UTEXAS4 (Spencer)	Prot. Side	WTC	1.4	1.45
UTEXAS4 (Spencer)	Floodside	Low Water	1.5	>1.8

* Factor of Safety equals 1.5 after ¼ feet of settlement/shrinkage occurs, probably in the first year after construction.

Seepage Analysis

1) <u>General.</u>

The Highway 45 levee forms the southwest portion of the Westbank Hurricane Protection Levee. It is approximately 14,900 feet in length. A seepage analyses was performed along the levee to determine the overall stability of the levee against seepage and piping during flood events, and the need if any of seepage berms or relief wells. Levee baseline stationing was developed for the project and encompasses levee station 426 + xx to levee station 575 + xx. Based upon available boring information along the levee and the resulting stratification of the levee foundation, the project was divided into two reaches for purposes of the seepage evaluations. Reach 1 is from levee station 426 + xx to levee station 509 + xx, and Reach 2 is from levee station 509 + xx to the end of project at levee station 575 + xx. Seepage analyses were performed according to the guidelines reported in section 8 of DIVR 1110-1-400 as revised in December, 1998.

2) <u>Reach 1 - Station 426 + xx to 509 + xx</u>.

Approximately 14 undisturbed borings were utilized for stratification of the foundation along this reach of the levee. These borings included 7 borings, borings WWHC-43UCL to WWHC-49UCL taken along the levee crest in 2007, and six prior borings, borings HL-3 thru boring HL-8 and boring WB-4U, taken on the riverside of the levee toe in 1987. Most of the borings were taken in depth to elevations ranging from elevation -55 to elevation -80. These borings indicated predominantly impermeable clay soils with some intermittent thin silt layers. None of these borings penetrated though this impermeable top stratum into more permeable sand or silty sand layers that could be considered an aquifer for seepage concerns. Two borings, boring WB-4U and HL-6 were taken to greater depths to elevation -100 NGVD. These borings did encounter silty sand layers at approximately elevation -90 NGVD. However at that depth, the impermeable blanket thickness for seepage considerations would be approximately 93 feet thick, and in areas where riverside borrow was taken to a depth at elevation -20 NGVD the blanket thickness is still 70 feet. Due to the large thickness of the impermeable blanket, no seepage analyses were necessary for this reach as there are no seepage concerns. Boring profiles and geological interpretations are shown in Plates 14, 15, and 16, as well as the geological quad taken from the Geological Investigation performed by Waterways Experiment Station in 1994.

3) <u>Reach 2 – Station 509 + xx to 575 + xx</u>.

Approximately 16 borings were utilized to evaluate foundation conditions along this reach. 9 borings, borings WWHC-50UCL thru WWHC-58UCL taken along the levee crest in 2007, and 7 prior borings, borings HL-9 thru HL-15 taken near the riverside toe of the levee in 1987. All borings indicated a top stratum of mostly impermeable clays with some intermittent thin layers of silt, underlain by a substratum of sand and silty sand. Most of the borings were taken to a depth ranging from elevation -60 to -80 N.A.V.D.88. None of these borings penetrated the substratum sands and silty sands. Boring HL-11 was taken to a depth at Elevation -100 N.G.V.D. This boring did penetrate through the substratum sand layer into impermeable clays at elevation -90 N.G.V.D. Since the thickness of this sand / silty sand layer is an important factor in seepage evaluations, the bottom of the sand/silty sand was assumed at this elevation of -90 feet N.G.V.D for the entire reach. A second critical factor in performing seepage analyses is the thickness of the top stratum impermeable clay layer or blanket. Boring WWHC-50UCL indicated the thinnest blanket thickness with the bottom of the topstratum clay layer at elevation -20 N.A.V.D.88. In addition, the critical cross section taken along this reach was taken at levee station 516 + xx. It was considered the most critical because it indicated that at a distance of 106 feet from the land or protected side of the levee toe the top stratum impervious blanket would be its thinnest along the entire reach at 12 feet. Therefore boring WWHC-50CL, and the cross section at station 516 + xx were utilized to represent the most critical and worst case section for the entire reach for seepage analyses. The section analyzed is shown in the Appendix under the Seepage folder as the file titled "Seepage.jpg." In this section the blanket thickness is 24 feet beneath and at the river side toe of the levee narrowing to 12 feet in thickness at 106 feet from the riverside toe of the levee. The aquifer thickness (d) is 70 feet. Permeability of the aquifer, (Kf) was based on D10 gradations taken in the substratum sands from all borings in this reach and was found to be 0.0280 cm/sec. Three conditions were considered for analyses. The first condition was seepage at the landside toe of the levee without a river side borrow area; condition two was seepage at the landside toe of the

levee with a river side borrow area taken to a depth at elevation -12, N.A.V.D.88; and the final condition was seepage at the thinnest part of the landside impermeable blanket approximately 106 feet from the landside toe of the levee with a river side borrow area taken to a depth at elevation -12 N.A.V.D.88. Seepage analyses of condition number one indicated an upward seepage gradient of 0.08 which is less than the critical seepage gradient of 0.8 and results in a factor of safety of 10. Seepage analyses of condition number two indicated an upward seepage gradient of 0.18 which is less than the critical seepage gradient of 0.8 and results in a factor of safety of 4.4. Seepage analyses of condition number three indicated an upward seepage gradient of 0.32 which is less than the critical seepage gradient of 0.8 and results in a factor of safety of 2.5. Since this section was considered the worst case condition no other sections were analyzed. The required factor of safety is 1.6 therefore concern for seepage and piping in this reach is unwarranted.

4) Conclusions.

Based on this seepage evaluation, the structural integrity of the levee from seepage and piping of the levee foundation during flood conditions along the Louisiana Highway 45 portion of the Westbank Hurricane Protection Levee will not be compromised.

CANTILEVER SHEETPILE WALL

(Note: Aug 2009 - I-Walls no longer a part of Plans – Both Pipelines will be directional drilled about 270 feet below the levee and an earthen levee will be constructed in lieu of T-wall)

The cantilever sheetpile wall alternative was designed with flowline water applied at Elev. 10.5 NAVD88. The required penetrations for the stability of the walls were determined by the method of planes analysis for both the short term undrained (Q) and the long term drained (S) cases. The walls were analyzed for the Q–case using design shear strengths from the soils reports referenced in paragraph 1 above. The walls were analyzed for the S-case using the shear strengths of c = 0 and N = 23° for clay strata and c = 0 and N = 28° for silt strata. The following criteria were applied:

Soil Design Case	Factor of Safety	Applied Criteria
Q	1.5	Water to SWL + Waveload
Q	1.3	Water to Top Of Wall

Penetration ratio shall be at least 3 times the exposed height (H) on the protected side of the wall or 10 feet below the lower ground elevation, whichever is lower.

The factors of safety were applied to the design shear strengths as follows:
Using the resulting shear strength, net horizontal water and earth pressure diagrams were determined for movement toward each side of the sheet pile. Using these distributions of pressure, summations of horizontal forces were equated to zero for various tip penetrations.

At these penetrations, summations of overturning moments about the bottom of the pile were determined. The required depth of penetration to satisfy the stability criteria was determined where the summation of moments was equal to zero. All sheetpile stability was analyzed with the X0031 program (CWALSHT), and run for both the "sweep" and "fixed" method. The governing case was the 10 feet below the ground surface case. The net pressure analysis for the critical load case is shown on Plate 10.

CANTILEVER SHEETPILE WALL GLOBAL STABILITY

(Note: Aug 2009 - I-Walls no longer a part of Plans – Both Pipelines will be directional drilled about 270 feet below the levee and an earthen levee will be constructed in lieu of T-wall)

The cantilever sheetpile wall alternative was analyzed for global stability. This run is applicable to both the I-Wall and L-Wall alternative.

Case (1) – Protected Side Analysis, Water to Top of Wall (EL. +14.5 NAVD88), inside canal water level at EL. -10.0 NAVD88. A minimum Factor-of-Safety of 1.3 required. A Factor-of-Safety of 1.39 was obtained. See Plate 8 for details.

Case (2) – Protected Side Analysis w/tension crack, Water to Top of Wall (EL. +14.5 NAVD88), inside canal water level at EL. -10.0 NAVD88. A minimum Factor-of-Safety of 1.3 required. A Factor-of-Safety of 1.35 was obtained. See Plate 9 for details.

For case 2, the tension crack depth was determined to be the lower of three values:
(a) Hydrofracturing
(b) Text book tension crack calculation
(c) CWALSHT, run for both the "sweep" and "fixed" method. The CWALSHT program gave the most critical crack elevation (elev. -10.5)

L-WALL

(Note: Aug 2009 - I-Walls no longer a part of Plans – Both Pipelines will be directional drilled about 270 feet below the levee and an earthen levee will be constructed in lieu of L-wall)

The L-wall alternative is similar to the I-wall alternative in that the sheetpile length remains the same. An ultimate pile capacity curve for 12-inch concrete piles is presented on Plates 12 and 13, for an all clay foundation and a clay/sand foundation for the southern portion of the project. For sheetpile tension capacity curves, we recommend using the tension curves for the 12-inch concrete piles and divide the ultimate loads by half since the sheetpile will have ½ the surface area of the concrete pile. This should suffice for a cost estimate. If an L-wall alternative is chosen, we will provide an updated sheetpile capacity curve.

Borrow Pit

There appears to be no government furnished borrow pit proposed for this work. Borrow is expected to be Contractor furnished at this time. Borrow should meet all current criteria, including organic matter content to not exceed 9%, a PI greater than 10 and clays with 35% or less sand content. Government furnished borrow pits, if used, shall be forwarded to this branch for design and approval.

Settlement

Future settlement due to the induced loads from the proposed levee enlargement was predicted using empirical methods based upon past settlement history obtained from past surveys. This portion of the Westwego to Harvey Canal HPP has received the initial construction lift only. Since construction, settlement at the crown has been in the range of 1½ to 2½ feet over a period of 15 years. Due to stability constraints of the Spencer's analysis, the final levee grade will include a ½ foot overbuild above the 2057 required elevation, which will require 2½ feet to 3½ feet of additional fill over the existing levee. Although we currently await the results of the bulk of consolidation testing for the Hwy 45 reach, the few consolidation curves we presently have indicate that this levee enlargement will not exceed the maximum past pressures and will not result in significant settlement.

Empirical data indicates that expected modest settlement will be slow and another lift is not anticipated for at least 20 years to stay above required 100-year flood elevations.

Borings & CPTs

a. Undisturbed soil boring data from the following borings was available.

BORING	LATITUDE	LONGITUDE	DATE TAKEN	DEPTH (FT)
WWHC-41UCL	29°50'38.00"	90°07'23.32"	Mar 07	72
WWHC-41UPT	29°50'38.72"	90°07'22.98"	Mar 07	72
WWHC-42UCL	29°50'28.60"	90°07'18.96"	Apr 07	92
WWHC-42UFT	29°50'28.49"	90°07'19.49"	Apr 07	70
WWHC-43UCL	29°50'19.88"	90°07'13.46"	Apr 07	72
WWHC-43UPT	29°50'20.09"	90°07'12.96"	Apr 07	72
WWHC-44UCL	29°50'11.20"	90°07'07.87"	Apr 07	92
WWHC-44UFT	29°50'11.09"	90°07'08.31"	Apr 07	72
WWHC-45UCL	29°50'03.05"	90°07'02.69"	Apr 07	72
WWHC-45 UPT	29°50'03.31"	90°07'02.11"	Apr 07	72
WWHC-46UCL	29°49'54.10"	90°06'57.49"	Apr 07	92
WWHC-46UFT	29°49'53.82"	90°06'58.09"	Apr 07	72
WWHC-47UCL	29°49'45.04"	90°06'51.78"	Apr 07	72
WWHC-47UPT	29°49'45.37"	90°06'51.19"	Apr 07	72
WWHC-48UCL	29°49'36.66"	90°06'46.74"	Apr 07	92
WWHC-48UFT	29°49'36.44"	90°06'47.12"	Apr 07	72
WWHC-49UCL	29°49'27.23"	90°06'42.10"	Apr 07	72
WWHC-49UPT	29°49'27.43"	90°06'41.25"	Apr 07	70
WWHC-50UCL	29°49'17.99"	90°06'38.75"	Apr 07	90
WWHC-50UFT	29°49'17.78"	90°06'39.20"	Apr 07	70
WWHC-51UCL	29°49'08.27"	90°06'40.64"	Apr 07	70
WWHC-51UPT	29°49'08.01"	90°06'39.78"	Apr 07	70
WWHC-52UCL	29°48'58.56"	90°06'43.83"	Apr 07	90
WWHC-52UFT	29°48'58.76"	90°06'44.20"	Apr 07	70
WWHC-53UCL	29°48'49.78"	90°06'47.92"	Apr 07	72
WWHC-53UPT	29°48'49.35"	90°06'47.52"	Apr 07	70
WWHC-54UCL	29°48'42.00"	90°06'55.27"	Apr 07	92
WWHC-54UFT	29°48'42.01"	90°06'55.11"	Apr 07	72
WWHC-55UCL	29°48'34.06"	90°07'02.50"	Apr 07	72
WWHC-55UPT	29°48'33.61"	90°07'01.96"	Apr 07	72
WWHC-56UCL	29°48'29.65"	90°07'00.12"	Apr 07	92
WWHC-56UFT	29°48'29.77"	90°07'00.07"	Apr 07	72

The boring logs are shown in the Appendix.

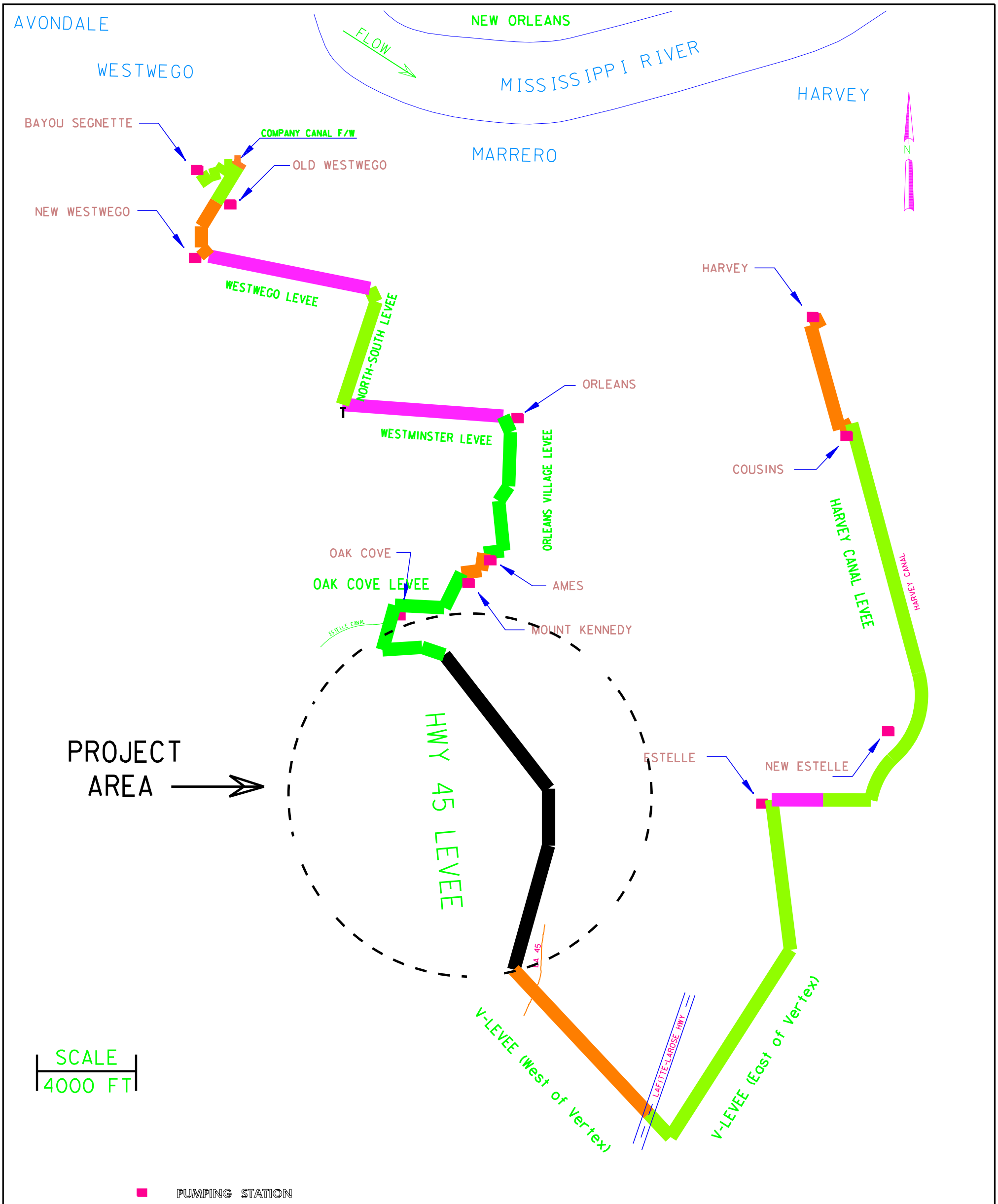
b. The listed Cone Penetrometer data was available.

CONE PENETROMETER	LATITUDE	LONGITUDE	DATE TAKEN	DEPTH (FT)
WWHCCPT-38CL	29°50'33.41"	90°07'20.73"	Mar-2007	92
WWHCCPT-38PT	29°50'33.63"	90°07'19.89"	Mar-2007	71
WWHCCPT-39CL	29°50'24.27"	90°07'16.28"	Mar-2007	71
WWHCCPT-39FT	29°50'24.07"	90°07'16.74"	Mar-2007	71
WWHCCPT-40CL	29°50'15.81"	90°07'10.84"	Mar-2007	91
WWHCCPT-40PT	29°50'16.01"	90°07'10.35"	Mar-2007	71
WWHCCPT-41CL	29°50'07.11"	90°07'05.21"	Mar-2007	71
WWHCCPT-41FT	29°50'06.87"	90°07'05.66"	Mar-2007	71
WWHCCPT-42CL	29°49'57.93"	90°06'59.47"	Mar-2007	91
WWHCCPT-42PT	29°49'58.70"	90°06'59.07"	Mar-2007	71
WWHCCPT-43CL	29°49'49.40"	90°06'54.50"	Mar-2007	71
WWHCCPT-43FT	29°49'49.24"	90°06'54.91"	Mar-2007	71
WWHCCPT-44CL	29°49'40.86"	90°06'49.24"	Mar-2007	91
WWHCCPT-44PT	29°49'41.27"	90°06'48.52"	Mar-2007	71
WWHCCPT-45CL	29°49'31.61"	90°06'43.74"	Mar-2007	71
WWHCCPT-45FT	29°49'31.42"	90°06'44.26"	Mar-2007	71
WWHCCPT-46CL	29°49'22.01"	90°06'40.19"	Mar-2007	91
WWHCCPT-46PT	29°49'22.36"	90°06'39.41"	Mar-2007	71
WWHCCPT-47CL	29°49'13.19"	90°06'39.09"	Mar-2007	71
WWHCCPT-47FT	29°49'13.24"	90°06'39.73"	Mar-2007	71
WWHCCPT-48CL	29°49'03.43"	90°06'42.24"	Mar-2007	91
WWHCCPT-48PT	29°49'03.24"	90°06'41.59"	Mar-2007	71
WWHCCPT-49CL	29°48'54.26"	90°06'45.21"	Mar-2007	71
WWHCCPT-49FT	29°48'54.42"	90°06'45.73"	Mar-2007	71
WWHCCPT-50CL	29°48'46.22"	90°06'51.28"	Mar-2007	91
WWHCCPT-50PT	29°48'45.62"	90°06'50.72"	Mar-2007	71
WWHCCPT-51CL	29°48'38.34"	90°06'58.21"	Mar-2007	71
WWHCCPT-51FT	29°48'38.65"	90°06'59.14"	Mar-2007	71
WWHCCPT-52CL	29°48'26.13"	90°06'55.79"	Mar-2007	91
WWHCCPT-52PT	29°48'26.75"	90°06'55.31"	Mar-2007	71
WWHCCPT-107CL	29°50'28.82"	90°07'19.04"	Mar-2007	91
WWHCCPT-108CL	29°50'02.81"	90°07'02.53"	Mar-2007	71
WWHCCPT-109CL	29°49'36.76"	90°06'46.78"	Mar-2007	91
WWHCCPT-133PT	29°50'38.66"	90°07'23.23"	Mar-2007	71
WWHCCPT-134FT	29°49'53.83"	90°06'58.29"	Mar-2007	71

c. Historical soil boring data from the following borings was available.

BORING	LATITUDE	LONGITUDE	DATE TAKEN	DEPTH (FT)
HL-1	29°50'31.17"	90°07'22.70"	May 87	100
HL-2	29°50'22.28"	90°07'17.98"	May 87	50
HL-3	29°50'14.00"	90°07'12.77"	May 87	50
HL-4	29°50'05.33"	90°07'07.52"	May 87	50
HL-5	29°49'56.05"	90°07'01.88"	May 87	50
HL-6	29°49'45.17"	90°06'54.92"	May 87	100
HL-7	29°49'37.91"	90°06'50.15"	May 87	50
HL-8	29°49'29.30"	90°06'45.60"	May 87	50
HL-9	29°49'19.80"	90°06'42.10"	May 87	50
HL-10	29°49'10.40"	90°06'42.70"	May 87	50
HL-11	29°49'01.0"	90°06'46.0"	May 87	100
HL-12	29°48'51.9"	90°06'49.6"	May 87	50
HL-13	29°48'44.4"	90°06'56.5"	May 87	50
HL-14	29°48'36.6"	90°07'03.9"	May 87	50
HL-15	29°48'28.8"	90°06'59.5"	May 87	100
HLC-1	29°50'31.0"	90°07'20.0"	Jan 90	80
HLC-2	29°50'13.5"	90°07'09.4"	Feb 90	80
HLC-3	29°49'57.2"	90°06'59.3"	Feb 90	80
HLC-4	29°49'39.7"	90°06'48.6"	Feb 90	80
HLC-5	29°49'20.6"	90°06'39.7"	Feb 90	80
HLC-6	29°49'01.5"	90°06'43.0"	Feb 90	80
HLC-7	29°48'42.4"	90°06'55.0"	Feb 90	80

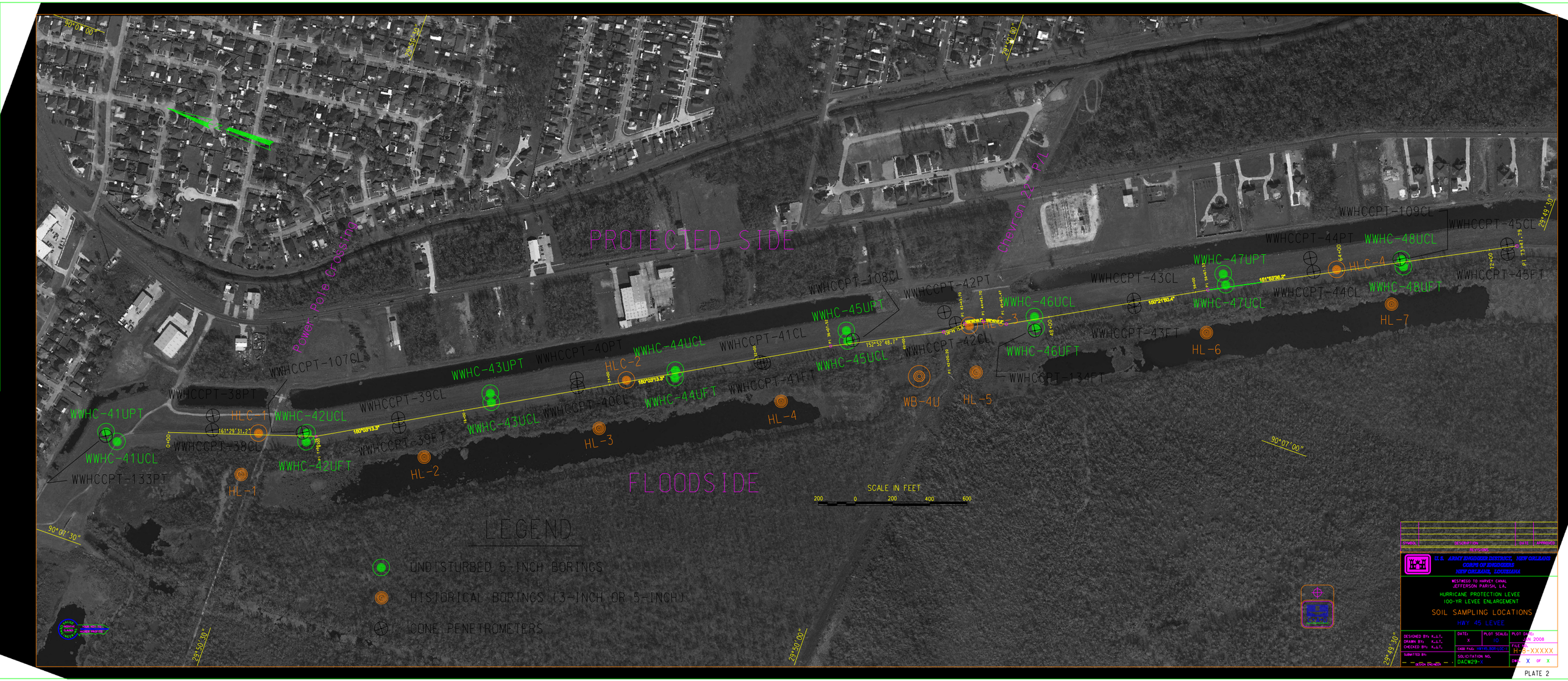
fln=WESTHARV



WESTWEGO TO HARVEY CANAL HURRICANE PROTECTION PROJECT

WESTWEGO TO HARVEY CANAL
HURRICANE PROTECTION
LEVEE PROTECTION LOOP
JAN 2008

PLATE 1



SYMBOL	DESCRIPTION	DATE	APPROVED

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

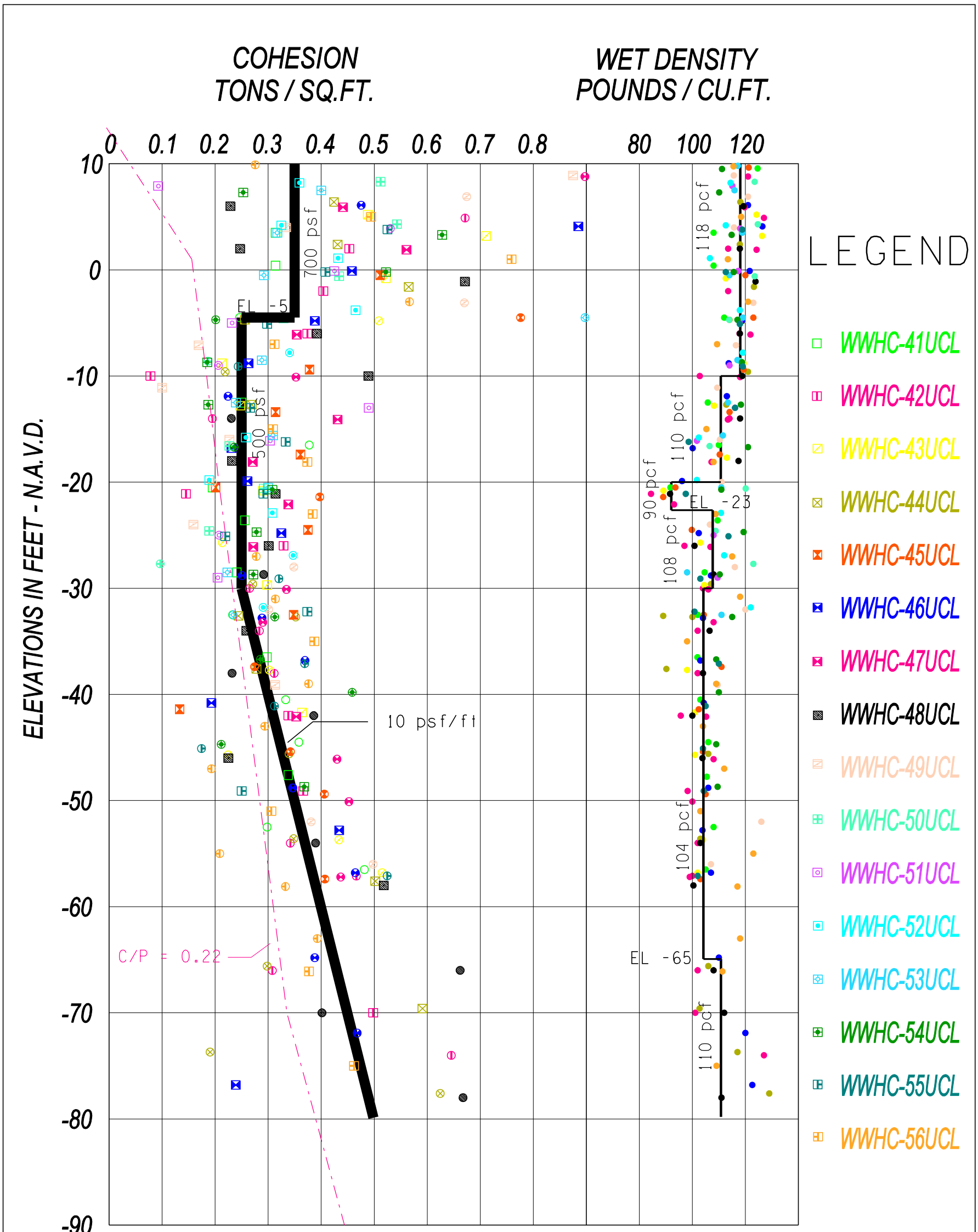
WESTWEGO TO HARVEY CANAL
JEFFERSON PARISH, LA.
HURRICANE PROTECTION LEVEE
100-YR LEVEE ENLARGEMENT

SOIL SAMPLING LOCATIONS
HWY 45 LEVEE

DESIGNED BY: K.J.T.	DATE: X	PLOT SCALE: 10	PLOT DATE: JUN 2008
DRAWN BY: K.J.T.			
CHECKED BY: K.J.T.	CADD FILE: HWY45_BOR_LOC.DGN		FILE NO. H-3-XXXXX
SUBMITTED BY: DESIGN ENGINEER	SOLICITATION NO. DACW29-X		DWG. X OF X

PLATE 2

PLATE 3
SOIL SAMPLING LOCATIONS
HWY 45 LEVEE
HURRICANE PROTECTION LEVEE
100-YR LEVEE ENLARGEMENT
WESTWEGO TO HARVEY CANAL
JEFFERSON PARISH, LA.
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA
DESIGNED BY: K.J.T.
DRAWN BY: K.J.T.
CHECKED BY: K.J.T.
SUBMITTED BY:
DATE: X
PLOT SCALE: 10
PLOT DATE: JAN 2008
CADD FILE: HWY45_SOILSCP
FILE NO. H-8-XXXXX
SOLICITATION NO. DACW29-X
DWG. X OF X
LEGEND
UNDISTURBED 5-INCH BORINGS
HISTORICAL BORINGS (3-INCH OR 5-INCH)
CONE PENETROMETERS
SCALE IN FEET
200 0 200 400 600
FLOODSIDE
Enterprise 10" PL
PROTECTED SIDE
SEEPAGE REACH 1
SEEPAGE REACH 2
HWY 45 LEVEE
LA HWY 45
(BARATARIA BLVD)
HL-8
HL-9
HL-10
HL-11
HL-12
HL-13
HL-14
HLC-5
HLC-6
HLC-7
WWHC-49UCL
WWHC-49UPT
WWHC-50UCL
WWHC-50UFT
WWHC-51UCL
WWHC-51UPT
WWHC-52UCL
WWHC-52UFT
WWHC-53UCL
WWHC-53UPT
WWHC-54UCL
WWHC-54UFT
WWHC-55UCL
WWHC-55UPT
WWHCCPT-46CL
WWHCCPT-46PT
WWHCCPT-47CL
WWHCCPT-47FT
WWHCCPT-48CL
WWHCCPT-48PT
WWHCCPT-49CL
WWHCCPT-49FT
WWHCCPT-50CL
WWHCCPT-50PT
WWHCCPT-51CL
WWHCCPT-51FT
WWHCCPT-52CL
WWHCCPT-52PT
WWHC-55UCL
WWHC-55UPT
90°07'00"
29°48'30"
29°49'00"



SYMBOLOGY

○ UCT

□ Q-TEST

Note: Sand layers exist below elev. -30 starting near approximate B/L Sta. 509+__ and to the Limit of Work near B/L Sta. 575+__

WESTWEGO TO HARVEY CANAL HURRICANE PROTECTION PROJECT

HWY 45 LEVEE REACH

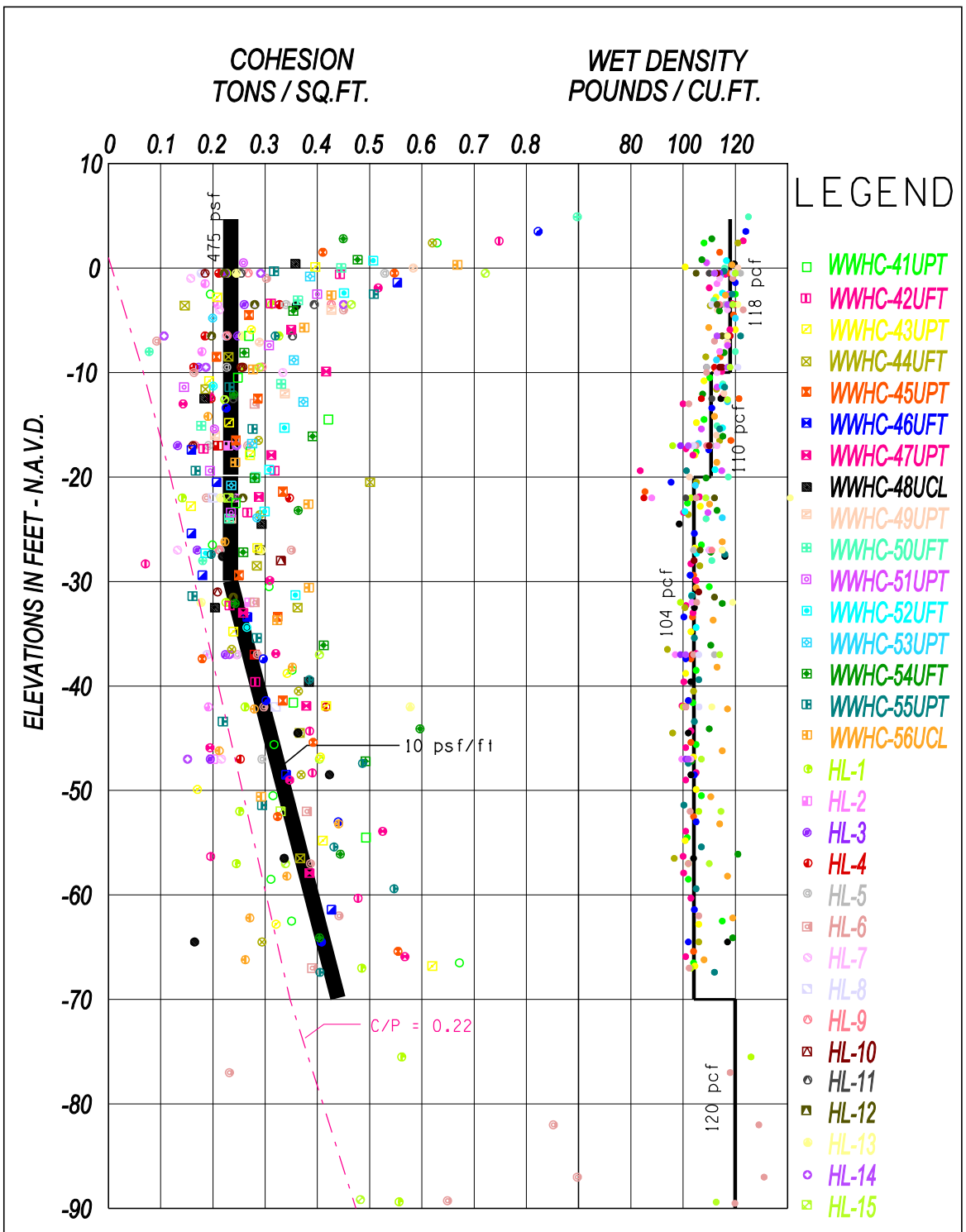
WEST JEFEERSON PARISH, LOUISIANA

LEVEE C/L
DENSITY AND SHEAR STRENGTH

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: K.J.T.	PLOT SCALE: 10	PLOT DATE:	CADD FILE: Hwy45-Shear
DRAWN BY: K.J.T.			FILE NO.
CHECKED BY: K.J.T.	DATE: DEC 2007		

PLATE 4



SYMBOLOGY

- ○ UCT
- □ Q-TEST

WESTWEGO TO HARVEY CANAL HURRICANE PROTECTION PROJECT

HWY 45 LEVEE REACH

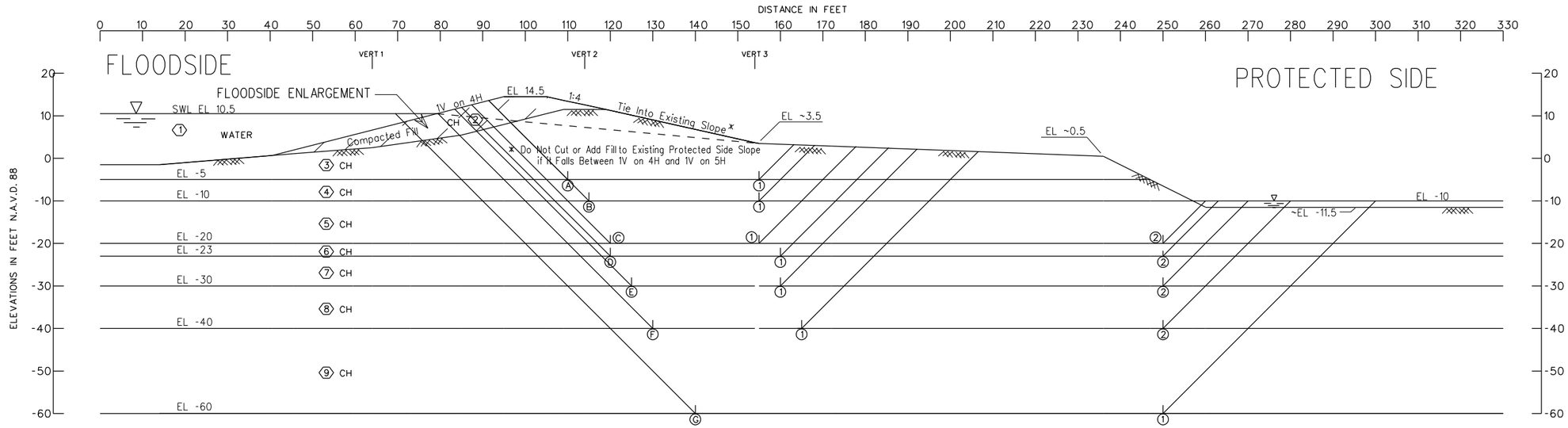
WEST JEFEERSON PARISH, LOUISIANA

LEVEE TOE
DENSITY AND SHEAR STRENGTH

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: K.J.T.	PLOT SCALE: 10	PLOT DATE:	CADD FILE: Hwy45-Shear
DRAWN BY: K.J.T.			FILE NO.
CHECKED BY: K.J.T.	DATE: DEC 2007		

PLATE 5



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-5.0	23711	21971	7919	21657	4259	53601	17398	3.08
Ⓑ ①	-10.0	28703	19475	12490	33667	10596	60668	23071	2.63
Ⓒ ①	-20.0	36861	16986	21633	65585	31388	75480	34197	2.21
Ⓒ ②	-20.0	36861	62111	8549	65585	6872	107521	58713	1.83
Ⓓ ①	-23.0	38777	19361	24198	77145	39069	82336	38076	2.16
Ⓓ ②	-23.0	38777	62111	10925	77145	10443	111813	66702	1.68
Ⓔ ①	-30.0	45009	16888	30598	106752	61693	92495	45059	2.05
Ⓔ ②	-30.0	45009	59638	17575	106752	22376	122222	84376	1.45
Ⓕ ①	-40.0	54196	20305	40563	157307	101516	115064	55791	2.06
Ⓕ ②	-40.0	54196	69180	28075	157307	48263	151451	109044	1.39
Ⓖ ①	-60.0	78524	85311	55075	286767	131235	218910	155532	1.41

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	DEGREES
①	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
②	CH	115	115	115	600	600	600	600	600	600	0
③	CH	118	118	118	475	700	475	475	700	475	0
④	CH	118	118	118	475	500	475	475	500	475	0
⑤	CH	110	110	110	475	500	475	475	500	475	0
⑥	CH	104	90	104	475	500	475	475	500	475	0
⑦	CH	104	108	104	475	500	475	475	500	475	0
⑧	CH	104	104	104	525	550	525	575	600	575	0
⑨	CH	104	104	104	675	700	675	775	800	775	0
⑩	CH	104	104	104	775	800	775	775	800	775	0

FOR WATER TO TOP OF CROWN, WEDGE Ⓕ-② HAS SAFETY FACTOR OF 1.35 & Ⓖ-①a 1.36
FOR FLOOD SIDE ANALYSIS, ALL SAFETY FACTORS ABOVE 1.4

GENERAL NOTES

CLASSIFICATION STRATIFICATION, SHEAR STRENGTHS & UNIT WEIGHTS OF SOIL BASED ON UNDISTURBED C/L BORINGS WWHC-41UCL, WWHC-42UCL, WWHC-43UCL...WWHC-56UCL and TOE BORINGS WWHC-41UPT, WWHC-43UPT, WWHC-45UPT...WWHC-55UPT and WWHC-42UFT, WWHC-44UFT, WWHC-46UFT...WWHC-56UFT and HISTORICAL BORINGS HL-1, HL-2, HL-3...HL-15 and HLC-1, HLC-2, HLC-3...HLC-7 and CPT WWHCCPT-38CL, -39CL, -40CL...WWHCCPT-52CL and WWHC-38PT, -40PT, 42PT...WWHCCPT-56PT and WWHCCPT-39FT, -41FT, -43FT...WWHCCPT-53FT and WWHCCPT-107CL, WWHCCPT-108CL, WWHCCPT-109CL, WWHCCPT-133PT. SEE BORING DATA PLATES.

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

The symbol " ⩘⩘⩘ " indicates natural ground based on surveys recieved.
Cutting of slopes or addition of fill is not required.
If the typical sections vary significantly, contact Geotechnical Branch for advice.

GENERAL NOTES

CLASSIFICATION STRATIFICATION SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES.

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

NOTES

◇ -- STRATUM NUMBER
○ -- WEDGE NUMBER
⌀ -- CROSSOVER POINT
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT REFERS TO PASSIVE WEDGE

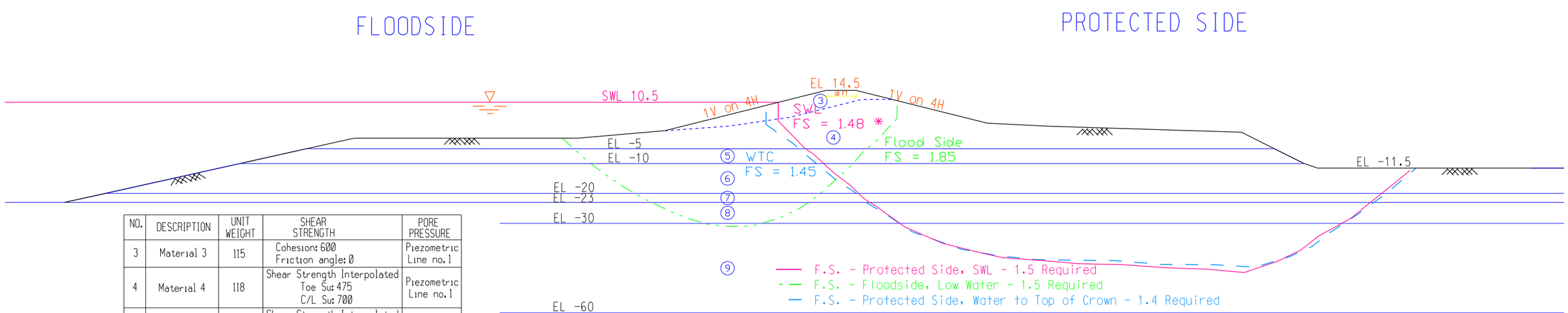
FACTOR OF SAFETY $= \frac{R_A + R_B + R_P}{D_A - D_P}$

WESTBANK IN THE VICINITY OF NEW ORLEANS, LA
WESTWEGO TO HARVEY CANAL, LA
100 YEAR ROTECTION
HWY 45 LEVEE
SOILS STABILITY ANALYSIS
PROTECTED SIDE
EARTHEN ENLARGEMENT ALTERNATIVE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: K.J.T	PLOT SCALE: 10	PLOT DATE:	CADD FILE: WW_E-W.PS
DRAWN BY: M.J.C.			FILE NO.
CHECKED BY: K.J.T.	DATE: JAN 08		

PLATE 6



NO.	DESCRIPTION	UNIT WEIGHT	SHEAR STRENGTH	PORE PRESSURE
3	Material 3	115	Cohesion: 600 Friction angle: 0	Piezometric Line no. 1
4	Material 4	118	Shear Strength Interpolated Toe Su: 475 C/L Su: 700	Piezometric Line no. 1
5	Material 5	118	Shear Strength Interpolated Toe Su: 475 C/L Su: 500	Piezometric Line no. 1
6	Material 6	110	Shear Strength Interpolated Toe Su: 475 C/L Su: 500	Piezometric Line no. 1
7	Material 7	Varies	Shear Strength Interpolated Toe Su: 475 C/L Su: 500	Piezometric Line no. 1
8	Material 8	Varies	Shear Strength Interpolated Toe Su: 475 C/L Su: 500	Piezometric Line no. 1
9	Material 9	104	Shear Strength Interpolated Toe Su: 475 C/L Su: 800	Piezometric Line no. 1
10	Material 10	122	Cohesion: 0 Friction angle: 30	Piezometric Line no. 1

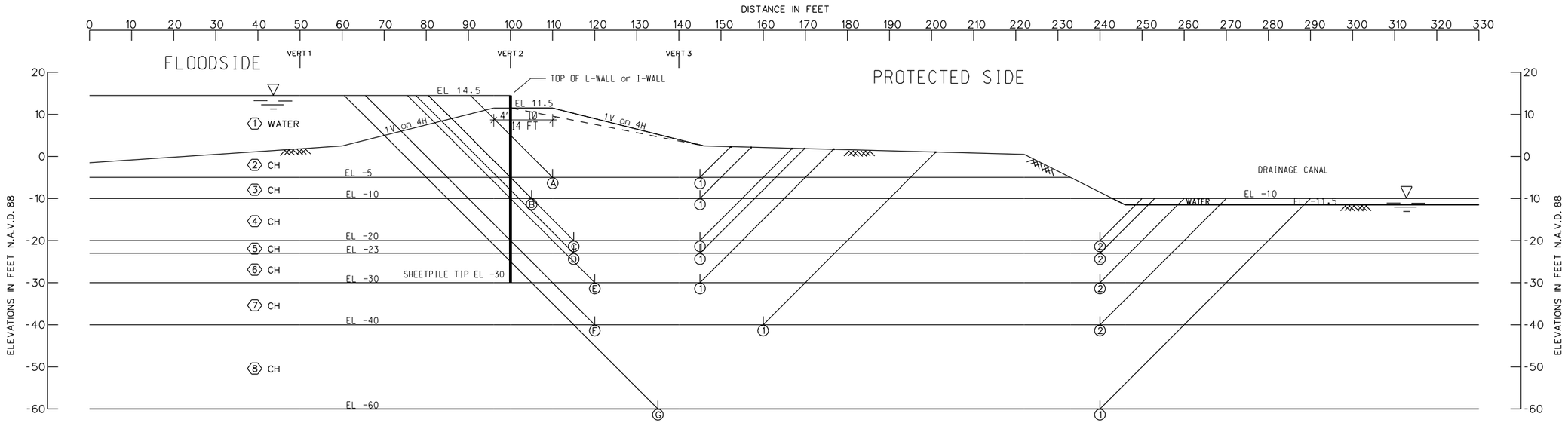
* Factor of Safety of 1.5 after 3-inches of settlement/shrinkage of fill

UTEXAS ver. 4.1.0.2

WESTBANK IN THE VICINITY OF NEW ORLEANS, LA
WESTWEGO TO HARVEY CANAL, LA
HNY 45 LEVEE
UTEXAS 4 STABILITY RESULTS
SOILS STABILITY
100 YEAR DESIGN ENLARGEMENT
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: M.J.C.	PLOT SCALE: 10	PLOT DATE: JAN 2008	CADD FILE: *****
DRAWN BY: M.J.C.			FILE NO.
CHECKED BY: K.J.T.	DATE: JAN 08		

PLATE 7



STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
2	CH	118	118	118	475	700	475	475	700	475	0
3	CH	118	118	118	475	500	475	475	500	475	0
4	CH	110	110	110	475	500	475	475	500	475	0
5	CH	104	90	104	475	500	475	475	500	475	0
6	CH	104	108	104	475	500	475	475	500	475	0
7	CH	104	108	104	525	550	525	575	600	575	0
8	CH	104	104	104	675	700	675	775	800	775	0
9	CH	104	104	104	775	800	775	775	800	775	0

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-5.0	22041	16906	6966	17599	3269	45913	14330	3.20
Ⓑ ①	-10.0	23705	19383	11594	29853	9032	54682	20821	2.63
Ⓒ ①	-20.0	33580	14445	20850	60351	28781	68875	31570	2.18
Ⓒ ②	-20.0	33580	59570	8075	60351	5426	101225	54925	1.84
Ⓓ ①	-23.0	35452	14445	23627	71785	36765	73524	35020	2.10
Ⓓ ②	-23.0	35452	59570	10925	71785	8980	105947	62805	1.69
Ⓔ ①	-30.0	41595	12000	30106	100758	58927	83701	41831	2.00
Ⓔ ②	-30.0	41595	57125	17575	100758	20913	116295	79845	1.46
Ⓕ ①	-40.0	49011	23125	39996	152078	97231	112132	54847	2.04
Ⓕ ②	-40.0	49011	69125	28075	152078	46800	146211	105278	1.39
Ⓖ ①	-60.0	74792	81383	55075	278920	129772	211250	149148	1.42

Factor of Safety of 1.3 Required

Protected Side Analysis more critical than Floodside

Seepage Analysis shown on Plate 11.

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

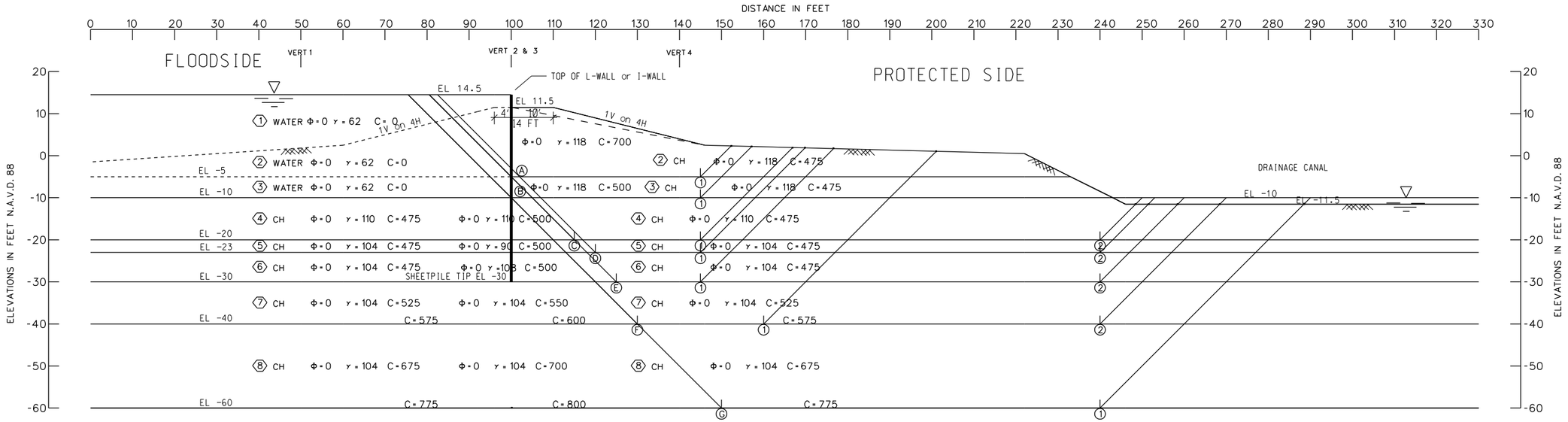
FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

WESTBANK IN THE VICINITY OF NEW ORLEANS, LA
WESTMEGO TO HARVEY CANAL, LA
100 YEAR PROTECTION
HWY 45 LEVEE
I-WALL & L-WALL STABILITY ANALYSIS
PROTECTED SIDE
I-WALL & L-WALL ALTERNATIVE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: K.J.T.	PLOT SCALE: 10	PLOT DATE: JAN 08	CADD FILE: I-WALL-100YR	
DRAWN BY: K.J.T.				FILE NO.
CHECKED BY: K.J.T.	DATE: JAN 08			

PLATE 8



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-5.0	0	21828	6966	11882	3269	28794	8613	3.34
Ⓑ ①	-10.0	0	21828	11594	18757	9032	33422	9725	3.44
Ⓒ ①	-20.0	14862	14446	20850	53632	28781	50158	24851	2.02
Ⓒ ②	-20.0	14862	59571	8075	53632	5426	82508	48206	1.71
Ⓓ ①	-23.0	17756	12001	23627	63478	36765	53384	26713	2.00
Ⓓ ②	-23.0	17756	57126	10925	63478	8980	85807	54498	1.57
Ⓔ ①	-30.0	24614	9571	30106	92120	58927	64291	33193	1.94
Ⓔ ②	-30.0	24614	54696	17575	92120	20913	96885	71207	1.36
Ⓕ ①	-40.0	30442	17281	39996	137162	97231	87719	39931	2.20
Ⓕ ②	-40.0	30442	63281	28075	137162	46800	121798	90362	1.35
Ⓖ ①	-60.0	57442	69750	55075	254805	129772	182267	125033	1.46

Factor of Safety of 1.3 Required

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

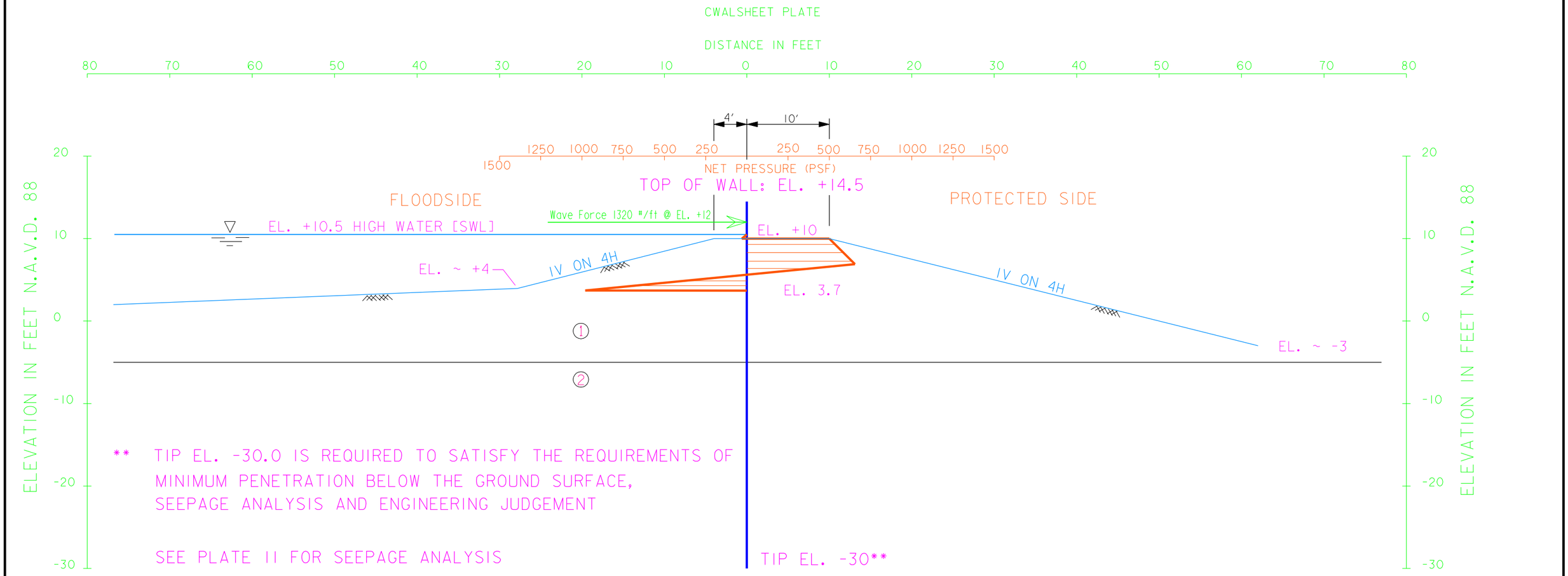
GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

WESTBANK IN THE VICINITY OF NEW ORLEANS, LA
WESTWEGO TO HARVEY CANAL, LA
100 YEAR PROTECTION
HWY 45 LEVEE
I-WALL & L-WALL STABILITY ANALYSIS
PROTECTED SIDE - CRACK ANALYSIS
I-WALL & L-WALL ALTERNATIVE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: K.J.T.	PLOT SCALE: 10	PLOT DATE: JAN 08	CADD FILE: I-WALL-100YR
DRAWN BY: K.J.T.			FILE NO. H-4-XXXXX
CHECKED BY: K.J.T.	DATE: JAN 08		



ELEVATION	PRESSURE
10.5	0.0
10.0	31.25
6.9	-665.6
3.7	980.4

Q-Case: F.S. = 1.5 SWL + WAVELOAD

LEFT & RIGHT SIDE PROPERTIES

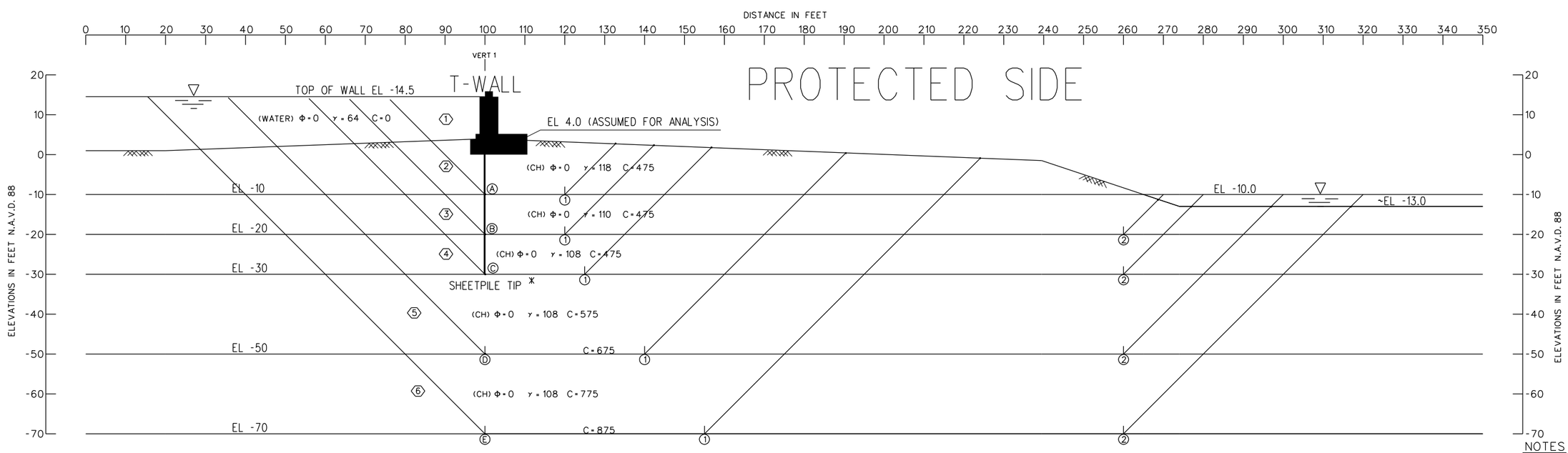
STRATUM NO.	SOIL TYPE	FRICTION ANGLE	TOTAL WEIGHT	AVERAGE COHESION
①	CH	0	118.0	700
②	CH	0	118.0	700

W.W.H.C. H.P.P.
HWY 45 LEVEE
CANTILEVERED SHEETPILE STABILITY
ALTERNATIVE DESIGN

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: K.J.T.
DRAWN BY: K.J.T.
CHECKED BY: K.J.T.
PLOT SCALE: 5
PLOT DATE:
CADD FILE: HWY45_I-WALL
FILE NO.
DATE: JAN 2008

PLATE: 10



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-10.0	12819	9500	12077	23048	9911	34396	13137	2.62
Ⓑ ①	-20.0	21976	9500	21216	51024	30187	52692	20837	2.53
Ⓑ ②	-20.0	21976	76000	8311	51024	5847	106287	45177	2.35
Ⓒ ①	-30.0	31133	11875	30175	89783	60173	73183	29610	2.47
Ⓒ ②	-30.0	31133	76000	16150	89783	21148	123283	68635	1.80
Ⓓ ①	-50.0	53446	27000	51912	199346	148691	132358	50655	2.61
Ⓓ ②	-50.0	53446	108000	39150	199346	83586	200596	115760	1.73
Ⓔ ①	-70.0	83760	48125	81650	351632	275968	213535	75664	2.82
Ⓔ ②	-70.0	83760	140000	70150	351632	189223	293910	162409	1.81

NOTE: T-WALL IS NOT TO BE BUILT ON TOP OF LEVEE, SO NATURAL GROUND SHEAR STRENGTHS WERE USED

FOR COST ESTIMATING PURPOSES ONLY

* SHEETPILE TIP ELEVATION OF -30 CHOSEN BY ENGINEERING JUDGEMENT TO CUT OFF SMALL SILT/SAND LAYER BETWEEN ELEV. -20 TO -24.

SEEPAGE: For Soft Clay, use Lane's Creep Ratio of 3.
For shortest path, water will travel 34' + 34' + 10'/3 = approx 70'
70'/head = 70/10.5 = 6.6 > 3 okay

For longer path to canal, water will travel (34' + 17' + 160'x2)/3 = approx 124'
70'/head = 124/24.5 = 5 > 3 okay

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

GENERAL NOTES:

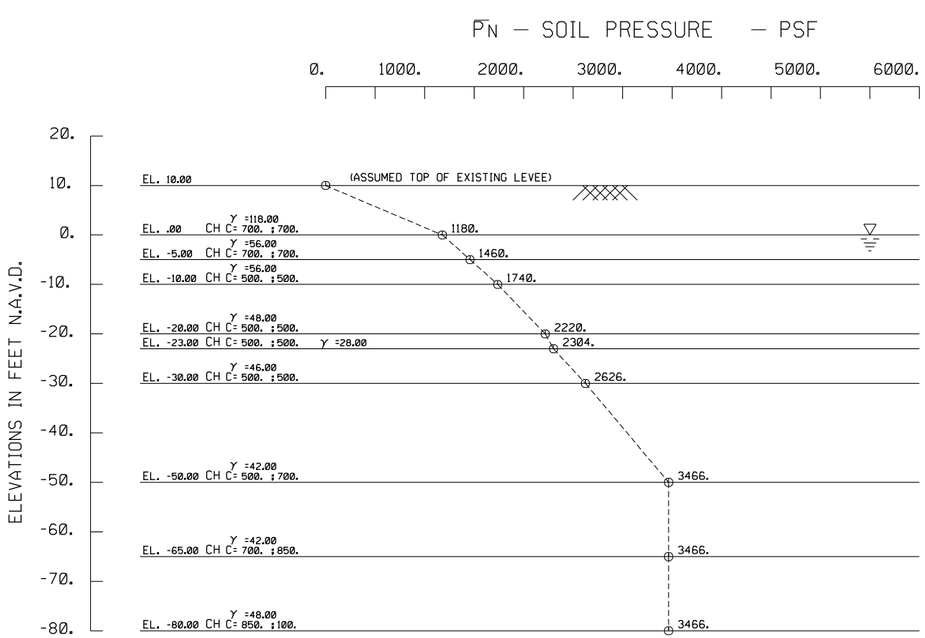
CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

WESTBANK IN THE VICINITY OF NEW ORLEANS, LA
WESTWEGO TO HARVEY CANAL, LA
100 YEAR PROTECTION
HWY 45 LEVEE
T-WALL GLOBAL STABILITY ANALYSIS
PROTECTED SIDE
PIPELINE CROSSING COST ESTIMATE ALTERNATIVE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: K.J.T	PLOT SCALE: 10	PLOT DATE: FEB 08	CADD FILE: T-WALL-100YR	
DRAWN BY: K.J.T.				FILE NO.
CHECKED BY: K.J.T.	DATE: FEB 08			

PLATE 11

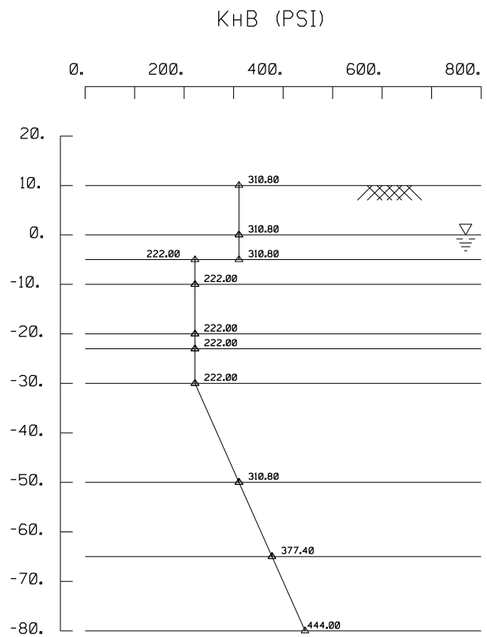


S-CASE
CH,CL- Φ=23°
ML- Φ=28°
SM,SP- Φ=30°

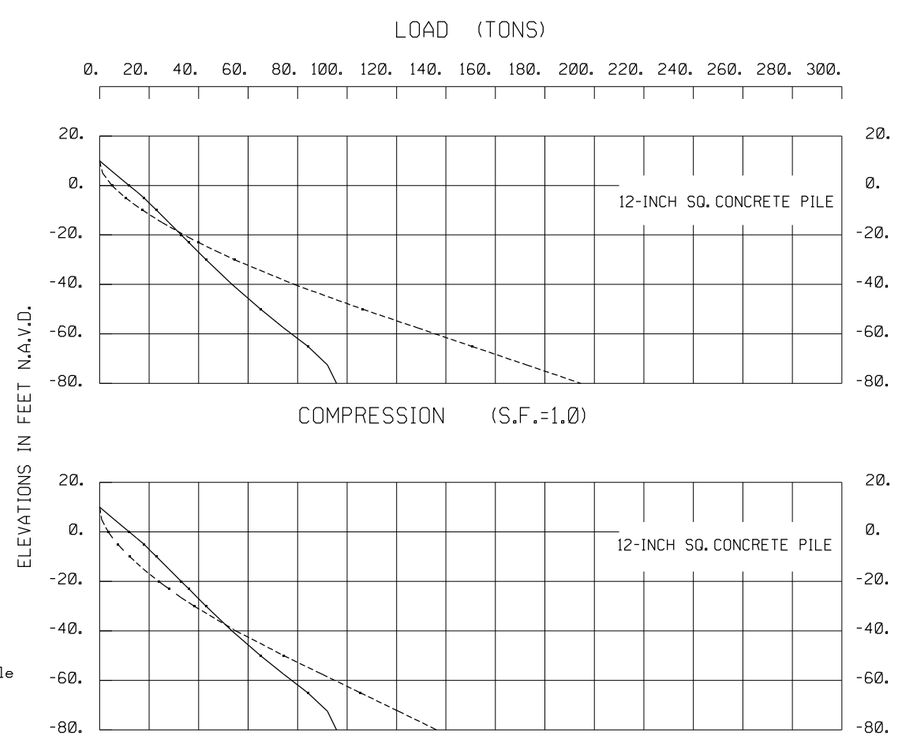
TYPICAL SOIL PROFILE

SOIL STRATIFICATION IS BASED ON GEOLOGIC PROFILE
SHEAR STRENGTH AND WET DENSITIES SEE PLATE
SECOND ORDER STATIONS

D	PILE SPACING IN DIRECTION OF LOADING
1.00	8B
.85	7B
.70	6B
.55	5B
.40	4B
.25	3B
C	LOADING CONDITION
1.00	INITIAL LOADING
0.30	CYCLIC LOADING



NOTES: KH = αK1/B=(0.2222qu/B)(C)(D) COHESIVE
α = 0.4 = Factor of material properties of soil and pile
k1 = Modulue of subgrade reaction for test plate (pci)
B1 = Width or diameter of test plate (in)
K1 = k1B1 = 80qu(pcf) = 0.5556qu(psi)
qu = 2 c = Unconfined compressive strength (psf)
C = Reduction for cyclic loading-not applicable
D = Group effect reduction factor
B = Width of pile measured at right angles to the direction of displacement (in)
KH = (nh)(Z/B)(C)(D) COHESIONLESS
nh = Coeficient of horizontal subgrade reaction (pci)
Z = Depth below equivalent ground surface (in)

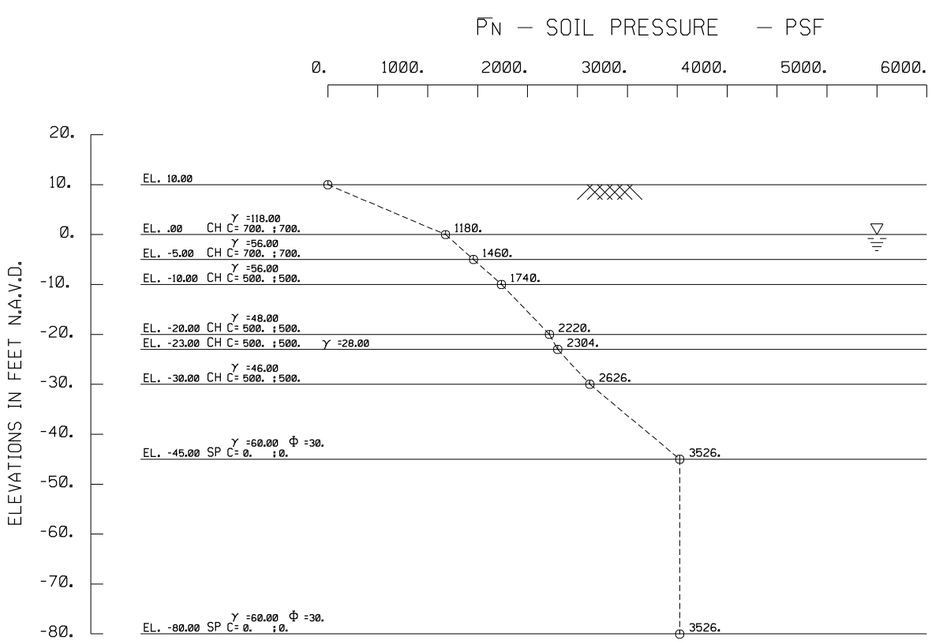


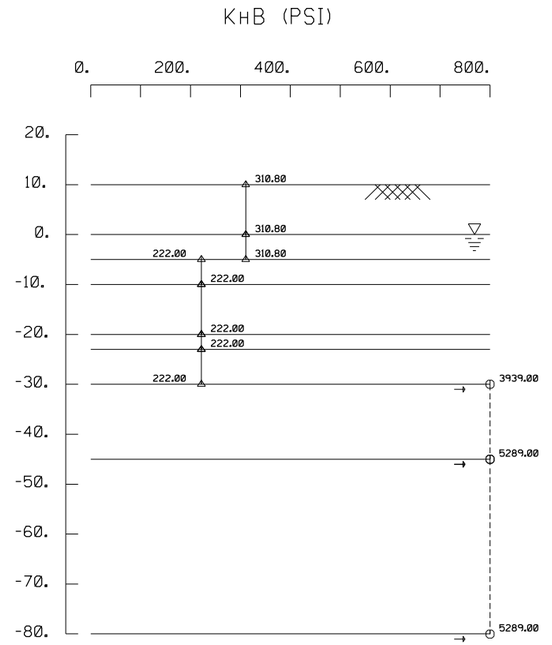
THE FACTOR SHOWN, (MODULUS OF HORIZONTAL SUBGRADE Kh, TIMES THE PILE WIDTH IN INCHES (B), MEASURED AT RIGHT ANGLES TO THE DIRECTION OF DISPLACEMENT) MUST BE MODIFIED BY A REDUCTION FACTOR FOR THE EFFECT OF GROUP ACTION (D) AND A REDUCTION FACTOR FOR CYCLIC LOADING (C) EX: $K_h = \frac{0.2222qu(C)(D)}{(B)}$

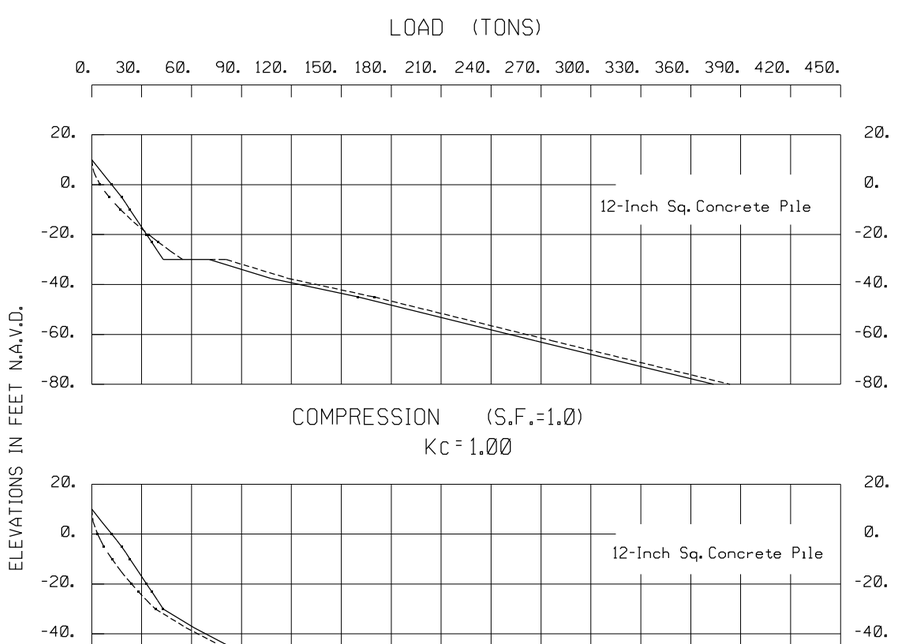
A F.S. = 3.0 (Q-Case) and 1.5 (S-Case) is Recommended If No Pile Test Are Performed
With Pile Test Results, A F.S. = 2.0 (Q-Case) and 1.5 (S-Case) is Recommended

WESTWEGO TO HARVEY CANAL HPP
HWY 45 - CLAY FOUNDATION
B/L STA 426+xx to STA 509+xx
ULTIMATE PILE CAPACITY
PILE CAPACITY CURVE
12-INCH SQUARE CONCRETE PILE

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
NEW ORLEANS
MAR 2008







S-CASE
CH,CL- Φ=23°
ML- Φ=28°
SM,SP- Φ=30°

TYPICAL SOIL PROFILE

SOIL STRATIFICATION IS BASED ON GEOLOGIC PROFILE
SHEAR STRENGTH AND WET DENSITIES SEE PLATE
SECOND ORDER STATIONS

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1.00	8B
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NOTES: KH = $\alpha K1/B = (0.2222qu/B)(C)(D)$ COHESIVE
α = 0.4 = Factor of material properties of soil and pile
k1 = Modulue of subgrade reaction for test plate (pci)
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K1 = k1B1 = 80qu(pcf) = 0.5556qu(psi)
qu = 2 c = Unconfined compressive strength (psf)
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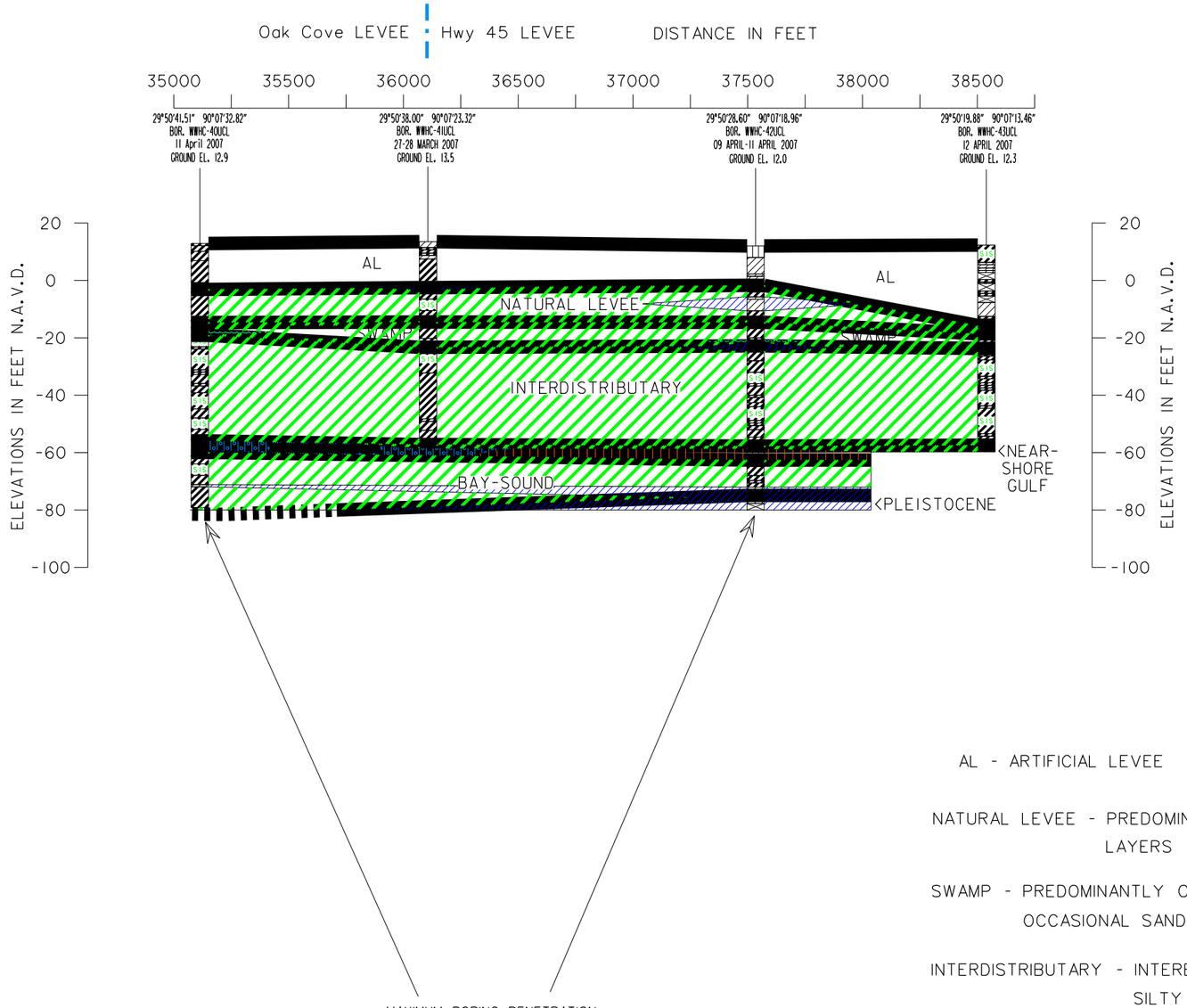
D = Group effect reduction factor
B = Width of pile measured at right angles to the direction of displacement (in)
KH = (nh)(Z/B)(C)(D) COHESIONLESS
nh = Coeficient of horizontal subgrade reaction (pci)
Z = Depth below equivelent ground surface (in)

THE FACTOR SHOWN, (MODULUS OF HORIZONTAL SUBGRADE Kh, TIMES THE PILE WIDTH IN INCHES (B), MEASURED AT RIGHT ANGLES TO THE DIRECTION OF DISPLACEMENT) MUST BE MODIFIED BY A REDUCTION FACTOR FOR THE EFFECT OF GROUP ACTION (D) AND A REDUCTION FACTOR FOR CYCLIC LOADING (C) EX: $K_h = \frac{0.2222qu(C)(D)}{(B)}$

A F.S. = 3.0 is Recommended If No Pile Test Are Performed
With Pile Test Results, A F.S. = 2.0 is Recommended

WESTWEGO TO HARVEY CANAL HPP
HWY 45 - SAND FOUNDATION
B/L STA 509+xx to STA 575+xx
ULTIMATE PILE CAPACITY
PILE CAPACITY CURVE
12-INCH SQUARE CONCRETE PILE
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
NEW ORLEANS
MAR 2008



SOIL LEGEND

- CH - FAT CLAY
- CL - LEAN CLAY
- PT - PEAT
- ML - SILT
- SC - CLAYEY SAND
- SM - SILTY SAND
- SP - SAND POORLY-GRADED
- NO SAMPLE

AL - ARTIFICIAL LEVEE

NATURAL LEVEE - PREDOMINANTLY FAT AND LEAN CLAYS AND SILTS WITH SOME SAND LAYERS

SWAMP - PREDOMINANTLY ORGANIC CLAYS, FAT CLAYS, AND PEATS WITH OCCASIONAL SAND AND SILT LAYERS AND WOOD

INTERDISTRIBUTARY - INTERBEDDED LAYERS OF FAT AND LEAN CLAYS, SILTS, SILTY SANDS, AND SANDS

NEARSHORE GULF - PREDOMINANTLY SAND AND SILTY SAND WITH SHELL FRAGMENTS

BAY-SOUND - PREDOMINANTLY SILTS AND SILTY SANDS WITH SOME CLAY LAYERS

PLEISTOCENE - STIFF TO VERY STIFF OXIDIZED CLAYS INTERBEDDED WITH LAYERS AND LENSES OF SILTS AND SANDS

WESTWEGO TO HARVEY CANAL

HWY 45 LEVEE

SOIL AND GEOLOGIC PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: T. CREASY	PLOT SCALE: 1 : 20	PLOT DATE:	CADD FILE: wwhc7.dgn
DRAWN BY: T. CREASY			FILE NO.
CHECKED BY: D. BRITSCH	DATE: 09 October 2007		

PLATE: 14

North

DISTANCE IN FEET

South

38500 39000 39500 40000 40500 41000 41500 42000 42500 43000 43500 44000 44500 45000 45500 46000 46500

29°50'19.88" 90°07'13.46"
BOR. WWHC-43UCL
12 APRIL 2007
GROUND EL. 12.3

29°50'11.20" 90°07'07.87"
BOR. WWHC-44UCL
15 APRIL 2007
GROUND EL. 12.4

29°50'03.05" 90°07'02.69"
BOR. WWHC-45UCL
15-16 APRIL 2007
GROUND EL. 12.6

29°49'54.10" 90°06'57.49"
BOR. WWHC-46UCL
16-18 APRIL 2007
GROUND EL. 13.2

29°49'45.04" 90°06'51.78"
BOR. WWHC-47UCL
16-17 APRIL 2007
GROUND EL. 11.9

29°49'36.66" 90°06'46.74"
BOR. WWHC-48UCL
25 APRIL 2007
GROUND EL. 12.0

29°49'27.23" 90°6'42.10"
BOR. WWHC-49UCL
23-24 April 2007
GROUND EL. 14.0

29°49'17.99" 90°06'38.75"
BOR. WWHC-50UCL
18-19 APRIL 2007
GROUND EL. 13.4

ELEVATIONS IN FEET N.A.V.D.

20 0 -20 -40 -60 -80 -100 -120 -140

AL

NATURAL LEVEE

SWAMP

INTERDISTRIBUTARY

POINT BAR

NEAR-SHORE GULF

BAY-SOUND

PLEISTOCENE

MAXIMUM BORING PENETRATION

SOIL LEGEND

- CH - FAT CLAY
- CL - LEAN CLAY
- ML - SILT
- SM - SILTY SAND
- SP - SAND POORLY-GRADED
- NO SAMPLE

HORIZONTAL SCALE IN FEET

250 125 0 250 500 750

AL - ARTIFICIAL LEVEE

NATURAL LEVEE - PREDOMINANTLY FAT AND LEAN CLAYS AND SILTS WITH SOME SAND LAYERS

SWAMP - PREDOMINANTLY ORGANIC CLAYS, FAT CLAYS, AND PEATS WITH OCCASIONAL SAND AND SILT LAYERS AND WOOD

POINT BAR - PREDOMINANTLY SILTY SANDS, SANDY SILTS, AND SANDS WITH OCCASIONAL CLAY LAYERS

INTERDISTRIBUTARY - INTERBEDDED LAYERS OF FAT AND LEAN CLAYS, SILTS, SILTY SANDS, AND SANDS

NEARSHORE GULF - PREDOMINANTLY SAND AND SILTY SAND WITH SHELL FRAGMENTS

BAY-SOUND - PREDOMINANTLY SILTS AND SILTY SANDS WITH SOME CLAY LAYERS

PLEISTOCENE - STIFF TO VERY STIFF OXIDIZED CLAYS INTERBEDDED WITH LAYERS AND LENSES OF SILTS AND SANDS

WESTWEGO TO HARVEY CANAL

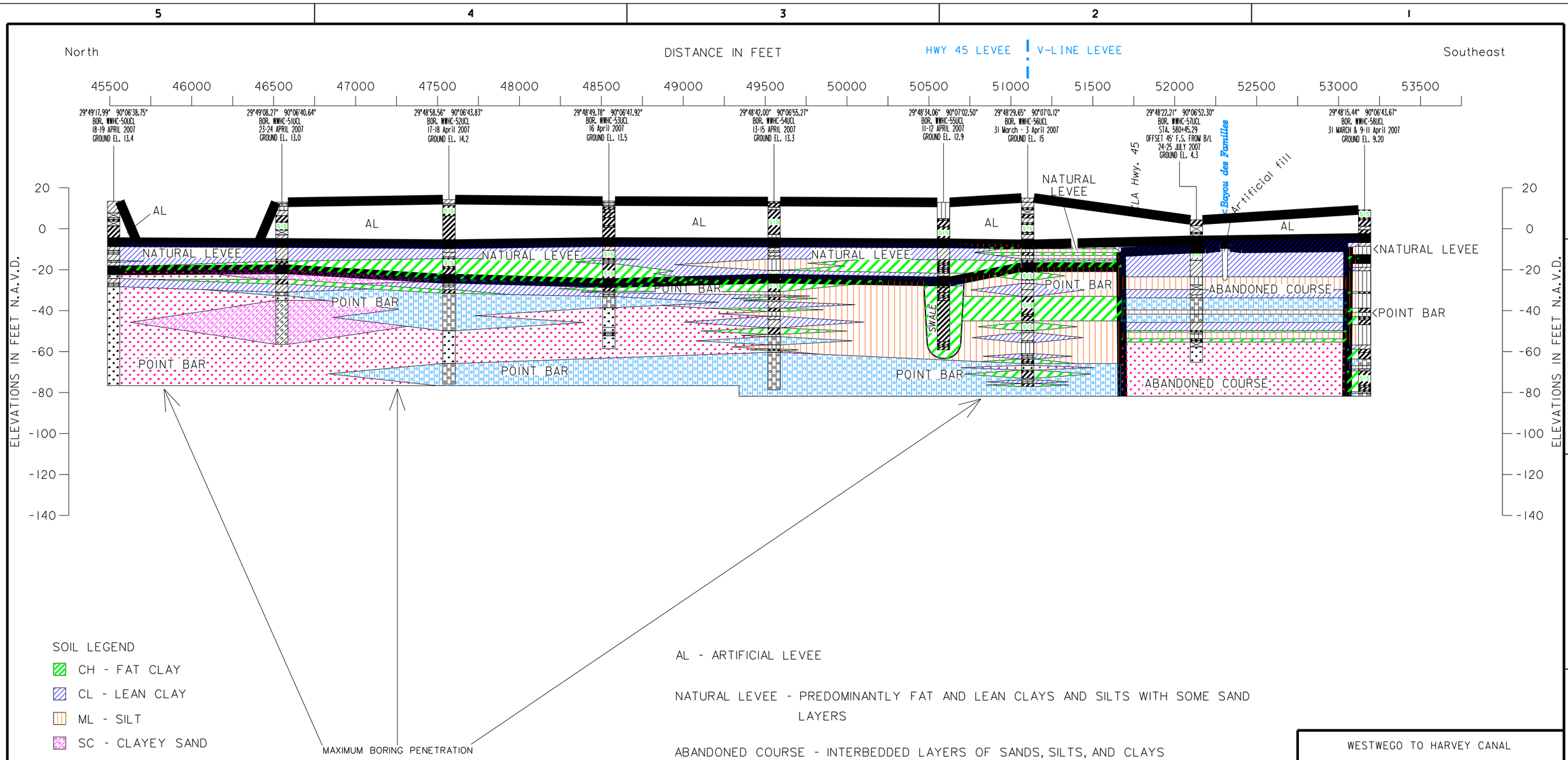
HWY 45 LEVEE

SOIL AND GEOLOGIC PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: T. CREASY	PLOT SCALE: 1 : 20	PLOT DATE:	CADD FILE: wwhc8.dgn
DRAWN BY: T. CREASY			FILE NO.
CHECKED BY: D. BRITSCH	DATE: 17 October 2007		

PLATE: 15



SOIL LEGEND

- CH - FAT CLAY
- CL - LEAN CLAY
- ML - SILT
- SC - CLAYEY SAND
- SM - SILTY SAND
- SP - SAND POORLY-GRADED
- NO SAMPLE

AL - ARTIFICIAL LEVEE

NATURAL LEVEE - PREDOMINANTLY FAT AND LEAN CLAYS AND SILTS WITH SOME SAND LAYERS

ABANDONED COURSE - INTERBEDDED LAYERS OF SANDS, SILTS, AND CLAYS

POINT BAR - PREDOMINANTLY SILTY SANDS, SANDY SILTS, AND SANDS WITH OCCASIONAL CLAY LAYERS

SWALE - PART OF POINT BAR DEPOSITS. GENERALLY A SHALLOW TROUGH-LIKE DEPRESSION BETWEEN POINT BAR RIDGES. IT CONSISTS OF CLAYS AND SILTS.

WESTWEGO TO HARVEY CANAL

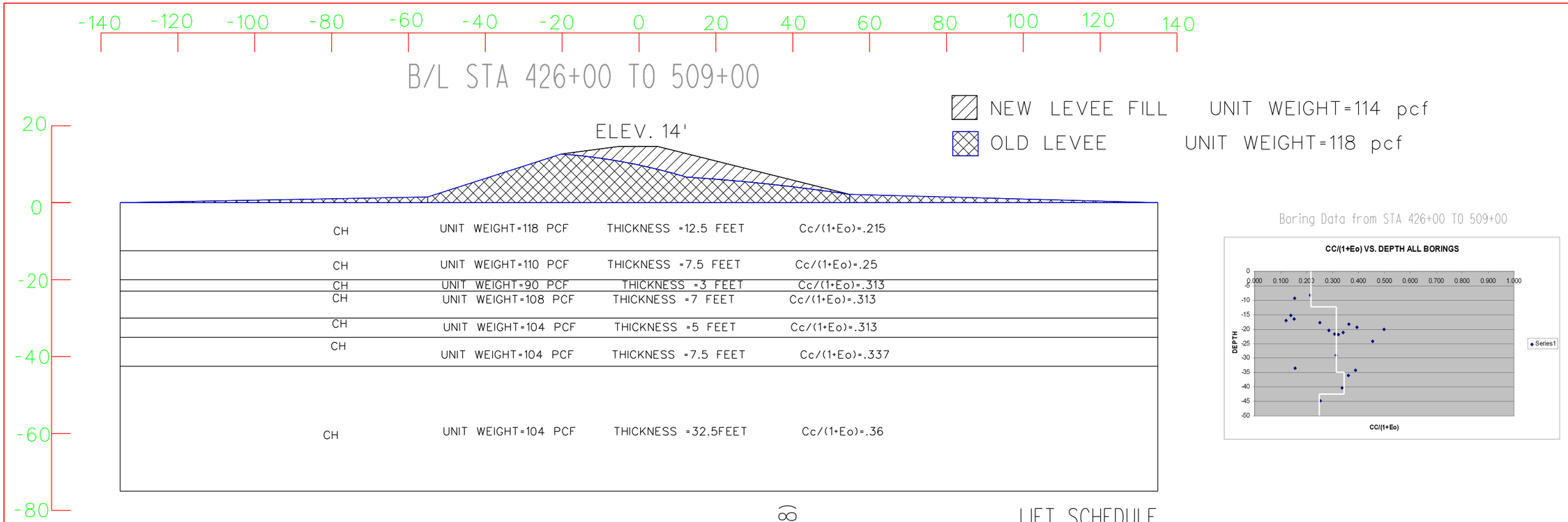
HWY 45 LEVEE

SOIL AND GEOLOGIC PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: T. CREASY	PLOT SCALE: 1 : 20	PLOT DATE:	CADD FILE: wwhc9.dgn
DRAWN BY: T. CREASY			FILE NO.
CHECKED BY: D. BRITSCH	DATE: 17 October 2007		

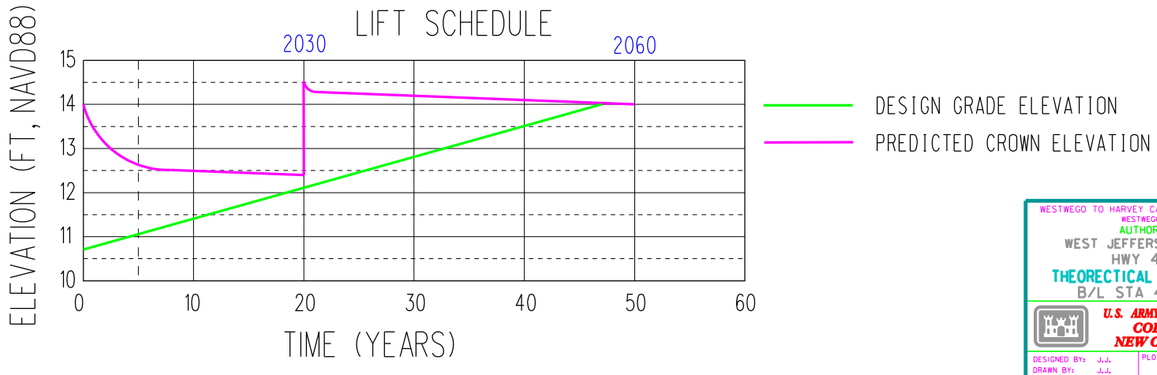
PLATE: 16



Boring Data from STA 426+00 TO 509+00

Layer	H (layer)	σ_o	σ_f	Cc/(1+Eo)	δ
1	12.5	1385.9	1953.7	0.215	0.4
2	7.5	1844	2333.7	0.25	0.19
3	3	2054	2502.4	0.313	0.08
4	7	2228.7	2642.2	0.313	0.16
5	5	2437.4	2814	0.313	0.098
6	7.5	2649	2992.4	0.337	0.134
7	32.5	3341.7	3605.5	0.36	0.386
				Total:	1.448

ULTIMATE SETTLEMENT

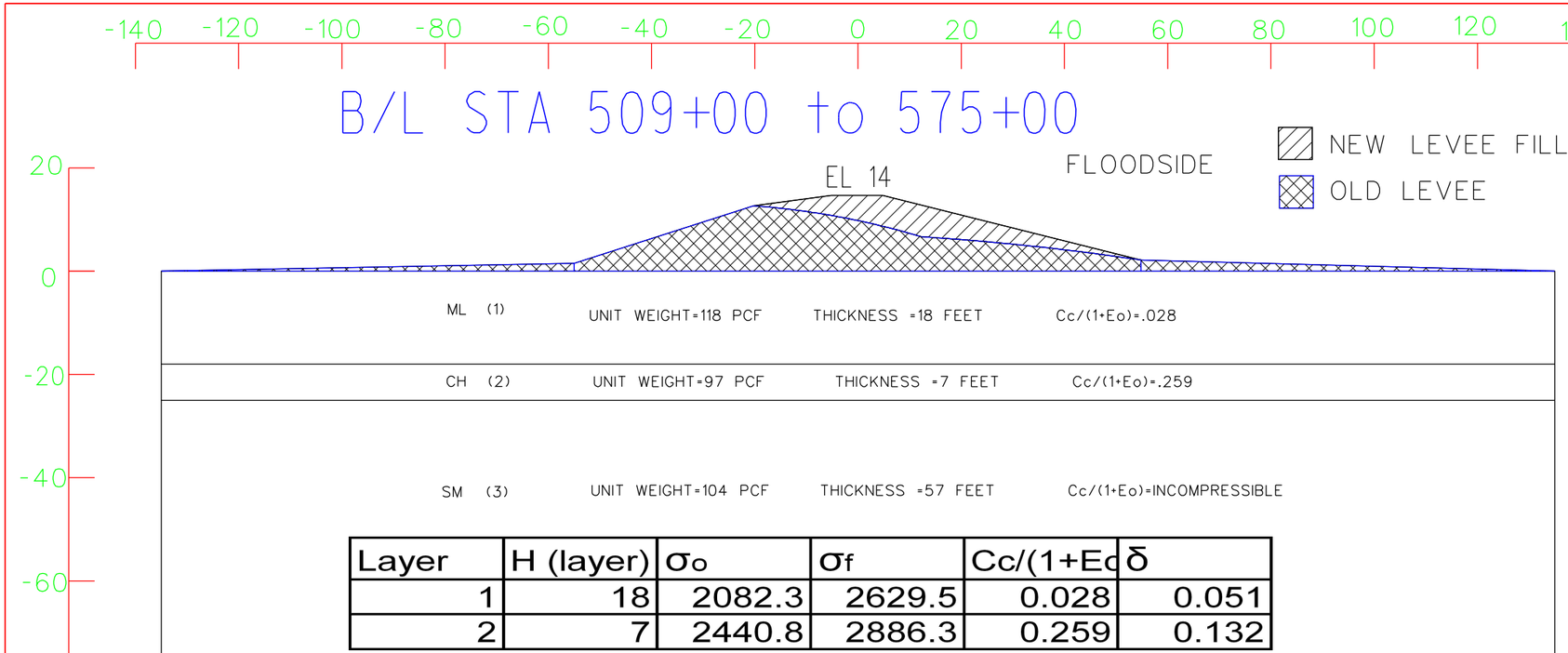


WESTWEGO TO HARVEY CANAL HURRICANE PROTECTION PROJECT
WESTWEGO TO HARVEY CANAL, LA
AUTHORIZED 2057 HEIGHT
WEST JEFFERSON PARISH, LOUISIANA
HWY 45 LEVEE REACH
THEORECTICAL SETTLEMENT ANALYSIS
B/L STA 426+00 TO 509+00

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	J.J.	PLOT SCALE:	PLOT DATE:	CADD FILE:	HWY-SETT
DRAWN BY:	J.J.	10	MAR 09	FILE NO.	
CHECKED BY:	K.T.	DATE:	MAR 09		

PLATE XX



Layer	H (layer)	σ_o	σ_f	Cc/(1+Eo)	δ
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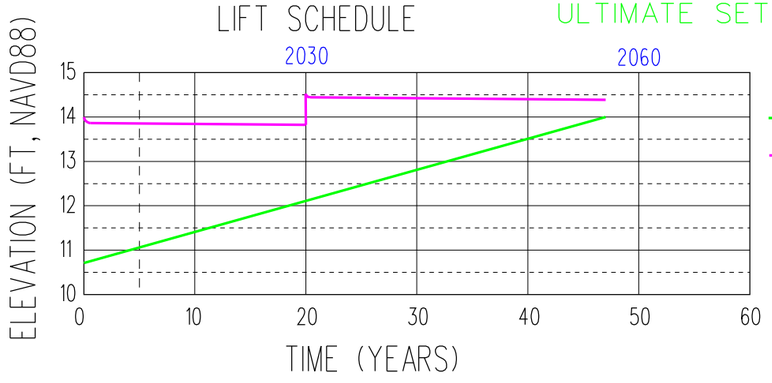
2	7	2440.8	2886.3	0.259	0.132

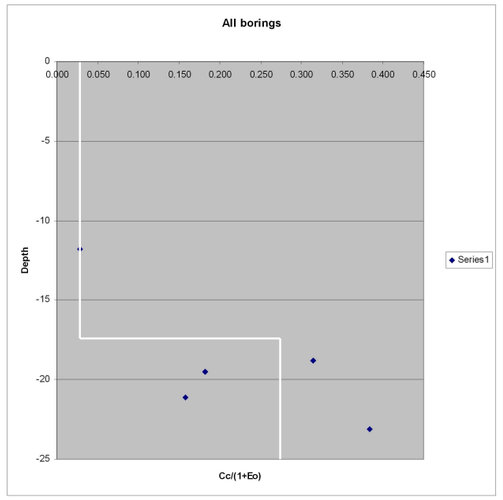


ULTIMATE SETTLEMENT = 0.2 ft

DESIGN GRADE ELEVATION

PREDICTED CROWN ELEVATION

Boring Data from STA 509+00 TO 575+00



WESTWEGO TO HARVEY CANAL HURRICANE PROTECTION PROJECT
WESTWEGO TO HARVEY CANAL, LA
AUTHORIZED 2057 HEIGHT
WEST JEFFERSON PARISH, LOUISIANA
HWY 45 LEVEE REACH

SETTLEMENT ANALYSIS

STA 509+00 TO 575+00

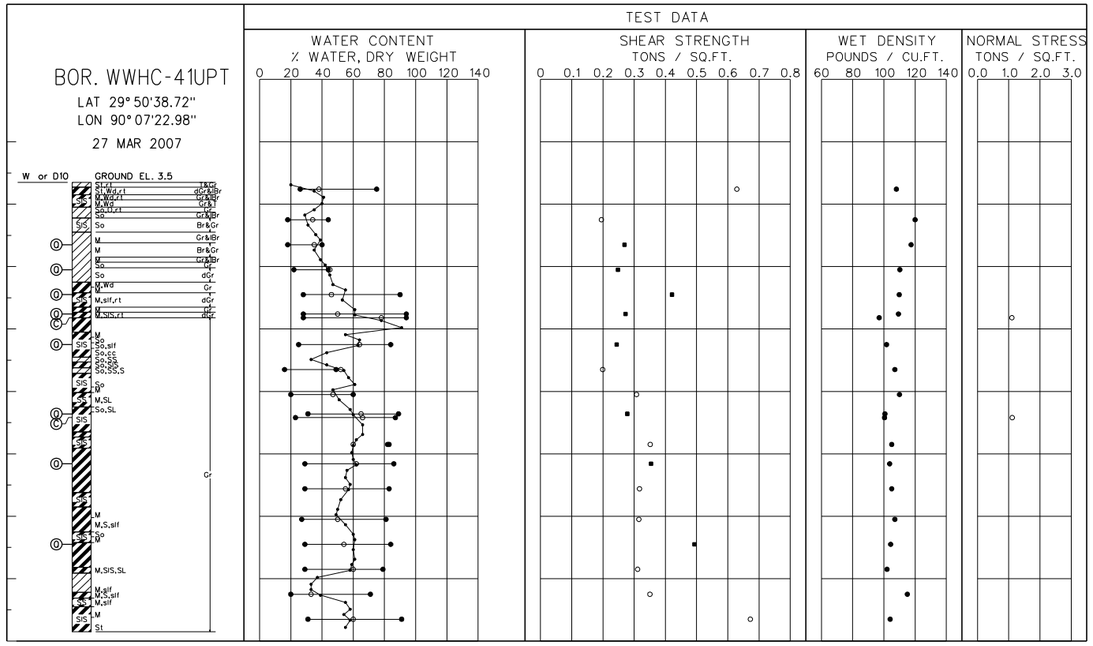
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	J.J.	PLOT SCALE:	PLOT DATE:	CADD FILE:	HWY-SE12
DRAWN BY:	J.J.	10	MAR 09	FILE NO.	
CHECKED BY:	K.T.	DATE:	MAR 09		

PLATE XX

APPENDIX

BORING LOGS



TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH c - TSF	CLASS
1	-6.5	Q	0.0	0.269	CL
2	-10.5	Q	0.0	0.248	CL
3	-14.5	Q	0.0	0.421	CH
4	-17.6	Q	0.0	0.272	CH
5	-22.5	Q	0.0	0.244	CH
6	-33.6	Q	0.0	0.278	CH
7	-41.6	Q	0.0	0.354	CH
8	-54.5	Q	0.0	0.493	CH
9	-18.2	C	0.0	0.000	CH
10	-34.2	C	0.0	0.000	CH

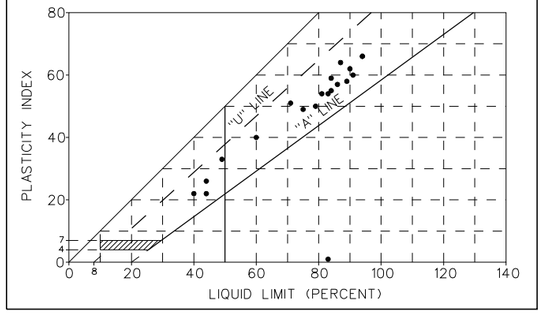
NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

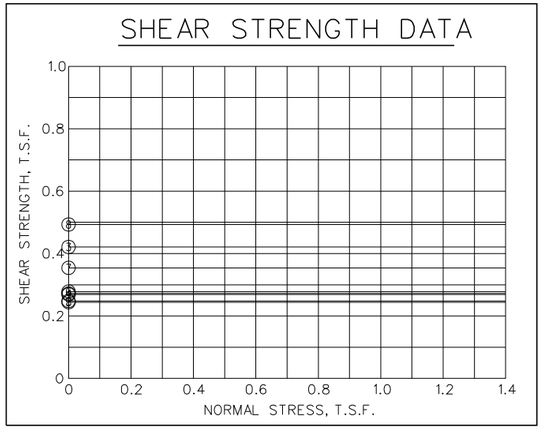
ω_P ω_N ω_L ATTERBERG LIMITS

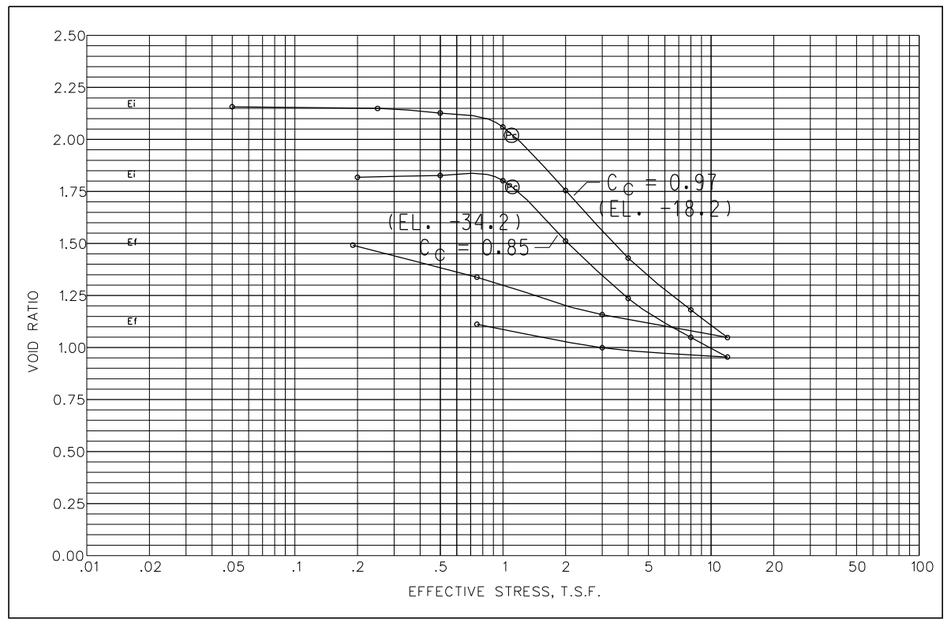
BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

PLASTICITY CHART



SHEAR STRENGTH DATA





US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

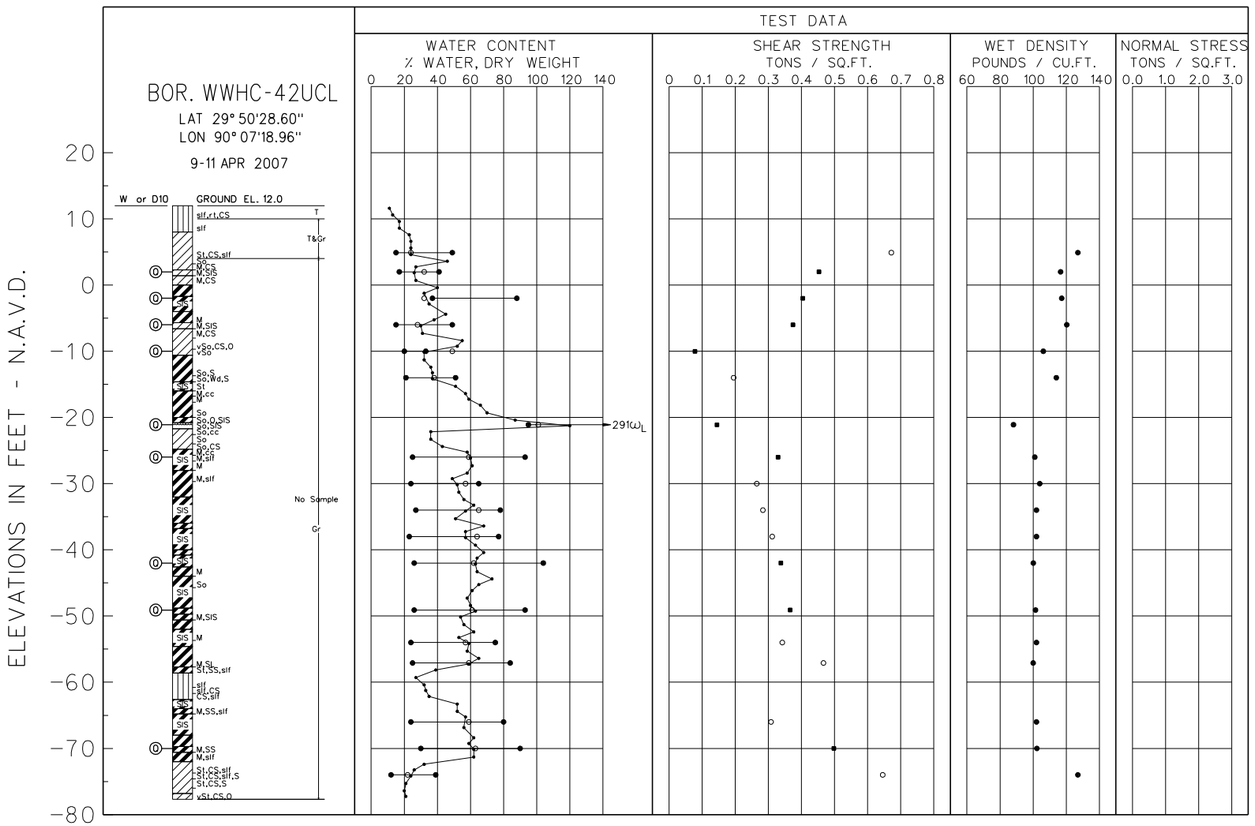
MARK	DESCRIPTION	DATE	APPR
MARK	DESCRIPTION	DATE	APPR

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

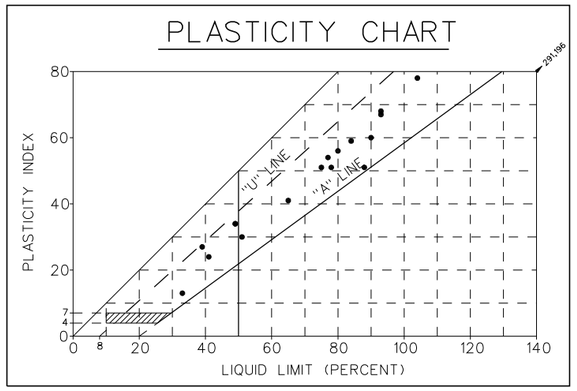
DESIGNED BY:
DRAWN BY:
SUBMITTED BY:
FILE NAME=
DATE:
SOLICITATION NO.:
CONTRACT NO.:
FILE NUMBER:
PLOT DATE:
PLOT SCALE:

BOR. WWHC-41UPT

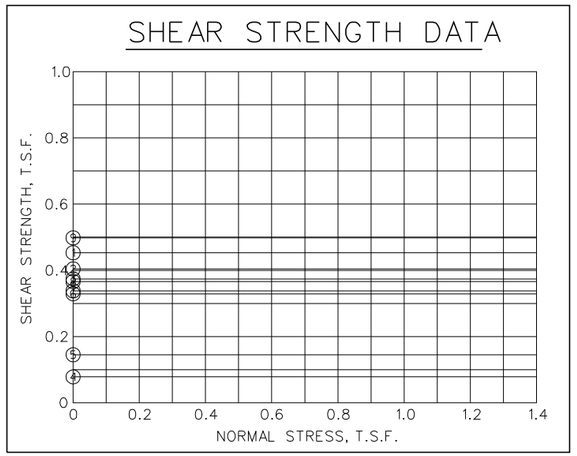
SHEET IDENTIFICATION NUMBER



PLASTICITY CHART



SHEAR STRENGTH DATA



TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	2.0	Q	0.0	0.453	CL
2	-2.0	Q	0.0	0.404	CH
3	-6.0	Q	0.0	0.374	CL
4	-10.0	Q	0.0	0.078	CL
5	-21.1	Q	0.0	0.145	PT
6	-26.0	Q	0.0	0.329	CH
7	-42.0	Q	0.0	0.338	CH
8	-49.1	Q	0.0	0.366	CH
9	-70.0	Q	0.0	0.498	CH

NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
- ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

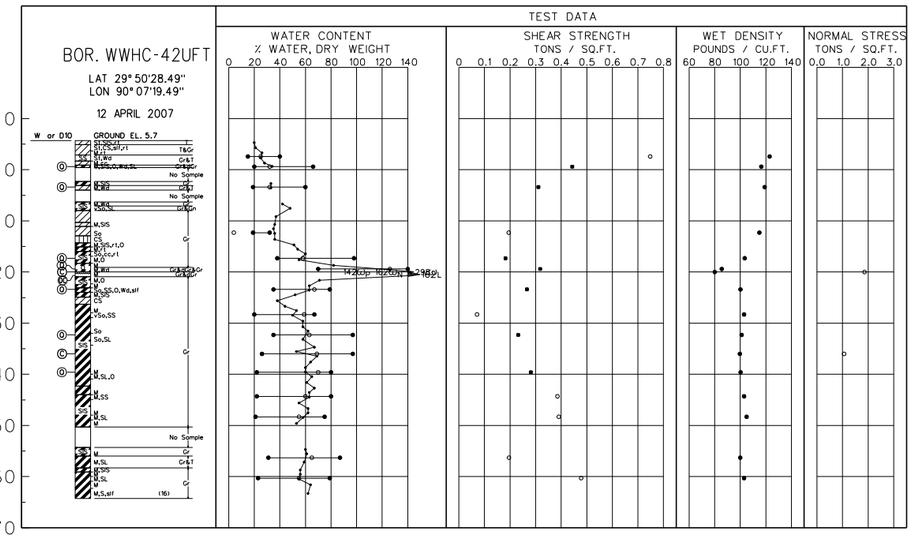
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY:
DWN BY:
SUBMITTED BY:
DATE:
SOLICITATION NO.:
CONTRACT NO.:
DOD BY:
FILE NAME:
SBS
PLOT SCALE:
PLOT DATE:
FILE NUMBER

MARK | DESCRIPTION | DATE | APPR.

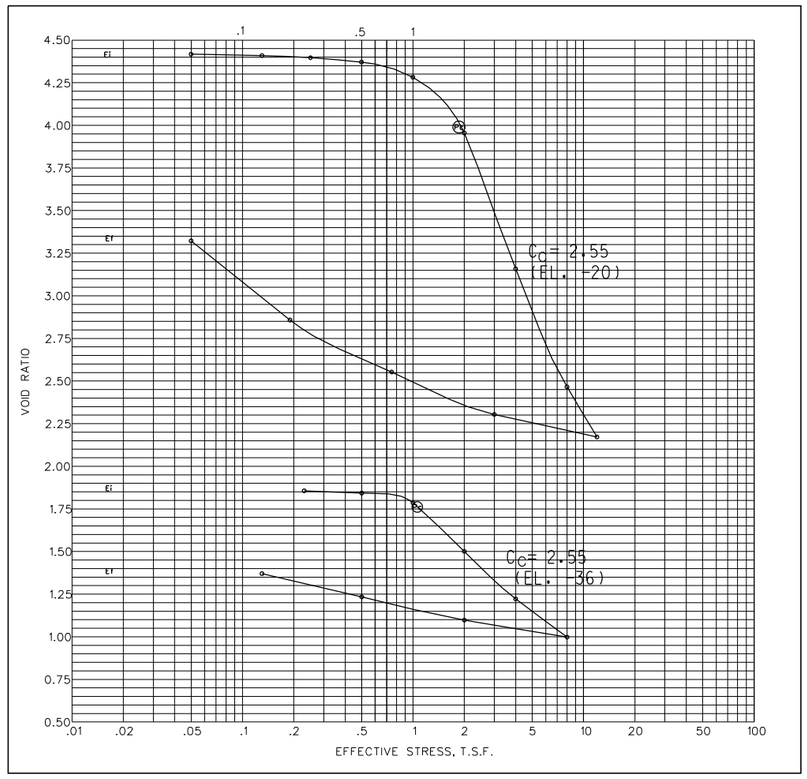
BOR. WWHC-42UCL

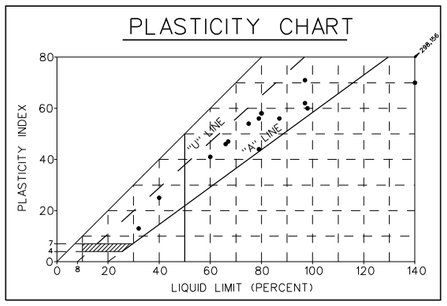
SHEET IDENTIFICATION NUMBER

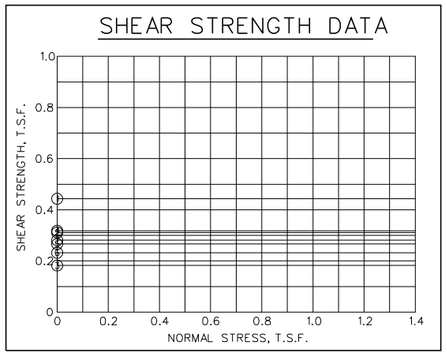


TABULAR TEST DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	0.6	Q	0.0	0.443	CH
2	-3.4	Q	0.0	0.311	CH
3	-17.3	Q	0.0	0.182	CH
4	-19.4	Q	0.0	0.318	CH
5	-23.4	Q	0.0	0.266	CH
6	-32.3	Q	0.0	0.232	CH
7	-39.6	Q	0.0	0.281	CH
8	-20.0	C	0.0	0.000	PT
9	-36.0	C	0.0	0.000	CH







NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

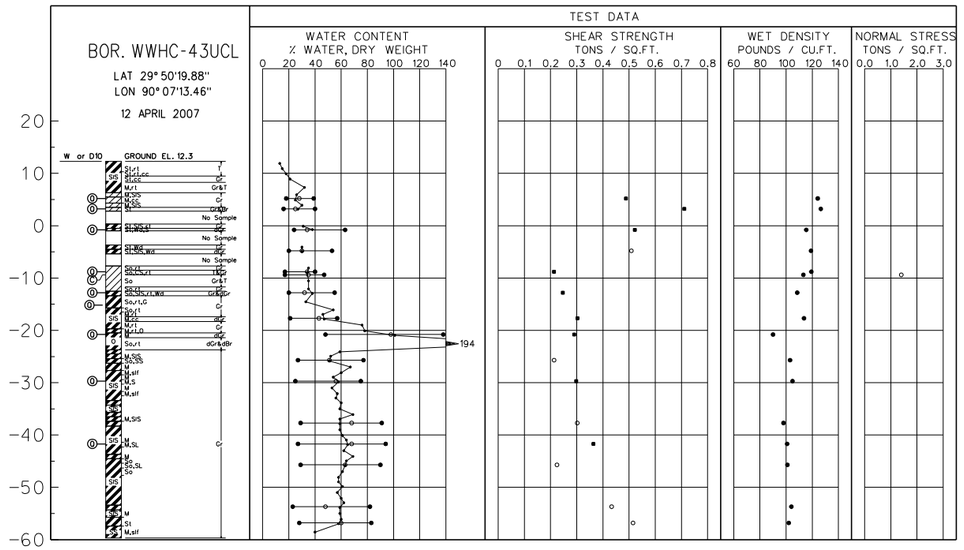
BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

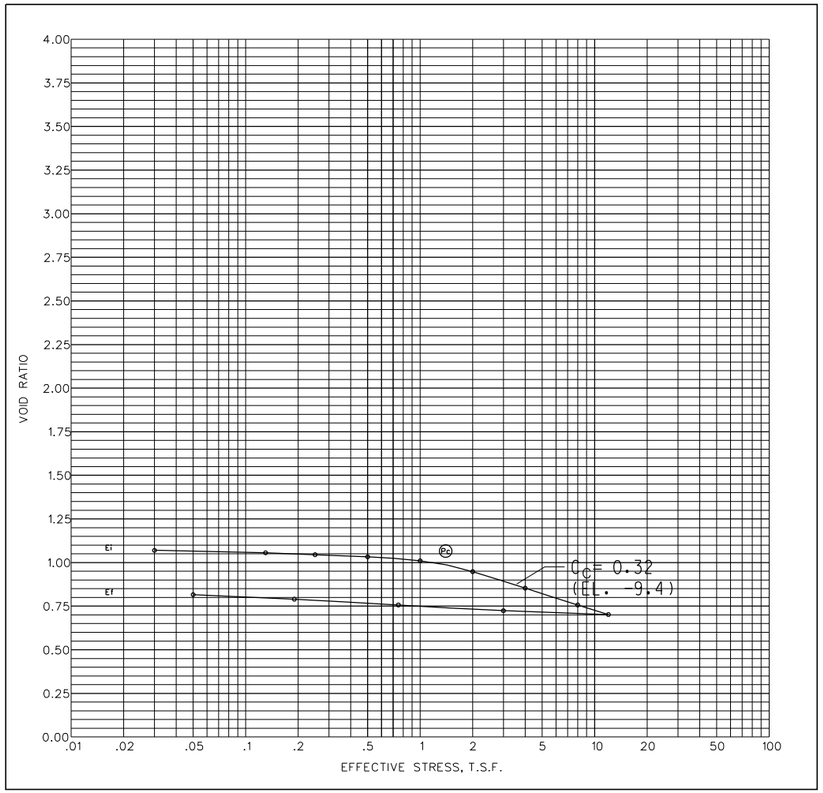
BOR. WWHC-42UFT

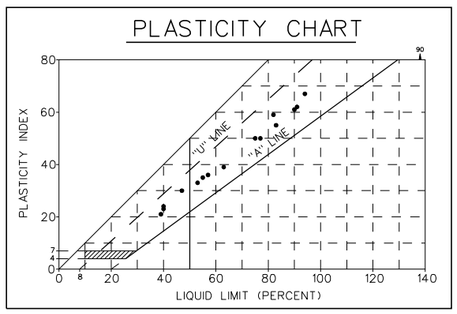
SHEET IDENTIFICATION NUMBER

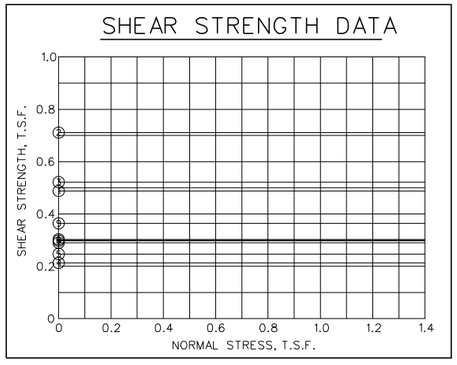


TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	5.2	Q	0.0	0.488	CL
2	3.2	Q	0.0	0.711	CL
3	-0.8	Q	0.0	0.522	CH
4	-8.8	Q	0.0	0.213	CL
5	-12.8	Q	0.0	0.247	CH
6	-17.7	Q	0.0	0.303	CH
7	-20.8	Q	0.0	0.290	CH
8	-29.7	Q	0.0	0.298	CH
9	-41.7	Q	0.0	0.364	CH
10	-9.4	C	0.0	0.000	CL







NOTES

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

BOR. WWHC-43UCL

SHEET IDENTIFICATION NUMBER

BOR. WWHC-43UPT

LAT 29° 50'20.09"
LON 90° 07'12.96"

13 APR 2007

W or D10 — GROUND EL. 3.2

ELEVATIONS IN FEET - N.A.V.D.

10, 0, −10, −20, −30, −40, −50, −60, −70

TEST DATA

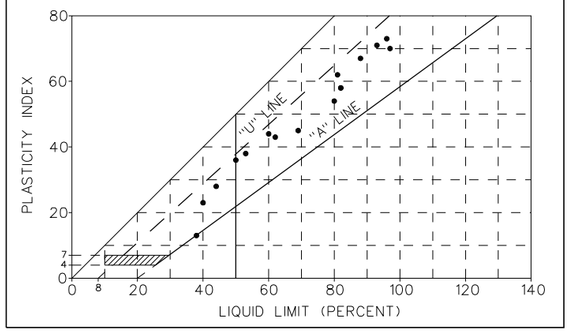
WATER CONTENT
% WATER, DRY WEIGHT
0 20 40 60 80 100 120 140

SHEAR STRENGTH
TONS / SQ.FT.
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8

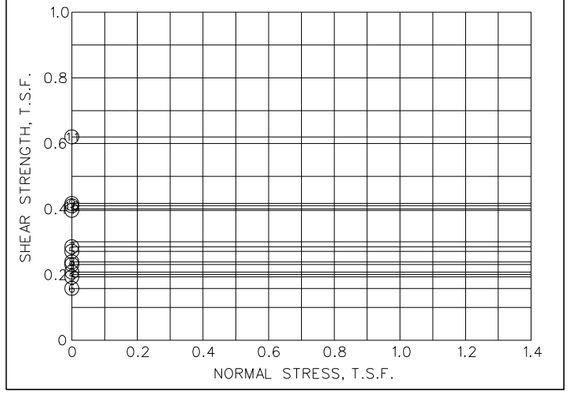
WET DENSITY
POUNDS / CU.FT.
60 80 100 120 140

NORMAL STRESS
TONS / SQ.FT.
0.0 1.0 2.0 3.0

PLASTICITY CHART



SHEAR STRENGTH DATA



TABULAR TEST DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH c - TSF	CLASS
1	0.1	Q	0.0	0.396	CH
2	-2.8	Q	0.0	0.208	CH
3	-10.8	Q	0.0	0.193	CL
4	-14.8	Q	0.0	0.231	CH
5	-17.9	Q	0.0	0.271	CH
6	-22.8	Q	0.0	0.158	CL
7	-26.8	Q	0.0	0.285	CH
8	-34.8	Q	0.0	0.239	CH
9	-41.9	Q	0.0	0.417	CH
10	-54.8	Q	0.0	0.410	CH
11	-66.8	Q	0.0	0.620	CH

NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
- ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

APPR. | DATE | DESCRIPTION | MARK

APPR. | DATE | DESCRIPTION | MARK

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY: | DATE: | SOLICITATION NO.:
DWN BY: | LOG BY: | CONTRACT NO.: | FILE NUMBER:
SUBMITTED BY: | PLOT SCALE: | PLOT DATE:
FILE NAME: | SIZE:

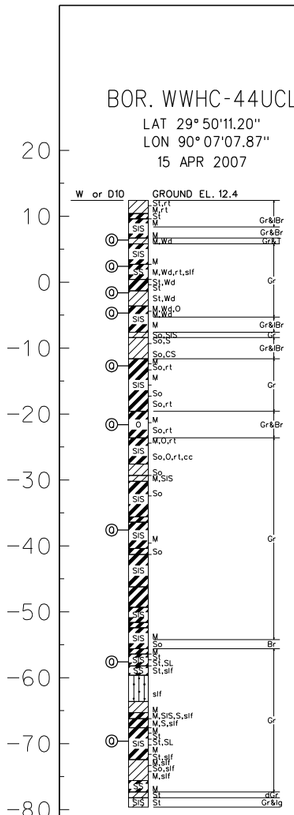
BOR. WWHC-43UPT

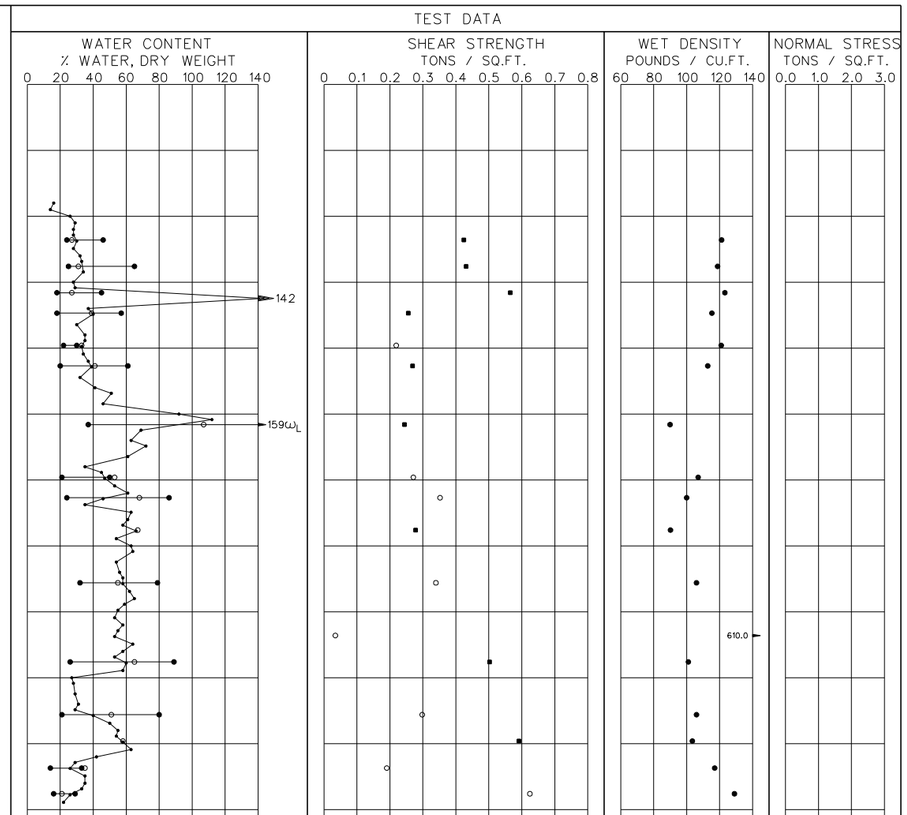
SHEET IDENTIFICATION NUMBER

BOR. WWHC-44UCL

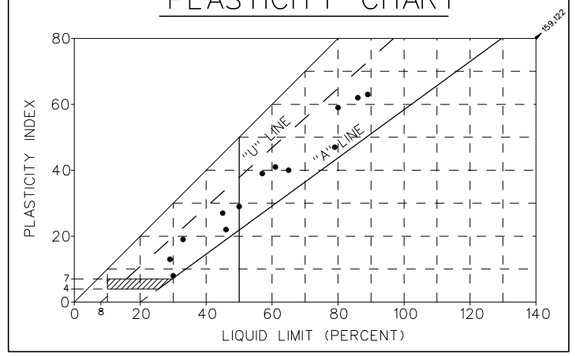
LAT 29° 50'11.20"
LON 90° 07'07.87"
15 APR 2007

ELEVATIONS IN FEET - N.A.V.D.

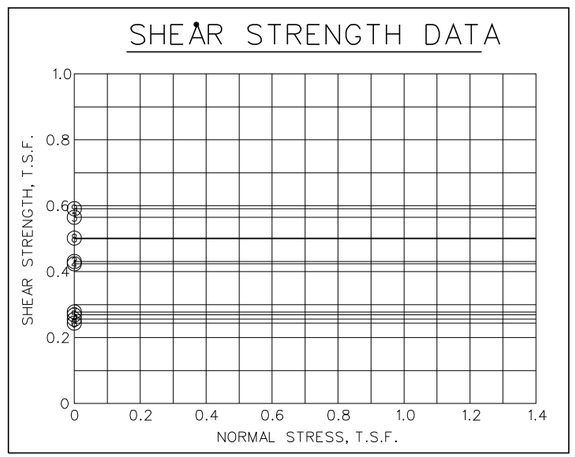




PLASTICITY CHART



SHEAR STRENGTH DATA



TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	6.4	Q	0.0	0.424	CL
2	2.4	Q	0.0	0.431	CH
3	-1.6	Q	0.0	0.565	CL
4	-4.7	Q	0.0	0.256	CH
5	-12.7	Q	0.0	0.269	CH
6	-21.6	Q	0.0	0.244	CH
7	-37.6	Q	0.0	0.278	CH
8	-57.6	Q	0.0	0.502	CH
9	-69.6	Q	0.0	0.591	CH

NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

APPR. | DATE | DESCRIPTION | MARK
APPR. | DATE | DESCRIPTION | MARK

DESIGNED BY: | DATE: | SOLICITATION NO.:
DRAWN BY: | CHKD BY: | SUBMITTED BY: | CONTRACT NO.: | FILE NUMBER:
FILE NAME: | PLOT SCALE: | PLOT DATE:
SIZE:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

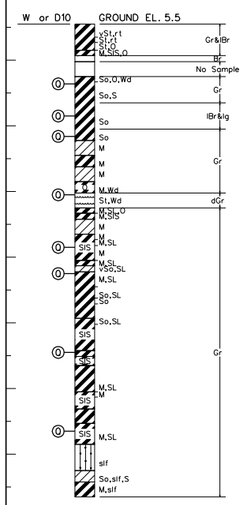
BOR. WWHC-44UCL

SHEET IDENTIFICATION NUMBER

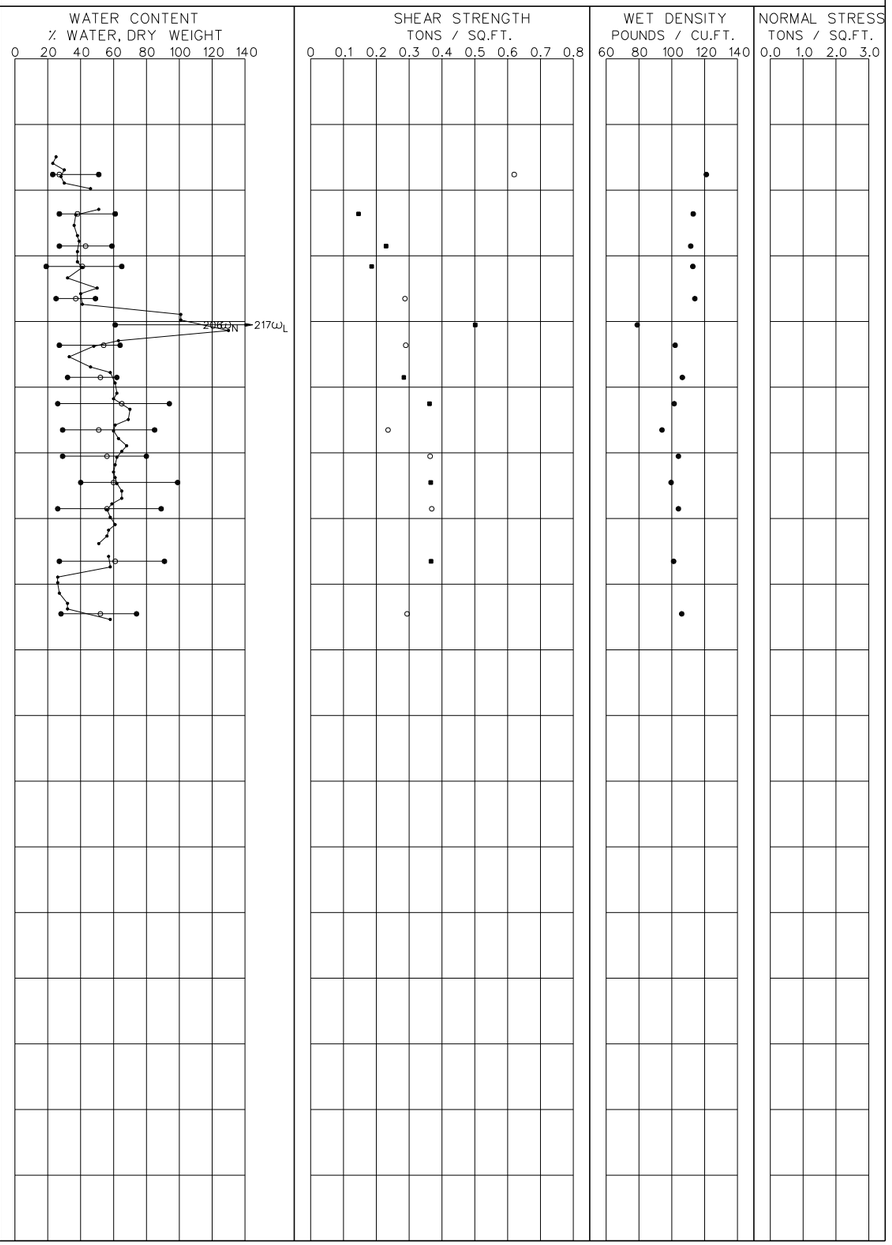
Bor. WWHC-44UFT

LAT 29° 50' 11.09"
LON 90° 07' 08.31"
13 Apr 2007

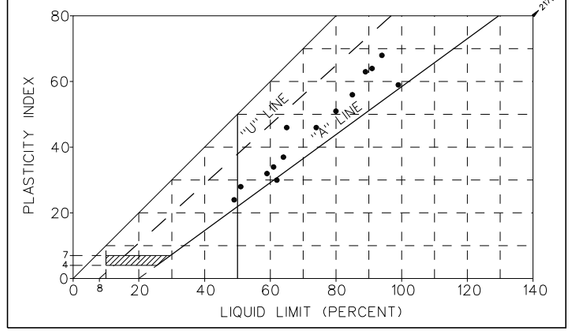
ELEVATIONS IN FEET - N.A.V.D.



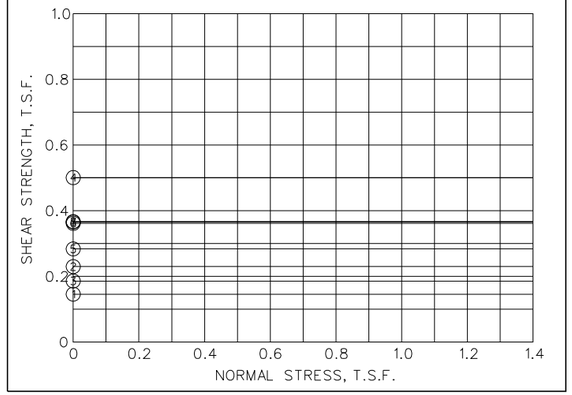
TEST DATA



PLASTICITY CHART



SHEAR STRENGTH DATA



TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-3.6	Q	0.0	0.146	CH
2	-8.5	Q	0.0	0.230	CH
3	-11.6	Q	0.0	0.186	CH
4	-20.5	Q	0.0	0.501	PT
5	-28.5	Q	0.0	0.284	CH
6	-32.5	Q	0.0	0.362	CH
7	-44.5	Q	0.0	0.366	CH
8	-56.5	Q	0.0	0.367	CH

NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

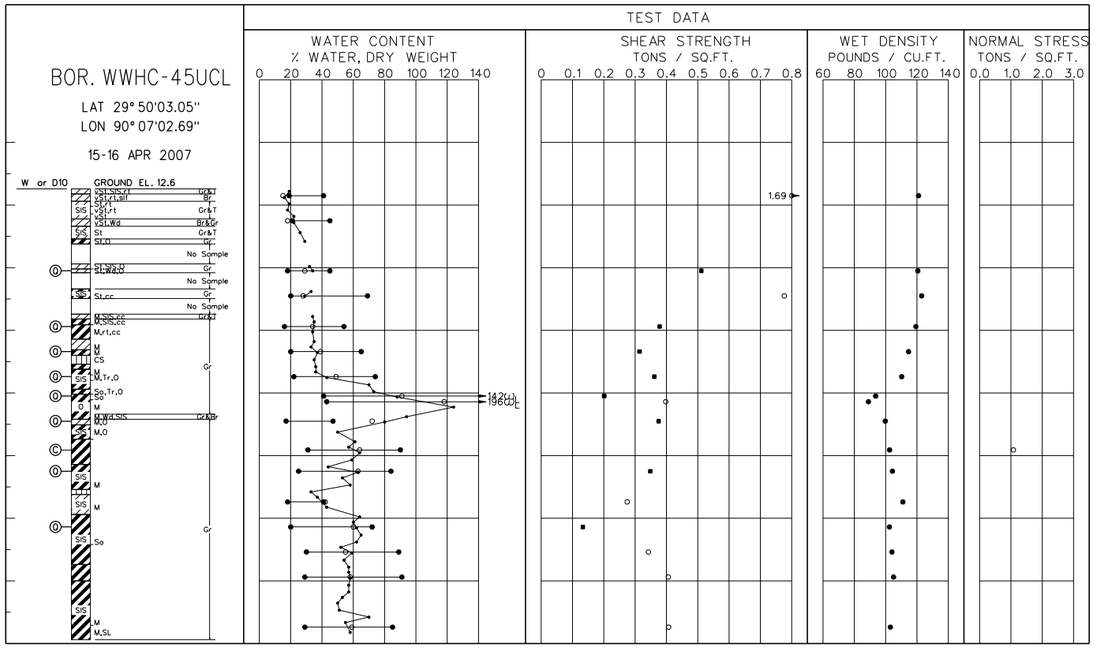
MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY:
DRAWN BY:
SUBMITTED BY:
FILE NAME:
DATE:
SOLICITATION NO.:
CONTRACT NO.:
SIZE:
PLOT SCALE:
PLOT DATE:

Bor. WWHC-44UFT

SHEET IDENTIFICATION NUMBER



TABULAR TEST DATA

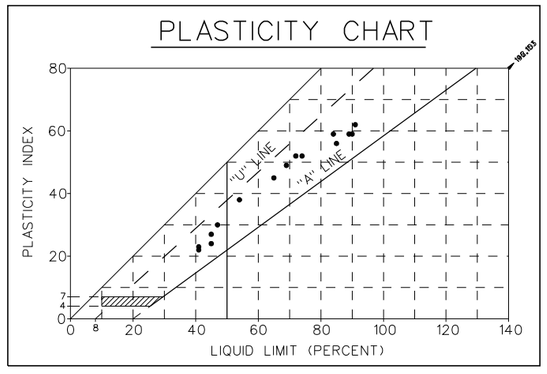
ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH c - TSF	CLASS
1	-0.5	Q	0.0	0.511	CL
2	-9.4	Q	0.0	0.378	CH
3	-13.4	Q	0.0	0.314	CH
4	-17.4	Q	0.0	0.361	CH
5	-20.5	Q	0.0	0.201	CH
6	-24.5	Q	0.0	0.375	CL
7	-32.5	Q	0.0	0.348	CH
8	-41.4	Q	0.0	0.133	CH
9	-29.1	C	0.0	0.000	CH

NOTES

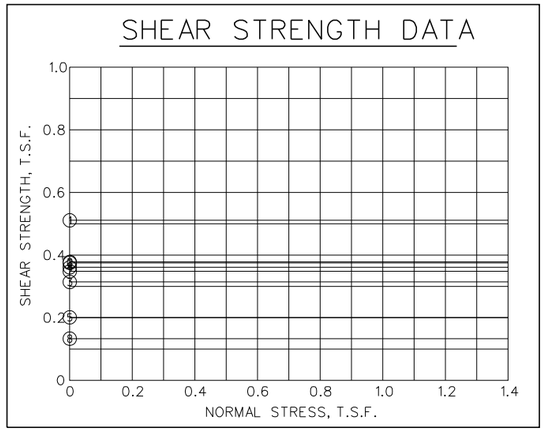
- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
- ω_P ω_N ω_L ATTERBERG LIMITS

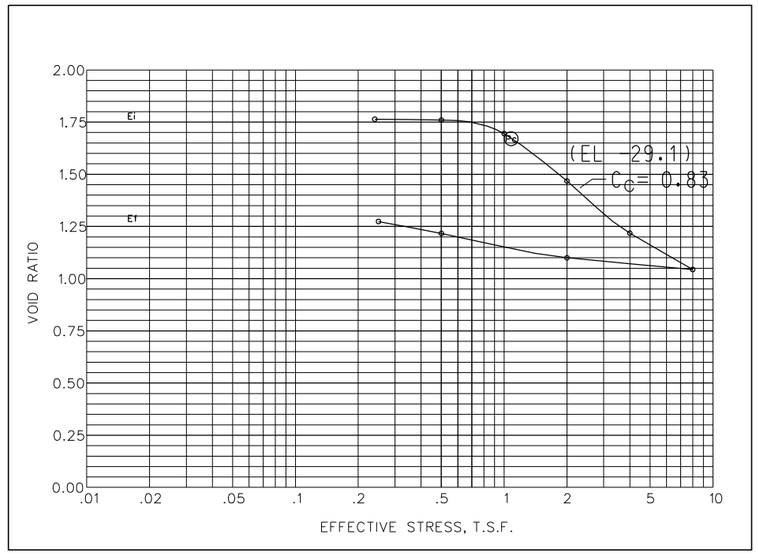
BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

PLASTICITY CHART



SHEAR STRENGTH DATA





US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

BOR. WWHC-45UCL

SHEET IDENTIFICATION NUMBER

BOR. WWHC-45UPT

LAT 29° 50' 03.31"
LON 90° 07' 02.11"
15 APR 2007

ELEVATIONS IN FEET - N.A.V.D.

W or D10 — GROUND EL. 4.6

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT
0 20 40 60 80 100 120 140

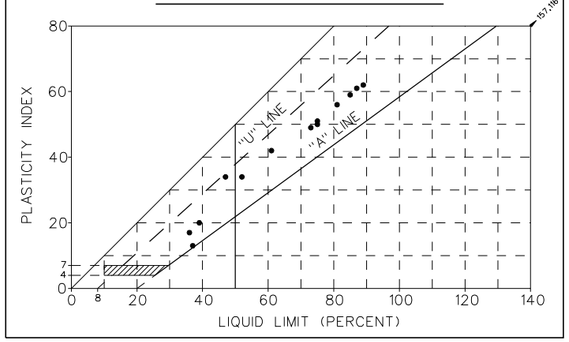
SHEAR STRENGTH
TONS / SQ.FT.
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8

WET DENSITY
POUNDS / CU.FT.
60 80 100 120 140

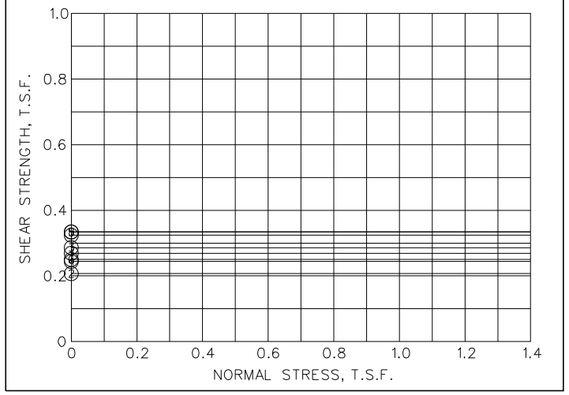
NORMAL STRESS
TONS / SQ.FT.
0.0 1.0 2.0 3.0

157 ω_L

PLASTICITY CHART



SHEAR STRENGTH DATA



TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH c - TSF	CLASS
1	-4.5	Q	0.0	0.269	CL
2	-8.5	Q	0.0	0.207	CL
3	-12.5	Q	0.0	0.286	CL
4	-16.5	Q	0.0	0.244	CL
5	-21.4	Q	0.0	0.334	CH
6	-29.4	Q	0.0	0.250	CH
7	-33.4	Q	0.0	0.324	CH
8	-41.4	Q	0.0	0.334	CH

NOTES

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER
STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY:
DRAWN BY:
SUBMITTED BY:
FILE NAMES
DATE:
SOLICITATION NO.:
CONTRACT NO.:
LOG BY:
PLOT DATE:
PLOT SCALE:
SIZE:

BOR. WWHC-45UPT

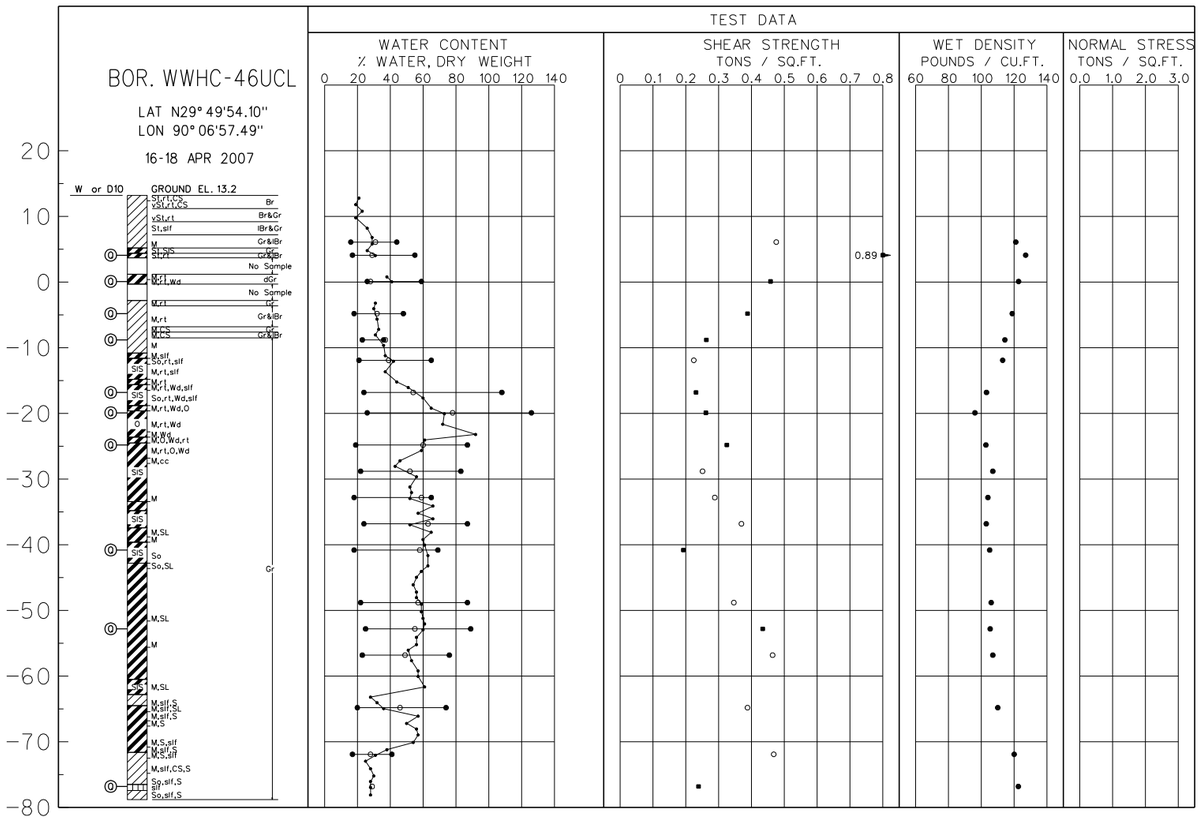
SHEET IDENTIFICATION NUMBER

BOR. WWHC-46UCL

LAT N29° 49'54.10"
LON 90° 06'57.49"

16-18 APR 2007

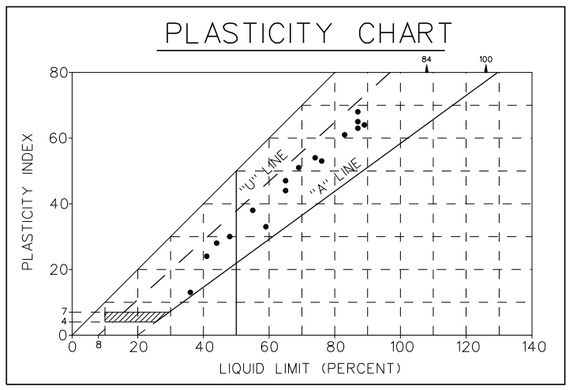
ELEVATIONS IN FEET - N.A.V.D.



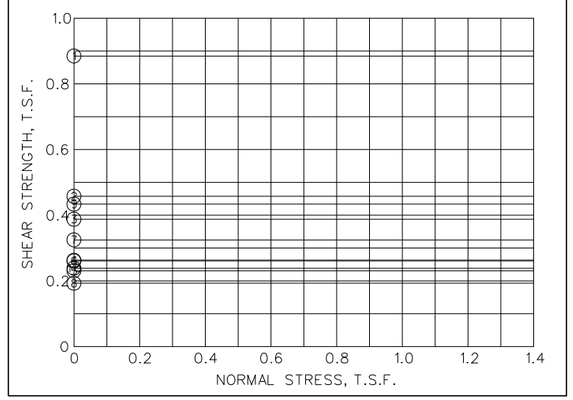
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH c - TSF	CLASS
1	4.1	Q	0.0	0.885	CH
2	0.1	Q	0.0	0.458	CH
3	-4.8	Q	0.0	0.388	CL
4	-8.8	Q	0.0	0.263	CL
5	-16.8	Q	0.0	0.231	CH
6	-19.9	Q	0.0	0.261	CH
7	-24.8	Q	0.0	0.325	CH
8	-40.8	Q	0.0	0.193	CH
9	-52.8	Q	0.0	0.434	CH
10	-76.8	Q	0.0	0.239	ML

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

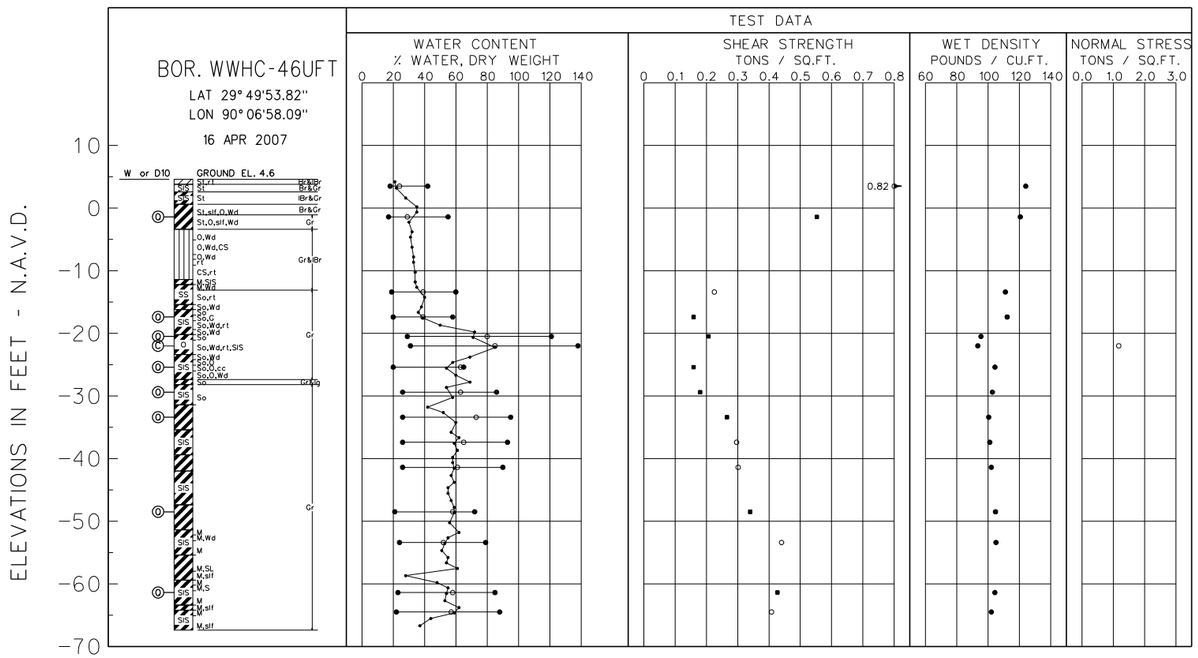
MARK | DESCRIPTION | DATE
MARK | DESCRIPTION | DATE

DESIGNED BY: | DATE: | FILE NUMBER:
DRN. BY: | LOG BY: | SOLICITATION NO.: | CONTRACT NO.: | PLOT DATE:
SUBMITTED BY: | PLOT SCALE:
FILE NAME: | SIZE:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

BOR. WWHC-46UCL

SHEET IDENTIFICATION NUMBER



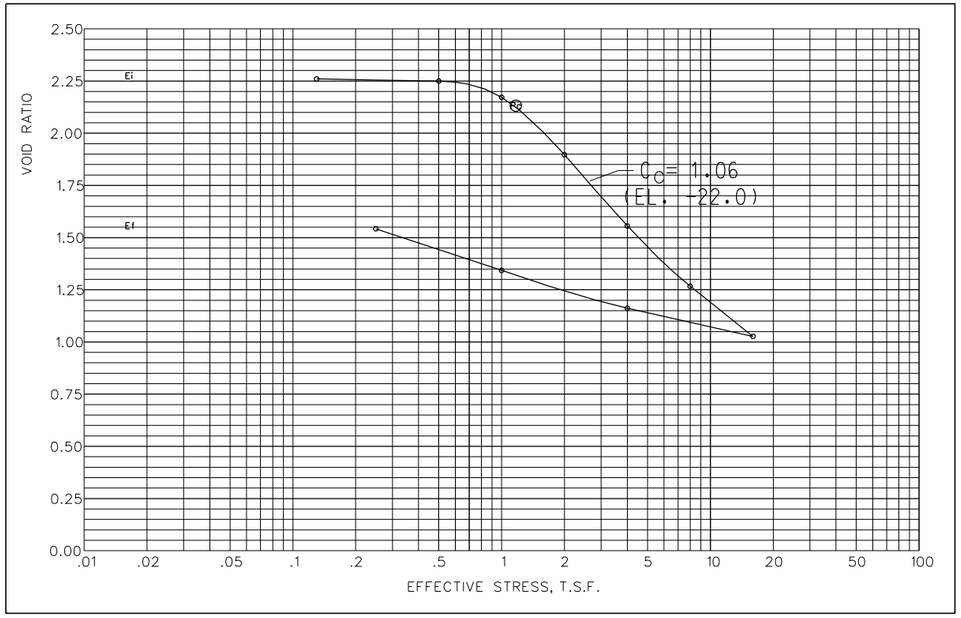
TABULAR TEST DATA

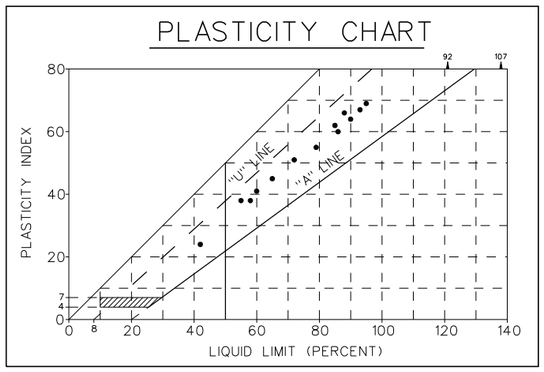
ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH c - TSF	CLASS
1	-1.4	Q	0.0	0.553	CH
2	-17.4	Q	0.0	0.159	CH
3	-20.5	Q	0.0	0.207	CH
4	-25.4	Q	0.0	0.159	CH
5	-29.4	Q	0.0	0.180	CH
6	-33.4	Q	0.0	0.266	CH
7	-48.5	Q	0.0	0.340	CH
8	-61.4	Q	0.0	0.427	CH
9	-22.0	C	0.0	0.000	CH

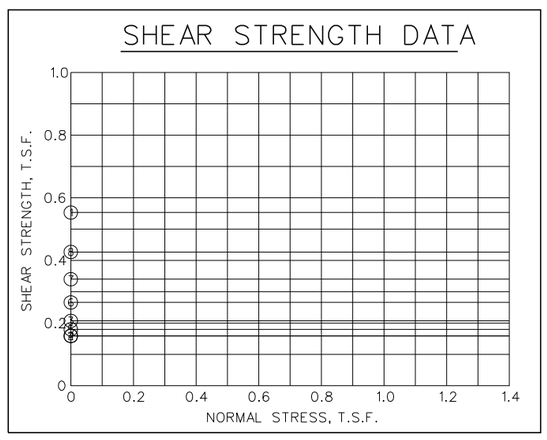
NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
- ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE







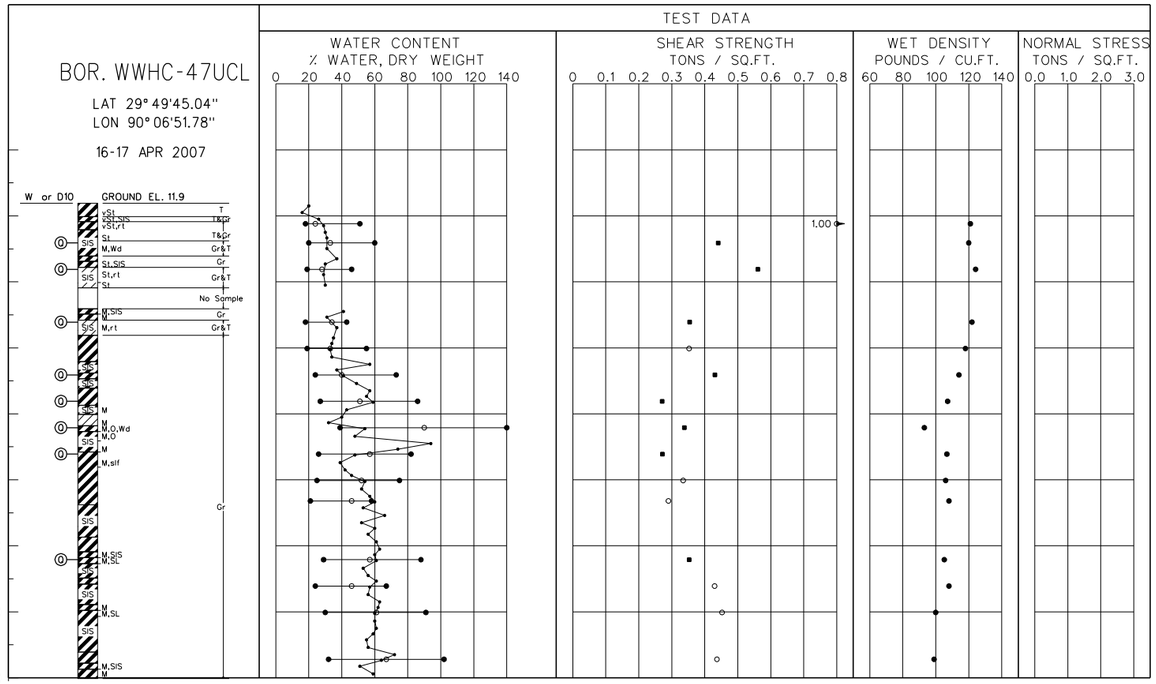
US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY:
DRAWN BY:
SUBMITTED BY:
FILE NAME:
DATE:
SOLICITATION NO.:
CONTRACT NO.:
PLOT DATE:
PLOT SCALE:
SIZE:

BOR. WWHC-46UFT

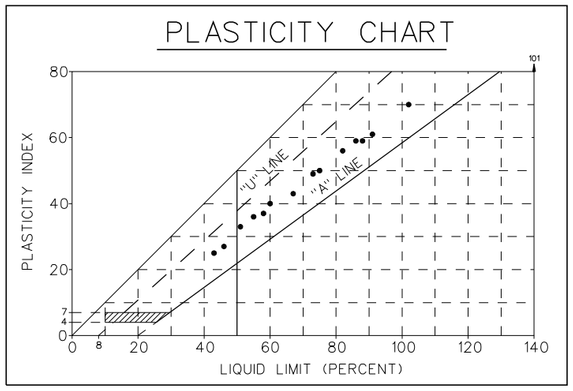
SHEET IDENTIFICATION NUMBER



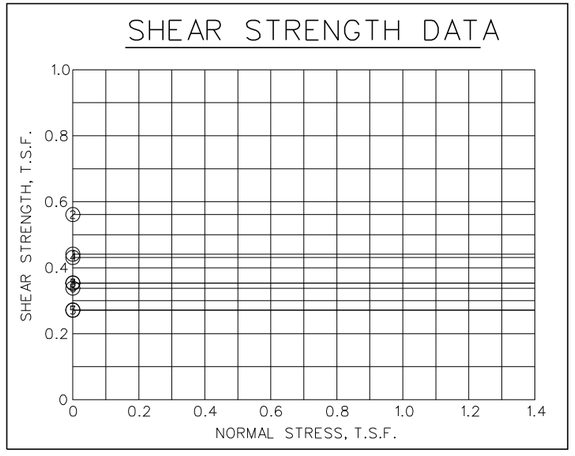
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH c - TSF	CLASS
1	5.9	Q	0.0	0.441	CH
2	1.9	Q	0.0	0.561	CL
3	-6.1	Q	0.0	0.354	CL
4	-14.1	Q	0.0	0.431	CH
5	-18.1	Q	0.0	0.271	CH
6	-22.1	Q	0.0	0.338	CH
7	-26.1	Q	0.0	0.272	CH
8	-42.1	Q	0.0	0.353	CH

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

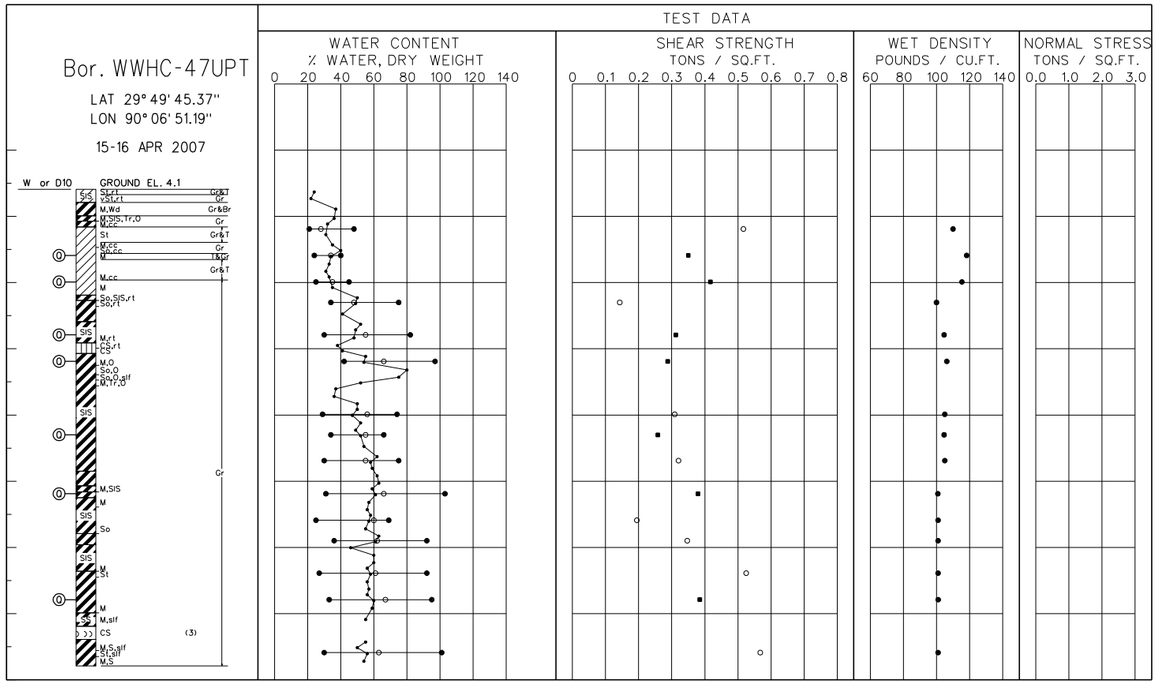
MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY:
DRAWN BY:
SUBMITTED BY:
FILE NAME:
DATE:
SOLICITATION NO.:
CONTRACT NO.:
FILE NUMBER:
CAD BY:
PLOT DATE:
SCALE:
PLOT SCALE:

BOR. WWHC-47UCL

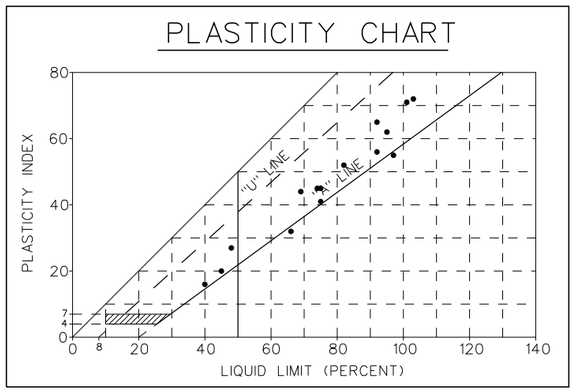
SHEET IDENTIFICATION NUMBER



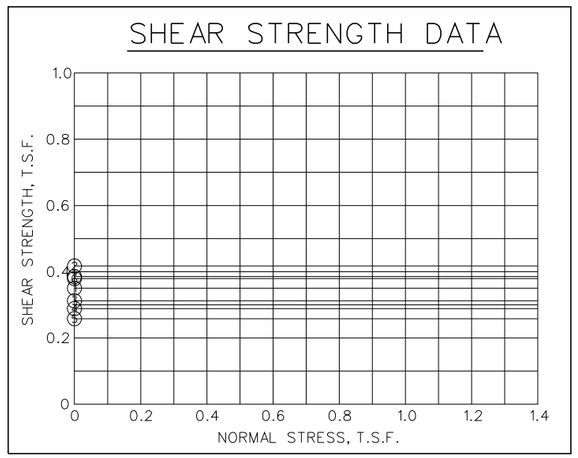
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-5.9	Q	0.0	0.350	CL
2	-9.9	Q	0.0	0.417	CL
3	-17.9	Q	0.0	0.312	CH
4	-21.9	Q	0.0	0.288	CH
5	-33.0	Q	0.0	0.258	CH
6	-41.9	Q	0.0	0.379	CH
7	-57.9	Q	0.0	0.385	CH

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

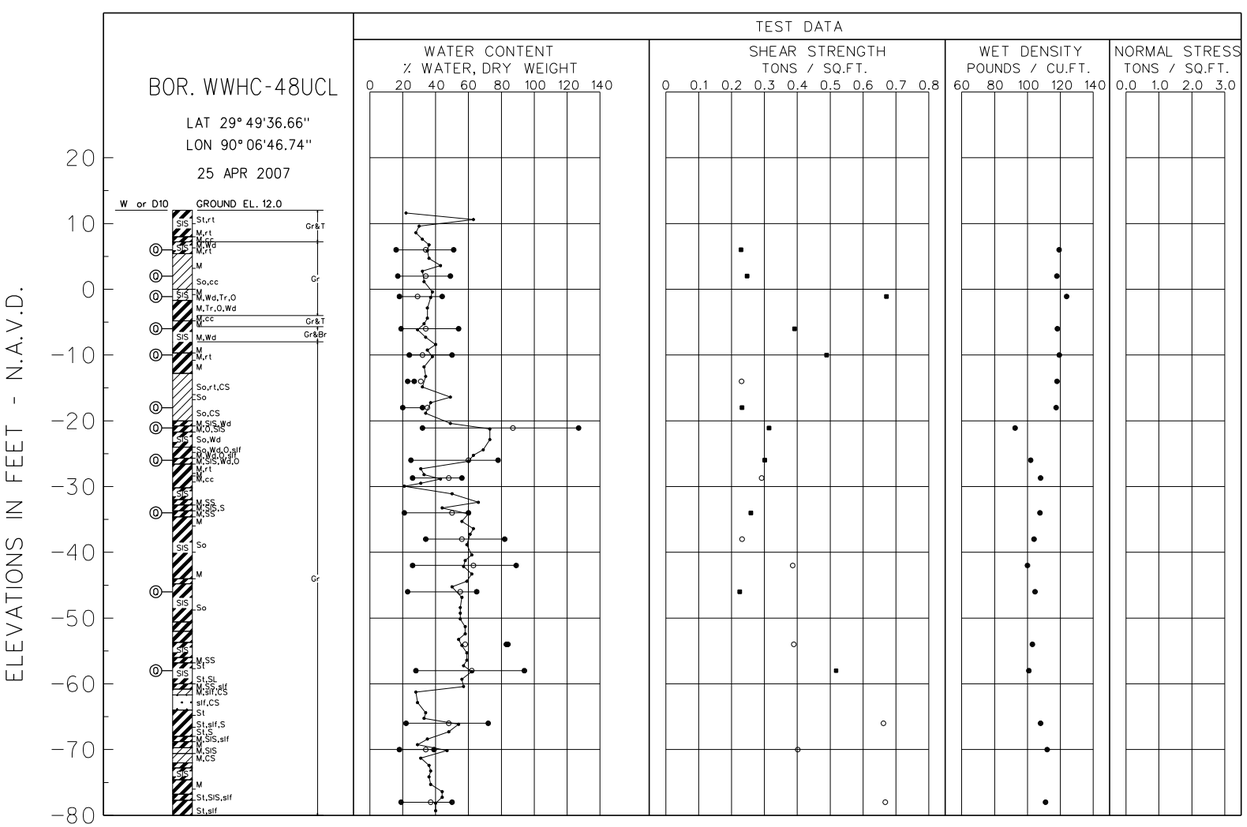
APPR. | DATE | DESCRIPTION | MARK

DESIGNED BY: | DRAWN BY: | SUBMITTED BY: | FILE NAME: | DATE: | SOLICITATION NO.: | CONTRACT NO.: | FILE NUMBER: | PLOT DATE: | PLOT SCALE:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

Bor. WWHC-47UPT

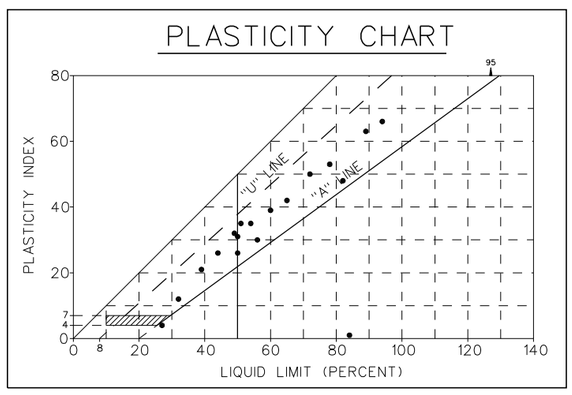
SHEET IDENTIFICATION NUMBER



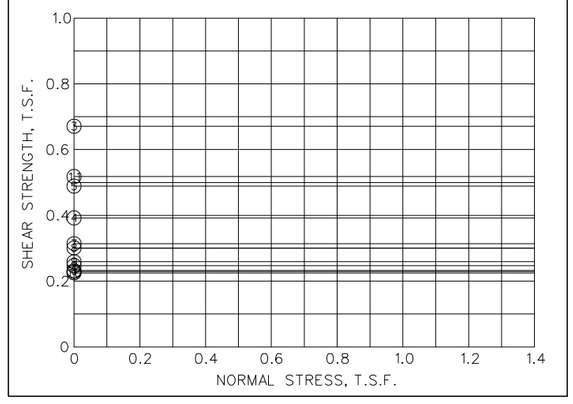
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	6.0	Q	0.0	0.229	CH
2	2.0	Q	0.0	0.247	CL
3	-1.1	Q	0.0	0.671	CL
4	-6.0	Q	0.0	0.392	CH
5	-10.0	Q	0.0	0.489	CH
6	-18.0	Q	0.0	0.232	CL
7	-21.1	Q	0.0	0.314	CH
8	-26.0	Q	0.0	0.301	CH
9	-34.0	Q	0.0	0.259	CH
10	-46.0	Q	0.0	0.225	CH
11	-58.0	Q	0.0	0.518	CH

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY: DATE:
DWN BY: CKD BY: SOLICITATION NO.:
SUBMITTED BY: CONTRACT NO.: FILE NUMBER:
FILE NAME: SIZE: PLOT SCALE: PLOT DATE:

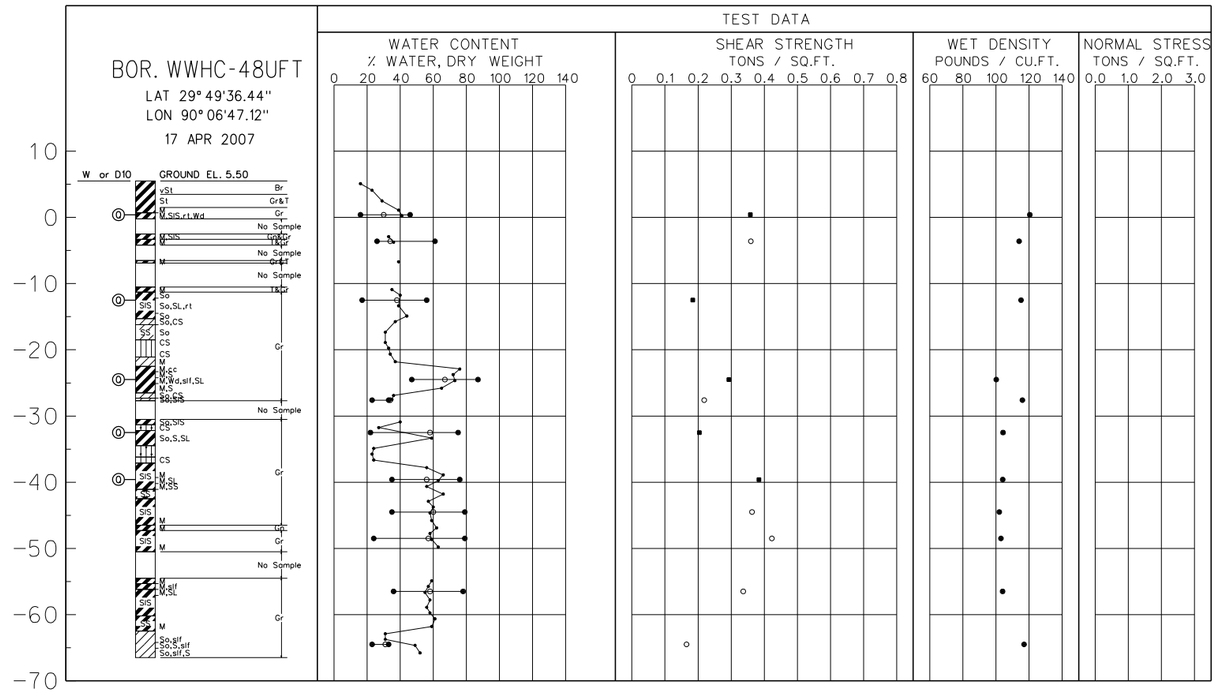
BOR. WWHC-48UCL

SHEET IDENTIFICATION NUMBER

BOR. WWHC-48UFT

LAT 29° 49'36.44"
LON 90° 06'47.12"
17 APR 2007

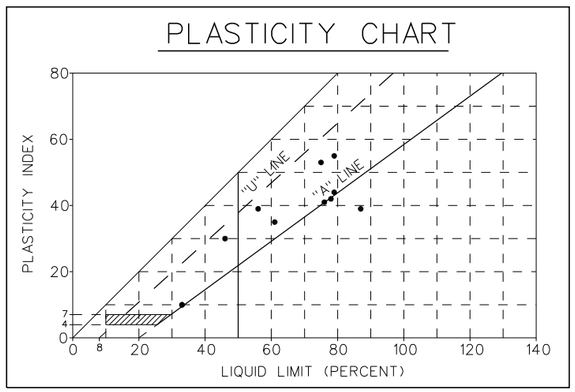
ELEVATIONS IN FEET - N.A.V.D.



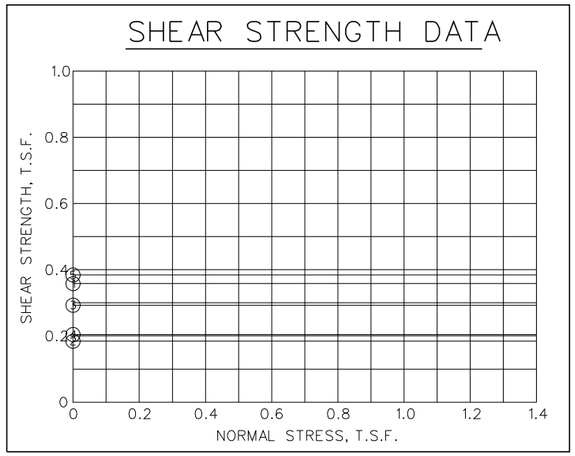
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	0.4	Q	0.0	0.358	CL
2	-12.5	Q	0.0	0.184	CH
3	-24.5	Q	0.0	0.293	CH
4	-32.5	Q	0.0	0.204	CH
5	-39.6	Q	0.0	0.384	CH

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
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- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

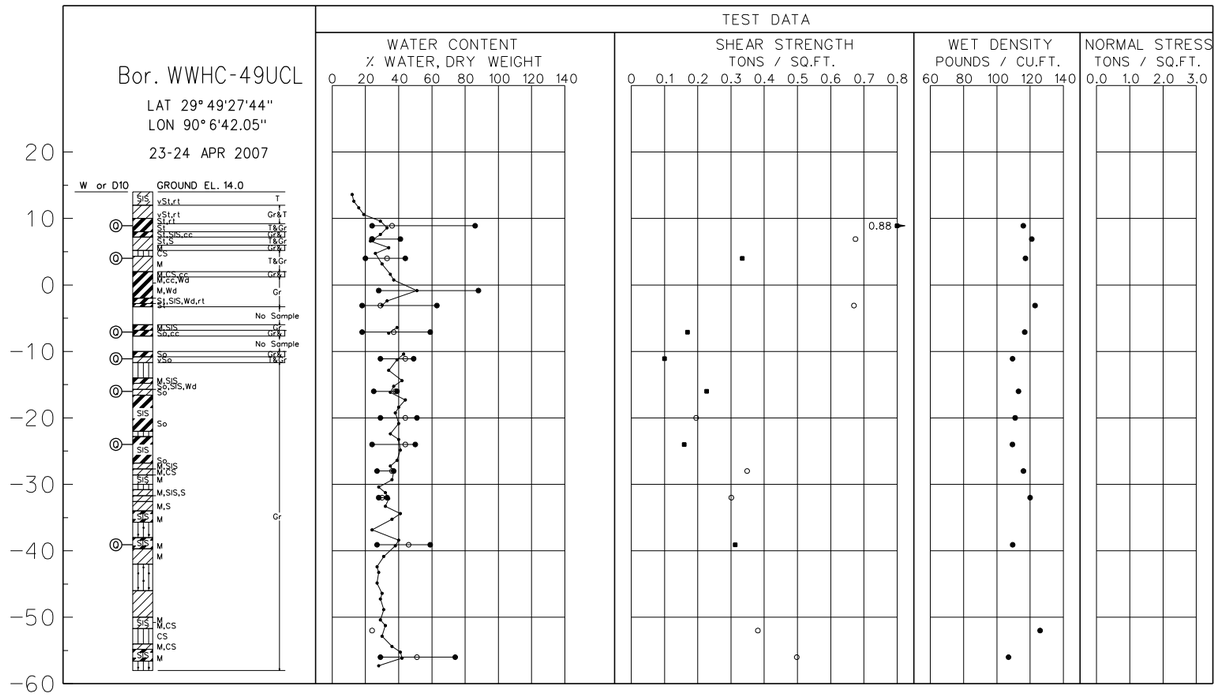
MARK | DESCRIPTION | DATE | APPR.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY: | DATE:
DRAWN BY: | JOB BY: | SOLICITATION NO.:
SUBMITTED BY: | CONTRACT NO.:
FILE NAME: | PLOT DATE:
DATE: | PLOT SCALE:

BOR. WWHC-48UFT

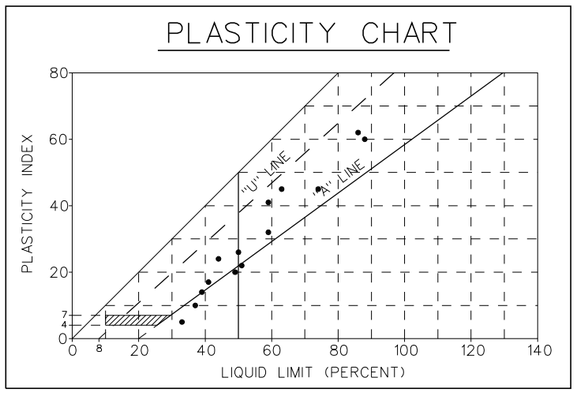
SHEET IDENTIFICATION NUMBER



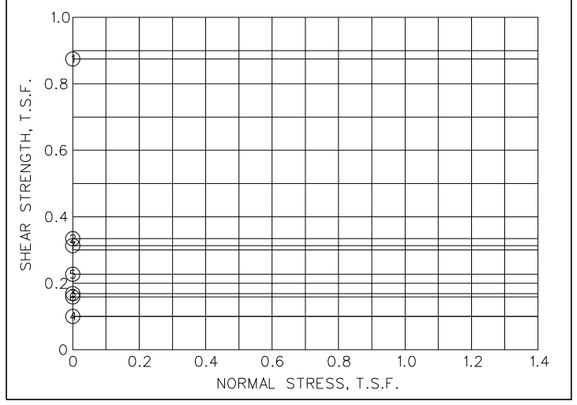
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	8.9	Q	0.0	0.875	CH
2	4.0	Q	0.0	0.334	CL
3	-7.1	Q	0.0	0.169	CH
4	-11.1	Q	0.0	0.100	CL
5	-16.0	Q	0.0	0.227	CL
6	-24.0	Q	0.0	0.159	CH
7	-39.1	Q	0.0	0.313	CH

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
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- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

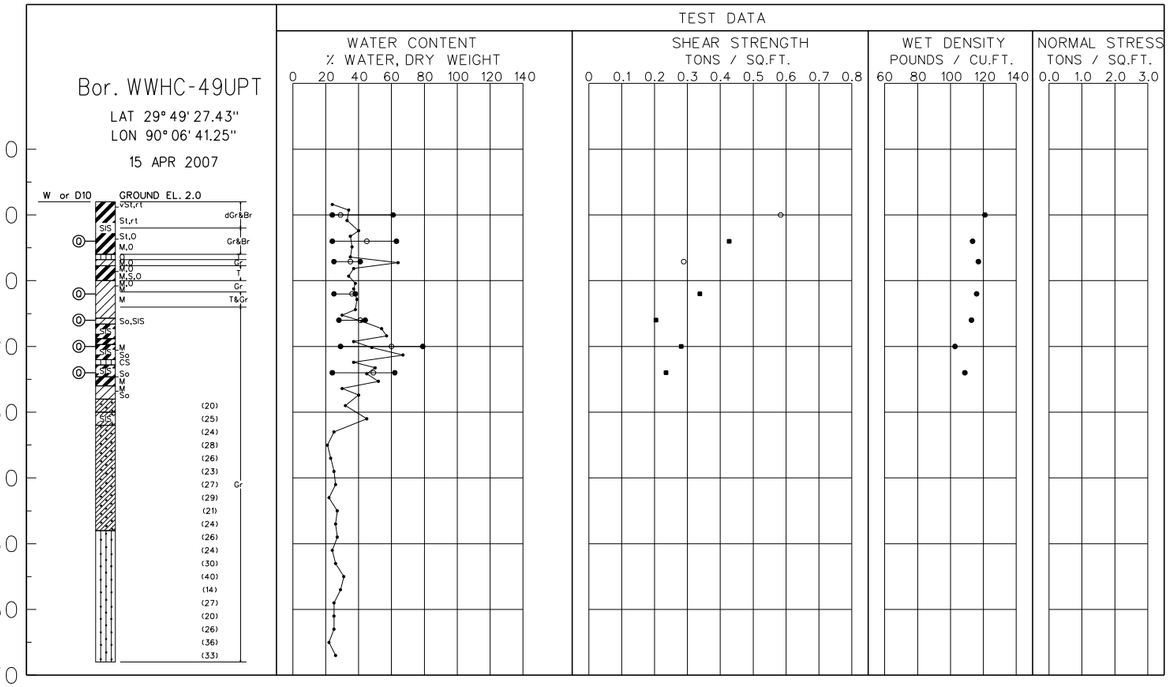
MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY:
DWN BY:
SUBMITTED BY:
FILE NAME:
DATE:
SOLICITATION NO.:
CONTRACT NO.:
SIZE:
PLOT SCALE:
PLOT DATE:
FILE NUMBER:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

Bor. WWHC-49UCL

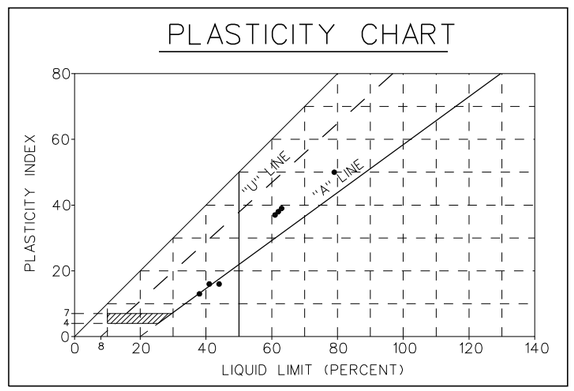
SHEET IDENTIFICATION NUMBER



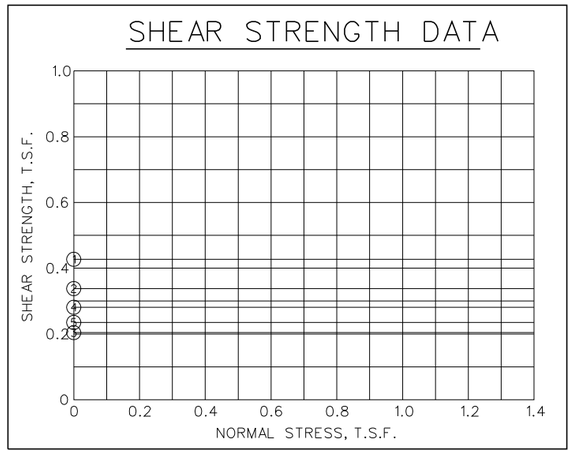
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-4.0	Q	0.0	0.427	CH
2	-12.0	Q	0.0	0.338	CL
3	-16.0	Q	0.0	0.204	CL
4	-20.0	Q	0.0	0.281	CH
5	-24.0	Q	0.0	0.235	CH

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

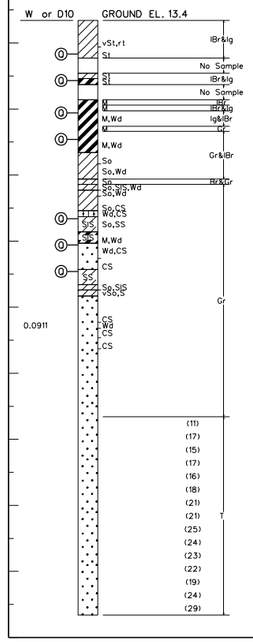
DESIGNED BY: DATE:
DRAWN BY: CKD BY: SOLICITATION NO.:
SUBMITTED BY: CONTRACT NO.:
FILE NAME: SIZE: PLOT SCALE: PLOT DATE: FILE NUMBER

Bor. WWHC-49UPT

SHEET IDENTIFICATION NUMBER

BOR. WWHC-50UCL

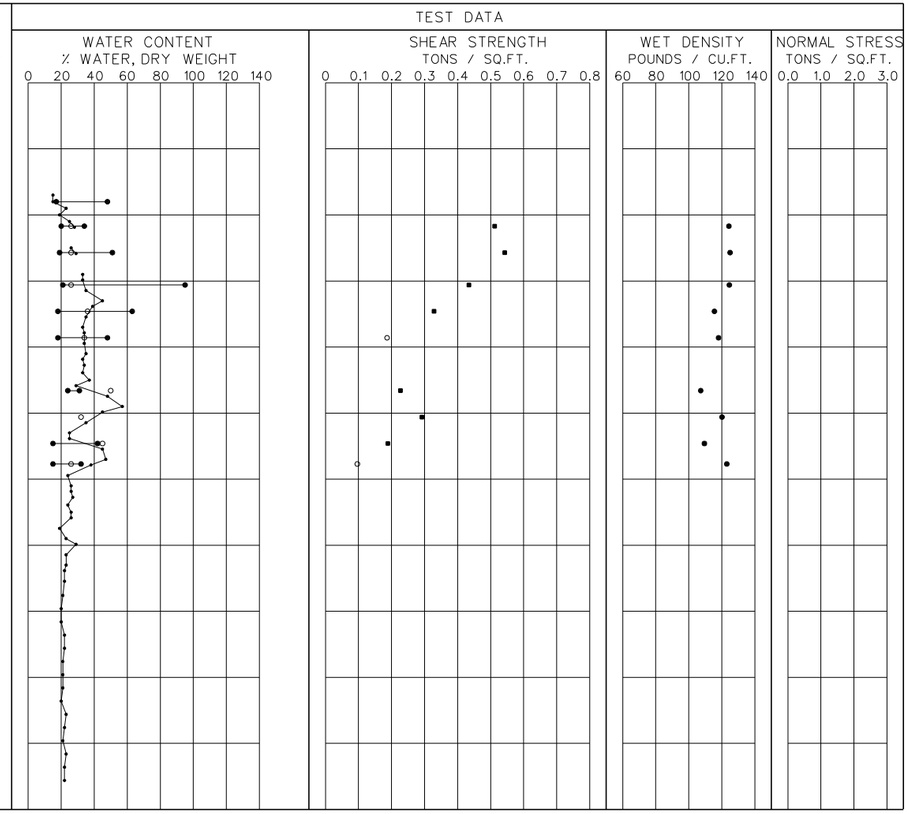
LAT 29° 49'17.99"
LON 90° 06'38.75"
18-19 APR 2007



ELEVATIONS IN FEET - N.A.V.D.

20 10 0 −10 −20 −30 −40 −50 −60 −70 −80

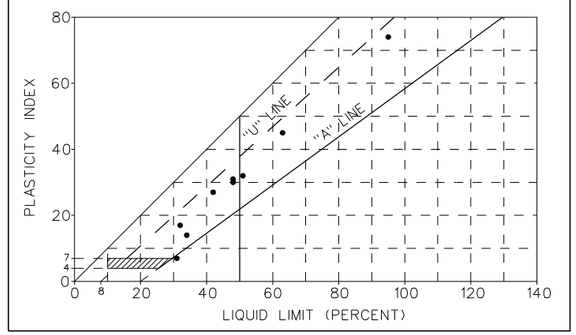
TEST DATA



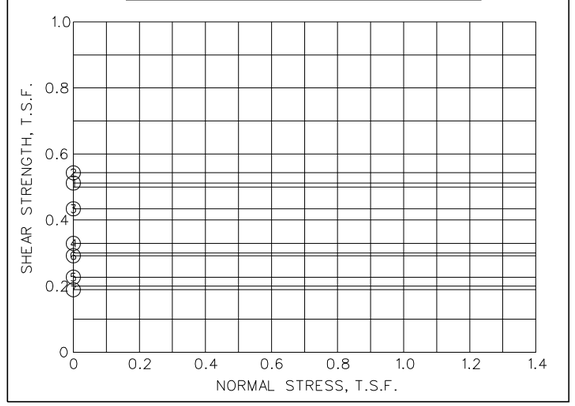
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH c - TSF	CLASS
1	8.3	Q	0.0	0.512	CL
2	4.3	Q	0.0	0.543	CH
3	-0.6	Q	0.0	0.434	CH
4	-4.6	Q	0.0	0.329	CH
5	-16.6	Q	0.0	0.227	CL
6	-20.6	Q	0.0	0.292	SP
7	-24.6	Q	0.0	0.189	CL

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

MARK | DESCRIPTION | DATE | APPR.

DESIGNED BY: | DATE: | SOLICITATION NO.: | FILE NUMBER:
DWN BY: | CKD BY: | CONTRACT NO.: |
SUBMITTED BY: | | | PLOT DATE:
FILE NAME: | PLOT SCALE: | SIZE:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

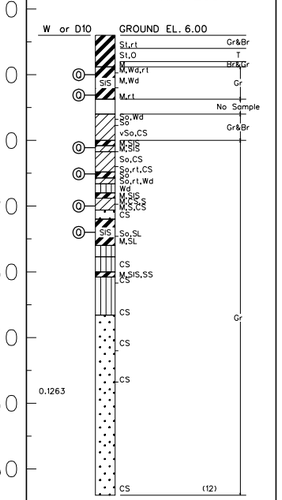
BOR. WWHC-50UCL

SHEET IDENTIFICATION NUMBER

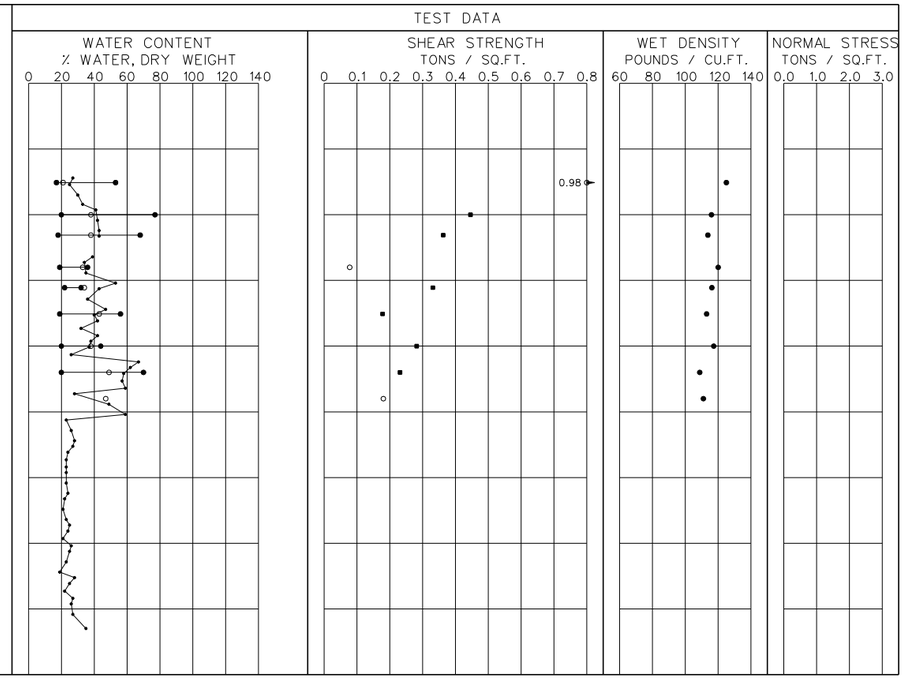
BOR. WWHC-50UFT

LAT 29° 49'17.78"
LON 90° 06'39.20"
16-17 APR 2007

ELEVATIONS IN FEET - N.A.V.D.



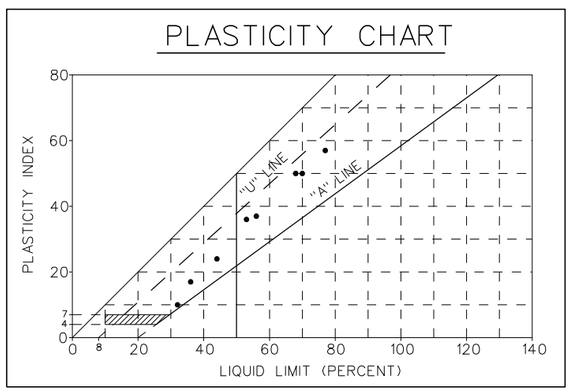
TEST DATA



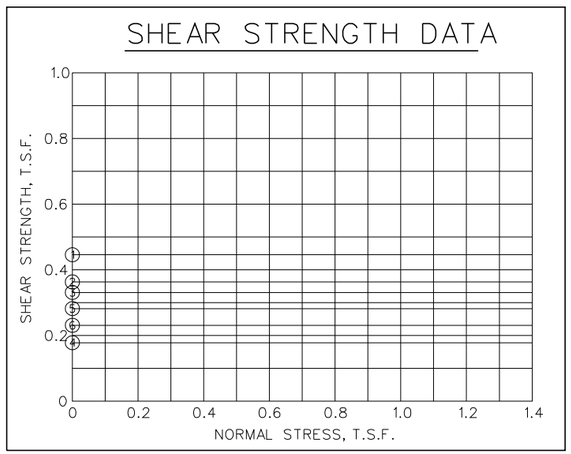
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	0.0	0	0.0	0.446	CH
2	-3.1	0	0.0	0.363	CH
3	-11.1	0	0.0	0.331	CL
4	-15.1	0	0.0	0.178	CH
5	-20.0	0	0.0	0.282	CL
6	-24.0	0	0.0	0.231	CH

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
- ω_P ——○—— ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

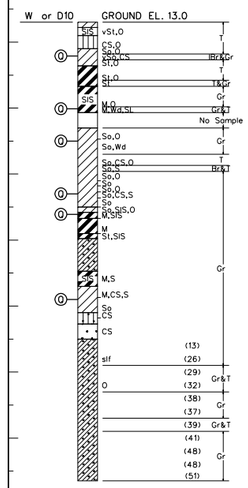
DESIGNED BY: | DATE: | SOLICITATION NO.: | FILE NUMBER:
DWN BY: | CKD BY: | CONTRACT NO.: | PLOT DATE:
SUBMITTED BY: | PLOT SCALE:
FILE NAME: | SIZE:

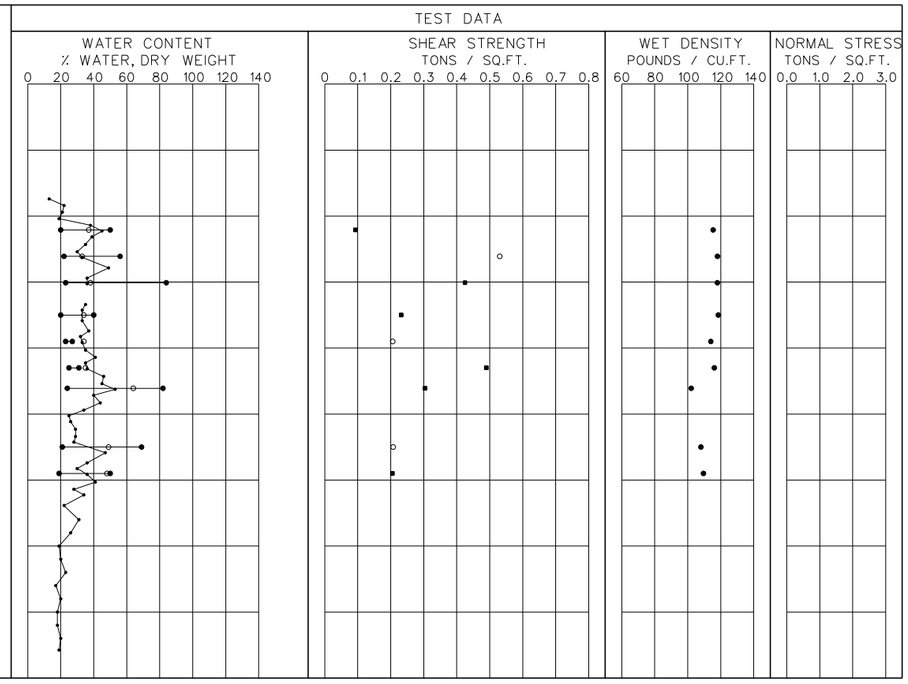
BOR. WWHC-50UFT

SHEET IDENTIFICATION NUMBER

BOR. WWHC-51UCL

LAT 29° 49'08.27"
LON 90° 06'40.64"
23-24 APR 2007

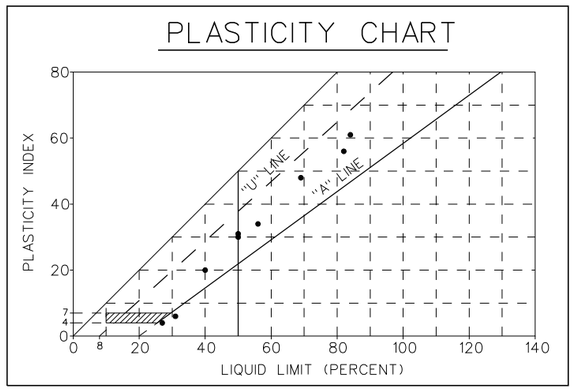




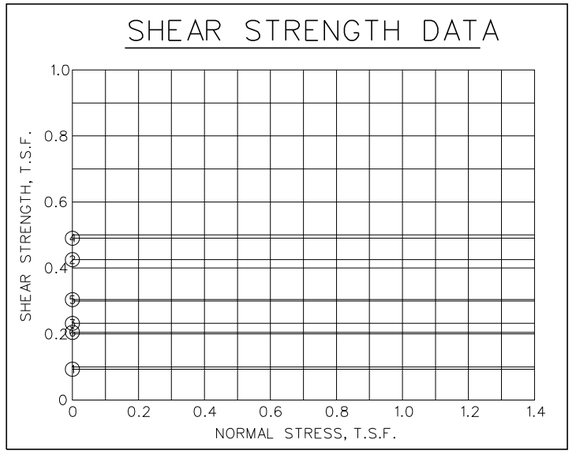
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	7.9	Q	0.0	0.093	CL
2	-0.1	Q	0.0	0.425	CH
3	-5.0	Q	0.0	0.232	CL
4	-13.0	Q	0.0	0.490	CL
5	-16.1	Q	0.0	0.304	CH
6	-29.0	Q	0.0	0.205	CL

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

MARK	DESCRIPTION	DATE	APPR.

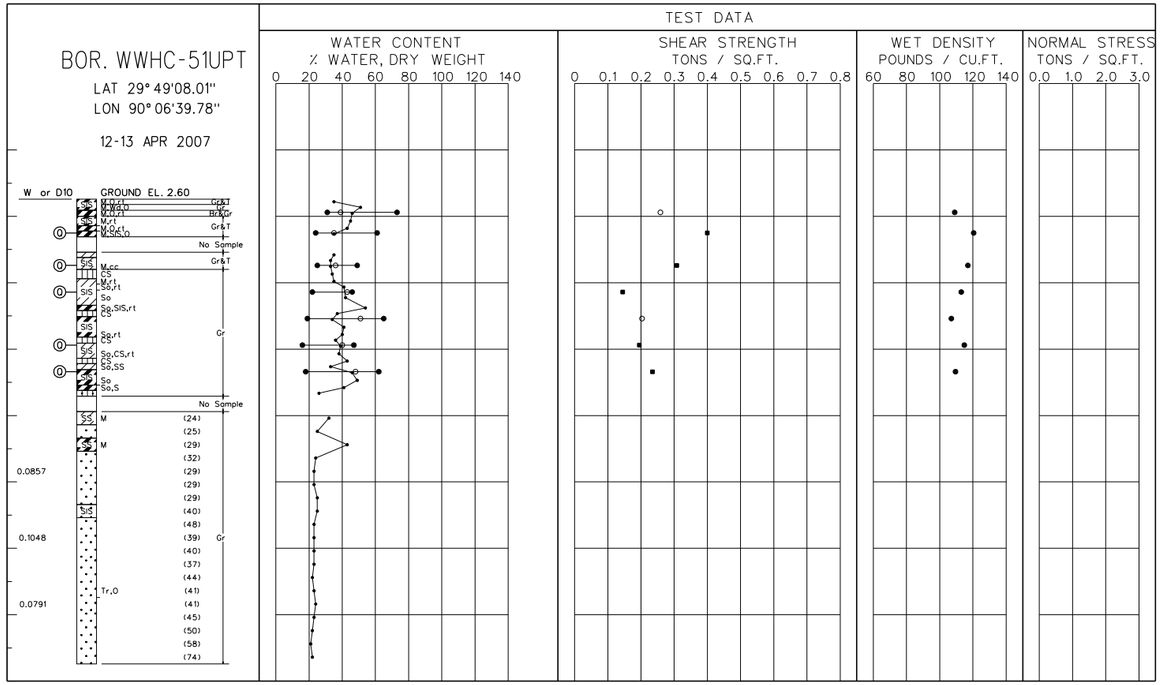
MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY:
DWN BY:
SUBMITTED BY:
FILE NAME:
DATE:
SOLICITATION NO.:
CONTRACT NO.:
DIG BY:
SIZE
PLOT SCALE:
PLOT DATE:
FILE NUMBER:

BOR. WWHC-51UCL

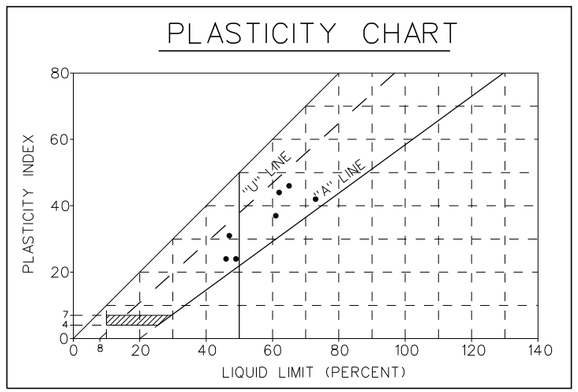
SHEET IDENTIFICATION NUMBER



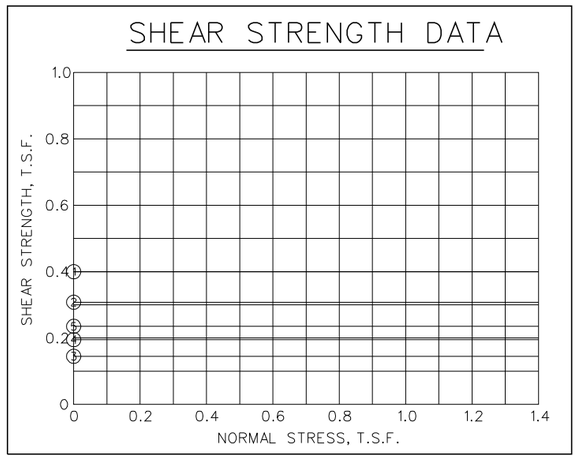
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-2.5	Q	0.0	0.400	CH
2	-7.4	Q	0.0	0.308	CL
3	-11.4	Q	0.0	0.145	CL
4	-19.4	Q	0.0	0.195	CL
5	-23.4	Q	0.0	0.235	CH

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

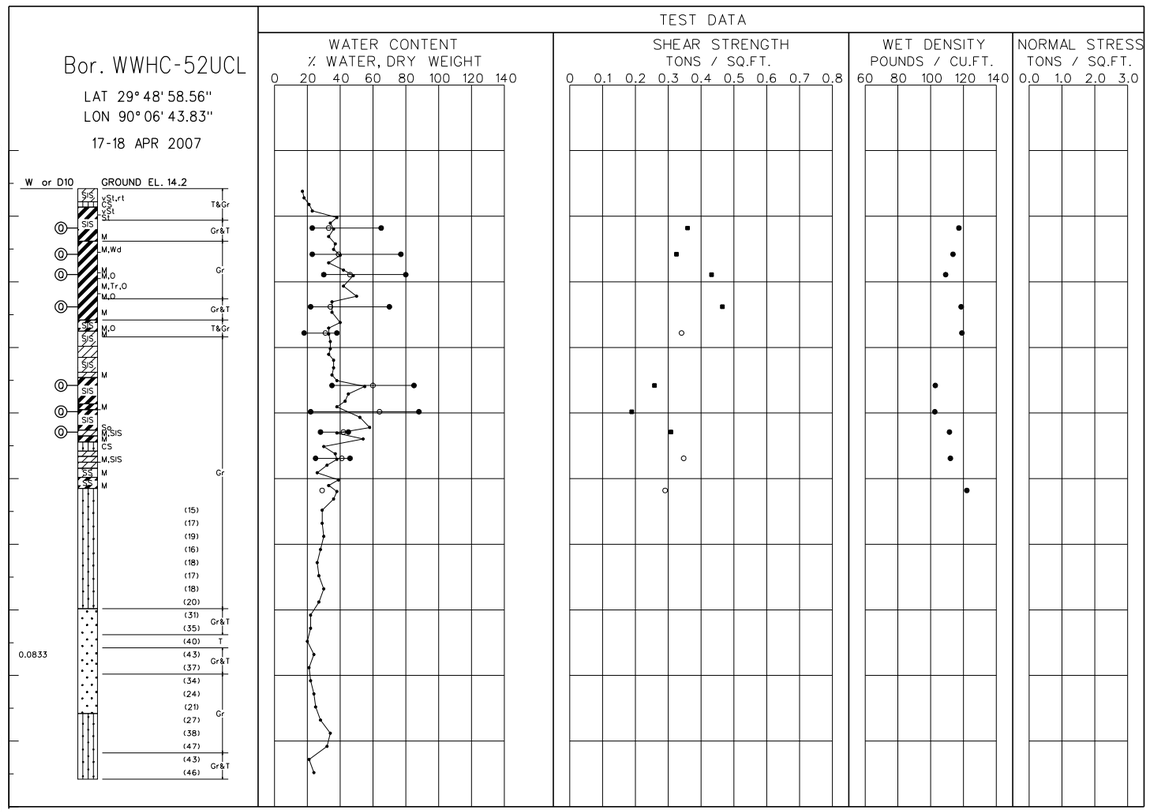
MARK | DESCRIPTION | DATE | APPR.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY: | DRAWN BY: | SUBMITTED BY: | FILE NAME: | DATE: | SOLICITATION NO.: | CONTRACT NO.: | FILE NUMBER: | PLOT DATE: | PLOT SCALE:

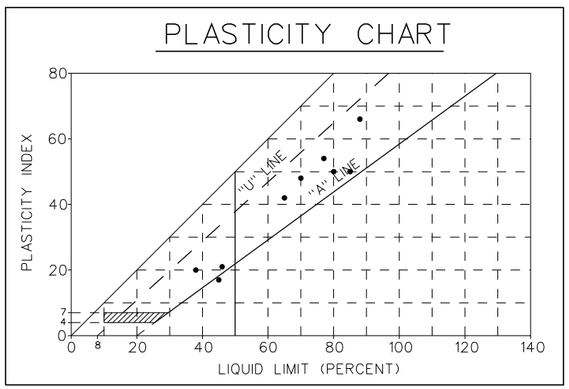
BOR. WWHC-51UPT

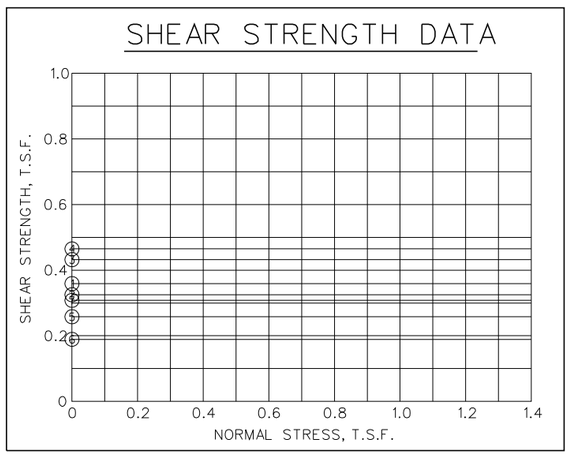
SHEET IDENTIFICATION NUMBER



TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	8.2	Q	0.0	0.359	CH
2	4.2	Q	0.0	0.325	CH
3	1.1	Q	0.0	0.432	CH
4	-3.8	Q	0.0	0.465	CH
5	-15.8	Q	0.0	0.258	CH
6	-19.8	Q	0.0	0.189	CH
7	-22.9	Q	0.0	0.308	CL





NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY: | DATE: | SOLICITATION NO.: | FILE NUMBER:
DWN BY: | CKD BY: | CONTRACT NO.: | PLOT DATE:
SUBMITTED BY: | | | PLOT SCALE:
FILE NAME: | | SEE:

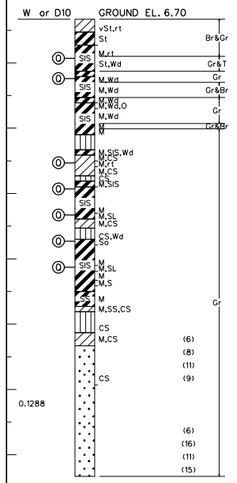
Bor. WWHC-52UCL

SHEET IDENTIFICATION NUMBER

BOR. WWHC-52UFT

LAT 29° 48'58.76"
LON 90° 06'44.20"
14-16 APR 2007

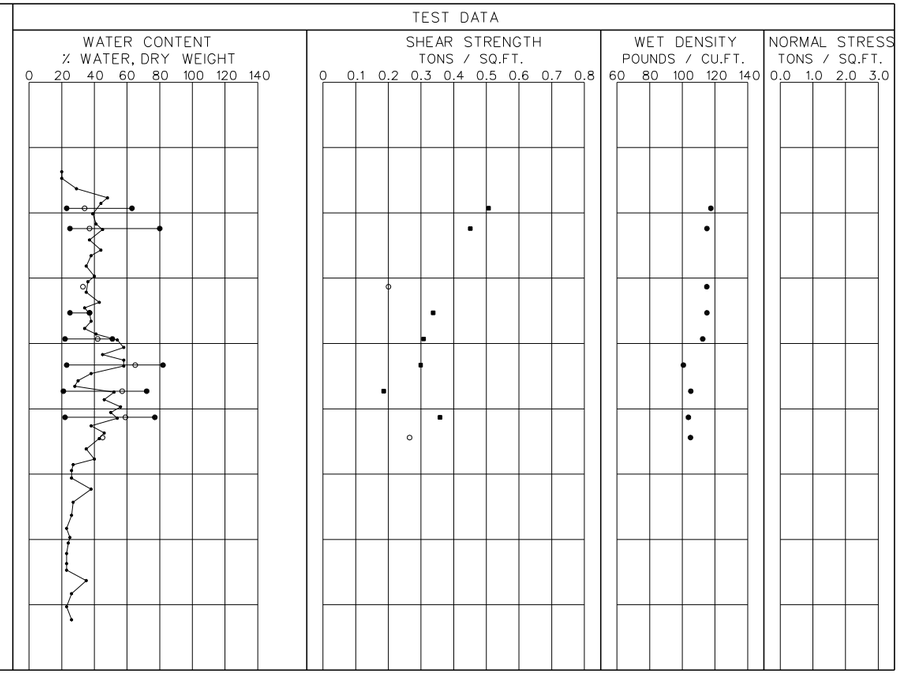
W or D10 GROUND EL. 6.70



ELEVATIONS IN FEET - N.A.V.D.

10
0
-10
-20
-30
-40
-50
-60
-70

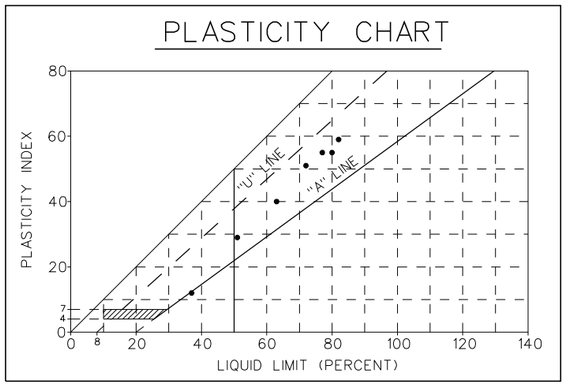
TEST DATA



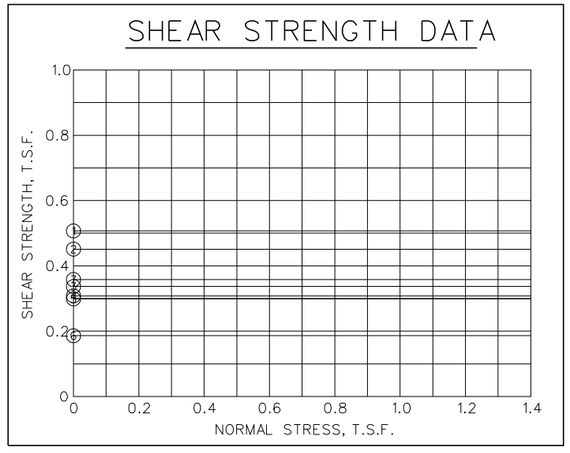
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH c - TSF	CLASS
1	0.7	Q	0.0	0.507	CH
2	-2.4	Q	0.0	0.451	CH
3	-15.3	Q	0.0	0.337	CL
4	-19.3	Q	0.0	0.308	CH
5	-23.3	Q	0.0	0.299	CH
6	-27.3	Q	0.0	0.186	CH
7	-31.3	Q	0.0	0.358	CH

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

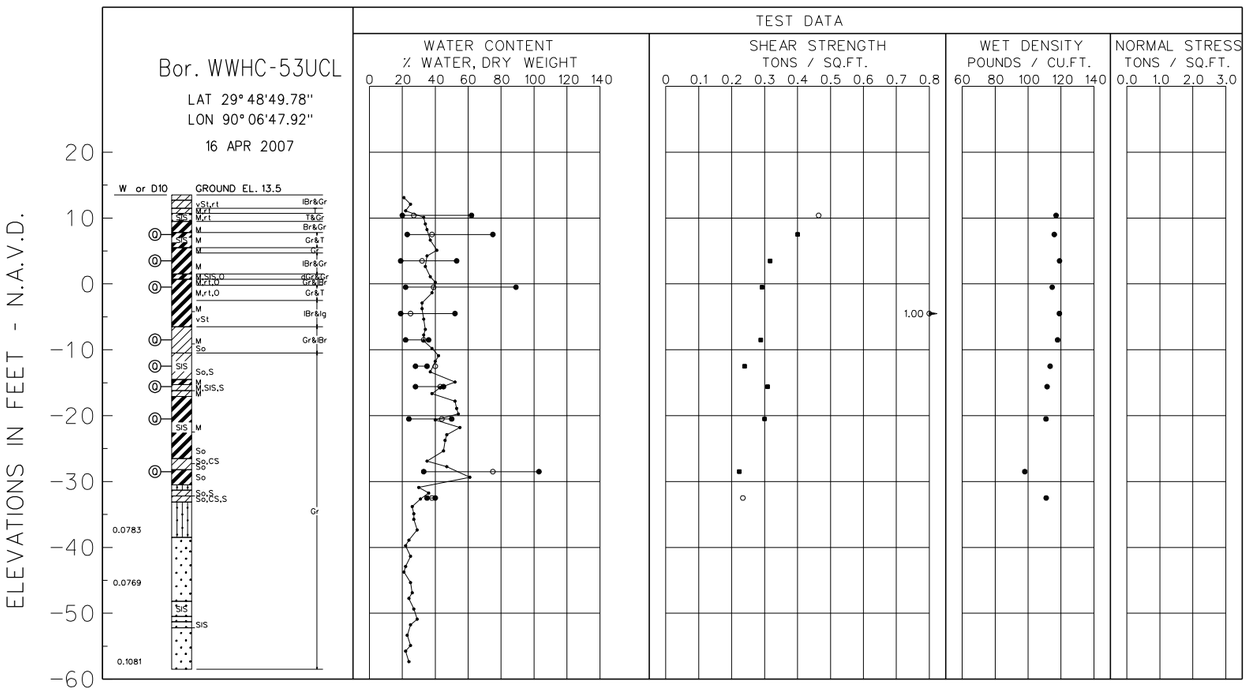
MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY:
DRAWN BY:
SUBMITTED BY:
CHECKED BY:
DATE:
SOLICITATION NO.:
CONTRACT NO.:
FILE NAME:
SIZE:
PLOT SCALE:
PLOT DATE:
FILE NUMBER:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

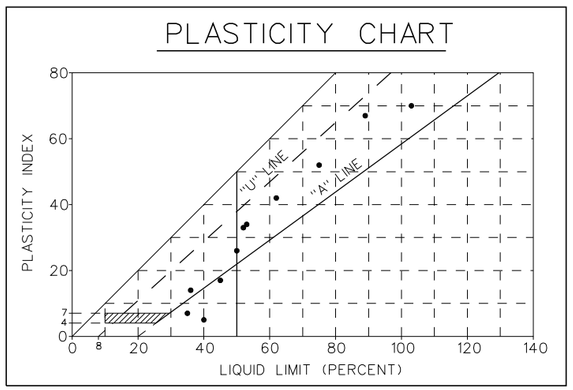
BOR. WWHC-52UFT

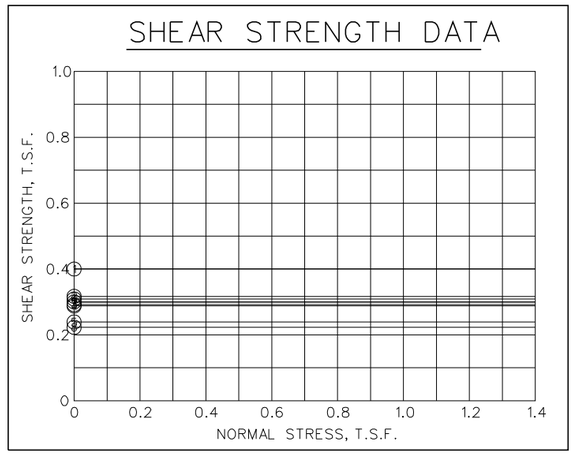
SHEET IDENTIFICATION NUMBER



TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	7.5	Q	0.0	0.400	CH
2	3.5	Q	0.0	0.317	CH
3	-0.5	Q	0.0	0.292	CH
4	-8.5	Q	0.0	0.288	CL
5	-12.5	Q	0.0	0.239	CL
6	-15.6	Q	0.0	0.309	CL
7	-20.5	Q	0.0	0.300	CH
8	-28.5	Q	0.0	0.223	CH





NOTES

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
ω_P ω_N ω_L ATTERBERG LIMITS

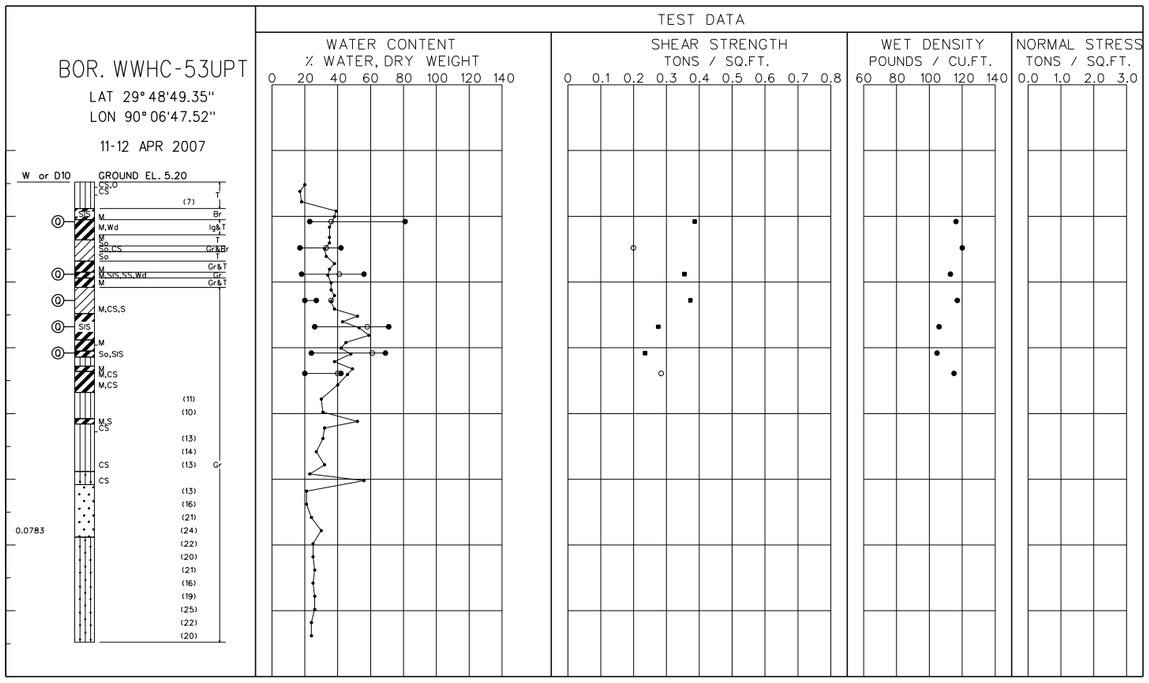
BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

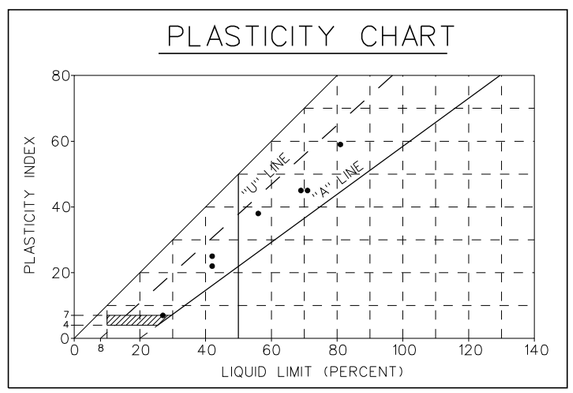
Bor. WWHC-53UCL

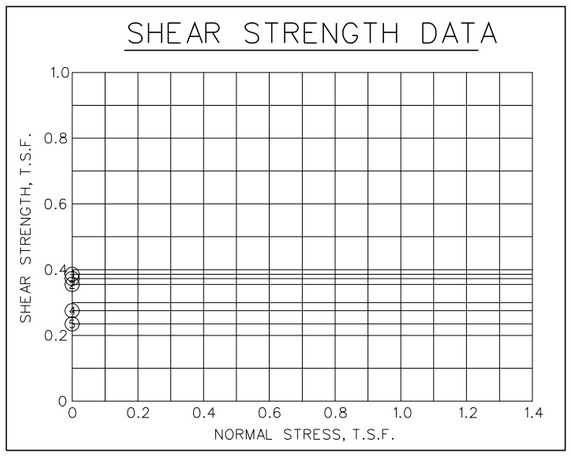
SHEET IDENTIFICATION NUMBER



TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-0.8	Q	0.0	0.386	CH
2	-8.8	Q	0.0	0.355	CH
3	-12.8	Q	0.0	0.373	CL
4	-16.8	Q	0.0	0.275	CH
5	-20.8	Q	0.0	0.235	CH





NOTES

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
□ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
ω_P —— ω_N —— ω_L ATTERBERG LIMITS

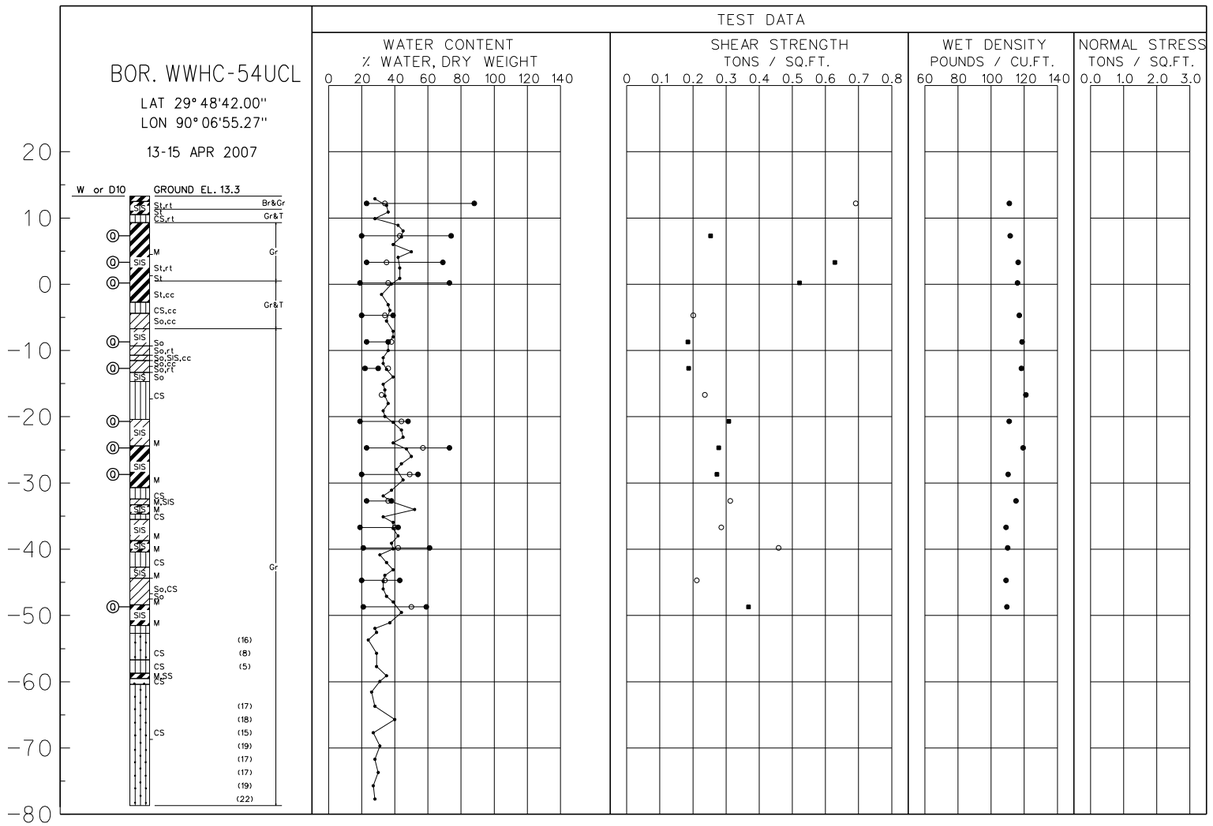
BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

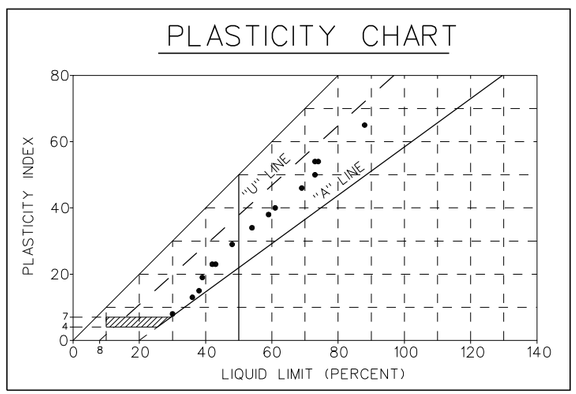
BOR. WWHC-53UPT

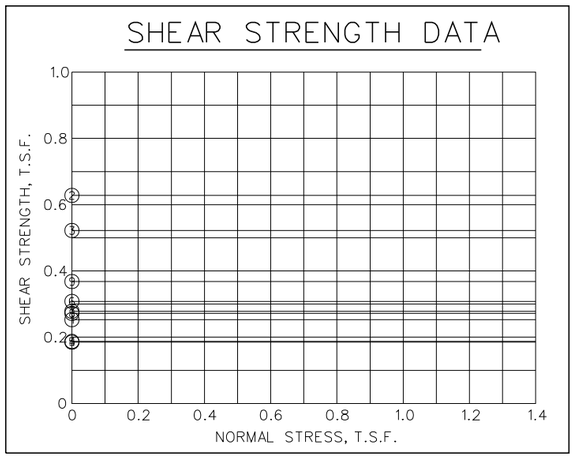
SHEET IDENTIFICATION NUMBER



TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	7.3	Q	0.0	0.253	CH
2	3.3	Q	0.0	0.628	CH
3	0.2	Q	0.0	0.522	CH
4	-8.7	Q	0.0	0.185	CL
5	-12.7	Q	0.0	0.187	CL
6	-20.7	Q	0.0	0.308	CL
7	-24.7	Q	0.0	0.278	CH
8	-28.7	Q	0.0	0.272	CH
9	-48.7	Q	0.0	0.368	CH





NOTES

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ω_P ω_N ω_L ATTERBERG LIMITS

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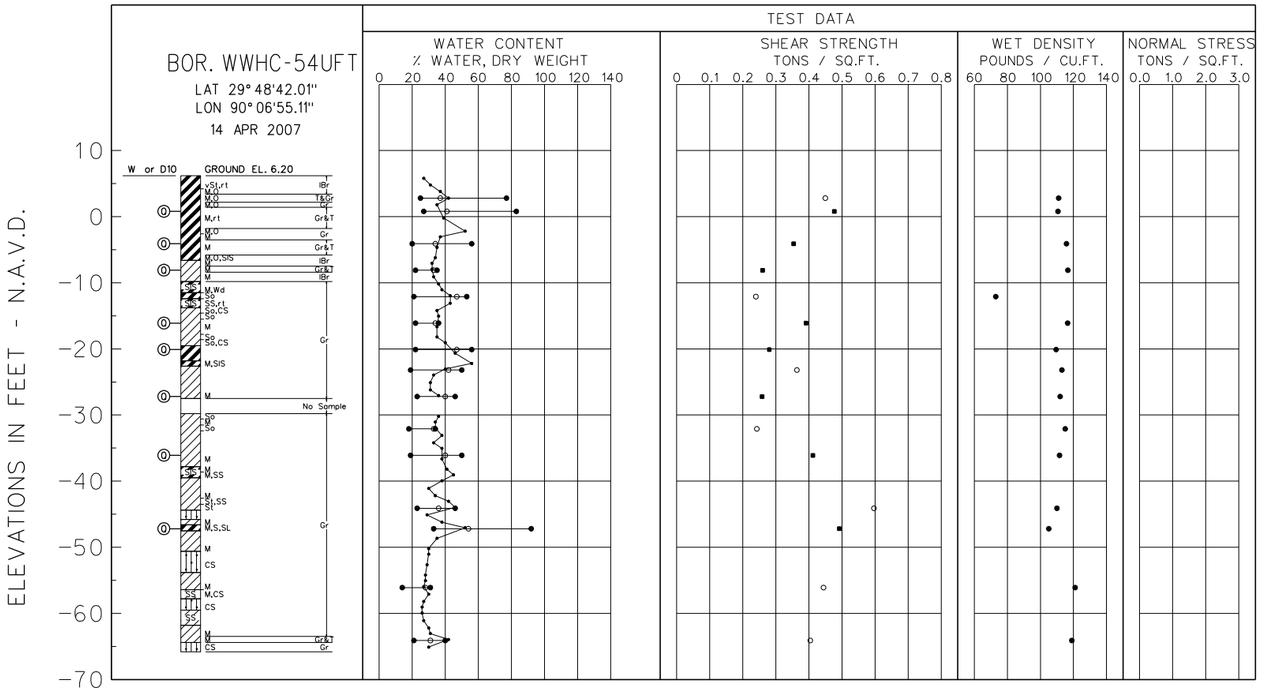
US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

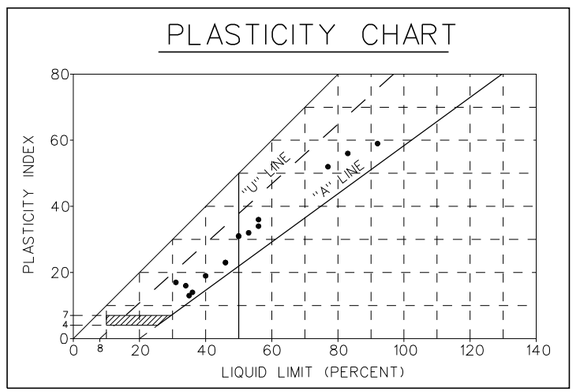
BOR. WWHC-54UCL

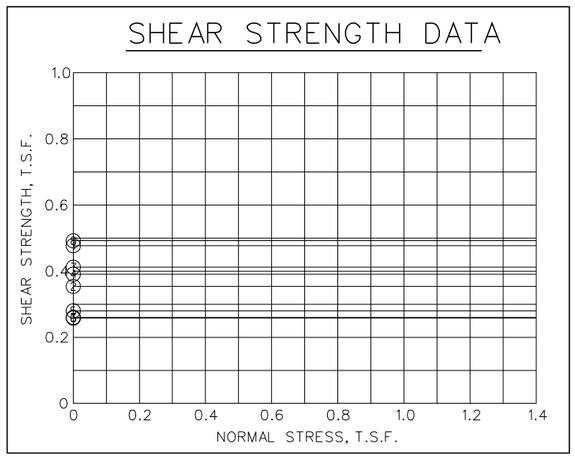
SHEET IDENTIFICATION NUMBER



TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	0.8	Q	0.0	0.477	CH
2	-4.1	Q	0.0	0.354	CH
3	-8.1	Q	0.0	0.260	CL
4	-16.1	Q	0.0	0.391	CL
5	-20.1	Q	0.0	0.280	CH
6	-27.2	Q	0.0	0.258	CL
7	-36.1	Q	0.0	0.412	CL
8	-47.2	Q	0.0	0.492	CH





NOTES

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FOR DETAILED TEST DATA SEE

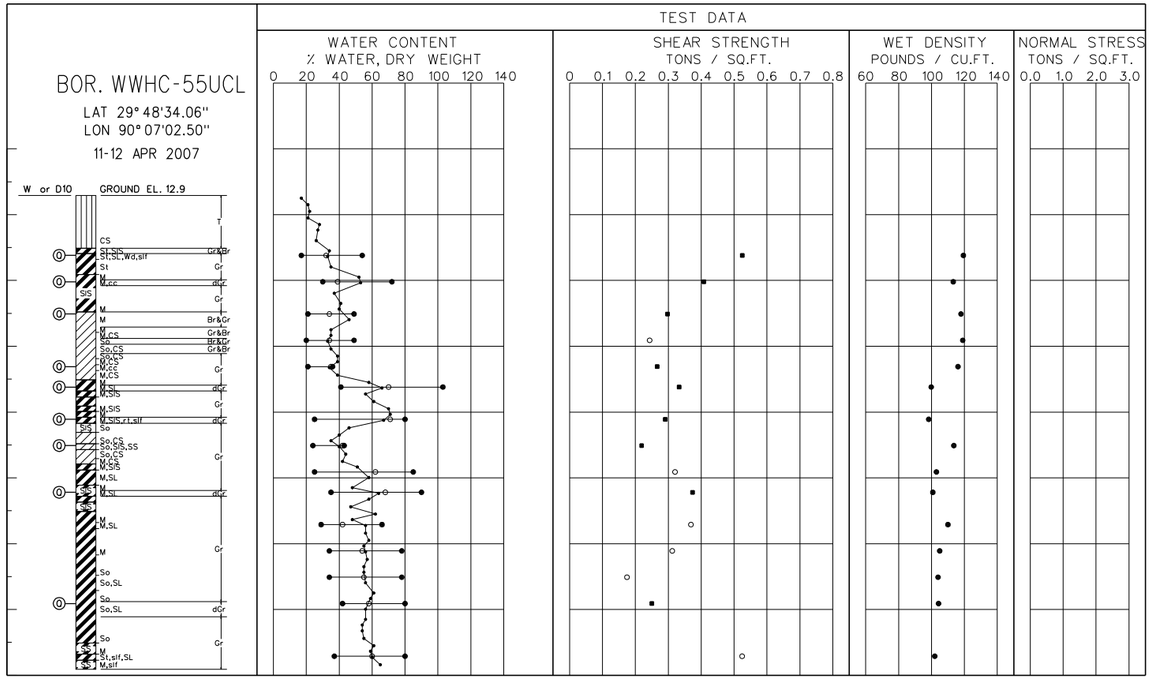
US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY: DATE:
DWN BY: CKD BY: SOLICITATION NO.:
SUBMITTED BY: CONTRACT NO.:
FILE NAME: FILE NUMBER:
SIZE: PLOT SCALE: PLOT DATE:

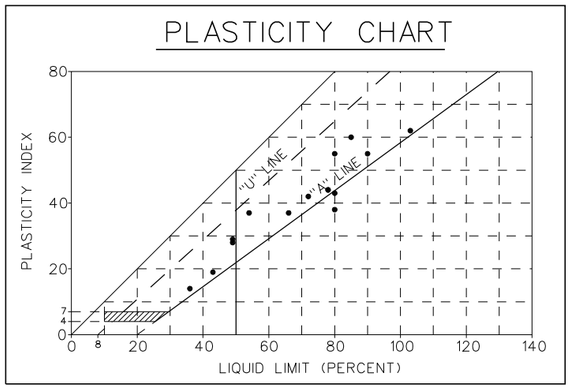
BOR. WWHC-54UFT

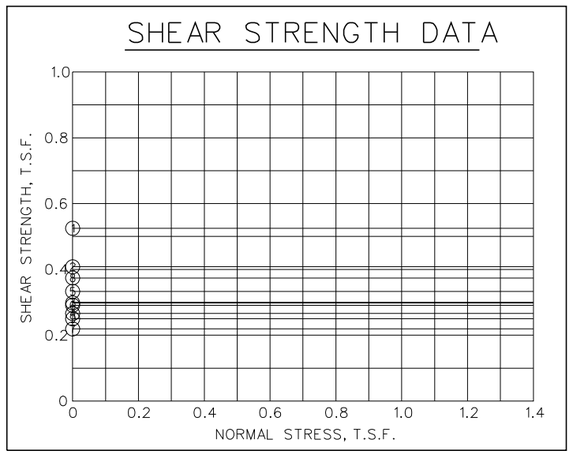
SHEET IDENTIFICATION NUMBER



TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	3.8	Q	0.0	0.525	CH
2	-0.2	Q	0.0	0.408	CH
3	-5.1	Q	0.0	0.298	CL
4	-13.1	Q	0.0	0.266	CL
5	-16.2	Q	0.0	0.333	CH
6	-21.1	Q	0.0	0.291	CH
7	-25.1	Q	0.0	0.219	CL
8	-32.2	Q	0.0	0.374	CH
9	-49.1	Q	0.0	0.250	CH





NOTES

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ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY:
DRAWN BY:
SUBMITTED BY:
CHECKED BY:
DATE:
SOLICITATION NO.:
CONTRACT NO.:
FILE NAME:
FILE NUMBER:
PLOT DATE:
PLOT SCALE:

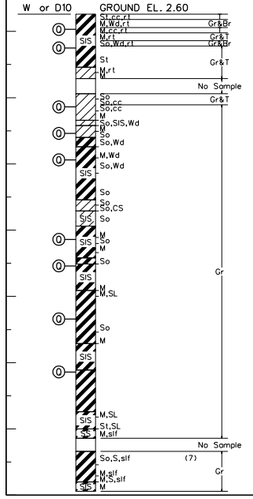
BOR. WWHC-55UCL

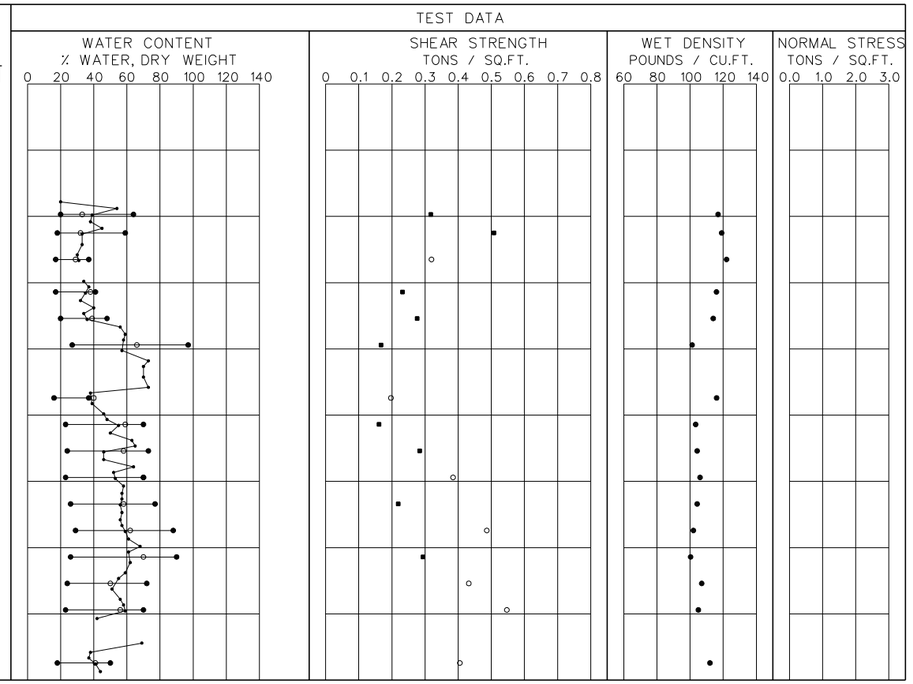
SHEET IDENTIFICATION NUMBER

BOR. WWHC-55UPT

LAT 29° 48'33.61"
LON 90° 07'01.96"

10-11 APR 2007

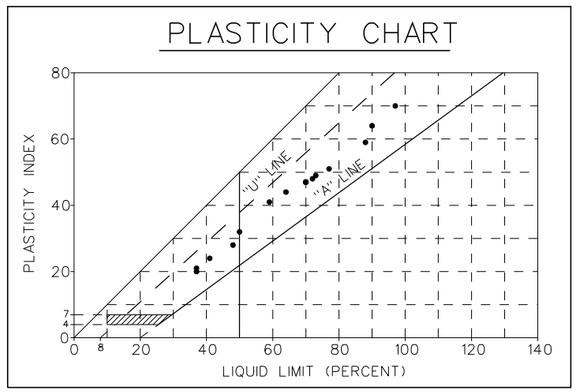




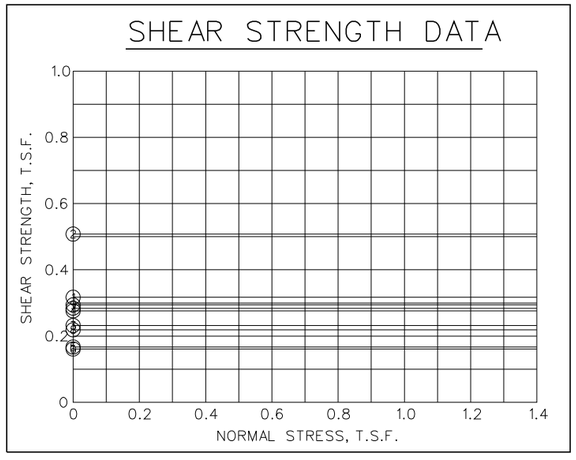
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	0.3	Q	0.0	0.317	CH
2	-2.5	Q	0.0	0.508	CH
3	-11.4	Q	0.0	0.232	CL
4	-15.4	Q	0.0	0.276	CL
5	-19.4	Q	0.0	0.167	CH
6	-31.4	Q	0.0	0.161	CH
7	-35.4	Q	0.0	0.284	CH
8	-43.4	Q	0.0	0.219	CH
9	-51.4	Q	0.0	0.294	CH

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

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ω_P ω_N ω_L ATTERBERG LIMITS

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US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

DATES
SOLICITATION NO.:
CONTRACT NO.:
FILE NUMBER:
DESIGNED BY:
DRAWN BY:
TRACED BY:
CHKD BY:
SUBMITTED BY:
FILE NAME:
PLOT DATE:
SIZE:
PLOT SCALE:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

BOR. WWHC-55UPT

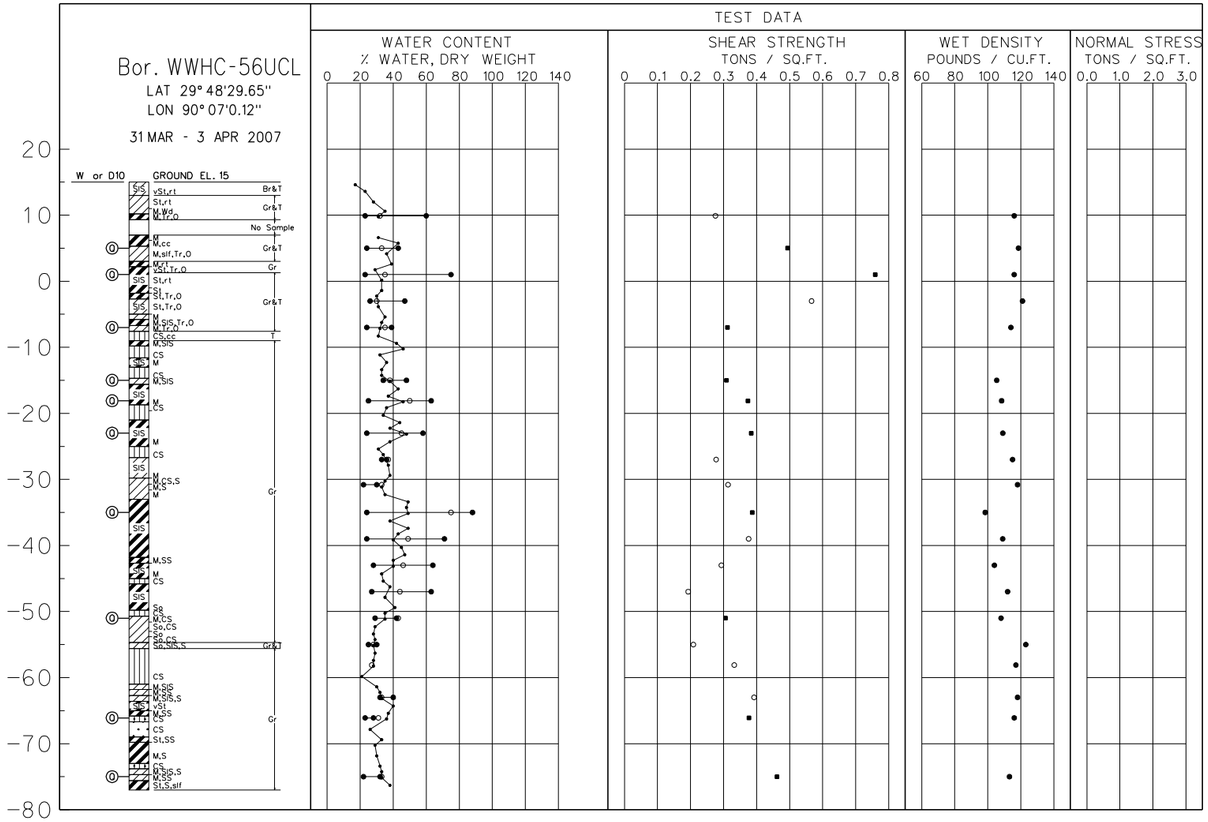
SHEET IDENTIFICATION NUMBER

Bor. WWHC-56UCL

LAT 29° 48'29.65"
LON 90° 07'0.12"

31 MAR - 3 APR 2007

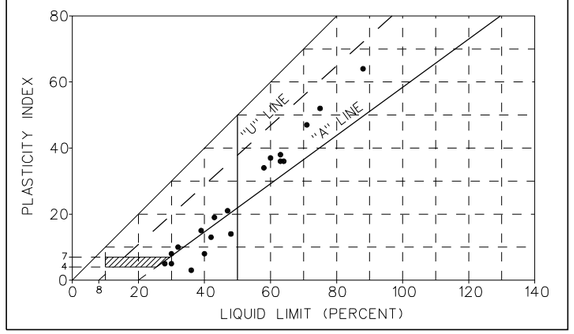
ELEVATIONS IN FEET - N.A.V.D.



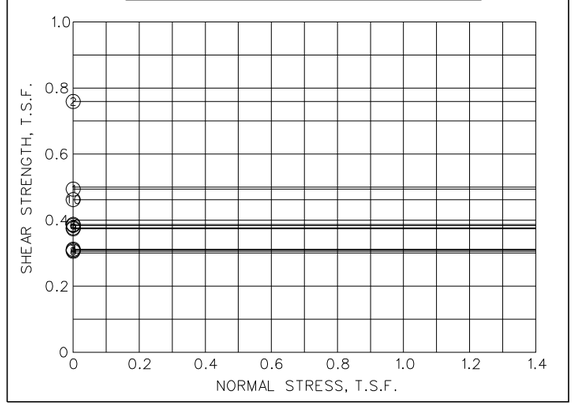
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	5.0	Q	0.0	0.494	CL
2	1.0	Q	0.0	0.759	CH
3	-7.0	Q	0.0	0.312	CL
4	-15.0	Q	0.0	0.309	CL
5	-18.1	Q	0.0	0.374	CH
6	-23.0	Q	0.0	0.384	CH
7	-35.0	Q	0.0	0.387	CH
8	-51.0	Q	0.0	0.306	CL
9	-66.1	Q	0.0	0.377	SM
10	-75.0	Q	0.0	0.462	CL

PLASTICITY CHART



SHEAR STRENGTH DATA



NOTES

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ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
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US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

APPR. DATE DESCRIPTION MARK
APPR. DATE DESCRIPTION MARK

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY: DATE:
DWN BY: TOG BY: SUBDIVISION NO.:
SUBMITTED BY: CONTRACT NO.: FILE NUMBER:
FILE NAME:
SEE: PLOT SCALE: PLOT DATE:

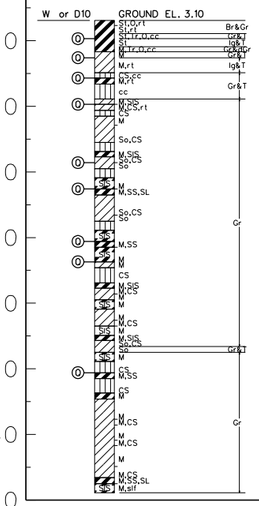
Bor. WWHC-56UCL

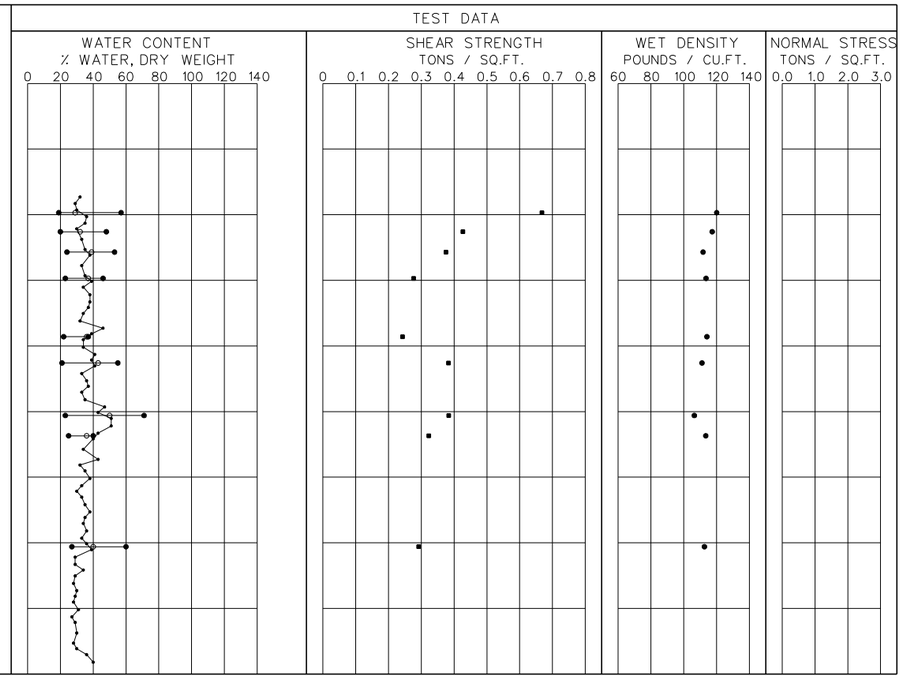
SHEET IDENTIFICATION NUMBER

BOR. WWHC-56UFT

LAT 29° 48'29.77"
LON 90° 07'00.07"
12-13 APR 2007

W or D10 — GROUND EL. 3.10

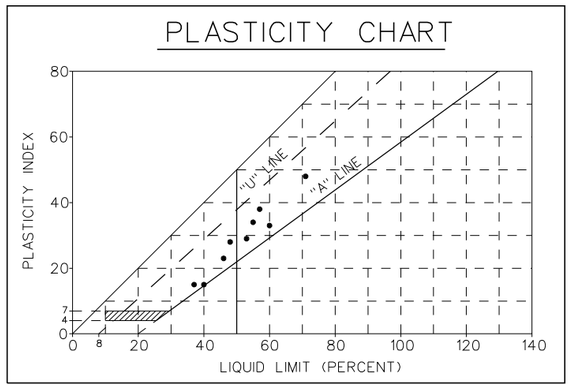




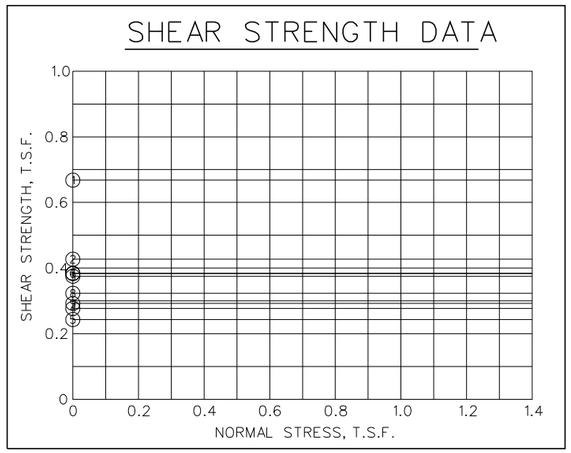
TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH c - TSF	CLASS
1	0.3	Q	0.0	0.668	CH
2	-2.6	Q	0.0	0.427	CL
3	-5.7	Q	0.0	0.375	CH
4	-9.7	Q	0.0	0.277	CL
5	-18.6	Q	0.0	0.243	CL
6	-22.6	Q	0.0	0.383	CH
7	-30.6	Q	0.0	0.384	CH
8	-33.7	Q	0.0	0.323	CL
9	-50.6	Q	0.0	0.292	CH

PLASTICITY CHART



SHEAR STRENGTH DATA



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ω_P ω_N ω_L ATTERBERG LIMITS

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US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY: DRAWN BY: SUBMITTED BY: FILE NAME:
DATE: SOLICITATION NO.: CONTRACT NO.: FILE NUMBER:
QCD BY: PLOT DATE:
SCALE: PLOT SCALE:

BOR. WWHC-56UFT

SHEET IDENTIFICATION NUMBER

Boring Test Data

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program

Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-41UCL

Current Date: 12/7/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	VST LBR & GR CL4	CL4		16												
1B	0.8	VST LBR & GR CL4	CL4		19												
2A	2.0	VST BR & GR CH2	CH2		21												
2B	2.8	VST BR & GR CH3 W/ ARS ML	CH3	9	25	100	125	98	UC	--	2986	5971	66	25	41	0.90	
3A	4.0	VST LBR & LGR CH2	CH2		21												
3B	4.8	VST GR & LGR CL6	CL6		18				UU				51	20	31		UU DIST
4A	6.0	ST GR & LBR CH2	CH2		23												
5A	8.0	M GR CH4 W/ RT, WD, O	CH4		42												
5B	8.8	M GR CH4 W/ RT, WD, O	CH4		43												
5C	9.7	M GR CH4 W/ RT, WD, O	CH4		48	73	109	99	UU	0	628		84	26	58	0.42	
6A	12.0	M GR CH4 W/ WD, RT, O	CH4		50												
6B	12.8	M GR CH3 W/ RT, WD, SIF	CH3		46	74	108	97	UU	0	627		71	19	52	0.40	
6C	13.7	M GR CH2 W/ RT, SIF	CH2		29												
7A	16.0	M GR & LBR CL6 W/ ARS CH	CL6		32												
7B	16.8	M LGR & LBR CH2	CH2		33												
7C	17.7	SO LBR & LGR CH2 W/ LNS ML	CH2	7	38	81	112	96	UC	--	492	984	50	17	33	0.25	
8A	20.0	SO GR CH2	CH2		41												
8B	20.8	M GR CH3 W/ ARS ML, RT	CH3		50												
8C	21.7	M GR CH4 W/ LNS ML	CH4		49	71	105	94					75	27	48		CON
9A	24.0	M GR CH4	CH4		55												
9B	24.8	M GR CH4	CH4		53												
9C	25.7	M GR CH4 W/ ARS ML	CH4		49	71	105	95	UU	0	549		87	17	70	0.54	
10A	28.0	M GR CH4 W/ O	CH4		56												
10B	28.8	M GR CH4 W/ O	CH4		58												
10C	29.7	M GR CH4	CH4	5	52	72	110	104	UC	--	755	1510	87	25	62	0.54	
10D	30.6	SO GR CH4 W/ O	CH4		71												
11A	32.0	SO GR CH4 W/ SL	CH4		61												
11B	32.8	SO GR CH4 W/ WD, SL	CH4		80												
11C	33.7	SO GR CHOA W/ SL	CHOA		95	47	92	101	UU	0	389		134	29	105	0.24	
12A	36.0	M GR CH4 W/ LNS ML, O	CH4		53												
12B	36.8	M GR CH4 W/ ARS ML	CH4		50	73	110	103	UU	0	512		72	41	31	0.25	
12C	37.7	M GR CH4 W/ SL, ARS ML	CH4		64	62	101	98					90	25	65		CON
13A	40.0	M GR CH3 W/ LNS ML	CH3		48												
13B	40.8	M GR CH3 W/ LNS ML & LNS SM	CH3		45												
13C	41.7	SO GR CH4 W/ LNS ML & LNS SM	CH4		66	63	103	103	UU	0	481		74	22	52	0.3	
14A	44.0	SO GR CH4 W/ LNS ML, SL	CH4		62												
14B	44.8	SO GR CH4 W/ LNS ML, SL	CH4		59												

Remarks: _____
FFEBJV, LLC.

Checked by: WJY
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-41UCL

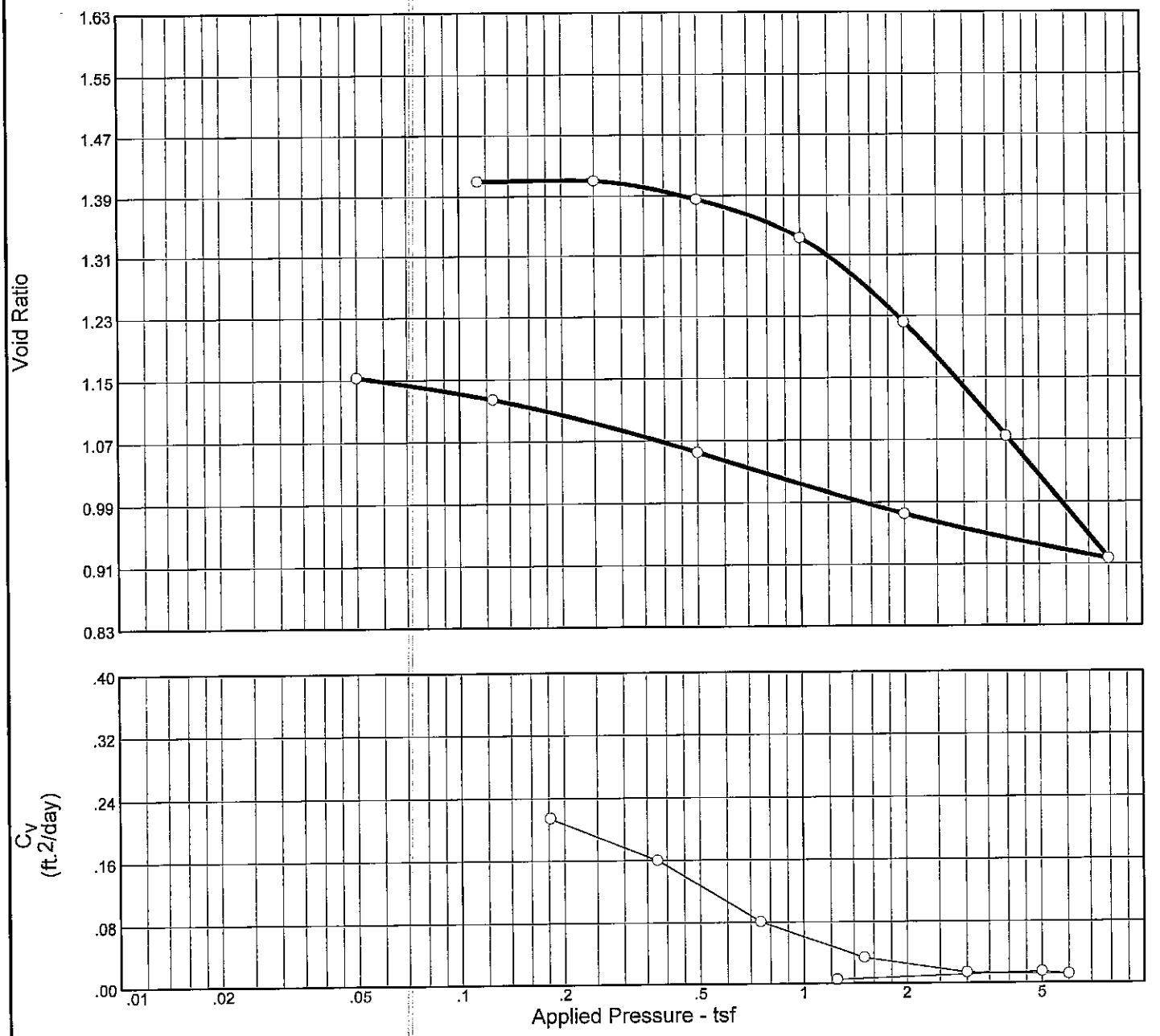
Current Date: 12/7/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
14C	45.7	SO GR CH4 W/ SL	CH4	4	69	60	102	103	UC	--	466	932	96	32	64	0.27	
15A	48.0	M GR CH4 W/ SL	CH4		61												
15B	48.8	M GR CH4 W/ SL	CH4		60												
15C	49.7	M GR CH4 W/ SL	CH4		67	61	102	102	UU	0	595		90	28	62	0.3	
16A	52.0	M GR CH4 W/ SL	CH4		62												
16B	52.8	M GR CH4 W/ SL	CH4		60												
16C	53.7	M GR CH4 W/ SL	CH4	6	61	64	103	100	UC	--	666	1332	88	26	62	0.7	
16D	54.6	M GR CH4 W/ SL	CH4		59												
17A	56.0	M GR CH4 W/ SL	CH4		62												
17B	56.8	M GR CH4 W/ SL	CH4		62												
17C	57.7	M GR CH4 W/ SL	CH4	5	55	69	106	101	UC	--	716	1431	90	30	60	0.28	
17D	58.6	M GR CH4 W/ SL	CH4		58												
18A	60.0	M GR CH4 W/ SL	CH4		58												
18B	60.8	M GR CH4 W/ SL	CH4		55	68	105	99	UU	0	675		81	27	54	0.38	
18C	61.7	ST GR CH4 W/ SL, LNS ML	CH4		49												
18D	62.6	M GR CH4 W/ SL	CH4		51												
19A	64.0	M GR CH4 W/ SL	CH4		52												
19B	64.8	M GR CH4 W/ SL	CH4		51												
19C	65.7	M GR CH4 W/ SL, ARS ML	CH4	4	56	69	108	104	UC	--	596	1192	80	22	58	0.36	
19D	66.6	M GR CH4 W/ SL, LNS ML	CH4		60												
20A	68.0	M GR CH4 W/ SL, ARS ML	CH4		55												
20B	68.8	M GR CH4 W/ SL	CH4		59												
20C	69.7	M GR CH4	CH4	6	49	70	105	94	UC	--	963	1927	82	25	57	0.34	
20D	70.6	M GR CH4 W/ SL, SIF	CH4		61												

Remarks: _____
FFEBJV, LLC.

Checked by: WSY
File Name: TO 2

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
94.3 %	48.9 %	70.7	75	48	2.74	1.17	0.52	1.419

MATERIAL DESCRIPTION	USCS	AASHTO
M GR CH4 W/ LNS ML	CH4	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-41UCL **Sample No.:** 8C **Elev./Depth:** 21.7

FFEBJV, LLC

St Rose, LA

Remarks:
Specific gravity is assumed

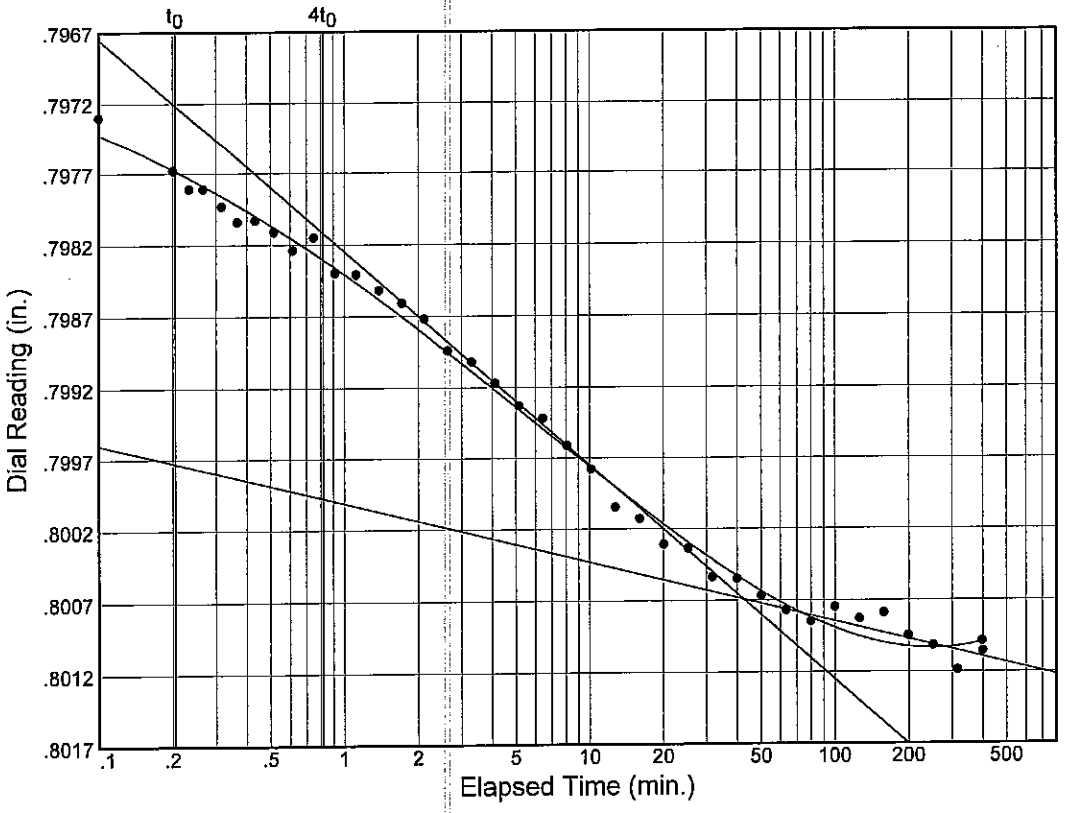
Tested by: JMB
Calculated by: WJY
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

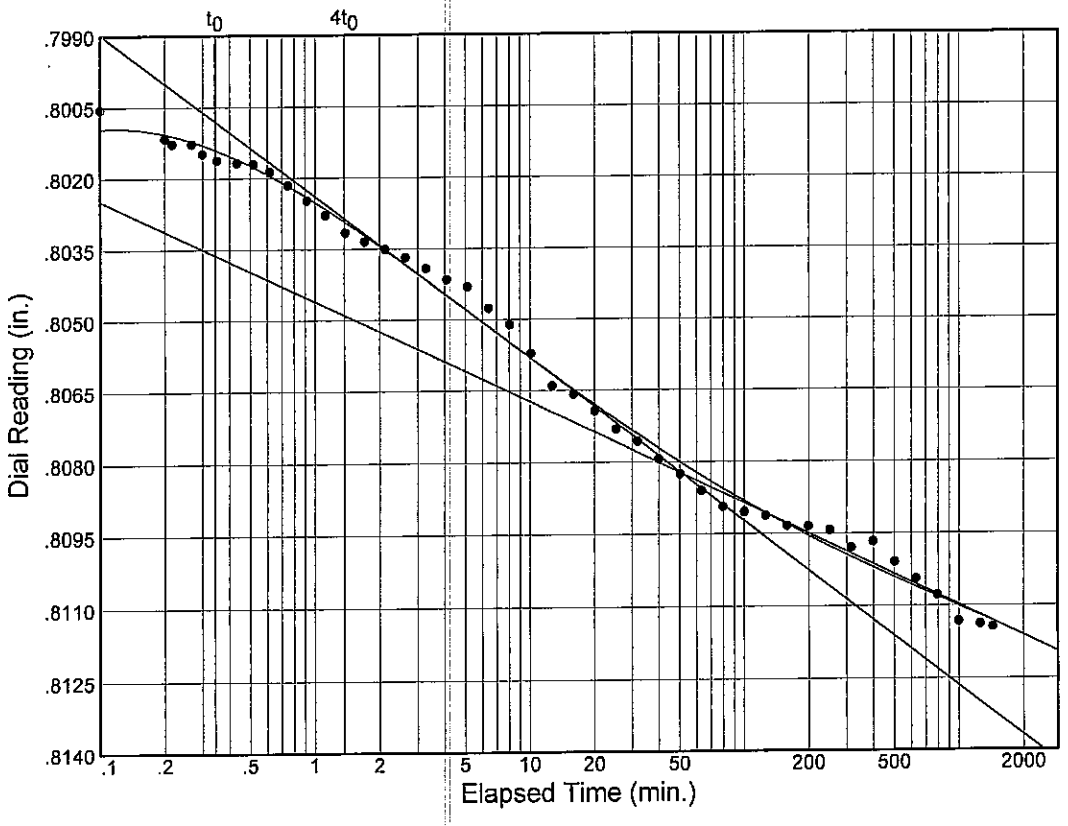
Source: WWHC-41UCL Sample No.: 8C Elev./Depth: 21.7



Load No.= 2
Load= 0.25 tsf
D_0 = 0.79706
D_{50} = 0.79887
D_{100} = 0.80069
T_{50} = 2.30 min.

C_v @ T_{50}
0.21 ft.^{2}/day

C_α = 0.000



Load No.= 3
Load= 0.50 tsf
D_0 = 0.79987
D_{50} = 0.80406
D_{100} = 0.80824
T_{50} = 3.05 min.

C_v @ T_{50}
0.16 ft.^{2}/day

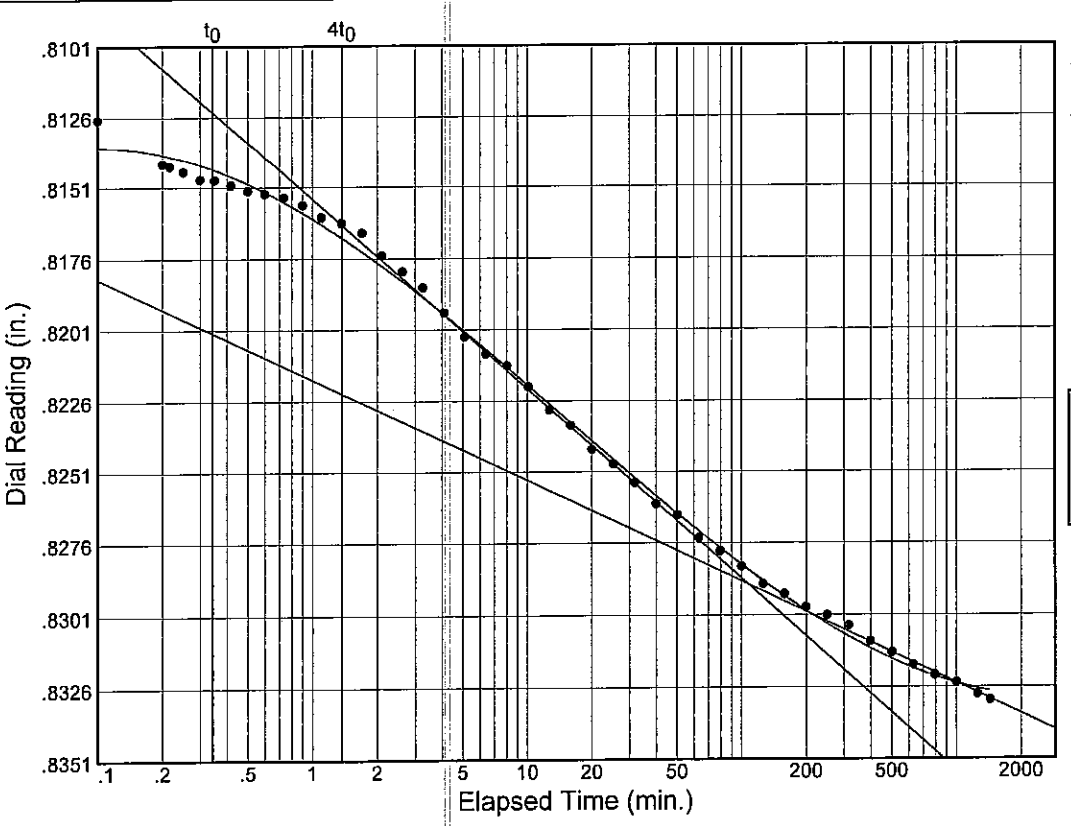
C_α = 0.002

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

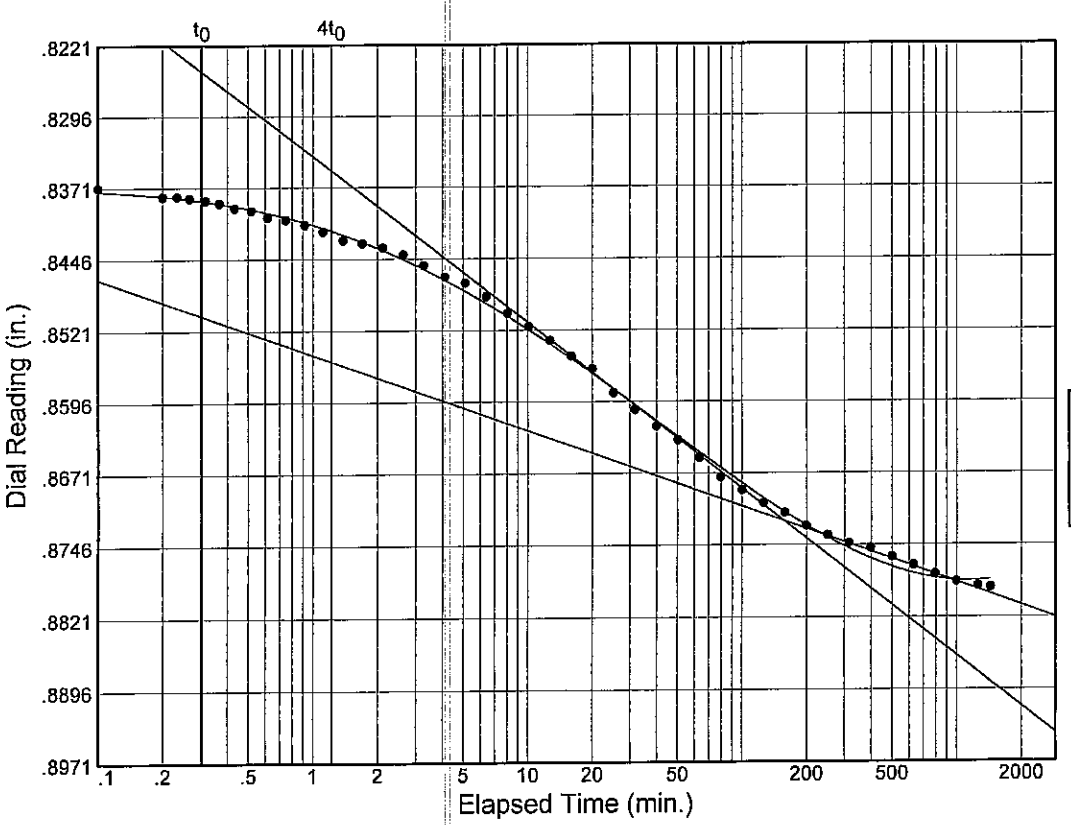
Source: WWHC-41UCL Sample No.: 8C Elev./Depth: 21.7



Load No.= 4
Load= 1.00 tsf
D_0 = 0.81204
D_{50} = 0.82054
D_{100} = 0.82904
T_{50} = 5.87 min.

C_v @ T_{50}
0.08 ft.^{2}/day

C_α = 0.004



Load No.= 5
Load= 2.00 tsf
D_0 = 0.83533
D_{50} = 0.85370
D_{100} = 0.87208
T_{50} = 13.00 min.

C_v @ T_{50}
0.03 ft.^{2}/day

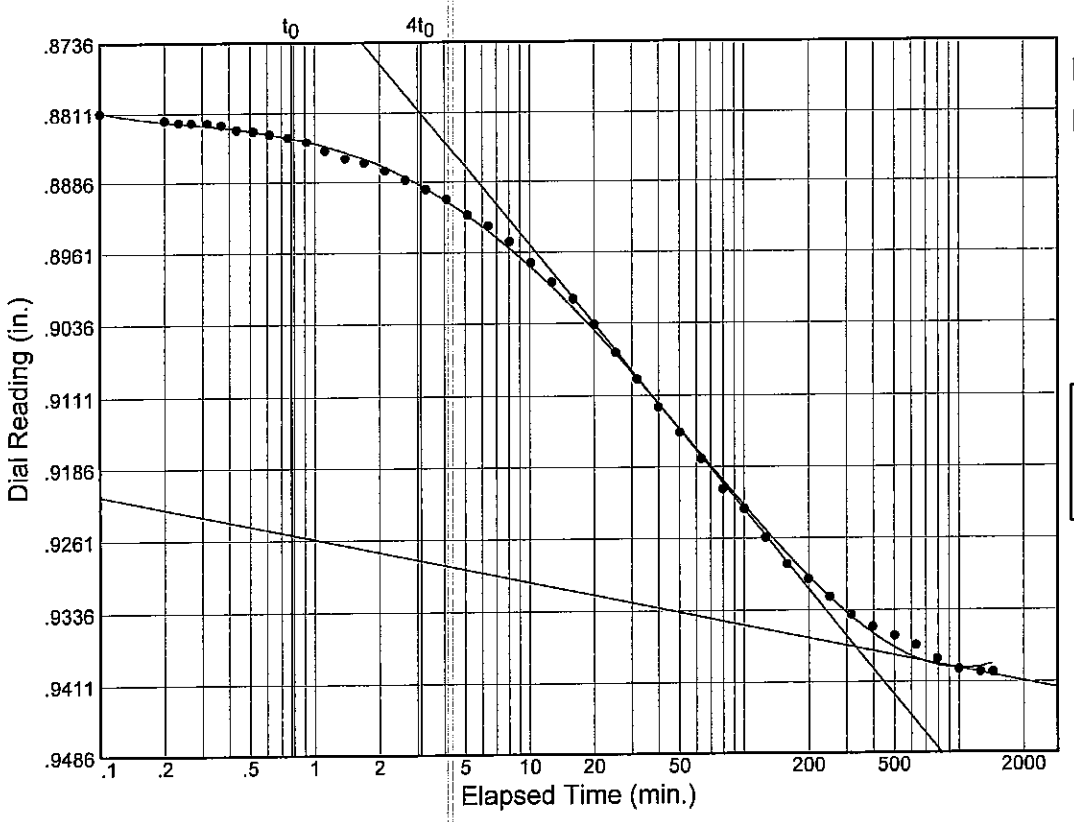
C_α = 0.008

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

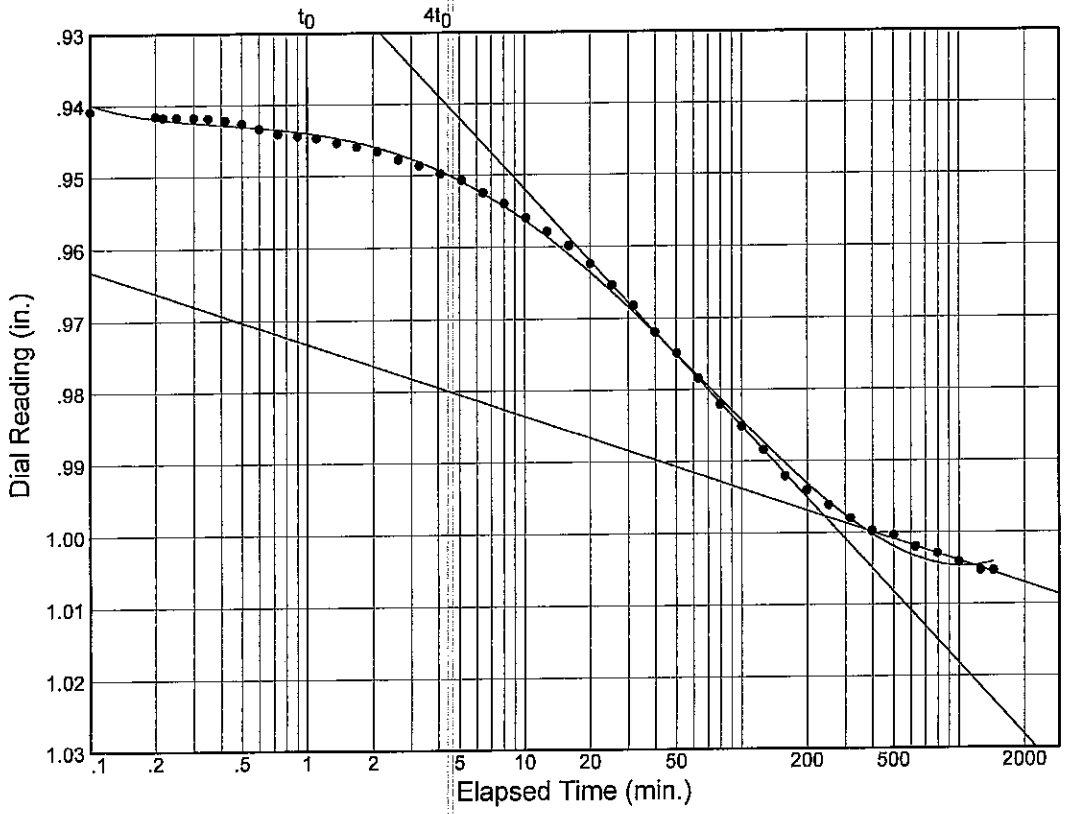
Source: WWHC-41UCL Sample No.: 8C Elev./Depth: 21.7



Load No.= 6
Load= 4.00 tsf
D_0 = 0.87858
D_{50} = 0.90803
D_{100} = 0.93747
T_{50} = 28.13 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.005



Load No.= 7
Load= 8.00 tsf
D_0 = 0.93879
D_{50} = 0.96824
D_{100} = 0.99769
T_{50} = 29.55 min.

C_v @ T_{50}
0.01 ft.^{2}/day

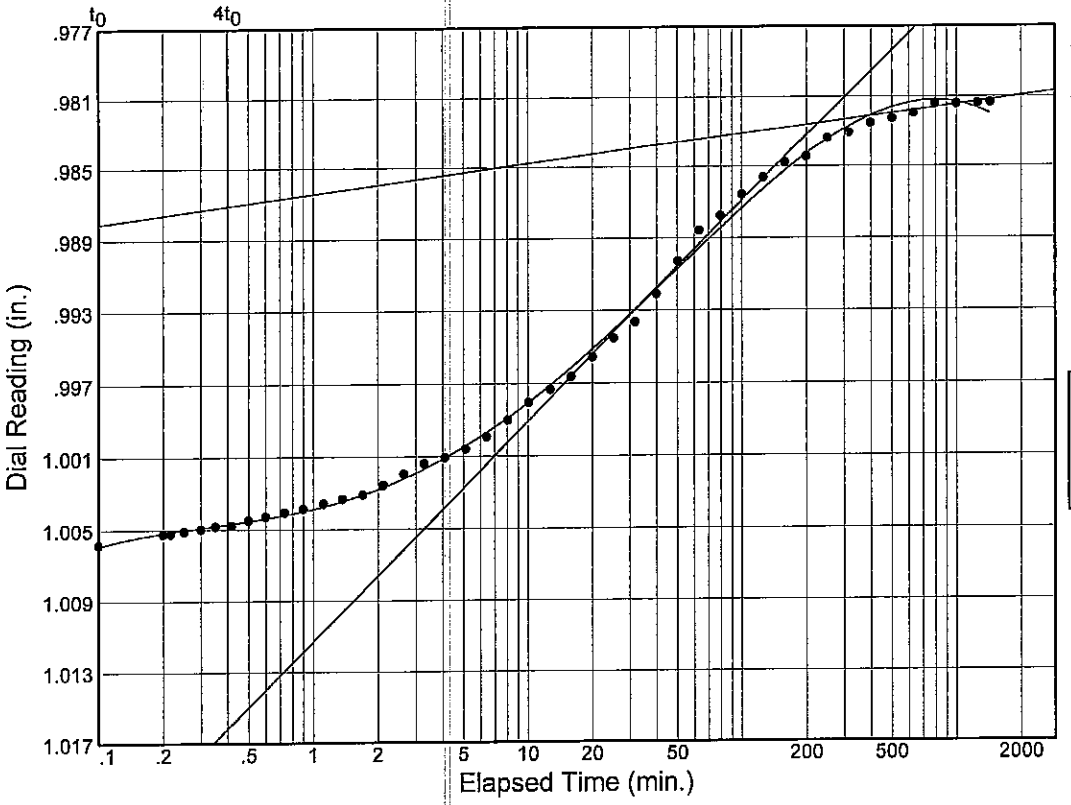
C_α = 0.012

Figure

Dial Reading vs. Time

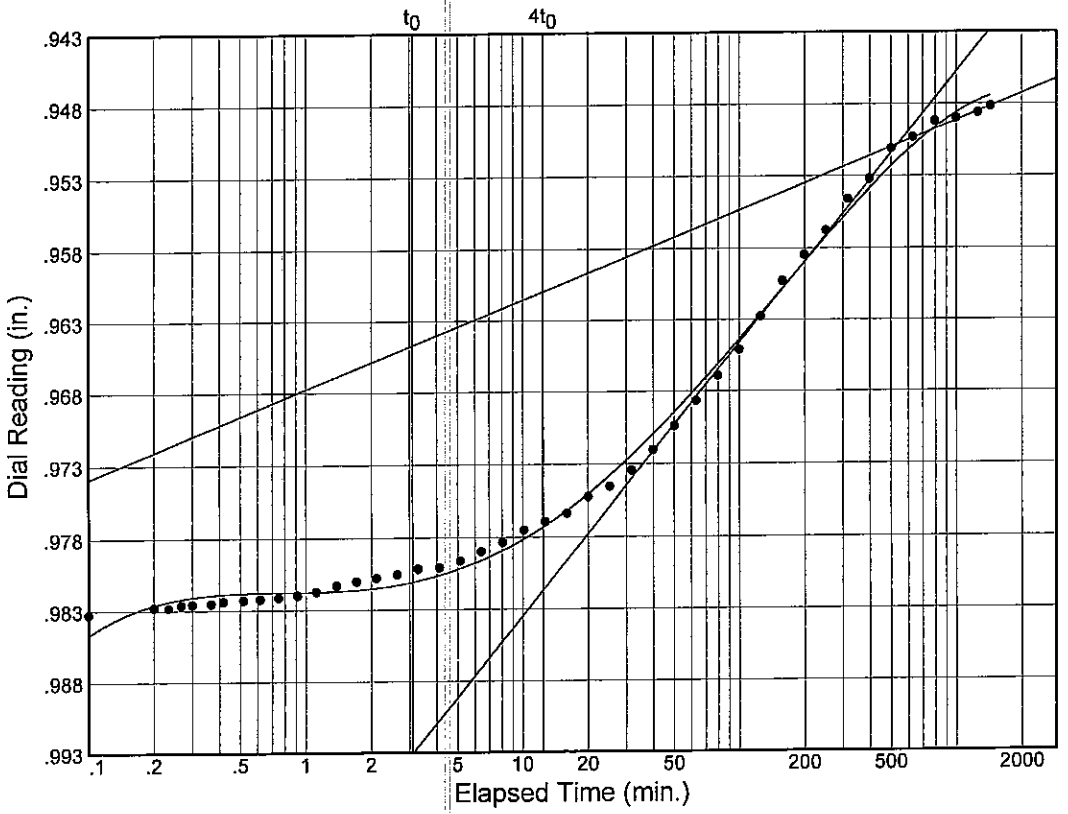
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-41UCL Sample No.: 8C Elev./Depth: 21.7



Load No.= 8
Load= 2.00 tsf
D_0 = 1.00716
D_{50} = 0.99483
D_{100} = 0.98250
T_{50} = 21.42 min.

C_v @ T_{50}
0.01 ft.^{2}/day

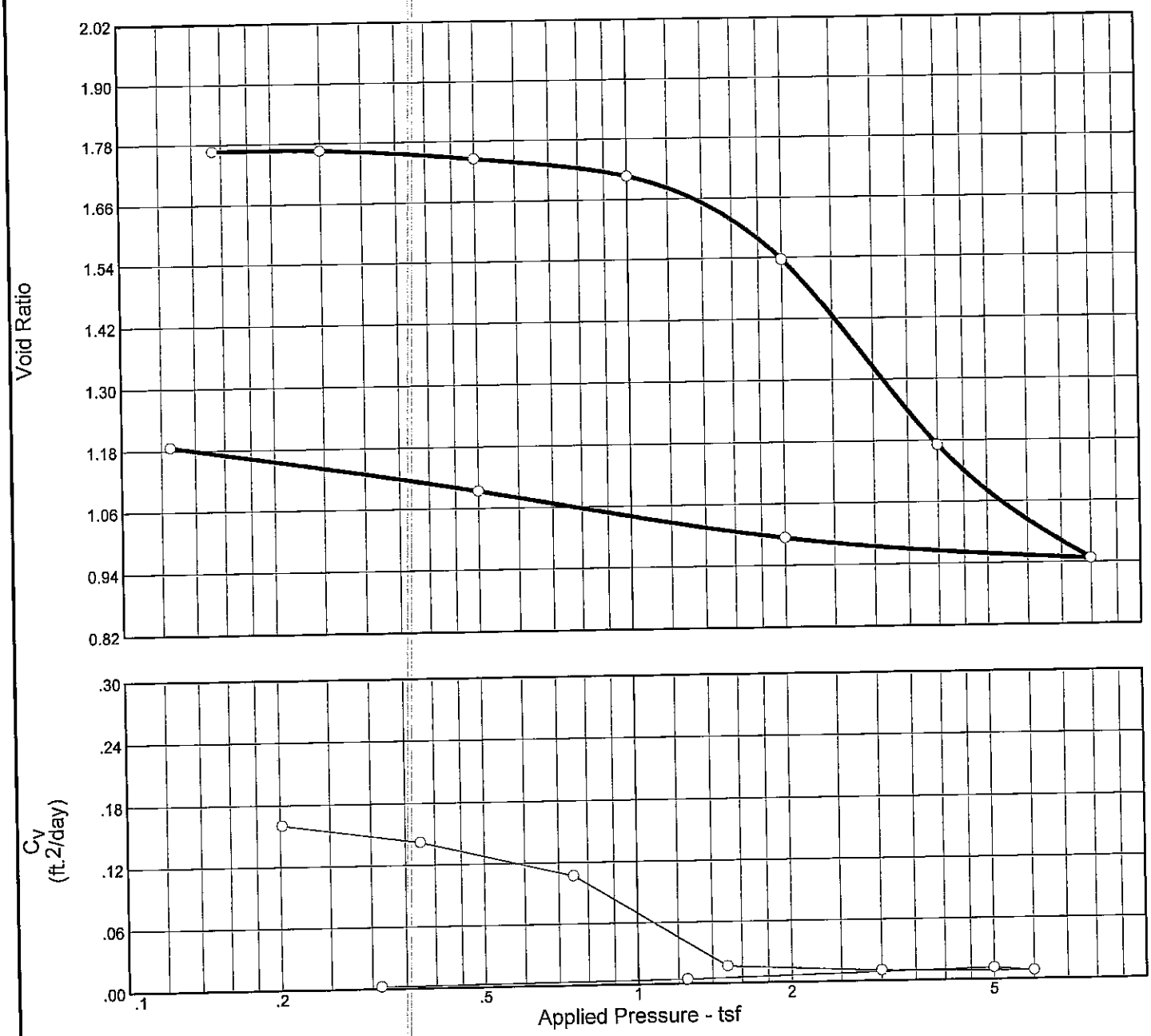


Load No.= 9
Load= 0.50 tsf
D_0 = 0.98489
D_{50} = 0.96785
D_{100} = 0.95080
T_{50} = 62.77 min.

C_v @ T_{50}
0.01 ft.^{2}/day

Figure

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
98.1 %	63.5 %	61.7	90	65	2.74	1.66	1.26	1.772

MATERIAL DESCRIPTION	USCS	AASHTO
M GR CH4 W/ SL, ARS ML	CH4	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-41UCL **Sample No.:** 12C **Elev./Depth:** 37.7

FFEBJV, LLC

St Rose, LA

Remarks:
Specific gravity is assumed

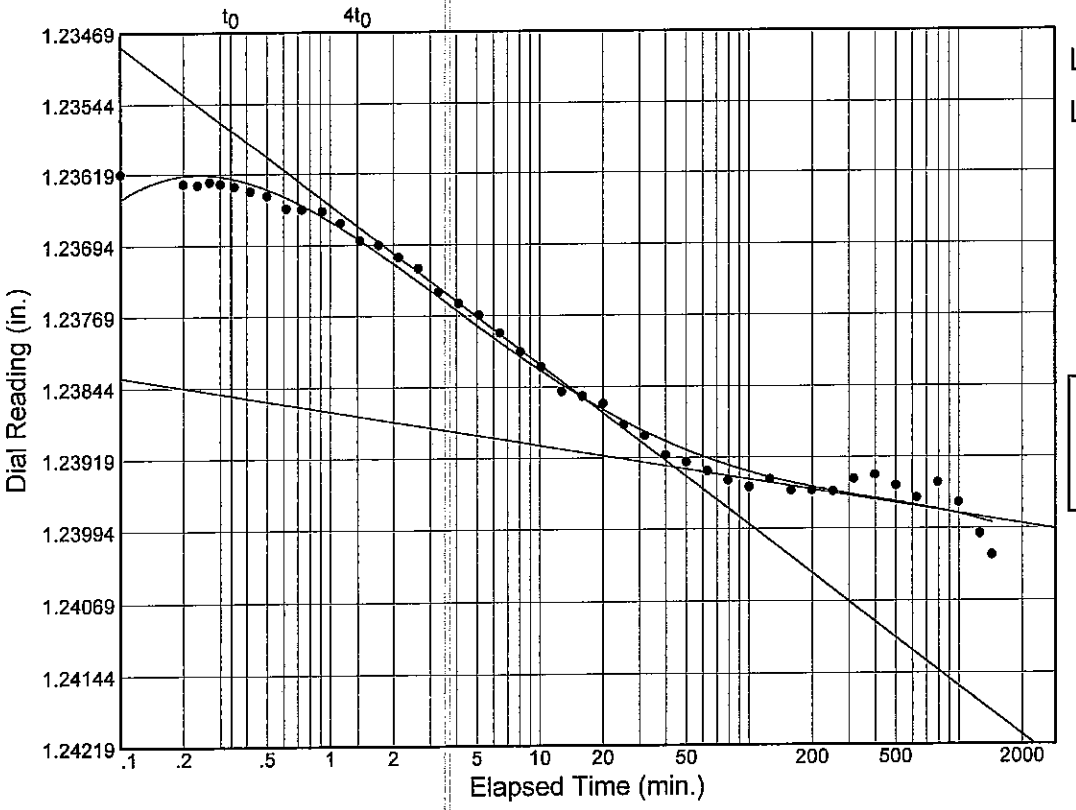
Tested by: JMB
Calculated by: WJY
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

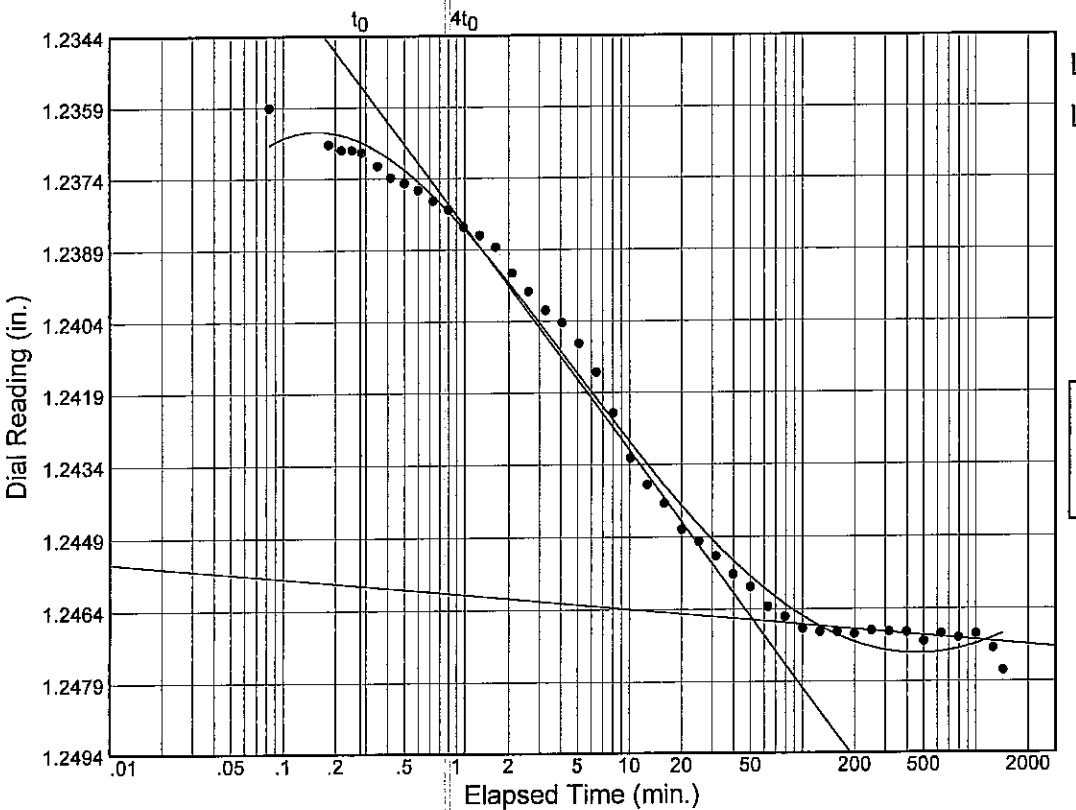
Source: WWHC-41UCL Sample No.: 12C Elev./Depth: 37.7



Load No.= 2
Load= 0.25 tsf
D_0 = 1.23560
D_{50} = 1.23744
D_{100} = 1.23929
T_{50} = 3.07 min.

C_v @ T_{50}
0.16 ft.^{2}/day

C_α = 0.000



Load No.= 3
Load= 0.50 tsf
D_0 = 1.23479
D_{50} = 1.24071
D_{100} = 1.24663
T_{50} = 3.44 min.

C_v @ T_{50}
0.14 ft.^{2}/day

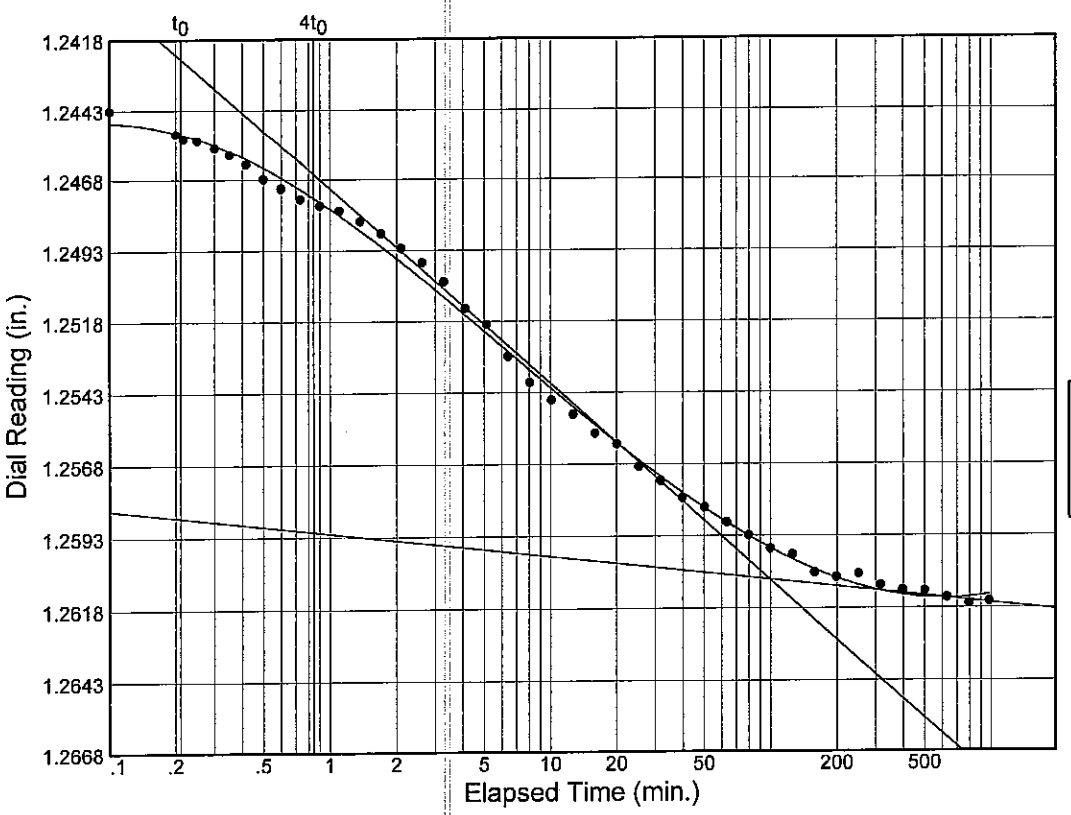
C_α = 0.000

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

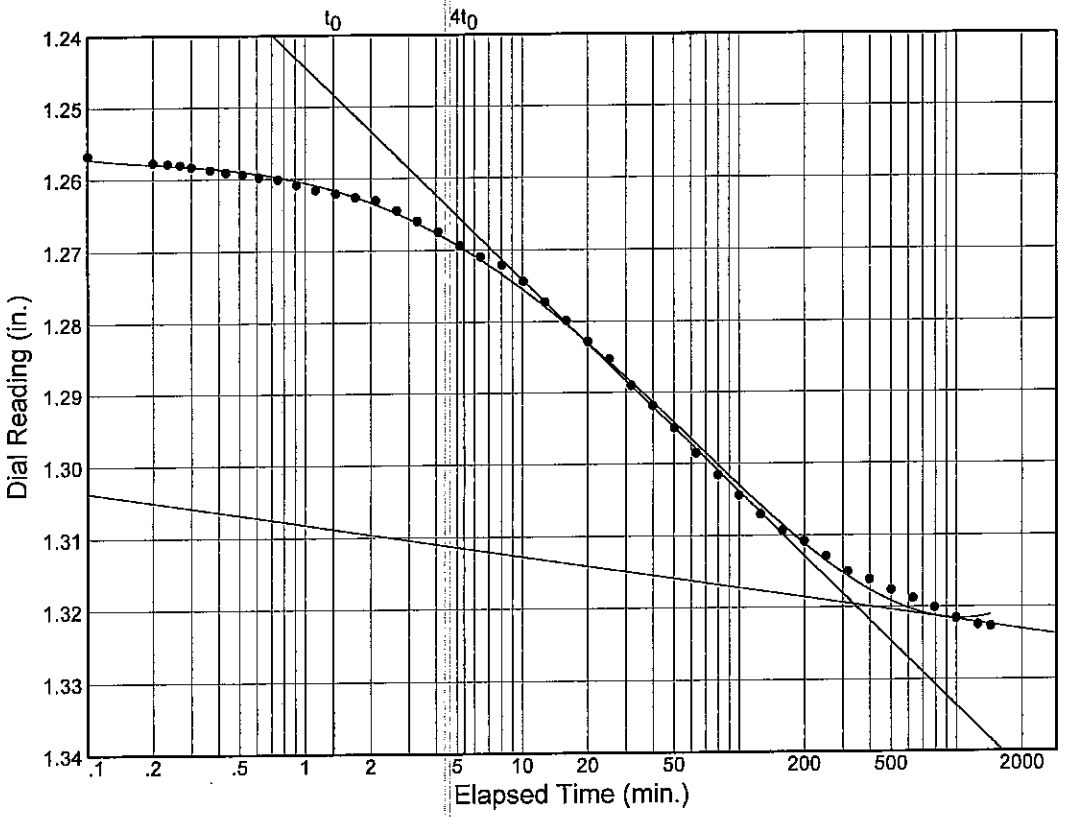
Source: WWHC-41UCL Sample No.: 12C Elev./Depth: 37.7



Load No.= 4
Load= 1.00 tsf
D_0 = 1.24285
D_{50} = 1.25183
D_{100} = 1.26081
T_{50} = 4.48 min.

C_v @ T_{50}
0.11 ft.^{2}/day

C_α = 0.001



Load No.= 5
Load= 2.00 tsf
D_0 = 1.25335
D_{50} = 1.28646
D_{100} = 1.31958
T_{50} = 26.77 min.

C_v @ T_{50}
0.02 ft.^{2}/day

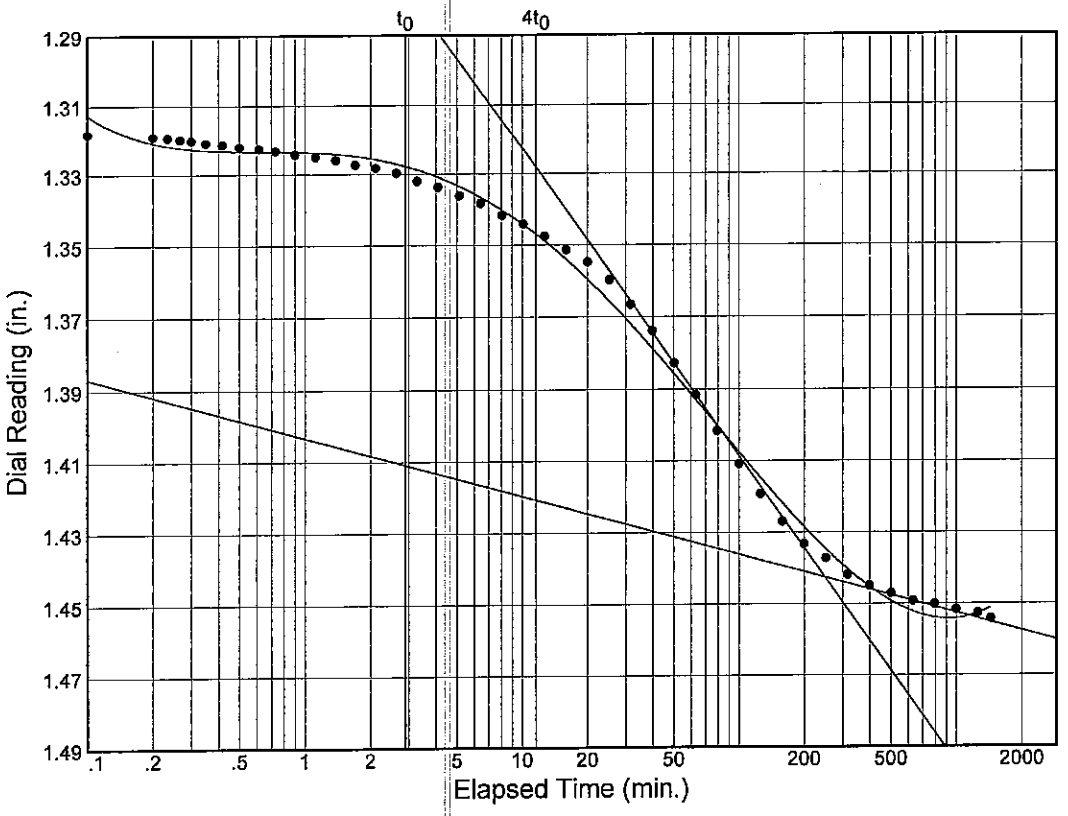
C_α = 0.005

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

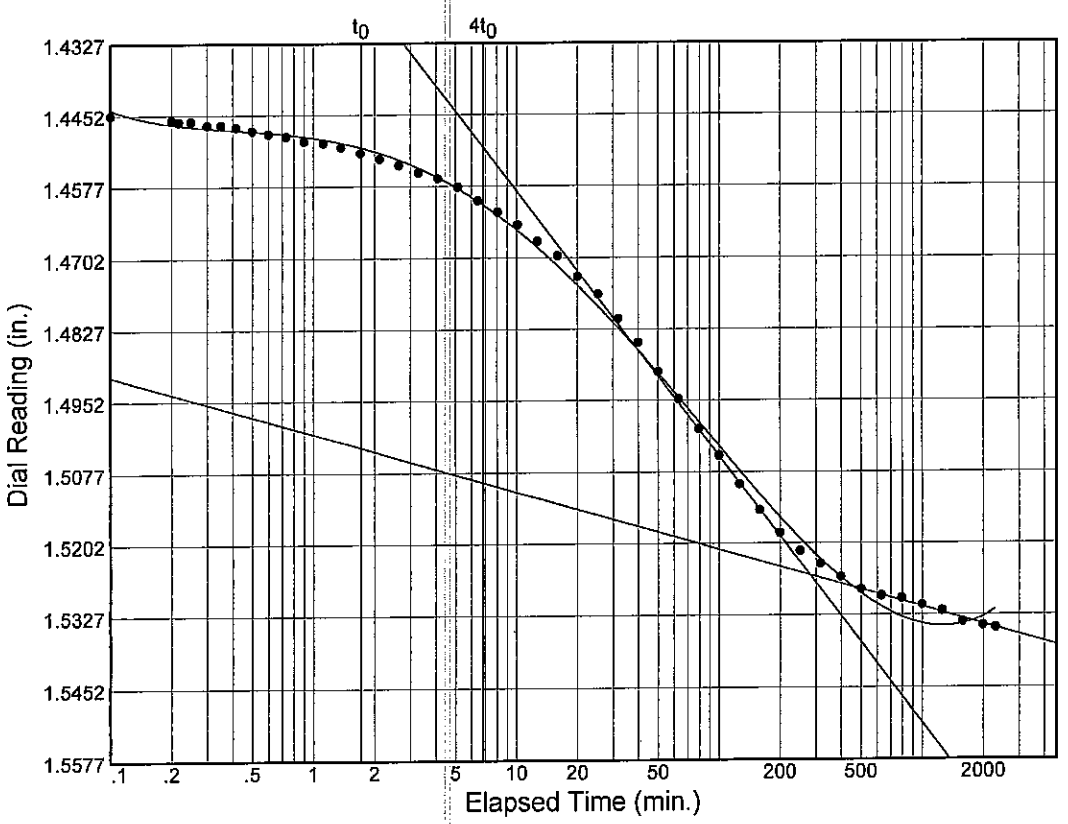
Source: WWHC-41UCL Sample No.: 12C Elev./Depth: 37.7



Load No.= 6
Load= 4.00 tsf
D_0 = 1.30851
D_{50} = 1.37554
D_{100} = 1.44257
T_{50} = 35.79 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.018



Load No.= 7
Load= 8.00 tsf
D_0 = 1.44089
D_{50} = 1.48333
D_{100} = 1.52576
T_{50} = 33.35 min.

C_v @ T_{50}
0.01 ft.^{2}/day

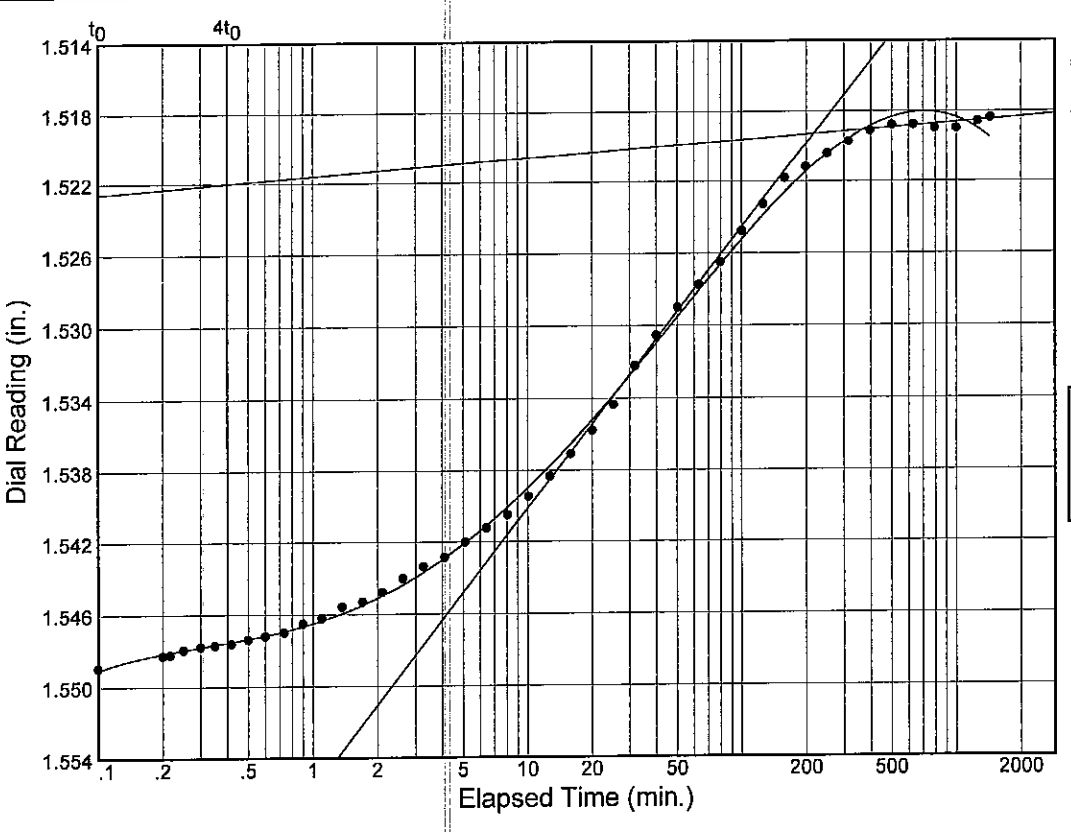
C_α = 0.013

Figure

Dial Reading vs. Time

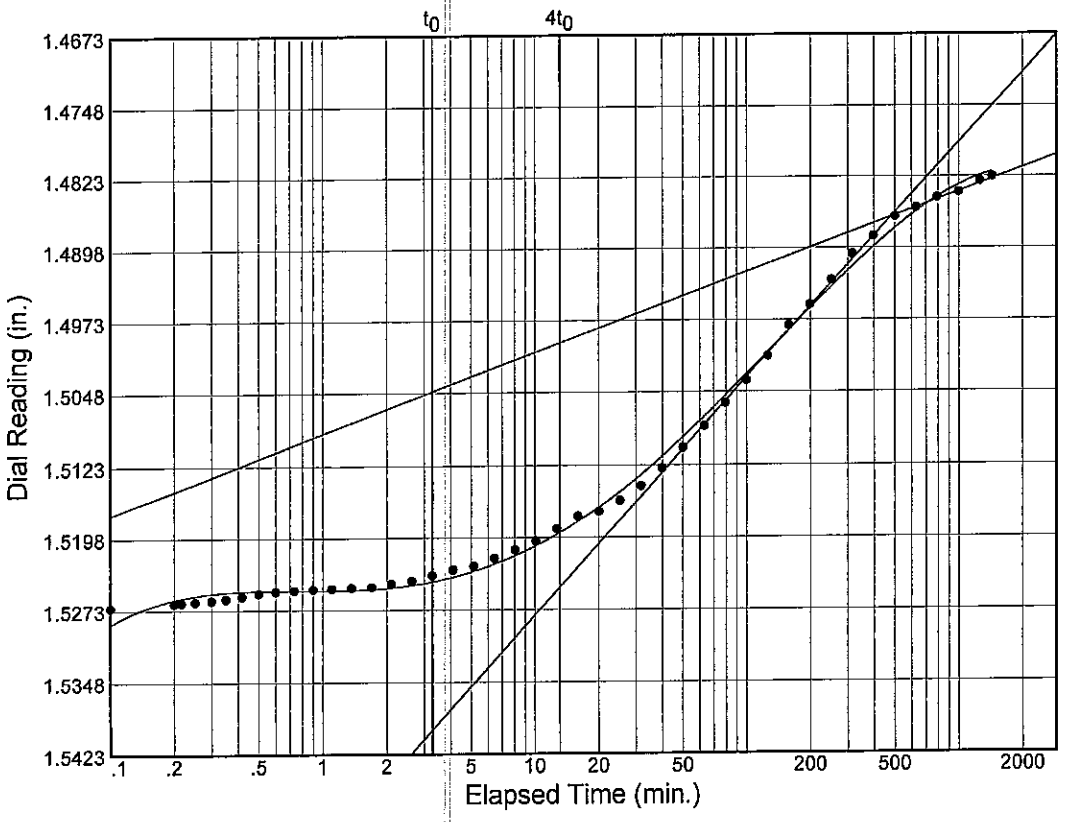
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-41UCL Sample No.: 12C Elev./Depth: 37.7



Load No.= 8
Load= 2.00 tsf
D_0 = 1.55062
D_{50} = 1.53494
D_{100} = 1.51926
T_{50} = 20.97 min.

C_v @ T_{50}
0.01 ft.^{2}/day



Load No.= 9
Load= 0.50 tsf
D_0 = 1.52944
D_{50} = 1.50799
D_{100} = 1.48654
T_{50} = 59.08 min.

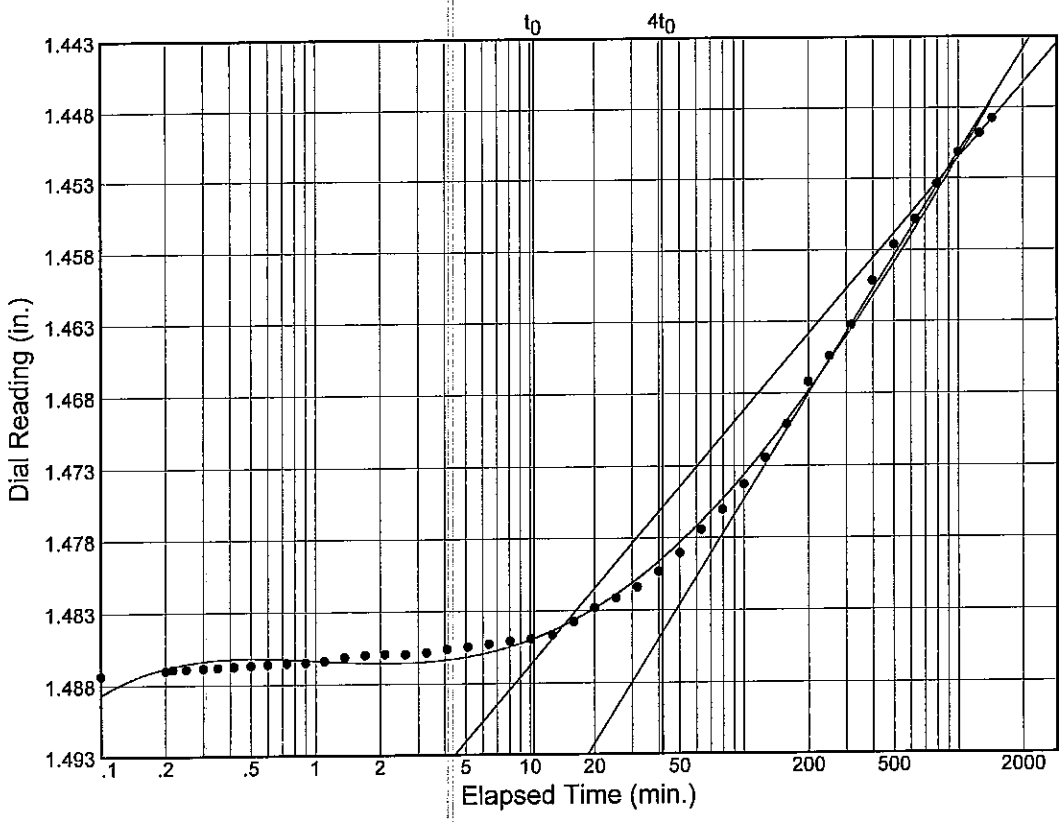
C_v @ T_{50}
0.00 ft.^{2}/day

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-41UCL Sample No.: 12C Elev./Depth: 37.7



Load No.= 10
Load= 0.13 tsf
D_0 = 1.49042
D_{50} = 1.47154
D_{100} = 1.45265
T_{50} = 130.24 min.

C_v @ T_{50}

0.00 ft.^{2}/day

Figure

BOR. WWHC-41UCL
STA. LAT N29^50'38.00" LONG W90^07'23.32"

27-28 MARCH 2007

GROUND EL. 13.5

0.0	0.8	16		CL	VSTLBRGR								
0.8	2.0	19	2.0	CL	VSTLBRGR								
2.0	2.8	21	2.8	CH	VSTBR GR								
2.8	4.0	28	4.0	CH	SISVSTBR GR			2986	125	66	25	25	31
4.0	4.8	21	4.8	CH	VSTLBRLGR								
4.8	6.0	18	6.0	CL	VSTGR LBR				51	20			
6.0	8.0	23		CH	ST GR LBR								
8.0	8.8	42		CH	M GR	RT WD	O						
8.8	9.7	43		CH	M GR	RT WD	O						
9.7	12.0	47		CH	M GR	RT WD	O						
12.0	12.8	50		CH	M GR	WD RT	O						
12.8	13.7	43		CH	M GR	RT WD	SIF						
13.7	16.0	29	16.0	CH	M GR	RT	SIF						
16.0	16.8	32	16.8	CL	M GR LBR	CS							
16.8	17.7	33	17.7	CH	M LGRLBR								
17.7	20.0	40	20.0	CH	SISSO LBRLGR				492	112	50	17	38 180
20.0	20.8	41		CH	SISSO GR								
20.8	21.7	50		CH	SIS M GR	RT							
21.7	24.0	49	24.0	CH	SIS M GR								
24.0	24.8	55		CH	M GR								
24.8	25.7	53	25.7	CH	M GR								
25.7	28.0	53	28.0	CH	SIS M GR								
28.0	28.8	56		CH	M GR	O							
28.8	29.7	58		CH	M GR	O							
29.7	30.6	54		CH	M GR			755	110	87	25	52	300
30.6	32.0	71		CH	SO GR	O							
32.0	32.8	61		CH	SO GR	SL							
32.8	33.7	80	33.7	CH	SO GR	WD SL							
33.7	36.0	92	36.0	CH	O SO GR	SL							
36.0	36.8	53		CH	SIS M GR	O							
36.8	37.7	49		CH	SIS M GR								
37.7	40.0	64		CH	SIS M GR	SL							
40.0	40.8	48		CH	SIS M GR								
40.8	41.7	45		CH	SIS M GR	SS							
41.7	44.0	58		CH	SISSO GR	SS							
44.0	44.8	62		CH	SISSO GR	SL							

44.8 45.7 59 45.7CH SISSO GR SL
45.7 48.0 63 CH SO GR SL 466102 96 32 69 460
48.0 48.8 61 CH M GR SL
48.8 49.7 60 CH M GR SL
49.7 52.0 63 CH M GR SL
52.0 52.8 62 CH M GR SL
52.8 53.7 60 CH M GR SL
53.7 54.6 59 CH M GR SL 666103 88 26 61 540
54.6 56.0 59 CH M GR SL
56.0 56.8 62 CH M GR SL
56.8 57.7 62 CH M GR SL
57.7 58.6 58 CH M GR SL 716106 90 30 55 580
58.6 60.0 58 CH M GR SL
60.0 60.8 58 CH M GR SL
60.8 61.7 57 61.7CH M GR SL
61.7 62.6 49 62.6CH SISST GR SL
62.6 64.0 51 CH M GR SL
64.0 64.8 52 CH M GR SL
64.8 65.7 51 65.7CH M GR SL
65.7 66.6 56 CH SIS M GR SL 596108 80 20 56 660
66.6 68.0 60 CH SIS M GR SL
68.0 68.8 55 68.8CH SIS M GR SL
68.8 69.7 59 CH M GR SL
69.7 70.6 58 CH M GR 963105 82 25 49 700
70.6 72.0 61 72.0CH M GR SL SIF
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 10.00/ 3.50 Water Con: 48.00
LL,PL,PI : 84, 26, 58 Dry Dens : 73.00
Cohesion : 0.314 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 13.10/ 0.40 Water Con: 46.00
LL,PL,PI : 71, 19, 52 Dry Dens : 74.00
Cohesion : 0.314 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 26.00/-12.5 Water Con: 49.00
LL,PL,PI : 87, 17, 70 Dry Dens : 71.00
Cohesion : 0.250 Saturat : 95.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CHO
Depth/Ele: 34.00/-20.5 Water Con: 95.00
LL,PL,PI : 134, 29,105 Dry Dens : 47.00
Cohesion : 0.195 Saturat :101.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 37.10/-23.6 Water Con: 50.00
LL,PL,PI : 72, 41, 31 Dry Dens : 73.00
Cohesion : 0.256 Saturat :103.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 42.00/-28.5 Water Con: 66.00
LL,PL,PI : 74, 22, 52 Dry Dens : 63.00
Cohesion : 0.241 Saturat :103.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 50.00/-36.5 Water Con: 67.00
LL,PL,PI : 90, 28, 62 Dry Dens : 61.00
Cohesion : 0.298 Saturat :102.00

Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 61.10/-47.6 Water Con: 55.00
LL,PL,PI : 81, 27, 54 Dry Dens : 68.00
Cohesion : 0.338 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CH
Depth/Ele: 21.7/-8.20 Water Con: 49.00
LL,PL,PI : 75, 27, 48 Dry Dens : 71.00
Cohesion : Saturat : 94.00
Shear Str: Frict Ang: 00.00
Norm Str: 1.170, 1.318
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.11	1.410
0.25	1.410
0.50	1.385
1.00	1.333
2.00	1.222
4.00	1.075
8.00	0.917
2.00	0.975
0.50	1.055
0.13	1.124
0.05	1.153

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CH
Depth/Ele: 37.7/-24.2 Water Con: 64.00
LL,PL,PI : 90, 25, 65 Dry Dens : 62.00
Cohesion : Saturat : 98.00
Shear Str: Frict Ang: 00.00
Norm Str: 1.660, 1.591

Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.15	1.766
0.25	1.765
0.50	1.744
1.00	1.706
2.00	1.536
4.00	1.171
8.00	0.947
2.00	0.994
0.50	1.094
0.13	1.187

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-41UPT

Current Date: 12/6/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	ST T & GR CL6 W/ RT	CL6		20												
1B	0.8	ST DGR & LBR CH3 W/ WD, RT	CH3	8	38	79	108	88	UC	--	1258	2547	75	26	49	0.68	
2A	2.0	M GR & LBR CH3 W/ WD, RT, ARS ML	CH3		41												
2B	2.8	M GR & T CH2 W/ WD	CH2		40				UU	--			58	22	36	0.47	DIST.
3A	4.0	SO GR CL6 W/ O, RT	CL6		35												
3B	4.8	SO GR & LBR CL6	CL6		29												
3C	5.7	SO BR & GR CL6	CL6	15	34	90	120	100	UC	--	390	781	44	18	26	0.27	
4A	8.0	M GR & LBR CL6	CL6		36												
4B	8.8	M GR & LBR CL6	CL6		39												
4C	9.7	M BR & GR CL6	CL6		35	87	117	100	UU	0	537		40	18	22	0.17	
5A	12.0	M GR & LBR CL6	CL6		39												
5B	12.8	SO GR CL6	CL6		42												
5C	13.7	SO DGR CL6	CL6		45	76	111	100	UU	0	495		44	22	22	0.45	
6A	16.0	M GR CH4 W/ WD	CH4		47												
6B	16.8	M GR CH4	CH4		55												
6C	17.7	M DGR CH4 W/ ARS ML, SIF, RT	CH4		46	74	107	95	UU	0	842		90	28	62	0.41	
7A	20.0	M GR CH4	CH4		61												
7B	20.8	M DGR CH4 W/ ARS ML, RT	CH4		50	70	106	89	UU	0	543		94	28	66	0.35	
7C	21.7	SO GR CH4	CH4		78	54	96	98					94	28	66		CON
7D	22.6	M GR CH4	CH4		91												
8A	24.0	M GR CH4 W/ LNS ML	CH4		55												
8B	24.8	SO GR CH4 W/ ARS ML	CH4		64												
8C	25.7	SO GR CH4 W/ ARS ML, SIF	CH4		64	62	102	100	UU	0	488		84	25	59	0.24	
8D	26.6	SO GR CH4 W/ ARS ML, CC	CH4		43												
9A	28.0	SO GR CL4 W/ LNS SP	CL4		33												
9B	28.8	SO GR CH2 W/ LNS ML	CH2		43												
9C	29.7	SO GR CL6 W/ LNS & ARS SM	CL6	6	52	70	107	100	UC	--	398	795	49	16	33	0.29	
9D	30.6	SO GR CH3 W/ LNS ML	CH3		57												
10A	32.0	SO GR CH3 W/ LNS ML	CH3		61												
10B	32.8	M GR CH3 W/ LNS ML	CH3		47												
10C	33.7	M GR CH3 W/ LNS & ARS SM, SL	CH3	3	47	75	110	100	UC	--	615	1231	60	20	40	0.26	
11A	36.0	SO GR CH4 W/ SL, ARS ML	CH4		58												
11B	36.8	M GR CH4 W/ ARS ML	CH4		65	61	101	100	UU	0	555		89	31	58	0.25	RETEST
11C	37.7	SO GR CH4 W/ ARS ML	CH4		66	60	99	98					87	23	64		GS, CON
12A	40.0	M GR CH4	CH4		66												
12B	40.8	M GR CH4 W/ ARS ML	CH4		62												
12C	41.7	M GR CH4 W/ ARS ML	CH4	5	60	65	105	100	UC	--	703	1405	83	28	55	0.28	

Remarks: _____
FFEBJV, LLC.

Checked by: WJY
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-41UPT

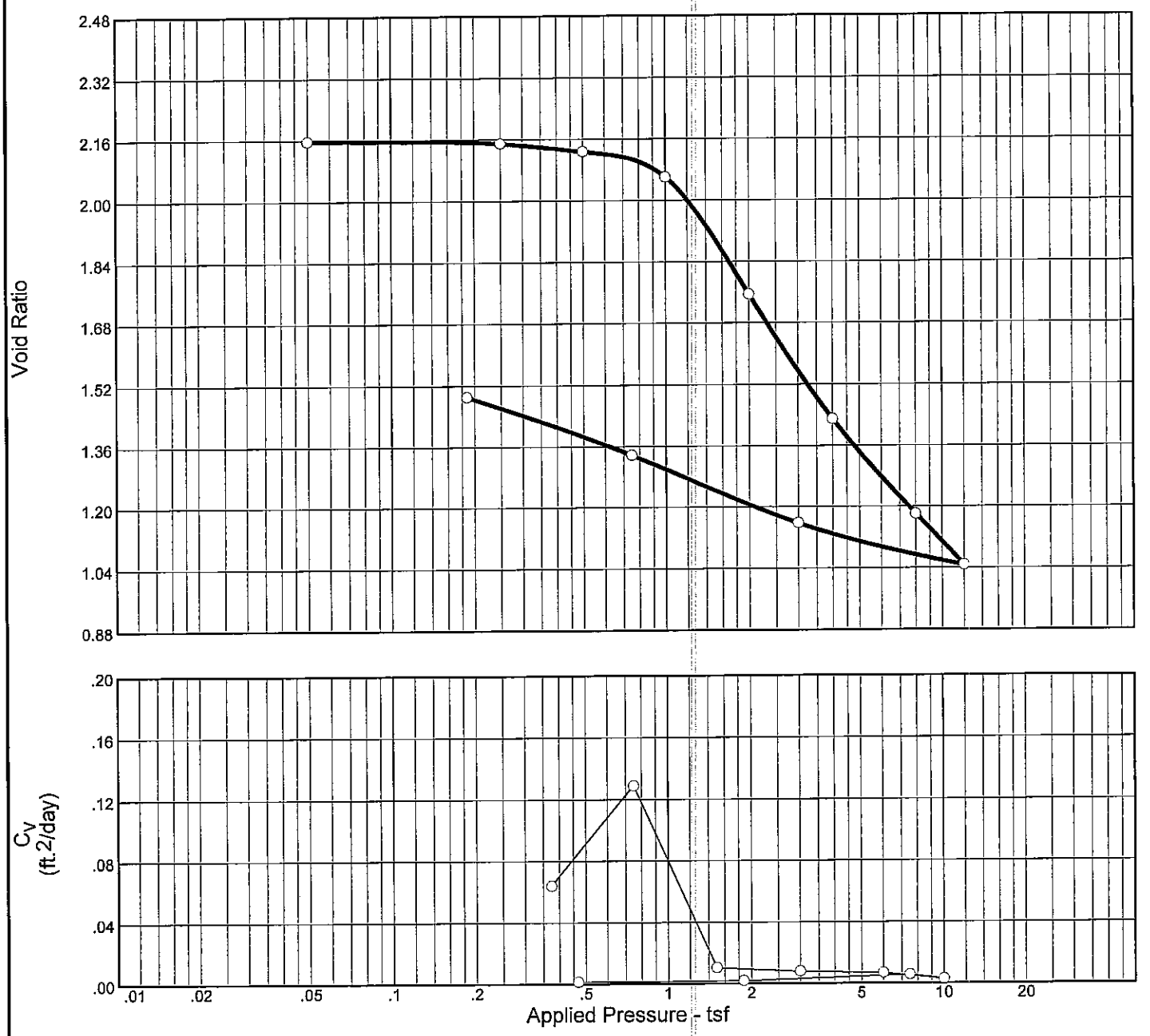
Current Date: 12/6/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
12D	42.6	M GR CH4	CH4		59												
13A	44.0	M GR CH4	CH4		60												
13B	44.8	M GR CH4	CH4		62	64	103	100	UU	0	708		86	29	57	0.31	
13C	45.7	M GR CH4	CH4		56												
13D	46.6	M GR CH4	CH4		55												
14A	48.0	M GR CH4	CH4		58												
14B	48.8	M GR CH4	CH4	9	55	68	105	99	UC	--	634	1269	83	29	54	0.24	
14C	49.7	M GR CH4 W/ LNS ML	CH4		52												
15A	52.0	M GR CH4	CH4		50												
15B	52.8	M GR CH4	CH4		49												
15C	53.7	M GR CH4 W/ ARS SM, SIF	CH4	6	50	71	107	98	UC	--	630	1260	81	27	54	0.34	
16A	56.0	SO GR CH4 W/ LNS ML	CH4		60												
16B	56.8	M GR CH4 W/ LNS ML	CH4		61												
16C	57.7	M GR CH4 W/ SL	CH4		54	66	102	93	UU	0	986		84	29	55	0.41	
17A	60.0	M GR CH4 W/ SL	CH4		61												
17B	60.8	M GR CH4 W/ SL	CH4		59												
17C	61.7	M GR CH4 W/ ARS ML, SL	CH4	3	60	64	102	98	UC	--	622	1245	79	29	50	0.39	
17D	62.6	M GR CL4-S W/ SIF	CL4-S		37												
18A	64.0	M GR CL4-S W/ SIF	CL4-S		33												
18B	64.8	M GR CL6-S W/ SIF	CL6-S		33												
18C	65.7	M GR CH3 W/ ARS SM, SIF	CH3	4	33	87	115	92	UC	--	701	1402	71	20	51	0.30	
18D	66.6	M GR CH4 W/ LNS SP, SIF	CH4		55												
19A	68.0	M GR CH4 W/ LNS ML	CH4		58												
19B	68.8	M GR CH4 W/ LNS ML	CH4		54												
19C	69.7	ST GR CH4 W/ ARS & LNS ML	CH4	4	60	65	104	100	UC	--	1344	2688	91	31	60	0.44	
19D	70.6	ST GR CH4 W/ LNS ML	CH4		55												

Remarks:
FFEBJV, LLC.

Checked by: WSY
File Name: TO 2

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
98.0 %	78.0 %	53.7	94	66	2.72	1.10	1.15	2.165

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CH4	CH4	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-41UPT **Sample No.:** 7C **Elev./Depth:** 21.7

FFEBJV, LLC

St Rose, LA

Remarks:

Specific gravity is assumed

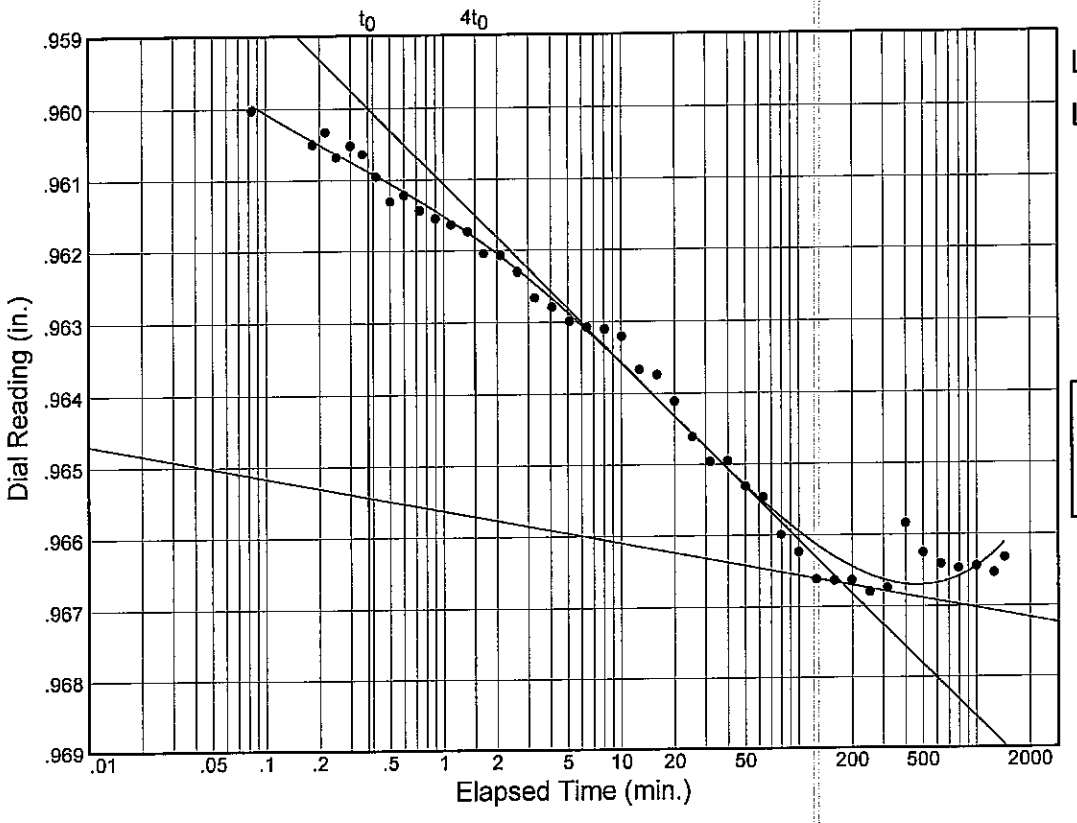
Tested by: DLD
Calculated by: WJY
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

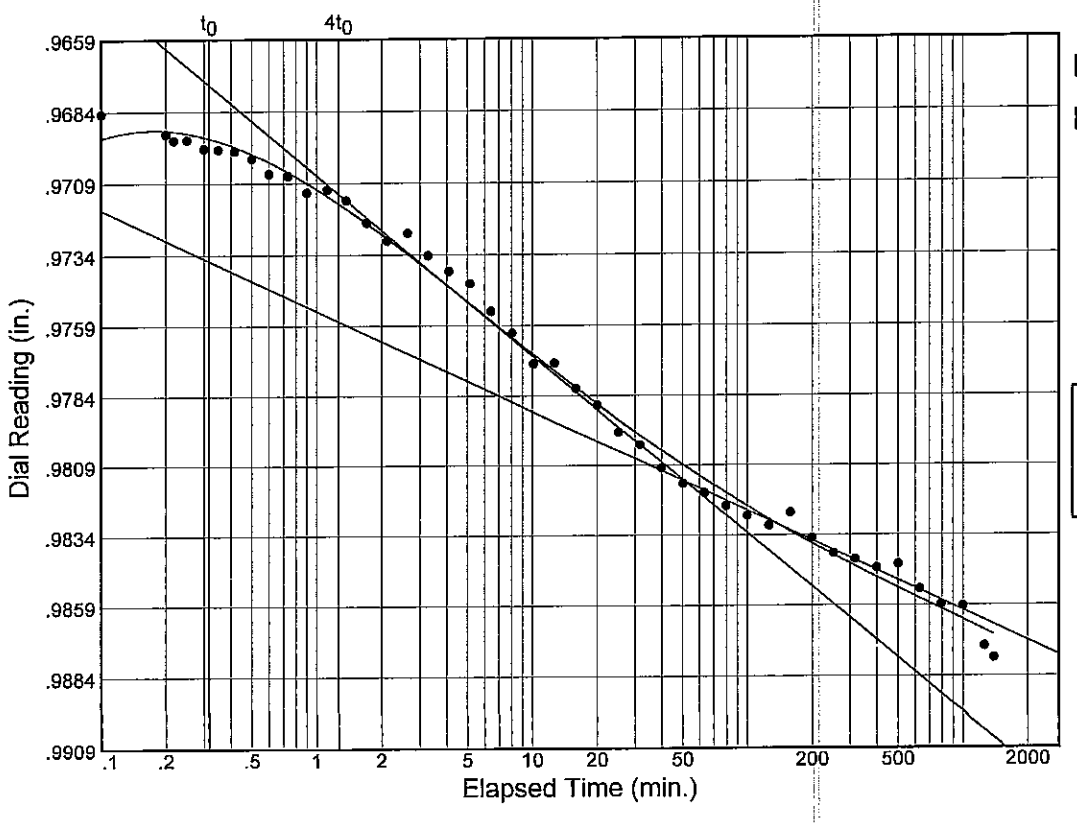
Source: WWHC-41UPT Sample No.: 7C Elev./Depth: 21.7



Load No.= 3
Load= 0.50 tsf
D_0 = 0.95993
D_{50} = 0.96330
D_{100} = 0.96667
T_{50} = 7.72 min.

C_v @ T_{50}
0.06 ft.^{2}/day

C_α = 0.000



Load No.= 4
Load= 1.00 tsf
D_0 = 0.96705
D_{50} = 0.97427
D_{100} = 0.98149
T_{50} = 3.72 min.

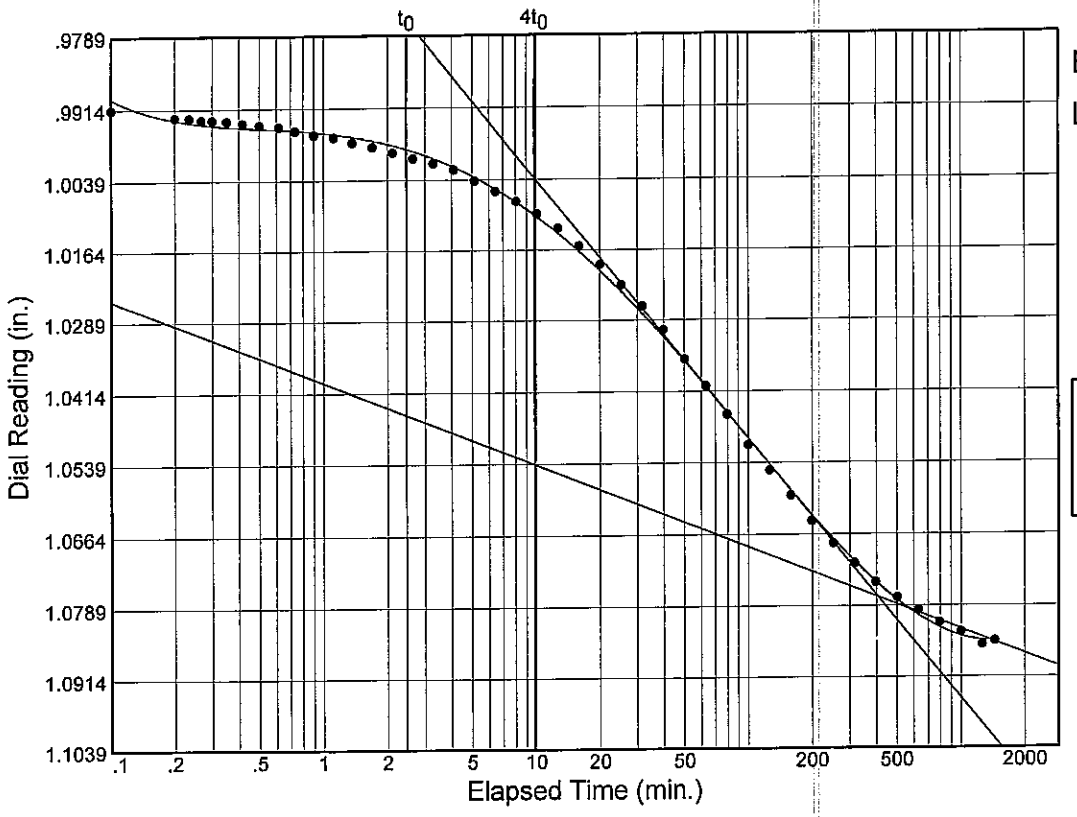
C_v @ T_{50}
0.13 ft.^{2}/day

C_α = 0.004

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

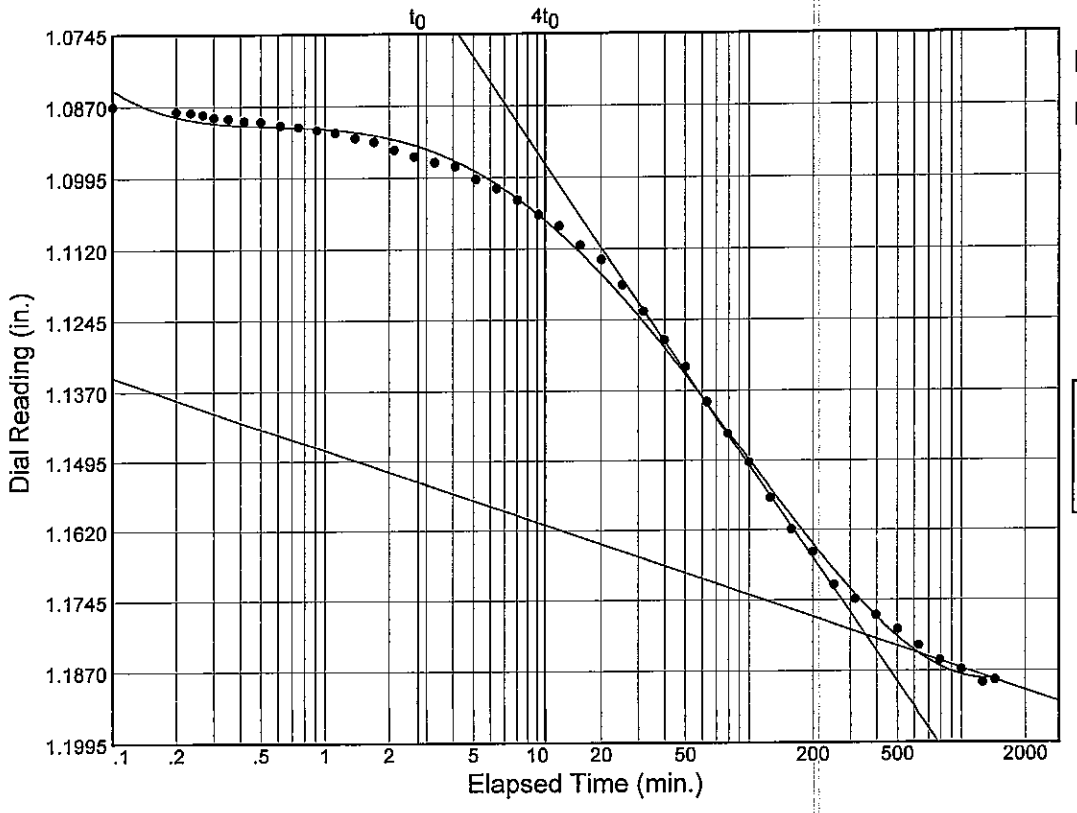
Source: WWHC-41UPT Sample No.: 7C Elev./Depth: 21.7



Load No.= 5
Load= 2.00 tsf
D_0 = 0.98683
D_{50} = 1.03207
D_{100} = 1.07731
T_{50} = 40.38 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.015



Load No.= 6
Load= 4.00 tsf
D_0 = 1.08103
D_{50} = 1.13085
D_{100} = 1.18068
T_{50} = 42.67 min.

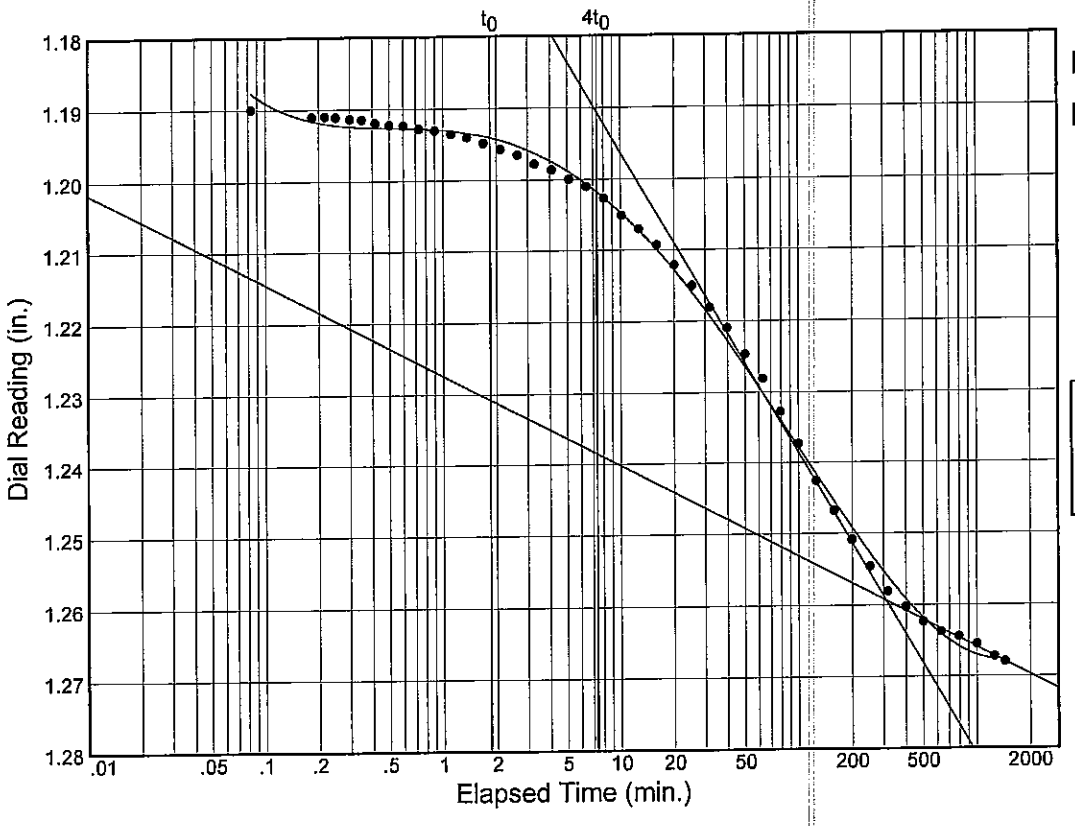
C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.015

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

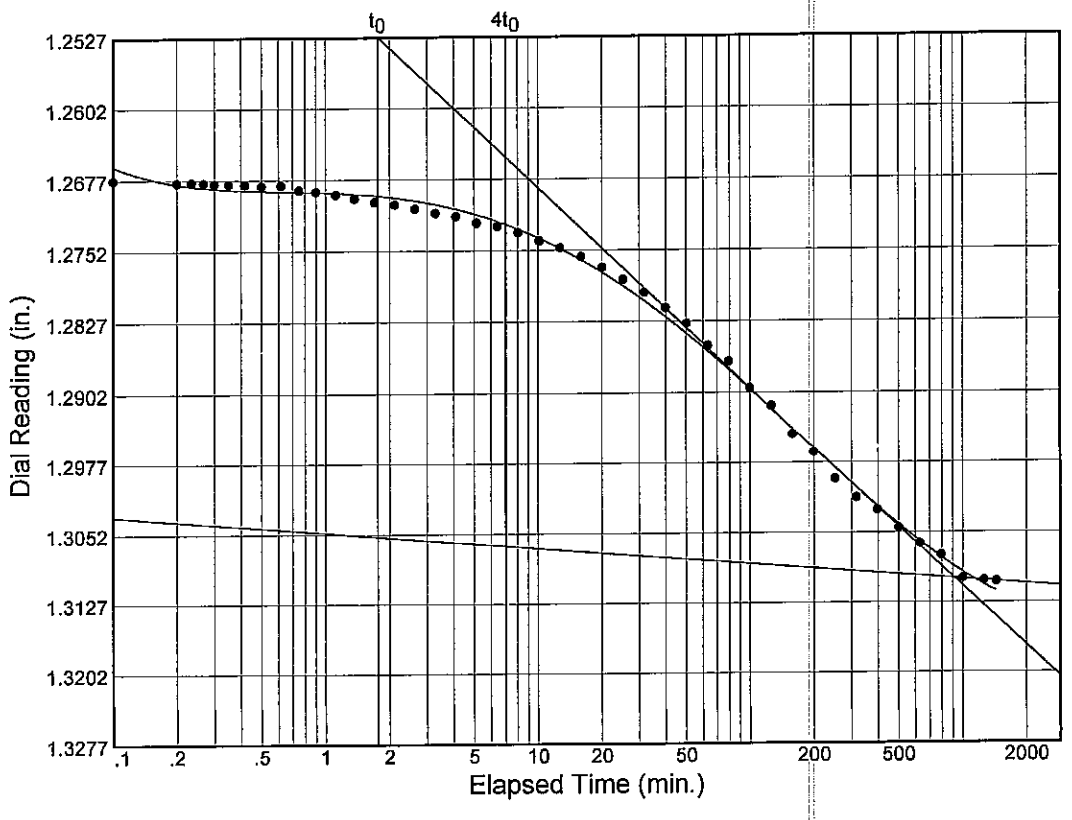
Source: WWHC-41UPT Sample No.: 7C Elev./Depth: 21.7



Load No.= 7
Load= 8.00 tsf
D_0 = 1.18634
D_{50} = 1.22289
D_{100} = 1.25943
T_{50} = 40.22 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.016



Load No.= 8
Load= 12.00 tsf
D_0 = 1.26640
D_{50} = 1.28826
D_{100} = 1.31012
T_{50} = 83.56 min.

C_v @ T_{50}
0.00 ft.^{2}/day

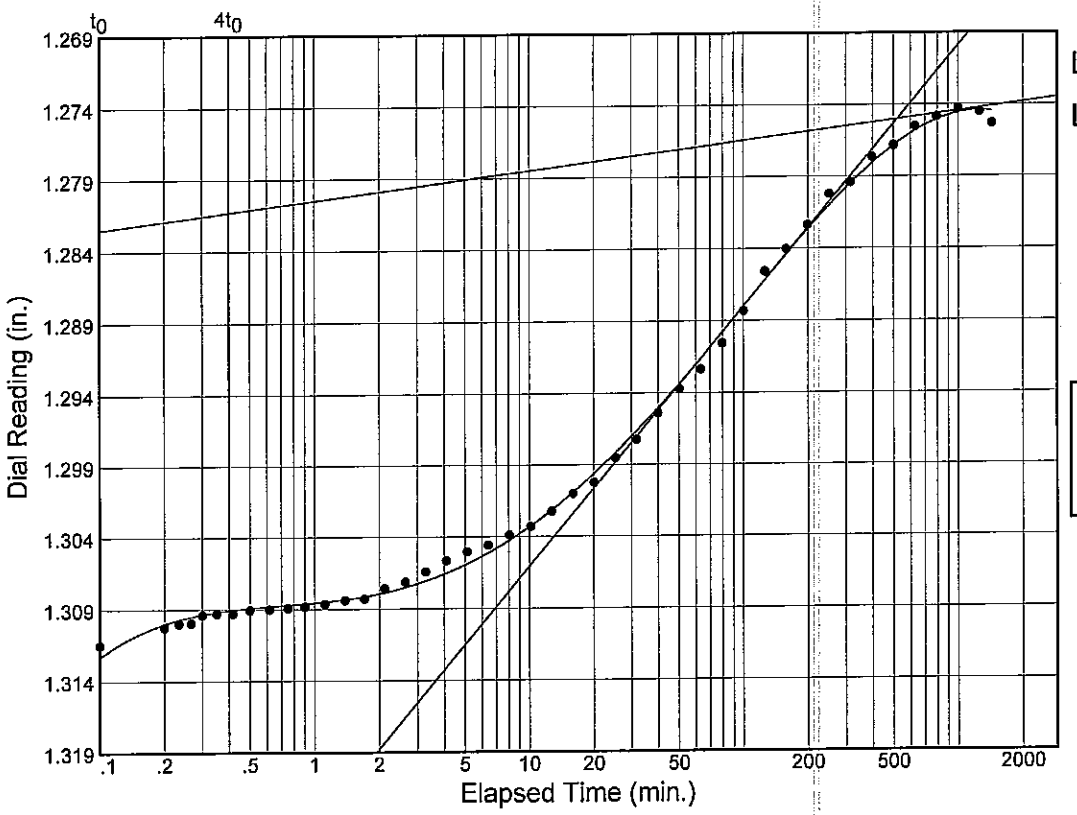
C_α = 0.002

Figure

Dial Reading vs. Time

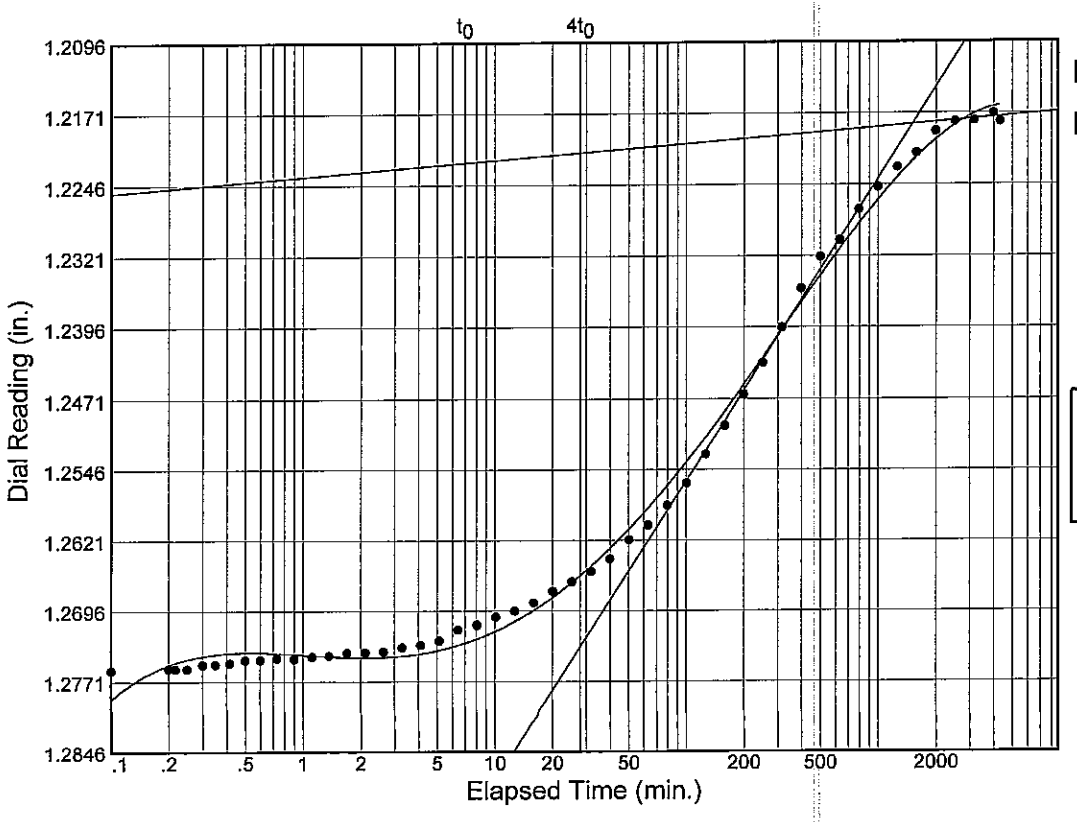
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-41UPT Sample No.: 7C Elev./Depth: 21.7



Load No.= 9
Load= 3.00 tsf
D_0 = 1.31560
D_{50} = 1.29529
D_{100} = 1.27498
T_{50} = 38.32 min.

C_v @ T_{50}
0.01 ft.^{2}/day



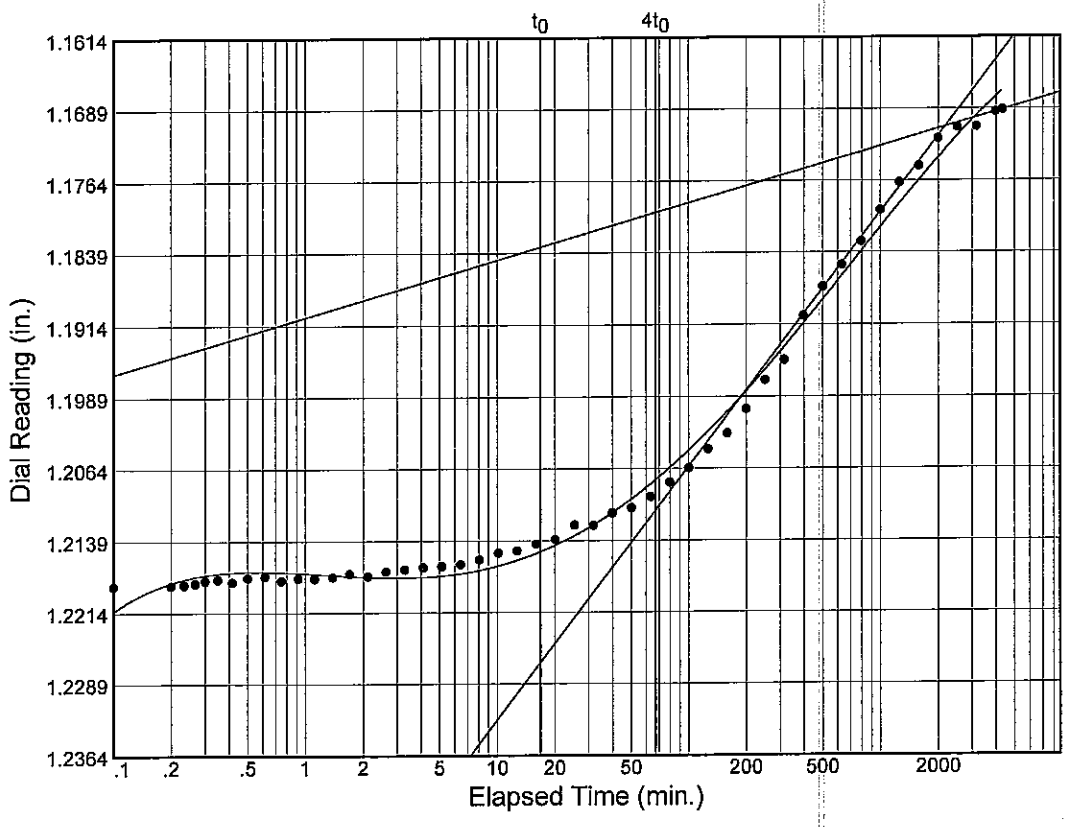
Load No.= 10
Load= 0.75 tsf
D_0 = 1.28019
D_{50} = 1.24922
D_{100} = 1.21824
T_{50} = 147.93 min.

C_v @ T_{50}
0.00 ft.^{2}/day

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

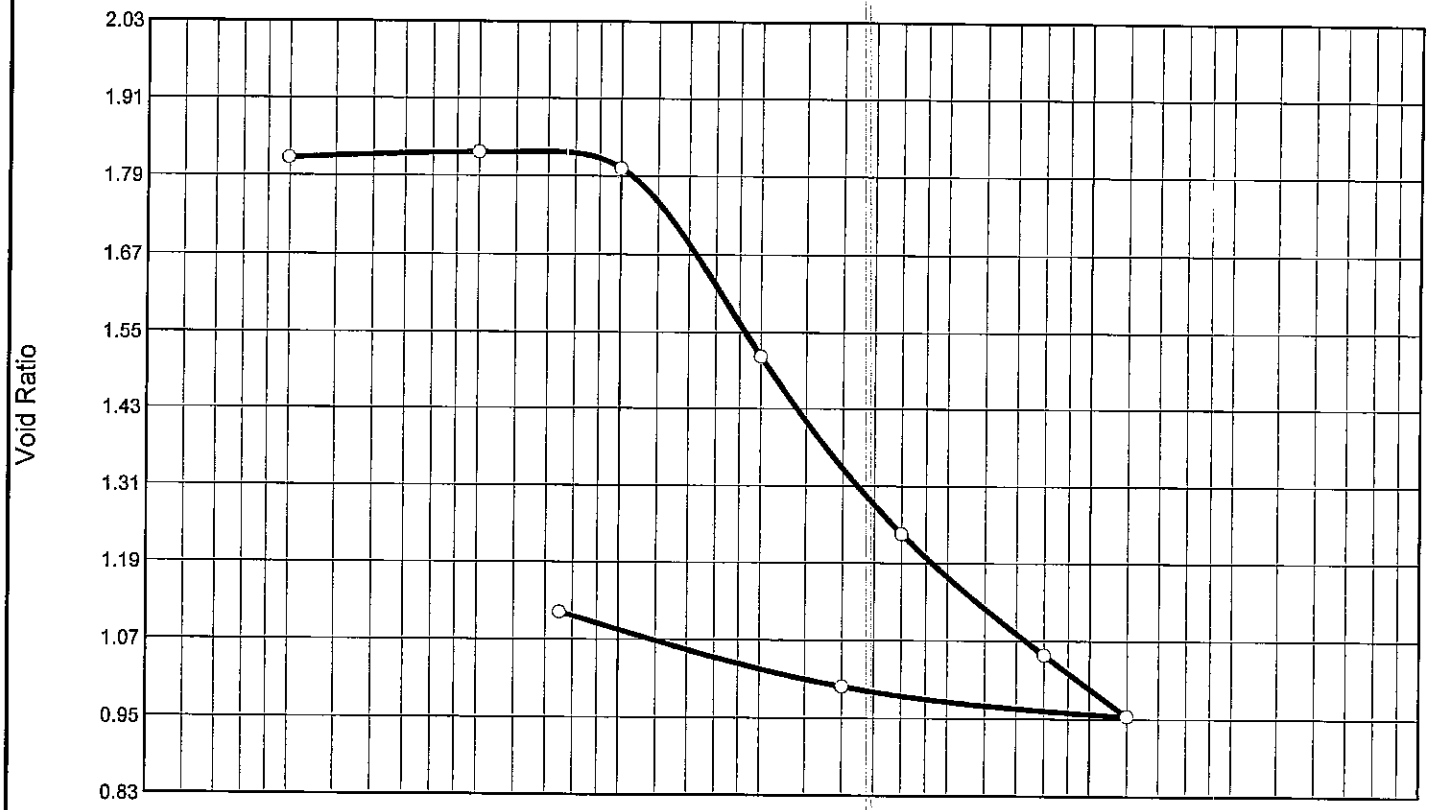
Source: WWHC-41UPT Sample No.: 7C Elev./Depth: 21.7

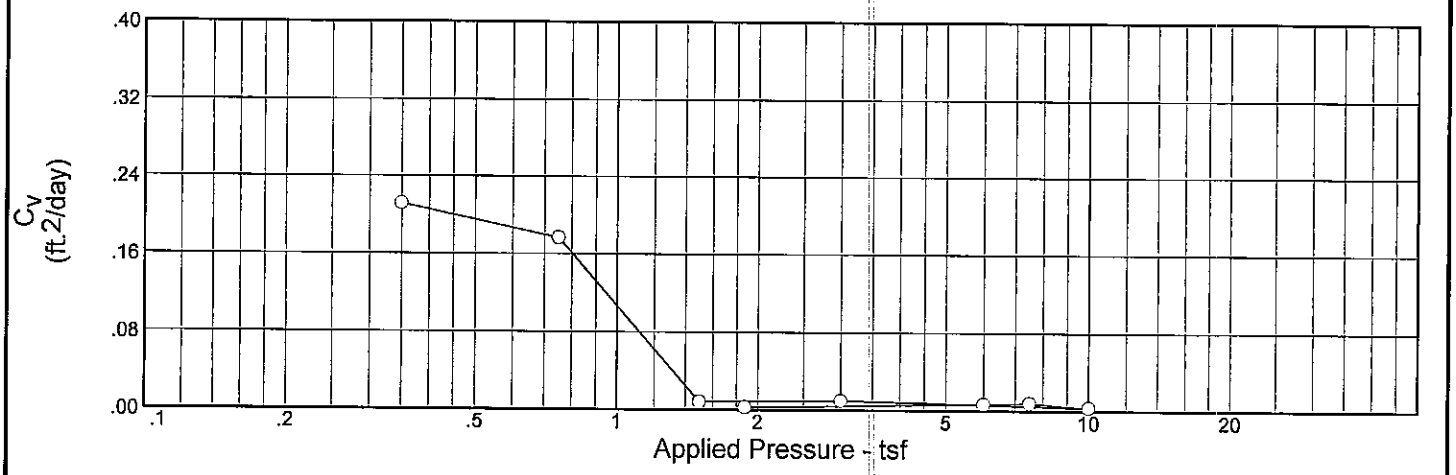


Load No.= 11
Load= 0.19 tsf
D_0 = 1.22255
D_{50} = 1.19665
D_{100} = 1.17075
T_{50} = 235.85 min.

C_v @ T_{50}
0.00 ft.^{2}/day

CONSOLIDATION TEST REPORT





Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
97.6 %	65.6 %	60.1	87	64	2.72	1.11	1.10	1.828

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CH4 W/ ARS ML	CH4	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-41UPT **Sample No.:** 11C **Elev./Depth:** 37.7

FFEBJV, LLC

St Rose, LA

Remarks:

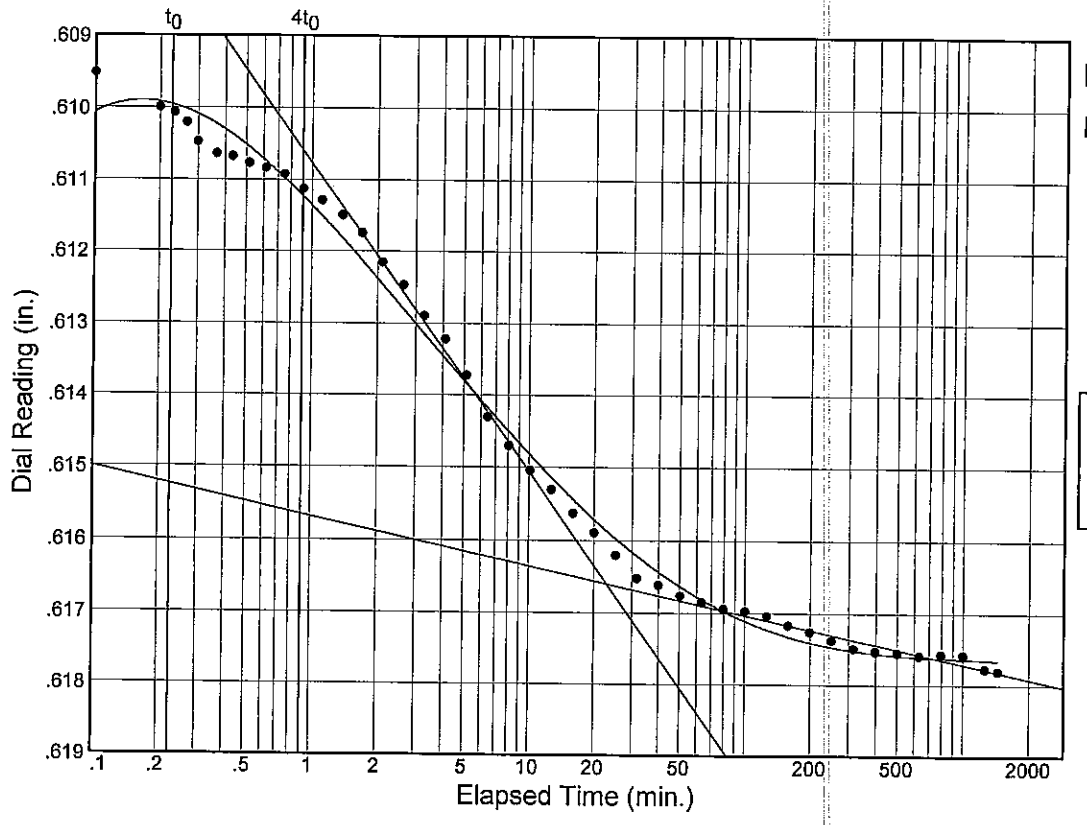
Tested by: DLD
Calculated by: WJY
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

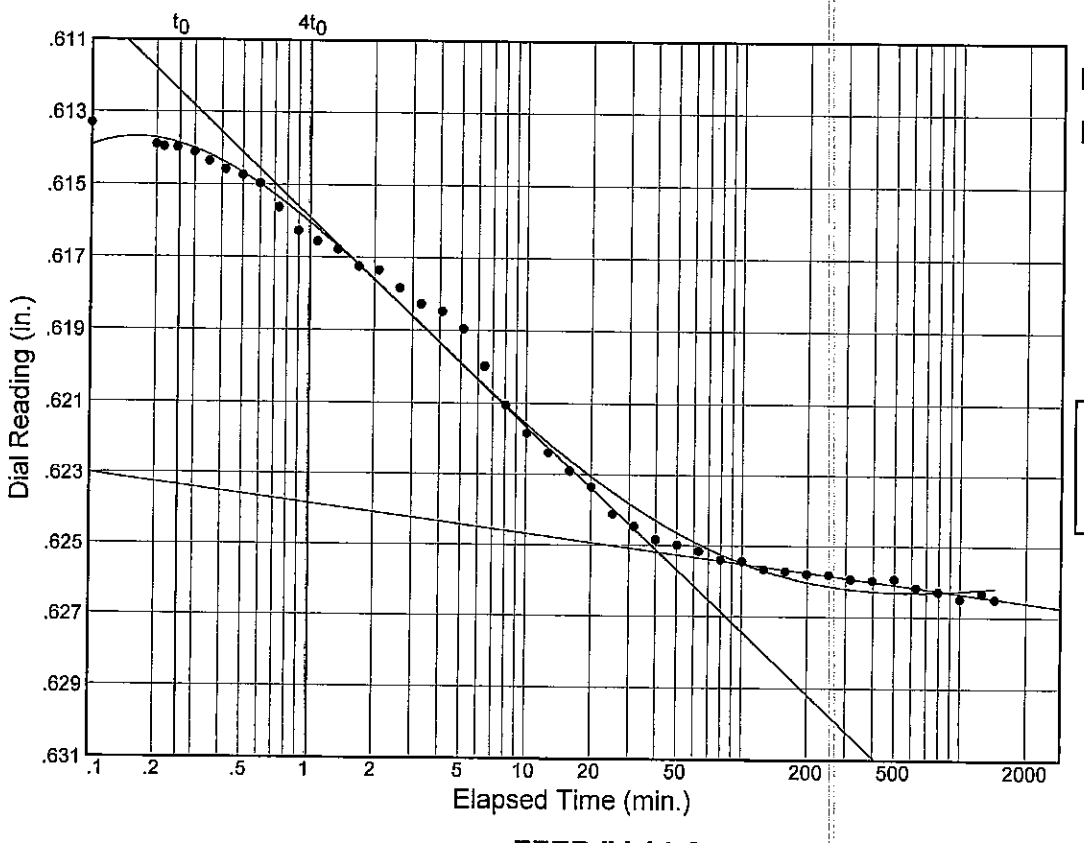
Source: WWHC-41UPT Sample No.: 11C Elev./Depth: 37.7



Load No.= 2
Load= 0.50 tsf
D_0 = 0.60868
D_{50} = 0.61264
D_{100} = 0.61660
T_{50} = 2.37 min.

C_v @ T_{50}
0.21 ft.^{2}/day

C_α = 0.001



Load No.= 3
Load= 1.00 tsf
D_0 = 0.61168
D_{50} = 0.61844
D_{100} = 0.62519
T_{50} = 2.80 min.

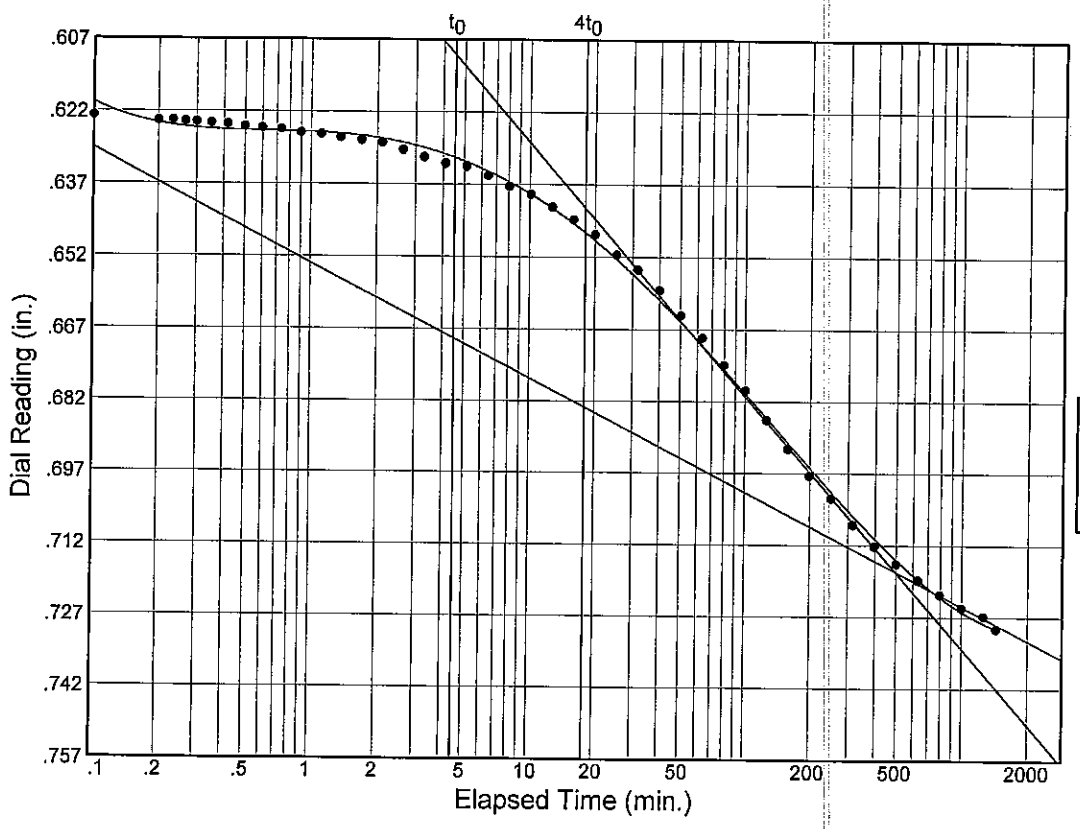
C_v @ T_{50}
0.18 ft.^{2}/day

C_α = 0.001

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

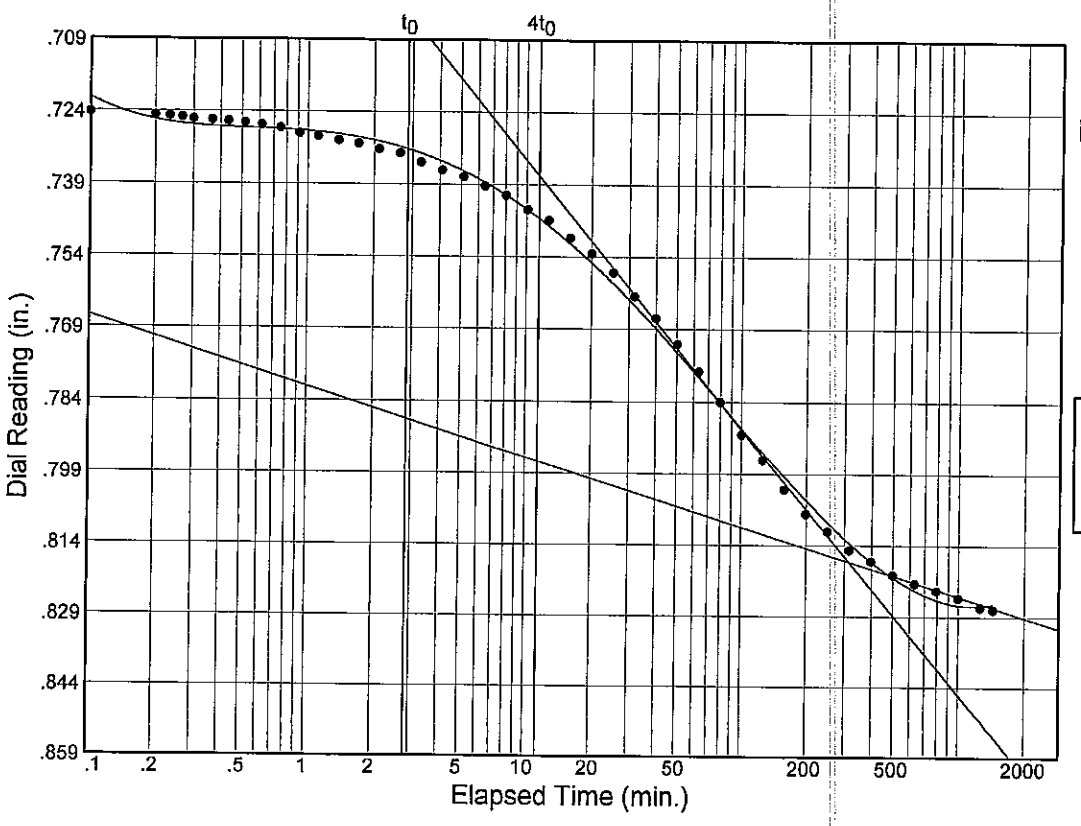
Source: WWHC-41UPT Sample No.: 11C Elev./Depth: 37.7



Load No.= 4
Load= 2.00 tsf
D_0 = 0.61587
D_{50} = 0.66668
D_{100} = 0.71750
T_{50} = 53.24 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.024



Load No.= 5
Load= 4.00 tsf
D_0 = 0.71728
D_{50} = 0.76735
D_{100} = 0.81742
T_{50} = 37.07 min.

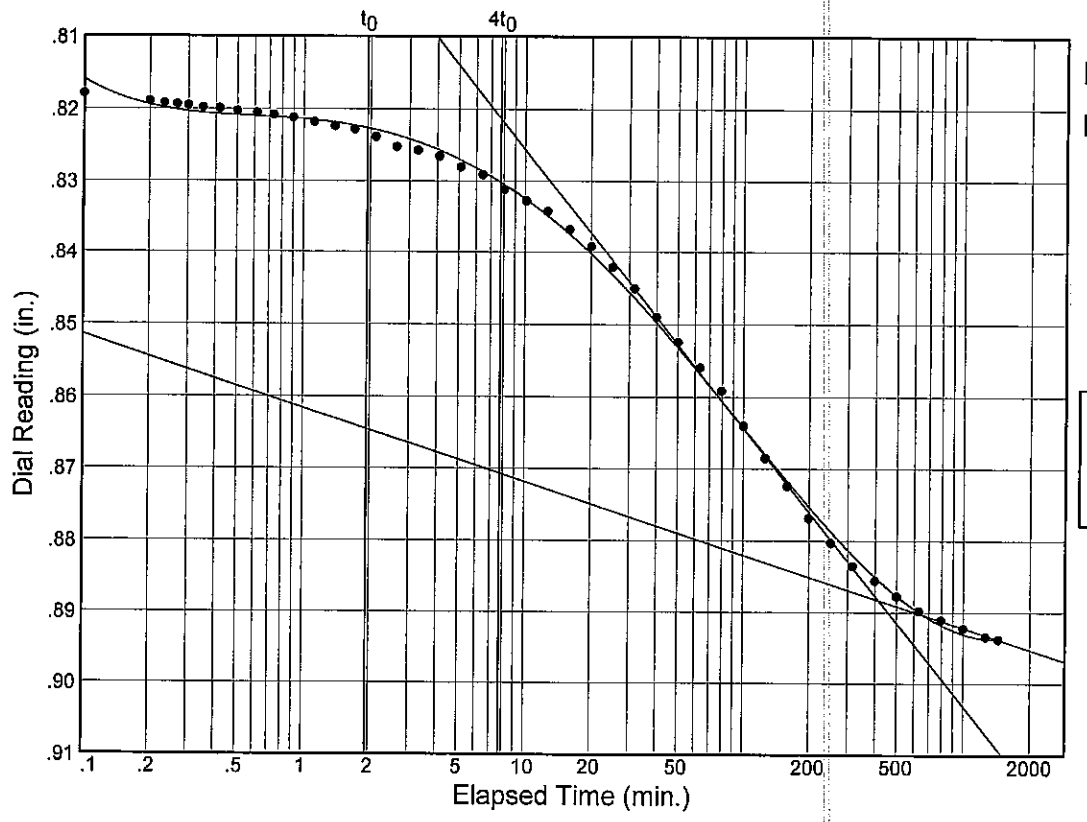
C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.016

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

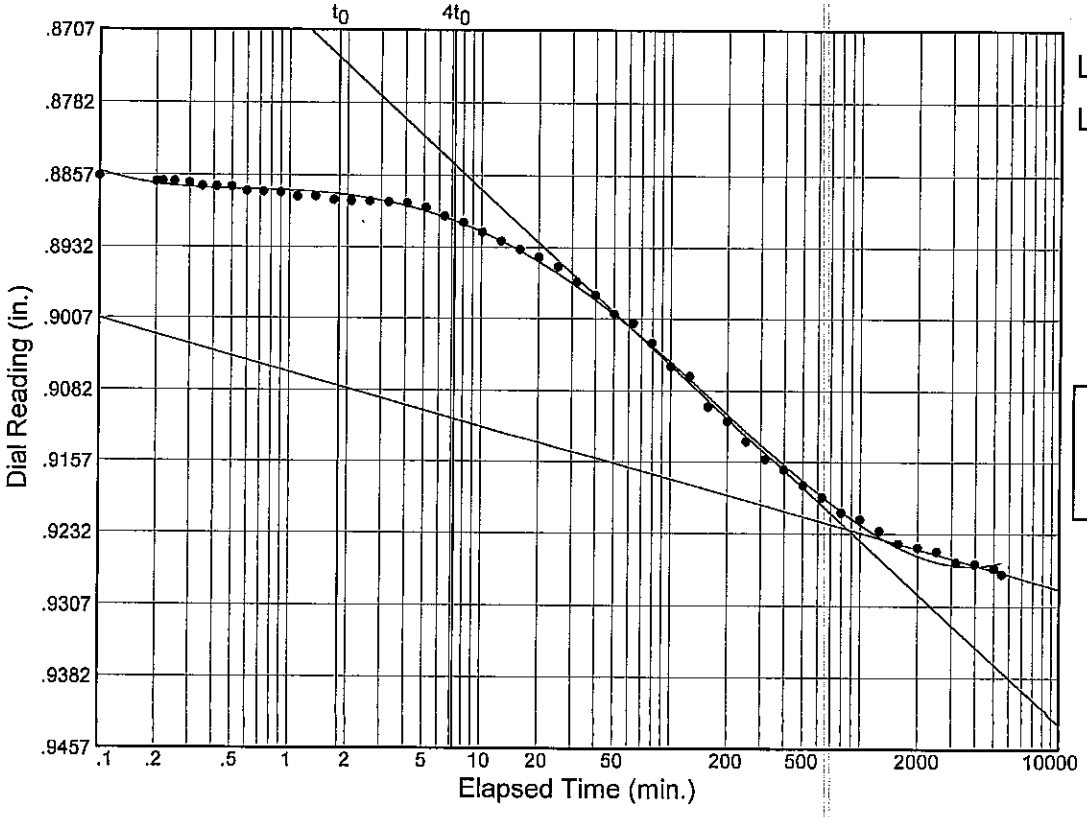
Source: WWHC-41UPT Sample No.: 11C Elev./Depth: 37.7



Load No.= 6
Load= 8.00 tsf
D_0 = 0.81504
D_{50} = 0.85165
D_{100} = 0.88825
T_{50} = 45.26 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.013



Load No.= 7
Load= 12.00 tsf
D_0 = 0.88486
D_{50} = 0.90380
D_{100} = 0.92274
T_{50} = 82.50 min.

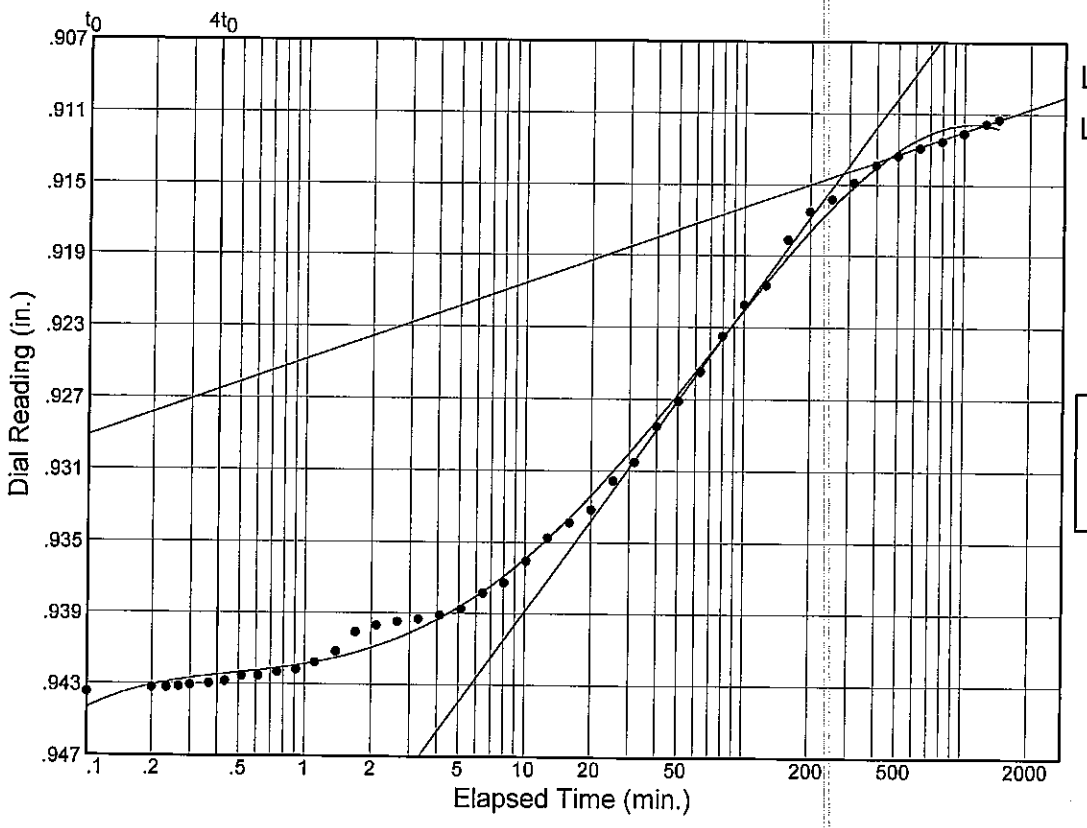
C_v @ T_{50}
0.00 ft.^{2}/day

C_α = 0.008

Dial Reading vs. Time

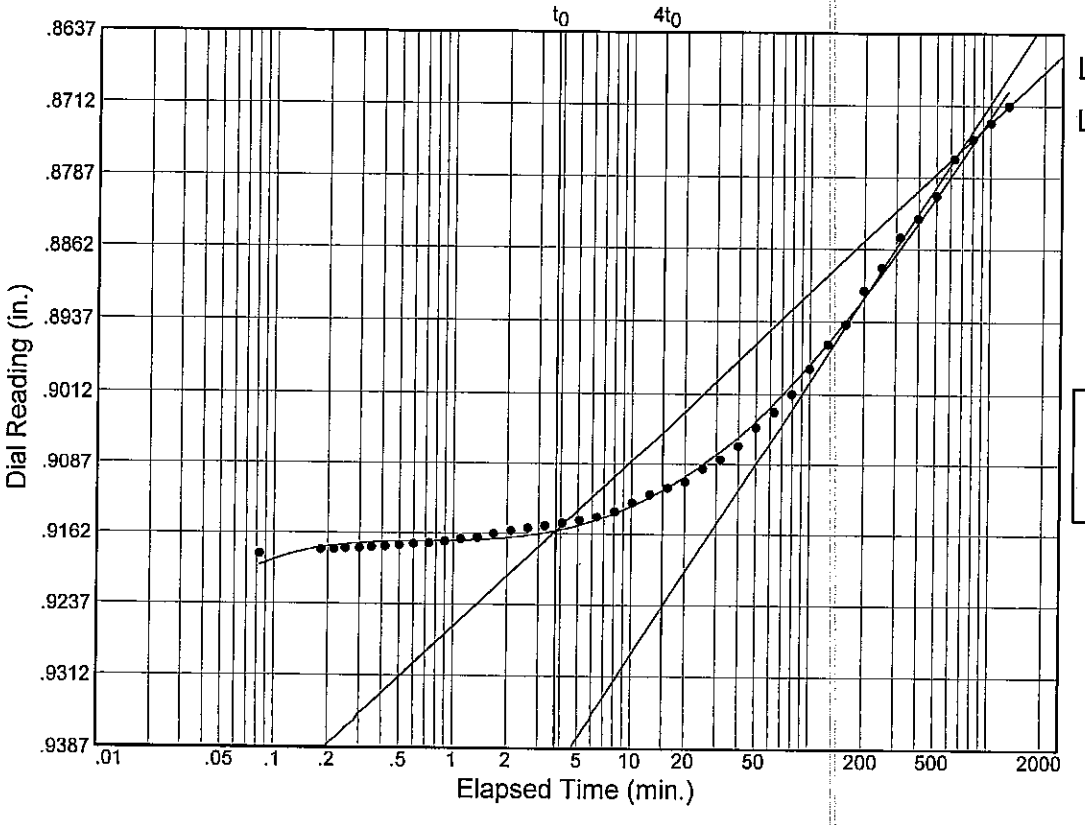
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-41UPT Sample No.: 11C Elev./Depth: 37.7



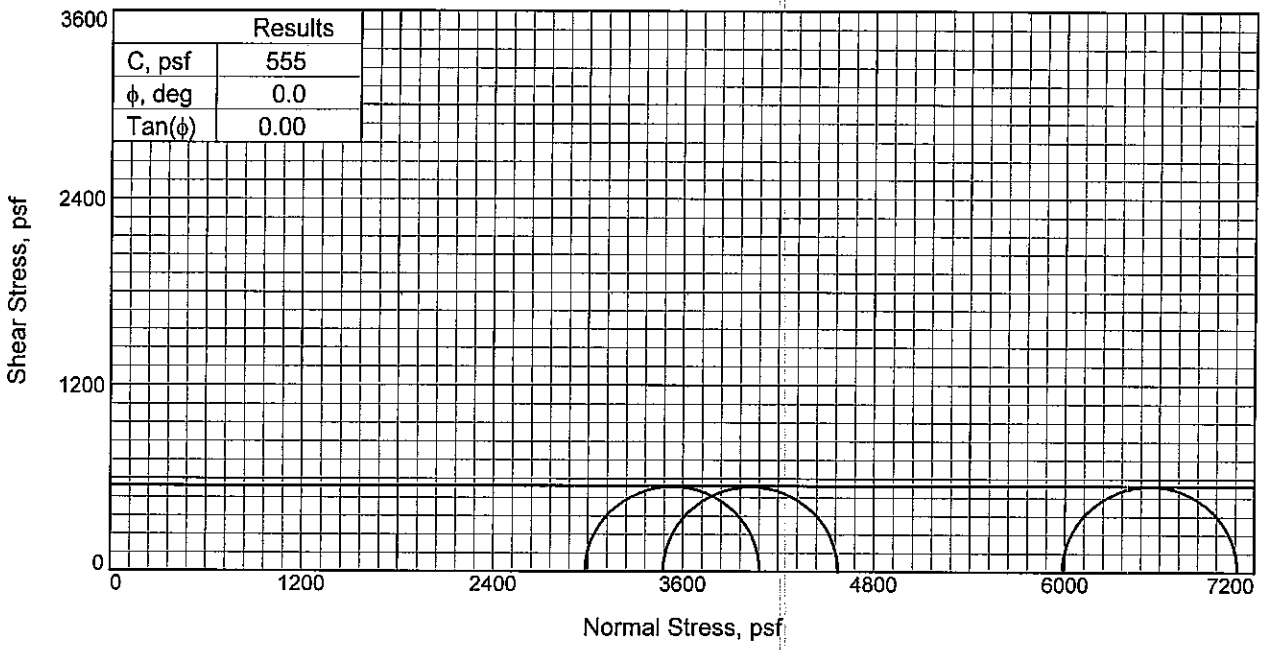
Load No.= 8
Load= 3.00 tsf
D_0 = 0.94619
D_{50} = 0.93026
D_{100} = 0.91433
T_{50} = 28.76 min.

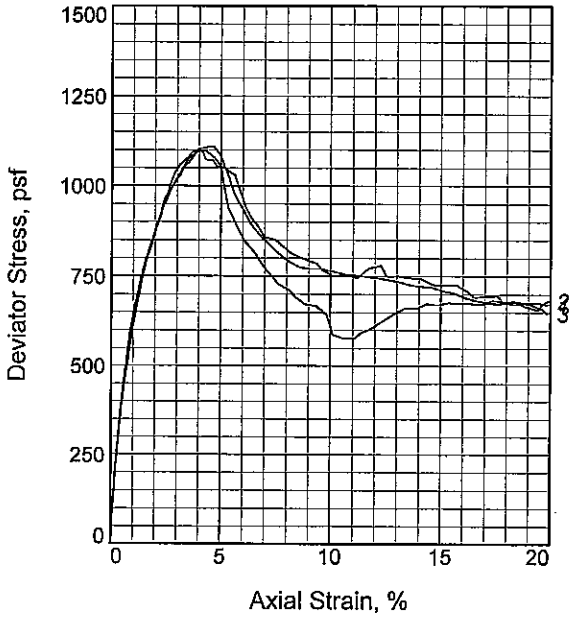
C_V @ T_{50}
0.01 ft.^{2}/day



Load No.= 9
Load= 0.75 tsf
D_0 = 0.92026
D_{50} = 0.89816
D_{100} = 0.87606
T_{50} = 100.37 min.

C_V @ T_{50}
0.00 ft.^{2}/day





Sample No.		1	2	3
Initial	Water Content, %	65.6	64.7	64.8
	Dry Density, pcf	60.9	61.4	61.7
	Saturation, %	99.7	99.8	100.6
	Void Ratio	1.7897	1.7644	1.7510
	Diameter, in.	1.400	1.385	1.391
	Height, in.	3.137	3.132	3.140
At Test	Water Content, %	65.6	64.7	64.8
	Dry Density, pcf	60.9	61.4	61.7
	Saturation, %	99.7	99.8	100.6
	Void Ratio	1.7897	1.7644	1.7510
	Diameter, in.	1.400	1.385	1.391
	Height, in.	3.137	3.132	3.140
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		24.14	20.71	41.56
Fail. Stress, psf		1099	1102	1110
Strain, %		4.3	4.0	4.6
Ult. Stress, psf		577	725	710
Strain, %				
σ_1 Failure, psf		4575	4084	7094
σ_3 Failure, psf		3477	2982	5984

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ ARS ML

LL= 89 **PL=** 31 **PI=** 58
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

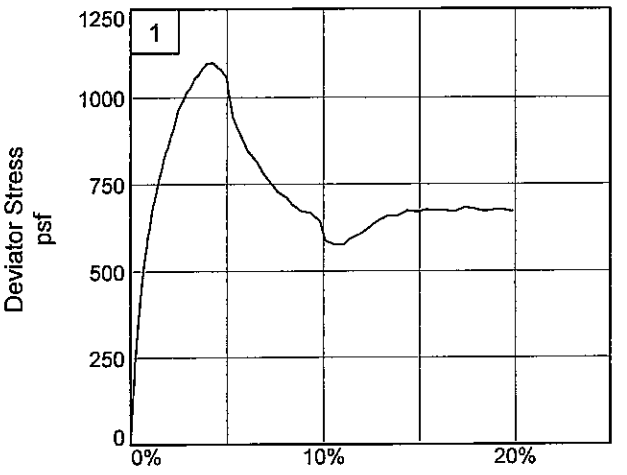
Client: U.S. Army Corps of Engineers

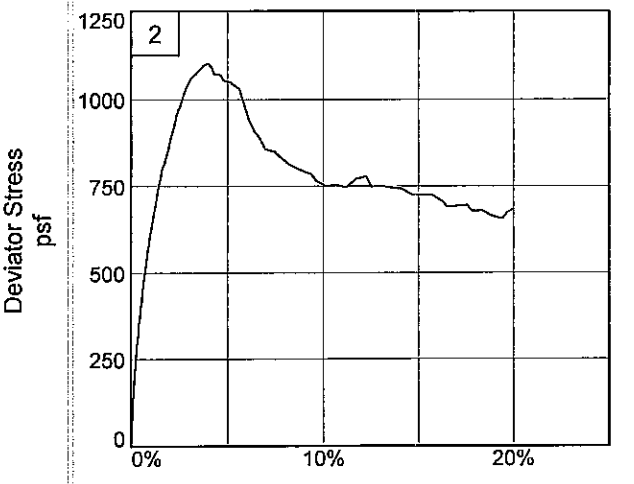
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-41UPT **Depth:** 36.8
Sample Number: 11B
Proj. No.: 0022-0002 **Date Sampled:** 4/24/07

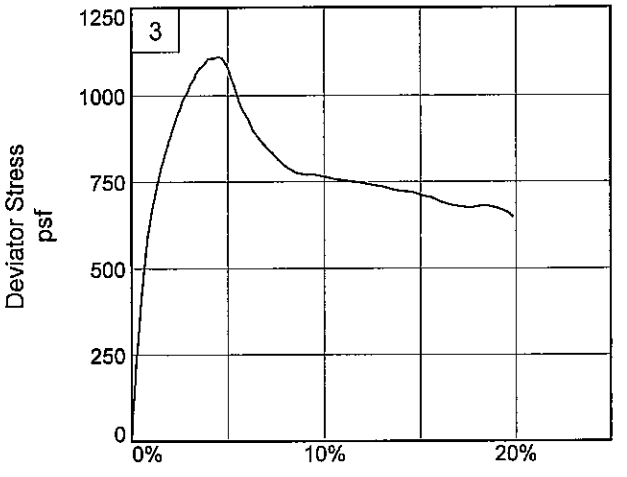
TRIAXIAL SHEAR TEST REPORT

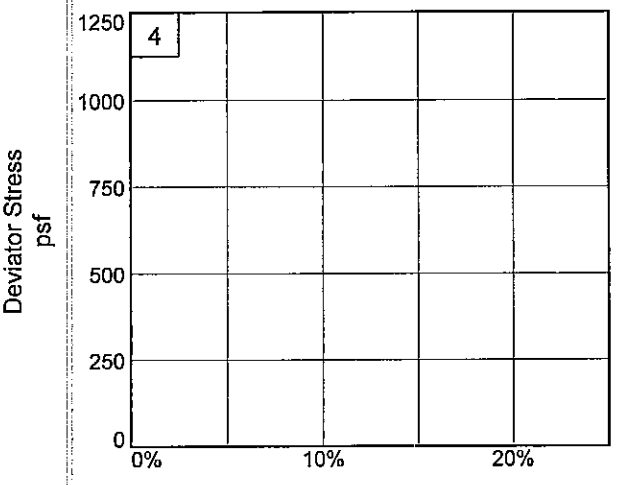
FFEBJV, LLC

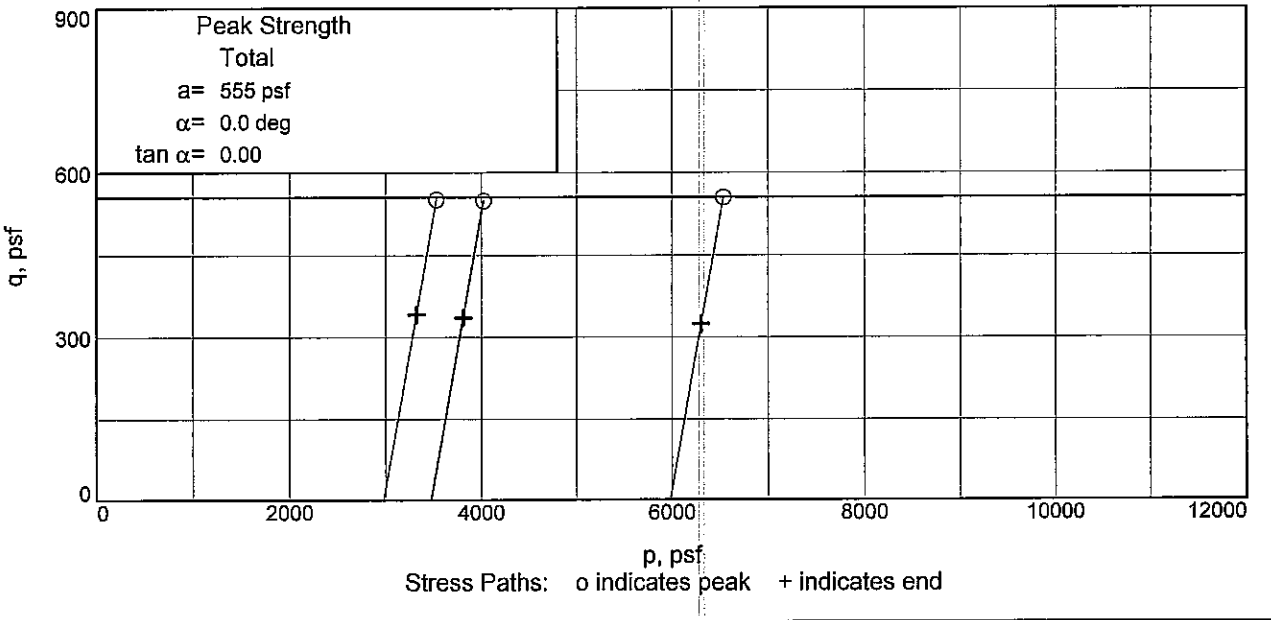
Tested By: DW **Checked By:** AD











Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-41UPT **Depth:** 36.8 **Sample Number:** 11B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW **Checked By:** AD

```
BOR. WWHC-41UPT
STA. LAT N29^50'38.72" LONG W90^07'22.98"

27 MARCH 2007

GROUND EL. 3.50
  0.0  0.8 20  0.8CL     ST  T GR    RT
  0.8  2.0 35  2.0CH     ST DGRLBR   WD RT            1258108 75 26      38  11
  2.0  2.8 41     CH  SIS M GR LBR   WD RT
  2.8  4.0 40  4.0CH  SIS M GR  T    WD
  4.0  4.8 35     CL     SO GR        O RT
  4.8  5.7 29  5.7CL     SO GR LBR
  5.7  8.0 31  8.0CL  SISSO BR GR                    390120 44 18      34  60
  8.0  8.8 36     CL      M GR LBR
  8.8  9.7 39     CL      M GR LBR
  9.7 12.0 35     CL      M BR GR
 12.0 12.8 39     CL      M GR LBR
 12.8 13.7 42     CL     SO GR
 13.7 16.0 45 16.0CL     SO DGR
 16.0 16.8 47     CH      M GR       WD
 16.8 17.7 55 17.7CH      M GR
 17.7 20.0 53 20.0CH  SIS M DGR      SIFRT
 20.0 20.8 61 20.8CH      M GR
 20.8 21.7 61 21.7CH  SIS M DGR      RT
 21.7 22.6 78     CH      M GR
 22.6 24.0 91 24.0CH      M GR
 24.0 24.8 55     CH  SIS M GR
 24.8 25.7 64     CH  SISSO GR
 25.7 26.6 63     CH  SISSO GR       SIF
 26.6 28.0 43 28.0CH  SISSO GR       CC
 28.0 28.8 33 28.8CL  SS SO GR
 28.8 29.7 43 29.7CH  SISSO GR
 29.7 30.6 54 30.6CL  SS SO GR        S              398107 49 16      52 300
 30.6 32.0 57     CH  SISSO GR
 32.0 32.8 61     CH  SISSO GR
 32.8 33.7 47 33.7CH  SIS M GR
 33.7 36.0 51 36.0CH  SS  M GR       SL              615110 60 20      47 340
 36.0 36.8 58     CH  SISSO GR       SL
 36.8 37.7 60     CH  SIS M GR
 37.7 40.0 66 40.0CH  SIS M GR
 40.0 40.8 66 40.8CH      M GR
 40.8 41.7 62     CH  SIS M GR
```

41.7 42.6 60 42.6CH SIS M GR 703105 83 82 60 420
42.6 44.0 59 CH M GR
44.0 44.8 60 CH M GR
44.8 45.7 62 CH M GR
45.7 46.6 56 CH M GR
46.6 48.0 55 CH M GR
48.0 48.8 58 CH M GR
48.8 49.7 57 49.7CH M GR 634105 83 29 55 491
49.7 52.0 52 52.0CH SIS M GR
52.0 52.8 50 CH M GR
52.8 53.7 49 CH M GR
53.7 56.0 55 56.0CH M GR S SIF 630107 81 27 50 540
56.0 56.8 60 CH SISSO GR
56.8 57.7 61 57.7CH SIS M GR
57.7 60.0 60 CH M GR SL
60.0 60.8 61 CH M GR SL
60.8 61.7 59 61.7CH M GR SL
61.7 62.6 58 62.6CH SIS M GR SL 622102 79 29 60 620
62.6 64.0 37 CL M GR SIF
64.0 64.8 33 CL M GR SIF
64.8 65.7 33 65.7CL M GR SIF
65.7 66.6 39 66.6CH M GR S SIF 701115 71 20 33 660
66.6 68.0 55 68.0CH SS M GR SIF
68.0 68.8 58 CH SIS M GR
68.8 69.7 54 CH SIS M GR
69.7 70.6 58 CH SISST GR 1344104 91 31 60 700
70.6 72.0 55 72.0CH SISST GR
999.9
****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 10.00/-6.50 Water Con: 35.00
LL,PL,PI : 40, 18, 22 Dry Dens : 87.00
Cohesion : 0.269 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 14.00/-10.5 Water Con: 45.00
LL,PL,PI : 44, 22, 22 Dry Dens : 76.00
Cohesion : 0.248 Saturat :100.00

Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 18.00/-14.5 Water Con: 46.00
LL,PL,PI : 90, 28, 62 Dry Dens : 74.00
Cohesion : 0.421 Saturat : 95.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 21.10/-17.6 Water Con: 50.00
LL,PL,PI : 94, 28, 66 Dry Dens : 70.00
Cohesion : 0.272 Saturat : 89.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 26.00/-22.5 Water Con: 64.00
LL,PL,PI : 84, 25, 59 Dry Dens : 62.00
Cohesion : 0.244 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 37.10/-33.6 Water Con: 65.00
LL,PL,PI : 89, 31, 58 Dry Dens : 61.00
Cohesion : 0.278 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 45.10/-41.6 Water Con: 62.00

LL,PL,PI : 86, 29, 57 Dry Dens : 64.00
Cohesion : 0.354 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 58.00/-54.5 Water Con: 54.00
LL,PL,PI : 84, 29, 55 Dry Dens : 66.00
Cohesion : 0.493 Saturat : 93.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CH
Depth/Ele: 21.7/-18.2 Water Con: 78.00
LL,PL,PI : 94, 28, 66 Dry Dens : 54.00
Cohesion : Saturat : 98.00
Shear Str: Frict Ang: 00.00
Norm Str: 1.100, 2.020
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.05	2.157
0.25	2.149
0.50	2.127
1.00	2.060
2.00	1.755
4.00	1.430
8.00	1.181
12.00	1.048
3.00	1.158
0.75	1.338
0.19	1.492

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CH
Depth/Ele: 37.7/-34.2 Water Con: 66.00
LL,PL,PI : 87, 23, 64 Dry Dens : 60.00
Cohesion : Saturat : 98.00

Shear Str: Frict Ang: 00.00
Norm Str: 1.110, 1.772
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.20	1.818
0.50	1.827
1.00	1.802
2.00	1.512
4.00	1.236
8.00	1.049
12.00	0.954
3.00	0.999
0.75	1.112

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-42UCL

Current Date: 8/22/2008

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	T ML2 W/ SIF, RT, LNS CH	ML2		11												
1B	0.8	T ML2 W/ SIF, RT, LNS CH	ML2		13												
2A	2.0	T GR ML2 W/ SIF	ML2		17												
2B	2.8	T GR ML2 W/ SIF	ML2		17												
3A	4.0	ST GR CL6 W/ LNS CH, SIF	CL6		23												
3B	4.8	ST GR CL6 W/ LNS CH, SIF	CL6		24												
4A	6.0	ST T & GR CL6 W/ LNS CH, SIF	CL6		24												
4B	6.8	ST T & GR CL6 W/ LYS CH, SIF	CL6	6	24	103	127	100	UC	--	1343	2687	49	15	34	0.28	
5A	8.0	SO GR CL6	CL6		46												
5B	8.8	M GR CL6 W/ LNS CH	CL6		27												
5C	9.7	M GR CL6 W/ LNS ML	CL6		32	86	114	90	UU	0	906		41	17	24	0.51	
5D	10.6	M GR CL6 W/ LNS CH	CL6		27												
6A	12.0	M GR CH4	CH4		40												
6B	12.8	M GR CH4	CH4		32												
6C	13.7	M GR CH4 W/ LNS ML	CH4		32	86	113	88	UU	0	808		88	37	51	0.35	
7A	16.0	M GR CH4	CH4		45												
7B	16.8	M GR CH4	CH4		38												
7C	17.7	M GR CL6 W/ LNS ML	CL6		28	92	118	91	UU	0	748		49	15	34	0.26	
7D	18.6	M GR CL6 W/ LNS CH	CL6		31												
8A	20.0	VSO GR CL4 W/ LNS CH	CL4		55												
8B	20.8	VSO GR CL4 W/ LNS CH	CL4		52												
8C	21.7	VSO GR CL4	CL4		49	69	103	91	UU	0	155		33	20	13	0.16	
8D	22.6	SO GR CH2-S	CH2-S		32												
9A	24.0	SO GR CH2-S	CH2-S		36												
9B	24.8	SO GR CH2-S	CH2-S		37												
9C	25.7	SO GR CH2-S W/ WD	CH2-S	7	38	83	114	98	UC	--	390	779	51	21	30	0.20	
9D	26.6	ST GR CH4 W/ ARS ML	CH4		51												
10A	28.0	M GR CH4 W/ CC	CH4		57												
10B	28.8	M GR CH4	CH4		59												
10C	29.7	M T GR CH4 W/ O	CH4		66	68	103	97					89	25	64		Gs, CON
10D	30.6	SO GR CH4	CH4		70												
11A	32.0	SO GR CHOA W/ ARS ML	CHOA		87												
11B	32.8	SO GR PT W/ ARS ML	PT		101	42	84	92	UU	0	289		291	95	196	0.36	OC = 33.7%
11C	33.7	SO GR CL6 W/ CC	CL6		36												
11D	34.6	SO GR CL6	CL6		36												
12A	36.0	SO GR CL6 W/ LNS CH	CL6		43												

Remarks: 2 consolidations (10C & 17B) added WJY

Checked by: JC

FFEBJV, LLC.

File Name: TO 2 WWHC

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-42UCL

Current Date: 8/22/2008

Sample Number	Depth	Visual Classification	USCS	E (f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
12B	36.8	M GR CH4 W/ ARS ML, CC	CH4		58												
12C	37.7	M GR CH4 W/ LNS ML, SIF	CH4		59	61	97	90	UU	0	658		93	25	68	0.31	
12D	38.6	M GR CH4 W/ ARS ML	CH4		61												
13A	40.0	M GR CH4 W/ SIF	CH4		58												
13B	40.8	M GR CH3 W/ SIF	CH3		49												
13C	41.7	M GR CH3	CH3	6	57	66	104	99	UC	--	530	1059	65	24	41	0.25	
13D	42.6	M GR CH3	CH3		53												
14A	44.0	M GR CH4 W/ ARS & LNS ML	CH4		56												
14B	44.8	M GR CH4 W/ ARS & LNS ML	CH4		62												
14C	45.7	M GR CH4 W/ ARS ML	CH4	7	65	62	102	100	UC	--	567	1134	78	27	51	0.25	
14D	46.6	M GR CH4 W/ ARS & LNS ML	CH4		51												
15A	48.0	M GR CH4	CH4		68												
15B	48.8	M GR CH4 W/ ARS & LNS ML	CH4		57												
15C	49.7	M GR CH4 W/ ARS & LNS ML	CH4	4	64	62	102	100	UC	--	623	1246	77	23	54	0.32	
15D	50.6	M GR CH4 W/ ARS ML	CH4														
16A	52.0	M GR CH4	CH4		68												
16B	52.8	M GR CH4 W/ ARS ML	CH4		64												
16C	53.7	M GR CH4 W/ ARS ML	CH4		62	59	95	89	UU	0	675		104	26	78	0.35	
16D	54.6	M GR CH4	CH4		64												
17A	56.0	SO GR CH4 W/ ARS ML	CH4		73												
17B	56.8	M GR CH4 W/ ARS ML	CH4		65	62	102	100					93	27	66		Gs, CON
17C	57.7	M GR CH4 W/ ARS & LNS ML	CH4		61												
17D	58.6	M GR CH4 ARS & LNS ML	CH4		58												
18A	60.0	M GR CH4 W/ ARS ML	CH4		60												
18B	60.8	M GR CH4	CH4		61	61	98	92	UU	0	732		93	26	67	0.35	
18C	61.7	M GR CH4 LNS & ARS ML	CH4		54												
18D	62.6	M GR CH4	CH4		56												
19A	64.0	M GR CH4 W/ ARS ML	CH4		62												
19B	64.8	M GR CH4 W/ ARS & LNS ML	CH4		53												
19C	65.7	M GR CH4 W/ ARS ML, SL	CH4	2	57	65	102	96	UC	--	684	1367	75	24	51	0.42	
19D	66.6	M GR CH4 W/ SL	CH4		58												
20A	68.0	M GR CH4 W/ SL	CH4		65												
20B	68.8	M GR CH4 W/ SL	CH4	3	59	63	100	95	UC	--	933	1865	84	25	59	0.55	
20C	69.7	ST GR CH4 W/ LYS SM, SIF	CH4		39												
20D	70.6	GR ML2-S W/ SIF	ML2-S		27												
21A	72.0	GR ML2-S W/ SIF	ML2-S		32												
21B	72.8	GR ML2-S W/ SIF, ARS CH	ML2-S		33												

Remarks: 2 consolidations (10C & 17B) added WJY
FFEBJV, LLC.

Checked by: JC
File Name: TO 2 WWHC

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-42UCL

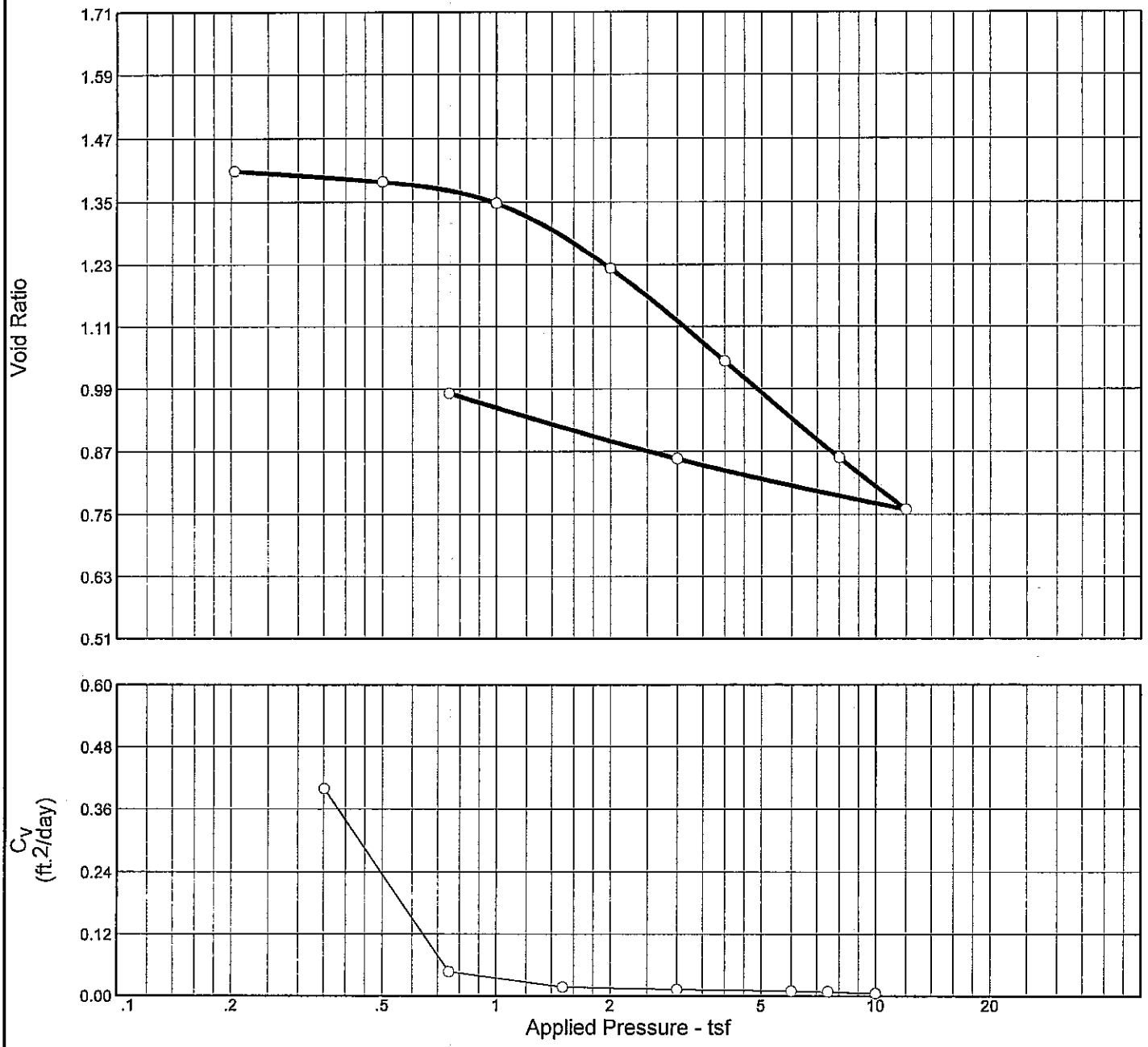
Current Date: 8/22/2008

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
21C	73.7	GR ML2-S W/ LNS CH, SIF	ML2-S		35												SV
21D	74.6	M GR CH4 W/ LNS ML, SIF	CH4		52												
22A	76.0	M GR CH4 W/ LYS SM, SIF	CH4		52												
22B	76.8	M GR CH4 W/ LNS ML	CH4		57												
22C	77.7	M GR CH4 W/ LNS ML	CH4	3	59	64	102	98	UC	--	616	1233	80	24	56	0.20	
23A	80.0	M GR CH4	CH4		62												
23B	80.8	M GR CH4	CH4		59												
23C	81.7	M GR CH4 W/ LNS SM	CH4		63	62	100	97	UU	0	996		90	30	60	0.40	
23D	82.6	M GR CH4 W/ SIF	CH4		62												
24A	84.0	ST GR CL4 W/ LNS CH, SIF	CL4		32												
24B	84.8	ST GR CL4 W/ LNS CH, SIF	CL4		26												
24C	85.7	ST GR CL4 W/ LNS CH, SIF, ARS SM	CL4	9	22	104	127	95	UC	--	1291	2583	39	12	27	0.70	
24D	86.6	ST GR CL4 W/ LNS CH, ARS SM	CL4		21												
25A	88.0	VST GR CL4 W/ LYS CH, O	CL4		20												
25B	88.8	VST GR CL4 W/ LYS CH, O	CL4		21												
NS	89.7	NO SAMPLE	NS														

Remarks: 2 consolidations (10C & 17B) added WJY
FFEBJV, LLC.

Checked by: JC
File Name: TO 2 WWHC

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
96.8 %	52.4 %	67.6	89	64	2.62	1.38	0.61	1.418

MATERIAL DESCRIPTION	USCS	AASHTO
M T GR CH4 W/ O	CH4	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-42UCL **Sample No.:** 10C **Elev./Depth:** 29.7

FFEBJV, LLC

St Rose, LA

Remarks:

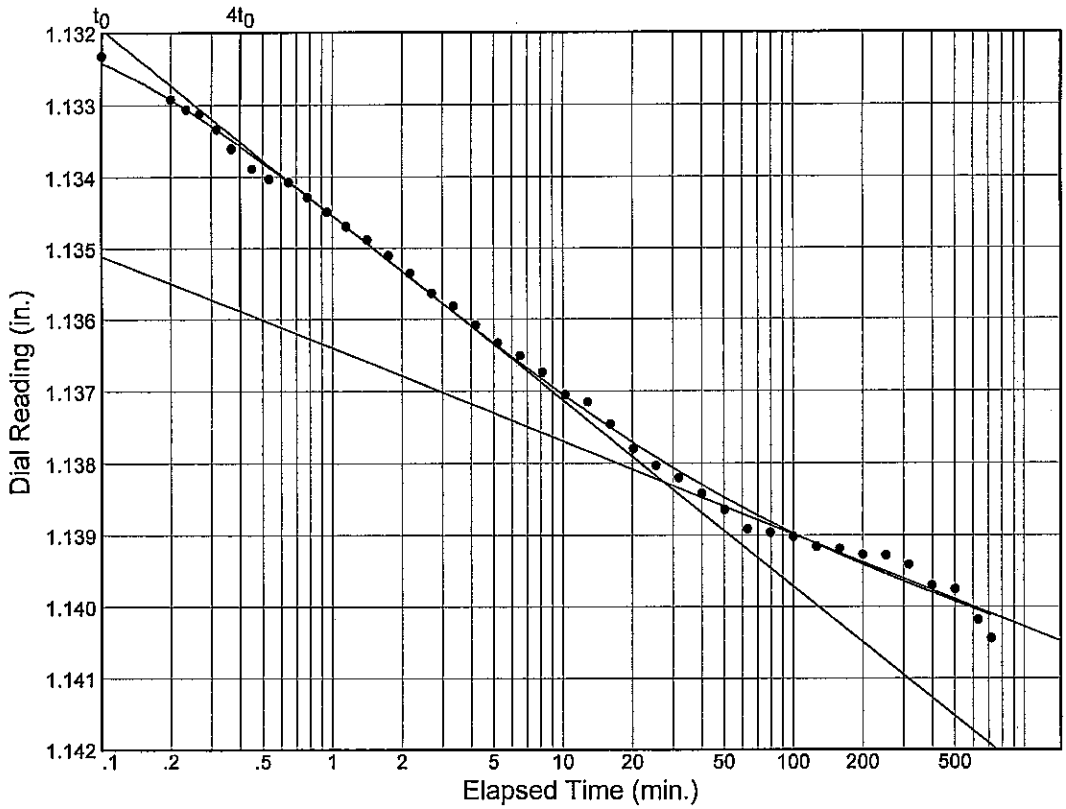
Tested by: ARS
Calcualted by: WJY
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

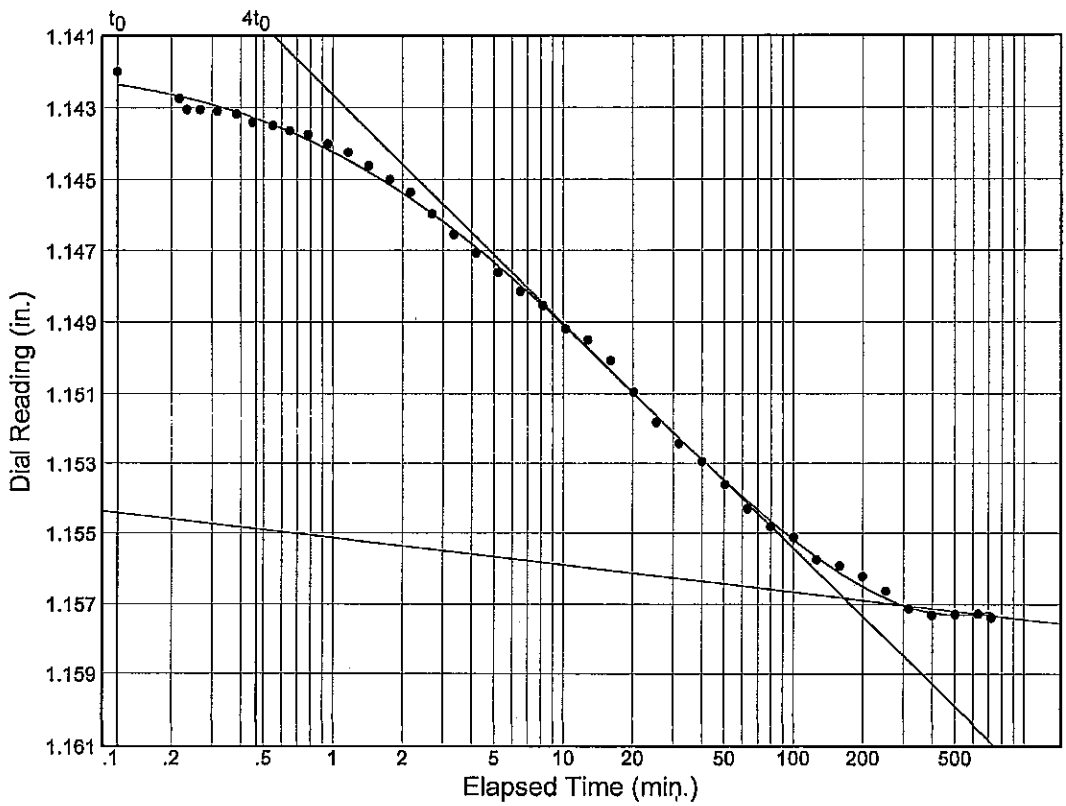
Source: WWHC-42UCL Sample No.: 10C Elev./Depth: 29.7



Load No.= 2
Load= 0.50 tsf
D_0 = 1.13128
D_{50} = 1.13477
D_{100} = 1.13826
T_{50} = 1.22 min.

C_v @ T_{50}
0.40 ft.^{2}/day

C_α = 0.001



Load No.= 3
Load= 1.00 tsf
D_0 = 1.14142
D_{50} = 1.14913
D_{100} = 1.15684
T_{50} = 10.19 min.

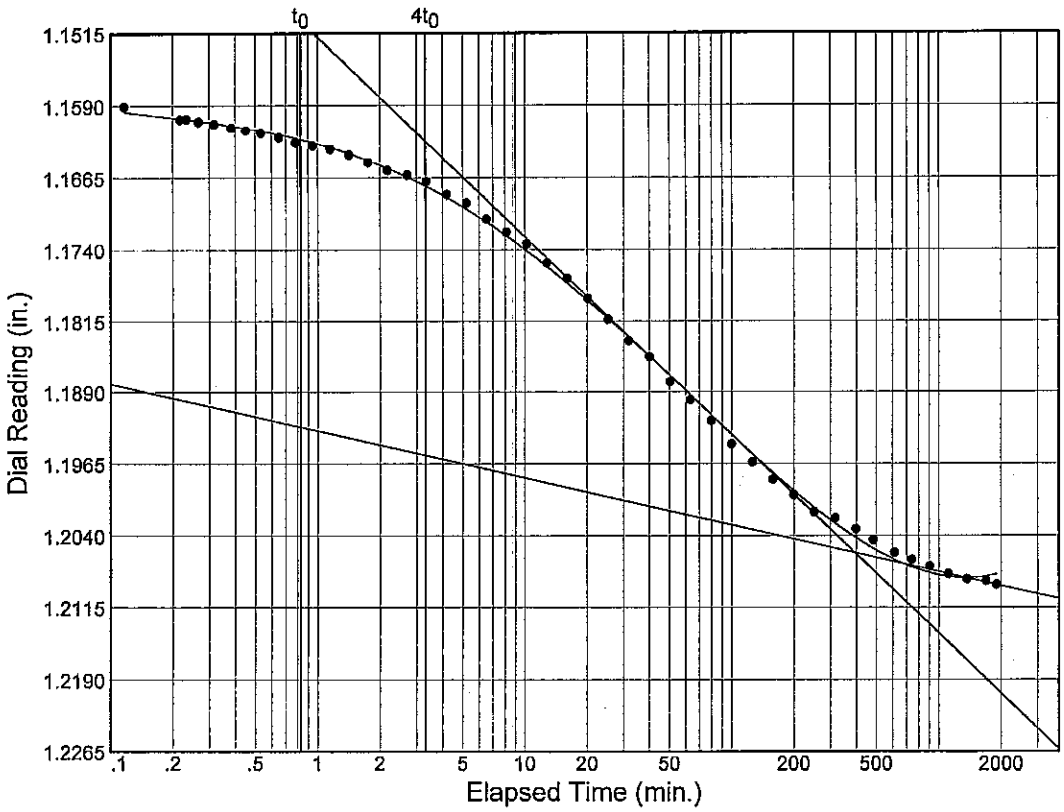
C_v @ T_{50}
0.05 ft.^{2}/day

C_α = 0.001

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

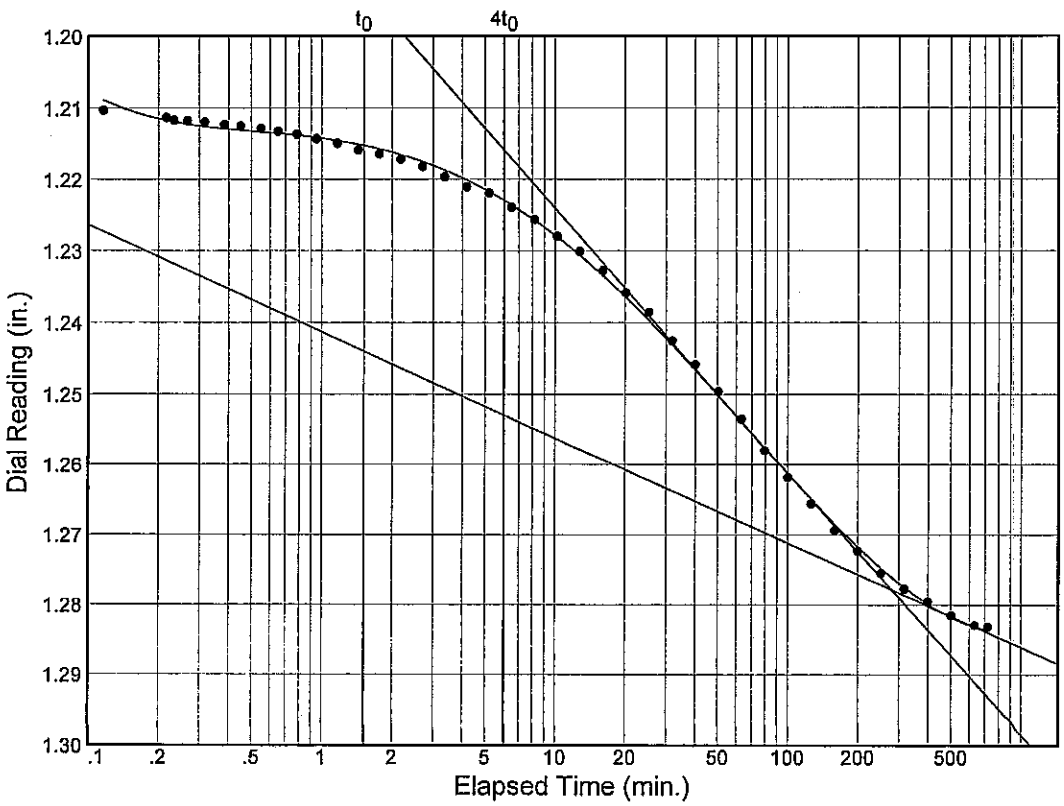
Source: WWHC-42UCL Sample No.: 10C Elev./Depth: 29.7



Load No.= 4
Load= 2.00 tsf
D_0 = 1.15760
D_{50} = 1.18169
D_{100} = 1.20579
T_{50} = 26.74 min.

C_v @ T_{50}
0.02 ft.^{2}/day

C_α = 0.005



Load No.= 5
Load= 4.00 tsf
D_0 = 1.20745
D_{50} = 1.24262
D_{100} = 1.27780
T_{50} = 30.95 min.

C_v @ T_{50}
0.01 ft.^{2}/day

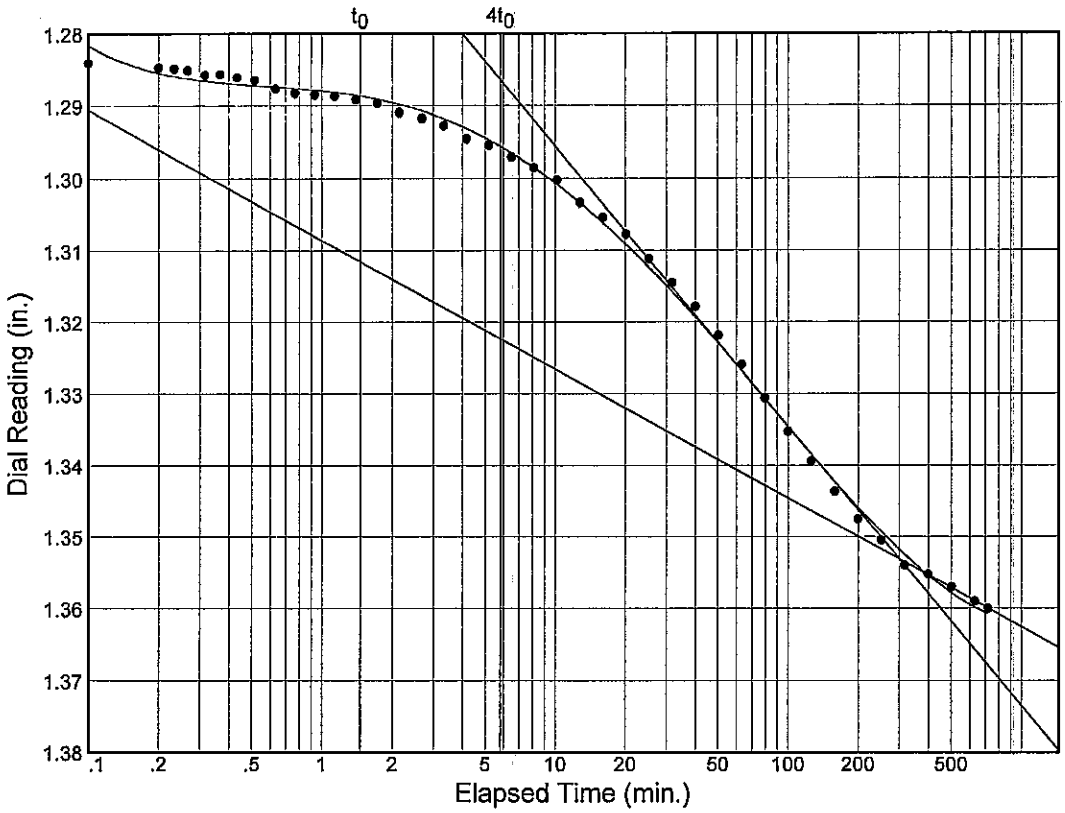
C_α = 0.016

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

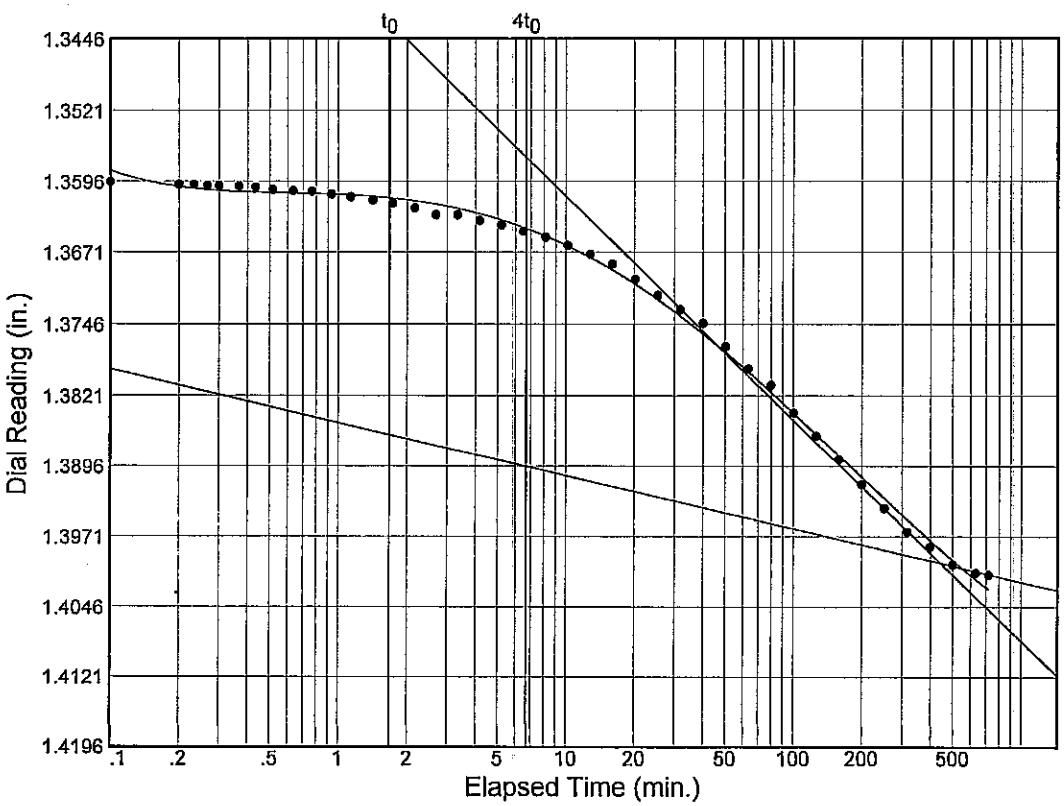
Source: WWHC-42UCL Sample No.: 10C Elev./Depth: 29.7



Load No.= 6
Load= 8.00 tsf
D_0 = 1.28170
D_{50} = 1.31744
D_{100} = 1.35318
T_{50} = 35.52 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.021



Load No.= 7
Load= 12.00 tsf
D_0 = 1.35809
D_{50} = 1.37901
D_{100} = 1.39994
T_{50} = 59.43 min.

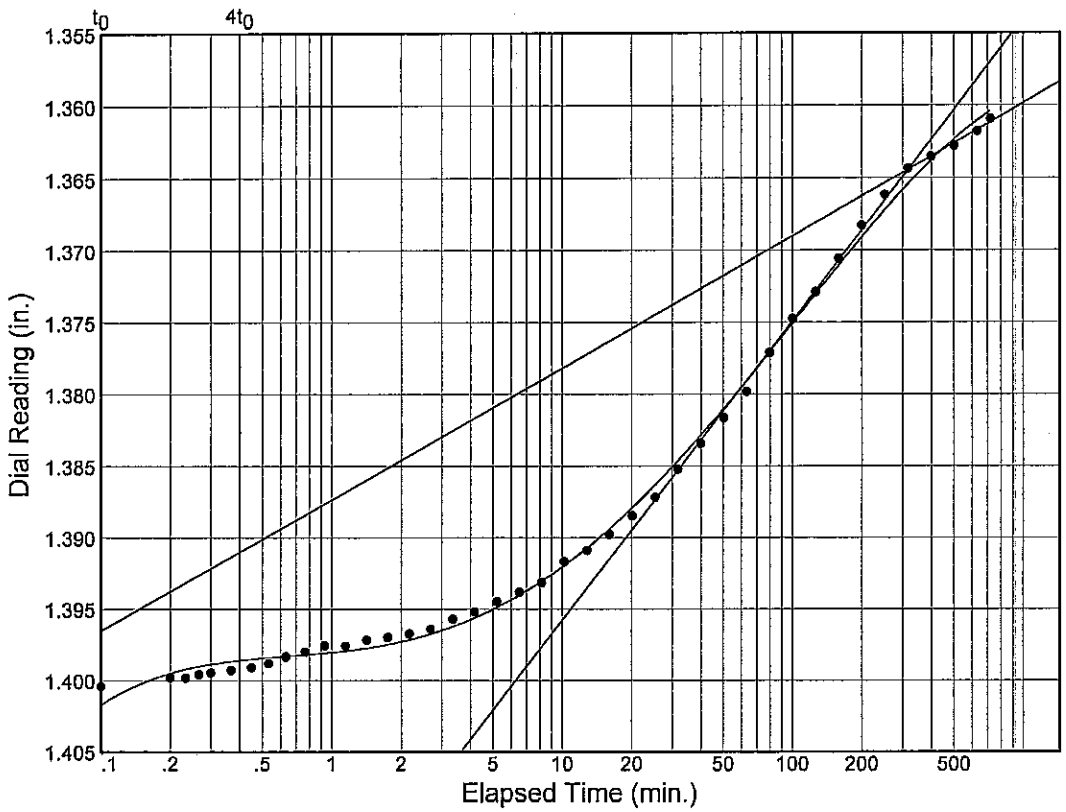
C_v @ T_{50}
0.00 ft.^{2}/day

C_α = 0.007

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-42UCL Sample No.: 10C Elev./Depth: 29.7



Load No.= 8
Load= 3.00 tsf
D_0 = 1.40481
D_{50} = 1.38458
D_{100} = 1.36435
T_{50} = 31.96 min.

C_v @ T_{50}
0.01 ft.^{2}/day

CONSOLIDATION TEST DATA

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Contract No. W912P8-07-D-0022
Task Order No. 0002
Project Number: 0022-0002

Sample Data

Source: WWHC-42UCL
Sample No.: 10C
Elev. or Depth: 29.7 **Sample Length(in./cm.):**
Location:
Description: M T GR CH4 W/ O
Liquid Limit: 89 **Plasticity Index:** 64
USCS: CH4 **AASHTO:** **Figure No.:**
Testing Remarks: TESTED BY: ARS
CALCULATED BY: JLA
CHECKED BY: WJY

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST		AFTER TEST	
Wet w+t =	152.43 g.	Consolidometer # =	16	Wet w+t =	428.46 g.
Dry w+t =	100.00 g.			Dry w+t =	321.58 g.
Tare Wt. =	.00 g.	Spec. Gravity =	2.62	Tare Wt. =	110.22 g.
Height =	1.00 in.	Height =	1.00 in.		
Diameter =	4.00 in.	Diameter =	4.00 in.		
Weight =	340.77 g.	Defl. Table =	n/a		
Moisture =	52.4 %	Ht. Solids =	0.4144 in.	Moisture =	50.6 %
Wet Den. =	103.1 pcf	Dry Wt. =	223.20 g.*	Dry Wt. =	211.36 g.
Dry Den. =	67.6 pcf	Void Ratio =	1.418	Void Ratio =	0.982
		Saturation =	96.8 %		

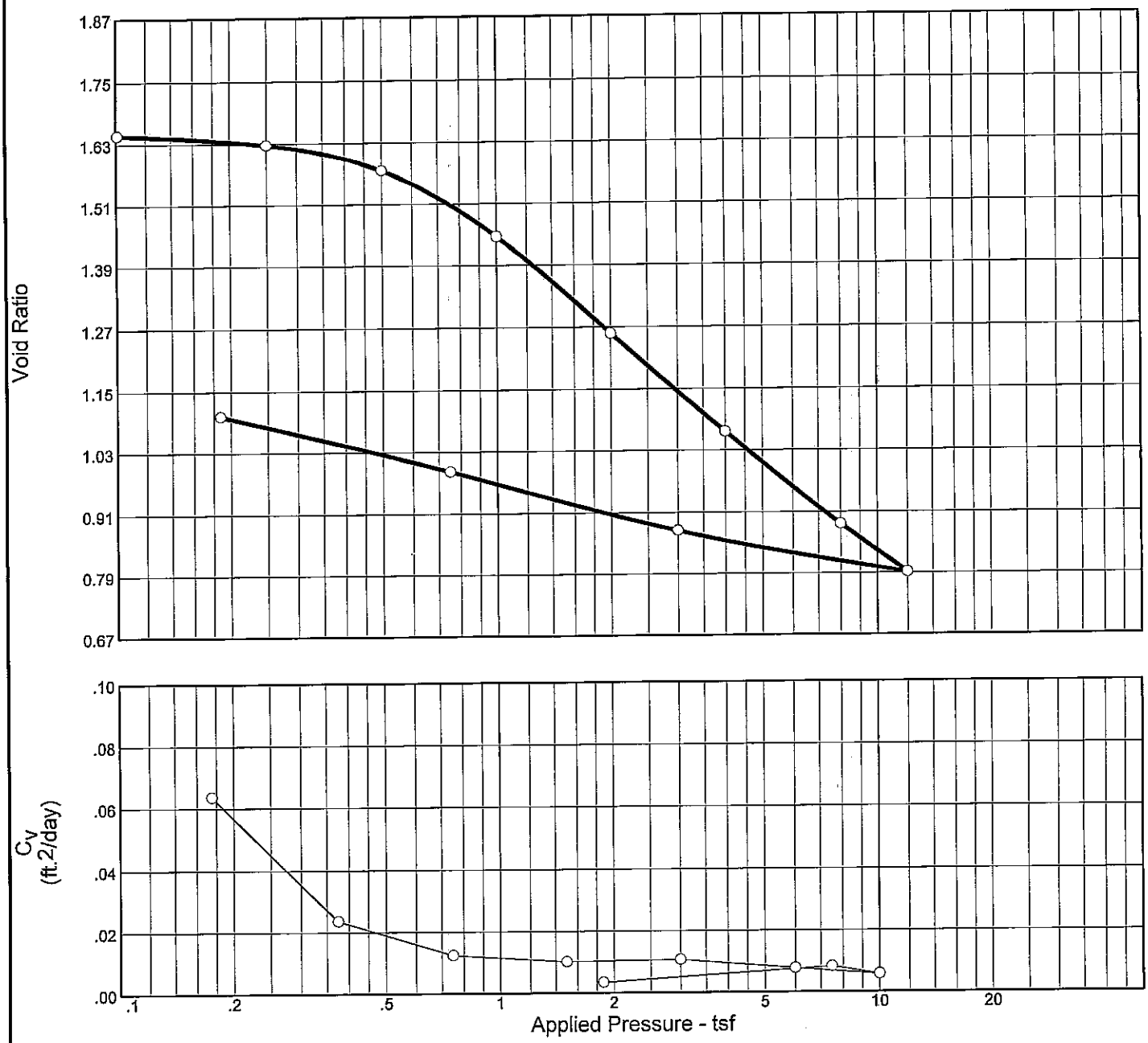
*** Initial dry weight used in calculations**

End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	1.12802				1.418	
0.20	1.13186	0.00000			1.409	0.4 Comprs.
0.50	1.14044	0.00000	0.38	0.001	1.388	1.2 Comprs.
1.00	1.15738	0.00000	0.05	0.001	1.348	2.9 Comprs.
2.00	1.20910	0.00000	0.02	0.007	1.223	8.1 Comprs.
4.00	1.28316	0.00000	0.01	0.006	1.044	15.5 Comprs.
8.00	1.36000	0.00000	0.01	0.021	0.859	23.1 Comprs.
12.00	1.40114	0.00000	0.00	0.008	0.759	27.2 Comprs.
3.00	1.36088	0.00000	0.01		0.857	23.2 Comprs.
0.75	1.30885	0.00000			0.982	18.0 Comprs.

C_c = 0.59 P_c = 1.27 tsf C_r = 0.18

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
102.3 %	64.5 %	61.7	93	66	2.62	0.72	0.67	1.652

MATERIAL DESCRIPTION	USCS	AASHTO
M GR CH4 W/ ARS ML	CH4	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-42UCL **Sample No.:** 17B **Elev./Depth:** 56.8

FFEBJV, LLC

St Rose, LA

Remarks:

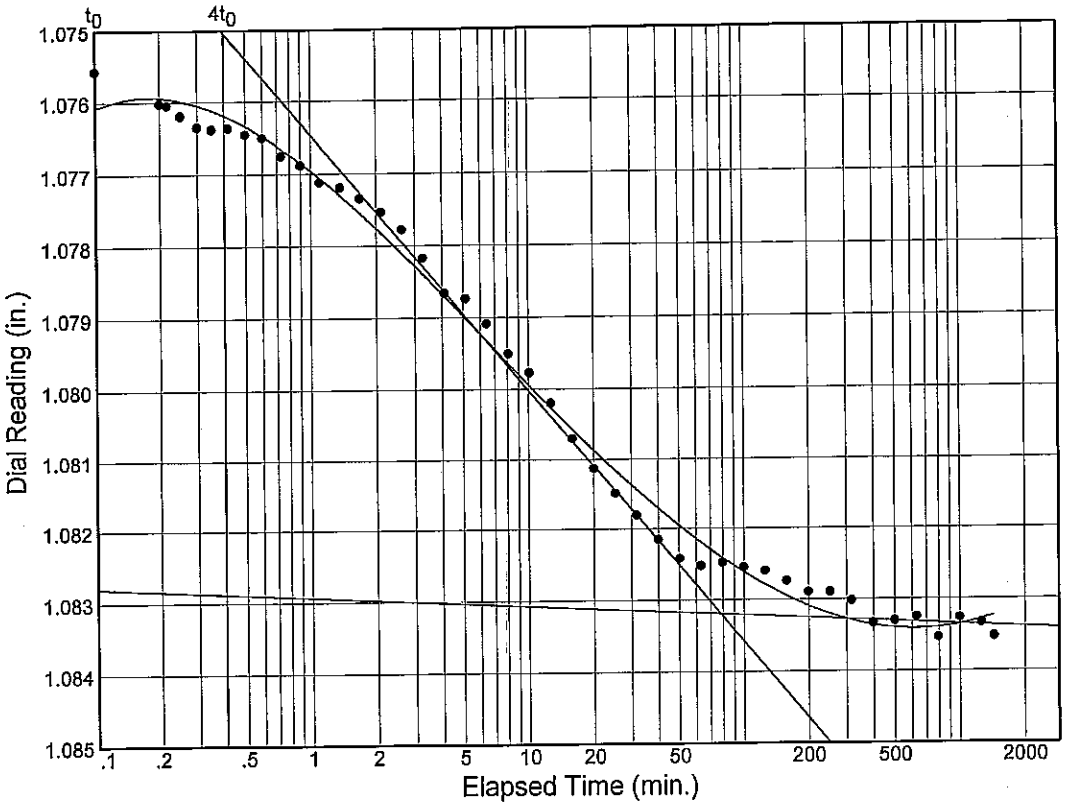
Tested by: ARS
Calculated by: JLA
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

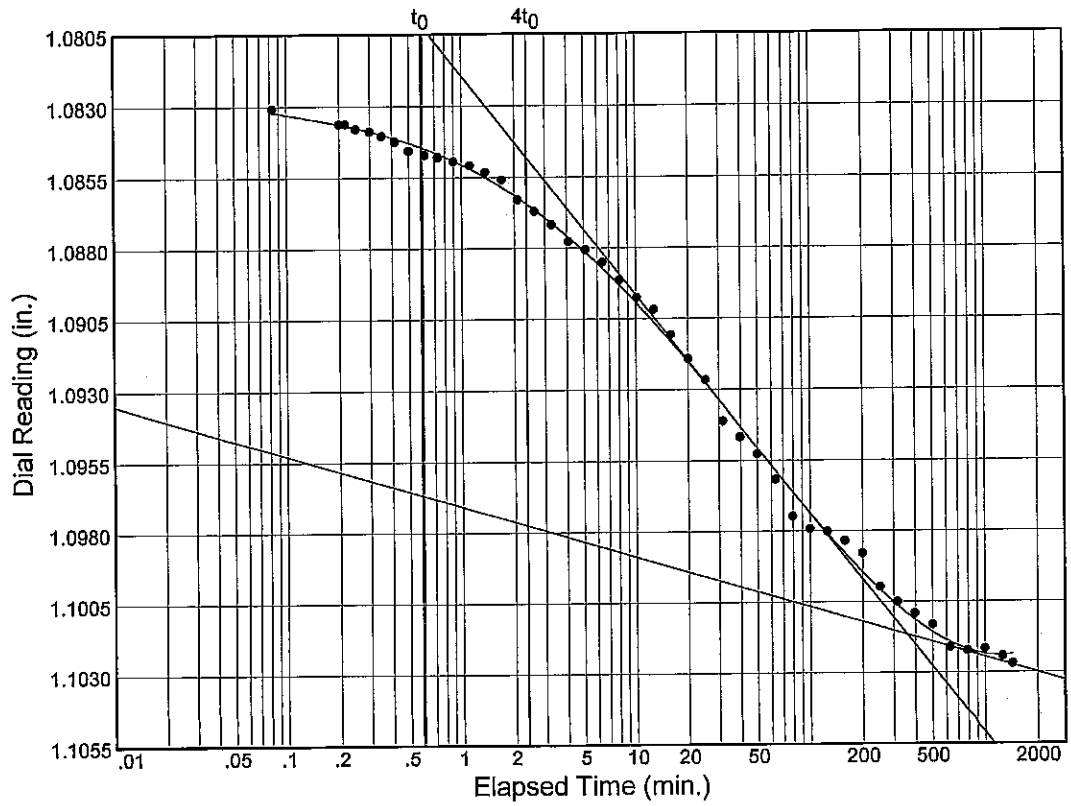
Source: WWHC-42UCL Sample No.: 17B Elev./Depth: 56.8



Load No.= 2
Load= 0.25 tsf
D_0 = 1.07597
D_{50} = 1.07958
D_{100} = 1.08319
T_{50} = 7.68 min.

C_v @ T_{50}
0.06 ft.^{2}/day

C_α = 0.000



Load No.= 3
Load= 0.50 tsf
D_0 = 1.08243
D_{50} = 1.09204
D_{100} = 1.10166
T_{50} = 20.03 min.

C_v @ T_{50}
0.02 ft.^{2}/day

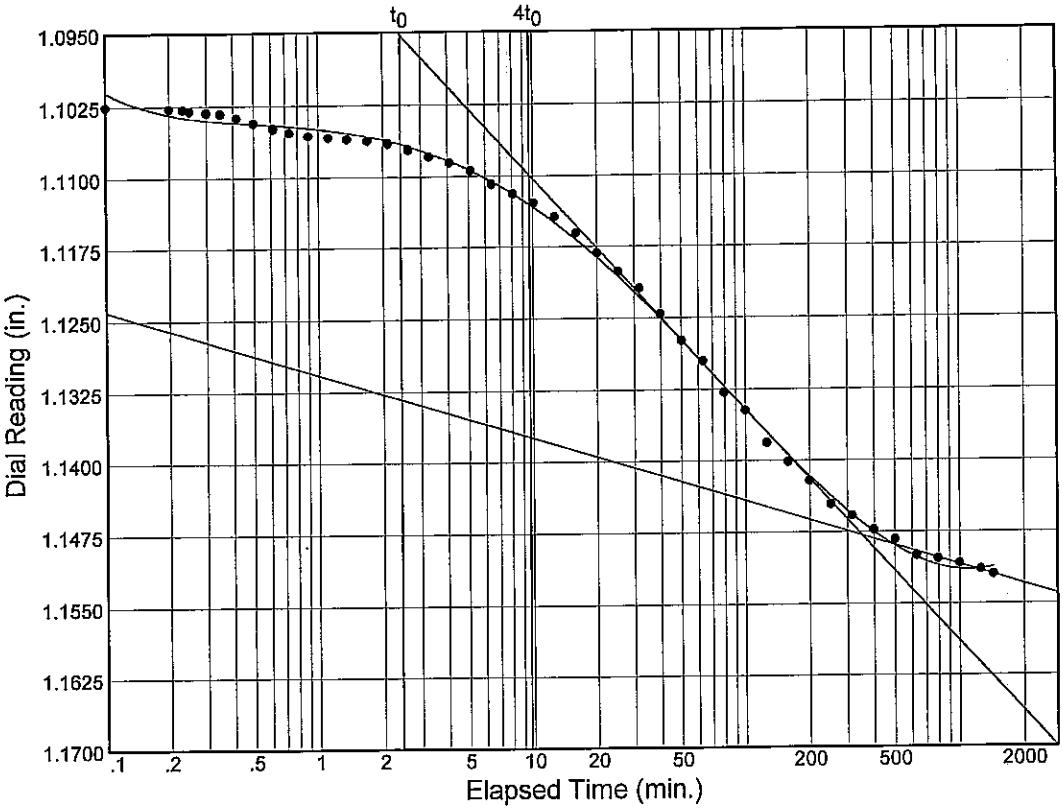
C_α = 0.002

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

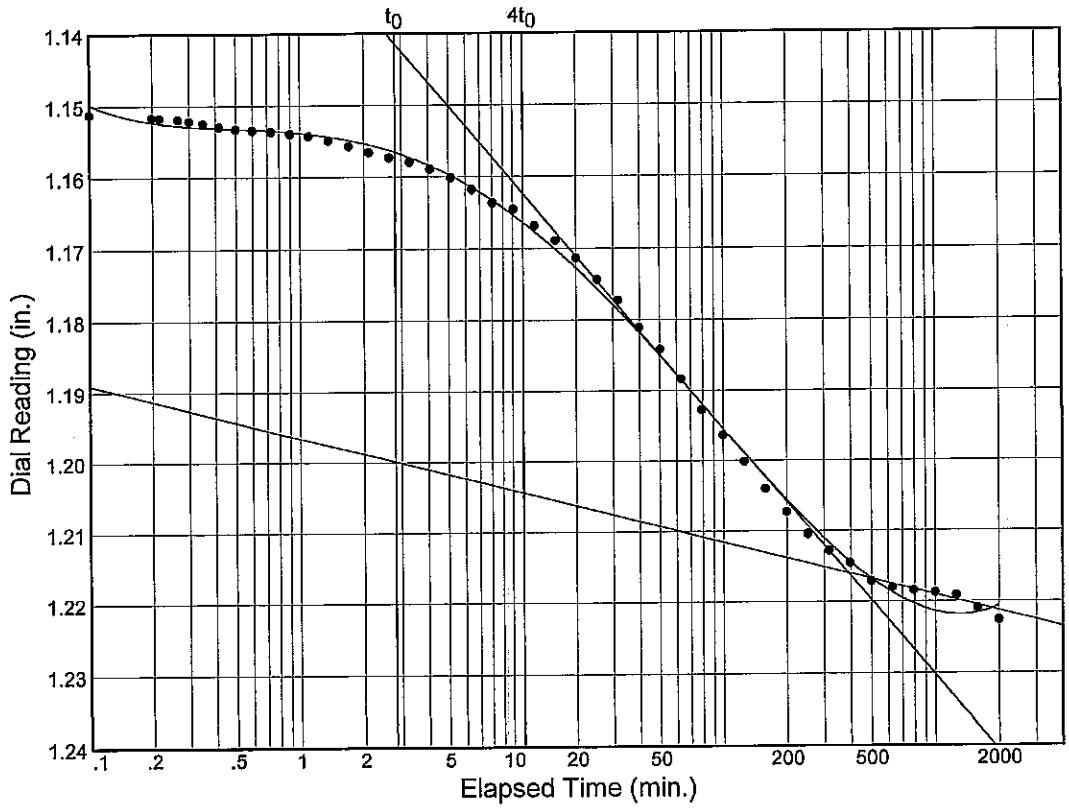
Source: WWHC-42UCL Sample No.: 17B Elev./Depth: 56.8



Load No.= 4
Load= 1.00 tsf
D_0 = 1.10011
D_{50} = 1.12396
D_{100} = 1.14781
T_{50} = 35.68 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.007



Load No.= 5
Load= 2.00 tsf
D_0 = 1.14674
D_{50} = 1.18133
D_{100} = 1.21592
T_{50} = 38.50 min.

C_v @ T_{50}
0.01 ft.^{2}/day

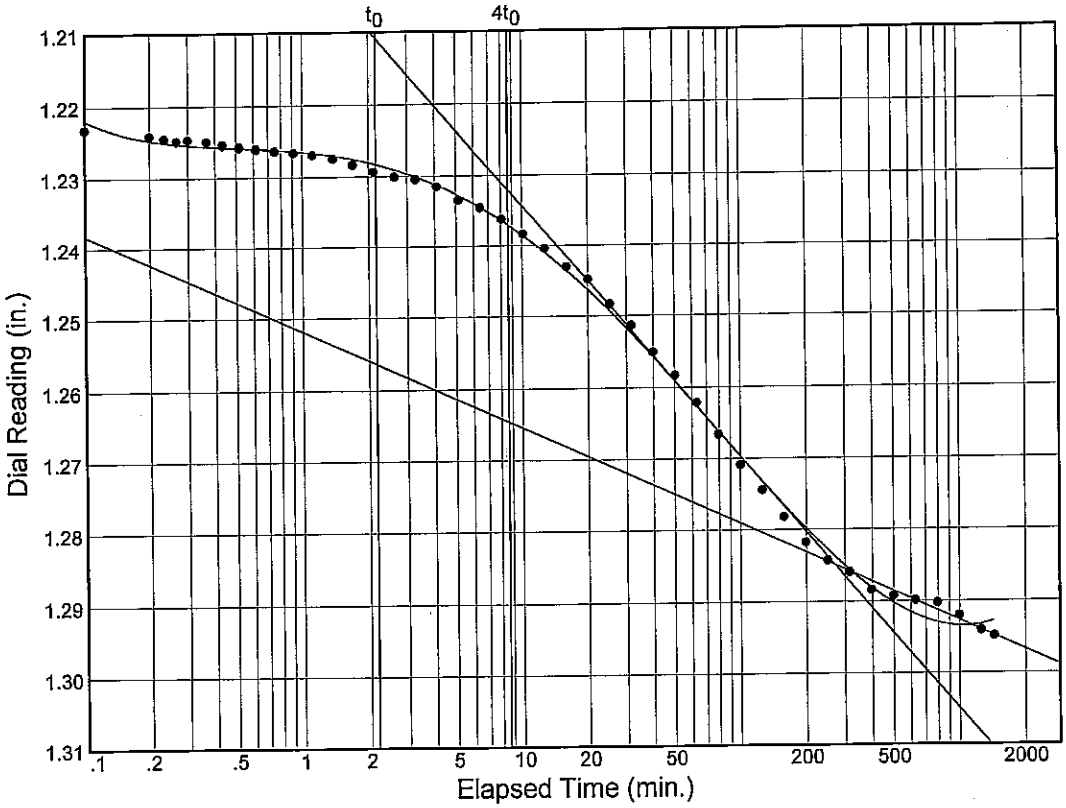
C_α = 0.008

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

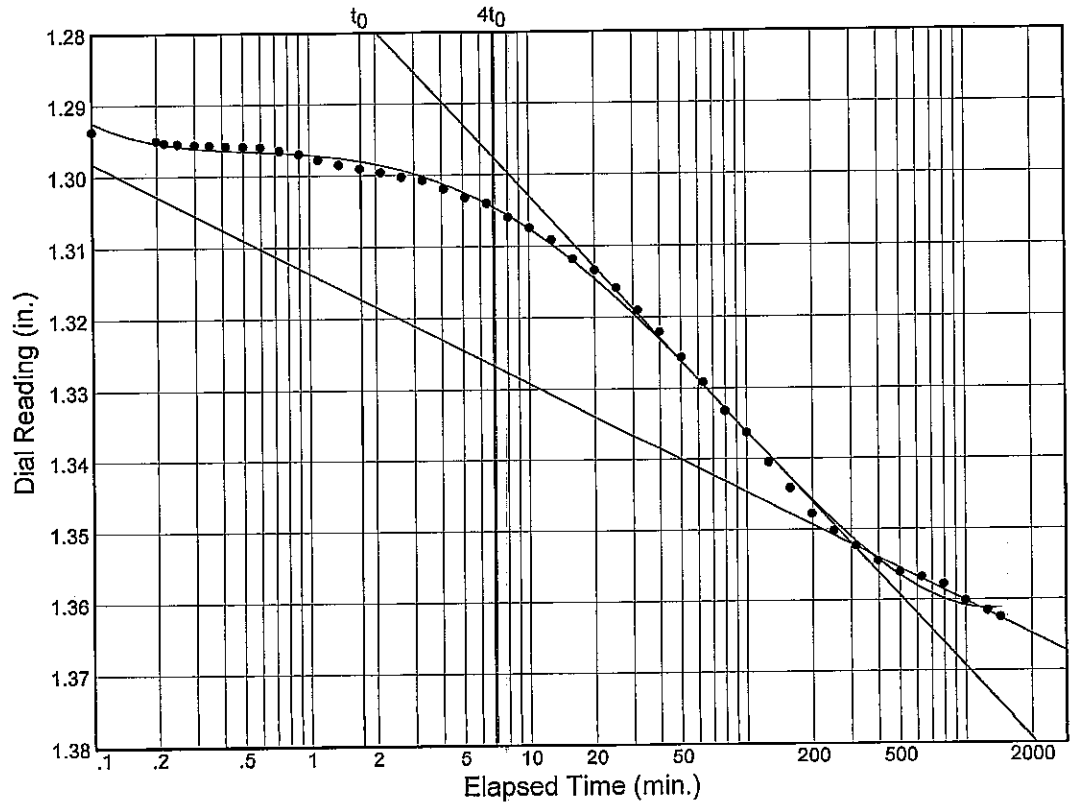
Source: WWHC-42UCL Sample No.: 17B Elev./Depth: 56.8



Load No.= 6
Load= 4.00 tsf
D_0 = 1.21943
D_{50} = 1.25214
D_{100} = 1.28485
T_{50} = 30.89 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.016



Load No.= 7
Load= 8.00 tsf
D_0 = 1.29151
D_{50} = 1.32184
D_{100} = 1.35217
T_{50} = 36.10 min.

C_v @ T_{50}
0.01 ft.^{2}/day

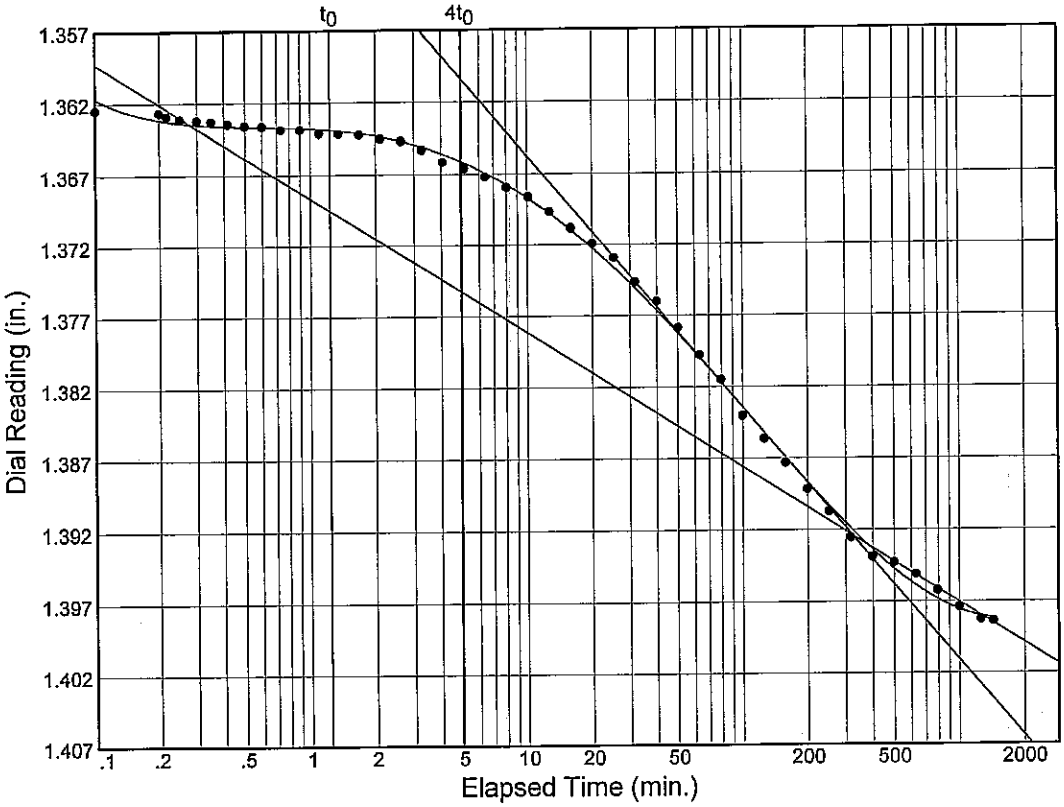
C_α = 0.020

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

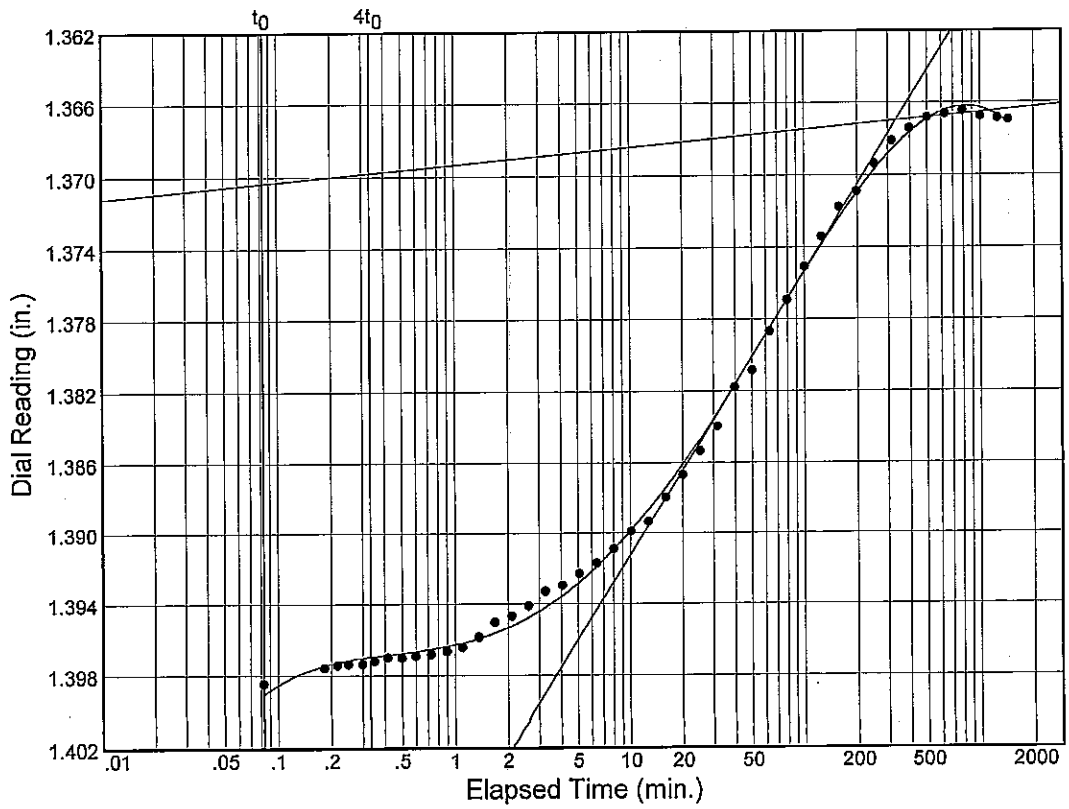
Source: WWHC-42UCL Sample No.: 17B Elev./Depth: 56.8



Load No.= 8
Load= 12.00 tsf
D_0 = 1.36162
D_{50} = 1.37700
D_{100} = 1.39238
T_{50} = 41.96 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.013



Load No.= 9
Load= 3.00 tsf
D_0 = 1.40115
D_{50} = 1.38406
D_{100} = 1.36697
T_{50} = 27.83 min.

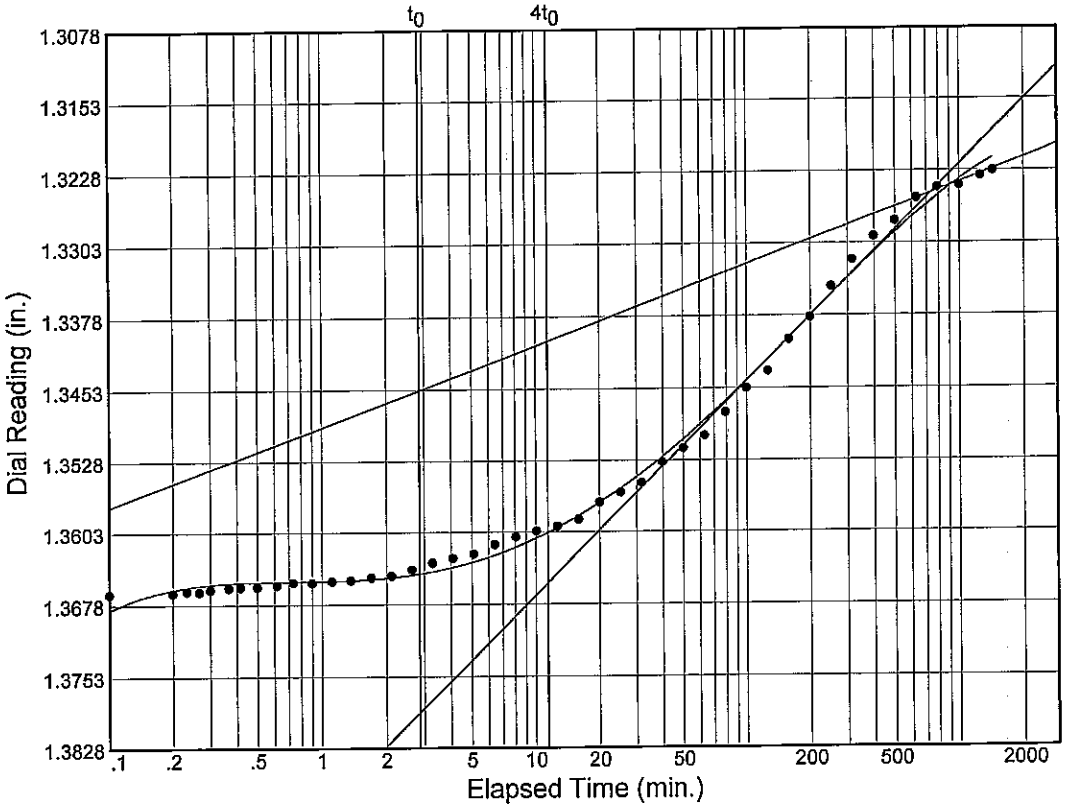
C_v @ T_{50}
0.01 ft.^{2}/day

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-42UCL Sample No.: 17B Elev./Depth: 56.8



Load No.= 10
Load= 0.75 tsf
D_0 = 1.36890
D_{50} = 1.34695
D_{100} = 1.32499
T_{50} = 76.60 min.

C_v @ T_{50}
0.00 ft.^{2}/day

Figure

CONSOLIDATION TEST DATA

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Contract No. W912P8-07-D-0022
Task Order No. 0002
Project Number: 0022-0002

Sample Data

Source: WWHC-42UCL
Sample No.: 17B
Elev. or Depth: 56.8
Sample Length(in./cm.):
Location:
Description: SO GR CH4 W/ ARS ML
Liquid Limit: **
Plasticity Index: **
USCS: CH4
AASHTO:
Figure No.:
Testing Remarks: TESTED BY: ARS
CALCULATED BY: JLA
CHECKED BY: WJY

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t =	164.53 g.	Consolidometer # = 4	Wet w+t = 407.84 g.
Dry w+t =	100.00 g.		Dry w+t = 312.36 g.
Tare Wt. =	.00 g.	Spec. Gravity = 2.62	Tare Wt. = 112.73 g.
Height =	1.00 in.	Height = 1.00 in.	
Diameter =	4.00 in.	Diameter = 4.00 in.	
Weight =	334.88 g.	Defl. Table = n/a	
Moisture =	64.5 %	Ht. Solids = 0.3771 in.	Moisture = 47.8 %
Wet Den. =	101.5 pcf	Dry Wt. = 203.45 g.*	Dry Wt. = 199.63 g.
Dry Den. =	61.7 pcf	Void Ratio = 1.652	Void Ratio = 1.102
		Saturation = 102.3 %	

*** Initial dry weight used in calculations**

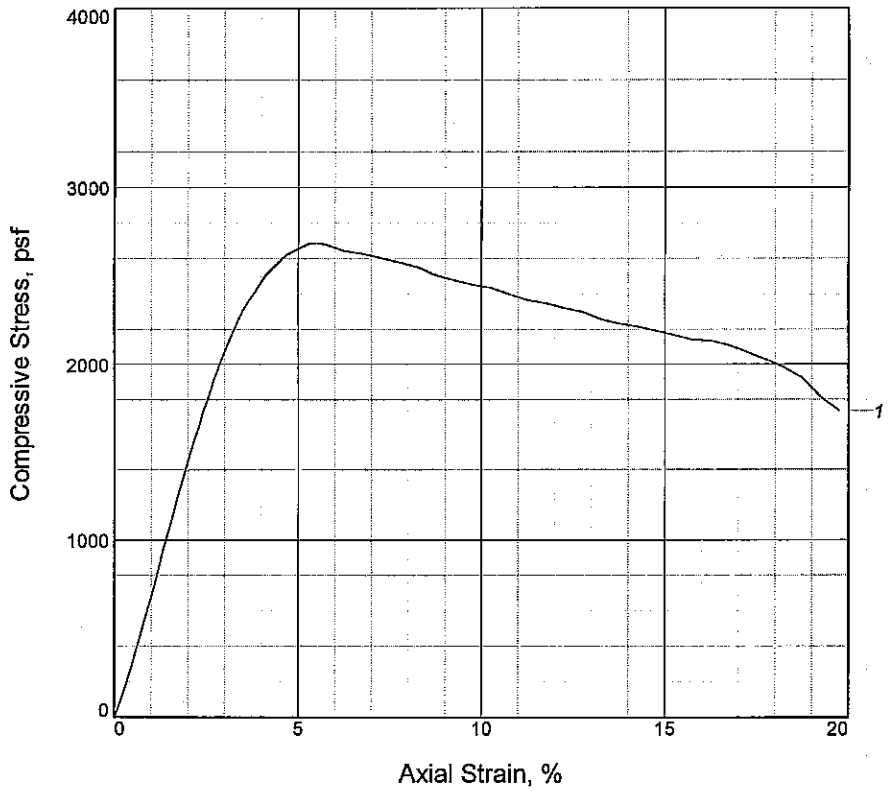
End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	1.07398				1.652	
0.10	1.07581	0.00000			1.647	0.2 Comprs.
0.25	1.08352	0.00000	0.06	0.000	1.627	1.0 Comprs.
0.50	1.10269	0.00000	0.03	0.003	1.576	2.9 Comprs.
1.00	1.15194	0.00000	0.01	0.007	1.446	7.8 Comprs.
2.00	1.22257	0.00000	0.01	0.008	1.258	14.9 Comprs.
4.00	1.29484	0.00000	0.01	0.016	1.067	22.1 Comprs.
8.00	1.36249	0.00000	0.01	0.020	0.887	28.8 Comprs.
12.00	1.39837	0.00000	0.01	0.013	0.792	32.4 Comprs.
3.00	1.36696	0.00000	0.01	0.002	0.875	29.3 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v ($ft.^2$/day)	C_α	Void Ratio	% Compression /Swell
0.75	1.32282	0.00000	0.00		0.992	24.9 Comprs.
0.19	1.28148	0.00000			1.102	20.7 Comprs.

C_c = 0.60 P_c = 0.67 tsf C_r = 0.17

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	2687			
Undrained shear strength, psf	1343			
Failure strain, %	5.5			
Strain rate, in./min.	0.03			
Water content, %	23.7			
Wet density, pcf	127.1			
Dry density, pcf	102.7			
Saturation, %	100.5			
Void ratio	0.6350			
Specimen diameter, in.	1.46			
Specimen height, in.	3.12			
Height/diameter ratio	2.13			

Description: ST T & GR CL6 W/ LYS CH, SIF

LL = 49	**PL** = 15	**PI** = 34	**Assumed GS**= 2.69	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4/9/2007
Remarks:

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

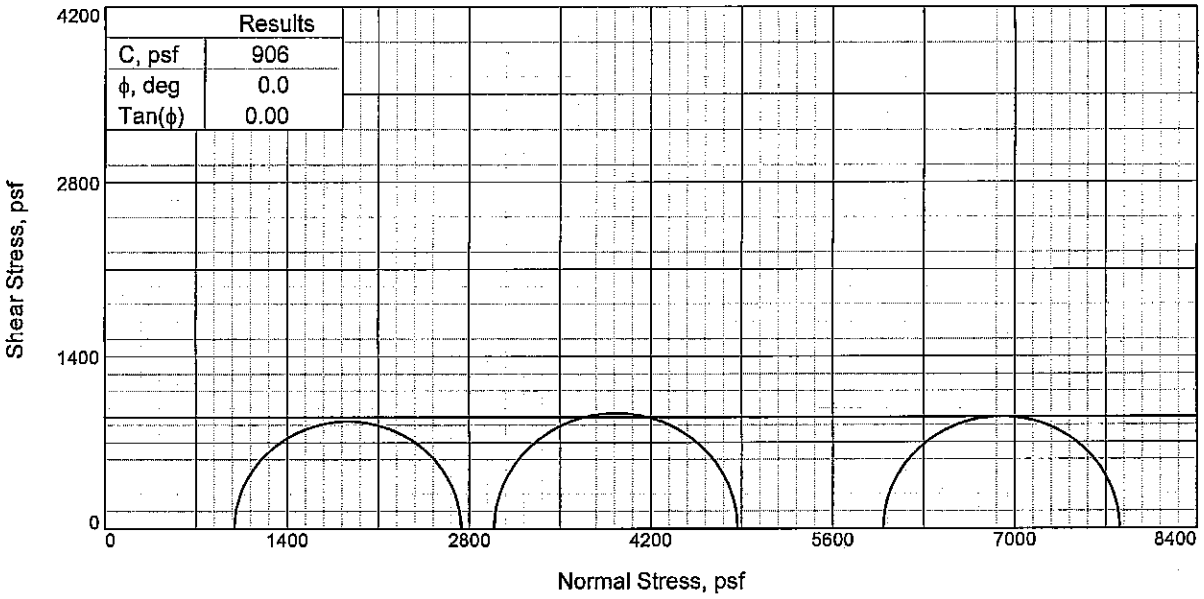
Source of Sample: WWHC-42UCL **Depth:** 6.8
Sample Number: 4B

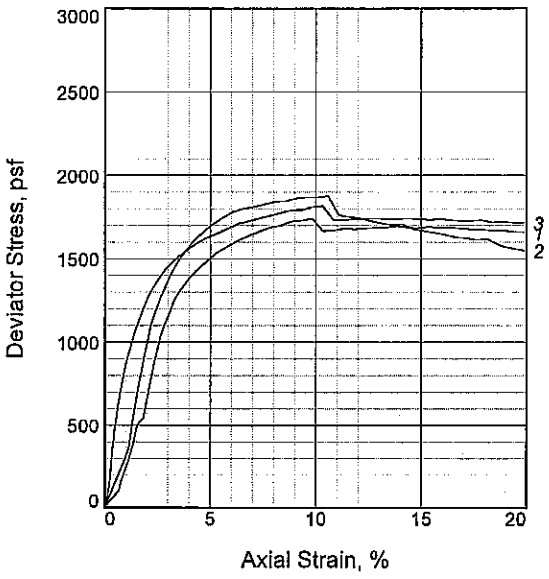
UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: TMK **Checked By:** AB





Specimen No.		1	2	3
Initial	Water Content, %	31.8	31.8	31.2
	Dry Density, pcf	85.8	86.5	87.0
	Saturation, %	89.4	90.8	90.4
	Void Ratio	0.9576	0.9418	0.9299
	Diameter, in.	1.42	1.41	1.41
	Height, in.	3.20	3.14	3.16
At Test	Water Content, %	31.8	31.8	31.2
	Dry Density, pcf	85.8	86.5	87.0
	Saturation, %	89.4	90.8	90.4
	Void Ratio	0.9576	0.9418	0.9299
	Diameter, in.	1.42	1.41	1.41
	Height, in.	3.20	3.14	3.16
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.77	41.59
Fail. Stress, psf		1743	1877	1818
Strain, %		9.8	10.6	10.3
Ult. Stress, psf		1686	1667	1744
Strain, %				
σ_1 Failure, psf		2737	4868	7806
σ_3 Failure, psf		994	2991	5989

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL6 W/ LNS ML

LL= 41 **PL=** 17 **PI=** 24
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

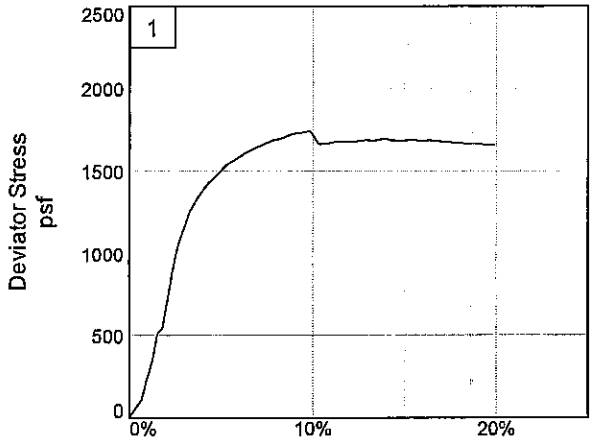
Project: Westwego to Harvey Canal

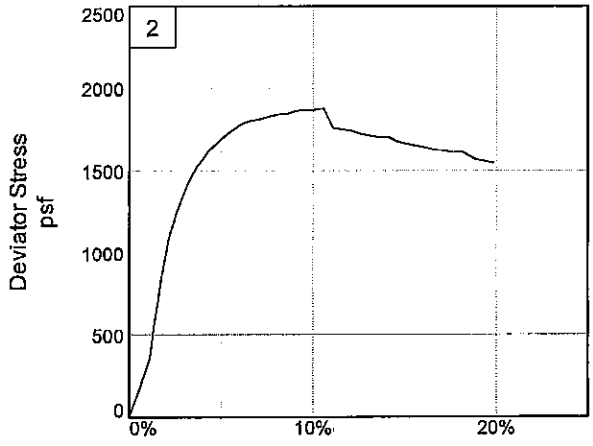
Source of Sample: WWHC-42UCL **Depth:** 9.7
Sample Number: 5C
Proj. No.: 0022-0002 **Date Sampled:** 4/9/2007

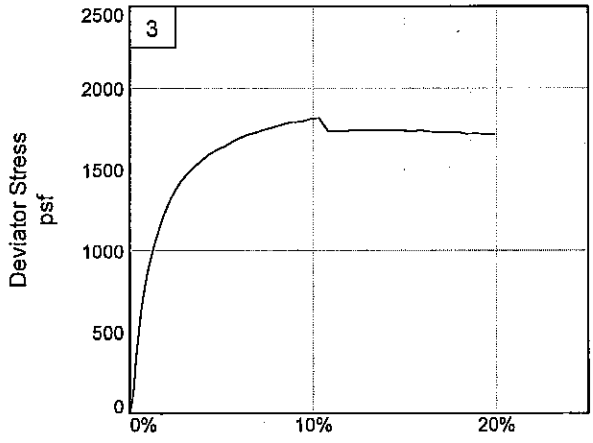
TRIAXIAL SHEAR TEST REPORT

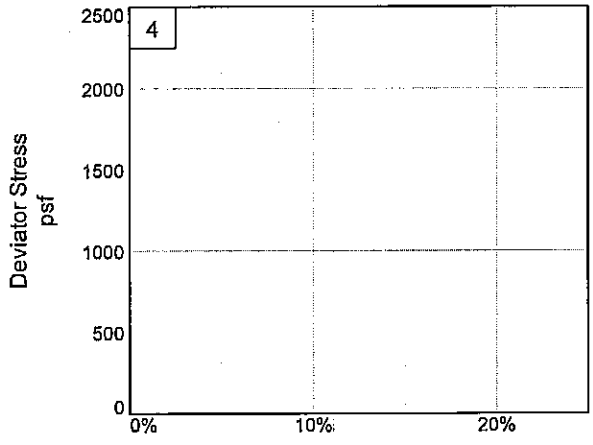
FFEBJV, LLC

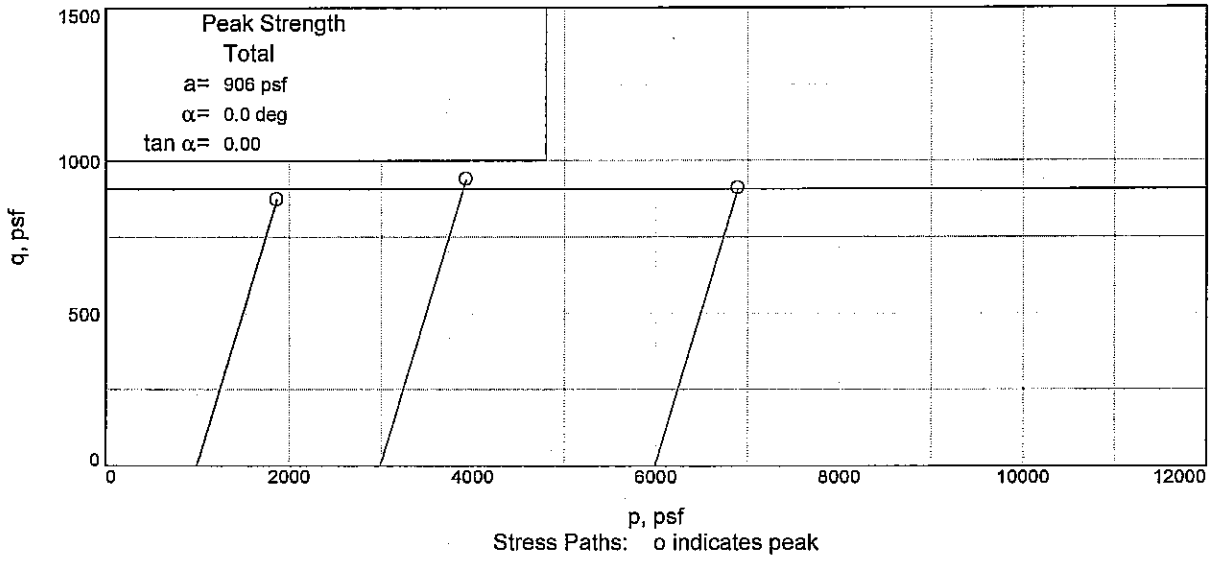
Tested By: CM **Checked By:** AB







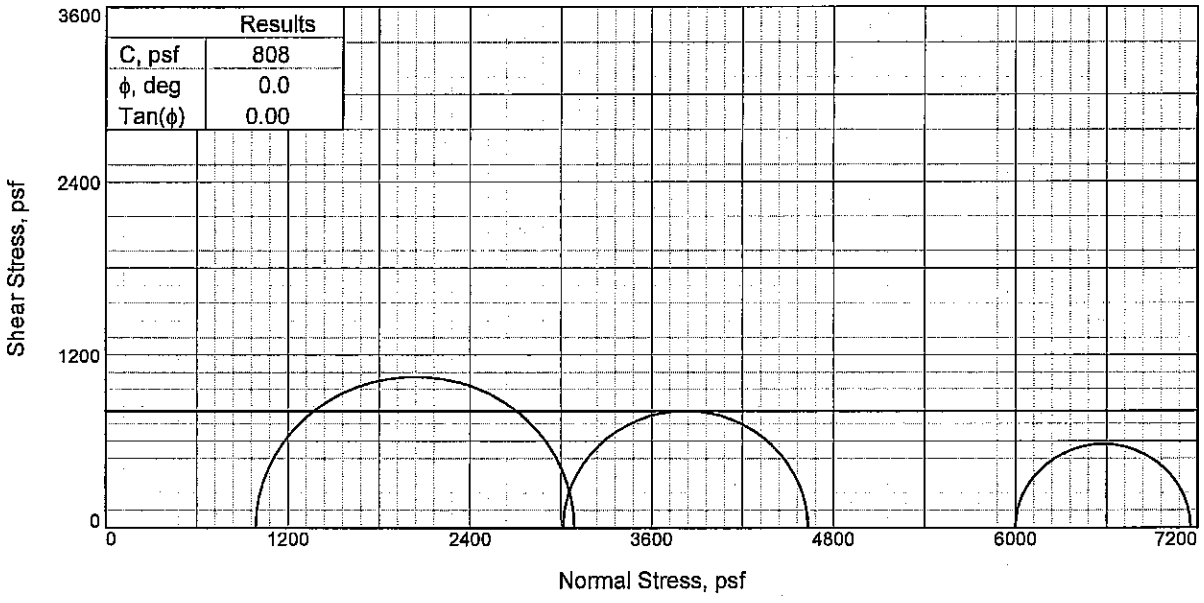


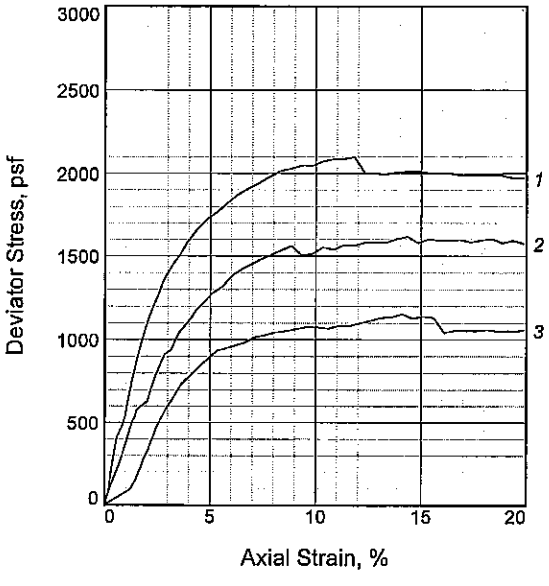


Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-42UCL **Depth:** 9.7 **Sample Number:** 5C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: CM **Checked By:** AB





Specimen No.		1	2	3
Initial	Water Content, %	27.7	29.0	38.0
	Dry Density, pcf	91.3	89.7	78.4
	Saturation, %	87.8	88.1	88.7
	Void Ratio	0.8598	0.8936	1.1661
	Diameter, in.	1.41	1.41	1.41
	Height, in.	3.11	3.14	3.01
At Test	Water Content, %	27.7	29.0	38.0
	Dry Density, pcf	91.3	89.7	78.4
	Saturation, %	87.8	88.1	88.7
	Void Ratio	0.8598	0.8936	1.1661
	Diameter, in.	1.41	1.41	1.41
	Height, in.	3.11	3.14	3.01
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.94	41.66
Fail. Stress, psf		2100	1616	1155
Strain, %		11.8	14.3	14.1
Ult. Stress, psf		2012	1578	1140
Strain, %				
σ_1 Failure, psf		3088	4631	7155
σ_3 Failure, psf		988	3015	5999

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ LNS ML

LL= 88 **PL=** 37 **PI=** 51
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

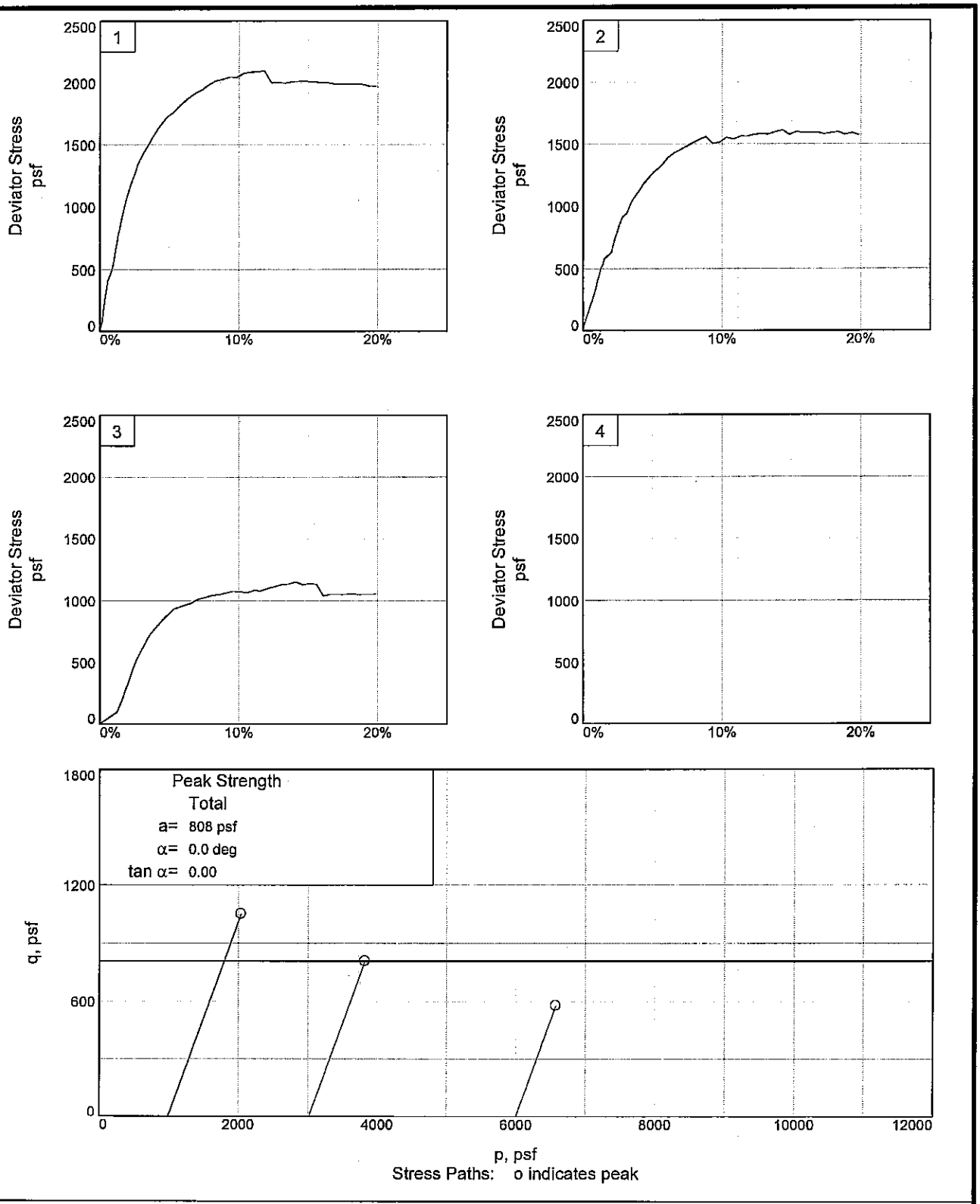
Project: Westwego to Harvey Canal

Source of Sample: WWHC-42UCL **Depth:** 13.7
Sample Number: 6C
Proj. No.: 0022-0002 **Date Sampled:** 4/9/2007

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

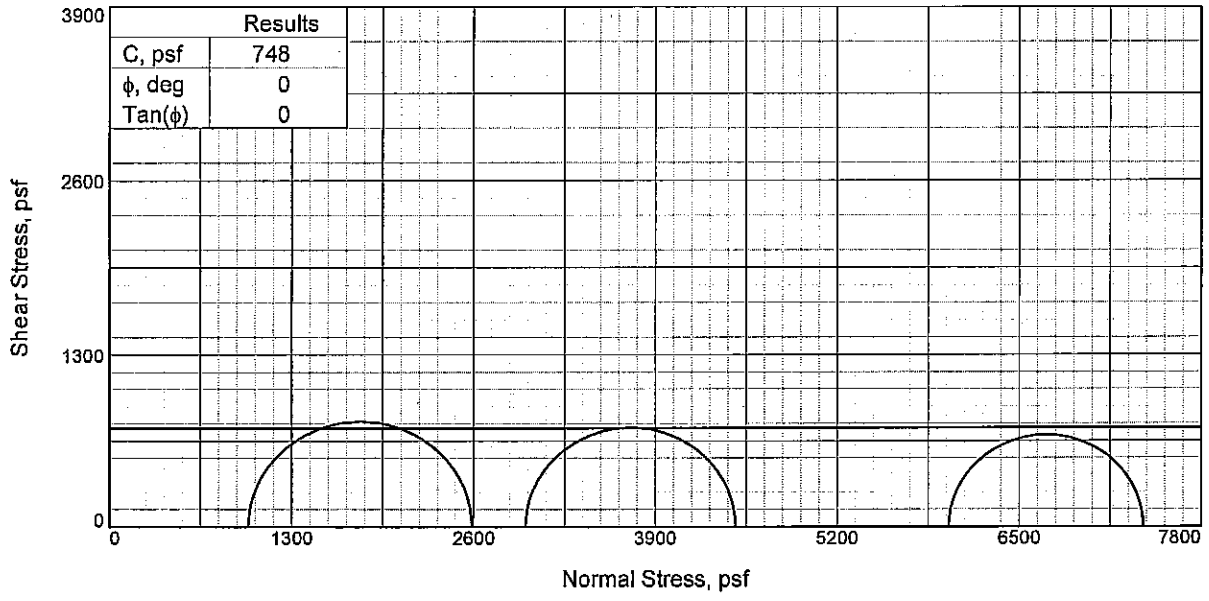
Tested By: CM **Checked By:** AB

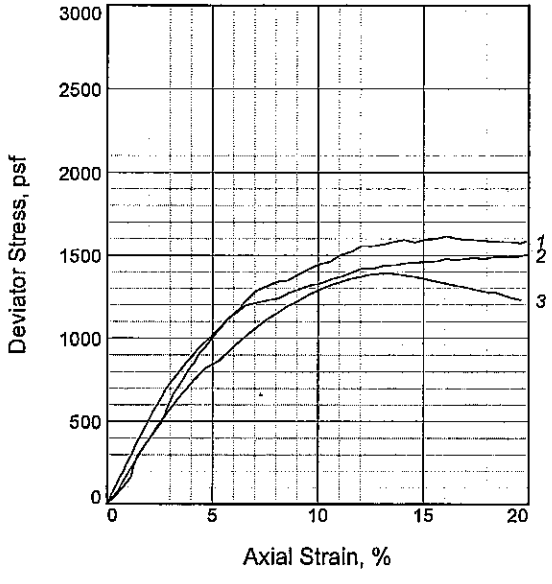


Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-42UCL **Depth:** 13.7 **Sample Number:** 6C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: CM **Checked By:** AB





Specimen No.		1	2	3
Initial	Water Content, %	27.6	27.8	28.2
	Dry Density, pcf	92.9	91.5	92.5
	Saturation, %	91.8	89.4	93.0
	Void Ratio	0.8085	0.8361	0.8155
	Diameter, in.	1.38	1.40	1.39
	Height, in.	3.18	3.20	3.14
At Test	Water Content, %	27.6	27.8	28.2
	Dry Density, pcf	92.9	91.5	92.5
	Saturation, %	91.8	89.4	93.0
	Void Ratio	0.8085	0.8361	0.8155
	Diameter, in.	1.38	1.40	1.39
	Height, in.	3.18	3.20	3.14
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.63	41.65
Fail. Stress, psf		1596	1503	1389
Strain, %		15.1	19.9	13.6
Ult. Stress, psf		1596	1456	1356
Strain, %				
σ_1 Failure, psf		2587	4474	7386
σ_3 Failure, psf		991	2971	5997

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL6 W/ LNS ML

LL= 49 **PL=** 15 **PI=** 34
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

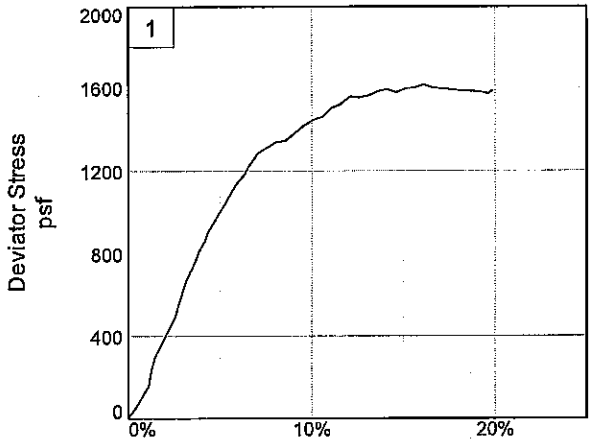
Project: Westwego to Harvey Canal

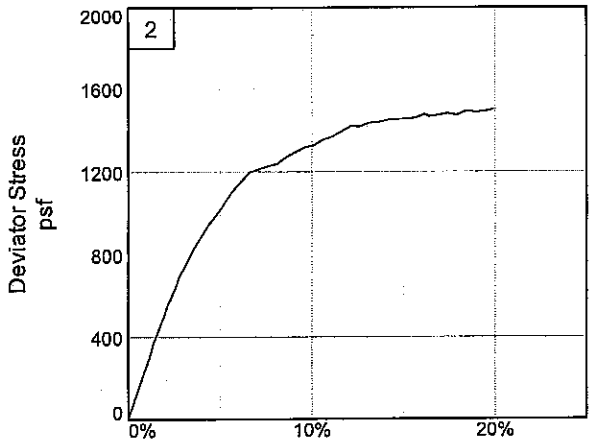
Source of Sample: WWHC-42UCL **Depth:** 17.7
Sample Number: 7C
Proj. No.: 0022-0002 **Date Sampled:** 4/9/2007

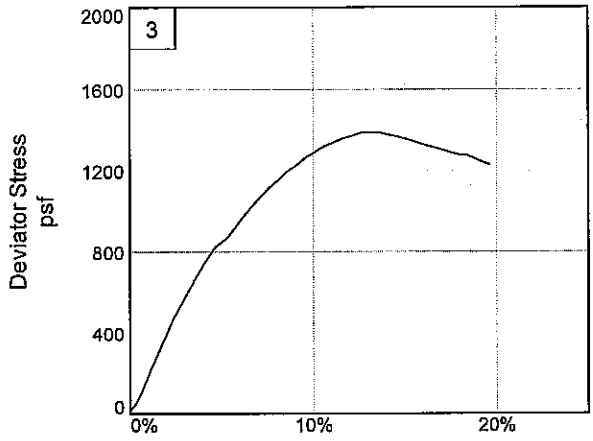
TRIAXIAL SHEAR TEST REPORT

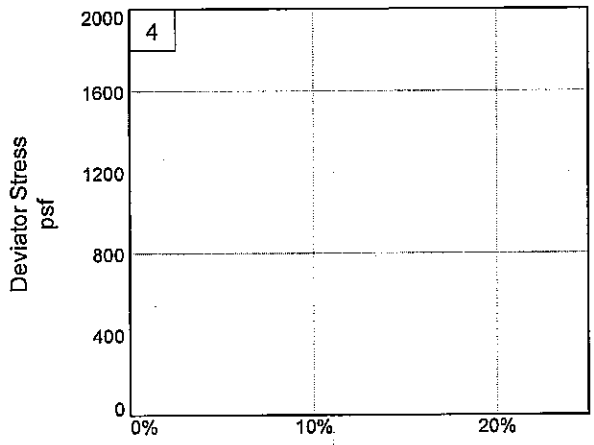
FFEBJV, LLC

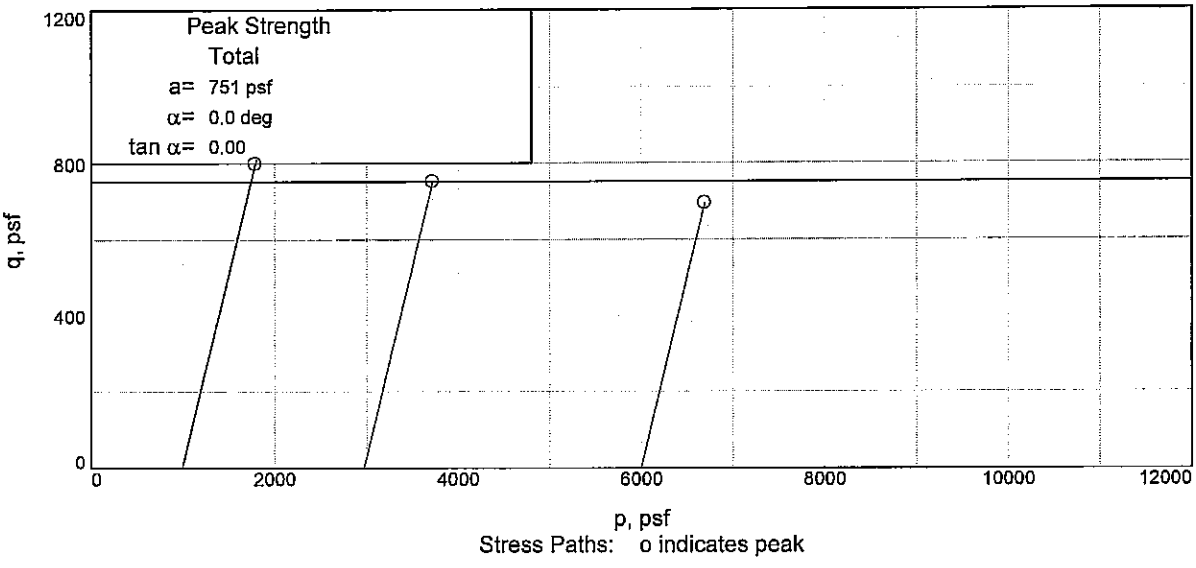
Tested By: CM **Checked By:** AB









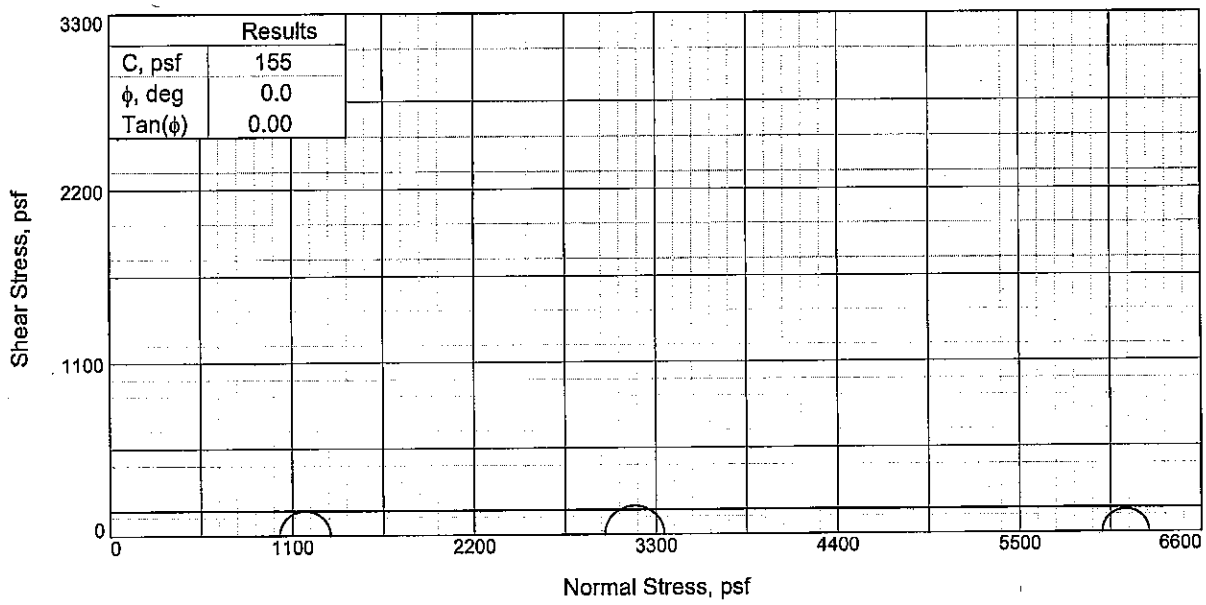


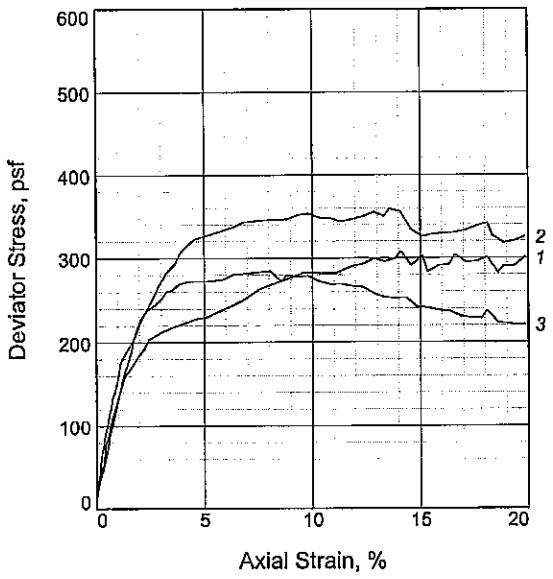
Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-42UCL **Depth:** 17.7 **Sample Number:** 7C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: CM **Checked By:** AB





Specimen No.		1	2	3
Initial	Water Content, %	46.8	42.5	57.3
	Dry Density, pcf	71.1	75.6	60.7
	Saturation, %	92.7	94.0	87.4
	Void Ratio	1.3545	1.2126	1.7569
	Diameter, in.	1.41	1.41	1.40
	Height, in.	3.14	3.11	3.26
At Test	Water Content, %	46.8	42.5	57.3
	Dry Density, pcf	71.1	75.6	60.7
	Saturation, %	92.7	94.0	87.4
	Void Ratio	1.3545	1.2126	1.7569
	Diameter, in.	1.41	1.41	1.40
	Height, in.	3.14	3.11	3.26
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		7.10	20.76	41.65
Fail. Stress, psf		308	360	285
Strain, %		14.1	13.6	8.1
Ult. Stress, psf		303	326	242
Strain, %				
σ_1 Failure, psf		1330	3349	6283
σ_3 Failure, psf		1022	2989	5998

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CL4

LL= 33 **PL=** 20 **PI=** 13
Assumed Specific Gravity= 2.68
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

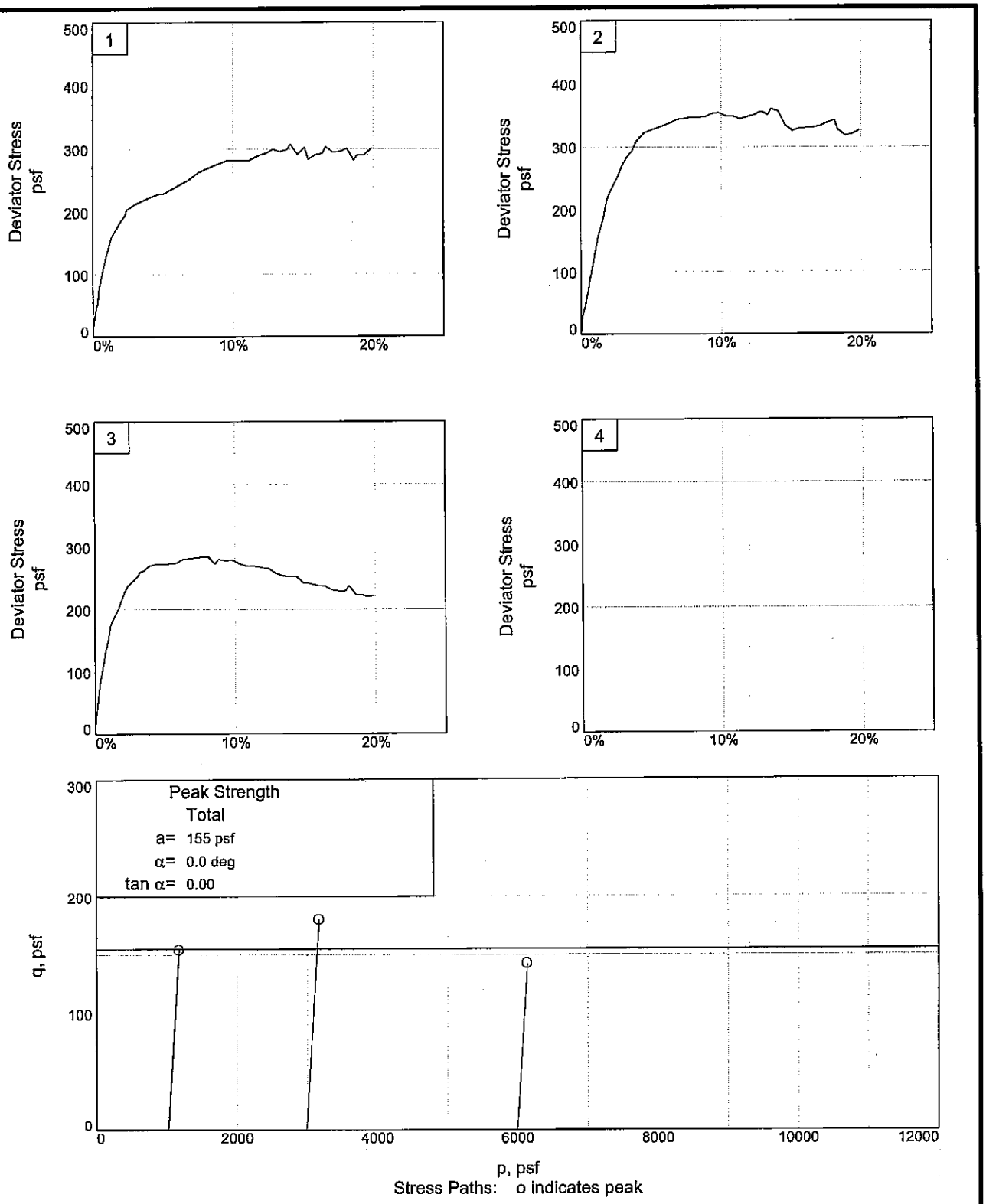
Project: Westwego to Harvey Canal

Source of Sample: WWHC-42UCL **Depth:** 21.7
Sample Number: 8C
Proj. No.: 0022-0002 **Date Sampled:** 4/9/2007

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

Tested By: CM **Checked By:** AB

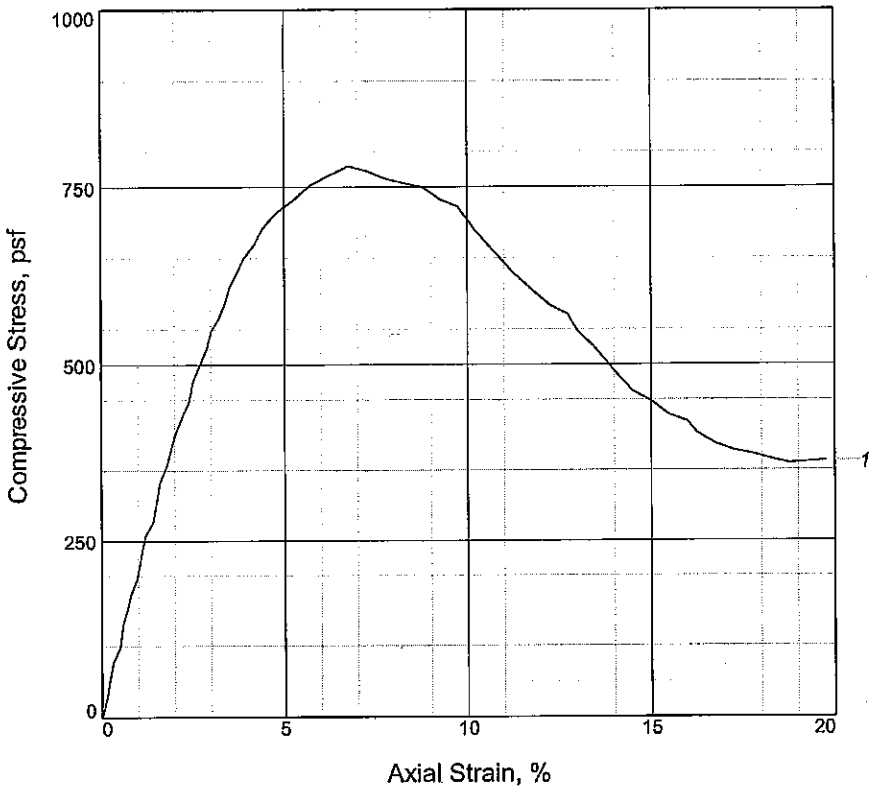


Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-42UCL **Depth:** 21.7 **Sample Number:** 8C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: CM _____ **Checked By:** AB _____

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	779			
Undrained shear strength, psf	390			
Failure strain, %	6.8			
Strain rate, in./min.	0.03			
Water content, %	37.7			
Wet density, pcf	113.6			
Dry density, pcf	82.5			
Saturation, %	97.5			
Void ratio	1.0430			
Specimen diameter, in.	1.41			
Specimen height, in.	3.21			
Height/diameter ratio	2.27			

Description: SO GR CH2-S W/ WD

LL = 51	**PL =** 21	**PI =** 30	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4/9/2007
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

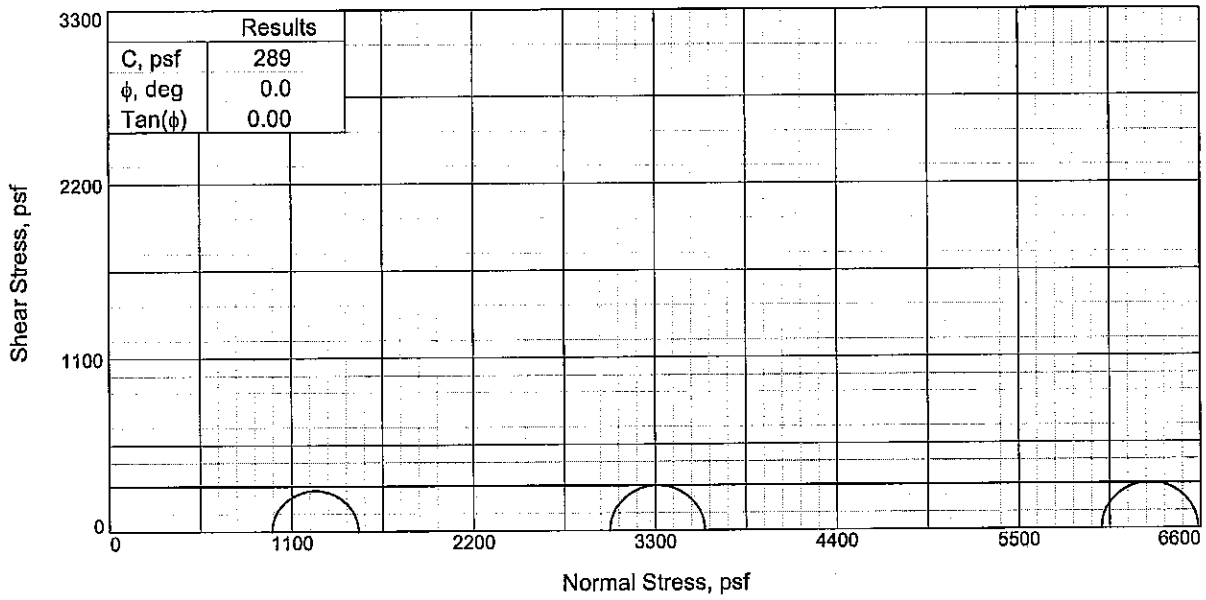
Project: Westwego to Harvey Canal

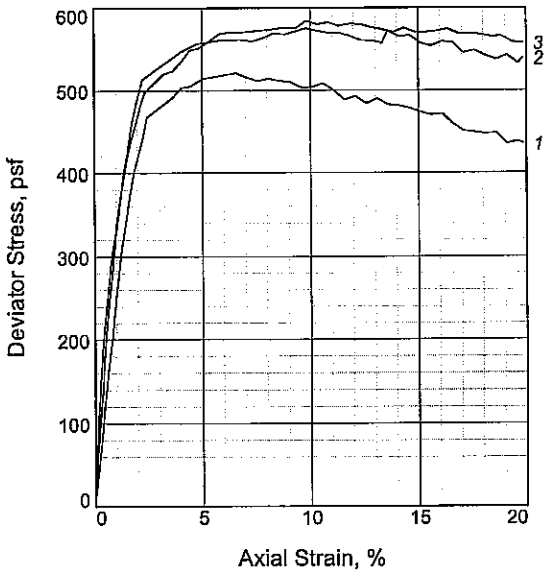
Source of Sample: WWHC-42UCL **Depth:** 25.7
Sample Number: 9C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: TMK **Checked By:** AB





Specimen No.		1	2	3
Initial	Water Content, %	117.1	102.6	82.2
	Dry Density, pcf	37.4	40.7	49.3
	Saturation, %	92.2	90.4	94.9
	Void Ratio	3.1768	2.8362	2.1644
	Diameter, in.	1.38	1.40	1.39
	Height, in.	3.22	3.21	3.14
At Test	Water Content, %	117.1	102.6	82.2
	Dry Density, pcf	37.4	40.7	49.3
	Saturation, %	92.2	90.4	94.9
	Void Ratio	3.1768	2.8362	2.1644
	Diameter, in.	1.38	1.40	1.39
	Height, in.	3.22	3.21	3.14
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.81	21.00	41.66
Fail. Stress, psf		521	576	585
Strain, %		6.6	9.8	9.8
Ult. Stress, psf		474	558	571
Strain, %				
σ_1 Failure, psf		1502	3600	6584
σ_3 Failure, psf		981	3024	6000

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR PT W/ ARS ML

LL= 291 **PL=** 95 **PI=** 196
Assumed Specific Gravity= 2.50
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

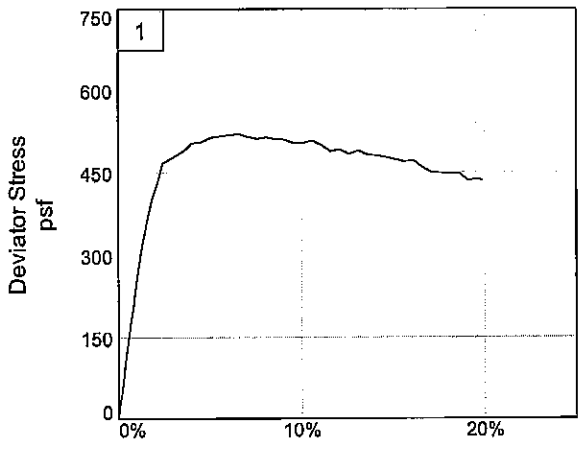
Project: Westwego to Harvey Canal

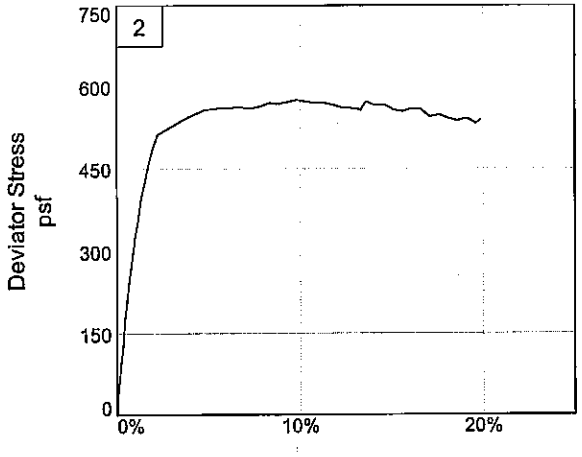
Source of Sample: WWHC-42UCL **Depth:** 32.8
Sample Number: 11B
Proj. No.: 0022-0002 **Date Sampled:** 4/9/2007

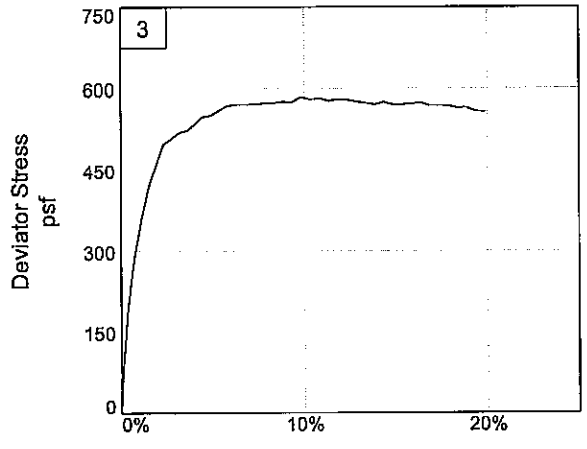
TRIAXIAL SHEAR TEST REPORT

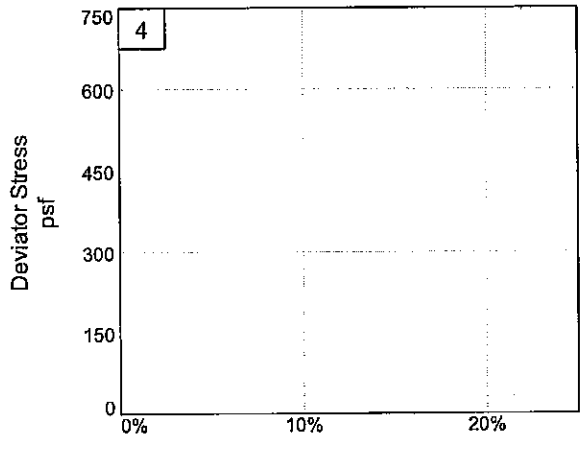
FFEBJV, LLC

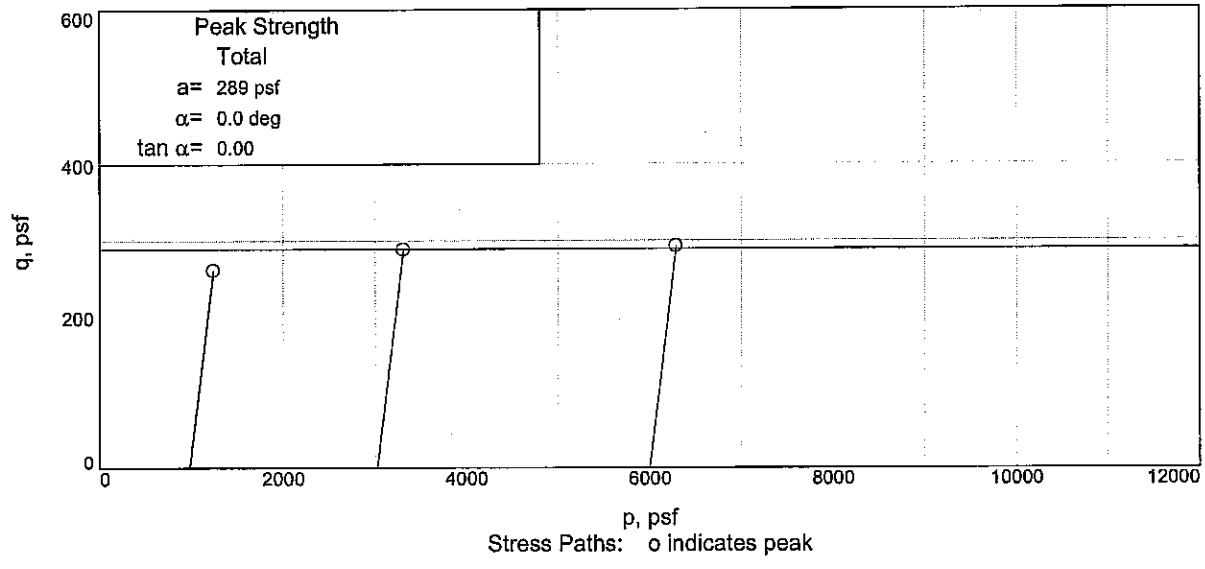
Tested By: CM **Checked By:** AB









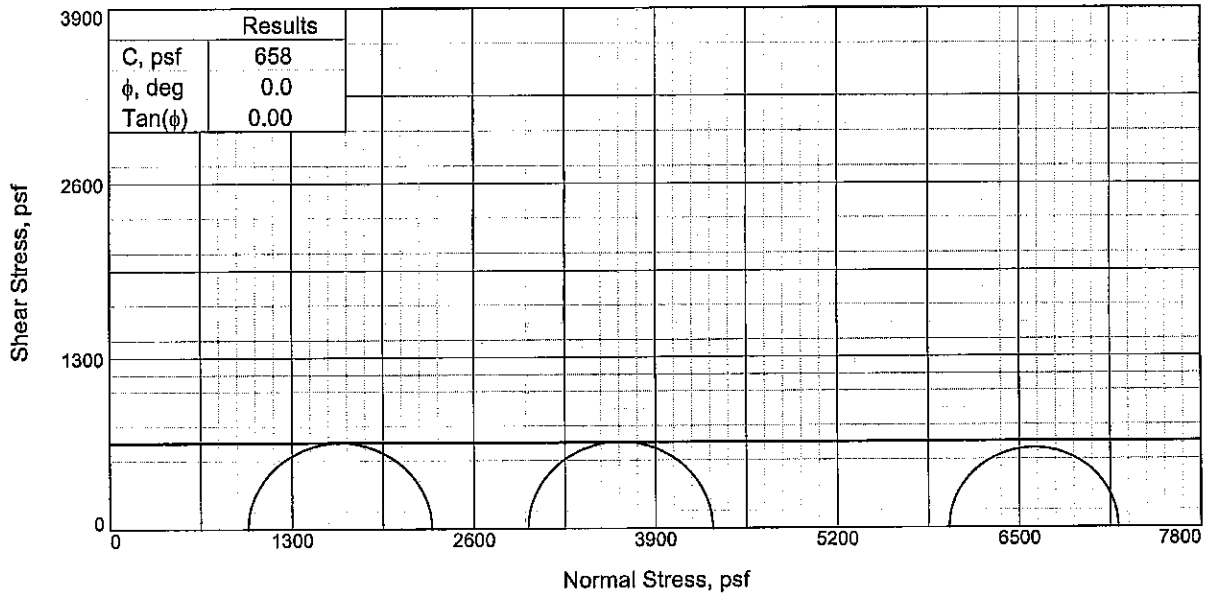


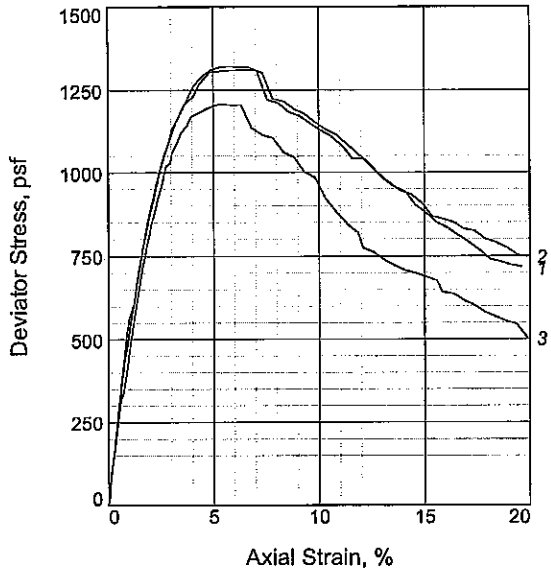
Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-42UCL **Depth:** 32.8 **Sample Number:** 11B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: CM **Checked By:** AB





Specimen No.		1	2	3
Initial	Water Content, %	57.7	58.9	59.4
	Dry Density, pcf	61.9	60.6	61.3
	Saturation, %	89.9	88.9	91.2
	Void Ratio	1.7442	1.8030	1.7708
	Diameter, in.	1.38	1.38	1.38
	Height, in.	3.22	3.22	3.23
At Test	Water Content, %	57.7	58.9	59.4
	Dry Density, pcf	61.9	60.6	61.3
	Saturation, %	89.9	88.9	91.2
	Void Ratio	1.7442	1.8030	1.7708
	Diameter, in.	1.38	1.38	1.38
	Height, in.	3.22	3.22	3.23
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.85	20.74	41.65
Fail. Stress, psf		1312	1323	1209
Strain, %		6.6	5.8	5.3
Ult. Stress, psf		878	910	688
Strain, %				
σ_1 Failure, psf		2298	4309	7207
σ_3 Failure, psf		986	2986	5998

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ LNS ML, SIF

LL= 93 **PL=** 25 **PI=** 68
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

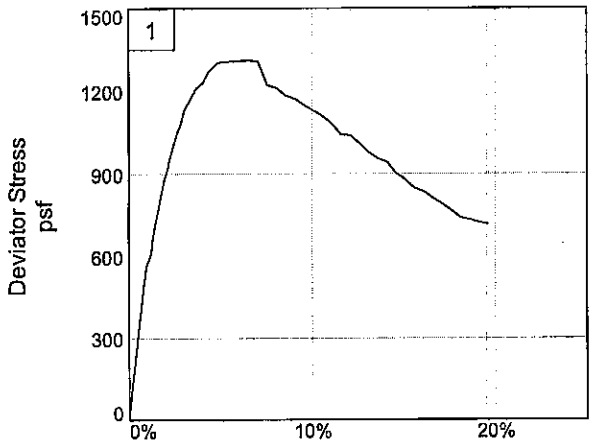
Project: Westwego to Harvey Canal

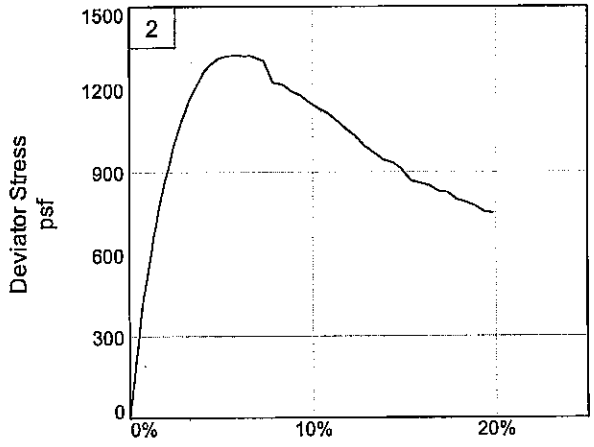
Source of Sample: WWHC-42UCL **Depth:** 37.7
Sample Number: 12C
Proj. No.: 0022-0002 **Date Sampled:** 4/9/2007

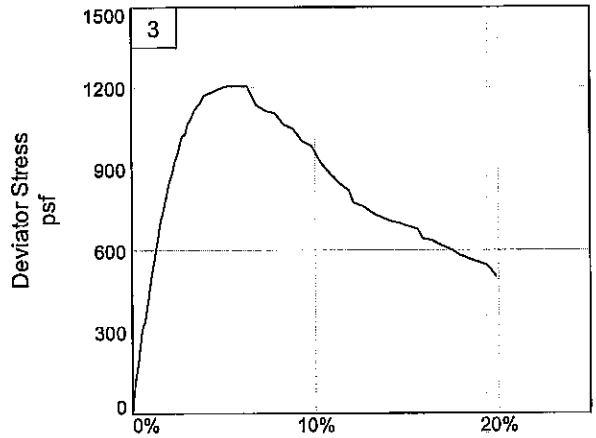
TRIAXIAL SHEAR TEST REPORT

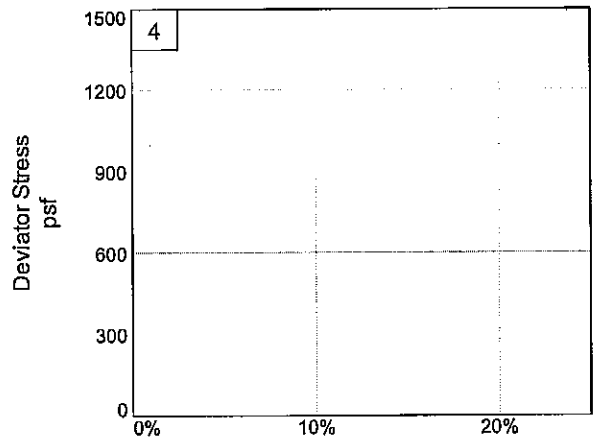
FFEBJV, LLC

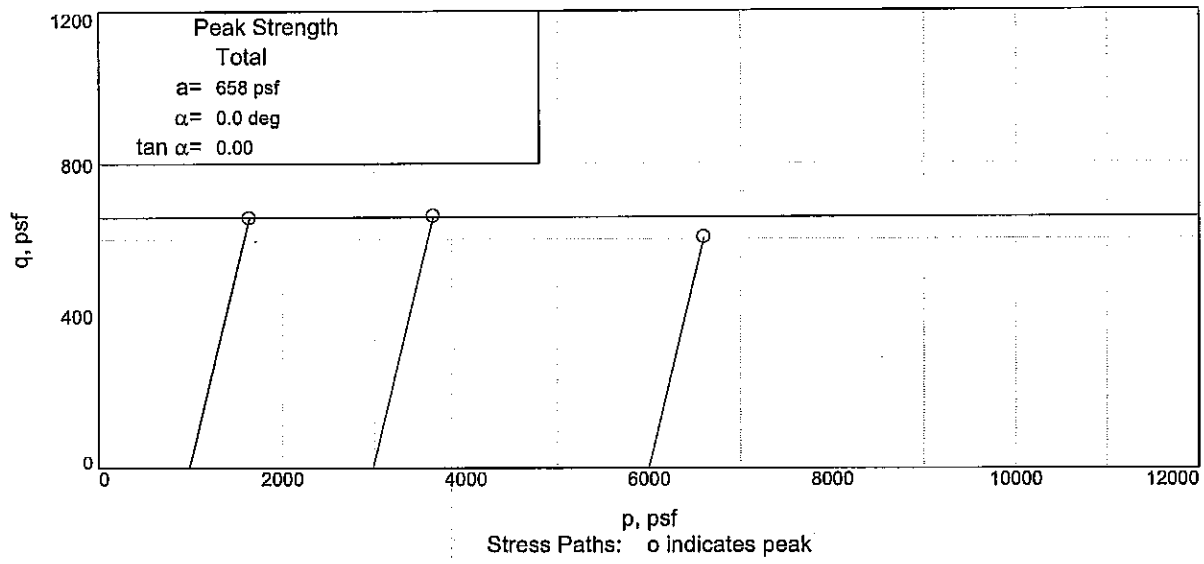
Tested By: CM **Checked By:** AB









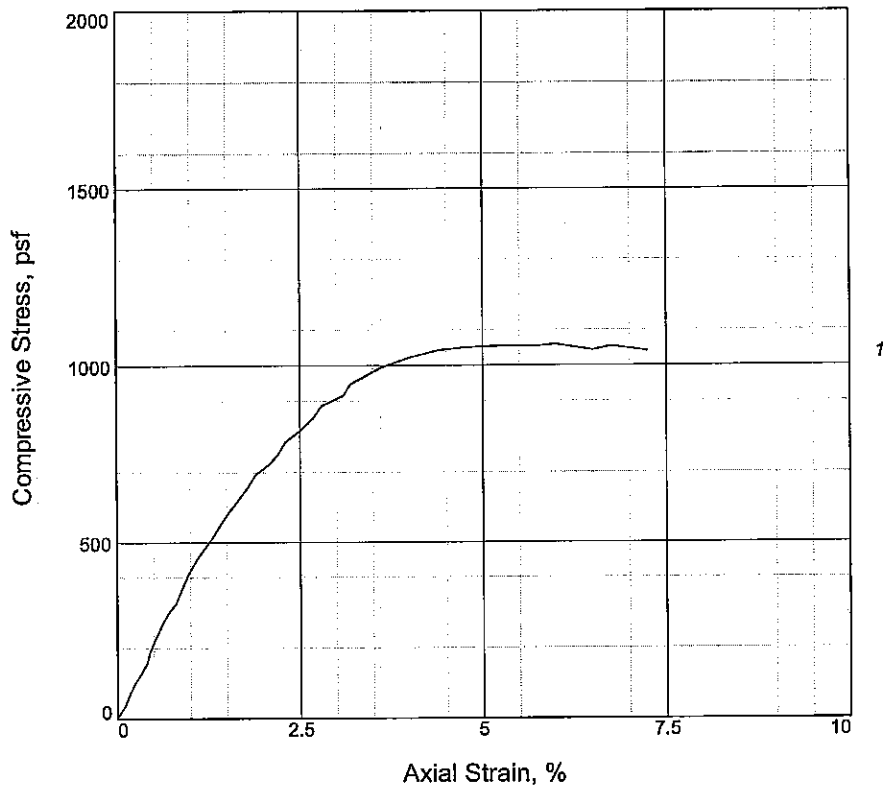


Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-42UCL **Depth:** 37.7 **Sample Number:** 12C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: CM **Checked By:** AB

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1059			
Undrained shear strength, psf	530			
Failure strain, %	6.0			
Strain rate, in./min.	0.03			
Water content, %	56.8			
Wet density, pcf	104.1			
Dry density, pcf	66.4			
Saturation, %	98.8			
Void ratio	1.5753			
Specimen diameter, in.	1.42			
Specimen height, in.	3.17			
Height/diameter ratio	2.23			

Description: M GR CH3

LL = 65	**PL =** 24	**PI =** 41	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4/9/2007
Remarks:

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

Source of Sample: WWHC-42UCL **Depth:** 41.7
Sample Number: 13C

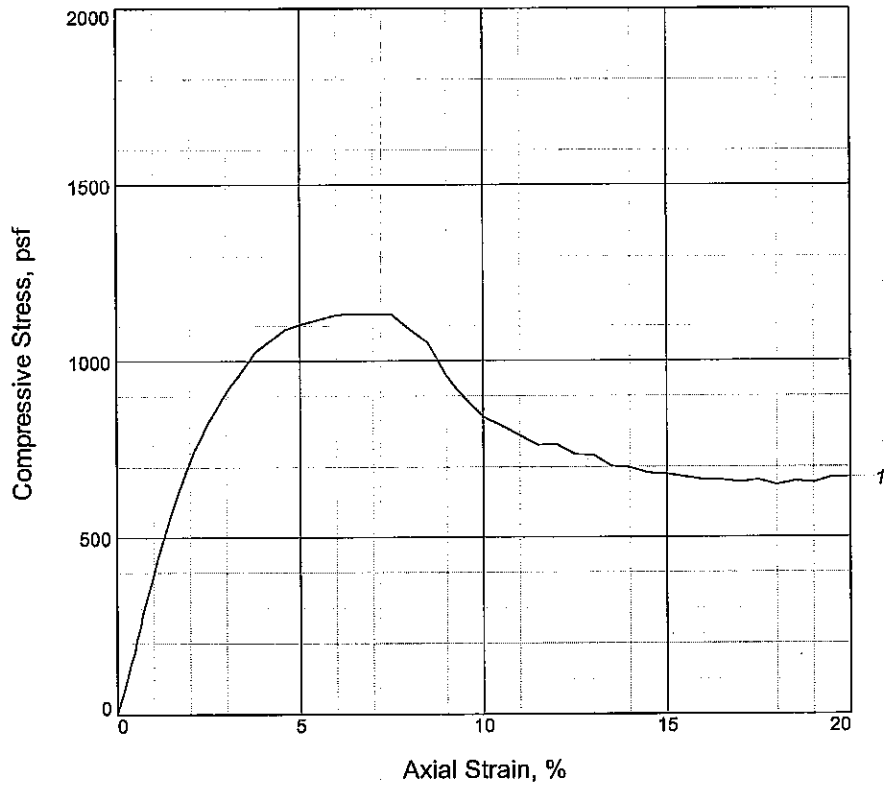
UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: TMK **Checked By:** AB

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1134			
Undrained shear strength, psf	567			
Failure strain, %	6.5			
Strain rate, in./min.	0.03			
Water content, %	65.1			
Wet density, pcf	101.9			
Dry density, pcf	61.7			
Saturation, %	101.1			
Void ratio	1.7506			
Specimen diameter, in.	1.42			
Specimen height, in.	3.16			
Height/diameter ratio	2.22			

Description: M GR CH4 W/ ARS ML

LL = 78	**PL** = 27	**PI** = 51	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4/9/2007
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

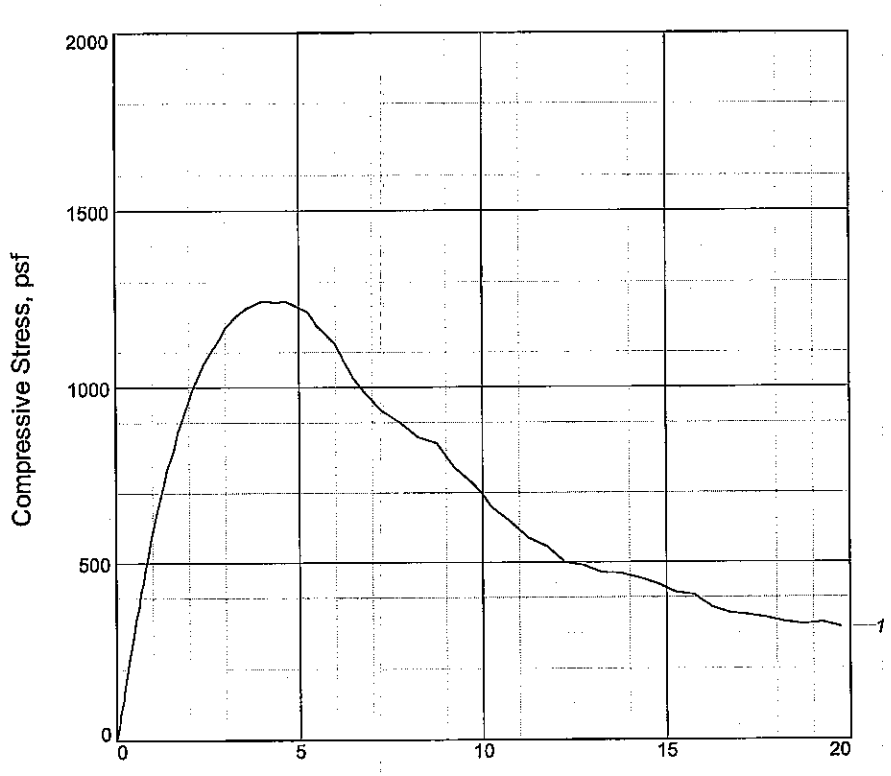
Source of Sample: WWHC-42UCL **Depth:** 45.7
Sample Number: 14C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: TMK **Checked By:** AB

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1246			
Undrained shear strength, psf	623			
Failure strain, %	4.0			
Strain rate, in./min.	0.03			
Water content, %	63.7			
Wet density, pcf	101.5			
Dry density, pcf	62.0			
Saturation, %	99.7			
Void ratio	1.7367			
Specimen diameter, in.	1.43			
Specimen height, in.	3.14			
Height/diameter ratio	2.20			

Description: M GR CH4 W/ ARS & LNS ML

LL = 77	**PL** = 23	**PI** = 54	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4/9/2007
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

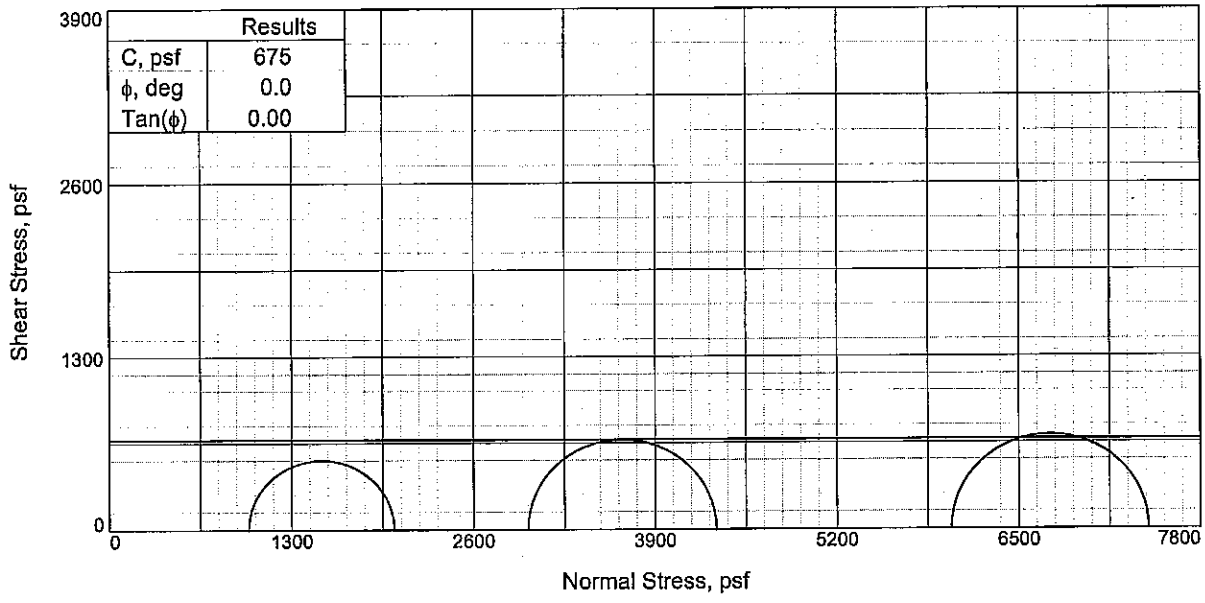
Project: Westwego to Harvey Canal

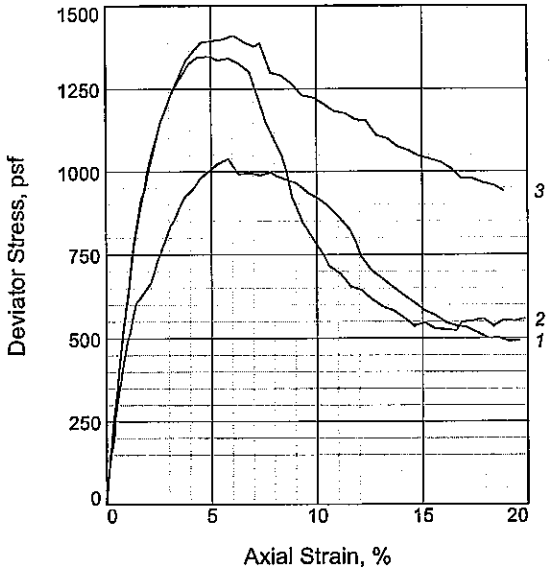
Source of Sample: WWHC-42UCL **Depth:** 49.7
Sample Number: 15C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: TMK **Checked By:** AB





Specimen No.		1	2	3
Initial	Water Content, %	62.5	62.7	61.0
	Dry Density, pcf	58.5	58.4	59.5
	Saturation, %	89.3	89.5	89.5
	Void Ratio	1.9044	1.9052	1.8527
	Diameter, in.	1.39	1.38	1.38
	Height, in.	3.20	3.19	3.17
At Test	Water Content, %	62.5	62.7	61.0
	Dry Density, pcf	58.5	58.4	59.5
	Saturation, %	89.3	89.5	89.5
	Void Ratio	1.9044	1.9052	1.8527
	Diameter, in.	1.39	1.38	1.38
	Height, in.	3.20	3.19	3.17
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.76	41.78
Fail. Stress, psf		1039	1348	1411
Strain, %		5.8	5.0	6.1
Ult. Stress, psf		584	547	1048
Strain, %				
σ_1 Failure, psf		2032	4337	7427
σ_3 Failure, psf		993	2989	6017

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ ARS ML

LL= 104 **PL=** 26 **PI=** 78
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

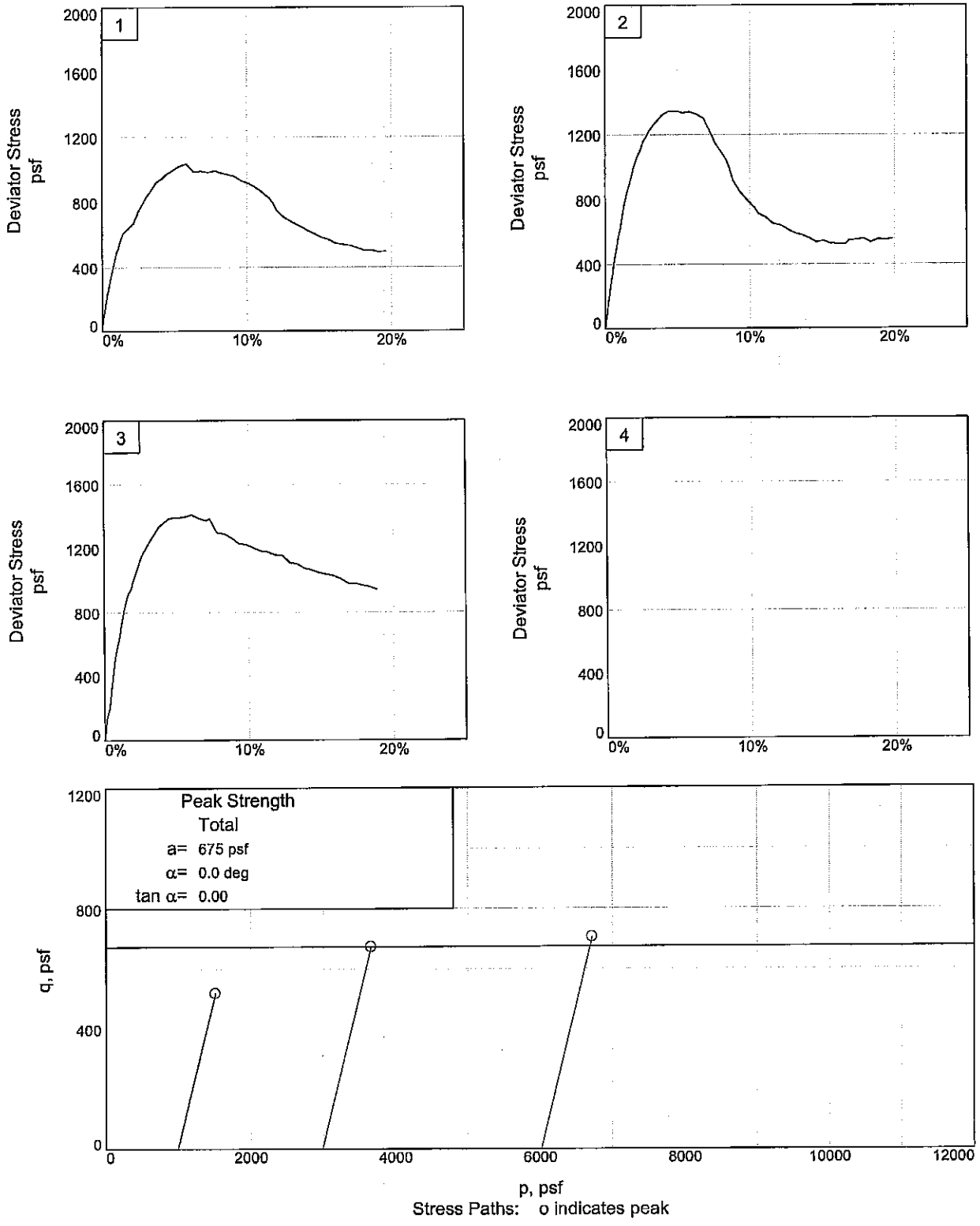
Project: Westwego to Harvey Canal

Source of Sample: WWHC-42UCL **Depth:** 53.7
Sample Number: 16C
Proj. No.: 0022-0002 **Date Sampled:** 4/9/2007

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

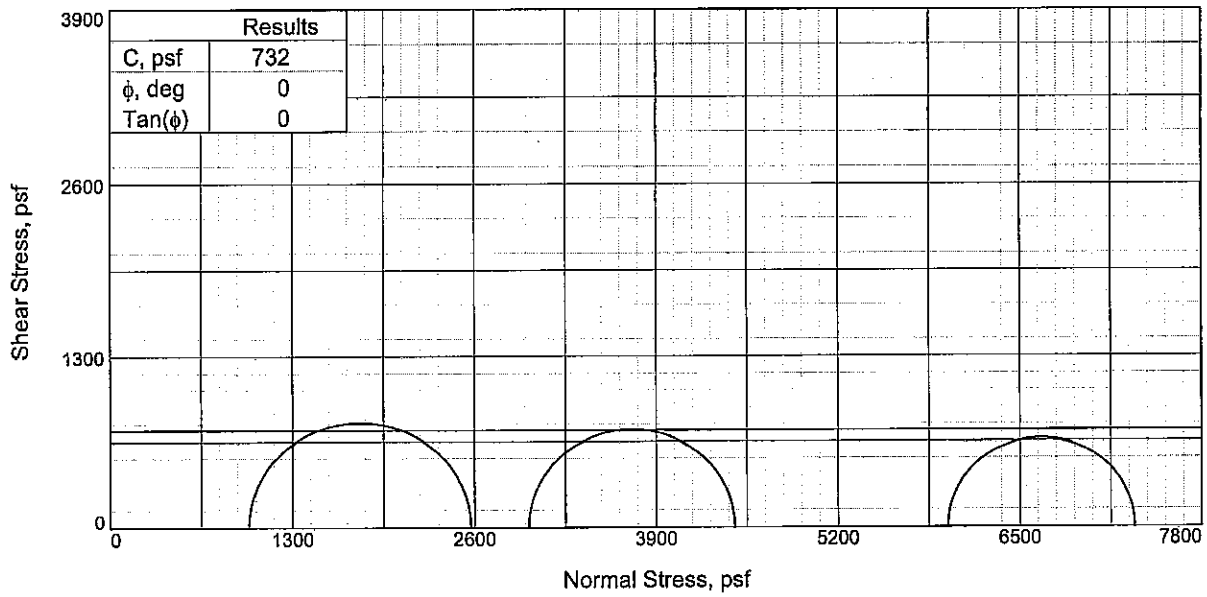
Tested By: CM **Checked By:** AB

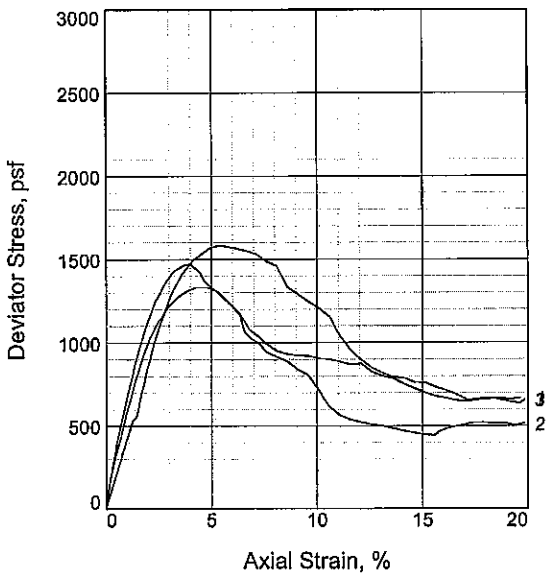


Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-42UCL **Depth:** 53.7 **Sample Number:** 16C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: CM **Checked By:** AB





Specimen No.		1	2	3
Initial	Water Content, %	60.1	61.8	59.9
	Dry Density, pcf	61.3	60.1	61.4
	Saturation, %	92.0	91.9	91.9
	Void Ratio	1.7888	1.8446	1.7868
	Diameter, in.	1.39	1.39	1.38
	Height, in.	3.17	3.18	3.18
At Test	Water Content, %	60.1	61.8	59.9
	Dry Density, pcf	61.3	60.1	61.4
	Saturation, %	92.0	91.9	91.9
	Void Ratio	1.7888	1.8446	1.7868
	Diameter, in.	1.39	1.39	1.38
	Height, in.	3.17	3.18	3.18
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.74	41.56
Fail. Stress, psf		1585	1475	1335
Strain, %		5.3	3.9	4.3
Ult. Stress, psf		762	448	702
Strain, %				
σ_1 Failure, psf		2574	4462	7319
σ_3 Failure, psf		988	2987	5984

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4

LL= 93 **PL=** 26 **PI=** 67
Assumed Specific Gravity= 2.74
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

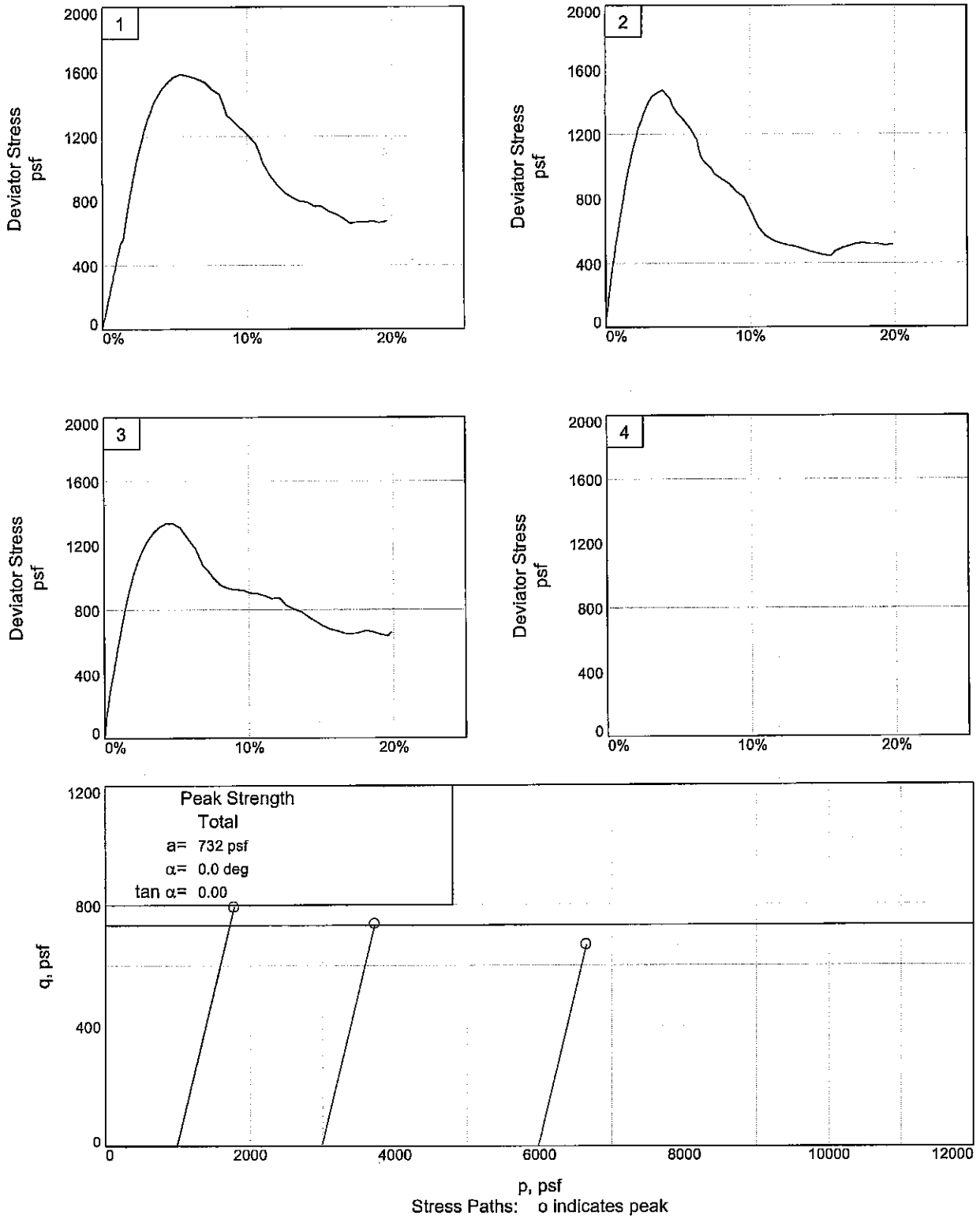
Project: Westwego to Harvey Canal

Source of Sample: WWHC-42UCL **Depth:** 60.8
Sample Number: 18B
Proj. No.: 0022-0002 **Date Sampled:** 4/9/2007

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

Tested By: CM **Checked By:** AB

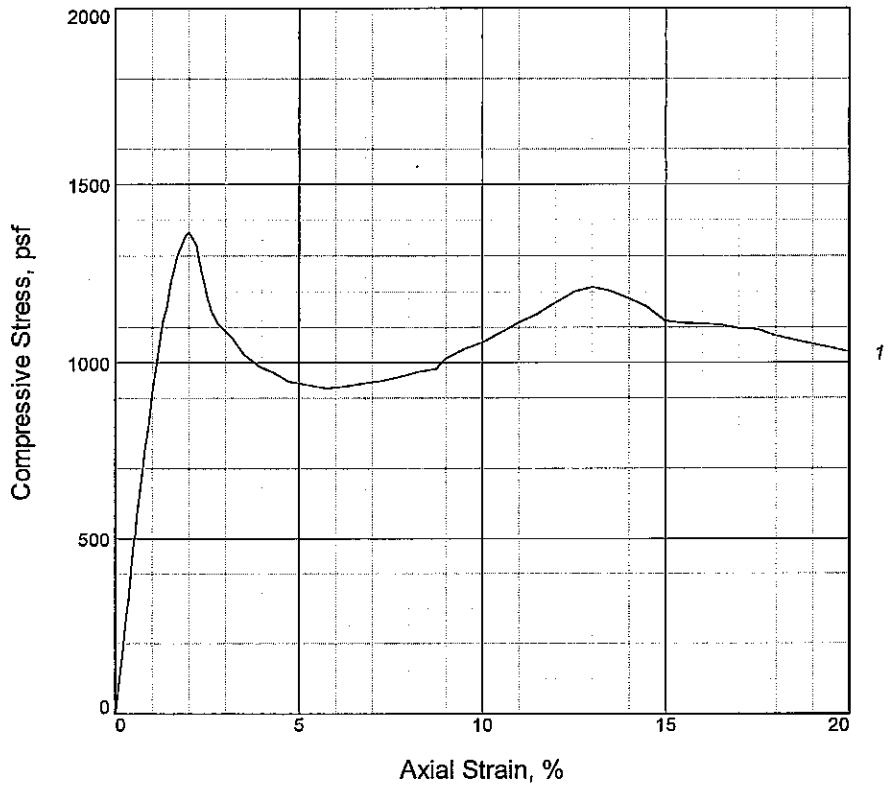


Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-42UCL **Depth:** 60.8 **Sample Number:** 18B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: CM **Checked By:** AB

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1367			
Undrained shear strength, psf	684			
Failure strain, %	2.0			
Strain rate, in./min.	0.03			
Water content, %	56.6			
Wet density, pcf	102.2			
Dry density, pcf	65.2			
Saturation, %	96.1			
Void ratio	1.6025			
Specimen diameter, in.	1.43			
Specimen height, in.	3.23			
Height/diameter ratio	2.26			

Description: M GR CH4 W/ ARS ML, SL

LL = 75	**PL** = 24	**PI** = 51	**Assumed GS**= 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4/9/2007
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

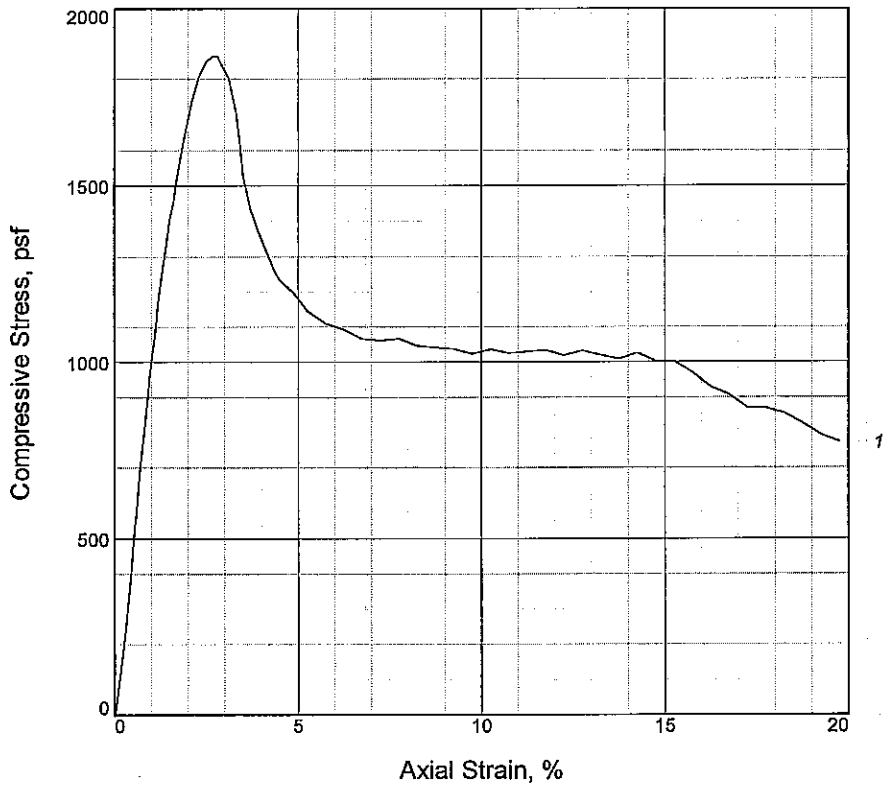
Source of Sample: WWHC-42UCL **Depth:** 65.7
Sample Number: 19C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: TMK **Checked By:** AB

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1865			
Undrained shear strength, psf	933			
Failure strain, %	2.7			
Strain rate, in./min.	0.03			
Water content, %	59.2			
Wet density, pcf	100.4			
Dry density, pcf	63.1			
Saturation, %	94.7			
Void ratio	1.7115			
Specimen diameter, in.	1.43			
Specimen height, in.	3.20			
Height/diameter ratio	2.24			

Description: M GR CH4 W/ SL

LL = 84	**PL =** 25	**PI =** 59	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4/9/2007
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

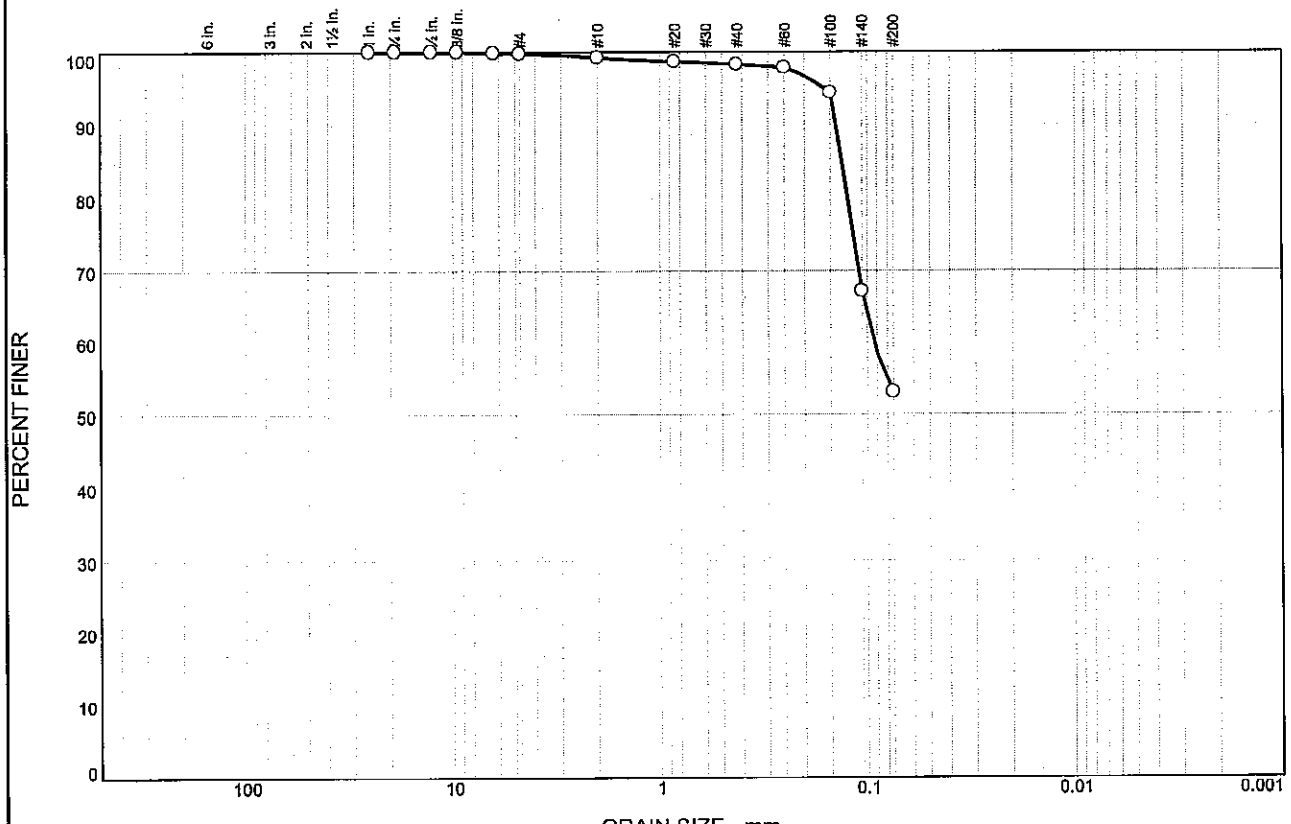
Source of Sample: WWHC-42UCL **Depth:** 68.8
Sample Number: 20B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: TMK **Checked By:** AB

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.2	0.6	0.9	45.2	53.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1317	0.0931						

Material Description	USCS	AASHTO
○ GR ML2-S W/ LNS CH, SIF	ML2-S	

Project No. 0022-0002 **Client:** FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

○ **Source of Sample:** WWHC-42UCL **Depth:** 73.7 **Sample Number:** 21C

FFEBJV, LLC

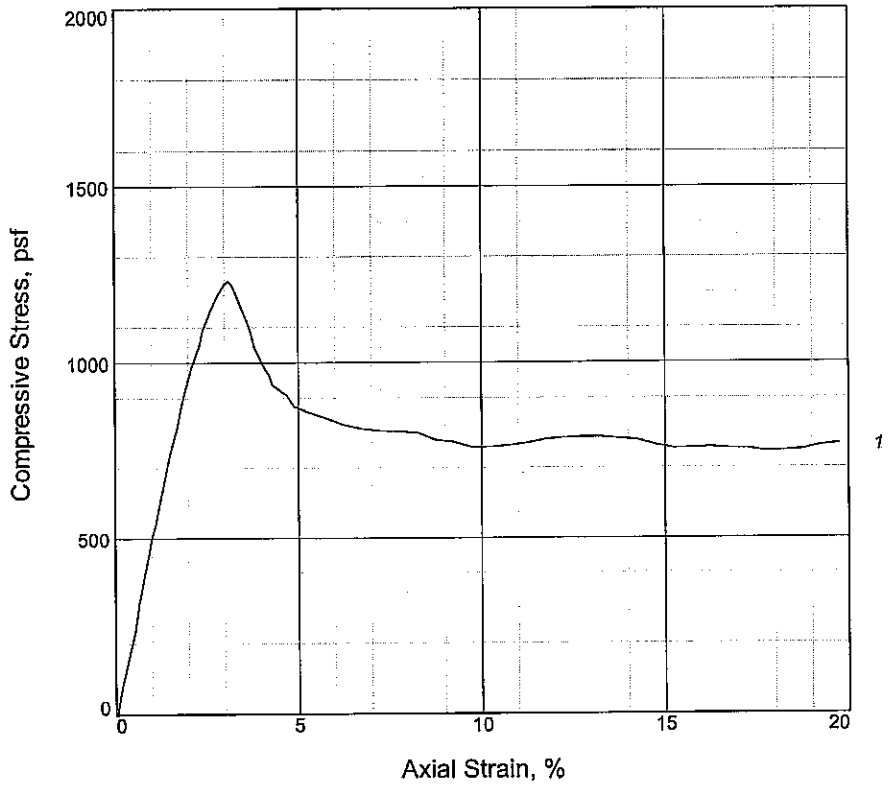
Lexington, KY

Remarks:

Figure

Tested By: DL **Checked By:** AB

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1233			
Undrained shear strength, psf	616			
Failure strain, %	3.1			
Strain rate, in./min.	0.03			
Water content, %	58.7			
Wet density, pcf	102.3			
Dry density, pcf	64.4			
Saturation, %	97.7			
Void ratio	1.6347			
Specimen diameter, in.	1.43			
Specimen height, in.	3.20			
Height/diameter ratio	2.25			

Description: M GR CH4 W/ LNS ML

LL = 80	**PL** = 24	**PI** = 56	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4/9/2007
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

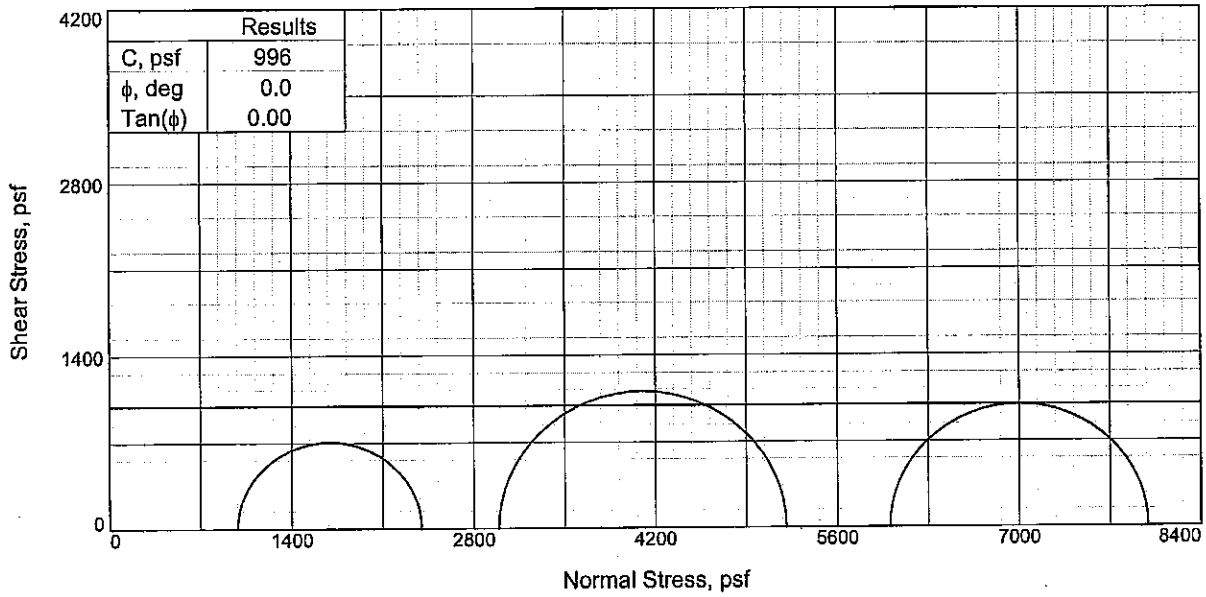
Project: Westwego to Harvey Canal

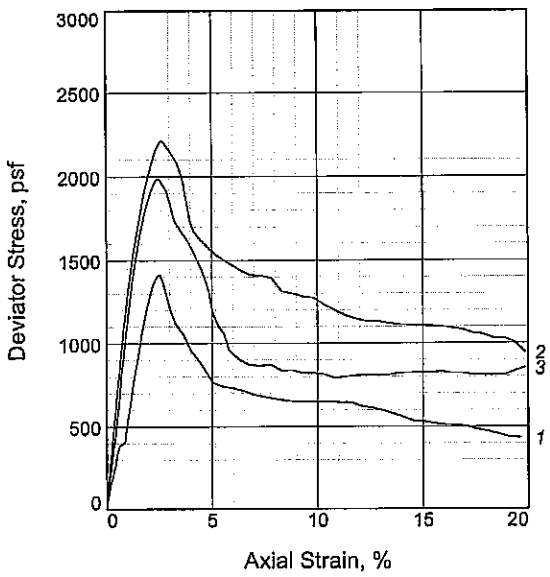
Source of Sample: WWHC-42UCL **Depth:** 77.7
Sample Number: 22C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: TMK **Checked By:** AB





Specimen No.		1	2	3
Initial	Water Content, %	62.4	63.3	62.2
	Dry Density, pcf	59.7	62.6	62.3
	Saturation, %	91.9	100.4	98.2
	Void Ratio	1.8461	1.7135	1.7238
	Diameter, in.	1.39	1.38	1.39
	Height, in.	3.19	3.16	3.16
At Test	Water Content, %	62.4	63.3	62.2
	Dry Density, pcf	59.7	62.6	62.3
	Saturation, %	91.9	100.4	98.2
	Void Ratio	1.8461	1.7135	1.7238
	Diameter, in.	1.39	1.38	1.39
	Height, in.	3.19	3.16	3.16
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.83	20.77	41.70
Fail. Stress, psf		1413	2216	1988
Strain, %		2.5	2.6	2.4
Ult. Stress, psf		649	1113	827
Strain, %				
σ_1 Failure, psf		2396	5207	7992
σ_3 Failure, psf		983	2991	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ LNS SM

LL= 90 **PL=** 30 **PI=** 60
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

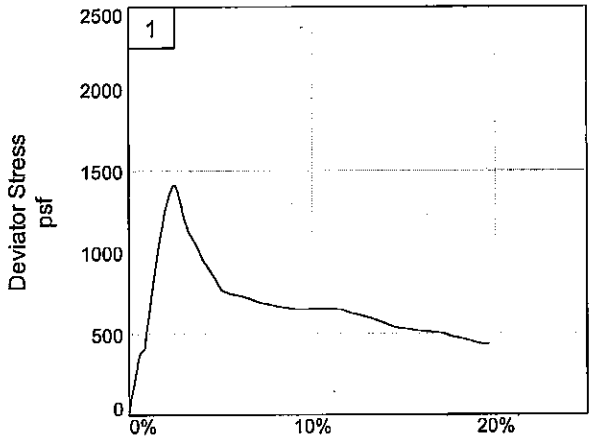
Project: Westwego to Harvey Canal

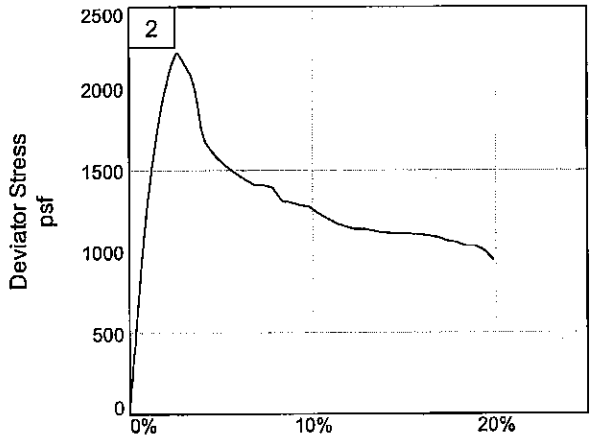
Source of Sample: WWHC-42UCL **Depth:** 81.7
Sample Number: 23C
Proj. No.: 0022-0002 **Date Sampled:** 4/9/2007

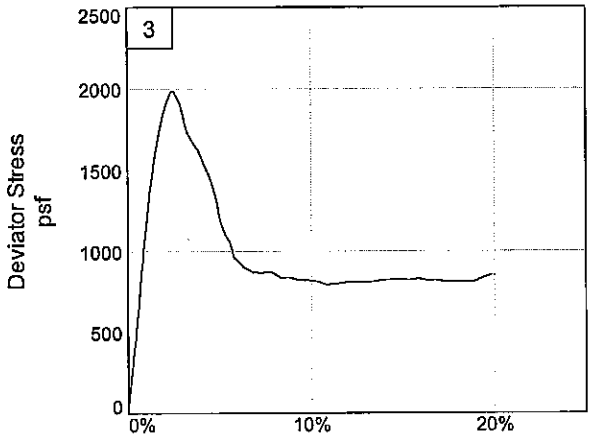
TRIAXIAL SHEAR TEST REPORT

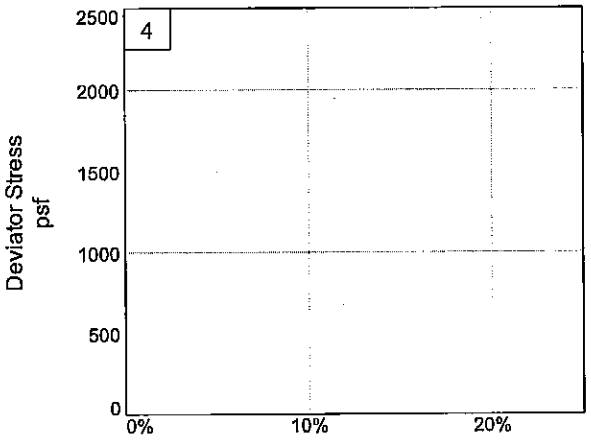
FFEBJV, LLC

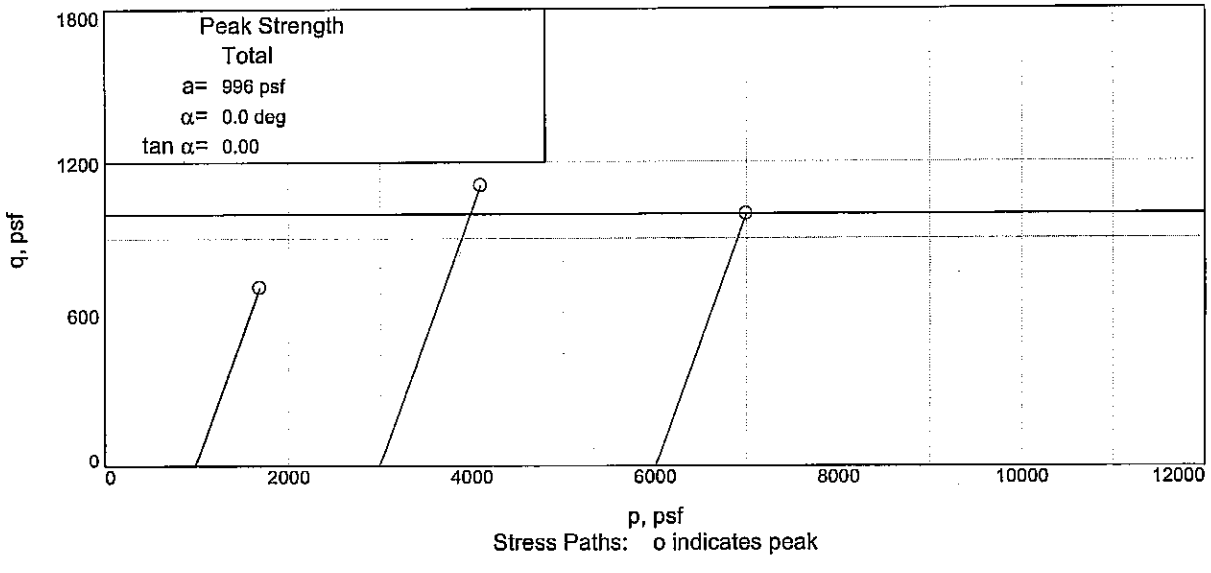
Tested By: CM **Checked By:** AB











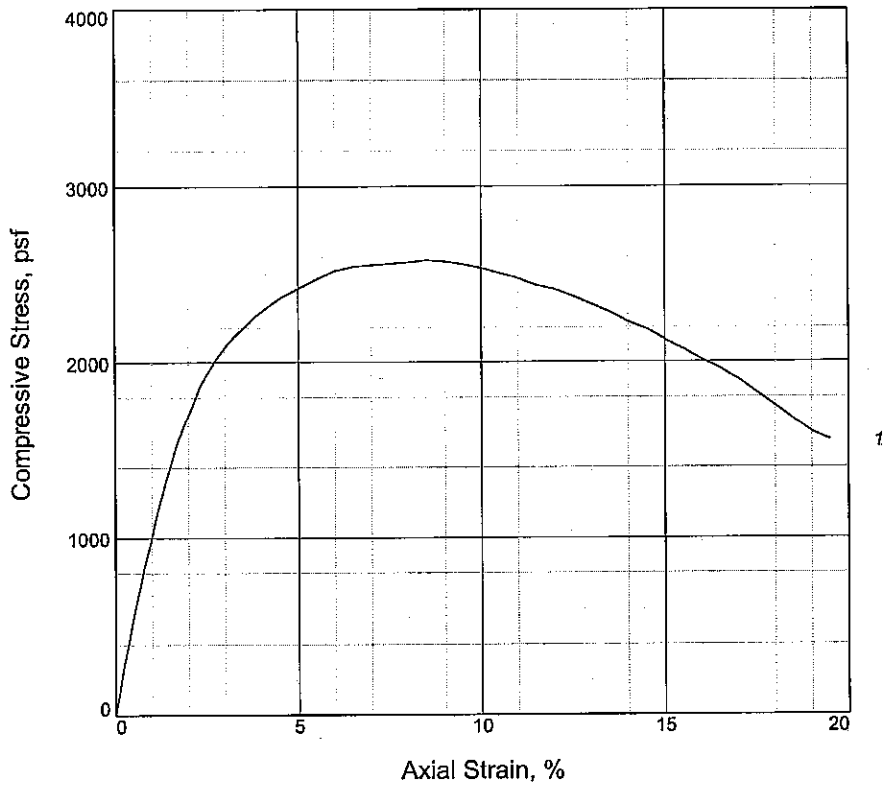
Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-42UCL **Depth:** 81.7 **Sample Number:** 23C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: CM **Checked By:** AB

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	2583			
Undrained shear strength, psf	1291			
Failure strain, %	8.5			
Strain rate, in./min.	0.03			
Water content, %	21.7			
Wet density, pcf	126.5			
Dry density, pcf	103.9			
Saturation, %	95.3			
Void ratio	0.6095			
Specimen diameter, in.	1.45			
Specimen height, in.	3.24			
Height/diameter ratio	2.23			

Description: ST GR CL4 W/ LNS CH, SIF, ARS SM

LL = 39	PL = 12	PI = 27	Assumed GS= 2.68	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4/9/2007
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

Source of Sample: WWHC-42UCL **Depth:** 85.7
Sample Number: 24C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: TMK **Checked By:** AB

```
BOR. WWHC-42UCL
STA. LAT N29^50'28.60" LONG W90^07'18.96"

09 APRIL-11 APRIL 2007

GROUND EL. 12.0
  0.0  0.8 11     ML        T      SIFRT CS
  0.8  2.0 13     ML        T      SIFRT CS
  2.0  2.8 17     ML        T GR    SIF
  2.8  4.0 17  4.0ML        T GR    SIF
  4.0  4.8 23     CL     ST  T GR    CS SIF
  4.8  6.0 24     CL     ST  T GR    CS SIF
  6.0  6.8 24     CL     ST  T GR    CS SIF
  6.8  8.0 24     CL     ST  T GR    CS SIF          1343127 49 15      24  71
  8.0  8.8 46     CL     SO GR
  8.8  9.7 27  9.7CL      M GR       CS
  9.7 10.6 26 10.6CL  SIS M GR
 10.6 12.0 27 12.0CL      M GR       CS
 12.0 12.8 40     CH      M GR
 12.8 13.7 32 13.7CH      M GR
 13.7 16.0 35 16.0CH  SIS M GR
 16.0 16.8 45     CH      M GR
 16.8 17.7 38 17.7CH      M GR
 17.7 18.6 30 18.6CL  SIS M GR
 18.6 20.0 31     CL      M GR       CS
 20.0 20.8 55     CL     VSOGR       CS  O
 20.8 21.7 52     CL     VSOGR       CS  O
 21.7 22.6 32 22.6CL     VSOGR
 22.6 24.0 32     CH     SO GR       S
 24.0 24.8 36     CH     SO GR       S
 24.8 25.7 37     CH     SO GR       S
 25.7 26.6 37 26.6CH     SO GR       WD  S          390114 51 21      38 260
 26.6 28.0 51 28.0CH  SISST GR
 28.0 28.8 57     CH      M GR       CC
 28.8 29.7 59     CH      M GR
 29.7 30.6 66     CH     SO GR
 30.6 32.0 70 32.0CH     SO GR
 32.0 32.8 87 32.8CH   O SO GR       SIS
 32.8 33.7120 33.7PT     SO GR       SIS
 33.7 34.6 36     CL     SO GR       CC
 34.6 36.0 36     CL     SO GR
 36.0 36.8 43 36.8CL     SO GR       CS
```

36.8 37.7 58 CH SIS M GR CC
37.7 38.6 60 CH SIS M GR SIF
38.6 40.0 61 40.0CH SIS M GR
40.0 40.8 58 CH M GR SIF
40.8 41.7 49 CH M GR SIF
41.7 42.6 52 CH M GR 530104 65 24 57 420
42.6 44.0 53 44.0CH M GR
44.0 44.8 56 CH SIS M GR
44.8 45.7 62 CH SIS M GR
45.7 46.6 57 CH SIS M GR 567102 78 27 65 460
46.6 48.0 51 48.0CH SIS M GR
48.0 48.8 68 48.8CH M GR
48.8 49.7 57 CH SIS M GR
49.7 50.6 57 CH SIS M GR 623102 77 23 64 500
50.6 52.0 63 52.0CH SIS M GR
52.0 52.8 68 52.8CH M GR
52.8 53.7 64 CH SIS M GR
53.7 54.6 63 54.6CH SIS M GR
54.6 56.0 64 56.0CH M GR
56.0 56.8 73 CH SISSO GR
56.8 57.7 65 CH SISSO GR
57.7 58.6 61 CH SIS M GR
58.6 60.0 58 CH SIS M GR
60.0 60.8 60 60.8CH SIS M GR
60.8 61.7 63 61.7CH M GR
61.7 62.6 54 62.6CH SIS M GR
62.6 64.0 56 64.0CH M GR
64.0 64.8 62 CH SIS M GR
64.8 65.7 53 CH SIS M GR
65.7 66.6 59 66.6CH SIS M GR SL 684102 75 24 57 660
66.6 68.0 58 CH M GR SL
68.0 68.8 65 CH M GR SL
68.8 69.7 59 69.7CH M GR SL 933100 84 25 59 691
69.7 70.6 39 70.6CH SS ST GR SIF
70.6 72.0 27 ML GR SIF
72.0 72.8 32 ML GR SIF
72.8 73.7 33 ML GR SIFCS
73.7 74.6 35 74.6ML GR CS SIF
74.6 76.0 52 76.0CH SIS M GR SIF
76.0 76.8 52 76.8CH SS M GR SIF
76.8 77.7 57 CH SIS M GR
77.7 80.0 56 80.0CH SIS M GR 616102 80 24 59 780
80.0 80.8 62 CH M GR

80.8 81.7 59 81.7CH M GR
81.7 82.6 62 82.6CH SS M GR
82.6 84.0 62 84.0CH M GR SIF
84.0 84.8 32 CL ST GR CS SIF
84.8 85.7 26 CL ST GR CS SIF
85.7 86.6 24 CL ST GR CS SIF S 1291127 39 12 22 860
86.6 88.0 21 CL ST GR CS S
88.0 88.8 20 88.8CL VSTGR CS O
88.8 89.7 21 89.7CL VSTGR CS O
89.7 92.0 92.0NS
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 10.00/ 2.00 Water Con: 32.00
LL,PL,PI : 41, 17, 24 Dry Dens : 86.00
Cohesion : 0.453 Saturat : 90.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 14.00/-2.00 Water Con: 32.00
LL,PL,PI : 88, 37, 51 Dry Dens : 86.00
Cohesion : 0.404 Saturat : 88.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 18.00/-6.00 Water Con: 28.00
LL,PL,PI : 49, 15, 34 Dry Dens : 92.00
Cohesion : 0.374 Saturat : 91.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 22.00/-10.0 Water Con: 49.00
LL,PL,PI : 33, 20, 13 Dry Dens : 69.00

Cohesion : 0.078 Saturat : 91.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : PT
Depth/Ele: 33.10/-21.1 Water Con:101.00
LL,PL,PI : 291, 95,196 Dry Dens : 42.00
Cohesion : 0.145 Saturat : 92.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-26.0 Water Con: 59.00
LL,PL,PI : 93, 25, 68 Dry Dens : 61.00
Cohesion : 0.329 Saturat : 90.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 54.00/-42.0 Water Con: 62.00
LL,PL,PI : 104, 26, 78 Dry Dens : 59.00
Cohesion : 0.338 Saturat : 89.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 61.10/-49.1 Water Con: 61.00
LL,PL,PI : 93, 26, 67 Dry Dens : 61.00
Cohesion : 0.366 Saturat : 92.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH

Depth/Ele: 82.00/-70.0 Water Con: 63.00
LL,PL,PI : 90, 30, 60 Dry Dens : 62.00
Cohesion : 0.498 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CH
Depth/Ele: 29.7/-17.7 Water Con: 52.00
LL,PL,PI : 89, 25, 64 Dry Dens : 68.00
Cohesion : Saturat : 97.00
Shear Str: Frict Ang: 00.00
Norm Str: 1.270, 1.308
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.20	1.409
0.50	1.388
1.00	1.348
2.00	1.223
4.00	1.044
8.00	0.859
12.00	0.759
3.00	0.857
0.75	0.982

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CH
Depth/Ele: 56.8/-44.8 Water Con: 65.00
LL,PL,PI : 93, 27, 66 Dry Dens : 62.00
Cohesion : Saturat :100.00
Shear Str: Frict Ang: 00.00
Norm Str: 0.720, 1.522
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.10	1.647
0.25	1.627
0.50	1.576
1.00	1.446
2.00	1.258

4.00	1.067
8.00	0.887
12.00	0.792
3.00	0.875
0.75	0.992
0.19	1.102

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-42UFT

Current Date: 12/10/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	ST T CL6 W/ LYS ML, RT	CL6		20												
1B	0.8	ST T & GR CL6 W/ ARS CH, SIF, RT	CL6		21												
2A	2.0	M T & GR CL6 W/ RT	CL6		26												
2B	2.8	ST GR & T CL6 W/ LNS SP, WD	CL6	10	25	98	123	95	UC	--	1496	2992	40	15	25	0.62	
3A	4.0	M GR & T CL6 W/ CC	CL6		28												
3B	4.8	M GR & DGR CH3 W/ O, WD, ARS ML, SL	CH3		32	88	119	99	UU	0	885		66	20	46	0.53	
NS	5.3	NO SAMPLE	NS														
4A	8.0	M GR CH3 W/ ARS ML	CH3		33												
4B	8.8	M GR & T CH3 W/ WD, ARS ML	CH3		32	90	119	99	UU	0	622		60	19	41	0.35	
NS	9.7	NO SAMPLE	NS														
5A	12.0	M GR CH3 W/ LYS ML, WD	CH3		42												
5B	12.8	VSO GR & GN CH3 W/ SL, ARS ML	CH3		48	73	108	99	UU	0	248		71	30	41	0.25	
5C	13.7	M GR CL4	CL4		37												
6A	16.0	M GR CL4 W/ LYS ML	CL4		36												
6B	16.8	SO GR CL4	CL4		35												
6C	17.7	SO GR CL4 W/ O	CL4	7	40	86	115	96	UC	--	390	779	32	19	13	0.19	
6D	18.6	GR ML3 W/ ARS CL	ML3		36												
7A	20.0	M GR CH3 W/ ARS ML, RT, O	CH3		51												
7B	20.8	M GR CH3 W/ RT	CH3		54												
7C	21.7	SO GR CH4 W/ CC, RT, ARS ML	CH4		58	64	100	94	UU	0	364		98	38	60	0.32	
7D	22.6	M GR CH3 W/ ARS ML, O	CH3		55												
8A	24.0	M GR CHOA	CHOA		82												
8B	24.8	M DGR & GR CHOA W/ WD	CHOA		126	37	87	96	UU	0	635		140	70	70	0.24	OC = 16.5%
8C	25.7	M GR & DGR PT	PT		162	29	75	92					298	142	156		CON
8D	26.6	M GR CH4 W/ ARS ML, O	CH4		71												
9A	28.0	M GR CH4 W/ ARS ML	CH4		63												
9B	28.8	SO GR CH3 W/ WD, LNS SM, SIF	CH3		67	60	101	100	UU	0	531		79	35	44	0.35	
9C	29.7	M GR CH4 W/ ARS ML	CH4		52												
9D	30.6	M GR CL4 W/ ARS CH	CL4		38												
10A	32.0	M GR CH3 W/ LNS & LYS ML	CH3		44												
10B	32.8	M GR CH3 W/ LNS & ARS ML	CH3		53												
10C	33.7	VSO GR CH3 W/ LNS SM, ML	CH3	1	59	65	103	99	UC	--	142	284	67	20	47	0.30	
10D	34.6	SO GR CH3 W/ LNS & ARS ML	CH3		58												
11A	36.0	SO GR CH4 W/ LNS & ARS ML	CH4		58												
11B	36.8	SO GR CH4 W/ ARS ML	CH4		62												
11C	37.7	SO GR CH4 W/ SL, ARS ML	CH4		63	62	102	100	UU	0	463		97	35	62	0.25	

Remarks: _____
FFEBJV, LLC.

Checked by: WJY
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-42UFT

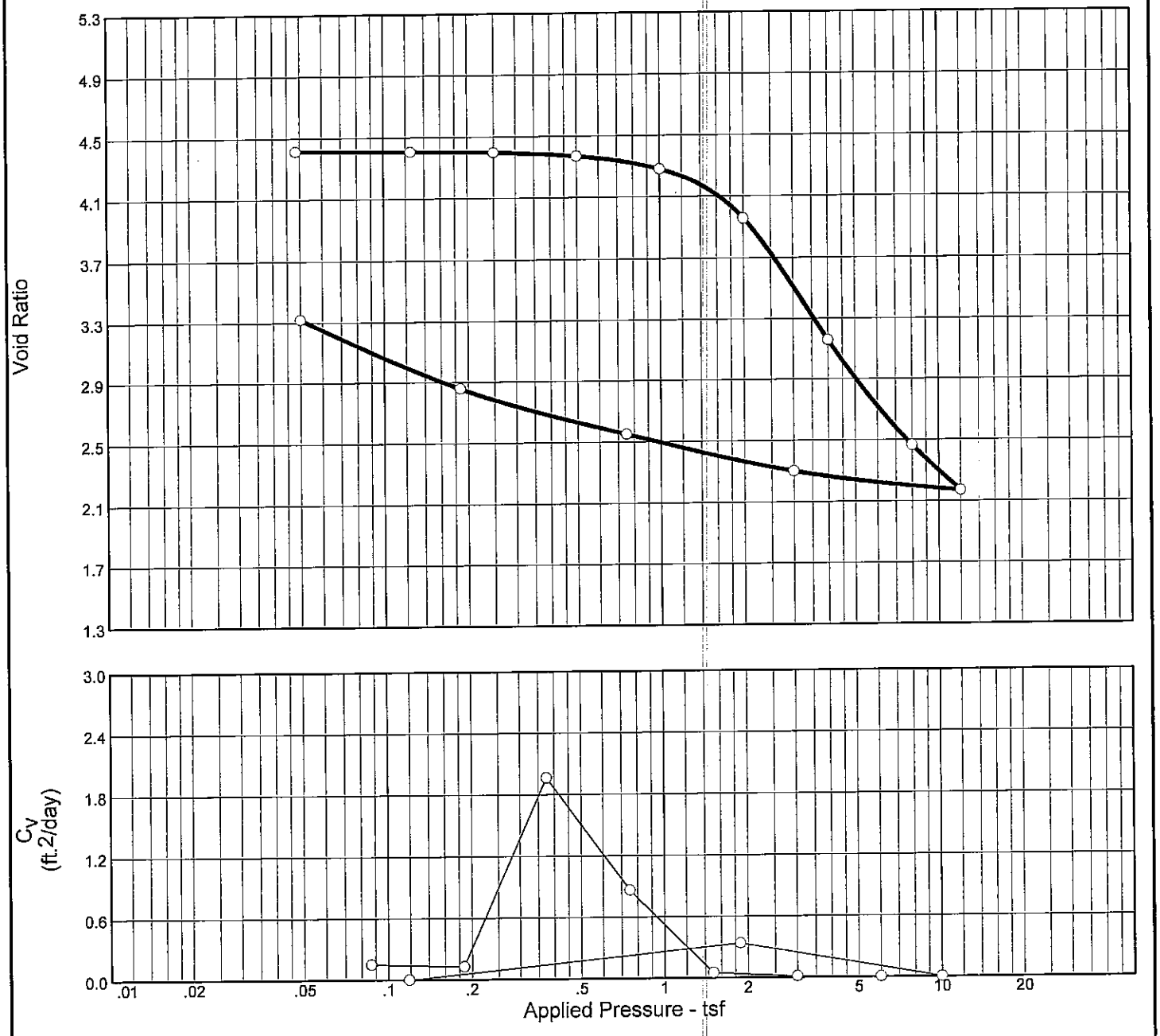
Current Date: 12/10/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
12A	40.0	M GR CH4 W/ ARS ML	CH4		67												
12B	40.8	M GR CH4 W/ ARS ML	CH4		53												
12C	41.7	SO GR CH4 W/ LNS & ARS ML	CH4		69	59	100	100					97	26	71		CON
12D	42.6	M GR CH4 W/ LNS & ARS ML	CH4		64												
13A	44.0	M GR CH4 W/ ARS ML	CH4		60												
13B	44.8	M GR CH4 W/ ARS ML	CH4		60												
13C	45.0	M GR CH4 W/ ARS ML, SL, O	CH4		70	59	100	100	UU	0	561		80	22	58	0.30	
13D	46.6	M GR CH4 W/ LNS & ARS ML	CH4		61												
14A	48.0	M GR CH4	CH4		67												
14B	48.8	M GR CH4	CH4		63												
14C	49.7	M GR CH4 W/ LNS SM, ML	CH4	4	60	64	103	99	UC	--	771	1542	80	22	58	0.39	
14D	50.6	M GR CH4 W/ LNS & ARS ML	CH4		55												
15A	52.0	M GR CH4 W/ ARS ML	CH4		62												
15B	52.8	M GR CH4 W/ ARS ML	CH4		62												
15C	53.7	M GR CH4 W/ ARS ML, SL	CH4	3	55	68	105	99	UC	--	781	1563	75	21	54	0.40	
15D	54.6	M GR CH4 W/ ARS ML	CH4		53												
NS	56.0	NO SAMPLE	NS														
17A	60.0	M GR CH4 W/ ARS ML	CH4		60												
17B	60.8	M GR CH4 W/ ARS ML	CH4		61												
17C	61.7	M GR & T CH4 W/ SL	CH4	10	65	61	100	98	UC	--	392	785	87	31	56	0.36	
18A	64.0	M GR CH4 W/ ARS ML	CH4		56												
18B	64.8	M GR CH4	CH4		56												
18C	65.7	M GR CH4 W/ SL	CH4	4	55	65	103	58	UC	--	956	1911	79	23	56	0.35	
18D	66.6	M GR CH4	CH4		64												
19A	68.5	M GR CH4 W/ ARS SM, SIF	CH4		62												

Remarks: _____
FFEBJV, LLC.

Checked by: WJY
File Name: TO 2

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
91.5 %	161.7 %	28.8	298	156	2.5	1.86	2.70	4.416

MATERIAL DESCRIPTION	USCS	AASHTO
M GR & DGR PT	PT	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-42UFT **Sample No.:** 8C **Elev./Depth:** 25.7

FFEBJV, LLC

St Rose, LA

Remarks:
Specific gravity is assumed

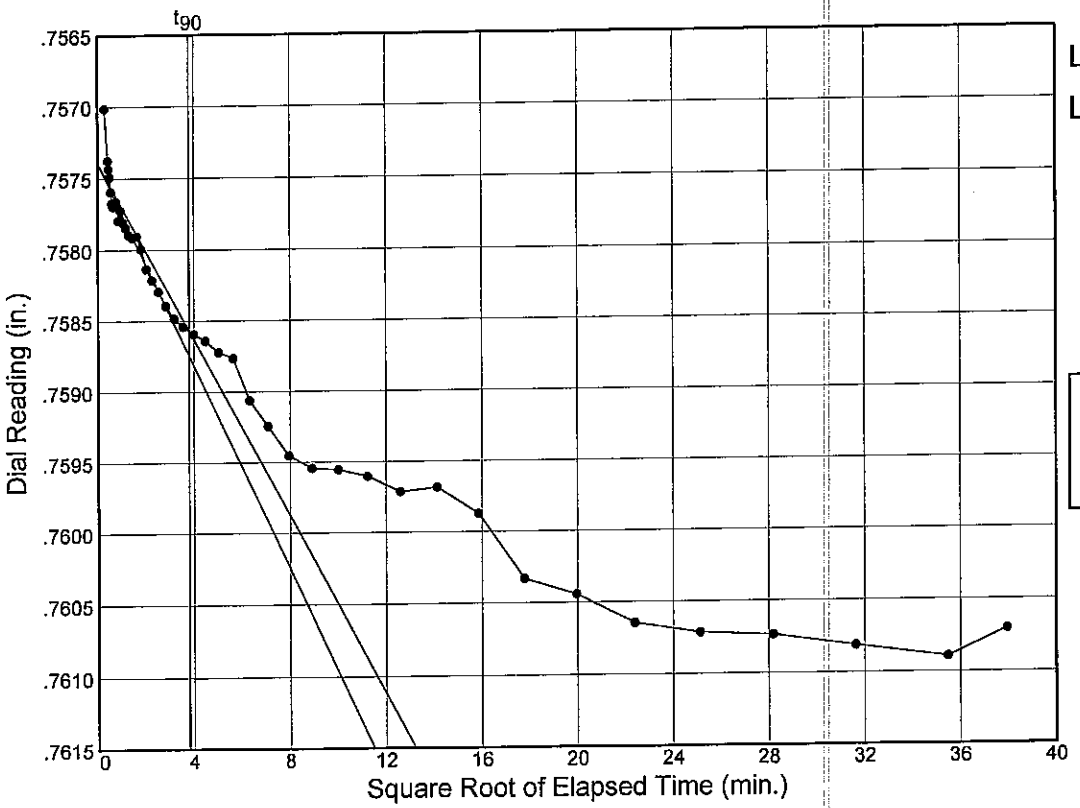
Tested by: JMB
Calculated by: WJY
Checked by: WJY

Figure

Dial Reading vs. Time

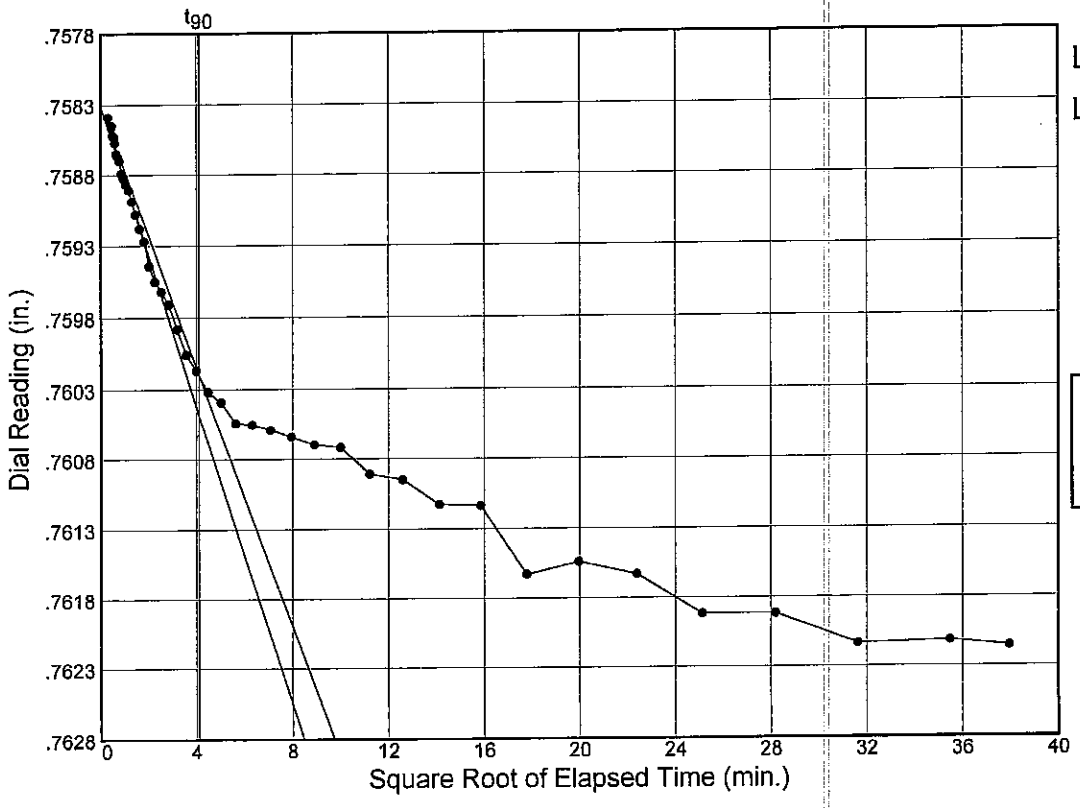
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-42UFT Sample No.: 8C Elev./Depth: 25.7



Load No.= 2
Load= 0.13 tsf
D_0 = 0.75739
D_{90} = 0.75857
D_{100} = 0.75870
T_{90} = 14.42 min.

C_V @ T_{90}
0.15 ft.^{2}/day



Load No.= 3
Load= 0.25 tsf
D_0 = 0.75831
D_{90} = 0.76020
D_{100} = 0.76041
T_{90} = 16.85 min.

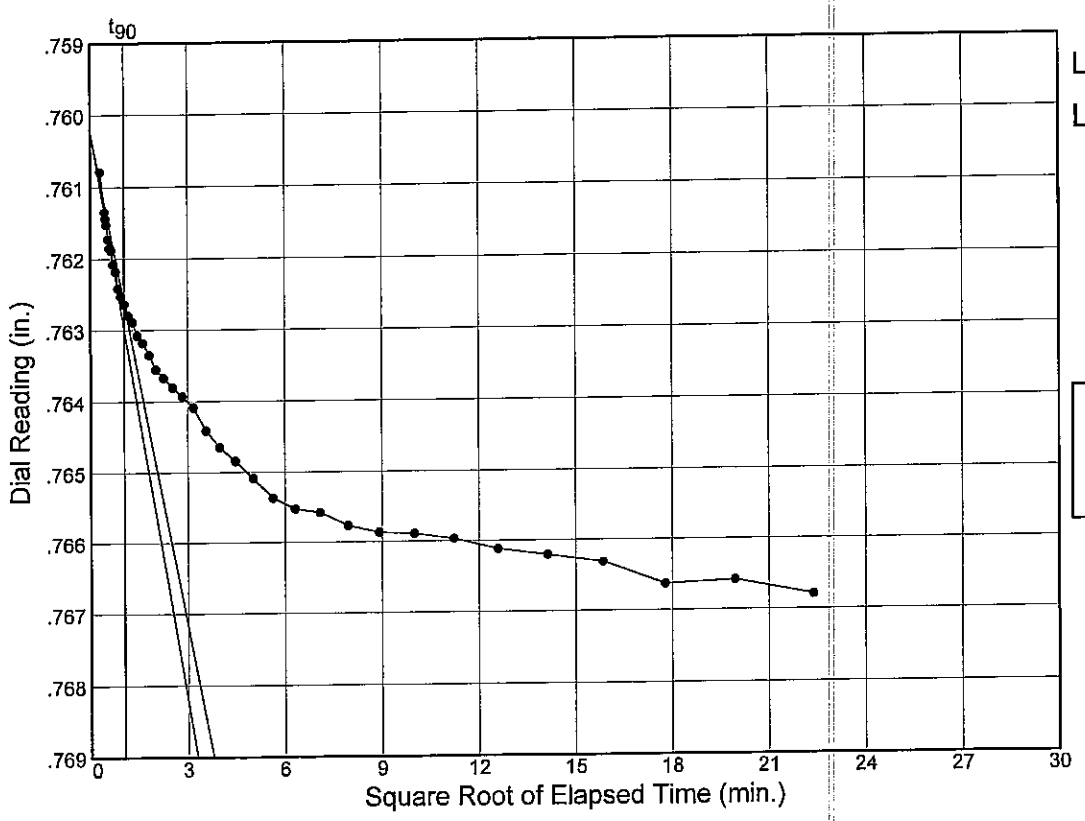
C_V @ T_{90}
0.13 ft.^{2}/day

Figure

Dial Reading vs. Time

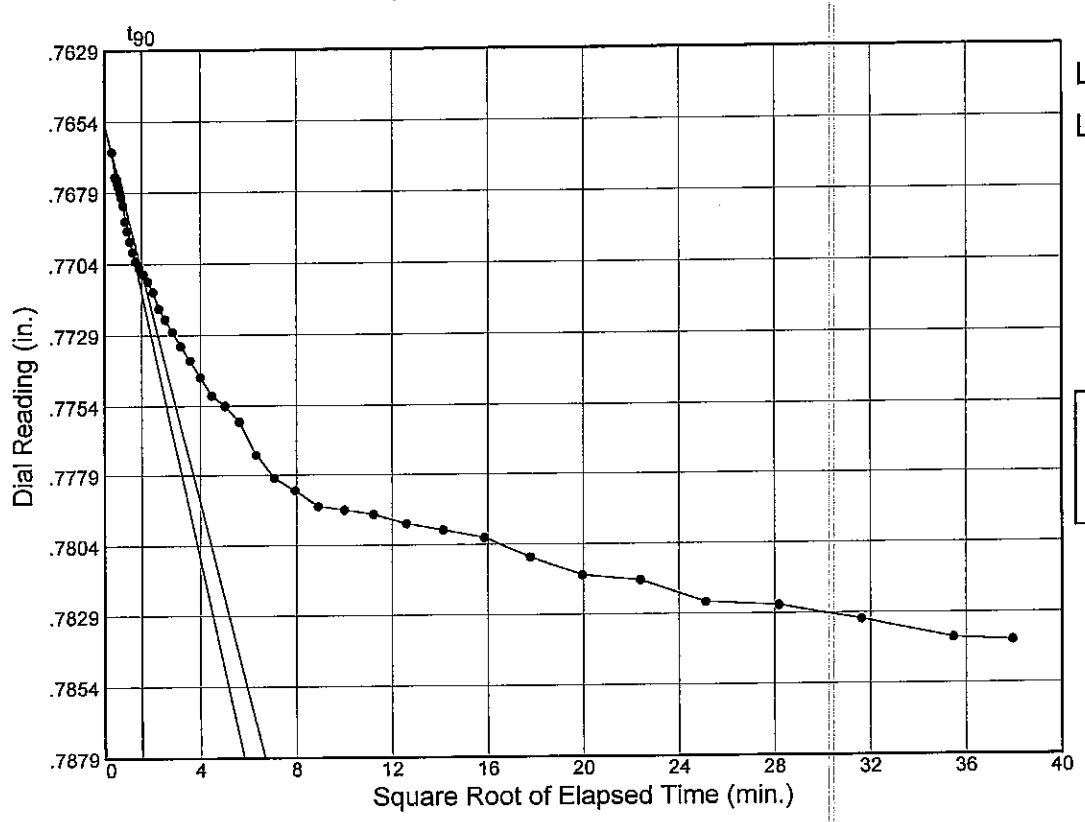
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-42UFT Sample No.: 8C Elev./Depth: 25.7



Load No.= 4
Load= 0.50 tsf
D_0 = 0.76020
D_{90} = 0.76262
D_{100} = 0.76289
T_{90} = 1.09 min.

C_v @ T_{90}
1.96 ft.^{2}/day



Load No.= 5
Load= 1.00 tsf
D_0 = 0.76544
D_{90} = 0.77068
D_{100} = 0.77126
T_{90} = 2.43 min.

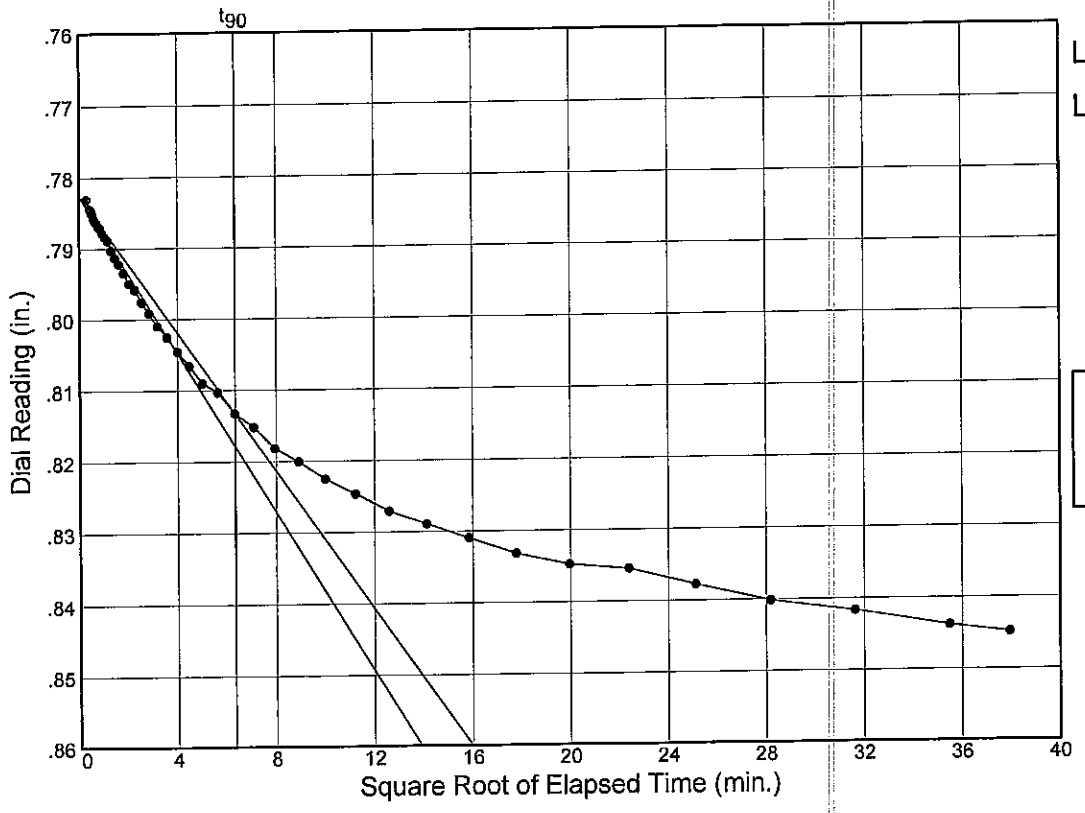
C_v @ T_{90}
0.86 ft.^{2}/day

Figure

Dial Reading vs. Time

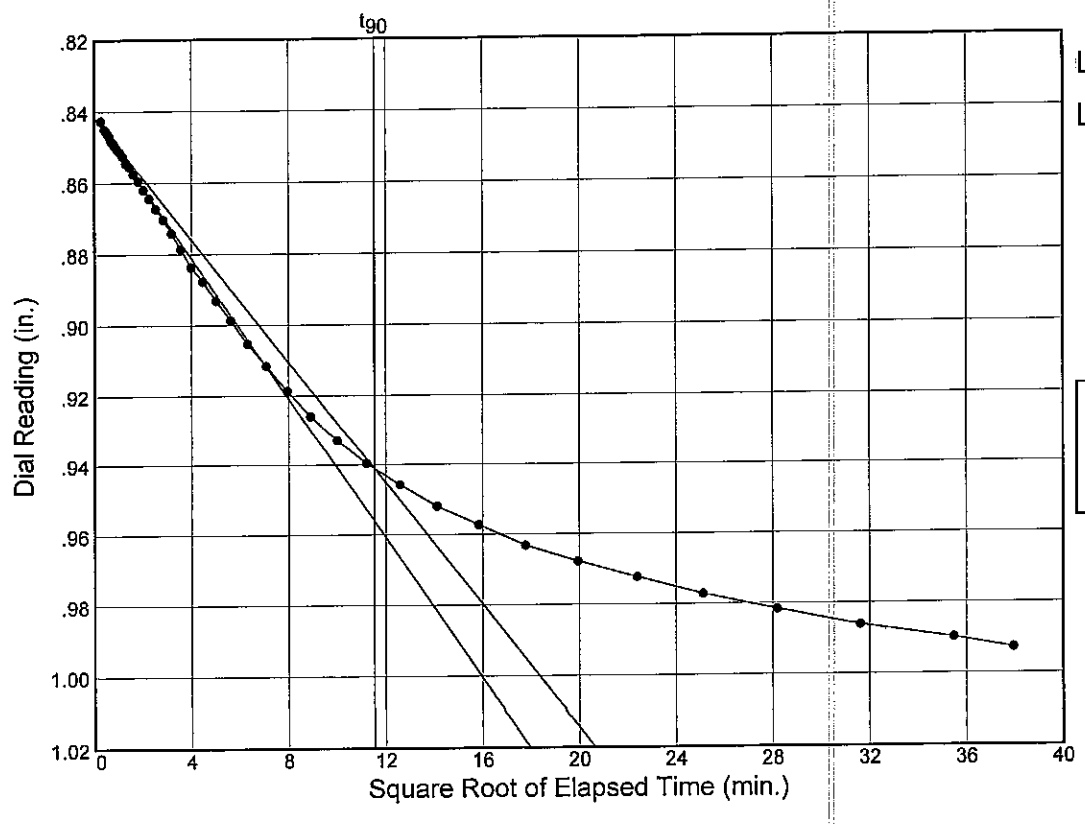
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-42UFT Sample No.: 8C Elev./Depth: 25.7



Load No.= 6
Load= 2.00 tsf
D_0 = 0.78259
D_{90} = 0.81326
D_{100} = 0.81666
T_{90} = 40.10 min.

C_v @ T_{90}
0.05 ft.^{2}/day



Load No.= 7
Load= 4.00 tsf
D_0 = 0.84132
D_{90} = 0.94105
D_{100} = 0.95213
T_{90} = 133.11 min.

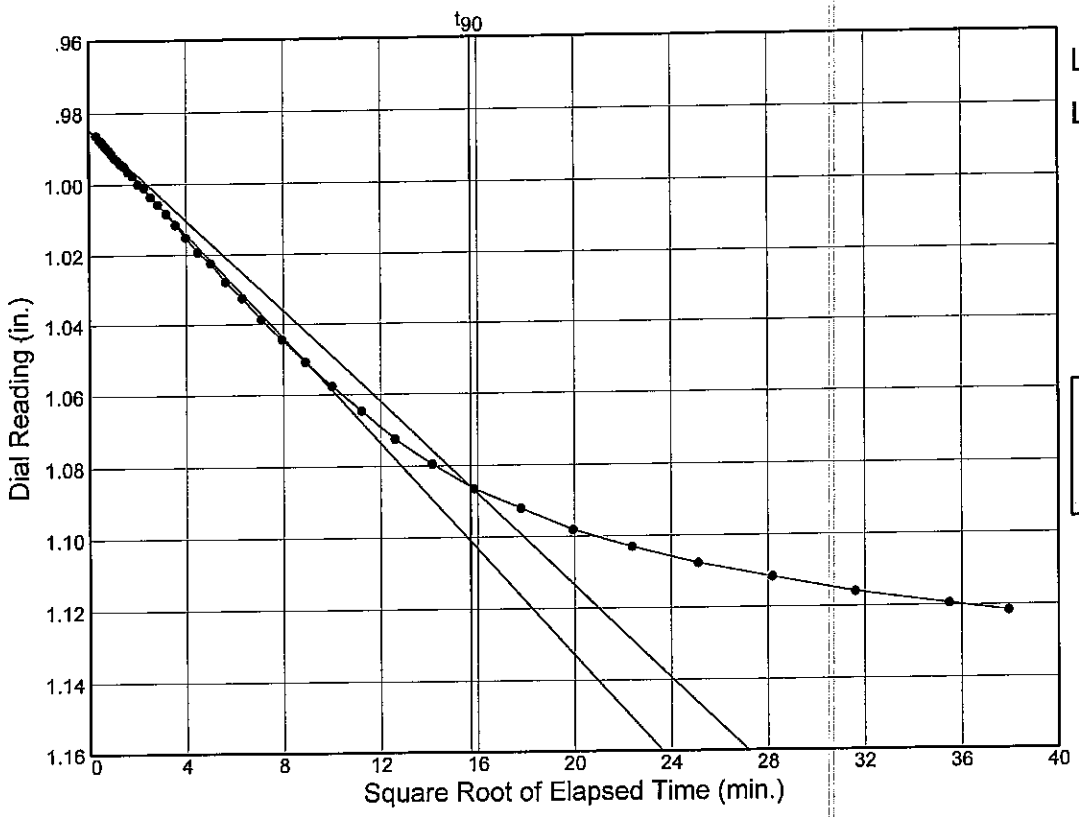
C_v @ T_{90}
0.01 ft.^{2}/day

Figure

Dial Reading vs. Time

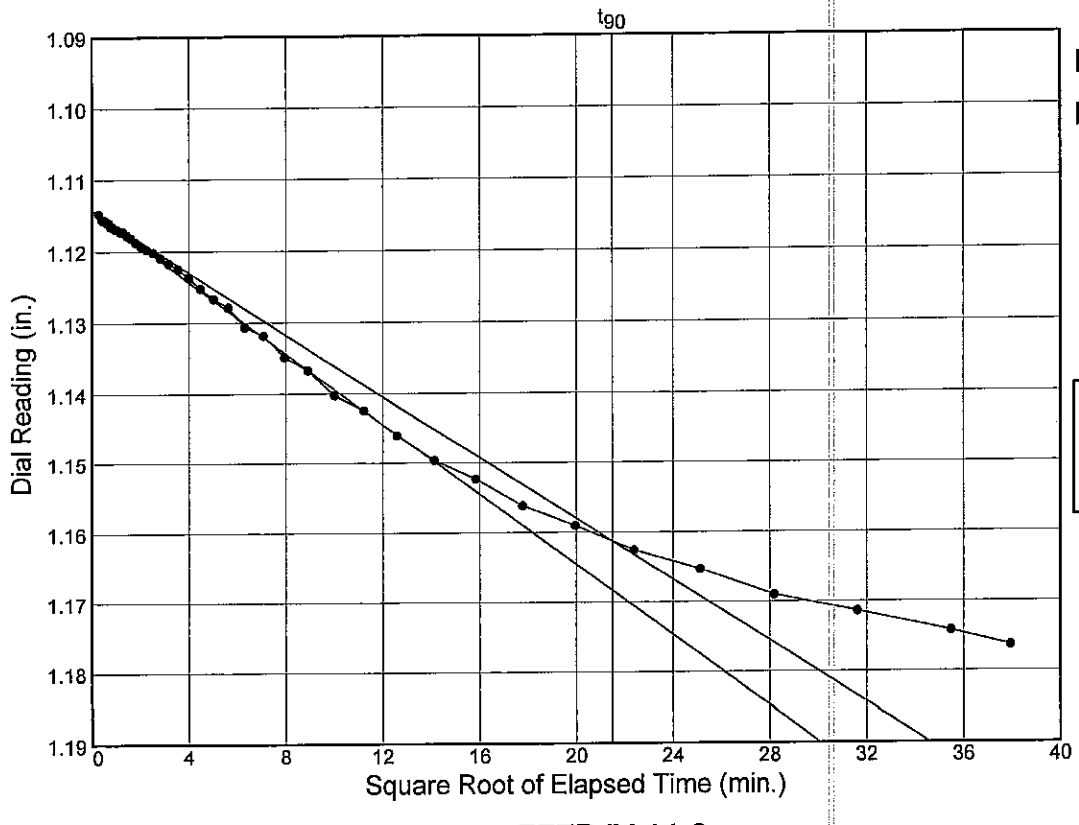
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-42UFT Sample No.: 8C Elev./Depth: 25.7



Load No.= 8
Load= 8.00 tsf
D_0 = 0.98454
D_{90} = 1.08589
D_{100} = 1.09715
T_{90} = 246.81 min.

C_v @ T_{90}
0.00 ft.^{2}/day



Load No.= 9
Load= 12.00 tsf
D_0 = 1.11419
D_{90} = 1.16129
D_{100} = 1.16652
T_{90} = 462.31 min.

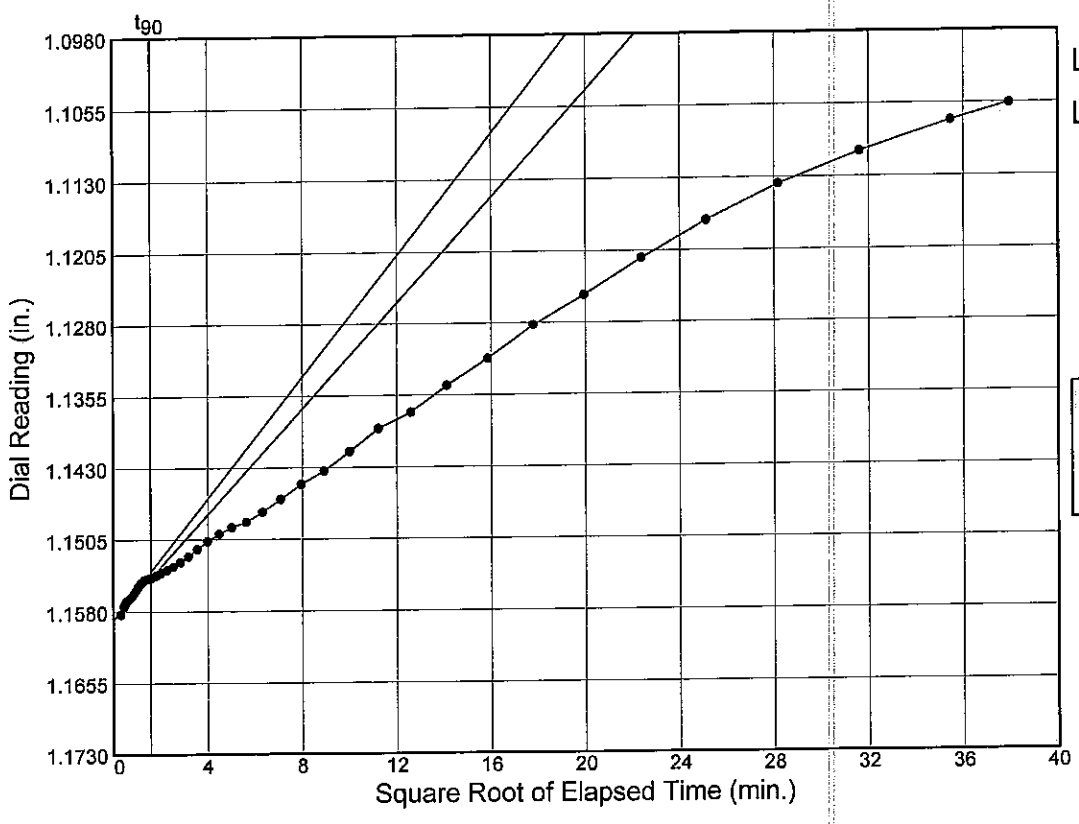
C_v @ T_{90}
0.00 ft.^{2}/day

Figure

Dial Reading vs. Time

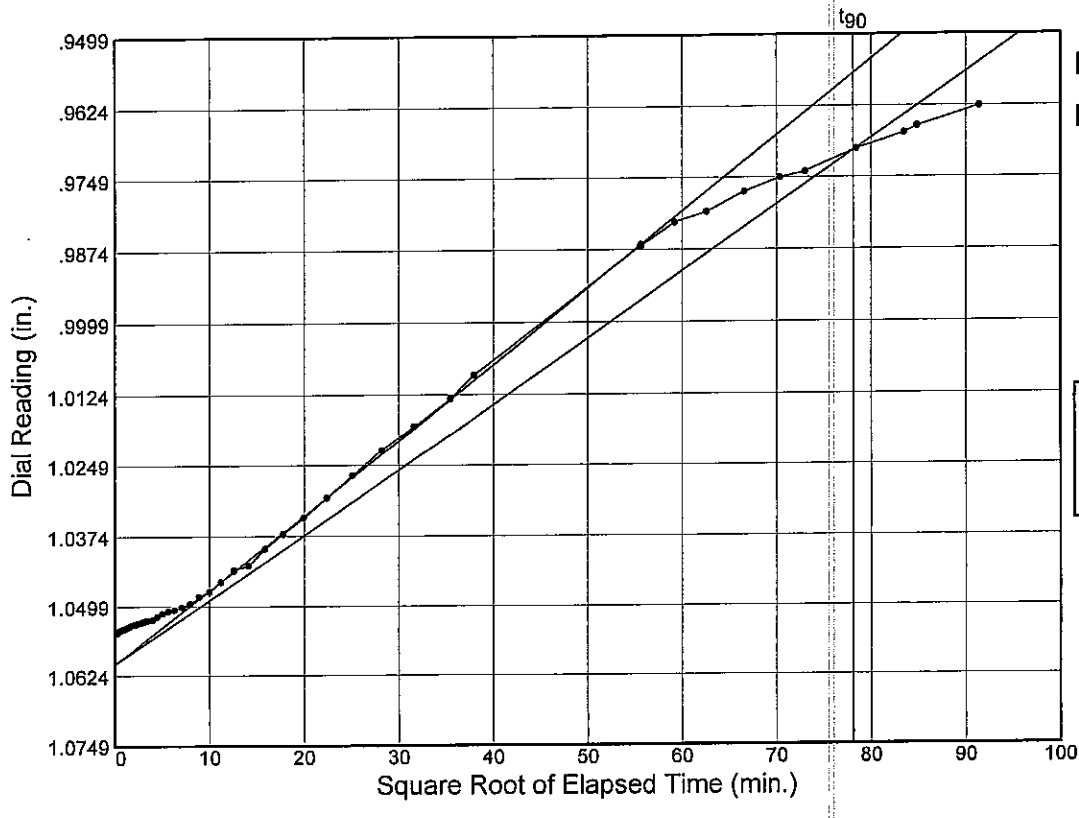
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-42UFT Sample No.: 8C Elev./Depth: 25.7



Load No.= 11
Load= 0.75 tsf
D_0 = 1.15886
D_{90} = 1.15449
D_{100} = 1.15400
T_{90} = 2.52 min.

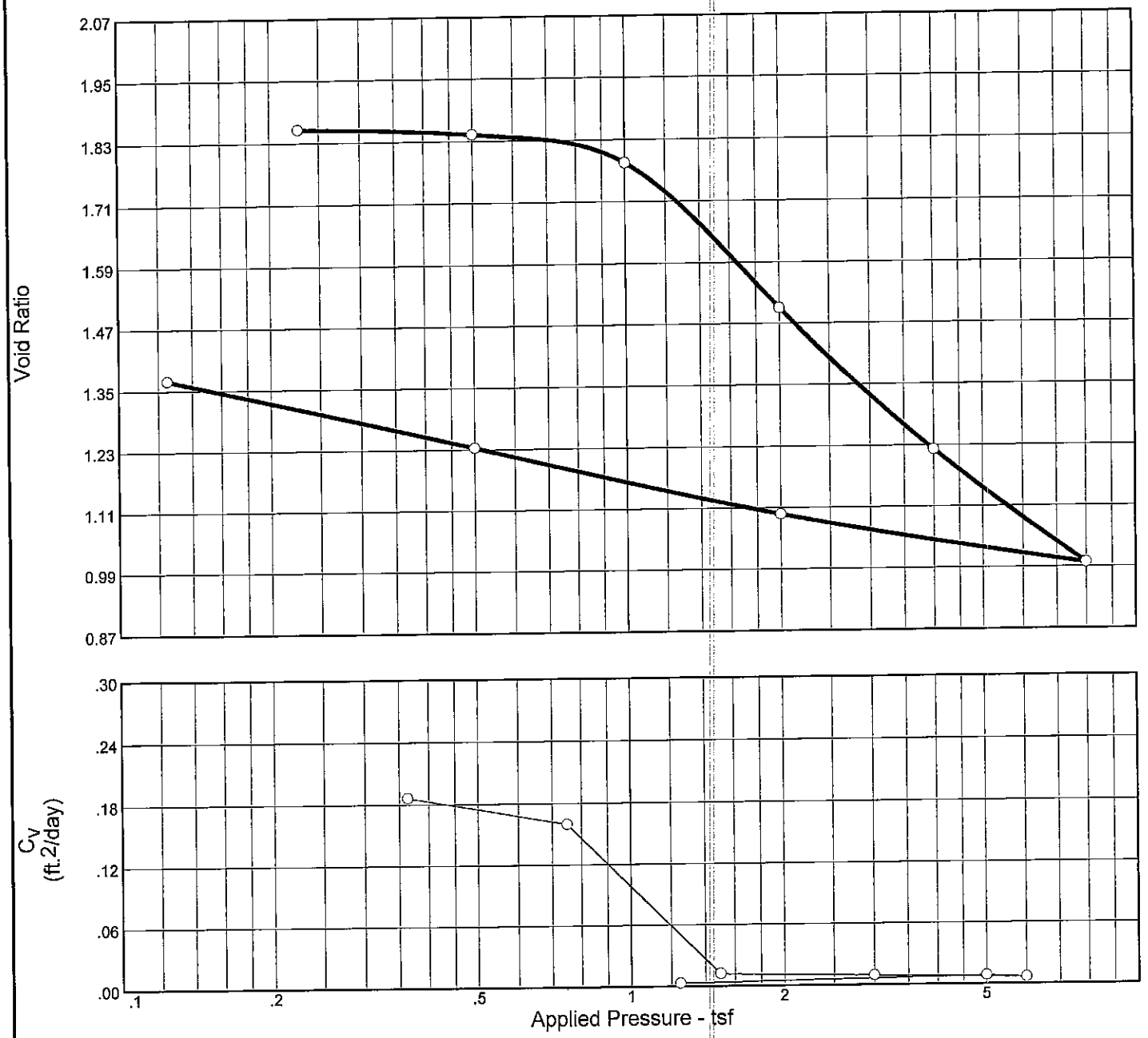
C_v @ T_{90}
0.34 ft.^{2}/day



Load No.= 13
Load= 0.05 tsf
D_0 = 1.06034
D_{90} = 0.97014
D_{100} = 0.96012
T_{90} = 6103.10 min.

C_v @ T_{90}
0.00 ft.^{2}/day

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
99.6 %	68.6 %	59.1	97	71	2.72	1.06	1.04	1.873

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CH4 W/ LNS & ARS ML	CH4	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-42UFT **Sample No.:** 12C **Elev./Depth:** 41.7

FFEBJV, LLC

St Rose, LA

Remarks:
Specific gravity is assumed

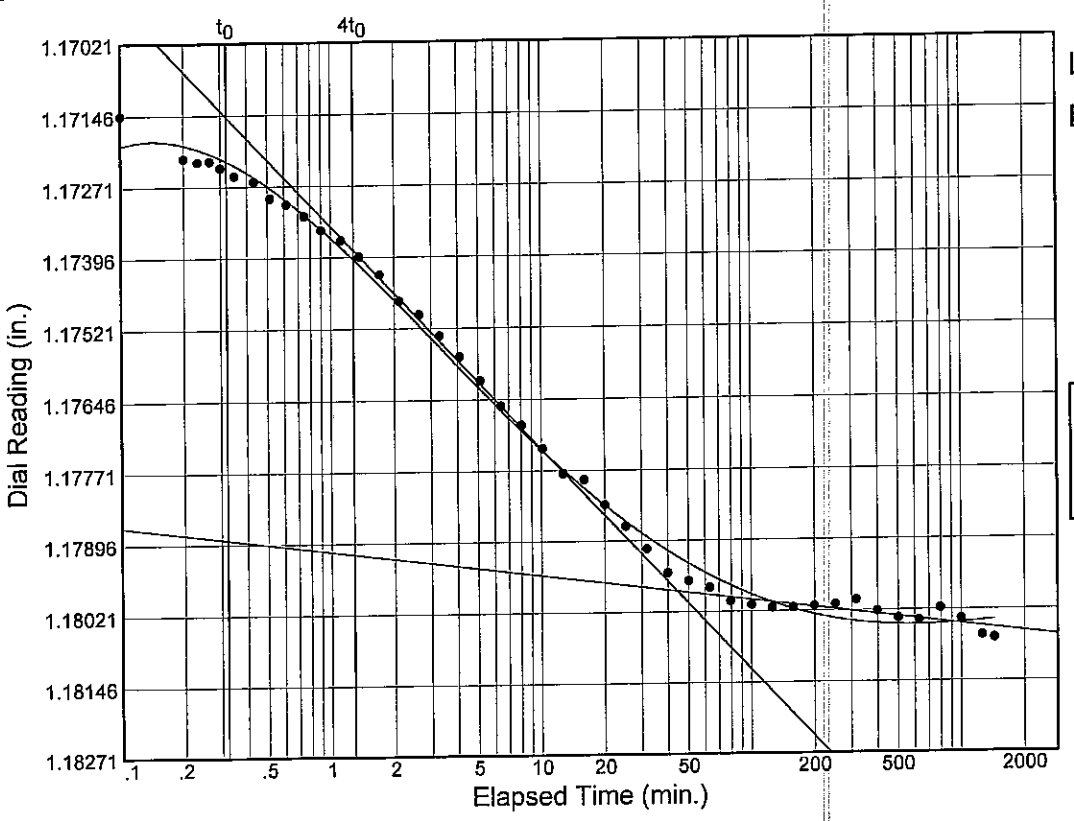
Tested by: JMB
Calculated by: WJY
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

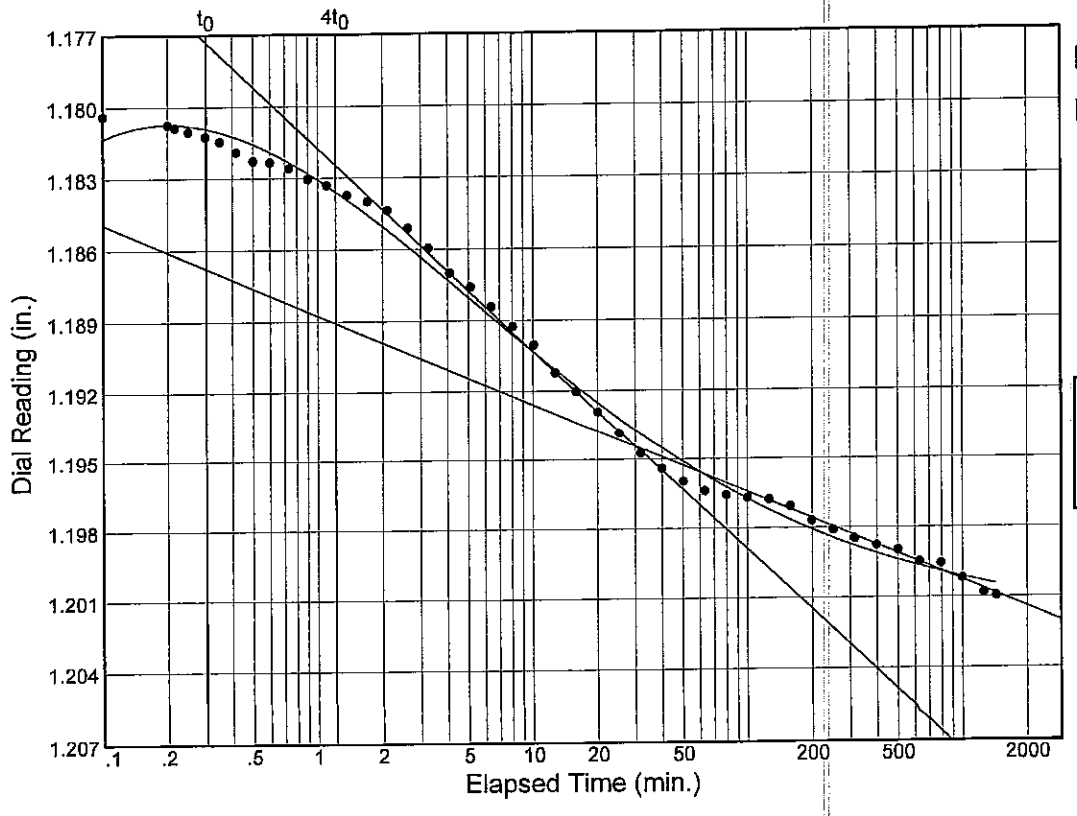
Source: WWHC-42UFT Sample No.: 12C Elev./Depth: 41.7



Load No.= 2
Load= 0.50 tsf
D_0 = 1.17053
D_{50} = 1.17519
D_{100} = 1.17985
T_{50} = 2.66 min.

C_v @ T_{50}
0.19 ft.^{2}/day

C_α = 0.000



Load No.= 3
Load= 1.00 tsf
D_0 = 1.17826
D_{50} = 1.18634
D_{100} = 1.19443
T_{50} = 3.02 min.

C_v @ T_{50}
0.16 ft.^{2}/day

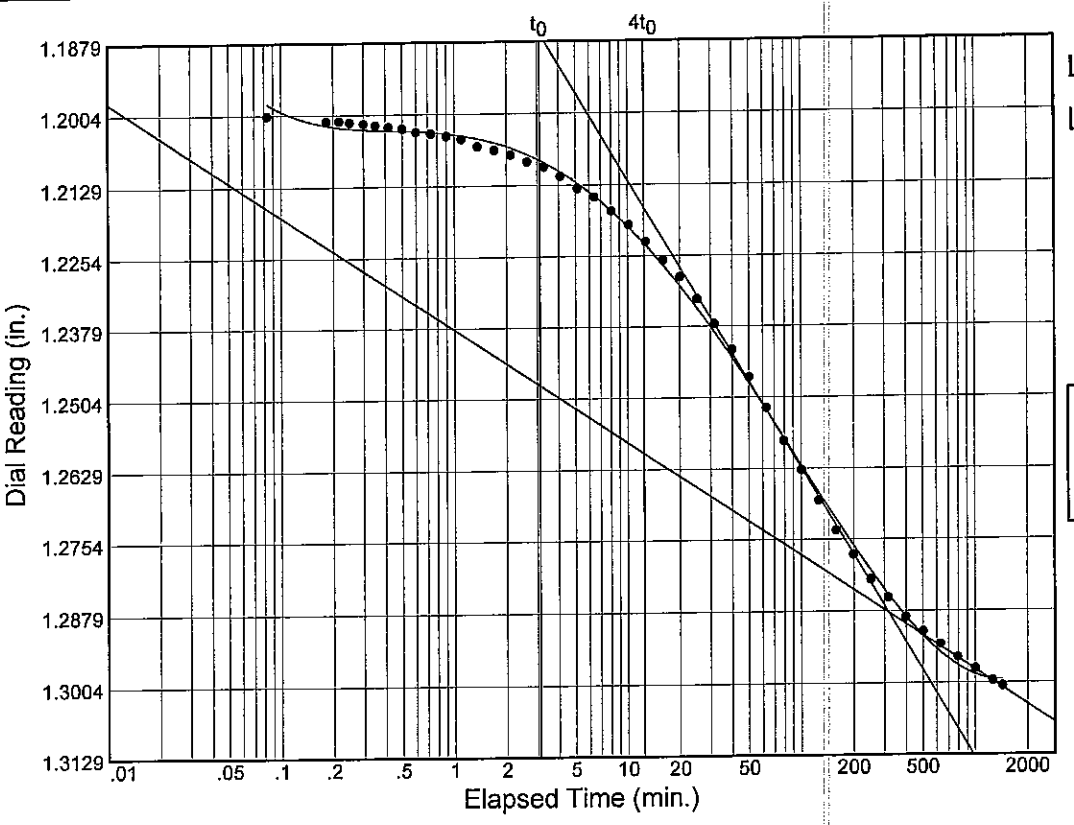
C_α = 0.004

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

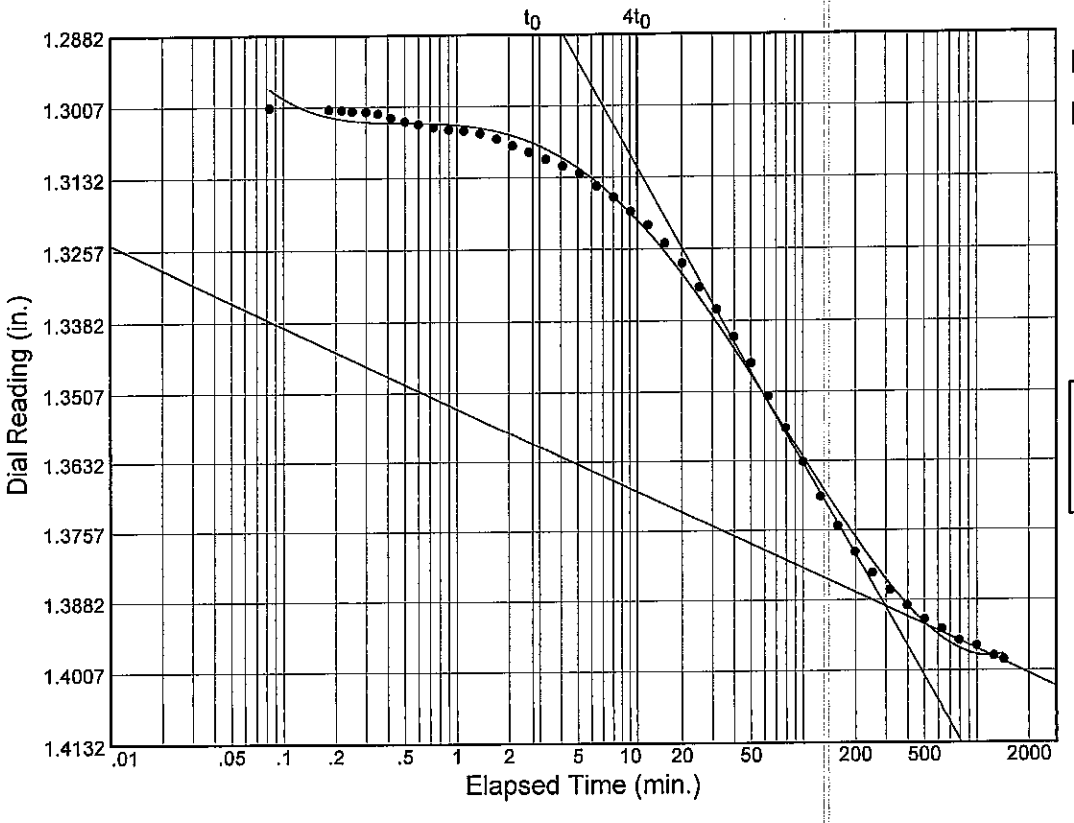
Source: WWHC-42UFT Sample No.: 12C Elev./Depth: 41.7



Load No.= 4
Load= 2.00 tsf
D_0 = 1.19390
D_{50} = 1.24103
D_{100} = 1.28817
T_{50} = 35.42 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.020



Load No.= 5
Load= 4.00 tsf
D_0 = 1.29375
D_{50} = 1.34151
D_{100} = 1.38928
T_{50} = 37.08 min.

C_v @ T_{50}
0.01 ft.^{2}/day

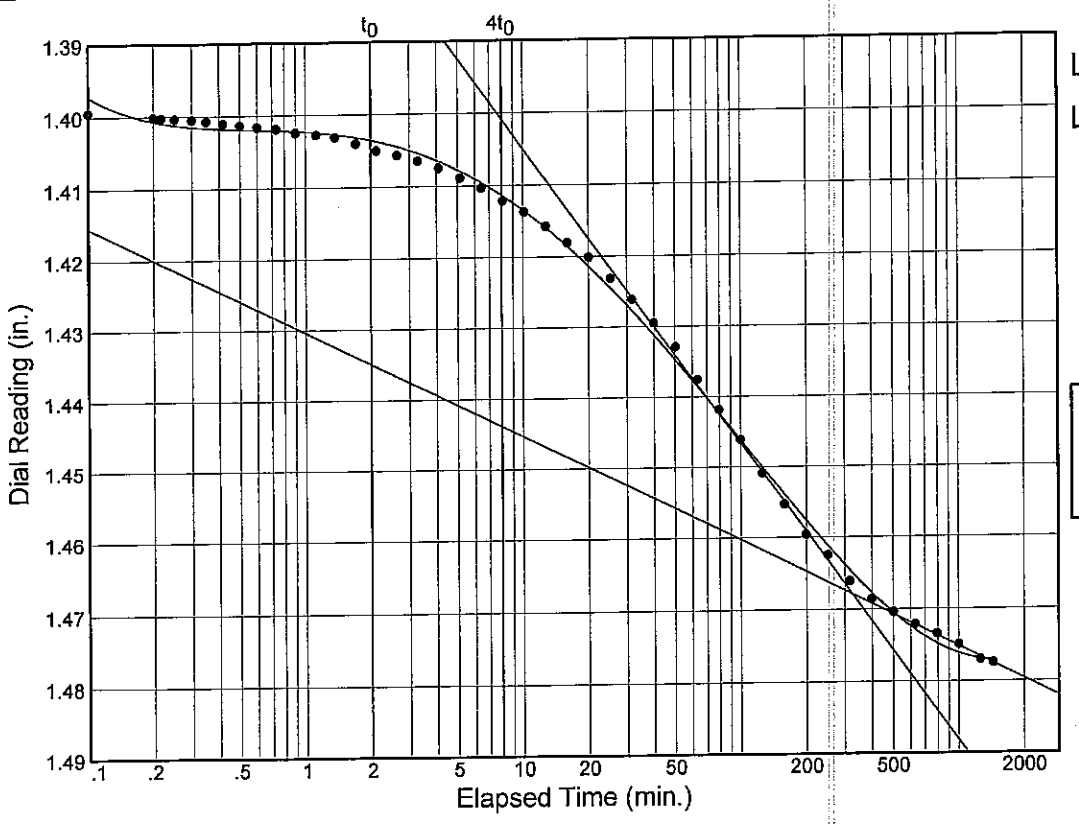
C_α = 0.016

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

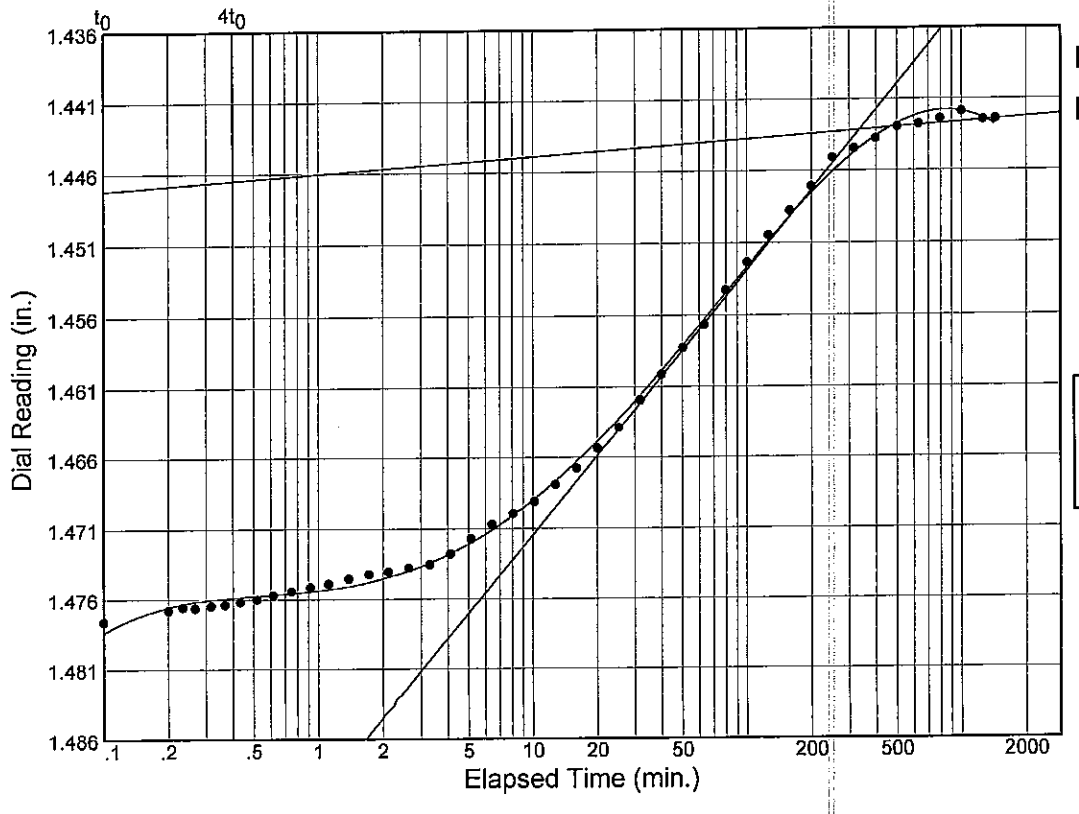
Source: WWHC-42UFT Sample No.: 12C Elev./Depth: 41.7



Load No.= 6
Load= 8.00 tsf
D_0 = 1.39572
D_{50} = 1.43178
D_{100} = 1.46784
T_{50} = 41.58 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.019



Load No.= 7
Load= 2.00 tsf
D_0 = 1.48089
D_{50} = 1.46201
D_{100} = 1.44314
T_{50} = 29.91 min.

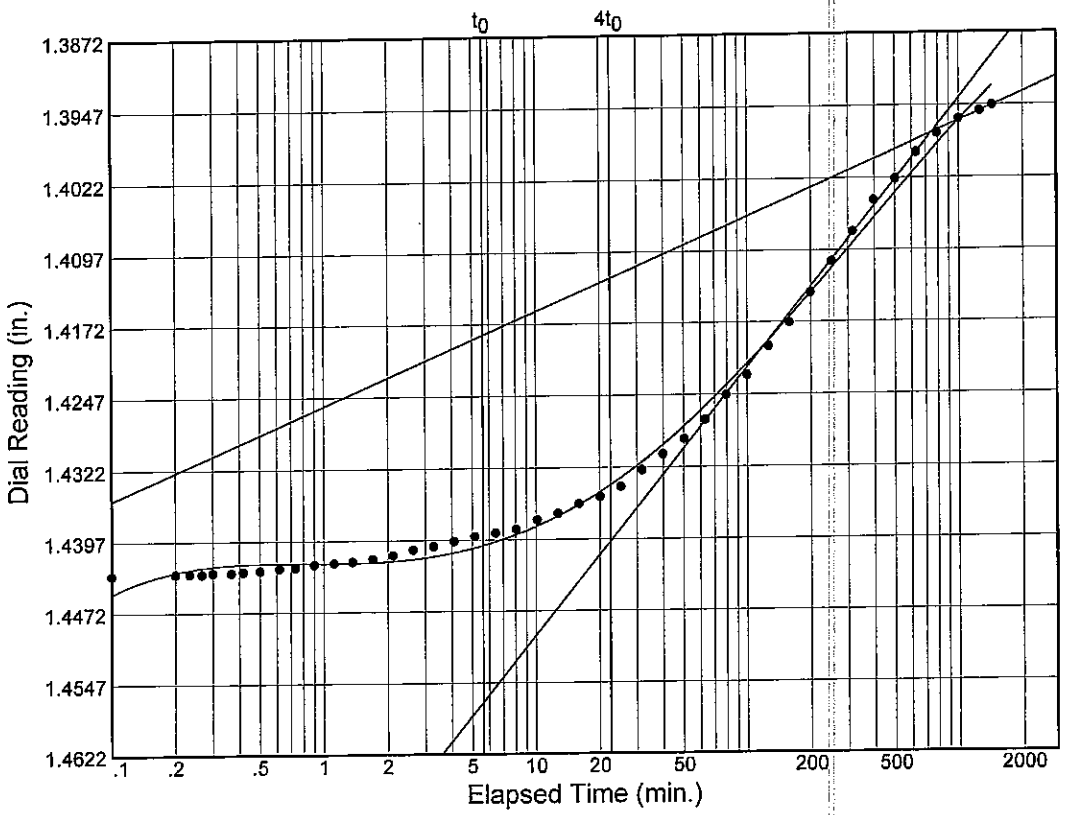
C_v @ T_{50}
0.01 ft.^{2}/day

Figure

Dial Reading vs. Time

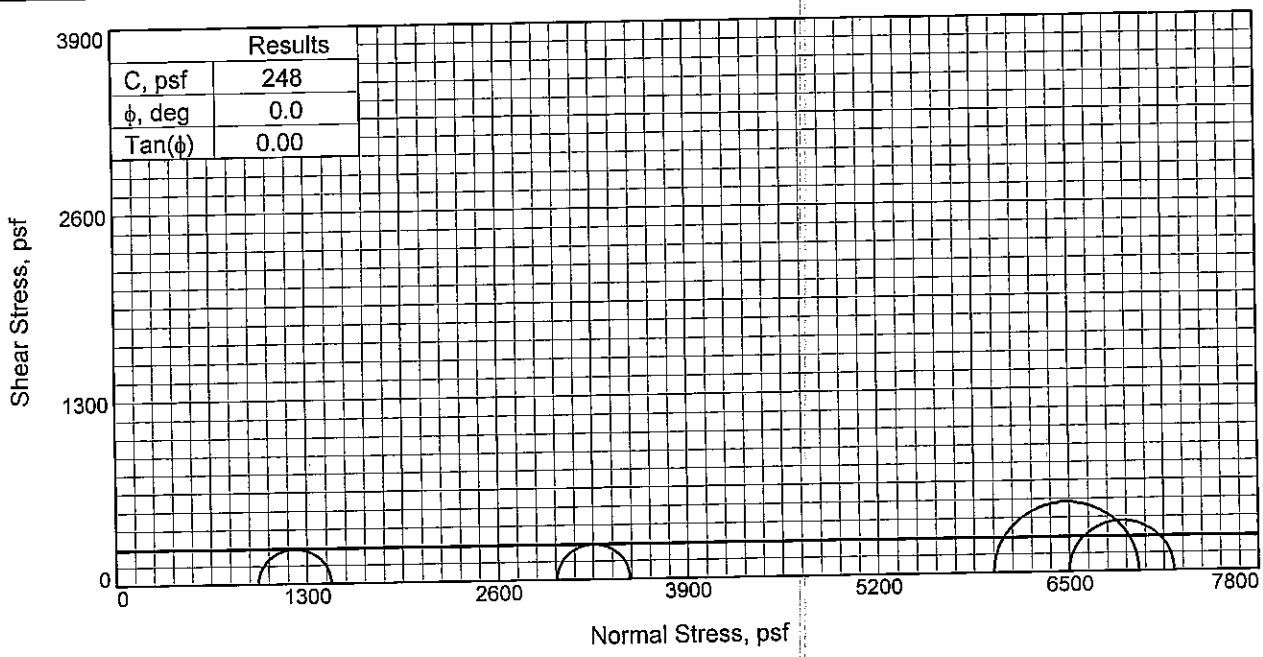
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

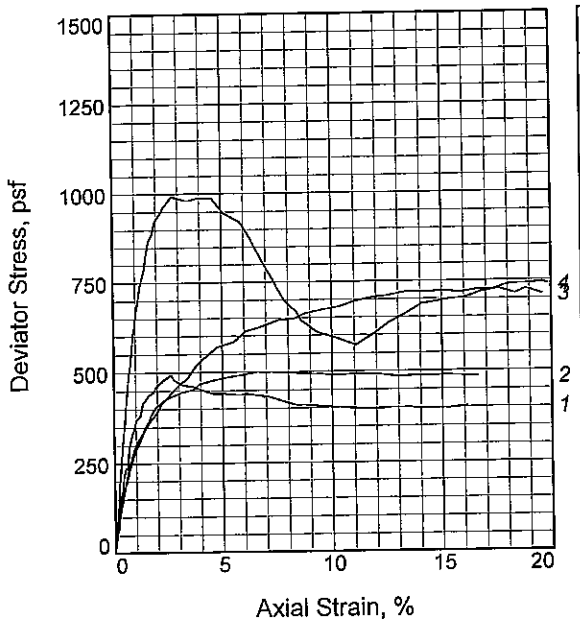
Source: WWHC-42UFT Sample No.: 12C Elev./Depth: 41.7



Load No.= 8
Load= 0.50 tsf
D_0 = 1.44658
D_{50} = 1.42205
D_{100} = 1.39752
T_{50} = 94.49 min.

C_v @ T_{50}
0.00 ft.^{2}/day





Sample No.		1	2	3	4
Initial	Water Content, %	52.6	53.7	46.1	41.2
	Dry Density, pcf	69.0	68.6	73.4	80.8
	Saturation, %	98.5	99.6	95.9	102.4
	Void Ratio	1.4416	1.4565	1.2974	1.0872
	Diameter, in.	1.409	1.408	1.403	1.406
	Height, in.	3.136	3.131	3.144	3.124
At Test	Water Content, %	52.6	53.7	46.1	41.2
	Dry Density, pcf	69.0	68.6	73.4	80.8
	Saturation, %	98.5	99.6	95.9	102.4
	Void Ratio	1.4416	1.4565	1.2974	1.0872
	Diameter, in.	1.409	1.408	1.403	1.406
	Height, in.	3.136	3.131	3.144	3.124
Strain rate, in./min.		0.031	0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.73	20.84	41.55	45.12
Fail. Stress, psf		493	500	993	722
Strain, %		2.6	6.6	2.8	15.1
Ult. Stress, psf		397	489	572	722
Strain, %					
σ_1 Failure, psf		1462	3501	6976	7219
σ_3 Failure, psf		969	3000	5983	6497

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR & GN CH3 W/ SL, ARS ML

LL= 71 **PL=** 30 **PI=** 41
Assumed Specific Gravity= 2.70
Remarks:

Client: U.S. Army Corps of Engineers

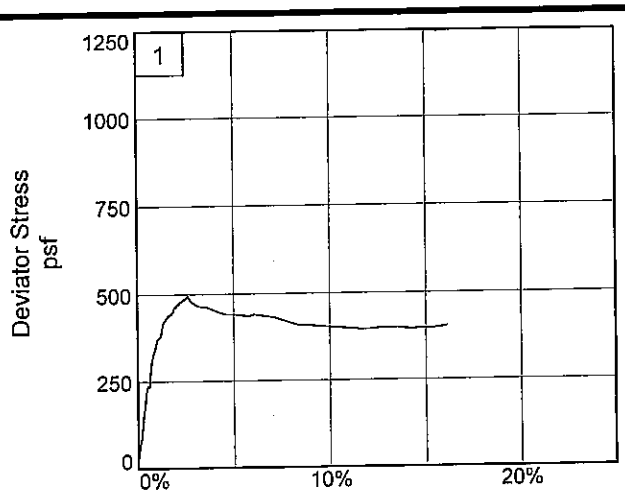
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-42UFT **Depth:** 12.8
Sample Number: 5B
Proj. No.: 0022-0002 **Date Sampled:** 5/21/07

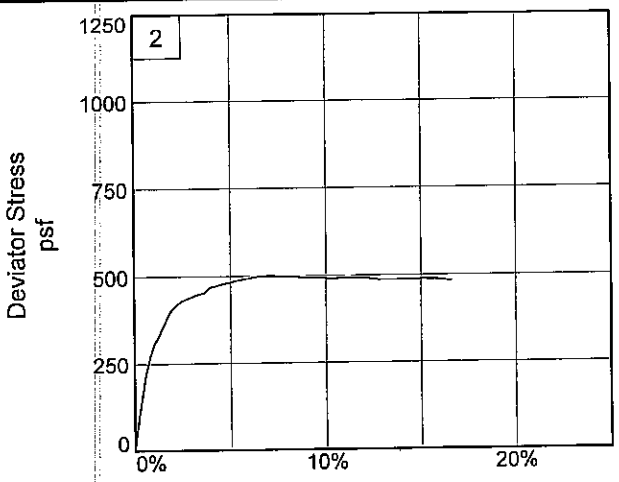
TRIAXIAL SHEAR TEST REPORT

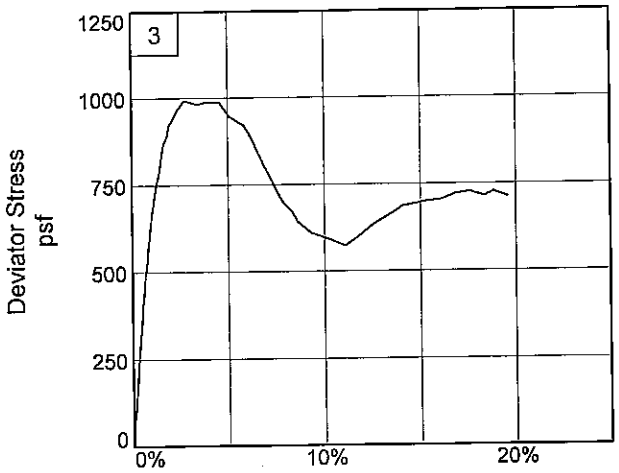
FFEBJV, LLC

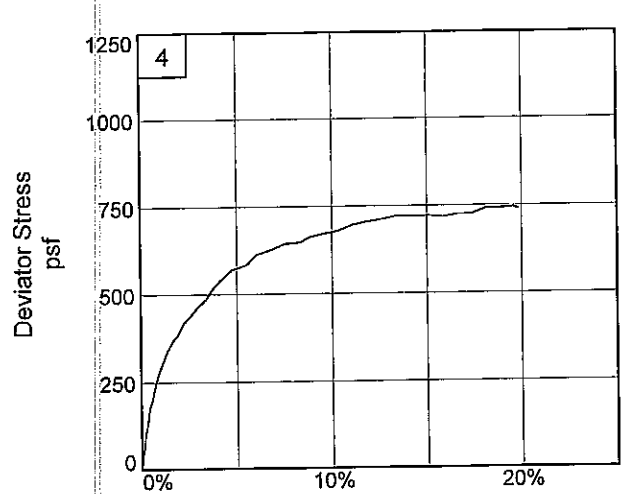
Figure _____

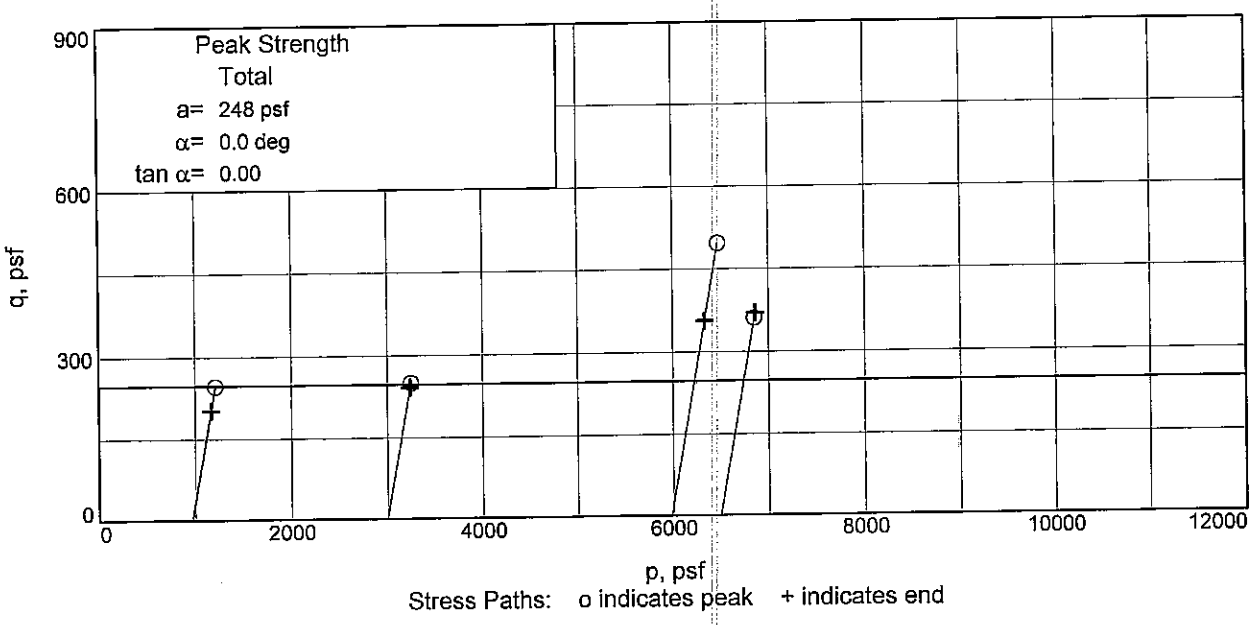
Tested By: DW/JMB **Checked By:** WJY











Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-42UFT **Depth:** 12.8 **Sample Number:** 5B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JMB **Checked By:** WJY

BOR. WWHC-42UFT
STA. LAT N29^50'28.49" LONG W90^07'19.49"

12 APRIL 2007

GROUND EL. 5.7

```
 0.0  0.8 20  0.8CL  SISST  T       RT
 0.8  2.0 21     CL     ST  T GR    CS SIFRT
 2.0  2.8 26  2.8CL      M  T GR    RT
 2.8  4.0 25  4.0CL  SS ST GR  T    WD              1496123 40 15      25  31
 4.0  4.8 28  4.8CL      M GR  T    CC
 4.8  5.3 34  5.3CH  SIS M GR DGR    O WD SL
 5.3  8.0     8.0NS
 8.0  8.8 33  8.8CH  SIS M GR
 8.8  9.7 33  9.7CL      M GR  T    WD
 9.7 12.0    12.0NS
12.0 12.8 42     CH  SIS M GR       WD
12.8 13.7 48 13.7CH  SISVSOGR GN    SL
13.7 16.0 37 16.0CL      M GR
16.0 16.8 36 16.8CL  SIS M GR
16.8 17.7 35     CL        GR
17.7 18.6 36 18.6CL     SO GR                    390115 32 19       40180
18.6 20.0 36 20.0ML        GR       CS
20.0 20.8 51 20.8CH  SIS M GR       RT  O
20.8 21.7 54 21.7CH      M GR       RT
21.7 22.6 60     CH  SISSO GR       CC RT
22.6 24.0 55 24.0CH  SIS M GR        O
24.0 24.8 82     CH   O  M GR
24.8 25.7126 25.7CH   O  M GR DGRGR WD
25.7 26.6162 26.6PT      M GR DGR
26.6 28.0 71     CH  SIS M GR        O
28.0 28.8 63 28.8CH  SIS M GR
28.8 29.7 63 29.7CH  SS SO GR        O WD SIF
29.7 30.6 52 30.6CH  SIS M GR
30.6 32.0 38 32.0CL        GR       CS
32.0 32.8 44     CH  SIS M GR
32.8 33.7 53     CH  SIS M GR
33.7 34.6 50     CH  SISVSOGR       SS              142103 67 20       59 340
34.6 36.0 58     CH  SISSO GR
36.0 36.8 58     CH  SISSO GR
36.8 37.7 62     CH  SISSO GR
37.7 40.0 58     CH  SISSO GR       SL
```

40.0 40.8 67 CH SIS M GR
40.8 41.7 53 CH SIS M GR
41.7 42.6 69 CH SIS M GR
42.6 44.0 64 CH SIS M GR
44.0 44.8 60 CH SIS M GR
44.8 45.7 60 CH SIS M GR
45.7 46.6 65 CH SIS M GR SL O
46.6 48.0 61 48.0CH SIS M GR
48.0 48.8 67 CH M GR
48.8 49.7 63 49.7CH M GR
49.7 50.6 63 CH SIS M GR SS 771103 80 22 60 500
50.6 52.0 55 CH SIS M GR
52.0 52.8 62 CH SIS M GR
52.8 53.7 62 CH SIS M GR
53.7 54.6 58 CH SIS M GR SL 781105 75 21 55 540
54.6 56.0 53 56.0CH SIS M GR
56.0 60.0 60.0NS
60.0 60.8 60 CH SIS M GR
60.8 61.7 61 61.7CH SIS M GR
61.7 64.0 59 64.0CH M GR T SL 392100 87 31 65 620
64.0 64.8 56 64.8CH SIS M GR
64.8 65.7 56 CH M GR
65.7 66.6 55 CH M GR SL 956103 79 23 55 660
66.6 68.0 64 CH M GR
68.0 70.0 62 70.0CH M GR S SIF 16
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 5.10/-0.60 Water Con: 32.00
LL,PL,PI : 66, 20, 46 Dry Dens : 88.00
Cohesion : 0.443 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 9.10/-3.40 Water Con: 32.00
LL,PL,PI : 60, 19, 41 Dry Dens : 90.00
Cohesion : 0.311 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 23.00/-17.3 Water Con: 58.00
LL,PL,PI : 98, 38, 60 Dry Dens : 64.00
Cohesion : 0.182 Saturat : 94.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CHO
Depth/Ele: 25.10/-19.4 Water Con:126.00
LL,PL,PI : 140, 70, 70 Dry Dens : 37.00
Cohesion : 0.318 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 29.10/-23.4 Water Con: 67.00
LL,PL,PI : 79, 35, 44 Dry Dens : 60.00
Cohesion : 0.266 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-32.3 Water Con: 63.00
LL,PL,PI : 97, 35, 62 Dry Dens : 62.00
Cohesion : 0.232 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 45.30/-39.6 Water Con: 70.00
LL,PL,PI : 80, 22, 58 Dry Dens : 59.00
Cohesion : 0.281 Saturat :100.00

Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : PT
Depth/Ele: 25.7/-20.0 Water Con:162.00
LL,PL,PI : 298,142,156 Dry Dens : 29.00
Cohesion : Saturat : 92.00
Shear Str: Frict Ang: 00.00
Norm Str: 1.860, 3.990
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.05	4.415
0.13	4.406
0.25	4.399
0.50	4.370
1.00	4.282
2.00	3.955
4.00	3.158
8.00	2.466
12.00	2.172
3.00	2.304
0.75	2.553
0.19	2.858
0.05	3.322

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CH
Depth/Ele: 41.7/-36.0 Water Con: 69.00
LL,PL,PI : 97, 26, 71 Dry Dens : 59.00
Cohesion : Saturat :100.00
Shear Str: Frict Ang: 00.00
Norm Str: 1.060, 1.761
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.23	1.856
0.50	1.843
1.00	1.786
2.00	1.501

4.00	1.222
8.00	0.998
2.00	1.098
0.50	1.234
0.13	1.370

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-43UCL

Current Date: 7/14/2008

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	ST T CH2 W/ LYS ML, RT	CH2		13												
1B	0.8	ST T CH2 W/ LYS ML, RT	CH2		15												
2A	2.0	ST T CH2 W/ LYS ML, RT, CC	CH2		18												
2B	2.8	ST GR CH3 W/ ARS ML, CC	CH3		21												
3A	4.0	M GR & T CH4 W/ ARS ML, RT	CH4		32												
4A	6.0	M GR CL4 W/ LYS ML	CL4		26												
4B	6.8	M GR CL4 W/ CC	CL4		28	97	124	100	UU	0	975		39	18	21	0.27	
5A	8.0	M GR CL4 W/ ARS ML	CL4		30												
5B	8.8	ST GR & BR CL4	CL4		25	101	125	99	UU	0	1422		40	16	24	0.54	
NS	9.5	NO SAMPLE	NS														
6A	12.0	ST GR CH3 W/ ARS ML, RT	CH3		34												
6B	12.8	ST DGR CH3 W/ WD, ARS SP	CH3		34	84	113	91	UU	0	1043		63	24	39	0.60	
NS	13.3	NO SAMPLE	NS		28												
7A	16.0	ST GR CH3 W/ WD	CH3		30												
7B	16.8	ST DGR CH3 W/ ARS ML, WD	CH3	7	30	92	119	95	UC	--	1018	2035	53	20	33	0.55	
NS	17.7	NO SAMPLE	NS														
8A	20.0	SO GR CL4 W/ RT	CL4		35												
8B	20.8	SO T & GR CL4 W/ ARS CH, RT	CL4		34	89	119	100	UU	0	426		40	17	23	0.23	
8C	21.7	SO GR & T CL6	CL6		35	81	109	88					47	17	30		CON
9A	24.0	SO GR CL4 W/ RT	CL4		35												
9B	24.8	SO GR & DGR CH2 W/ RT, WD	CH2		32	82	118	99	UU	0	494		55	20	35	0.27	
9C	25.7	SO GR CH2 W/ RT, G	CH2		33												
10A	28.0	SO GR CH4 W/ ARS ML, RT	CH4		54												
10B	28.8	M GR CH3 W/ ARS ML, RT	CH3		46												
10C	29.7	M DGR CH3 W/ ARS ML, CC	CH3		43	79	112	98	UU	0	605		57	21	36	0.34	
10D	30.6	M GR CH3 W/ ARS ML, RT	CH3		76												
11A	32.0	M GR CH4 W/ RT, O	CH4		78												
11B	32.8	M DGR CHOA	CHOA		98	45	89	98	UU	0	580		138	48	90	0.29	OC= 22.3%
11C	33.7	SO DGR & DBR CHOB W/ RT	CHOB		194												
12A	36.0	M GR CH4	CH4		59												
12B	36.8	M GR CH4 W/ LYS ML	CH4		52												
12C	37.7	SO GR CH4 W/ LNS SM	CH4	8	51	68	103	93	UC	--	427	853	77	27	50	0.20	
12D	38.6	M GR CH4	CH4		67												
13A	40.0	M GR CH4 W/ ARS ML, SIF	CH4		60												
13B	40.8	M GR CH4 W/ LNS & ARS ML	CH4		54												
13C	41.7	M GR CH4 W/ LNS ML, ARS SM	CH4		56	67	105	99	UU	0	595		75	25	50	0.27	

Remarks: 1 consolidation (14C) added WSY
FFEBJV, LLC.

Checked by: RNE
File Name: TO 2 WWHC

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-43UCL

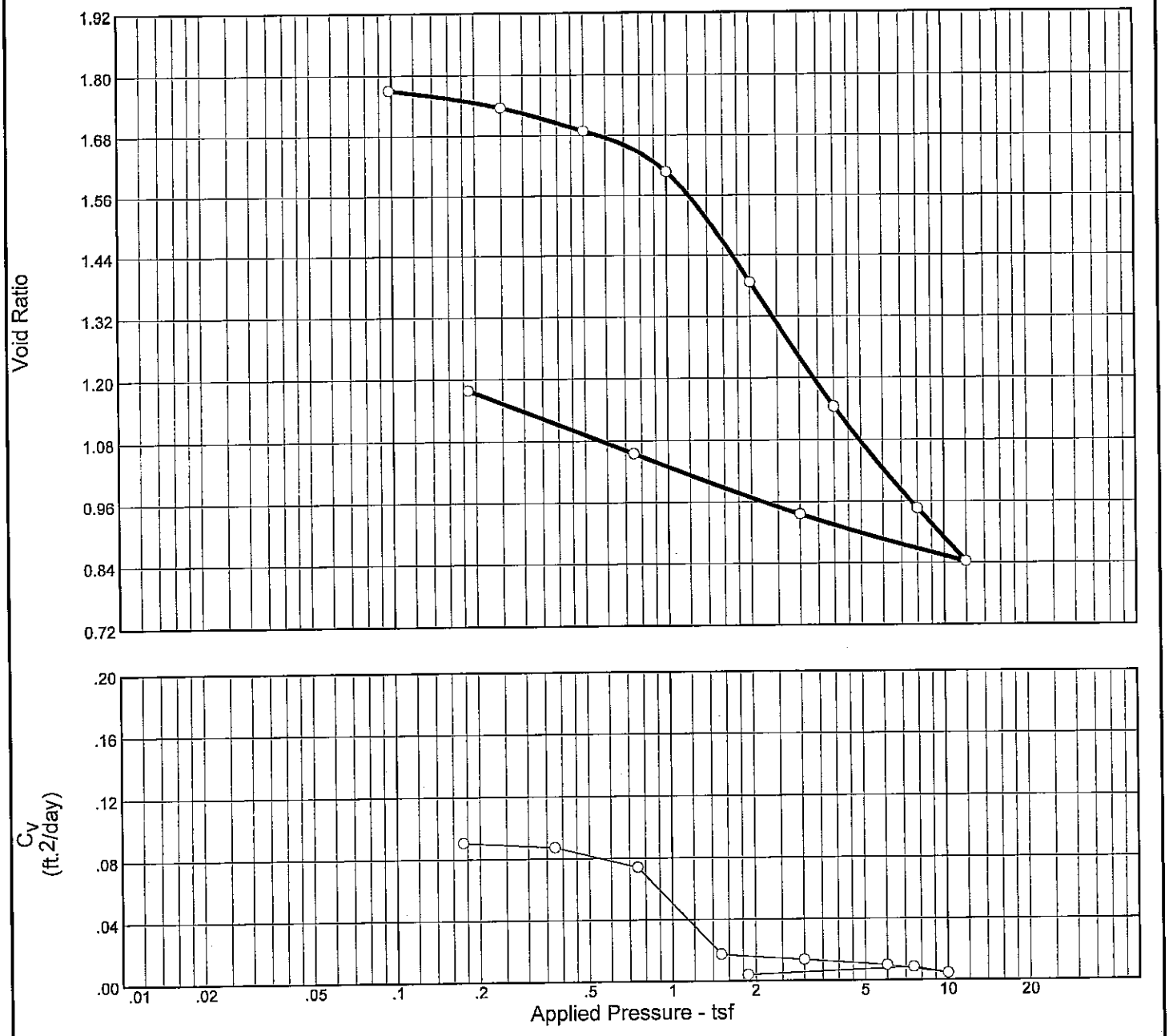
Current Date: 7/14/2008

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
13D	42.6	M GR CH4 W/ ARS ML	CH4		53												
14A	44.0	M GR CH4 W/ ARS ML, SIF	CH4		57												
14B	44.8	M GR CH4 W/ ARS ML	CH4		56												
14C	45.7	M GR CH4	CH4		60	63	101	95					88	26	62		Gs, CON
14D	46.6	M GR CH4 W/ LNS & ARS ML	CH4		59												
15A	48.0	M GR CH4	CH4		69												
15B	48.8	M GR CH4 W/ LNS & ARS ML	CH4		59												
15C	49.7	M GR CH4 W/ SL	CH4	6	68	59	98	97	UC	--	604	1207	91	29	62	0.25	
15D	50.6	M GR CH4 W/ ARS ML	CH4		59												
16A	52.0	M GR CH4 W/ ARS ML	CH4		61												
16B	52.8	M GR CH4 W/ ARS ML	CH4		64												
16C	53.7	M GR CH4 W/ ARS ML, SL	CH4		68	60	100	100	UU	0	728		94	27	67	0.25	
16D	54.6	M GR CH4 W/ LNS & ARS ML	CH4		62												
17A	56.0	M GR CH4	CH4		69												
17B	56.8	SO GR CH4 W/ ARS ML	CH4		64												
17C	57.7	SO GR CH4 W/ ARS ML, SL	CH4	7	63	62	101	99	UC	--	449	898	90	29	61	0.3	
17D	58.6	SO GR CH4 W/ ARS ML	CH4		61												
18A	60.0	M GR CH4 W/ LNS & ARS ML	CH4		58												
18B	60.8	M GR CH4 W/ LNS & ARS ML	CH4		58												
18C	61.7	M GR CH4 W/ ARS ML	CH4		61												
18D	62.6	M GR CH4 W/ ARS ML	CH4		57												
19A	64.0	M GR CH4 W/ LNS & ARS ML	CH4		60												
19B	64.8	M GR CH4 W/ LNS & ARS ML	CH4		62												
19C	65.7	M GR CH3	CH3	5	48	71	104	92	UC	--	867	1734	82	23	59	0.31	
19D	66.6	M GR CH4 W/ ARS ML	CH4		59												
20A	68.0	ST GR CH4	CH4		60												
20B	68.8	ST GR CH4	CH4	4	60	64	102	98	UC	--	1030	2060	83	28	55	0.32	
20C	69.7	M GR CH3 W/ LYS SM, SIF	CH3		40												

Remarks: 1 consolidation (ALC) added WJY
FFEBJV, LLC.

Checked by: RNE
File Name: TO 2 WWHC

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
95.2 %	60.6 %	62.7	88	62	2.79	1.11	0.84	1.777

MATERIAL DESCRIPTION	USCS	AASHTO
M GR CH4	CH4	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-43UCL **Sample No.:** 14C **Elev./Depth:** 45.7

FFEBJV, LLC

St Rose, LA

Remarks:

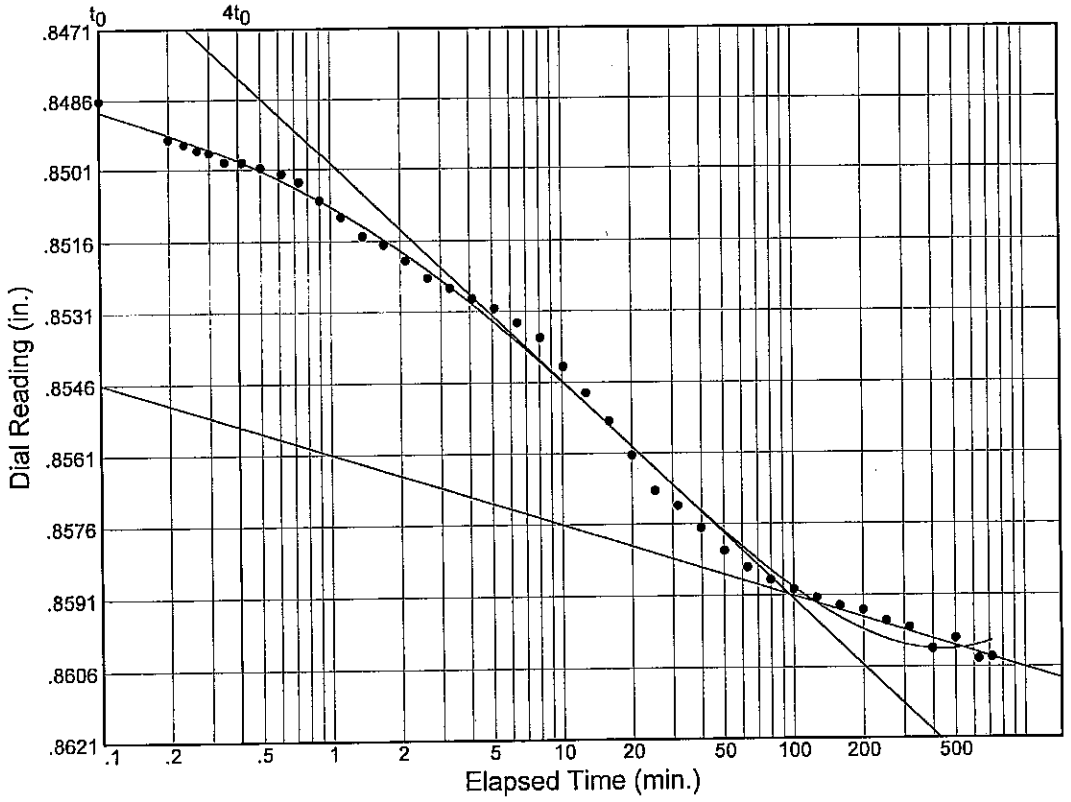
Tested by: ARS
Calculated by: WJY
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

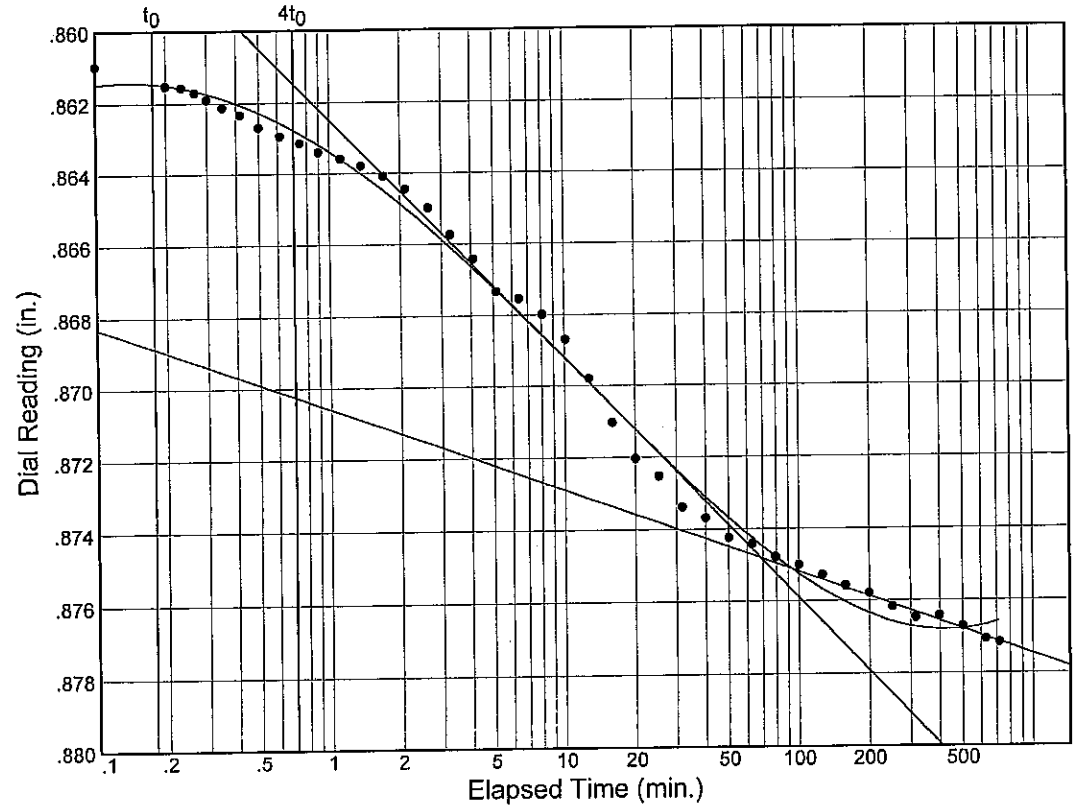
Source: WWHC-43UCL Sample No.: 14C Elev./Depth: 45.7



Load No.= 2
Load= 0.25 tsf
D_0 = 0.84778
D_{50} = 0.85343
D_{100} = 0.85908
T_{50} = 5.39 min.

C_v @ T_{50}
0.09 ft.^{2}/day

C_α = 0.001



Load No.= 3
Load= 0.50 tsf
D_0 = 0.86012
D_{50} = 0.86746
D_{100} = 0.87480
T_{50} = 5.44 min.

C_v @ T_{50}
0.09 ft.^{2}/day

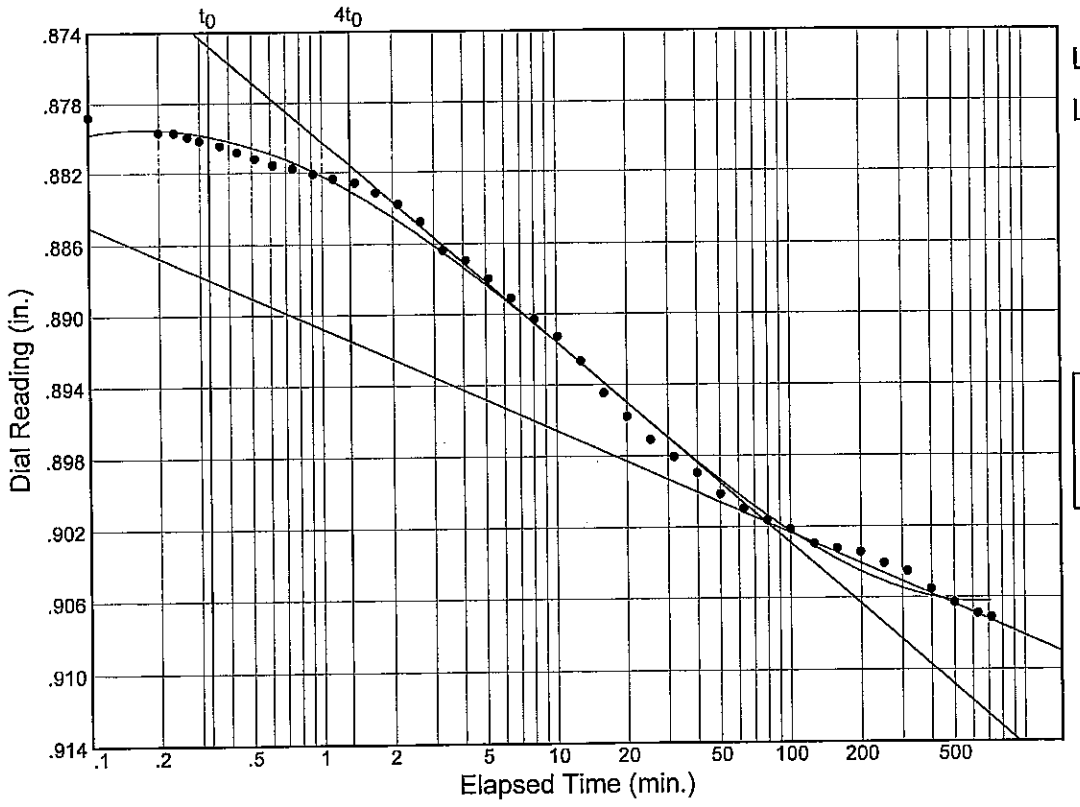
C_α = 0.002

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

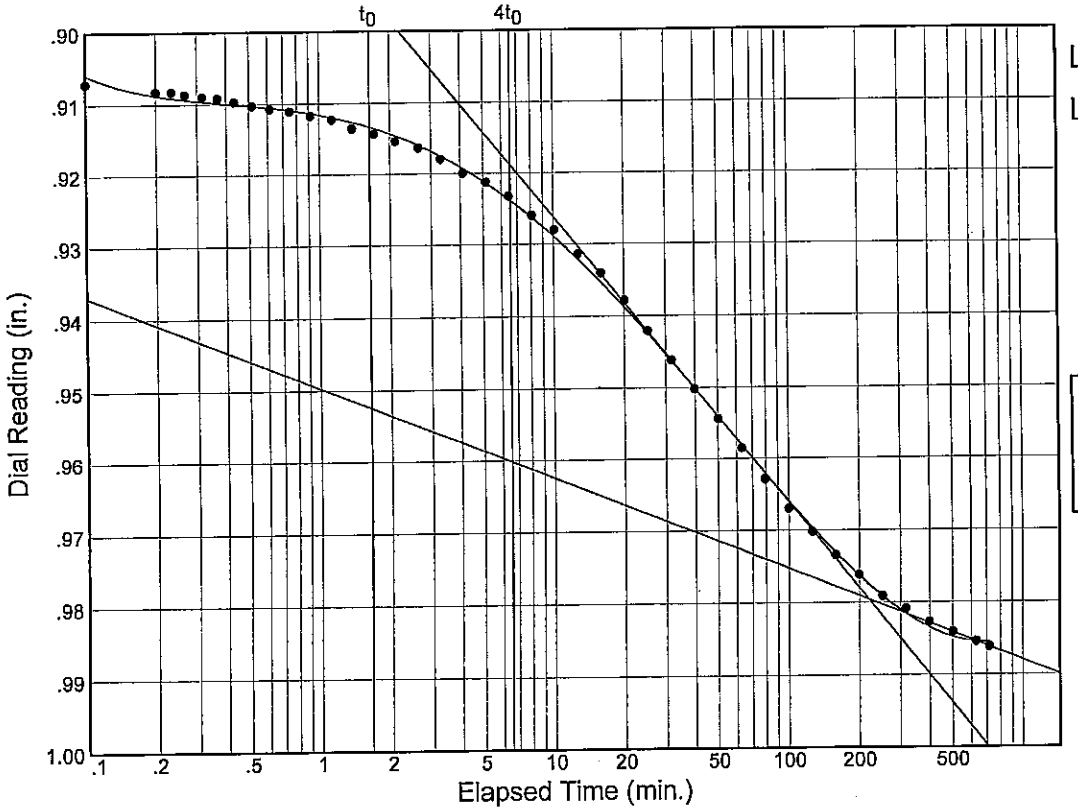
Source: WWHC-43UCL Sample No.: 14C Elev./Depth: 45.7



Load No.= 4
Load= 1.00 tsf
D_0 = 0.87675
D_{50} = 0.88924
D_{100} = 0.90173
T_{50} = 6.10 min.

C_v @ T_{50}
0.07 ft.^{2}/day

C_α = 0.006



Load No.= 5
Load= 2.00 tsf
D_0 = 0.90284
D_{50} = 0.94123
D_{100} = 0.97962
T_{50} = 23.34 min.

C_v @ T_{50}
0.02 ft.^{2}/day

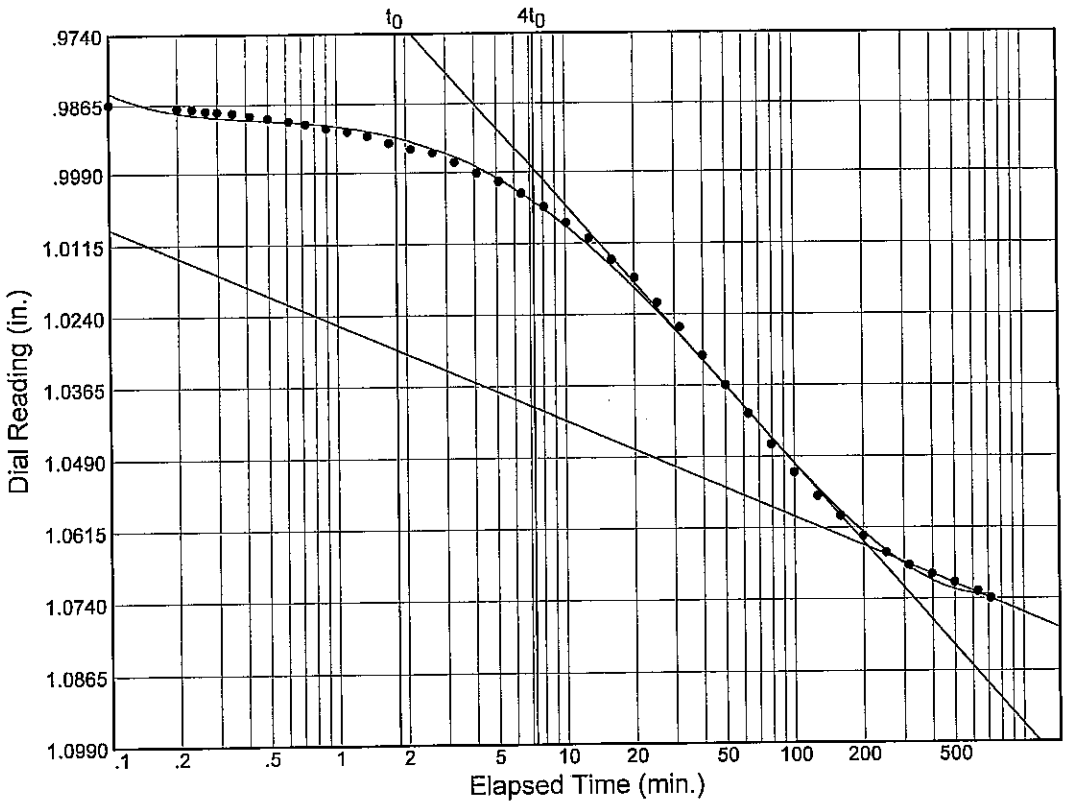
C_α = 0.013

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

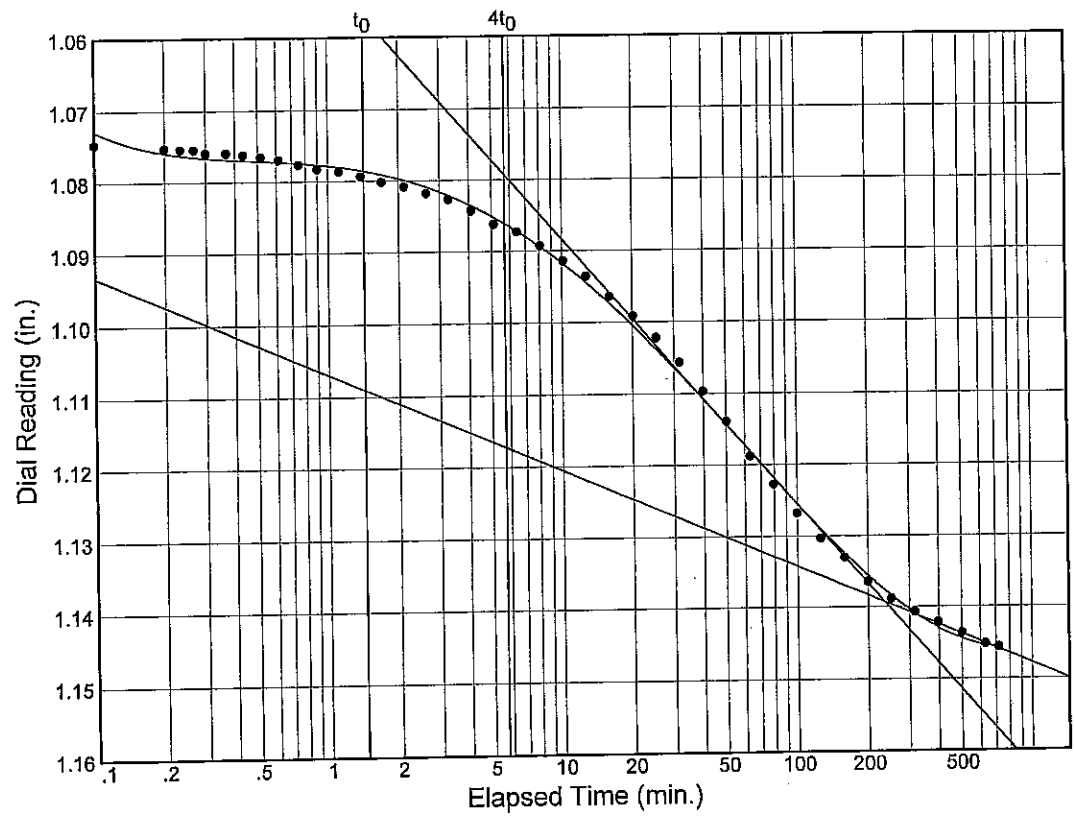
Source: WWHC-43UCL Sample No.: 14C Elev./Depth: 45.7



Load No.= 6
Load= 4.00 tsf
D_0 = 0.98096
D_{50} = 1.02297
D_{100} = 1.06498
T_{50} = 24.56 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.019



Load No.= 7
Load= 8.00 tsf
D_0 = 1.07104
D_{50} = 1.10516
D_{100} = 1.13928
T_{50} = 27.71 min.

C_v @ T_{50}
0.01 ft.^{2}/day

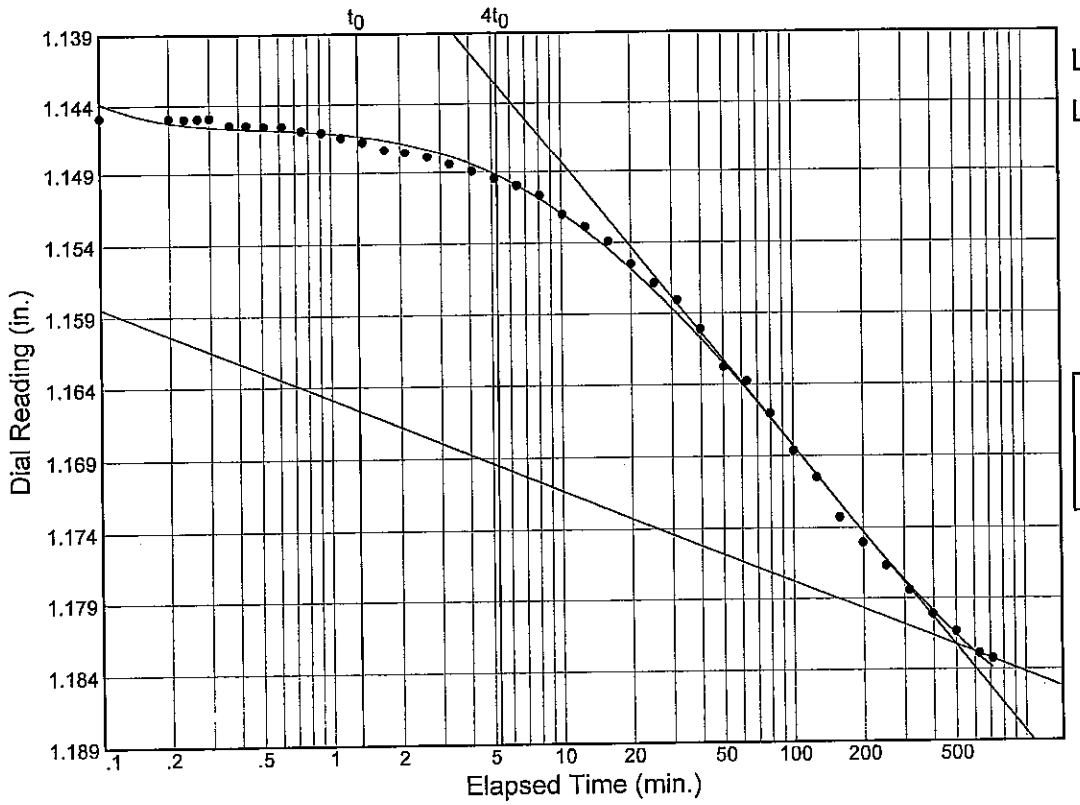
C_α = 0.017

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

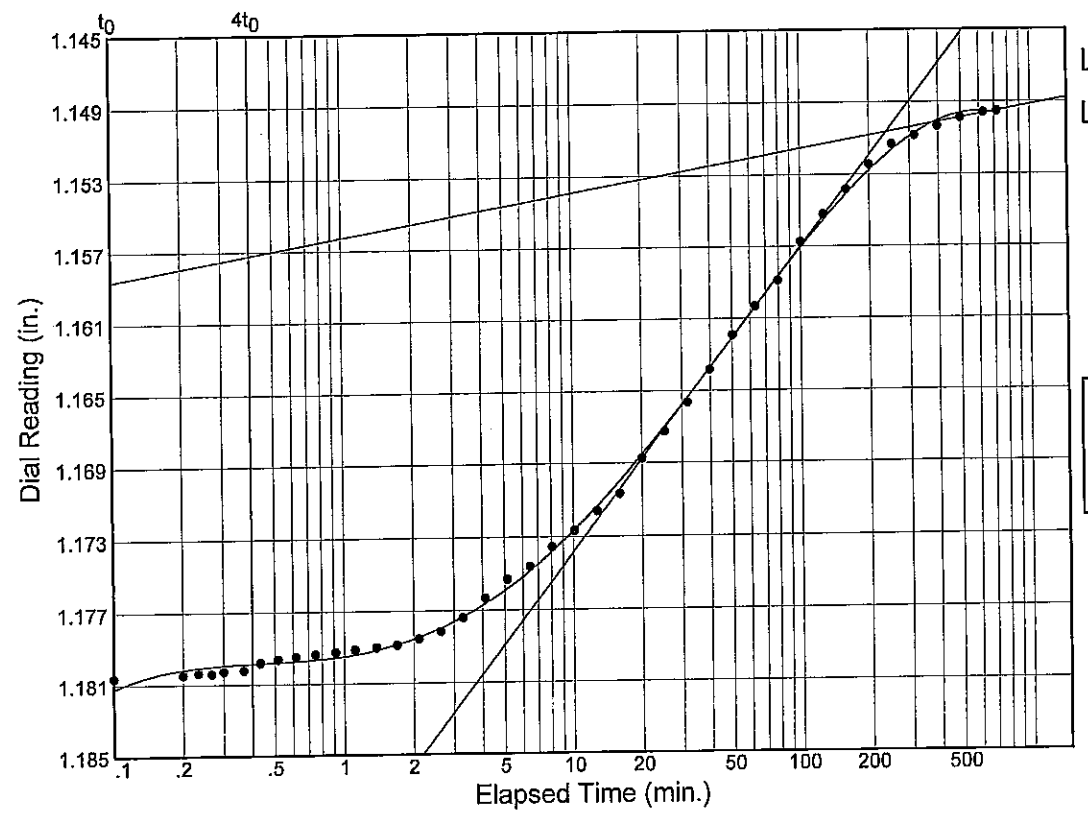
Source: WWHC-43UCL Sample No.: 14C Elev./Depth: 45.7



Load No.= 8
Load= 12.00 tsf
D_0 = 1.14342
D_{50} = 1.16283
D_{100} = 1.18224
T_{50} = 52.08 min.

C_v @ T_{50}
0.00 ft.^{2}/day

C_α = 0.009



Load No.= 9
Load= 3.00 tsf
D_0 = 1.18264
D_{50} = 1.16664
D_{100} = 1.15063
T_{50} = 26.50 min.

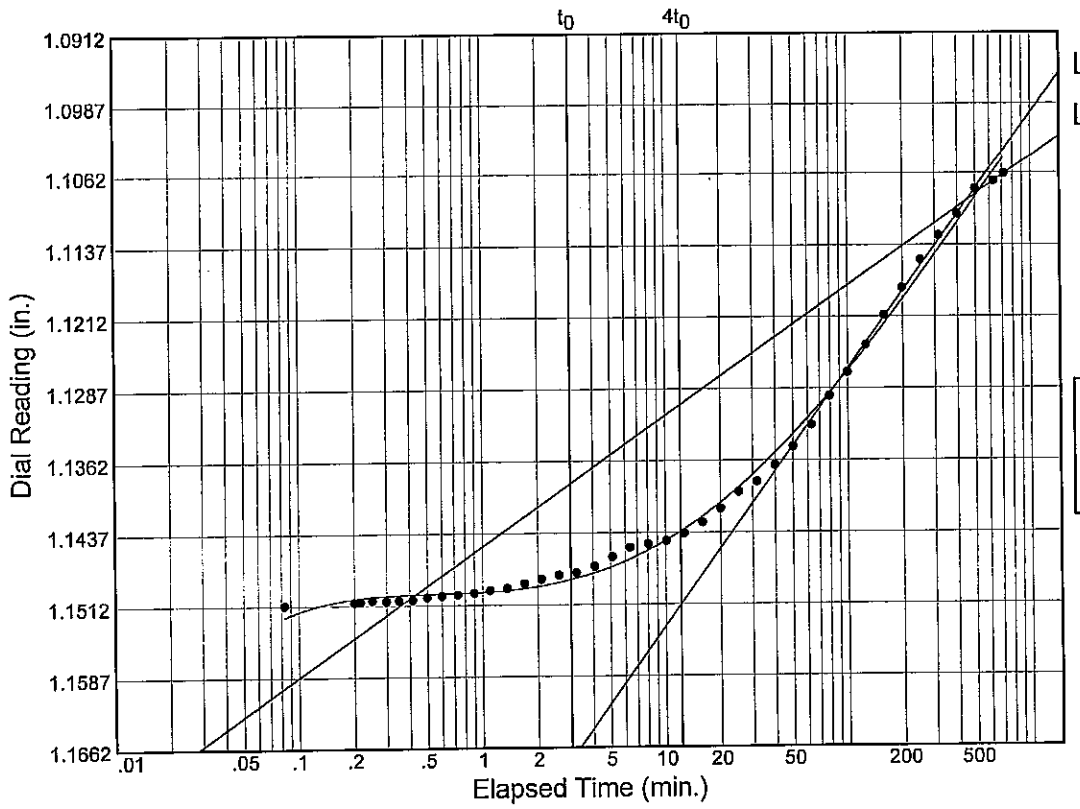
C_v @ T_{50}
0.01 ft.^{2}/day

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-43UCL Sample No.: 14C Elev./Depth: 45.7



Load No.= 10
Load= 0.75 tsf
D_0 = 1.15357
D_{50} = 1.13133
D_{100} = 1.10908
T_{50} = 63.58 min.

C_v @ T_{50}
0.00 ft.^{2}/day

Figure

CONSOLIDATION TEST DATA

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Contract No. W912P8-07-D-0022
Task Order No. 0002
Project Number: 0022-0002

Sample Data

Source: WWHC-43UCL
Sample No.: 14C
Elev. or Depth: 45.7
Location:
Description: M GR CH4
Liquid Limit: 88
USCS: CH4 **AASHTO:**
Testing Remarks: Tested by: ARS
Calculated by: WJY
Checked by: WJY

Sample Length(in./cm.):

Plasticity Index: 62
Figure No.:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t =	160.63 g.	Consolidometer # = 6	Wet w+t = 408.23 g.
Dry w+t =	100.00 g.		Dry w+t = 313.40 g.
Tare Wt. =	.00 g.	Spec. Gravity = 2.79	Tare Wt. = 112.04 g.
Height =	1.00 in.	Height = 1.00 in.	
Diameter =	4.00 in.	Diameter = 4.00 in.	
Weight =	333.65 g.	Defl. Table = n/a	
Moisture =	60.6 %	Ht. Solids = 0.3615 in.	Moisture = 47.1 %
Wet Den. =	100.8 pcf	Dry Wt. = 207.62 g.*	Dry Wt. = 201.36 g.
Dry Den. =	62.7 pcf	Void Ratio = 1.777	Void Ratio = 1.179
		Saturation = 95.2 %	

* Initial dry weight used in calculations

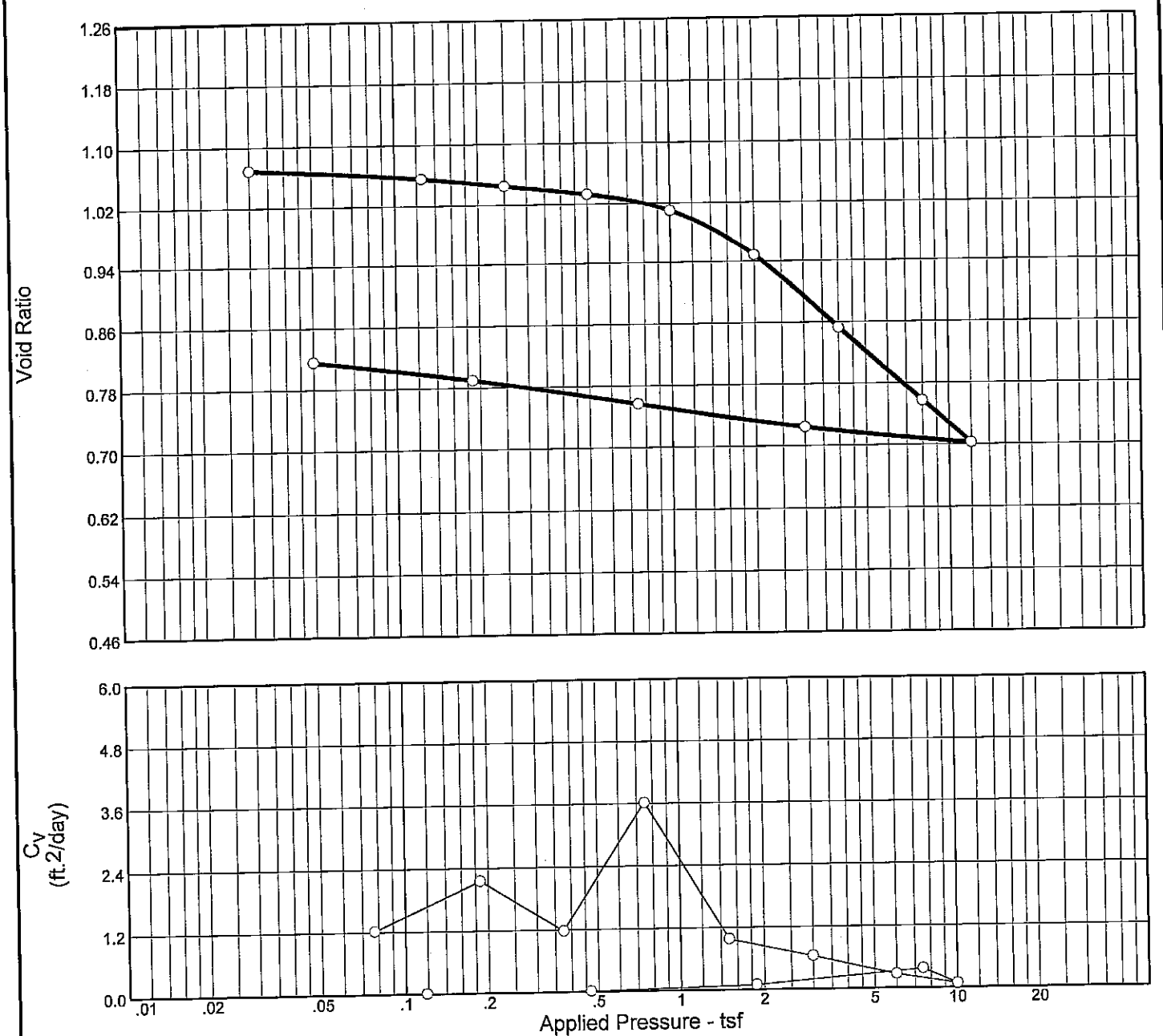
End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	0.84553				1.777	
0.10	0.84788	0.00000			1.770	0.2 Comprs.
0.25	0.86041	0.00000	0.09	0.001	1.736	1.5 Comprs.
0.50	0.87716	0.00000	0.09	0.002	1.689	3.2 Comprs.
1.00	0.90713	0.00000	0.07	0.006	1.606	6.1 Comprs.
2.00	0.98620	0.00000	0.02	0.013	1.388	14.0 Comprs.
4.00	1.07400	0.00000	0.01	0.019	1.145	22.8 Comprs.
8.00	1.14566	0.00000	0.01	0.017	0.947	29.9 Comprs.
12.00	1.18328	0.00000	0.00	0.009	0.843	33.6 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v ($ft.^2$/day)	C_α	Void Ratio	% Compression /Swell
3.00	1.14954	0.00000	0.01		0.936	30.3 Comprs.
0.75	1.10629	0.00000	0.00		1.056	26.0 Comprs.
0.19	1.06158	0.00000			1.179	21.5 Comprs.

C_c = 0.84 P_c = 1.11 tsf C_r = 0.19

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
87.5 %	34.8 %	81.1	47	30	2.69	1.40	0.32	1.070

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR & T CL6	CL6	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-43UCL **Sample No.:** 8C **Elev./Depth:** 21.7

FFEBJV, LLC

St Rose, LA

Remarks:
Specific gravity is assumed

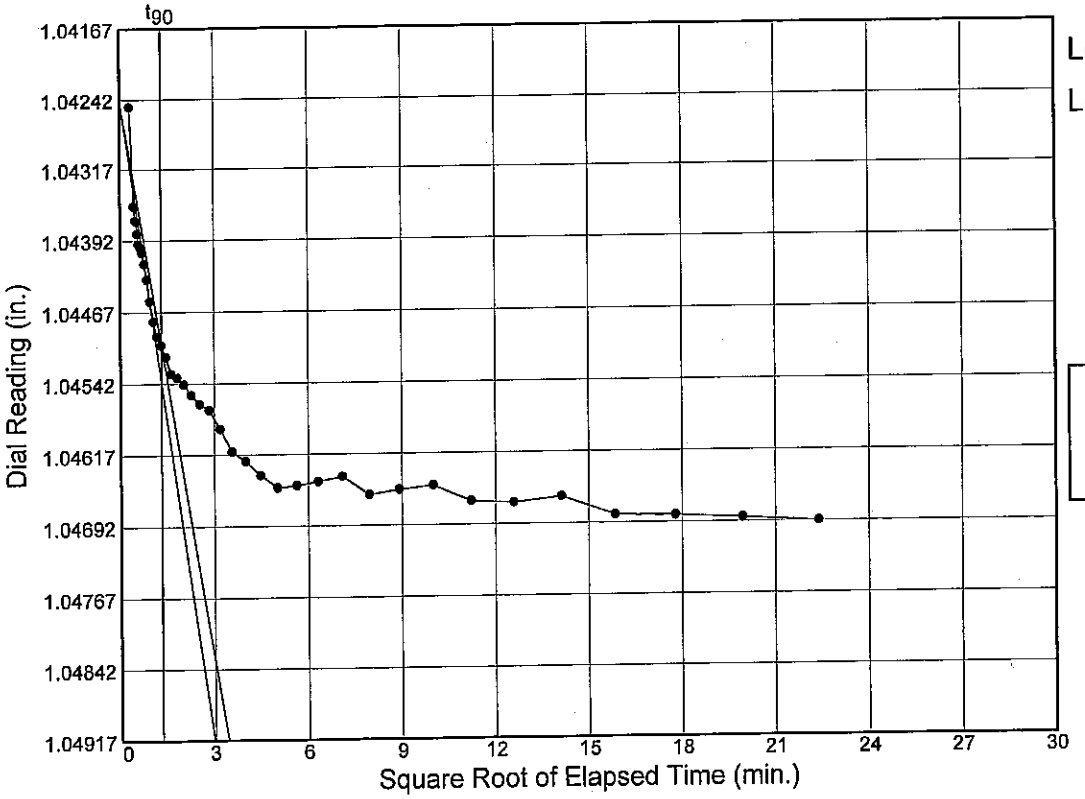
Tested by: JMB
Calculated by: WJY
Checked by: WJY

Figure

Dial Reading vs. Time

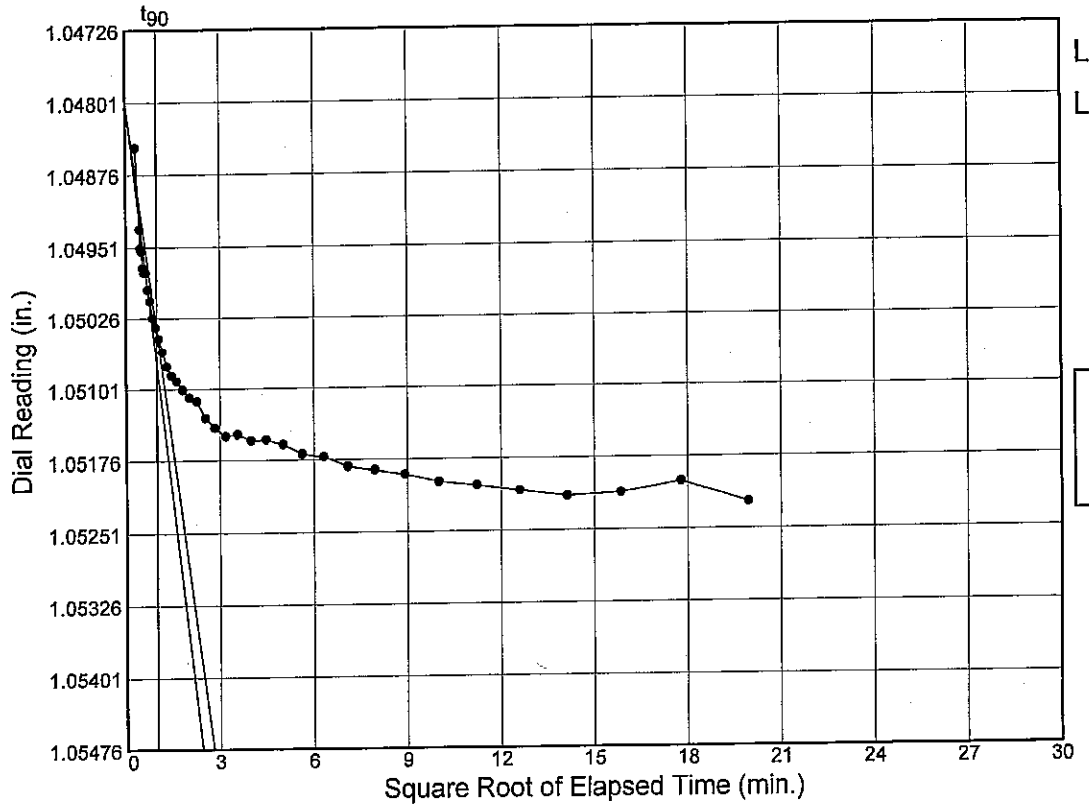
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-43UCL Sample No.: 8C Elev./Depth: 21.7



Load No.= 2
Load= 0.13 tsf
D_0 = 1.04243
D_{90} = 1.04504
D_{100} = 1.04533
T_{90} = 1.75 min.

C_v @ T_{90}
1.22 ft.^{2}/day



Load No.= 3
Load= 0.25 tsf
D_0 = 1.04802
D_{90} = 1.05041
D_{100} = 1.05067
T_{90} = 0.97 min.

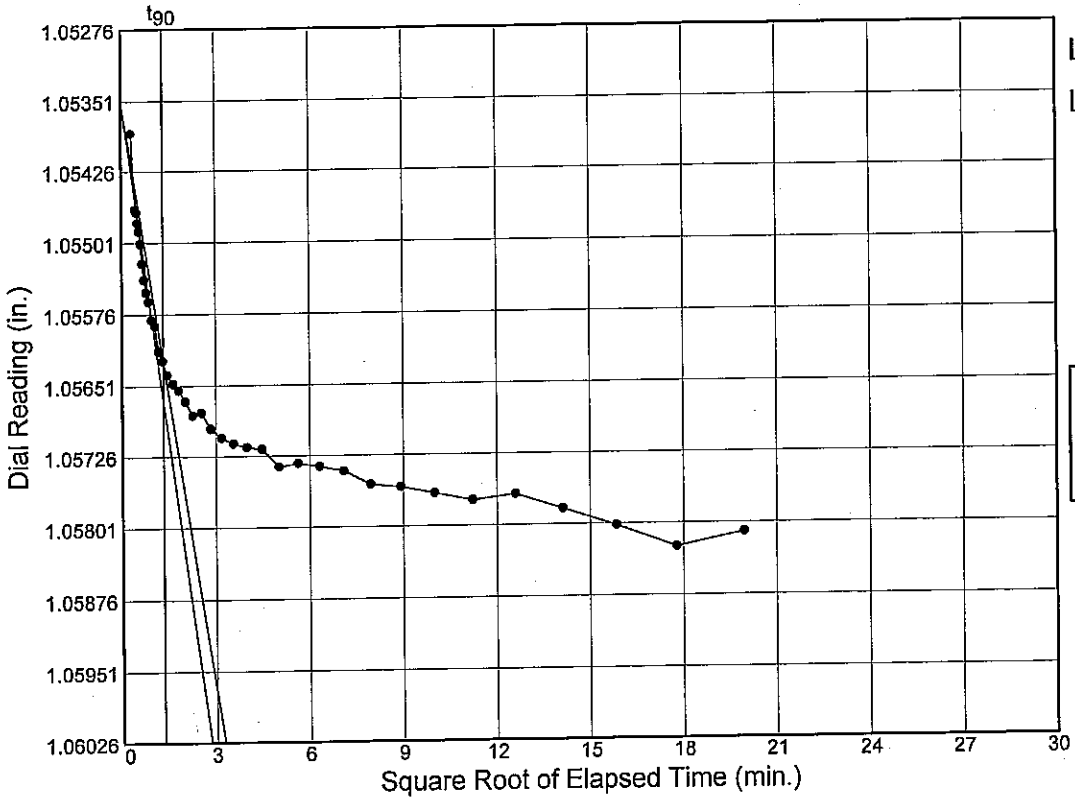
C_v @ T_{90}
2.16 ft.^{2}/day

Figure

Dial Reading vs. Time

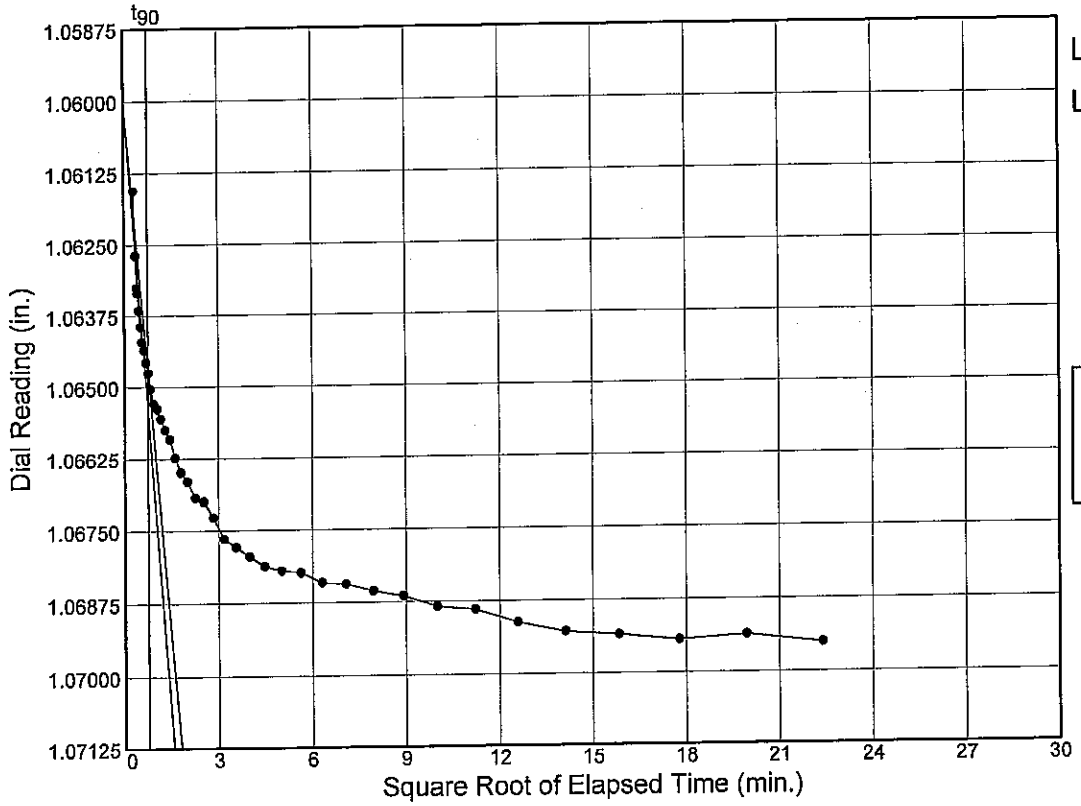
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-43UCL Sample No.: 8C Elev./Depth: 21.7



Load No.= 4
Load= 0.50 tsf
D_0 = 1.05352
D_{90} = 1.05628
D_{100} = 1.05658
T_{90} = 1.77 min.

C_v @ T_{90}
1.18 ft.^{2}/day



Load No.= 5
Load= 1.00 tsf
D_0 = 1.06000
D_{90} = 1.06473
D_{100} = 1.06526
T_{90} = 0.57 min.

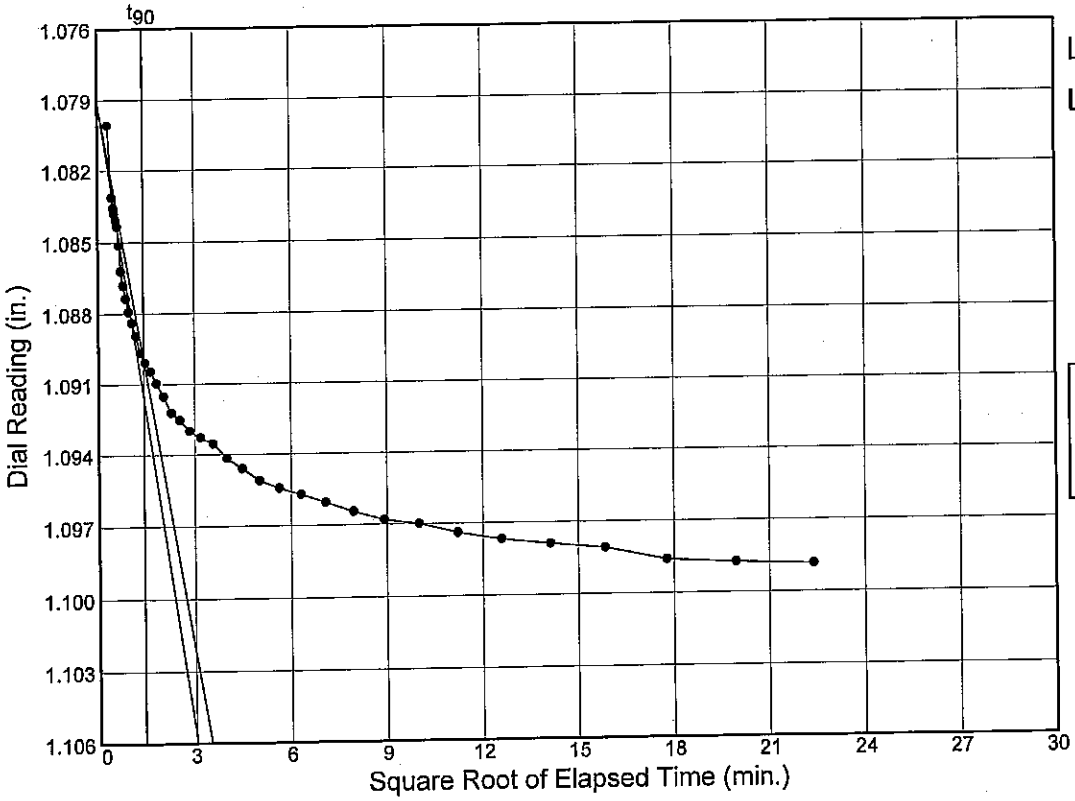
C_v @ T_{90}
3.61 ft.^{2}/day

Figure

Dial Reading vs. Time

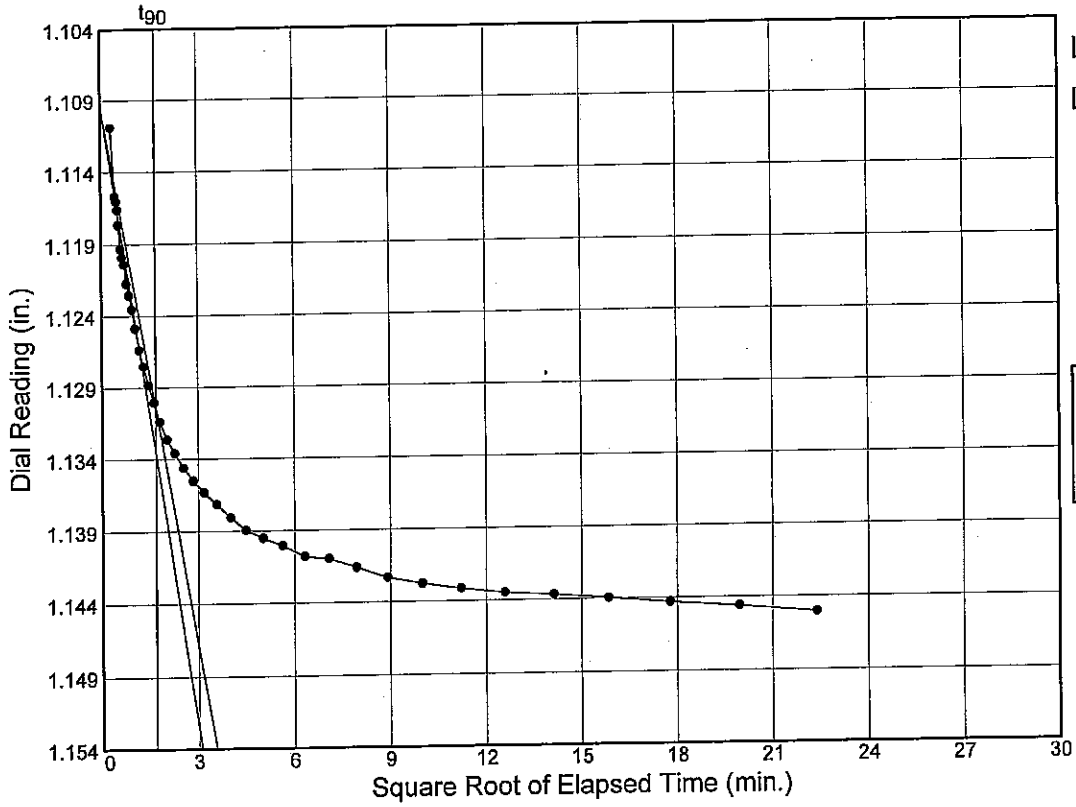
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-43UCL Sample No.: 8C Elev./Depth: 21.7



Load No.= 6
Load= 2.00 tsf
D_0 = 1.07906
D_{90} = 1.08998
D_{100} = 1.09120
T_{90} = 2.01 min.

C_v @ T_{90}
0.98 ft.^{2}/day



Load No.= 7
Load= 4.00 tsf
D_0 = 1.10939
D_{90} = 1.13052
D_{100} = 1.13287
T_{90} = 2.85 min.

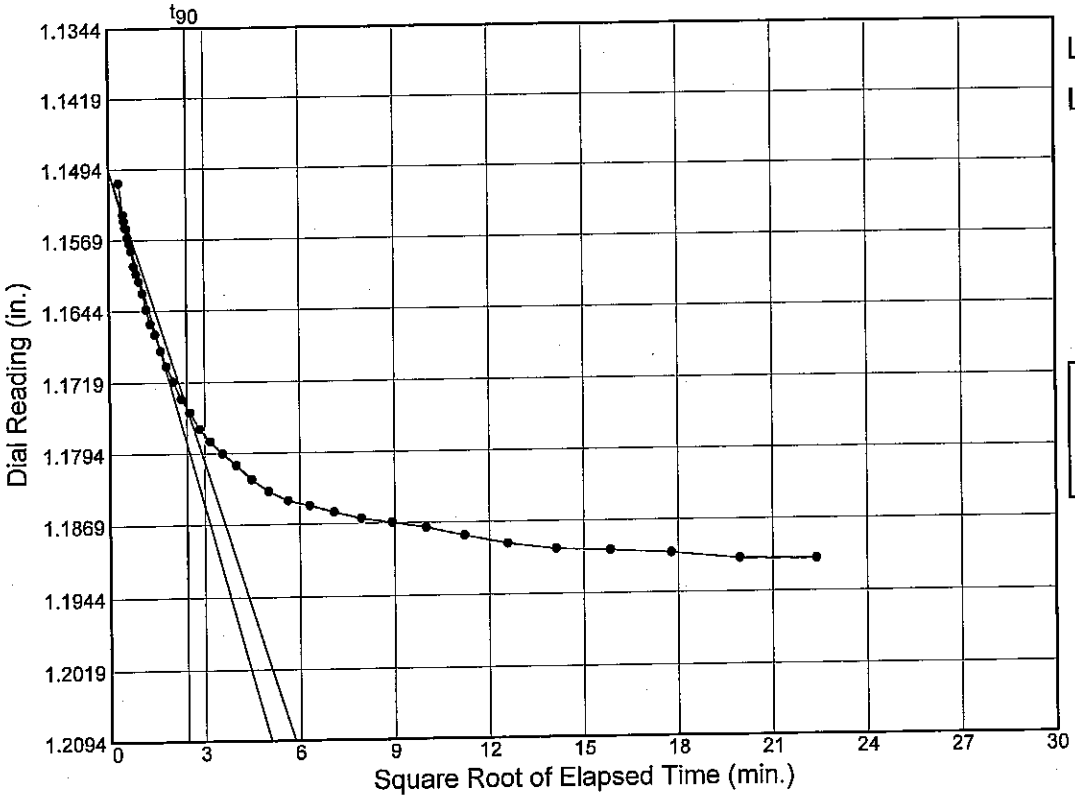
C_v @ T_{90}
0.64 ft.^{2}/day

Figure

Dial Reading vs. Time

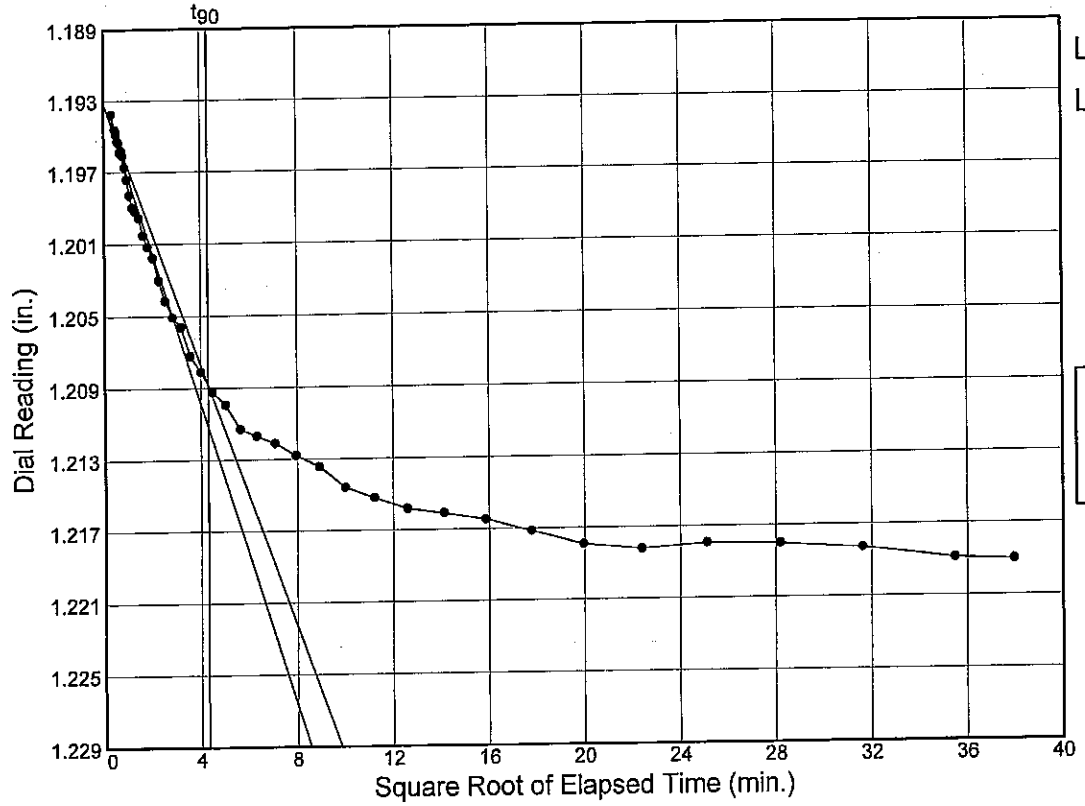
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-43UCL Sample No.: 8C Elev./Depth: 21.7



Load No.= 8
Load= 8.00 tsf
D_0 = 1.14948
D_{90} = 1.17462
D_{100} = 1.17741
T_{90} = 5.99 min.

C_v @ T_{90}
0.27 ft.^{2}/day



Load No.= 9
Load= 12.00 tsf
D_0 = 1.19313
D_{90} = 1.20882
D_{100} = 1.21056
T_{90} = 18.53 min.

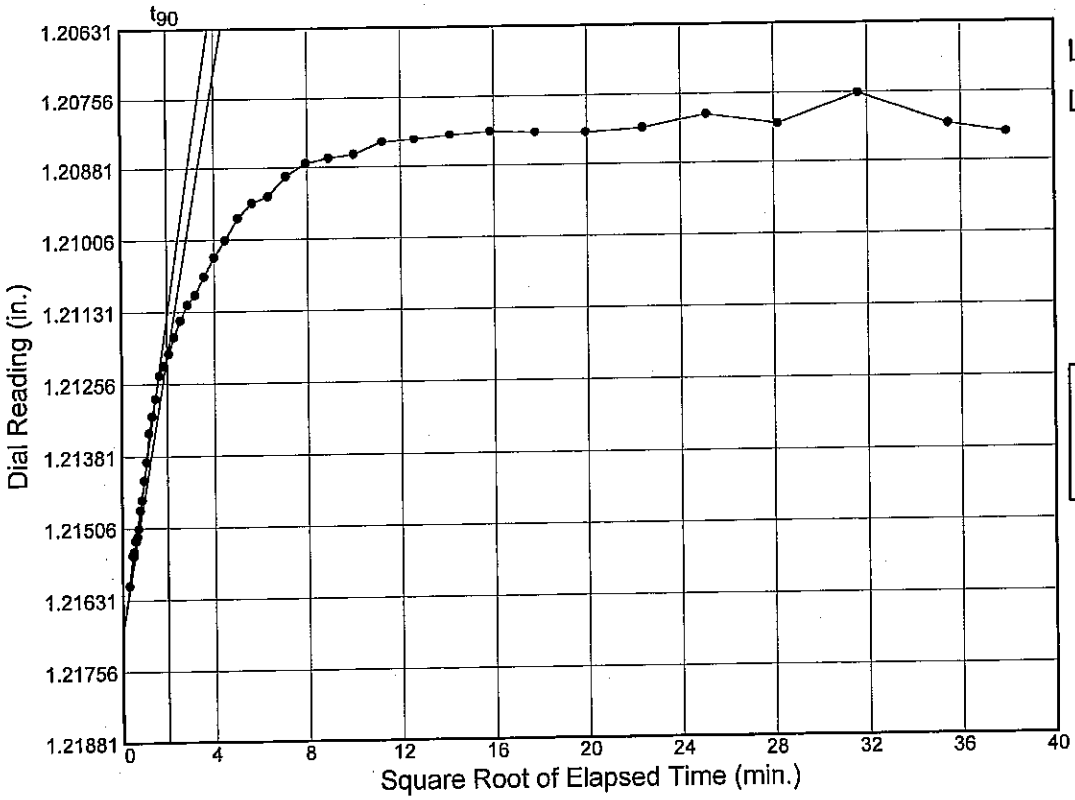
C_v @ T_{90}
0.08 ft.^{2}/day

Figure

Dial Reading vs. Time

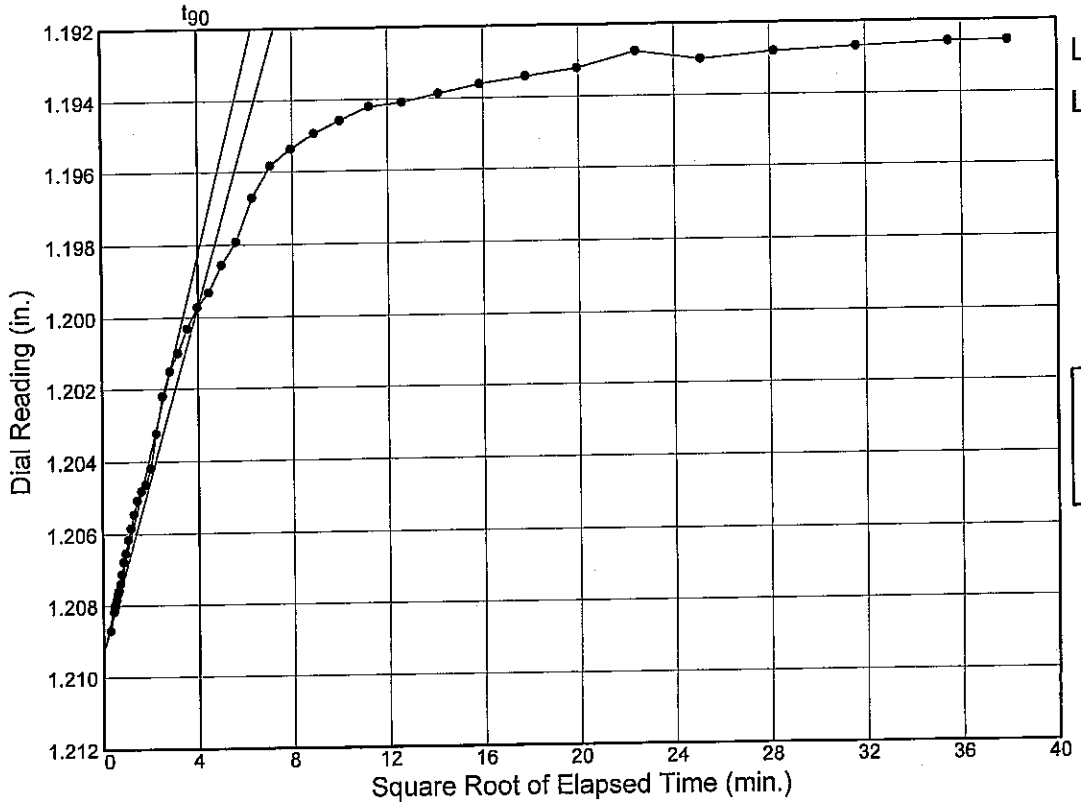
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-43UCL Sample No.: 8C Elev./Depth: 21.7



Load No.= 10
Load= 3.00 tsf
D_0 = 1.21690
D_{90} = 1.21210
D_{100} = 1.21157
T_{90} = 3.83 min.

C_v @ T_{90}
0.37 ft.^{2}/day



Load No.= 11
Load= 0.75 tsf
D_0 = 1.20932
D_{90} = 1.19968
D_{100} = 1.19861
T_{90} = 16.33 min.

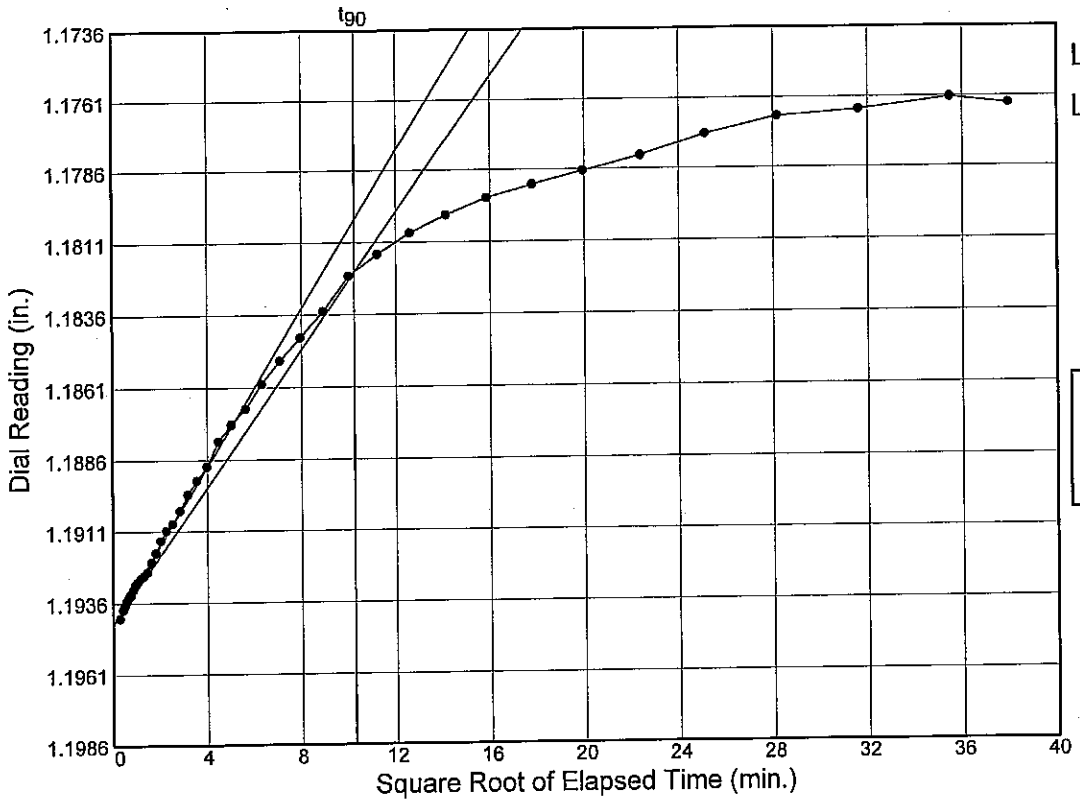
C_v @ T_{90}
0.09 ft.^{2}/day

Figure

Dial Reading vs. Time

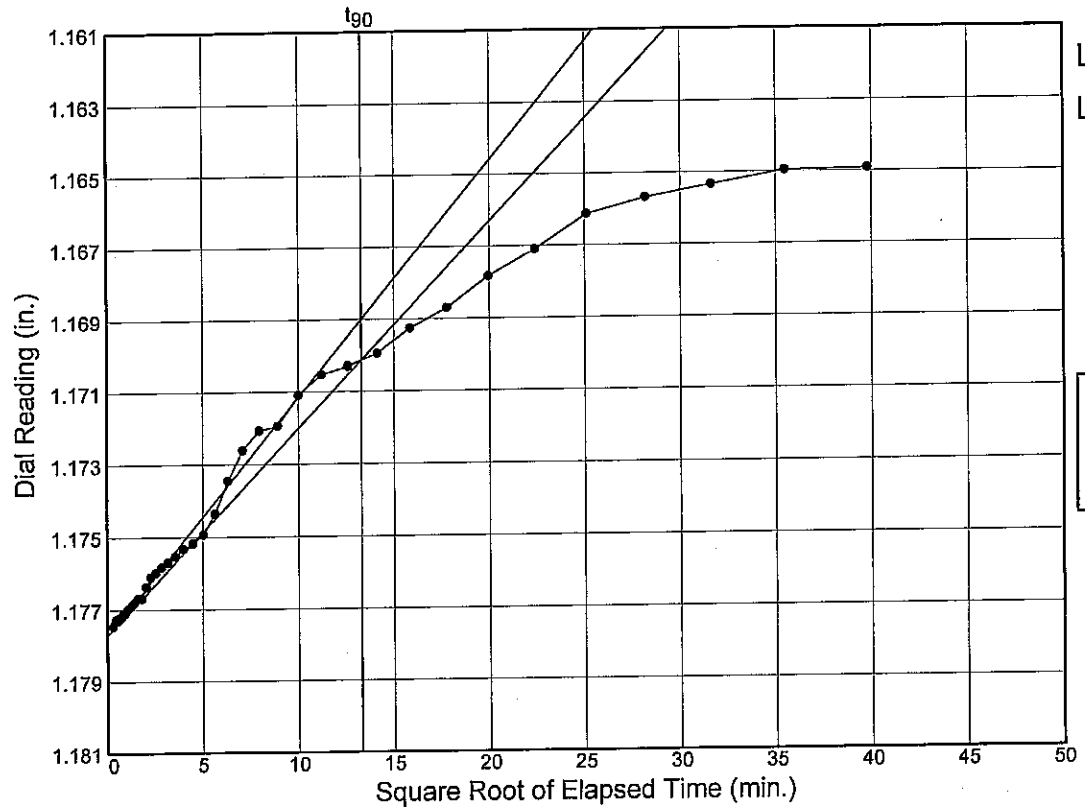
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-43UCL Sample No.: 8C Elev./Depth: 21.7



Load No.= 12
Load= 0.19 tsf
D_0 = 1.19436
D_{90} = 1.18213
D_{100} = 1.18077
T_{90} = 105.05 min.

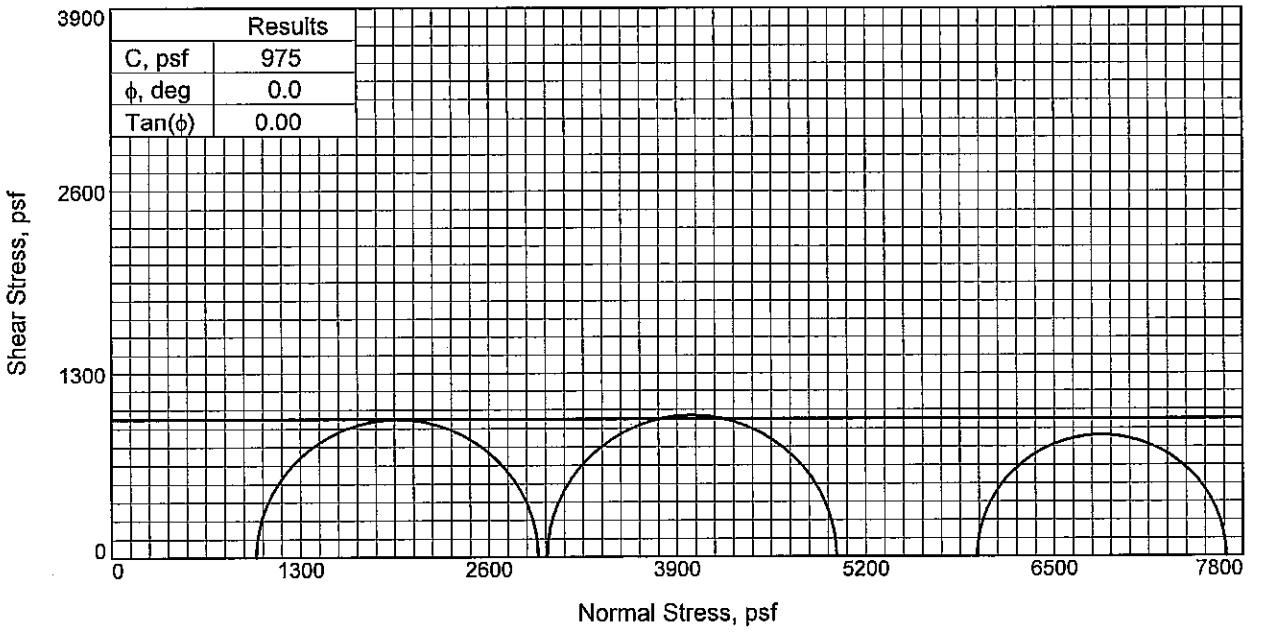
C_v @ T_{90}
0.01 ft.^{2}/day

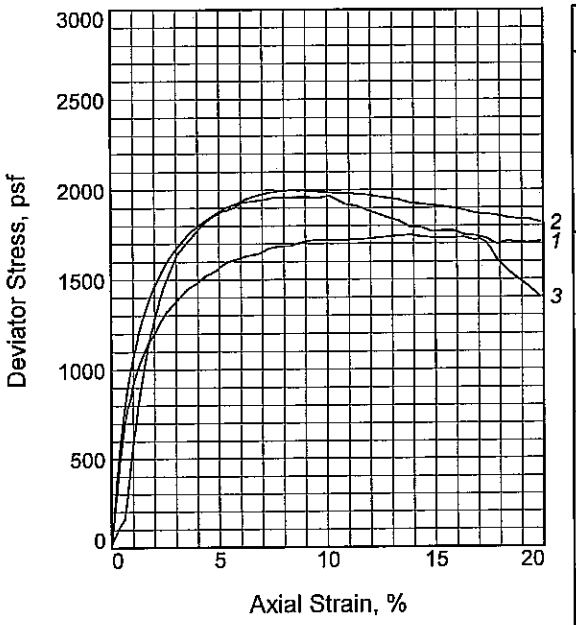


Load No.= 13
Load= 0.05 tsf
D_0 = 1.17773
D_{90} = 1.17014
D_{100} = 1.16930
T_{90} = 176.74 min.

C_v @ T_{90}
0.01 ft.^{2}/day

Figure





Sample No.		1	2	3
Initial	Water Content, %	30.0	26.1	26.6
	Dry Density, pcf	93.2	100.1	97.7
	Saturation, %	101.2	104.1	100.2
	Void Ratio	0.7950	0.6716	0.7120
	Diameter, in.	1.366	1.372	1.381
	Height, in.	3.131	3.141	3.129
At Test	Water Content, %	30.0	26.1	26.6
	Dry Density, pcf	93.2	100.1	97.7
	Saturation, %	101.2	104.1	100.2
	Void Ratio	0.7950	0.6716	0.7120
	Diameter, in.	1.366	1.372	1.381
	Height, in.	3.131	3.141	3.129
Strain rate, in./min.		0.313	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.92	20.85	41.44
Fail. Stress, psf		1944	1997	1718
Strain, %		7.1	8.3	9.3
Ult. Stress, psf		1771	1913	1730
Strain, %				
σ_1 Failure, psf		2940	4999	7686
σ_3 Failure, psf		997	3002	5968

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: M GR CL4 W/ CC

LL= 39 **PL=** 18 **PI=** 21
Assumed Specific Gravity= 2.68
Remarks:

Figure _____

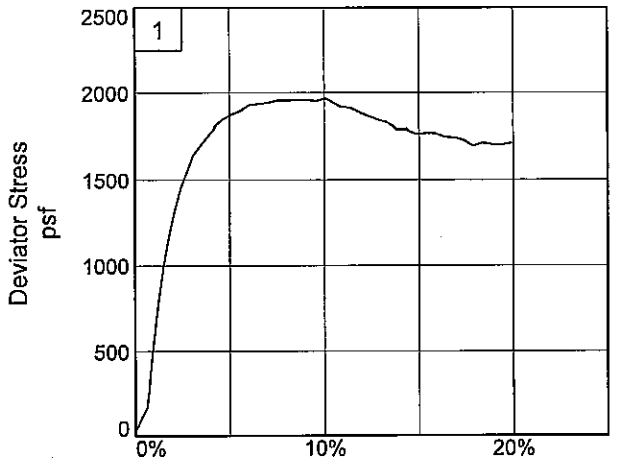
Client: U.S. Army Corps of Engineers

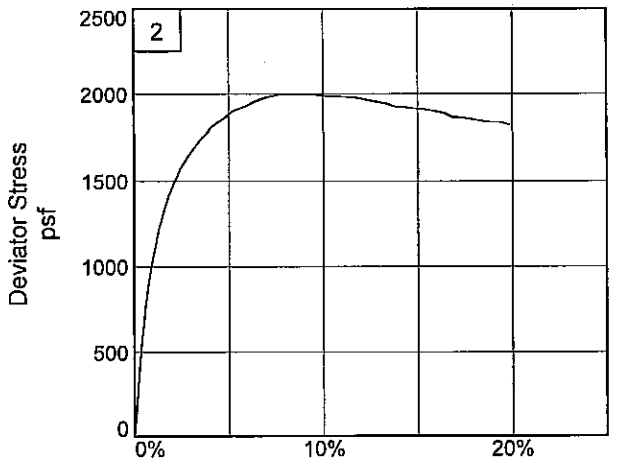
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-43UCL **Depth:** 6.8
Sample Number: 4B
Proj. No.: 0022-0002 **Date Sampled:** 05/14/07

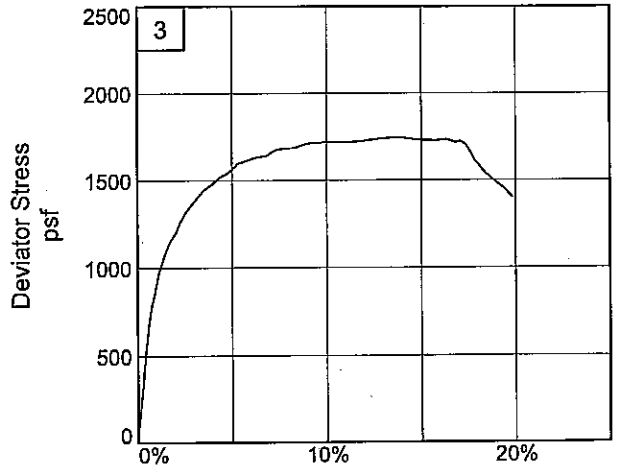
TRIAXIAL SHEAR TEST REPORT

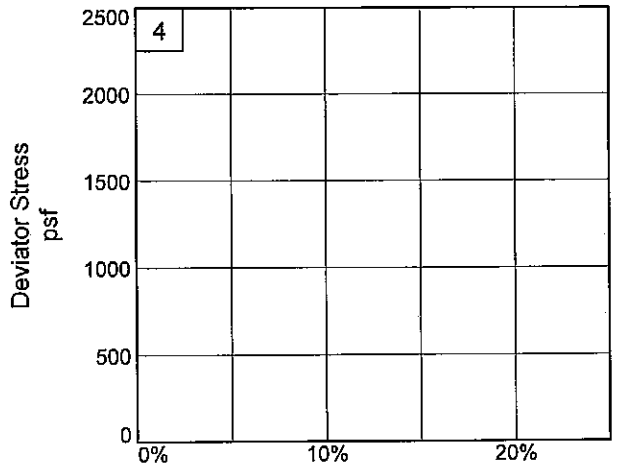
FFEBJV, LLC

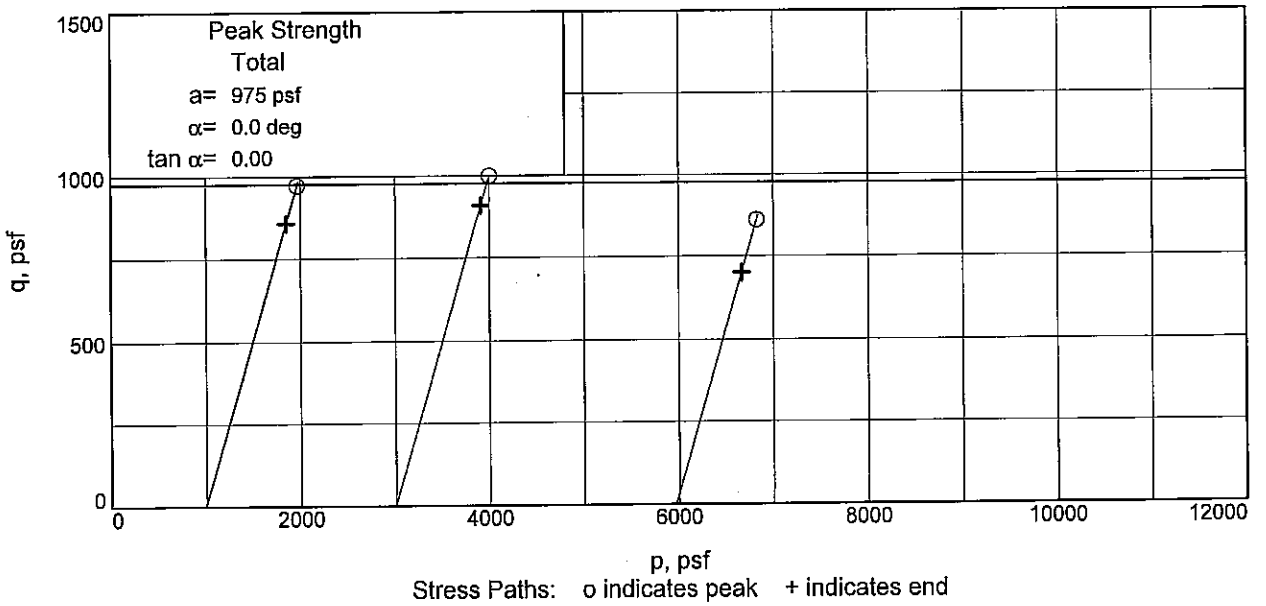
Tested By: DD/DW









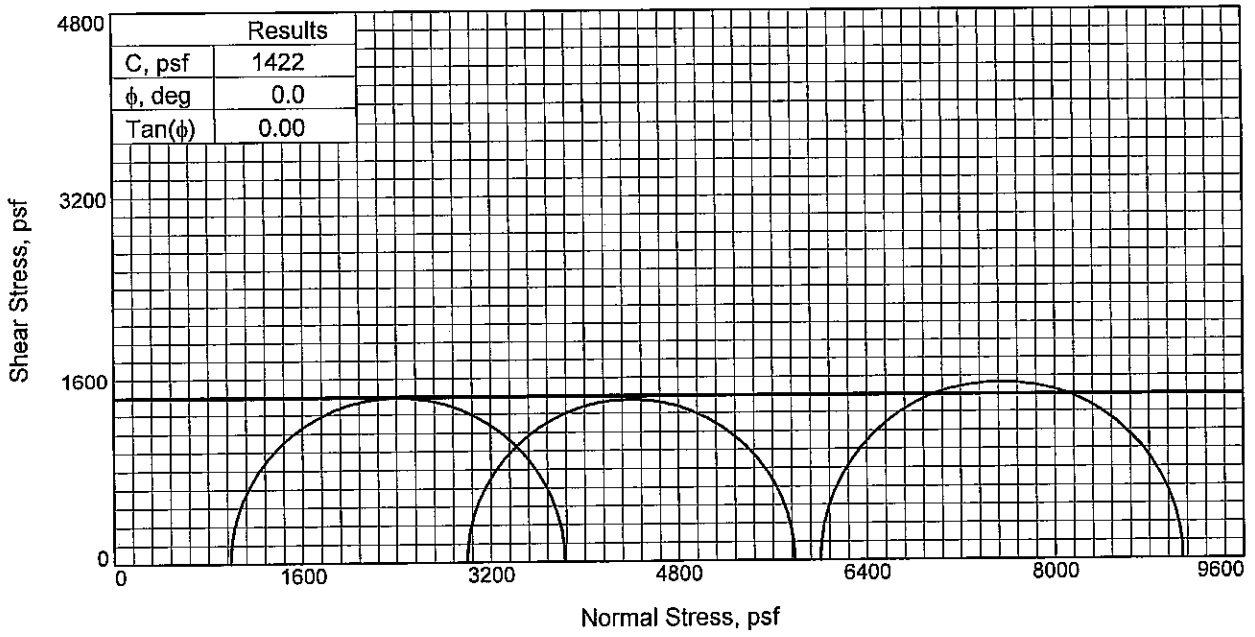


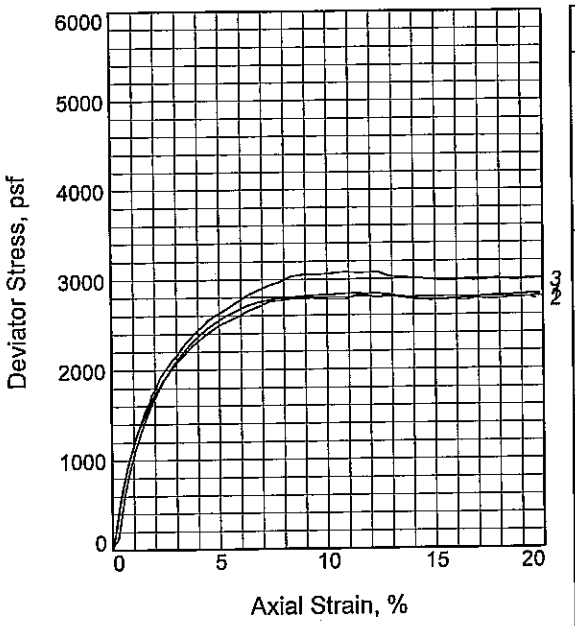
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-43UCL **Depth:** 6.8 **Sample Number:** 4B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/DW





Sample No.		1	2	3
Initial	Water Content, %	24.5	25.3	24.1
	Dry Density, pcf	100.2	101.2	100.3
	Saturation, %	97.3	103.3	96.3
	Void Ratio	0.6767	0.6593	0.6738
	Diameter, in.	1.374	1.358	1.366
	Height, in.	3.140	3.115	3.144
At Test	Water Content, %	24.5	25.3	24.1
	Dry Density, pcf	100.2	101.2	100.3
	Saturation, %	97.3	103.3	96.3
	Void Ratio	0.6767	0.6593	0.6738
	Diameter, in.	1.374	1.358	1.366
	Height, in.	3.140	3.115	3.144
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.81	41.70
Fail. Stress, psf		2842	2788	3078
Strain, %		11.3	9.4	10.8
Ult. Stress, psf		2764	2771	2991
Strain, %				
σ_1 Failure, psf		3829	5785	9084
σ_3 Failure, psf		987	2997	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST GR & BR CL4

LL= 40 **PL=** 16 **PI=** 24
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

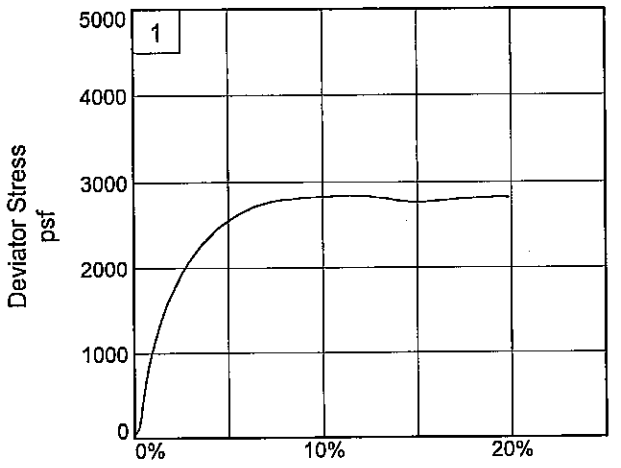
Client: U.S. Army Corps of Engineers

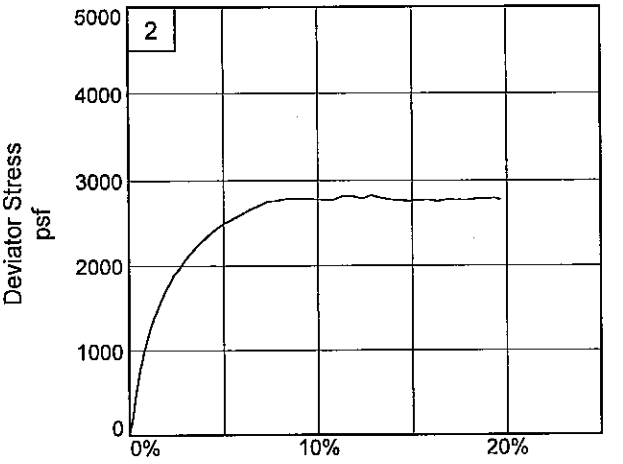
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-43UCL **Depth:** 8.8
Sample Number: 5B
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

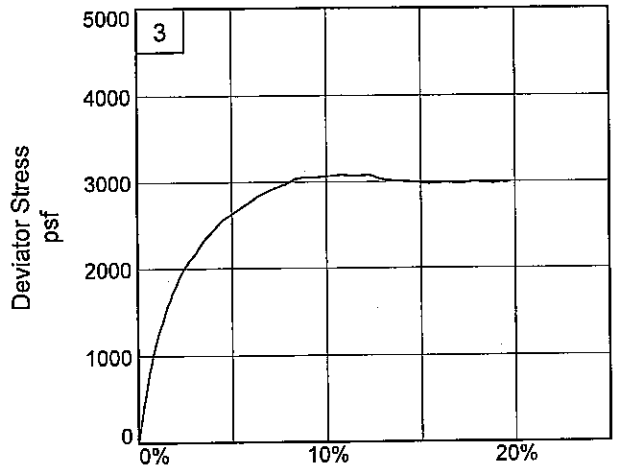
TRIAXIAL SHEAR TEST REPORT

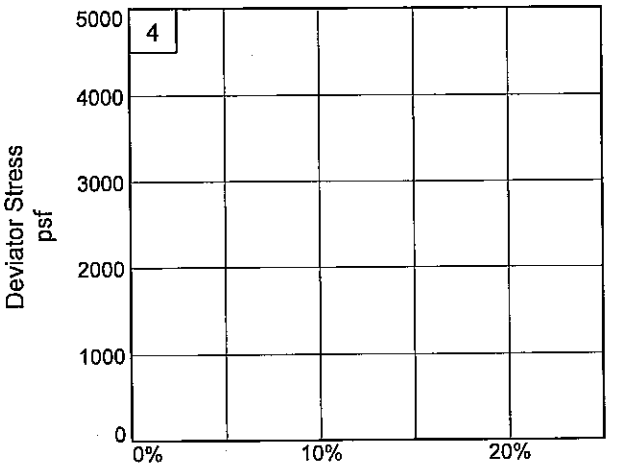
FFEBJV, LLC

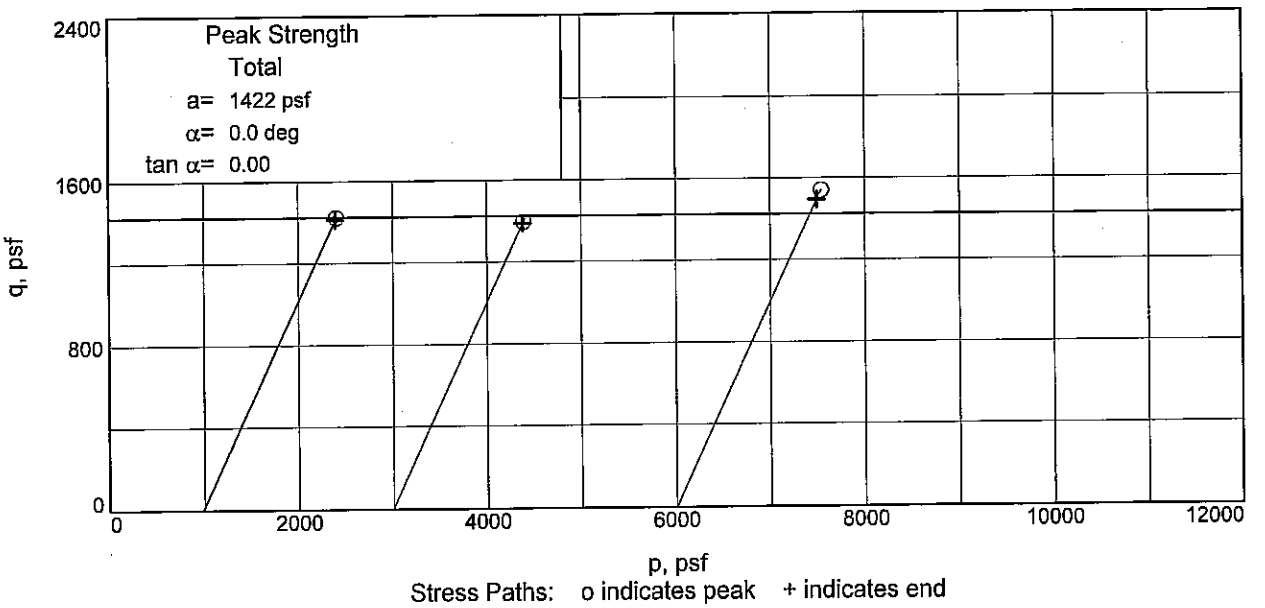
Tested By: DW/DD









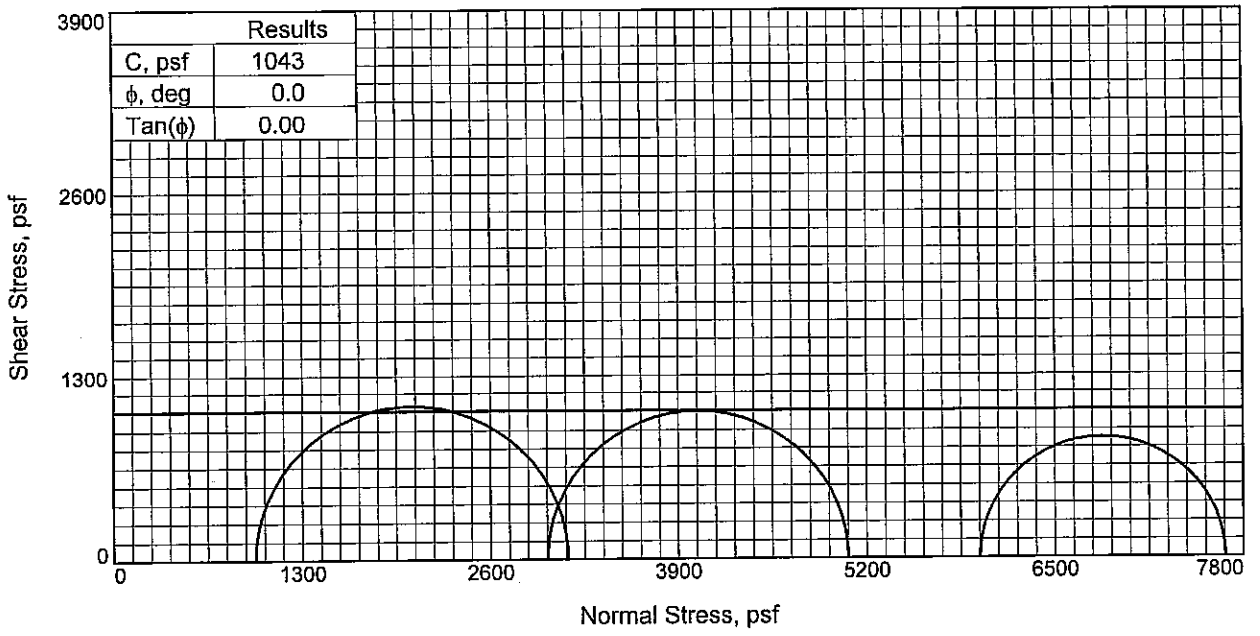


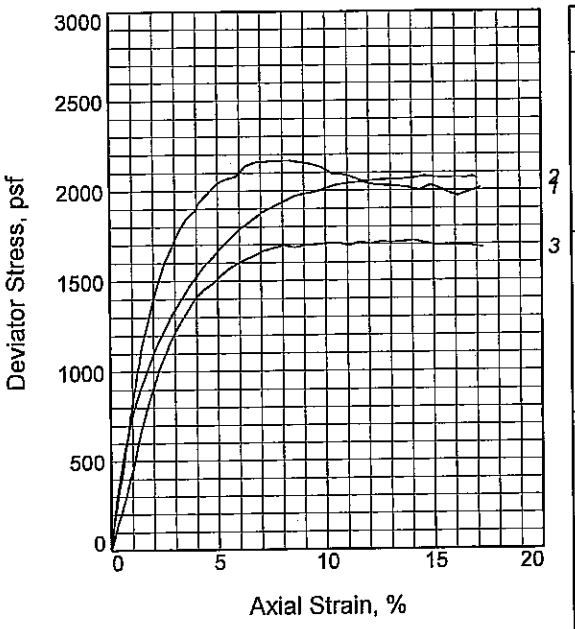
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-43UCL **Depth:** 8.8 **Sample Number:** 5B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD





Sample No.		1	2	3
Initial	Water Content, %	33.9	32.9	35.2
	Dry Density, pcf	85.1	83.6	83.9
	Saturation, %	92.5	86.7	93.6
	Void Ratio	0.9953	1.0318	1.0238
	Diameter, in.	1.383	1.440	1.428
	Height, in.	3.142	3.128	3.122
At Test	Water Content, %	33.9	32.9	35.2
	Dry Density, pcf	85.1	83.6	83.9
	Saturation, %	92.5	86.7	93.6
	Void Ratio	0.9953	1.0318	1.0238
	Diameter, in.	1.383	1.440	1.428
	Height, in.	3.142	3.128	3.122
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.79	20.80	41.54
Fail. Stress, psf		2159	2078	1695
Strain, %		6.8	14.6	8.1
Ult. Stress, psf		2000	2070	1683
Strain, %				
σ_1 Failure, psf		3137	5073	7677
σ_3 Failure, psf		978	2995	5982

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST DGR CH3 W/ WD, ARS SP

LL= 63 **PL=** 24 **PI=** 39
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

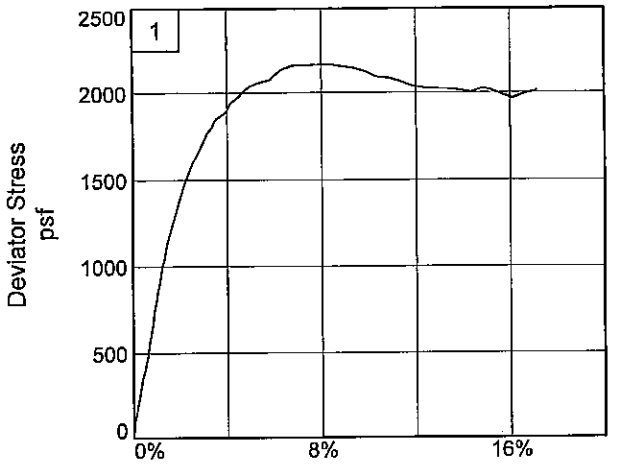
Client: U.S. Army Corps of Engineers

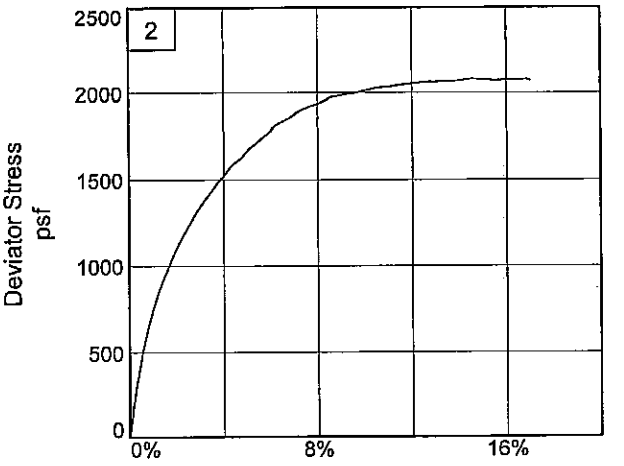
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-43UCL **Depth:** 12.8
Sample Number: 6B
Proj. No.: 0022-0002 **Date Sampled:** 5/12/07

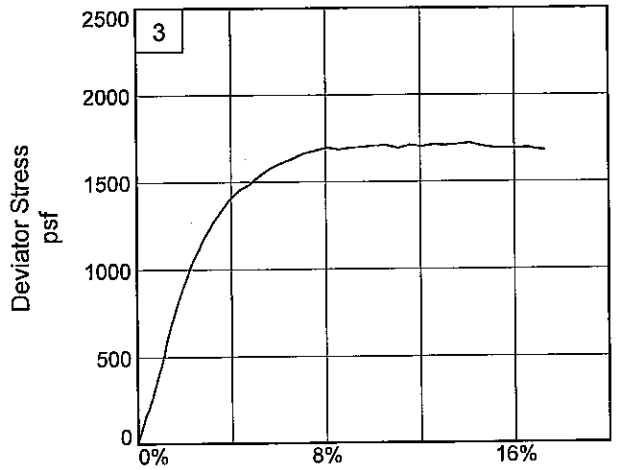
TRIAXIAL SHEAR TEST REPORT

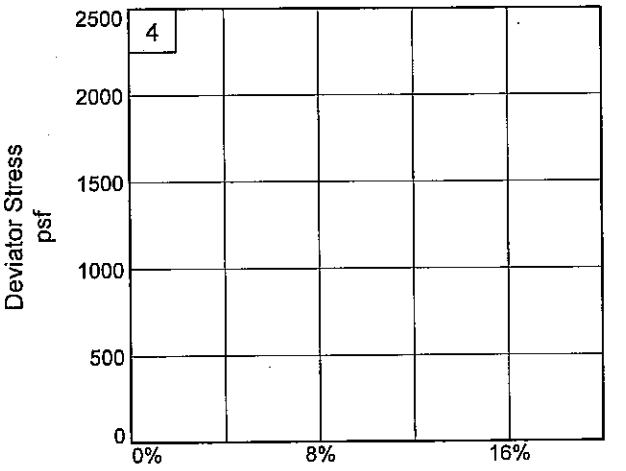
FFEBJV, LLC

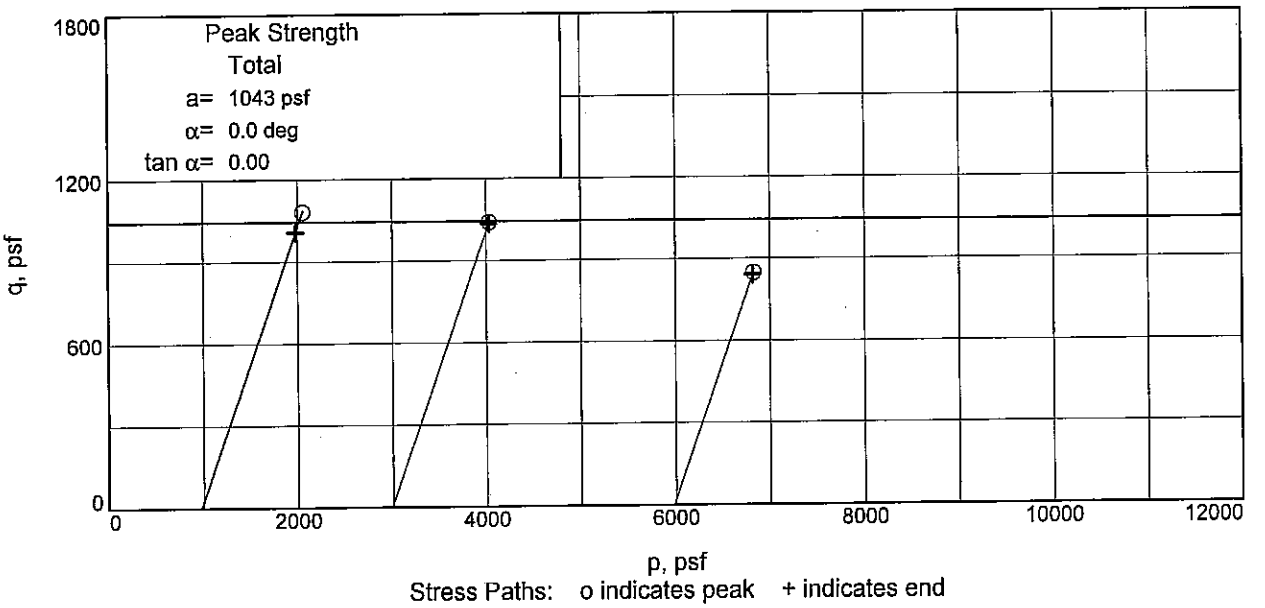
Tested By: DW/DD











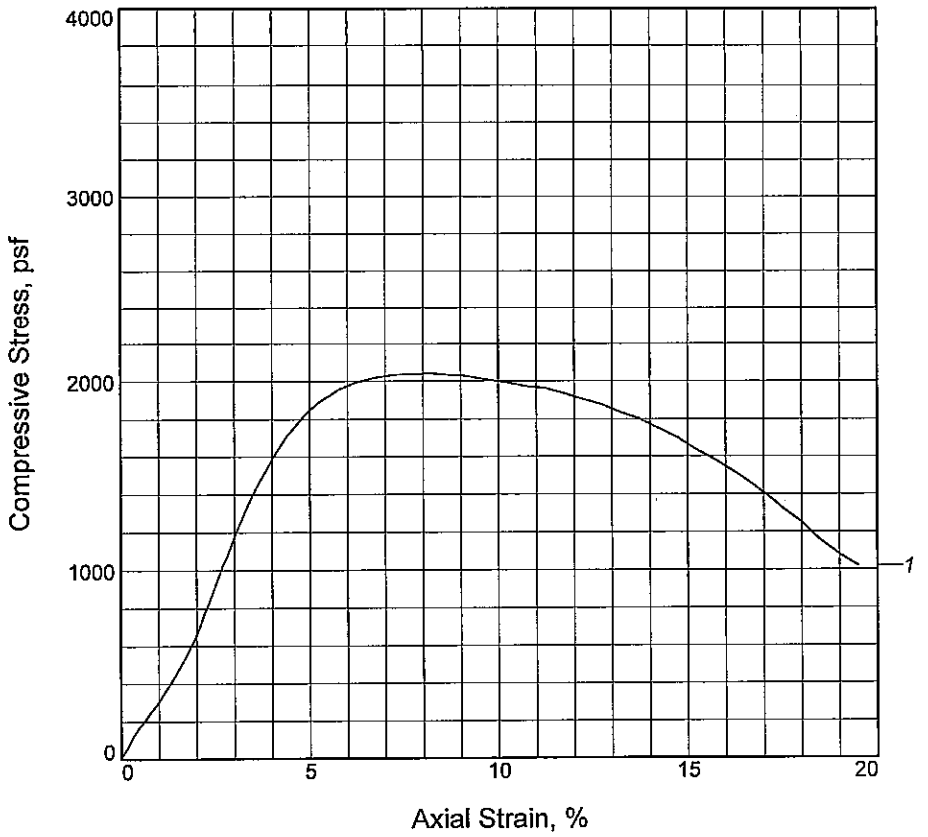
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-43UCL **Depth:** 12.8 **Sample Number:** 6B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2035			
Undrained shear strength, psf	1018			
Failure strain, %	7.2			
Strain rate, in./min.	0.031			
Water content, %	29.7			
Wet density, pcf	118.8			
Dry density, pcf	91.6			
Saturation, %	94.7			
Void ratio	0.8532			
Specimen diameter, in.	1.482			
Specimen height, in.	3.126			
Height/diameter ratio	2.11			

Description: ST DGR CH3 W/ ARS ML, WD

LL = 53 | **PL** = 20 | **PI** = 33 | **Assumed GS=** 2.72 | **Type:** Undisturbed

Project No.: 0022-0002
Date Sampled: 5-12-07
Remarks:

Figure _____

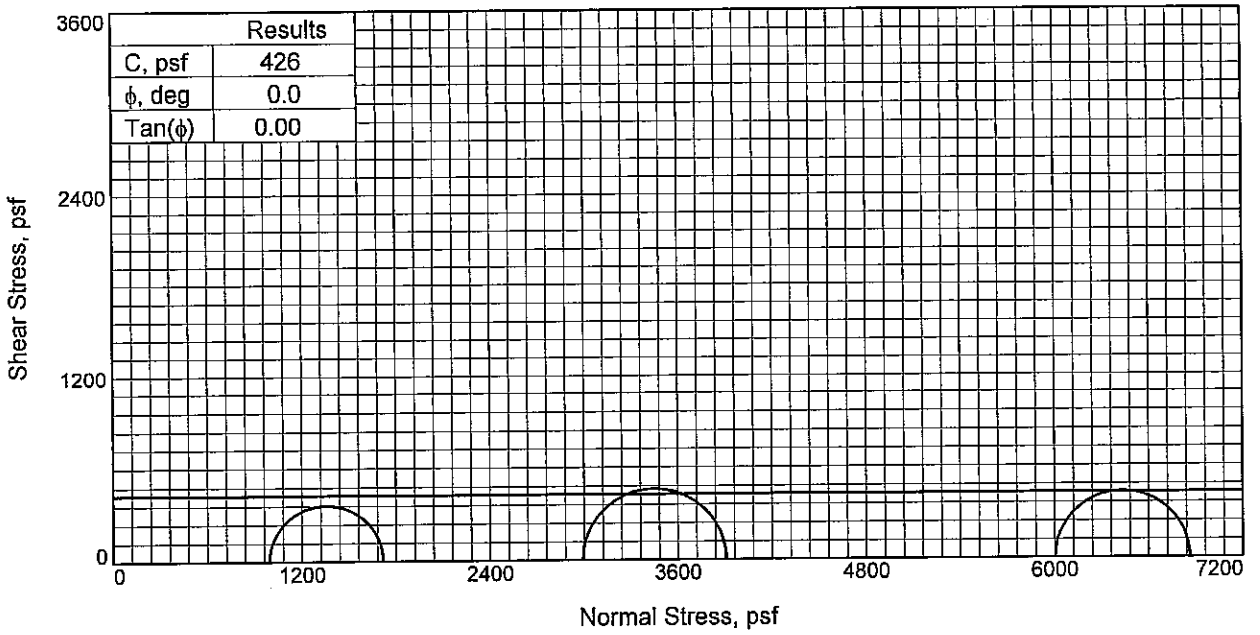
Client: U.S. Army Corps of Engineers

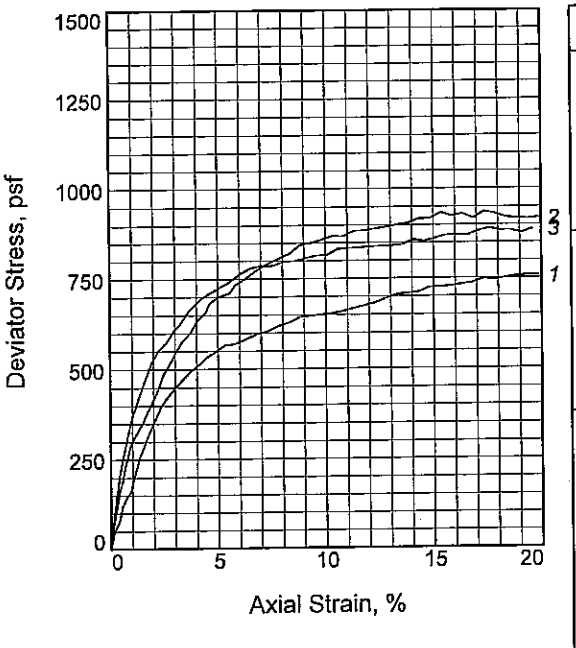
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-43UCL **Depth:** 16.8
Sample Number: 7B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: DW/JP





Sample No.		1	2	3
Initial	Water Content, %	33.3	33.8	33.8
	Dry Density, pcf	89.5	88.4	88.2
	Saturation, %	102.1	101.1	100.7
	Void Ratio	0.8769	0.8993	0.9031
	Diameter, in.	1.378	1.356	1.381
	Height, in.	3.134	3.117	3.125
At Test	Water Content, %	33.3	33.8	33.8
	Dry Density, pcf	89.5	88.4	88.2
	Saturation, %	102.1	101.1	100.7
	Void Ratio	0.8769	0.8993	0.9031
	Diameter, in.	1.378	1.356	1.381
	Height, in.	3.134	3.117	3.125
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.77	41.70
Fail. Stress, psf		724	917	858
Strain, %		14.8	14.9	14.1
Ult. Stress, psf		724	917	853
Strain, %				
σ_1 Failure, psf		1718	3908	6862
σ_3 Failure, psf		994	2991	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO T & GR CL4 W/ ARS CH, RT

LL= 40 **PL=** 17 **PI=** 23
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

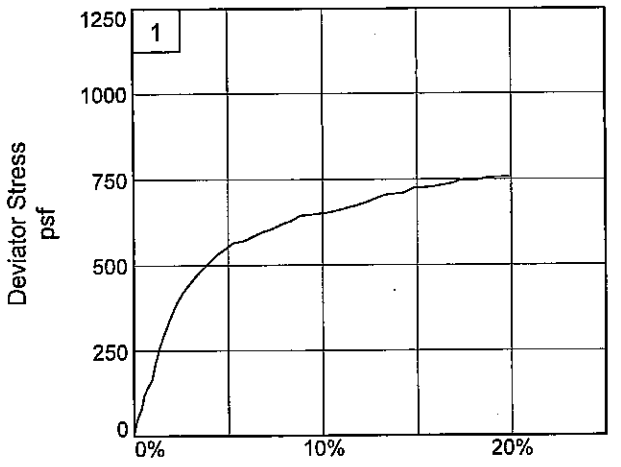
Client: U.S. Army Corps of Engineers

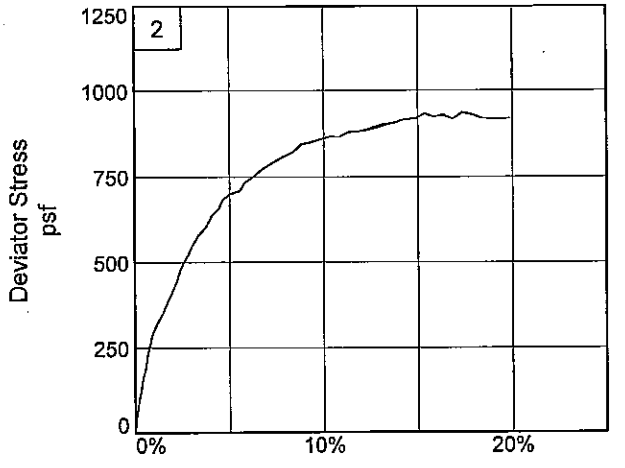
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-43UCL **Depth:** 20.8
Sample Number: 8B
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

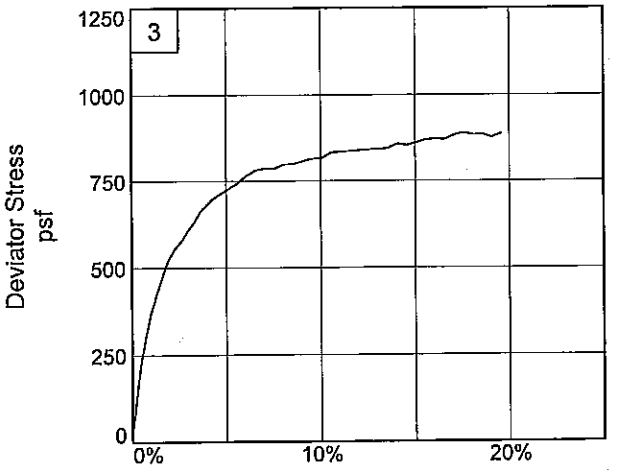
TRIAXIAL SHEAR TEST REPORT

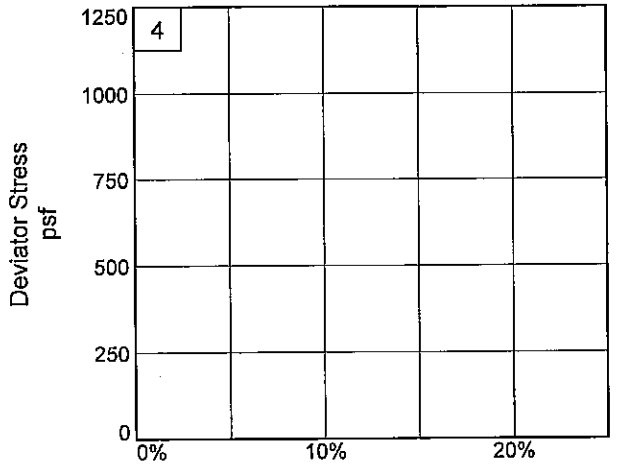
FFEBJV, LLC

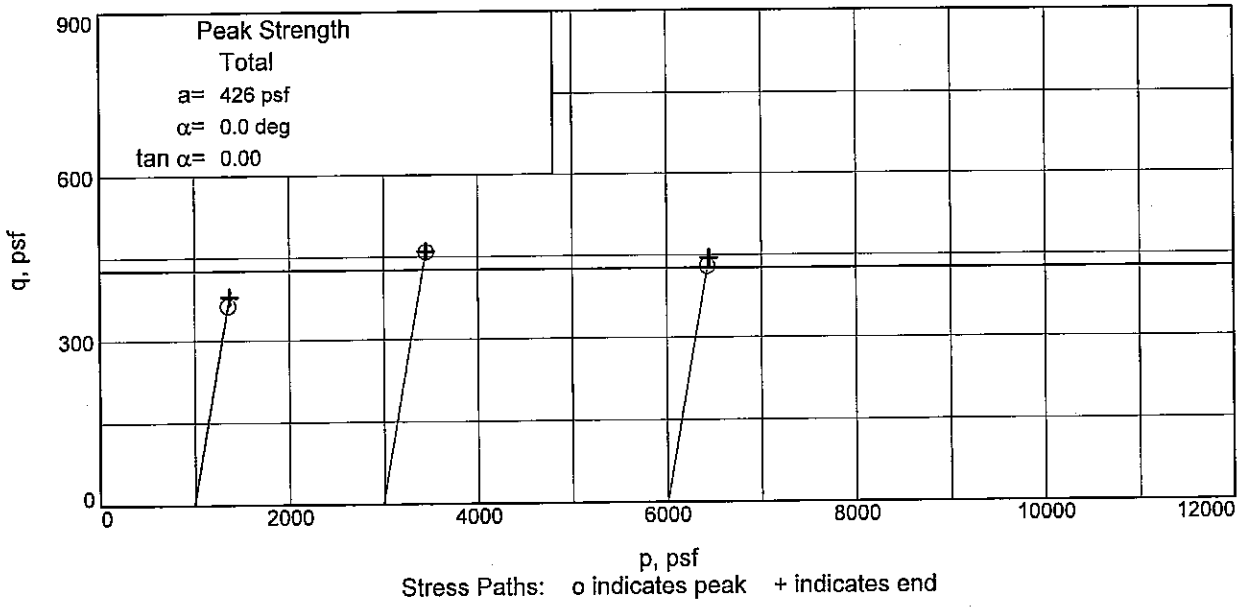
Tested By: DW/DD









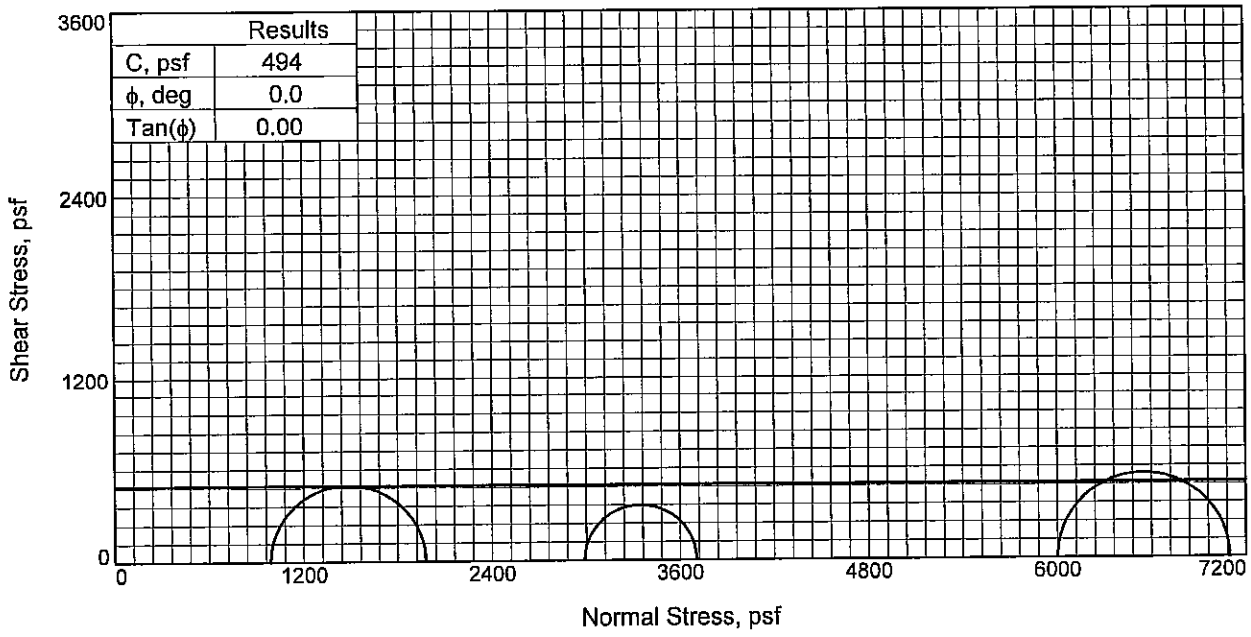


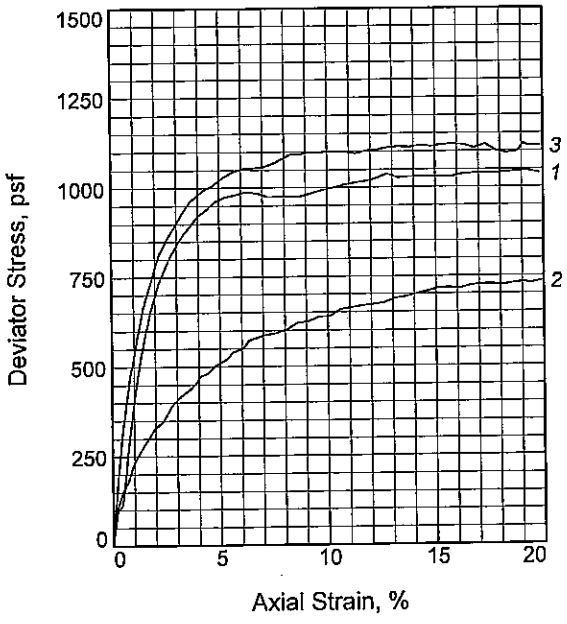
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-43UCL **Depth:** 20.8 **Sample Number:** 8B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD





Sample No.		1	2	3
Initial	Water Content, %	40.6	35.9	40.0
	Dry Density, pcf	79.8	85.4	81.9
	Saturation, %	97.9	98.9	101.3
	Void Ratio	1.1275	0.9878	1.0744
	Diameter, in.	1.383	1.410	1.376
	Height, in.	3.129	3.078	3.133
At Test	Water Content, %	40.6	35.9	40.0
	Dry Density, pcf	79.8	85.4	81.9
	Saturation, %	97.9	98.9	101.3
	Void Ratio	1.1275	0.9878	1.0744
	Diameter, in.	1.383	1.410	1.376
	Height, in.	3.129	3.078	3.133
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.76	41.67
Fail. Stress, psf		988	714	1098
Strain, %		6.3	15.1	9.3
Ult. Stress, psf		974	714	1094
Strain, %				
σ_1 Failure, psf		1977	3704	7098
σ_3 Failure, psf		989	2990	6000

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR & DGR CH2 W/ RT, WD

LL= 55 **PL=** 20 **PI=** 35
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

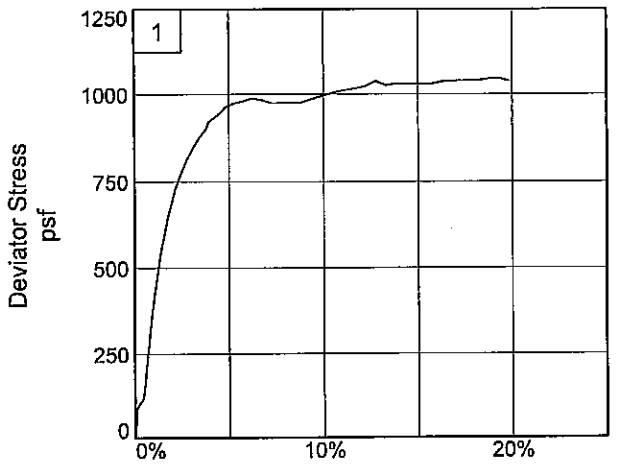
Client: U.S. Army Corps of Engineers

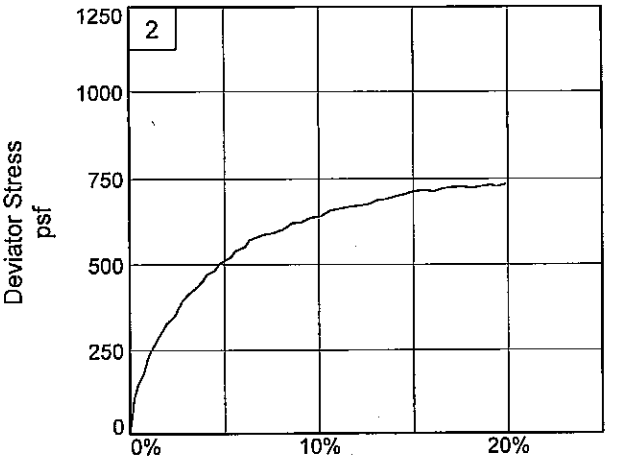
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-43UCL **Depth:** 24.8
Sample Number: 9B
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

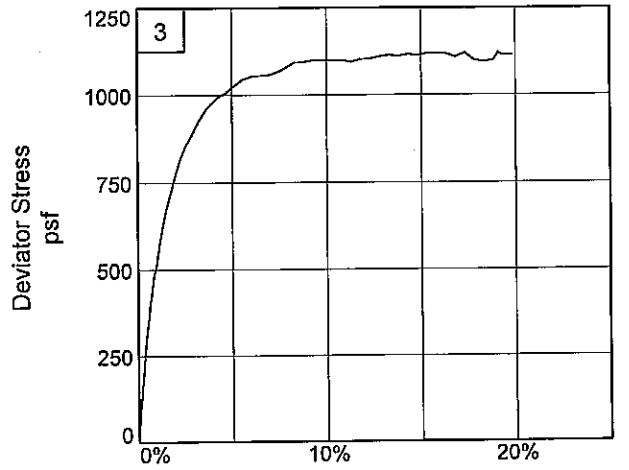
TRIAXIAL SHEAR TEST REPORT

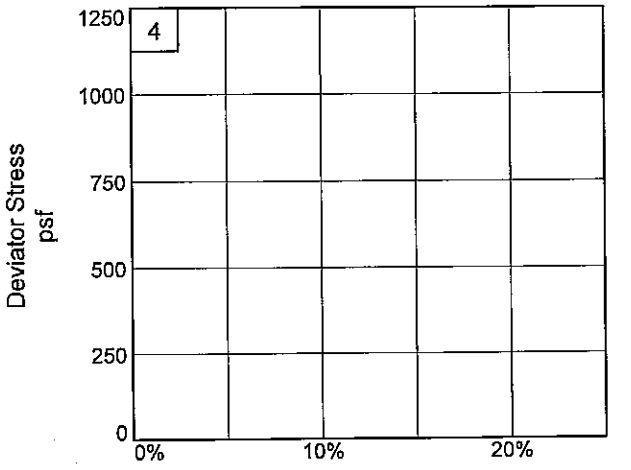
FFEBJV, LLC

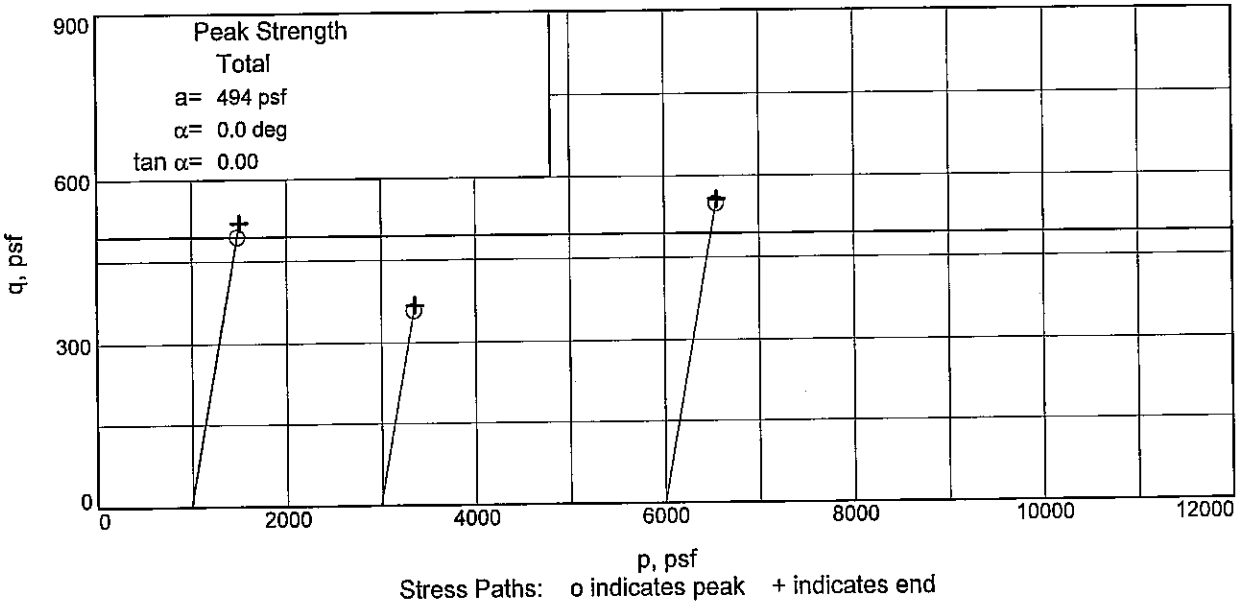
Tested By: DD/DW









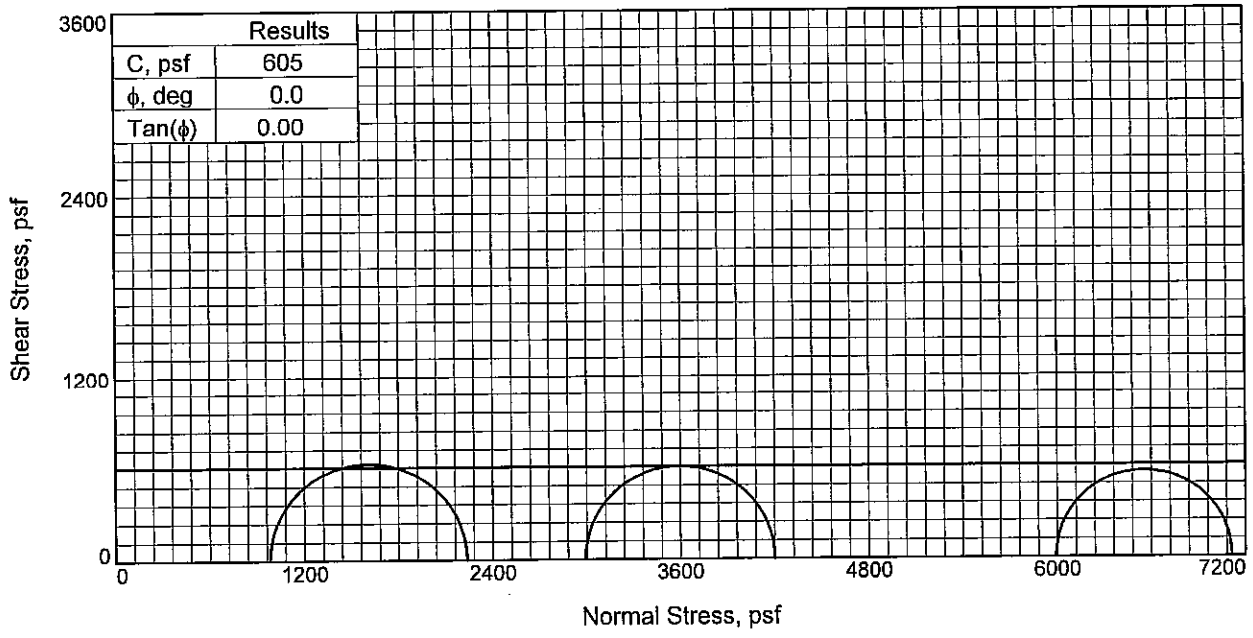


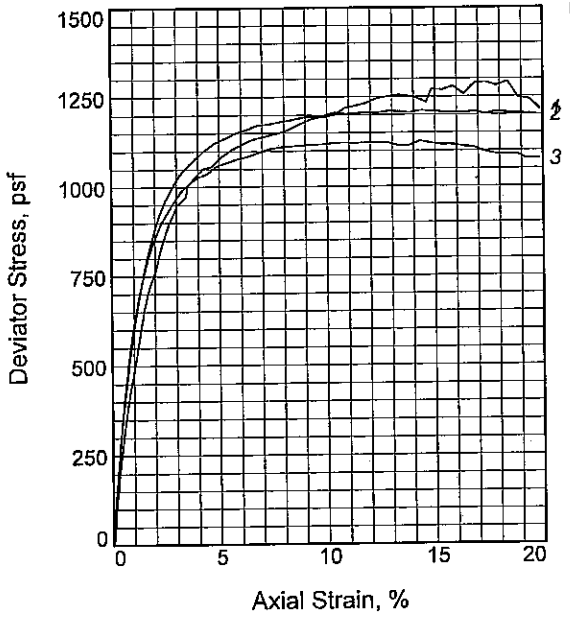
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-43UCL **Depth:** 24.8 **Sample Number:** 9B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/DW





Sample No.		1	2	3
Initial	Water Content, %	40.6	40.9	42.4
	Dry Density, pcf	81.0	78.8	77.6
	Saturation, %	100.7	96.4	97.0
	Void Ratio	1.0965	1.1542	1.1894
	Diameter, in.	1.374	1.434	1.390
	Height, in.	3.118	3.131	3.131
At Test	Water Content, %	40.6	40.9	42.4
	Dry Density, pcf	81.0	78.8	77.6
	Saturation, %	100.7	96.4	97.0
	Void Ratio	1.0965	1.1542	1.1894
	Diameter, in.	1.374	1.434	1.390
	Height, in.	3.118	3.131	3.131
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.81	20.78	41.61
Fail. Stress, psf		1255	1209	1122
Strain, %		13.3	14.9	10.8
Ult. Stress, psf		1234	1209	1113
Strain, %				
σ_1 Failure, psf		2236	4201	7114
σ_3 Failure, psf		981	2992	5992

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M DGR CH3 W/ ARS ML, CC

LL= 57 **PL=** 21 **PI=** 36
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

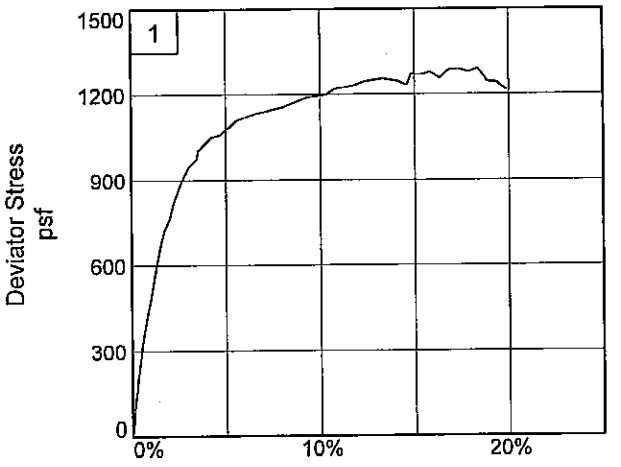
Client: U.S. Army Corps of Engineers

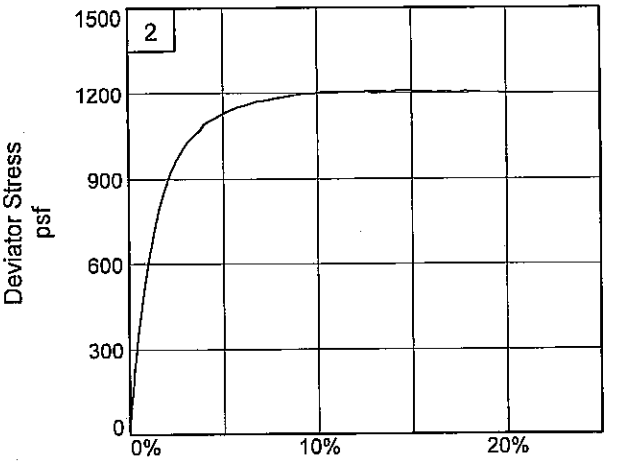
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-43UCL **Depth:** 29.7
Sample Number: 10C
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

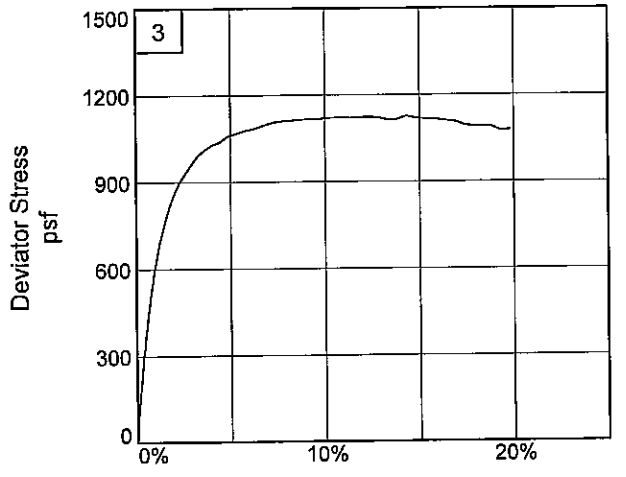
TRIAXIAL SHEAR TEST REPORT

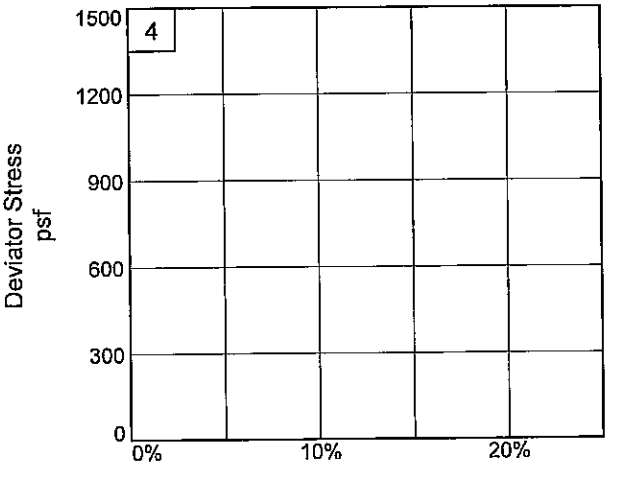
FFEBJV, LLC

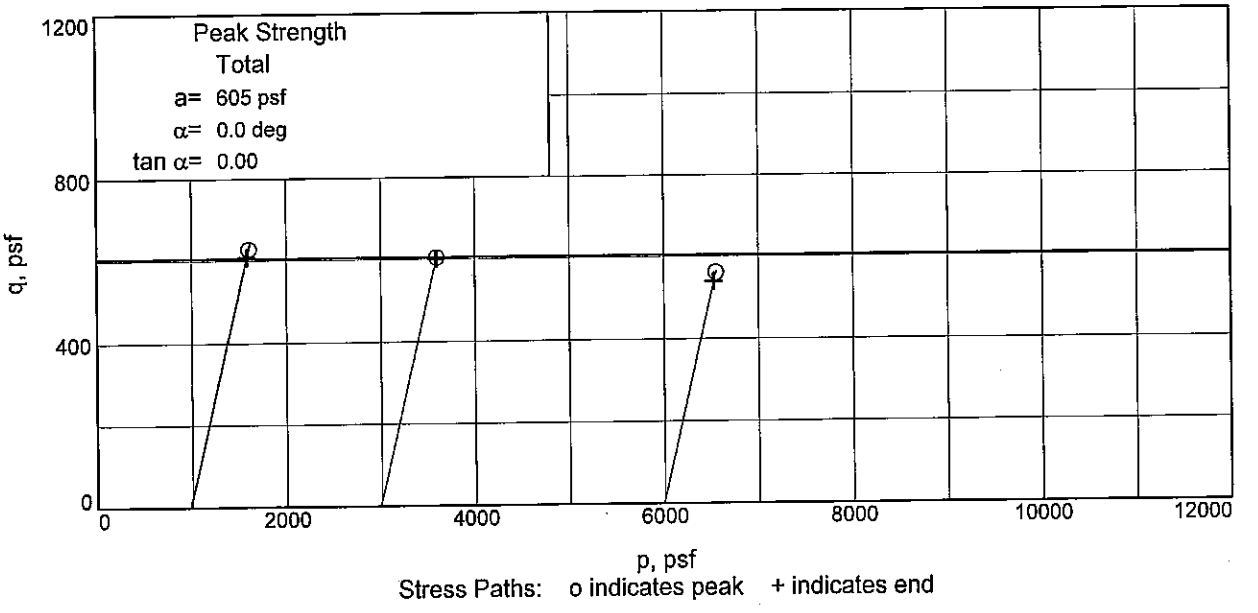
Tested By: DW/DD







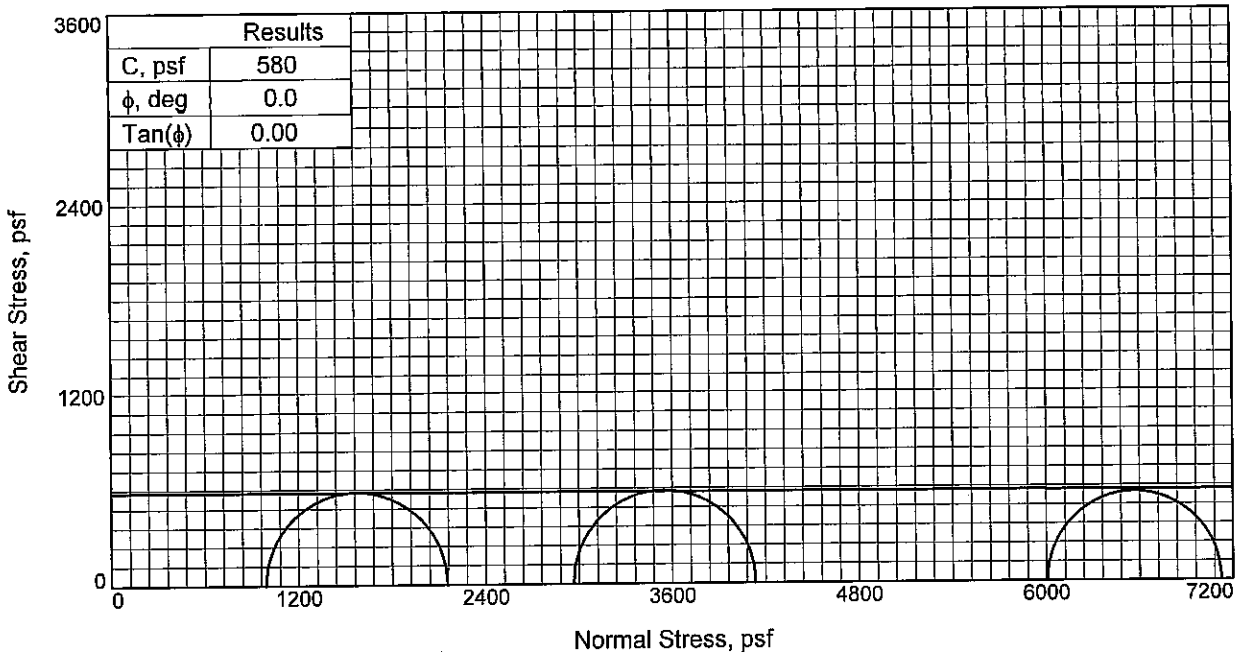


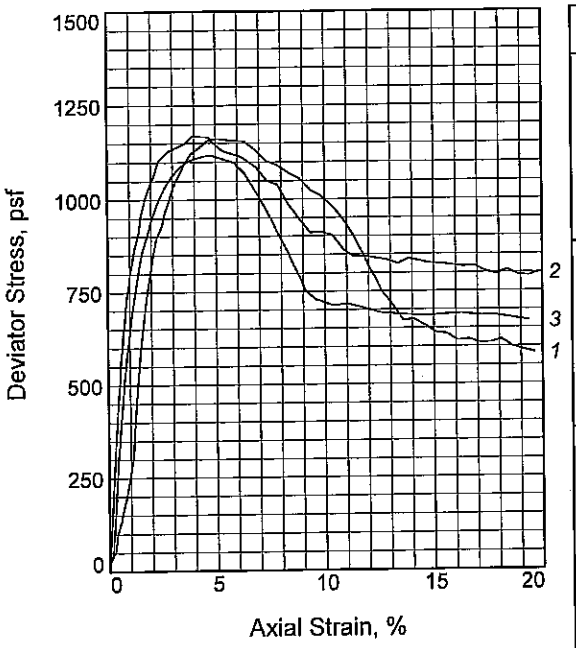


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-43UCL **Depth:** 29.7 **Sample Number:** 10C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD





Sample No.		1	2	3
Initial	Water Content, %	101.3	90.1	102.6
	Dry Density, pcf	43.2	48.4	44.1
	Saturation, %	95.1	99.3	98.3
	Void Ratio	2.7896	2.3767	2.8198
	Diameter, in.	1.398	1.385	1.393
	Height, in.	3.138	3.132	3.138
At Test	Water Content, %	101.3	90.1	102.6
	Dry Density, pcf	43.2	48.4	44.1
	Saturation, %	95.1	99.3	98.3
	Void Ratio	2.7896	2.3767	2.8198
	Diameter, in.	1.398	1.385	1.393
	Height, in.	3.138	3.132	3.138
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	20.60	41.72
Fail. Stress, psf		1162	1168	1116
Strain, %		5.1	4.0	4.5
Ult. Stress, psf		637	825	683
Strain, %				
σ_1 Failure, psf		2154	4135	7124
σ_3 Failure, psf		992	2966	6008

Type of Test:
Unconsolidated Undrained

Sample Type: Undisturbed

Description: M DGR CHOA

LL= 138 **PL=** 48 **PI=** 90

Assumed Specific Gravity= 2.62

Remarks:

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-43UCL **Depth:** 32.8

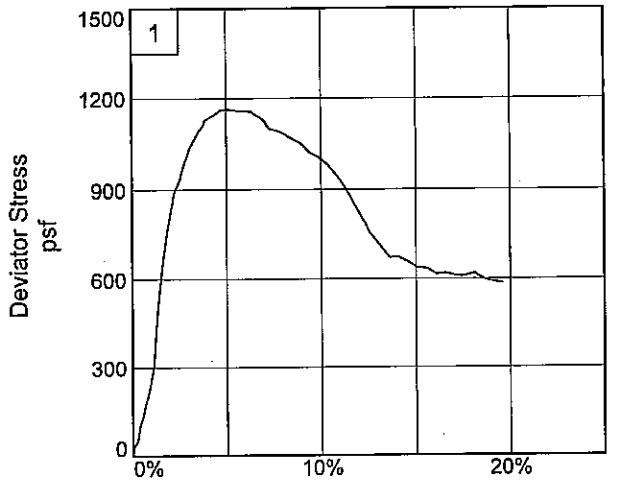
Sample Number: 11B

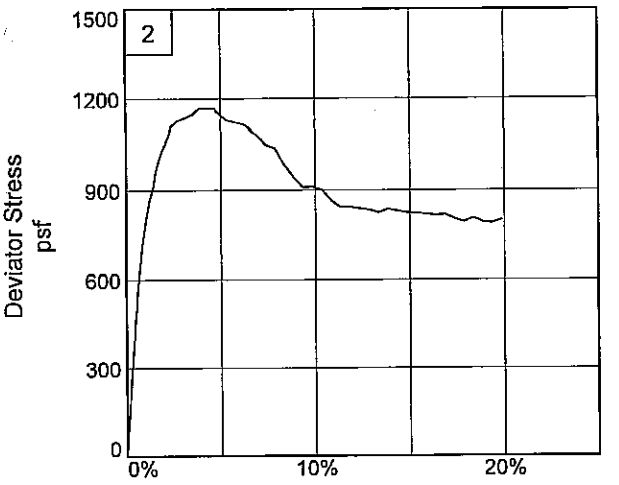
Proj. No.: 0022-0002 **Date Sampled:**

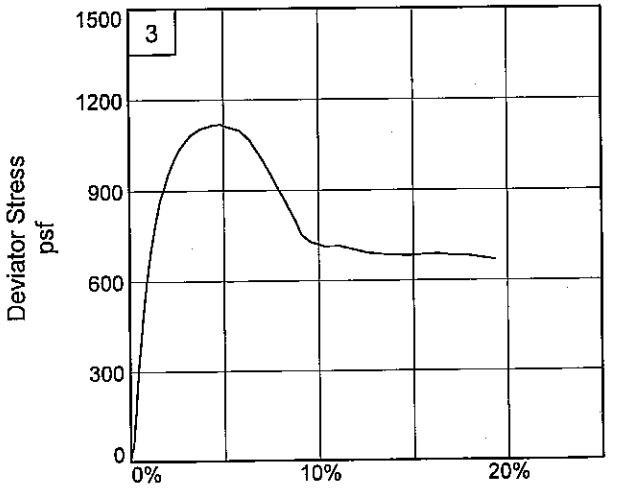
TRIAXIAL SHEAR TEST REPORT

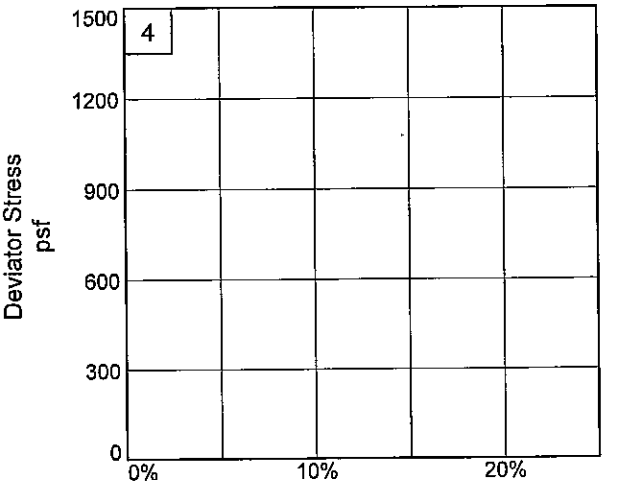
FFEBJV, LLC

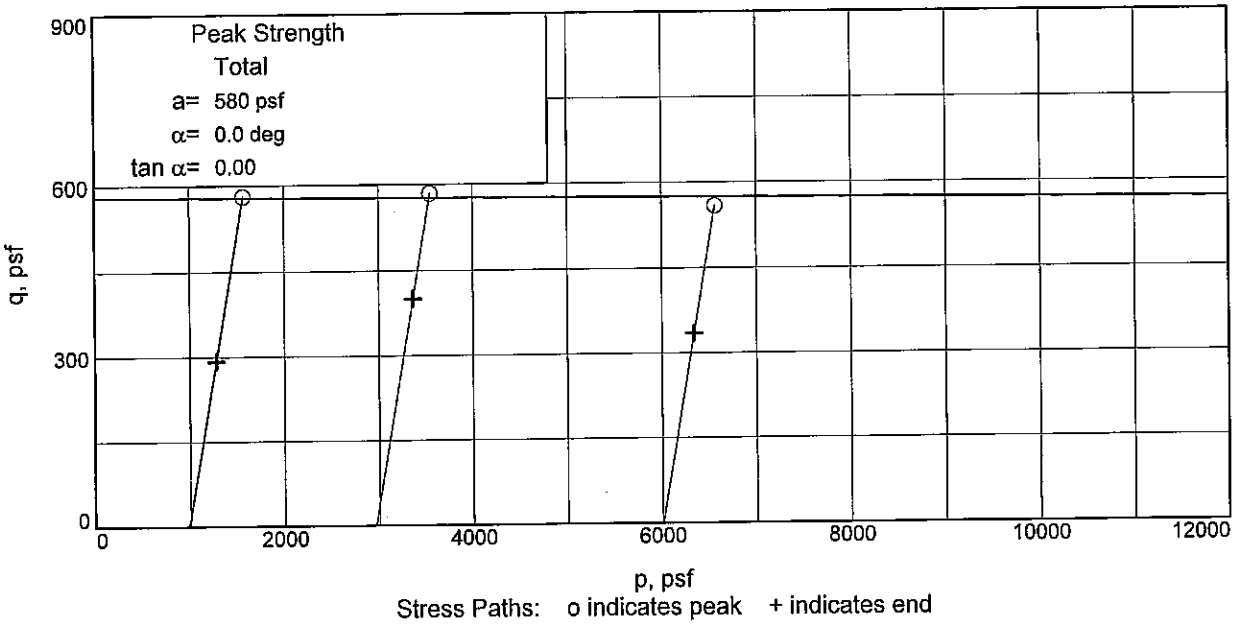
Figure _____









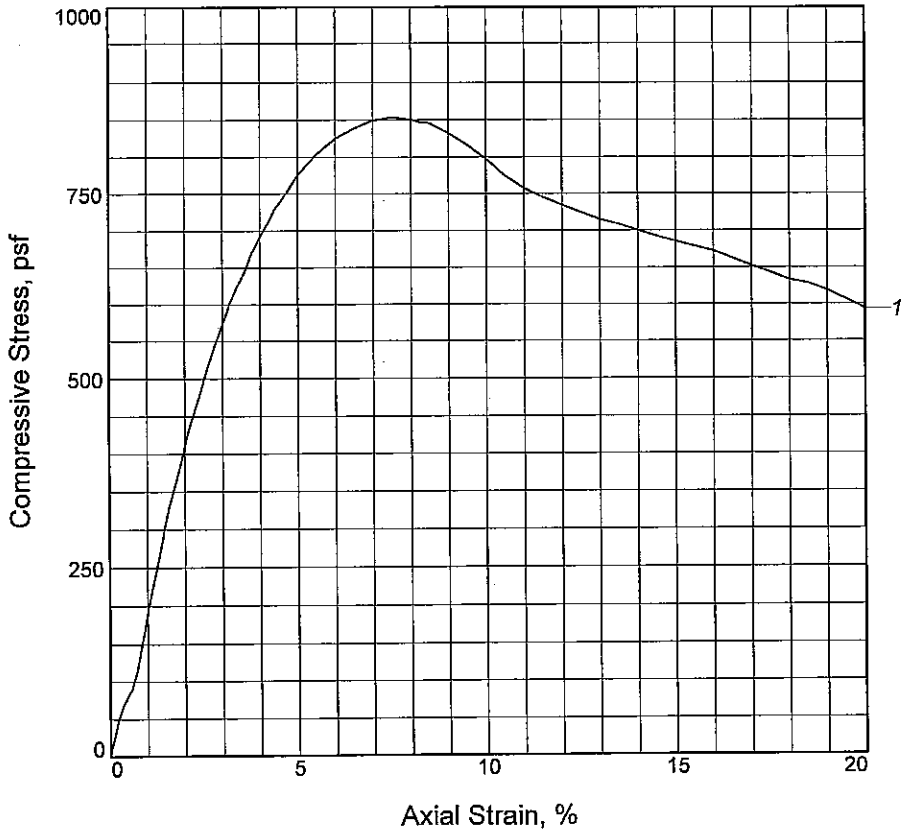


Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-43UCL **Depth:** 32.8 **Sample Number:** 11B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	853			
Undrained shear strength, psf	427			
Failure strain, %	7.5			
Strain rate, in./min.	0.031			
Water content, %	51.3			
Wet density, pcf	103.3			
Dry density, pcf	68.3			
Saturation, %	93.4			
Void ratio	1.5056			
Specimen diameter, in.	1.436			
Specimen height, in.	3.105			
Height/diameter ratio	2.16			

Description: SO GR CH4 W/ LNS SM

LL = 77	**PL =** 27	**PI =** 50	**Assumed GS=** 2.74	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled: 5-12-07
Remarks:

Figure _____

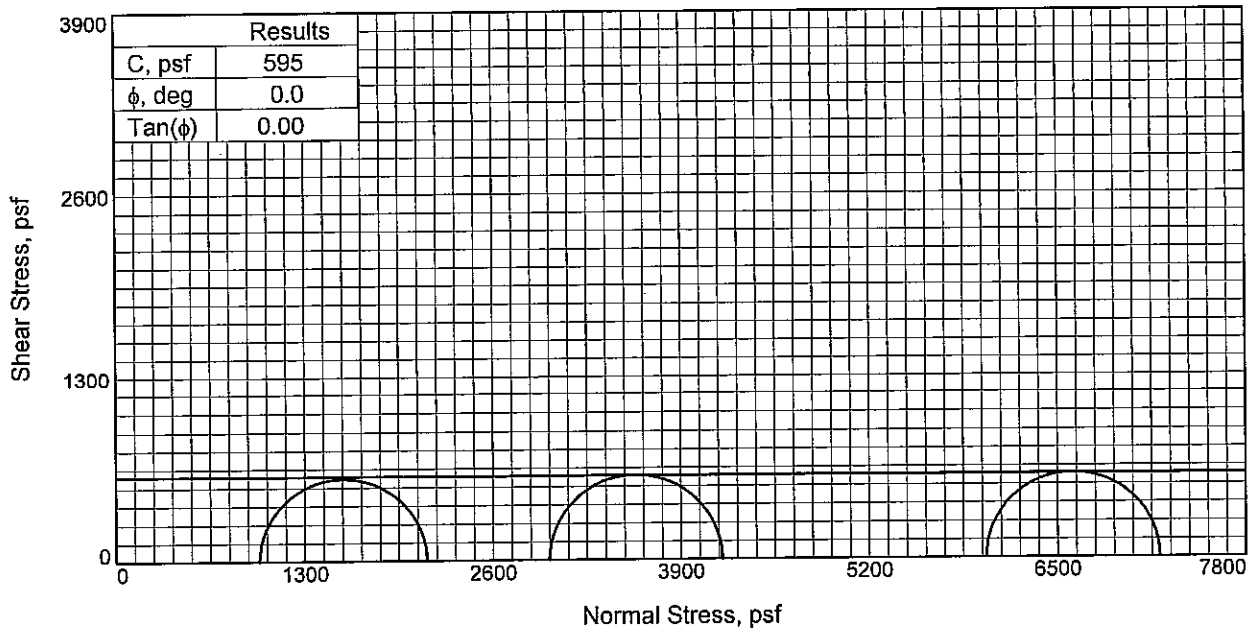
Client: U.S. Army Corps of Engineers

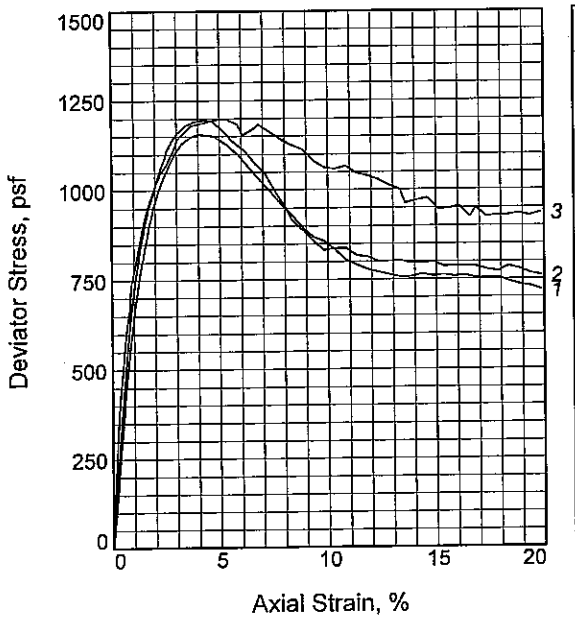
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-43UCL **Depth:** 37.7
Sample Number: 12C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: DW/JP





Sample No.		1	2	3
Initial	Water Content, %	57.2	55.6	55.8
	Dry Density, pcf	65.9	68.2	66.6
	Saturation, %	98.7	101.5	98.0
	Void Ratio	1.5769	1.4899	1.5505
	Diameter, in.	1.403	1.375	1.386
	Height, in.	3.136	3.139	3.137
At Test	Water Content, %	57.2	55.4	55.8
	Dry Density, pcf	65.9	68.2	66.6
	Saturation, %	98.7	101.1	98.0
	Void Ratio	1.5769	1.4899	1.5505
	Diameter, in.	1.403	1.375	1.386
	Height, in.	3.136	3.139	3.137
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.77	41.72
Fail. Stress, psf		1155	1195	1199
Strain, %		4.1	4.3	5.3
Ult. Stress, psf		757	832	1152
Strain, %				
σ_1 Failure, psf		2144	4186	7206
σ_3 Failure, psf		988	2991	6007

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ LNS ML, ARS SM

LL= 75 **PL=** 25 **PI=** 50
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

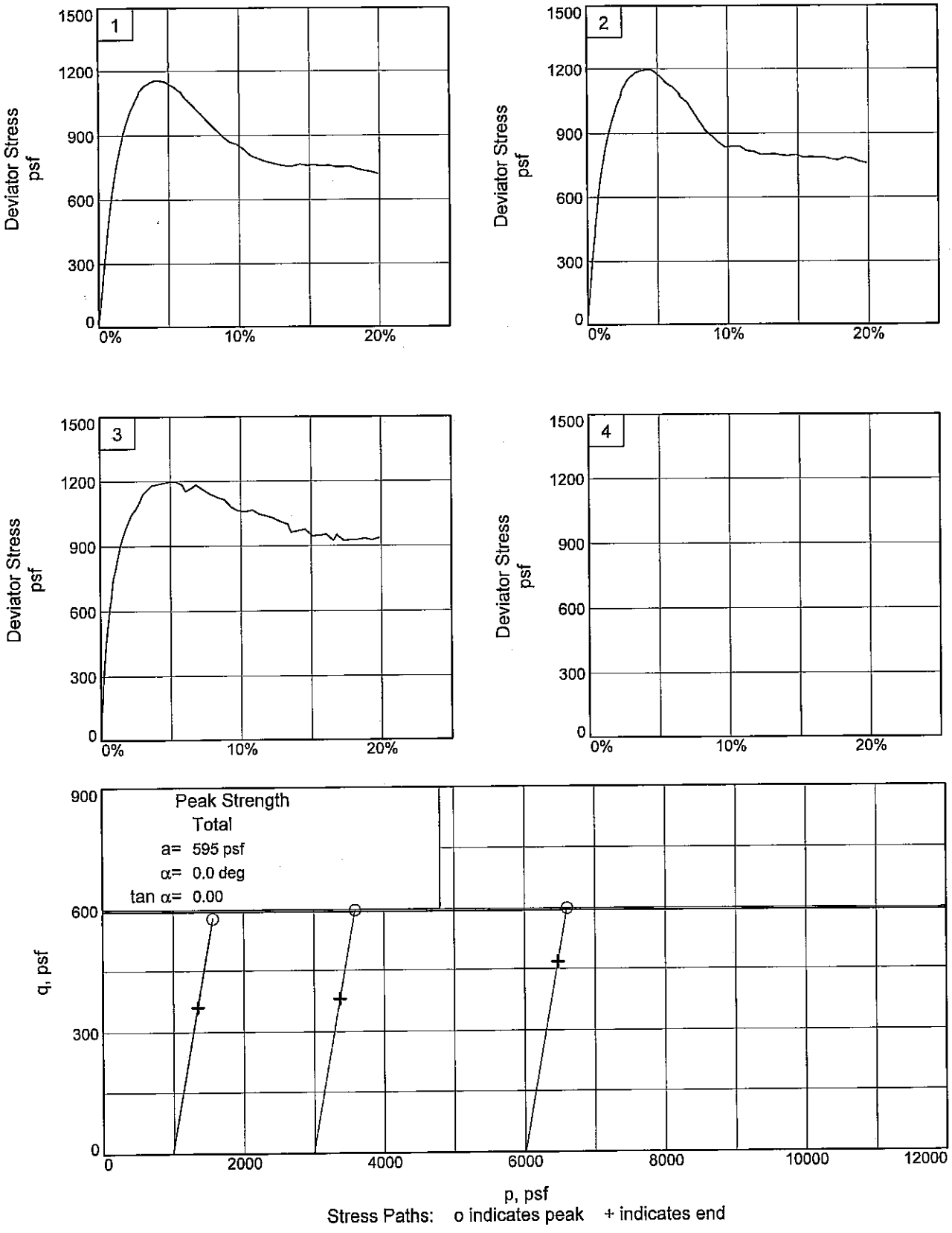
Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-43UCL **Depth:** 41.7
Sample Number: 13C
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

Tested By: DW/DD

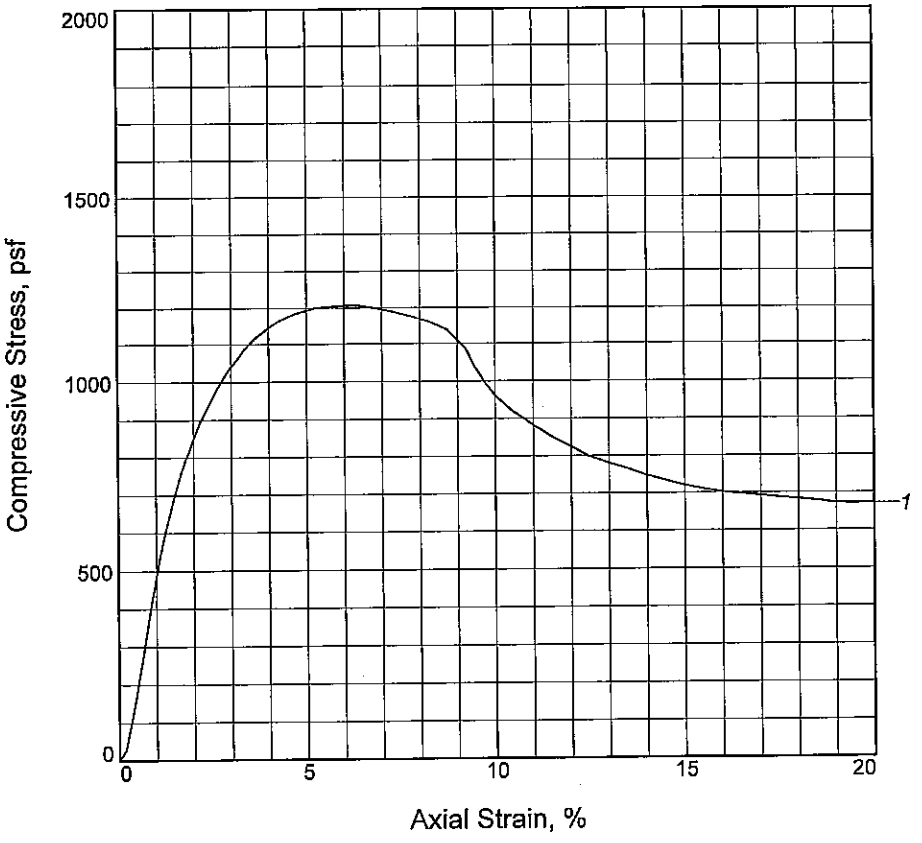


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-43UCL **Depth:** 41.7 **Sample Number:** 13C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1207			
Undrained shear strength, psf	603			
Failure strain, %	6.2			
Strain rate, in./min.	0.031			
Water content, %	67.5			
Wet density, pcf	98.2			
Dry density, pcf	58.6			
Saturation, %	96.5			
Void ratio	1.9167			
Specimen diameter, in.	1.435			
Specimen height, in.	3.145			
Height/diameter ratio	2.19			

Description: M GR CH4 W/ SL

LL = 91	**PL** = 29	**PI** = 62	**GS**= 2.74	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled: 05/12/07
Remarks:

Client: U.S. Army Corps of Engineers

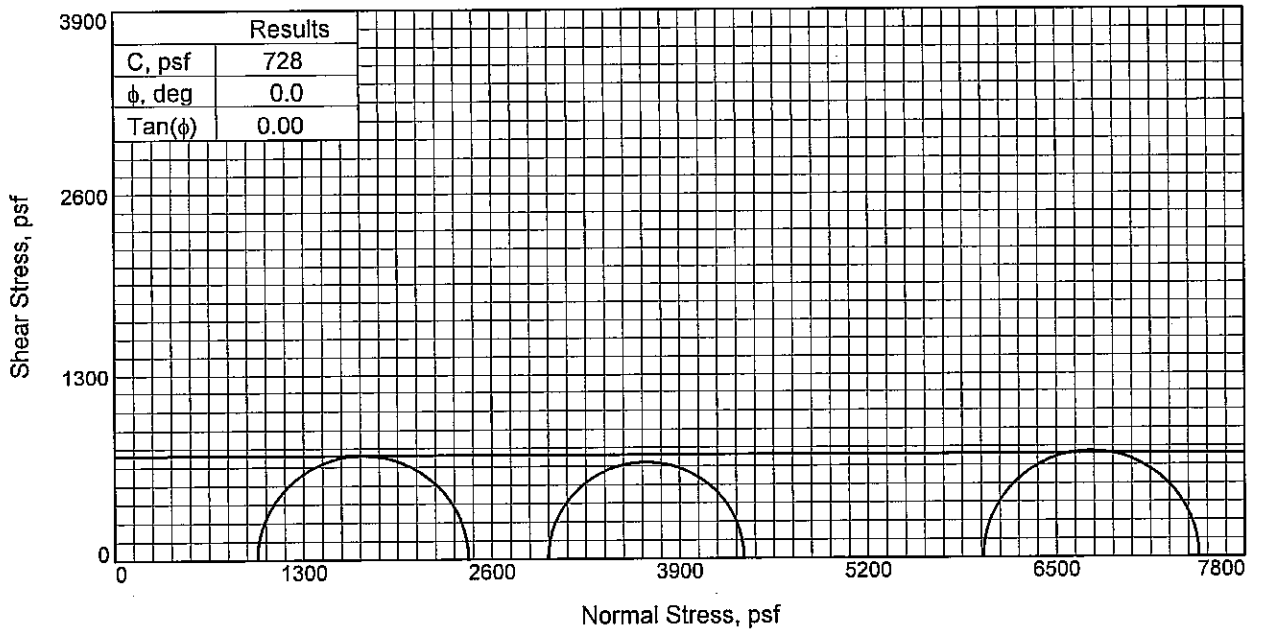
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-43UCL **Depth:** 49.7
Sample Number: 15C

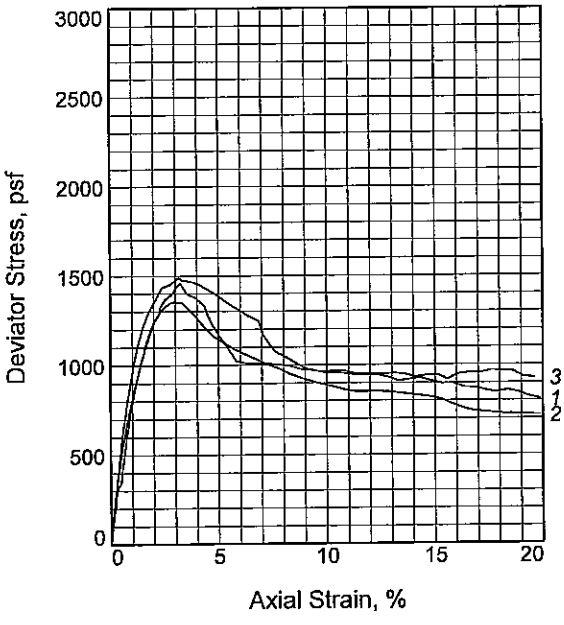
UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: JP/DW





Sample No.		1	2	3
Initial	Water Content, %	68.3	69.1	67.7
	Dry Density, pcf	60.0	58.8	59.8
	Saturation, %	101.6	99.6	100.1
	Void Ratio	1.8294	1.8857	1.8401
	Diameter, in.	1.367	1.397	1.395
	Height, in.	3.136	3.143	3.129
At Test	Water Content, %	68.3	69.1	67.7
	Dry Density, pcf	60.0	58.8	59.8
	Saturation, %	101.6	99.6	100.1
	Void Ratio	1.8294	1.8857	1.8401
	Diameter, in.	1.367	1.397	1.395
	Height, in.	3.136	3.143	3.129
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.82	20.76	41.63
Fail. Stress, psf		1456	1353	1489
Strain, %		3.2	2.9	3.2
Ult. Stress, psf		908	818	930
Strain, %				
σ_1 Failure, psf		2438	4343	7484
σ_3 Failure, psf		982	2990	5995

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ ARS ML, SL

LL= 94 **PL=** 27 **PI=** 67
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

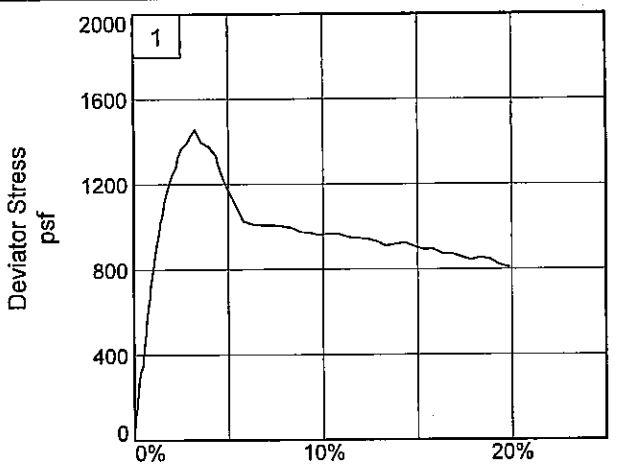
Client: U.S. Army Corps of Engineers

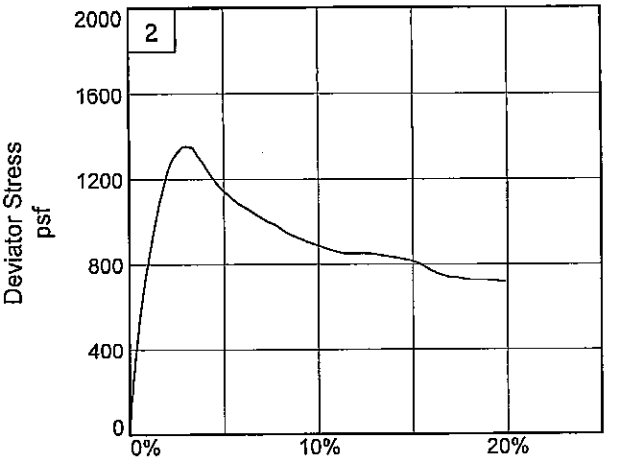
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-43UCL **Depth:** 53.7
Sample Number: 16C
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

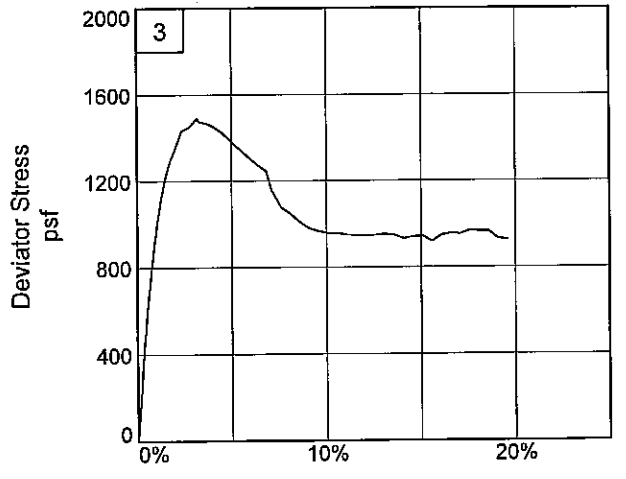
TRIAXIAL SHEAR TEST REPORT

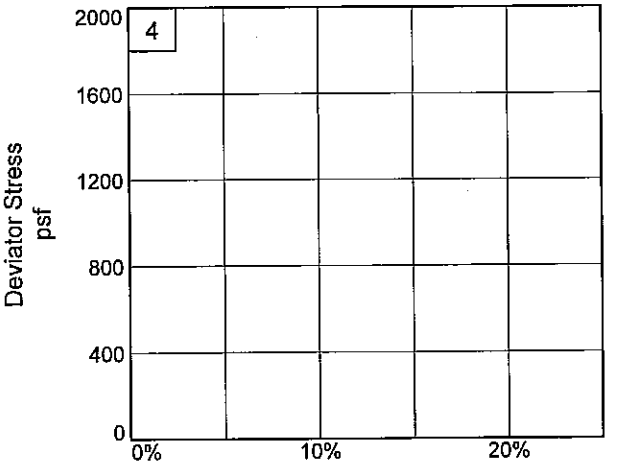
FFEBJV, LLC

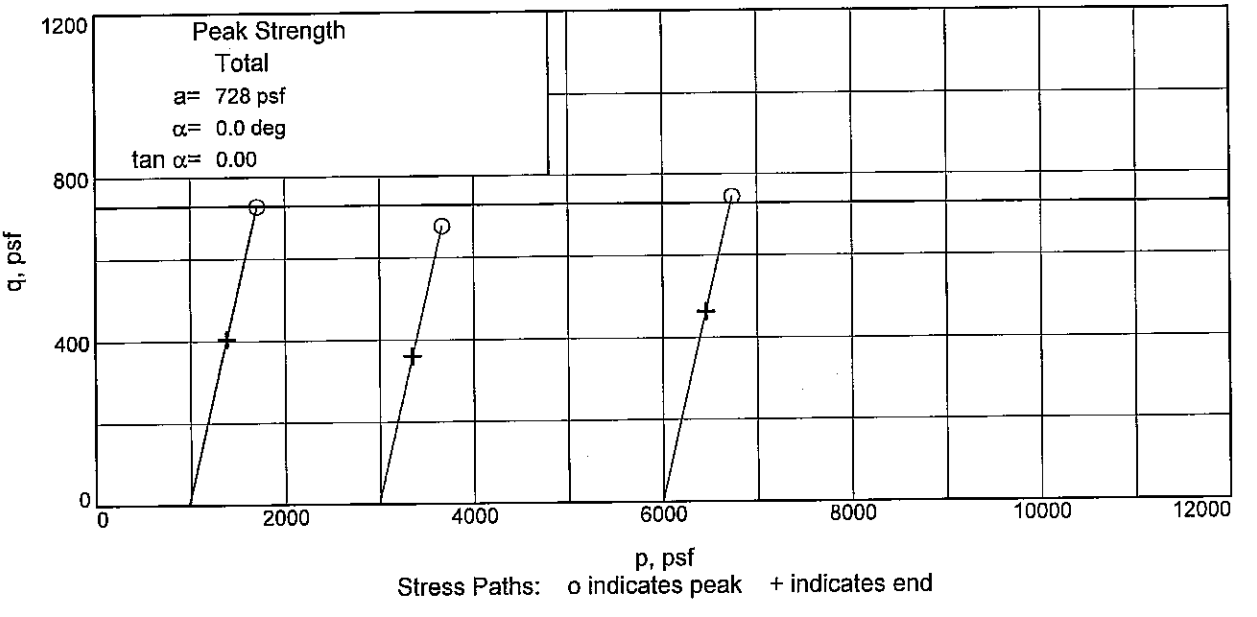
Tested By: DW/DD









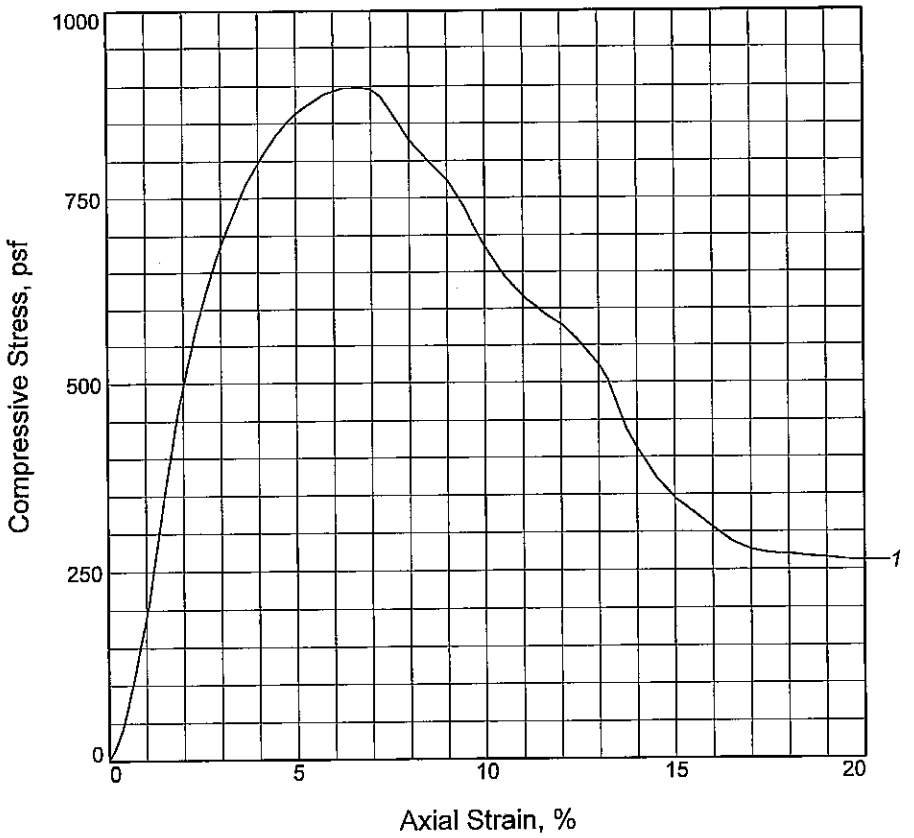


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-43UCL **Depth:** 53.7 **Sample Number:** 16C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	898			
Undrained shear strength, psf	449			
Failure strain, %	6.7			
Strain rate, in./min.	0.031			
Water content, %	63.1			
Wet density, pcf	101.1			
Dry density, pcf	62.0			
Saturation, %	98.7			
Void ratio	1.7395			
Specimen diameter, in.	1.458			
Specimen height, in.	3.127			
Height/diameter ratio	2.14			

Description: SO GR CH4 W/ ARS ML, SL

LL = 90	**PL** = 29	**PI** = 61	**GS**= 2.72	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled: 5/12/07
Remarks:

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-43UCL **Depth:** 57.7
Sample Number: 17C

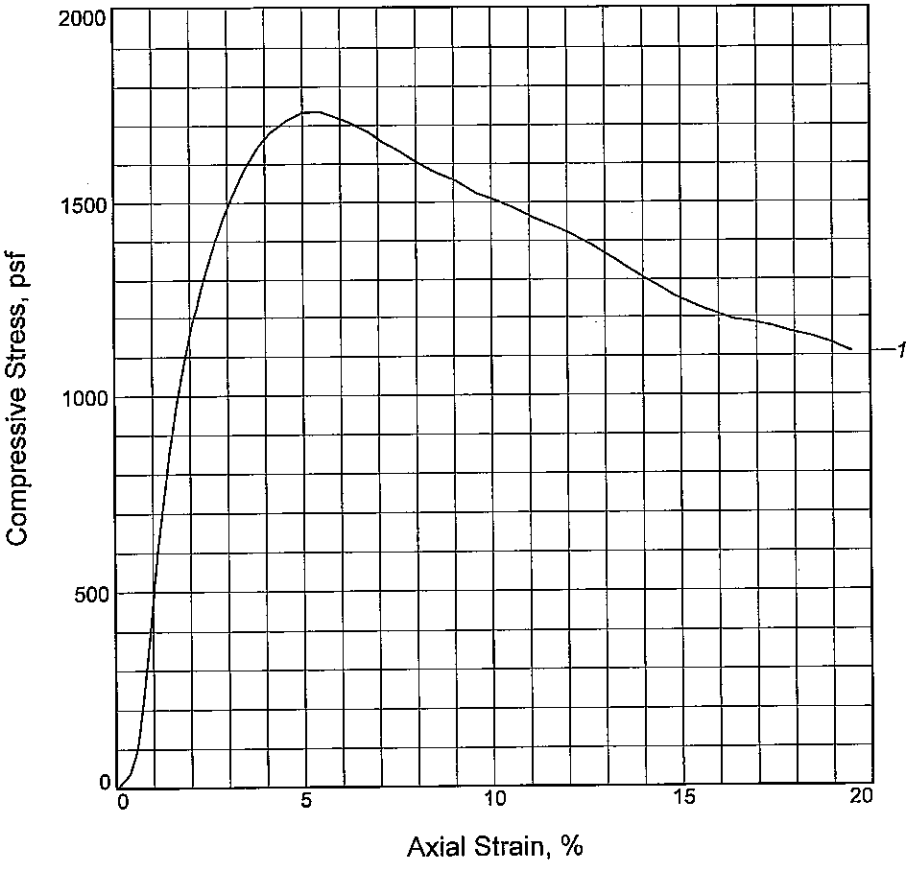
UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: JP/DW

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1734			
Undrained shear strength, psf	867			
Failure strain, %	5.0			
Strain rate, in./min.	0.030			
Water content, %	47.7			
Wet density, pcf	104.2			
Dry density, pcf	70.6			
Saturation, %	91.8			
Void ratio	1.4233			
Specimen diameter, in.	1.388			
Specimen height, in.	3.017			
Height/diameter ratio	2.17			

Description: M GR CH3

LL = 82	**PL** = 23	**PI** = 59	**GS**= 2.74	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled:
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

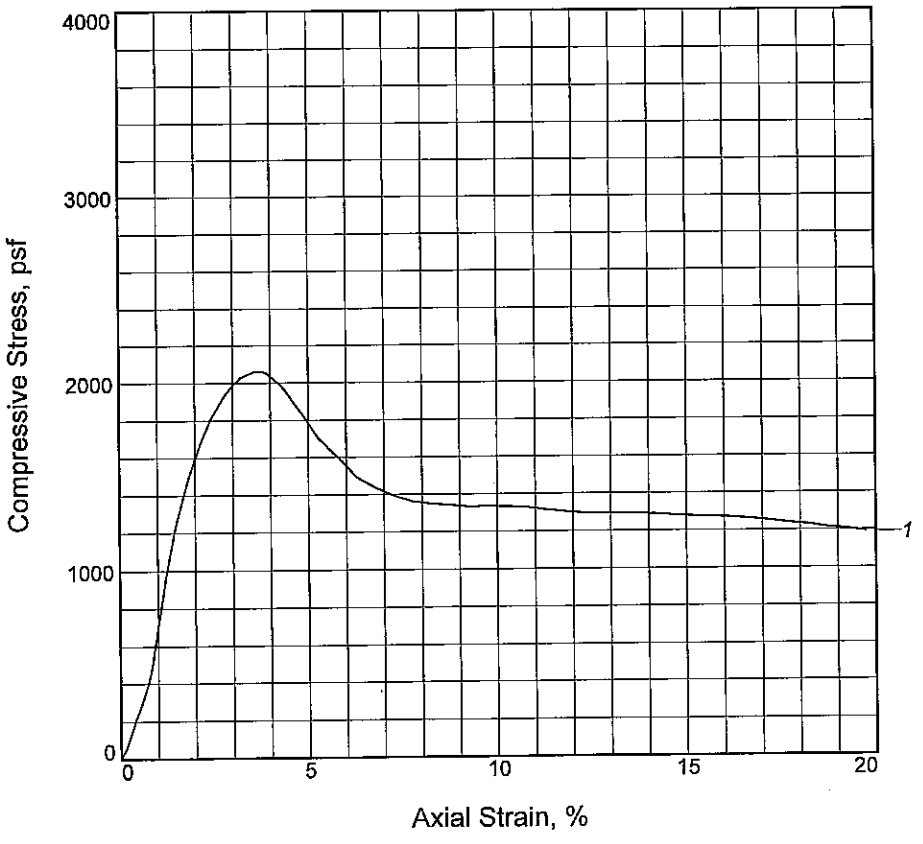
Source of Sample: WWHC-43UCL **Depth:** 65.7

Sample Number: 19C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2060			
Undrained shear strength, psf	1030			
Failure strain, %	3.6			
Strain rate, in./min.	0.031			
Water content, %	60.3			
Wet density, pcf	102.2			
Dry density, pcf	63.7			
Saturation, %	98.1			
Void ratio	1.6832			
Specimen diameter, in.	1.458			
Specimen height, in.	3.133			
Height/diameter ratio	2.15			

Description: ST GR CH4

LL = 83	**PL** = 28	**PI** = 55	**GS**= 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/12/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-43UCL **Depth:** 68.8
Sample Number: 20B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: DW/JP

BOR. WWHC-43UCL
STA.
LAT 29^50'19.88"
LON 90^07'13.46"
12 APRIL 2007

GROUND EL. 12.3

```
 0.0  0.8 13     CH  SISST  T       RT
 0.8  2.0 15     CH  SISST  T       RT
 2.0  2.8 18     CH  SISST  T       RT CC
 2.8  4.0 21     CH  SISST GR       CC
 4.0  6.0 32  6.0CH  SIS M GR  T    RT
 6.0  6.8 26  6.8CL  SIS M GR
 6.8  8.0 25  8.0CL      M GR       CC
 8.0  8.8 30  8.8CL  SIS M GR
 8.8  9.5 27  9.5CL     ST GR BR
 9.5 12.0    12.0NS
12.0 12.8 31 12.8CH  SISST GR       RT
12.8 13.3 38 13.3CH     ST DGR      WD  S
13.3 16.0    16.0NS
16.0 16.8 30 16.8CH     ST GR       WD
16.8 17.7 30 17.7CH  SISST DGR      WD              1018119 53 20      30 171
17.7 20.0    20.0NS
20.0 20.8 35     CL     SO GR       RT
20.8 21.7 34     CL     SO  T GR    CS RT
21.7 24.0 35     CL     SO GR  T
24.0 24.8 35 24.8CL     SO GR       RT
24.8 25.7 38 25.7CH  SISSO GR DGR   RT WD
25.7 28.0 33 28.0CH     SO GR       RT  G
28.0 28.8 54     CH  SISSO GR       RT
28.8 29.7 46     CH  SIS M GR       RT
29.7 30.6 47     CH  SIS M DGR      CC
30.6 32.0 76 32.0CH  SIS M GR       RT
32.0 32.8 78 32.8CH      M GR       RT  O
32.8 33.7101     CH   O  M DGR
33.7 36.0194 36.0CH   O SO DGRDBR   RT
36.0 36.8 59 36.8CH      M GR
36.8 37.7 52 37.7CH  SIS M GR
37.7 38.6 51 38.6CH  SS SO GR                    427103 77 27      51 380
38.6 40.0 67 40.0CH      M GR
40.0 40.8 60     CH  SIS M GR       SIF
40.8 41.7 54     CH  SIS M GR
```

41.7 42.6 58 CH SIS M GR S
42.6 44.0 53 CH SIS M GR
44.0 44.8 57 CH SIS M GR SIF
44.8 45.7 56 45.7CH SIS M GR
45.7 46.6 60 46.6CH M GR
46.6 48.0 59 48.0CH SIS M GR
48.0 48.8 69 48.8CH M GR
48.8 49.7 59 49.7CH SIS M GR
49.7 50.6 59 50.6CH M GR 604 98 91 29 68 500
50.6 52.0 59 CH SIS M GR
52.0 52.8 61 CH SIS M GR
52.8 53.7 64 CH SIS M GR
53.7 54.6 65 CH SIS M GR SL
54.6 56.0 62 56.0CH SIS M GR
56.0 56.8 69 56.8CH M GR
56.8 57.7 64 CH SISSO GR
57.7 58.6 63 CH SISSO GR SL 449101 90 29 63 580
58.6 60.0 61 CH SISSO GR
60.0 60.8 58 CH SIS M GR
60.8 61.7 58 CH SIS M GR
61.7 62.6 61 CH SIS M GR
62.6 64.0 57 CH SIS M GR
64.0 64.8 60 CH SIS M GR
64.8 65.7 62 65.7CH SIS M GR
65.7 66.6 59 66.6CH M GR 867104 82 23 48 660
66.6 68.0 59 68.0CH SIS M GR
68.0 68.8 60 CH ST GR
68.8 69.7 58 69.7CH ST GR 1030102 83 28 60 691
69.7 72.0 40 72.0CH SS M GR SIF
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 7.10/ 5.20 Water Con: 28.00
LL,PL,PI : 39, 18, 21 Dry Dens : 97.00
Cohesion : 0.488 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 9.10/ 3.20 Water Con: 25.00

LL,PL,PI : 40, 16, 24 Dry Dens :101.00
Cohesion : 0.711 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 13.10/-0.80 Water Con: 34.00
LL,PL,PI : 63, 24, 39 Dry Dens : 84.00
Cohesion : 0.522 Saturat : 91.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 21.10/-8.80 Water Con: 34.00
LL,PL,PI : 40, 17, 23 Dry Dens : 89.00
Cohesion : 0.213 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 25.10/-12.8 Water Con: 32.00
LL,PL,PI : 55, 20, 35 Dry Dens : 82.00
Cohesion : 0.247 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 30.00/-17.7 Water Con: 43.00
LL,PL,PI : 57, 21, 36 Dry Dens : 79.00
Cohesion : 0.303 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES

Test Type:(Q) Classif : CHO
Depth/Ele: 33.10/-20.8 Water Con: 98.00
LL,PL,PI : 138, 48, 90 Dry Dens : 45.00
Cohesion : 0.290 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 42.00/-29.7 Water Con: 56.00
LL,PL,PI : 75, 25, 50 Dry Dens : 67.00
Cohesion : 0.298 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 54.00/-41.7 Water Con: 68.00
LL,PL,PI : 94, 27, 67 Dry Dens : 60.00
Cohesion : 0.364 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CL
Depth/Ele: 21.7/-9.40 Water Con: 35.00
LL,PL,PI : 47, 17, 30 Dry Dens : 81.00
Cohesion : Saturat : 88.00
Shear Str: Frict Ang: 00.00
Norm Str: 1.400, 1.066
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.03	1.070
0.13	1.056
0.25	1.045
0.50	1.033
1.00	1.010
2.00	0.948
4.00	0.853

8.00	0.757
12.00	0.702
3.00	0.724
0.75	0.757
0.19	0.790
0.05	0.816

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-43UPT

Current Date: 7/2/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	VST BR CL4 W/ RT	CL4		17												
1B	0.8	VST BR & GR CL4 W/ RT	CL4		19												
2A	2.0	M BR CH3 W/ ARS ML	CH3		44												
2B	2.8	M GR CH3 W/ RT, ARS ML	CH3		42	71	100	81	UU	0	792		60	16	44	0.55	
3A	4.0	M GR CH3	CH3		44												
3B	4.8	SO GR CH2	CH2		33												
3C	5.7	SO GR CH2	CH2		39	81	113	98	UU	0	415		50	14	36	0.25	
3D	6.6	SO GR CH2 W/ ARS SM	CH2		40												
4A	8.0	SO GR CH2	CH2		45												
4B	8.8	M GR CL6 W/ RT	CL6	5	31	92	120	99	UC	–	547	1094	44	16	28	0.40	
4C	9.7	M GR CL6 W/ RT	CL6		33												
5A	12.0	SO GR CL6 W/ ARS CH	CL6		37												
5B	12.8	SO GR CL6 W/ ARS CH	CL6		37												
5C	13.7	SO GR CL6	CL6		44	75	108	95	UU	0	385		40	17	23	0.42	
6A	16.0	SO GR CL6 W/ RT	CL6		28												
6B	16.8	SO GR CH4 W/ ARS ML	CH4		46												
6C	17.7	SO GR CH4 W/ ARS ML	CH4		46	72	106	93	UU	0	461		81	19	62	0.31	
7A	20.0	M GR CH4 W/ RT, O	CH4		49												
7B	20.8	M GR CH4 W/ O	CH4		56	67	104	98	UU	0	542		93	22	71	0.41	
7C	21.7	M GR CHOA	CHOA		93								**	**			GS, CON
7D	22.6	M GR CHOA W/ WD, RT	CHOA		96												
8A	24.0	M GR & DGR CH4 W/ LNS ML	CH4		69												
8B	24.8	SO GR CH2 W/ LNS ML	CH2		52												
8C	25.7	SO GR CL4 W/ LNS & LYS ML	CL4		48	72	107	98	UU	0	315		38	25	13	0.23	
8D	26.6	M GR CH4 W/ CC	CH4		65												
9A	28.0	M GR CH4 W/ ARS ML	CH4		59												
9B	28.8	M GR CH4 W/ ARS ML	CH4		53												
9C	29.7	M GR CH4 W/ SIF	CH4		56	67	104	99	UU	0	569		96	23	73	0.33	
9D	30.6	M GR CH4 W/ ARS ML, SIF	CH4		57												
10A	32.0	SO GR CH4 W/ SIF	CH4		67												
10B	32.8	SO GR CH4 W/ SIF	CH4		50												
10C	33.7	SO GR CH4 W/ SIF	CH4		54												
11A	36.0	SO GR CH4	CH4		60												
11B	36.8	SO GR CH4	CH4		58								**	**			GS, CON
11C	37.7	SO GR CH4 W/ LNS ML	CH4		56	66	103	96	UU	0	477		88	21	67	0.34	
12A	40.0	SO GR CH4	CH4		68												
12B	40.8	M GR CH4 W/ LNS ML	CH4		62												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

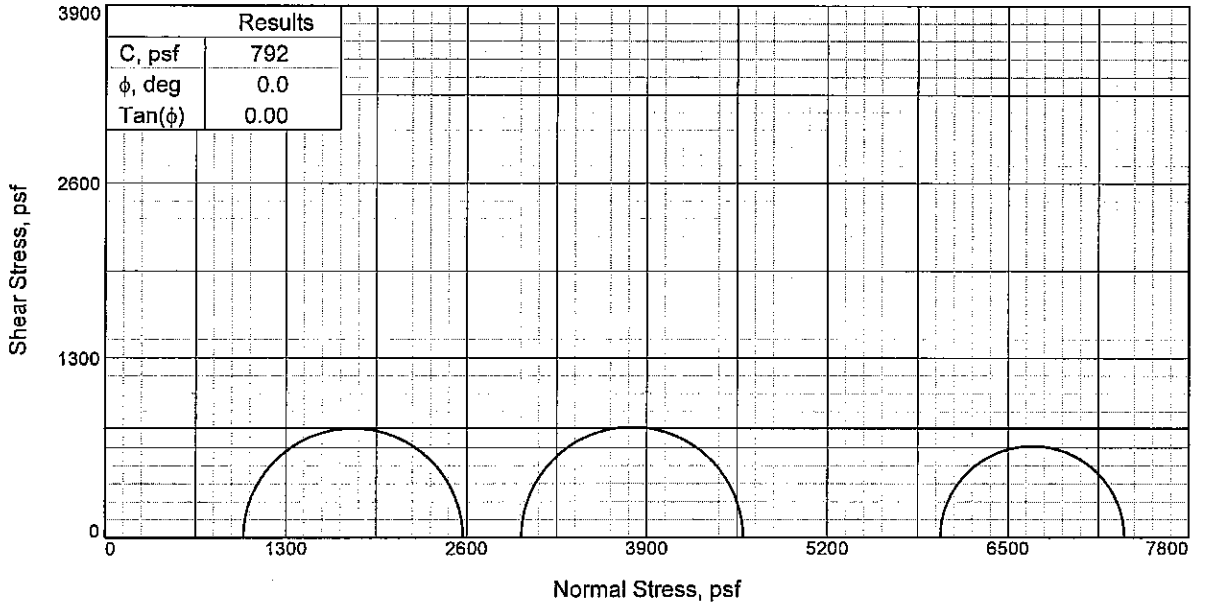
Project Number: 0022-0002
Boring: WWHC-43UPT

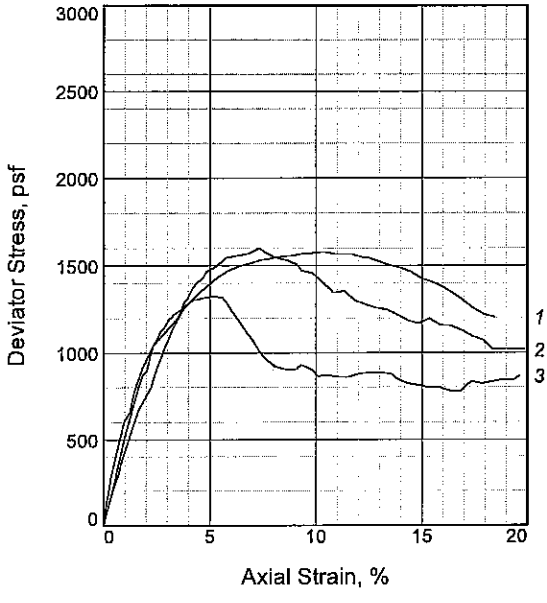
Current Date: 7/2/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
12C	41.7	M GR CH3 W/ SL	CH3	3	62	63	101	98	UC	--	684	1369	62	19	43	0.35	
12D	42.6	M GR CH3 W/ SL, LNS ML	CH3		56												
13A	44.0	M GR CH4 W/ LNS ML, SL	CH4		61												
13B	44.8	M GR CH4 W/ SL	CH4		67	60	100	99	UU	0	834		97	27	70	0.36	
13C	45.7	M GR CH4 W/ ARS ML, SL	CH4		60												
13D	46.6	M GR CH4 W/ SL	CH4		63												
14A	48.0	M GR CH4 W/ SL	CH4		61												
14B	48.8	M GR CH4 W/ SL	CH4		56												
14C	49.7	M GR CH4 W/ SL	CH4	4	57	67	104	99	UC	--	812	1624	82	24	58	0.33	
14D	50.6	M GR CH4 W/ SL	CH4		60												
15A	52.0	VSO GR CH3 W/ SL	CH3		69												
15B	52.8	SO GR CH3	CH3	7	51	69	105	96	UC	--	341	681	69	24	45	0.27	
15C	53.7	SO GR CH3 W/ SL	CH3		53												
16A	56.0	M GR CH4 W/ LNS ML, SL	CH4		63												
16B	56.8	M GR CH4 W/ SL	CH4		62												
16C	57.7	M GR CH4 W/ LNS ML	CH4		60	63	100	95	UU	0	820		80	26	54	0.25	
16D	58.6	M GR CH4 W/ SL	CH4		58												
17A	60.0	M GR CH4 W/ ARS ML, SL	CH4		63												
17B	60.8	M GR CH4 W/ SL	CH4		60												
17C	61.7	M GR CH4 W/ SL	CH4		58												
17D	62.6	M GR CH4 W/ LYS SP, SIF	CH4		59												
18A	64.0	M GR CL6-S W/ SIF	CL6-S		34												
18B	64.8	M GR CH2 W/ SIF	CH2		41												
18C	65.7	M GR CH2 W/ ARS SP, SIF	CH2	4	52	70	106	99	UC	--	642	1284	53	15	38	0.20	
18D	66.6	M GR CH4 W/ ARS SP, SIF	CH4		57												
19A	68.0	M GR CH4 W/ SL, LNS ML	CH4		60												
19B	68.8	M GR CH4 W/ SL, LNS ML	CH4		60												
19C	69.7	ST GR CH4 W/ LNS ML, SL	CH4		56	67	104	98	UU	0	1240		82	24	58	0.48	
19D	70.6	ST GR CH4 W/ SL, LNS ML	CH4		58												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2





Specimen No.		1	2	3
Initial	Water Content, %	43.5	44.4	38.5
	Dry Density, pcf	69.2	69.4	73.0
	Saturation, %	81.4	83.6	78.9
	Void Ratio	1.4543	1.4454	1.3262
	Diameter, in.	1.47	1.46	1.46
	Height, in.	3.10	3.12	3.19
At Test	Water Content, %	43.5	44.4	38.5
	Dry Density, pcf	69.2	69.4	73.0
	Saturation, %	81.4	83.6	78.9
	Void Ratio	1.4543	1.4454	1.3262
	Diameter, in.	1.47	1.46	1.46
	Height, in.	3.10	3.12	3.19
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.79	41.76
Fail. Stress, psf		1579	1600	1323
Strain, %		10.4	7.3	5.1
Ult. Stress, psf		1428	1170	813
Strain, %				
σ_1 Failure, psf		2573	4594	7337
σ_3 Failure, psf		994	2994	6014

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH3 W/ RT, ARS ML

LL= 60 **PL=** 16 **PI=** 44

Assumed Specific Gravity= 2.72

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

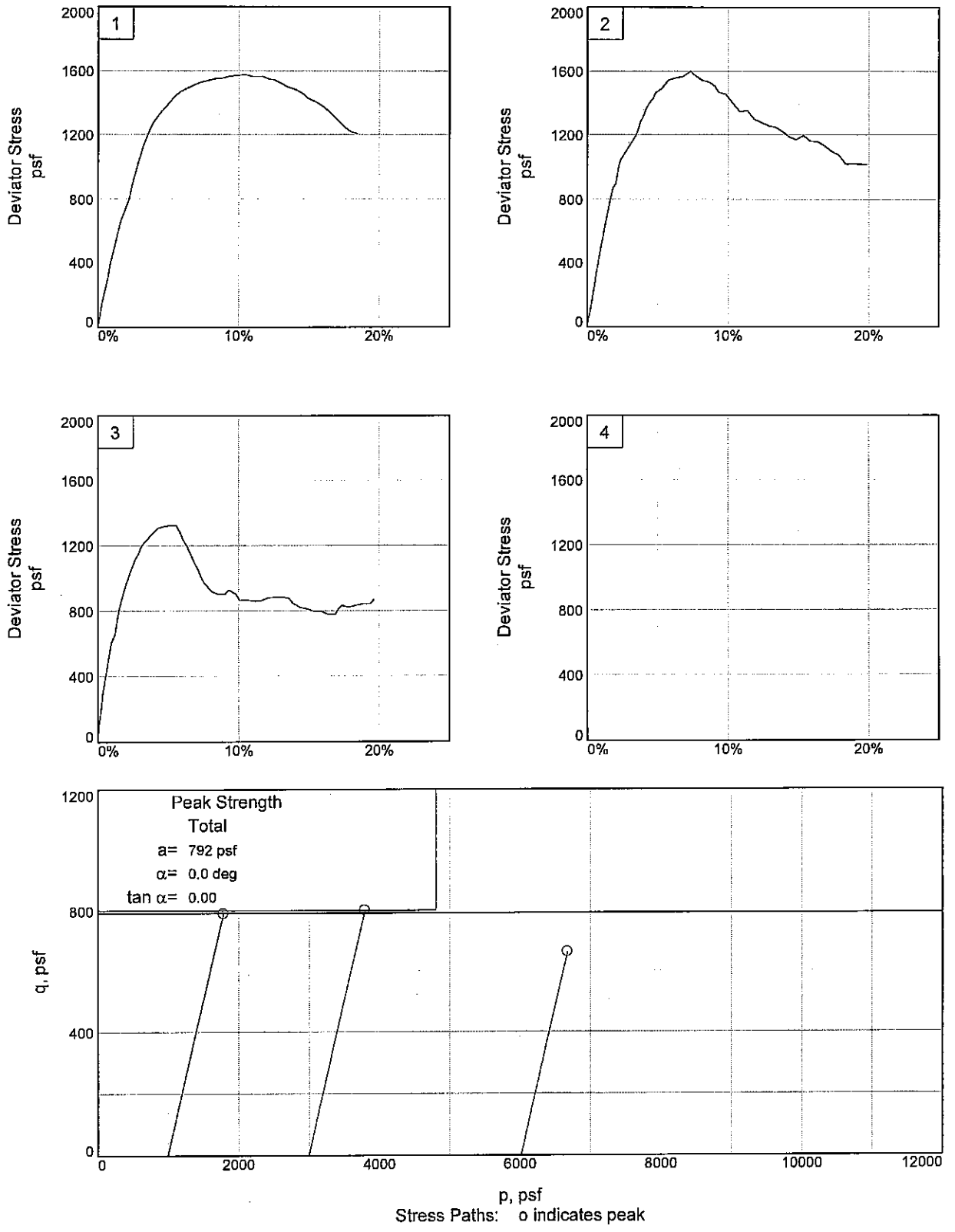
Source of Sample: WWHC-43UPT **Depth:** 2.8

Sample Number: 2B

Proj. No.: 0022-0002 **Date Sampled:** 4-13-07

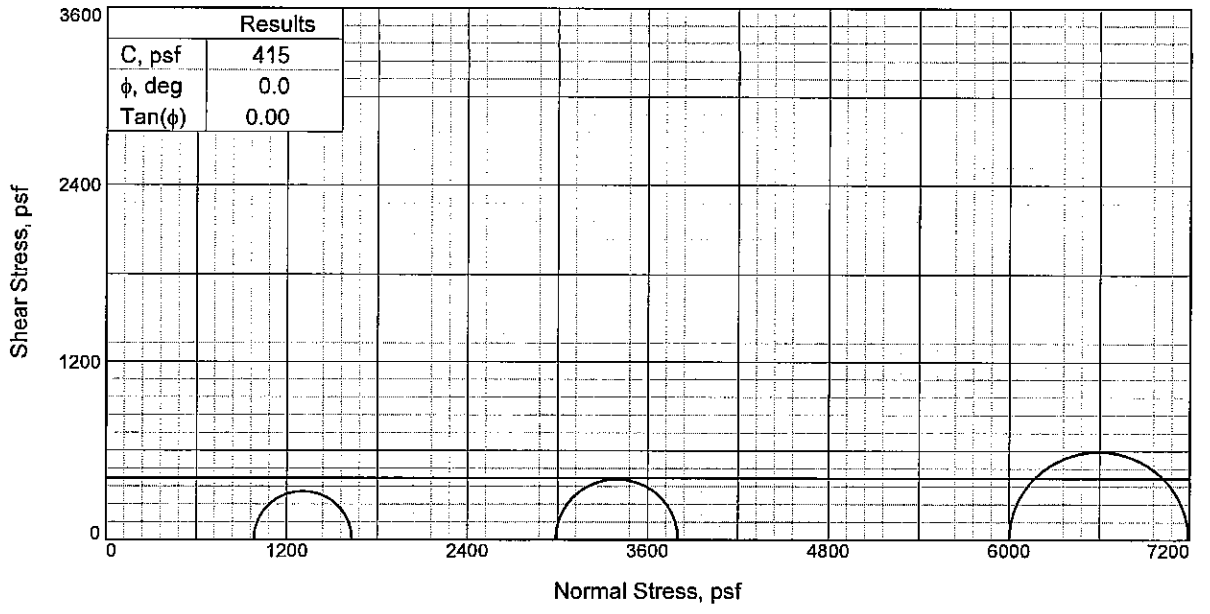
TRIAXIAL SHEAR TEST REPORT

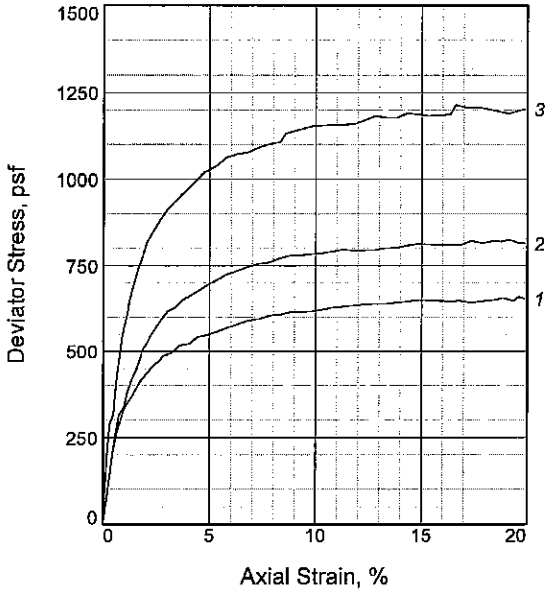
FFEBJV, LLC



Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-43UPT **Depth:** 2.8 **Sample Number:** 2B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	42.4	38.5	37.2
	Dry Density, pcf	77.7	82.0	83.0
	Saturation, %	97.9	98.6	97.5
	Void Ratio	1.1700	1.0553	1.0300
	Diameter, in.	1.42	1.41	1.43
	Height, in.	3.18	3.10	3.19
At Test	Water Content, %	42.4	38.5	37.2
	Dry Density, pcf	77.7	82.0	83.0
	Saturation, %	97.9	98.6	97.5
	Void Ratio	1.1700	1.0553	1.0300
	Diameter, in.	1.42	1.41	1.43
	Height, in.	3.18	3.10	3.19
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.82	20.75	41.67
Fail. Stress, psf		650	813	1190
Strain, %		14.9	14.9	14.4
Ult. Stress, psf		650	813	1186
Strain, %				
σ_1 Failure, psf		1632	3802	7191
σ_3 Failure, psf		982	2989	6001

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: SO GR CH2

LL= 50 **PL=** 14 **PI=** 36

Assumed Specific Gravity= 2.70

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

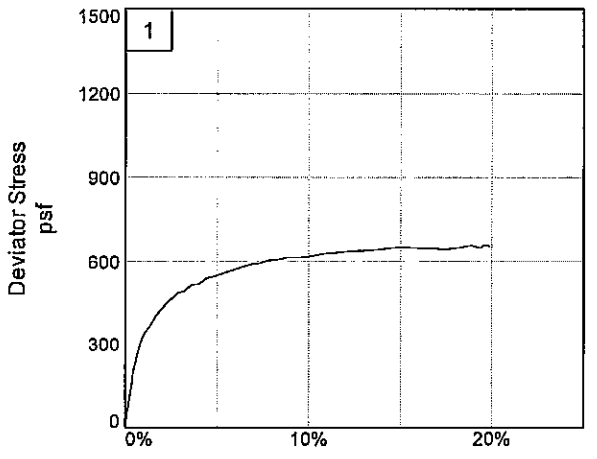
Source of Sample: WWHC-43UPT **Depth:** 5.7

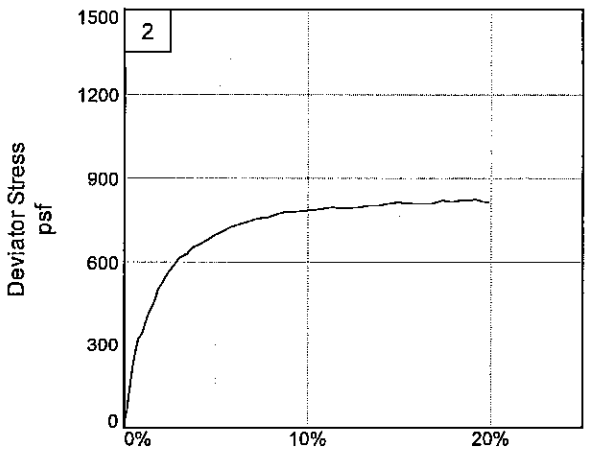
Sample Number: 3C

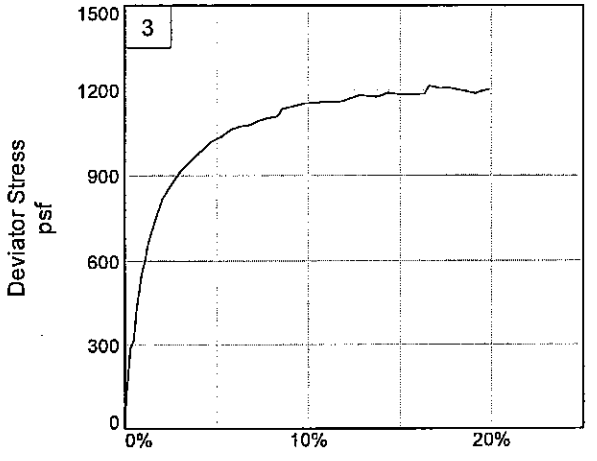
Proj. No.: 0022-0002 **Date Sampled:** 4-13-07

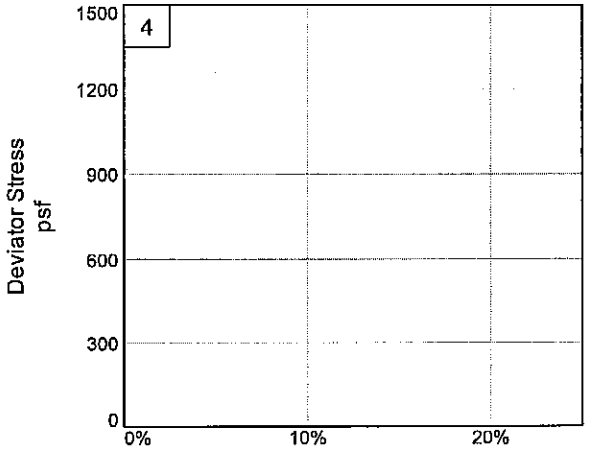
TRIAXIAL SHEAR TEST REPORT

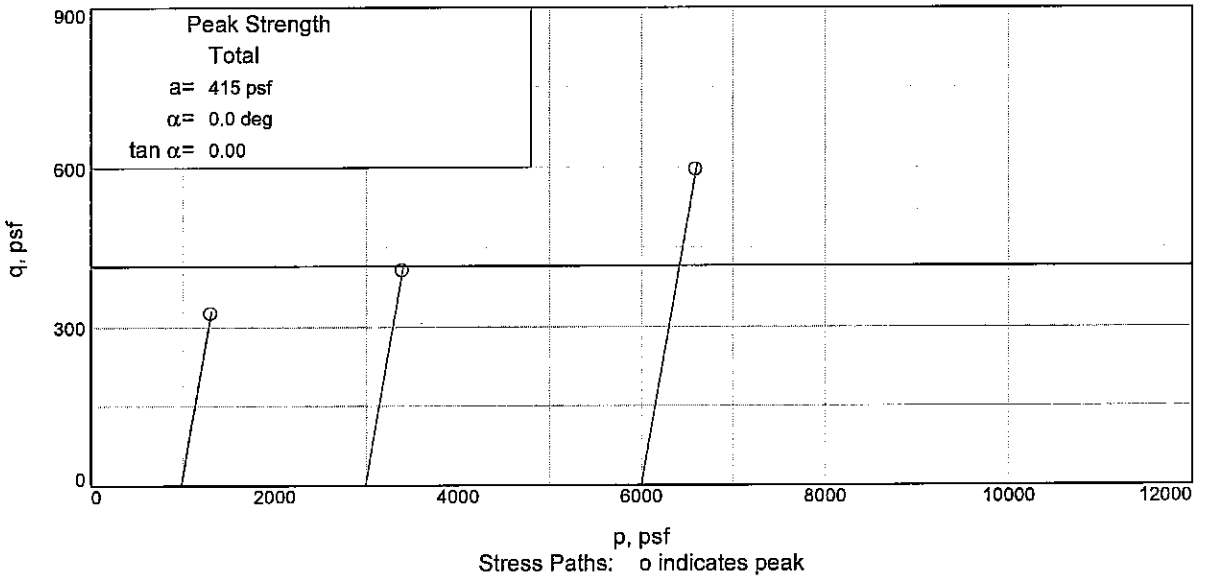
FFEBJV, LLC







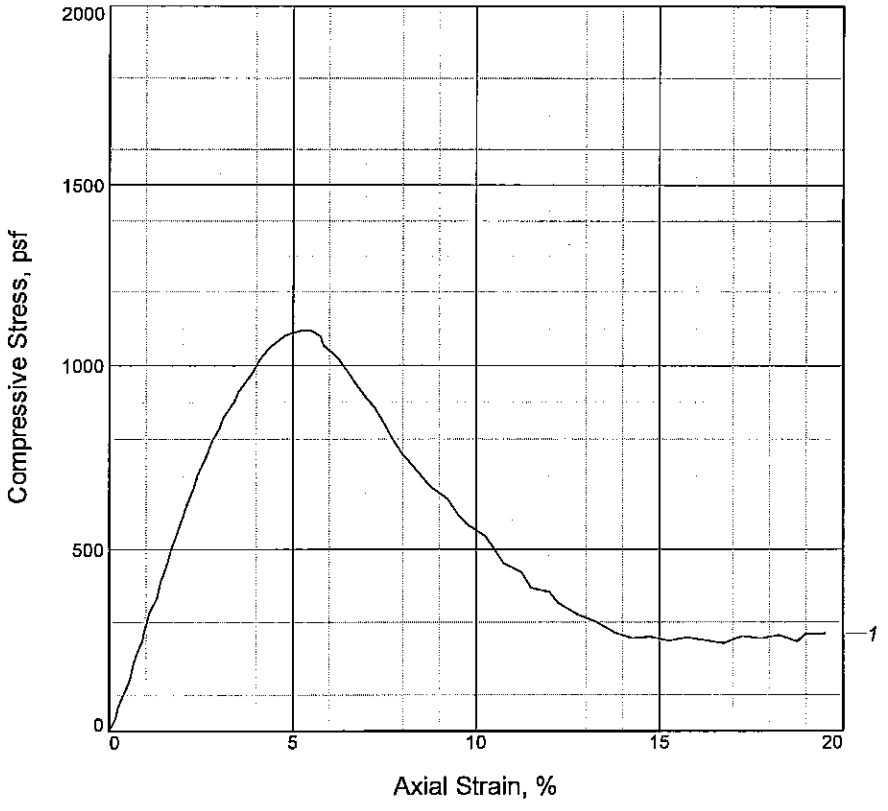




Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-43UPT **Depth:** 5.7 **Sample Number:** 3C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1094			
Undrained shear strength, psf	547			
Failure strain, %	5.3			
Strain rate, in./min.	0.03			
Water content, %	30.8			
Wet density, pcf	119.8			
Dry density, pcf	91.5			
Saturation, %	99.3			
Void ratio	0.8344			
Specimen diameter, in.	1.39			
Specimen height, in.	3.14			
Height/diameter ratio	2.26			

Description: M GR CL6 W/ RT

LL = 44	**PL** = 16	**PI** = 28	**Assumed GS=** 2.69	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-13-07
Remarks:

Figure _____

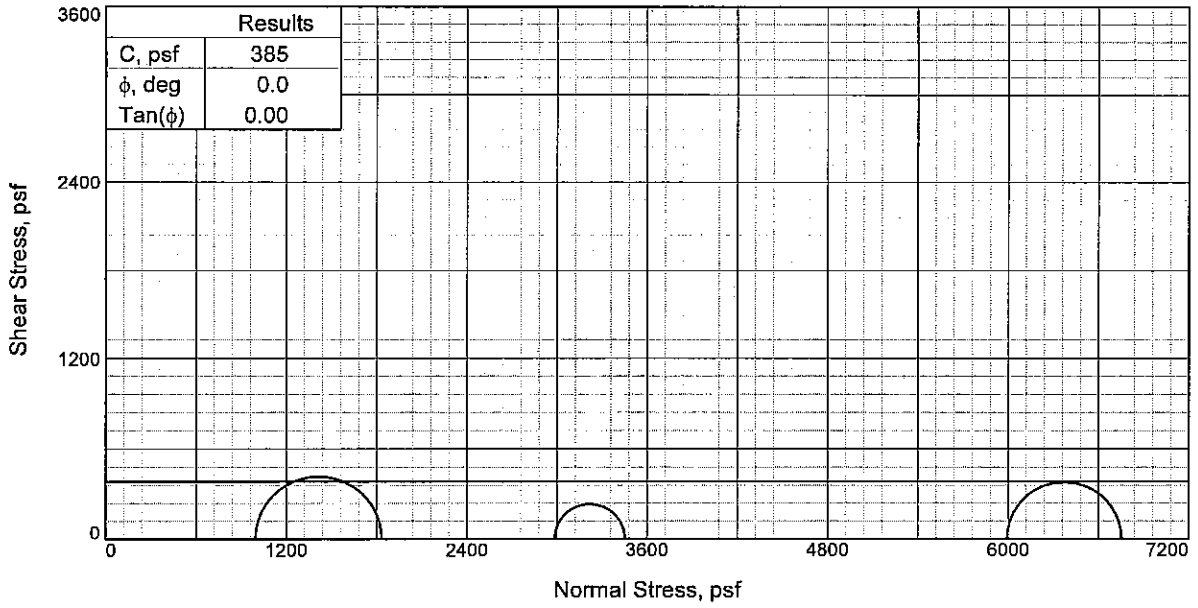
Client: FFEB JV, New Orleans, Louisiana

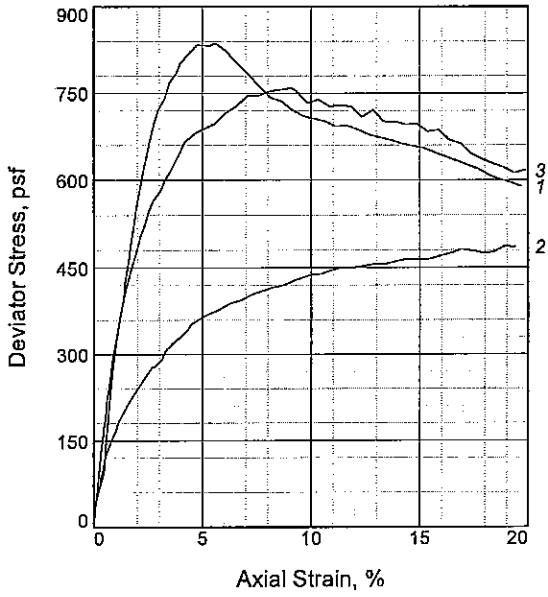
Project: Westwego to Harvey Canal

Source of Sample: WWHC-43UPT **Depth:** 8.8
Sample Number: 4B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	42.5	45.0	43.0
	Dry Density, pcf	73.4	75.9	75.9
	Saturation, %	88.8	99.8	95.3
	Void Ratio	1.2882	1.2118	1.2139
	Diameter, in.	1.40	1.40	1.43
	Height, in.	3.05	3.12	3.18
At Test	Water Content, %	42.5	45.0	43.0
	Dry Density, pcf	73.4	75.9	75.9
	Saturation, %	88.8	99.8	95.3
	Void Ratio	1.2882	1.2118	1.2139
	Diameter, in.	1.40	1.40	1.43
	Height, in.	3.05	3.12	3.18
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.92	20.74	41.62
Fail. Stress, psf		837	465	759
Strain, %		5.6	14.4	9.1
Ult. Stress, psf		656	464	697
Strain, %				
σ_1 Failure, psf		1833	3452	6752
σ_3 Failure, psf		996	2987	5994

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CL6

LL= 40 **PL=** 17 **PI=** 23
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

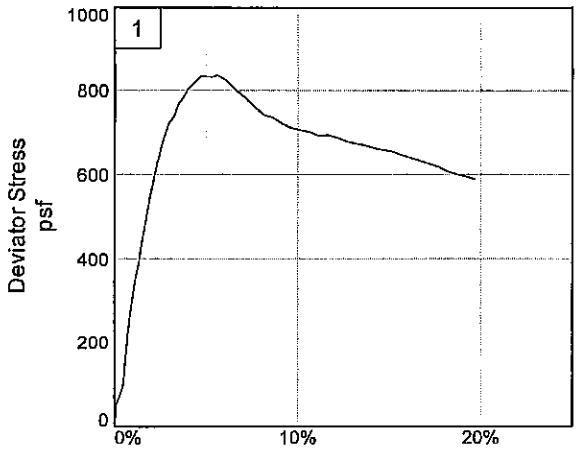
Client: FFEB JV, New Orleans, Louisiana

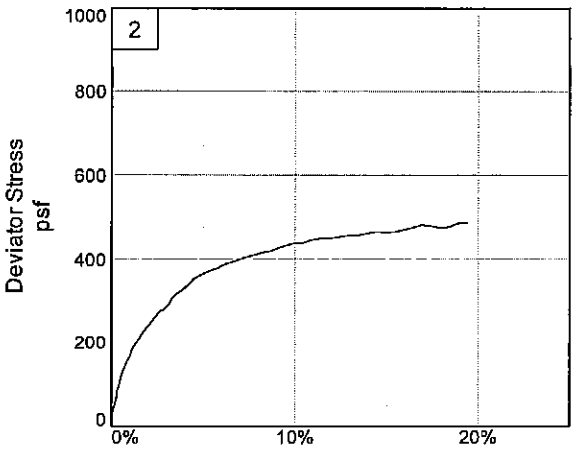
Project: Westwego to Harvey Canal

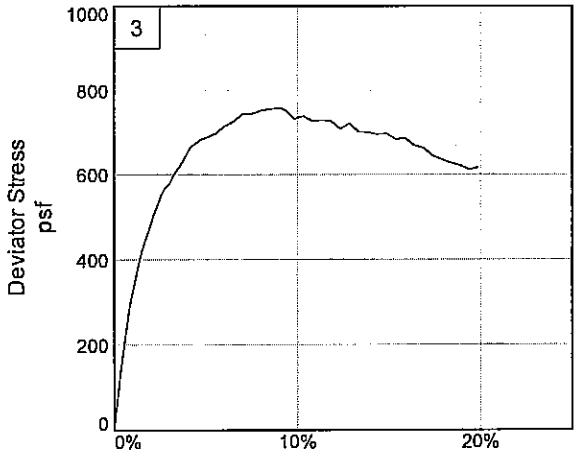
Source of Sample: WWHC-43UPT **Depth:** 13.7
Sample Number: 5C
Proj. No.: 0022-0002 **Date Sampled:** 4-13-07

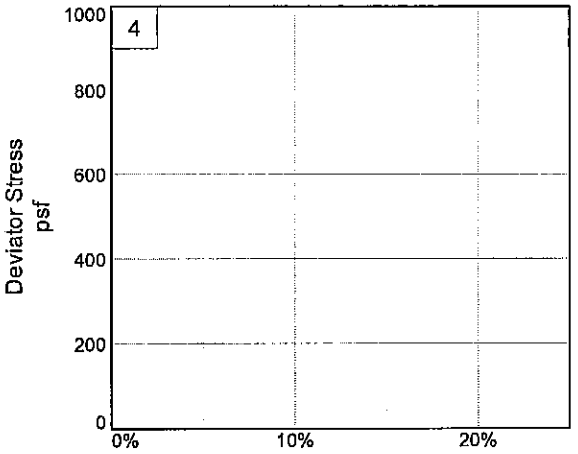
TRIAXIAL SHEAR TEST REPORT

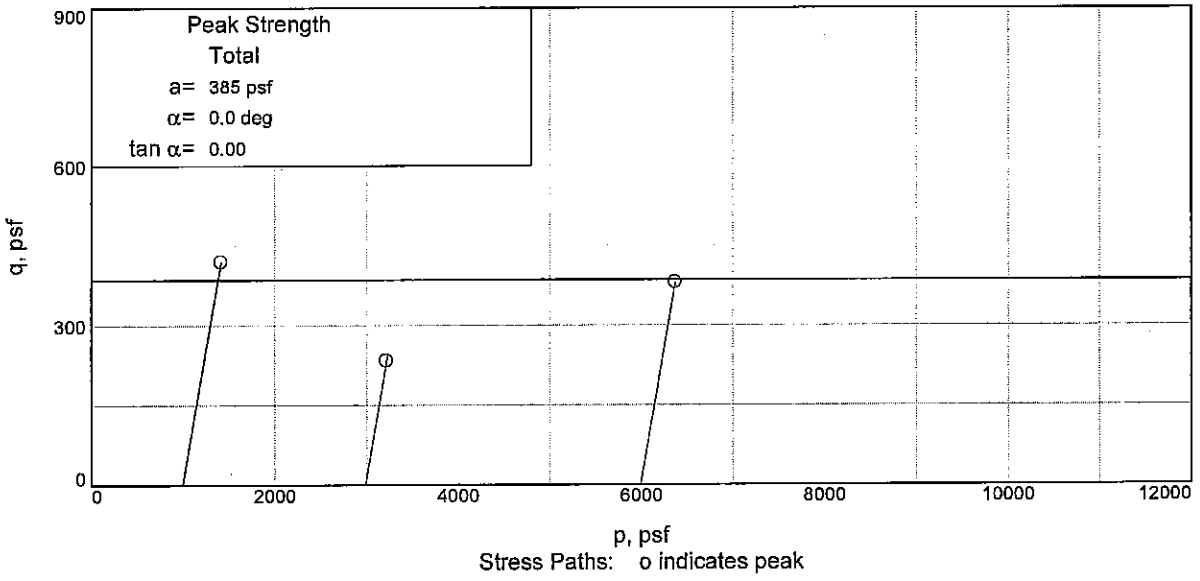
FFEBJV, LLC





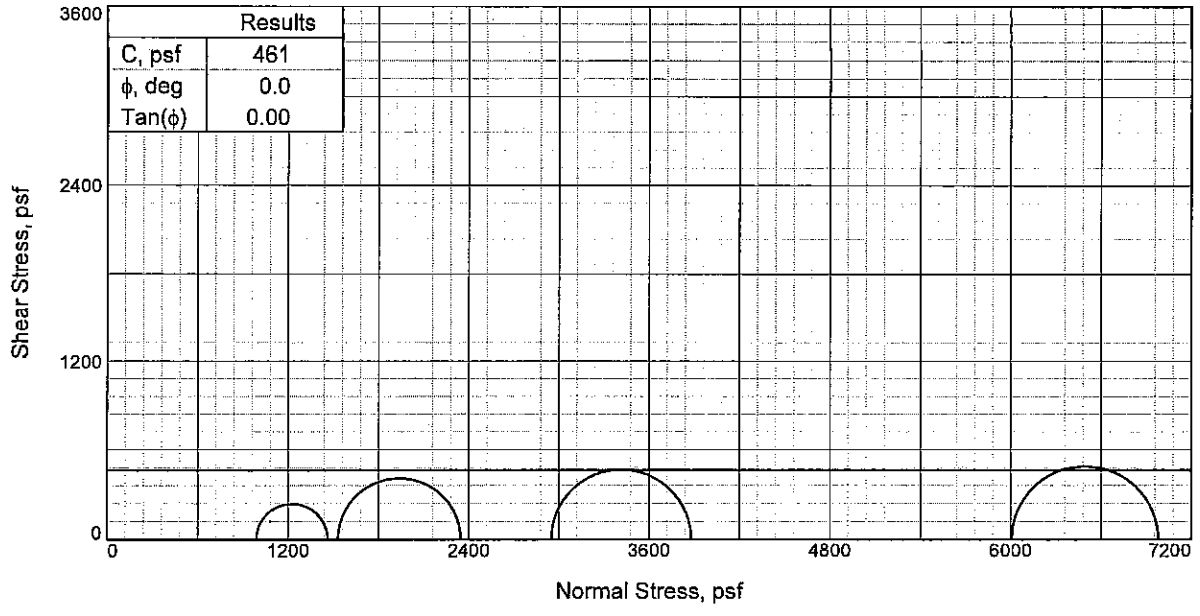


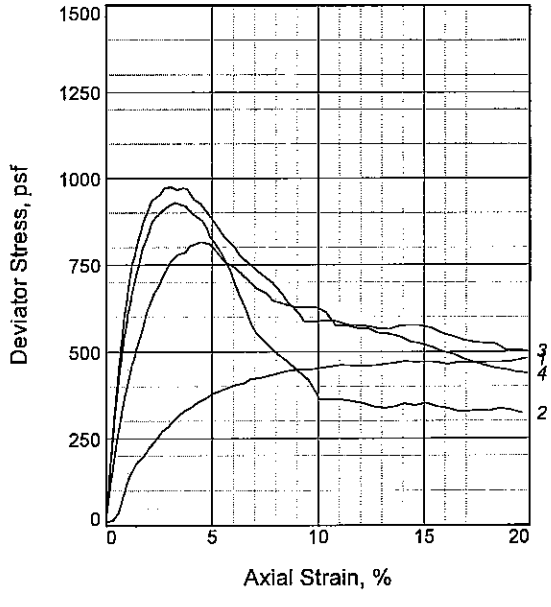




Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-43UPT **Depth:** 13.7 **Sample Number:** 5C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3	4
Initial	Water Content, %	48.8	46.0	45.9	43.3
	Dry Density, pcf	71.2	72.4	74.4	71.8
	Saturation, %	95.8	93.0	97.4	86.2
	Void Ratio	1.3850	1.3465	1.2831	1.3665
	Diameter, in.	1.41	1.43	1.41	1.47
	Height, in.	3.10	3.13	3.24	3.14
At Test	Water Content, %	48.8	46.0	45.9	43.3
	Dry Density, pcf	71.2	72.4	74.4	71.8
	Saturation, %	95.8	93.0	97.4	86.2
	Void Ratio	1.3850	1.3465	1.2831	1.3665
	Diameter, in.	1.41	1.42	1.41	1.47
	Height, in.	3.10	3.13	3.24	3.14
Strain rate, in./min.		0.03	0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.88	20.49	41.72	10.64
Fail. Stress, psf		472	929	974	815
Strain, %		14.1	3.2	3.1	4.5
Ult. Stress, psf		471	352	575	523
Strain, %					
σ_1 Failure, psf		1463	3880	6981	2347
σ_3 Failure, psf		991	2951	6007	1532

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: SO GR CH4 W/ ARS ML

LL= 81 **PL=** 19 **PI=** 62

Assumed Specific Gravity= 2.72

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

Source of Sample: WWHC-43UPT **Depth:** 17.7

Sample Number: 6C

Proj. No.: 0022-0002 **Date Sampled:** 4/13/2007

TRIAXIAL SHEAR TEST REPORT

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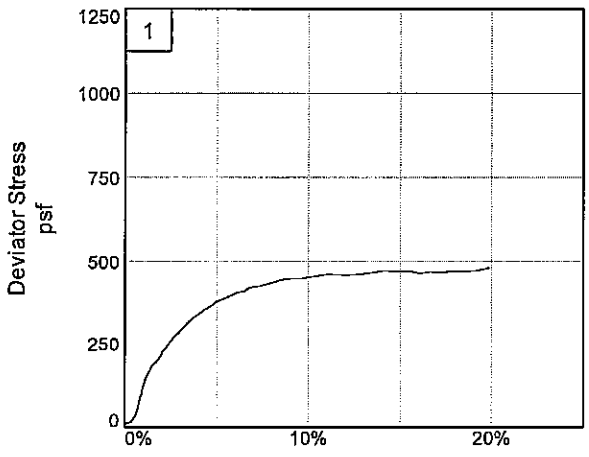
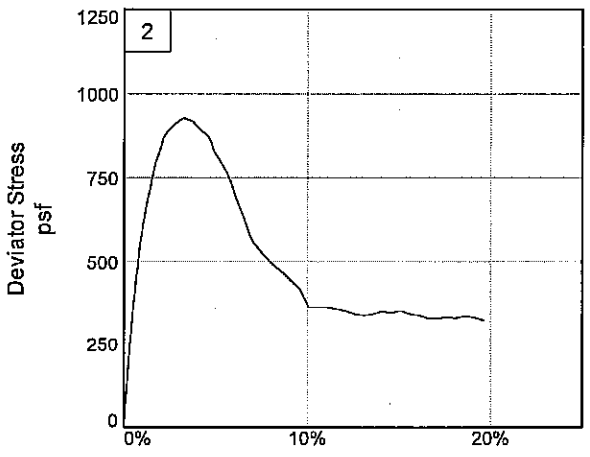
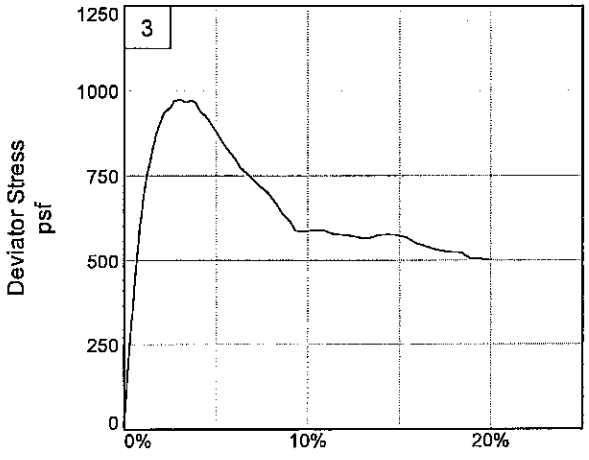
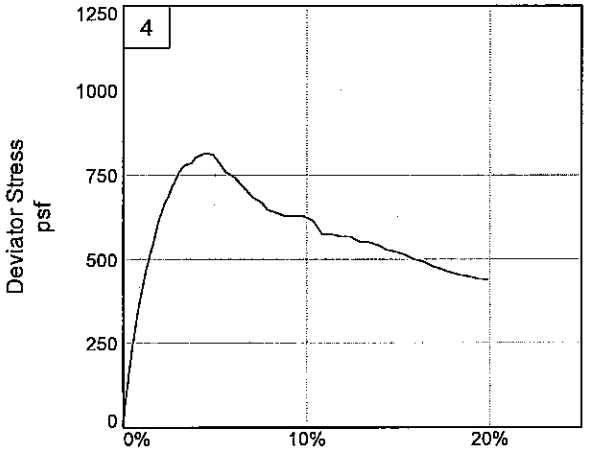
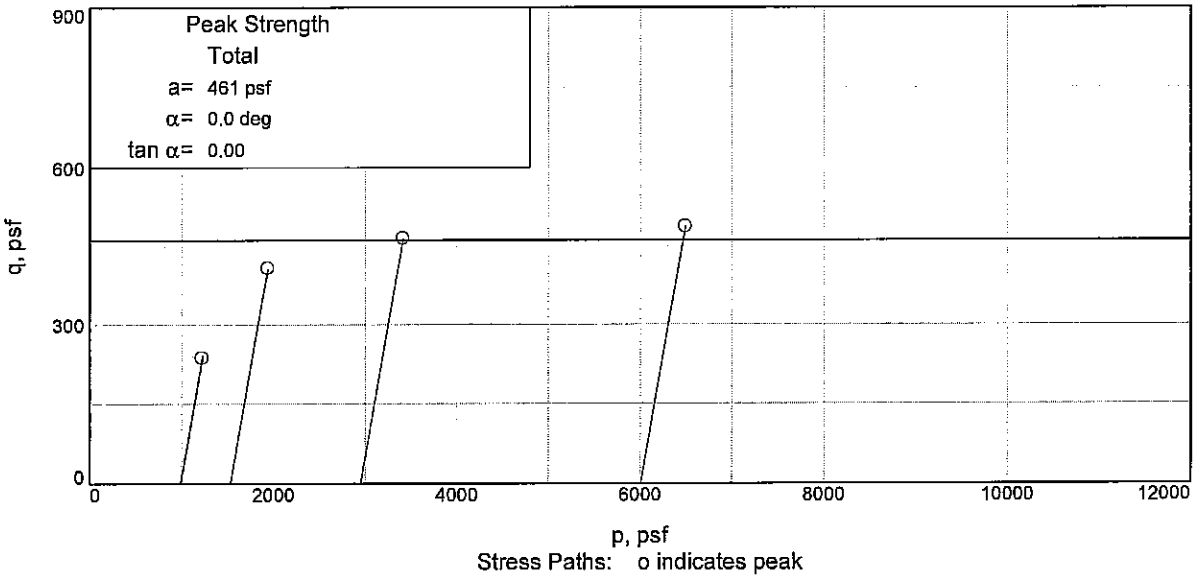






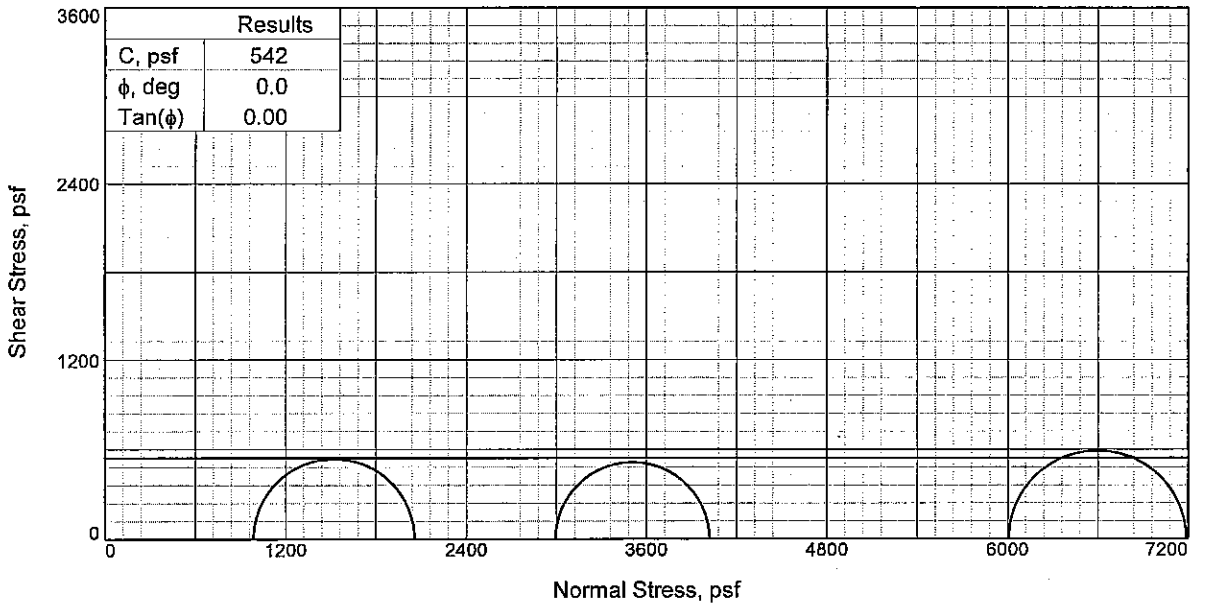


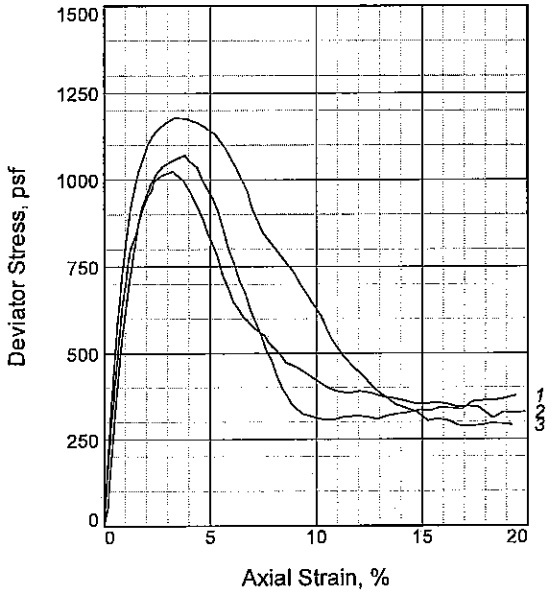


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-43UPT **Depth:** 17.7 **Sample Number:** 6C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	56.6	58.9	53.1
	Dry Density, pcf	66.1	64.6	68.9
	Saturation, %	97.6	97.8	98.1
	Void Ratio	1.5877	1.6485	1.4818
	Diameter, in.	1.42	1.41	1.41
	Height, in.	3.14	3.20	3.21
At Test	Water Content, %	56.6	58.9	53.1
	Dry Density, pcf	66.1	64.6	68.9
	Saturation, %	97.6	97.8	98.1
	Void Ratio	1.5877	1.6485	1.4818
	Diameter, in.	1.42	1.41	1.41
	Height, in.	3.14	3.20	3.21
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.85	20.80	41.72
Fail. Stress, psf		1070	1024	1180
Strain, %		3.8	3.2	3.3
Ult. Stress, psf		336	352	329
Strain, %				
σ_1 Failure, psf		2056	4019	7187
σ_3 Failure, psf		986	2995	6008

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH4 W/ O

LL= 93 **PL=** 22 **PI=** 71

Assumed Specific Gravity= 2.74

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

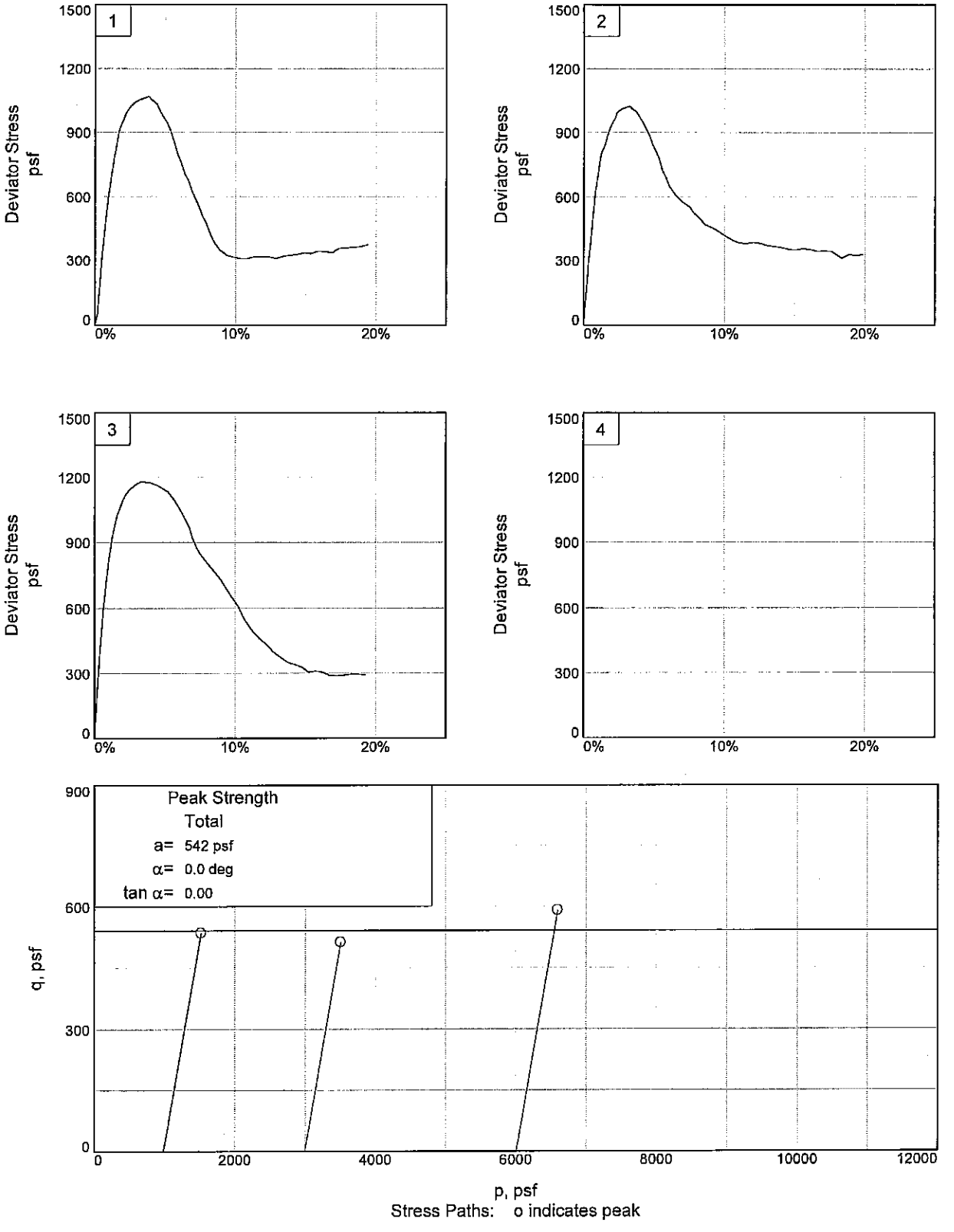
Source of Sample: WWHC-43UPT **Depth:** 20.8

Sample Number: 7B

Proj. No.: 0022-0002 **Date Sampled:** 4-13-07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC



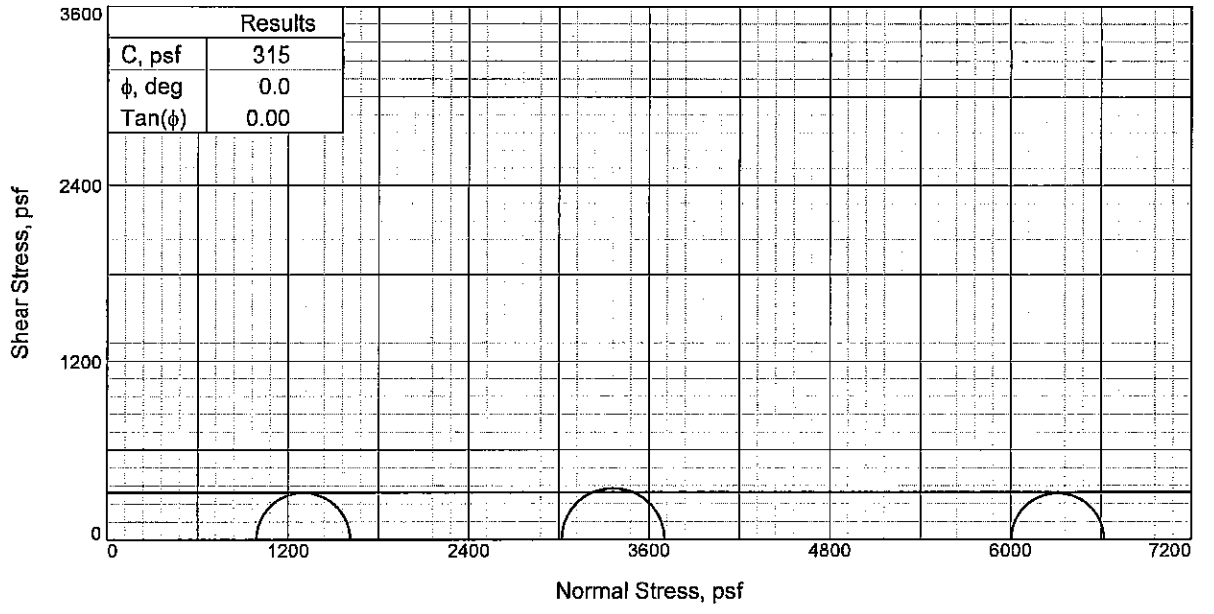
Client: FFEB JV, New Orleans, Louisiana

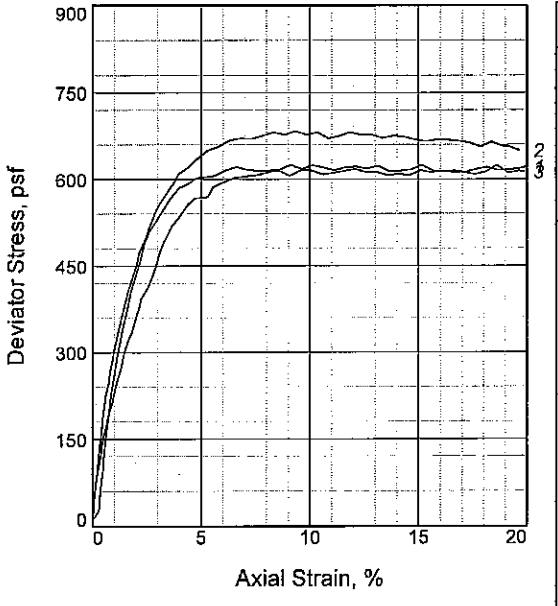
Project: Westwego to Harvey Canal

Source of Sample: WWHC-43UPT **Depth:** 20.8 **Sample Number:** 7B

Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	48.7	48.6	47.9
	Dry Density, pcf	72.6	71.0	72.0
	Saturation, %	100.2	95.9	97.0
	Void Ratio	1.3037	1.3571	1.3233
	Diameter, in.	1.39	1.42	1.41
	Height, in.	3.17	3.09	3.06
At Test	Water Content, %	48.7	48.6	47.9
	Dry Density, pcf	72.6	71.0	72.0
	Saturation, %	100.2	95.9	97.0
	Void Ratio	1.3037	1.3571	1.3233
	Diameter, in.	1.39	1.42	1.41
	Height, in.	3.17	3.09	3.06
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.97	41.70
Fail. Stress, psf		622	683	616
Strain, %		6.6	9.3	10.1
Ult. Stress, psf		617	668	607
Strain, %				
σ_1 Failure, psf		1613	3703	6621
σ_3 Failure, psf		991	3020	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CL4 W/ LNS & LYS ML

LL= 38 **PL=** 25 **PI=** 13
Assumed Specific Gravity= 2.68
Remarks:

Figure _____

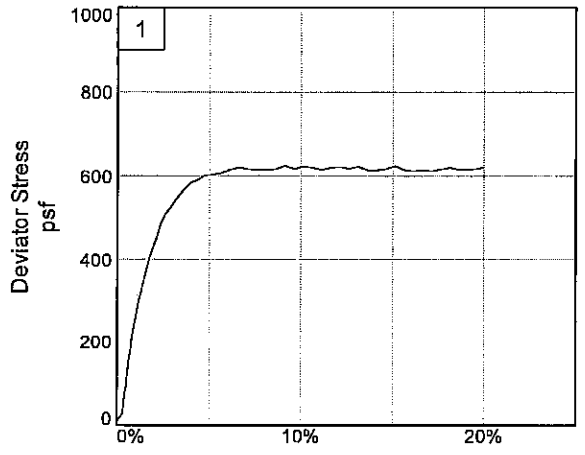
Client: FFEB JV, New Orleans, Louisiana

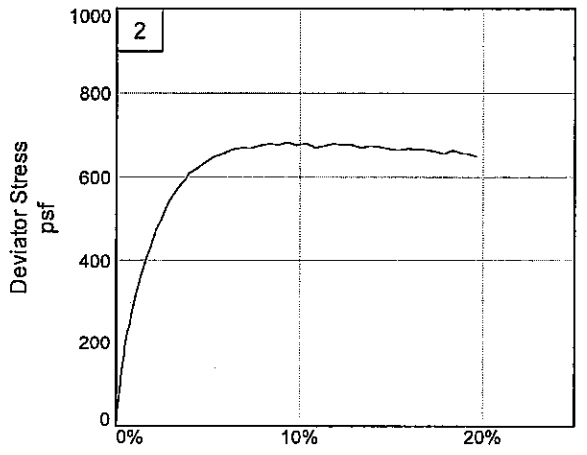
Project: Westwego to Harvey Canal

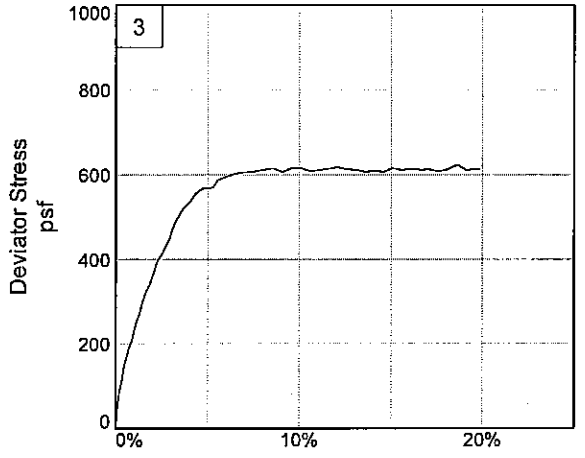
Source of Sample: WWHC-43UPT **Depth:** 25.7
Sample Number: 8C
Proj. No.: 0022-0002 **Date Sampled:** 4-13-07

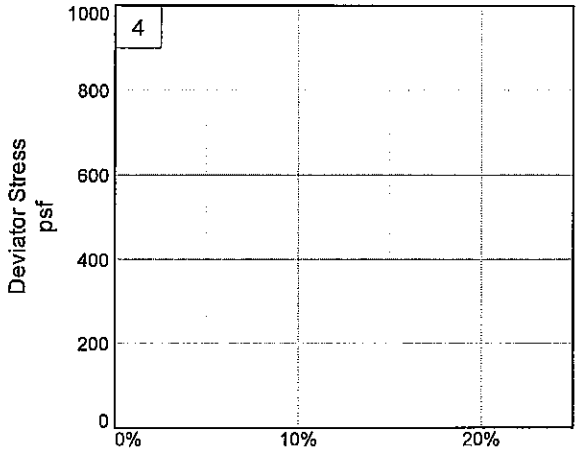
TRIAXIAL SHEAR TEST REPORT

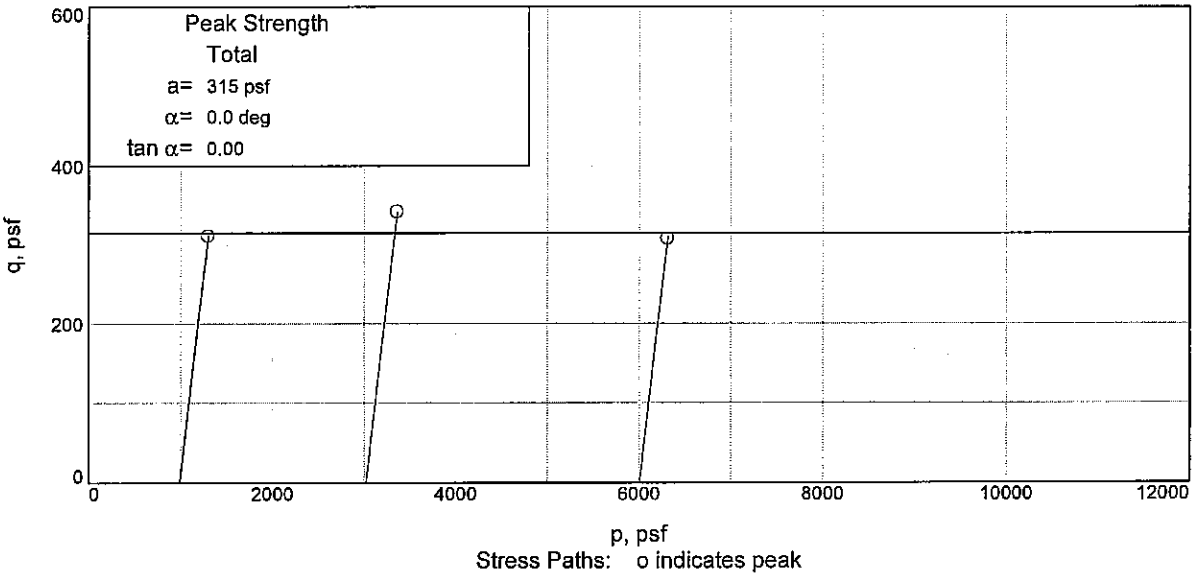
FFEBJV, LLC





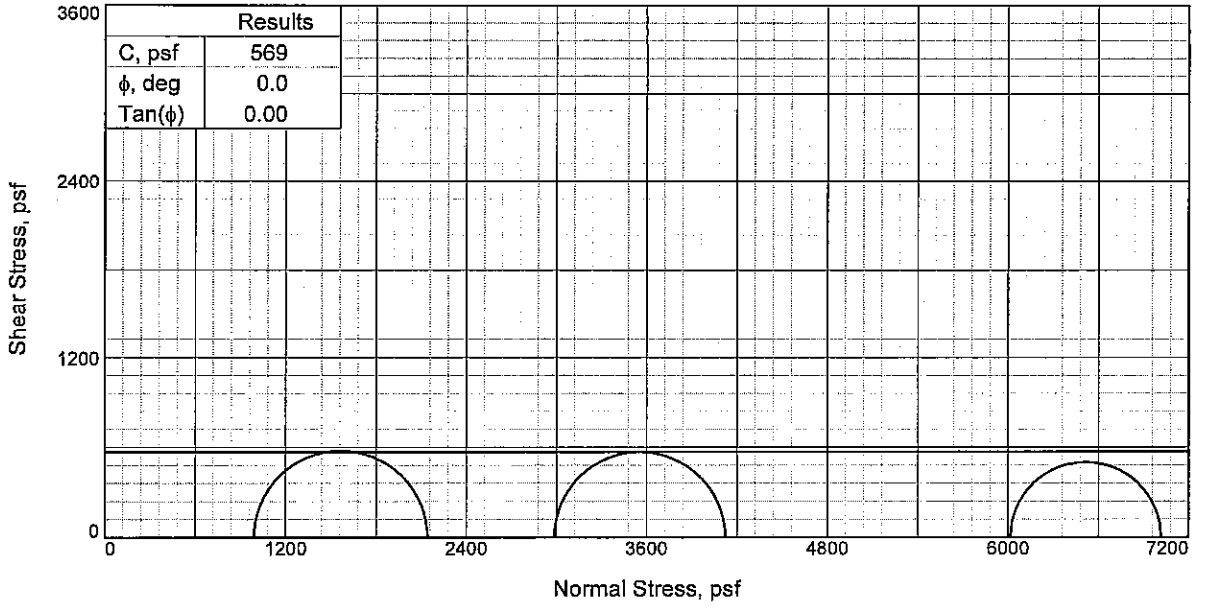


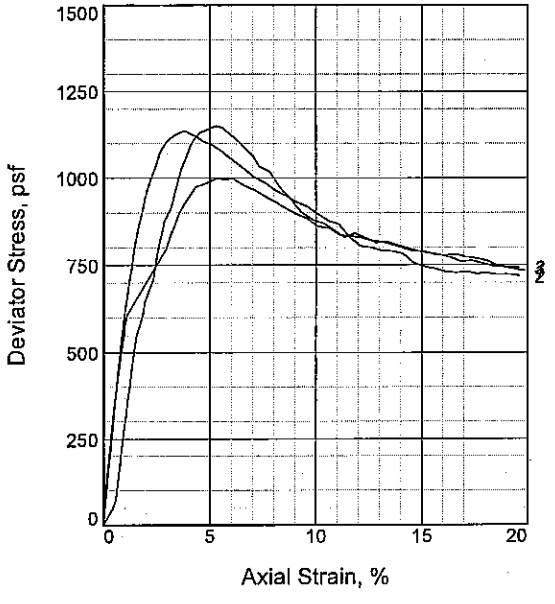




Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-43UPT **Depth:** 25.7 **Sample Number:** 8C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	58.7	54.7	55.8
	Dry Density, pcf	65.3	67.8	66.7
	Saturation, %	99.4	98.4	97.7
	Void Ratio	1.6197	1.5219	1.5652
	Diameter, in.	1.41	1.41	1.42
	Height, in.	3.17	3.23	3.21
At Test	Water Content, %	58.7	54.7	55.8
	Dry Density, pcf	65.3	67.8	66.7
	Saturation, %	99.4	98.4	97.7
	Void Ratio	1.6197	1.5219	1.5652
	Diameter, in.	1.41	1.41	1.42
	Height, in.	3.17	3.23	3.21
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.74	41.78
Fail. Stress, psf		1152	1136	1000
Strain, %		5.3	3.8	6.1
Ult. Stress, psf		789	745	789
Strain, %				
σ_1 Failure, psf		2142	4123	7016
σ_3 Failure, psf		990	2987	6016

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH4 W/ SIF

LL= 96 **PL=** 23 **PI=** 73

Assumed Specific Gravity= 2.74

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

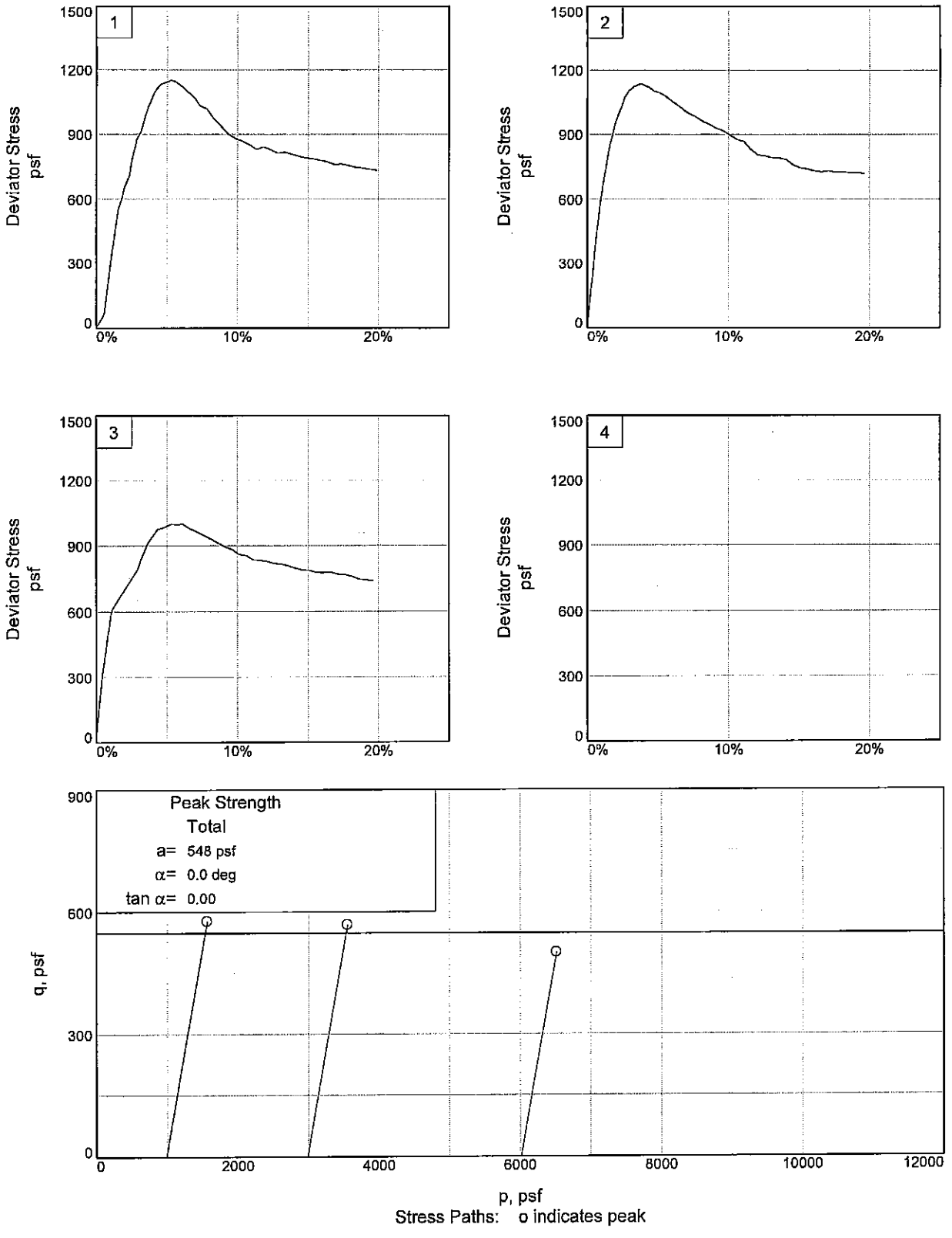
Source of Sample: WWHC-43UPT **Depth:** 29.7

Sample Number: 9C

Proj. No.: 0022-0002 **Date Sampled:** 4-13-07

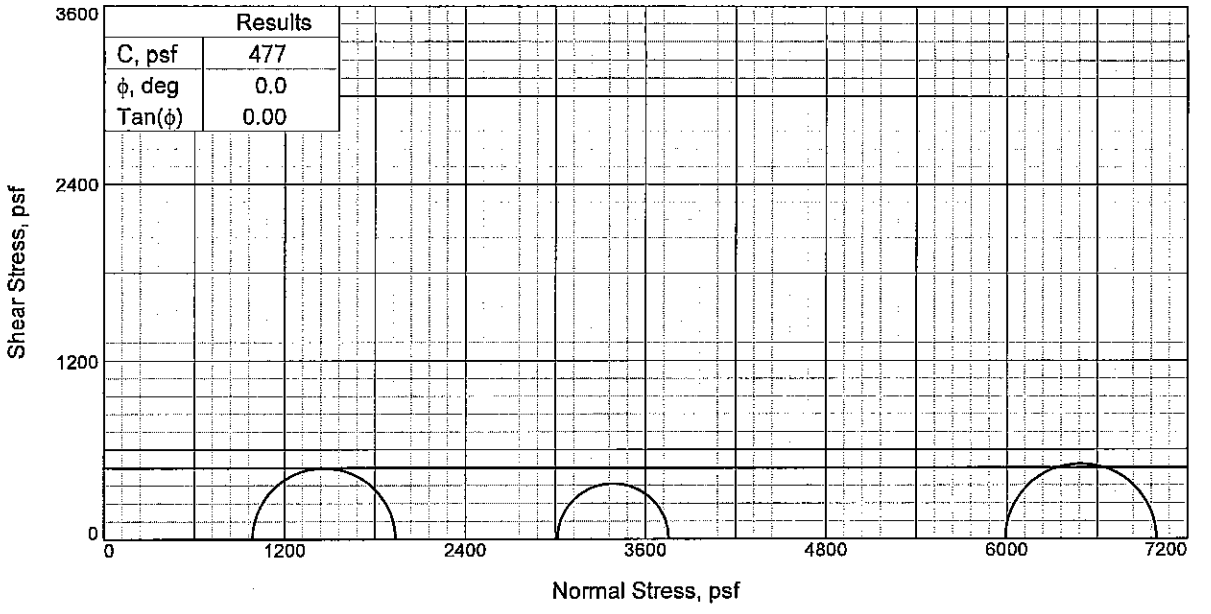
TRIAXIAL SHEAR TEST REPORT

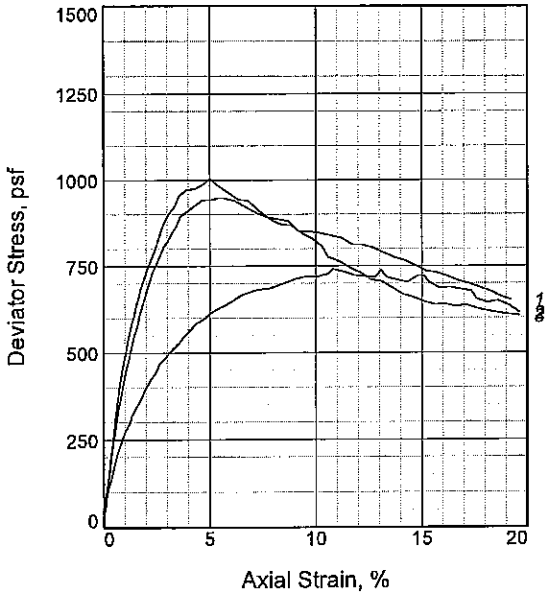
FFEBJV, LLC



Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-43UPT **Depth:** 29.7 **Sample Number:** 9C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	58.4	52.8	55.3
	Dry Density, pcf	64.6	67.9	66.8
	Saturation, %	97.0	95.2	97.0
	Void Ratio	1.6490	1.5192	1.5614
	Diameter, in.	1.38	1.38	1.39
	Height, in.	3.11	3.13	3.17
At Test	Water Content, %	58.4	52.8	55.3
	Dry Density, pcf	64.6	67.9	66.8
	Saturation, %	97.0	95.2	97.0
	Void Ratio	1.6490	1.5192	1.5614
	Diameter, in.	1.38	1.38	1.39
	Height, in.	3.11	3.13	3.17
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.93	41.60
Fail. Stress, psf		949	741	1004
Strain, %		5.4	10.8	5.1
Ult. Stress, psf		736	722	647
Strain, %				
σ_1 Failure, psf		1936	3755	6995
σ_3 Failure, psf		987	3014	5991

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: SO GR CH4 W/ LNS ML

LL= 88 **PL=** 21 **PI=** 67

Assumed Specific Gravity= 2.74

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

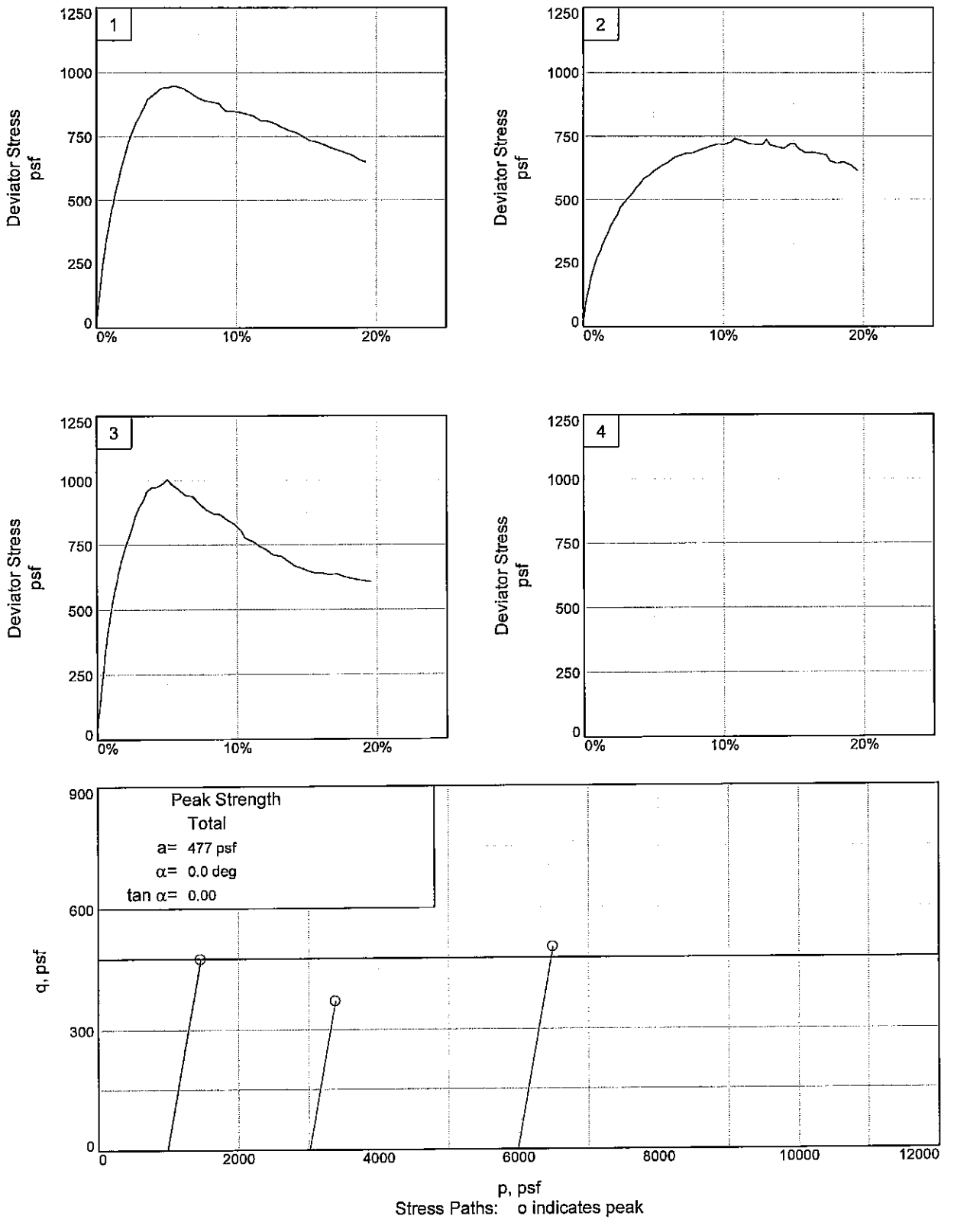
Source of Sample: WWHC-43UPT **Depth:** 37.7

Sample Number: 11C

Proj. No.: 0022-0002 **Date Sampled:** 4-13-07

TRIAXIAL SHEAR TEST REPORT

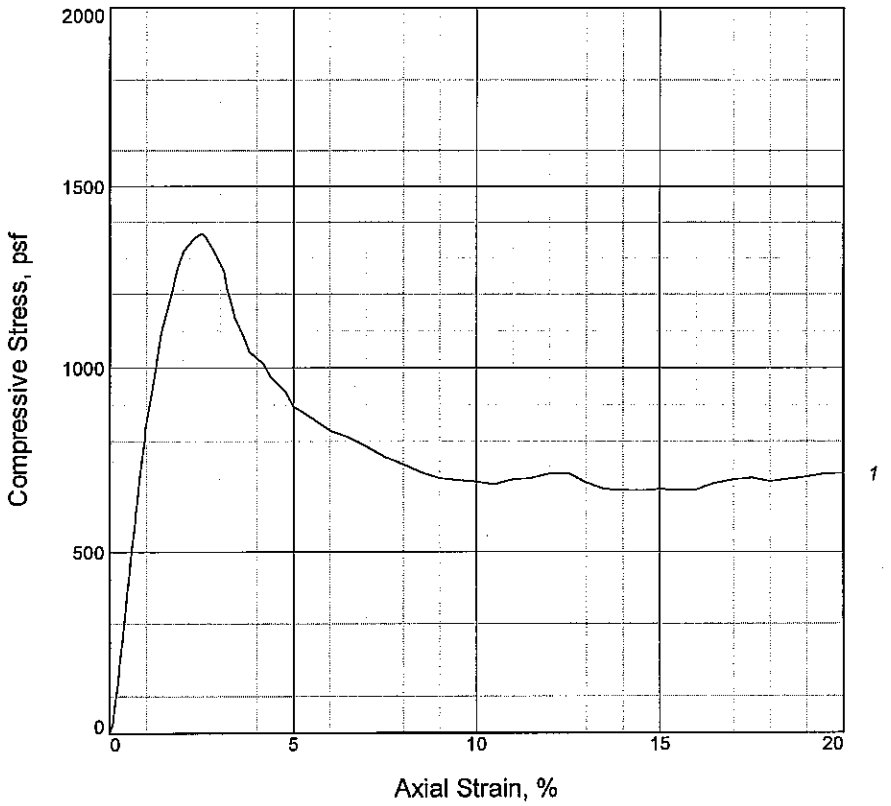
FFEBJV, LLC



Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-43UPT **Depth:** 37.7 **Sample Number:** 11C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1369			
Undrained shear strength, psf	684			
Failure strain, %	2.5			
Strain rate, in./min.	0.03			
Water content, %	62.1			
Wet density, pcf	101.4			
Dry density, pcf	62.6			
Saturation, %	98.2			
Void ratio	1.7343			
Specimen diameter, in.	1.41			
Specimen height, in.	3.28			
Height/diameter ratio	2.32			

Description: M GR CH3 W/ SL

LL = 62	**PL** = 19	**PI** = 43	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-13-07
Remarks:

Figure _____

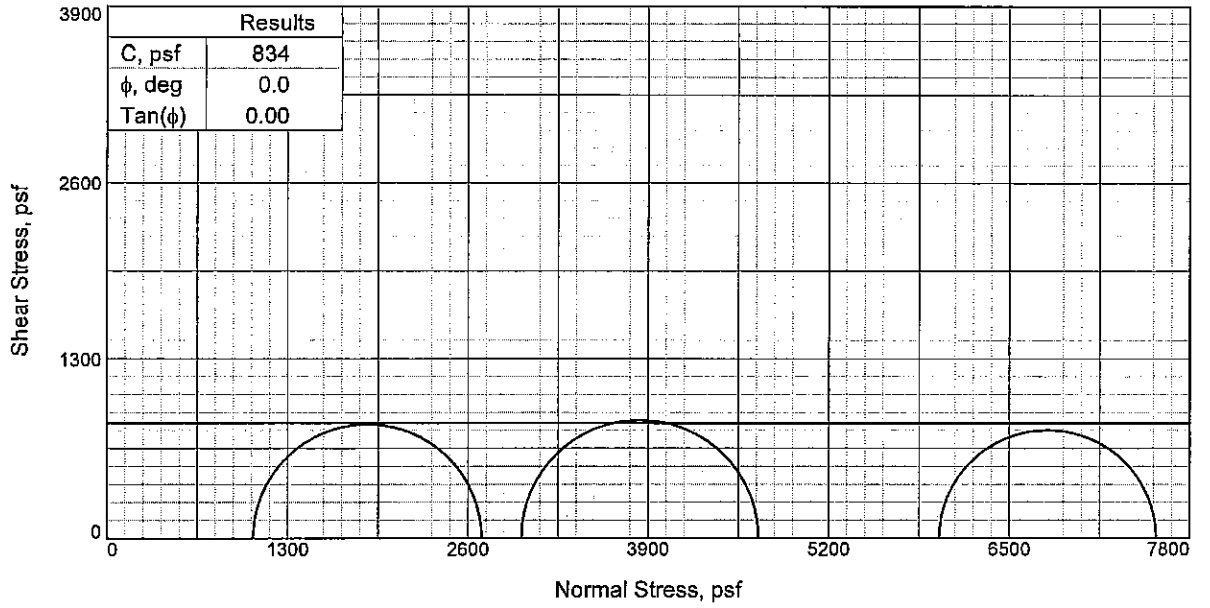
Client: FFEB JV, New Orleans, Louisiana

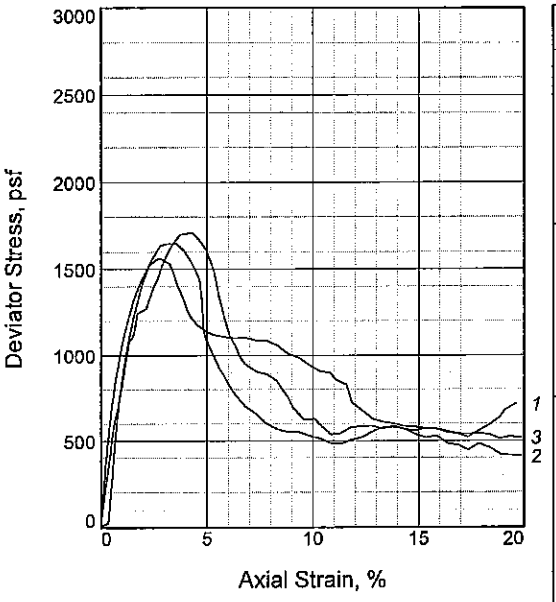
Project: Westwego to Harvey Canal

Source of Sample: WWHC-43UPT **Depth:** 41.7
Sample Number: 12C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	67.4	65.3	67.1
	Dry Density, pcf	60.0	61.0	59.3
	Saturation, %	99.6	99.1	97.6
	Void Ratio	1.8531	1.8039	1.8830
	Diameter, in.	1.41	1.41	1.42
	Height, in.	3.17	3.18	3.21
At Test	Water Content, %	67.4	65.3	67.1
	Dry Density, pcf	60.0	61.0	59.3
	Saturation, %	99.6	99.1	97.6
	Void Ratio	1.8531	1.8039	1.8830
	Diameter, in.	1.41	1.41	1.42
	Height, in.	3.17	3.18	3.21
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		7.30	20.73	41.63
Fail. Stress, psf		1647	1709	1563
Strain, %		3.5	4.3	2.7
Ult. Stress, psf		481	537	582
Strain, %				
σ_1 Failure, psf		2699	4695	7558
σ_3 Failure, psf		1052	2986	5995

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH4 W/ SL

LL= 97 **PL=** 27 **PI=** 70

Assumed Specific Gravity= 2.74

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

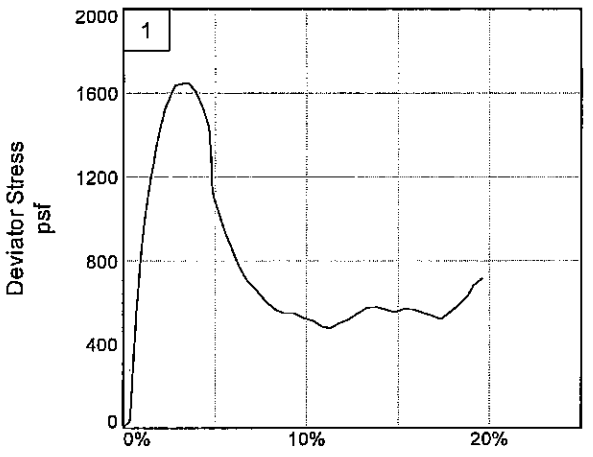
Source of Sample: WWHC-43UPT **Depth:** 44.8

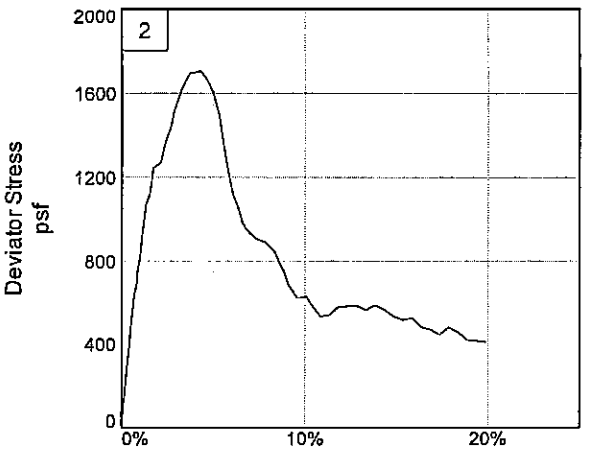
Sample Number: 13B

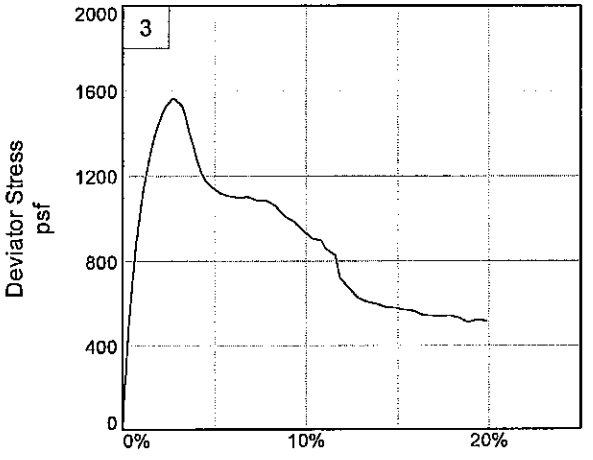
Proj. No.: 0022-0002 **Date Sampled:** 4-13-07

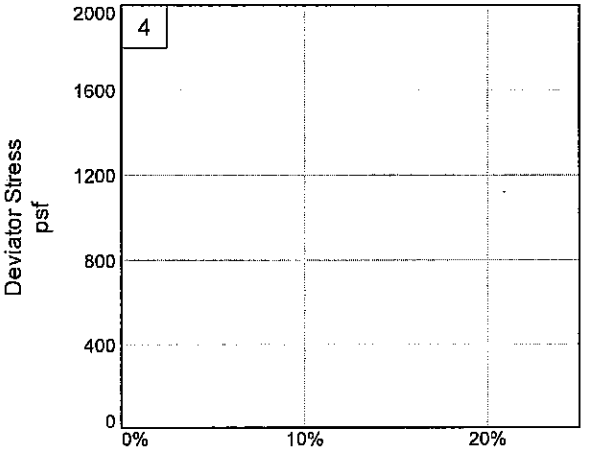
TRIAXIAL SHEAR TEST REPORT

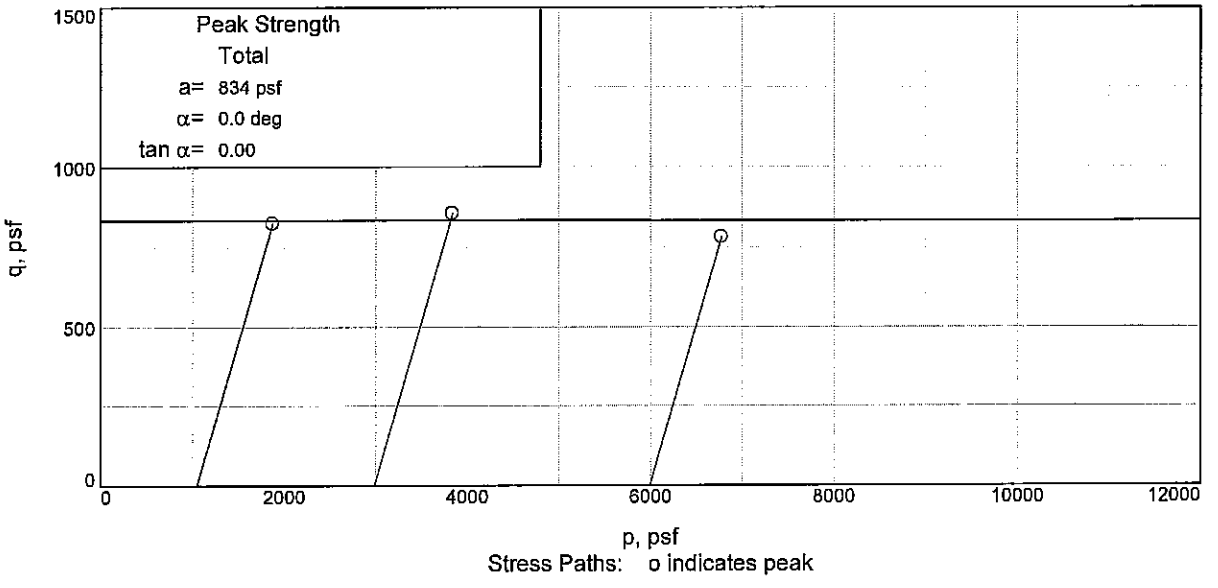
FFEBJV, LLC









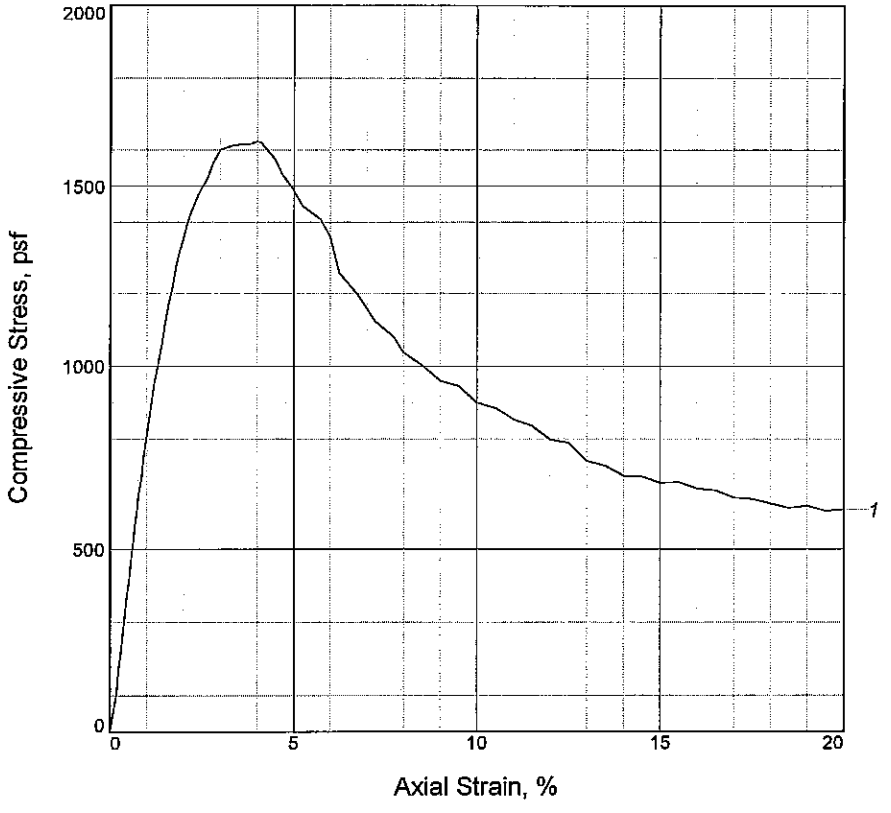


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-43UPT **Depth:** 44.8 **Sample Number:** 13B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1624			
Undrained shear strength, psf	812			
Failure strain, %	4.0			
Strain rate, in./min.	0.03			
Water content, %	57.0			
Wet density, pcf	104.4			
Dry density, pcf	66.5			
Saturation, %	99.3			
Void ratio	1.5741			
Specimen diameter, in.	1.40			
Specimen height, in.	3.26			
Height/diameter ratio	2.32			

Description: M GR CH4 W/ SL

LL = 82	PL = 24	PI = 58	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-13-07
Remarks:

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

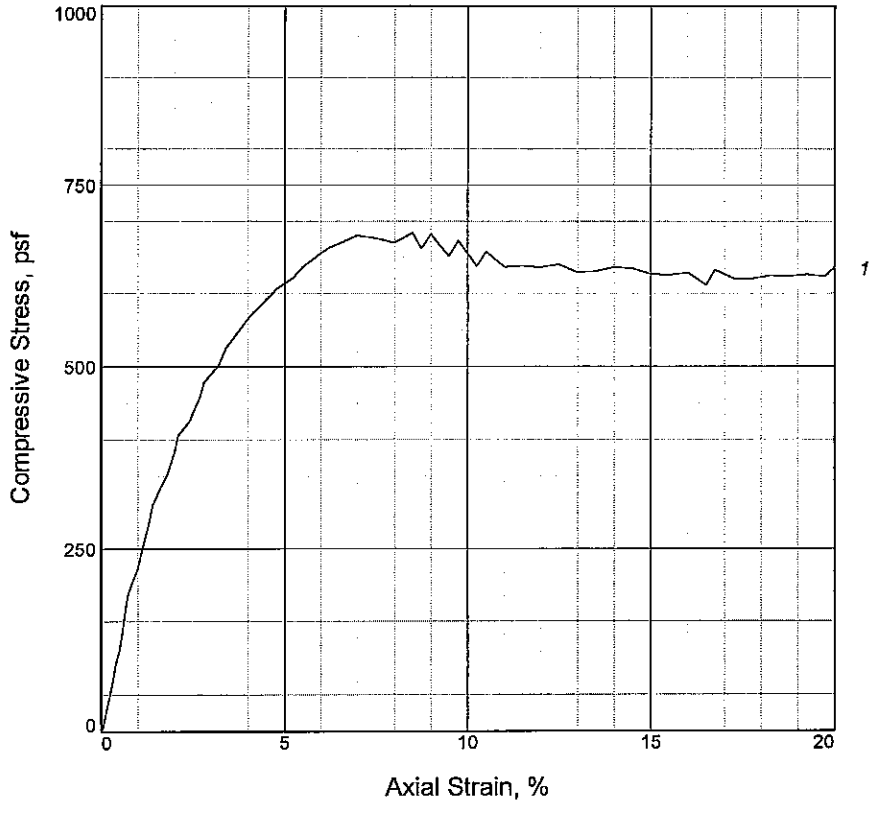
Source of Sample: WWHC-43UPT **Depth:** 49.7
Sample Number: 14C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	681			
Undrained shear strength, psf	341			
Failure strain, %	7.0			
Strain rate, in./min.	0.03			
Water content, %	51.3			
Wet density, pcf	105.0			
Dry density, pcf	69.4			
Saturation, %	96.0			
Void ratio	1.4639			
Specimen diameter, in.	1.39			
Specimen height, in.	3.18			
Height/diameter ratio	2.28			

Description: SO GR CH3

LL = 69	**PL** = 24	**PI** = 45	**Assumed GS**= 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-13-07
Remarks:

Figure _____

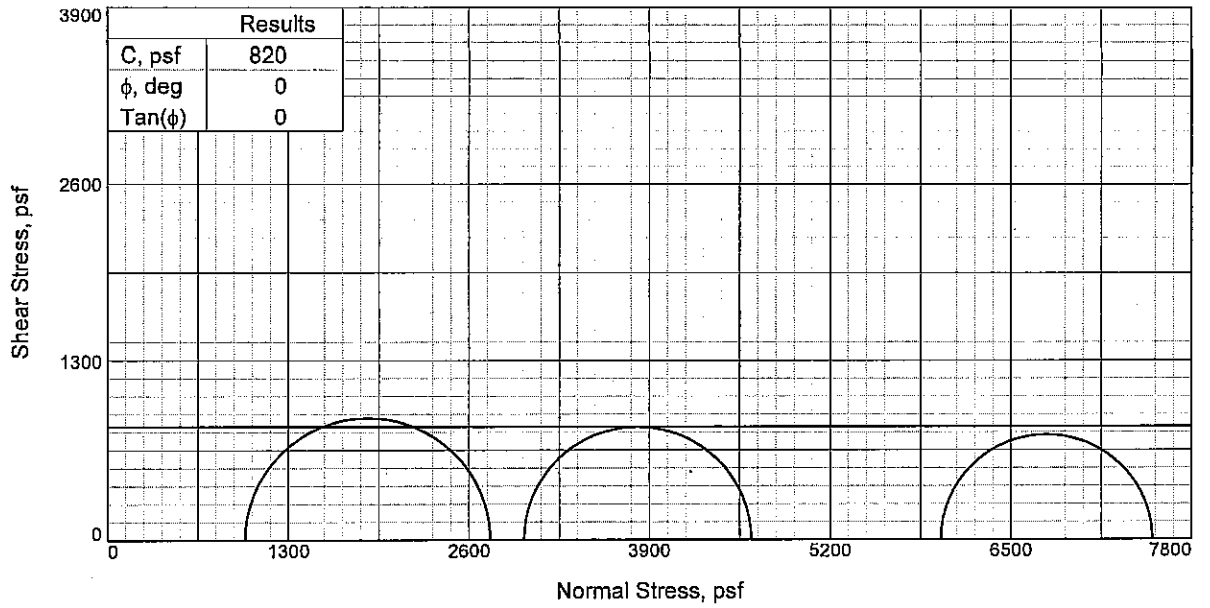
Client: FFEB JV, New Orleans, Louisiana

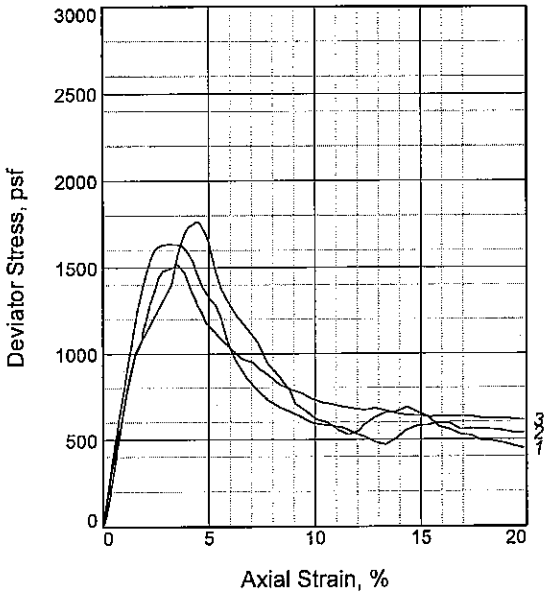
Project: Westwego to Harvey Canal

Source of Sample: WWHC-43UPT **Depth:** 52.8
Sample Number: 15B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	60.0	57.0	62.5
	Dry Density, pcf	62.7	63.1	62.3
	Saturation, %	95.1	91.2	98.0
	Void Ratio	1.7287	1.7108	1.7463
	Diameter, in.	1.43	1.44	1.40
	Height, in.	3.09	3.17	3.12
At Test	Water Content, %	60.0	57.0	62.5
	Dry Density, pcf	62.7	63.1	62.3
	Saturation, %	95.1	91.2	98.0
	Void Ratio	1.7287	1.7108	1.7463
	Diameter, in.	1.43	1.44	1.40
	Height, in.	3.09	3.17	3.12
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.81	41.64
Fail. Stress, psf		1764	1636	1522
Strain, %		4.5	3.1	3.4
Ult. Stress, psf		527	471	639
Strain, %				
σ_1 Failure, psf		2754	4634	7518
σ_3 Failure, psf		989	2997	5996

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH4 W/ LNS ML

LL= 80 **PL=** 26 **PI=** 54

Assumed Specific Gravity= 2.74

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

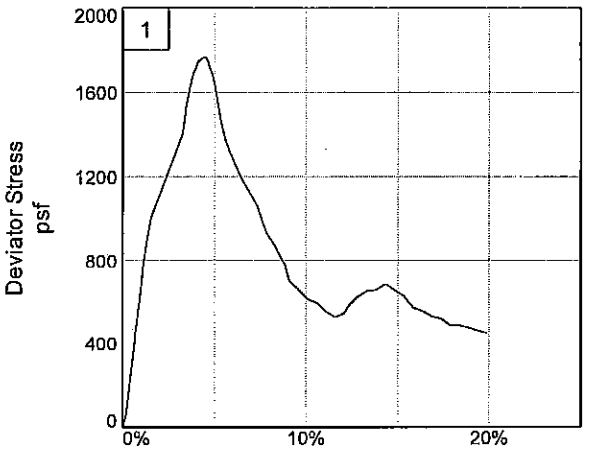
Source of Sample: WWHC-43UPT **Depth:** 57.7

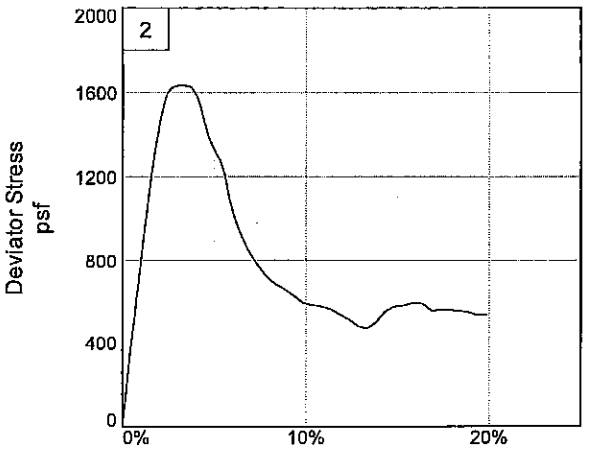
Sample Number: 16C

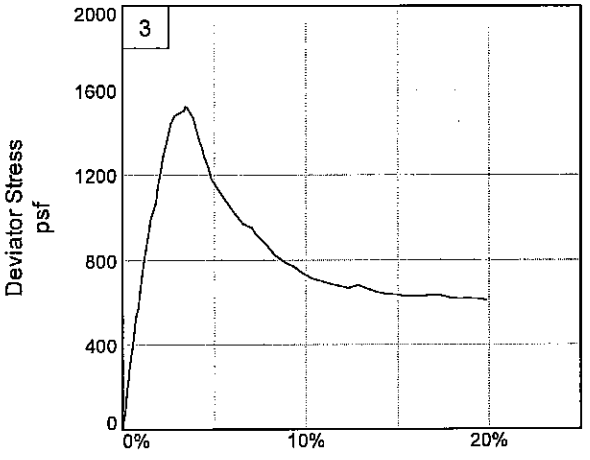
Proj. No.: 0022-0002 **Date Sampled:** 4-13-07

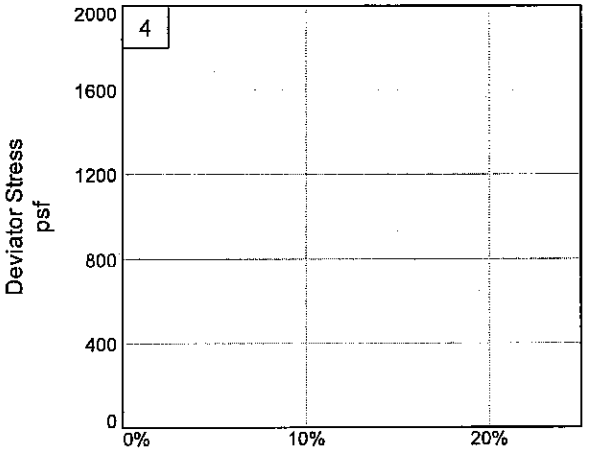
TRIAXIAL SHEAR TEST REPORT

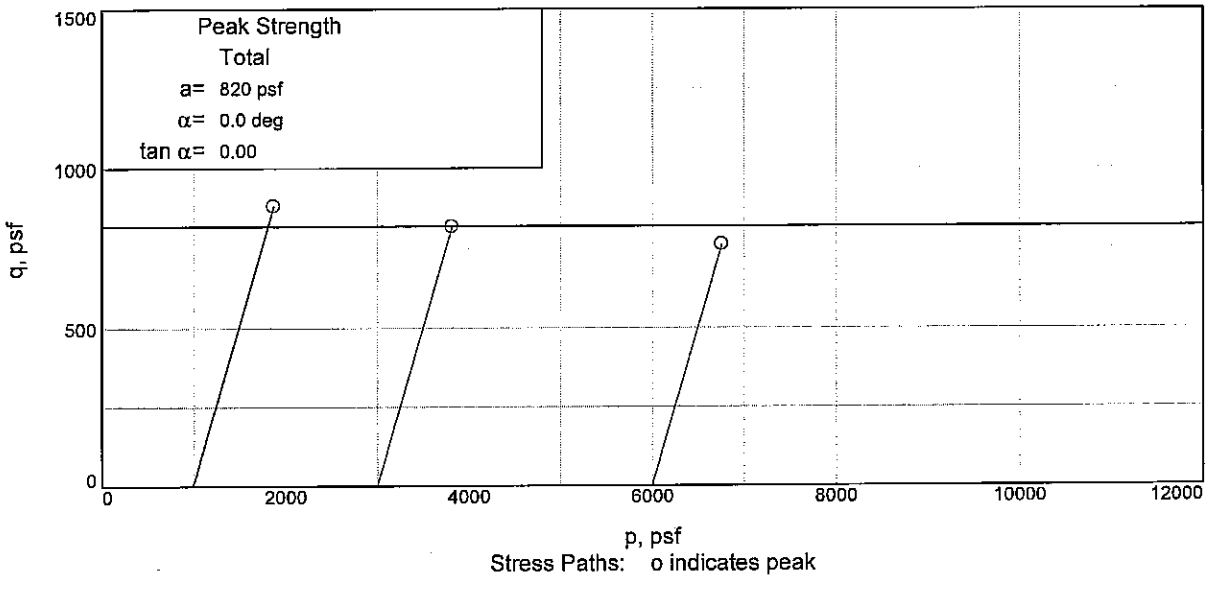
FFEBJV, LLC









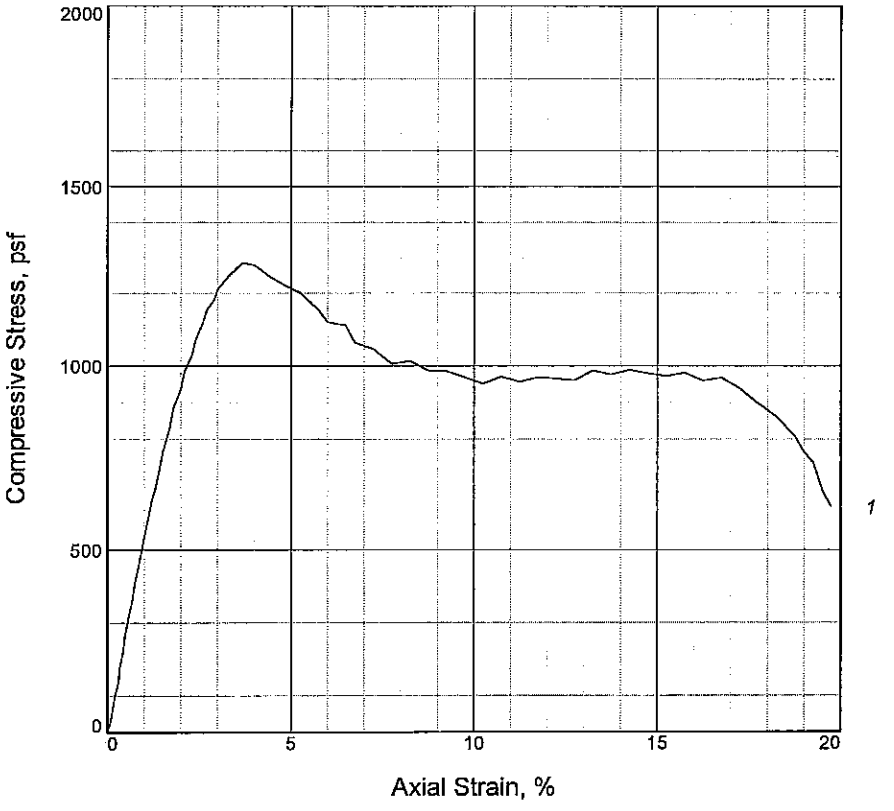


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-43UPT **Depth:** 57.7 **Sample Number:** 16C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1284			
Undrained shear strength, psf	642			
Failure strain, %	3.7			
Strain rate, in./min.	0.03			
Water content, %	51.5			
Wet density, pcf	106.2			
Dry density, pcf	70.1			
Saturation, %	99.0			
Void ratio	1.4044			
Specimen diameter, in.	1.41			
Specimen height, in.	3.14			
Height/diameter ratio	2.24			

Description: M GR CH2 W/ ARS SP, SIF

LL = 53	**PL =** 15	**PI =** 38	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-13-07
Remarks:

Figure _____

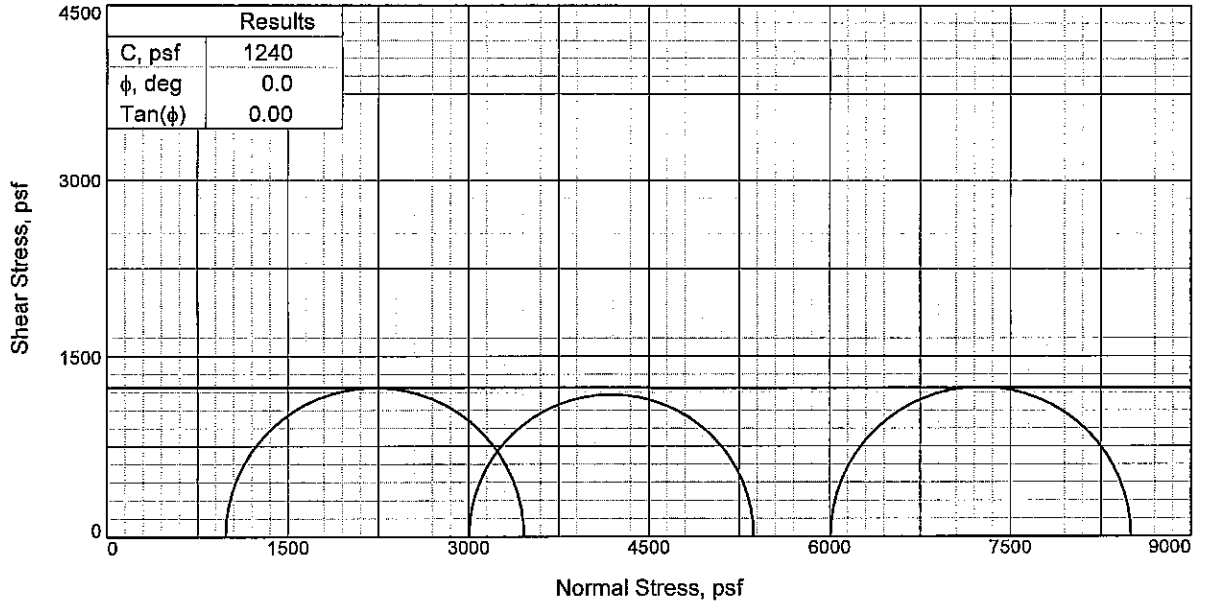
Client: FFEB JV, New Orleans, Louisiana

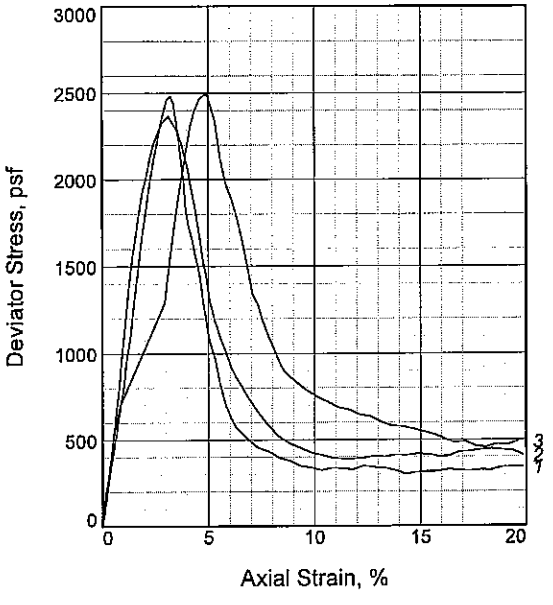
Project: Westwego to Harvey Canal

Source of Sample: WWHC-43UPT **Depth:** 65.7
Sample Number: 18C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	55.6	56.2	54.7
	Dry Density, pcf	67.9	66.2	67.4
	Saturation, %	100.3	97.3	97.5
	Void Ratio	1.5202	1.5828	1.5369
	Diameter, in.	1.41	1.43	1.41
	Height, in.	3.10	3.16	3.11
At Test	Water Content, %	55.6	56.2	54.7
	Dry Density, pcf	67.9	66.2	67.4
	Saturation, %	100.3	97.3	97.5
	Void Ratio	1.5202	1.5828	1.5369
	Diameter, in.	1.41	1.43	1.41
	Height, in.	3.10	3.16	3.11
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.83	20.87	41.72
Fail. Stress, psf		2479	2366	2493
Strain, %		3.2	3.1	4.9
Ult. Stress, psf		299	391	549
Strain, %				
σ_1 Failure, psf		3462	5371	8501
σ_3 Failure, psf		983	3005	6008

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: ST GR CH4 W/ LNS ML, SL

LL= 82 **PL=** 24 **PI=** 58

Assumed Specific Gravity= 2.74

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

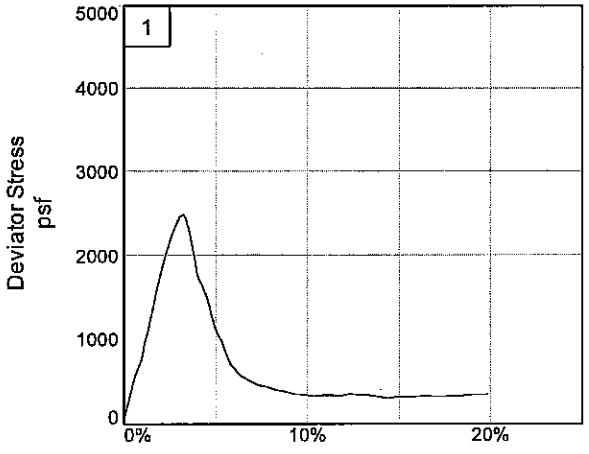
Source of Sample: WWHC-43UPT **Depth:** 69.7

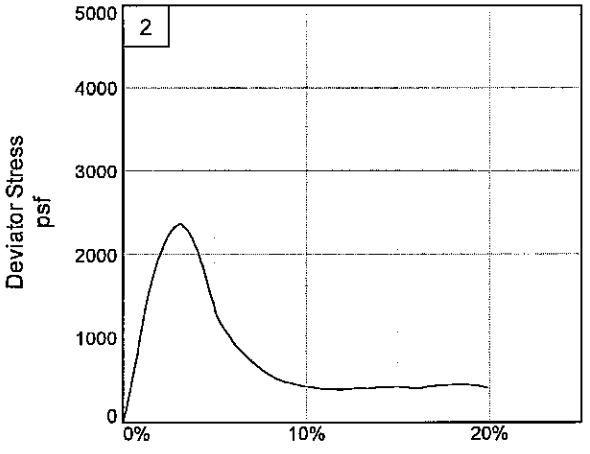
Sample Number: 19C

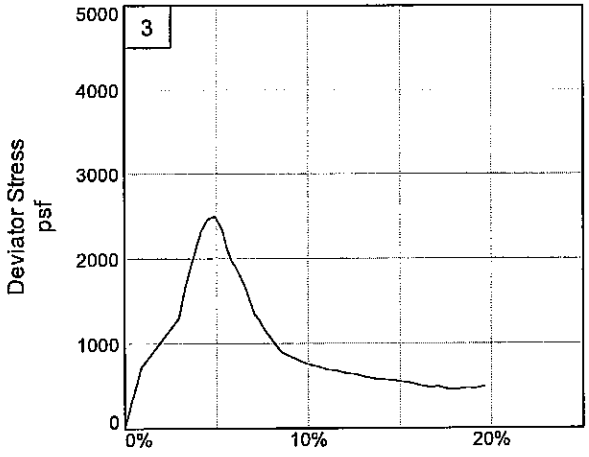
Proj. No.: 0022-0002 **Date Sampled:** 4-13-07

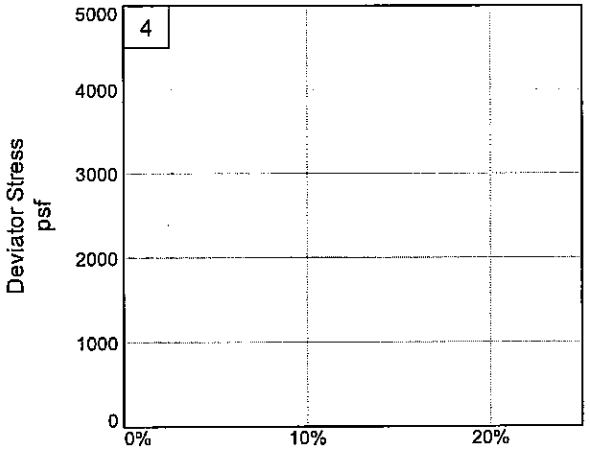
TRIAXIAL SHEAR TEST REPORT

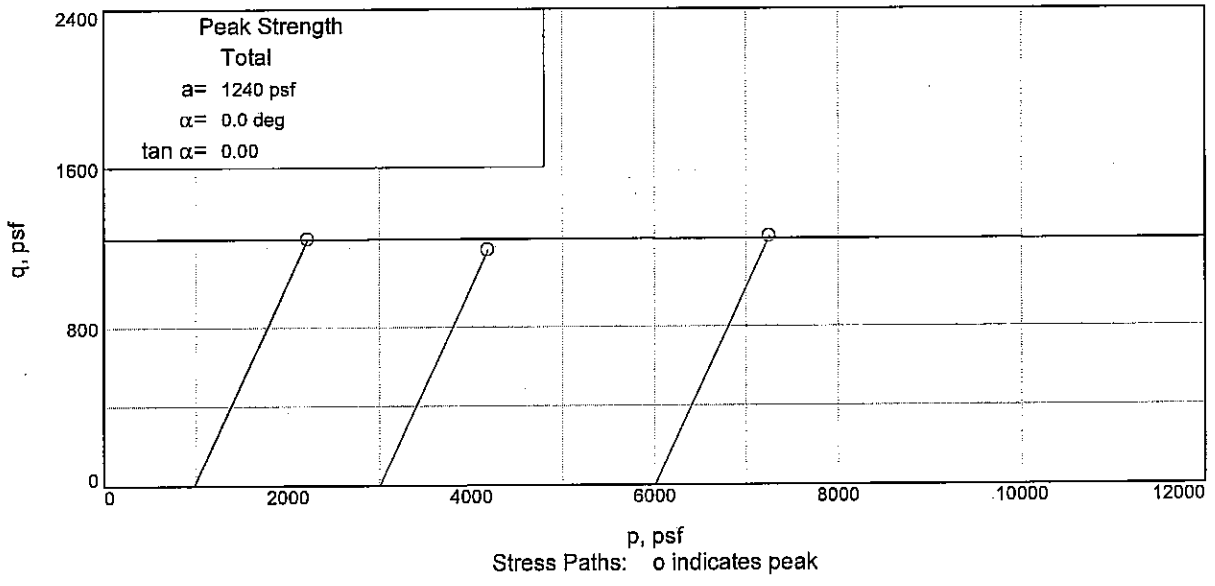
FFEBJV, LLC











Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-43UPT **Depth:** 69.7 **Sample Number:** 19C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

BOR. WWHC-43UPT
STA. LAT N29^50'20.09" LONG W90^07'12.96"
Offset 50' from C/L
13 APRIL 2007

GROUND EL. 3.2

0.0	0.8	17		CL	VSTBR		RT				
0.8	2.0	19	2.0	CL	VSTBR GR		RT				
2.0	2.8	44		CH	SIS M BR						
2.8	4.0	36	4.0	CH	SIS M GR		RT				
4.0	4.8	44		CH	M GR						
4.8	5.7	33		CH	SO GR						
5.7	6.6	46		CH	SO GR						
6.6	8.0	40		CH	SO GR		S				
8.0	8.8	45	8.8	CH	SO GR						
8.8	9.7	42		CL	M GR		RT	547120	44	16	31 91
9.7	12.0	33		CL	M GR		RT				
12.0	12.8	37		CL	SO GR		CS				
12.8	13.7	37		CL	SO GR		CS				
13.7	16.0	44		CL	SO GR						
16.0	16.8	28	16.8	CL	SO GR		RT				
16.8	17.7	46		CH	SISSO GR						
17.7	20.0	55	20.0	CH	SISSO GR						
20.0	20.8	49		CH	M GR		RT O				
20.8	21.7	58	21.7	CH	M GR		O				
21.7	22.6	93		CH	O M GR						
22.6	24.0	96	24.0	CH	O M GR		WD RT				
24.0	24.8	69		CH	SIS M GR DGR						
24.8	25.7	52	25.7	CH	SISSO GR						
25.7	26.6	56	26.6	CL	SISSO GR						
26.6	28.0	65	28.0	CH	M GR		CC				
28.0	28.8	59		CH	SIS M GR						
28.8	29.7	53	29.7	CH	SIS M GR						
29.7	30.6	58	30.6	CH	M GR		SIF				
30.6	32.0	57	32.0	CH	SIS M GR		SIF				
32.0	32.8	67		CH	SO GR		SIF				
32.8	33.7	50		CH	SO GR		SIF				
33.7	36.0	54		CH	SO GR		SIF				
36.0	36.8	60		CH	SO GR						
36.8	37.7	58	37.7	CH	SO GR						
37.7	40.0	61	40.0	CH	SISSO GR						
40.0	40.8	68	40.8	CH	SO GR						

40.8 41.7 62 41.7CH SIS M GR
41.7 42.6 64 42.6CH M GR SL 684101 62 19 62 420
42.6 44.0 56 CH SIS M GR SL
44.0 44.8 61 44.8CH SIS M GR SL
44.8 45.7 66 45.7CH M GR SL
45.7 46.6 60 46.6CH SIS M GR SL
46.6 48.0 63 CH M GR SL
48.0 48.8 61 CH M GR SL
48.8 49.7 56 CH M GR SL
49.7 50.6 57 CH M GR SL 812104 82 24 57 500
50.6 52.0 60 CH M GR SL
52.0 52.8 69 CH VSOGR SL
52.8 53.7 62 CH SO GR 341105 69 24 51 531
53.7 56.0 53 56.0CH SO GR SL
56.0 56.8 63 56.8CH SIS M GR SL
56.8 57.7 62 57.7CH M GR SL
57.7 58.6 58 58.6CH SIS M GR
58.6 60.0 58 60.0CH M GR SL
60.0 60.8 63 60.8CH SIS M GR SL
60.8 61.7 60 CH M GR SL
61.7 62.6 58 62.6CH M GR SL
62.6 64.0 59 64.0CH SS M GR SIF
64.0 64.8 34 CL M GR SIF S
64.8 65.7 41 CH M GR SIF
65.7 66.6 46 CH M GR S SIF 642106 53 15 52 660
66.6 68.0 57 68.0CH M GR S SIF
68.0 68.8 60 CH SIS M GR SL
68.8 69.7 60 CH SIS M GR SL
69.7 70.6 57 CH SISST GR SL
70.6 72.0 58 72.0CH SISST GR SL
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 3.10/ 0.10 Water Con: 42.00
LL,PL,PI : 60, 16, 44 Dry Dens : 71.00
Cohesion : 0.396 Saturat : 81.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH

Depth/Ele: 6.00/-2.80 Water Con: 39.00
LL,PL,PI : 50, 14, 36 Dry Dens : 81.00
Cohesion : 0.208 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 14.00/-10.8 Water Con: 44.00
LL,PL,PI : 40, 17, 23 Dry Dens : 75.00
Cohesion : 0.193 Saturat : 95.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 18.00/-14.8 Water Con: 46.00
LL,PL,PI : 81, 19, 62 Dry Dens : 72.00
Cohesion : 0.231 Saturat : 93.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 21.10/-17.9 Water Con: 56.00
LL,PL,PI : 93, 22, 71 Dry Dens : 67.00
Cohesion : 0.271 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 26.00/-22.8 Water Con: 48.00
LL,PL,PI : 38, 25, 13 Dry Dens : 72.00
Cohesion : 0.158 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 30.00/-26.8 Water Con: 56.00
LL,PL,PI : 96, 23, 73 Dry Dens : 67.00
Cohesion : 0.285 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-34.8 Water Con: 56.00
LL,PL,PI : 88, 21, 67 Dry Dens : 66.00
Cohesion : 0.239 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 45.10/-41.9 Water Con: 67.00
LL,PL,PI : 97, 27, 70 Dry Dens : 60.00
Cohesion : 0.417 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 58.00/-54.8 Water Con: 60.00
LL,PL,PI : 80, 26, 54 Dry Dens : 63.00
Cohesion : 0.410 Saturat : 95.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 70.00/-66.8 Water Con: 56.00
LL,PL,PI : 82, 24, 58 Dry Dens : 67.00
Cohesion : 0.620 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-44UCL

Current Date: 8/26/2008

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	ST GR CL6 W/ RT	CL6		16												
1B	0.8	M GR CH2 W/ RT	CH2		27												
2A	2.0	ST GR & LBR CH2	CH2		26												
2B	2.8	M GR & LBR CH2 W/ LNS ML	CH2		29												
3A	4.0	M GR & BR CH2	CH2		28												
3B	4.8	M GR & BR CH2	CH2		28												
3C	5.7	M GR & T CL6 W/ WD	CL6		27	93	118	89	UU	0	847		46	24	22	0.53	
3D	6.6	M GR CH2	CH2		28												
4A	8.0	M GR CH3 W/ LNS ML	CH3		32												
4B	8.8	M GR CH3 W/ ARS ML	CH3		33												
4C	9.7	M GR CH3 W/ ARS & LNS SM, WD, RT, SIF	CH3		31	90	119	97	UU	0	862		65	25	40	0.43	
5A	12.0	ST GR CH2 W/ WD	CH2		28												
5B	12.8	ST GR CH2	CH2		29												
5C	13.7	ST GR CL6 W/ WD	CL6		27	97	124	100	UU	0	1130		45	18	27	0.80	OC = 4.1%
6A	16.0	M GR CH3 W/ WD, O, ARS ML	CH3		37												
6B	16.8	M GR CH3 W/ WD, LNS ML	CH3		39	82	113	96	UU	0	512		57	18	39	0.42	
6C	17.7	M GR & LBR CH2 W/ LNS ML	CH2		30												
7A	20.0	SO GR CL4-S W/ ARS ML	CL4-S		35												
7B	20.8	SO GR & LBR CL4-S W/ ARS SM	CL4-S		35												
7C	21.7	SO GR & LBR CL4-S W/ ARS CH	CL4-S	15	33	91	121	100	UC	--	438	876	30	22	8	0.21	
7D	22.6	SO GR & LBR CL4-S W/ ARS CH	CL4-S		34												
8A	24.0	M GR CH3 W/ ARS ML	CH3		37												
8B	24.8	SO GR CH3 W/ ARS ML, RT	CH3		41	80	113	100	UU	0	538		61	20	41	0.41	
8C	25.7	M GR CH3 W/ ARS ML	CH3		32												
9A	28.0	SO GR CH3 W/ ARS ML	CH3		41												
9B	28.8'	SO GR CH2 W/ LNS ML	CH2		51	81	113	100					51	23	28		Gs, CON
9C	29.7	SO GR CH3 W/ ARS ML, RT	CH3		46												
10A	32.0	M GR & BR CHOA	CHOA		92												
10B	32.8	M GR & BR CHOB	CHOB		112								165	51	114		OC= 14.3%
10C	33.7	SO GR & BR CHOB W/ RT	CHOB		107	43	88	98	UU	0	488		159	37	122	0.35	
11A	36.0	M GR CH4 W/ ARS ML, O, RT	CH4		63												
11B	36.8	SO GR CH4 W/ ARS ML, O, RT, CC	CH4		72												
11C	37.7	SO GR CH4 W/ ARS ML, O, RT, CC	CH4		61												
12A	40.0	SO GR CL6	CL6		35												
12B	40.8	SO GR CL6	CL6		45												

Remarks: 2 consolidations (9B & 15B) added WJY
FFEBJV, LLC.

Checked by: RNE
File Name: TO 2 WWHC

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-44UCL

Current Date: 8/26/2008

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
12C	41.7	M GR CL6 W/ LNS ML	CL6	6	53	70	107	100	UC	--	542	1084	50	21	29	0.28	
12D	42.6	SO GR CH3 W/ LNS ML	CH3		53												
13A	44.0	SO GR CH4 W/ LNS ML	CH4		61												
13B	44.8	M GR CH4 W/ LNS ML	CH4	4	68	60	100	100	UC	--	704	1408	86	24	62	0.39	
13C	45.7	M GR CH2 W/ LNS ML	CH2		35												
13D	46.6	M GR CH4 W/ LNS ML	CH4		63												
14A	48.0	M GR CH4	CH4		61												
14B	48.8	M GR CH4 W/ LNS ML	CH4		58												
14C	49.7	M GR CH4 W/ ARS ML	CH4		67	54	101	100	UU	0	555					0.29	
14D	50.6	M GR CH4 W/ LNS ML	CH4		45												
15A	52.0	SO GR CH4 W/ LNS ML	CH4		63												
15B	52.8'	SO GR CH4	CH4		64	60	100	98					91	25	66		Gs, CON
15C	53.7	M GR CH4 W/ LNS ML	CH4		54												
16A	56.0	M GR CH4 W/ LNS ML	CH4		56												
16B	56.8	M GR CH4 W/ LNS ML	CH4		58												
16C	57.7	M GR CH4 W/ LNS ML	CH4	6	55	68	106	100	UC	--	679	1358	79	32	47	0.36	
16D	58.6	M GR CH4	CH4		62												
17A	60.0	M GR CH4	CH4		65												
17B	60.8	M GR CH4	CH4		59												
17C	61.7	M GR CH4 W/ ARS ML	CH4		55												
17D	62.6	M GR CH4 W/ LNS ML	CH4		53												
18A	64.0	M GR CH4	CH4		58												
18B	64.8	M GR CH4 W/ LNS ML	CH4		55												
18C	65.7	M GR CH4 W/ LNS ML	CH4	5	56	66	103	96	UC	--	696	1392	77	26	51	0.30	
18D	66.6	SO BR CH4 W/ LNS ML	CH4		64												
19A	68.0	M GR CH4	CH4		58												
19B	68.8	ST GR CH4 W/ LNS ML	CH4		53												
19C	69.7	ST GR CH4 W/ LNS ML, SL	CH4		65	61	101	99	UU	0	1004		89	26	63	0.37	
19D	70.6	ST GR CH4 W/ LNS SP, SIF	CH4		58												
20A	72.0	GR SM1 W/ SIF	SM1		27												
20B	72.8	GR SM1 W/ SIF	SM1		28												
20C	73.7	GR SM1 W/ SIF	SM1		29												SV
21A	76.0	M GR CL4-S	CL4-S		31												
21B	76.8	M GR CL4-S	CL4-S		29												
21C	77.7	M GR CH4 W/ ARS ML, ARS SP, SIF	CH4	3	51	70	106		UC	--	596	1192	80	21	59	0.30	
21D	78.6	M GR CH4 W/ ARS SP, SIF	CH4		50												
22A	80.0	M GR CH4 W/ LNS ML	CH4		55												

Remarks: 2 consolidations (9B & 15B) added WJY
FFEBJV, LLC.

Checked by: RNE
File Name: TO 2 WWHC

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-44UCL

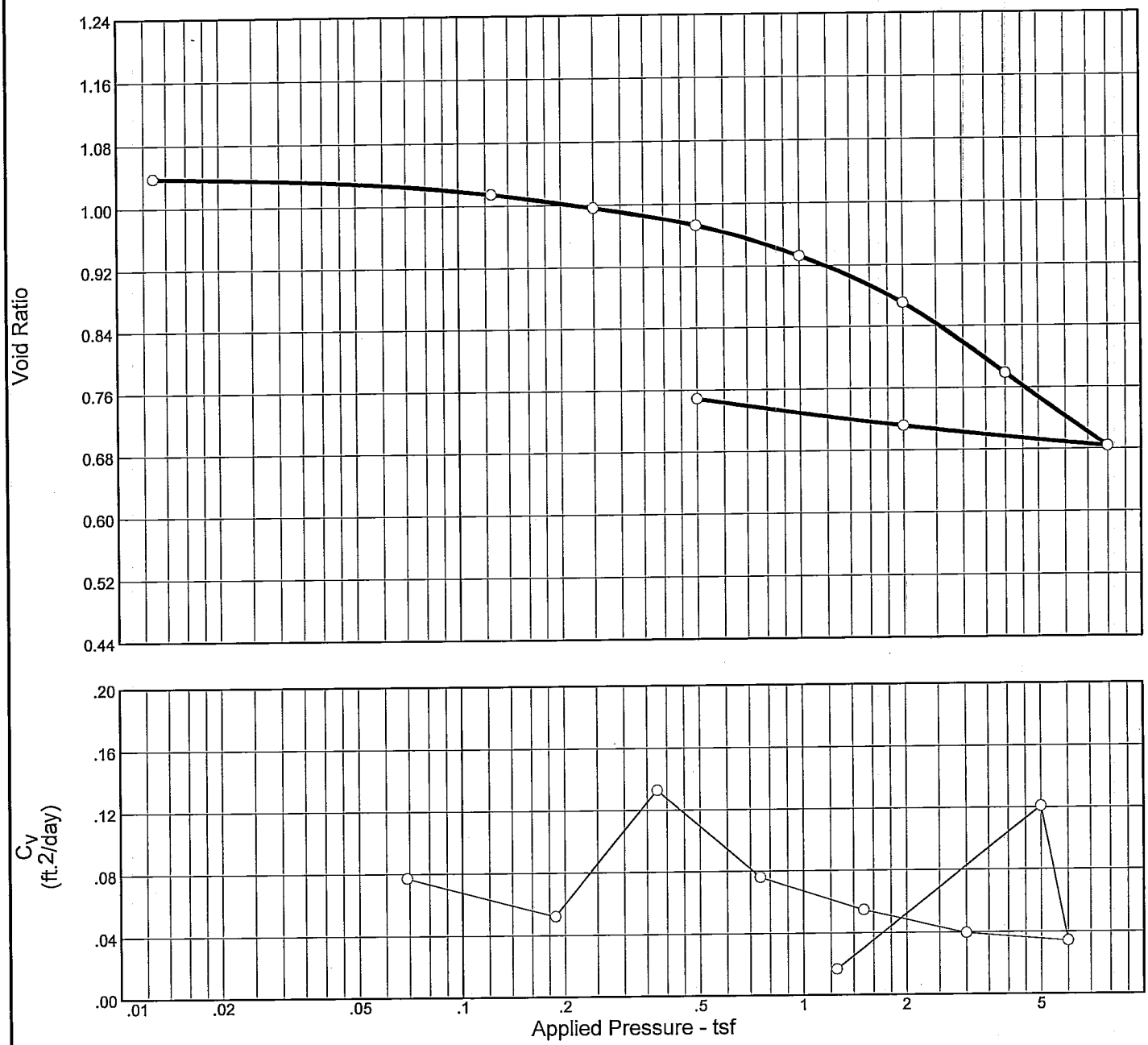
Current Date: 8/26/2008

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
22B	80.8	ST GR CH4 W/ LNS ML	CH4		54												
22C	81.7	ST GR CH4 W/ LNS ML, SL	CH4		58	65	103	98	UU	0	1181		88	27	61	0.43	
22D	82.6	M GR CH4 W/ LNS ML	CH4		63												
23A	84.0	ST GR CH4 W/ LNS ML, SIF	CH4		42												
23B	84.8	M GR CL4 W/ SIF	CL4		29												
23C	85.8	SO GR CL4 W/ SIF	CL4	9	35	87	117	100	UC	--	381	762	33	14	19	0.20	
23D	86.6	M GR CL4 W/ SIF	CL4		35												
24A	88.0	M GR CL4 W/ LNS SP	CL4		35												
24B	88.8	M GR CL4 W/ LNS SP	CL4		33												
24C	89.7	ST DGR CL4	CL4	13	21	106	129	98	UC	--	1249	2498	29	16	13	0.46	
24D	90.6	ST GR & LBR CL4 W/ ARS ML	CL4		22												

Remarks: 2 consolidations (9B & 15B) added WJY
FFEBJV, LLC.

Checked by: RNE
File Name: TO 2 WWHC

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
101.8 %	40.2 %	80.6	51	28	2.63	1.42	0.31	1.038

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CH2 W/ LNS ML	CH2	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-44UCL **Sample No.:** 9B **Elev./Depth:** 28.8'

FFEBJV, LLC

St Rose, LA

Remarks:

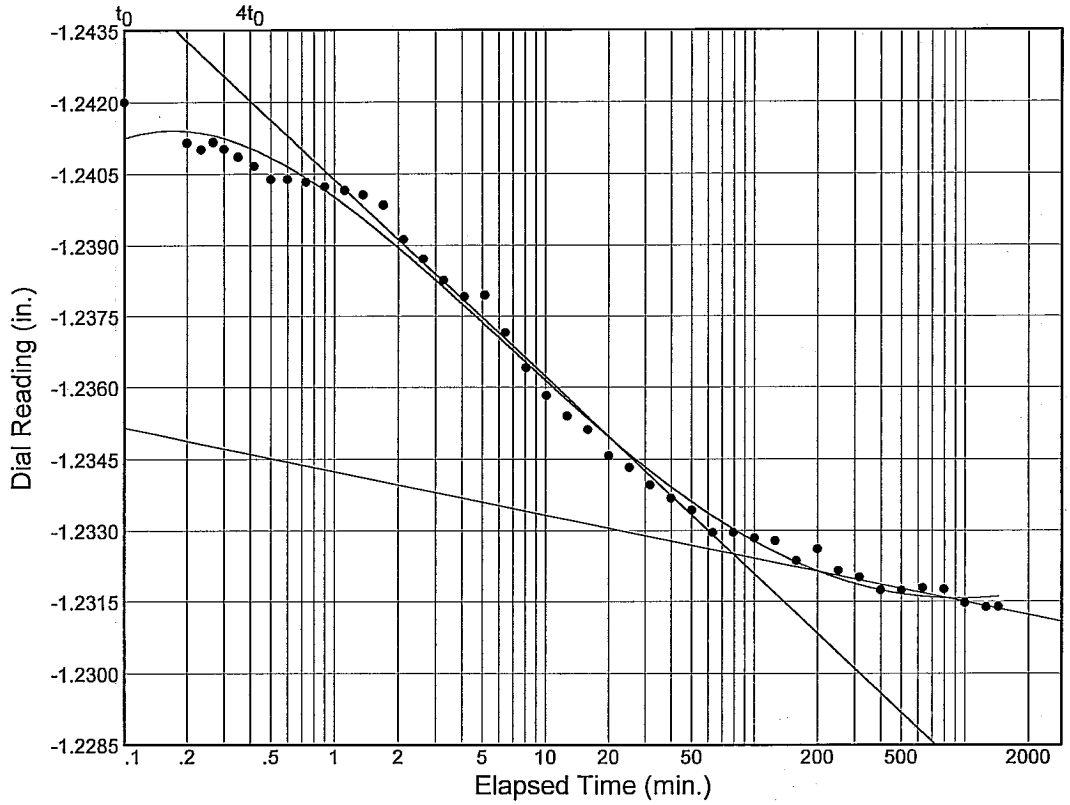
Tested by: CB
Calculated by: MR
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

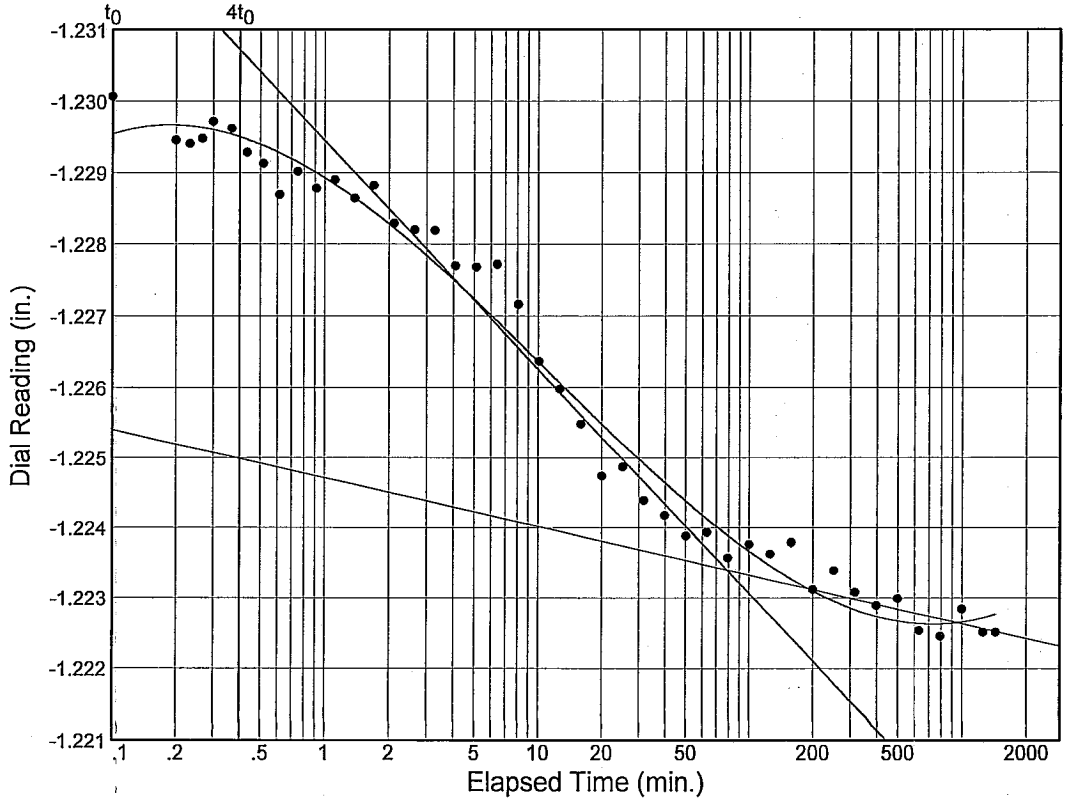
Source: WWHC-44UCL Sample No.: 9B Elev./Depth: 28.8'



Load No.= 2
Load= 0.13 tsf
D_0 = -1.24143
D_{50} = -1.23697
D_{100} = -1.23251
T_{50} = 6.26 min.

C_v @ T_{50}
0.08 ft.^{2}/day

C_α = 0.001



Load No.= 3
Load= 0.25 tsf
D_0 = -1.22958
D_{50} = -1.22649
D_{100} = -1.22340
T_{50} = 9.08 min.

C_v @ T_{50}
0.05 ft.^{2}/day

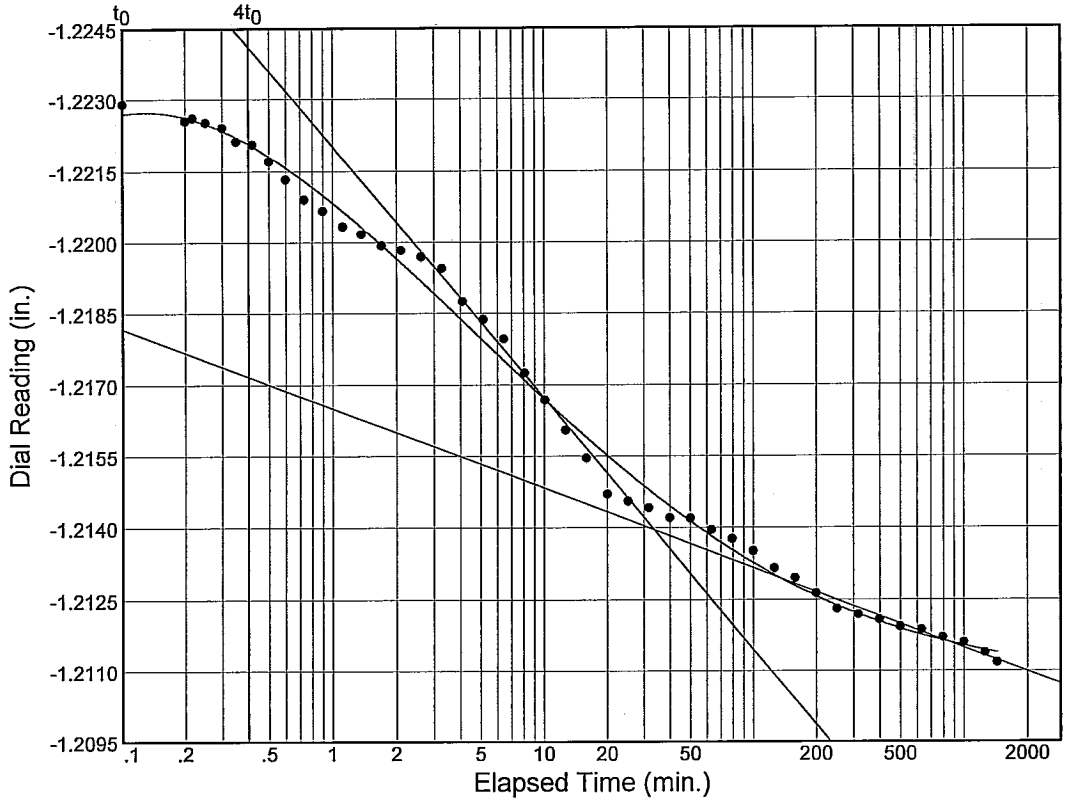
C_α = 0.001

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

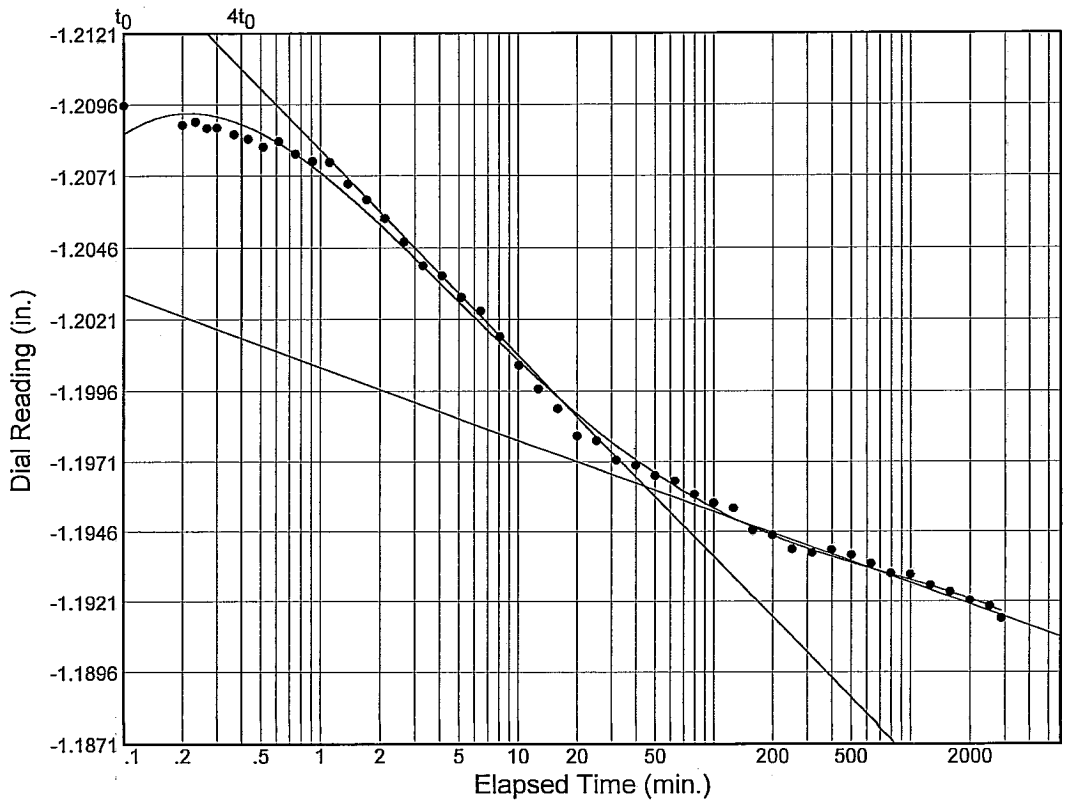
Source: WWHC-44UCL Sample No.: 9B Elev./Depth: 28.8'



Load No.= 4
Load= 0.50 tsf
D_0 = -1.22332
D_{50} = -1.21863
D_{100} = -1.21396
T_{50} = 3.49 min.

C_v @ T_{50}
0.13 ft.^{2}/day

C_α = 0.002



Load No.= 5
Load= 1.00 tsf
D_0 = -1.20820
D_{50} = -1.20222
D_{100} = -1.19623
T_{50} = 5.90 min.

C_v @ T_{50}
0.08 ft.^{2}/day

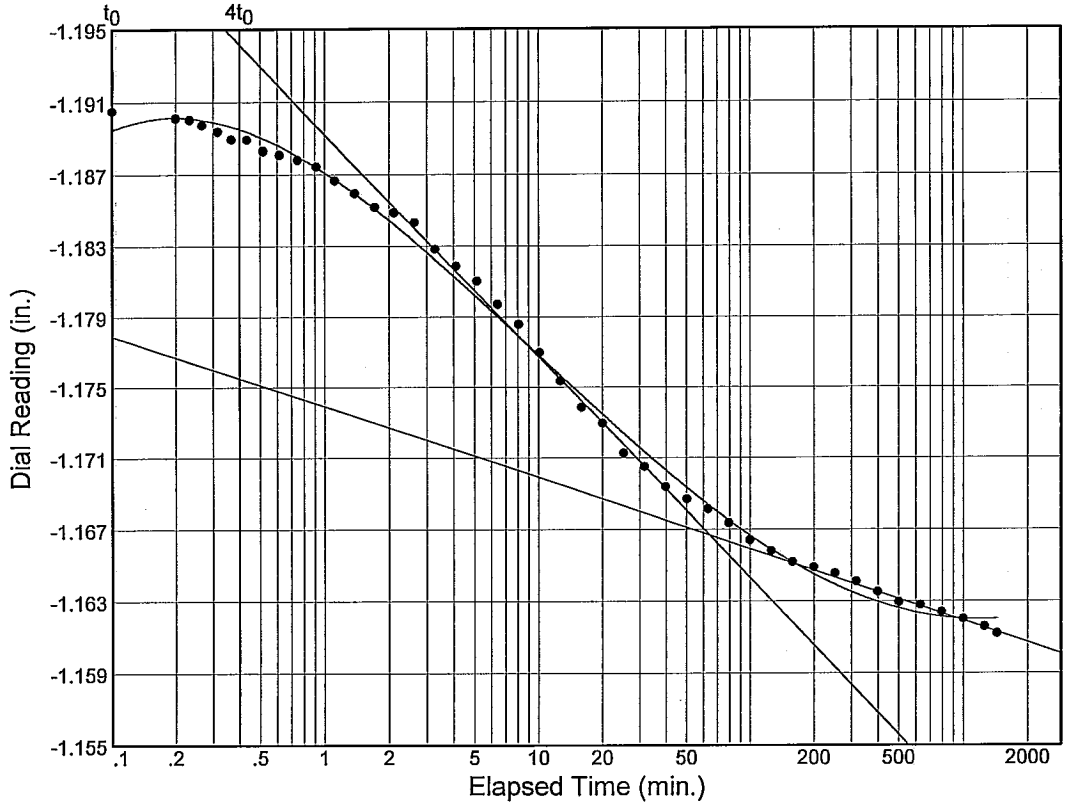
C_α = 0.003

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

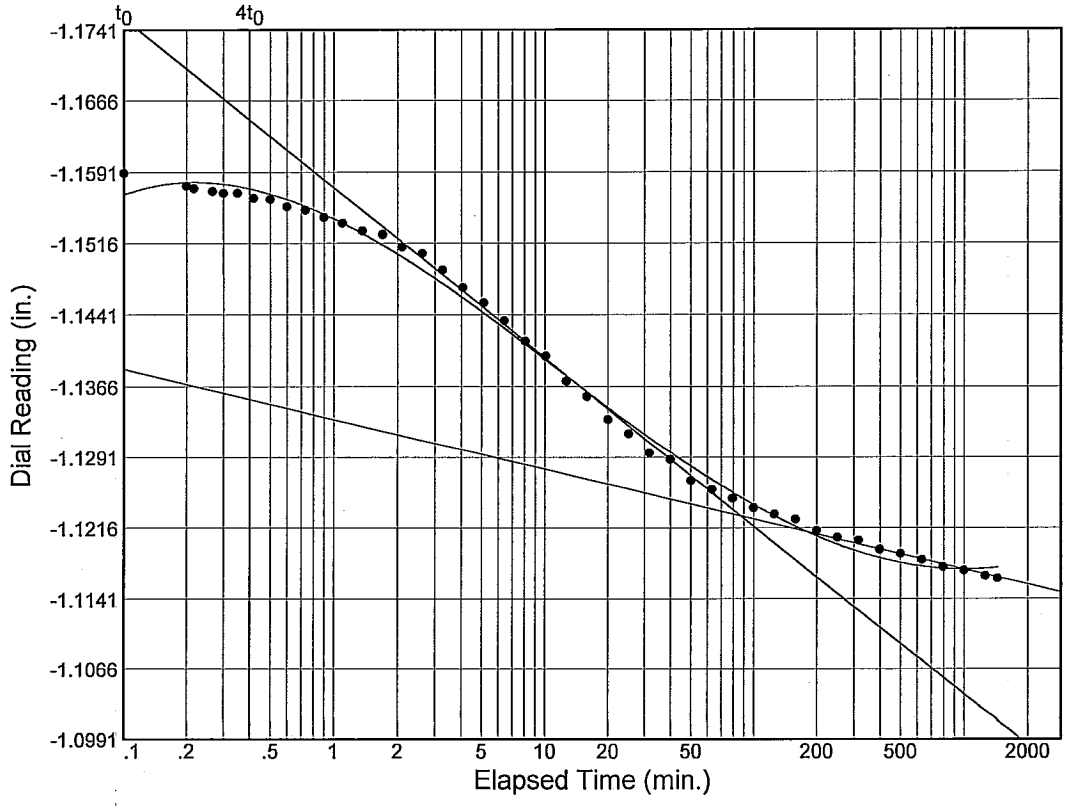
Source: WWHC-44UCL Sample No.: 9B Elev./Depth: 28.8'



Load No.= 6
Load= 2.00 tsf
D_0 = -1.18942
D_{50} = -1.17806
D_{100} = -1.16671
T_{50} = 7.79 min.

C_v @ T_{50}
0.05 ft.^{2}/day

C_α = 0.004



Load No.= 7
Load= 4.00 tsf
D_0 = -1.15616
D_{50} = -1.13953
D_{100} = -1.12290
T_{50} = 9.89 min.

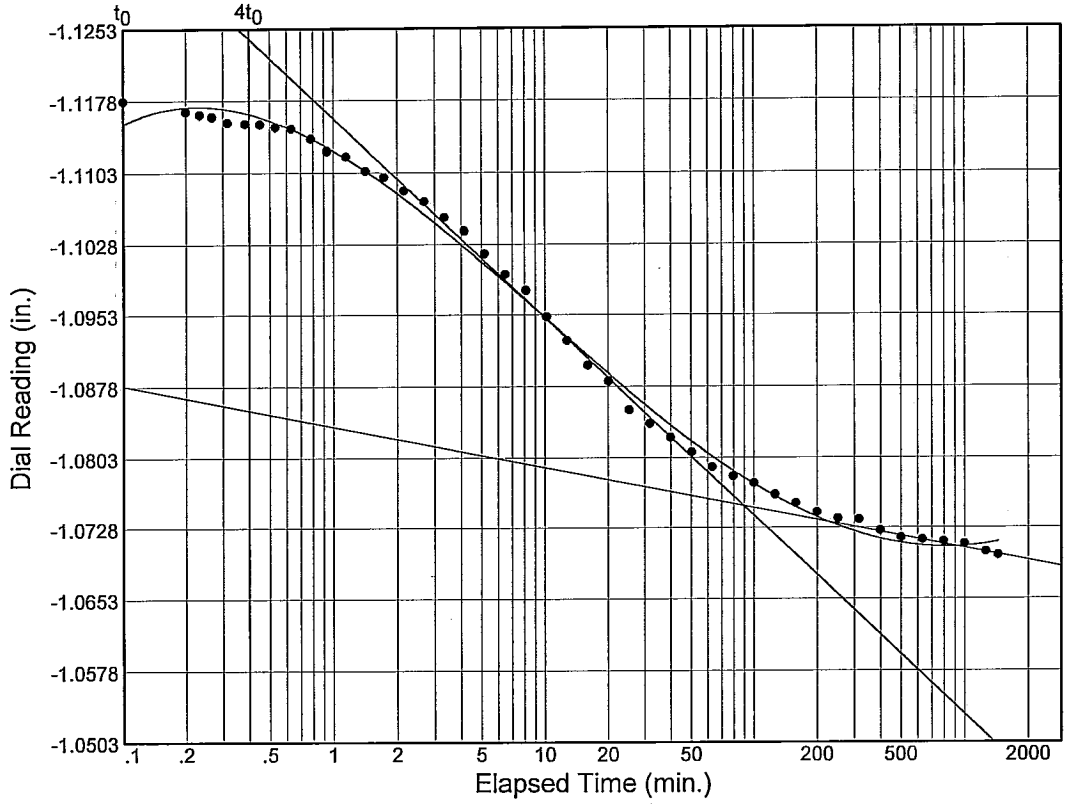
C_v @ T_{50}
0.04 ft.^{2}/day

C_α = 0.006

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

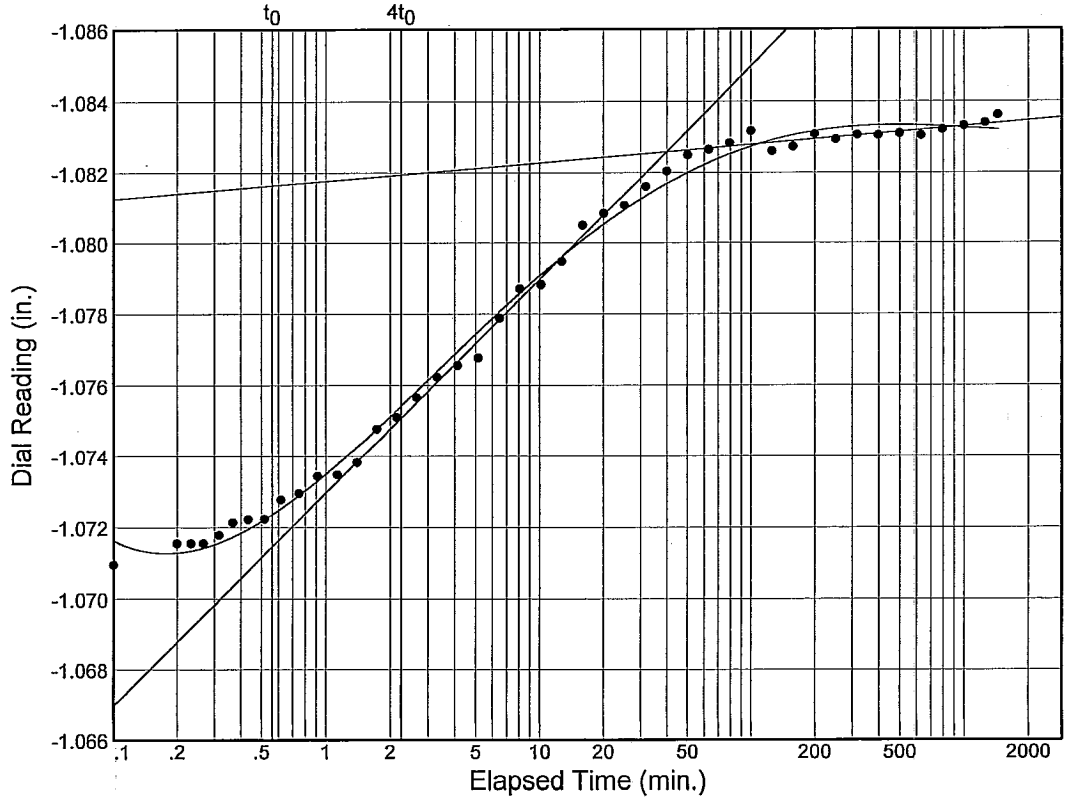
Source: WWHC-44UCL Sample No.: 9B Elev./Depth: 28.8'



Load No.= 8
Load= 8.00 tsf
D_0 = -1.11441
D_{50} = -1.09479
D_{100} = -1.07518
T_{50} = 10.31 min.

C_v @ T_{50}
0.03 ft.^{2}/day

C_α = 0.005



Load No.= 9
Load= 2.00 tsf
D_0 = -1.06931
D_{50} = -1.07595
D_{100} = -1.08260
T_{50} = 2.79 min.

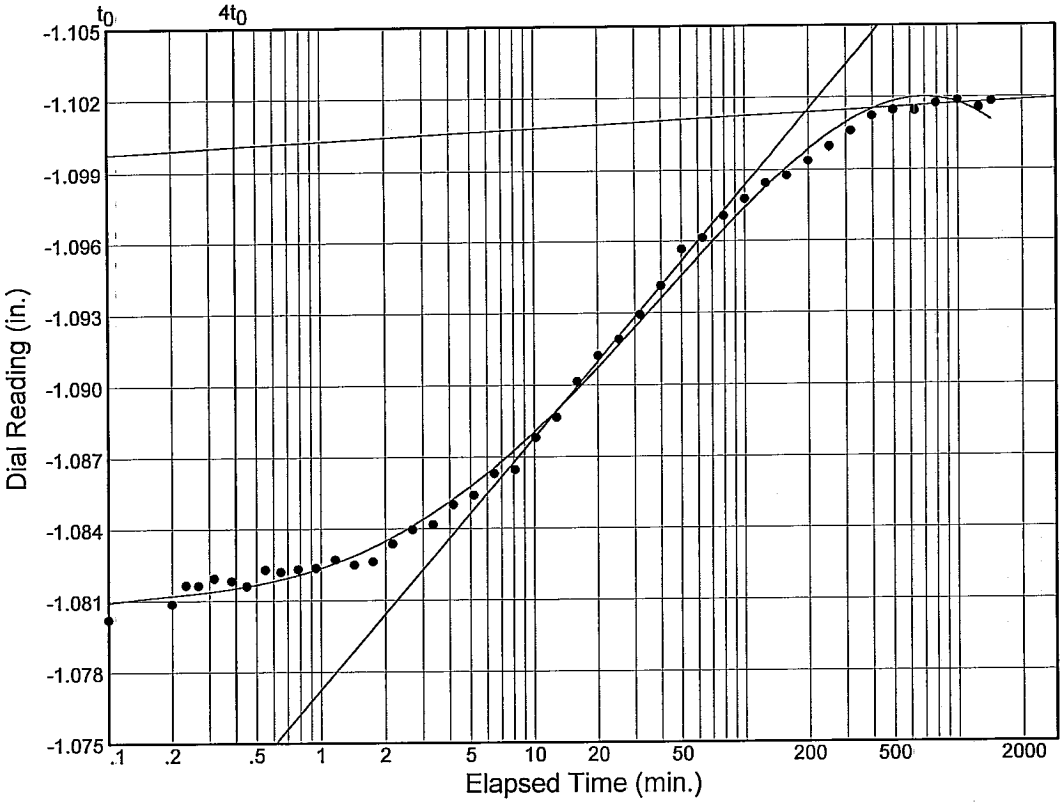
C_v @ T_{50}
0.12 ft.^{2}/day

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-44UCL Sample No.: 9B Elev./Depth: 28.8'



Load No.= 10
Load= 0.50 tsf
D_0 = -1.08033
D_{50} = -1.09086
D_{100} = -1.10140
T_{50} = 20.82 min.

C_v @ T_{50}
0.02 ft.^{2}/day

Figure

CONSOLIDATION TEST DATA

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Contract No. W912P8-07-D-0022
Task Order No. 0002
Project Number: 0022-0002

Sample Data

Source: WWHC-44UCL
Sample No.: 9B
Elev. or Depth: 28.8'
Location:
Description: SO GR CH2 W/ LNS ML
Liquid Limit: 51
USCS: CH2 **AASHTO:**
Testing Remarks: Tested by: CB
Calculated by: MR
Checked by: WJY

Sample Length(in./cm.):

Plasticity Index: 28
Figure No.:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST		AFTER TEST	
Wet w+t =	140.18 g.	Consolidometer # =	20	Wet w+t =	142.99 g.
Dry w+t =	100.00 g.			Dry w+t =	114.96 g.
Tare Wt. =	.00 g.	Spec. Gravity =	2.63	Tare Wt. =	32.48 g.
Height =	1.00 in.	Height =	1.00 in.		
Diameter =	3.99 in.	Diameter =	3.99 in.		
Weight =	369.74 g.	Defl. Table =	n/a		
Moisture =	40.2 %	Ht. Solids =	0.4883 in.	Moisture =	34.0 %
Wet Den. =	112.9 pcf	Dry Wt. =	263.76 g.*	Dry Wt. =	82.48 g.
Dry Den. =	80.6 pcf	Void Ratio =	1.038	Void Ratio =	0.749
		Saturation =	101.8 %		

*** Initial dry weight used in calculations**

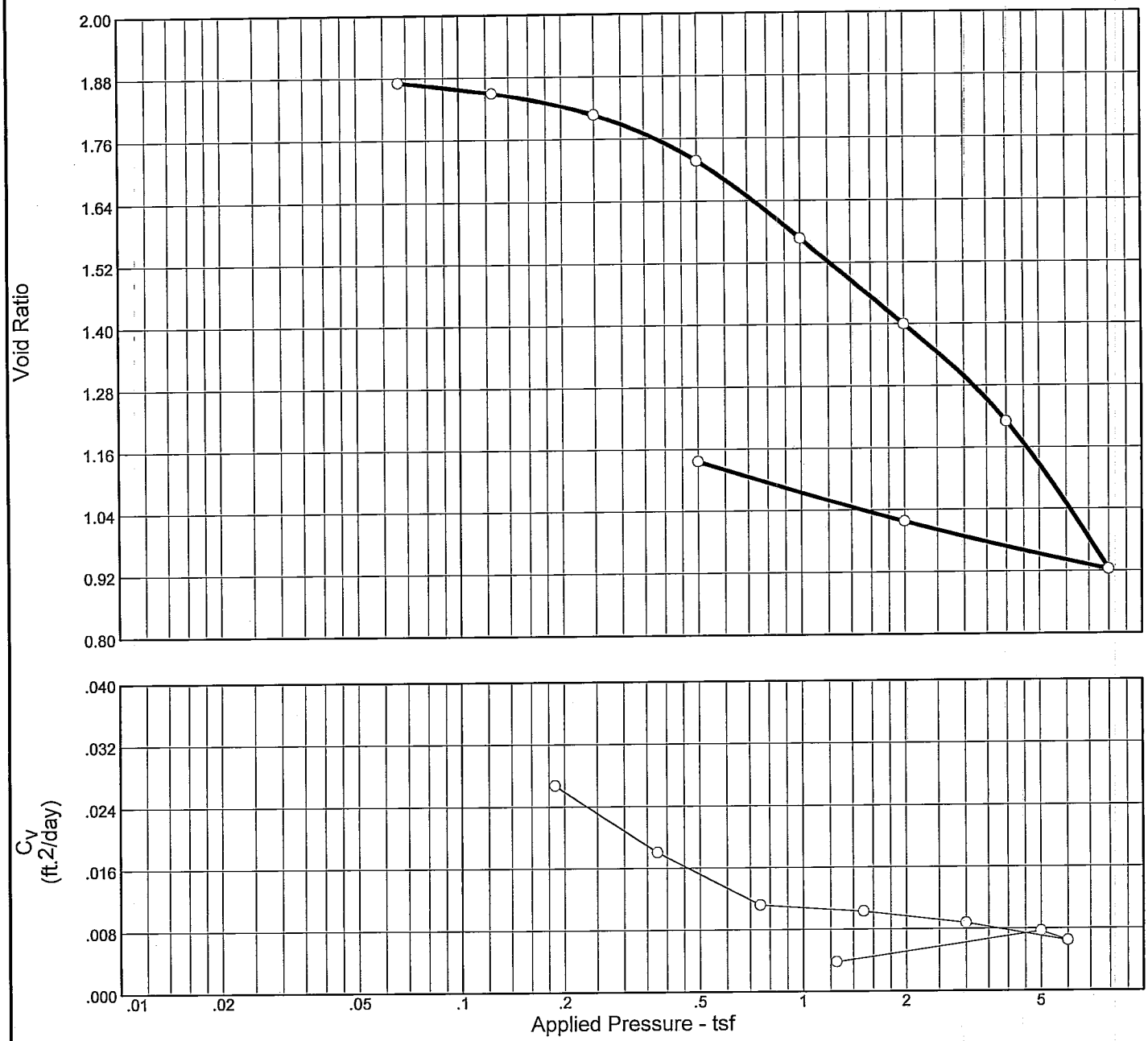
End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-1.24302				1.038	
0.01	-1.24294	0.00000			1.038	0.0 Comprs.
0.13	-1.23139	0.00000	0.08	0.001	1.014	1.2 Comprs.
0.25	-1.22251	0.00000	0.05	0.001	0.996	2.1 Comprs.
0.50	-1.21118	0.00000	0.13	0.002	0.973	3.2 Comprs.
1.00	-1.19149	0.00000	0.08	0.003	0.933	5.2 Comprs.
2.00	-1.16120	0.00000	0.05	0.004	0.871	8.2 Comprs.
4.00	-1.11627	0.00000	0.04	0.006	0.779	12.7 Comprs.
8.00	-1.06986	0.00000	0.03	0.005	0.684	17.4 Comprs.
2.00	-1.08363	0.00000	0.12		0.712	16.0 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v ($ft.^2$/day)	C_α	Void Ratio	% Compression /Swell
0.50	-1.10182	0.00000	0.02		0.749	14.2 Comprs.

C_c = 0.31 P_c = 1.42 tsf C_r = 0.05

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
97.9 %	66.4 %	60.1	91	66	2.77	2.22	0.97	1.877

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CH4	CH4	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-44UCL **Sample No.:** 15B **Elev./Depth:** 52.8'

FFEBJV, LLC

St Rose, LA

Remarks:

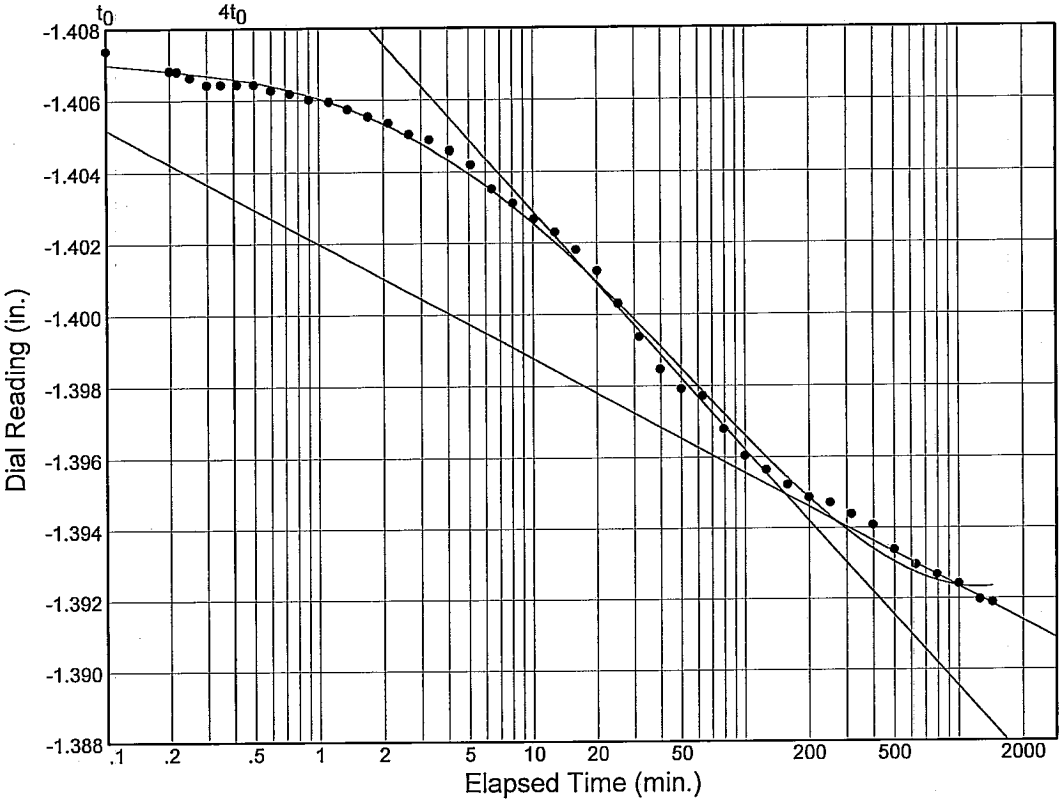
Tested by: CB
Calculated by: MR
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

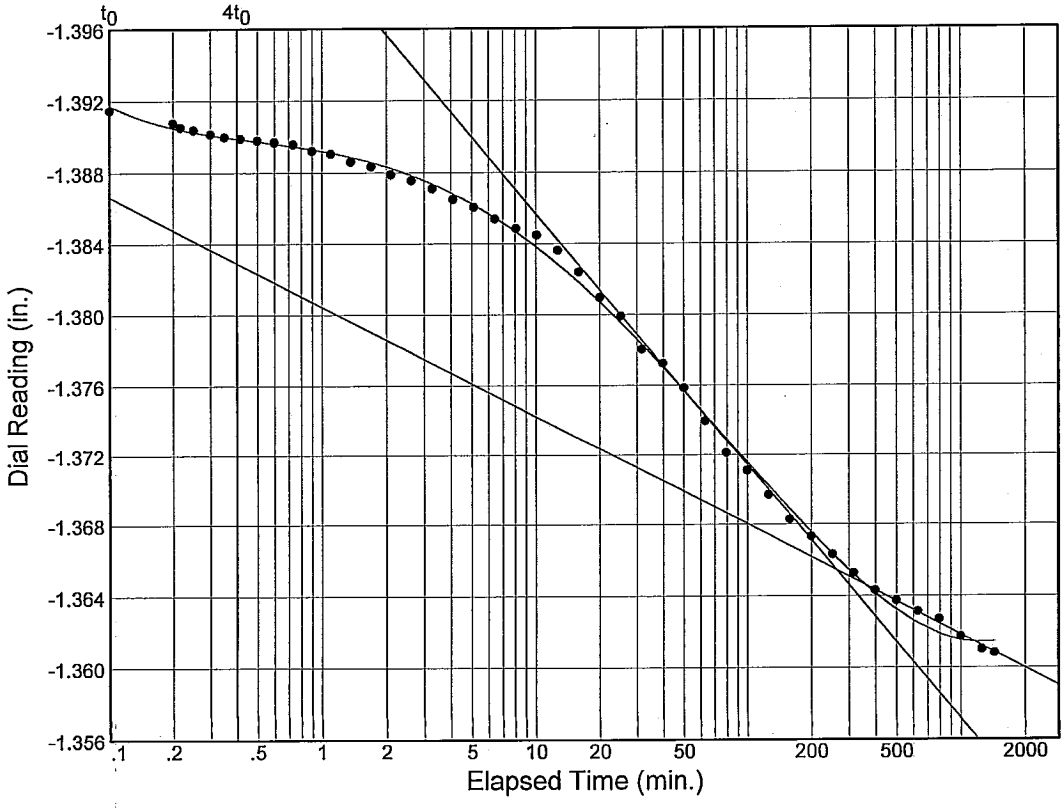
Source: WWHC-44UCL Sample No.: 15B Elev./Depth: 52.8'



Load No.= 3
Load= 0.25 tsf
D_0 = -1.40742
D_{50} = -1.40119
D_{100} = -1.39497
T_{50} = 17.86 min.

C_v @ T_{50}
0.03 ft.^{2}/day

C_α = 0.003



Load No.= 4
Load= 0.50 tsf
D_0 = -1.39360
D_{50} = -1.37952
D_{100} = -1.36543
T_{50} = 25.26 min.

C_v @ T_{50}
0.02 ft.^{2}/day

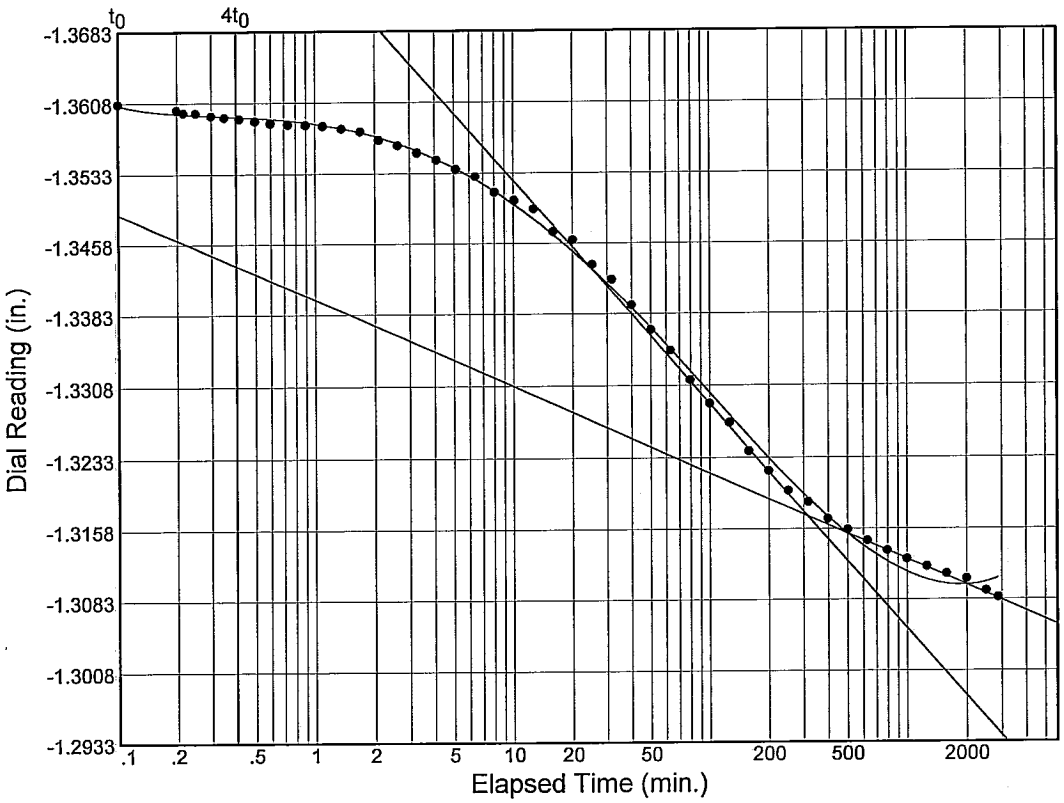
C_α = 0.006

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

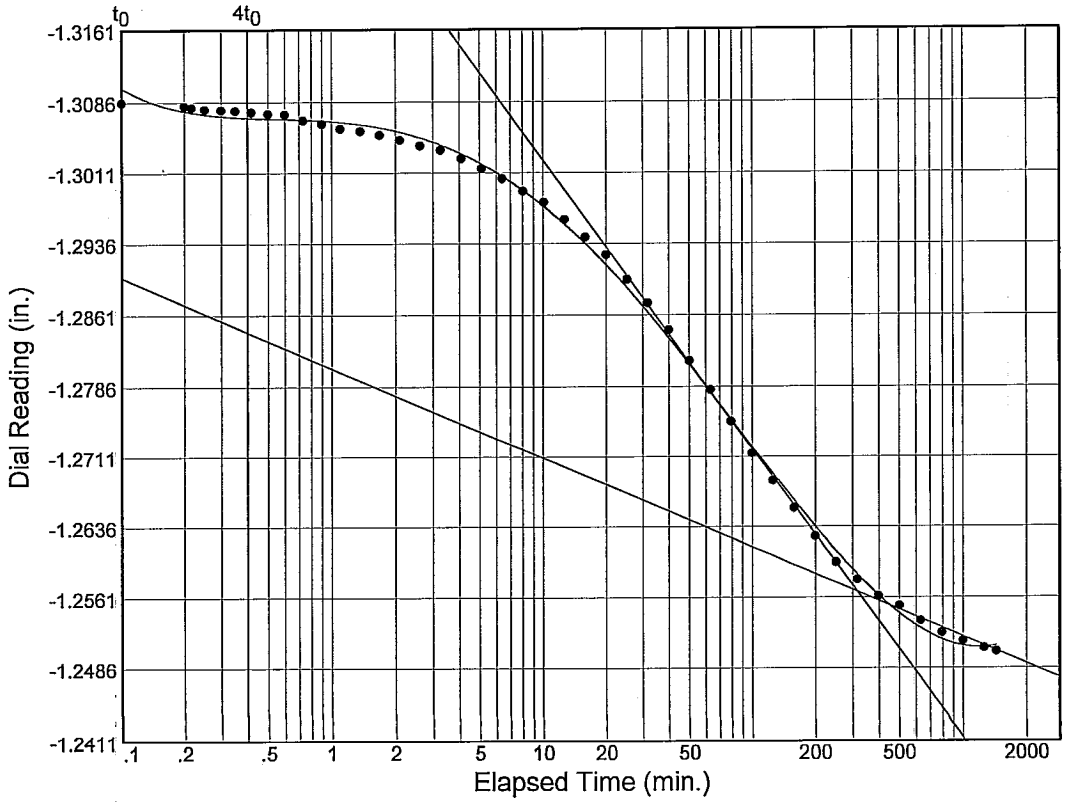
Source: WWHC-44UCL Sample No.: 15B Elev./Depth: 52.8'



Load No.= 5
Load= 1.00 tsf
D_0 = -1.36188
D_{50} = -1.33954
D_{100} = -1.31720
T_{50} = 37.35 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.010



Load No.= 6
Load= 2.00 tsf
D_0 = -1.31319
D_{50} = -1.28495
D_{100} = -1.25672
T_{50} = 35.84 min.

C_v @ T_{50}
0.01 ft.^{2}/day

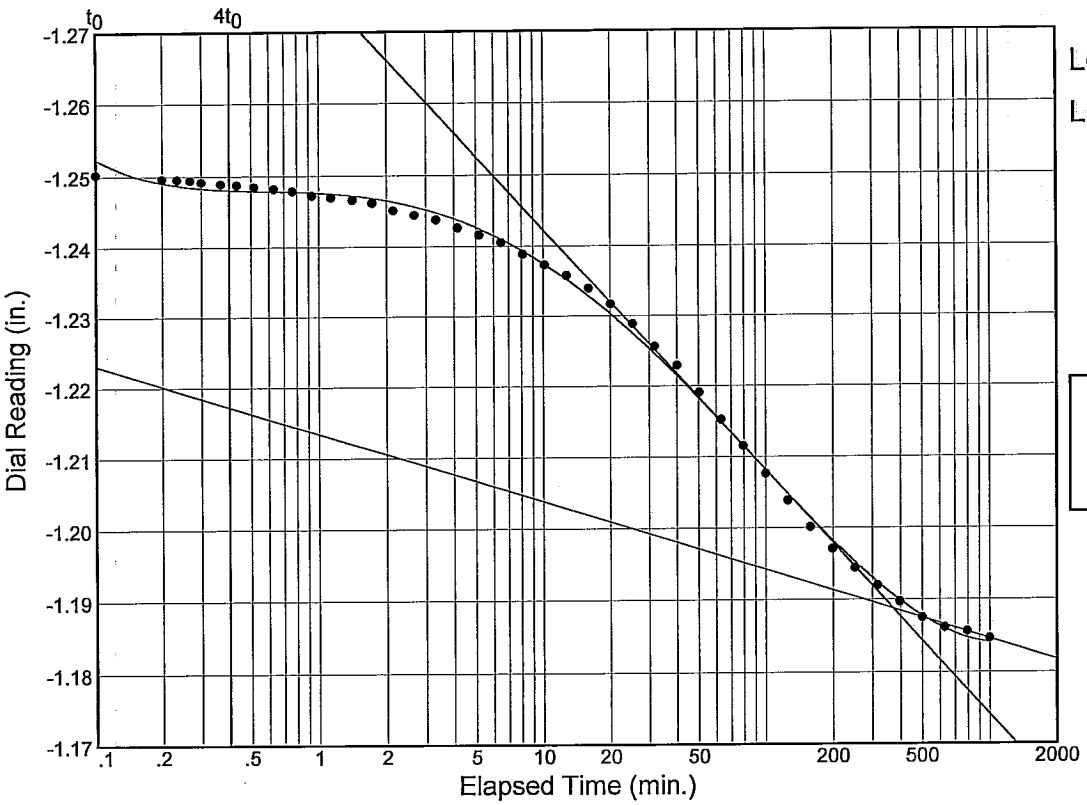
C_α = 0.011

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

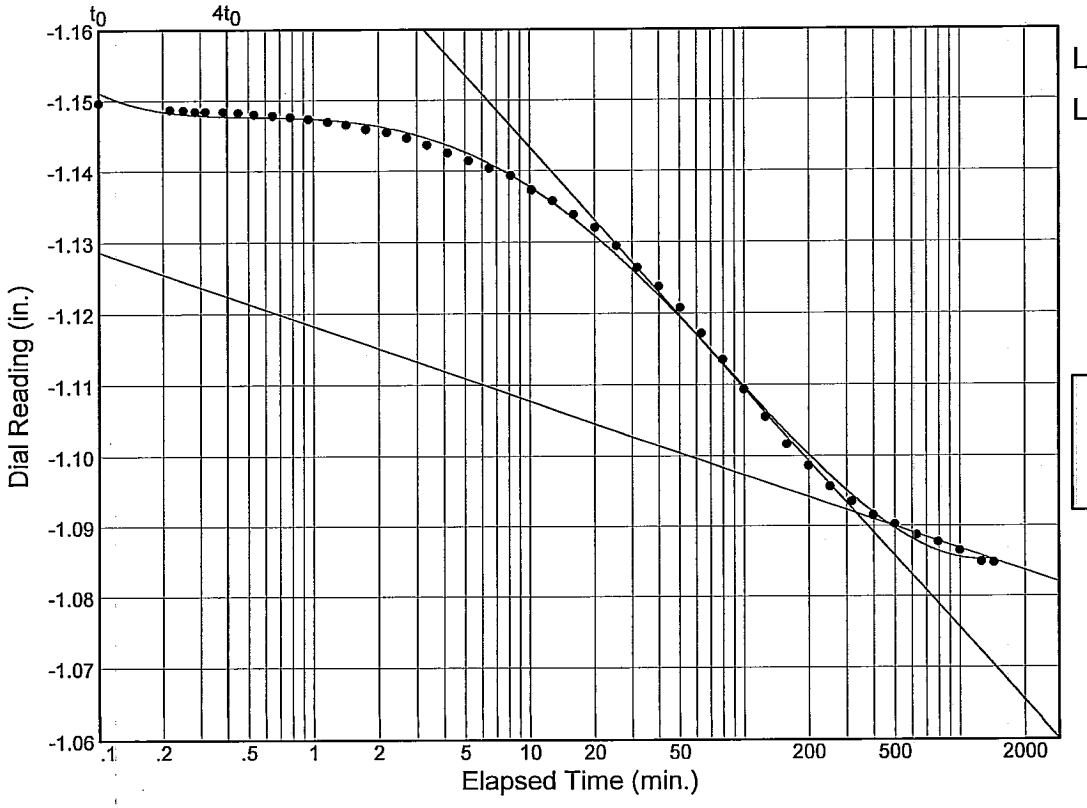
Source: WWHC-44UCL Sample No.: 15B Elev./Depth: 52.8'



Load No.= 7
Load= 4.00 tsf
D_0 = -1.25669
D_{50} = -1.22276
D_{100} = -1.18884
T_{50} = 36.33 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.011



Load No.= 8
Load= 8.00 tsf
D_0 = -1.15455
D_{50} = -1.12324
D_{100} = -1.09193
T_{50} = 37.64 min.

C_v @ T_{50}
0.01 ft.^{2}/day

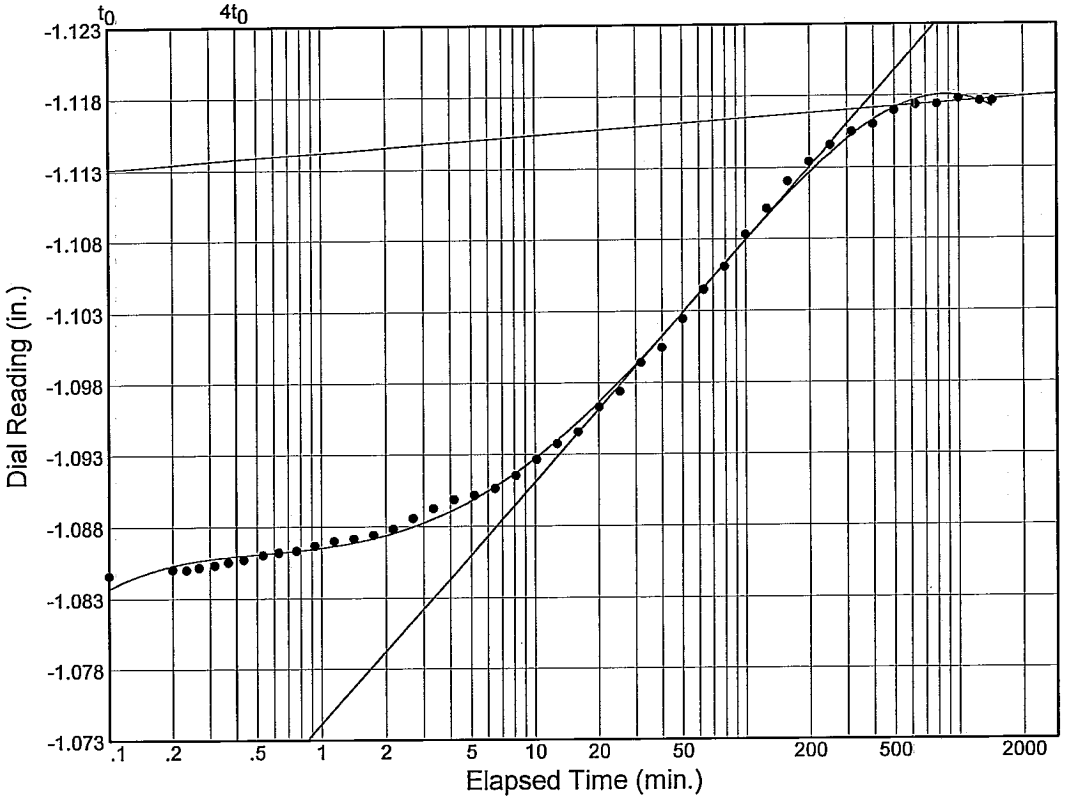
C_α = 0.014

Figure

Dial Reading vs. Time

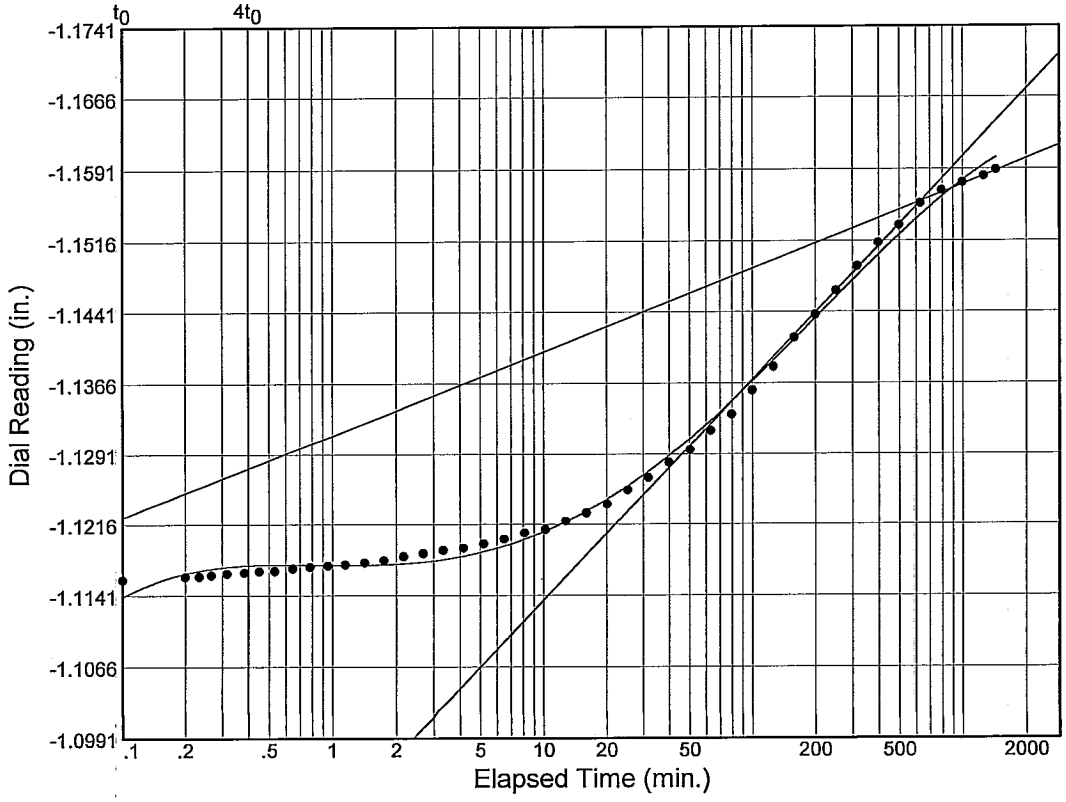
Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-44UCL Sample No.: 15B Elev./Depth: 52.8'



Load No.= 9
Load= 2.00 tsf
D_0 = -1.08141
D_{50} = -1.09925
D_{100} = -1.11709
T_{50} = 30.05 min.

C_v @ T_{50}
0.01 ft.^{2}/day



Load No.= 10
Load= 0.50 tsf
D_0 = -1.11064
D_{50} = -1.13324
D_{100} = -1.15584
T_{50} = 67.59 min.

C_v @ T_{50}
0.00 ft.^{2}/day

Figure

CONSOLIDATION TEST DATA

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Contract No. W912P8-07-D-0022
Task Order No. 0002
Project Number: 0022-0002

Sample Data

Source: WWHC-44UCL
Sample No.: 15B
Elev. or Depth: 52.8'
Location:
Description: SO GR CH4
Liquid Limit: 91
USCS: CH4 **AASHTO:**
Testing Remarks: Tested by: CB
Calculated by: MR
Checked by: WJY

Sample Length(in./cm.):
Plasticity Index: 66
Figure No.:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST		AFTER TEST	
Wet w+t	= 166.35 g.	Consolidometer #	= 20	Wet w+t	= 112.46 g.
Dry w+t	= 100.00 g.			Dry w+t	= 86.25 g.
Tare Wt.	= .00 g.	Spec. Gravity	= 2.77	Tare Wt.	= 30.71 g.
Height	= 1.00 in.	Height	= 1.00 in.		
Diameter	= 4.00 in.	Diameter	= 4.00 in.		
Weight	= 329.37 g.	Defl. Table	= n/a		
Moisture	= 66.4 %	Ht. Solids	= 0.3478 in.	Moisture	= 47.2 %
Wet Den.	= 100.0 pcf	Dry Wt.	= 198.00 g.*	Dry Wt.	= 55.54 g.
Dry Den.	= 60.1 pcf	Void Ratio	= 1.877	Void Ratio	= 1.137
		Saturation	= 97.9 %		

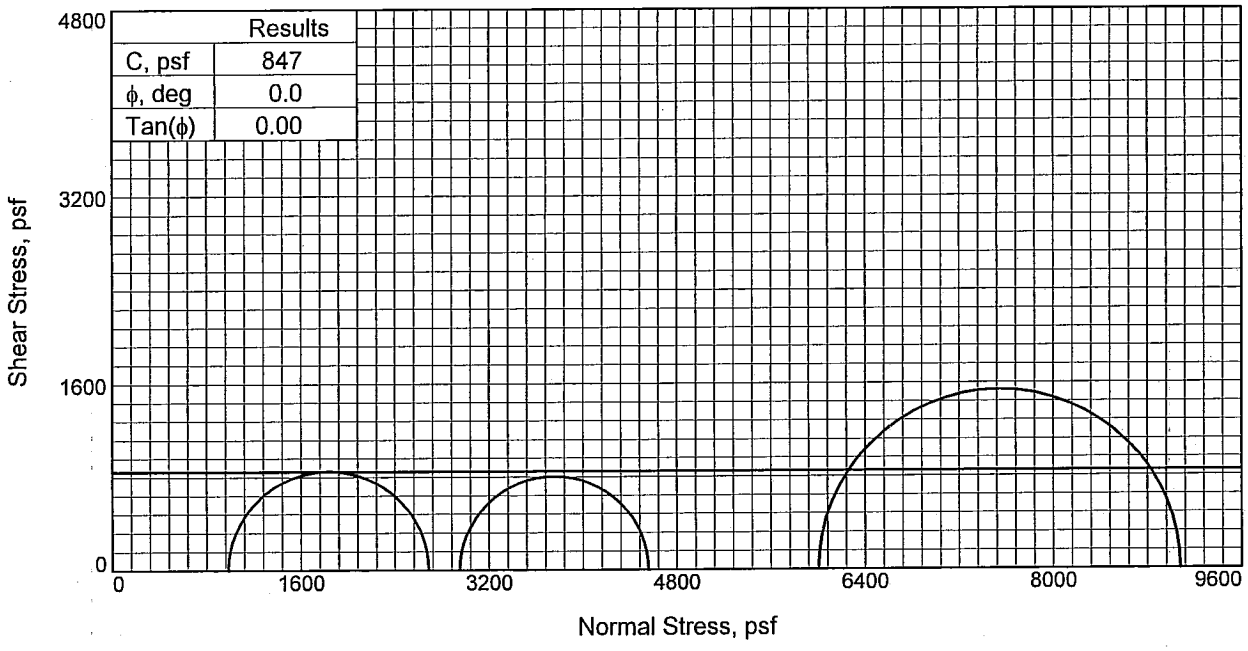
*** Initial dry weight used in calculations**

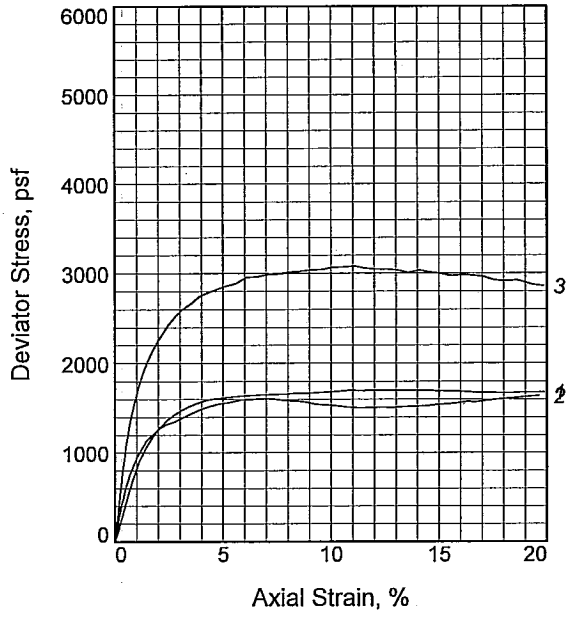
End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-1.41625				1.877	
0.07	-1.41437	0.00000			1.871	0.2 Comprs.
0.13	-1.40674	0.00000			1.849	1.0 Comprs.
0.25	-1.39189	0.00000	0.03	0.003	1.807	2.4 Comprs.
0.50	-1.36081	0.00000	0.02	0.006	1.717	5.5 Comprs.
1.00	-1.30850	0.00000	0.01	0.010	1.567	10.8 Comprs.
2.00	-1.25032	0.00000	0.01	0.011	1.400	16.6 Comprs.
4.00	-1.18467	0.00000	0.01	0.011	1.211	23.1 Comprs.
8.00	-1.08479	0.00000	0.01	0.014	0.924	33.1 Comprs.
2.00	-1.11762	0.00000	0.01		1.018	29.8 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
0.50	-1.15901	0.00000	0.00		1.137	25.7 Comprs.

C_c = 0.97 P_c = 2.22 tsf C_r = 0.18





Sample No.		1	2	3
Initial	Water Content, %	28.0	26.3	28.1
	Dry Density, pcf	91.3	93.6	92.6
	Saturation, %	89.7	89.3	93.0
	Void Ratio	0.8395	0.7936	0.8144
	Diameter, in.	1.372	1.376	1.371
	Height, in.	3.136	3.138	3.125
At Test	Water Content, %	28.0	26.3	28.1
	Dry Density, pcf	91.3	93.6	92.6
	Saturation, %	89.7	89.3	93.0
	Void Ratio	0.8395	0.7936	0.8144
	Diameter, in.	1.372	1.376	1.371
	Height, in.	3.136	3.138	3.125
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.84	20.48	41.69
Fail. Stress, psf		1701	1607	3077
Strain, %		10.9	6.8	11.1
Ult. Stress, psf		1695	1505	2997
Strain, %				
σ_1 Failure, psf		2685	4556	9081
σ_3 Failure, psf		984	2949	6004

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR & T CL6 W/ WD

LL= 46 **PL=** 24 **PI=** 22

Assumed Specific Gravity= 2.69

Remarks:

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-44UCL **Depth:** 5.7

Sample Number: 3C

Proj. No.: 0022-0002 **Date Sampled:** 5/22/07

TRIAXIAL SHEAR TEST REPORT

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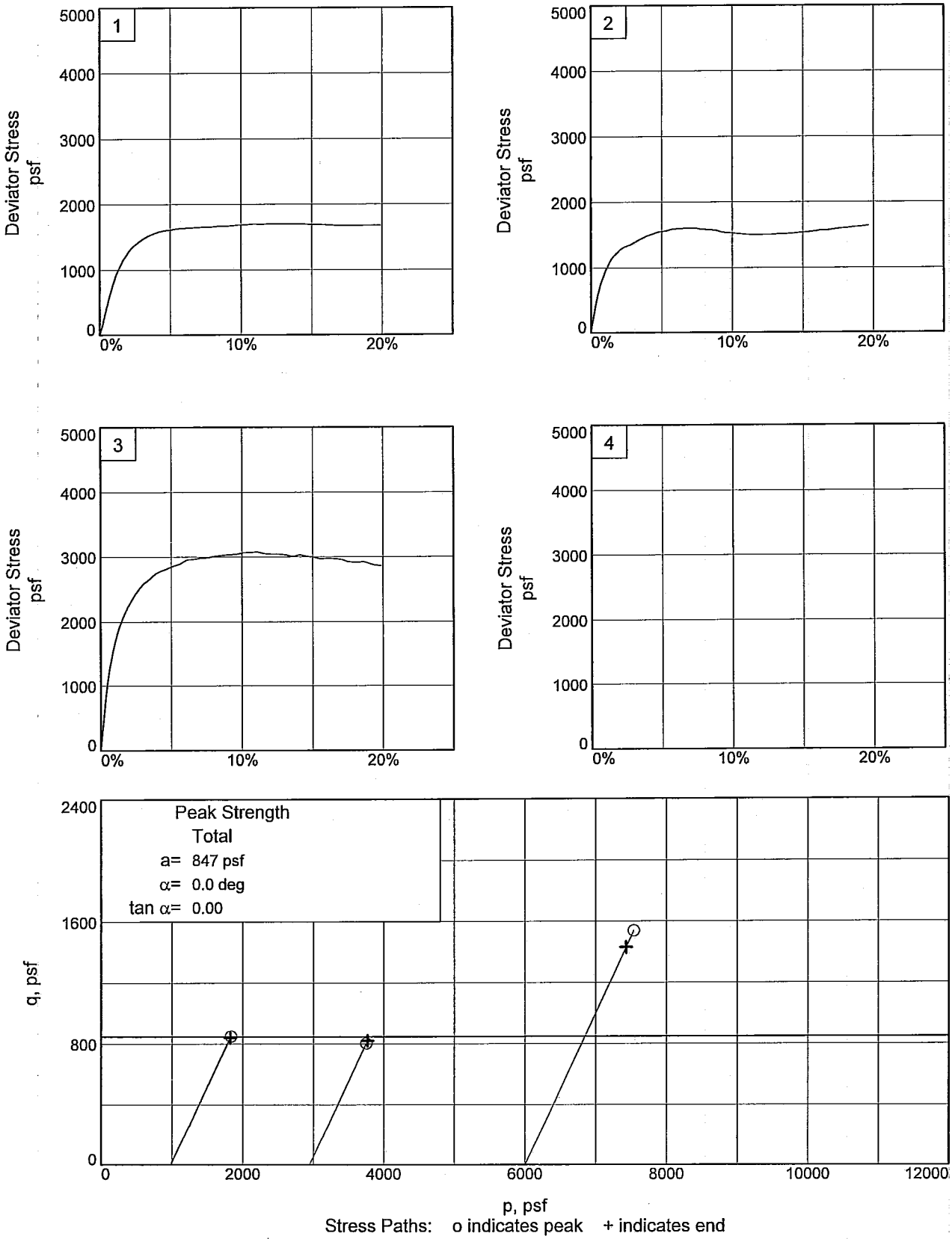
Figure _____

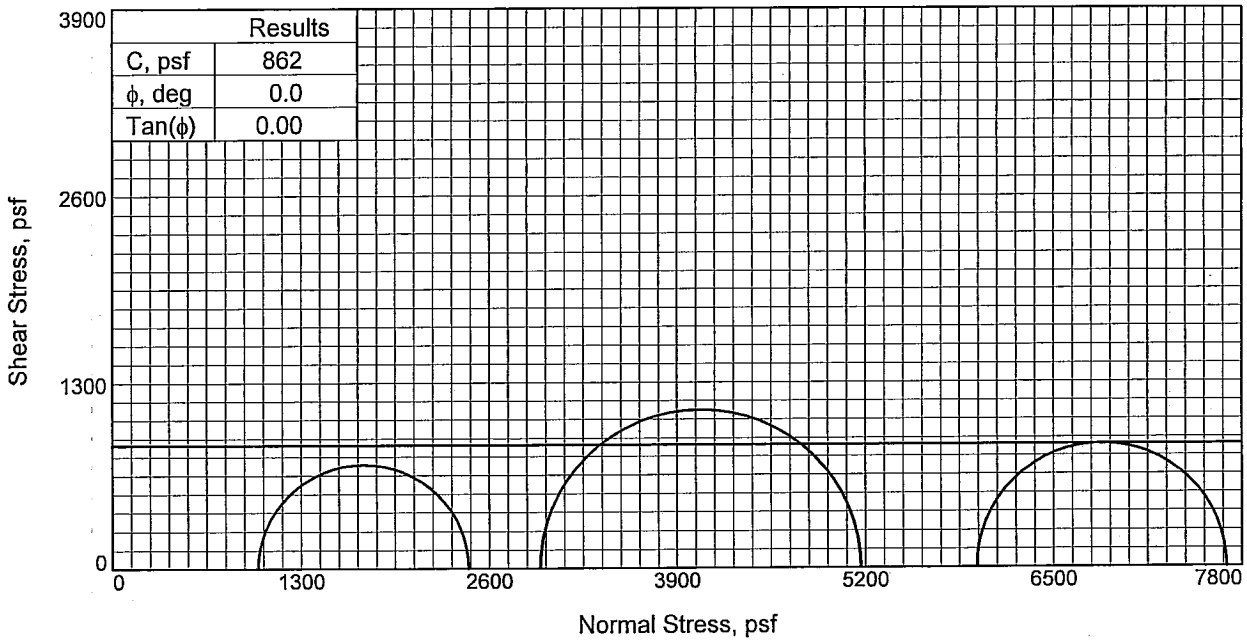
Tested By: DW **Checked By:** AD

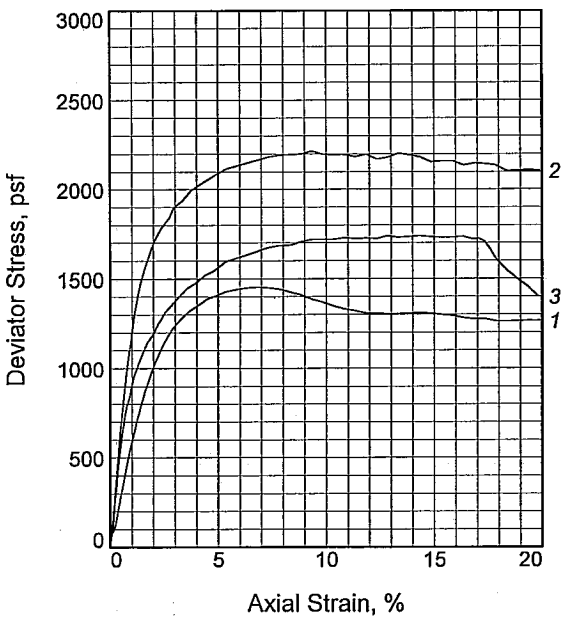


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-44UCL **Depth:** 5.7 **Sample Number:** 3C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW **Checked By:** AD





Sample No.		1	2	3
Initial	Water Content, %	31.9	29.5	32.7
	Dry Density, pcf	88.5	91.6	90.8
	Saturation, %	94.4	93.9	102.4
	Void Ratio	0.9187	0.8539	0.8691
	Diameter, in.	1.369	1.389	1.381
	Height, in.	3.118	3.138	3.129
At Test	Water Content, %	31.9	29.5	32.7
	Dry Density, pcf	88.5	91.6	90.8
	Saturation, %	94.4	93.9	102.4
	Void Ratio	0.9187	0.8539	0.8691
	Diameter, in.	1.369	1.389	1.381
	Height, in.	3.118	3.138	3.129
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.97	20.50	41.44
Fail. Stress, psf		1452	2216	1727
Strain, %		6.8	9.3	10.8
Ult. Stress, psf		1303	2154	1727
Strain, %				
σ_1 Failure, psf		2456	5169	7695
σ_3 Failure, psf		1004	2952	5968

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH3 W/ ARS & LNS SM, WD, RT, SIF

LL= 65 **PL=** 25 **PI=** 40

Assumed Specific Gravity= 2.72

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-44UCL **Depth:** 9.7

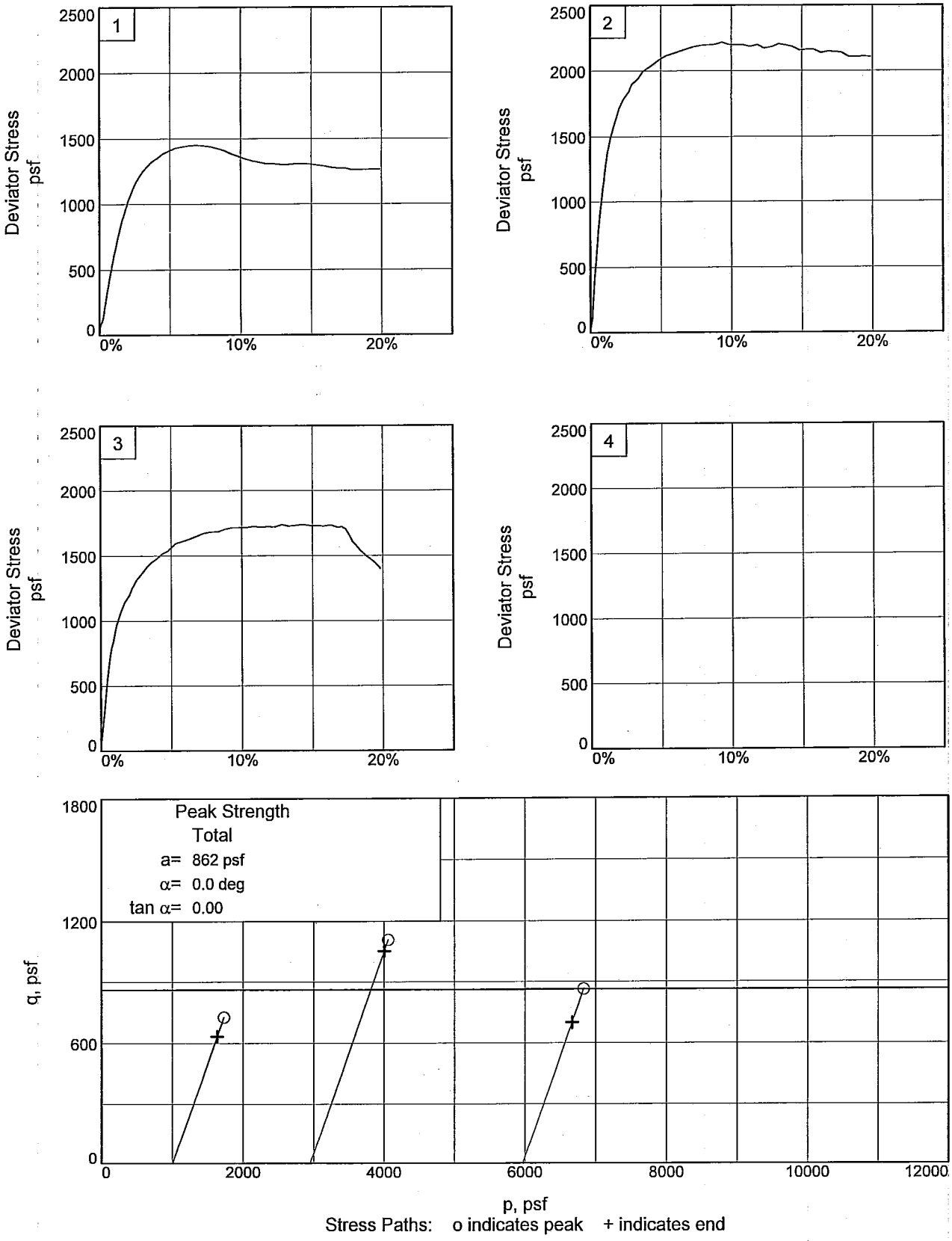
Sample Number: 4C

Proj. No.: 0022-0002 **Date Sampled:** 5/22/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

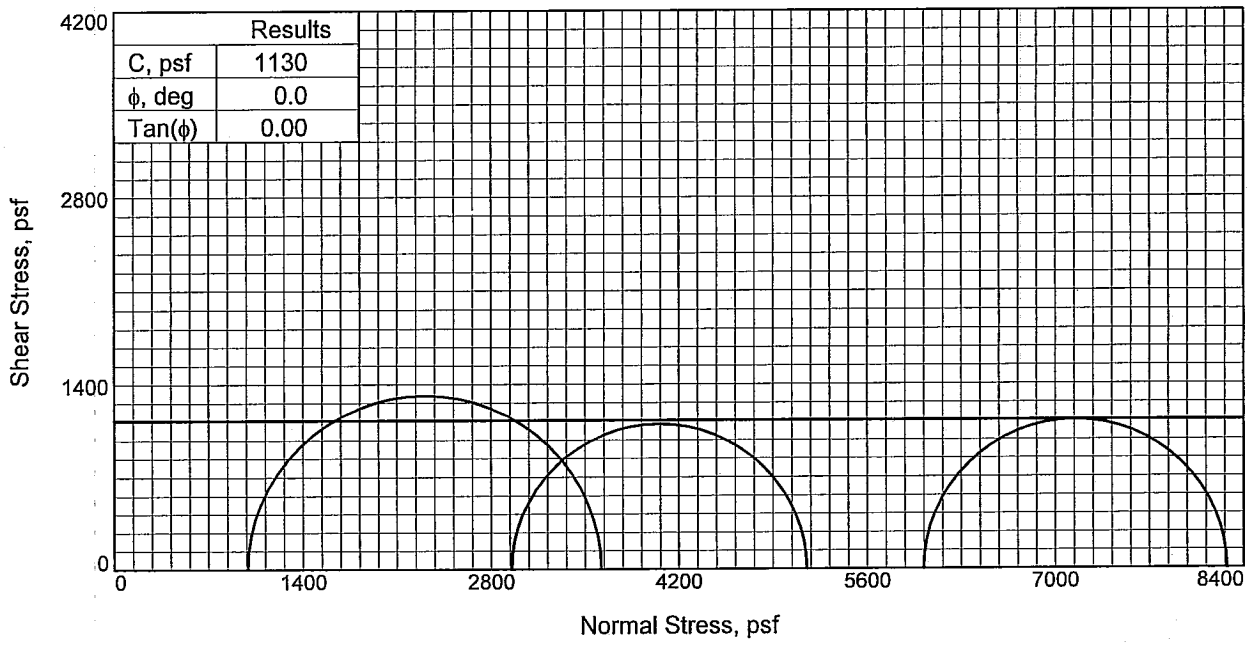
Tested By: DW **Checked By:** SH

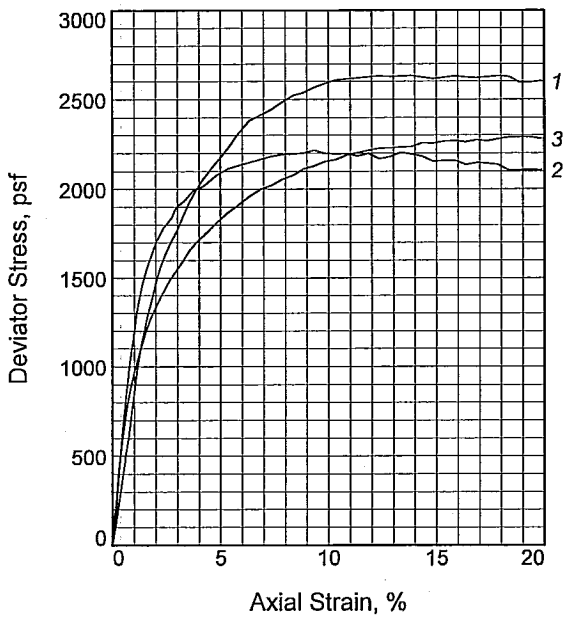


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-44UCL **Depth:** 9.7 **Sample Number:** 4C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW **Checked By:** SH





Sample No.		1	2	3
Initial	Water Content, %	26.3	28.5	27.6
	Dry Density, pcf	97.4	94.8	96.0
	Saturation, %	97.8	99.5	99.0
	Void Ratio	0.7245	0.7708	0.7492
	Diameter, in.	1.428	1.389	1.395
	Height, in.	3.140	3.138	3.118
At Test	Water Content, %	26.3	28.5	27.6
	Dry Density, pcf	97.4	94.8	96.0
	Saturation, %	97.8	99.5	99.0
	Void Ratio	0.7245	0.7708	0.7492
	Diameter, in.	1.428	1.389	1.395
	Height, in.	3.140	3.138	3.118
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.50	41.80
Fail. Stress, psf		2631	2198	2256
Strain, %		12.3	9.8	14.8
Ult. Stress, psf		2622	2154	2256
Strain, %				
σ_1 Failure, psf		3620	5150	8275
σ_3 Failure, psf		989	2952	6020

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST GR CL6 W/ WD

LL= 45 **PL=** 18 **PI=** 27
Assumed Specific Gravity= 2.69
Remarks:

Client: U.S. Army Corps of Engineers

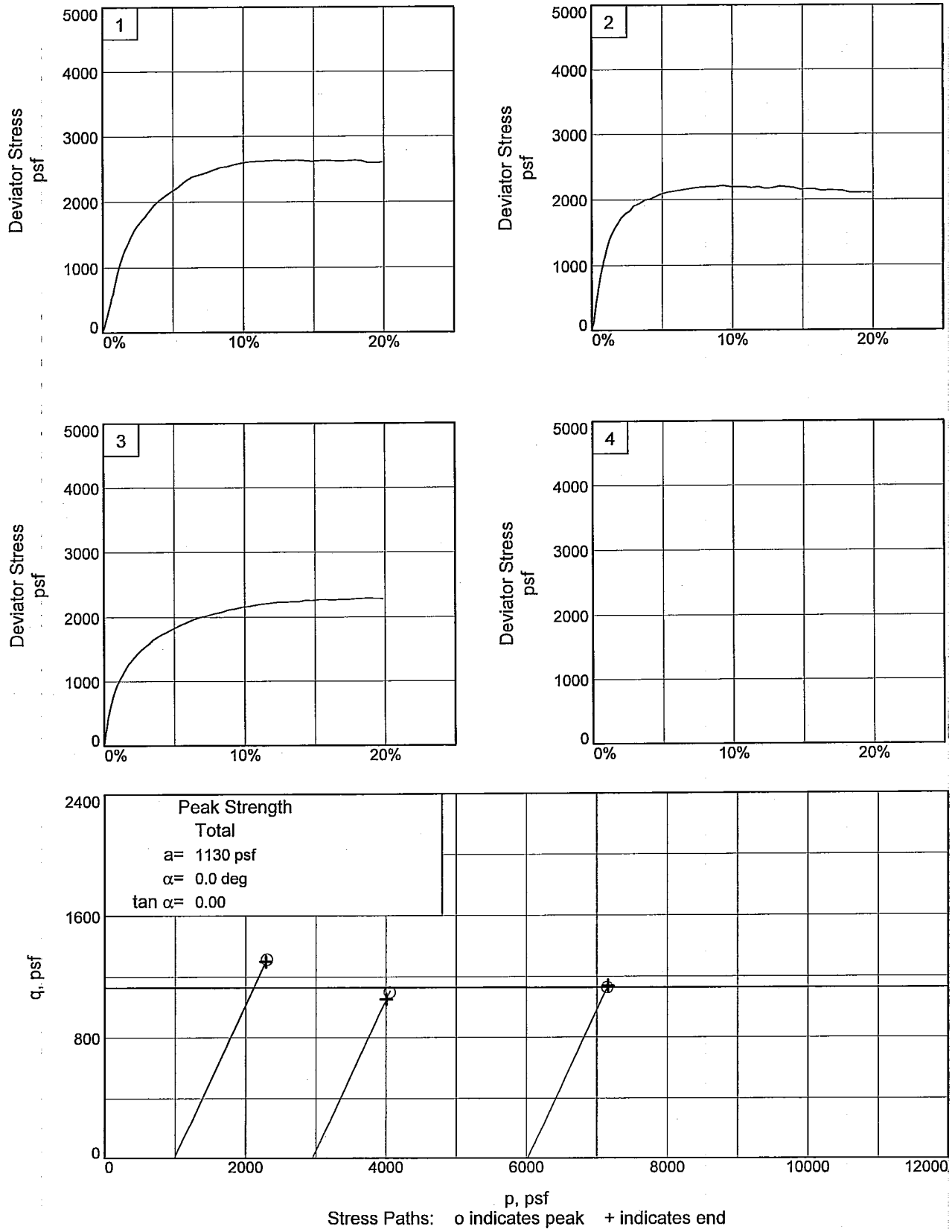
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-44UCL **Depth:** 13.7
Sample Number: 5C
Proj. No.: 0022-0002 **Date Sampled:** 5/18/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

Figure _____

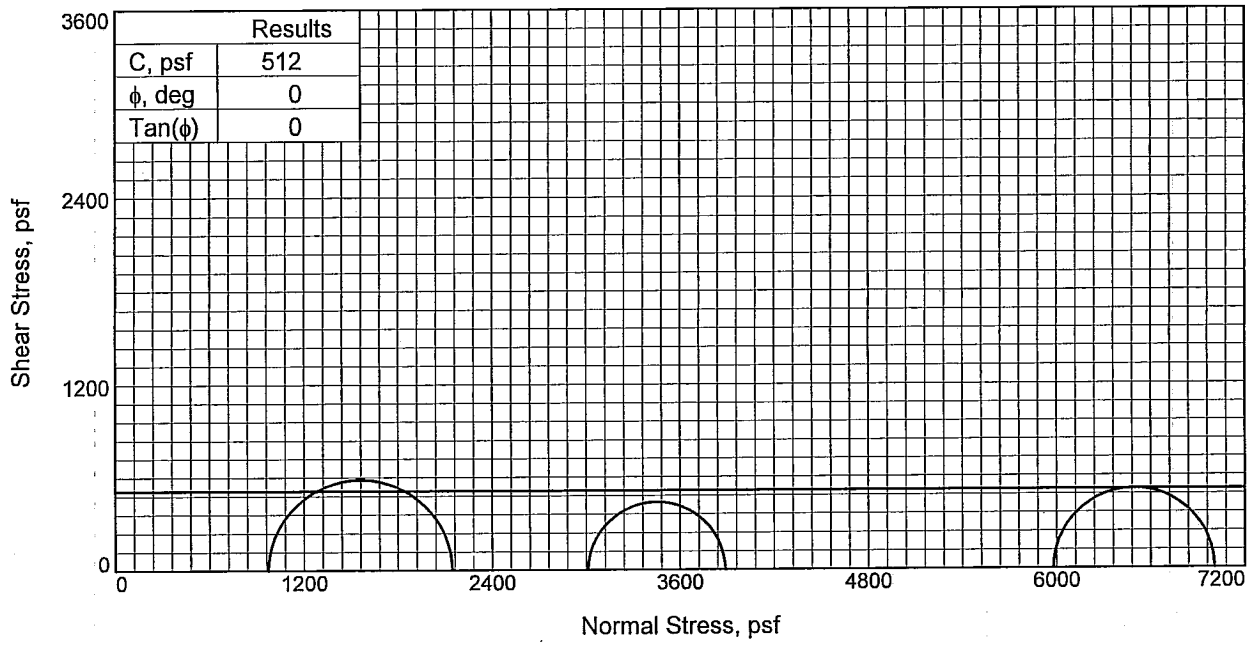
Tested By: JMB **Checked By:** SH

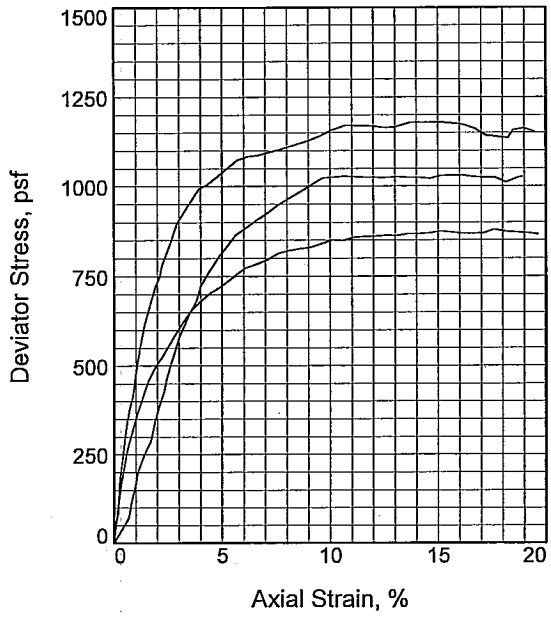


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-44UCL **Depth:** 13.7 **Sample Number:** 5C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: JMB **Checked By:** SH





Sample No.		1	2	3
Initial	Water Content, %	34.6	42.8	38.4
	Dry Density, pcf	86.3	76.2	82.6
	Saturation, %	97.2	94.7	98.9
	Void Ratio	0.9673	1.2297	1.0546
	Diameter, in.	1.352	1.363	1.377
	Height, in.	3.137	3.123	3.131
At Test	Water Content, %	34.6	42.8	38.4
	Dry Density, pcf	86.3	76.2	82.6
	Saturation, %	97.2	94.7	98.9
	Void Ratio	0.9673	1.2297	1.0546
	Diameter, in.	1.352	1.363	1.377
	Height, in.	3.137	3.123	3.131
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.76	20.92	41.52
Fail. Stress, psf		1171	875	1028
Strain, %		10.7	15.1	10.6
Ult. Stress, psf		1165	875	1022
Strain, %				
σ_1 Failure, psf		2144	3887	7007
σ_3 Failure, psf		973	3013	5979

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH3 W/ WD, LNS ML

LL= 57 **PL=** 18 **PI=** 39

Assumed Specific Gravity= 2.72

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-44UCL **Depth:** 16.8

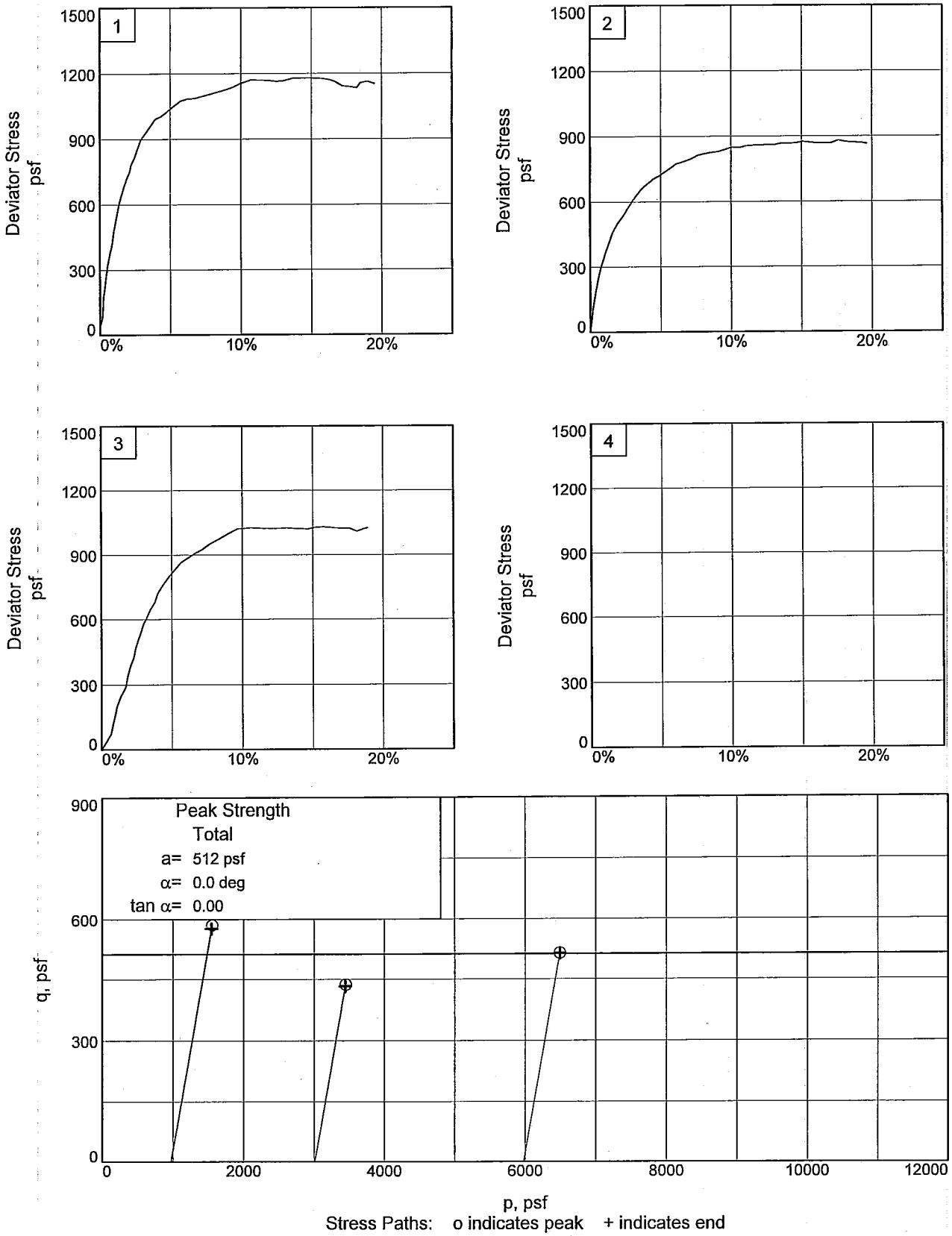
Sample Number: 6B

Proj. No.: 0022-0002 **Date Sampled:** 5/22/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

Tested By: DW

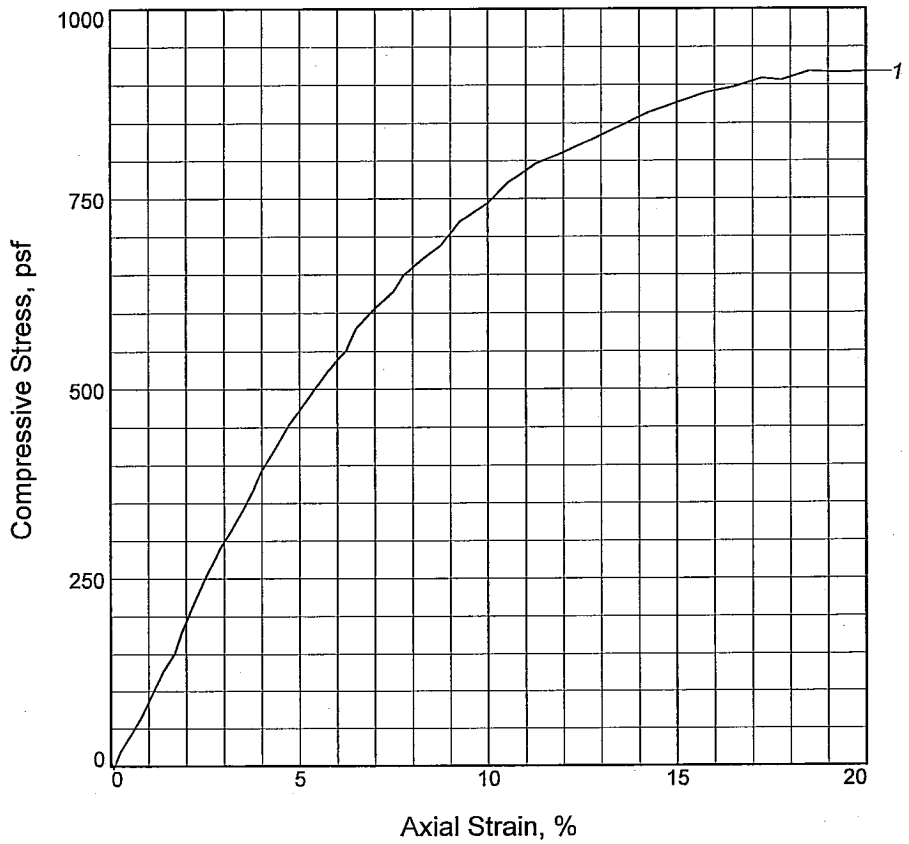


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-44UCL **Depth:** 16.8 **Sample Number:** 6B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	876			
Undrained shear strength, psf	438			
Failure strain, %	15.0			
Strain rate, in./min.	0.031			
Water content, %	33.0			
Wet density, pcf	120.7			
Dry density, pcf	90.8			
Saturation, %	104.8			
Void ratio	0.8429			
Specimen diameter, in.	1.396			
Specimen height, in.	3.098			
Height/diameter ratio	2.22			

Description: SO GR & LBR CL4-S W/ ARS CH

LL = 30	**PL** = 22	**PI** = 8	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

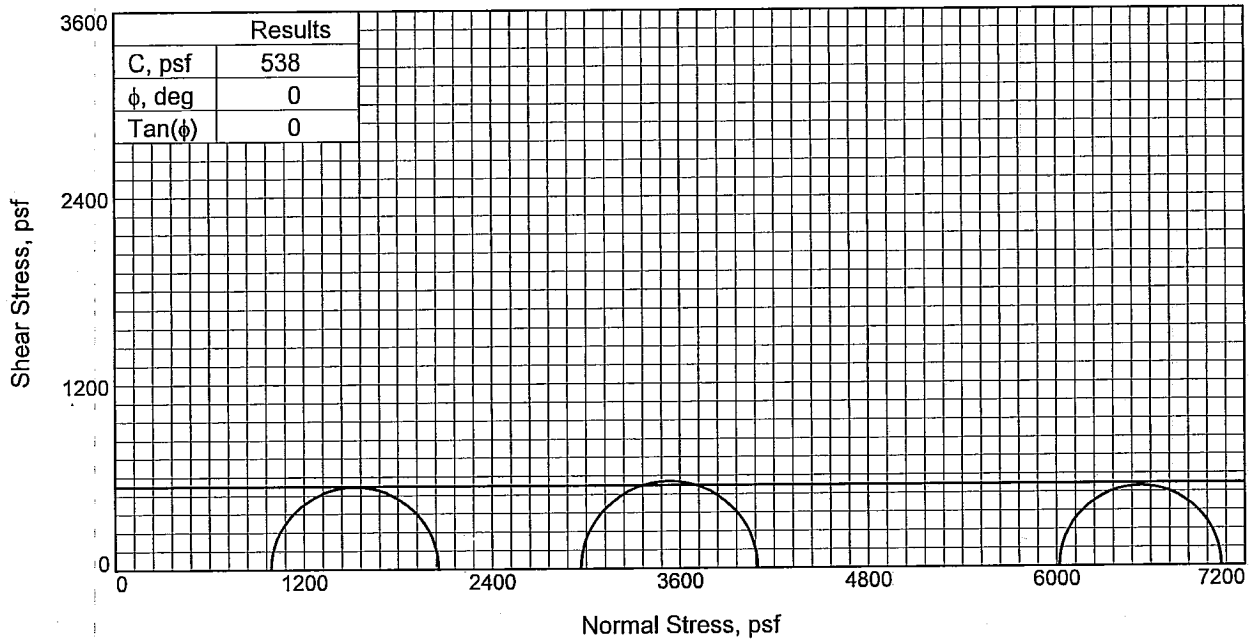
Client: U.S. Army Corps of Engineers

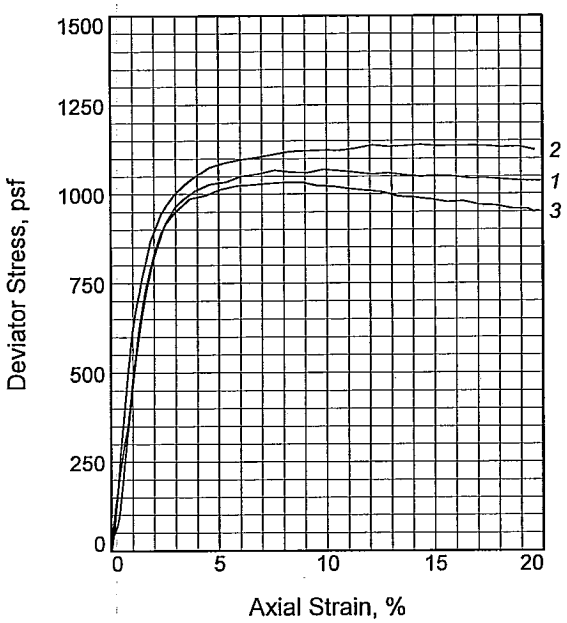
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-44UCL **Depth:** 21.7
Sample Number: 7C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: DW **Checked By:** SH





Sample No.		1	2	3
Initial	Water Content, %	39.7	40.3	42.6
	Dry Density, pcf	81.2	81.2	78.3
	Saturation, %	99.0	100.5	99.2
	Void Ratio	1.0919	1.0912	1.1675
	Diameter, in.	1.430	1.429	1.426
	Height, in.	3.126	3.123	3.123
At Test	Water Content, %	39.7	40.3	42.6
	Dry Density, pcf	81.2	81.2	78.3
	Saturation, %	99.0	100.5	99.2
	Void Ratio	1.0919	1.0912	1.1675
	Diameter, in.	1.430	1.429	1.426
	Height, in.	3.126	3.123	3.123
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.60	41.79
Fail. Stress, psf		1067	1128	1033
Strain, %		7.6	11.3	8.1
Ult. Stress, psf		1062	1135	985
Strain, %				
σ_1 Failure, psf		2057	4095	7050
σ_3 Failure, psf		990	2966	6017

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: SO GR CH3 W/ ARS ML, RT

LL= 61 **PL=** 20 **PI=** 41
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

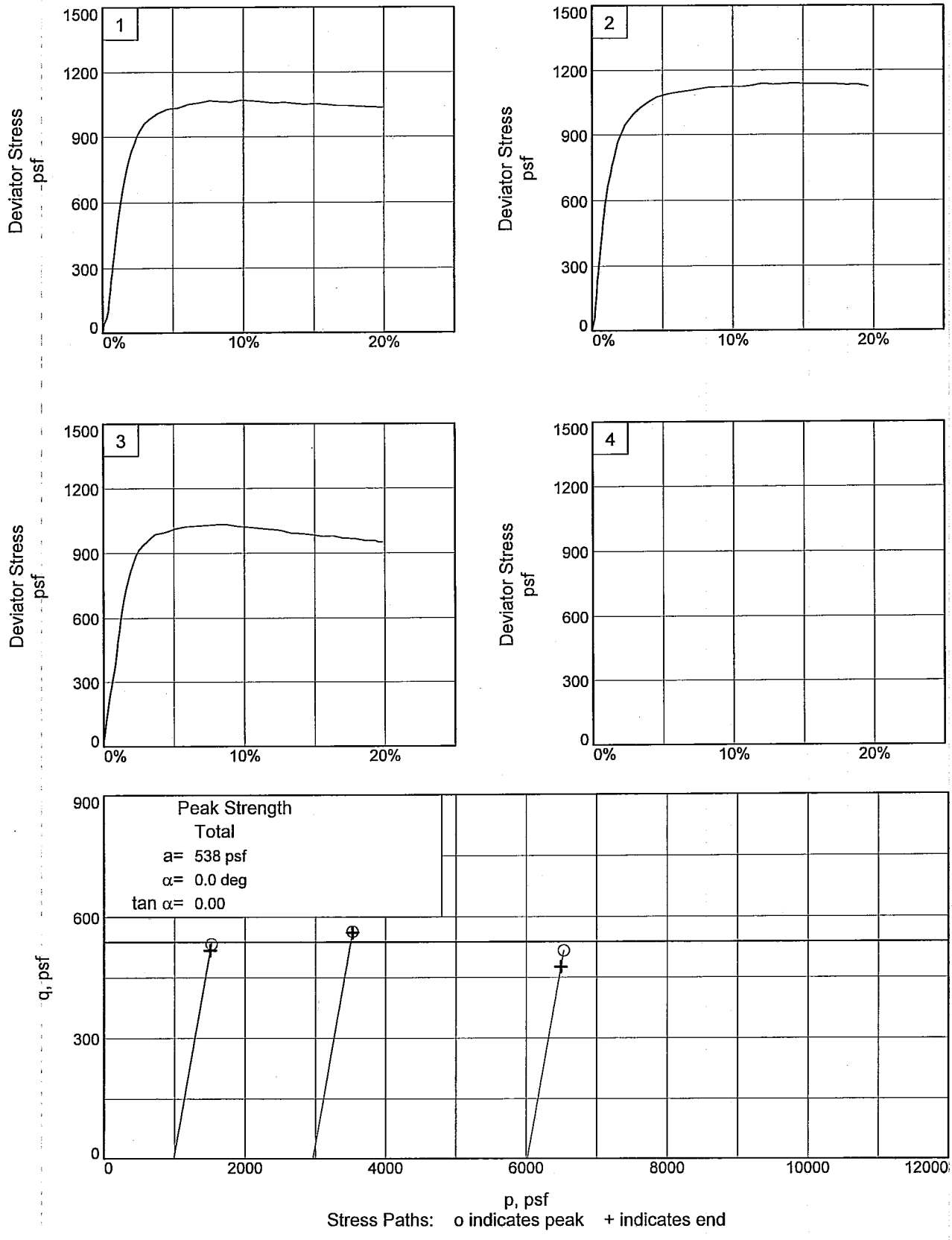
Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-44UCL **Depth:** 24.8
Sample Number: 8B
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

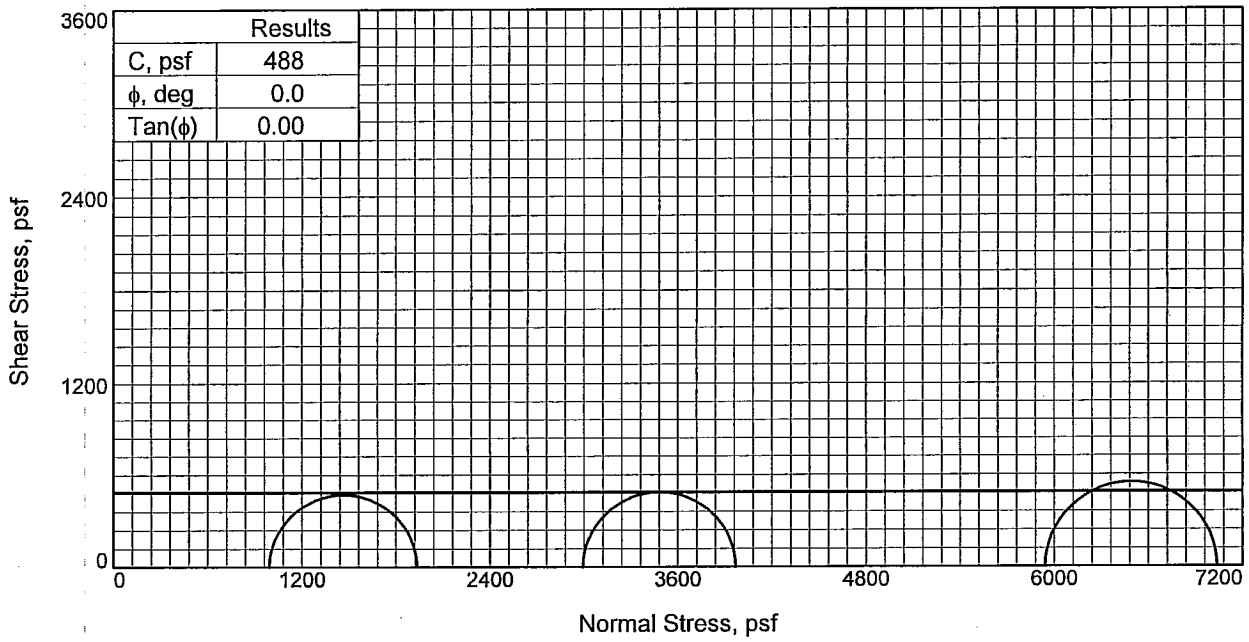
Tested By: DW **Checked By:** SH

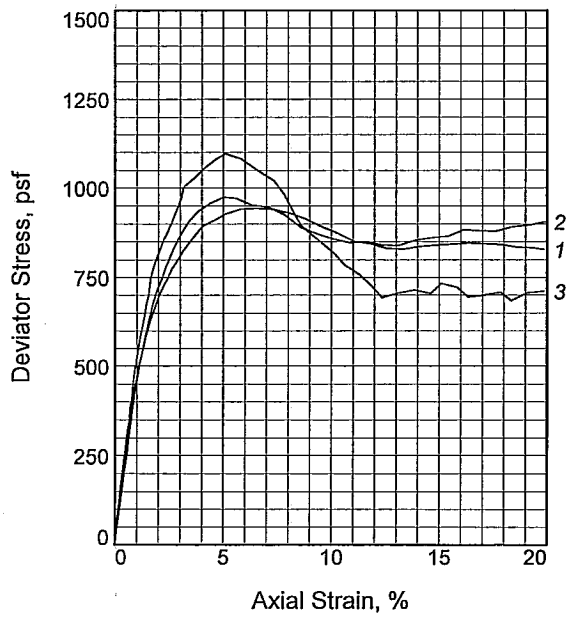


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-44UCL **Depth:** 24.8 **Sample Number:** 8B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW **Checked By:** SH





Sample No.		1	2	3
Initial	Water Content, %	113.3	106.2	101.1
	Dry Density, pcf	40.4	42.7	44.5
	Saturation, %	97.3	98.2	98.9
	Void Ratio	3.0513	2.8333	2.6767
	Diameter, in.	1.419	1.426	1.429
	Height, in.	3.127	3.135	3.132
At Test	Water Content, %	113.3	106.2	101.1
	Dry Density, pcf	40.4	42.7	44.5
	Saturation, %	97.3	98.2	98.9
	Void Ratio	3.0513	2.8333	2.6767
	Diameter, in.	1.419	1.426	1.429
	Height, in.	3.127	3.135	3.132
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	20.79	41.27
Fail. Stress, psf		941	974	1096
Strain, %		5.8	5.0	5.1
Ult. Stress, psf		832	847	757
Strain, %				
σ_1 Failure, psf		1933	3968	7039
σ_3 Failure, psf		992	2994	5943

Type of Test: Unconsolidated Undrained

Sample Type: Undisturbed

Description: SO GR & BR CHOB W/ RT

LL= 159 **PL=** 37 **PI=** 122

Assumed Specific Gravity= 2.62

Remarks:

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-44UCL **Depth:** 33.7

Sample Number: 10C

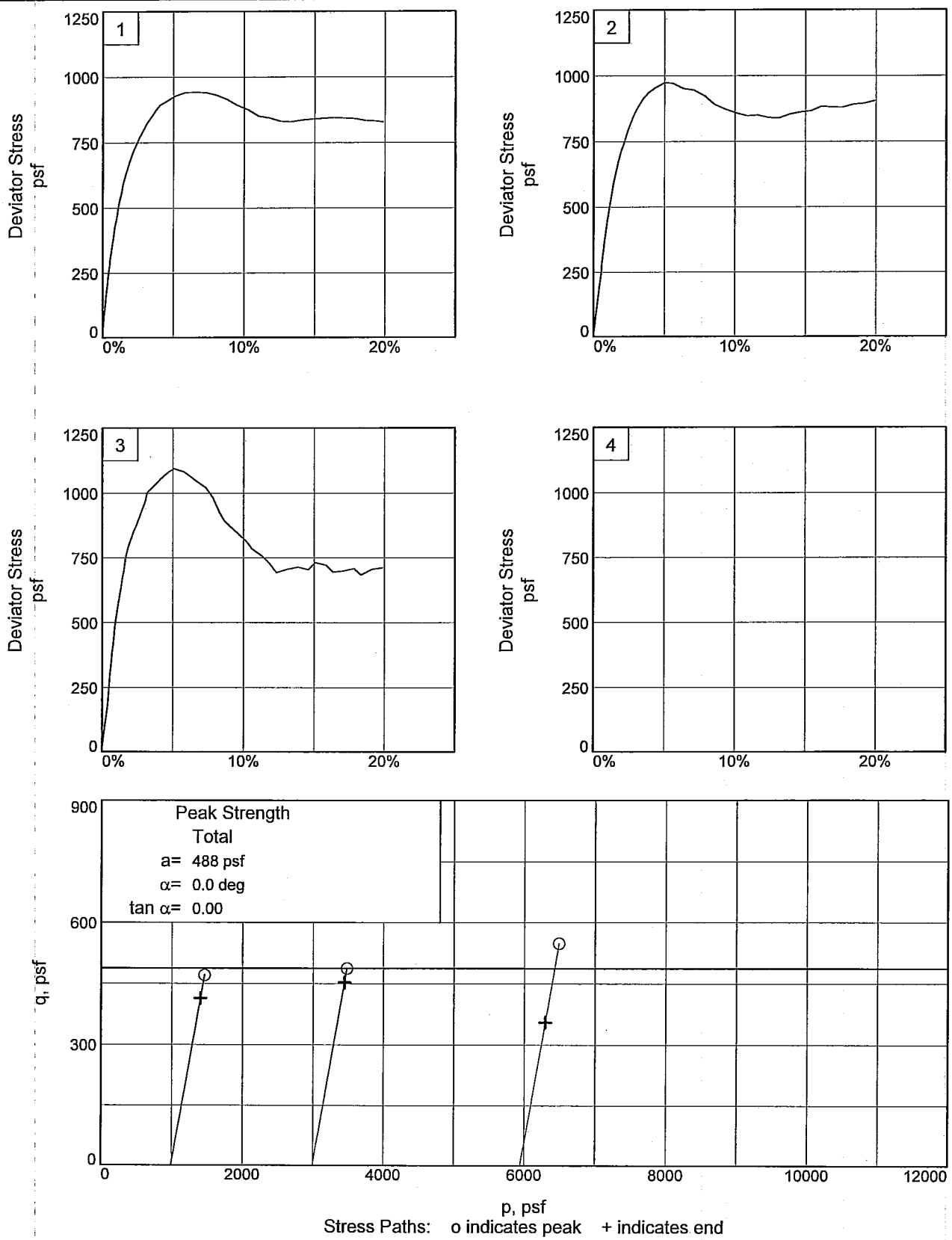
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

Figure _____

Tested By: DW **Checked By:** SH

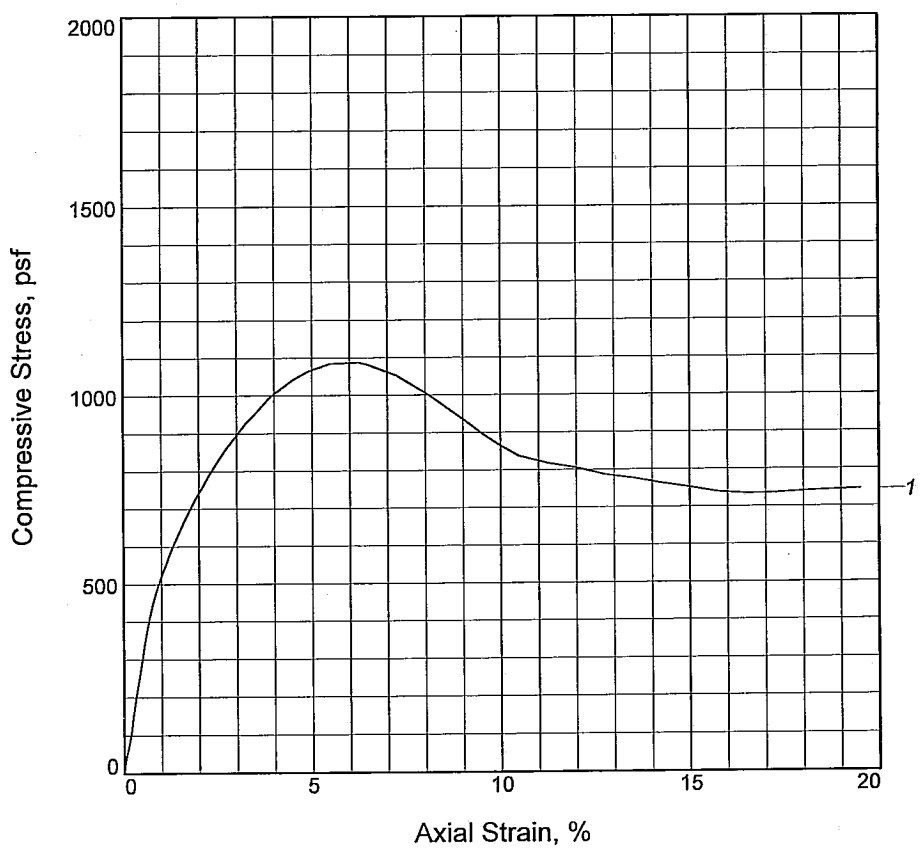


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-44UCL **Depth:** 33.7 **Sample Number:** 10C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW **Checked By:** SH

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1084			
Undrained shear strength, psf	542			
Failure strain, %	5.5			
Strain rate, in./min.	0.031			
Water content, %	53.0			
Wet density, pcf	106.7			
Dry density, pcf	69.7			
Saturation, %	100.5			
Void ratio	1.4364			
Specimen diameter, in.	1.409			
Specimen height, in.	3.125			
Height/diameter ratio	2.22			

Description: M GR CL6 W/ LNS ML

LL = 50	**PL** = 21	**PI** = 29	**Assumed GS=** 2.72	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

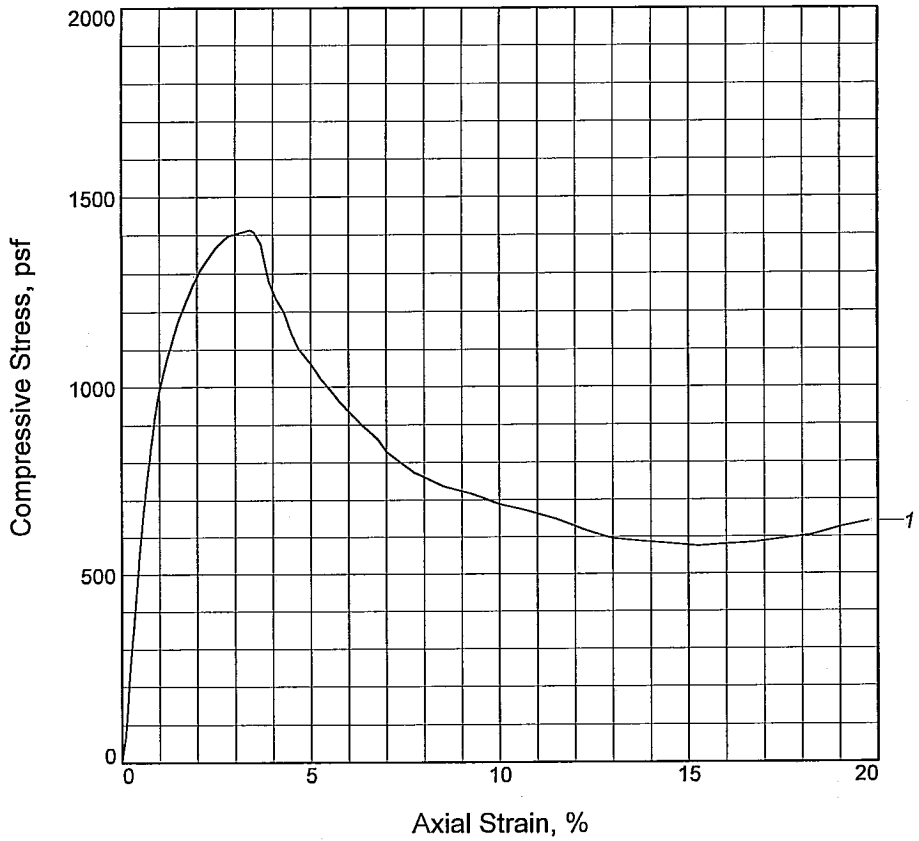
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-44UCL **Depth:** 41.7
Sample Number: 12C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: DW **Checked By:** SH

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1408			
Undrained shear strength, psf	704			
Failure strain, %	3.5			
Strain rate, in./min.	0.031			
Water content, %	68.4			
Wet density, pcf	100.3			
Dry density, pcf	59.6			
Saturation, %	100.3			
Void ratio	1.8610			
Specimen diameter, in.	1.427			
Specimen height, in.	3.134			
Height/diameter ratio	2.20			

Description: M GR CH4 W/ LNS ML

LL = 86	**PL** = 24	**PI** = 62	**Assumed GS=** 2.73	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

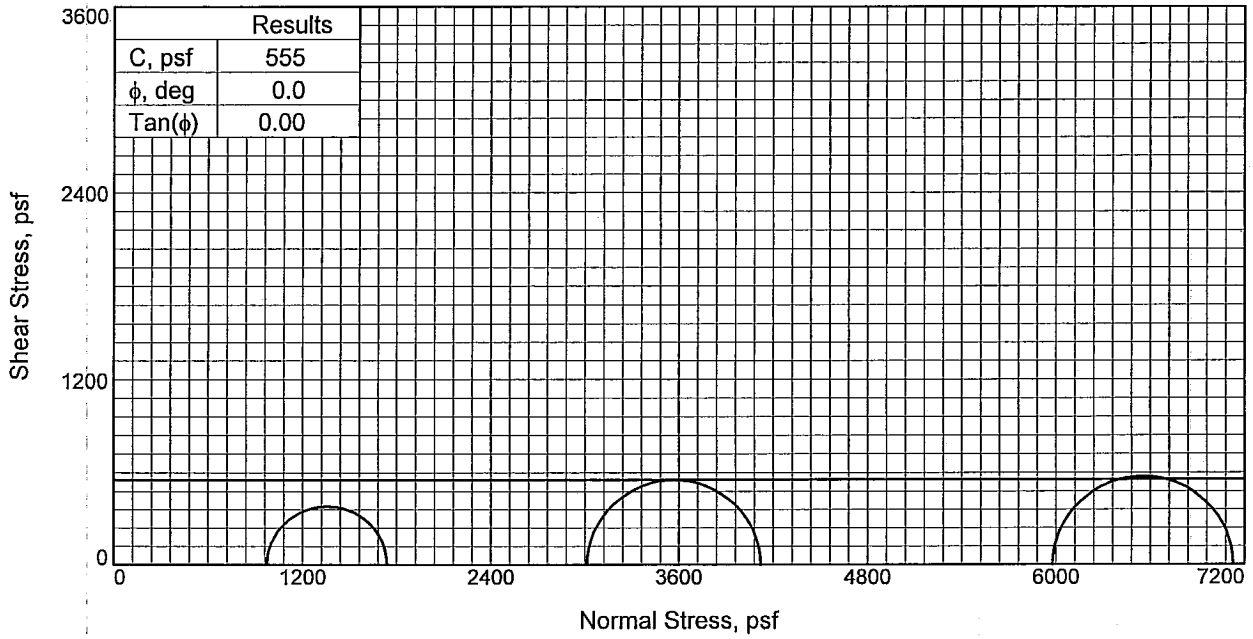
Client: U.S. Army Corps of Engineers

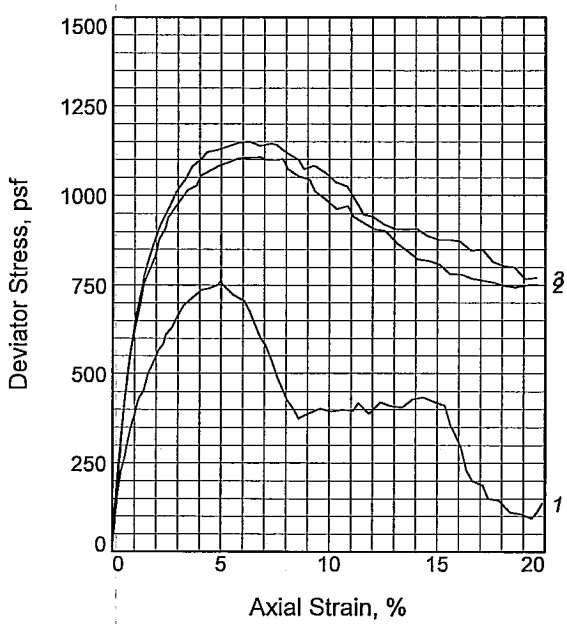
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-44UCL **Depth:** 44.8
Sample Number: 13B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: DW **Checked By:** SH





Sample No.		1	2	3
Initial	Water Content, %	68.2	65.8	66.9
	Dry Density, pcf	59.3	61.0	60.9
	Saturation, %	99.7	100.2	101.6
	Void Ratio	1.8616	1.7850	1.7902
	Diameter, in.	1.407	1.385	1.383
	Height, in.	3.130	3.127	3.127
At Test	Water Content, %	68.2	65.8	66.9
	Dry Density, pcf	59.3	61.0	60.9
	Saturation, %	99.7	100.2	101.6
	Void Ratio	1.8616	1.7850	1.7902
	Diameter, in.	1.407	1.385	1.383
	Height, in.	3.130	3.127	3.127
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.76	20.93	41.51
Fail. Stress, psf		764	1106	1150
Strain, %		5.0	6.8	6.3
Ult. Stress, psf		375	808	876
Strain, %				
σ_1 Failure, psf		1738	4121	7128
σ_3 Failure, psf		974	3014	5978

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ ARS ML

LL= * **PI=** *
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

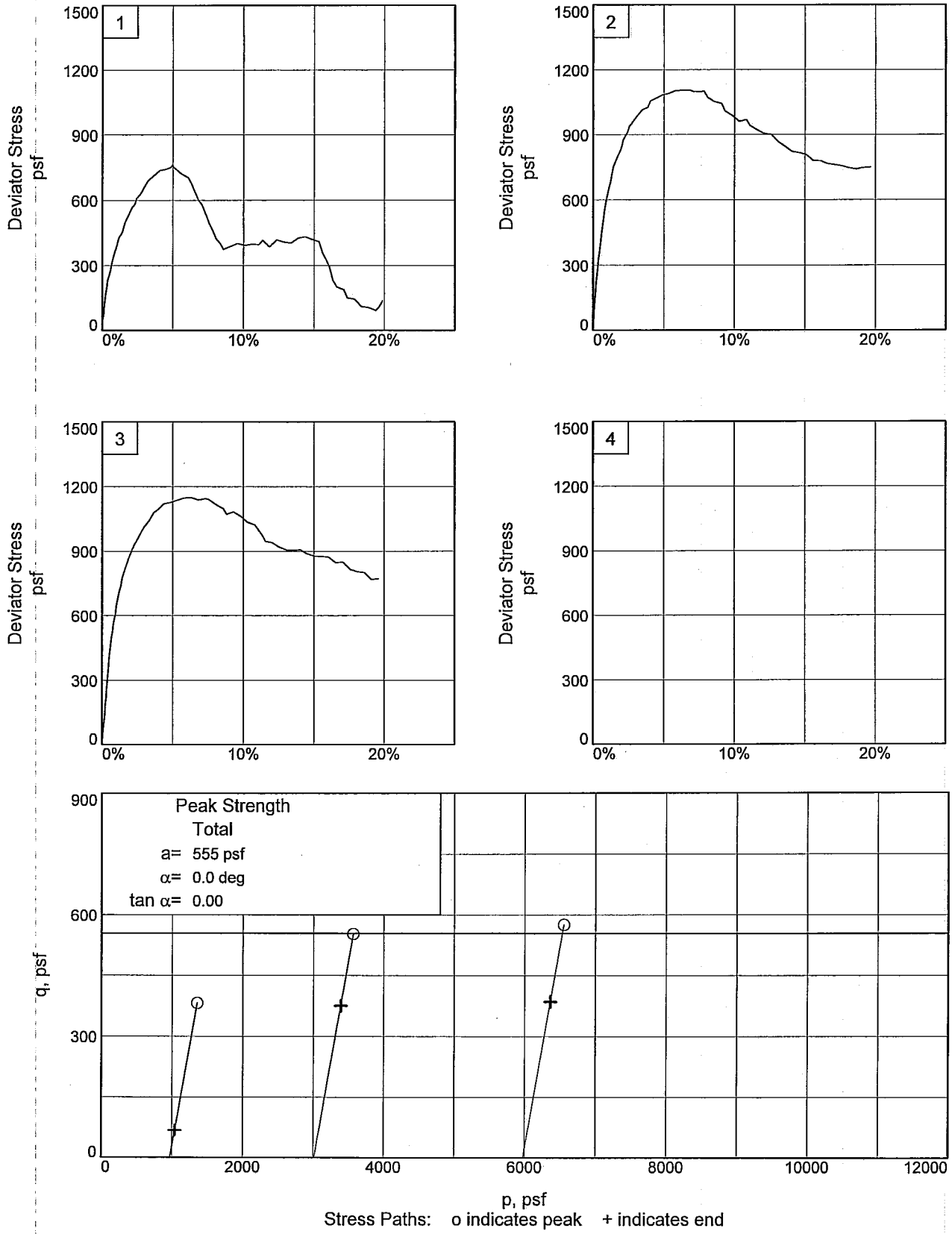
Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-44UCL **Depth:** 49.7
Sample Number: 14C
Proj. No.: 0022-0002 **Date Sampled:** 5/22/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

Tested By: DW/JMB

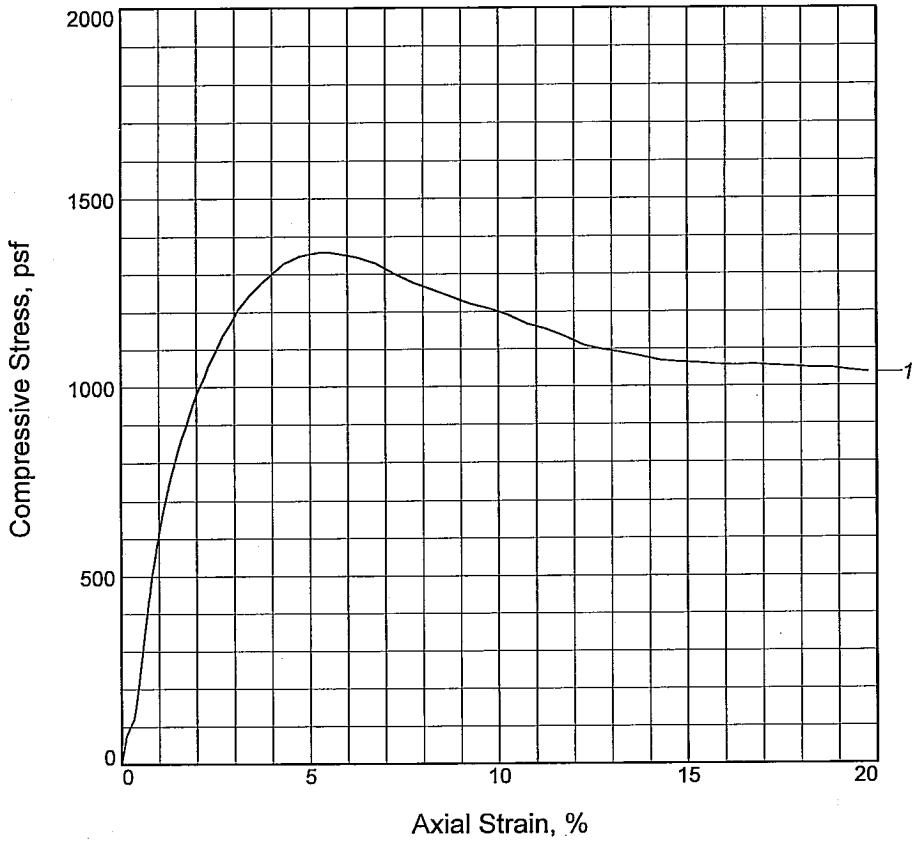


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-44UCL **Depth:** 49.7 **Sample Number:** 14C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1358			
Undrained shear strength, psf	679			
Failure strain, %	5.5			
Strain rate, in./min.	0.031			
Water content, %	54.7			
Wet density, pcf	105.6			
Dry density, pcf	68.3			
Saturation, %	100.0			
Void ratio	1.4863			
Specimen diameter, in.	1.388			
Specimen height, in.	3.137			
Height/diameter ratio	2.26			

Description: M GR CH4 W/ LNS ML

LL = 79	**PL** = 32	**PI** = 47	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/22/07
Remarks:

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-44UCL **Depth:** 57.7
Sample Number: 16C

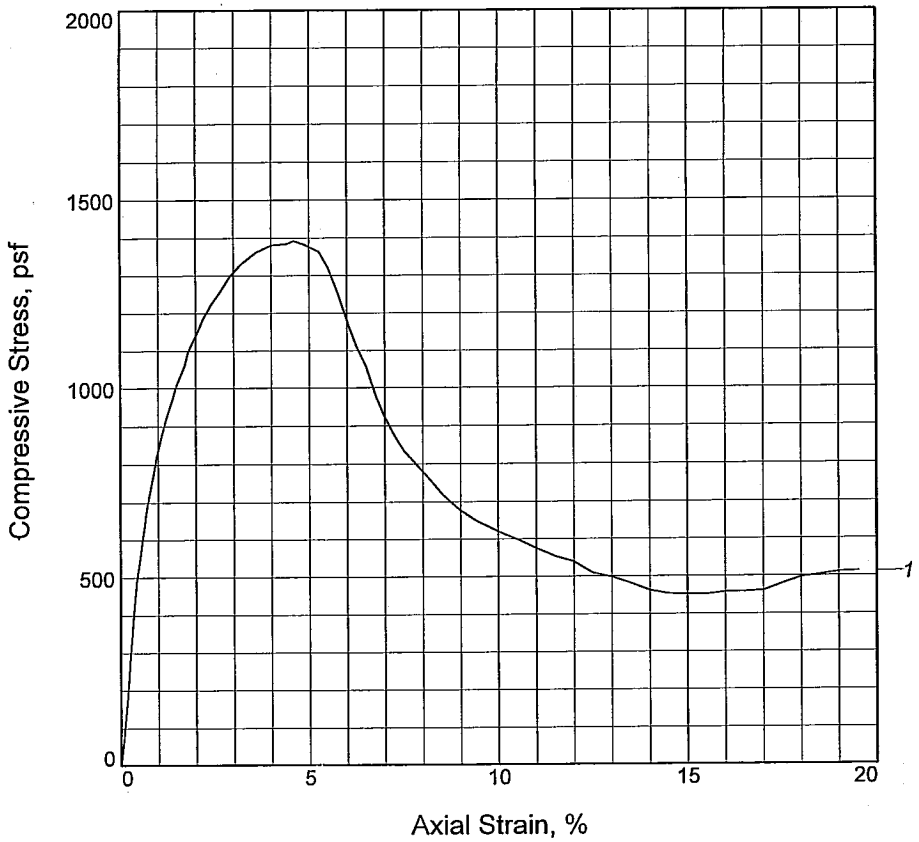
UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: DD

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1392			
Undrained shear strength, psf	696			
Failure strain, %	4.6			
Strain rate, in./min.	0.031			
Water content, %	55.9			
Wet density, pcf	102.7			
Dry density, pcf	65.9			
Saturation, %	96.4			
Void ratio	1.5768			
Specimen diameter, in.	1.403			
Specimen height, in.	3.135			
Height/diameter ratio	2.23			

Description: M GR CH4 W/ LNS ML

LL = 77	**PL** = 26	**PI** = 51	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/22/07
Remarks:

Client: U.S. Army Corps of Engineers

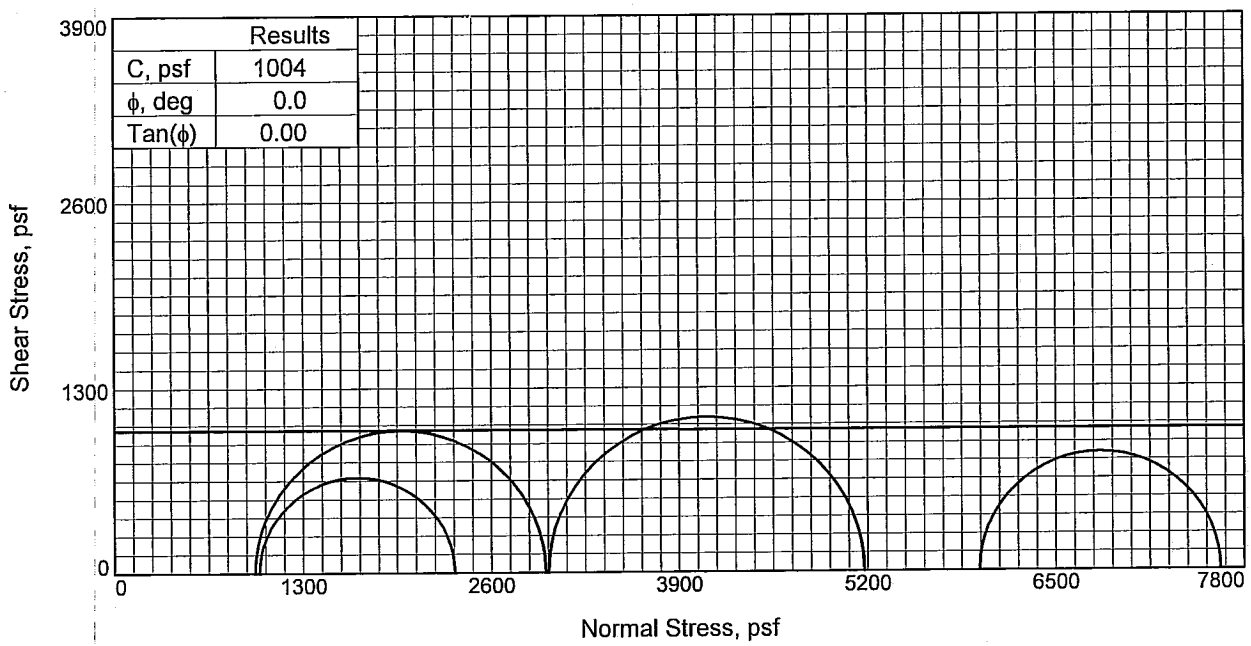
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-44UCL **Depth:** 65.7
Sample Number: 18C

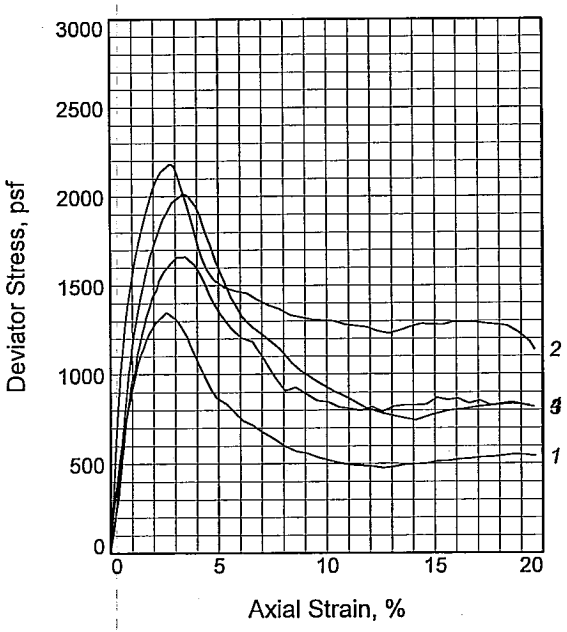
UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: DW





Sample No.		1	2	3	4
Initial	Water Content, %	64.9	63.5	65.6	65.9
	Dry Density, pcf	59.7	61.7	61.2	62.0
	Saturation, %	95.8	98.5	100.6	103.0
	Void Ratio	1.8422	1.7532	1.7748	1.7401
	Diameter, in.	1.425	1.413	1.406	1.430
	Height, in.	3.137	3.137	3.140	3.141
At Test	Water Content, %	64.9	63.5	65.6	65.9
	Dry Density, pcf	59.7	61.7	61.2	62.0
	Saturation, %	95.8	98.5	100.6	103.0
	Void Ratio	1.8422	1.7532	1.7748	1.7401
	Diameter, in.	1.425	1.413	1.406	1.430
	Height, in.	3.137	3.137	3.140	3.141
Strain rate, in./min.		0.031	0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.94	20.80	41.47	6.73
Fail. Stress, psf		1346	2182	1665	2005
Strain, %		2.6	2.7	3.5	3.2
Ult. Stress, psf		478	1229	791	743
Strain, %					
σ_1 Failure, psf		2345	5177	7636	2974
σ_3 Failure, psf		999	2995	5971	969

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST GR CH4 W/ LNS ML, SL

LL= 89 **PL=** 26 **PI=** 63
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

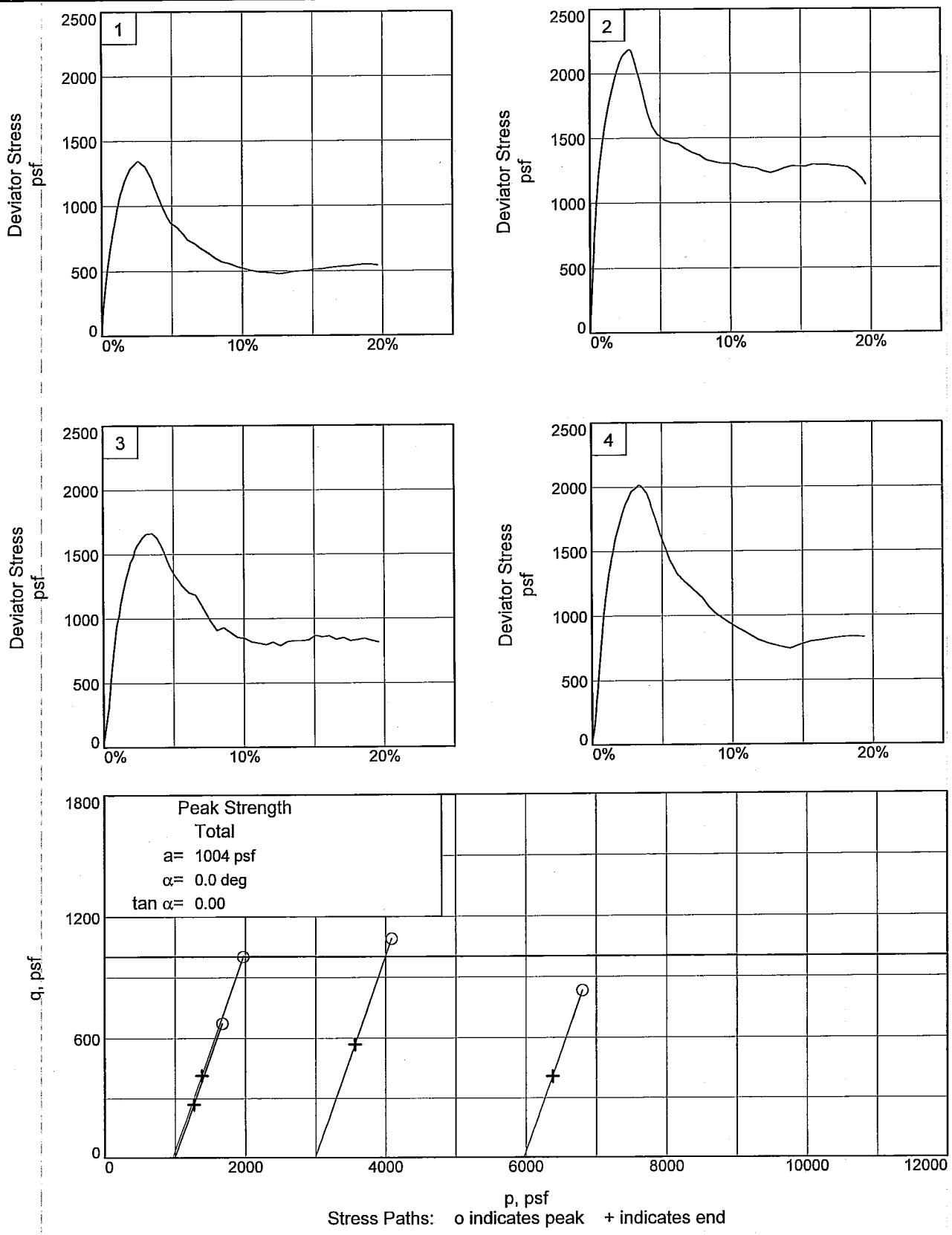
Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-44UCL **Depth:** 69.7
Sample Number: 19C
Proj. No.: 0022-0002 **Date Sampled:** 5/17/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

Tested By: JMB **Checked By:** SH

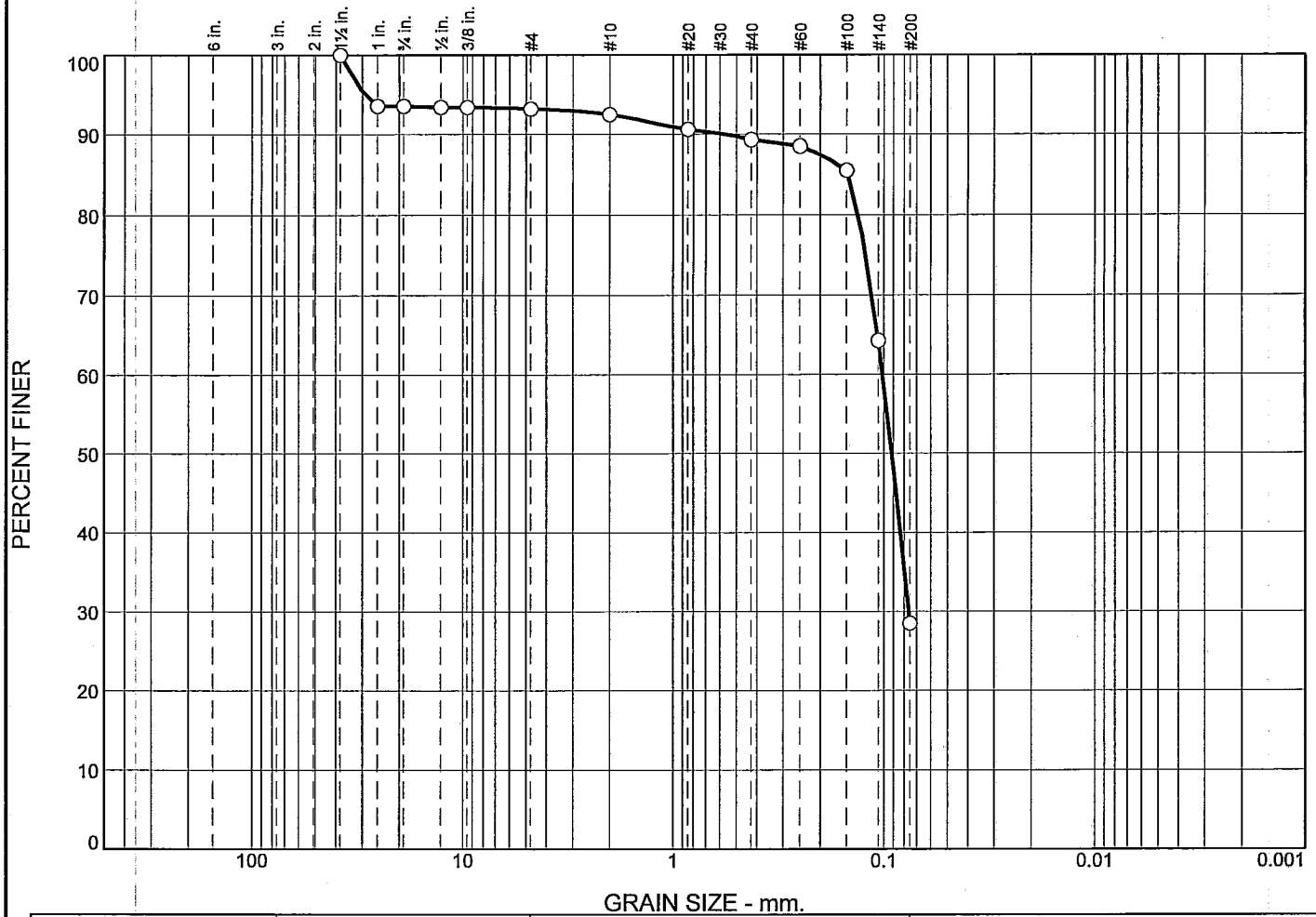


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-44UCL **Depth:** 69.7 **Sample Number:** 19C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: JMB **Checked By:** SH

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	6.4	0.4	0.7	3.2	60.8	28.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1478	0.1011	0.0914	0.0760				

Material Description	USCS	AASHTO
○ GR SM1 W/ SIF	SM1	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Source of Sample:** WWHC-44UCL **Depth:** 73.7 **Sample Number:** 20C

Remarks:

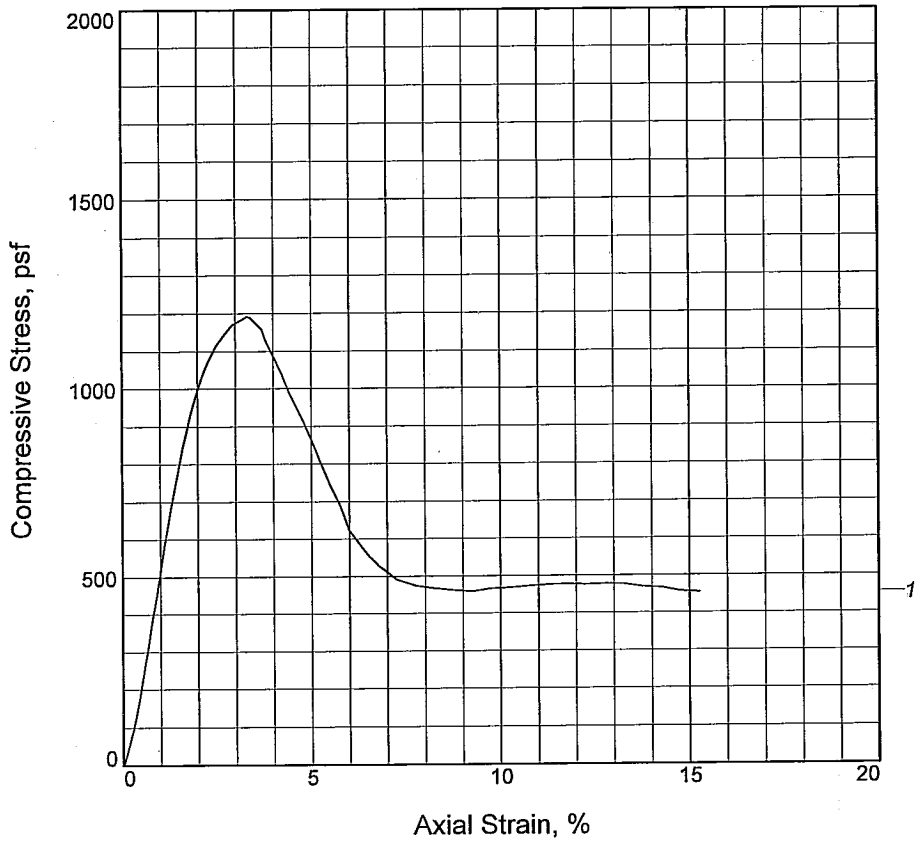
FFEBJV, LLC

St Rose, LA

Figure

Tested By: CSM/BL

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1192			
Undrained shear strength, psf	596			
Failure strain, %	3.3			
Strain rate, in./min.	0.031			
Water content, %	51.4			
Wet density, pcf	105.7			
Dry density, pcf	69.8			
Saturation, %	97.6			
Void ratio	1.4334			
Specimen diameter, in.	1.369			
Specimen height, in.	3.135			
Height/diameter ratio	2.29			

Description: M GR CH4 W/ ARS ML, ARS SP, SIF

LL = 80	**PL** = 21	**PI** = 59	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/22/07
Remarks:

Figure _____

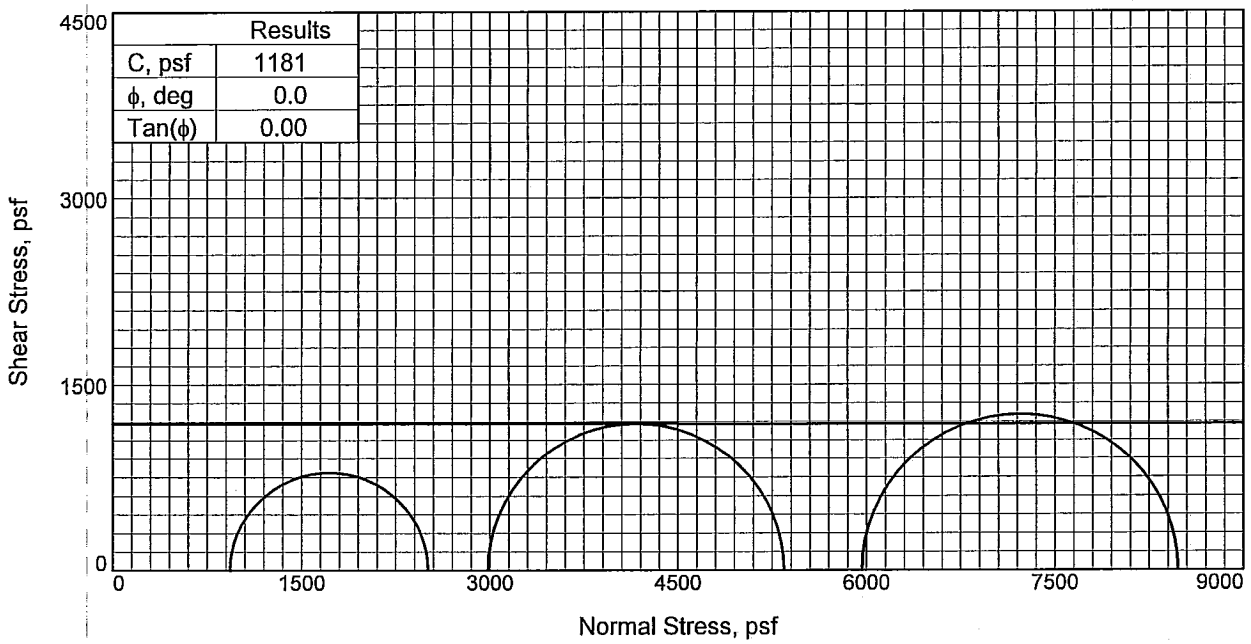
Client: U.S. Army Corps of Engineers

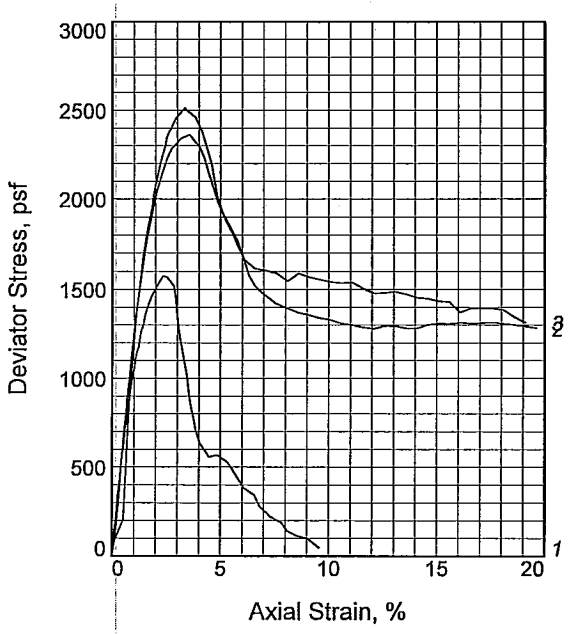
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-44UCL **Depth:** 77.7
Sample Number: 21C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: DW





Sample No.		1	2	3
Initial	Water Content, %	58.7	58.5	57.5
	Dry Density, pcf	64.8	64.7	65.3
	Saturation, %	98.4	98.1	97.6
	Void Ratio	1.6219	1.6234	1.6020
	Diameter, in.	1.470	1.452	1.457
	Height, in.	3.136	3.154	3.145
At Test	Water Content, %	58.7	58.5	57.5
	Dry Density, pcf	64.8	64.7	65.3
	Saturation, %	98.4	98.1	97.6
	Void Ratio	1.6219	1.6234	1.6020
	Diameter, in.	1.470	1.452	1.457
	Height, in.	3.136	3.154	3.145
Strain rate, in./min.		0.031	0.032	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.47	20.72	41.42
Fail. Stress, psf		1575	2361	2515
Strain, %		2.3	3.5	3.3
Ult. Stress, psf		48	1279	1433
Strain, %				
σ_1 Failure, psf		2507	5345	8480
σ_3 Failure, psf		932	2984	5965

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: ST GR CH4 W/ LNS ML, SL

LL= * **PI=** *

Assumed Specific Gravity= 2.72

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-44UCL **Depth:** 81.7

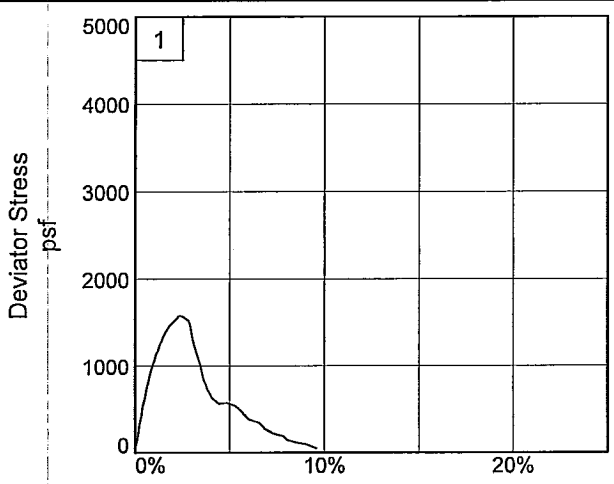
Sample Number: 22C

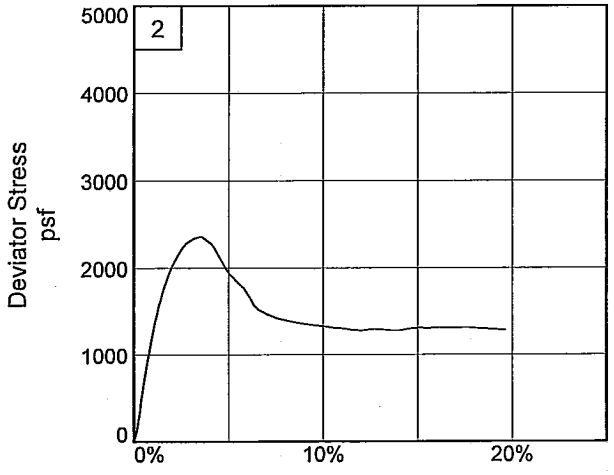
Proj. No.: 0022-0002 **Date Sampled:** 5/22/07

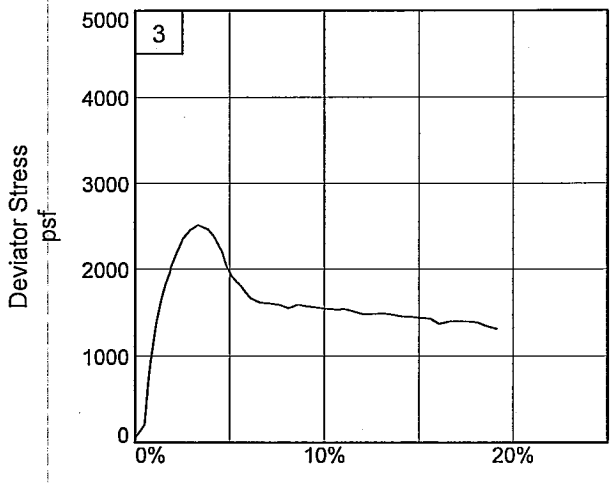
TRIAXIAL SHEAR TEST REPORT

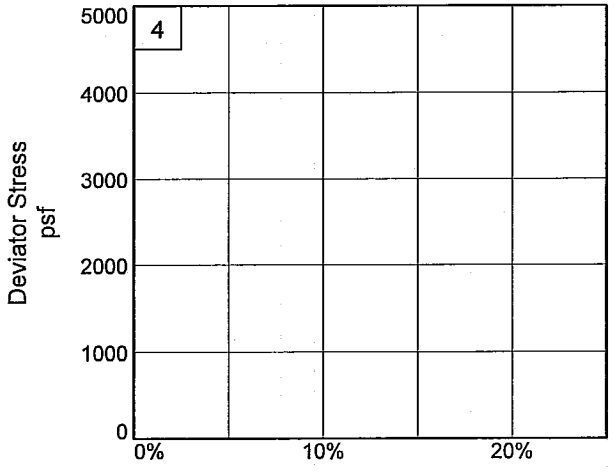
FFEBJV, LLC

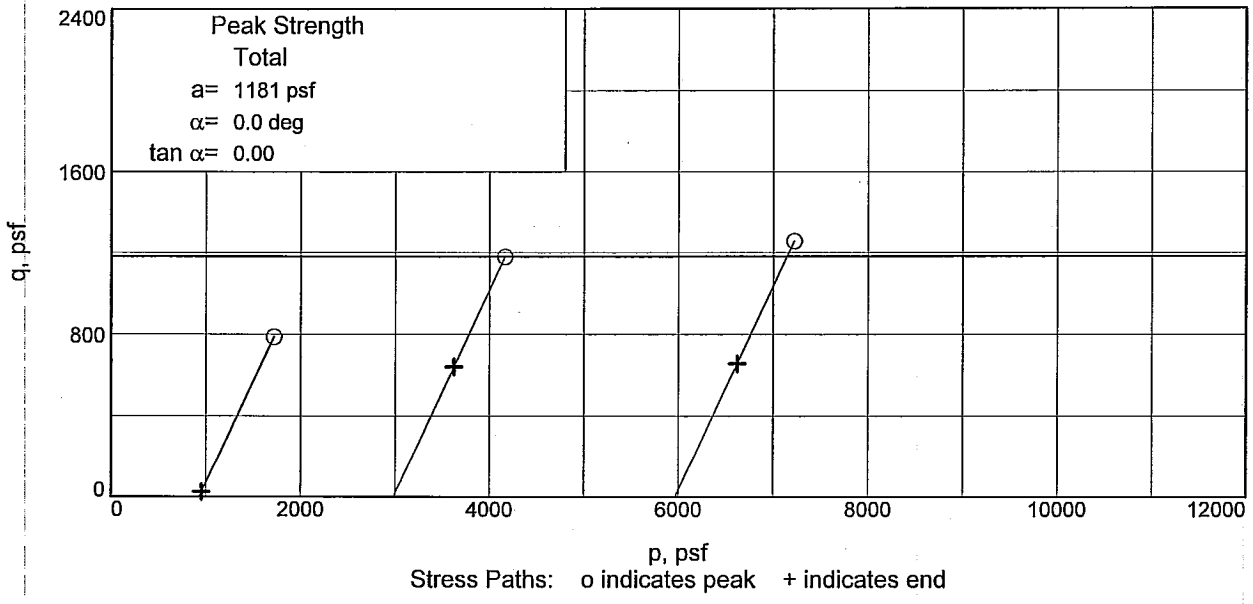
Tested By: JMB **Checked By:** SH











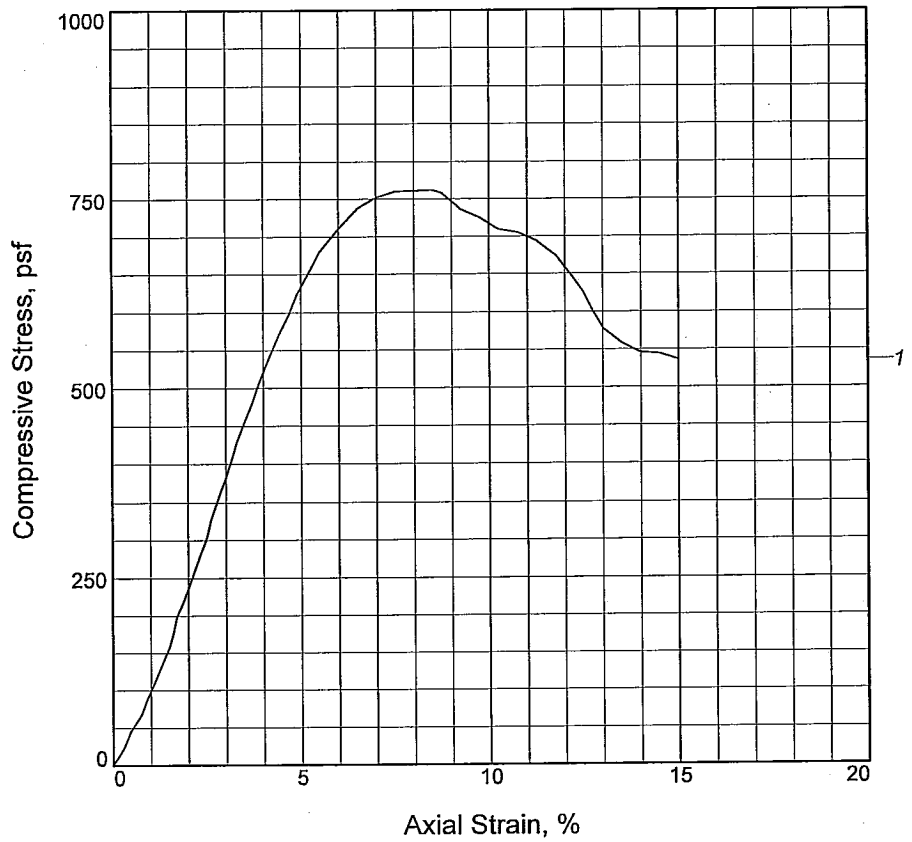
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-44UCL **Depth:** 81.7 **Sample Number:** 22C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: JMB **Checked By:** SH

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	762			
Undrained shear strength, psf	381			
Failure strain, %	8.5			
Strain rate, in./min.	0.031			
Water content, %	34.8			
Wet density, pcf	117.1			
Dry density, pcf	86.8			
Saturation, %	100.8			
Void ratio	0.9266			
Specimen diameter, in.	1.310			
Specimen height, in.	3.110			
Height/diameter ratio	2.37			

Description: SO GR CL4 W/ SIF

LL = 33	**PL** = 14	**PI** = 19	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/2207
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

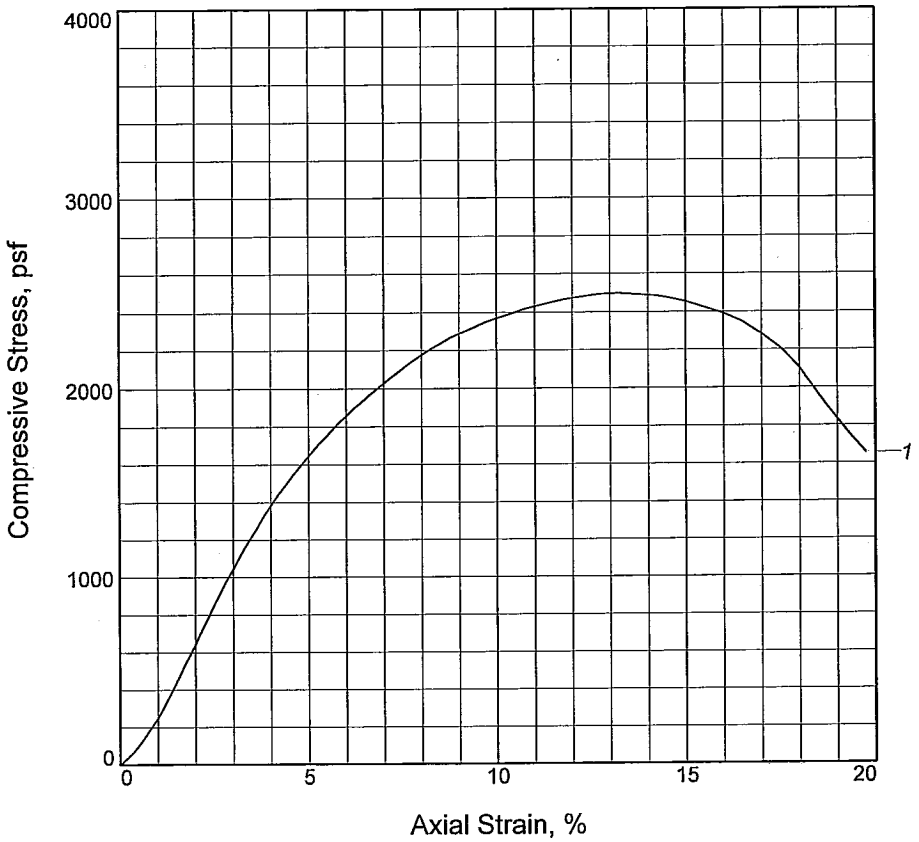
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-44UCL **Depth:** 85.8
Sample Number: 23C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: DW

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2498			
Undrained shear strength, psf	1249			
Failure strain, %	13.2			
Strain rate, in./min.	0.031			
Water content, %	20.9			
Wet density, pcf	128.5			
Dry density, pcf	106.2			
Saturation, %	97.6			
Void ratio	0.5749			
Specimen diameter, in.	1.428			
Specimen height, in.	3.115			
Height/diameter ratio	2.18			

Description: ST DGR CL4

LL = 29	**PL** = 16	**PI** = 13	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/16/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-44UCL **Depth:** 89.7
Sample Number: 24C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: DD/DW **Checked By:** SH

```
BOR. WWHC-44UCL
STA.
LAT N29^50'11.20"
LONG W90^07'07.87"

15 APRIL 2007
GROUND EL. 12.4
  0.0  0.8 16     CL     ST          RT
  0.8  2.0 14  2.0CL      M          RT
  2.0  2.8 26  2.8CH     ST GR LBR
  2.8  4.0 29     CH  SIS M GR LBR
  4.0  4.8 28     CH  SIS M GR BR
  4.8  5.7 28  5.7CH  SIS M GR BR
  5.7  6.6 30  6.6CL      M GR  T    WD
  6.6  8.0 28     CH  SIS M GR
  8.0  8.8 32     CH  SIS M GR
  8.8  9.7 33  9.7CH  SIS M GR
  9.7 12.0 34 12.0CH  SS  M GR       WD RT SIF
 12.0 12.8 28     CH     ST GR       WD
 12.8 13.7 29 13.7CH     ST GR
 13.7 16.0142 16.0CL     ST GR       WD
 16.0 16.8 37     CH  SIS M GR       WD  O
 16.8 17.7 40     CH  SIS M GR       WD
 17.7 20.0 30 20.0CH  SIS M GR LBR
 20.0 20.8 35 20.8CL  SISSO GR
 20.8 21.7 35     CL     SO GR LBR    S
 21.7 22.6 33     CL     SO GR LBR   CS                438121 30 22      33 220
 22.6 24.0 34 24.0CL     SO GR LBR   CS
 24.0 24.8 37     CH  SIS M GR
 24.8 25.7 39     CH  SISSO GR       RT
 25.7 28.0 32     CH  SIS M GR
 28.0 28.8 41     CH  SISSO GR
 28.8 29.7 51     CH  SISSO GR
 29.7 32.0 46 32.0CH  SISSO GR       RT
 32.0 32.8 92     CH   O  M GR BR
 32.8 33.7112     CH   O  M GR BR
 33.7 36.0 69 36.0CH   O SO GR BR    RT
 36.0 36.8 63     CH  SIS M GR       O RT
 36.8 37.7 72     CH  SISSO GR       O RT CC
 37.7 40.0 61 40.0CH  SISSO GR       O RT CC
 40.0 40.8 35     CL     SO GR
 40.8 41.7 45 41.7CL     SO GR
```

41.7 42.6 47 42.6CL SIS M GR 542107 50 21 53 420
42.6 44.0 53 CH SISSO GR
44.0 44.8 61 CH SISSO GR
44.8 45.7 46 CH SIS M GR 704100 86 24 68 451
45.7 46.6 35 CH SIS M GR
46.6 48.0 63 48.0CH SIS M GR
48.0 48.8 61 48.8CH M GR
48.8 49.7 58 CH SIS M GR
49.7 50.6 66 CH SIS M GR
50.6 52.0 54 CH SIS M GR
52.0 52.8 63 52.8CH SISSO GR
52.8 53.7 64 53.7CH SO GR
53.7 56.0 54 CH SIS M GR
56.0 56.8 56 CH SIS M GR
56.8 57.7 58 CH SIS M GR
57.7 58.6 58 58.6CH SIS M GR 679106 79 32 55 580
58.6 60.0 62 CH M GR
60.0 60.8 65 CH M GR
60.8 61.7 59 61.7CH M GR
61.7 62.6 55 CH SIS M GR
62.6 64.0 53 64.0CH SIS M GR
64.0 64.8 58 64.8CH M GR
64.8 65.7 55 CH SIS M GR
65.7 66.6 53 CH SIS M GR 696103 77 26 56 660
66.6 68.0 64 68.0CH SISSO BR
68.0 68.8 58 68.8CH M GR
68.8 69.7 53 CH SISST GR
69.7 70.6 60 70.6CH SISST GR SL
70.6 72.0 58 72.0CH SS ST GR SIF
72.0 72.8 27 SM GR SIF
72.8 73.7 28 SM GR SIF
73.7 76.0 29 76.0SM GR SIF
76.0 76.8 31 CL M GR
76.8 77.7 29 77.7CL M GR
77.7 78.6 40 78.6CH SIS M GR S SIF 596106 80 21 51 780
78.6 80.0 50 80.0CH M GR S SIF
80.0 80.8 55 CH SIS M GR
80.8 81.7 54 CH SISST GR
81.7 82.6 58 CH SISST GR SL
82.6 84.0 63 CH SIS M GR
84.0 84.8 42 84.8CH SISST GR SIF
84.8 85.7 29 CL M GR SIF
85.7 86.6 26 CL SO GR SIF 381117 33 14 35 861

86.6 88.0 35 88.0CL M GR SIF
88.0 88.8 35 CH SS M GR
88.8 89.7 33 89.7CH SS M GR
89.7 90.6 26 90.6CL ST DGR 1249129 29 16 21 900
90.6 92.0 22 92.0CL SISST GR LGR
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CL
Depth/Ele: 6.00/ 6.40 Water Con: 27.00
LL,PL,PI : 46, 24, 22 Dry Dens : 93.00
Cohesion : 0.424 Saturat : 89.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 10.00/ 2.40 Water Con: 31.00
LL,PL,PI : 65, 25, 40 Dry Dens : 90.00
Cohesion : 0.431 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CL
Depth/Ele: 14.00/-1.60 Water Con: 27.00
LL,PL,PI : 45, 18, 27 Dry Dens : 97.00
Cohesion : 0.565 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 17.10/-4.70 Water Con: 39.00
LL,PL,PI : 57, 18, 39 Dry Dens : 82.00
Cohesion : 0.256 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 25.10/-12.7 Water Con: 41.00
LL,PL,PI : 61, 20, 41 Dry Dens : 80.00
Cohesion : 0.269 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CHO
Depth/Ele: 34.00/-32.6 Water Con:107.00
LL,PL,PI : 159, 37,122 Dry Dens : 43.00
Cohesion : 0.244 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 50.00/-37.6 Water Con: 67.00
LL,PL,PI : , , Dry Dens : 54.00
Cohesion : 0.278 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 70.00/-57.6 Water Con: 65.00
LL,PL,PI : 89, 26, 63 Dry Dens : 61.00
Cohesion : 0.502 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 82.00/-69.6 Water Con: 58.00
LL,PL,PI : , , Dry Dens : 65.00
Cohesion : 0.591 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif :CH
Depth/Ele: 28.8/-16.4 Water Con: 40.00
LL,PL,PI : 51, 23, 28 Dry Dens : 81.00
Cohesion : Saturat :100.00
Shear Str: Frict Ang: 00.00
Norm Str: 1.420, 0.904
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.01	1.038
0.13	1.014
0.25	0.996
0.50	0.973
1.00	0.933
2.00	0.871
4.00	0.779
8.00	0.684
2.00	0.712
0.50	0.749

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif :CH
Depth/Ele: 52.8/-40.4 Water Con: 66.00
LL,PL,PI : 91, 25, 66 Dry Dens : 60.00
Cohesion : Saturat : 98.00
Shear Str: Frict Ang: 00.00
Norm Str: 2.220, 1.376
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.07	1.871
0.13	1.849
0.25	1.807
0.50	1.717
1.00	1.567
2.00	1.400
4.00	1.211
8.00	0.924
2.00	1.018
0.50	1.137

****

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

Project Number: TASK ORDER 0002
Boring: WWHC-44 UFT

Current Date: 7/6/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1A	0.0	VST GR & LBR CH2 W/ RT	CH2		25												
1B	0.8	VST GR & LBR CH2 W/ RT	CH2		23												
2A	2.0	ST GR & LBR CH2 W/ RT	CH2		30												
2B	2.8	ST GR & LBR CH2 W/ O	CH2	13	27	95	121	96	UC	-	1240	2481	51	23	28		
3A	4.0	M GR & LBR CH3 W/ ARS ML, O	CH3		30												
3B	4.8	BR WD	WD		46												
NS	5.7	No Sample	NS														
4A	8.0	SO GR CH3 W/ O, WD	CH3		51												
4B	8.8	SO GR CH3 W/ ARS SM	CH3		38	80	110	92	UU	0	291		61	27	34		
4C	9.7	SO GR CH2 W/ ARS SM	CH2		36								53	22	31		Gs, CON
5A	12.0	SO LBR & LGR CH2	CH2		38												
5B	12.8	SO LBR & LGR CH2	CH2		39												
5C	13.7	SO LBR & LGR CH2	CH2		43	76	109	92	UU	0	459		59	27	32		
6A	16.0	SO GR CH2	CH2		38												
6B	16.8	SO GR CH3	CH3		41	80	113	100	UU	0	371		65	19	46		
6C	17.7	M GR CL6	CL6		32												
7A	20.0	M GR CH3	CH3		50												
7B	20.8	M GR CH3	CH3		40												
7C	21.7	M GR CL6	CL6	8	37	83	114	84	UC	-	575	1150	49	25	24		
8A	24.0	M GR CHOA W/ WD	CHOA		101												
8B	24.8	M GR CHOA W/ WD	CHOA		101												
8C	25.7	ST DGR PT W/ WD	PT		206	24	73	90	UU	0	1002		217	61	156		OC=27.3%
9A	28.0	M GR CH4 W/ SL, O	CH4		63												
9B	28.8	M GR CH3 W/ LNS ML	CH3	7	54	67	102	94	UC	-	580	1160	64	27	37		
9C	29.7	M GR CL4	CL4		33												
10A	32.0	M GR CH3 W/ LNS ML	CH3		46												
10B	32.8	M GR CH3 W/ LNS ML, SL	CH3		58												
10C	33.7	M GR CH3 W/ LNS ML	CH3		52	70	106	100	UU	0	567		62	32	30		
11A	36.0	M GR CH4 W/ SL	CH4		62												
11B	36.8	VSO GR CL4 W/ SL	CL4		60								42	30	12		Gs, CON
11C	37.7	M GR CH4 W/ SL	CH4		65	61	101	98	UU	0	724		94	26	68		
12A	40.0	SO GR CH4 W/ SL	CH4		69												
12B	40.8	SO GR CH4 W/ SL	CH4		61												
12C	41.7	SO GR CH4	CH4	8	51	62	94	80	UC	-	472	944	85	29	56		
12D	42.6	SO GR CH4 W/ SL	CH4		63												
13A	44.0	SO GR CH4 W/ SL	CH4		68												
13B	44.8	SO GR CH4 W/ SL, LNS ML	CH4		65												

Remarks: _____
FFEB JV, LLC

Checked By: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

Project Number: TASK ORDER 0002
Boring: WWHC-44 UFT

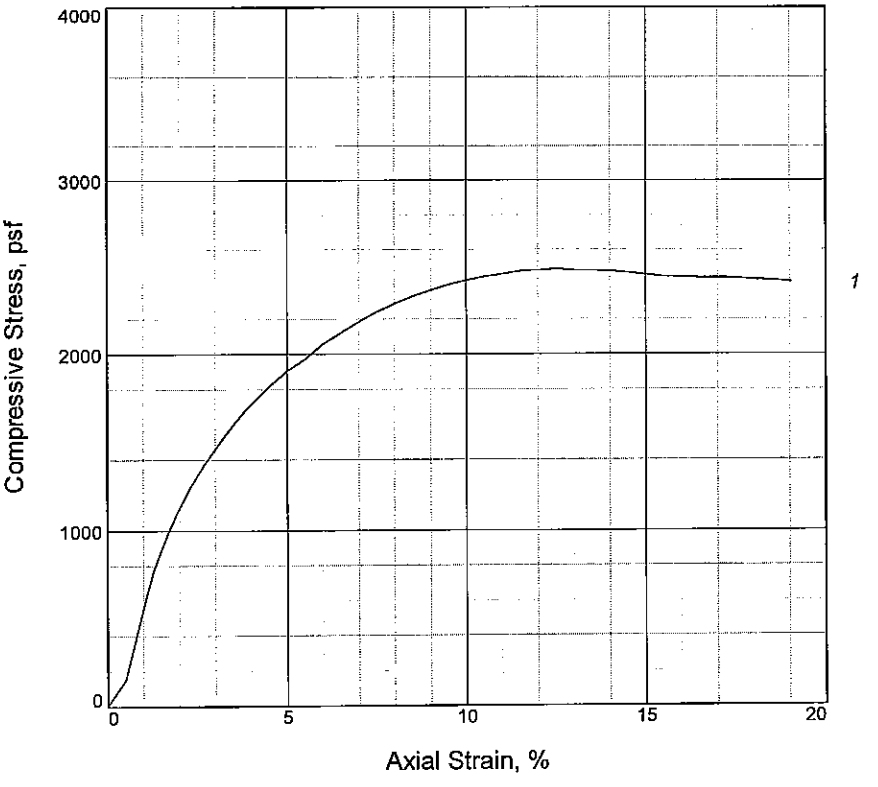
Current Date: 7/6/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
13C	45.7	M GR CH4 W/ SL, LNS ML	CH4	5	56	67	104	99	UC	-	728	1457	80	29	51		
13D	46.6	M GR CH4 W/ SL, LNS ML	CH4		61												
14A	48.0	M GR CH4 W/ SL, ARS ML	CH4		60												
14B	48.8	M GR CH4 W/ SL, LNS ML	CH4		61												
14C	49.7	M GR CH4 W/ SL	CH4		60	60	96	91	UU	0	732		99	40	59		
14D	50.6	M GR CH4 W/ SL, LNS ML	CH4		65												
15A	52.0	M GR CH4 W/ SL	CH4		65												
15B	52.8	M GR CH4 W/ SL	CH4		59												
15C	53.7	M GR CH4 W/ SL	CH4	5	56	67	104	97	UC	-	738	1477	89	26	63		
15D	54.6	M GR CH4 W/ SL	CH4		58												
16A	56.0	M GR CH4 W/ LNS ML	CH4		61												
16B	56.8	M GR CH4 W/ SL, ARS ML	CH4		57												
16C	57.7	M GR CH4 W/ SL, ARS ML	CH4		56												
16D	58.6	M GR CH4 W/ SL	CH4		51												
17A	60.0	M GR CH4 W/ SL	CH4														
17B	60.8	M GR CH4 W/ SL, LNS ML	CH4		57												
17C	61.7	M GR CH4 W/ SL, LNS ML	CH4		61	60	97	89	UU	0	733		91	27	64		
18A	64.0	GR SM1 W/ SIF	SM1		26												
18B	64.8	GR SM1 W/ SIF	SM1		26												
18C	65.7	GR SM1 W/ SIF	SM1		27												SV
19A	68.0	SO GR CL4-S W/ SIF	CL4-S		32												
19B	68.8	SO GR CL4-S W/ SIF	CL4-S		32												
19C	69.7	M GR CH4 W/ SIF	CH4	4	52	70	106	98	UC	-	588	1176	74	28	46		

Remarks: _____
FFEB JV, LLC

Checked By: _____
File Name: TO 2

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2481			
Undrained shear strength, psf	1240			
Failure strain, %	12.5			
Strain rate, %/min.	1.00			
Water content, %	27.4			
Wet density, pcf	121.4			
Dry density, pcf	95.3			
Saturation, %	96.3			
Void ratio	0.7685			
Specimen diameter, in.	1.39			
Specimen height, in.	3.01			
Height/diameter ratio	2.17			

Description: ST GR & LBR CH2 W/ O

LL = 51	**PL** = 23	**PI** = 28	**Assumed GS**= 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/22/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

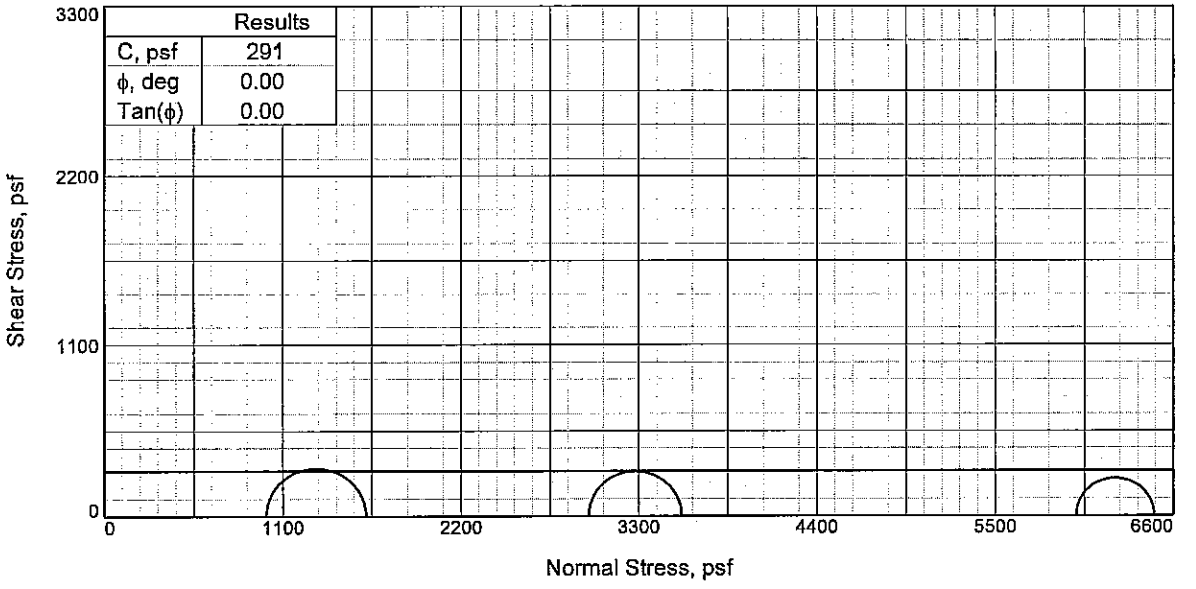
Client: U.S. ARMY CORPS OF ENGINEERS

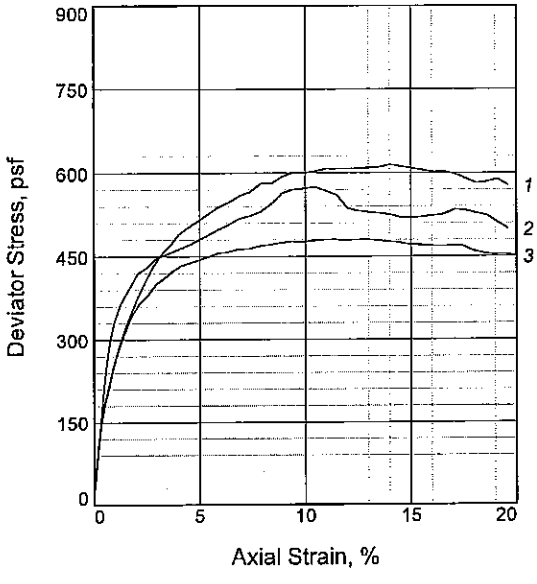
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-44UFT **Depth:** 2.80'
Sample Number: 2B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	37.9	39.7	35.5
	Dry Density, pcf	81.9	77.0	82.3
	Saturation, %	96.0	89.6	90.9
	Void Ratio	1.0742	1.2048	1.0620
	Diameter, in.	1.32	1.35	1.34
	Height, in.	3.00	3.00	3.00
At Test	Water Content, %	36.2	39.1	35.6
	Dry Density, pcf	81.9	77.0	82.3
	Saturation, %	91.6	88.4	91.3
	Void Ratio	1.0742	1.2048	1.0620
	Diameter, in.	1.32	1.35	1.34
	Height, in.	3.00	3.00	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	20.76	41.67
Fail. Stress, psf		615	575	481
Strain, %		14.0	10.5	11.4
Ult. Stress, psf		615	533	476
Strain, %				
σ_1 Failure, psf		1614	3565	6481
σ_3 Failure, psf		998	2990	6000

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH3 W/ ARS SM

LL= 61 **PL=** 27 **PI=** 34
Assumed Specific Gravity= 2.72
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

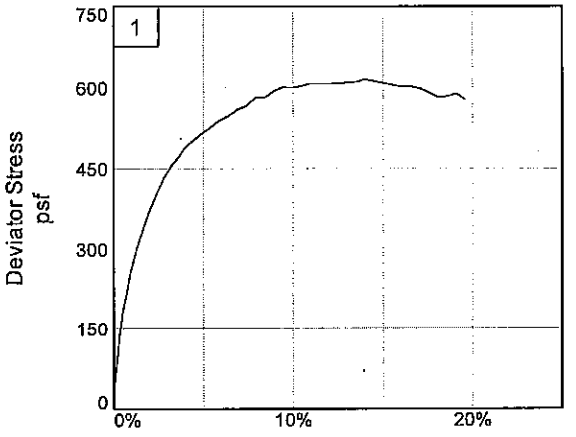
Client: U.S. ARMY CORPS OF ENGINEERS

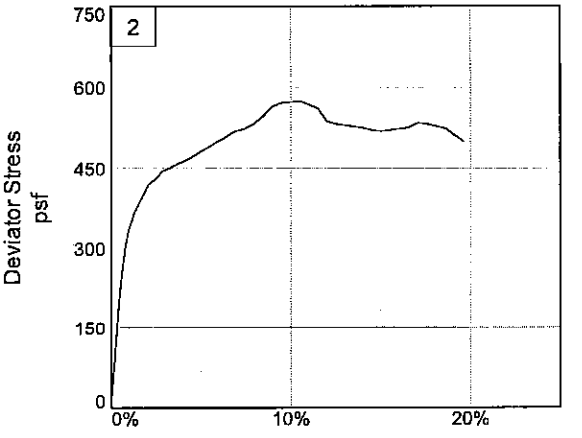
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-44UFT **Depth:** 8.80'
Sample Number: 4B
Proj. No.: 0022-0002 **Date Sampled:** 5/23/07

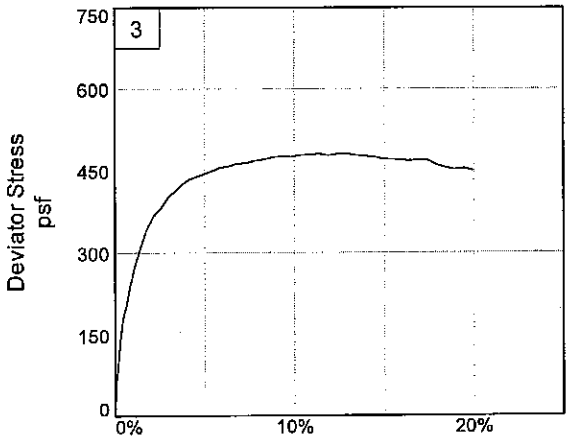
TRIAXIAL SHEAR TEST REPORT

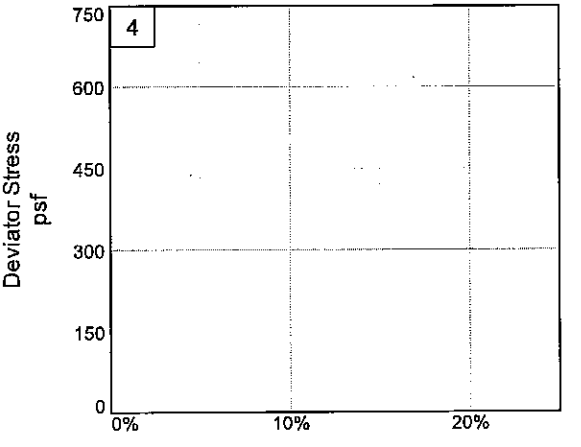
FFEBJV, LLC.

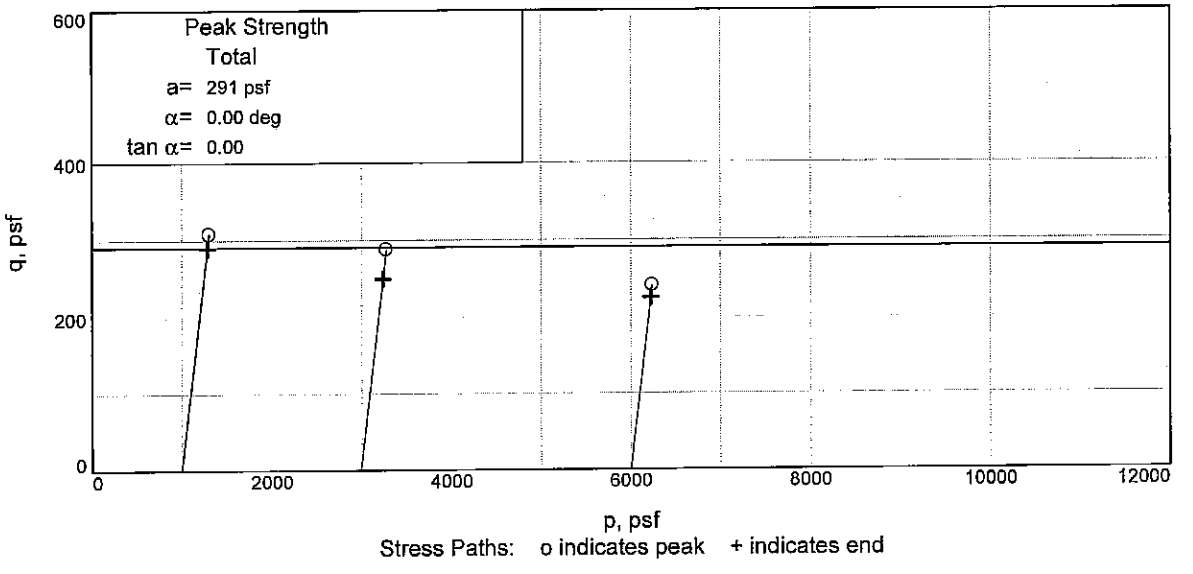
Tested By: LP **Checked By:** GMU







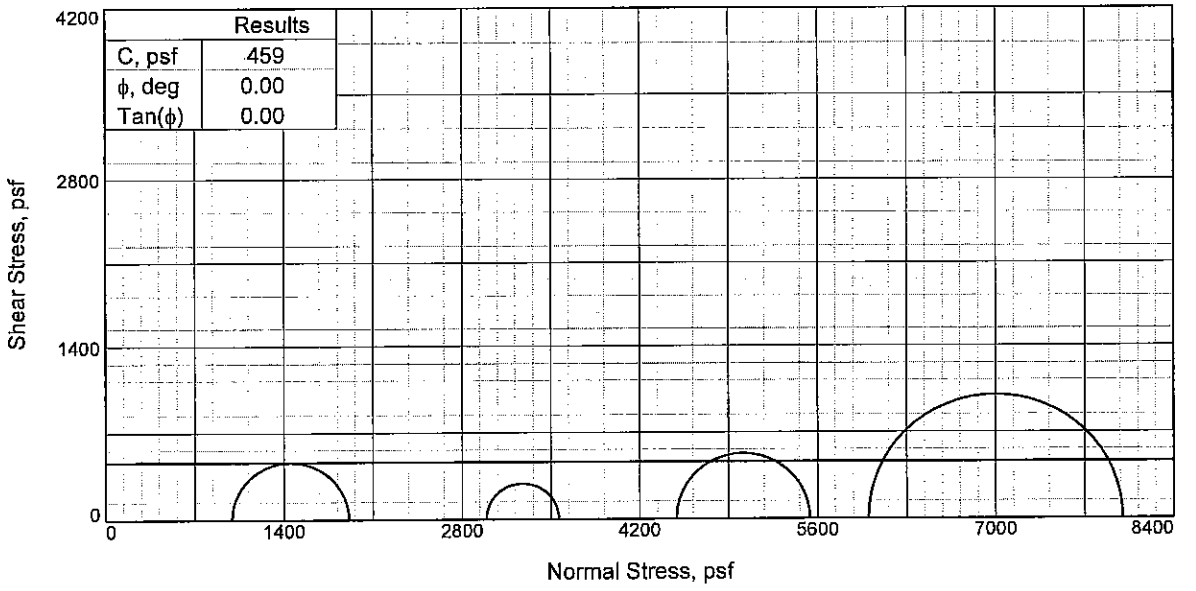


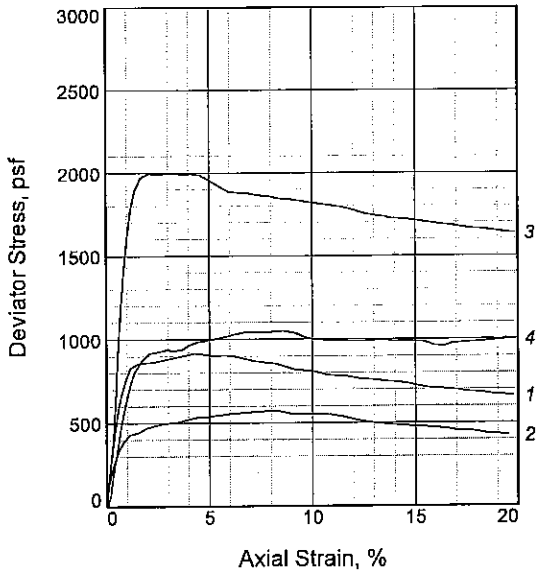


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-44UFT **Depth:** 8.80' **Sample Number:** 4B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: LP **Checked By:** GMU





Sample No.		1	2	3	4
Initial	Water Content, %	41.4	40.6	38.4	50.8
	Dry Density, pcf	79.9	73.1	78.0	71.4
	Saturation, %	99.4	83.0	88.2	99.8
	Void Ratio	1.1412	1.3403	1.1931	1.3947
	Diameter, in.	1.32	1.37	1.34	1.27
	Height, in.	3.01	3.00	3.00	3.13
At Test	Water Content, %	39.8	40.2	38.2	49.2
	Dry Density, pcf	79.9	73.1	78.0	71.4
	Saturation, %	95.6	82.2	87.8	96.6
	Void Ratio	1.1412	1.3403	1.1931	1.3947
	Diameter, in.	1.32	1.37	1.34	1.27
	Height, in.	3.01	3.00	3.00	3.13
Strain rate, %/min.		1.00	1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.90	20.78	41.68	31.18
Fail. Stress, psf		917	570	1997	1049
Strain, %		4.3	7.9	3.3	8.7
Ult. Stress, psf		732	484	1722	998
Strain, %					
σ_1 Failure, psf		1911	3563	7998	5539
σ_3 Failure, psf		994	2993	6001	4490

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO LBR & LGR CH2

LL= 59 **PL=** 27 **PI=** 32
Assumed Specific Gravity= 2.74
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

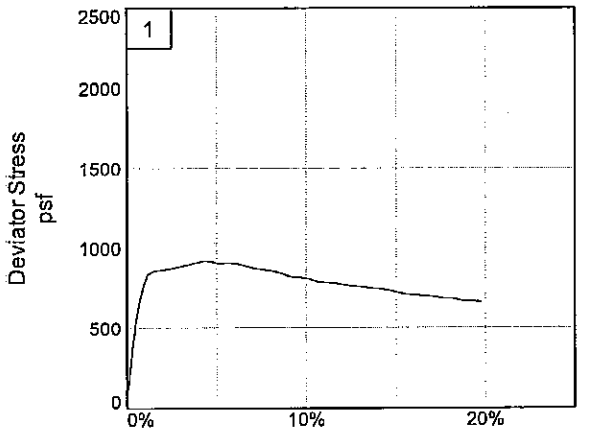
Client: U.S. ARMY CORPS OF ENGINEERS

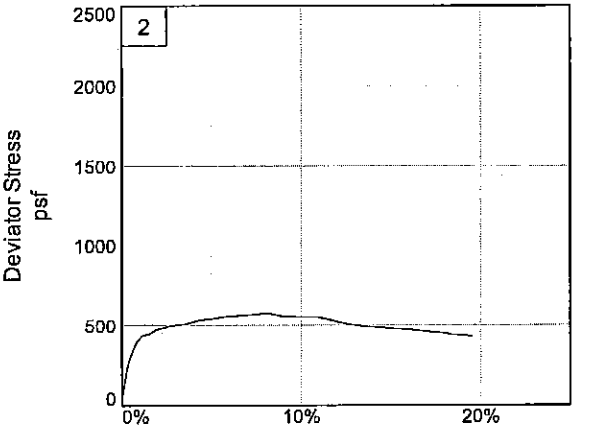
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-44UFT **Depth:** 13.70'
Sample Number: 5C
Proj. No.: 0022-0002 **Date Sampled:** 5/23/07

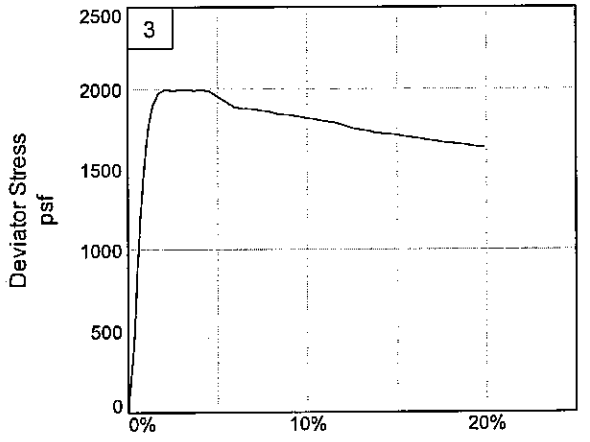
TRIAXIAL SHEAR TEST REPORT

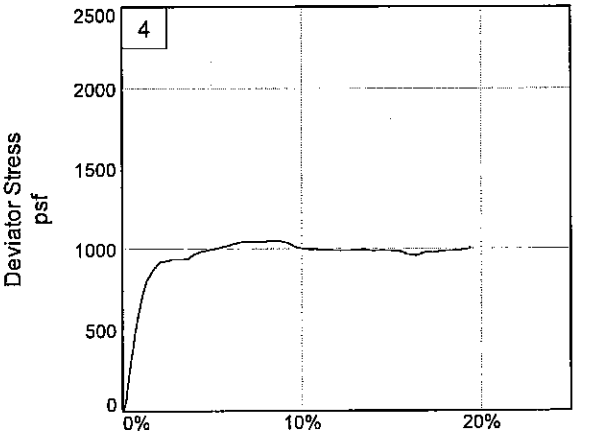
FFEBJV, LLC.

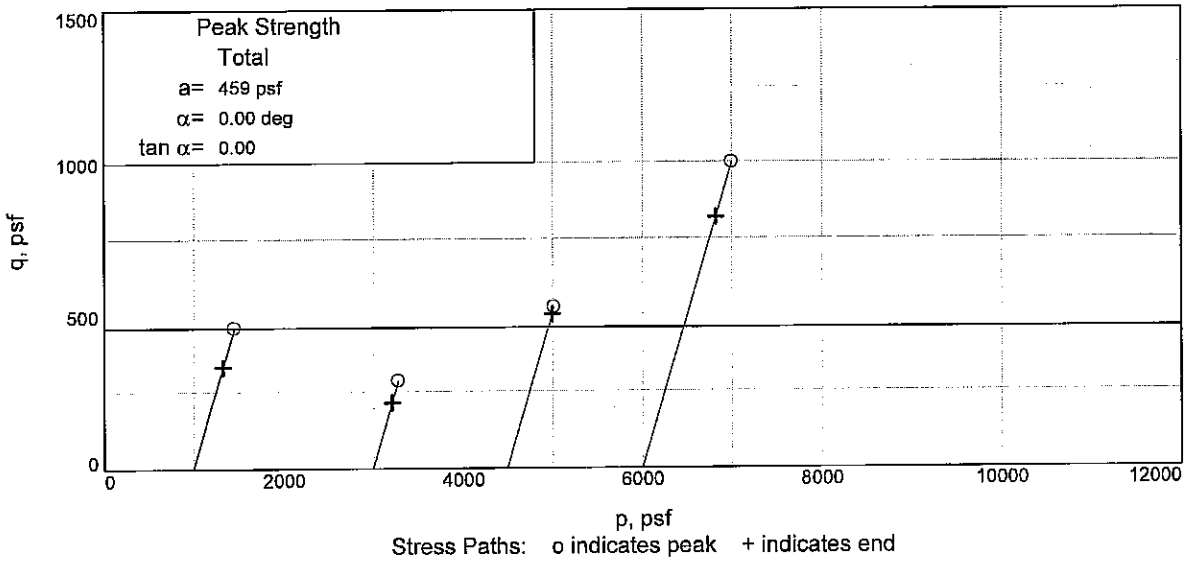
Tested By: LP **Checked By:** GMU







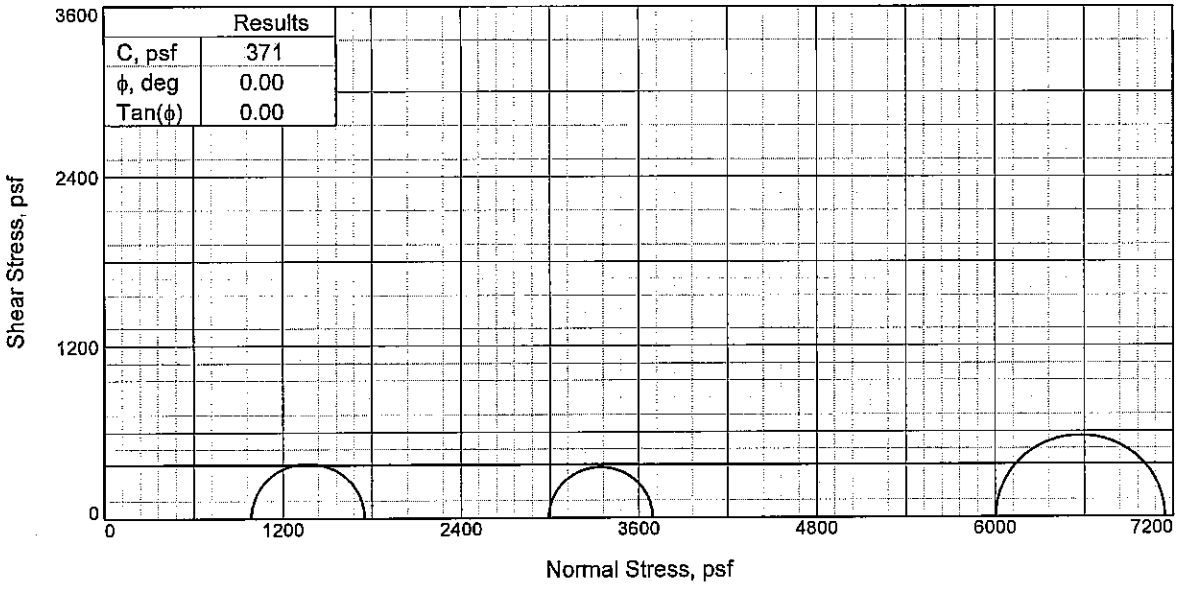


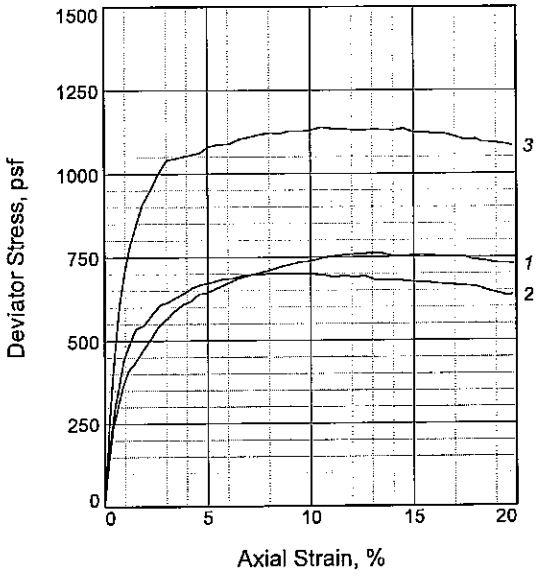


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-44UFT **Depth:** 13.70' **Sample Number:** 5C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: LP **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	40.0	43.0	40.8
	Dry Density, pcf	81.5	78.3	80.7
	Saturation, %	99.9	99.5	99.8
	Void Ratio	1.0978	1.1844	1.1209
	Diameter, in.	1.39	1.39	1.39
	Height, in.	3.04	3.05	3.02
At Test	Water Content, %	39.0	42.4	40.8
	Dry Density, pcf	81.5	78.3	80.7
	Saturation, %	97.4	98.1	99.6
	Void Ratio	1.0978	1.1844	1.1209
	Diameter, in.	1.39	1.39	1.39
	Height, in.	3.04	3.05	3.02
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.78	41.70
Fail. Stress, psf		762	701	1139
Strain, %		13.4	8.2	10.5
Ult. Stress, psf		754	681	1135
Strain, %				
σ_1 Failure, psf		1750	3693	7144
σ_3 Failure, psf		988	2992	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH3

LL= 65 **PL=** 19 **PI=** 46
Assumed Specific Gravity= 2.74
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

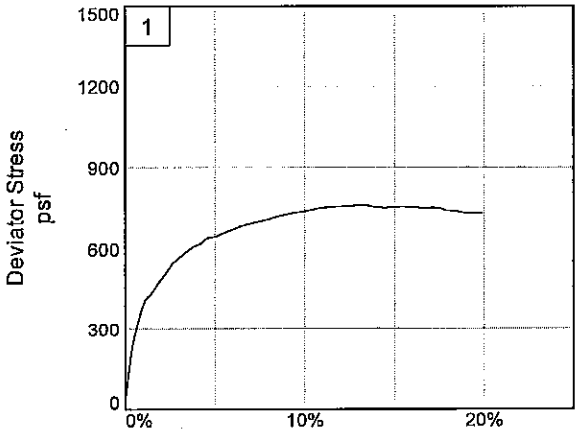
Client: U.S. ARMY CORPS OF ENGINEERS

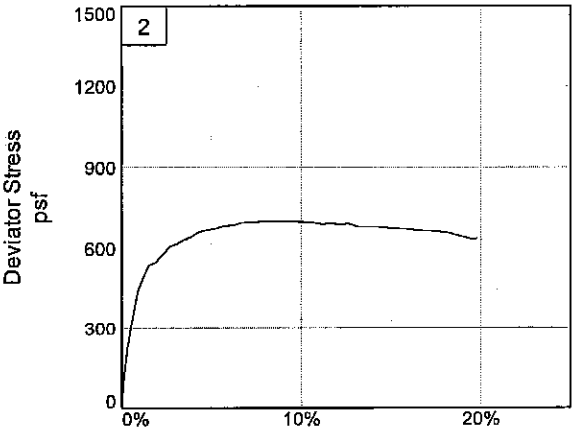
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-44UFT **Depth:** 16.80'
Sample Number: 6B
Proj. No.: 0022-0002 **Date Sampled:** 5/23/07

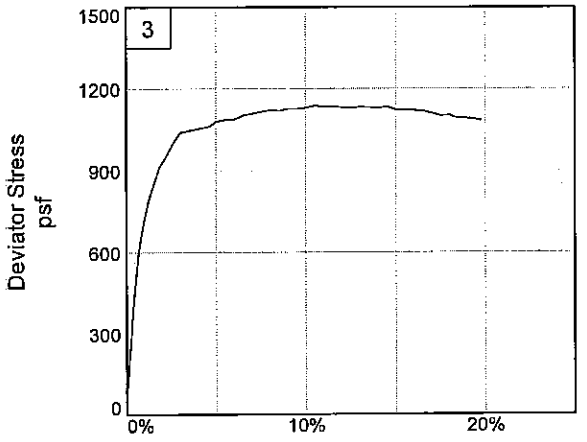
TRIAXIAL SHEAR TEST REPORT

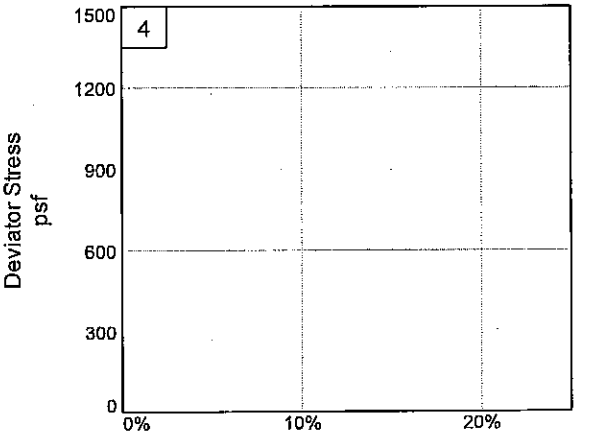
FFEBJV, LLC.

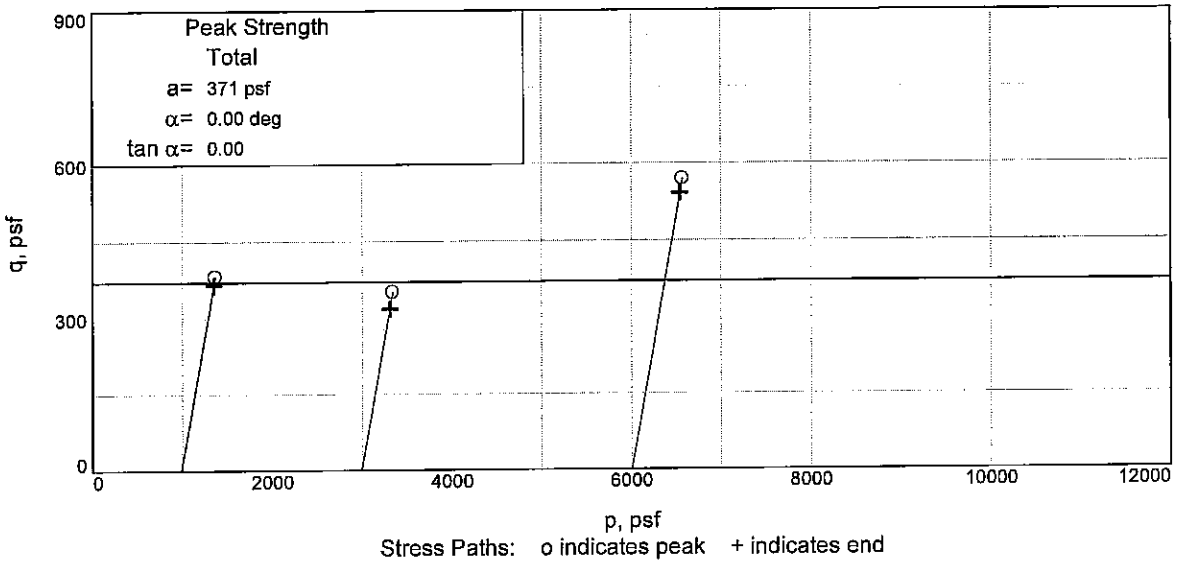
Tested By: LP **Checked By:** GMU









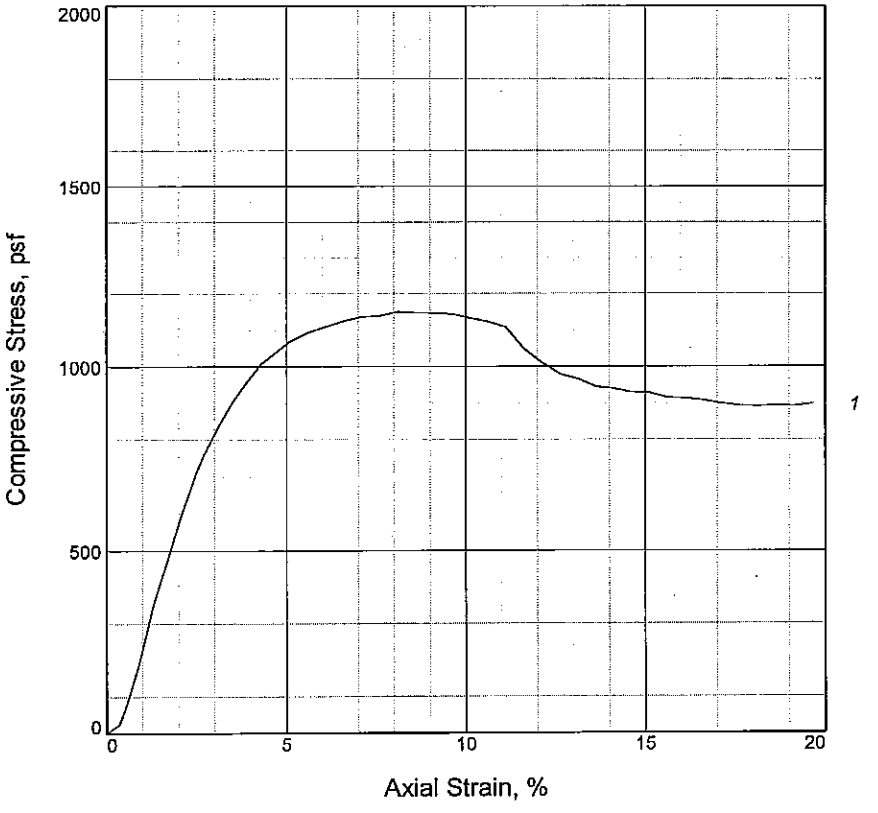


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-44UFT **Depth:** 16.80' **Sample Number:** 6B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: LP **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1150			
Undrained shear strength, psf	575			
Failure strain, %	8.1			
Strain rate, %/min.	1.00			
Water content, %	36.8			
Wet density, pcf	114.3			
Dry density, pcf	83.5			
Saturation, %	98.1			
Void ratio	1.0100			
Specimen diameter, in.	1.38			
Specimen height, in.	3.00			
Height/diameter ratio	2.17			

Description: M GR CL6

LL = 49	**PL** = 25	**PI** = 24	**Assumed GS=** 2.69	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/22/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

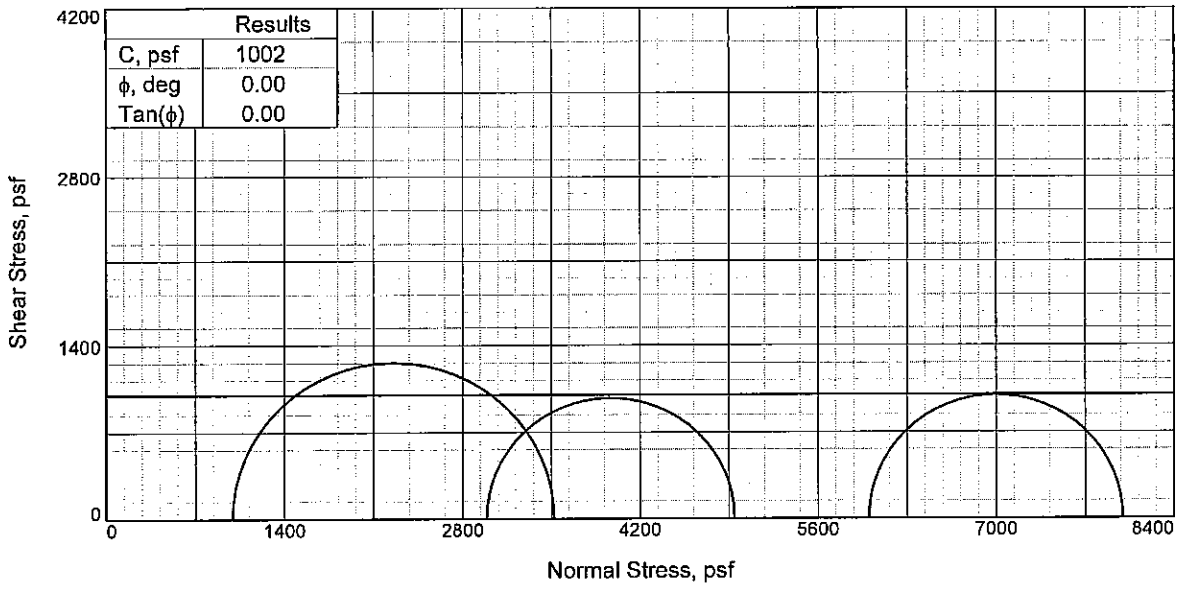
Figure _____

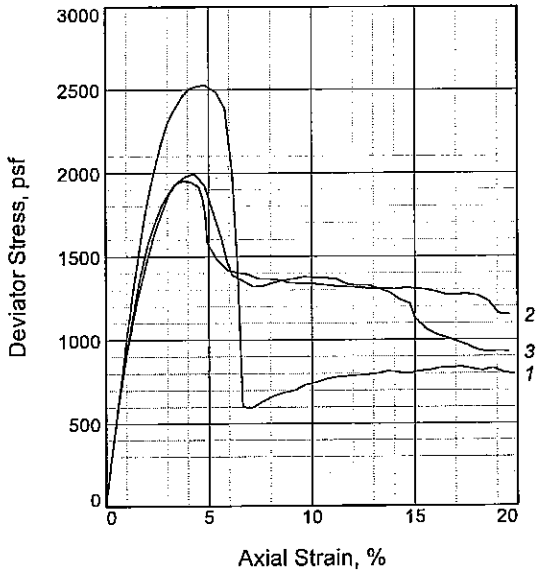
Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-44UFT **Depth:** 21.70'
Sample Number: 7C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.





Sample No.		1	2	3
Initial	Water Content, %	207.6	208.0	201.8
	Dry Density, pcf	24.3	22.8	23.6
	Saturation, %	95.6	89.0	89.9
	Void Ratio	5.4060	5.8163	5.5892
	Diameter, in.	1.32	1.35	1.34
	Height, in.	3.00	3.00	3.00
At Test	Water Content, %	203.6	208.8	209.6
	Dry Density, pcf	24.3	22.8	23.6
	Saturation, %	93.8	89.4	93.4
	Void Ratio	5.4060	5.8163	5.5892
	Diameter, in.	1.32	1.35	1.34
	Height, in.	3.00	3.00	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.77	41.67
Fail. Stress, psf		2527	1952	1995
Strain, %		4.8	3.8	4.3
Ult. Stress, psf		798	1311	1244
Strain, %				
σ_1 Failure, psf		3520	4943	7996
σ_3 Failure, psf		993	2991	6001

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST DGR PT W/ WD

LL= 217 **PL=** 61 **PI=** 156
Assumed Specific Gravity= 2.49
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

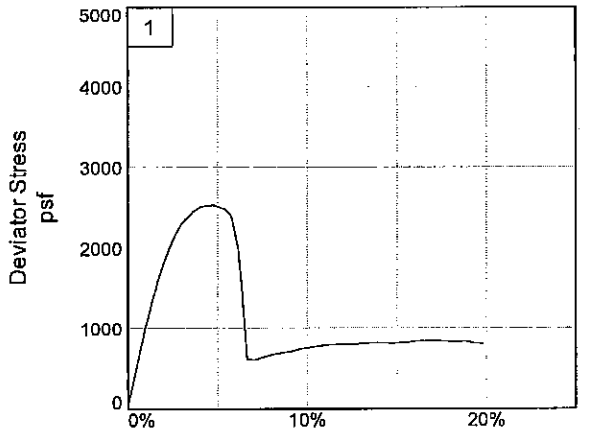
Client: U.S. ARMY CORPS OF ENGINEERS

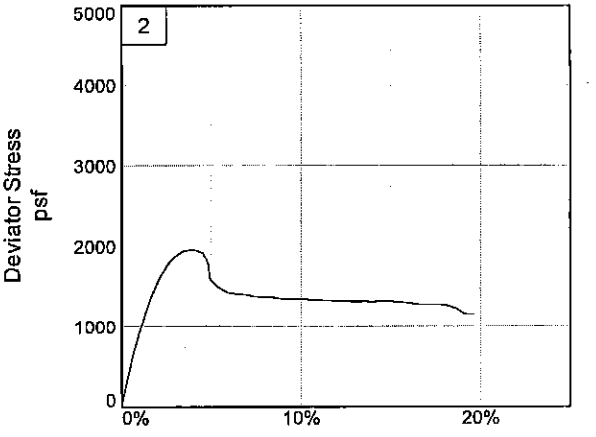
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-44UFT **Depth:** 25.70'
Sample Number: 8C
Proj. No.: 0022-0002 **Date Sampled:** 5/23/07

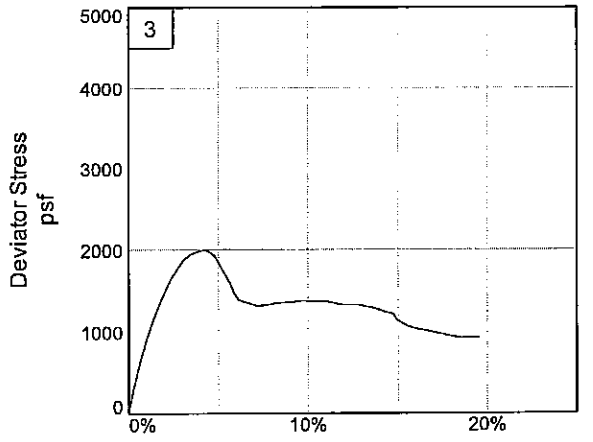
TRIAXIAL SHEAR TEST REPORT

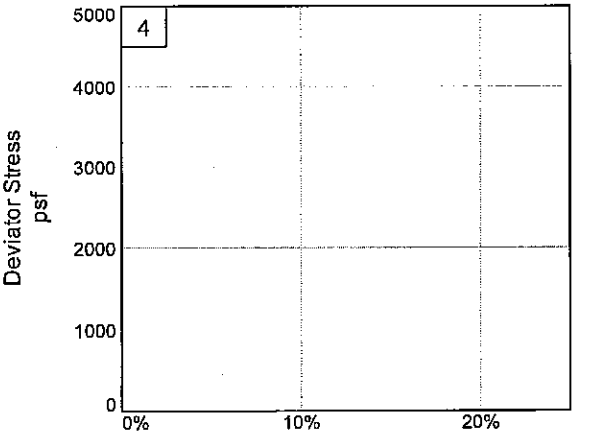
FFEBJV, LLC.

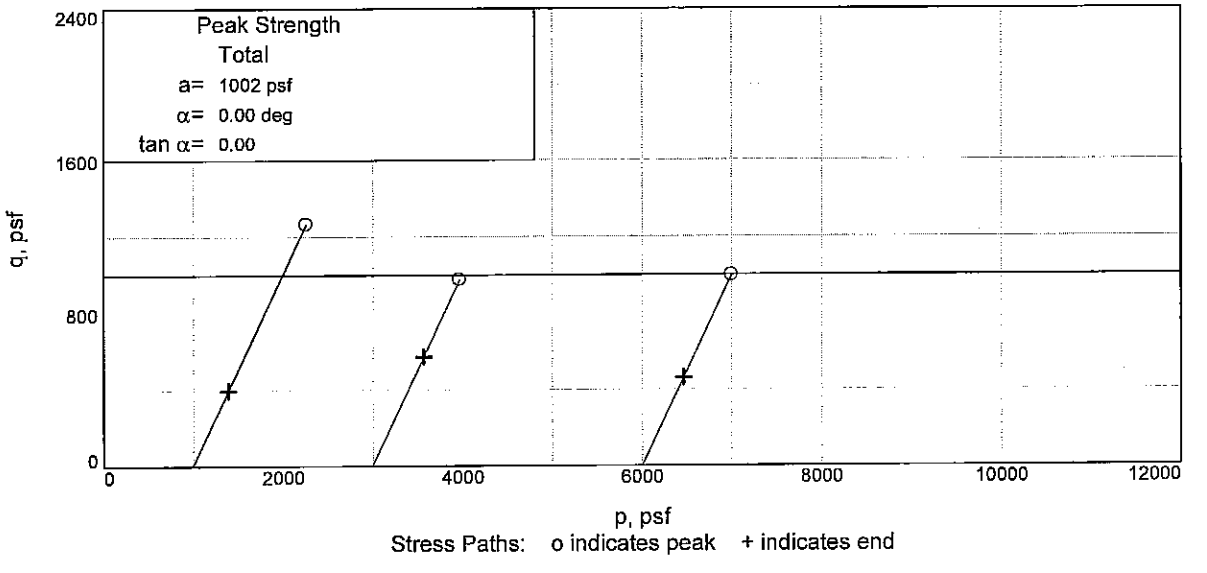
Tested By: LP **Checked By:** GMU











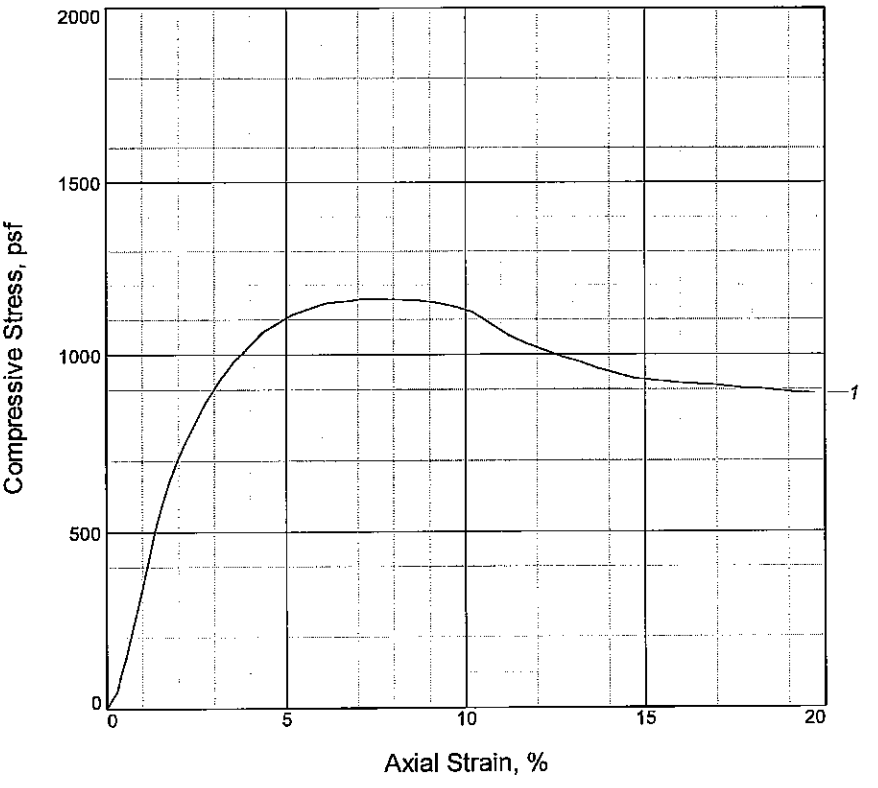
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-44UFT **Depth:** 25.70' **Sample Number:** 8C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: LP **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1160			
Undrained shear strength, psf	580			
Failure strain, %	7.2			
Strain rate, %/min.	1.00			
Water content, %	53.8			
Wet density, pcf	102.4			
Dry density, pcf	66.5			
Saturation, %	94.4			
Void ratio	1.5516			
Specimen diameter, in.	1.33			
Specimen height, in.	3.02			
Height/diameter ratio	2.27			

Description: M GR CH3 W/ LNS ML

LL = 64	**PL** = 27	**PI** = 37	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/22/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

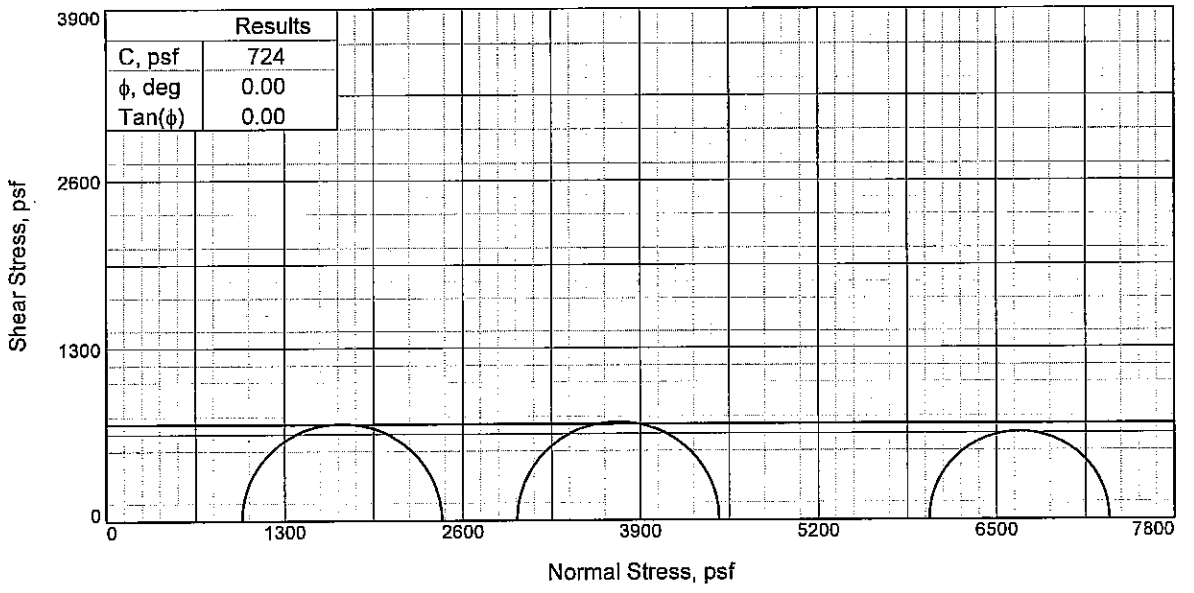
Client: U.S. ARMY CORPS OF ENGINEERS

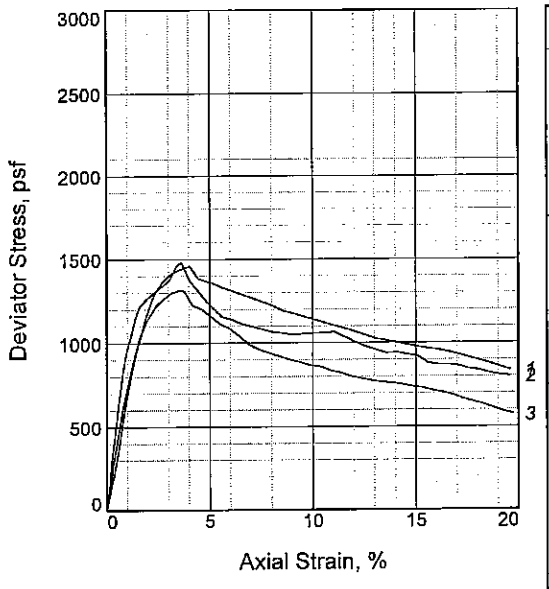
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-44UFT **Depth:** 28.80'
Sample Number: 9B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	64.0	65.1	65.9
	Dry Density, pcf	61.3	61.0	60.6
	Saturation, %	97.9	98.8	99.1
	Void Ratio	1.7919	1.8061	1.8215
	Diameter, in.	1.40	1.40	1.39
	Height, in.	3.00	3.00	3.05
At Test	Water Content, %	62.3	64.0	64.1
	Dry Density, pcf	61.3	61.0	60.6
	Saturation, %	95.3	97.0	96.4
	Void Ratio	1.7919	1.8061	1.8215
	Diameter, in.	1.40	1.40	1.39
	Height, in.	3.00	3.00	3.05
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.82	41.73
Fail. Stress, psf		1458	1478	1315
Strain, %		4.0	3.6	3.6
Ult. Stress, psf		990	1139	739
Strain, %				
σ_1 Failure, psf		2447	4476	7324
σ_3 Failure, psf		990	2997	6009

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH4 W/ SL

LL= 94 **PL=** 26 **PI=** 68

Assumed Specific Gravity= 2.74

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-44UFT **Depth:** 37.70'

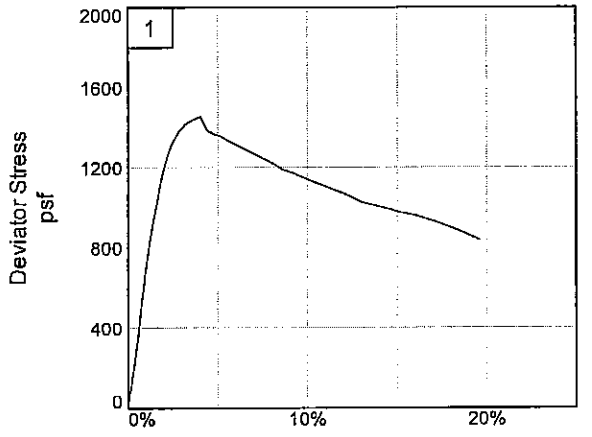
Sample Number: 11C

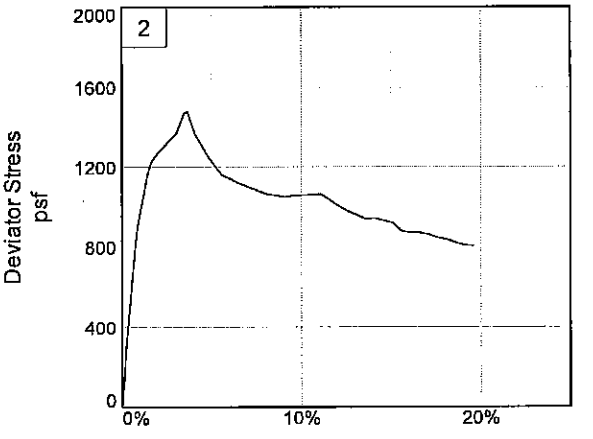
Proj. No.: 0022-0002 **Date Sampled:** 5/23/07

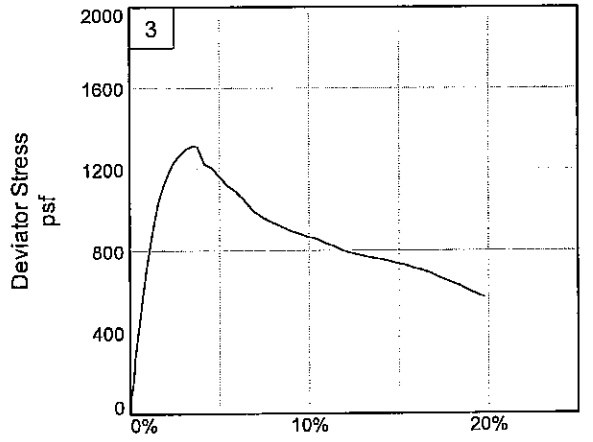
TRIAXIAL SHEAR TEST REPORT

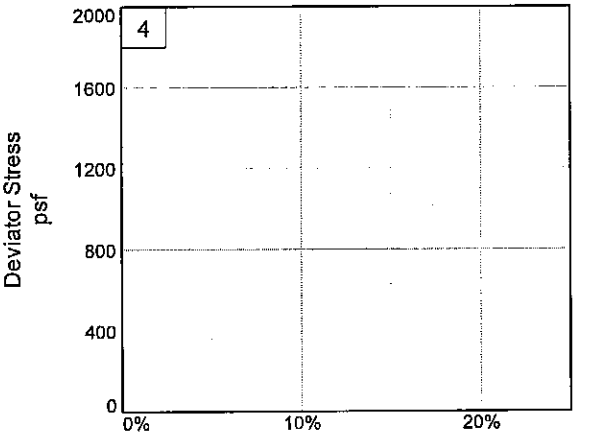
FFEBJV, LLC.

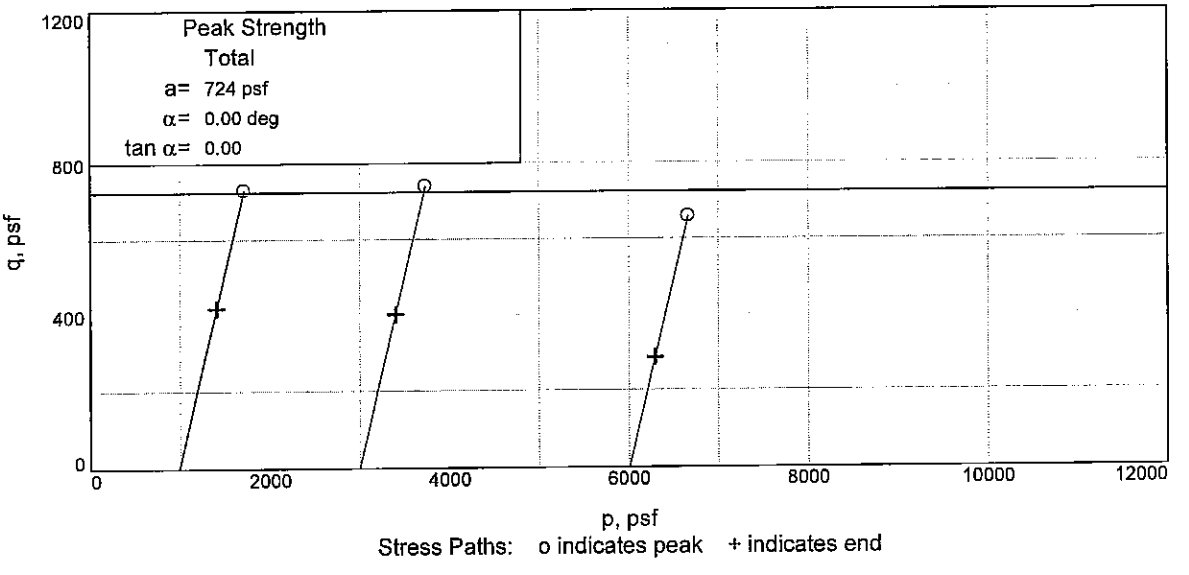
Tested By: LP **Checked By:** GMU











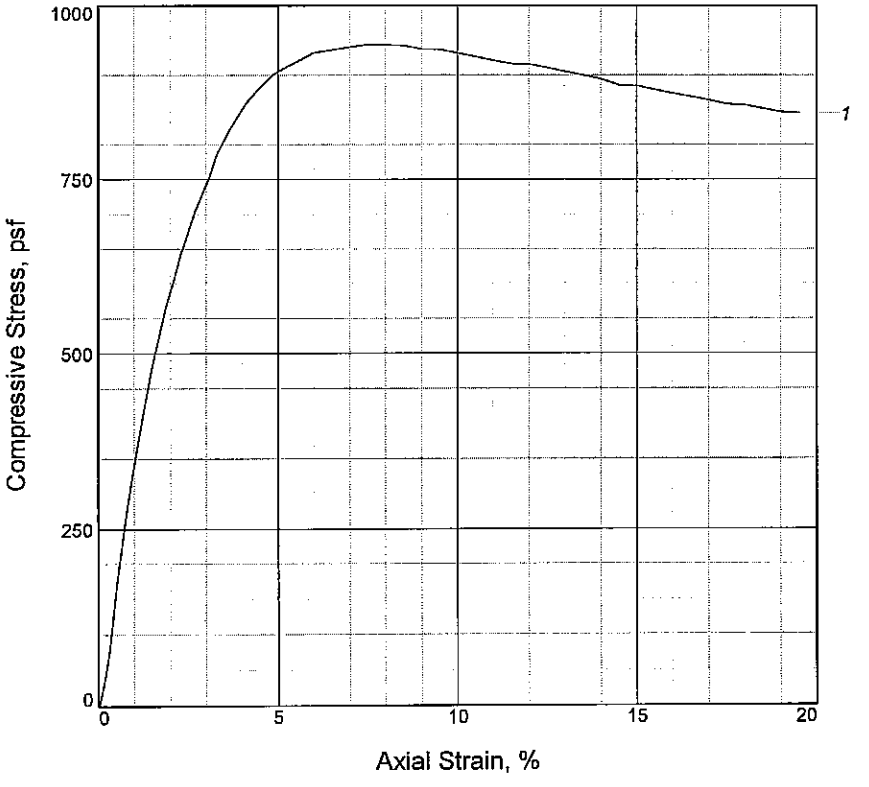
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-44UFT **Depth:** 37.70' **Sample Number:** 11C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: LP **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	944			
Undrained shear strength, psf	472			
Failure strain, %	7.5			
Strain rate, %/min.	1.00			
Water content, %	50.5			
Wet density, pcf	94.2			
Dry density, pcf	62.6			
Saturation, %	79.9			
Void ratio	1.7337			
Specimen diameter, in.	1.35			
Specimen height, in.	3.02			
Height/diameter ratio	2.23			

Description: SO GR CH4

LL = 85	PL = 29	PI = 56	Assumed GS= 2.74	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/23/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

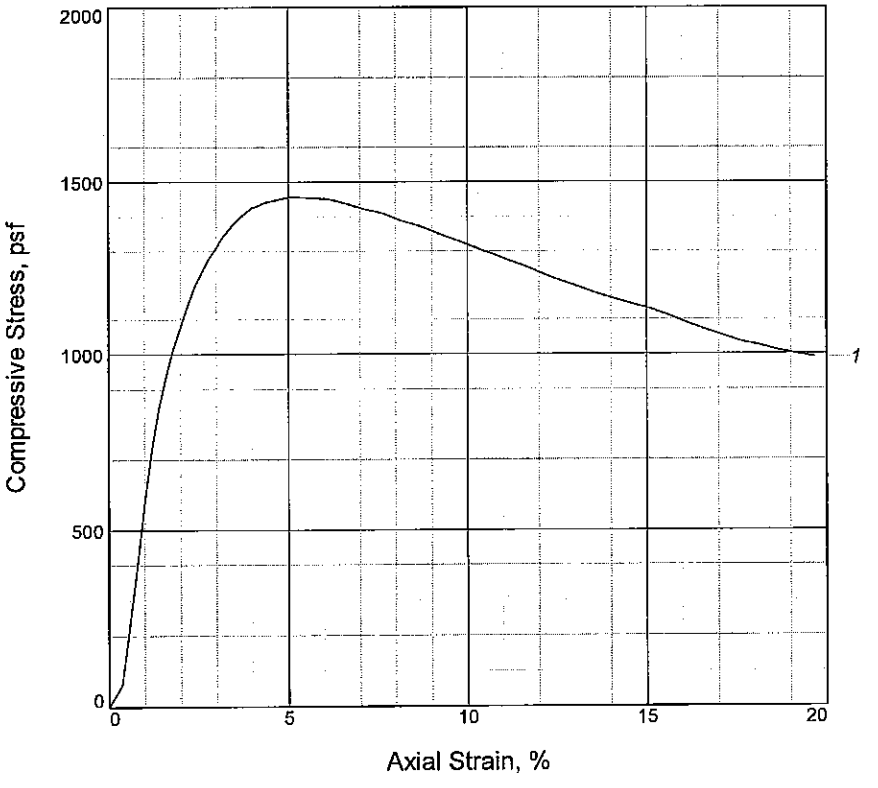
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-44UFT **Depth:** 41.70'
Sample Number: 12C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1457			
Undrained shear strength, psf	728			
Failure strain, %	5.1			
Strain rate, %/min.	1.00			
Water content, %	56.3			
Wet density, pcf	104.2			
Dry density, pcf	66.7			
Saturation, %	99.1			
Void ratio	1.5463			
Specimen diameter, in.	1.39			
Specimen height, in.	3.00			
Height/diameter ratio	2.15			

Description: M GR CH4 W/ SL, LNS ML

LL = 80	PL = 29	PI = 51	GS= 2.72	Type: UNDISTURBED

Project No.: 0022-0002

Date Sampled: 5/23/07

Remarks:
Other tests conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

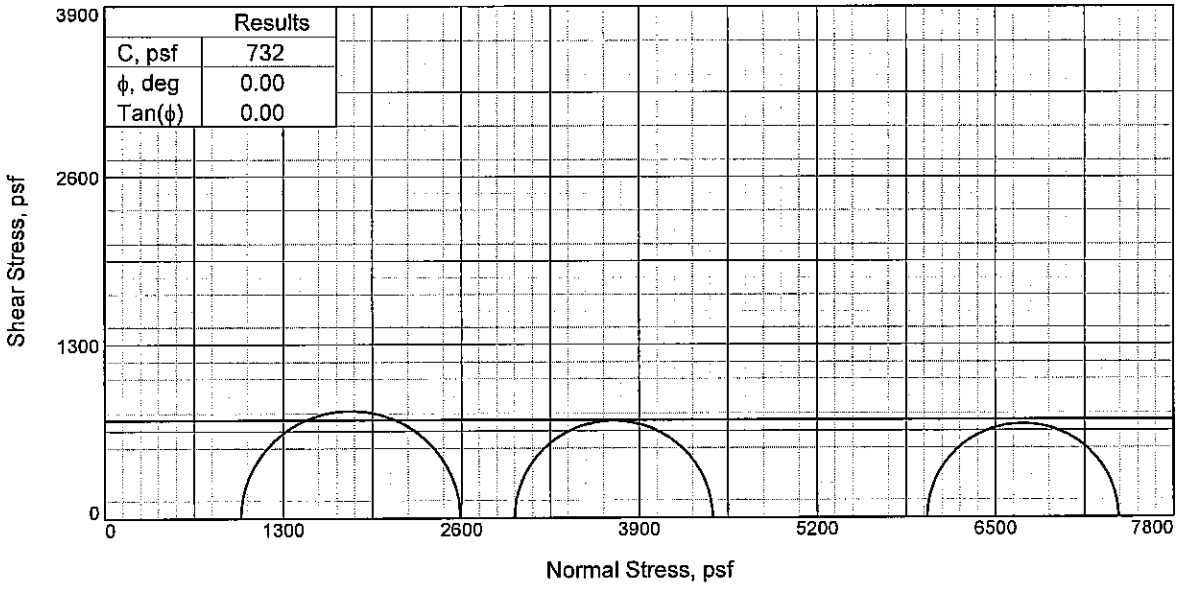
Source of Sample: WWHC-44UFT **Depth:** 45.70'

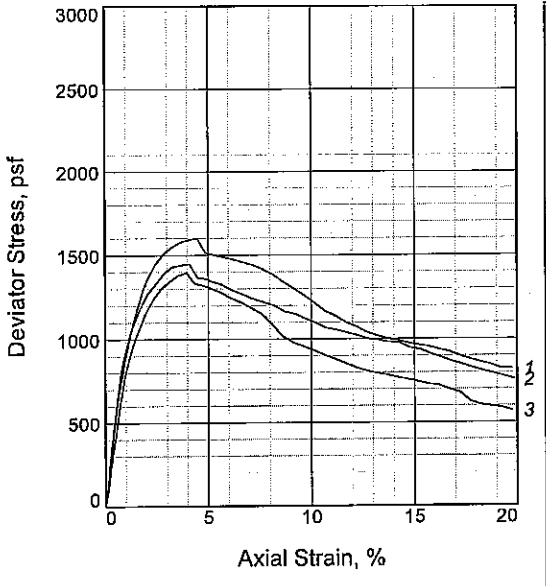
Sample Number: 13C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	60.4	59.6	62.0
	Dry Density, pcf	62.2	60.6	58.4
	Saturation, %	94.9	89.9	88.4
	Void Ratio	1.7304	1.8033	1.9085
	Diameter, in.	1.31	1.33	1.34
	Height, in.	3.00	3.00	3.00
At Test	Water Content, %	59.7	58.9	61.4
	Dry Density, pcf	62.2	60.6	58.4
	Saturation, %	93.8	88.9	87.4
	Void Ratio	1.7304	1.8033	1.9085
	Diameter, in.	1.31	1.33	1.34
	Height, in.	3.00	3.00	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	20.75	41.68
Fail. Stress, psf		1600	1448	1395
Strain, %		4.5	4.1	4.0
Ult. Stress, psf		976	947	758
Strain, %				
σ_1 Failure, psf		2592	4436	7397
σ_3 Failure, psf		992	2989	6002

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ SL

LL= 99 **PL=** 40 **PI=** 59
Assumed Specific Gravity= 2.72
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

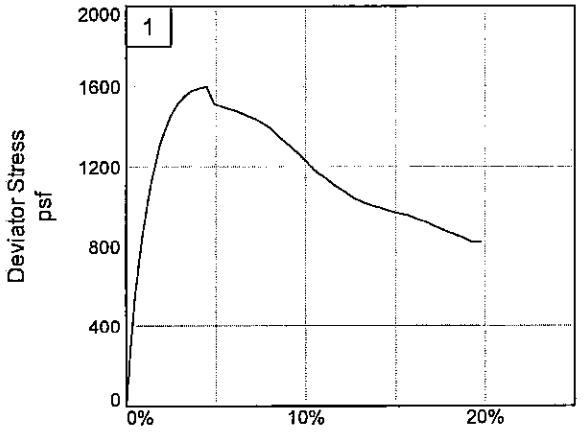
Client: U.S. ARMY CORPS OF ENGINEERS

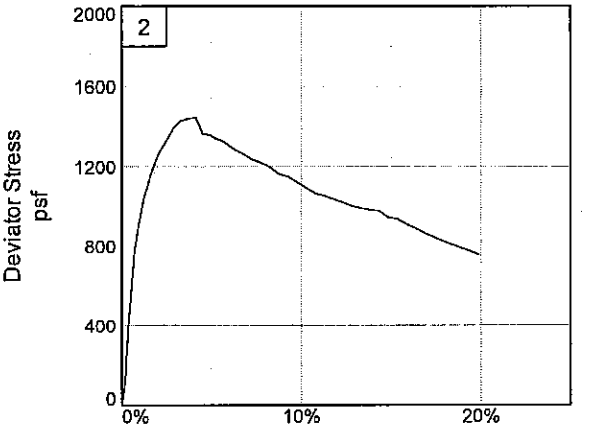
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-44UFT **Depth:** 49.70'
Sample Number: 14C
Proj. No.: 0022-0002 **Date Sampled:** 5/23/07

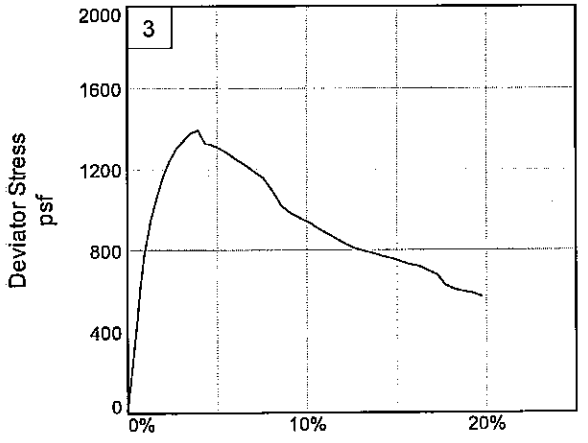
TRIAXIAL SHEAR TEST REPORT

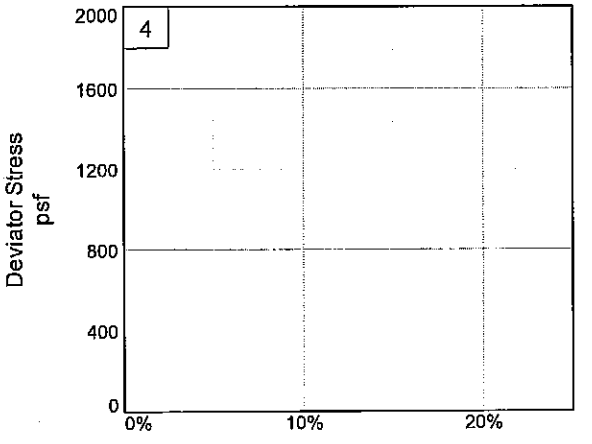
FFEBJV, LLC.

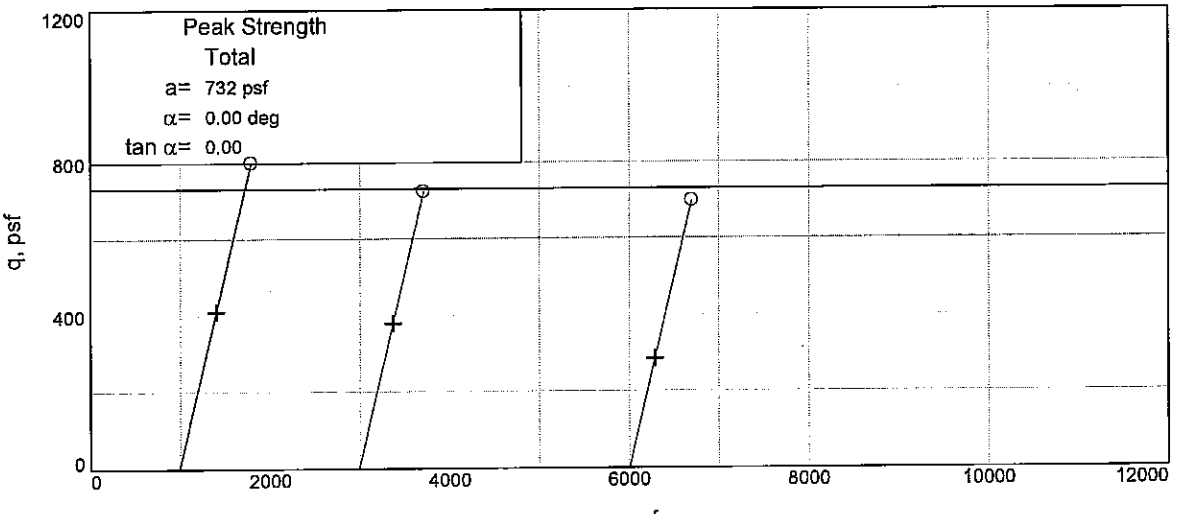
Tested By: LP **Checked By:** GMU











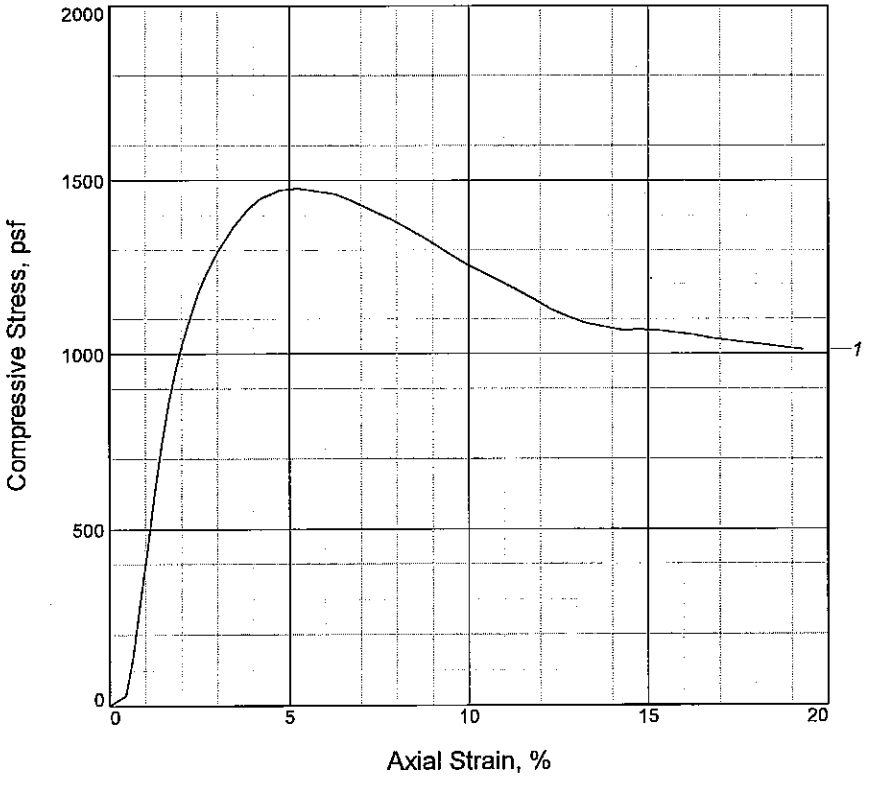
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-44UFT **Depth:** 49.70' **Sample Number:** 14C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: LP **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1477			
Undrained shear strength, psf	738			
Failure strain, %	5.3			
Strain rate, %/min.	1.00			
Water content, %	55.6			
Wet density, pcf	103.6			
Dry density, pcf	66.6			
Saturation, %	97.1			
Void ratio	1.5697			
Specimen diameter, in.	1.40			
Specimen height, in.	3.00			
Height/diameter ratio	2.15			

Description: M GR CH4 W/ SL

LL = 89	PL = 26	PI = 63	Assumed GS= 2.74	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/23/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

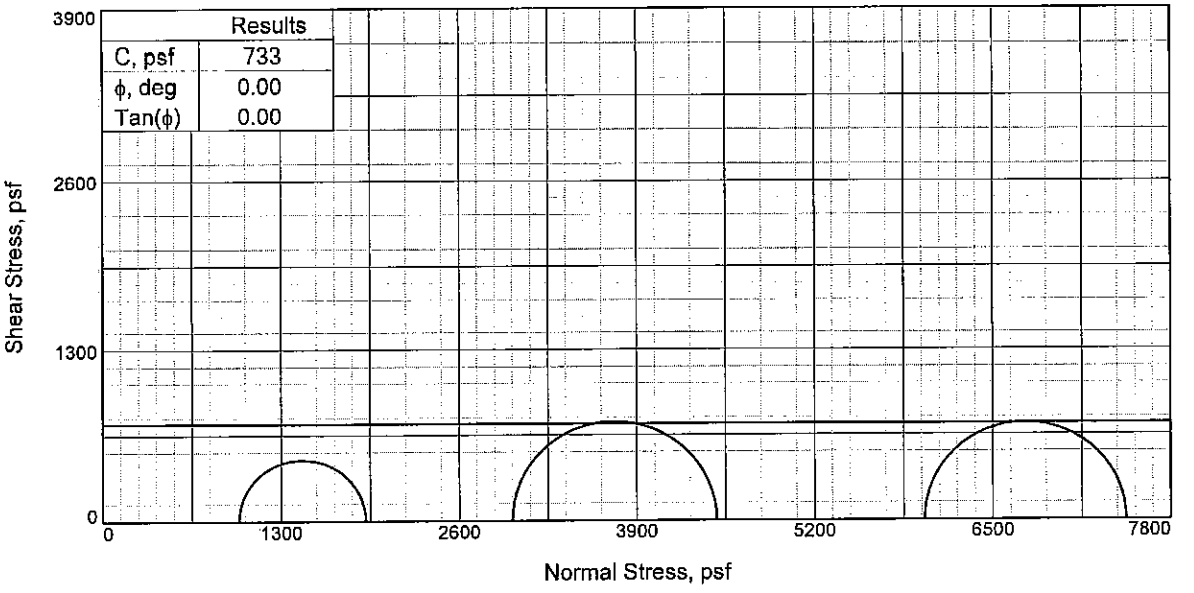
Client: U.S. ARMY CORPS OF ENGINEERS

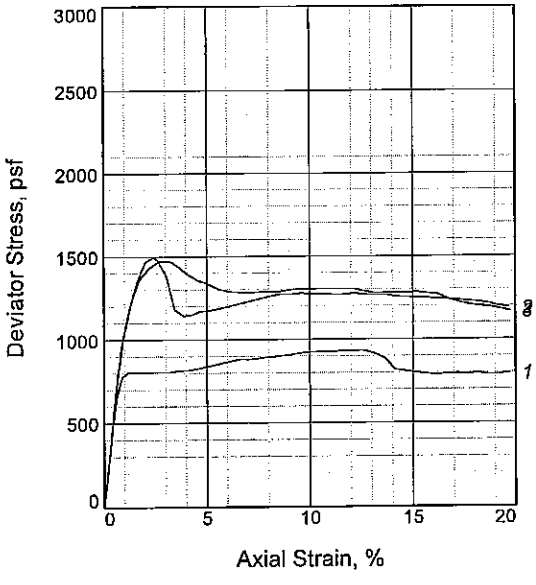
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-44UFT **Depth:** 53.70'
Sample Number: 15C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	64.4	61.3	56.6
	Dry Density, pcf	54.7	61.2	63.0
	Saturation, %	83.4	94.0	90.9
	Void Ratio	2.1015	1.7747	1.6937
	Diameter, in.	1.37	1.32	1.32
	Height, in.	3.00	3.00	3.00
At Test	Water Content, %	62.8	60.8	56.1
	Dry Density, pcf	54.7	61.2	63.0
	Saturation, %	81.3	93.2	90.1
	Void Ratio	2.1015	1.7747	1.6937
	Diameter, in.	1.37	1.32	1.32
	Height, in.	3.00	3.00	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.76	41.68
Fail. Stress, psf		924	1495	1472
Strain, %		10.1	2.4	3.1
Ult. Stress, psf		930	1252	1287
Strain, %				
σ_1 Failure, psf		1918	4485	7474
σ_3 Failure, psf		994	2989	6002

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ SL, LNS ML

LL= 91 **PL=** 27 **PI=** 64
Assumed Specific Gravity= 2.72
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

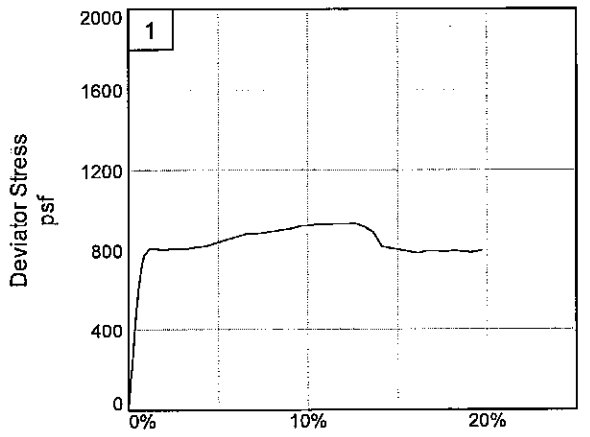
Client: U.S. ARMY CORPS OF ENGINEERS

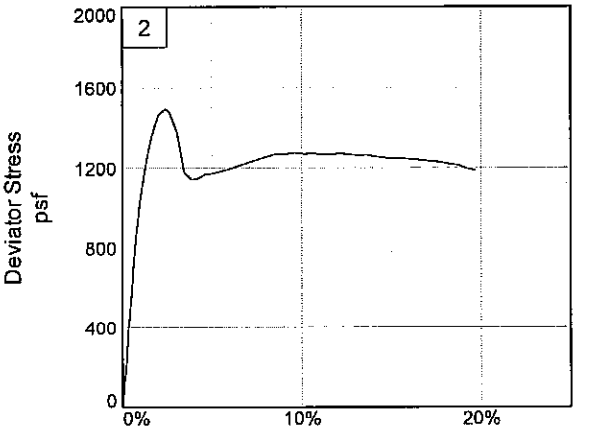
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-44UFT **Depth:** 61.70'
Sample Number: 17C
Proj. No.: 0022-0002 **Date Sampled:** 5-23-07

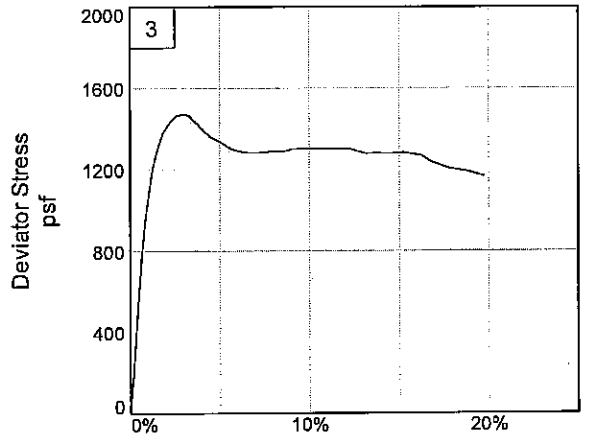
TRIAXIAL SHEAR TEST REPORT

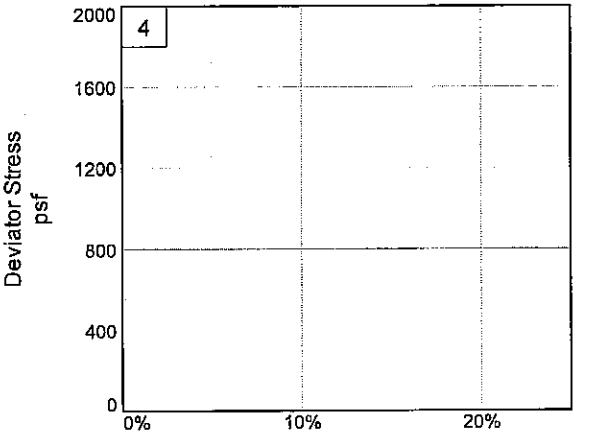
FFEBJV, LLC.

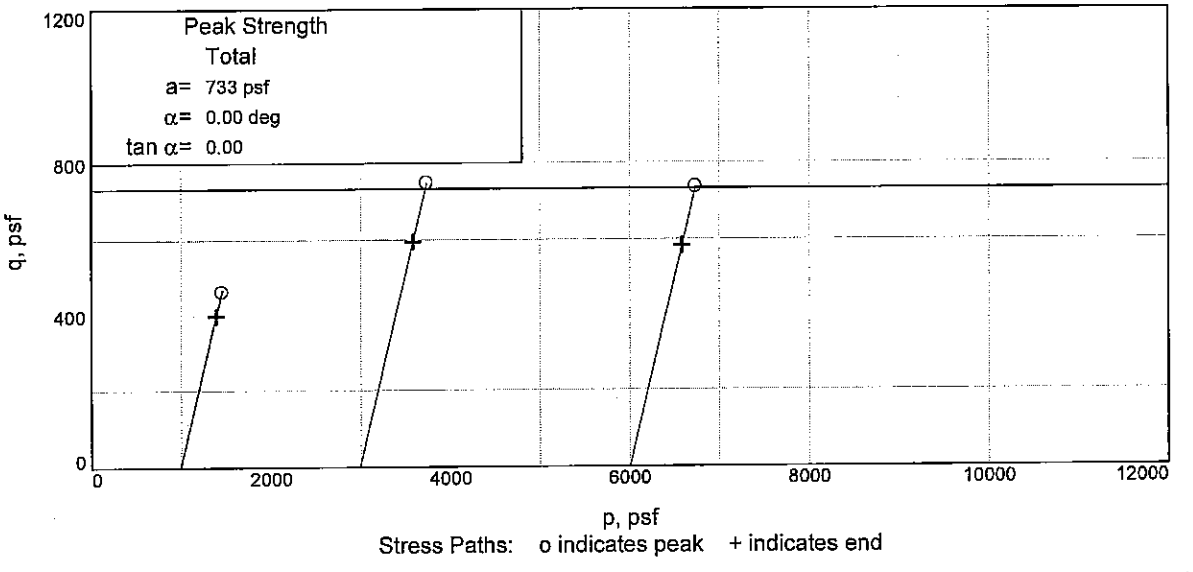
Tested By: CC **Checked By:** GMU











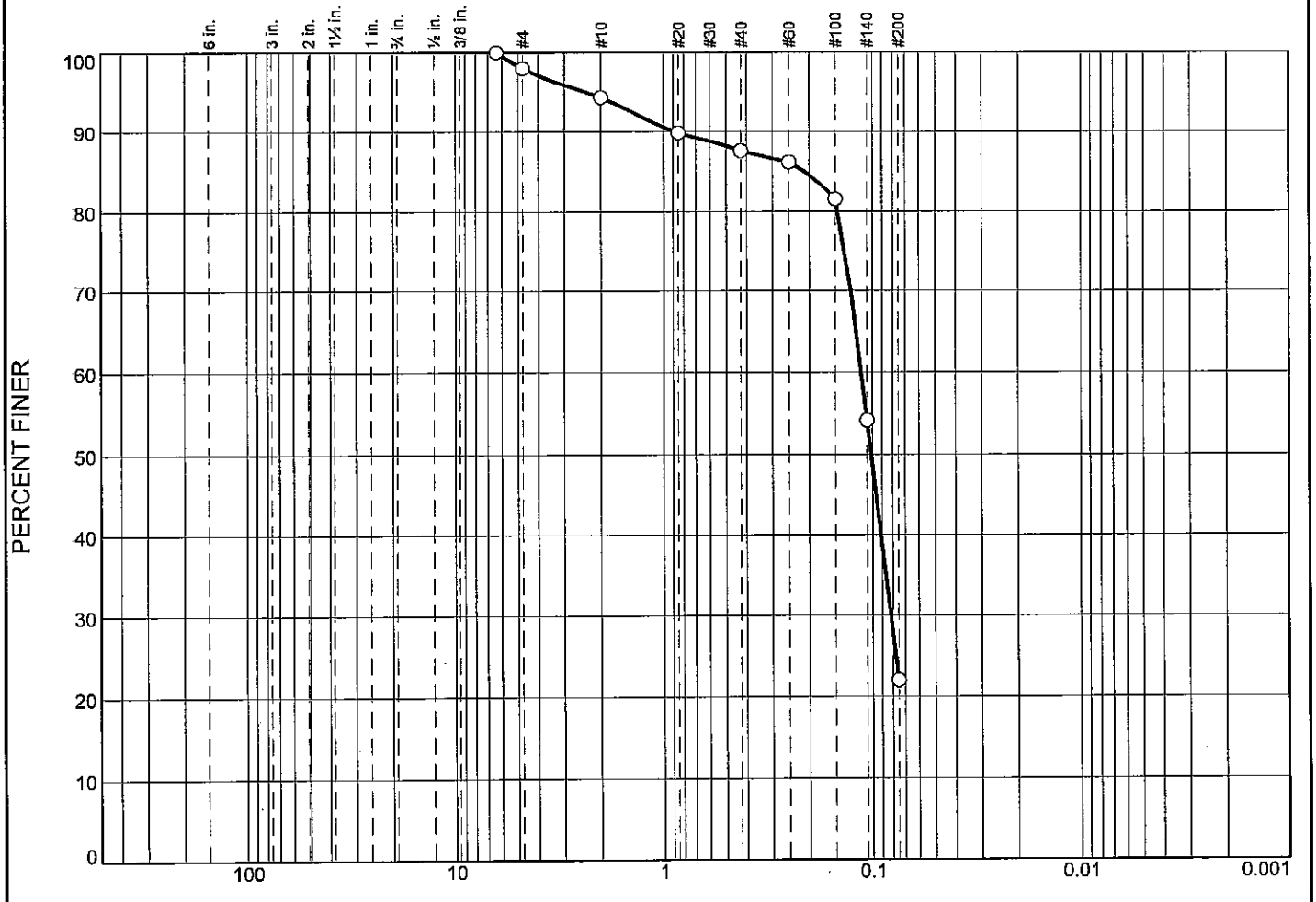
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-44UFT **Depth:** 61.70' **Sample Number:** 17C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	2.0	3.7	6.7	65.6	22.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2112	0.1129	0.1014	0.0818				

Material Description	USCS	AASHTO
○ GR SM1 W/ SIF	SM1	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Sample Source:** WWHC-44UFT **Depth:** 65.7 **Sample No.:** 18C

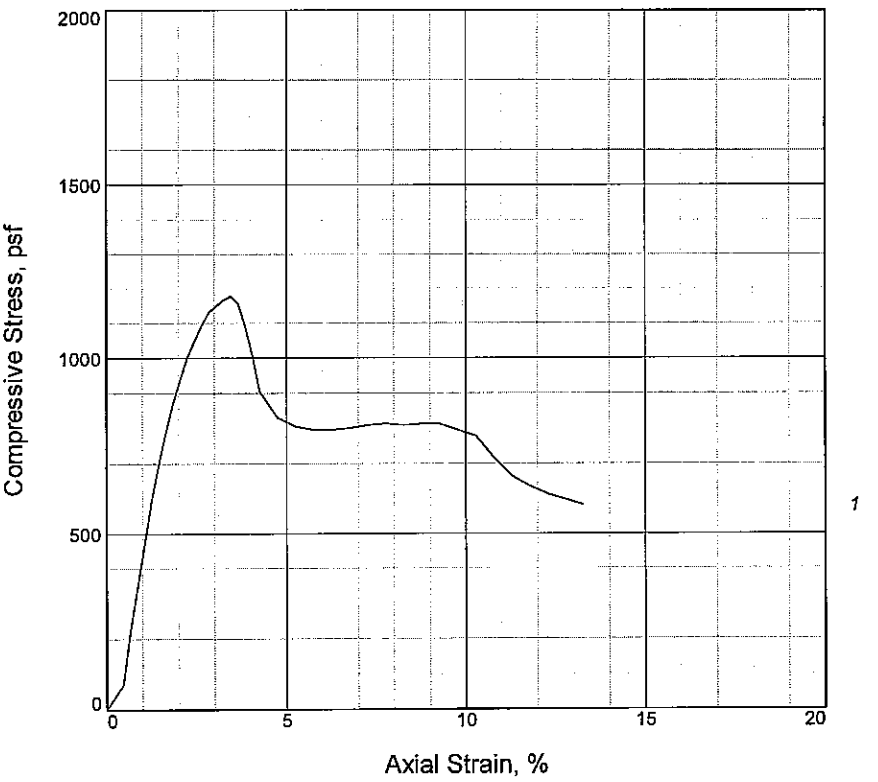
Remarks:

FFEBJV, LLC

St Rose, LA

Figure

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1176			
Undrained shear strength, psf	588			
Failure strain, %	3.5			
Strain rate, %/min.	14.00			
Water content, %	51.8			
Wet density, pcf	106.3			
Dry density, pcf	70.0			
Saturation, %	98.4			
Void ratio	1.4419			
Specimen diameter, in.	1.39			
Specimen height, in.	3.01			
Height/diameter ratio	2.16			

Description: M GR CH4 W/ SIF

LL = 74	**PL** = 28	**PI** = 46	**GS**= 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/23/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-44UFT **Depth:** 69.70'
Sample Number: 19C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

Bor. WWHC-44 UFT
STA. N 29^ 50' 11.09" W 090^ 07' 08.31"
OFFSET 40' from C/L
13 April 2007

GROUND EL. 5.5
0.0 0.8 25 CH VSTGR LBR RT
0.8 2.0 23 CH VSTGR LBR RT
2.0 2.8 30 CH ST GR LBR RT
2.8 4.0 28 4.0CH ST GR LBR O 1240121 51 23 27 31
4.0 4.8 30 4.8CH SIS M GR LBR O
4.8 5.7 46 5.7WD BR
5.7 8.0 8.0NS
8.0 8.8 51 CH SO GR O WD
8.8 9.7 37 CH SO GR S
9.7 12.0 36 CH SO GR S
12.0 12.8 38 CH SO LBRLGR
12.8 13.7 39 CH SO LBRLGR
13.7 16.0 38 CH SO LBRLGR
16.0 16.8 38 CH SO GR
16.8 17.7 41 17.7CH SO GR
17.7 20.0 32 20.0CL M GR
20.0 20.8 50 CH M GR
20.8 21.7 40 21.7CH M GR
21.7 24.0 41 24.0CL M GR 575114 49 25 37 220
24.0 24.8101 CH O M GR WD
24.8 25.7101 25.7CH O M GR WD
25.7 28.0130 28.0PT ST DGR WD
28.0 28.8 63 28.8CH M GR SL O
28.8 29.7 48 29.7CH SIS M GR 580102 64 27 54 291
29.7 32.0 33 32.0CL M GR
32.0 32.8 46 CH SIS M GR
32.8 33.7 58 CH SIS M GR SL
33.7 36.0 61 36.0CH SIS M GR
36.0 36.8 62 36.8CH M GR SL
36.8 37.7 60 37.7CL VSOGR SL
37.7 40.0 70 CH M GR SL
40.0 40.8 69 CH SO GR SL
40.8 41.7 61 CH SO GR SL
41.7 42.6 60 CH SO GR 472 94 85 29 51 420
42.6 44.0 63 CH SO GR SL
44.0 44.8 68 44.8CH SO GR SL

44.8 45.7 65 CH SISSO GR SL
45.7 46.6 62 CH SIS M GR SL 728104 80 29 56 460
46.6 48.0 61 CH SIS M GR SL
48.0 48.8 60 CH SIS M GR SL
48.8 49.7 61 49.7CH SIS M GR SL
49.7 50.6 62 50.6CH M GR SL
50.6 52.0 65 52.0CH SIS M GR SL
52.0 52.8 65 CH M GR SL
52.8 53.7 59 CH M GR SL
53.7 54.6 56 CH M GR SL 738104 89 26 56 540
54.6 56.0 58 56.0CH M GR SL
56.0 56.8 61 CH SIS M GR
56.8 57.7 57 CH SIS M GR SL
57.7 58.6 56 58.6CH SIS M GR SL
58.6 60.0 51 CH M GR SL
60.0 60.8 60.8CH M GR SL
60.8 61.7 57 CH SIS M GR SL
61.7 64.0 58 64.0CH SIS M GR SL
64.0 64.8 26 SM GR SIF
64.8 65.7 26 SM GR SIF
65.7 68.0 27 68.0SM GR SIF
68.0 68.8 32 CL SO GR SIF S
68.8 69.7 32 69.7CL SO GR SIF S
69.7 72.0 58 72.0CH M GR SIF 588106 74 28 52 700
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 9.10/-3.60 Water Con: 38.00
LL,PL,PI : 61, 27, 34 Dry Dens : 80.00
Cohesion : 0.146 Saturat : 92.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 14.00/-8.50 Water Con: 43.00
LL,PL,PI : 59, 27, 32 Dry Dens : 76.00
Cohesion : 0.230 Saturat : 92.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 17.10/-11.60 Water Con: 41.00
LL,PL,PI : 65, 19, 46 Dry Dens : 80.00
Cohesion : 0.186 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : PT
Depth/Ele: 26.00/-20.50 Water Con:206.00
LL,PL,PI : 217, 61,156 Dry Dens : 24.00
Cohesion : 0.501 Saturat : 90.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 34.00/-28.50 Water Con: 52.00
LL,PL,PI : 62, 32, 30 Dry Dens : 70.00
Cohesion : 0.284 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-32.50 Water Con: 65.00
LL,PL,PI : 94, 26, 68 Dry Dens : 61.00
Cohesion : 0.362 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 50.00/-44.50 Water Con: 60.00
LL,PL,PI : 99, 40, 59 Dry Dens : 60.00
Cohesion : 0.366 Saturat : 91.00
Shear Str: Frict Ang: 00.00

Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES

Test Type:(Q) Classif : CH

Depth/Ele: 62.00/-56.50 Water Con: 61.00

LL,PL,PI : 91, 27, 64 Dry Dens : 60.00

Cohesion : 0.367 Saturat : 89.00

Shear Str: Frict Ang: 00.00

Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program

Assigned By: _____

Current Date: 12/6/2007

Project Number: 0022-0002
Boring: WWHC-45UCL

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	VST GR & T CL6 W/ LYS ML, RT	CL6		19												
1B	0.8	VST BR CL6 W/ RT, SIF	CL6	3	15	106	121	68	UC	--	3388	6777	41	19	22	1.50	
2A	2.0	ST GR & T CL6 W/ LYS ML, RT	CL6		19												
2B	2.8	VST GR & T CL6 W/ LYS ML, RT	CL6		18												
3A	4.0	VST GR & T CL6 W/ LYS ML	CL6		22												
3B	4.8	VST BR & GR CL6 W/ WD	CL6		18				UU				45	21	24	1.25	DIST.
4A	6.0	ST GR & T CL6 W/ LYS ML	CL6		26												
5A	8.0	ST GR CH2 W/ O	CH2		29												
NS	8.8	NO SAMPLE	NS														
6A	12.0	ST GR CL6 W/ LNS ML, O	CL6		32												
6B	12.8	ST GR CL6 W/ WD, O	CL6		29	93	120	98	UU	0	1022		45	18	27	0.65	
NS	13.4	NO SAMPLE	NS														
7A	16.0	ST GR CH3 W/ ARS ML, CC	CH3		33												
7B	16.8	ST GR CH3 W/ ARS ML, CC	CH3	10	28	96	123	100	UC	--	1552	3103	69	20	49	1.00	
NS	17.5	NO SAMPLE	NS														
8A	20.0	M GR & T CL6 W/ LYS ML, CC	CL6		34												
8B	20.8	M GR CH2 W/ LYS ML, CC	CH2		35												
8C	21.7	M GR CH2 W/ RT, CC	CH2		34	89	119	100	UU	0	755		54	16	38	0.60	
9A	24.0	M GR CL6	CL6		35												
9B	24.8	M GR CL6	CL6		33												
9C	25.7	M GR CH3	CH3		39	82	114	98	UU	0	627		65	20	45	0.40	
9D	26.6	GR ML2 W/ LYS CH	ML2		35												
10A	28.0	M GR CH2	CH2		36												
10B	28.8	M GR CH2 W/ LYS ML	CH2		36												
10C	29.7	M GR CH4 W/ ARS ML, TR- O	CH4		49	74	110	100	UU	0	722		74	22	52	0.44	
10D	30.6	SO GR CH4 W/ ARS ML, TR- O	CH4		70												
11A	32.0	SO GR CH4 W/ TR- O	CH4		73												
11B	32.8	SO GR CHOA	CHOA		91	49	94	100	UU	0	401		142	41	101	0.35	
11C	33.7	M GR CHOC	CHOC	4	118	40	89	100	UC	--	795	1590	196	43	153	0.45	OC= 21.1%
12A	36.0	M GR & BR CHOA W/ WD, ARS ML	CHOA		94												
12B	36.8	M GR CL6 W/ O	CL6		72	58	100	100	UU	0	749		47	17	30	0.43	
12C	37.7	M GR CH4 W/ ARS ML, O	CH4		50												
13A	40.0	M GR CH4	CH4		61												
13B	40.8	M GR CH4	CH4		57												
13C	41.7	M GR CH4	CH4		64	62	101	98					90	31	59		CON
13D	42.6	M GR CH4	CH4		59												

Checked by: WJY
File Name: TO 2

Remarks: _____
FFEBJV, LLC.

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program

Assigned By: _____

Current Date: 12/6/2007

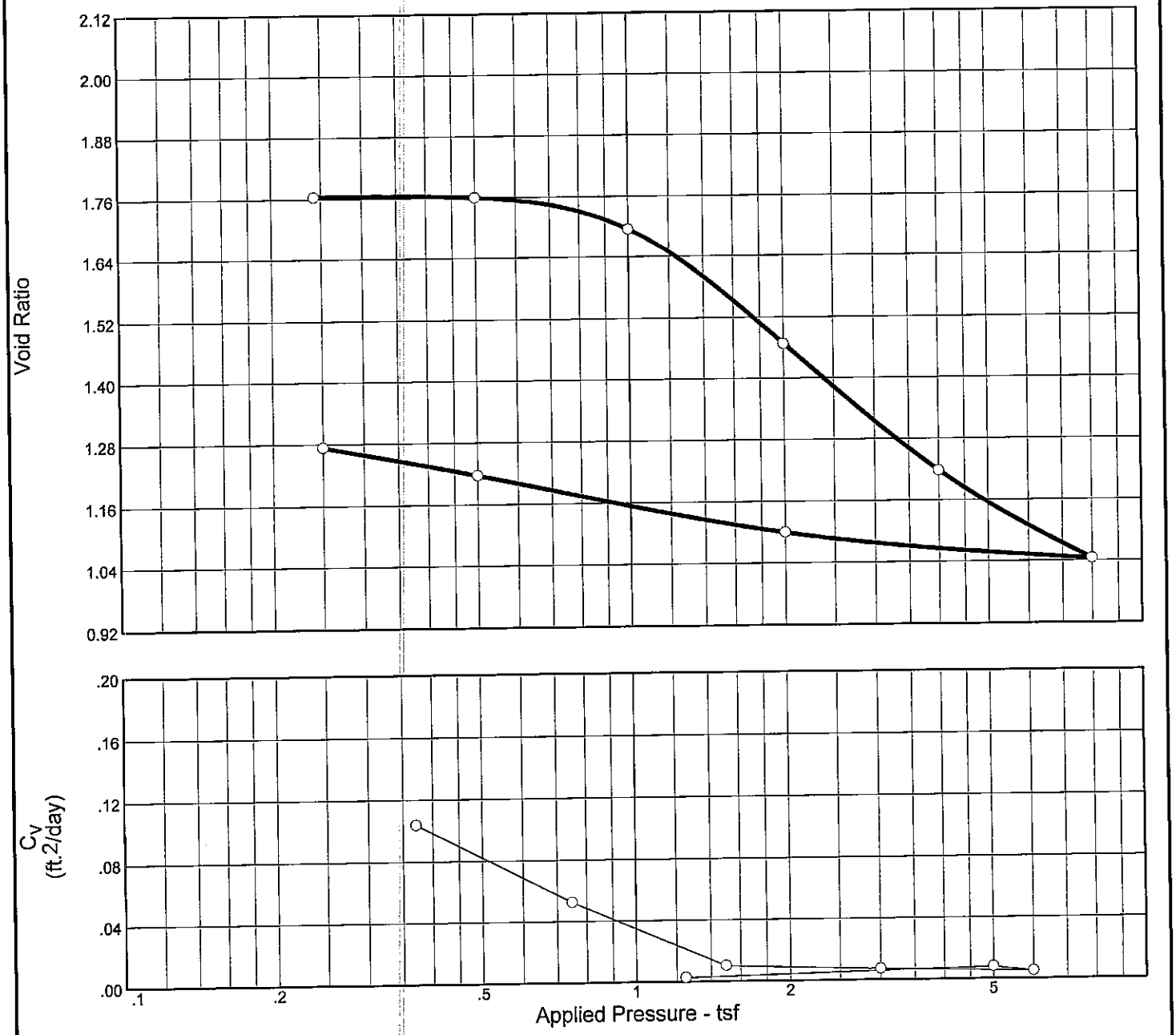
Project Number: 0022-0002
Boring: WWHC-45UCL

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
14A	44.0	M GR CH4 W/ LNS ML	CH4		44												
14B	44.8	M GR CH4 W/ LNS ML	CH4		63	64	103	100	UU	0	695		84	25	59	0.34	
14C	45.7	M GR CH4 W/ ARS ML	CH4		53												
14D	46.6	M GR CH4 W/ ARS ML	CH4		58												
15A	48.0	GR ML2	ML2		33												
15B	48.8	M GR CL6 W/ LNS & LYS ML	CL6		37												
15C	49.7	M GR CL6 W/ LNS & LYS ML	CL6	8	42	78	111	97	UC	–	549	1098	41	18	23	0.30	
16A	52.0	SO GR CH4 W/ ARS ML	CH4		64												
16B	52.8	SO GR CH4 W/ ARS ML	CH4		60												
16C	53.7	SO GR CH4 W/ ARS ML	CH4		60	64	103	100	UU	0	266		72	20	52	0.23	
16D	54.6	SO GR CH4 W/ ARS ML	CH4		65												
17A	56.0	SO GR CH4 W/ ARS ML	CH4		62												
17B	56.8	M GR CH4 W/ ARS ML	CH4		52												
17C	57.7	M GR CH4 W/ ARS ML	CH4	7	55	67	104	98	UC	–	684	1369	89	30	59	0.35	
17D	58.6	M GR CH4 W/ ARS ML	CH4		54												
18A	60.0	M GR CH4	CH4		57												
18B	60.8	M GR CH4	CH4		57												
18C	61.7	M GR CH4	CH4	6	58	66	105	100	UC	–	812	1623	91	29	62	0.35	
18D	62.6	M GR CH4 W/ ARS ML	CH4		57												
19A	64.0	M GR CH4 W/ LNS & ARS ML	CH4		57												
19B	64.8	M GR CH4 W/ ARS ML	CH4		53												
19C	65.7	M GR CH4 W/ ARS ML	CH4		56												
19D	66.6	M GR CH4 W/ LNS & ARS ML	CH4		51												
20A	68.0	M GR CH4 W/ ARS ML	CH4		70												
20B	68.8	M GR CH4 W/ ARS ML	CH4		55												
20C	69.7	M GR CH4 W/ ARS ML, SL	CH4	3	59	65	103	99	UC	–	814	1628	85	29	56	0.44	

Checked by: WSY
File Name: TO 2

Remarks: _____
FFEBJV, LLC.

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
98.0 %	63.6 %	61.6	90	59	2.74	1.08	0.87	1.778

MATERIAL DESCRIPTION	USCS	AASHTO
M GR CH4	CH4	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-45UCL **Sample No.:** 13C **Elev./Depth:** 41.7

FFEBJV, LLC

St Rose, LA

Remarks:
Specific gravity is assumed

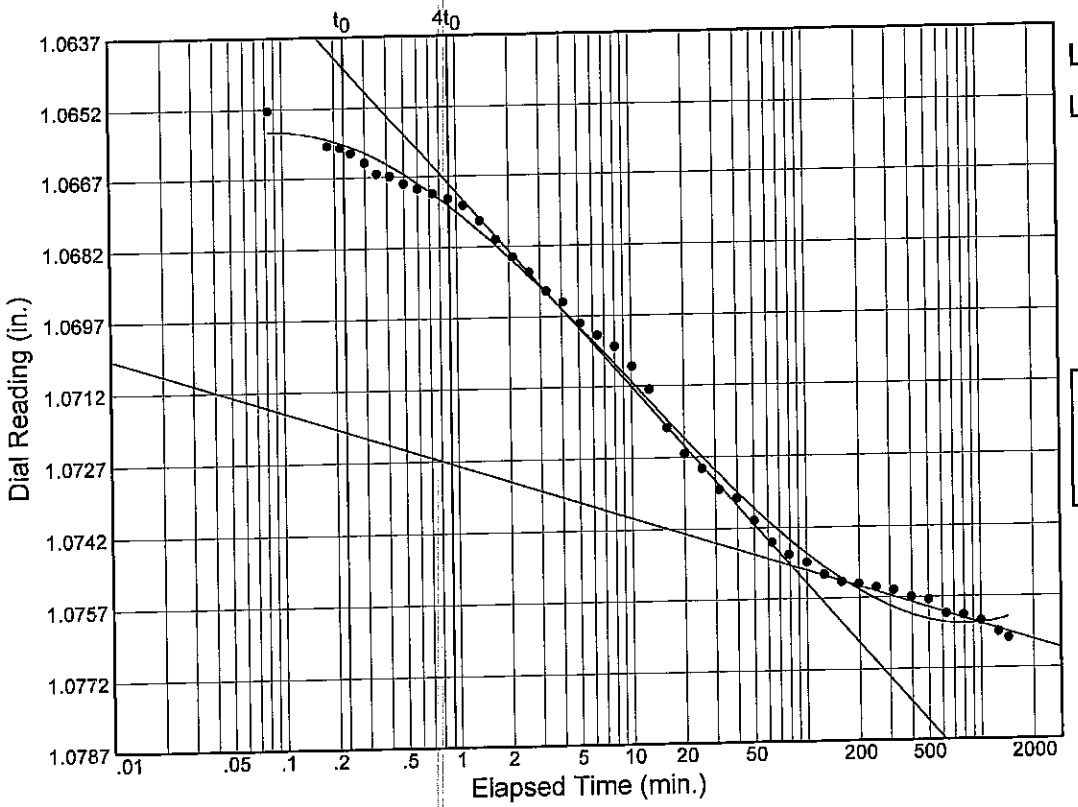
Tested by: JMB
Calculated by: WJY
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

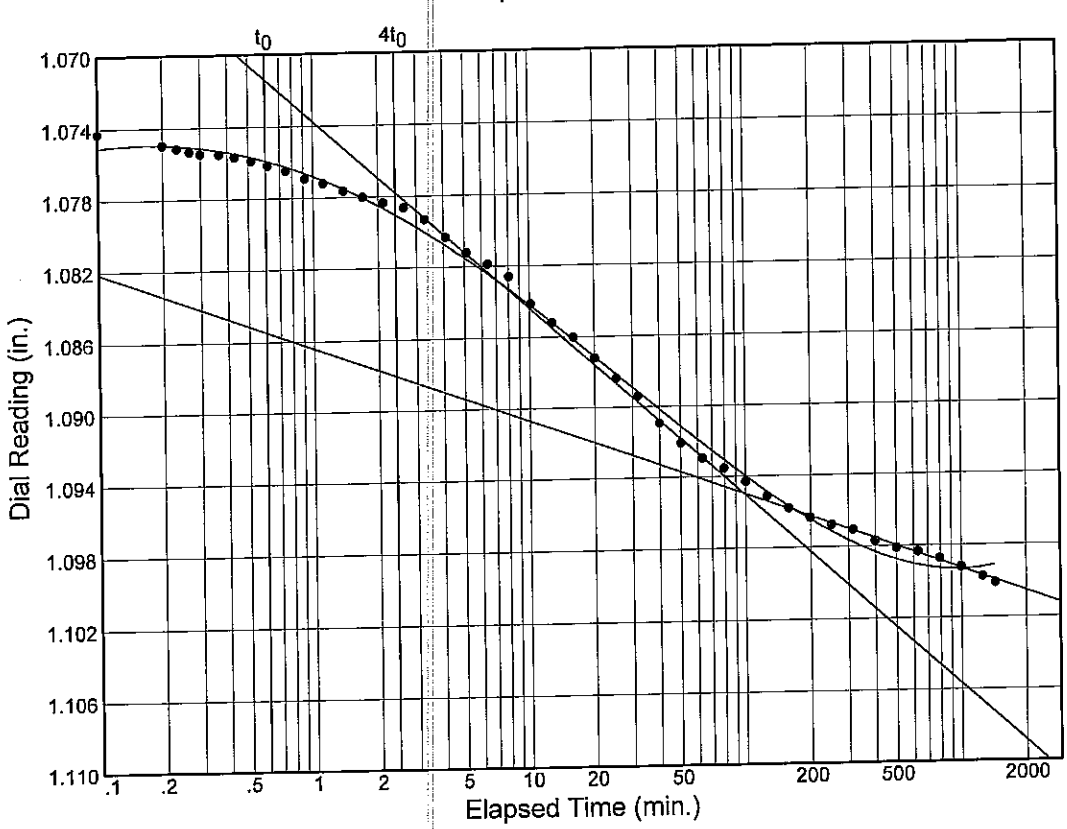
Source: WWHC-45UCL Sample No.: 13C Elev./Depth: 41.7



Load No.= 2
Load= 0.50 tsf
D_0 = 1.06467
D_{50} = 1.06984
D_{100} = 1.07501
T_{50} = 4.78 min.

C_v @ T_{50}
0.10 ft.^{2}/day

C_α = 0.001



Load No.= 3
Load= 1.00 tsf
D_0 = 1.07272
D_{50} = 1.08384
D_{100} = 1.09495
T_{50} = 9.17 min.

C_v @ T_{50}
0.05 ft.^{2}/day

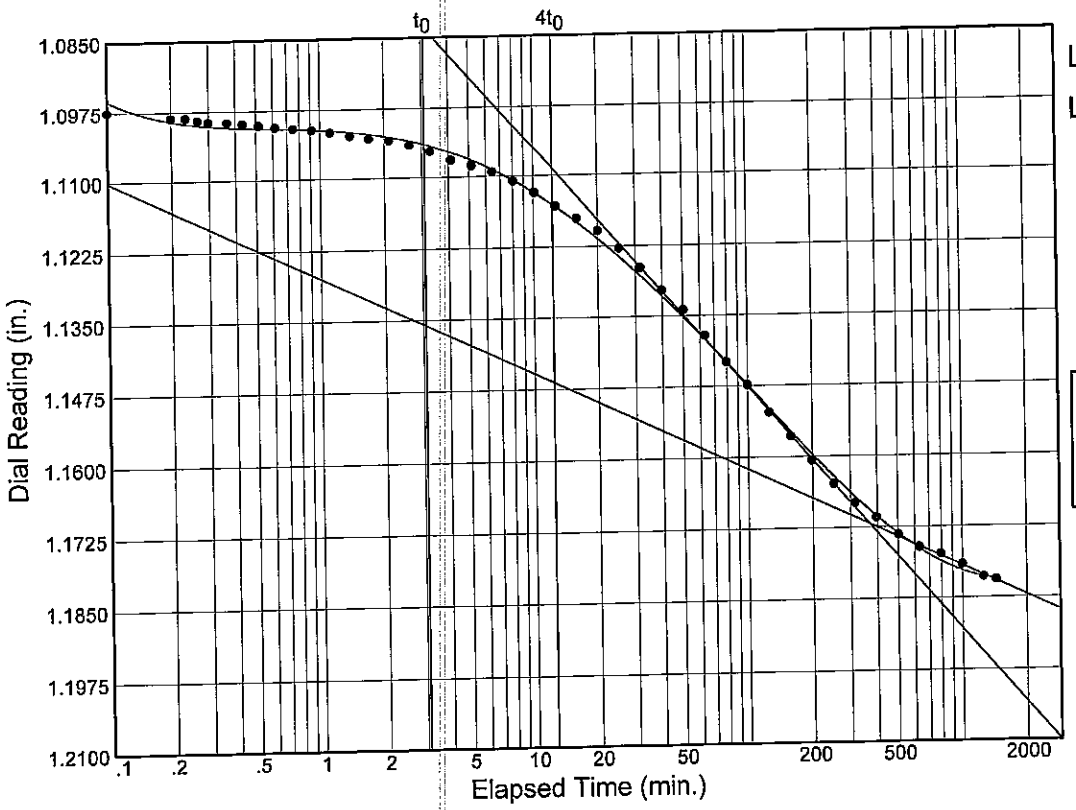
C_α = 0.004

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

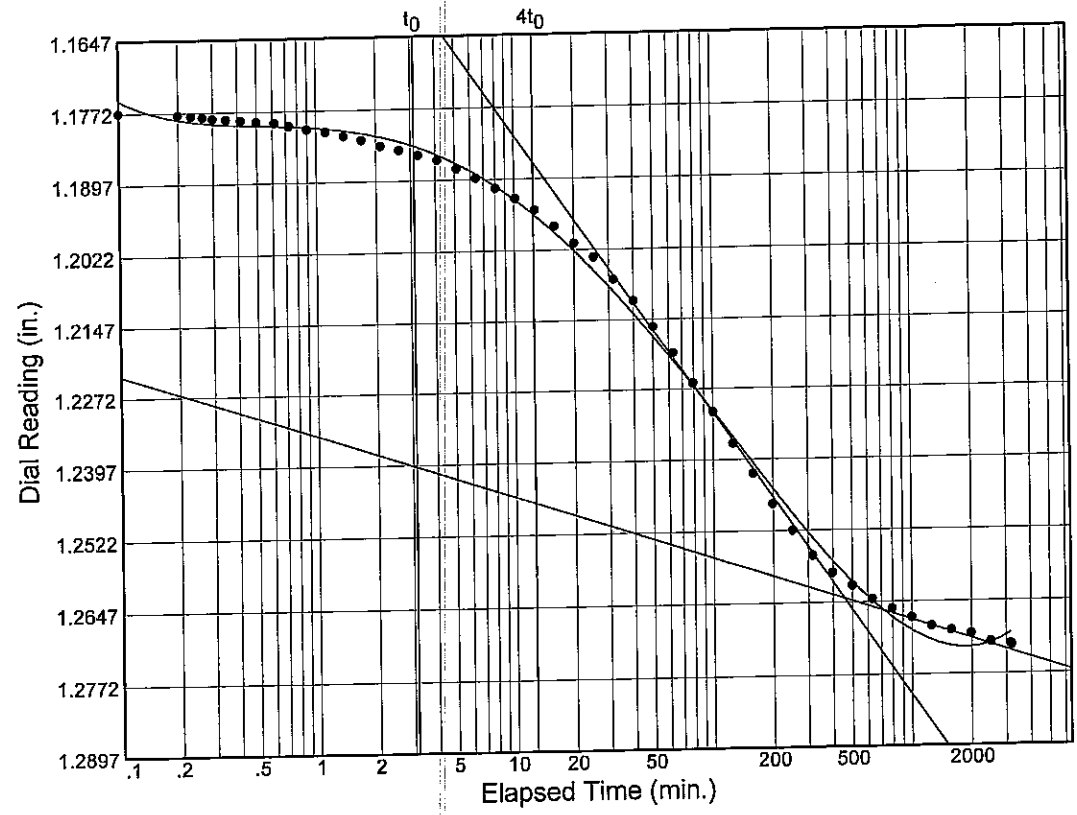
Source: WWHC-45UCL Sample No.: 13C Elev./Depth: 41.7



Load No.= 4
Load= 2.00 tsf
D_0 = 1.09313
D_{50} = 1.13249
D_{100} = 1.17186
T_{50} = 42.45 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.018



Load No.= 5
Load= 4.00 tsf
D_0 = 1.17140
D_{50} = 1.21771
D_{100} = 1.26401
T_{50} = 49.83 min.

C_v @ T_{50}
0.01 ft.^{2}/day

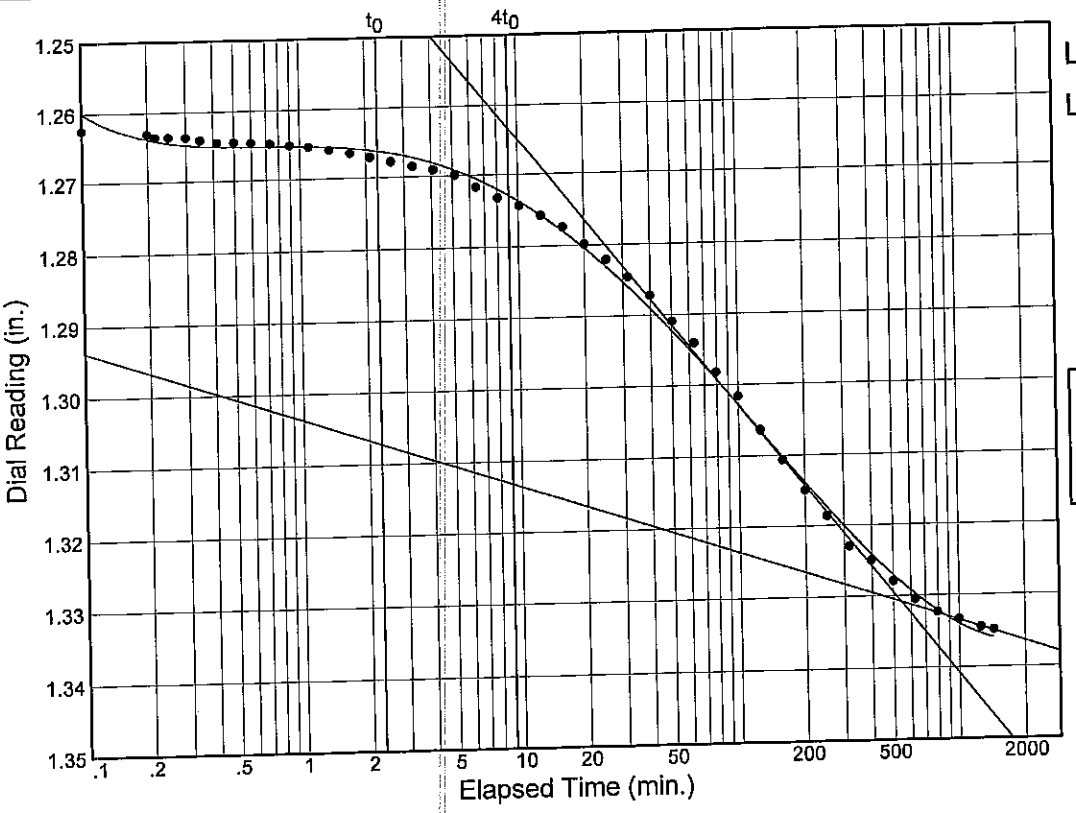
C_α = 0.012

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

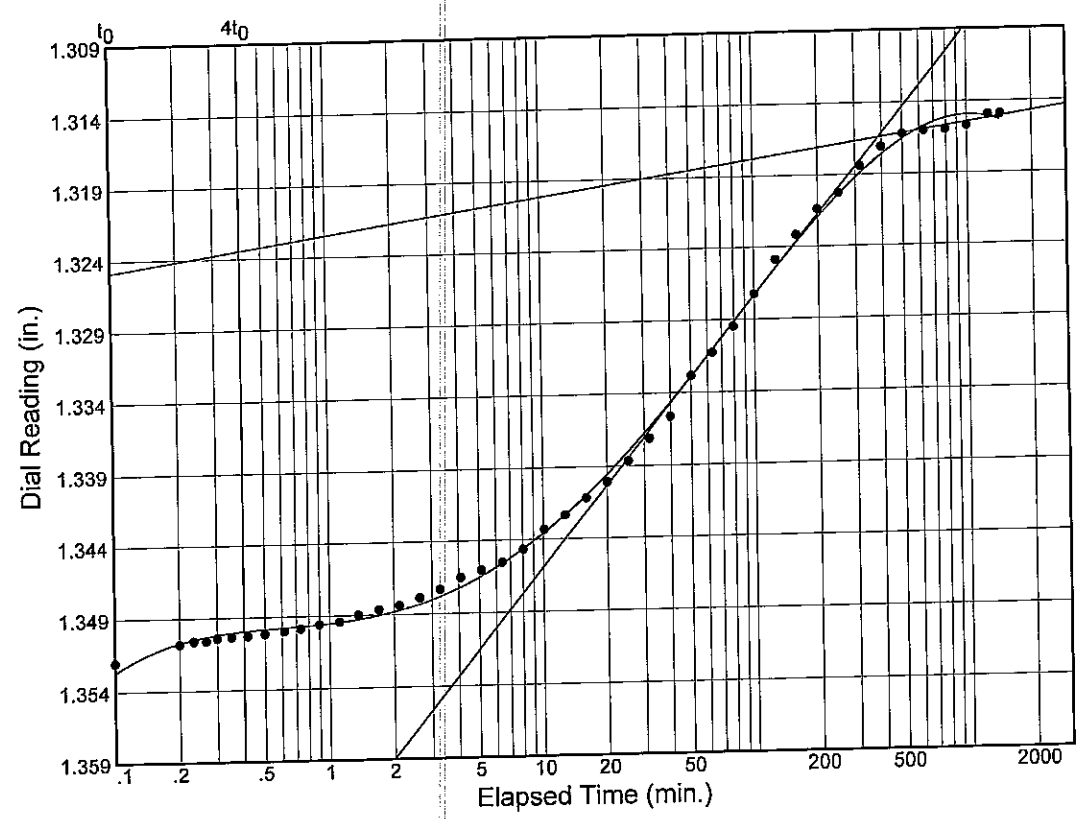
Source: WWHC-45UCL Sample No.: 13C Elev./Depth: 41.7



Load No.= 6
Load= 8.00 tsf
D_0 = 1.25966
D_{50} = 1.29526
D_{100} = 1.33087
T_{50} = 61.21 min.

C_v @ T_{50}
0.00 ft.^{2}/day

C_α = 0.012



Load No.= 7
Load= 2.00 tsf
D_0 = 1.35546
D_{50} = 1.33592
D_{100} = 1.31638
T_{50} = 33.74 min.

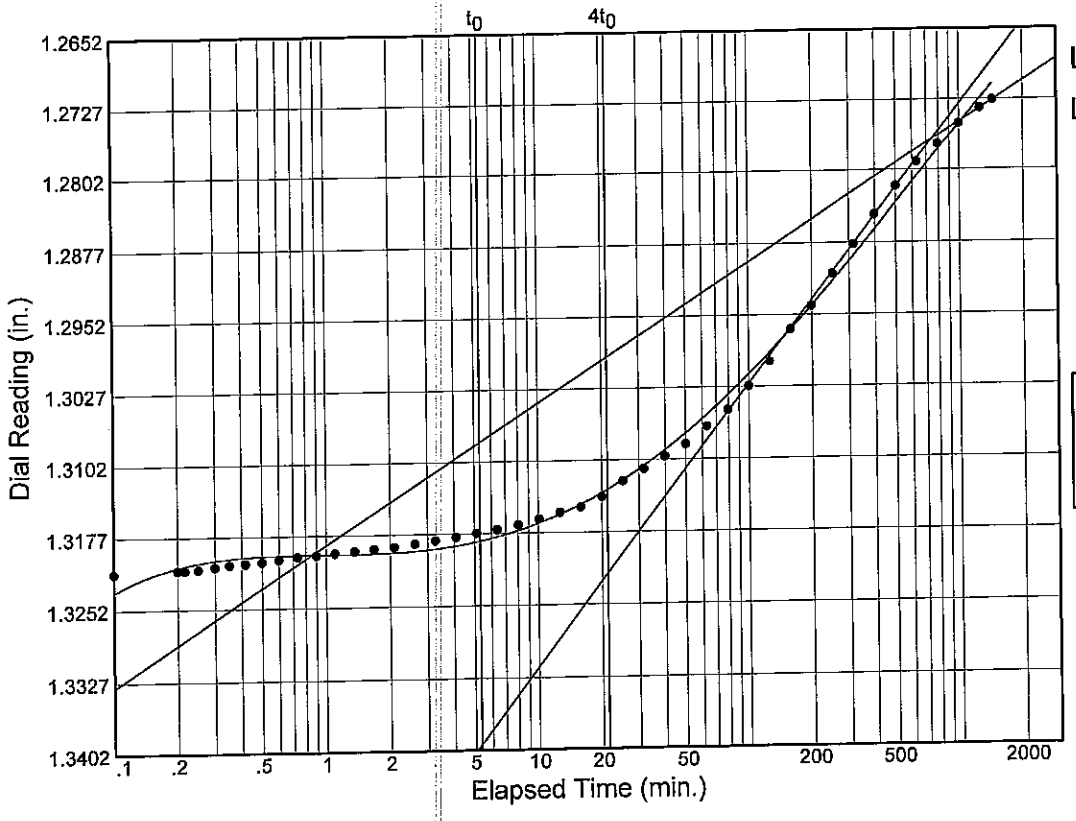
C_v @ T_{50}
0.01 ft.^{2}/day

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-45UCL Sample No.: 13C Elev./Depth: 41.7



Load No.= 8
Load= 0.50 tsf
D_0 = 1.32370
D_{50} = 1.30033
D_{100} = 1.27696
T_{50} = 111.95 min.

C_v @ T_{50}
0.00 ft.^{2}/day

Figure

BOR. WWHC-45UCL
STA. LAT N29^50'03.05" LONG W90^07'02.69"

15-16 APRIL 2007

GROUND EL. 12.6

0.0	0.8	19	0.8CL	SISVSTGR	T	RT						
0.8	2.0	16	2.0CL	VSTBR	RT	SIF		3388121	41	19	15	11
2.0	2.8	19	CL	SISST GR	T	RT						
2.8	4.0	18	CL	SISVSTGR	T	RT						
4.0	4.8	22	4.8CL	SISVSTGR	T							
4.8	6.0	22	6.0CL	VSTBR GR	WD				45	21	18	51
6.0	8.0	26	8.0CL	SISST GR	T							
8.0	8.8	29	8.8CH	ST GR	O							
8.8	12.0		12.0NS									
12.0	12.8	32	12.8CL	SISST GR	O							
12.8	13.4	34	13.4CL	ST GR	WD	O						
13.4	16.0		16.0NS									
16.0	16.8	33	CH	SISST GR	CC							
16.8	17.5	29	17.5CH	SISST GR	CC			1552123	69	20	28	171
17.5	20.0		20.0NS									
20.0	20.8	34	20.8CL	SIS M GR	T	CC						
20.8	21.7	35	21.7CH	SIS M GR	CC							
21.7	24.0	34	24.0CH	M GR	RT	CC						
24.0	24.8	35	CL	M GR								
24.8	25.7	33	25.7CL	M GR								
25.7	26.6	37	26.6CH	M GR								
26.6	28.0	35	28.0ML	GR	CS							
28.0	28.8	36	28.8CH	M GR								
28.8	29.7	36	CH	SIS M GR								
29.7	30.6	43	CH	SIS M GR	TR- O							
30.6	32.0	70	32.0CH	SISSO GR	TR- O							
32.0	32.8	73	32.8CH	SO GR	TR- O							
32.8	33.7	88	CH	O SO GR								
33.7	36.0	124	CH	O M GR				795	89196	43	118	340
36.0	36.8	94	36.8CH	O M GR BR	WD SIS							
36.8	37.7	80	37.7CL	M GR	O							
37.7	40.0	50	40.0CH	SIS M GR	O							
40.0	40.8	61	CH	M GR								
40.8	41.7	57	CH	M GR								
41.7	42.6	64	CH	M GR								
42.6	44.0	59	44.0CH	M GR								

44.0 44.8 44 CH SIS M GR
44.8 45.7 63 CH SIS M GR
45.7 46.6 53 CH SIS M GR
46.6 48.0 58 48.0CH SIS M GR
48.0 48.8 33 48.8ML GR
48.8 49.7 37 CL SIS M GR
49.7 52.0 43 52.0CL SIS M GR 549111 41 18 42 500
52.0 52.8 64 CH SISSO GR
52.8 53.7 60 CH SISSO GR
53.7 54.6 62 CH SISSO GR
54.6 56.0 65 CH SISSO GR
56.0 56.8 62 CH SISSO GR
56.8 57.7 52 CH SIS M GR
57.7 58.6 59 CH SIS M GR 684104 89 30 55 580
58.6 60.0 54 60.0CH SIS M GR
60.0 60.8 57 CH M GR
60.8 61.7 57 CH M GR
61.7 62.6 58 62.6CH M GR 812105 91 29 58 620
62.6 64.0 57 CH SIS M GR
64.0 64.8 57 CH SIS M GR
64.8 65.7 53 CH SIS M GR
65.7 66.6 50 CH SIS M GR
66.6 68.0 51 CH SIS M GR
68.0 68.8 70 CH SIS M GR
68.8 69.7 55 CH SIS M GR
69.7 72.0 58 72.0CH SIS M GR SL 814103 85 29 59 700
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 13.10/-0.50 Water Con: 29.00
LL,PL,PI : 45, 18, 27 Dry Dens : 93.00
Cohesion : 0.511 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 22.00/-9.40 Water Con: 34.00
LL,PL,PI : 54, 16, 38 Dry Dens : 89.00
Cohesion : 0.378 Saturat :100.00
Shear Str: Frict Ang: 00.00

Toggles :( )( )( )( )

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SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 26.00/-13.4 Water Con: 39.00
LL,PL,PI : 65, 20, 45 Dry Dens : 82.00
Cohesion : 0.314 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 30.00/-17.4 Water Con: 49.00
LL,PL,PI : 74, 22, 52 Dry Dens : 74.00
Cohesion : 0.361 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CHO
Depth/Ele: 33.10/-20.5 Water Con: 91.00
LL,PL,PI : 142, 41,101 Dry Dens : 49.00
Cohesion : 0.201 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 37.10/-24.5 Water Con: 72.00
LL,PL,PI : 47, 17, 30 Dry Dens : 58.00
Cohesion : 0.375 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 45.10/-32.5 Water Con: 63.00
LL,PL,PI : 84, 25, 59 Dry Dens : 64.00

Cohesion : 0.348 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 54.00/-41.4 Water Con: 60.00
LL,PL,PI : 72, 20, 52 Dry Dens : 64.00
Cohesion : 0.133 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CH
Depth/Ele: 41.7/-29.1 Water Con: 64.00
LL,PL,PI : 90, 31, 59 Dry Dens : 62.00
Cohesion : Saturat : 98.00
Shear Str: Frict Ang: 00.00
Norm Str: 1.080, 1.670
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.24	1.764
0.50	1.760
1.00	1.695
2.00	1.468
4.00	1.218
8.00	1.044
2.00	1.100
0.50	1.217
0.25	1.274

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-45UPT

Current Date: 9/16/2008

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	VST BR CL4 W/ O	CL4		13												
1B	0.8	VST BR CL4	CL4		22												
2A	2.0	ST LGR & BR CH2	CH2		28												
2B	2.8	M GR & BR CH2 W/ O	CH2	6	33	86	114	93	UC	--	821	1642	52	18	34	0.56	
3A	4.0	ST GR CH3 W/ ARS ML, WD	CH3		30												
3B	4.8	ST GR CH3 W/ ARS ML, WD	CH3	15	30	90	118	94	UC	--	1095	2190	61	19	42	0.55	
NS	5.7	NO SAMPLE	NS														
4A	8.0	M GR & BR CL4 W/ TR- O	CL4		33												
4B	8.8	M GR CL4 W/ TR- O	CL4		34	89	119	100	UU	0	537		39	19	20	0.33	
NS	9.7	NO SAMPLE	NS														
5A	12.0	SO T & GR CL6	CL6		36												
5B	12.8	SO T & GR CL6	CL6		36	84	115	98	UU	0	414		47	13	34	0.30	
NS	13.7	NO SAMPLE	NS														
6A	16.0	M GR CL6	CL6		34												
6B	16.8	M GR CL4	CL4		32	92	120	100	UU	0	571		36	19	17	0.30	
NS	17.7	NO SAMPLE	NS														
7A	20.0	SO GR CL4	CL4		34												
7B	20.8	SO GR CL4	CL4		36	87	117	100	UU	0	488		37	24	13	0.29	
7C	21.7'	SO GR CH3	CH3		37	83	116	100					68	24	44		Gs, CON
7D	22.6	SO GR CH3 W/ ARS ML, O	CH3		48												
8A	24.0	M GR CHOA W/ WD	CHOA		85												
8B	24.8	M GR CHOA	CHOA		110												
8C	25.7	M GR CHOB W/ WD	CHOB		119	39	86	99	UU	0	667		157	41	116	0.25	
8D	26.6	M DGR & GR CHOA W/ ARS ML	CHOA		95												
9A	28.0	SO GR CH4 W/ TR- O	CH4		58												
9B	28.8	M GR CH2 W/ CC	CH2		37												
9C	29.7	GR ML2 W/ ARS CH	ML2		32				CU				**	**			
9D	30.6	GR ML2 W/ ARS CH	ML2		29												
10A	32.0	SO GR CH3 W/ LNS ML, CC	CH3		45												
10B	32.8	SO GR CH3 W/ LNS ML, SM	CH3		56												
10C	33.7	SO GR CH4 W/ LNS SC, ML	CH4		60	65	104	100	UU	0	500		81	25	56	0.23	
10D	34.6	SO GR CH4 W/ LNS SC, ML	CH4		62												
11A	36.0	M GR CL6	CL6		39												
11B	36.8	M GR CH4 W/ LNS ML	CH4		59												
11C	37.7	M GR CH4 W/ ARS ML	CH4		57	66	103	98	UU	0	648		73	24	49	0.30	
12A	40.0	M GR CH4 W/ LNS ML	CH4		48												
12B	40.8	M GR CH4 W/ LNS SM	CH4		50												

Remarks: 1 consol (7C) added WJY
FFEBJV, LLC.

Checked by: JC
File Name: TO 2 WWHC

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-45UPT

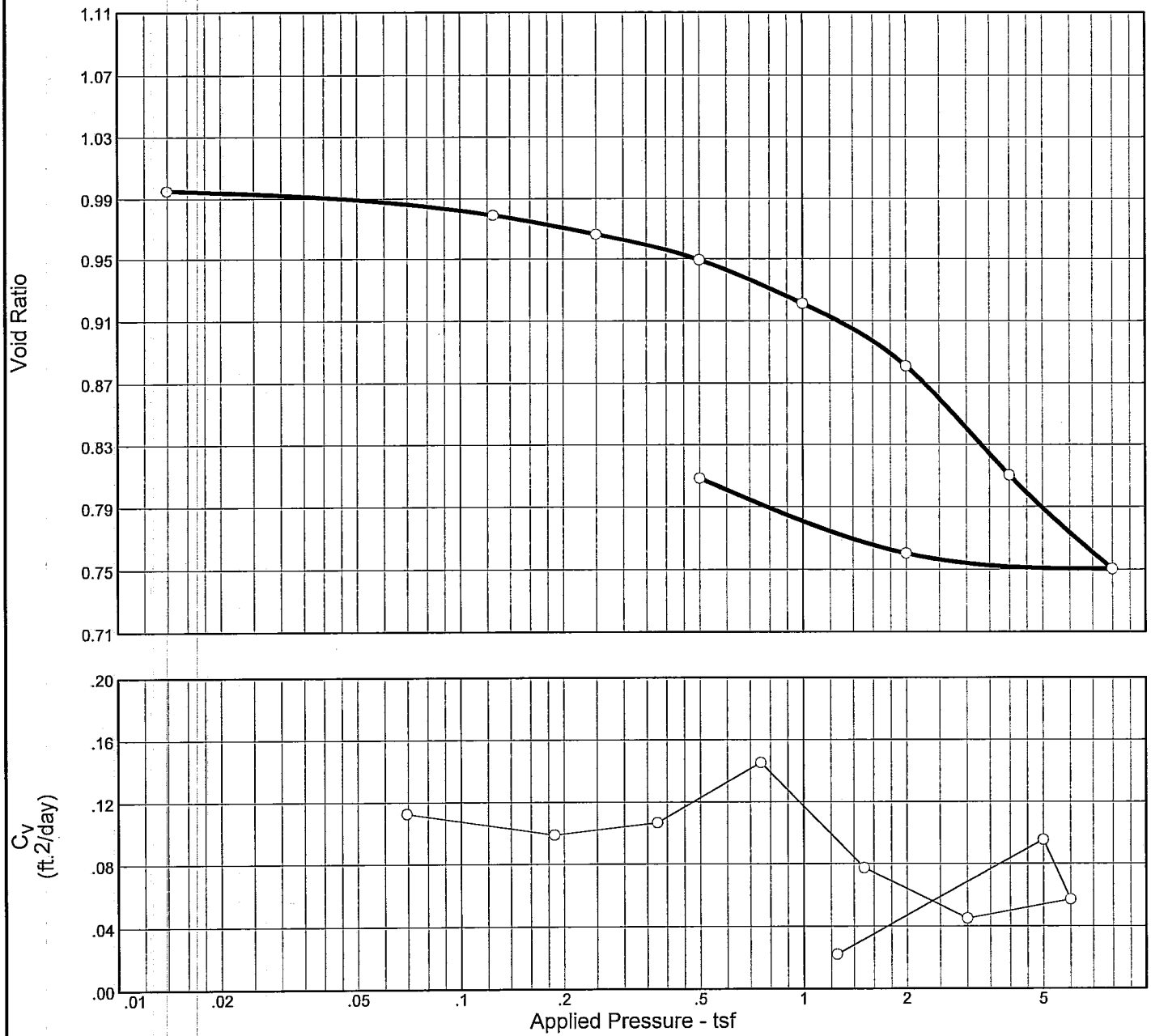
Current Date: 9/16/2008

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
12C	41.7	SO GR CH4 W/ ARS ML	CH4	3	54	67	103	96	UC	--	359	718	75	24	51	0.31	
13A	44.0	SO GR CH4 W/ LNS ML	CH4		64												
13B	44.8	M GR CH4 W/ LNS ML	CH4		59												
13C	45.7	M GR CH4	CH4		62	63	102	99	UU	0	668		85	26	59	0.32	
13D	46.6	M GR CH4 W/ ARS ML	CH4		60												
14A	48.0	M GR CH4 W/ LNS SM	CH4		53												
14B	48.8	M GR CH4 W/ LNS ML	CH4		59												
14C	49.7	M GR CH4 W/ LNS SM & ARS ML	CH4	5	56	66	103	96	UC	--	784	1568	87	26	61	0.40	
14D	50.6	M GR CH4 W/ ARS ML	CH4		60												
15A	52.0	M GR CH4 W/ SL	CH4		55												
15B	52.8	M GR CH4 W/ SL	CH4		62												
15C	53.7	M GR CH4 W/ SL	CH4		58												
15D	54.6	M GR CH4 W/ SL	CH4		57												
16A	56.0	M GR CH4 W/ LNS ML, SL	CH4		61												
16B	56.8	M GR CH4 W/ LNS ML, SL	CH4	6	52	69	104	96	UC	--	648	1296	75	25	50	0.40	
NS	57.7	NO SAMPLE	NS														
17A	60.0	M GR CH4 W/ SL	CH4		58												
17B	60.8	M GR CH4 W/ SL	CH4		57												
17C	61.7	M GR CH4 W/ SL	CH4		60												
17D	62.6	M GR CH4 W/ LNS ML, SL	CH4		58												
18A	64.0	M GR CH4 W/ LNS SP	CH4		55												
18B	64.8	GR SM1 W/ LYS & LNS CL, SIF	SM1		27												
18C	65.7	GR SM1 W/ LYS & LNS CL, SIF	SM1		28				UU				NP	NP			DIST
19A	68.0	M GR CH4 W/ SL	CH4		56												
19B	68.8	M GR CH4 W/ SIF	CH4		53												
19C	69.7	ST GR CH4 W/ SIF	CH4	5	51	69	104	93	UC	--	1109	2218	89	27	62	0.40	
19D	70.6	ST GR CH4 W/ SL	CH4		54												

Remarks: 1 consol (TC) added WJY
FFEBJV, LLC.

Checked by: JC
File Name: TO 2 WWHC

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
106.1 %	39.7 %	83.2	68	40	2.66	1.25	0.24	0.995

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CH3	CH3	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-45UPT **Sample No.:** 7C **Elev./Depth:** 21.7'

FFEBJV, LLC

St Rose, LA

Remarks:

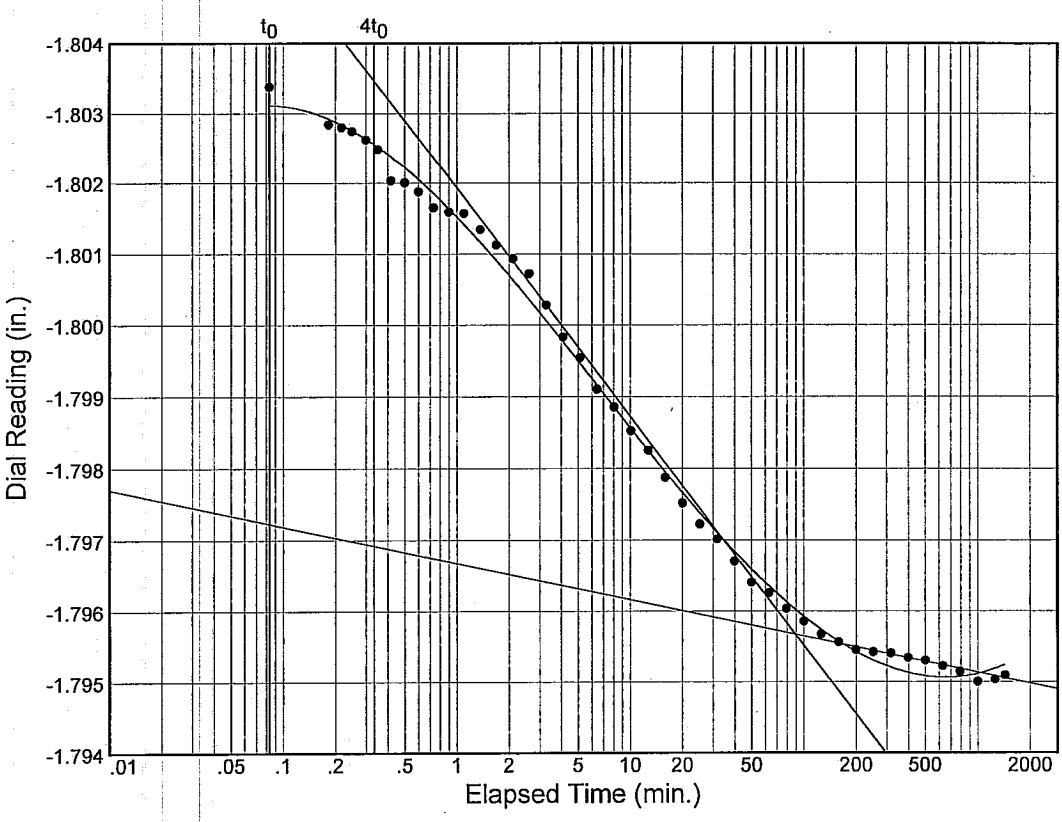
Tested by:CB
Calculated by: MR
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

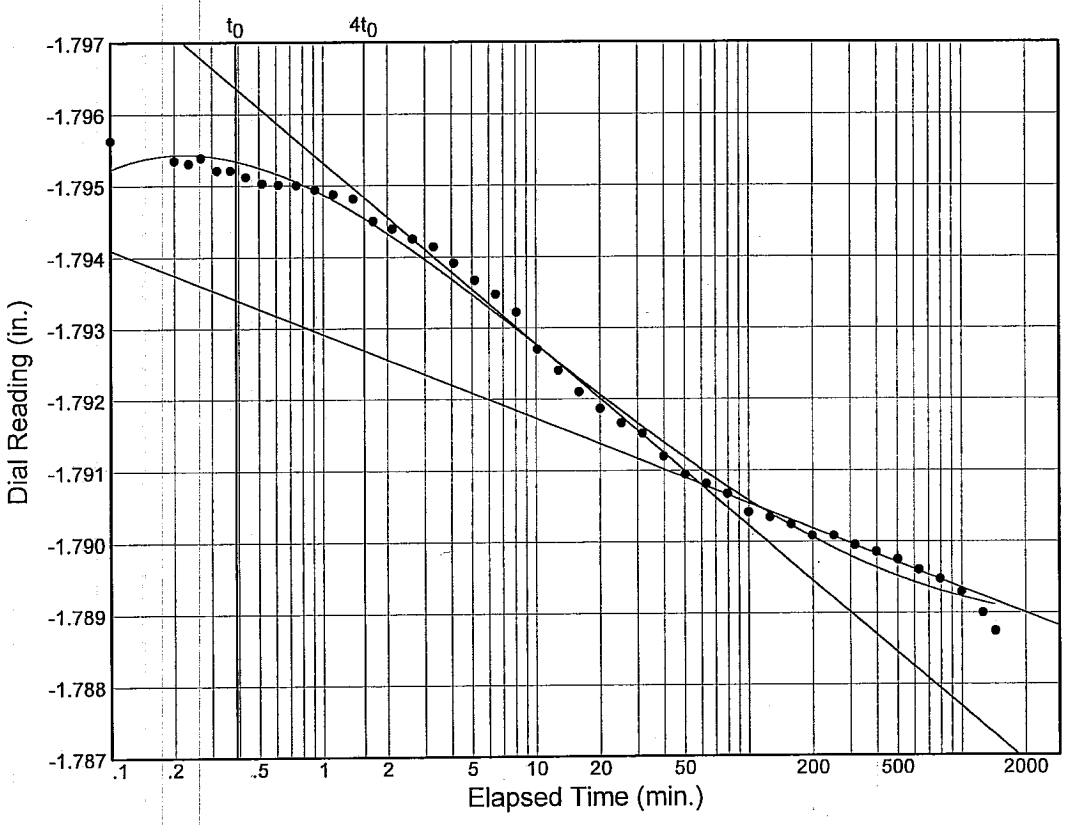
Source: WWHC-45UPT Sample No.: 7C Elev./Depth: 21.7'



Load No.= 2
Load= 0.13 tsf
D_0 = -1.80367
D_{50} = -1.79967
D_{100} = -1.79567
T_{50} = 4.38 min.

C_v @ T_{50}
0.11 ft.^{2}/day

C_α = 0.001



Load No.= 3
Load= 0.25 tsf
D_0 = -1.79615
D_{50} = -1.79349
D_{100} = -1.79082
T_{50} = 4.91 min.

C_v @ T_{50}
0.10 ft.^{2}/day

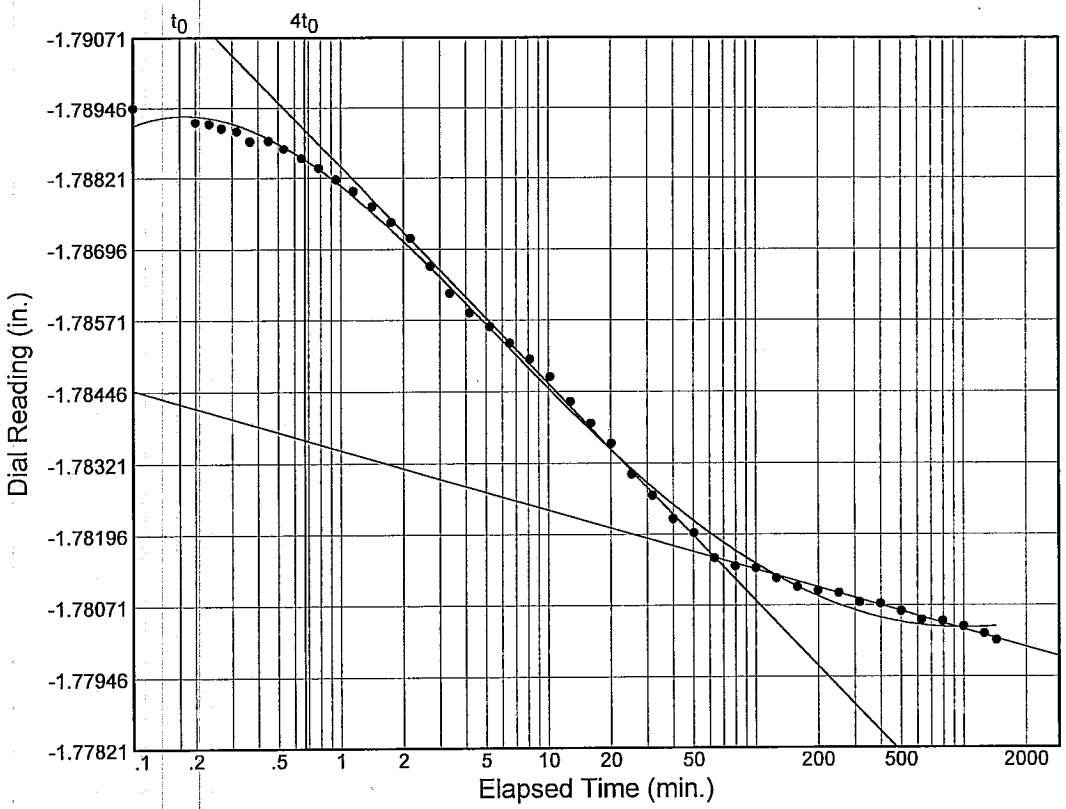
C_α = 0.001

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

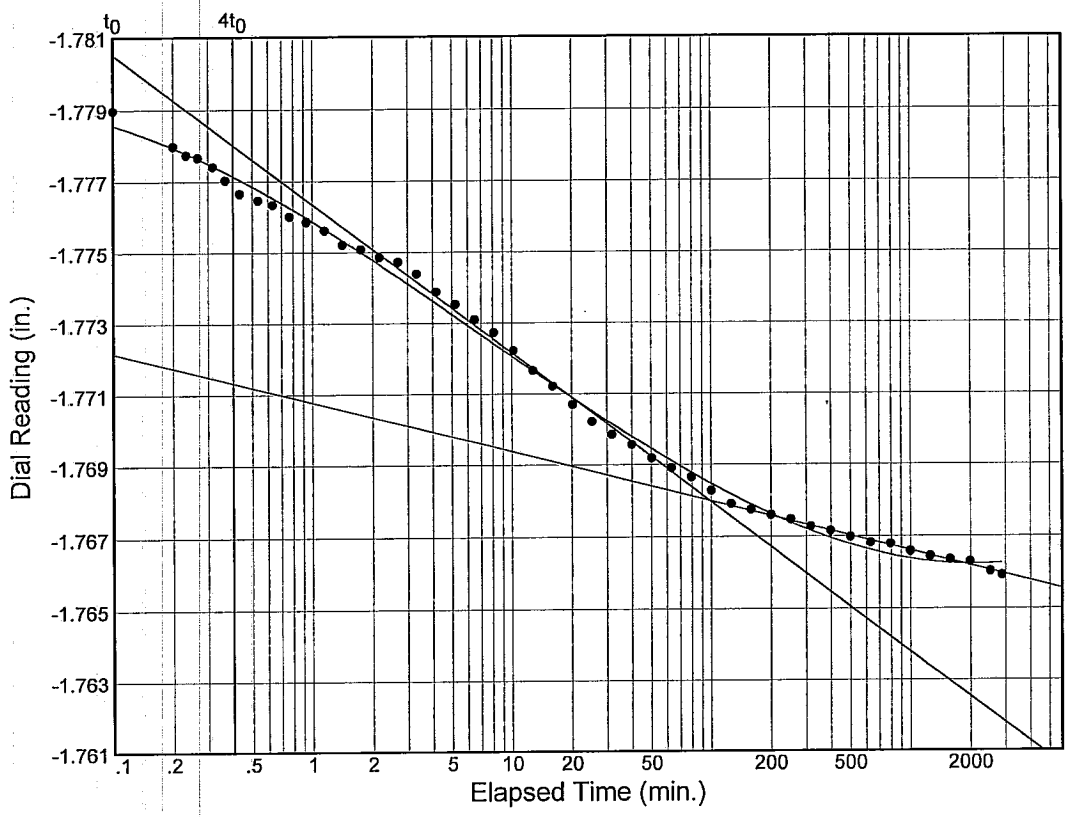
Source: WWHC-45UPT Sample No.: 7C Elev./Depth: 21.7'



Load No.= 4
Load= 0.50 tsf
D_0 = -1.79009
D_{50} = -1.78582
D_{100} = -1.78155
T_{50} = 4.49 min.

C_v @ T_{50}
0.11 ft.^{2}/day

C_α = 0.001



Load No.= 5
Load= 1.00 tsf
D_0 = -1.77998
D_{50} = -1.77399
D_{100} = -1.76800
T_{50} = 3.22 min.

C_v @ T_{50}
0.15 ft.^{2}/day

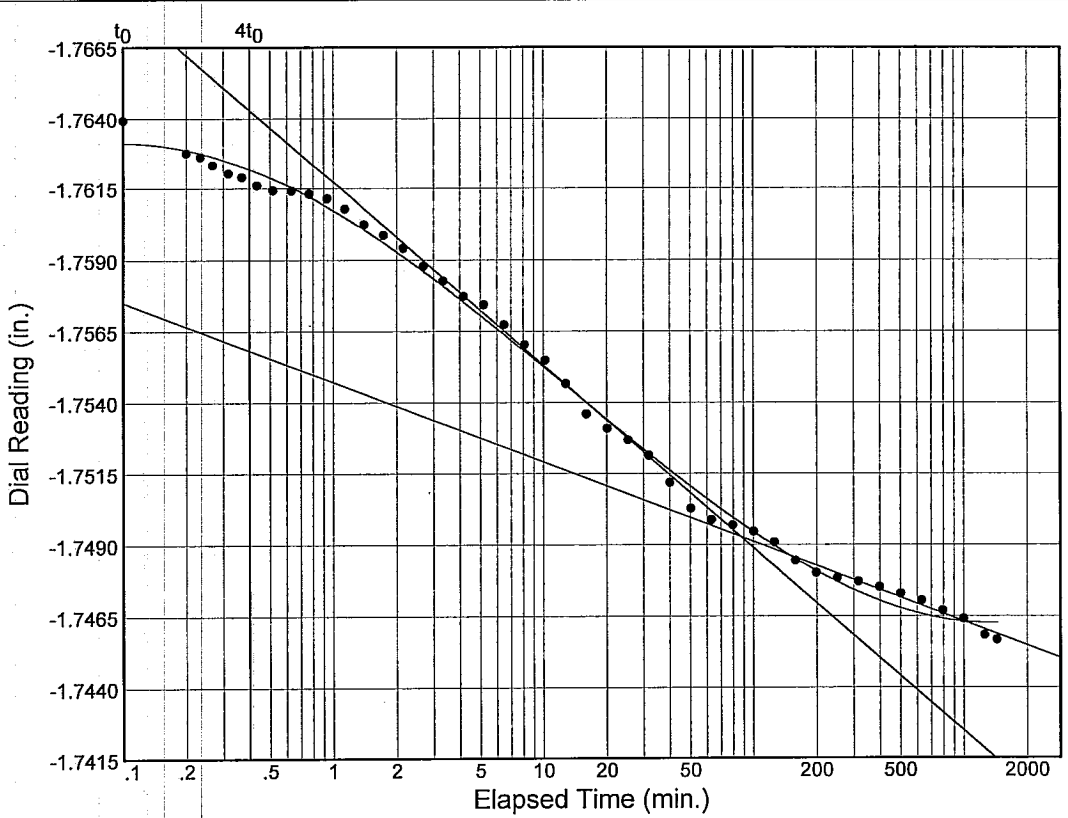
C_α = 0.001

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

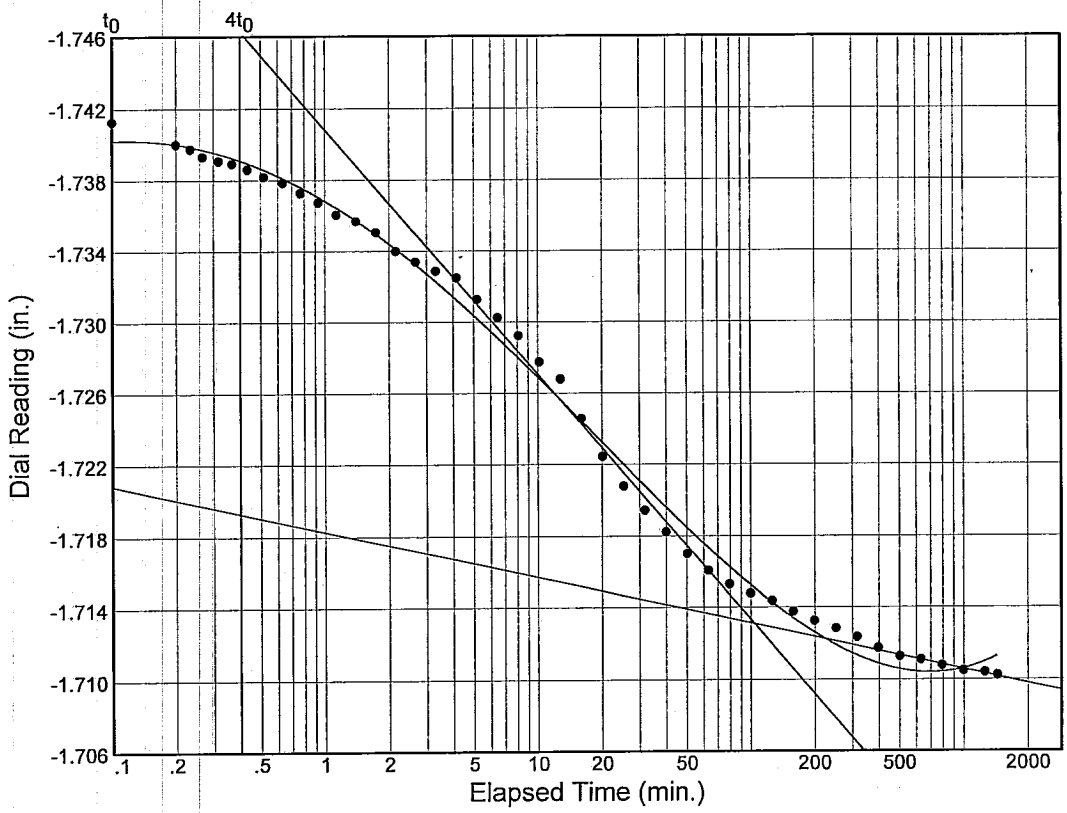
Source: WWHC-45UPT Sample No.: 7C Elev./Depth: 21.7'



Load No.= 6
Load= 2.00 tsf
D_0 = -1.76405
D_{50} = -1.75666
D_{100} = -1.74928
T_{50} = 5.84 min.

C_v @ T_{50}
0.08 ft.2/day

C_α = 0.003



Load No.= 7
Load= 4.00 tsf
D_0 = -1.74129
D_{50} = -1.72718
D_{100} = -1.71308
T_{50} = 9.47 min.

C_v @ T_{50}
0.04 ft.2/day

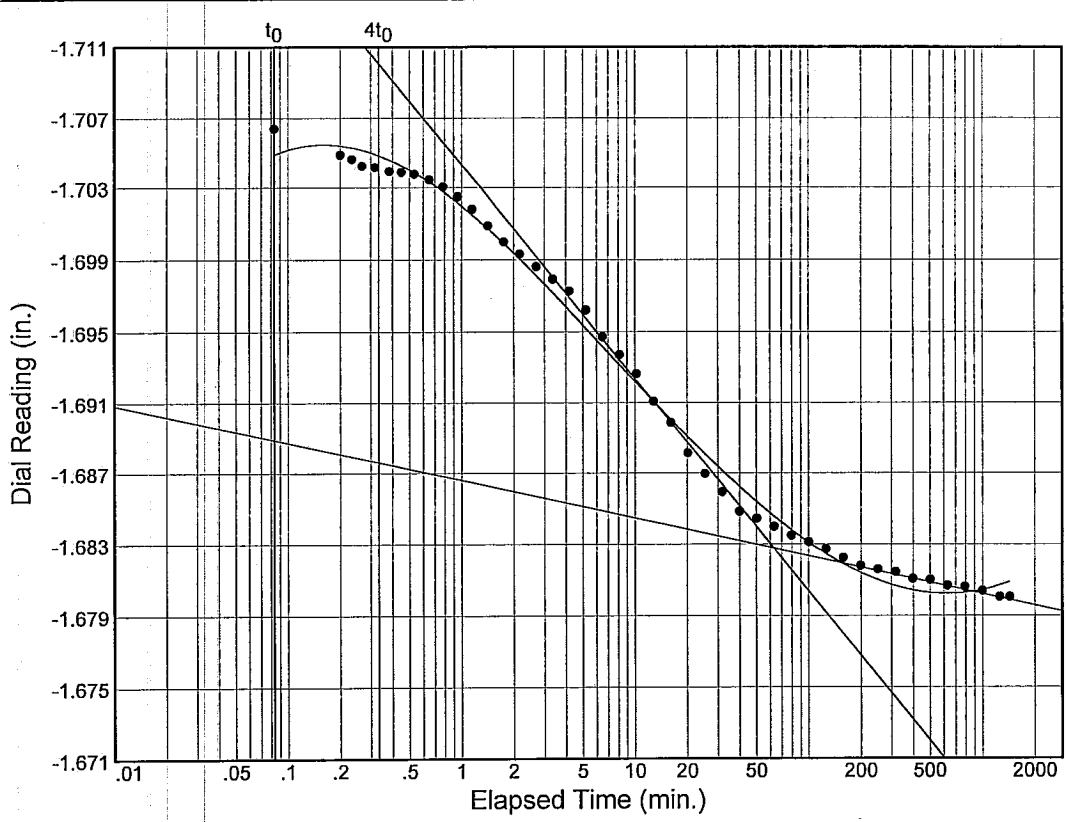
C_α = 0.003

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

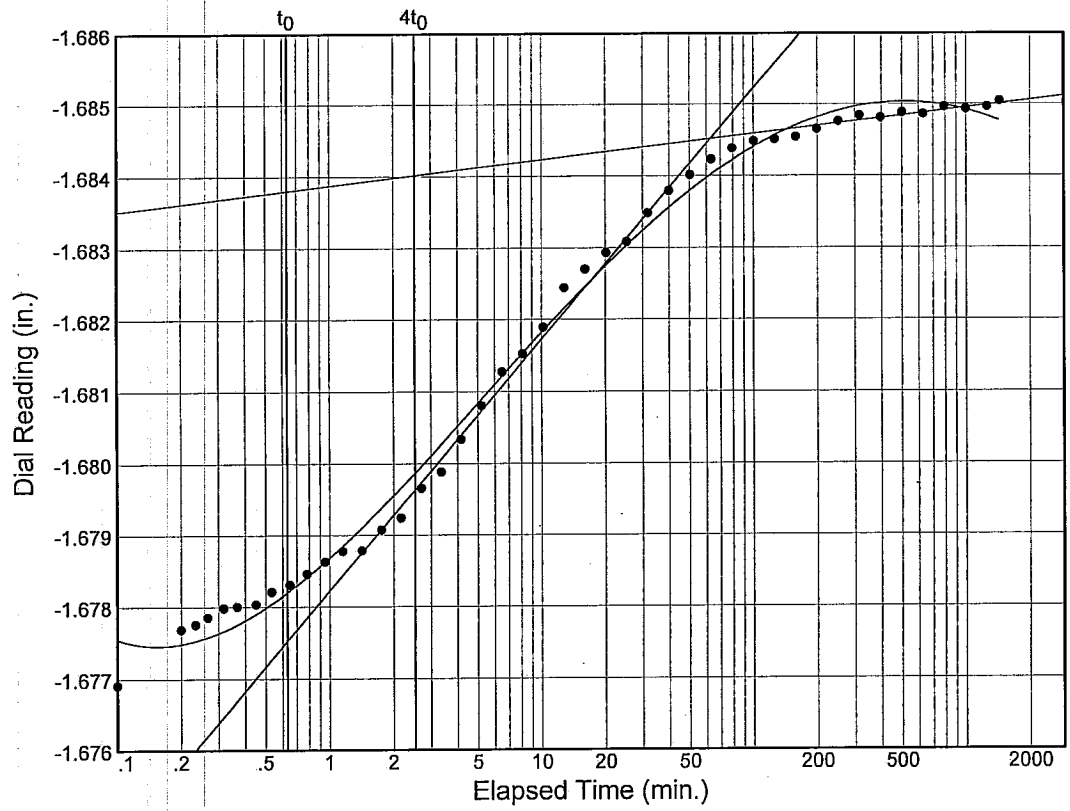
Source: WWHC-45UPT Sample No.: 7C Elev./Depth: 21.7'



Load No.= 8
Load= 8.00 tsf
D_0 = -1.70495
D_{50} = -1.69386
D_{100} = -1.68277
T_{50} = 6.96 min.

C_v @ T_{50}
0.06 ft.^{2}/day

C_α = 0.002



Load No.= 9
Load= 2.00 tsf
D_0 = -1.67652
D_{50} = -1.68052
D_{100} = -1.68452
T_{50} = 4.02 min.

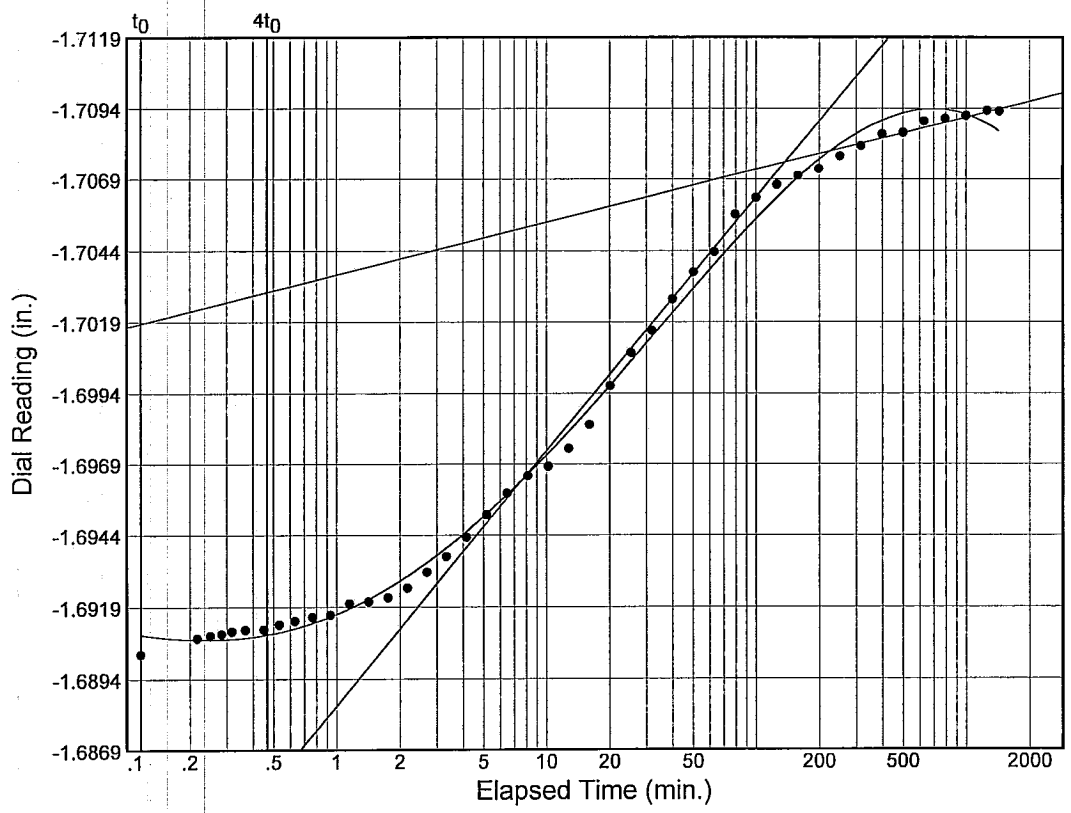
C_v @ T_{50}
0.10 ft.^{2}/day

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-45UPT Sample No.: 7C Elev./Depth: 21.7'



Load No.= 10
Load= 0.50 tsf
D_0 = -1.69094
D_{50} = -1.69923
D_{100} = -1.70751
T_{50} = 17.81 min.

C_v @ T_{50}
0.02 ft.^{2}/day

Figure

CONSOLIDATION TEST DATA

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Contract No. W912P8-07-D-0022
Task Order No. 0002
Project Number: 0022-0002

Sample Data

Source: WWHC-45UPT
Sample No.: 7C
Elev. or Depth: 21.7'
Sample Length(in./cm.):
Location:
Description: SO GR CH3
Liquid Limit: 68
Plasticity Index: 40
USCS: CH3
AASHTO:
Figure No.:
Testing Remarks: Tested by:CB
Calculated by: MR
Checked by: WJY

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t =	139.72 g.	Consolidometer # = 20	Wet w+t = 172.72 g.
Dry w+t =	100.00 g.		Dry w+t = 139.13 g.
Tare Wt. =	.00 g.	Spec. Gravity = 2.66	Tare Wt. = 30.80 g.
Height =	1.00 in.	Height = 1.00 in.	
Diameter =	3.99 in.	Diameter = 3.99 in.	
Weight =	383.65 g.	Defl. Table = n/a	
Moisture =	39.7 %	Ht. Solids = 0.5027 in.	Moisture = 31.0 %
Wet Den. =	116.3 pcf	Dry Wt. = 274.58 g.*	Dry Wt. = 108.33 g.
Dry Den. =	83.2 pcf	Void Ratio = 0.995	Void Ratio = 0.809
		Saturation = 106.1 %	

*** Initial dry weight used in calculations**

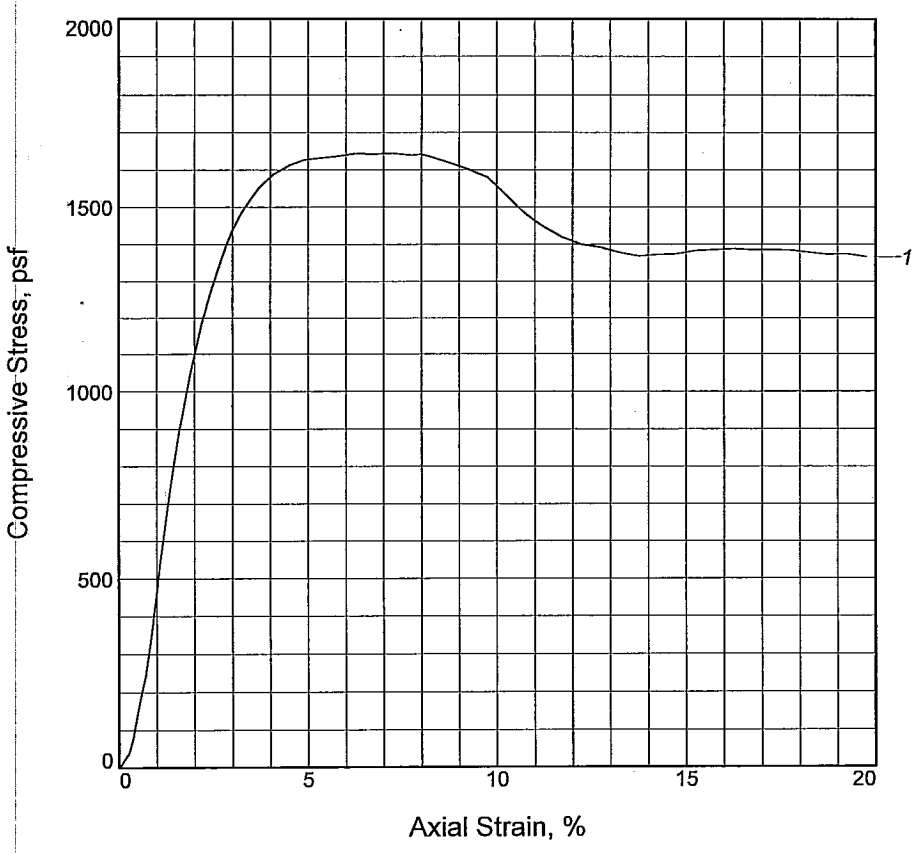
End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-1.80321				0.995	
0.01	-1.80309	0.00000		0.001	0.995	0.0 Comprs.
0.13	-1.79509	0.00000	0.11	0.001	0.979	0.8 Comprs.
0.25	-1.78874	0.00000	0.10	0.001	0.967	1.4 Comprs.
0.50	-1.78009	0.00000	0.11	0.001	0.949	2.3 Comprs.
1.00	-1.76590	0.00000	0.15	0.001	0.921	3.7 Comprs.
2.00	-1.74565	0.00000	0.08	0.003	0.881	5.7 Comprs.
4.00	-1.71020	0.00000	0.04	0.003	0.810	9.3 Comprs.
8.00	-1.68004	0.00000	0.06	0.002	0.750	12.3 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v ($ft.^2/day$)	C_α	Void Ratio	% Compression /Swell
2.00	-1.68504	0.00000	0.10		0.760	11.8 Comprs.
0.50	-1.70930	0.00000	0.02		0.809	9.4 Comprs.

C_c = 0.24 P_c = 1.25 tsf C_r = 0.05

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1642			
Undrained shear strength, psf	821			
Failure strain, %	6.2			
Strain rate, in./min.	0.031			
Water content, %	32.7			
Wet density, pcf	114.4			
Dry density, pcf	86.2			
Saturation, %	92.5			
Void ratio	0.9544			
Specimen diameter, in.	1.462			
Specimen height, in.	3.137			
Height/diameter ratio	2.15			

Description: M GR & BR CH2 W/ O

LL = 52	**PL** = 18	**PI** = 34	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/14/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

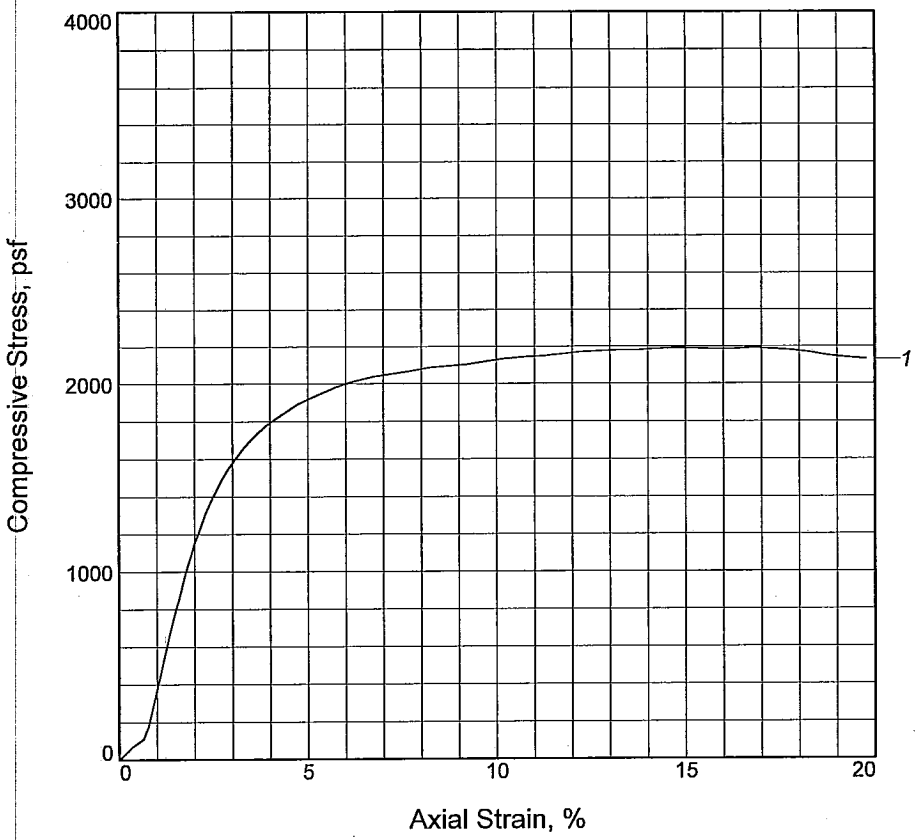
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 2.8
Sample Number: 2B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: BB **Checked By:** AD

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2190			
Undrained shear strength, psf	1095			
Failure strain, %	14.8			
Strain rate, in./min.	0.031			
Water content, %	30.4			
Wet density, pcf	117.6			
Dry density, pcf	90.1			
Saturation, %	93.6			
Void ratio	0.8843			
Specimen diameter, in.	1.446			
Specimen height, in.	3.136			
Height/diameter ratio	2.17			

Description: ST GR CH3 W/ ARS ML, WD

LL = 61	**PL** = 19	**PI** = 42	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/14/07
Remarks:

Client: U.S. Army Corps of Engineers

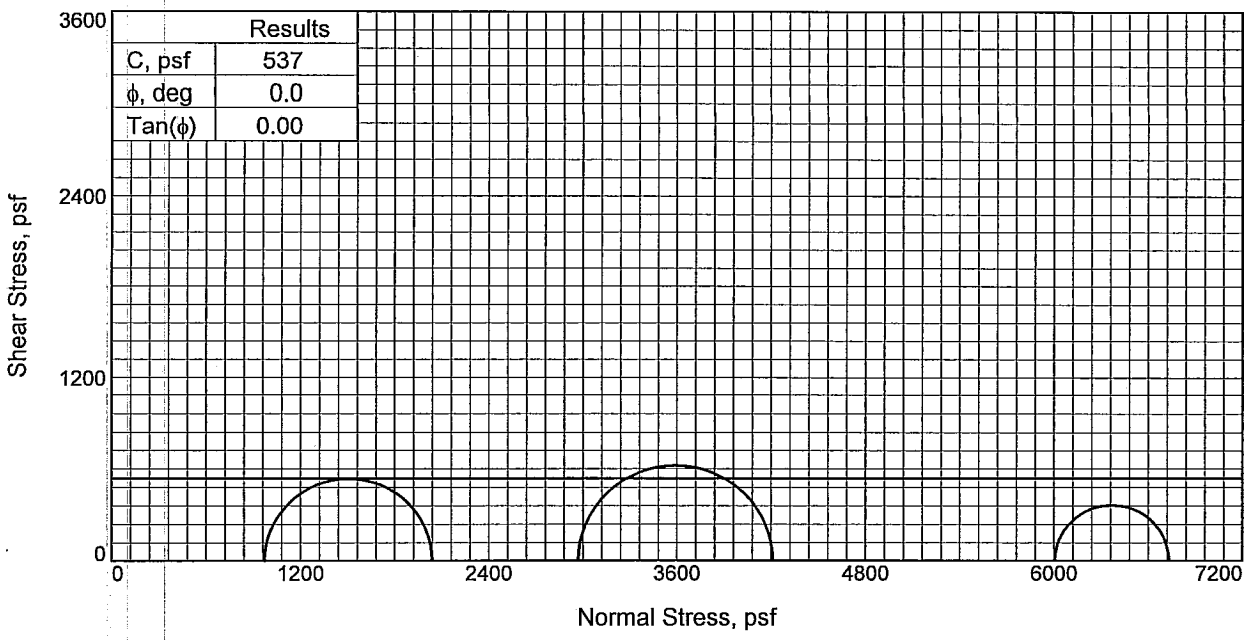
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 4.8
Sample Number: 3B

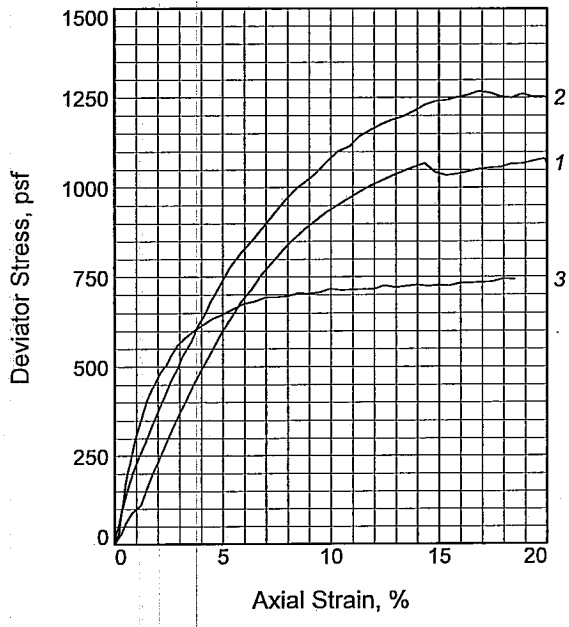
UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: BB **Checked By:** AD





Sample No.		1	2	3
Initial	Water Content, %	32.6	33.5	35.6
	Dry Density, pcf	91.0	89.5	86.9
	Saturation, %	104.2	103.1	103.0
	Void Ratio	0.8390	0.8696	0.9264
	Diameter, in.	1.372	1.432	1.399
	Height, in.	3.101	3.113	3.129
At Test	Water Content, %	32.6	33.5	35.6
	Dry Density, pcf	91.0	89.5	86.9
	Saturation, %	104.2	103.1	103.0
	Void Ratio	0.8390	0.8696	0.9264
	Diameter, in.	1.372	1.432	1.399
	Height, in.	3.101	3.113	3.129
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.75	20.63	41.71
Fail. Stress, psf		1067	1240	726
Strain, %		14.3	14.9	12.5
Ult. Stress, psf		1035	1240	720
Strain, %				
σ_1 Failure, psf		2040	4211	6732
σ_3 Failure, psf		973	2971	6007

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL4 W/ TR- O

LL= 39 **PL=** 19 **PI=** 20
Assumed Specific Gravity= 2.68
Remarks:

Figure _____

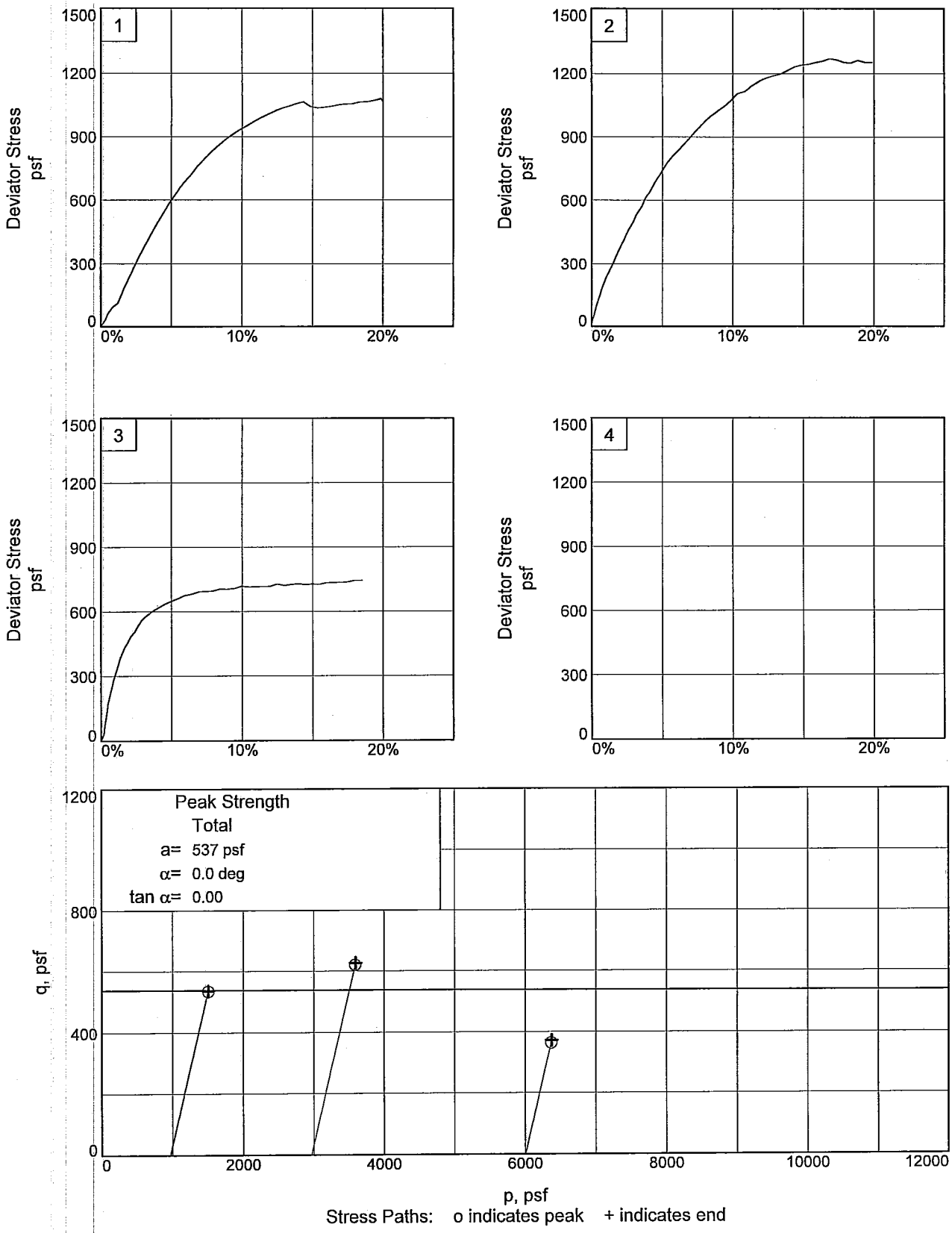
Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 8.8
Sample Number: 4B
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

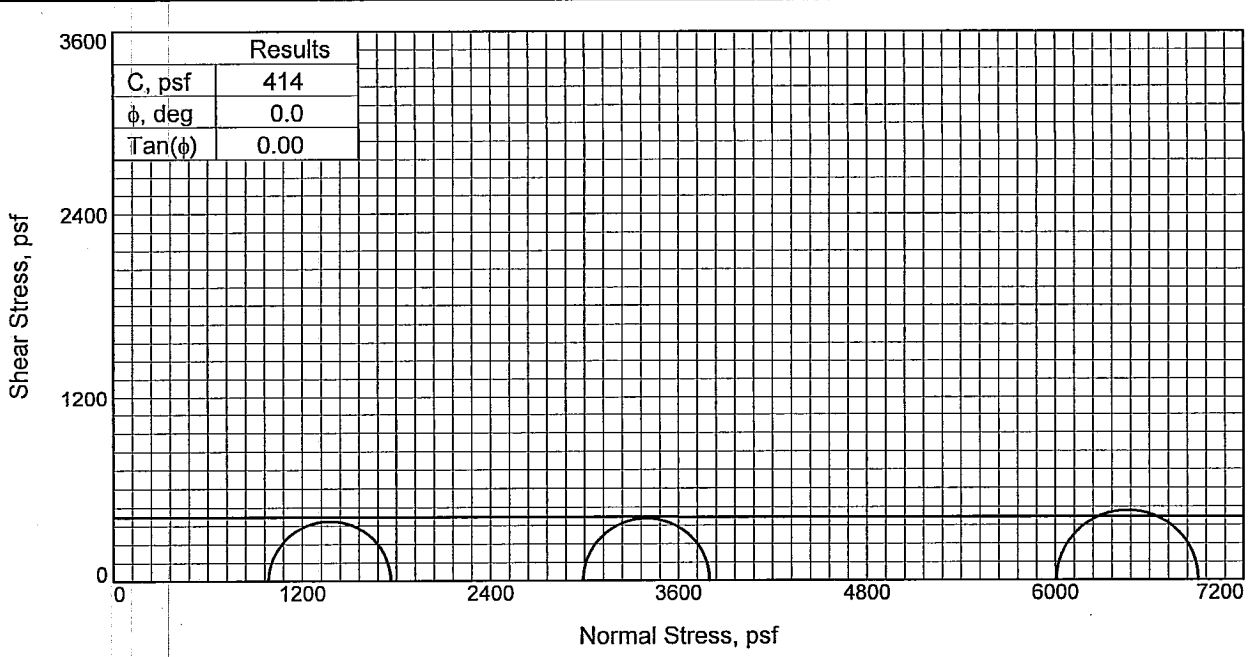
Tested By: DW/DD **Checked By:** AD

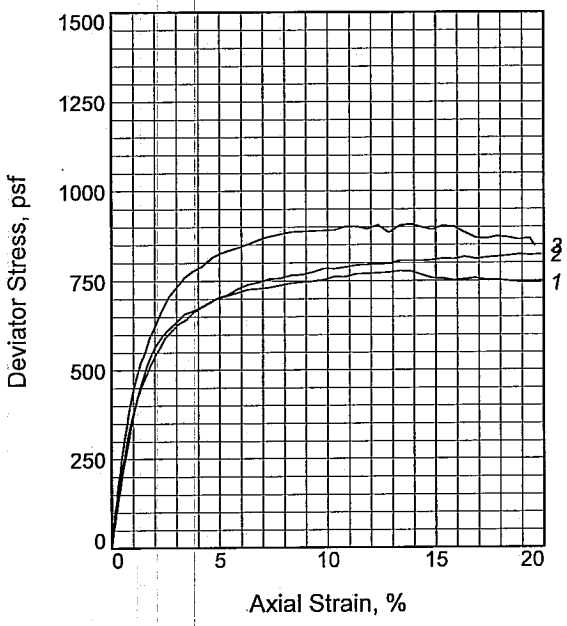


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-45UPT **Depth:** 8.8 **Sample Number:** 4B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD **Checked By:** AD





Sample No.		1	2	3
Initial	Water Content, %	36.9	35.8	36.5
	Dry Density, pcf	84.6	82.9	84.6
	Saturation, %	100.7	94.0	99.8
	Void Ratio	0.9855	1.0249	0.9843
	Diameter, in.	1.388	1.379	1.432
	Height, in.	3.031	3.189	3.034
At Test	Water Content, %	36.9	35.8	36.5
	Dry Density, pcf	84.6	82.9	84.6
	Saturation, %	100.7	94.0	99.8
	Void Ratio	0.9855	1.0249	0.9843
	Diameter, in.	1.388	1.379	1.432
	Height, in.	3.031	3.189	3.034
Strain rate, in./min.		0.030	0.032	0.030
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.78	41.72
Fail. Stress, psf		776	807	905
Strain, %		13.4	14.9	12.3
Ult. Stress, psf		757	807	892
Strain, %				
σ_1 Failure, psf		1764	3799	6913
σ_3 Failure, psf		987	2992	6008

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO T & GR CL6

LL= 47 **PL=** 13 **PI=** 34
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

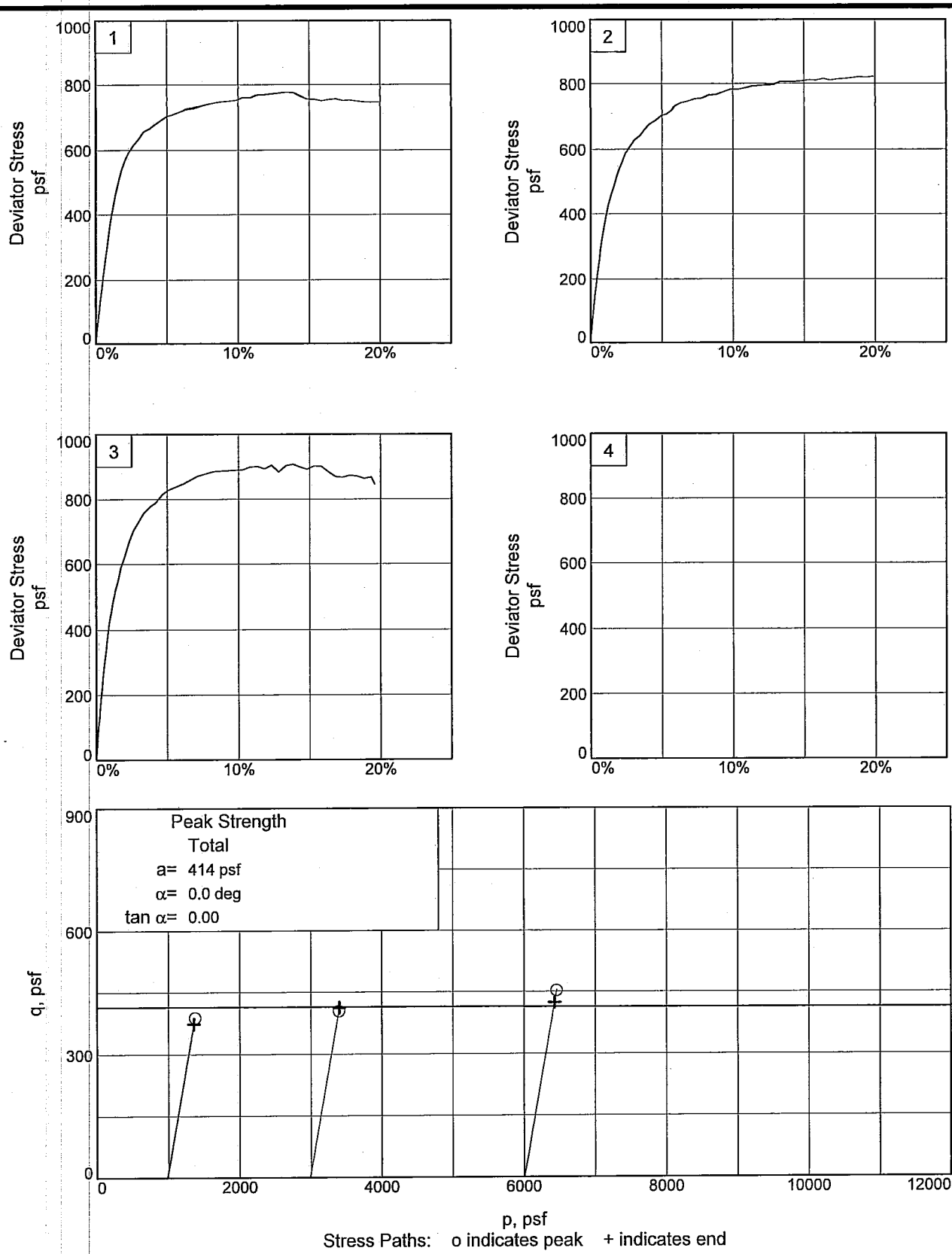
Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 12.8
Sample Number: 5B
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

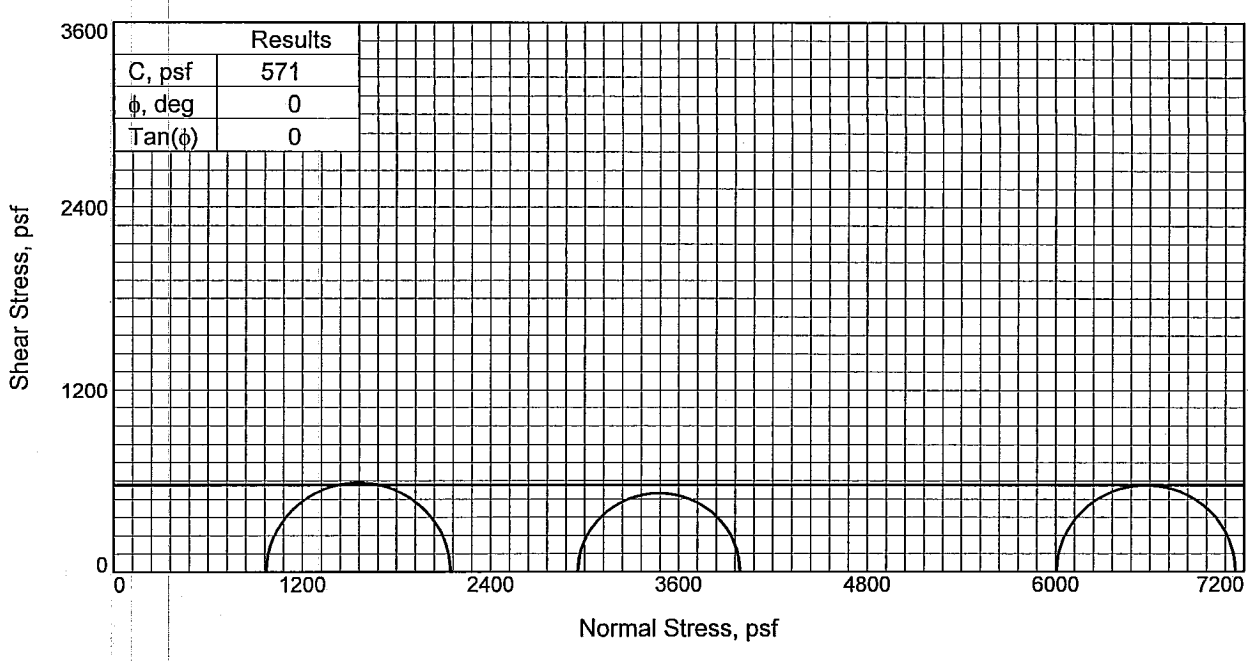
Tested By: DW/DD **Checked By:** AD

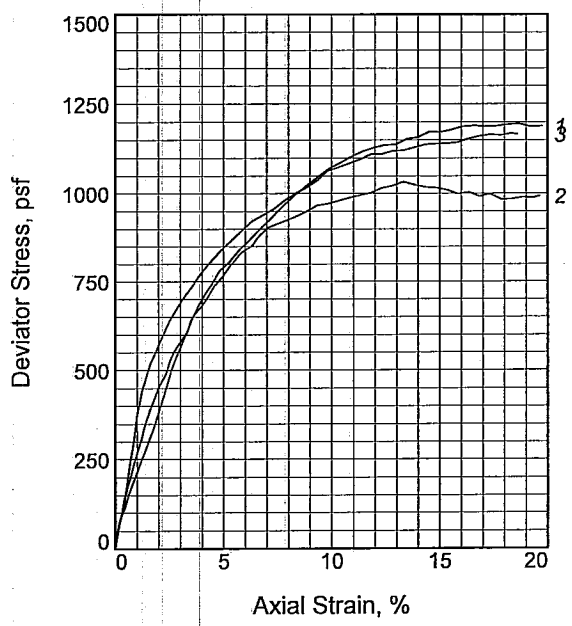


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-45UPT **Depth:** 12.8 **Sample Number:** 5B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD **Checked By:** AD





Sample No.		1	2	3
Initial	Water Content, %	31.0	32.3	31.5
	Dry Density, pcf	93.0	89.4	92.2
	Saturation, %	103.9	99.5	103.8
	Void Ratio	0.7990	0.8708	0.8138
	Diameter, in.	1.379	1.391	1.391
	Height, in.	2.986	2.970	2.996
At Test	Water Content, %	31.0	32.3	31.5
	Dry Density, pcf	93.0	89.4	92.2
	Saturation, %	103.9	99.5	103.8
	Void Ratio	0.7990	0.8708	0.8138
	Diameter, in.	1.379	1.391	1.391
	Height, in.	2.986	2.970	2.996
Strain rate, in./min.		0.030	0.030	0.030
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.75	20.55	41.72
Fail. Stress, psf		1172	1033	1140
Strain, %		15.1	13.3	14.8
Ult. Stress, psf		1172	1016	1140
Strain, %				
σ_1 Failure, psf		2144	3991	7147
σ_3 Failure, psf		972	2959	6007

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL4

LL= 36 **PL=** 19 **PI=** 17
Assumed Specific Gravity= 2.68
Remarks:

Client: U.S. Army Corps of Engineers

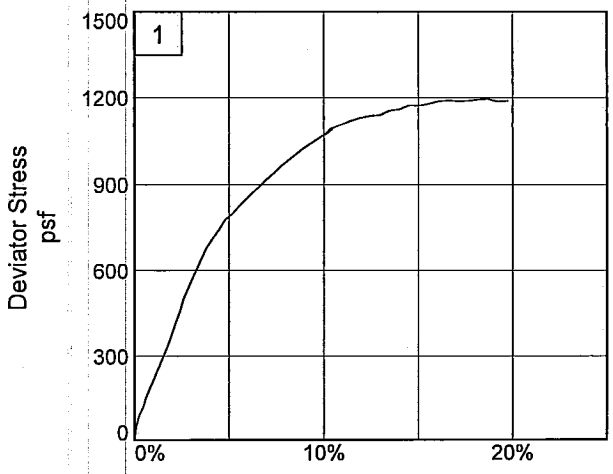
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 16.8
Sample Number: 6B
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

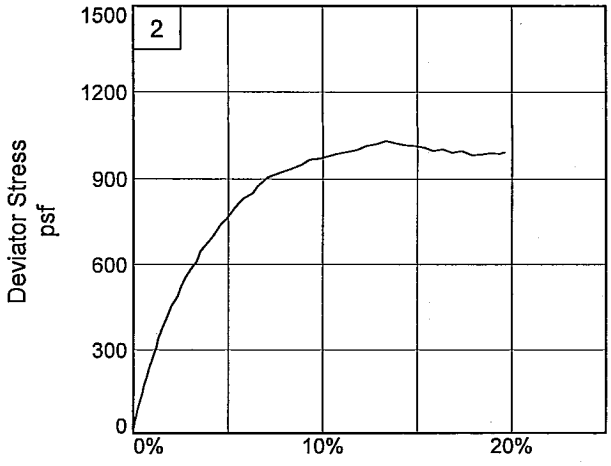
TRIAXIAL SHEAR TEST REPORT

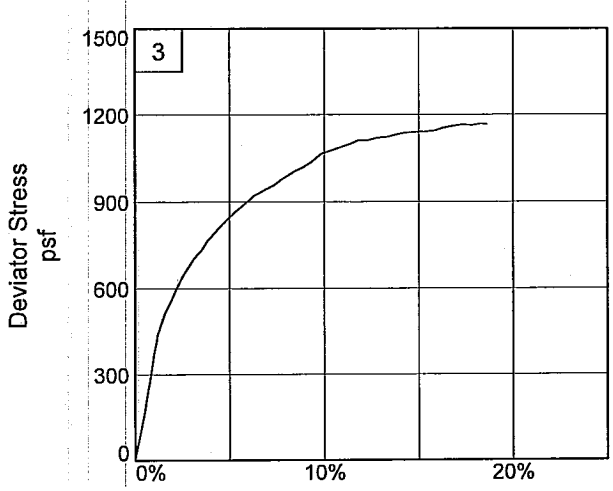
FFEBJV, LLC

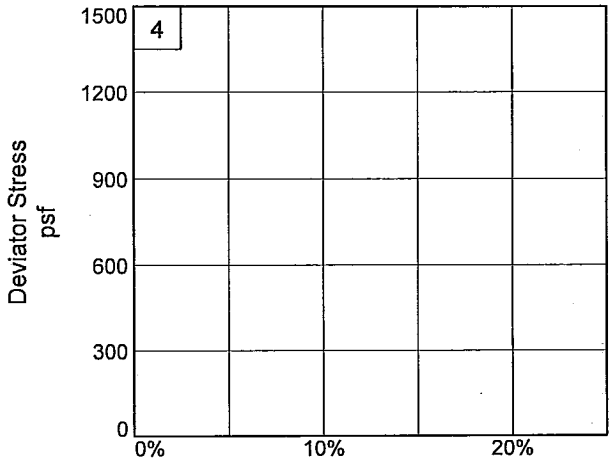
Figure _____

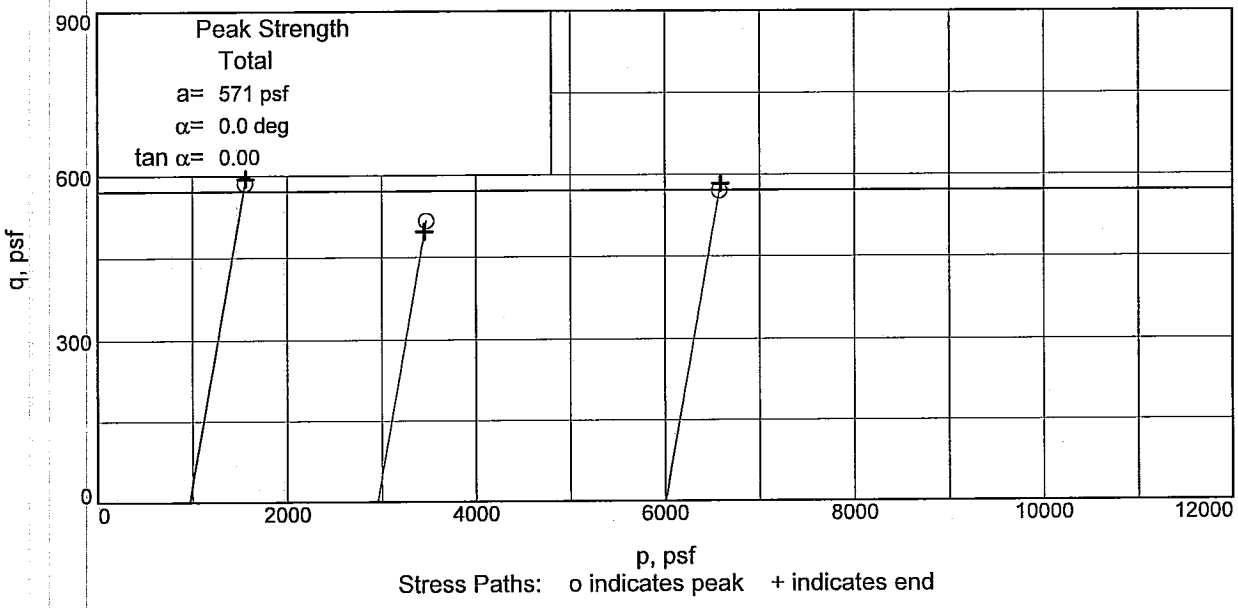
Tested By: DW/DD **Checked By:** AD







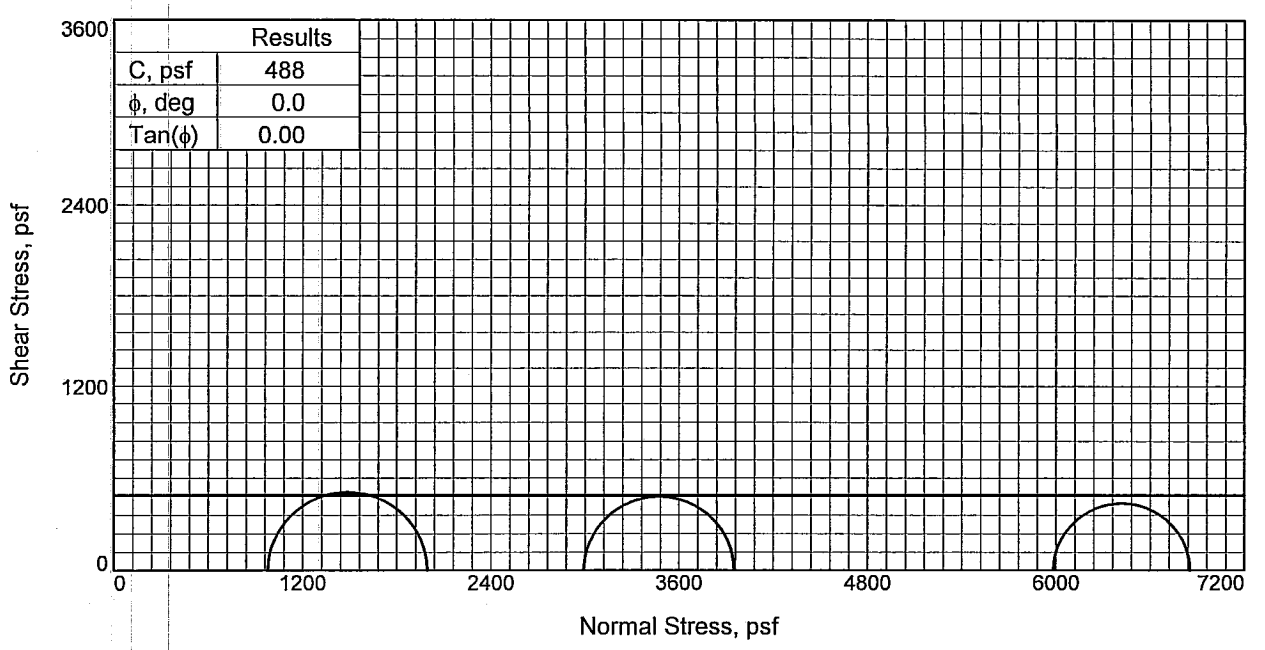


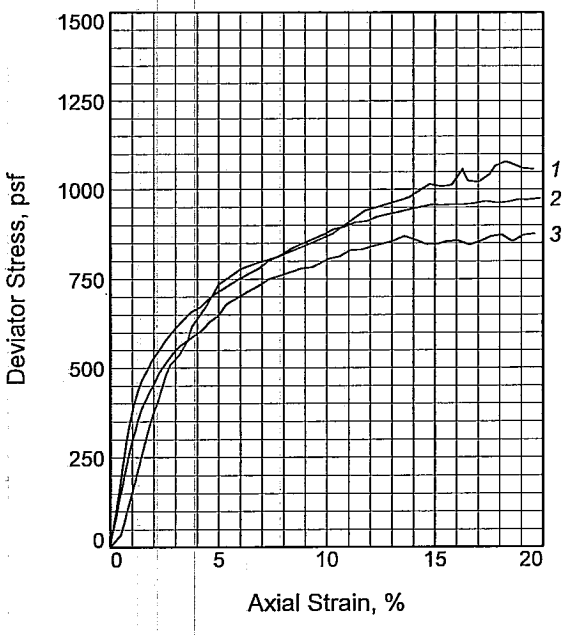


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-45UPT **Depth:** 16.8 **Sample Number:** 6B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD **Checked By:** AD





Sample No.		1	2	3
Initial	Water Content, %	35.9	35.4	35.9
	Dry Density, pcf	87.0	86.1	86.5
	Saturation, %	104.0	100.6	103.2
	Void Ratio	0.9241	0.9430	0.9332
	Diameter, in.	1.384	1.410	1.377
	Height, in.	3.000	3.007	3.023
At Test	Water Content, %	35.9	35.4	35.9
	Dry Density, pcf	87.0	86.1	86.5
	Saturation, %	104.0	100.6	103.2
	Void Ratio	0.9241	0.9430	0.9332
	Diameter, in.	1.384	1.410	1.377
	Height, in.	3.000	3.007	3.023
Strain rate, in./min.		0.030	0.030	0.030
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.80	20.79	41.55
Fail. Stress, psf		1015	957	869
Strain, %		14.8	14.9	13.6
Ult. Stress, psf		1015	957	847
Strain, %				
σ_1 Failure, psf		1994	3951	6853
σ_3 Failure, psf		980	2994	5984

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CL4

LL= 37 **PL=** 24 **PI=** 13
Assumed Specific Gravity= 2.68
Remarks:

Figure _____

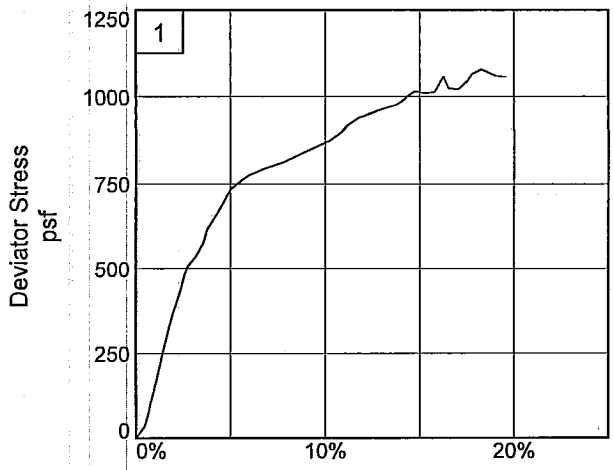
Client: U.S. Army Corps of Engineers

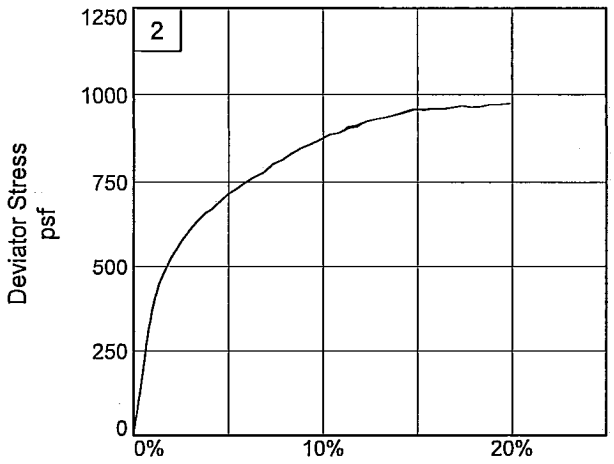
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 20.8
Sample Number: 7B
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

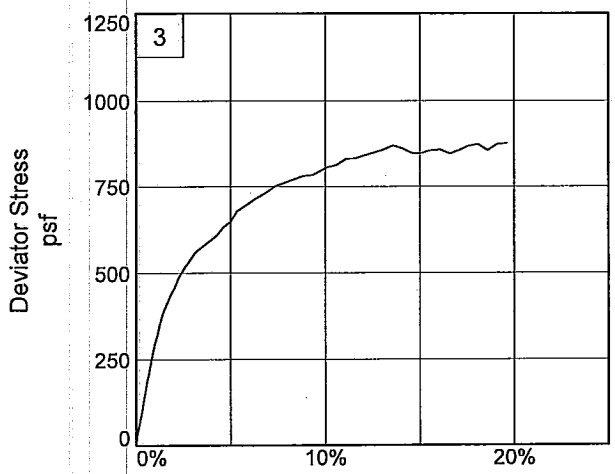
TRIAXIAL SHEAR TEST REPORT

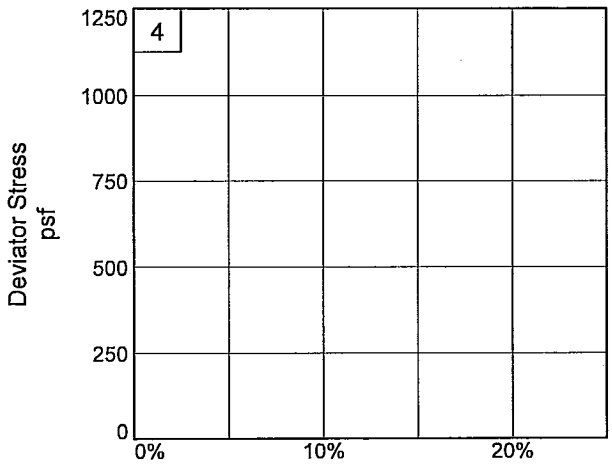
FFEBJV, LLC

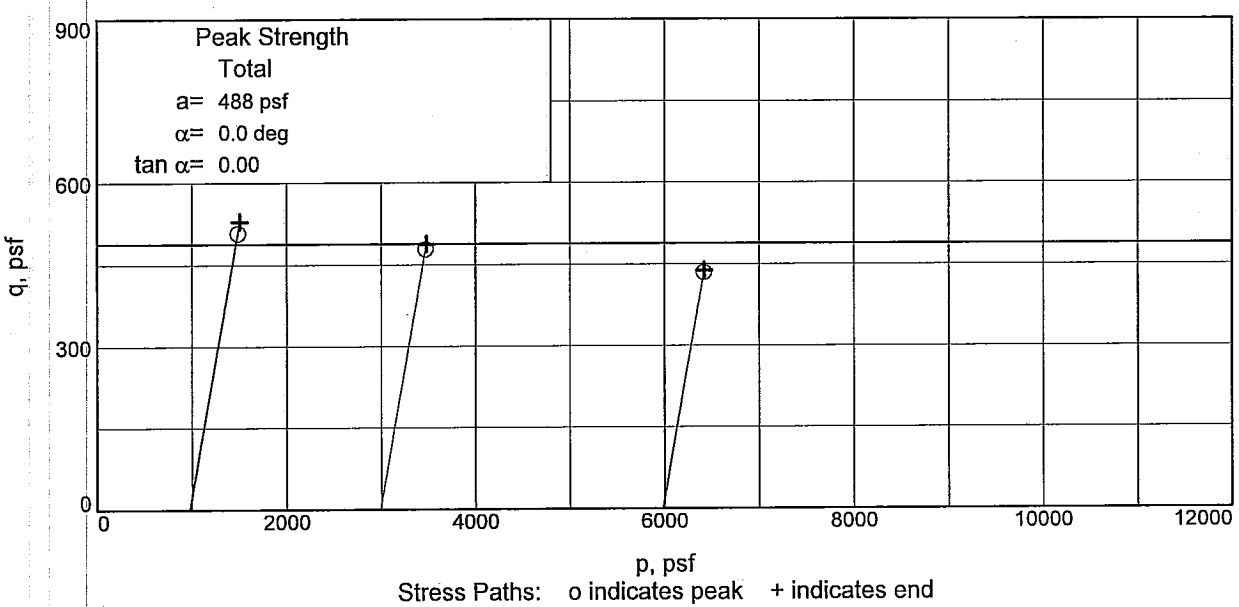
Tested By: DW/DD **Checked By:** AD







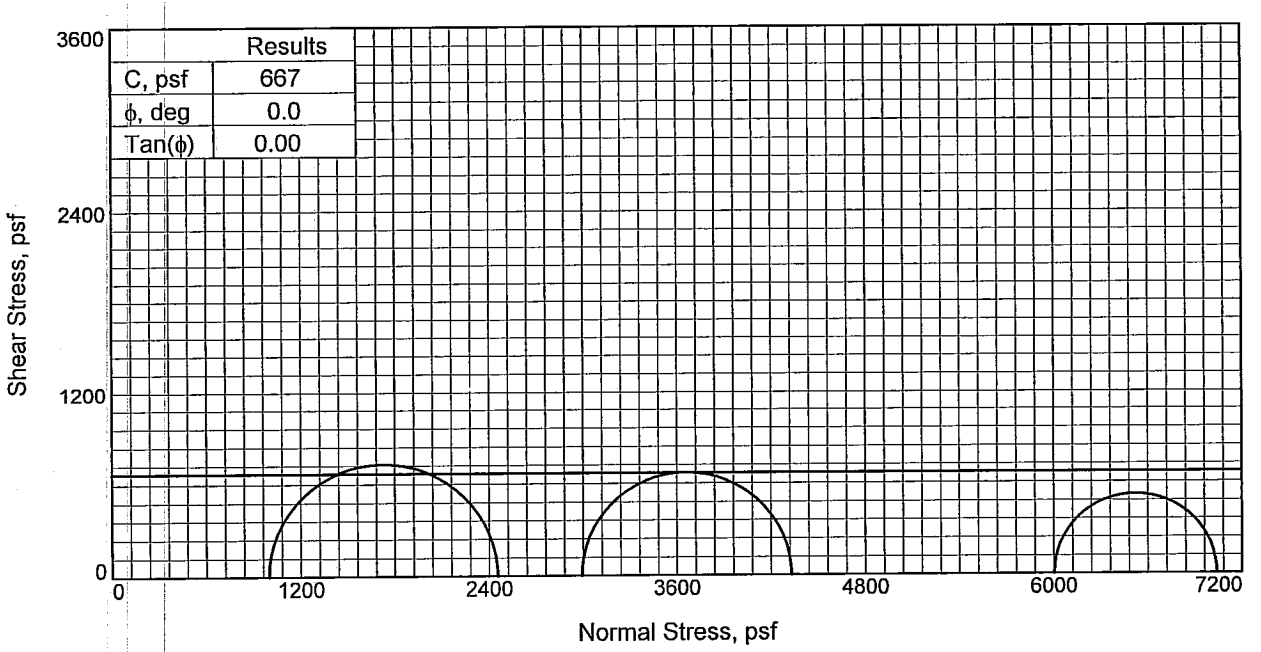


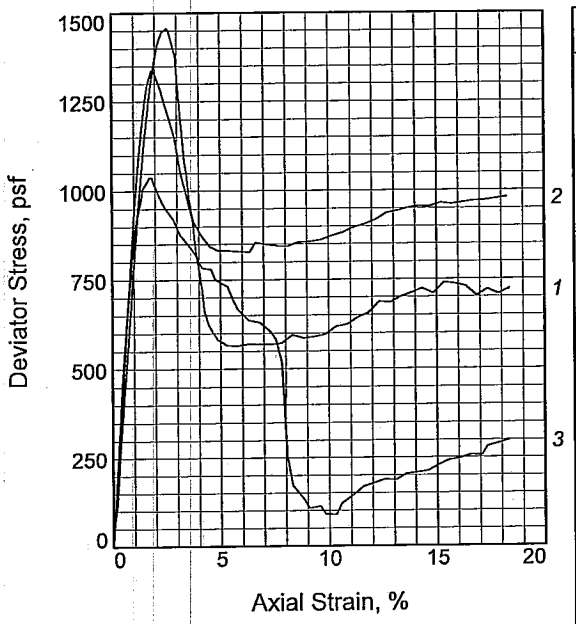


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-45UPT **Depth:** 20.8 **Sample Number:** 7B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD **Checked By:** AD





Sample No.		1	2	3
Initial	Water Content, %	110.0	130.1	117.7
	Dry Density, pcf	41.4	36.4	40.5
	Saturation, %	97.7	97.6	101.3
	Void Ratio	2.9511	3.4947	3.0420
	Diameter, in.	1.388	1.384	1.398
	Height, in.	3.041	3.038	3.032
At Test	Water Content, %	110.0	130.1	117.7
	Dry Density, pcf	41.4	36.4	40.5
	Saturation, %	97.7	97.6	101.3
	Void Ratio	2.9511	3.4947	3.0420
	Diameter, in.	1.388	1.384	1.398
	Height, in.	3.041	3.038	3.032
Strain rate, in./min.		0.030	0.030	0.030
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	20.79	41.69
Fail. Stress, psf		1456	1336	1038
Strain, %		2.5	1.8	1.8
Ult. Stress, psf		565	831	88
Strain, %				
σ_1 Failure, psf		2454	4329	7041
σ_3 Failure, psf		998	2993	6003

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CHOB W/ WD

LL= 157 **PL=** 41 **PI=** 116
Assumed Specific Gravity= 2.62
Remarks:

Figure _____

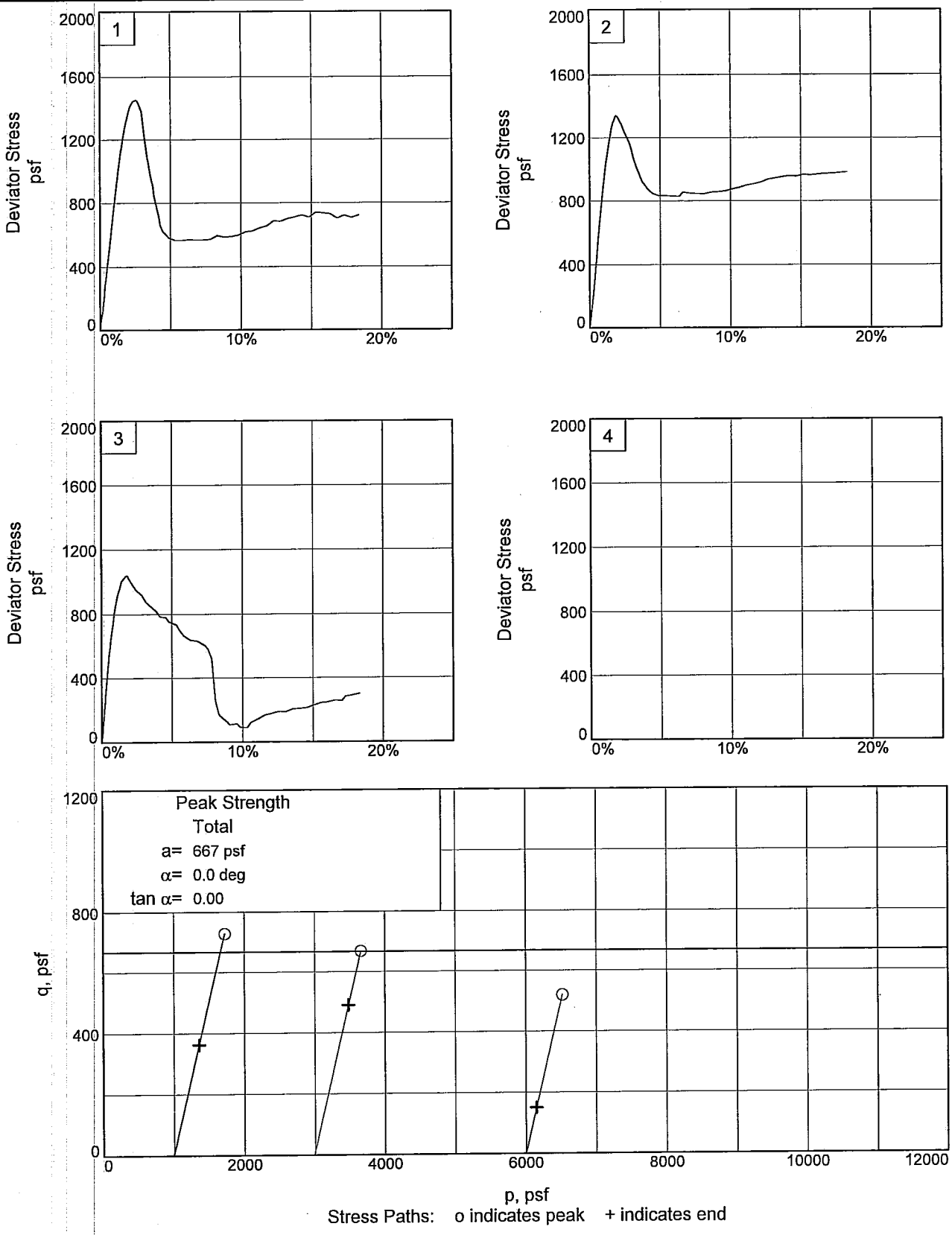
Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 25.7
Sample Number: 8C
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

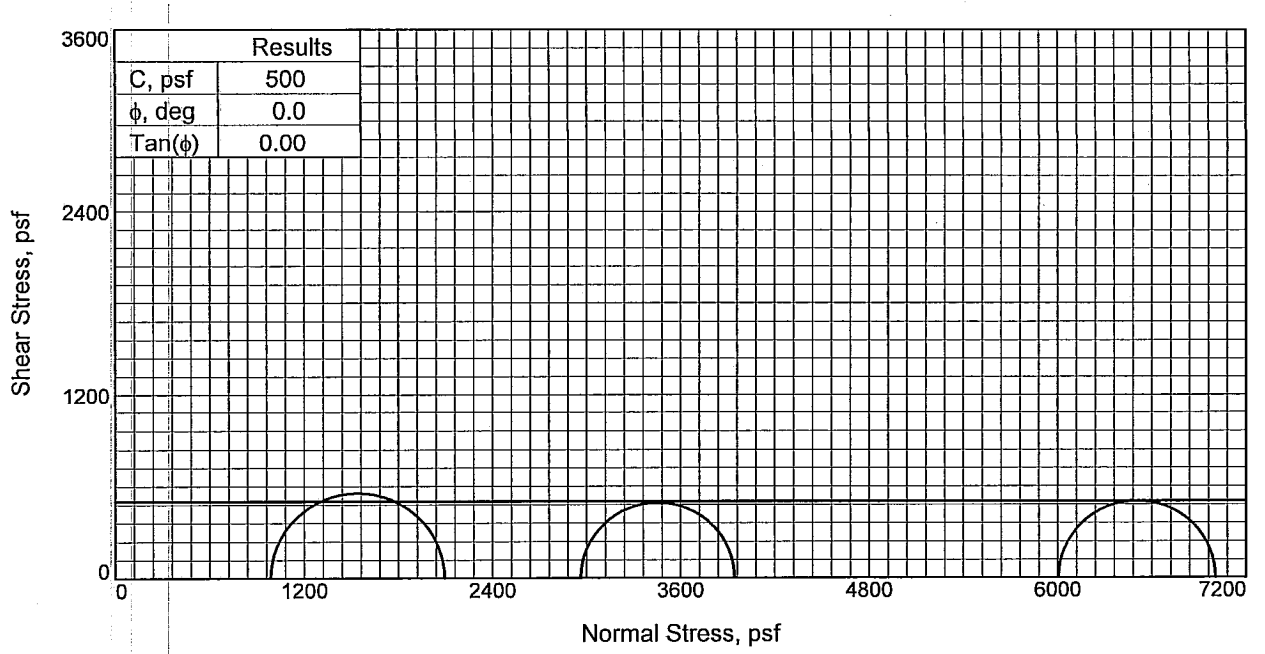
Tested By: DW/DD **Checked By:** AD

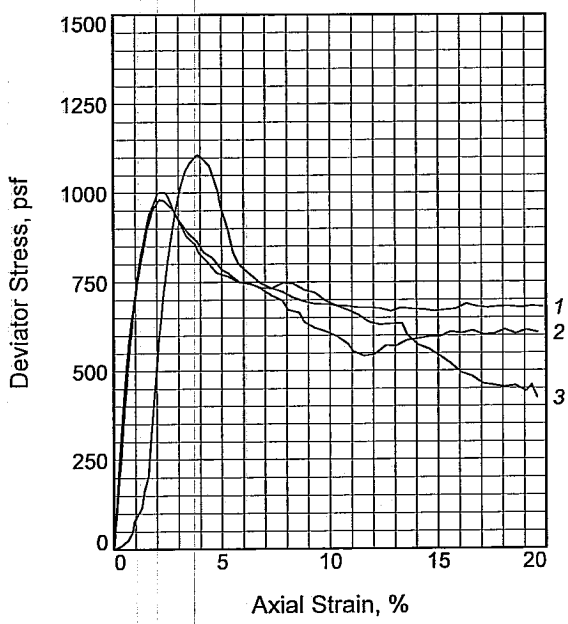


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-45UPT **Depth:** 25.7 **Sample Number:** 8C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD **Checked By:** AD





Sample No.		1	2	3
Initial	Water Content, %	56.9	61.6	61.7
	Dry Density, pcf	66.5	63.6	64.5
	Saturation, %	99.7	100.4	102.7
	Void Ratio	1.5518	1.6679	1.6343
	Diameter, in.	1.385	1.387	1.389
	Height, in.	3.137	3.150	3.147
At Test	Water Content, %	56.9	61.6	61.7
	Dry Density, pcf	66.5	63.6	64.5
	Saturation, %	99.7	100.4	102.7
	Void Ratio	1.5518	1.6679	1.6343
	Diameter, in.	1.385	1.387	1.389
	Height, in.	3.137	3.150	3.147
Strain rate, in./min.		0.031	0.032	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.58	41.71
Fail. Stress, psf		1107	981	1001
Strain, %		3.9	2.1	2.4
Ult. Stress, psf		667	542	542
Strain, %				
σ_1 Failure, psf		2094	3944	7007
σ_3 Failure, psf		987	2964	6006

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH4 W/ LNS SC, ML

LL= 81 **PL=** 25 **PI=** 56
Assumed Specific Gravity= 2.72
Remarks:

Client: U.S. Army Corps of Engineers

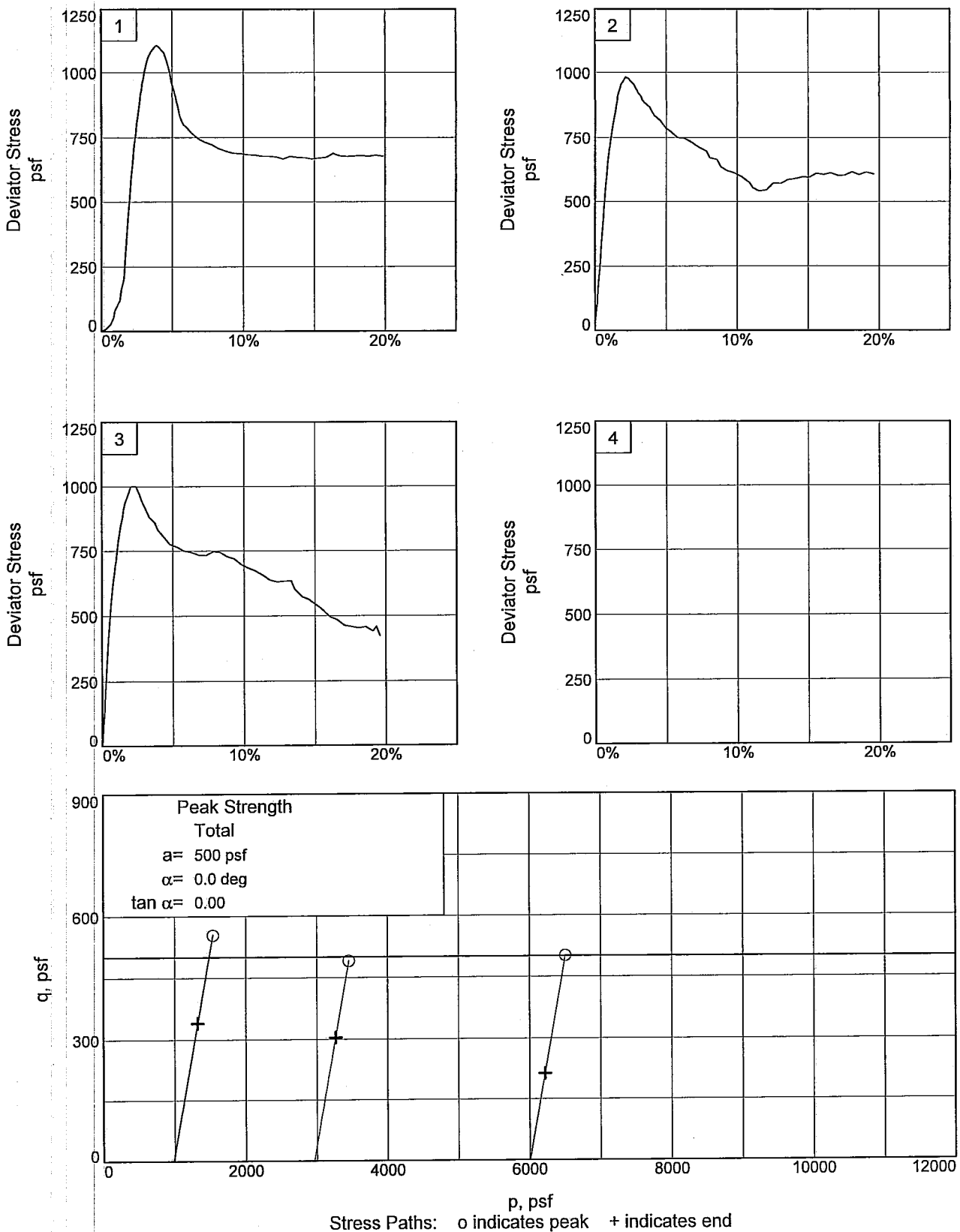
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 33.7
Sample Number: 10C
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

Figure _____

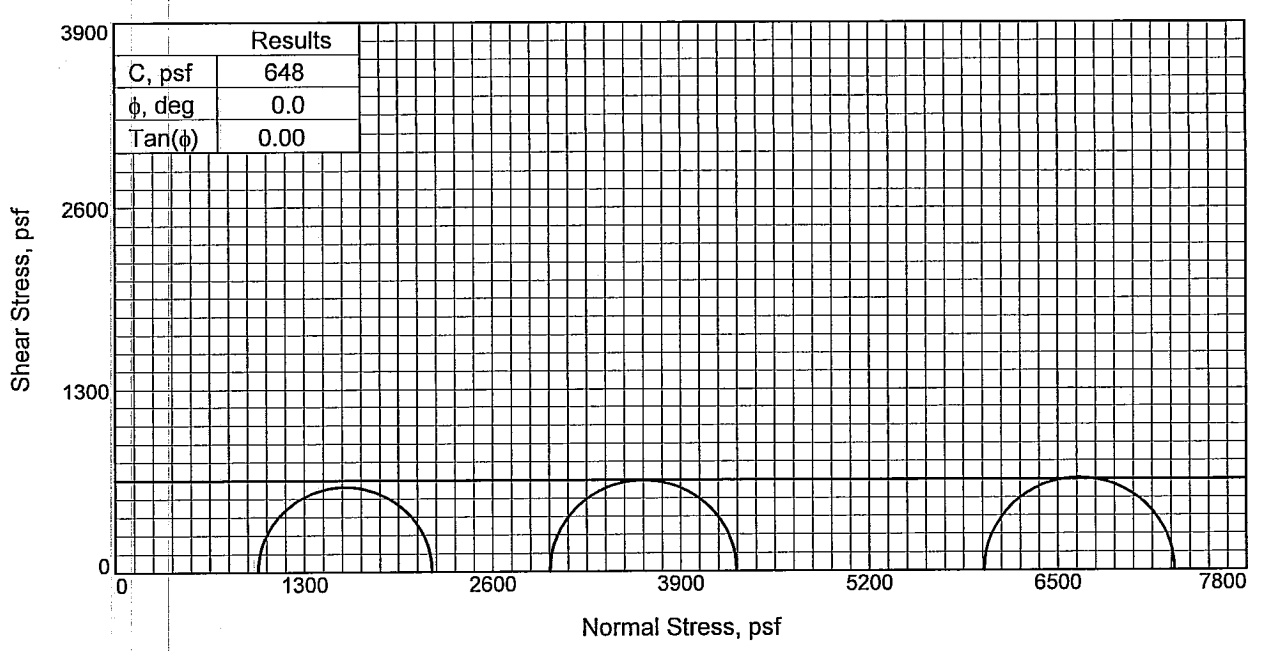
Tested By: DW/DD **Checked By:** AD

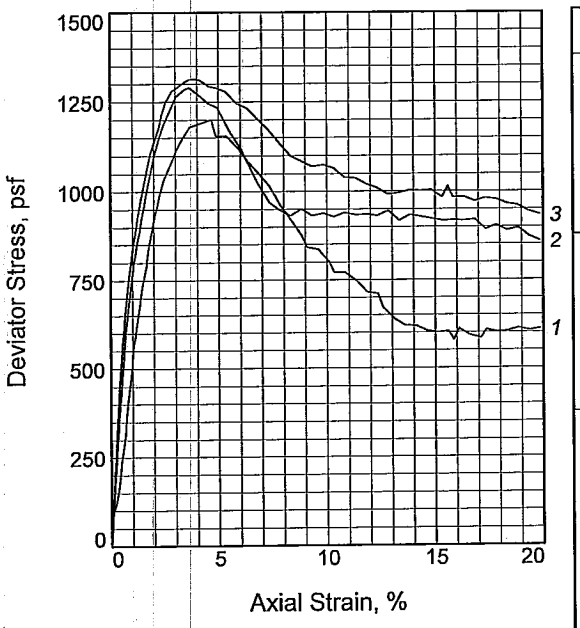


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-45UPT **Depth:** 33.7 **Sample Number:** 10C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD **Checked By:** AD





Sample No.		1	2	3
Initial	Water Content, %	59.1	55.6	55.6
	Dry Density, pcf	66.1	67.1	64.7
	Saturation, %	102.5	98.7	93.1
	Void Ratio	1.5685	1.5308	1.6234
	Diameter, in.	1.414	1.414	1.428
	Height, in.	3.159	3.155	3.160
At Test	Water Content, %	59.1	55.6	55.0
	Dry Density, pcf	66.1	67.1	64.7
	Saturation, %	102.5	98.7	92.2
	Void Ratio	1.5685	1.5308	1.6234
	Diameter, in.	1.414	1.414	1.428
	Height, in.	3.159	3.155	3.160
Strain rate, in./min.		0.032	0.032	0.032
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.82	20.81	41.61
Fail. Stress, psf		1199	1289	1312
Strain, %		4.7	3.6	3.7
Ult. Stress, psf		599	917	992
Strain, %				
σ_1 Failure, psf		2181	4285	7304
σ_3 Failure, psf		982	2996	5991

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ ARS ML

LL= 73 **PL=** 24 **PI=** 49
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

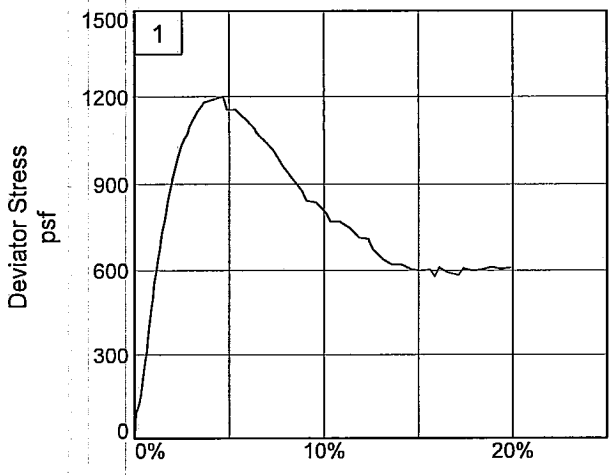
Client: U.S. Army Corps of Engineers

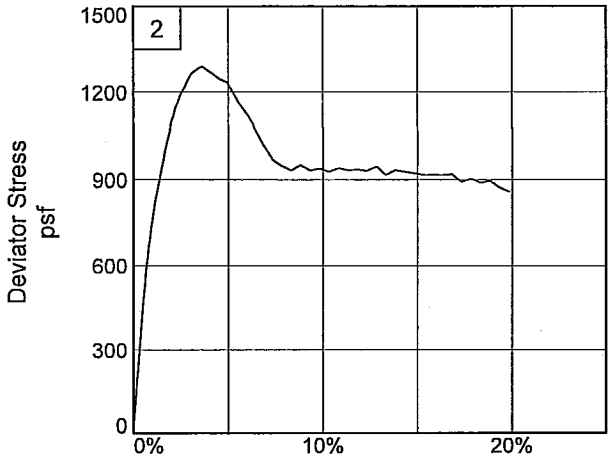
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 37.7
Sample Number: 11C
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

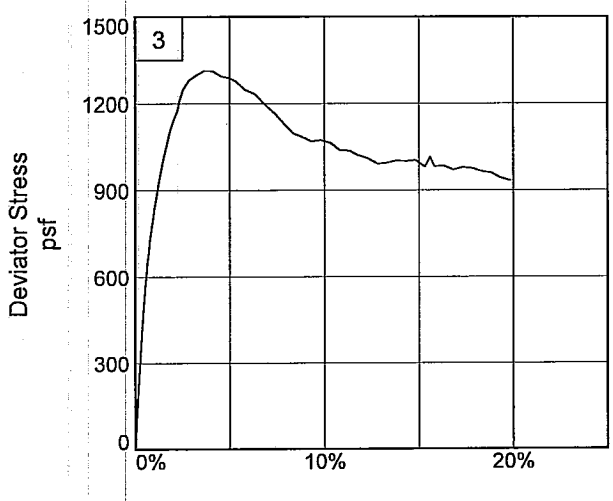
TRIAXIAL SHEAR TEST REPORT

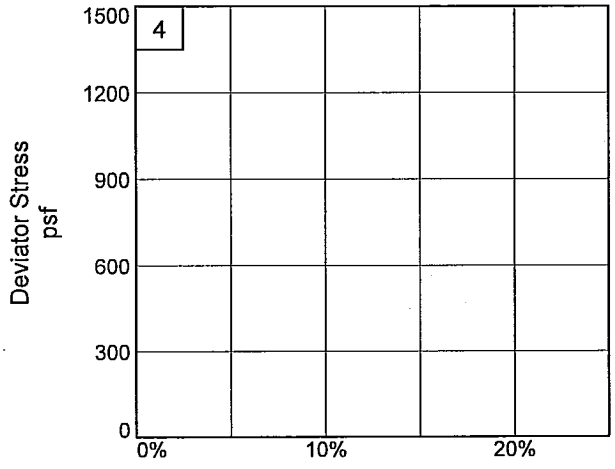
FFEBJV, LLC

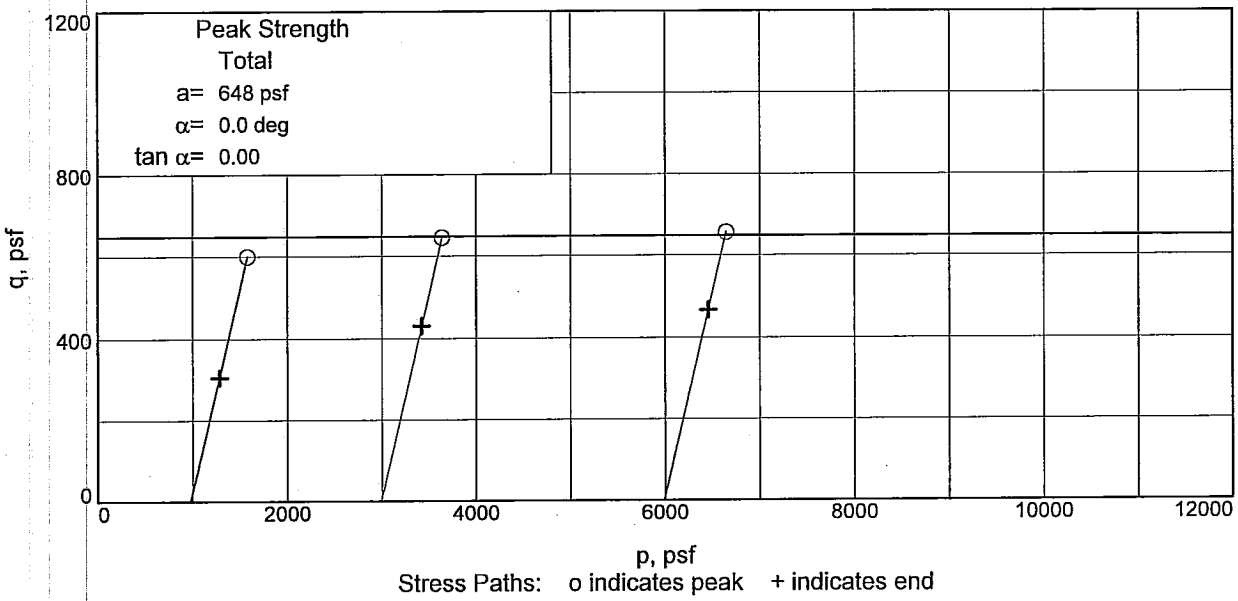
Tested By: DW/DD **Checked By:** AD











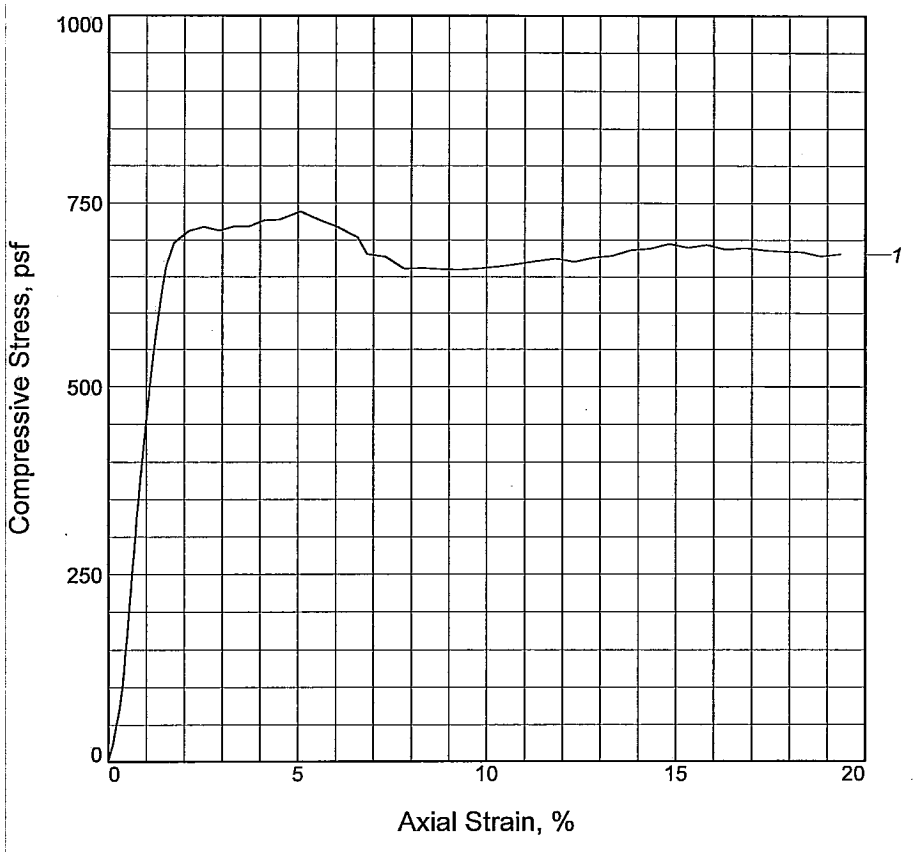
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-45UPT **Depth:** 37.7 **Sample Number:** 11C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD **Checked By:** AD

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	718			
Undrained shear strength, psf	359			
Failure strain, %	2.5			
Strain rate, in./min.	0.030			
Water content, %	53.6			
Wet density, pcf	103.4			
Dry density, pcf	67.3			
Saturation, %	95.8			
Void ratio	1.5224			
Specimen diameter, in.	1.429			
Specimen height, in.	3.019			
Height/diameter ratio	2.11			

Description: SO GR CH4 W/ ARS ML

LL = 75	**PL =** 24	**PI =** 51	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/12/07
Remarks:

Figure _____

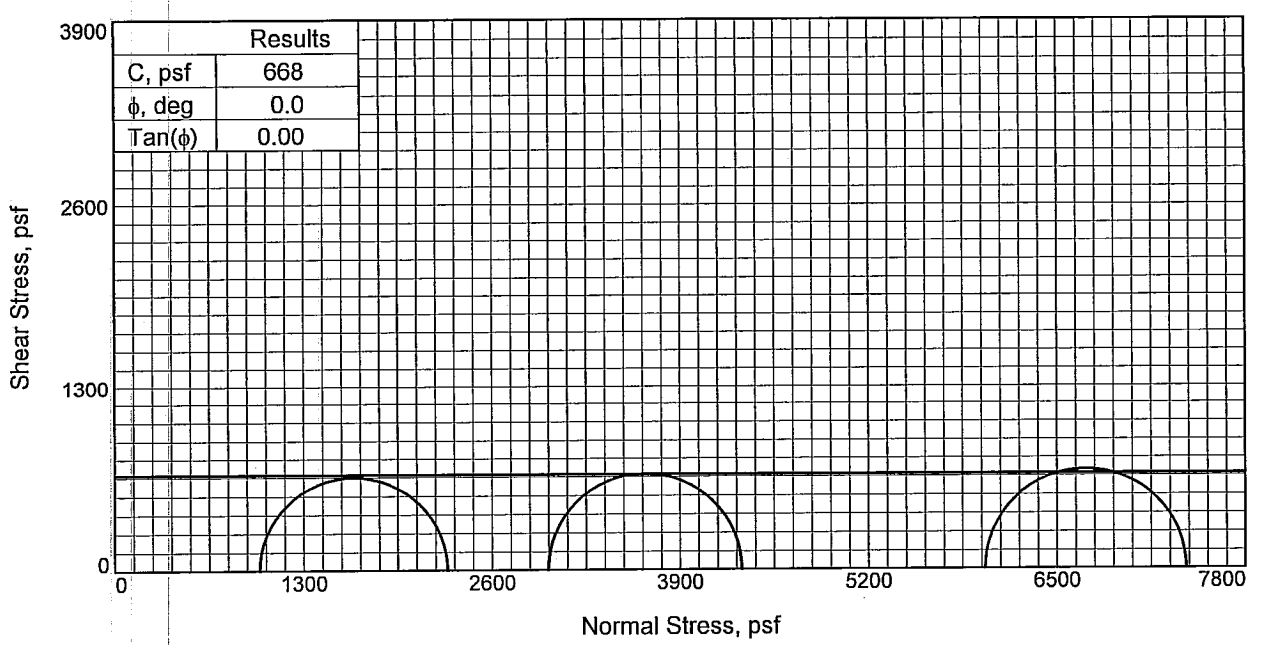
Client: U.S. Army Corps of Engineers

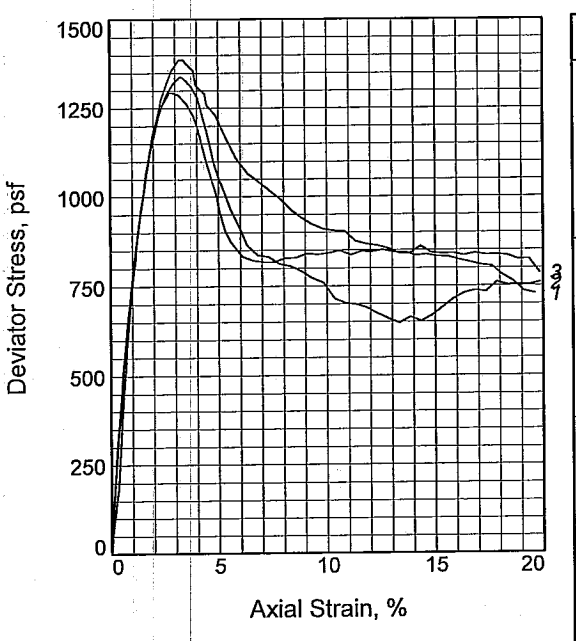
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 41.7
Sample Number: 12C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: BB _____ **Checked By:** AD _____





Sample No.		1	2	3
Initial	Water Content, %	62.4	61.6	62.8
	Dry Density, pcf	62.5	63.3	62.1
	Saturation, %	98.6	99.3	98.2
	Void Ratio	1.7349	1.7007	1.7527
	Diameter, in.	1.390	1.418	1.403
	Height, in.	3.150	3.149	3.147
At Test	Water Content, %	62.4	61.6	62.8
	Dry Density, pcf	62.5	63.3	62.1
	Saturation, %	98.6	99.3	98.2
	Void Ratio	1.7349	1.7007	1.7527
	Diameter, in.	1.390	1.418	1.403
	Height, in.	3.150	3.149	3.147
Strain rate, in./min.		0.032	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	20.75	41.70
Fail. Stress, psf		1295	1338	1388
Strain, %		2.8	3.2	3.4
Ult. Stress, psf		817	646	840
Strain, %				
σ_1 Failure, psf		2292	4327	7392
σ_3 Failure, psf		997	2989	6004

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4

LL= 85 **PL=** 26 **PI=** 59
Assumed Specific Gravity= 2.74
Remarks:

Client: U.S. Army Corps of Engineers

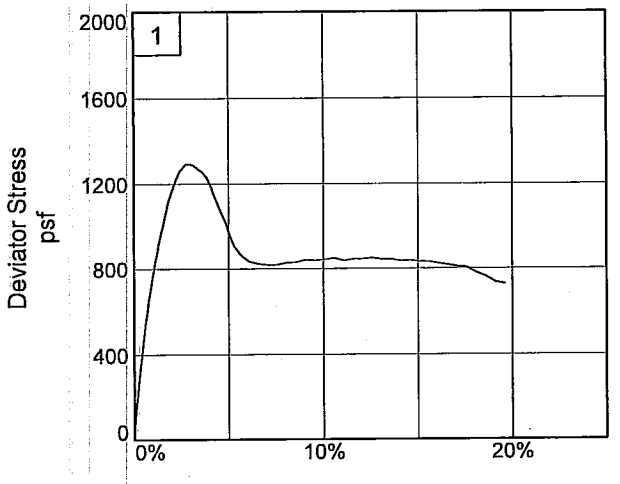
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 45.7
Sample Number: 13C
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

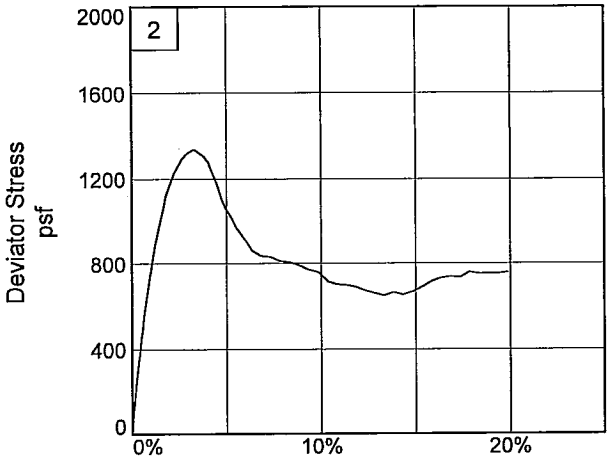
TRIAXIAL SHEAR TEST REPORT

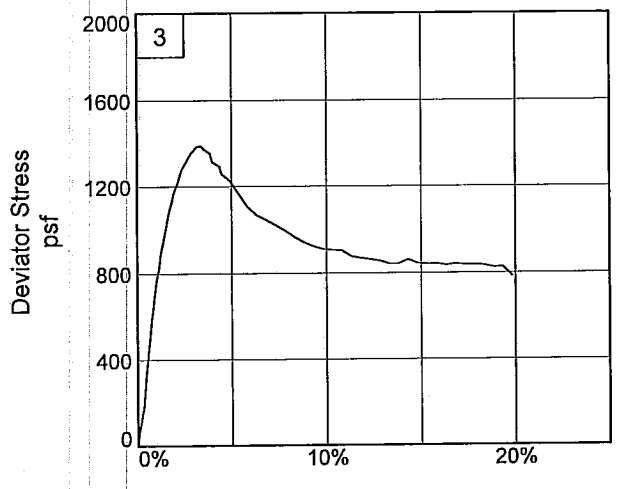
FFEBJV, LLC

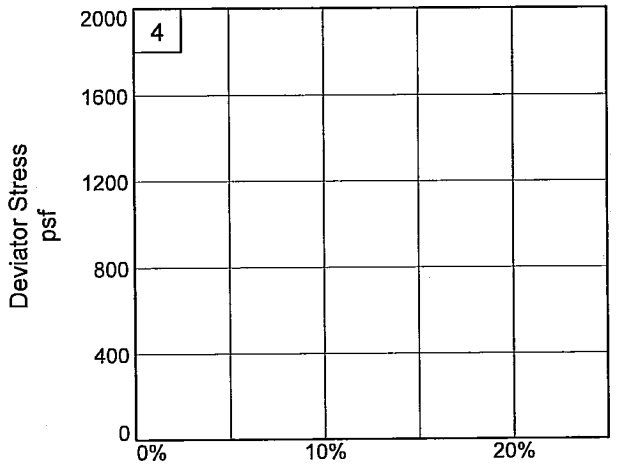
Figure _____

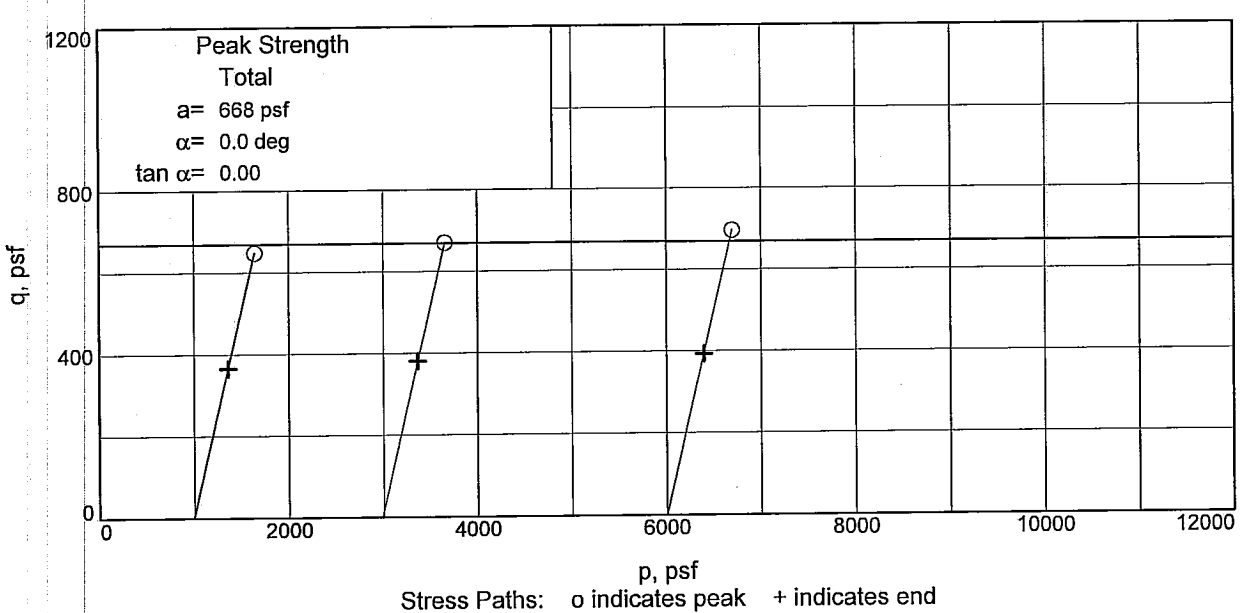
Tested By: DW/DD **Checked By:** AD











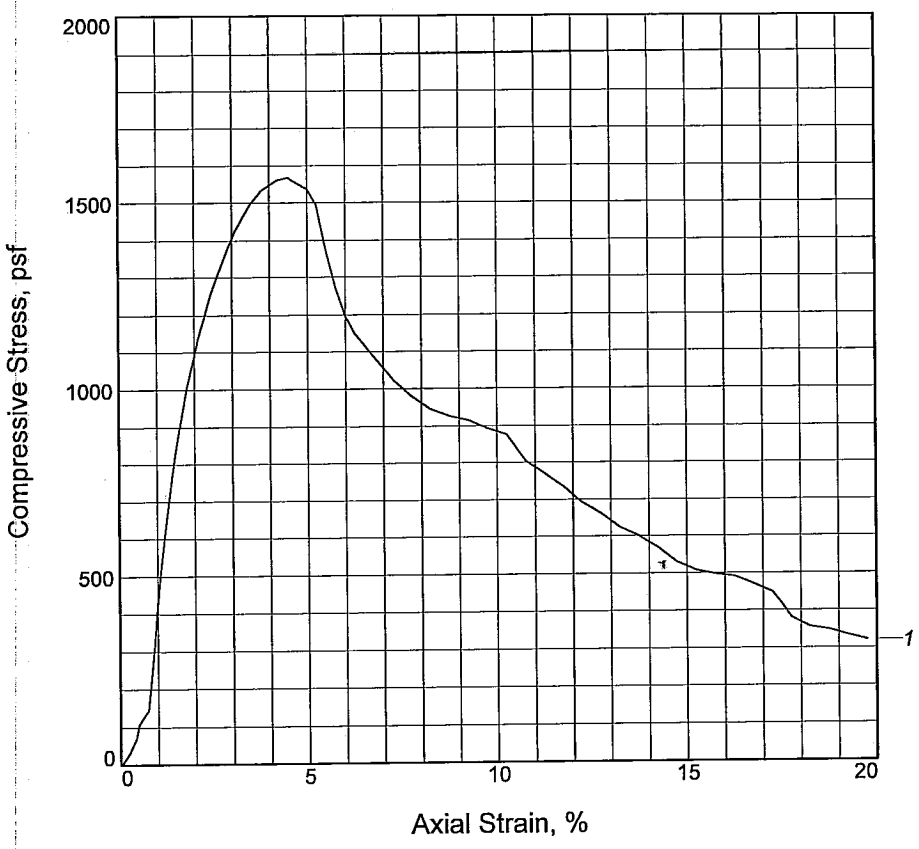
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-45UPT **Depth:** 45.7 **Sample Number:** 13C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD **Checked By:** AD

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1568			
Undrained shear strength, psf	784			
Failure strain, %	4.5			
Strain rate, in./min.	0.031			
Water content, %	56.0			
Wet density, pcf	102.5			
Dry density, pcf	65.7			
Saturation, %	96.1			
Void ratio	1.5833			
Specimen diameter, in.	1.417			
Specimen height, in.	3.139			
Height/diameter ratio	2.22			

Description: M GR CH4 W/ LNS SM & ARS ML

LL = 87	**PL** = 26	**PI** = 61	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled:
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

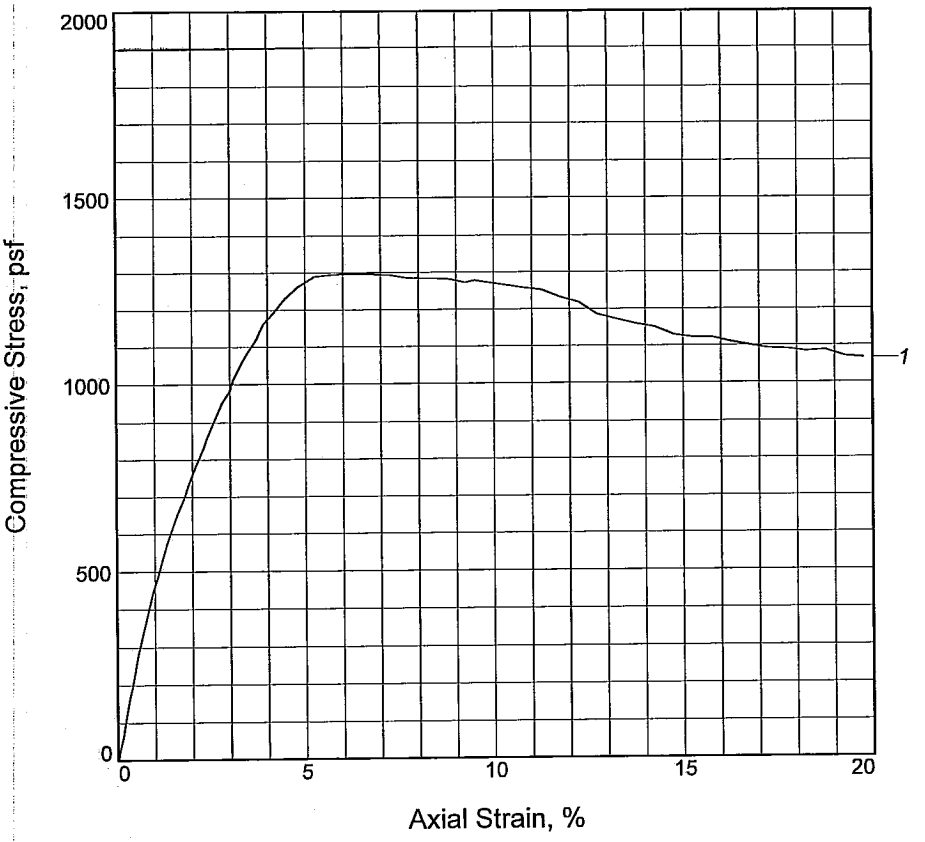
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 49.7
Sample Number: 14C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: BB _____ **Checked By:** AD _____

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1296			
Undrained shear strength, psf	648			
Failure strain, %	6.3			
Strain rate, in./min.	0.032			
Water content, %	52.4			
Wet density, pcf	104.4			
Dry density, pcf	68.5			
Saturation, %	96.3			
Void ratio	1.4789			
Specimen diameter, in.	1.431			
Specimen height, in.	3.180			
Height/diameter ratio	2.22			

Description: M GR CH4 W/ LNS ML, SL

LL = 75 | **PL** = 25 | **PI** = 50 | **Assumed GS=** 2.72 | **Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/14/07
Remarks:

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 56.8
Sample Number: 16B

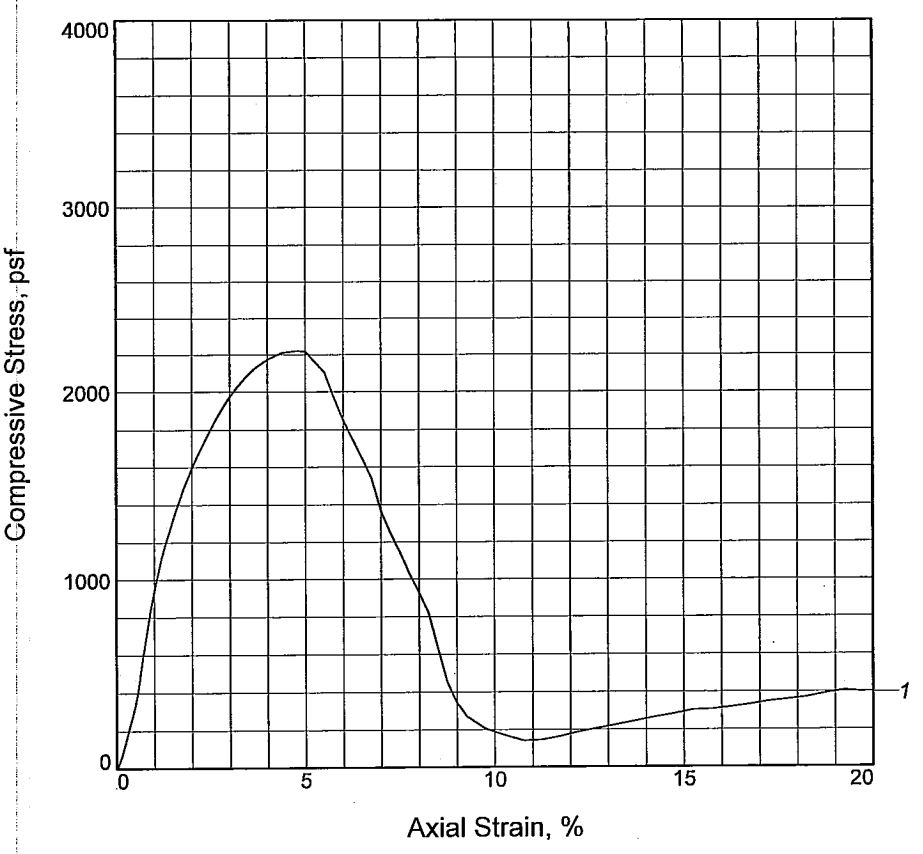
UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: BB _____ **Checked By:** AD _____

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2218			
Undrained shear strength, psf	1109			
Failure strain, %	4.8			
Strain rate, in./min.	0.032			
Water content, %	50.7			
Wet density, pcf	103.5			
Dry density, pcf	68.7			
Saturation, %	93.3			
Void ratio	1.4891			
Specimen diameter, in.	1.431			
Specimen height, in.	3.160			
Height/diameter ratio	2.21			

Description: ST GR CH4 W/ SIF

LL = 89	**PL** = 27	**PI** = 62	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/14/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-45UPT **Depth:** 69.7
Sample Number: 19C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: BB _____ **Checked By:** AD _____

BOR. WWHC-45UPT
STA.
LAT 29^50'03.31"
LON 90^07'02.11"
15 APRIL 2007

GROUND EL. 4.6

0.0	0.8	13		CL	VSTBR		O					
0.8	2.0	22	2.0	CL	VSTBR							
2.0	2.8	28		CH	ST LGRBR							
2.8	4.0	33	4.0	CH	M GR BR		O	821	114	52	18	33 31
4.0	4.8	30		CH	SISST GR		WD					
4.8	5.7	32	5.7	CH	SISST GR		WD	1095	118	61	19	30 51
5.7	8.0		8.0	NS								
8.0	8.8	33		CL	M GR BR		TR- O					
8.8	9.7	39	9.7	CL	M GR		TR- O					
9.7	12.0	39	12.0	NS								
12.0	12.8	36		CL	SO T GR							
12.8	13.7	33	13.7	CL	SO T GR							
13.7	16.0		16.0	NS								
16.0	16.8	34		CL	M GR							
16.8	17.7	36	17.7	CL	M GR							
17.7	20.0		20.0	NS								
20.0	20.8	34		CL	SO GR							
20.8	21.7	36	21.7	CL	SO GR							
21.7	22.6	37	22.6	CH	SO GR							
22.6	24.0	48	24.0	CH	SISSO GR		O					
24.0	24.8	85	24.8	CH	O M GR		WD					
24.8	25.7	110		CH	O M GR							
25.7	26.6	118		CH	O M GR		WD					
26.6	28.0	95	28.0	CH	O M DGRGR		SIS					
28.0	28.8	58		CH	SO GR		TR- O					
28.8	29.7	37	29.7	CH	M GR		CC					
29.7	30.6	32		ML	GR		CS					
30.6	32.0	29	32.0	ML	GR		CS					
32.0	32.8	45		CH	SISSO GR		CC					
32.8	33.7	56		CH	SISSO GR		SS					
33.7	34.6	57		CH	SISSO GR		SS					
34.6	36.0	62	36.0	CH	SISSO GR		SS					
36.0	36.8	39	36.8	CL	M GR							
36.8	37.7	59		CH	SIS M GR							
37.7	40.0	56		CH	SIS M GR							

```
 40.0 40.8 48 40.8CH  SIS M GR
 40.8 41.7 50 41.7CH  SS  M GR
 41.7 44.0 56     CH  SISSO GR                    359103 75 24      54 420
 44.0 44.8 64     CH  SISSO GR
 44.8 45.7 59 45.7CH  SIS M GR
 45.7 46.6 64 46.6CH      M GR
 46.6 48.0 60 48.0CH  SIS M GR
 48.0 48.8 53 48.8CH  SS  M GR
 48.8 49.7 59     CH  SIS M GR
 49.7 50.6 59     CH  SIS M GR       SS              784103 87 26      56 500
 50.6 52.0 60 52.0CH  SIS M GR
 52.0 52.8 55     CH      M GR       SL
 52.8 53.7 62     CH      M GR       SL
 53.7 54.6 58     CH      M GR       SL
 54.6 56.0 57 56.0CH      M GR       SL
 56.0 56.8 61     CH  SIS M GR       SL
 56.8 57.7 54 57.7CH  SIS M GR       SL              648104 75 25      52 571
 57.7 60.0    60.0NS
 60.0 60.8 58     CH      M GR       SL
 60.8 61.7 57     CH      M GR       SL
 61.7 62.6 60 62.6CH      M GR       SL
 62.6 64.0 58 64.0CH  SIS M GR       SL
 64.0 64.8 55 64.8CH  SS  M GR
 64.8 65.7 27     SM       GR       SIFCS
 65.7 68.0 28 68.0SM       GR       SIFCS
 68.0 68.8 56     CH      M GR       SL
 68.8 69.7 53     CH      M GR       SIF
 69.7 70.6 55     CH     ST GR       SIF             1109104 89 27      51 700
 70.6 72.0 54 72.0CH     ST GR       SL
999.9
*******************************************************************************
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q)                Classif  : CL
Depth/Ele:  9.10/-4.50         Water Con: 34.00
LL,PL,PI :  39, 19, 20         Dry Dens : 89.00
Cohesion :  0.269              Saturat  :103.00
Shear Str:                   Frict Ang: 00.00
Toggles  :(     )(     )(     )(     )

*******************************************************************************
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q)                Classif  : CL
Depth/Ele: 13.10/-8.50         Water Con: 36.00
```

LL,PL,PI : 47, 13, 34 Dry Dens : 84.00
Cohesion : 0.207 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 17.10/-12.5 Water Con: 32.00
LL,PL,PI : 36, 19, 17 Dry Dens : 92.00
Cohesion : 0.286 Saturat :102.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 21.10/-16.5 Water Con: 36.00
LL,PL,PI : 37, 24, 13 Dry Dens : 87.00
Cohesion : 0.244 Saturat :103.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CHO
Depth/Ele: 26.00/-21.4 Water Con:119.00
LL,PL,PI : 157, 41,116 Dry Dens : 39.00
Cohesion : 0.334 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 34.00/-29.4 Water Con: 60.00
LL,PL,PI : 81, 25, 56 Dry Dens : 65.00
Cohesion : 0.250 Saturat :101.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES

Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-33.4 Water Con: 57.00
LL,PL,PI : 73, 24, 49 Dry Dens : 66.00
Cohesion : 0.324 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 46.00/-41.4 Water Con: 62.00
LL,PL,PI : 85, 26, 59 Dry Dens : 63.00
Cohesion : 0.334 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CH
Depth/Ele: 21.7/-17.1 Water Con: 40.00
LL,PL,PI : 68, 28, 40 Dry Dens : 83.00
Cohesion : Saturat :100.00
Shear Str: Frict Ang: 00.00
Norm Str: 1.250, 0.910
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.01	0.995
0.13	0.979
0.25	0.967
0.50	0.949
1.00	0.921
2.00	0.881
4.00	0.810
8.00	0.750
2.00	0.760
0.50	0.809

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-46UCL

Current Date: 7/5/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	ST BR CL4 W/ RT, ARS CH	CL4		23												
1B	0.8	VST BR CL4 W/ RT, ARS CH	CL4		19												
2A	2.0	VST BR & GR CL6 W/ RT	CL6		23												
2B	2.8	VST BR & GR CL6 W/ RT	CL6		19												
3A	4.0	ST LBR & GR CL6 W/ SIF	CL6		26												
4A	6.0	M GR & LBR CL6	CL6		29												
4B	6.8	M GR & LBR CL6	CL6	7	31	92	121	100	UC	--	951	1903	44	16	28	0.98	
5A	8.0	ST GR CH2 W/ LNS ML	CH2		26												
5B	8.8	ST GR & LBR CH2 W/ RT	CH2		29	98	124	98	UU	0	1769		55	17	38	0.60	
NS	9.5	NO SAMPLE	NS														
6A	12.0	M DGR CH2 W/ RT	CH2		38												
6B	12.8	M DGR CH2 W/ RT, WD	CH2		28	95	121	96	UU	0	915		59	26	33	0.36	
NS	13.5	NO SAMPLE	NS														
7A	16.0	M GR CL6 W/ RT	CL6		31												
7B	16.8	M GR & LBR CL6 W/ RT	CL6		30												
7C	17.7	M GR & LBR CL6 W/ RT	CL6		32	90	119	100	UU	0	775		48	18	30	0.39	
8A	20.0	M GR CL4 W/ ARS CH	CL4		33												
8B	20.8	M GR & LBR CL4 W/ ARS CH	CL4		31												
8C	21.7	M GR CL4	CL4		37	83	114	98	UU	0	525		36	23	13	0.25	
9A	24.0	M GR CH2 W/ SIF	CH2		37												
9B	24.8	SO GR CH3 W/ ARS ML, RT, SIF	CH3	5	39	81	113	98	UC	--	449	897	65	21	44	0.36	
9C	25.7	M GR CH3 W/ ARS ML, RT, SIF	CH3		37												
10A	28.0	M GR CH3 W/ RT	CH3		44												
10B	28.8	M GR CH3 W/ RT, WD, SIF, ARS ML	CH3		51												
10C	29.7	SO GR CH4 W/ ARS ML, RT, WD, SIF	CH4		54	65	101	92	UU	0	462		108	24	84	0.36	
11A	32.0	M GR CH4 W/ RT, WD, O	CH4		65												
11B	32.8	M GR CHOA W/ RT, WD	CHOA		78	54	97	100	UU	0	522		126 **	26 **	100	0.32	
11C	33.7	M GR CHOA W/ RT, WD	CHOA		72												GS, CON
12A	36.0	M GR CHOA W/ WD	CHOA		92												
12B	36.8	M GR CH4 W/ O, WD, RT,	CH4		61												
12C	37.7	M GR CH4 W/ ARS ML, RT, O, WD	CH4		60	64	103	99	UU	0	650		87	19	68	0.35	
13A	40.0	M GR CH3 W/ LNS ML, CC	CH3		46												
13B	40.8	M GR CH3 W/ LNS ML	CH3		43												
13C	41.7	M GR CH4 W/ LNS ML	CH4	5	52	71	107	100	UC	--	502	1003	83	22	61	0.15	
14A	44.0	M GR CH4 W/ LNS ML	CH4		52												
14B	44.8	M GR CH3 W/ LNS ML	CH3		53												
14C	45.7	M GR CH3 W/ LNS ML	CH3	4	59	65	104	100	UC	--	577	1153	65	18	47	0.13	

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-46UCL

Current Date: 7/5/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
14D	46.6	M GR CH4 W/ SL	CH4		66												
15A	48.0	M GR CH4 W/ LNS ML, SL	CH4		57												
15B	48.8	M GR CH4 W/ LNS ML, SL	CH4		66												
15C	49.7	M GR CH4 W/ LNS ML, SL	CH4	4	63	63	103	100	UC	--	739	1478	87	24	63	0.33	
15D	50.6	M GR CH4 W/ SL	CH4		65												
16A	52.0	SO GR CH3	CH3		60												
16B	52.8	SO GR CH3 W/ LNS ML	CH3		61												
16C	53.7	SO GR CH3 W/ LNS ML	CH3		58	66	104	98	UU	0	385		69	18	51	0.34	
17A	56.0	SO GR CH4 W/ SL	CH4		63												
17B	56.8	M GR CH4 W/ SL	CH4		59												
17C	57.7	M GR CH4 W/ SL	CH4		56												
17D	58.6	M GR CH4 W/ SL	CH4		54												
18A	60.0	M GR CH4 W/ SL	CH4		56												
18B	60.8	M GR CH4 W/ SL	CH4		56												
18C	61.7	M GR CH4 W/ SL	CH4	3	57	67	106	100	UC	--	693	1386	87	22	65	0.35	
18D	62.6	M GR CH4 W/ SL	CH4		59												
19A	64.0	M GR CH4 W/ SL	CH4		60												
19B	64.8	M GR CH4	CH4		61												
19C	65.7	M GR CH4	CH4		55	67	103	96	UU	0	867		89	25	64	0.36	
19D	66.0	M GR CH4	CH4		56												
20A	68.0	M GR CH4	CH4		56												
20B	68.8	M GR CH4 W/ SL	CH4		51												
20C	69.7	M GR CH4 W/ SL	CH4	4	49	72	107	98	UC	--	929	1858	76	23	53	0.42	
21A	72.0	M GR CH4 W/ SL	CH4		57												
21B	72.8	M GR CH4 W/ SL	CH4		57												
21C	73.7	M GR CH4 W/ SL, LNS ML	CH4		61												
22A	76.0	M GR CL4-S W/ SIF	CL4-S		28												
22B	76.8	M GR CL6-S W/ SIF	CL6-S		32												
22C	77.7	M GR CH4 W/ SIF, SL	CH4	3	46	75	110	99	UC	--	776	1553	74	20	54	0.25	
22D	78.6	M GR CH4 W/ SIF, ARS SP	CH4		57												
23A	80.0	M GR CH4 W/ ARS SP	CH4		50												
23B	80.8	M GR CH4 W/ ARS SP, SIF	CH4		56												
23C	81.7	M GR CH4 W/ ARS SP, SIF	CH4		57												
23D	82.6	M GR CH4 W/ ARS SP, SIF	CH4		54												
24A	84.0	M GR CH3 W/ SIF, ARS SP	CH3		38												
24B	84.8	M GR CL6 W/ SIF, ARS SP	CL6	4	28	94	120	96	UC	--	936	1873	41	17	24	0.90	
24C	85.7	M GR CL4-S W/ SIF, ARS CH	CL4-S		25												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program

Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-46UCL

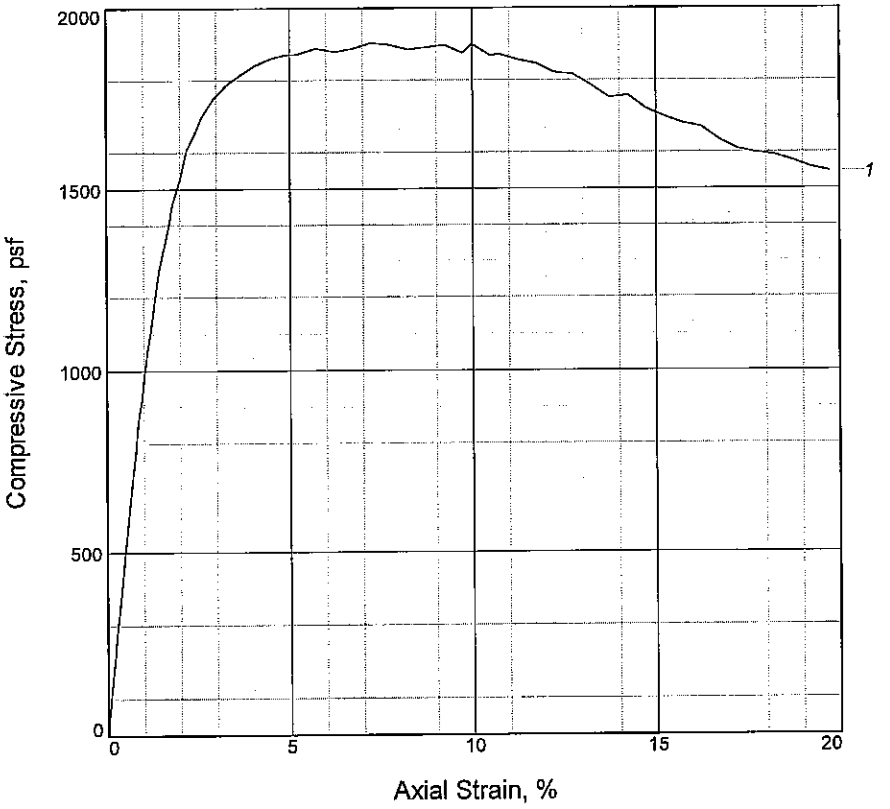
Current Date: 7/5/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
24D	86.6	M GR CL6-S W/ SIF, ARS CH	CL6-S		28												
25A	88.0	SO GR CL4-S W/ SIF	CL4-S		30												
25B	88.8	SO GR CL4-S W/ SIF	CL4-S		28												
25C	89.7	GR ML1 W/ SIF	ML1		29	95	122	100	UU	0	477		NP	NP		0.15	
25D	90.6	SO GR CL4-S W/ SIF	CL4-S		28												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1903			
Undrained shear strength, psf	951			
Failure strain, %	7.2			
Strain rate, in./min.	0.03			
Water content, %	31.1			
Wet density, pcf	120.9			
Dry density, pcf	92.2			
Saturation, %	101.9			
Void ratio	0.8205			
Specimen diameter, in.	1.41			
Specimen height, in.	3.07			
Height/diameter ratio	2.18			

Description: M GR & LBR CL6

LL = 44	**PL** = 16	**PI** = 28	**Assumed GS**= 2.69	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-18-07
Remarks:

Client: FFEB JV, New Orleans, Louisiana

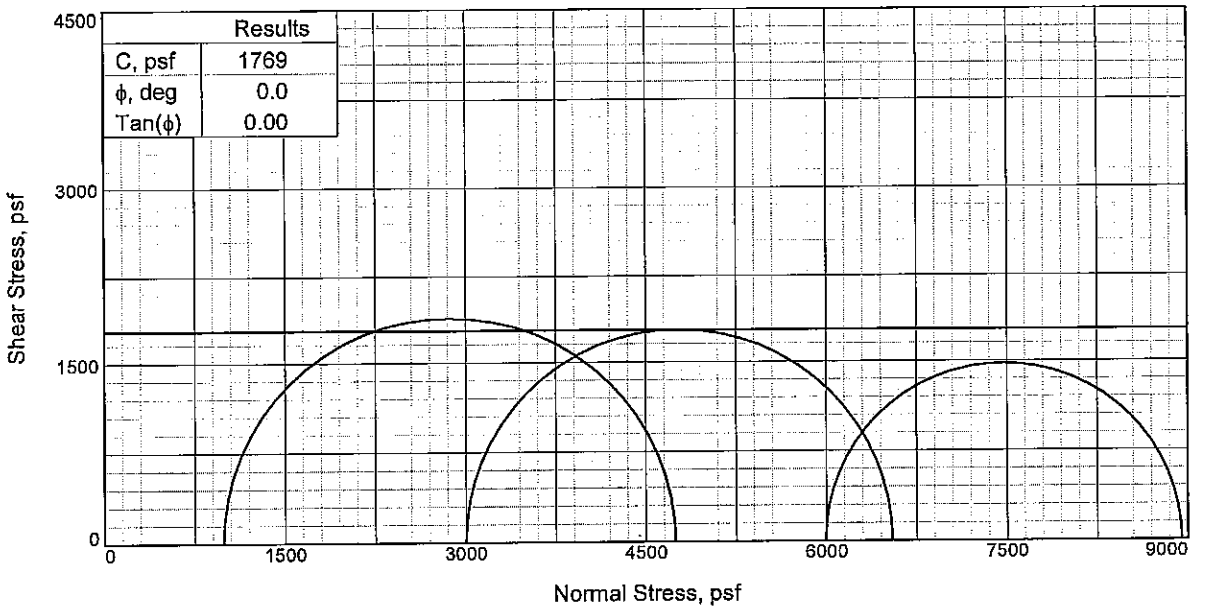
Project: Westwego to Harvey Canal

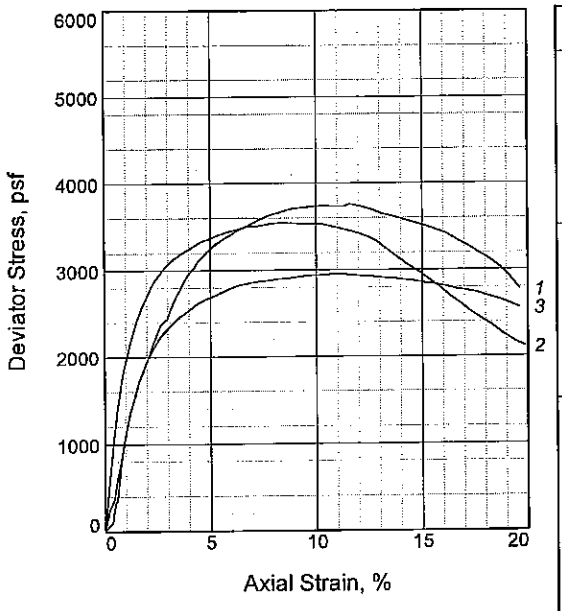
Source of Sample: WWHC-46UCL **Depth:** 6.8
Sample Number: 4B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____





Specimen No.		1	2	3
Initial	Water Content, %	25.4	25.8	27.6
	Dry Density, pcf	98.8	98.6	97.3
	Saturation, %	97.2	98.3	101.9
	Void Ratio	0.7052	0.7093	0.7317
	Diameter, in.	1.42	1.41	1.42
	Height, in.	3.17	3.18	3.19
At Test	Water Content, %	25.4	25.8	27.6
	Dry Density, pcf	98.8	98.6	97.3
	Saturation, %	97.2	98.3	101.9
	Void Ratio	0.7052	0.7093	0.7317
	Diameter, in.	1.42	1.41	1.42
	Height, in.	3.17	3.18	3.19
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.84	41.63
Fail. Stress, psf		3757	3546	2955
Strain, %		11.6	8.3	10.8
Ult. Stress, psf		3508	2975	2850
Strain, %				
σ_1 Failure, psf		4745	6547	8950
σ_3 Failure, psf		989	3001	5994

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: ST GR & LBR CH2 W/ RT

LL= 55 **PL=** 17 **PI=** 38

Assumed Specific Gravity= 2.70

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

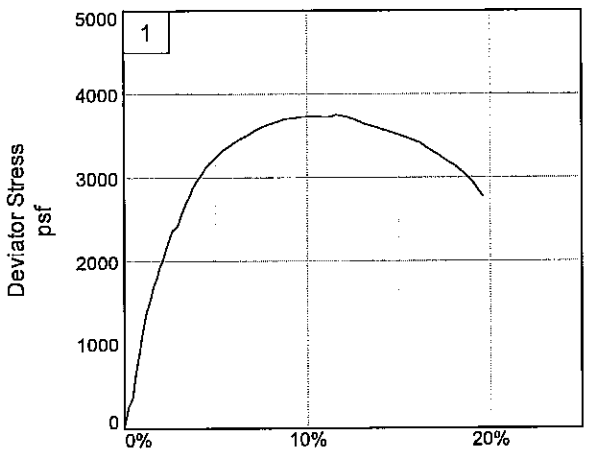
Source of Sample: WWHC-46UCL **Depth:** 8.8

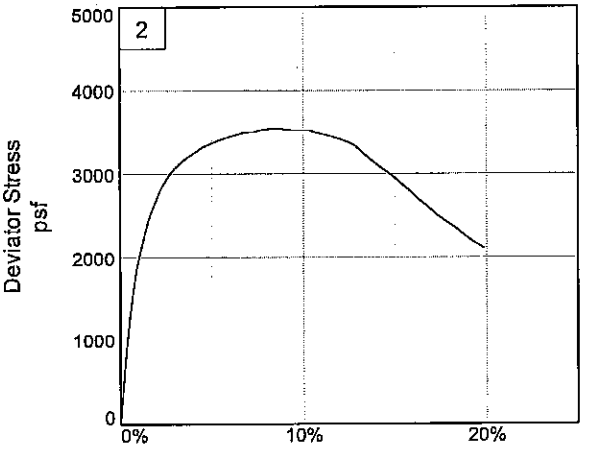
Sample Number: 5B

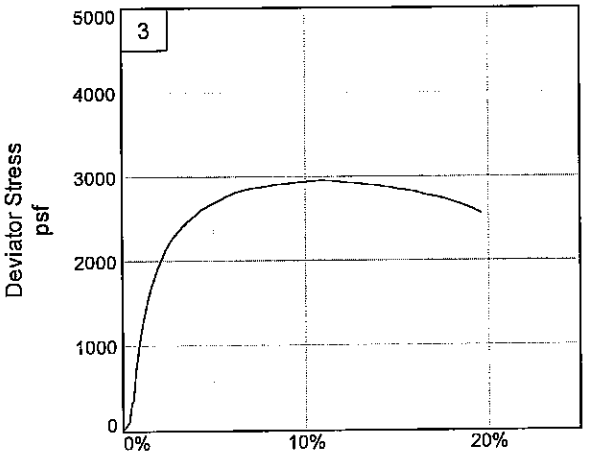
Proj. No.: 0022-0002 **Date Sampled:** 4-18-07

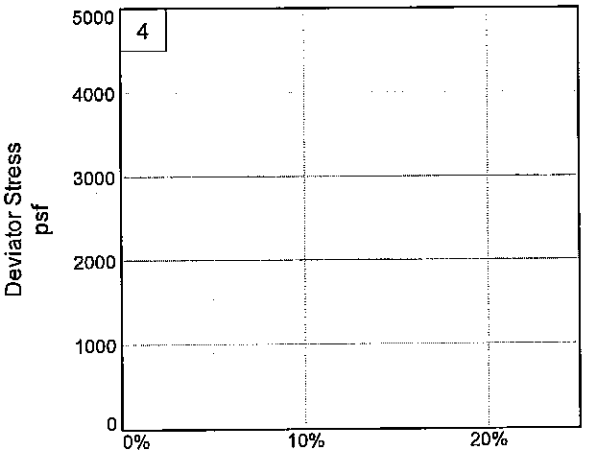
TRIAXIAL SHEAR TEST REPORT

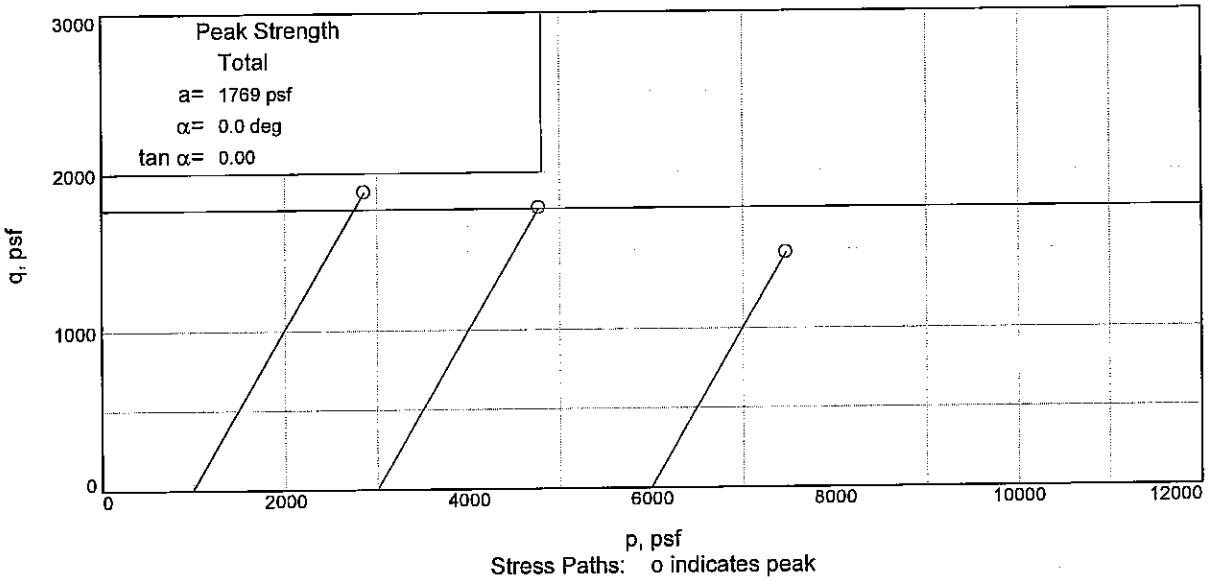
FFEBJV, LLC







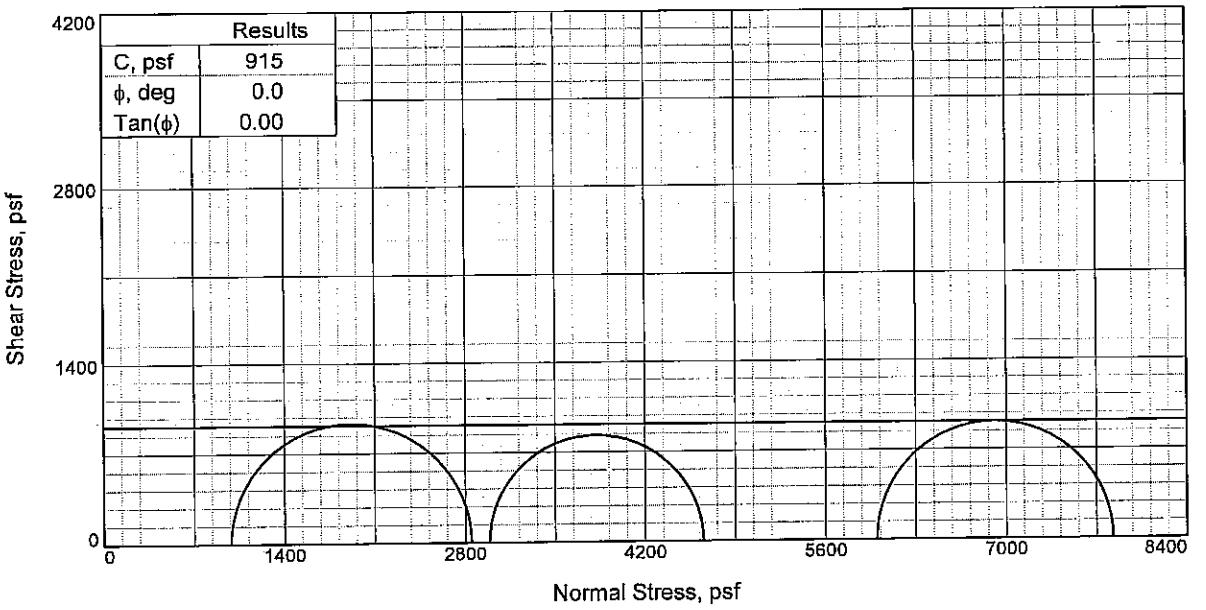


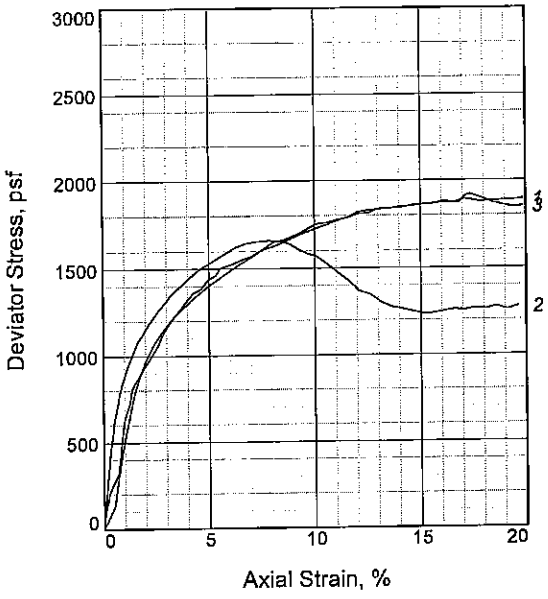


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-46UCL **Depth:** 8.8 **Sample Number:** 5B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	27.5	28.4	28.3
	Dry Density, pcf	95.8	95.2	93.4
	Saturation, %	97.8	99.5	94.9
	Void Ratio	0.7586	0.7711	0.8049
	Diameter, in.	1.42	1.41	1.41
	Height, in.	3.10	3.17	3.21
At Test	Water Content, %	27.5	28.4	28.3
	Dry Density, pcf	95.8	95.2	93.4
	Saturation, %	97.8	99.5	94.9
	Void Ratio	0.7586	0.7711	0.8049
	Diameter, in.	1.42	1.41	1.41
	Height, in.	3.10	3.17	3.21
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.85	20.76	41.65
Fail. Stress, psf		1863	1661	1829
Strain, %		15.1	7.8	12.6
Ult. Stress, psf		1863	1238	1829
Strain, %				
σ_1 Failure, psf		2849	4651	7828
σ_3 Failure, psf		986	2990	5998

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M DGR CH2 W/ RT, WD

LL= 59 **PL=** 26 **PI=** 33

Assumed Specific Gravity= 2.70

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

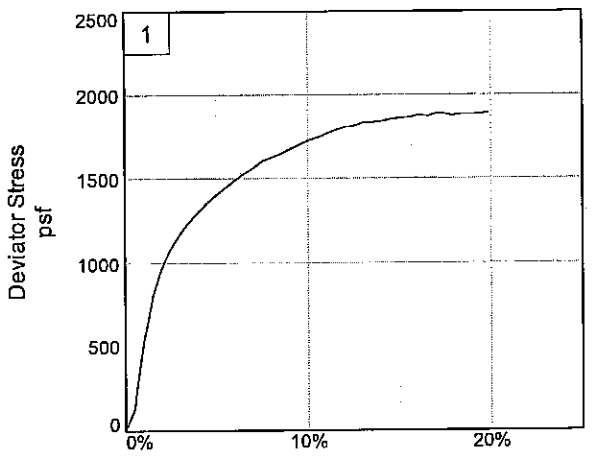
Source of Sample: WWHC-46UCL **Depth:** 12.8

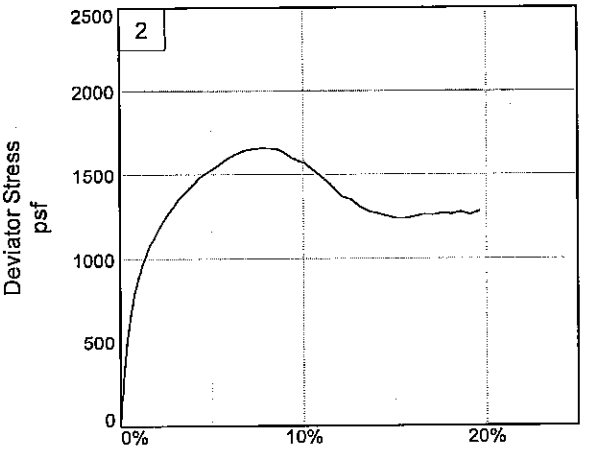
Sample Number: 6B

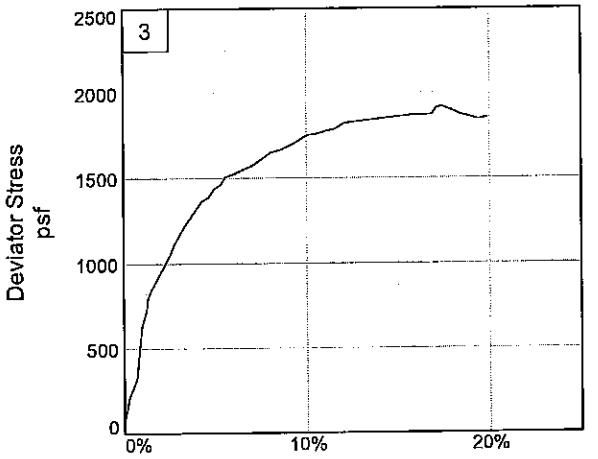
Proj. No.: 0022-0002 **Date Sampled:** 4-17-07

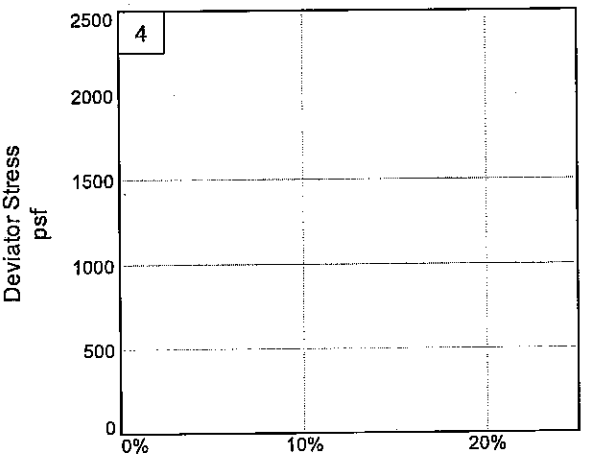
TRIAXIAL SHEAR TEST REPORT

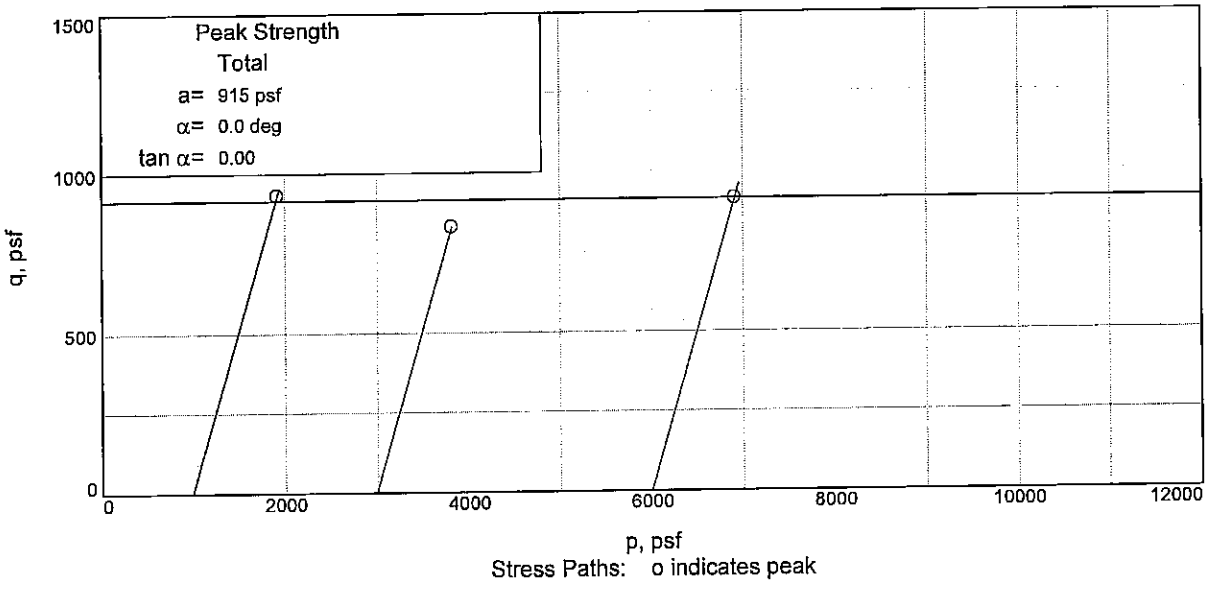
FFEBJV, LLC







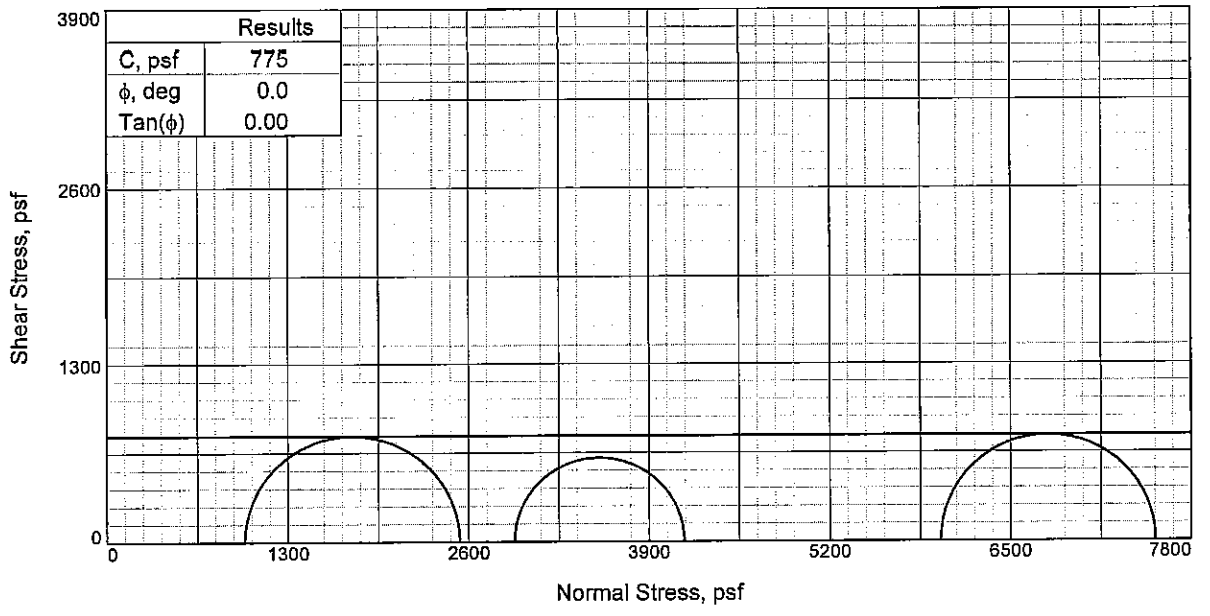


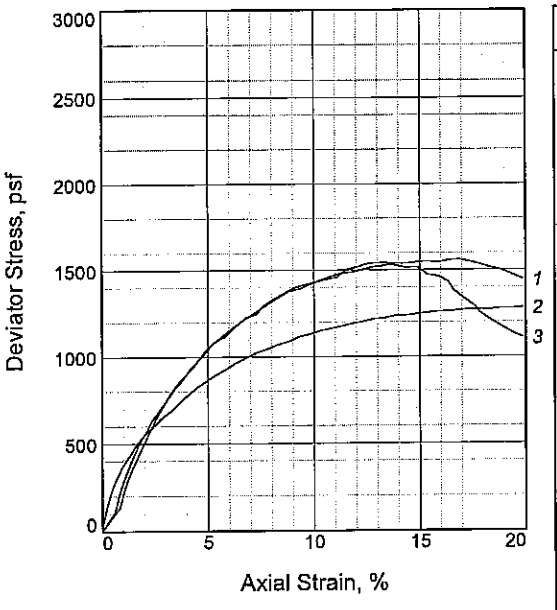


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-46UCL **Depth:** 12.8 **Sample Number:** 6B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	31.9	32.4	31.6
	Dry Density, pcf	90.6	89.8	90.3
	Saturation, %	100.5	100.4	98.9
	Void Ratio	0.8531	0.8691	0.8604
	Diameter, in.	1.40	1.40	1.41
	Height, in.	3.20	3.13	3.13
At Test	Water Content, %	31.9	32.4	31.6
	Dry Density, pcf	90.6	89.8	90.3
	Saturation, %	100.5	100.4	98.9
	Void Ratio	0.8531	0.8691	0.8604
	Diameter, in.	1.40	1.40	1.41
	Height, in.	3.20	3.13	3.13
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.35	41.64
Fail. Stress, psf		1546	1223	1546
Strain, %		14.8	13.3	13.4
Ult. Stress, psf		1546	1223	1518
Strain, %				
σ_1 Failure, psf		2536	4154	7542
σ_3 Failure, psf		990	2930	5996

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR & LBR CL6 W/ RT

LL= 48 **PL=** 18 **PI=** 30

Assumed Specific Gravity= 2.69

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

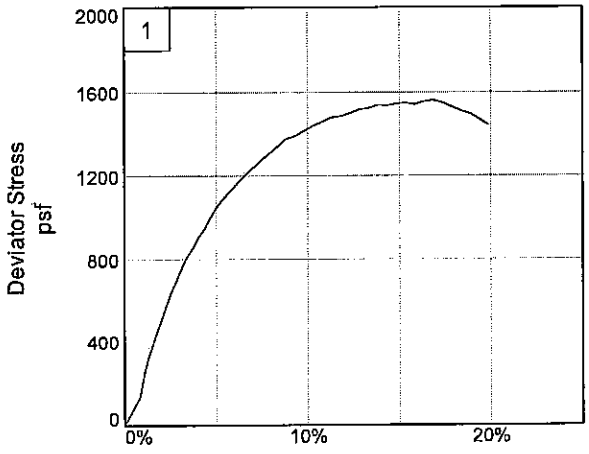
Source of Sample: WWHC-46UCL **Depth:** 17.7

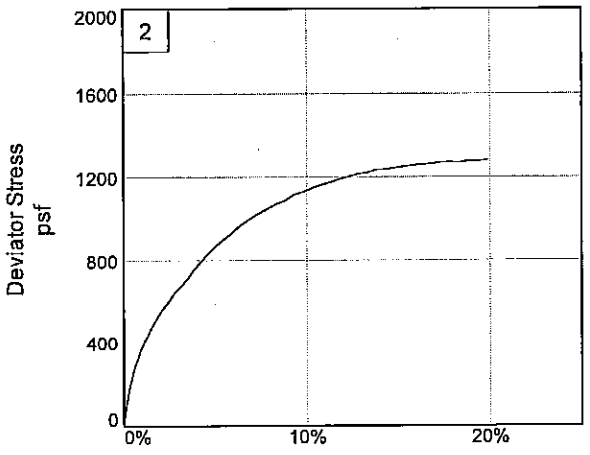
Sample Number: 7C

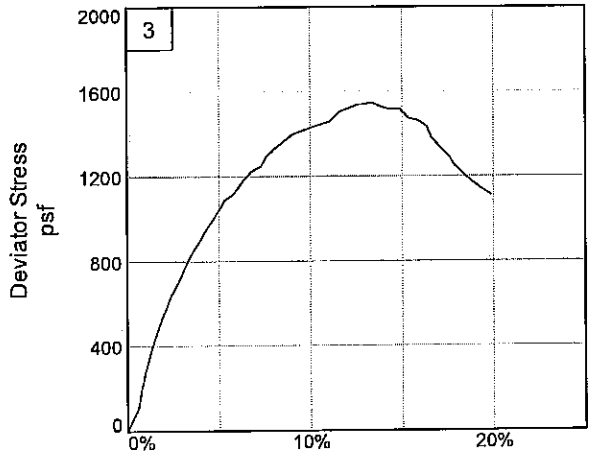
Proj. No.: 0022-0002 **Date Sampled:** 4-17-07

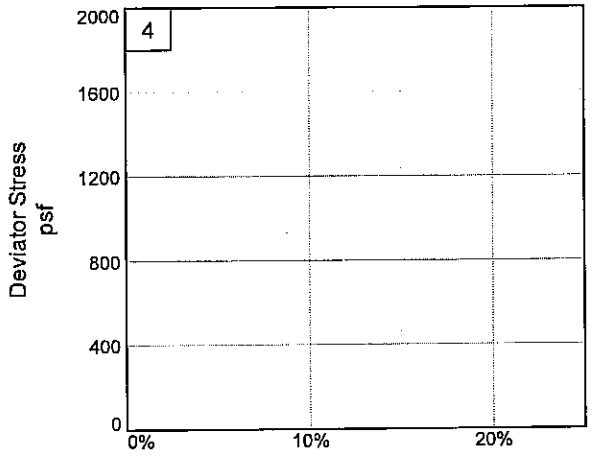
TRIAXIAL SHEAR TEST REPORT

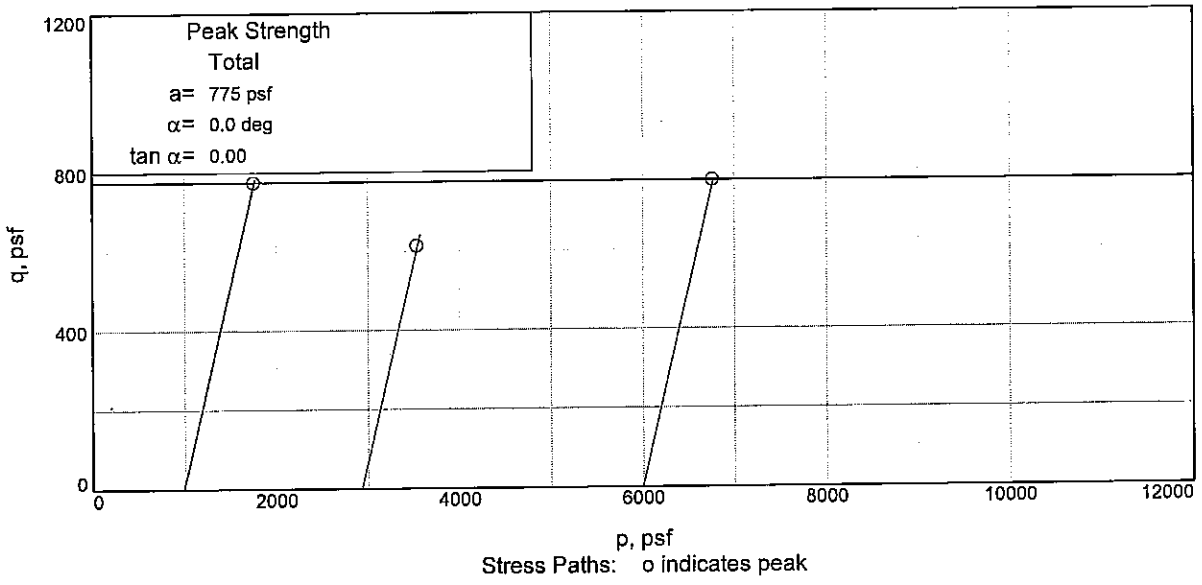
FFEBJV, LLC







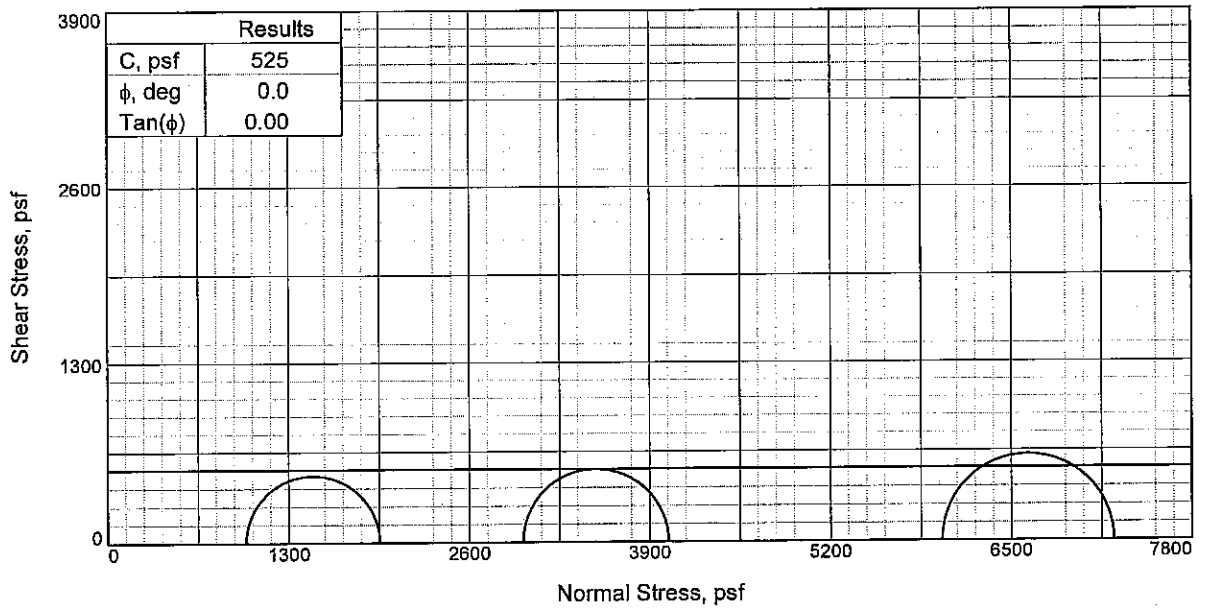


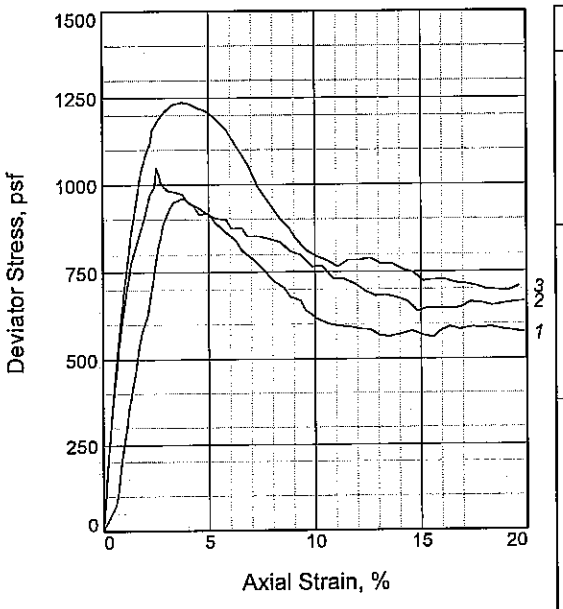


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-46UCL **Depth:** 17.7 **Sample Number:** 7C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	35.8	37.0	37.7
	Dry Density, pcf	83.6	84.4	82.0
	Saturation, %	95.7	101.0	97.0
	Void Ratio	1.0015	0.9813	1.0416
	Diameter, in.	1.41	1.38	1.40
	Height, in.	3.18	3.23	3.12
At Test	Water Content, %	35.8	37.0	37.7
	Dry Density, pcf	83.6	84.4	82.0
	Saturation, %	95.7	101.0	97.0
	Void Ratio	1.0015	0.9813	1.0416
	Diameter, in.	1.41	1.38	1.40
	Height, in.	3.18	3.23	3.12
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.75	41.68
Fail. Stress, psf		960	1047	1237
Strain, %		3.8	2.5	3.8
Ult. Stress, psf		568	637	724
Strain, %				
σ_1 Failure, psf		1953	4035	7238
σ_3 Failure, psf		994	2988	6002

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CL4

LL= 36 **PL=** 23 **PI=** 13

Assumed Specific Gravity= 2.68

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

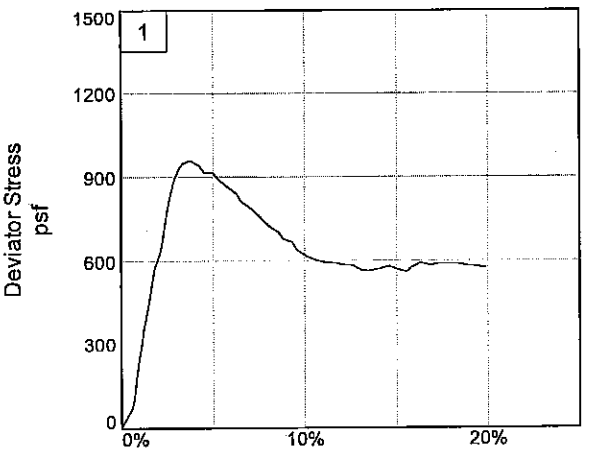
Source of Sample: WWHC-46UCL **Depth:** 21.7

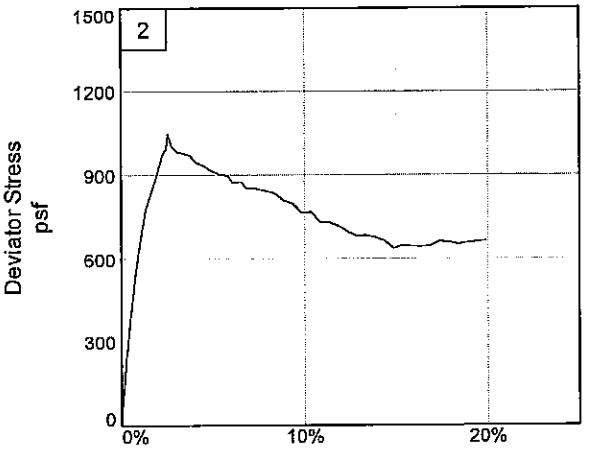
Sample Number: 8C

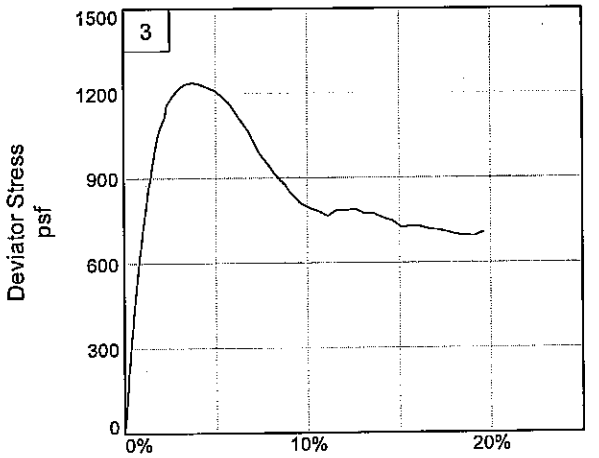
Proj. No.: 0022-0002 **Date Sampled:** 4-17-07

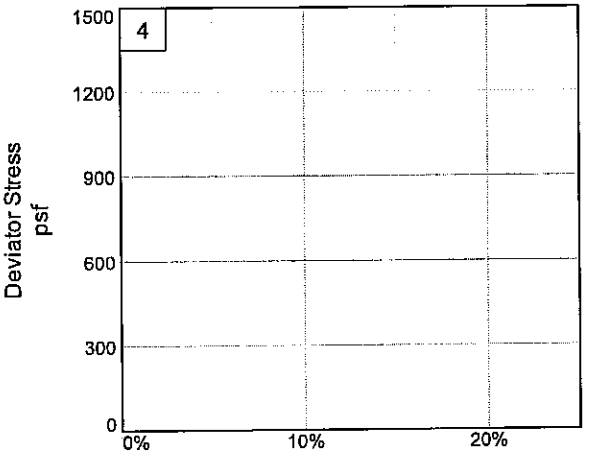
TRIAXIAL SHEAR TEST REPORT

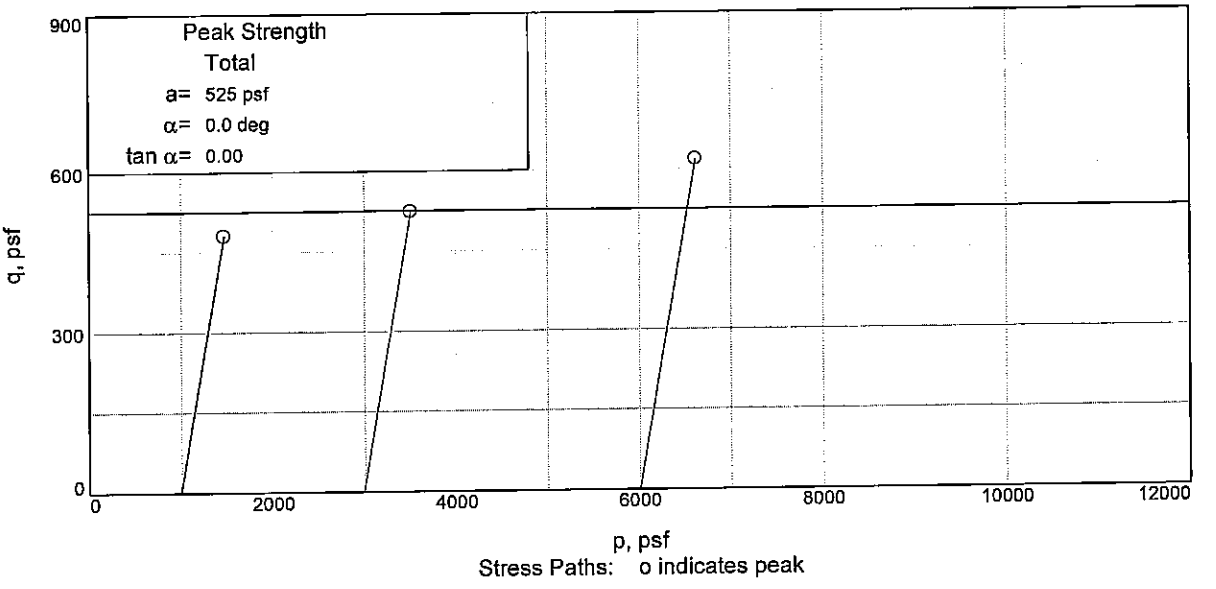
FFEBJV, LLC









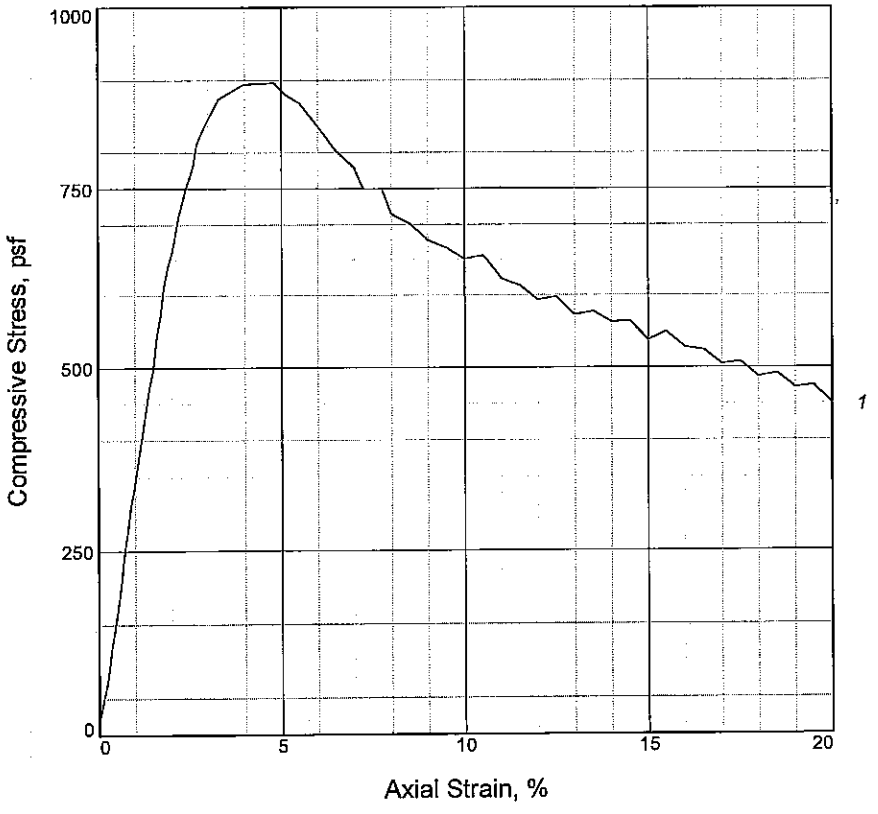


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-46UCL **Depth:** 21.7 **Sample Number:** 8C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	897			
Undrained shear strength, psf	449			
Failure strain, %	4.8			
Strain rate, in./min.	0.03			
Water content, %	39.3			
Wet density, pcf	113.3			
Dry density, pcf	81.4			
Saturation, %	98.2			
Void ratio	1.0870			
Specimen diameter, in.	1.40			
Specimen height, in.	3.18			
Height/diameter ratio	2.28			

Description: SO GR CH3 W/ ARS ML, RT, SIF

LL = 65	**PL** = 21	**PI** = 44	**Assumed GS**= 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-17-07
Remarks:

Figure _____

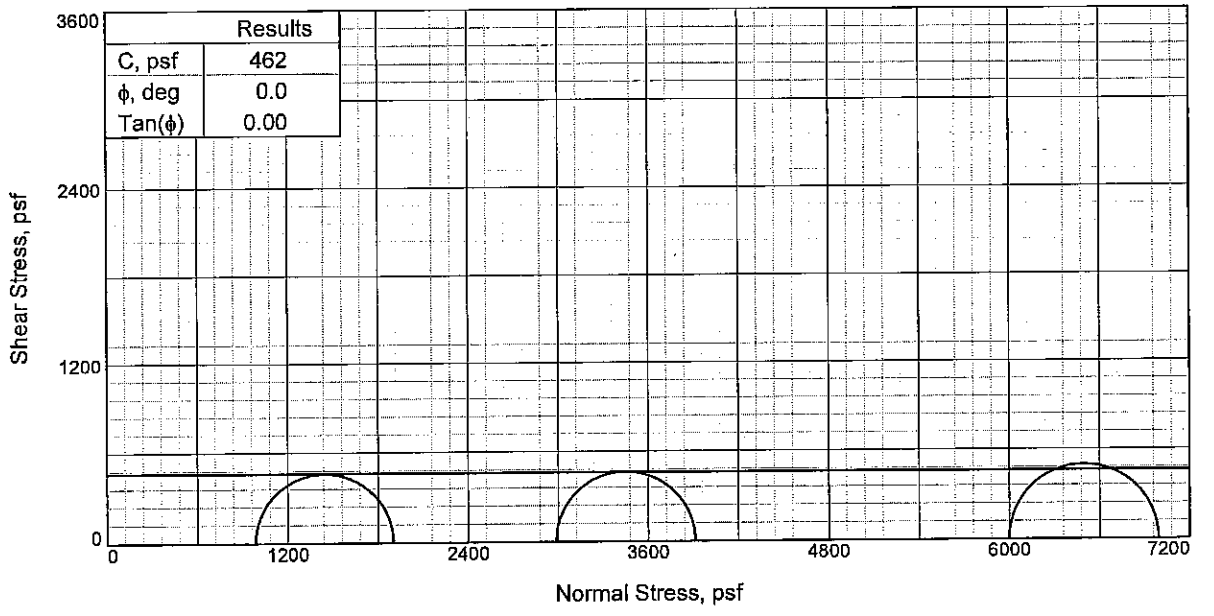
Client: FFEB JV, New Orleans, Louisiana

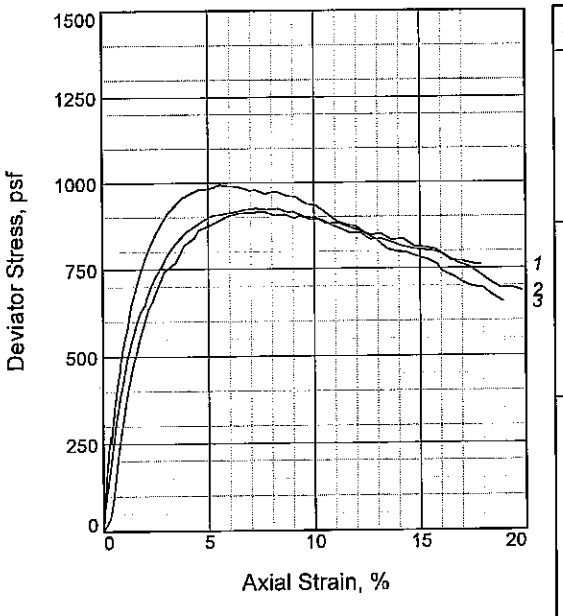
Project: Westwego to Harvey Canal

Source of Sample: WWHC-46UCL **Depth:** 24.8
Sample Number: 9B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	52.1	55.6	54.3
	Dry Density, pcf	63.9	64.6	67.9
	Saturation, %	85.5	92.9	98.3
	Void Ratio	1.6567	1.6282	1.5026
	Diameter, in.	1.48	1.45	1.43
	Height, in.	3.30	3.03	3.25
At Test	Water Content, %	52.1	55.6	54.3
	Dry Density, pcf	63.9	64.6	67.9
	Saturation, %	85.5	92.9	98.3
	Void Ratio	1.6567	1.6282	1.5026
	Diameter, in.	1.48	1.45	1.43
	Height, in.	3.30	3.03	3.25
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.85	20.74	41.66
Fail. Stress, psf		915	926	994
Strain, %		7.7	7.2	5.5
Ult. Stress, psf		803	811	785
Strain, %				
σ_1 Failure, psf		1902	3913	6992
σ_3 Failure, psf		987	2987	5998

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: SO GR CH4 W/ ARS ML, RT, WD, SIF

LL= 108 **PL=** 24 **PI=** 84

Assumed Specific Gravity= 2.72

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

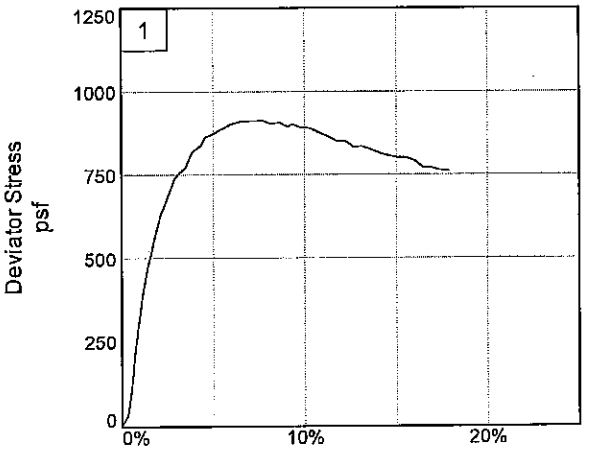
Source of Sample: WWHC-46UCL **Depth:** 29.7

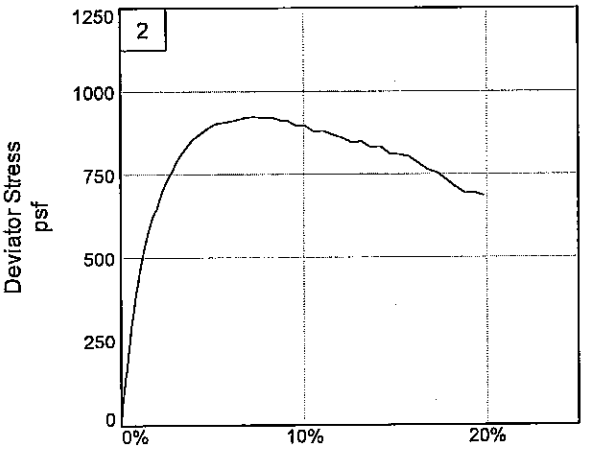
Sample Number: 10C

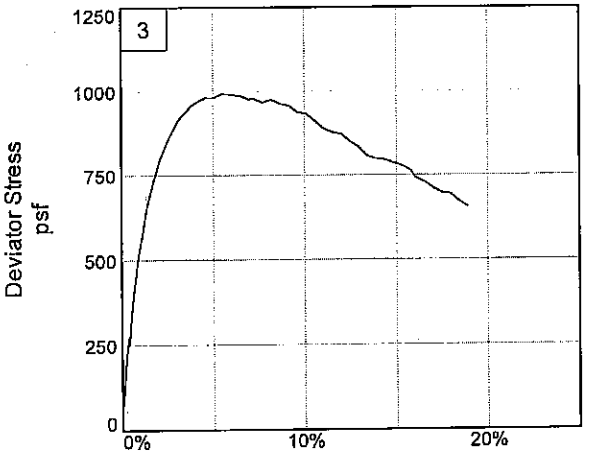
Proj. No.: 0022-0002 **Date Sampled:** 4-17-07

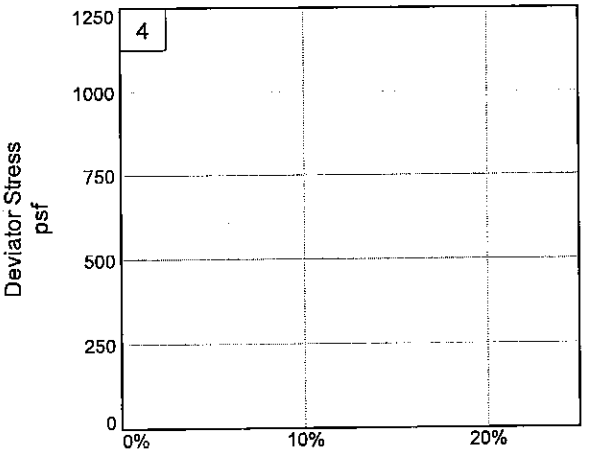
TRIAXIAL SHEAR TEST REPORT

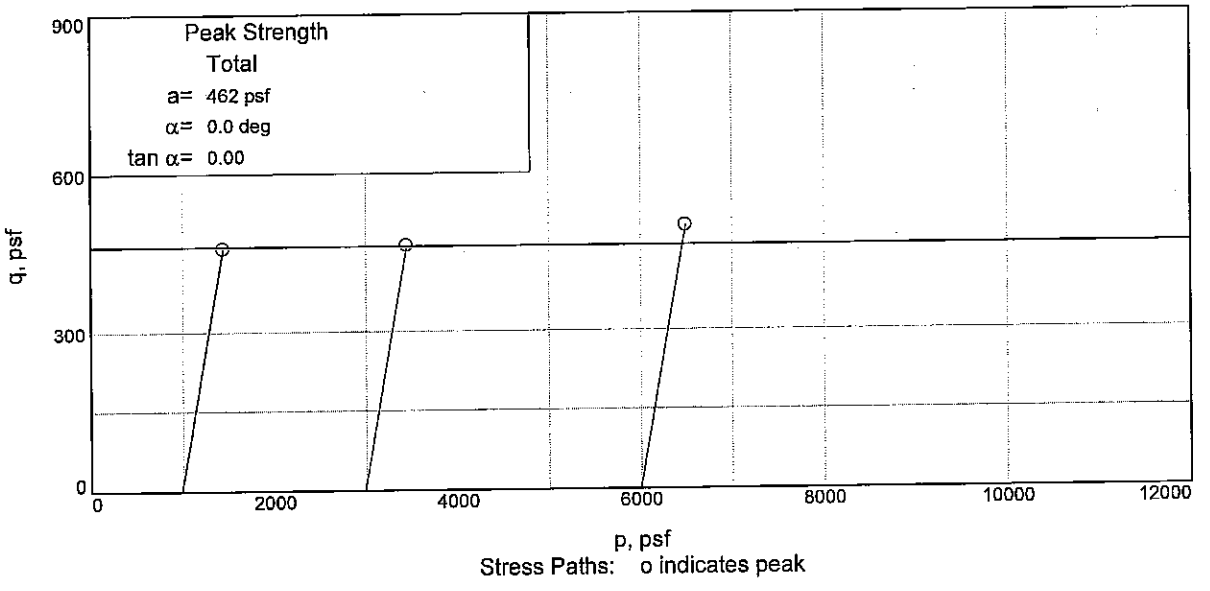
FFEBJV, LLC





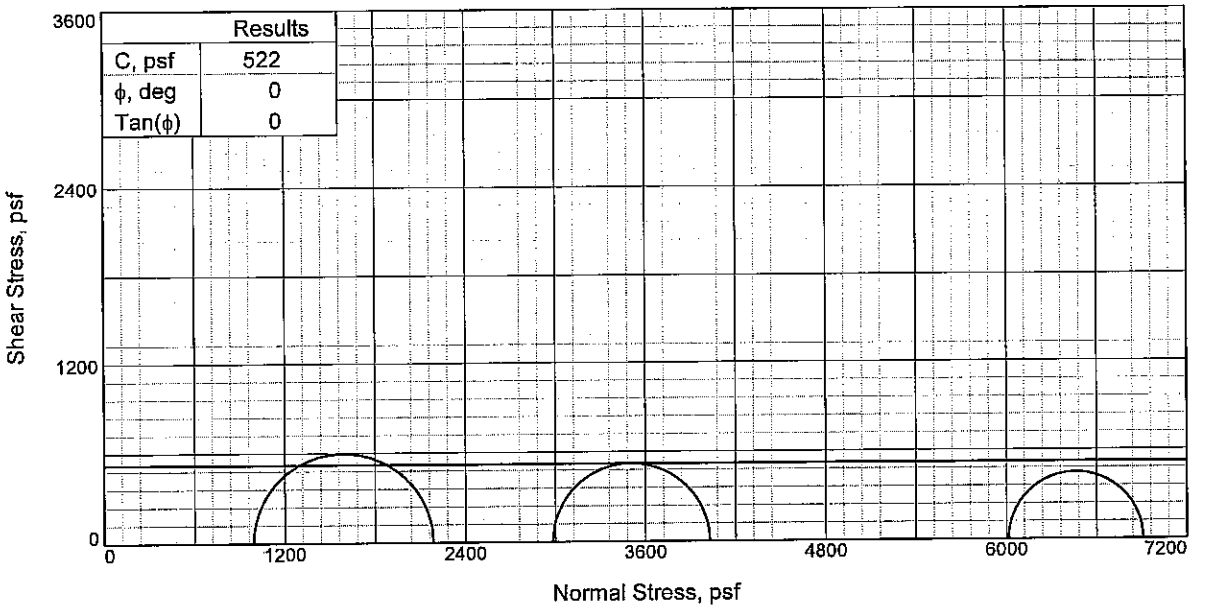


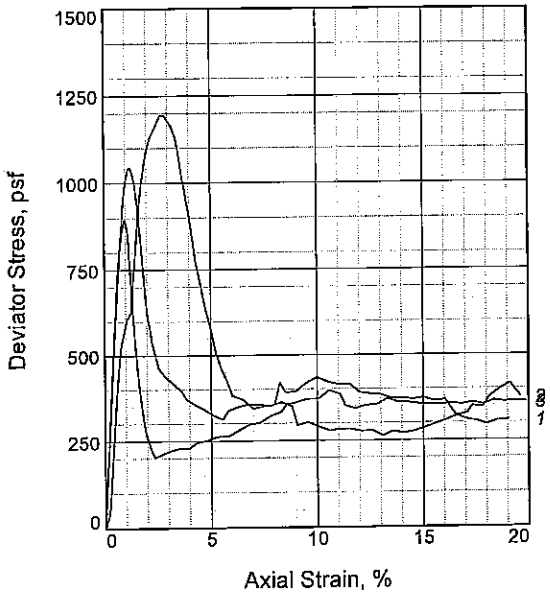




Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-46UCL **Depth:** 29.7 **Sample Number:** 10C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	76.2	77.5	79.8
	Dry Density, pcf	55.4	54.5	53.5
	Saturation, %	102.3	101.6	101.6
	Void Ratio	1.9505	1.9986	2.0571
	Diameter, in.	1.40	1.41	1.41
	Height, in.	3.12	3.20	3.18
At Test	Water Content, %	76.2	77.5	79.8
	Dry Density, pcf	55.4	54.5	53.5
	Saturation, %	102.3	101.6	101.6
	Void Ratio	1.9505	1.9986	2.0571
	Diameter, in.	1.40	1.41	1.41
	Height, in.	3.12	3.20	3.18
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	20.72	41.77
Fail. Stress, psf		1194	1044	894
Strain, %		2.7	1.2	1.0
Ult. Stress, psf		369	285	356
Strain, %				
σ_1 Failure, psf		2186	4027	6909
σ_3 Failure, psf		992	2984	6014

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CHOA W/ RT, WD

LL= 126 **PL=** 26 **PI=** 100

Assumed Specific Gravity= 2.62

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

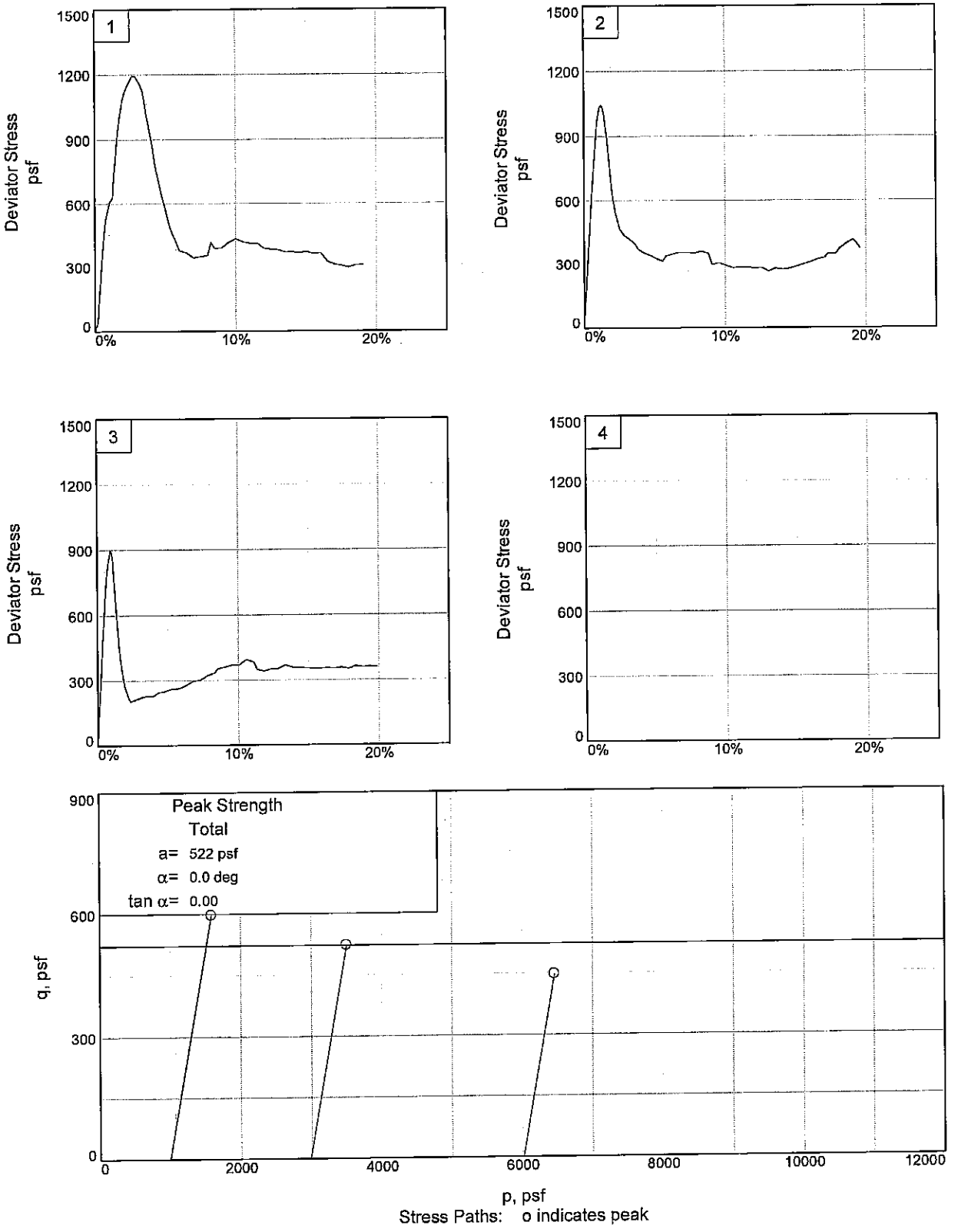
Source of Sample: WWHC-46UCL **Depth:** 32.6

Sample Number: 11B

Proj. No.: 0022-0002 **Date Sampled:** 4-17-07

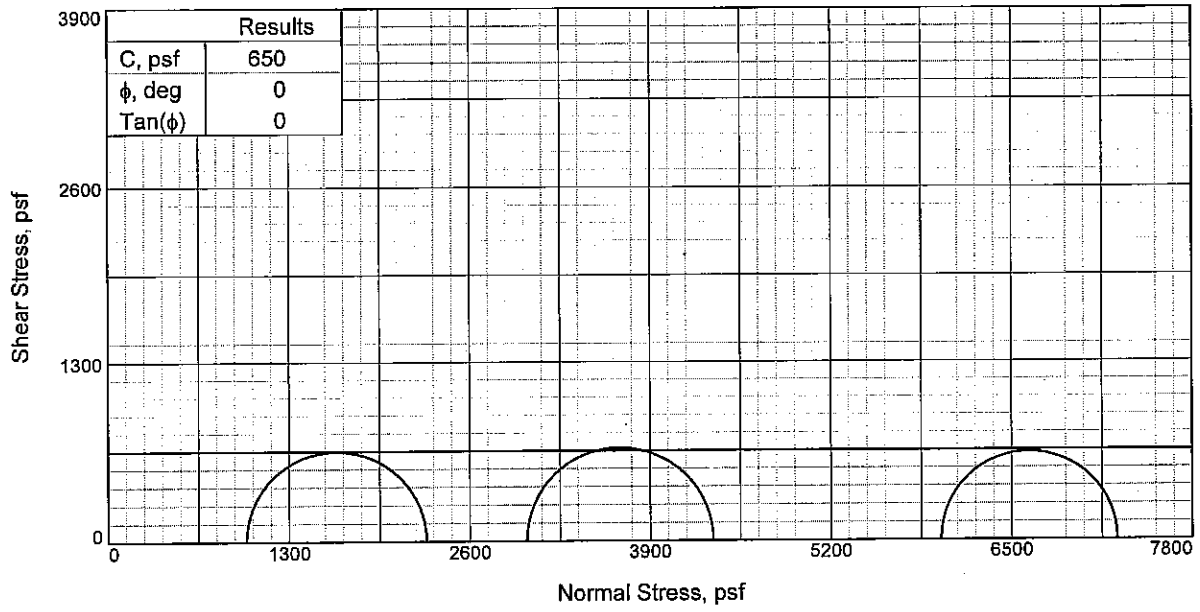
TRIAXIAL SHEAR TEST REPORT

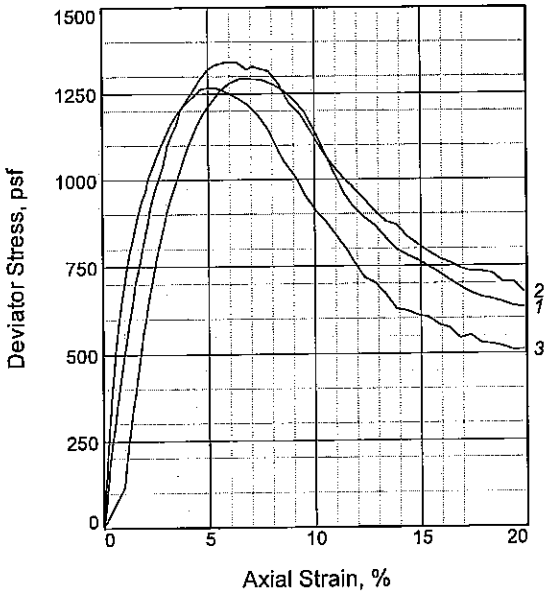
FFEBJV, LLC



Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-46UCL **Depth:** 32.6 **Sample Number:** 11B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	61.0	58.9	59.3
	Dry Density, pcf	62.8	65.0	64.9
	Saturation, %	97.3	99.3	99.8
	Void Ratio	1.7037	1.6124	1.6165
	Diameter, in.	1.43	1.42	1.41
	Height, in.	3.18	3.17	3.20
At Test	Water Content, %	61.0	58.9	59.3
	Dry Density, pcf	62.8	65.0	64.9
	Saturation, %	97.3	99.3	99.8
	Void Ratio	1.7037	1.6124	1.6165
	Diameter, in.	1.43	1.42	1.41
	Height, in.	3.18	3.17	3.20
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.92	41.61
Fail. Stress, psf		1294	1341	1268
Strain, %		6.6	6.3	5.3
Ult. Stress, psf		767	811	610
Strain, %				
σ_1 Failure, psf		2288	4353	7260
σ_3 Failure, psf		994	3012	5992

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH4 W/ ARS ML, RT, O, WD

LL= 87 **PL=** 19 **PI=** 68

Assumed Specific Gravity= 2.72

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

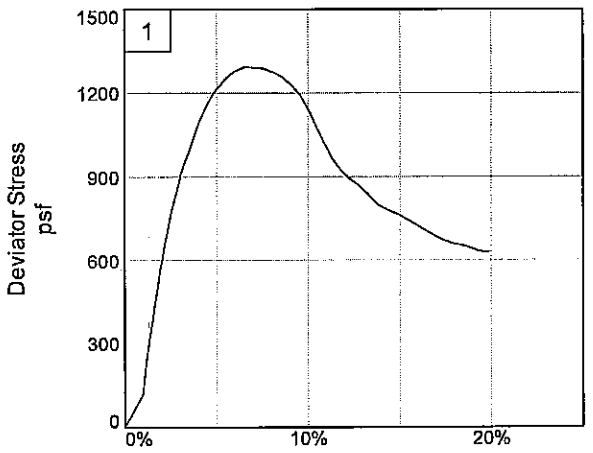
Source of Sample: WWHC-46UCL **Depth:** 37.7

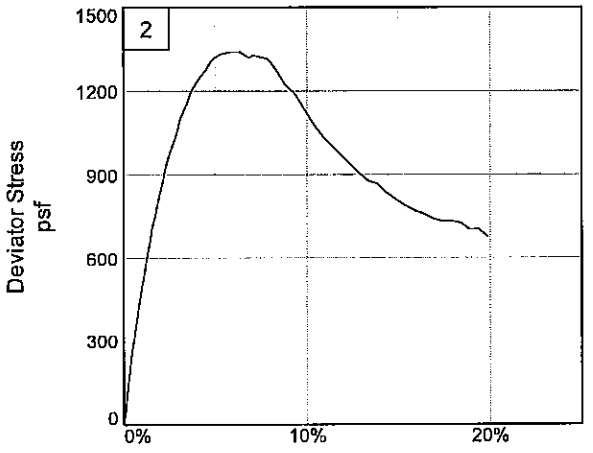
Sample Number: 12C

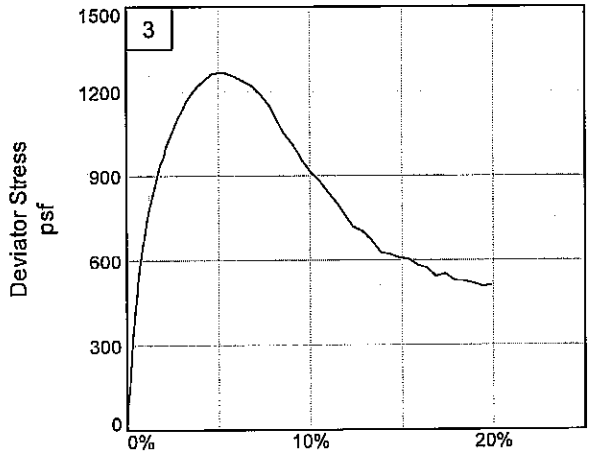
Proj. No.: 0022-0002 **Date Sampled:** 4-17-07

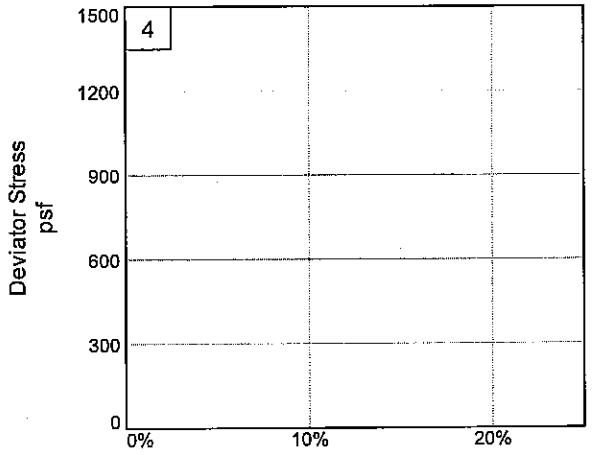
TRIAXIAL SHEAR TEST REPORT

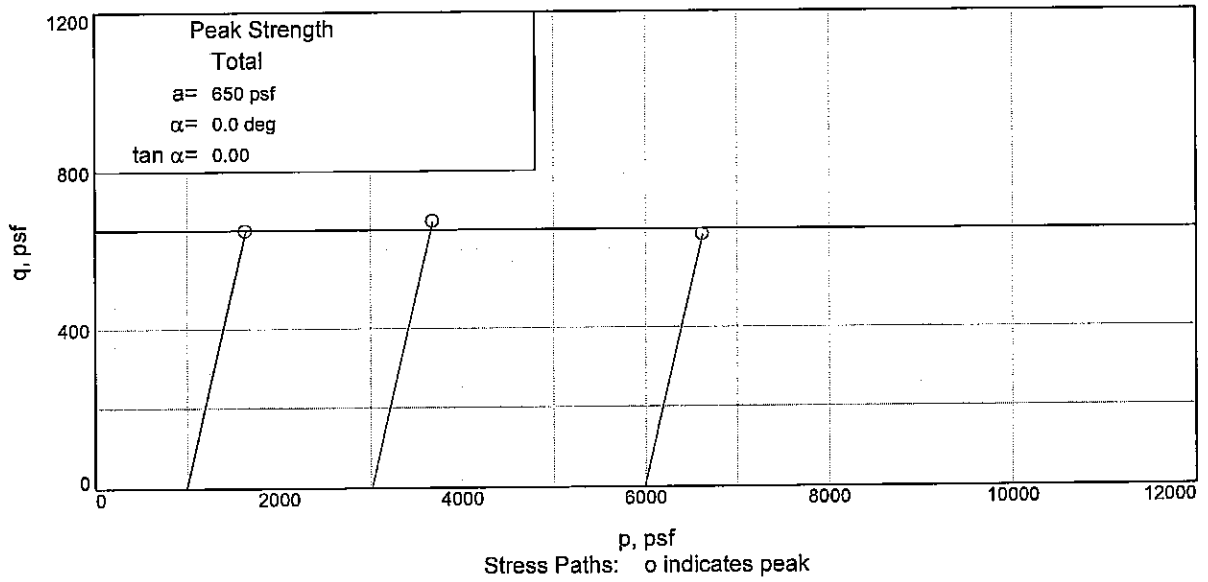
FFEBJV, LLC







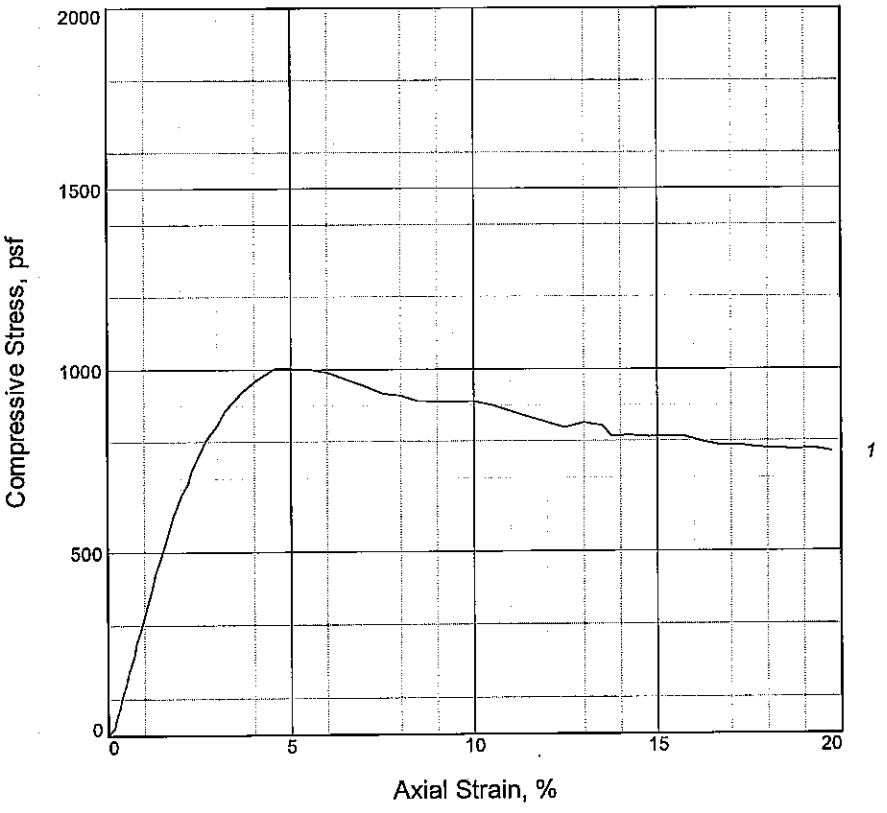




Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-46UCL **Depth:** 37.7 **Sample Number:** 12C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1003			
Undrained shear strength, psf	502			
Failure strain, %	4.6			
Strain rate, in./min.	0.03			
Water content, %	52.1			
Wet density, pcf	107.3			
Dry density, pcf	70.5			
Saturation, %	100.2			
Void ratio	1.4253			
Specimen diameter, in.	1.39			
Specimen height, in.	3.23			
Height/diameter ratio	2.32			

Description: M GR CH4 W/ LNS ML

LL = 83	PL = 22	PI = 61	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-17-07
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

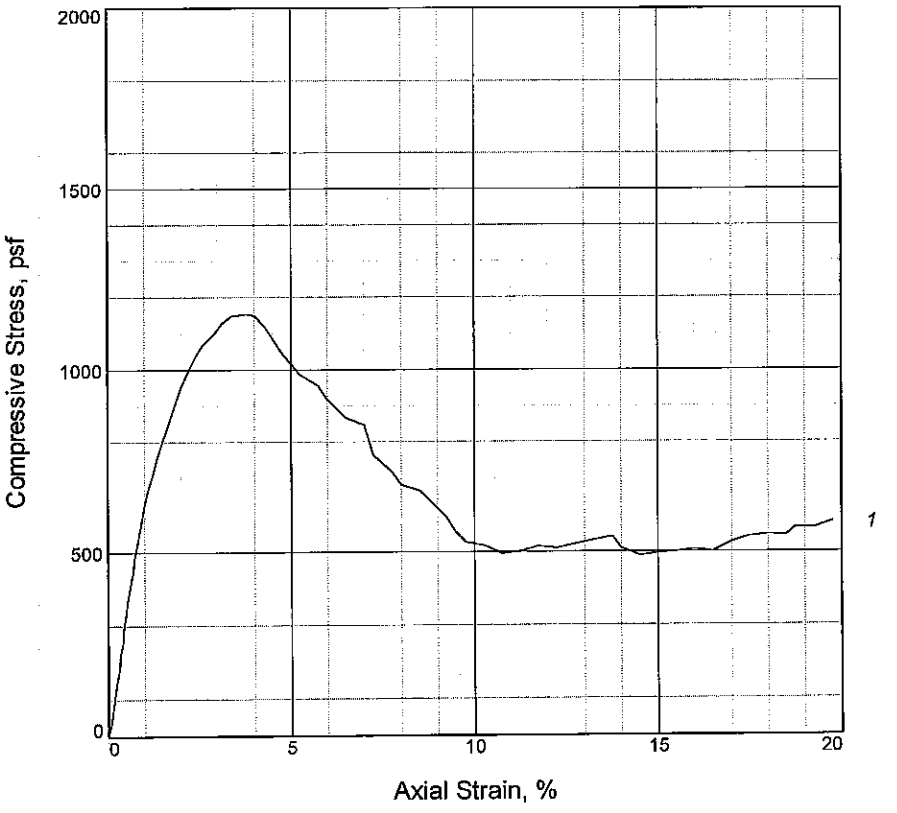
Project: Westwego to Harvey Canal

Source of Sample: WWHC-46UCL **Depth:** 41.7
Sample Number: 13C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1153			
Undrained shear strength, psf	577			
Failure strain, %	3.8			
Strain rate, in./min.	0.03			
Water content, %	59.2			
Wet density, pcf	103.8			
Dry density, pcf	65.2			
Saturation, %	99.9			
Void ratio	1.6221			
Specimen diameter, in.	1.41			
Specimen height, in.	3.12			
Height/diameter ratio	2.22			

Description: M GR CH3 W/ LNS ML

LL = 65	PL = 18	PI = 47	Assumed GS= 2.74	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-17-07
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

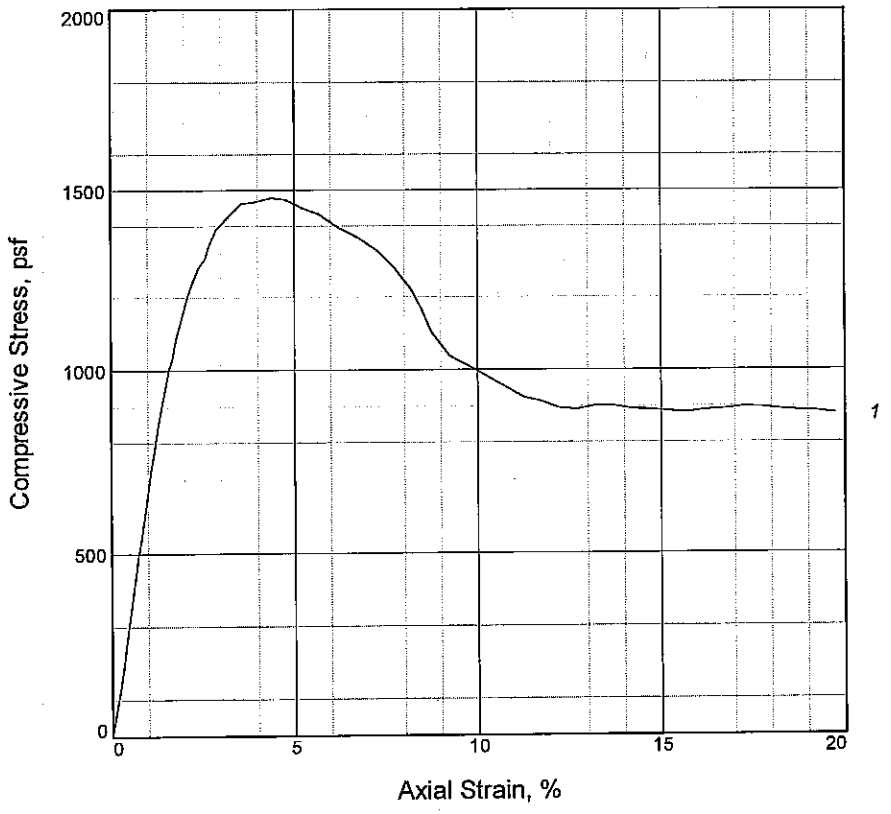
Project: Westwego to Harvey Canal

Source of Sample: WWHC-46UCL **Depth:** 45.7
Sample Number: 14C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1478			
Undrained shear strength, psf	739			
Failure strain, %	4.4			
Strain rate, in./min.	0.03			
Water content, %	62.6			
Wet density, pcf	103.1			
Dry density, pcf	63.4			
Saturation, %	101.0			
Void ratio	1.6988			
Specimen diameter, in.	1.40			
Specimen height, in.	3.19			
Height/diameter ratio	2.28			

Description: M GR CH4 W/ LNS ML, SL

LL = 87	**PL =** 24	**PI =** 63	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-16-07
Remarks:

Figure _____

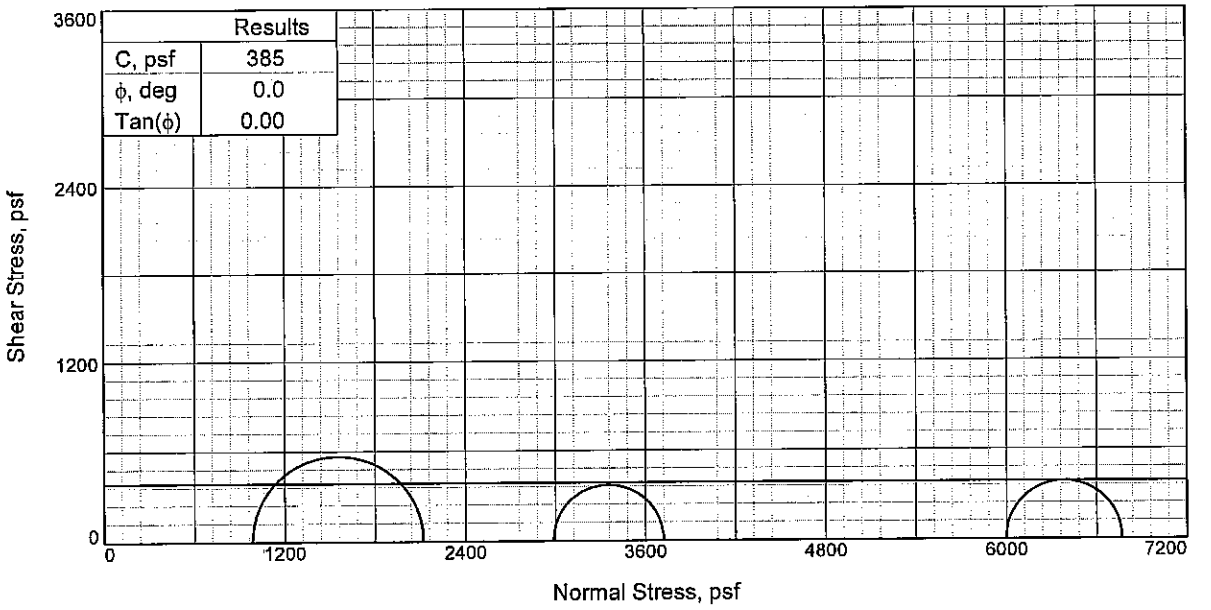
Client: FFEB JV, New Orleans, Louisiana

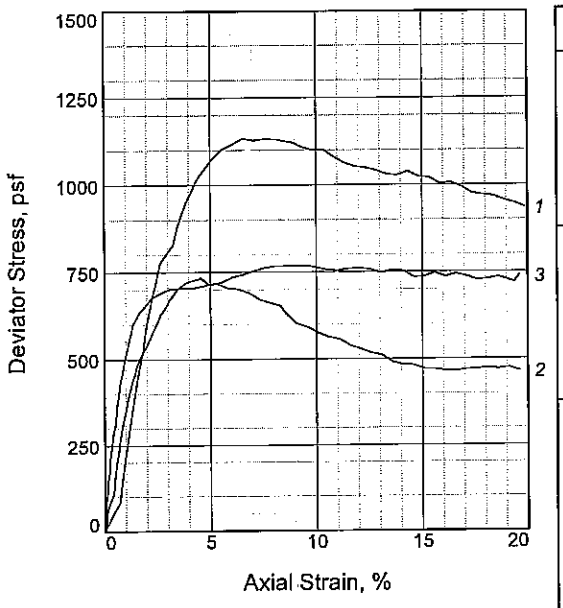
Project: Westwego to Harvey Canal

Source of Sample: WWHC-46UCL **Depth:** 49.7
Sample Number: 15C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	57.6	57.2	58.5
	Dry Density, pcf	66.2	66.3	64.4
	Saturation, %	99.6	99.0	96.7
	Void Ratio	1.5854	1.5817	1.6571
	Diameter, in.	1.40	1.38	1.39
	Height, in.	3.16	3.06	3.19
At Test	Water Content, %	57.6	57.2	58.5
	Dry Density, pcf	66.2	66.3	64.4
	Saturation, %	99.6	99.0	96.7
	Void Ratio	1.5854	1.5817	1.6571
	Diameter, in.	1.40	1.38	1.39
	Height, in.	3.16	3.06	3.19
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.85	20.74	41.65
Fail. Stress, psf		1134	734	769
Strain, %		6.6	4.6	9.6
Ult. Stress, psf		1024	471	736
Strain, %				
σ_1 Failure, psf		2121	3721	6767
σ_3 Failure, psf		987	2987	5998

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: SO GR CH3 W/ LNS ML

LL= 69 **PL=** 18 **PI=** 51

Assumed Specific Gravity= 2.74

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

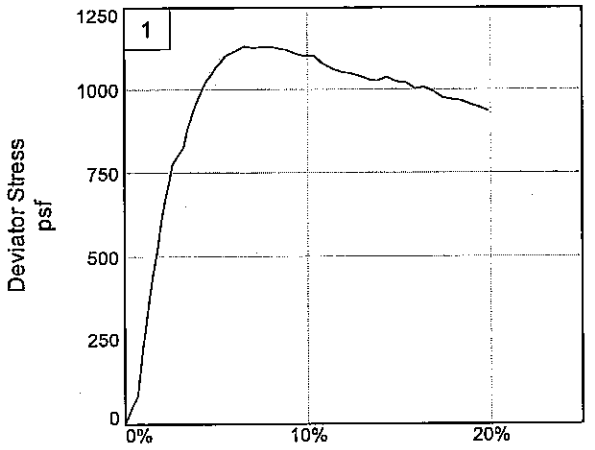
Source of Sample: WWHC-46UCL **Depth:** 53.7

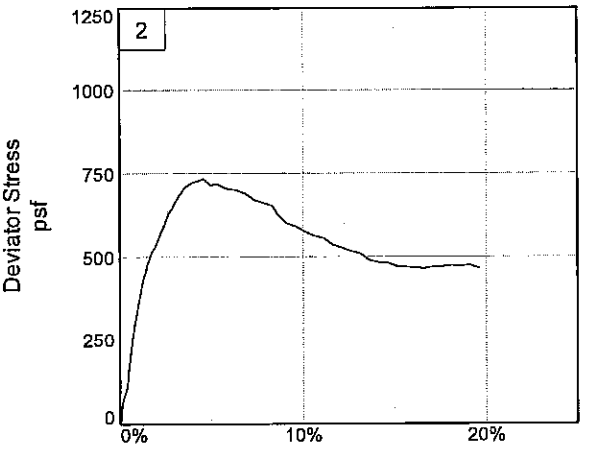
Sample Number: 16C

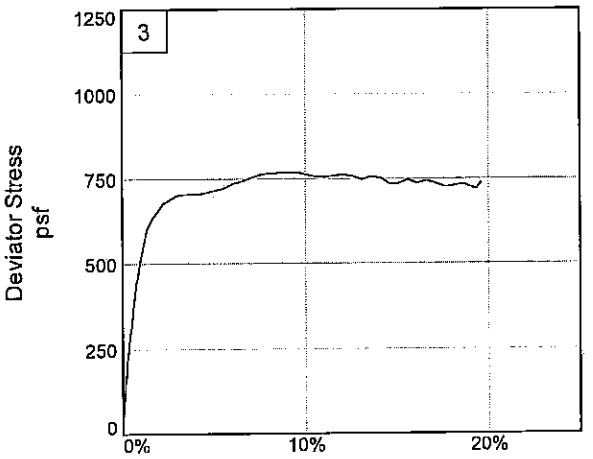
Proj. No.: 0022-0002 **Date Sampled:** 4-17-07

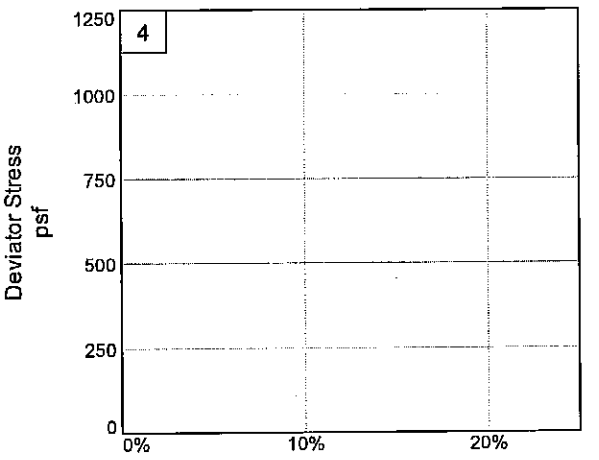
TRIAXIAL SHEAR TEST REPORT

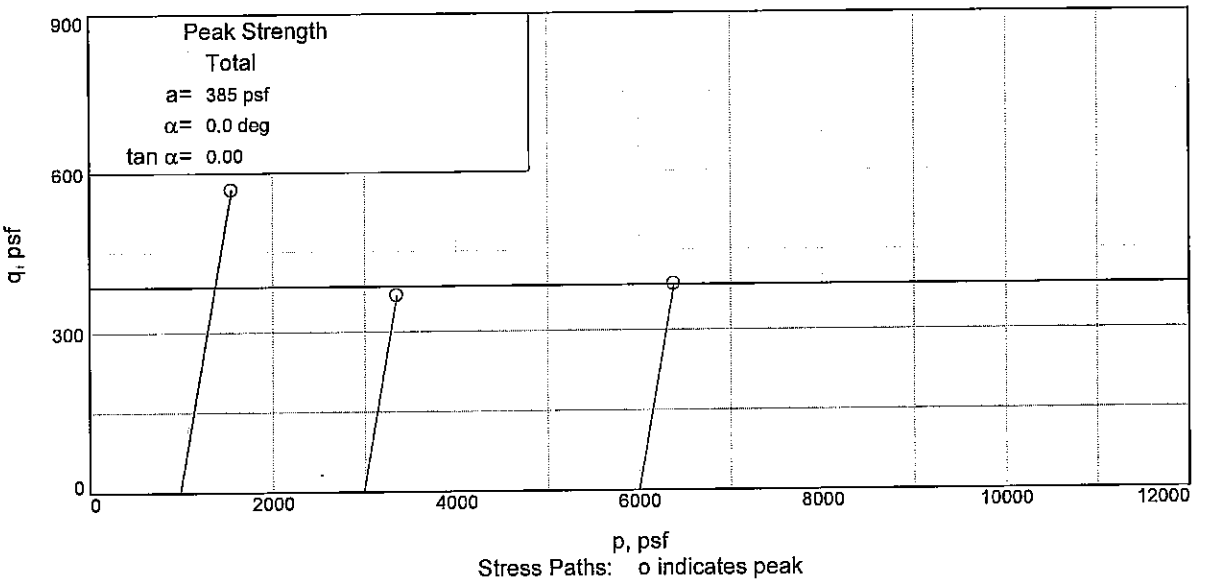
FFEBJV, LLC







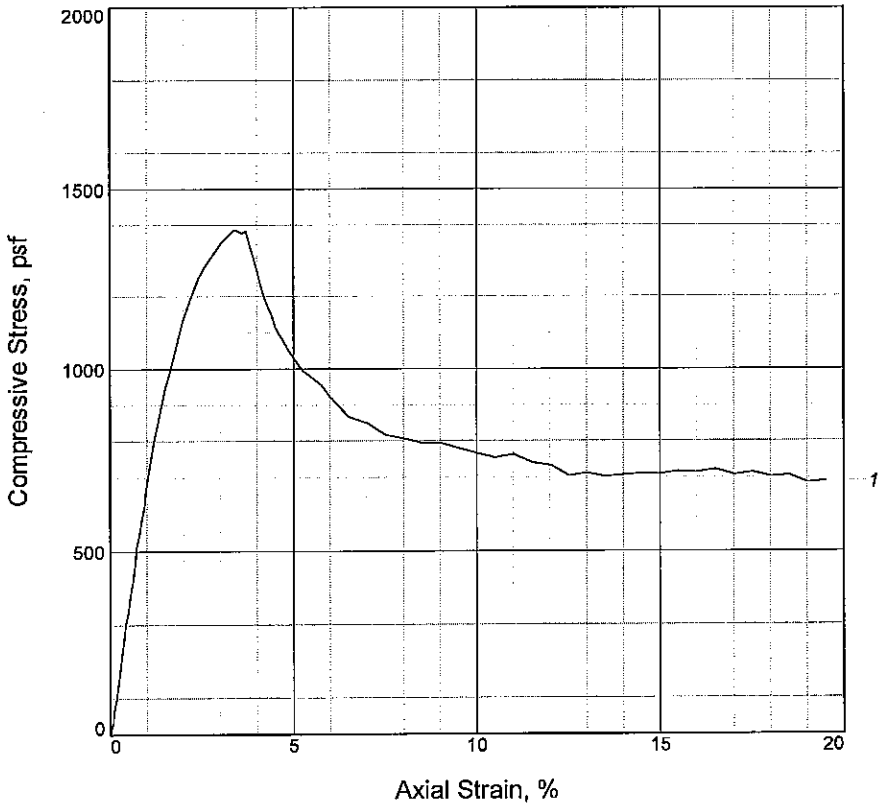




Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-46UCL **Depth:** 53.7 **Sample Number:** 16C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1386			
Undrained shear strength, psf	693			
Failure strain, %	3.4			
Strain rate, in./min.	0.03			
Water content, %	56.7			
Wet density, pcf	105.5			
Dry density, pcf	67.3			
Saturation, %	100.9			
Void ratio	1.5411			
Specimen diameter, in.	1.40			
Specimen height, in.	3.21			
Height/diameter ratio	2.29			

Description: M GR CH4 W/ SL

LL = 87	PL = 22	PI = 65	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-16-07
Remarks:

Figure _____

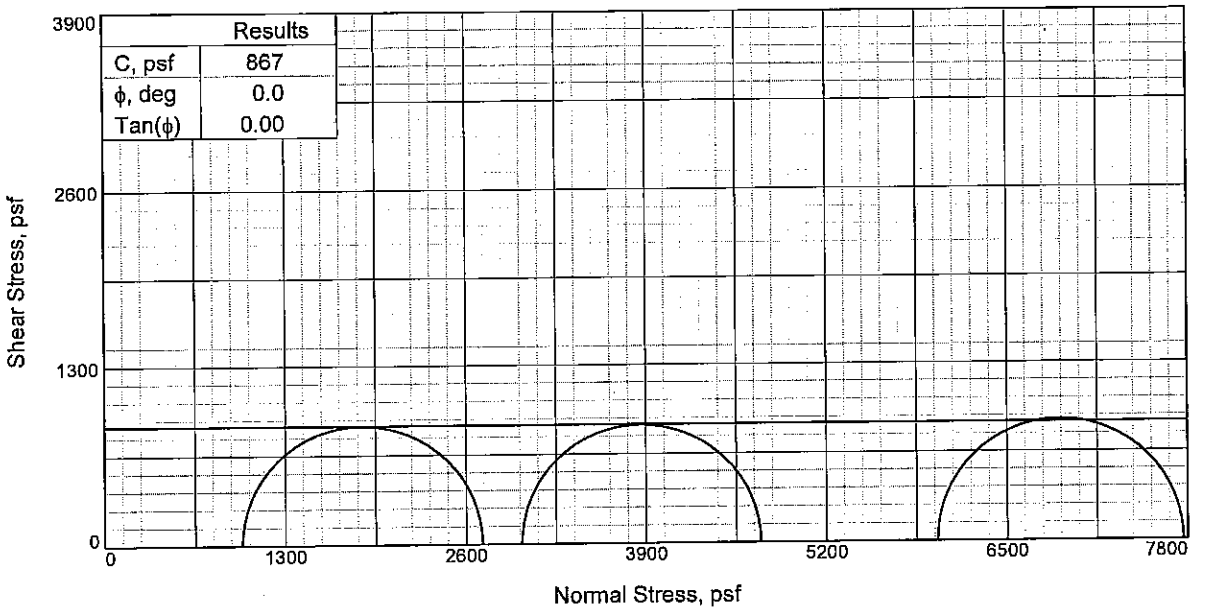
Client: FFEB JV, New Orleans, Louisiana

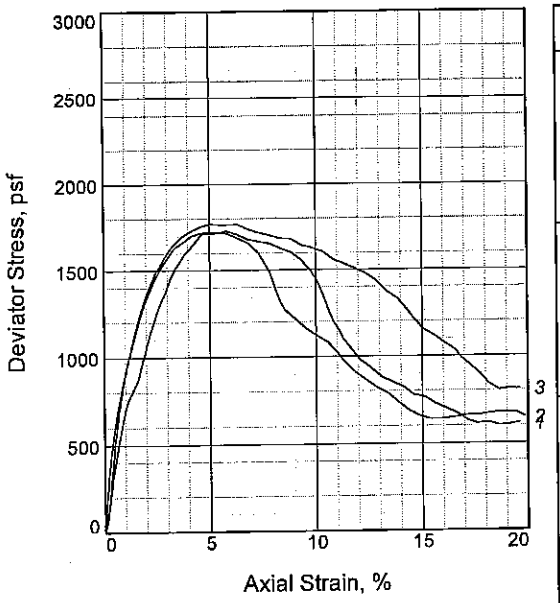
Project: Westwego to Harvey Canal

Source of Sample: WWHC-46UCL **Depth:** 61.7
Sample Number: 18C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	55.9	53.8	54.4
	Dry Density, pcf	66.2	66.9	66.8
	Saturation, %	96.6	94.6	95.6
	Void Ratio	1.5858	1.5579	1.5593
	Diameter, in.	1.41	1.41	1.41
	Height, in.	3.13	3.18	3.18
At Test	Water Content, %	55.9	53.8	54.4
	Dry Density, pcf	66.2	66.9	66.8
	Saturation, %	96.6	94.6	95.6
	Void Ratio	1.5858	1.5579	1.5593
	Diameter, in.	1.41	1.41	1.41
	Height, in.	3.13	3.18	3.18
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.86	41.66
Fail. Stress, psf		1728	1723	1770
Strain, %		5.8	5.3	5.1
Ult. Stress, psf		766	659	1149
Strain, %				
σ_1 Failure, psf		2719	4726	7769
σ_3 Failure, psf		990	3003	5999

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4

LL= 89 **PL=** 25 **PI=** 64
Assumed Specific Gravity= 2.74
Remarks:

Figure _____

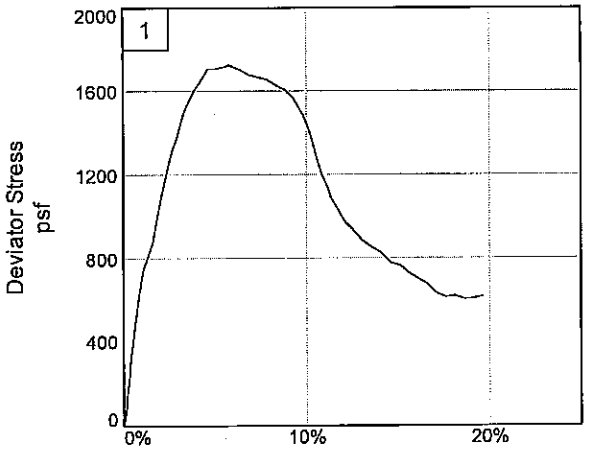
Client: FFEB JV, New Orleans, Louisiana

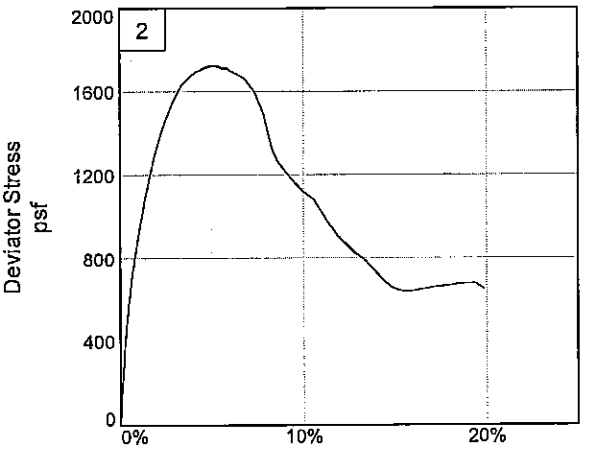
Project: Westwego to Harvey Canal

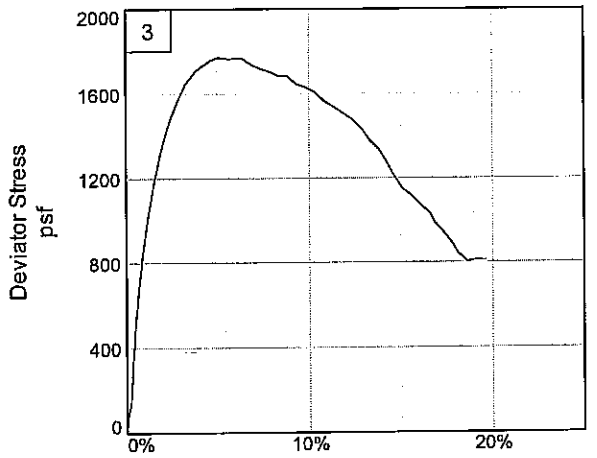
Source of Sample: WWHC-46UCL **Depth:** 65.7
Sample Number: 19C
Proj. No.: 0022-0002 **Date Sampled:** 4-17-07

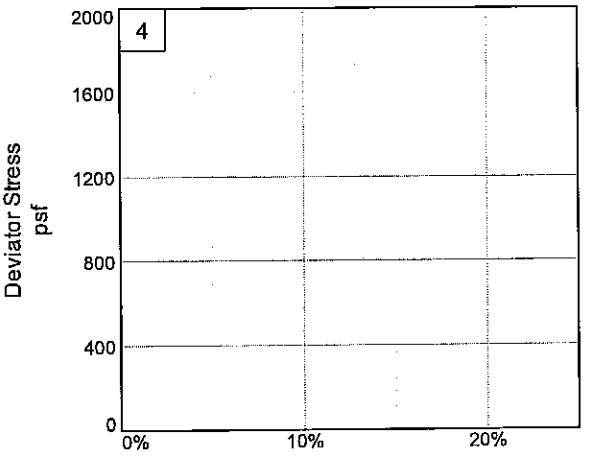
TRIAXIAL SHEAR TEST REPORT

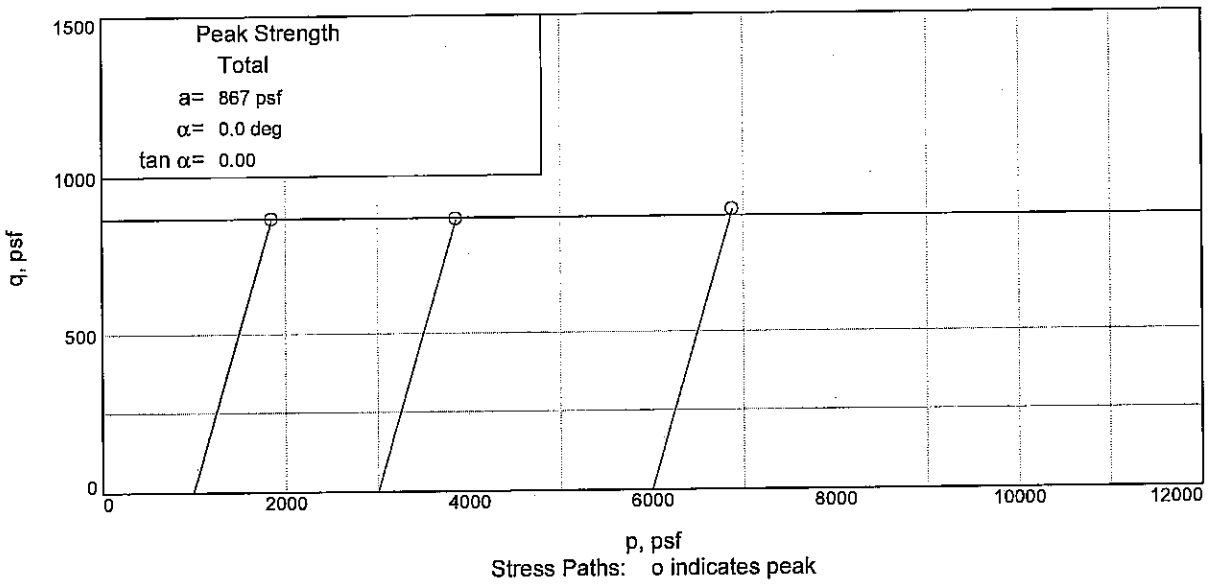
FFEBJV, LLC







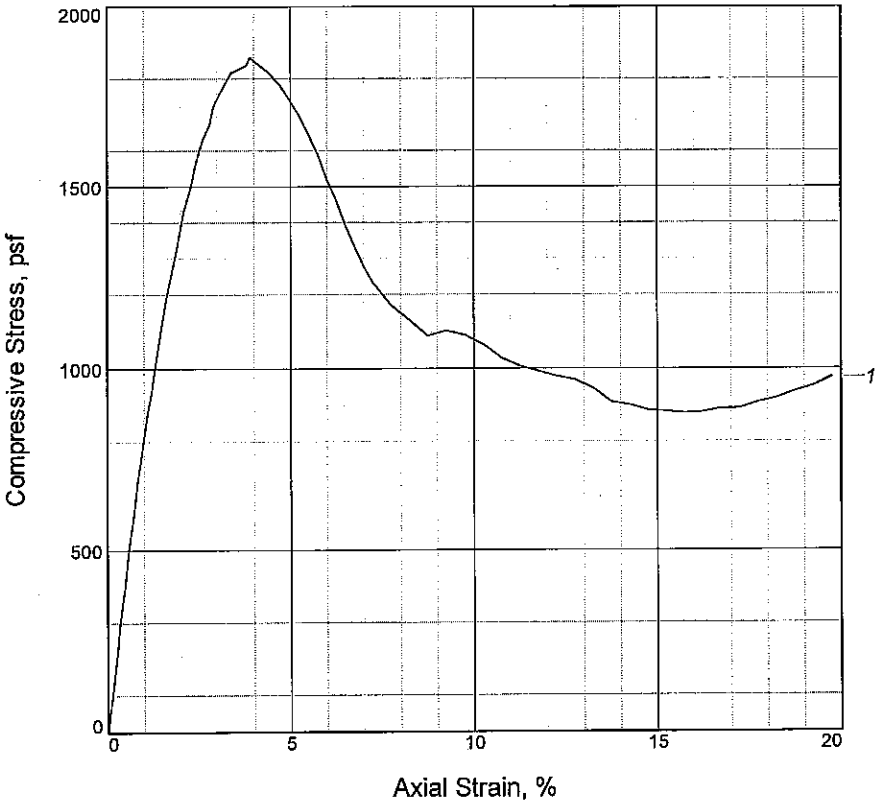




Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-46UCL **Depth:** 65.7 **Sample Number:** 19C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1858			
Undrained shear strength, psf	929			
Failure strain, %	3.9			
Strain rate, in./min.	0.03			
Water content, %	49.1			
Wet density, pcf	107.3			
Dry density, pcf	72.0			
Saturation, %	97.8			
Void ratio	1.3768			
Specimen diameter, in.	1.41			
Specimen height, in.	3.16			
Height/diameter ratio	2.24			

Description: M GR CH4 W/ SL

LL = 76	**PL** = 23	**PI** = 53	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-16-07
Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

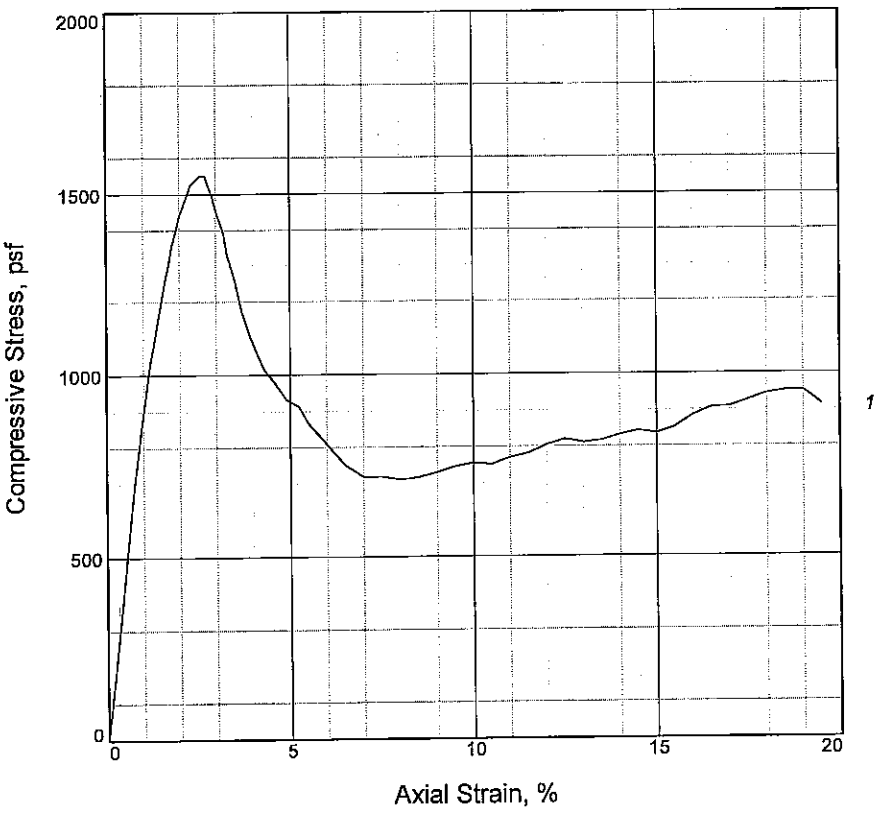
Project: Westwego to Harvey Canal

Source of Sample: WWHC-46UCL **Depth:** 69.7
Sample Number: 20C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1553			
Undrained shear strength, psf	776			
Failure strain, %	2.6			
Strain rate, in./min.	0.03			
Water content, %	46.2			
Wet density, pcf	109.8			
Dry density, pcf	75.1			
Saturation, %	99.1			
Void ratio	1.2769			
Specimen diameter, in.	1.40			
Specimen height, in.	3.19			
Height/diameter ratio	2.29			

Description: M GR CH4 W/ SIF, SL

LL = 74	PL = 20	PI = 54	Assumed GS= 2.74	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-16-07
Remarks:

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

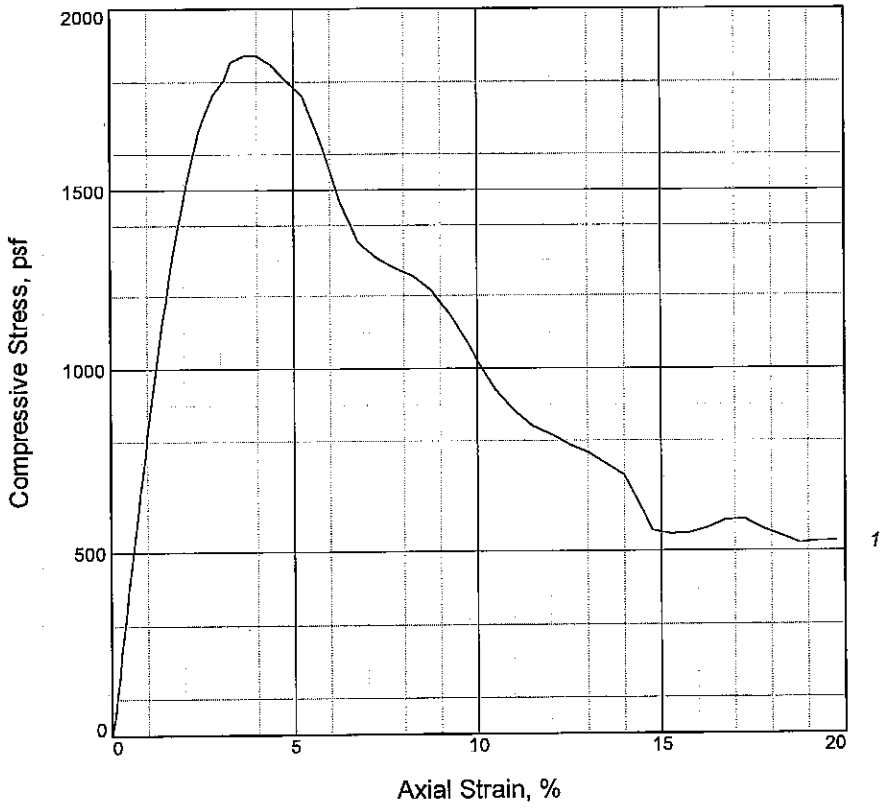
Source of Sample: WWHC-46UCL **Depth:** 77.7
Sample Number: 22C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1873			
Undrained shear strength, psf	936			
Failure strain, %	3.7			
Strain rate, in./min.	0.03			
Water content, %	28.4			
Wet density, pcf	120.1			
Dry density, pcf	93.6			
Saturation, %	96.1			
Void ratio	0.7948			
Specimen diameter, in.	1.40			
Specimen height, in.	3.26			
Height/diameter ratio	2.33			

Description: M GR CL6 W/ SIF, ARS SP

LL = 41	PL = 17	PI = 24	Assumed GS= 2.69	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-16-07
Remarks:

Figure _____

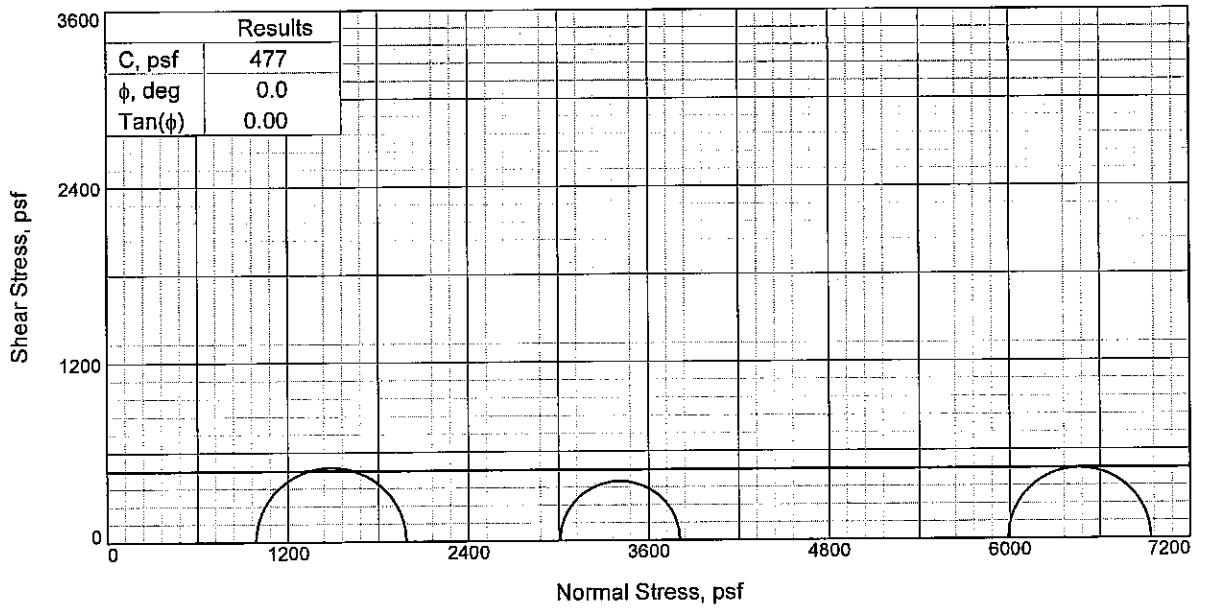
Client: FFEB JV, New Orleans, Louisiana

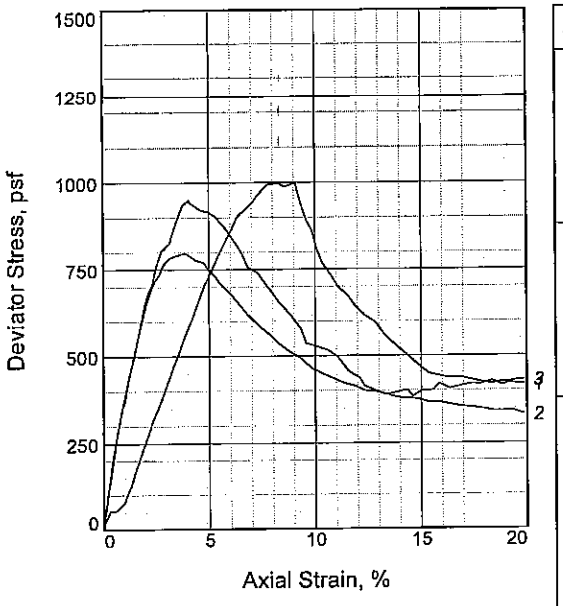
Project: Westwego to Harvey Canal

Source of Sample: WWHC-46UCL **Depth:** 84.8
Sample Number: 24B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	30.4	28.3	27.6
	Dry Density, pcf	92.5	94.2	97.6
	Saturation, %	100.8	97.8	103.8
	Void Ratio	0.8094	0.7769	0.7138
	Diameter, in.	1.41	1.41	1.41
	Height, in.	3.08	3.09	3.10
At Test	Water Content, %	30.4	28.3	27.6
	Dry Density, pcf	92.5	94.2	97.6
	Saturation, %	100.8	97.8	103.8
	Void Ratio	0.8094	0.7769	0.7138
	Diameter, in.	1.41	1.41	1.41
	Height, in.	3.08	3.09	3.10
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.90	41.58
Fail. Stress, psf		998	796	949
Strain, %		9.1	3.8	4.1
Ult. Stress, psf		474	368	401
Strain, %				
σ_1 Failure, psf		1985	3806	6937
σ_3 Failure, psf		987	3010	5988

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: GR ML1 W/ SIF

LL= NP **PI=** NP
Assumed Specific Gravity= 2.68
Remarks:

Figure _____

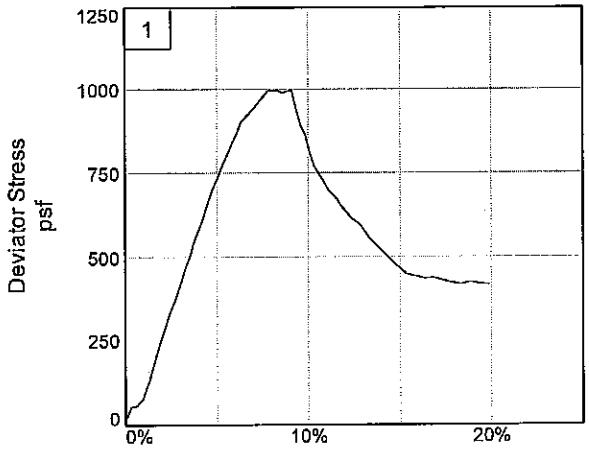
Client: FFEB JV, New Orleans, Louisiana

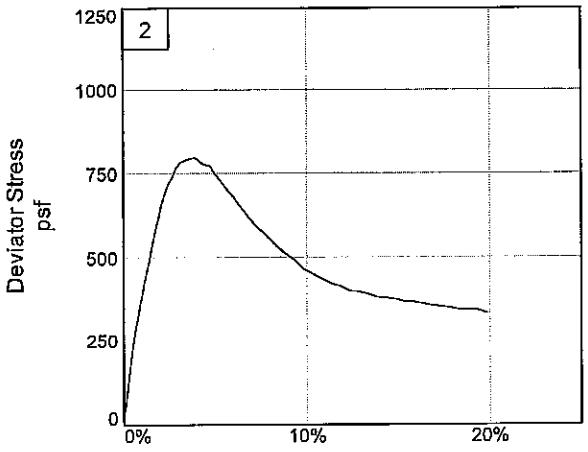
Project: Westwego to Harvey Canal

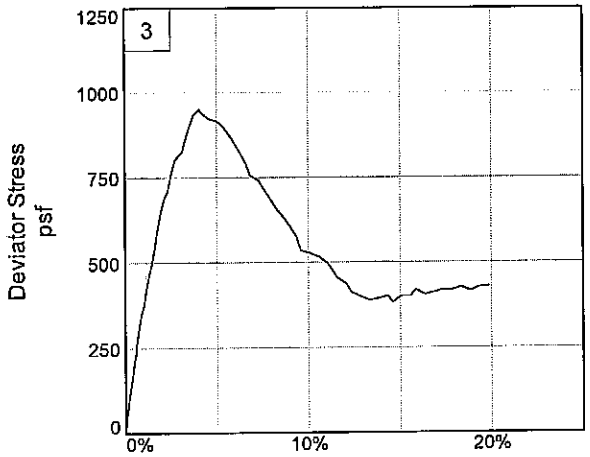
Source of Sample: WWHC-46UCL **Depth:** 89.7
Sample Number: 25C
Proj. No.: 0022-0002 **Date Sampled:** 4-16-07

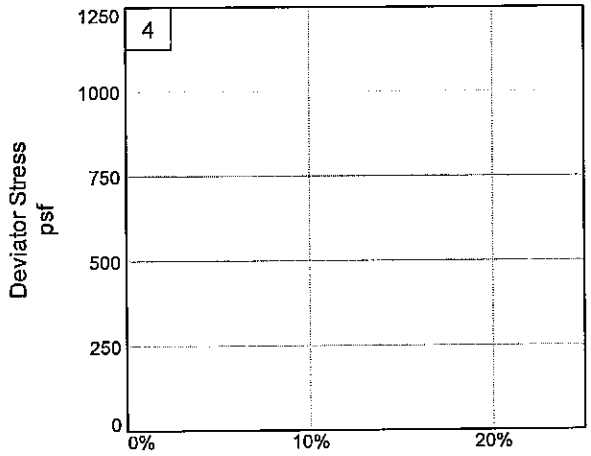
TRIAXIAL SHEAR TEST REPORT

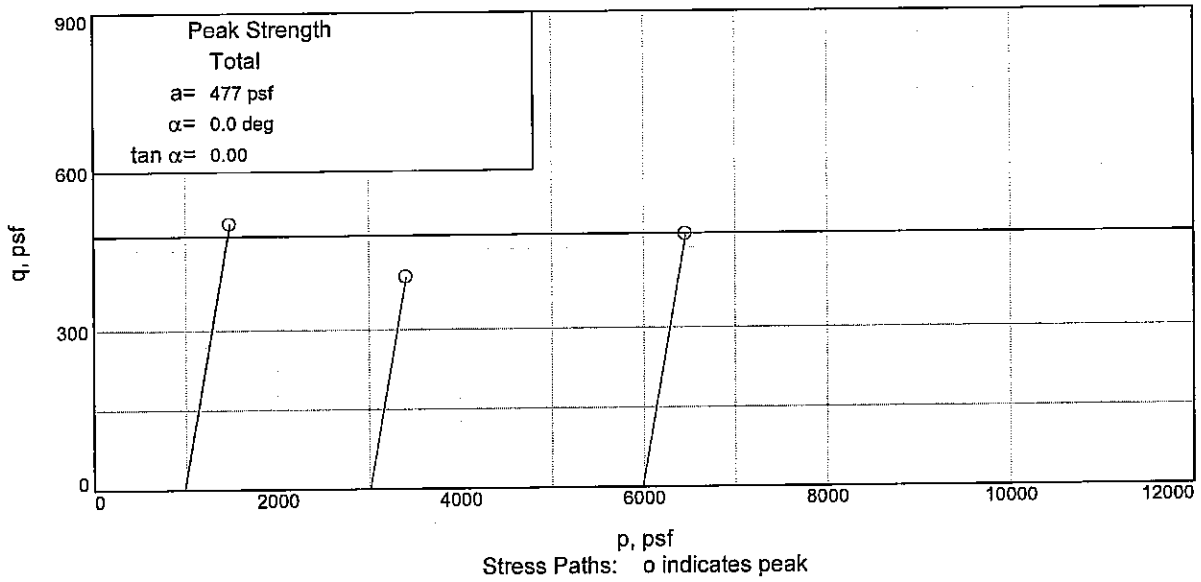
FFEBJV, LLC











Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-46UCL **Depth:** 89.7 **Sample Number:** 25C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

BOR. WWHC-46UCL
STA. LAT N29^49'54.10" LONG W90^06'57.49"

16-18 APRIL 2007

GROUND EL. 13.2

0.0	0.8	21		CL	ST BR	RT CS					
0.8	2.0	19		CL	VSTBR	RT CS					
2.0	2.8	23		CL	VSTBR GR	RT					
2.8	4.0	19		CL	VSTBR GR	RT					
4.0	6.0	26		CL	ST LBRGR	SIF					
6.0	6.8	29		CL	M GR LBR						
6.8	8.0	29	8.0CL		M GR LBR		951121	44	16	31	71
8.0	8.8	26	8.8CH		SISST GR						
8.8	9.5	31	9.5CH		ST GR LBR	RT					
9.5	12.0		12.0NS								
12.0	12.8	38		CH	M DGR	RT					
12.8	13.5	41	13.5CH		M DGR	RT WD					
13.5	16.0		16.0NS								
16.0	16.8	31		CL	M GR	RT					
16.8	17.7	30		CL	M GR LBR	RT					
17.7	20.0	32		CL	M GR LBR	RT					
20.0	20.8	33		CL	M GR	CS					
20.8	21.7	31		CL	M GR LBR	CS					
21.7	24.0	36	24.0CL		M GR						
24.0	24.8	37	24.8CH		M GR	SIF					
24.8	25.7	42		CH	SISSO GR	RT SIF	449113	65	21	39	251
25.7	28.0	37	28.0CH		SIS M GR	RT SIF					
28.0	28.8	44	28.8CH		M GR	RT					
28.8	29.7	51		CH	SIS M GR	RT WD SIF					
29.7	32.0	60	32.0CH		SISSO GR	RT WD SIF					
32.0	32.8	65	32.8CH		M GR	RT WD O					
32.8	33.7	73		CH	O M GR	RT WD					
33.7	36.0	72		CH	O M GR	RT WD					
36.0	36.8	92	36.8CH		O M GR	WD					
36.8	37.7	61	37.7CH		M GR	O WD RT					
37.7	40.0	59		CH	SIS M GR	RT O WD					
40.0	40.8	46		CH	SIS M GR	CC					
40.8	41.7	43		CH	SIS M GR						
41.7	44.0	56		CH	SIS M GR		502107	83	22	52	420
44.0	44.8	52		CH	SIS M GR						
44.8	45.7	53		CH	SIS M GR						

45.7 46.6 52 46.6CH SIS M GR 577104 65 18 59 460
46.6 48.0 66 48.0CH M GR SL
48.0 48.8 57 CH SIS M GR SL
48.8 49.7 66 CH SIS M GR SL
49.7 50.6 52 50.6CH SIS M GR SL 739103 87 24 63 500
50.6 52.0 65 CH M GR SL
52.0 52.8 60 52.8CH M GR
52.8 53.7 61 CH SISSO GR
53.7 56.0 63 56.0CH SISSO GR
56.0 56.8 63 CH SO GR SL
56.8 57.7 59 CH M GR SL
57.7 58.6 56 CH M GR SL
58.6 60.0 54 CH M GR SL
60.0 60.8 56 CH M GR SL
60.8 61.7 56 CH M GR SL
61.7 62.8 59 CH M GR SL 693106 87 22 57 620
62.8 64.0 59 CH M GR SL
64.0 64.8 60 CH M GR SL
64.8 65.7 61 CH M GR
65.7 66.6 60 CH M GR
66.6 68.0 56 CH M GR
68.0 68.8 56 CH M GR
68.8 69.7 51 CH M GR SL
69.7 72.0 53 CH M GR SL 929107 76 23 49 700
72.0 72.8 57 CH M GR SL
72.8 73.7 57 73.7CH M GR SL
73.7 76.0 61 76.0CH SIS M GR SL
76.0 76.8 28 CL M GR SIF S
76.8 77.7 32 77.7CL M GR SIF S
77.7 78.6 36 CH M GR SIF SL 776110 74 20 46 780
78.6 80.0 57 CH M GR SIF S
80.0 80.8 50 CH M GR S
80.8 81.7 56 CH M GR S SIF
81.7 82.6 57 CH M GR S SIF
82.6 84.0 54 CH M GR S SIF
84.0 84.8 38 84.8CH M GR SIF S
84.8 85.7 31 CL M GR S SIF 936120 41 17 28 851
85.7 86.6 25 CL M GR SIFCS S
86.6 88.0 28 CL M GR SIFCS S
88.0 88.8 30 CL SO GR SIF S
88.8 89.7 28 89.7CL SO GR SIF S
89.7 90.6 28 90.6ML GR SIF
90.6 92.0 28 92.0CL SO GR SIF S

999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 9.10/ 4.10 Water Con: 29.00
LL,PL,PI : 55, 17, 38 Dry Dens : 98.00
Cohesion : 0.885 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 13.10/-0.10 Water Con: 28.00
LL,PL,PI : 59, 26, 33 Dry Dens : 95.00
Cohesion : 0.458 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 18.00/-4.80 Water Con: 32.00
LL,PL,PI : 48, 18, 30 Dry Dens : 90.00
Cohesion : 0.388 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 22.00/-8.80 Water Con: 37.00
LL,PL,PI : 36, 23, 13 Dry Dens : 83.00
Cohesion : 0.263 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 30.00/-16.8 Water Con: 54.00
LL,PL,PI : 108, 24, 84 Dry Dens : 65.00
Cohesion : 0.231 Saturat : 92.00

Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CHO
Depth/Ele: 33.10/-19.9 Water Con: 78.00
LL,PL,PI : 126, 26,100 Dry Dens : 54.00
Cohesion : 0.261 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-24.8 Water Con: 60.00
LL,PL,PI : 87, 19, 68 Dry Dens : 64.00
Cohesion : 0.325 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 54.00/-40.8 Water Con: 58.00
LL,PL,PI : 69, 18, 51 Dry Dens : 66.00
Cohesion : 0.193 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 66.00/-52.8 Water Con: 55.00
LL,PL,PI : 89, 25, 64 Dry Dens : 67.00
Cohesion : 0.434 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : ML
Depth/Ele: 90.00/-76.8 Water Con: 29.00

LL,PL,PI : , , Dry Dens : 95.00
Cohesion : 0.239 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program

Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-46UFT

Current Date: 12/18/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	ST BR & LBR CL6 W/ RT	CL6		21												
1B	0.8	ST BR & GR CL6 W/ LNS ML	CL6	5	24	100	124	94	UC	--	1645	3289	42	18	24	0.59	
2A	2.0	ST LBR & GR CH2 W/ LNS ML	CH2		28												
3A	4.0	ST BR & GR CH2 W/ SIF, O, WD	CH2		35												
3B	4.8	ST BR & GR CH2 W/ SIF, O, WD	CH2		35												
3C	5.7	ST GR CH2 W/ O, SIF, WD	CH2		29	93	120	98	UU	0	1106		55	17	38	0.71	
4A	8.0	GR & LBR ML2 W/ O, WD	ML2		32												
4B	8.8	GR & LBR ML2 W/ O, WD	ML2		31												
4C	10.6	GR & LBR ML2 W/ O, WD, LNS CH	ML2		32												SV
5A	12.0	GR & LBR ML2 W/ O, WD	ML2		33												
5B	12.8	GR & LBR ML2 W/ RT	ML2		33												
5C	13.7	GR & LBR ML2 W/ LNS CH, RT	ML2		34												SV
6A	16.0	M GR & LBR CH3 W/ ARS ML	CH3		34												
6B	16.8	M GR & LBR CH3 W/ WD, LNS SP	CH3		35												
6C	17.7	SO GR CH3 W/ LNS SP, RT	CH3	5	39	80	111	93	UC	--	451	902	60	19	41	0.42	
7A	20.0	SO GR CH3 W/ WD	CH3		38												
7B	20.8	SO GR CH3 W/ LNS ML	CH3		36												
7C	21.7	SO GR CH3 W/ ARS ML, G	CH3		39	79	110	93	UU	0	317		58	20	38	0.61	
7D	22.6	SO GR CH3 W/ LNS ML, WD, RT	CH3		50												
8A	24.0	SO GR CH4 W/ ARS ML, WD	CH4		72												
8B	24.8	SO GR CHOA	CHOA		80	53	95	100	UU	0	414		121	29	92	0.36	
8C	25.7	SO GR CHOA W/ WD, RT, ARS ML	CHOA		85	50	93	98					138	31	107		Gs, CON
9A	28.0	SO GR CH4 W/ ARS ML, WD	CH4		69												
9B	28.8	SO GR CH3 W/ O, ARS ML	CH3		58												
9C	29.7	SO GR CH3 W/ ARS ML, CC, O	CH3		63	64	104	102	UU	0	318		65	20	45	0.28	
9D	30.6	SO GR CH3 W/ O, ARS ML, WD	CH3		60												
10A	32.0	SO GR & LGR CH4	CH4		69												
10B	32.8	SO GR CH4 W/ ARS ML	CH4		54												
10C	33.7	SO GR CH4 W/ LNS ML	CH4		63	63	102	101	UU	0	360		86	26	60	0.37	
11A	36.0	M GR CH4	CH4		42												
11B	36.8	M GR CH4	CH4		52												
11C	37.7	M GR CH4	CH4		73	58	100	101	UU	0	531		95	26	69	0.26	
12A	40.0	M GR CH4 W/ LNS ML	CH4		57												
12B	40.8	M GR CH4 W/ LNS ML	CH4		62												
12C	41.7	M GR CH4 W/ LNS ML	CH4	7	65	66	101	100	UC	--	593	1185	93	26	67	0.34	
12D	42.6	M GR CH4 W/ LNS ML	CH4		61												
13A	44.0	M GR CH4	CH4		53												

Remarks: _____
FFEBJV, LLC.

Checked by: WJY
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program

Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-46UFT

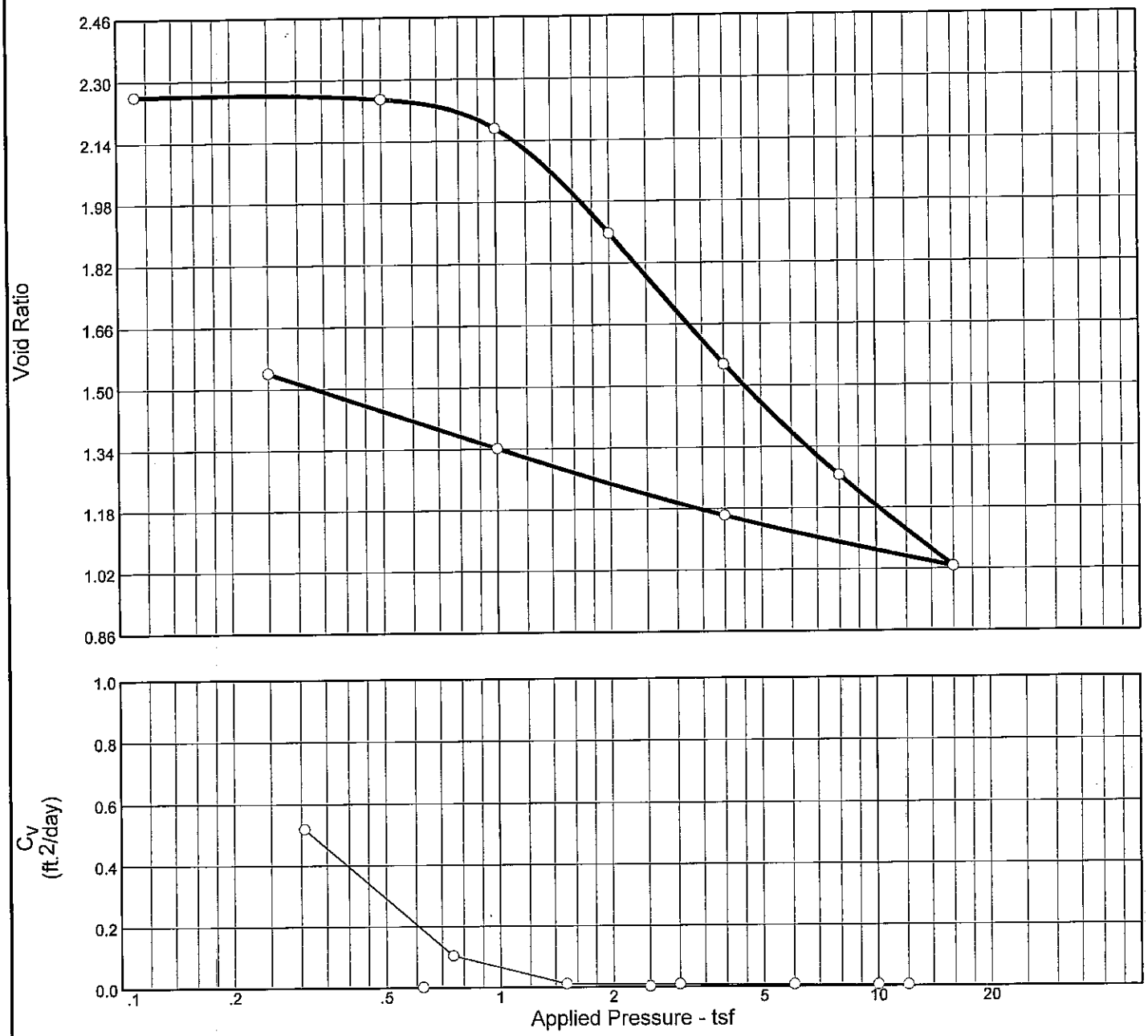
Current Date: 12/18/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
13B	44.8	M GR CH4	CH4		58												
13C	45.7	M GR CH4	CH4	7	61	61	102	98	UC	--	603	1207	90	26	64	0.40	
13D	46.6	M GR CH4 W/ LNS ML	CH4		57												
14A	48.0	M GR CH4 W/ ARS ML	CH4		59												
14B	48.8	M GR CH4 W/ ARS ML	CH4		55												
14C	49.7	M GR CH4 W/ ARS ML	CH4		55												
14D	50.6	M GR CH4 W/ ARS ML	CH4		57												
15A	52.0	M GR CH4	CH4		59												
15B	52.8	M GR CH4	CH4		58	66	104	99	UU	0	680		72	21	51	0.41	
15C	53.7	M GR CH4	CH4		56												
16A	56.0	M GR CH4 W/ ARS ML	CH4		62												
16B	56.8	M GR CH4 W/ WD, ARS ML	CH4		55												
16C	57.7	M GR CH4 W/ ARS ML	CH4	5	52	69	105	98	UC	--	880	1759	79	24	55	0.38	
16D	58.6	M GR CH4 W/ ARS ML	CH4		51												
17A	60.0	M GR CH4 W/ SL	CH4		55												
17B	60.8	M GR CH4 W/ SL	CH4		54												
17C	61.7	M GR CH4 W/ SL	CH4		61												
17D	62.6	M GR CH2 W/ SIF	CH2		28												
18A	64.0	M GR CH4 W/ LNS ML	CH4		48												
18B	64.8	M GR CH4 W/ LNS ML & ARS SM	CH4		55												
18C	65.7	M GR CH4 W/ LNS ML	CH4		58	66	104	100	UU	0	853		85	23	62	0.46	
18D	66.1	M GR CH4 W/ LNS ML	CH4		53												
19A	68.0	M GR CH4 W/ SIF	CH4		62												
19B	68.8	M GR CH4 W/ LNS ML	CH4	3	57	65	102	97	UC	--	816	1632	88	22	66	0.58	
19C	69.7	M GR CH4 W/ LNS ML, SIF	CH4		44												
19D	70.6	M GR CH3 W/ LNS ML, SIF	CH3		37												

Remarks: _____
FFEBJV, LLC.

Checked by: WSY
File Name: TO 2

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
98.2 %	85.4 %	49.9	138	107	2.62	1.17	1.12	2.278

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CHOA W/ WD, RT, ARS ML	CHOA	

Project No. 0022-0002 **Client:** US Army Corps of Engineers

Project: West Banks 100yr Boring Program

Source: WWHC-46UFT **Sample No.:** 8C **Elev./Depth:** 25.7'

FFEBJV, LLC

St Rose, LA

Remarks:

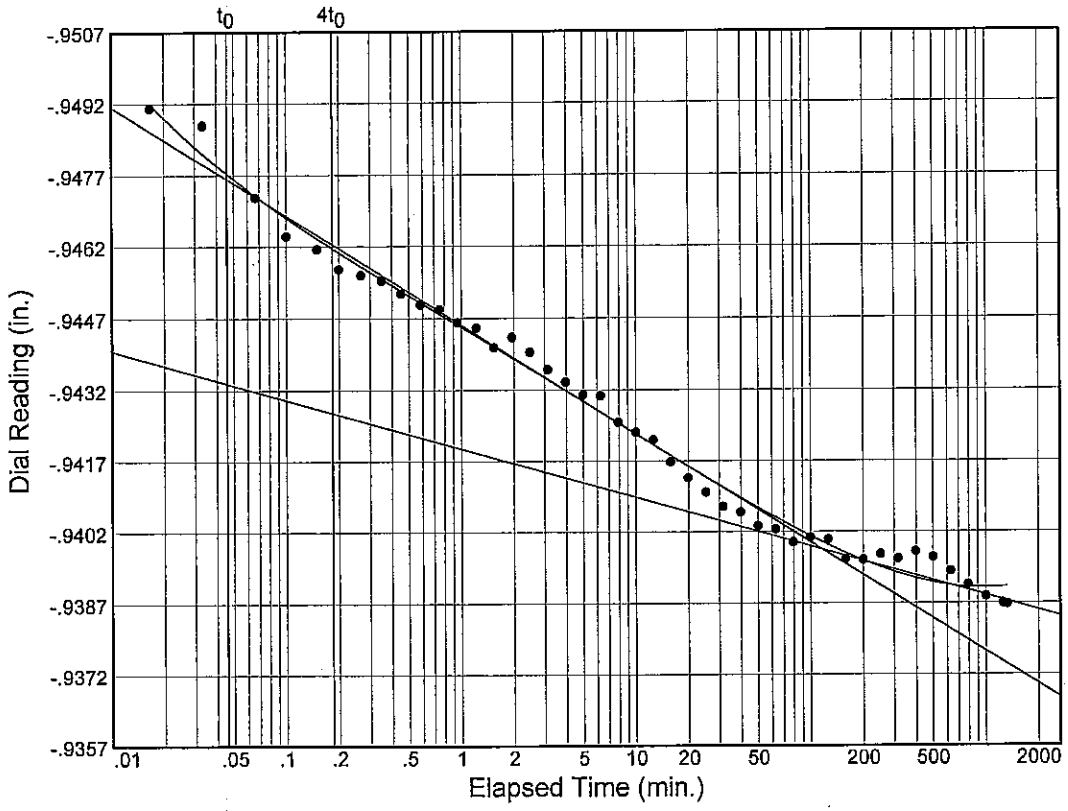
Tested by: DLD
Calculated by: WJY
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: West Banks 100yr Boring Program

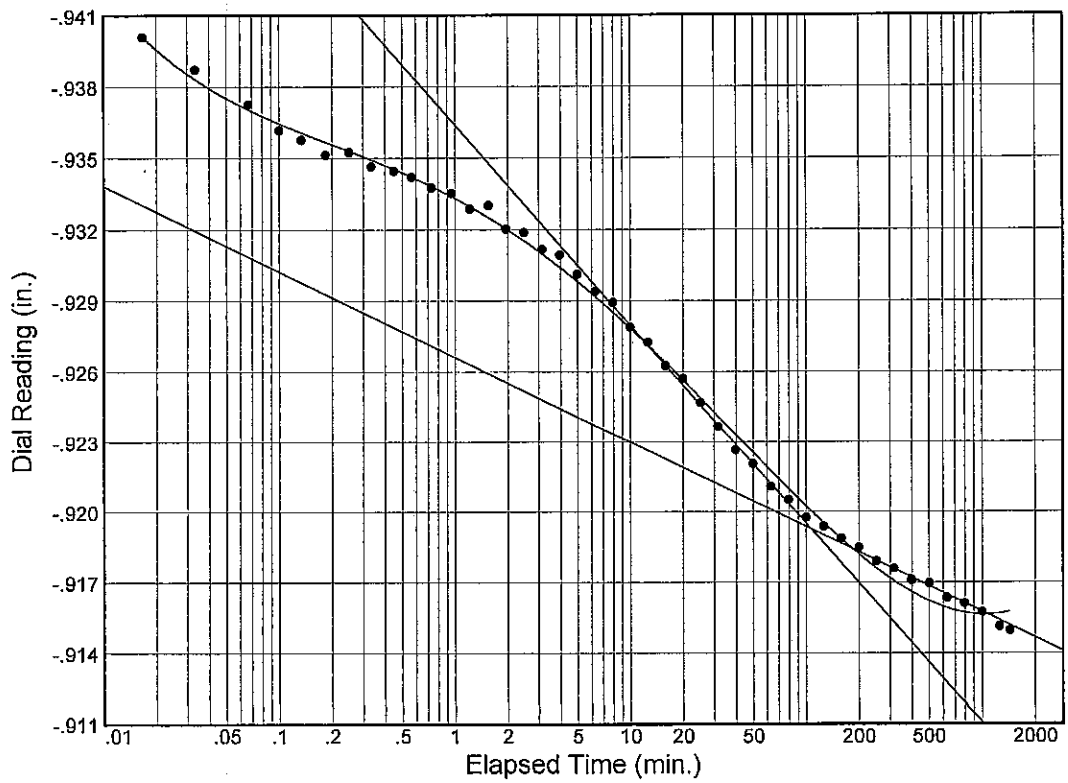
Source: WWHC-46UFT Sample No.: 8C Elev./Depth: 26.6'



Load No.= 2
Load= 0.50 tsf
D_0 = -0.94931
D_{50} = -0.94457
D_{100} = -0.93983
T_{50} = 0.94 min.

C_v @ T_{50}
0.52 ft.^{2}/day

C_α = 0.001



Load No.= 3
Load= 1.00 tsf
D_0 = -0.94085
D_{50} = -0.93006
D_{100} = -0.91926
T_{50} = 4.56 min.

C_v @ T_{50}
0.10 ft.^{2}/day

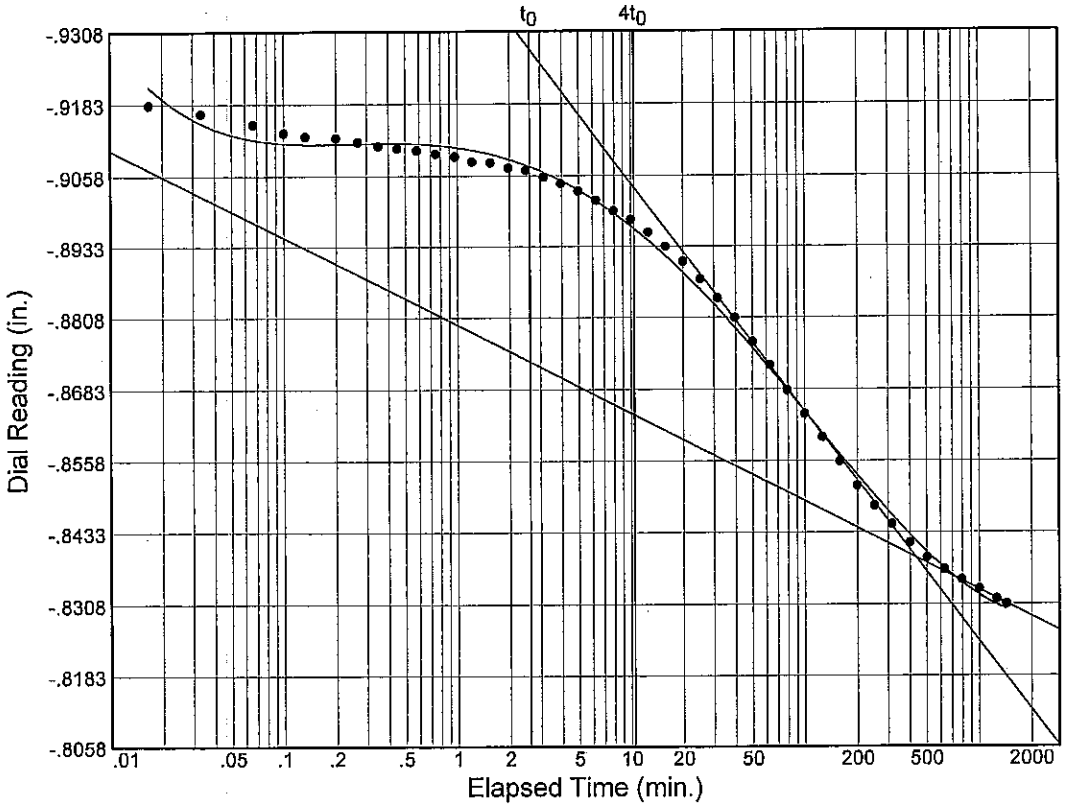
C_α = 0.004

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: West Banks 100yr Boring Program

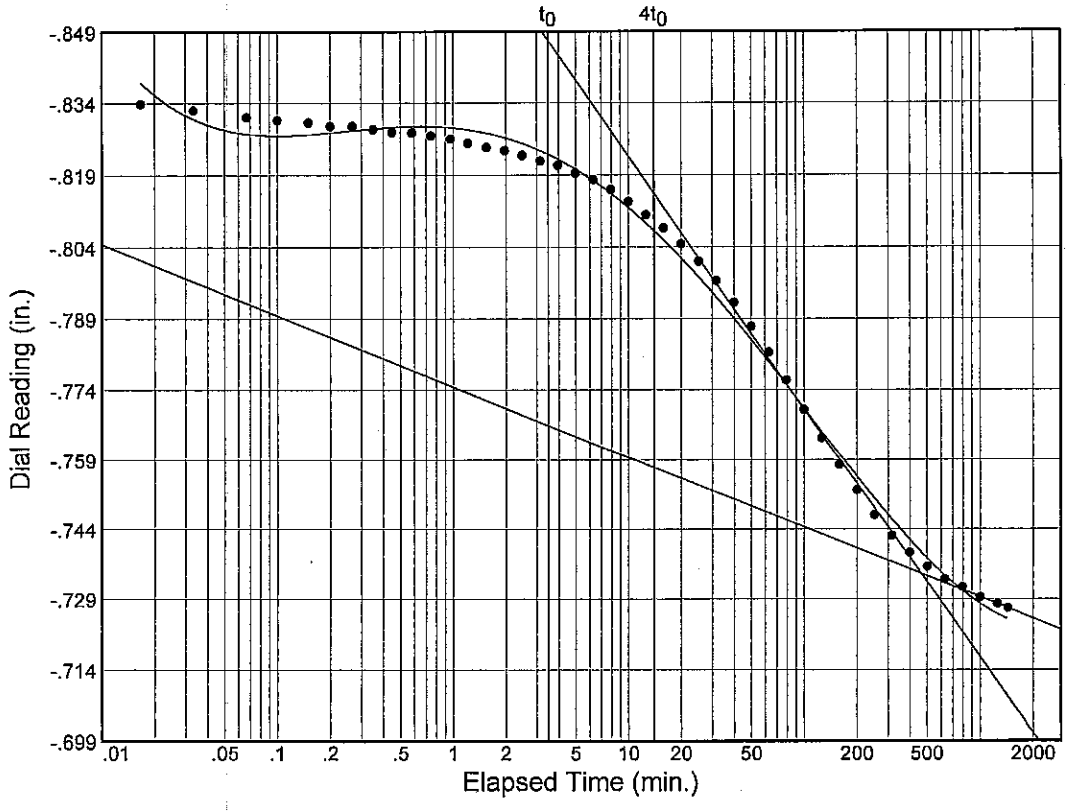
Source: WWHC-46UFT Sample No.: 8C Elev./Depth: 26.6'



Load No.= 4
Load= 2.00 tsf
D_0 = -0.91847
D_{50} = -0.87868
D_{100} = -0.83888
T_{50} = 40.63 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.016



Load No.= 5
Load= 4.00 tsf
D_0 = -0.83913
D_{50} = -0.78680
D_{100} = -0.73448
T_{50} = 44.74 min.

C_v @ T_{50}
0.01 ft.^{2}/day

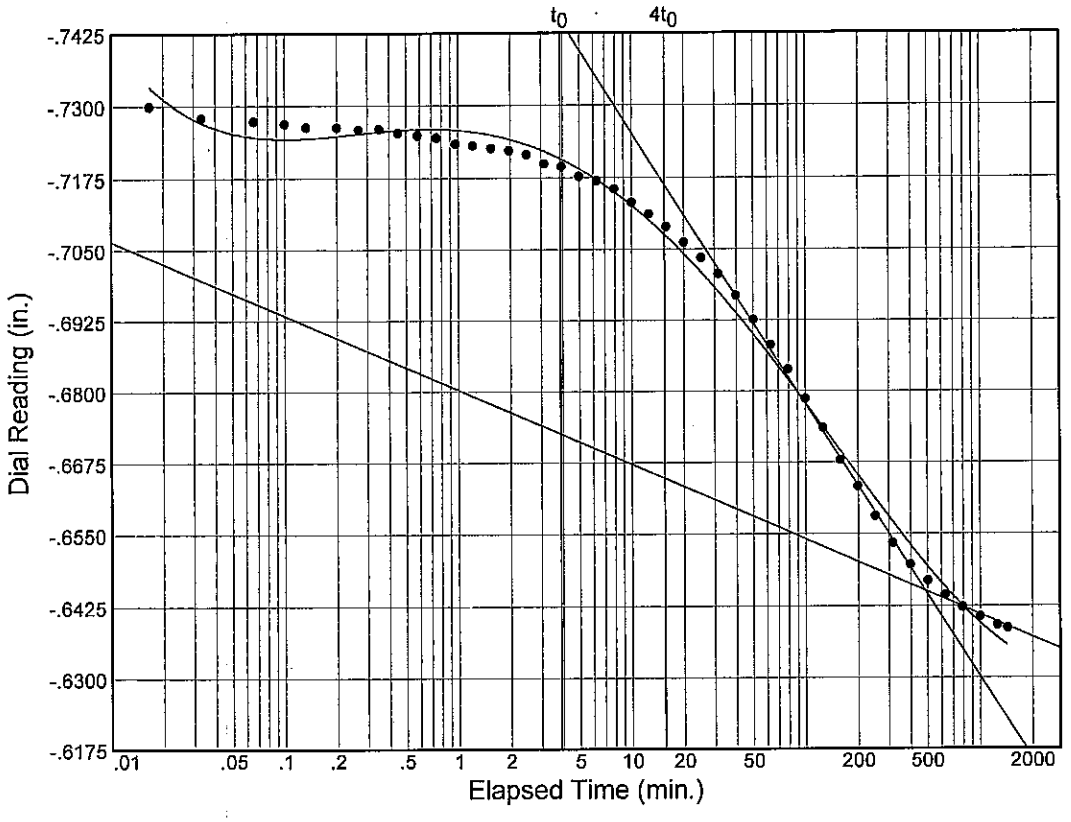
C_α = 0.017

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: West Banks 100yr Boring Program

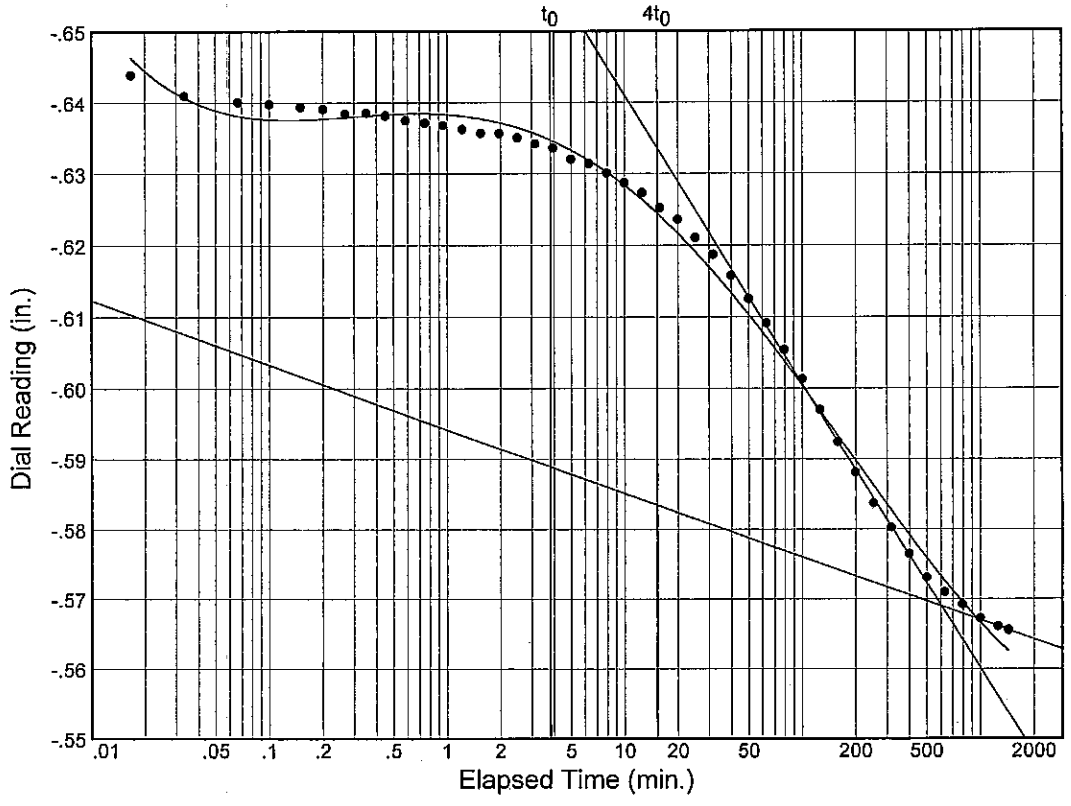
Source: WWHC-46UFT Sample No.: 8C Elev./Depth: 26.6'



Load No.= 6
Load= 8.00 tsf
D_0 = -0.73418
D_{50} = -0.68966
D_{100} = -0.64514
T_{50} = 51.31 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.017



Load No.= 7
Load= 16.00 tsf
D_0 = -0.64500
D_{50} = -0.60698
D_{100} = -0.56895
T_{50} = 63.89 min.

C_v @ T_{50}
0.00 ft.^{2}/day

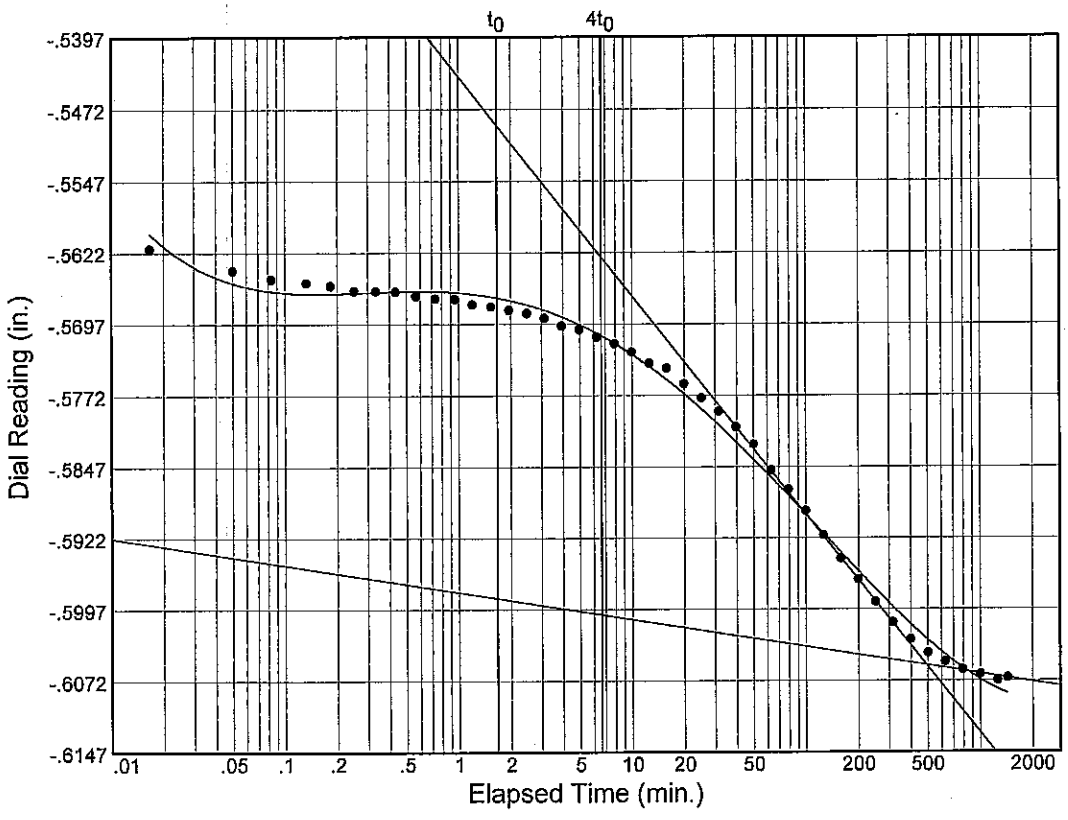
C_α = 0.013

Figure

Dial Reading vs. Time

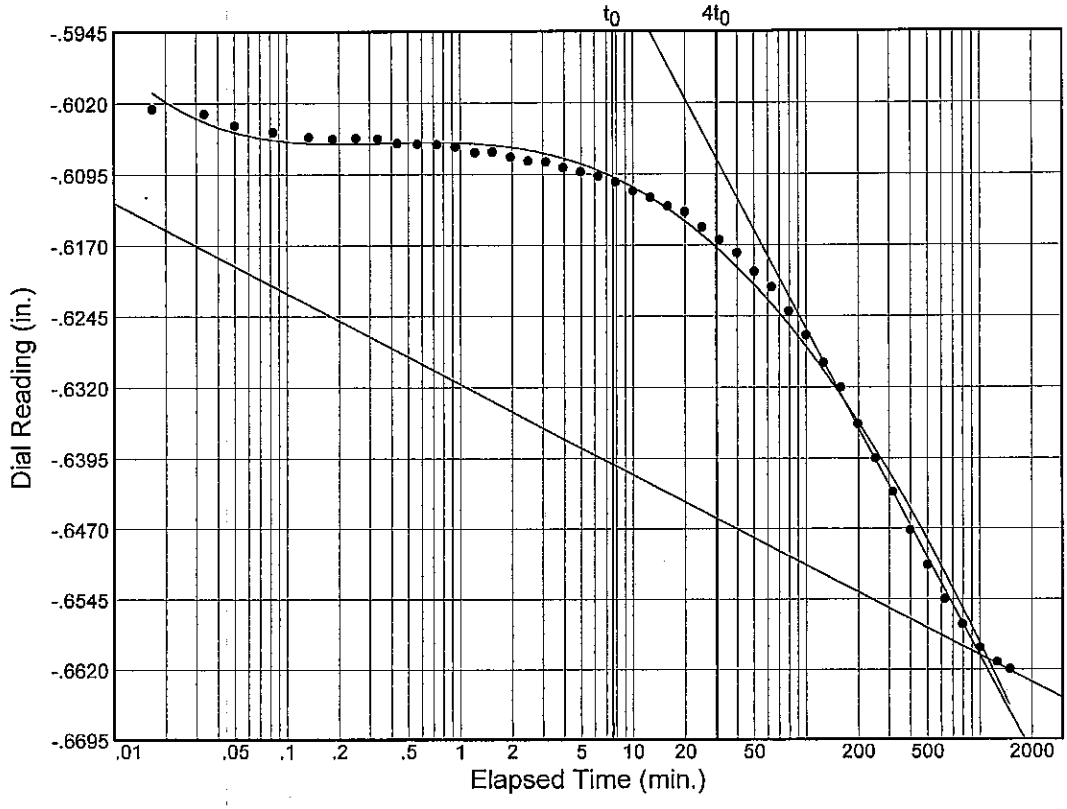
Project No.: 0022-0002
Project: West Banks 100yr Boring Program

Source: WWHC-46UFT Sample No.: 8C Elev./Depth: 26.6'



Load No.= 8
Load= 4.00 tsf
D_0 = -0.56295
D_{50} = -0.58427
D_{100} = -0.60559
T_{50} = 52.43 min.

C_v @ T_{50}
0.00 ft.^{2}/day



Load No.= 9
Load= 1.00 tsf
D_0 = -0.60231
D_{50} = -0.63138
D_{100} = -0.66045
T_{50} = 139.27 min.

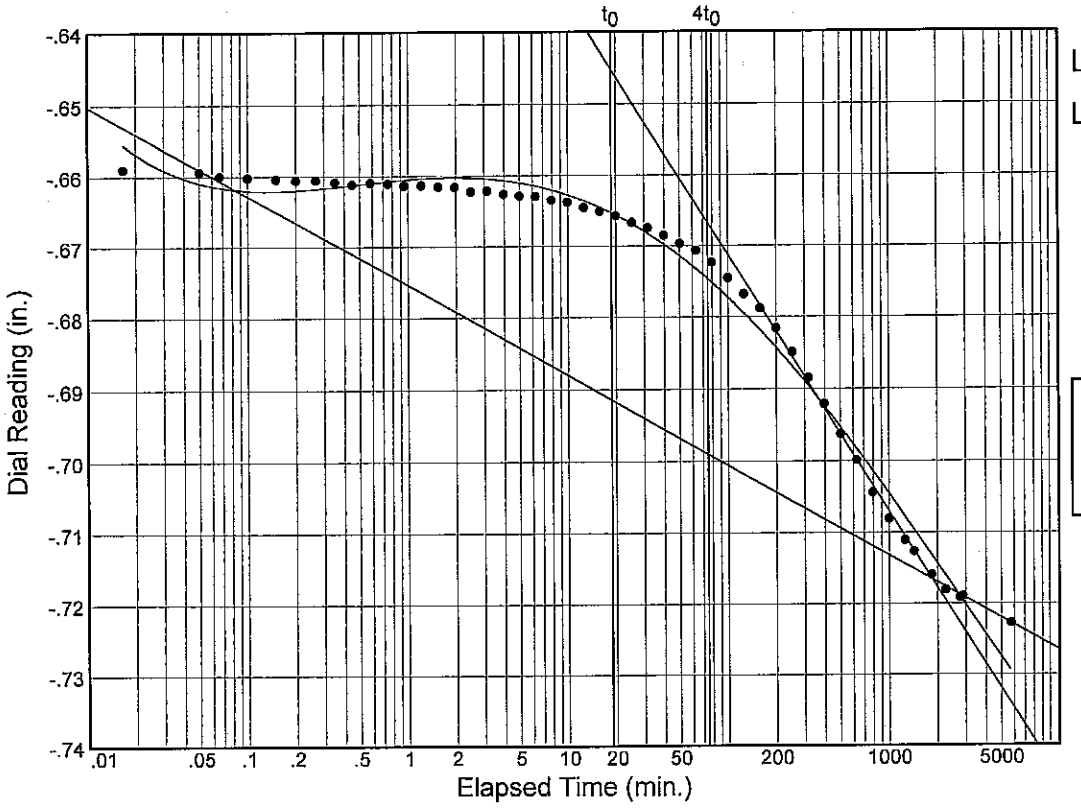
C_v @ T_{50}
0.00 ft.^{2}/day

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: West Banks 100yr Boring Program

Source: WWHC-46UFT Sample No.: 8C Elev./Depth: 26.6'



Load No.= 10
Load= 0.25 tsf
D_0 = -0.65595
D_{50} = -0.68624
D_{100} = -0.71653
T_{50} = 238.04 min.

C_v @ T_{50}
0.00 ft.^{2}/day

BOR. WWHC-46UFT
STA. LAT N29^49'53.82" LONG W90^06'58.09"
Offset 60' from C/L
16 APRIL 2007

GROUND EL. 4.6

0.0	0.8	21	0.8CL	ST BR LBR RT							
0.8	2.0	22	2.0CL	SISST BR GR			1645124	42	18	24	11
2.0	4.0	28	4.0CH	SISST LBRGR							
4.0	4.8	35	CH	ST BR GR SIF O WD							
4.8	5.7	35	CH	ST BR GR SIF O WD							
5.7	8.0	30	8.0CH	ST GR O SIFWD							
8.0	8.8	32	ML	GR LBR O WD							
8.8	9.7	31	ML	GR LBR O WD							
9.7	12.0	32	ML	GR LBR O WD CS							
12.0	12.8	33	ML	GR LBR O WD							
12.8	13.7	33	ML	GR LBR RT							
13.7	16.0	34	16.0ML	GR LBR CS RT							
16.0	16.8	34	16.8CH	SIS M GR LBR							
16.8	17.7	35	CH	SS M GR LBR WD							
17.7	20.0	40	20.0CH	SS SO GR RT			451111	60	19	39	180
20.0	20.8	38	20.8CH	SO GR WD							
20.8	21.7	36	CH	SISSO GR							
21.7	22.6	39	CH	SISSO GR G							
22.6	24.0	50	CH	SISSO GR WD RT							
24.0	24.8	72	24.8CH	SISSO GR WD							
24.8	25.7	71	CH	O SO GR							
25.7	28.0	85	28.0CH	O SO GR WD RT SIS							
28.0	28.8	69	CH	SISSO GR WD							
28.8	29.7	58	CH	SISSO GR O							
29.7	30.6	54	CH	SISSO GR O CC							
30.6	32.0	60	32.0CH	SISSO GR O WD							
32.0	32.8	69	32.8CH	SO GR LGR							
32.8	33.7	54	CH	SISSO GR							
33.7	36.0	58	36.0CH	SISSO GR							
36.0	36.8	42	CH	M GR							
36.8	37.7	52	CH	M GR							
37.7	40.0	60	40.0CH	M GR							
40.0	40.8	57	CH	SIS M GR							
40.8	41.7	62	CH	SIS M GR							
41.7	42.6	59	CH	SIS M GR			593101	93	26	65	420
42.6	44.0	61	44.0CH	SIS M GR							

```
 44.0 44.8 58     CH      M GR
 44.8 45.7 58     CH      M GR
 45.7 46.6 59 46.6CH      M GR                    603102 90 26      61 460
 46.6 48.0 57     CH  SIS M GR
 48.0 48.8 59     CH  SIS M GR
 48.8 49.7 55     CH  SIS M GR
 49.7 50.6 55     CH  SIS M GR
 50.6 52.0 57 52.0CH  SIS M GR
 52.0 52.8 59     CH      M GR
 52.8 53.7 59     CH      M GR
 53.7 56.0 56 56.0CH      M GR
 56.0 56.8 62     CH  SIS M GR
 56.8 57.7 55     CH  SIS M GR       WD
 57.7 58.6 53     CH  SIS M GR                    880105 79 24     52 580
 58.6 60.0 51 60.0CH  SIS M GR
 60.0 60.8 55     CH      M GR       SL
 60.8 61.7 54     CH      M GR       SL
 61.7 62.6 61     CH      M GR       SL
 62.6 64.0 28 64.0CH      M GR       SIF
 64.0 64.8 48     CH  SIS M GR
 64.8 65.7 55     CH  SIS M GR        S
 65.7 66.6 54     CH  SIS M GR
 66.6 68.0 53 68.0CH  SIS M GR
 68.0 68.8 62 68.8CH      M GR       SIF
 68.8 69.7 59     CH  SIS M GR                    816102 88 22      57 691
 69.7 70.6 44     CH  SIS M GR       SIF
 70.6 72.0 37 72.0CH  SIS M GR       SIF
999.9
*******************************************************************************
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q)                Classif  : CH
Depth/Ele:  6.00/-1.40         Water Con: 29.00
LL,PL,PI :  55, 17, 38         Dry Dens : 93.00
Cohesion :  0.553              Saturat  : 98.00
Shear Str:                   Frict Ang: 00.00
Toggles  :(     )(     )(     )(     )

*******************************************************************************
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q)                Classif  : CH
Depth/Ele: 22.00/-17.4         Water Con: 39.00
LL,PL,PI :  58, 20, 38         Dry Dens : 79.00
Cohesion :  0.159              Saturat  : 93.00
```

Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CHO
Depth/Ele: 25.10/-20.5 Water Con: 80.00
LL,PL,PI : 121, 29, 92 Dry Dens : 53.00
Cohesion : 0.207 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 30.00/-25.4 Water Con: 63.00
LL,PL,PI : 65, 20, 45 Dry Dens : 64.00
Cohesion : 0.159 Saturat :102.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 34.00/-29.4 Water Con: 63.00
LL,PL,PI : 86, 26, 60 Dry Dens : 63.00
Cohesion : 0.180 Saturat :101.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-33.4 Water Con: 73.00
LL,PL,PI : 95, 26, 69 Dry Dens : 58.00
Cohesion : 0.266 Saturat :101.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 53.10/-48.5 Water Con: 58.00

LL,PL,PI : 72, 21, 51 Dry Dens : 66.00
Cohesion : 0.340 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 66.00/-61.4 Water Con: 58.00
LL,PL,PI : 85, 23, 62 Dry Dens : 66.00
Cohesion : 0.427 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CHO
Depth/Ele: 26.6/-22.0 Water Con: 85.00
LL,PL,PI : 138, 31,107 Dry Dens : 50.00
Cohesion : Saturat : 98.00
Shear Str: Frict Ang: 00.00
Norm Str: 1.170, 2.132
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.13	2.260
0.50	2.250
1.00	2.172
2.00	1.897
4.00	1.556
8.00	1.267
16.00	1.027
4.00	1.162
1.00	1.343
0.25	1.542

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-47UCL

Current Date: 9/15/2008

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	VST T CH2	CH2		20												
1B	0.8	VST T CH2	CH2		16												
2A	2.0	VST T & GR CH3 W/ ARS & LNS ML	CH3		26												
2B	2.8	VST CH2 W/ RT	CH2	6	24	98	121	89	UC	--		4003	51	18	33	1.25	
3A	4.0	ST T & GR CH3 W/ ARS & LNS ML	CH3		30												
3B	4.8	ST T & GR CH3 W/ ARS & LNS ML	CH3		31												
3C	5.7	M GR & T CH3 W/ ARS & LNS ML, WD	CH3		33	90	119	99	UU	0	882		60	20	40	0.46	
4A	8.0	ST GR CH2	CH2		37												
4B	8.8	ST GR CH2 W/ LNS ML	CH2		30												
4C	9.7	ST GR & T CL6 W/ LNS ML, RT	CL6		28	97	124	100	UU	0	1122		46	19	27	0.70	
5A	12.0	ST GR & T CL6 W/ LNS ML	CL6		30												
NS	12.8	NO SAMPLE	NS														
6A	16.0	M GR CH3 W/ ARS ML	CH3		41												
6B	16.8	M GR CH2	CH2		31												
6C	17.7	M GR & T CL6 W/ LNS ML, RT	CL6		34	91	121	100	UU	0	708		43	18	25	0.36	
7A	20.0	M GR CH2	CH2		35												
7B	20.8	M GR CH2	CH2		34												
7C	21.7	M BR & GR CH2	CH2	7	33	88	118	99	UC	--	705	1411	55	19	36	0.55	
7D	22.6	M GR CH2	CH2		34												
8A	24.0	M GR CH3 W/ ARS & LNS ML	CH3		57												
8B	24.8	M GR CH3 W/ ARS & LNS ML	CH3		37												
8C	25.7	M GR CH3	CH3		40	81	113	98	UU	0	862		73	24	49	0.40	
8D	26.6	M GR CH3 W/ ARS ML	CH3		49												
9A	28.0	M GR CH4	CH4		57												
9B	28.8	M GR CH4	CH4		55												
9C	29.7	M GR CH4	CH4		51	71	108	100	UU	0	542		86	27	59	0.30	
9D	30.6	M GR CH4 W/ LNS & LYS ML	CH4		43												
10A	32.0	M GR CL6	CL6		40												
10B	32.8	M GR CL6	CL6		32												
10C	33.7	M GR CHOA W/ WD	CHOA		90	49	93	100	UU	0	675		140	39	101	0.44	
10D	34.6	M GR CH4 W/ O, LNS ML	CH4		48												
11A	36.0	SO GR CH4 W/ ARS ML	CH4		94												
11B	36.8'	SO GR CH4 W/ ARS ML	CH4		74	58	98	97					108	32	76		CON
11C	37.7	M GR CH4 W/ SIF	CH4		57	68	106	100	UU	0	543		82	26	56	0.34	
11D	38.6	M GR CH3 W/ SIF	CH3		39												
12A	40.0	M GR CH3	CH3		42												
12B	40.8	M GR CH3	CH3		46												

Remarks: 1 consol (11B) added WJY
FFEBJV, LLC.

Checked by: RNE
File Name: TO 2 WWHC

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-47UCL

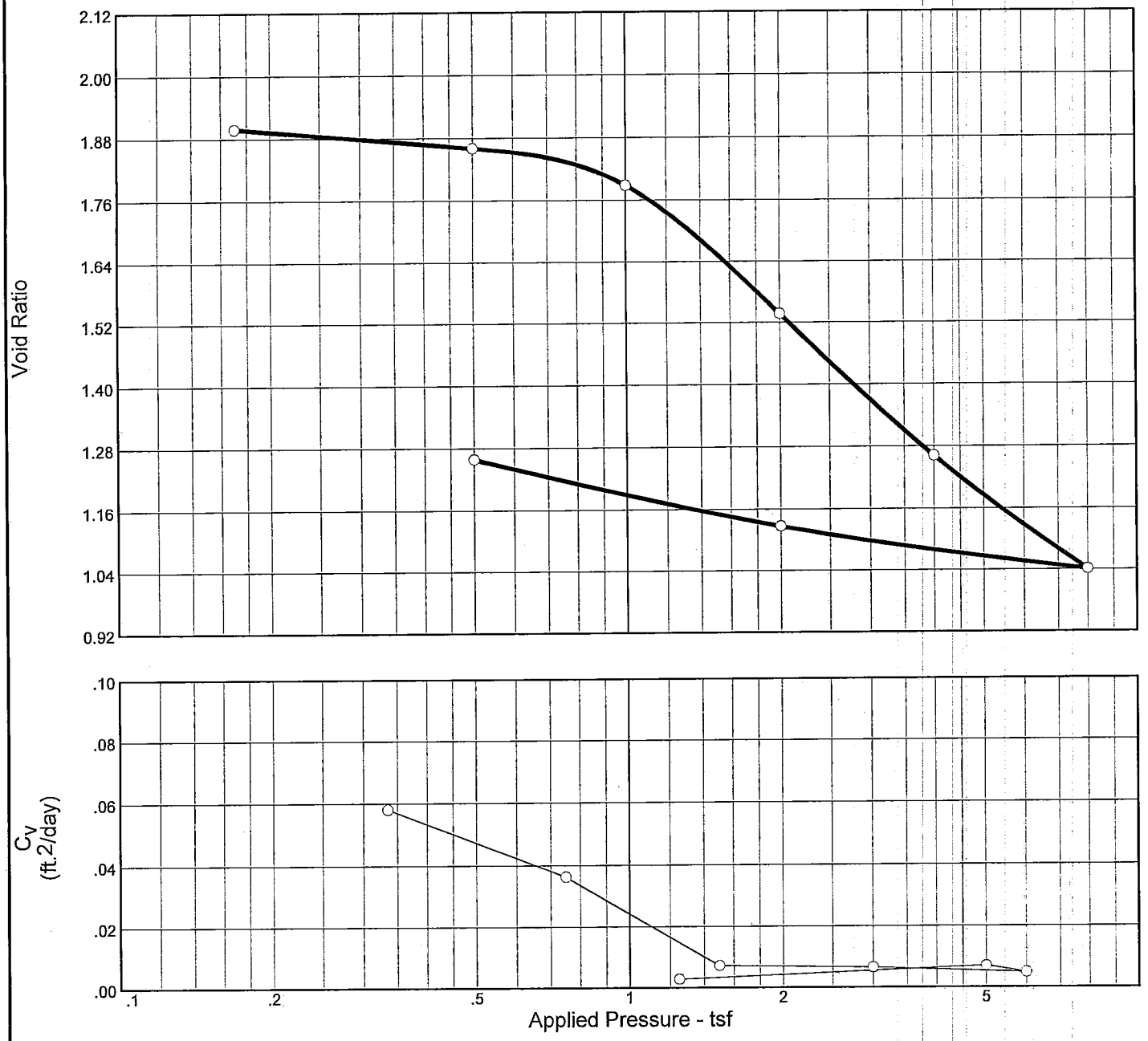
Current Date: 9/15/2008

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
12C	41.7	M GR CH3	CH3	5	52	70	106	98	UC	--	669	1338	75	25	50	0.30	
12D	42.6	M GR CH3	CH3		52												
13A	44.0	M GR CH3 W/ ARS & LNS ML	CH3		57												
13B	44.8	M GR CH3	CH3	4	46	74	108	96	UC	--	580	1160	58	21	37	0.29	
13C	45.7	M GR CH4 W/ ARS & LNS ML	CH4		53												
13D	46.6	M GR CH4 W/ LNS ML	CH4		66												
14A	48.0	M GR CH4 W/ LNS ML	CH4		52												
14B	48.8	M GR CH4 W/ LNS ML	CH4		60												
14C	49.7	M GR CH4 W/ LNS ML	CH4		56												
14D	50.6	M GR CH4	CH4		61												
15A	52.0	M GR CH4	CH4		63												
15B	52.8	M GR CH4 W/ ARS ML	CH4		60												
15C	53.7	M GR CH4 W/ SL	CH4		57	67	105	100	UU	0	705		88	29	59	0.35	
15D	54.6	M GR CH4 W/ LNS ML	CH4		53												
16A	56.0	M GR CH4 W/ LNS ML	CH4		56												
16B	56.8	M GR CH4	CH4		61												
16C	57.7	M GR CH3 W/ LNS ML	CH3	4	46	74	108	96	UC	--	860	1720	67	24	43	0.33	
16D	58.6	M GR CH4 W/ LNS ML	CH4		56												
17A	60.0	M GR CH4 W/ ARS ML	CH4		63												
17B	60.8	M GR CH4	CH4		62												
17C	61.7	M GR CH4 W/ ARS ML, SL	CH4	3	61	62	100	96	UC	--		1810	91	30	61	0.38	
17D	62.6	M GR CH4 W/ ARS & LNS ML	CH4		60												
18A	64.0	M GR CH4 W/ LNS ML	CH4		61												
18B	64.8	M GR CH4 W/ LNS ML	CH4		59												
18C	65.7	M GR CH4 W/ LNS ML	CH4		55												
18D	66.6	M GR CH4 W/ LNS ML	CH4		56												
19A	68.0	M GR CH4	CH4		72												
19B	68.8	M GR CH4	CH4	5	67	59	99	97	UC	--	874	1799	102	32	70	0.40	
19C	69.7	M GR CH4 W/ ARS & LNS ML	CH4		51												
19D	70.6	M GR CH4	CH4		59												

Remarks: 1 consol (11B) added WJY
FFEBJV, LLC.

Checked by: RNE
File Name: TO 2 WWHC

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
97.3 %	68.2 %	58.4	108	76	2.72	1.07	0.94	1.907

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CH4 W/ ARS ML	CH4	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-47UCL **Sample No.:** 11B **Elev./Depth:** 36.8'

FFEBJV, LLC

St Rose, LA

Remarks:

Tested by: CB
Calculated by: MR
Checked by: WJY

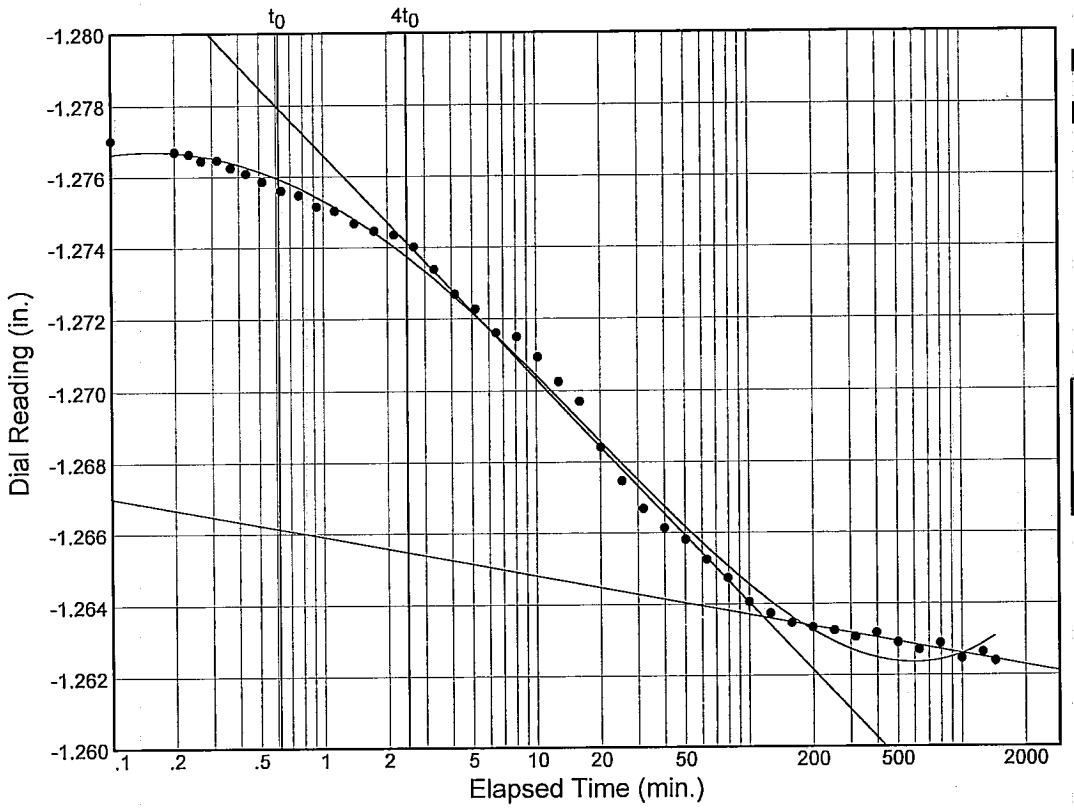
Specific Gravity is assumed.

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

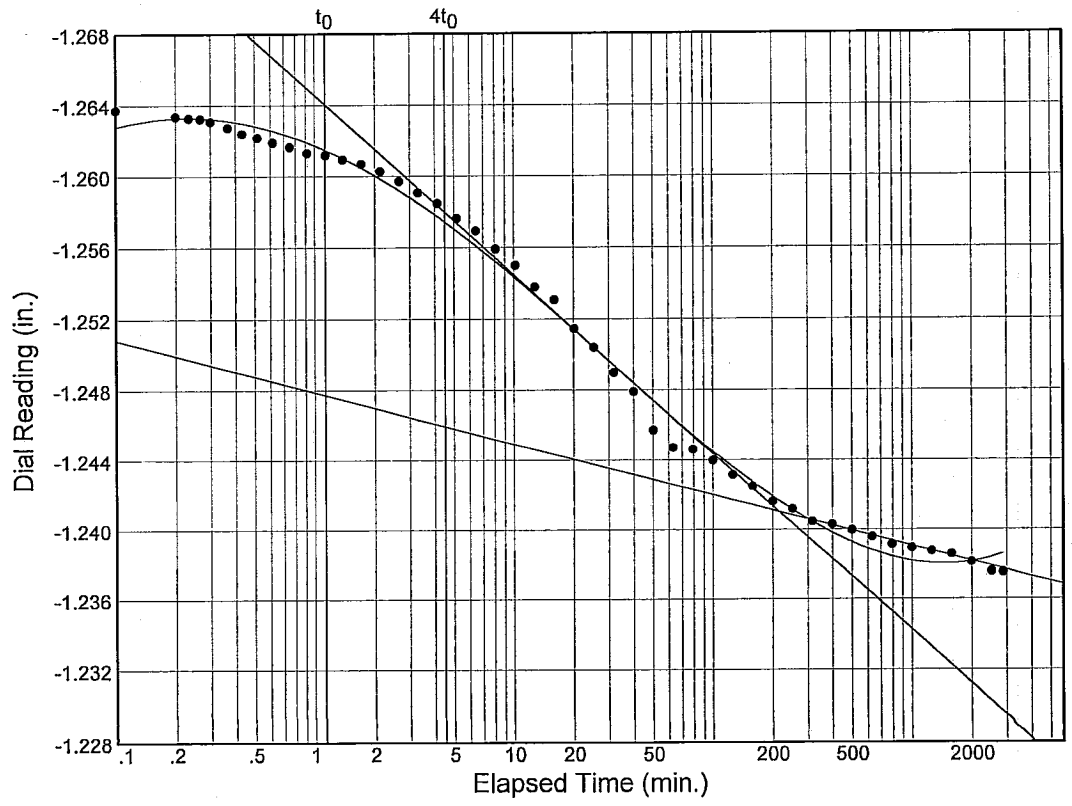
Source: WWHC-47UCL Sample No.: 11B Elev./Depth: 36.8'



Load No.= 2
Load= 0.50 tsf
D_0 = -1.27813
D_{50} = -1.27088
D_{100} = -1.26363
T_{50} = 8.42 min.

C_v @ T_{50}
0.06 ft.^{2}/day

C_α = 0.001



Load No.= 3
Load= 1.00 tsf
D_0 = -1.26553
D_{50} = -1.25328
D_{100} = -1.24102
T_{50} = 12.96 min.

C_v @ T_{50}
0.04 ft.^{2}/day

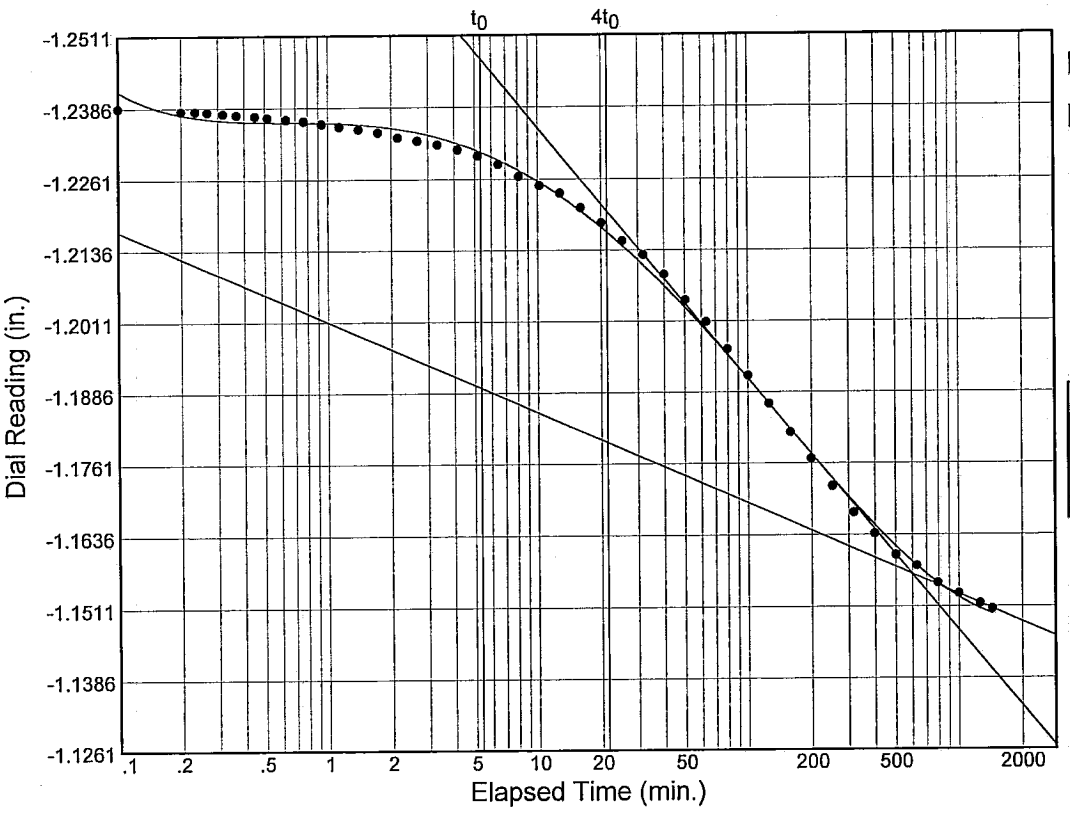
C_α = 0.003

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

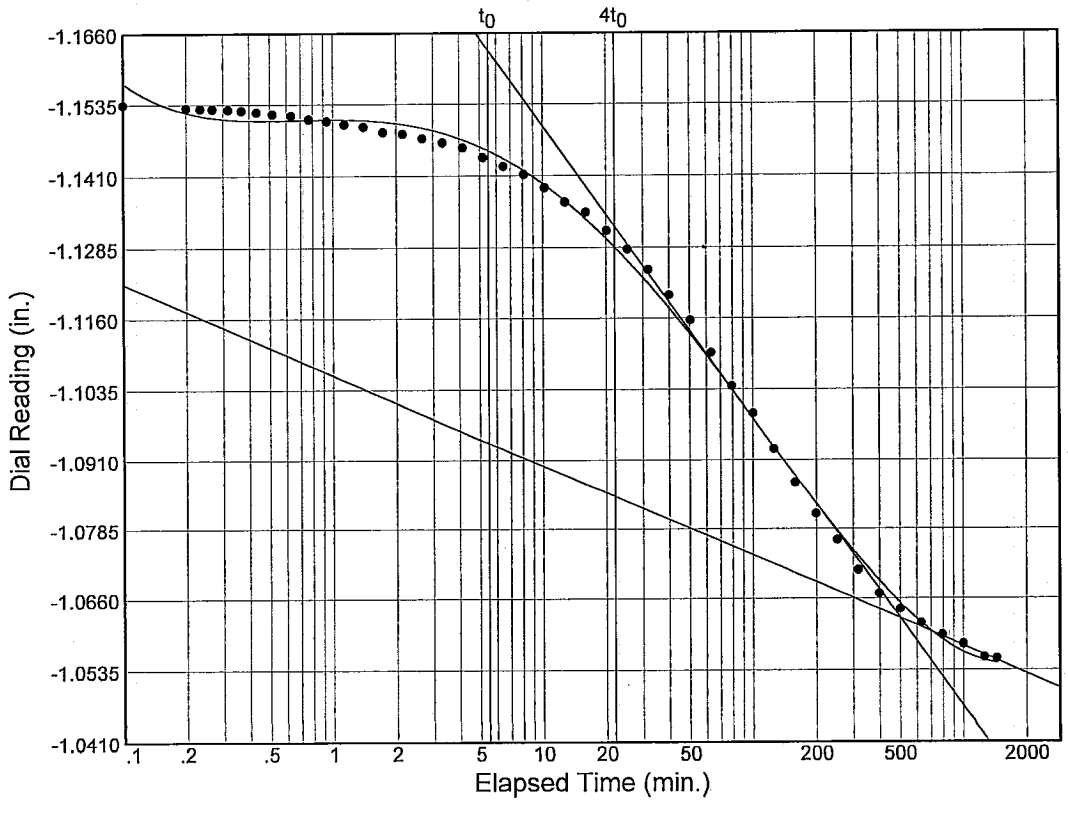
Source: WWHC-47UCL Sample No.: 11B Elev./Depth: 36.8'



Load No.= 4
Load= 2.00 tsf
D_0 = -1.24493
D_{50} = -1.20086
D_{100} = -1.15680
T_{50} = 58.31 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.017



Load No.= 5
Load= 4.00 tsf
D_0 = -1.16217
D_{50} = -1.11233
D_{100} = -1.06249
T_{50} = 52.33 min.

C_v @ T_{50}
0.01 ft.^{2}/day

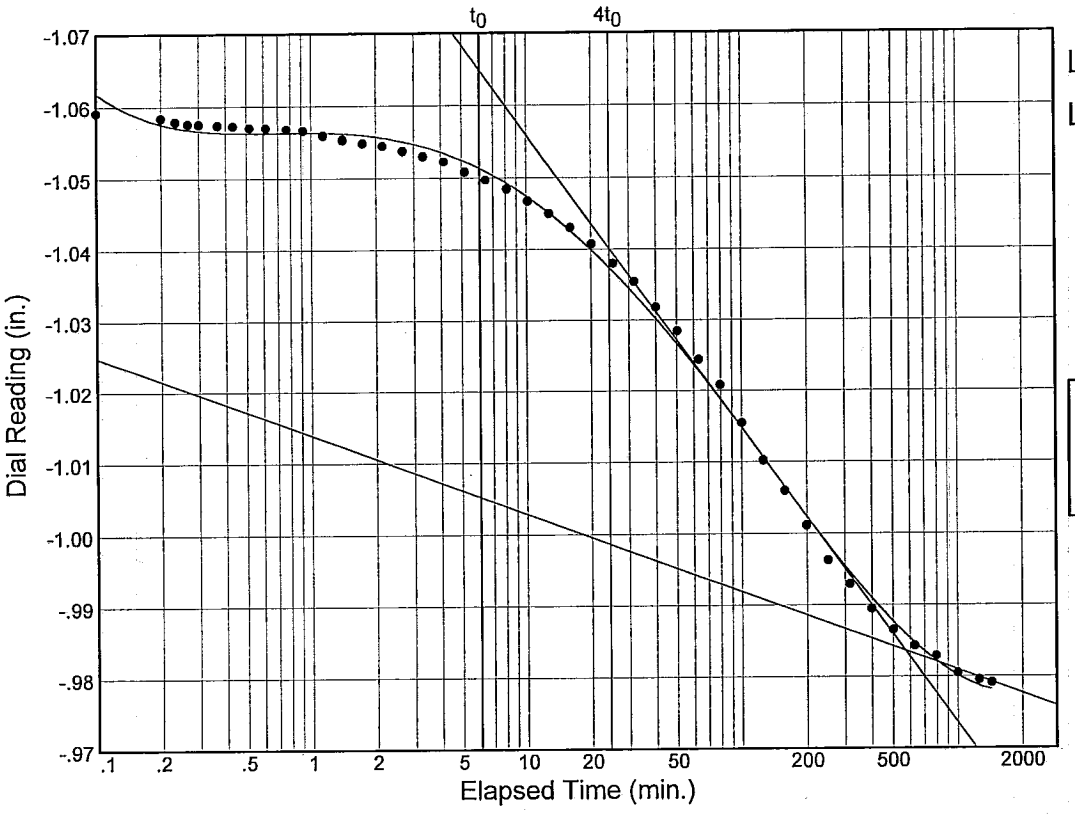
C_α = 0.018

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

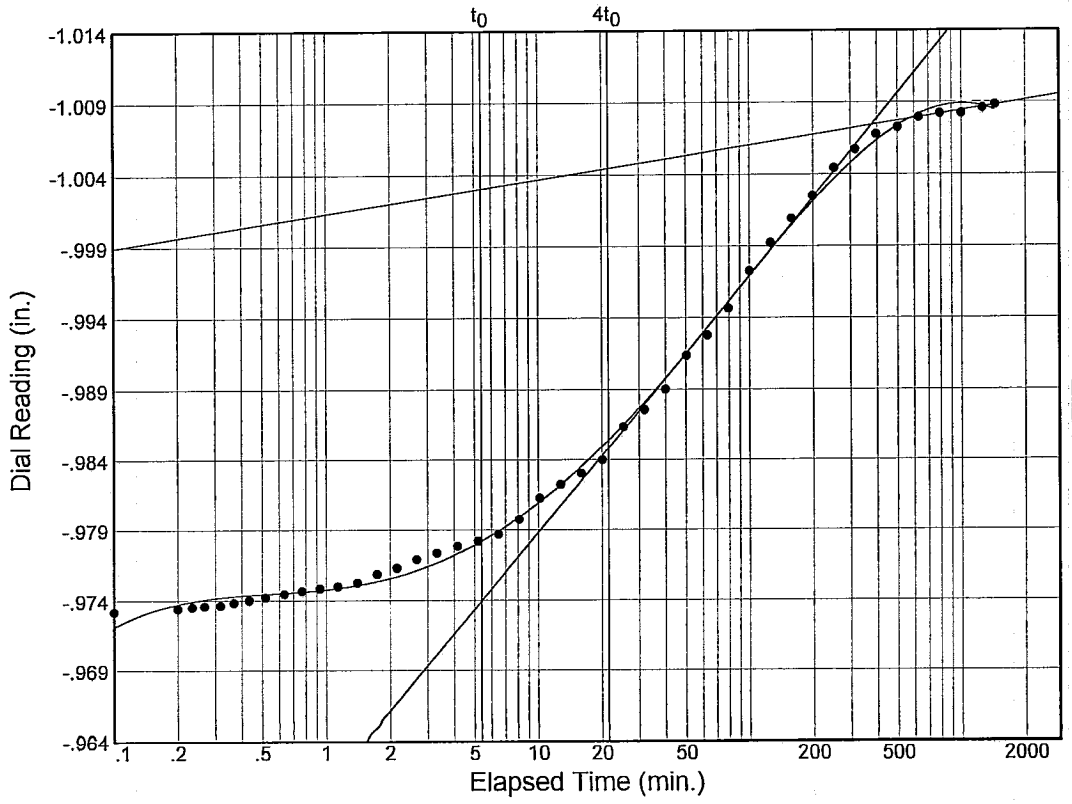
Source: WWHC-47UCL Sample No.: 11B Elev./Depth: 36.8'



Load No.= 6
Load= 8.00 tsf
D_0 = -1.06528
D_{50} = -1.02444
D_{100} = -0.98360
T_{50} = 57.10 min.

C_v @ T_{50}
0.00 ft.^{2}/day

C_α = 0.014



Load No.= 7
Load= 2.00 tsf
D_0 = -0.97094
D_{50} = -0.98918
D_{100} = -1.00743
T_{50} = 36.78 min.

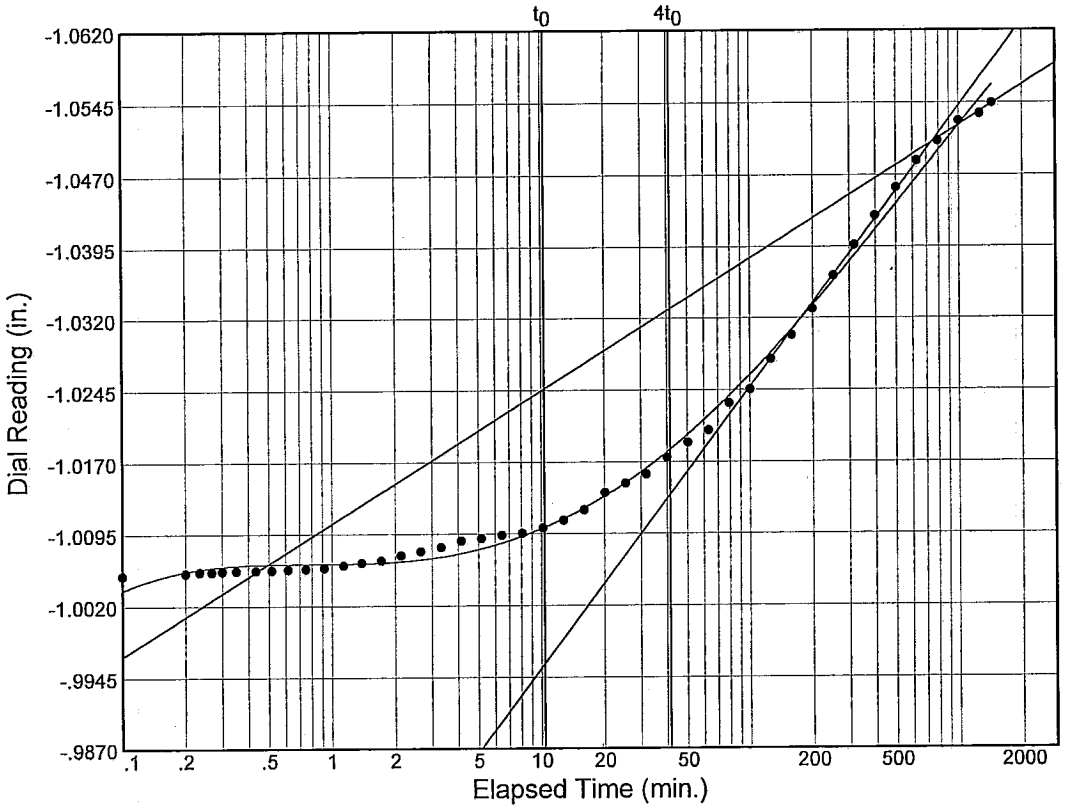
C_v @ T_{50}
0.01 ft.^{2}/day

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-47UCL Sample No.: 11B Elev./Depth: 36.8'



Load No.= 8
Load= 0.50 tsf
D_0 = -1.00200
D_{50} = -1.02623
D_{100} = -1.05045
T_{50} = 101.26 min.

C_v @ T_{50}
0.00 ft.^{2}/day

CONSOLIDATION TEST DATA

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Contract No. W912P8-07-D-0022
Task Order No. 0002
Project Number: 0022-0002

Sample Data

Source: WWHC-47UCL
Sample No.: 11B
Elev. or Depth: 36.8'
Sample Length(in./cm.):
Location:
Description: SO GR CH4 W/ ARS ML
Liquid Limit: 108
Plasticity Index: 76
USCS: CH4
AASHTO:
Figure No.:
Testing Remarks: Tested by: CB
Calculated by: MR
Checked by: WJY

Specific Gravity is assumed.

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST	
Wet w+t =	168.20 g.	Consolidometer # = 20	Wet w+t =	128.30 g.
Dry w+t =	100.00 g.		Dry w+t =	95.44 g.
Tare Wt. =	.00 g.	Spec. Gravity = 2.72	Tare Wt. =	32.57 g.
Height =	1.01 in.	Height = 1.01 in.		
Diameter =	4.00 in.	Diameter = 4.00 in.		
Weight =	325.75 g.	Defl. Table = n/a		
Moisture =	68.2 %	Ht. Solids = 0.3458 in.	Moisture =	52.3 %
Wet Den. =	98.2 pcf	Dry Wt. = 193.67 g.*	Dry Wt. =	62.87 g.
Dry Den. =	58.4 pcf	Void Ratio = 1.907	Void Ratio =	1.259
		Saturation = 97.3 %		

*** Initial dry weight used in calculations**

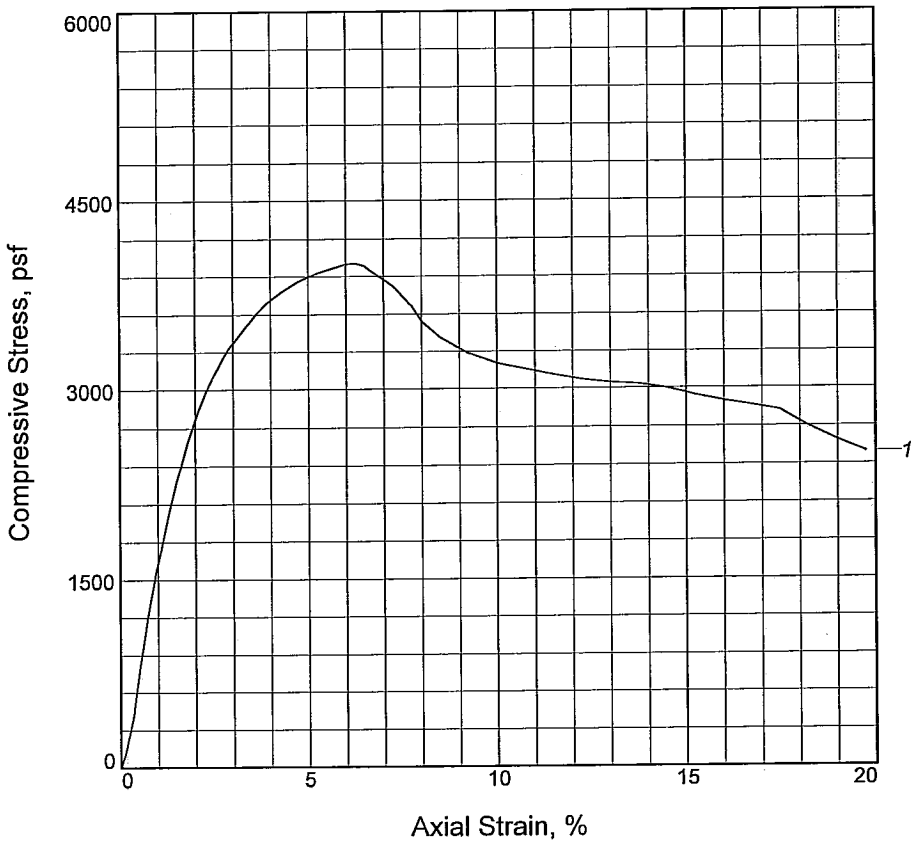
End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-1.27855				1.907	
0.17	-1.27554	0.00000			1.899	0.3 Comprs.
0.50	-1.26239	0.00000	0.06	0.001	1.861	1.6 Comprs.
1.00	-1.23752	0.00000	0.04	0.003	1.789	4.1 Comprs.
2.00	-1.15071	0.00000	0.01	0.017	1.538	12.7 Comprs.
4.00	-1.05541	0.00000	0.01	0.018	1.262	22.2 Comprs.
8.00	-0.97911	0.00000	0.00	0.014	1.041	29.8 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
2.00	-1.00883	0.00000	0.01		1.127	26.8 Comprs.
0.50	-1.05446	0.00000	0.00		1.259	22.3 Comprs.

C_c = 0.94 P_c = 1.07 tsf C_r = 0.18

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	4003			
Undrained shear strength, psf	2001			
Failure strain, %	6.2			
Strain rate, in./min.	0.030			
Water content, %	23.7			
Wet density, pcf	121.2			
Dry density, pcf	98.0			
Saturation, %	88.7			
Void ratio	0.7206			
Specimen diameter, in.	1.376			
Specimen height, in.	3.017			
Height/diameter ratio	2.19			

Description: VST CH2 W/ RT

LL = 51	**PL** = 18	**PI** = 33	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Client: U.S. Army Corps of Engineers

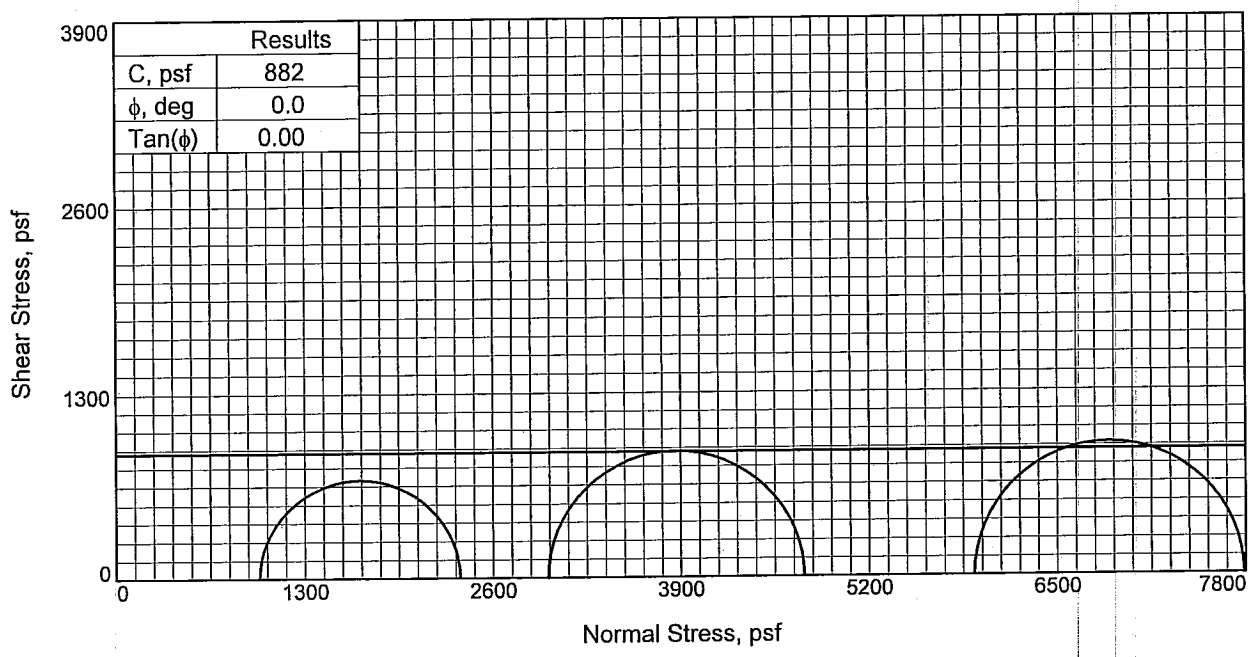
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-47UCL **Depth:** 2.8
Sample Number: 2B

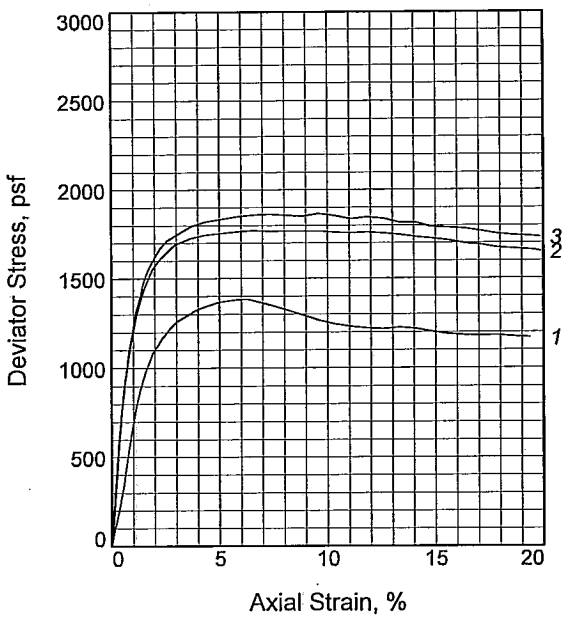
UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: JMB





Sample No.		1	2	3
Initial	Water Content, %	33.8	33.2	30.5
	Dry Density, pcf	88.2	88.6	92.1
	Saturation, %	99.3	98.6	98.4
	Void Ratio	0.9260	0.9167	0.8441
	Diameter, in.	1.418	1.417	1.422
	Height, in.	3.132	3.128	3.126
At Test	Water Content, %	33.8	33.2	30.5
	Dry Density, pcf	88.2	88.6	92.1
	Saturation, %	99.3	98.6	98.4
	Void Ratio	0.9260	0.9167	0.8441
	Diameter, in.	1.418	1.417	1.422
	Height, in.	3.132	3.128	3.126
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.70	41.14
Fail. Stress, psf		1383	1770	1862
Strain, %		6.3	6.6	7.3
Ult. Stress, psf		1201	1725	1790
Strain, %				
σ_1 Failure, psf		2371	4751	7787
σ_3 Failure, psf		988	2981	5925

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR & T CH3 W/ ARS & LNS ML, WD

LL= 60 **PL=** 20 **PI=** 40

Assumed Specific Gravity= 2.72

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-47UCL **Depth:** 5.7

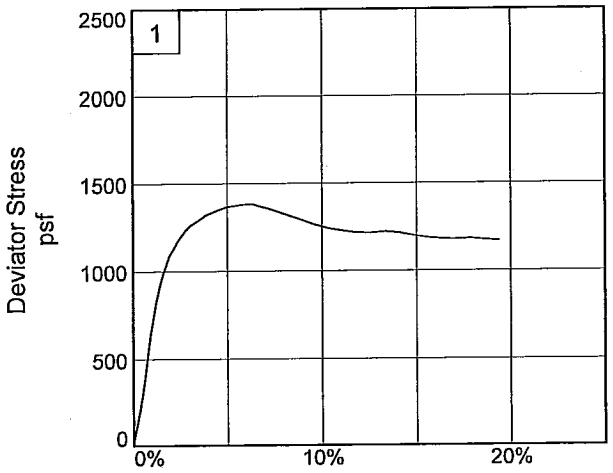
Sample Number: 3C

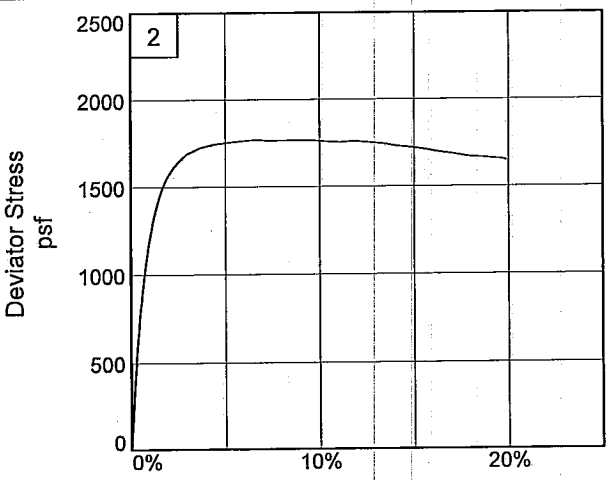
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

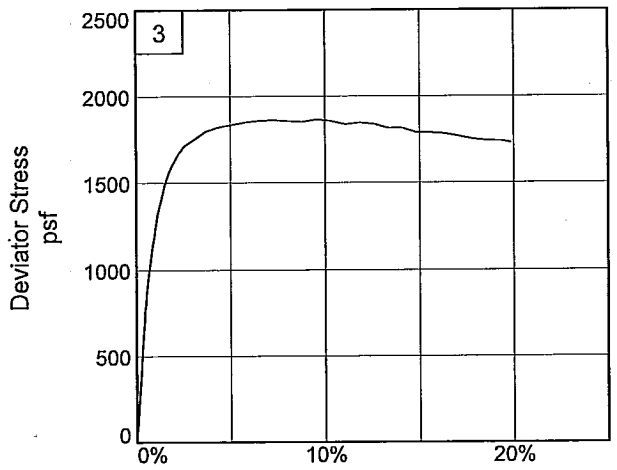
TRIAXIAL SHEAR TEST REPORT

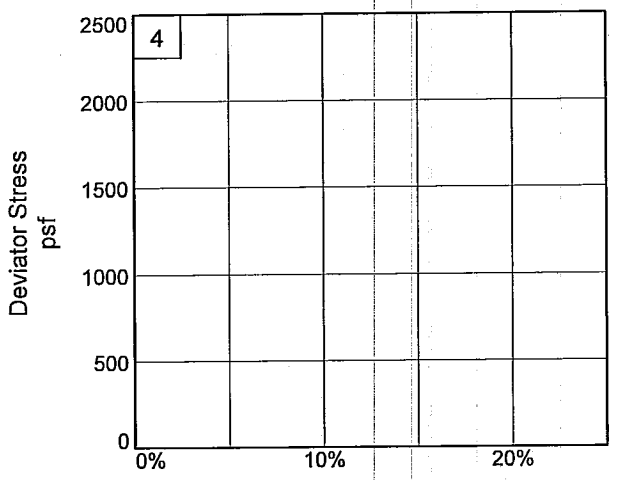
FFEBJV, LLC

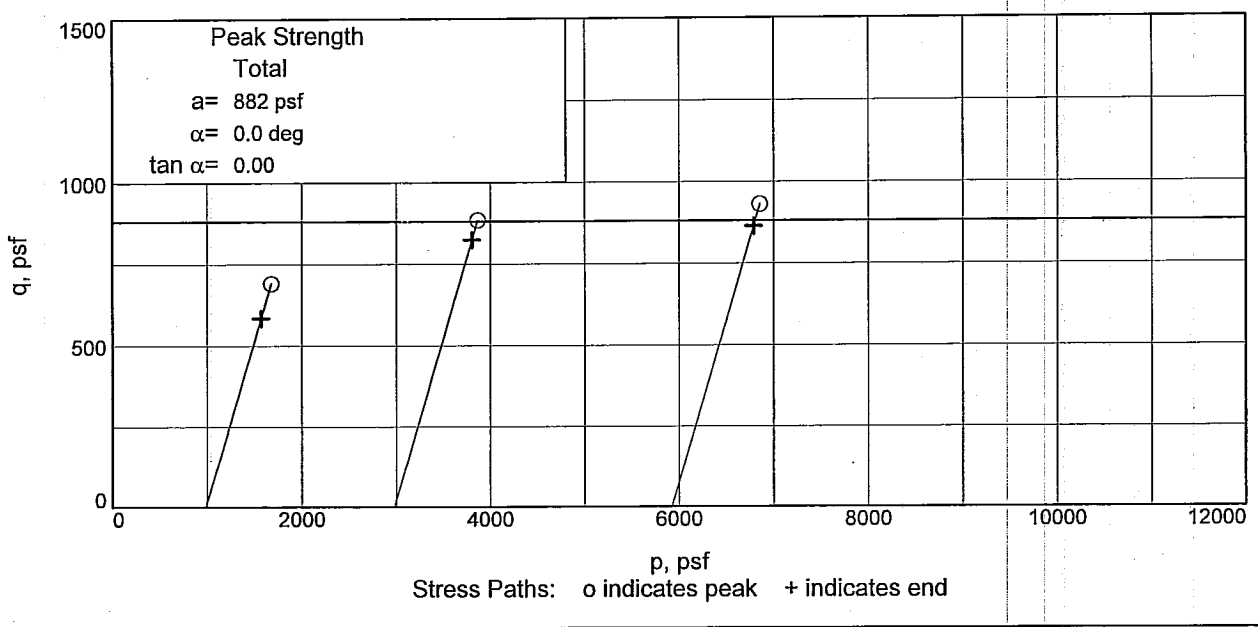
Tested By: DW/JP









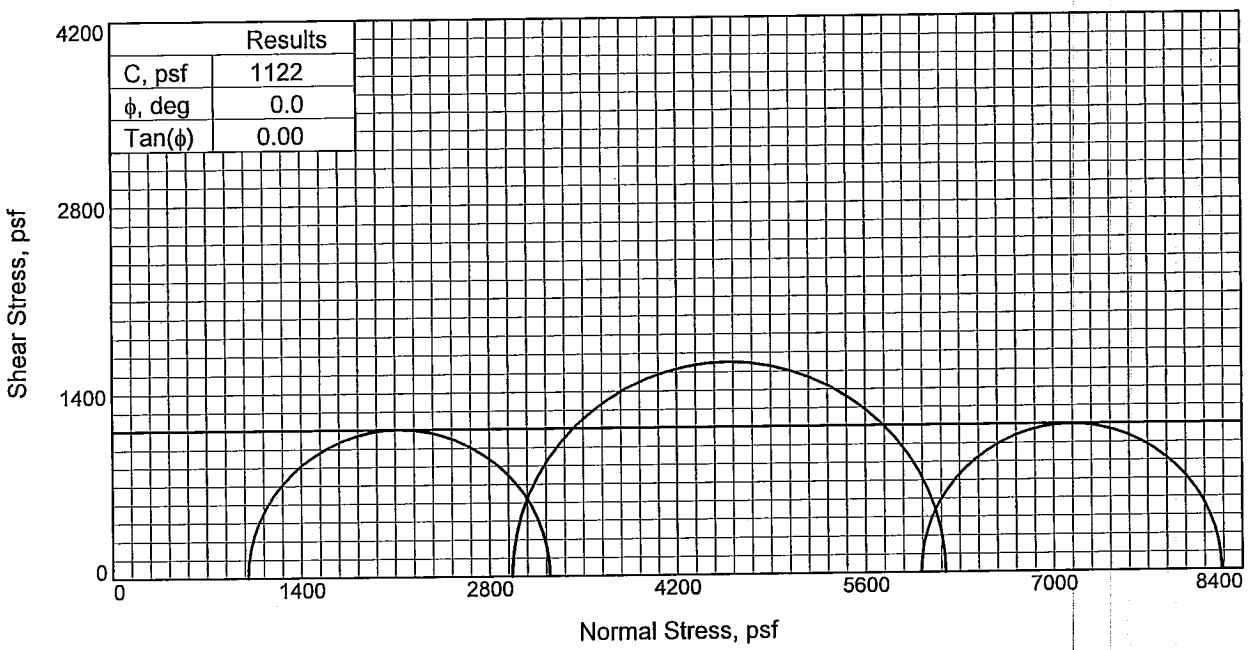


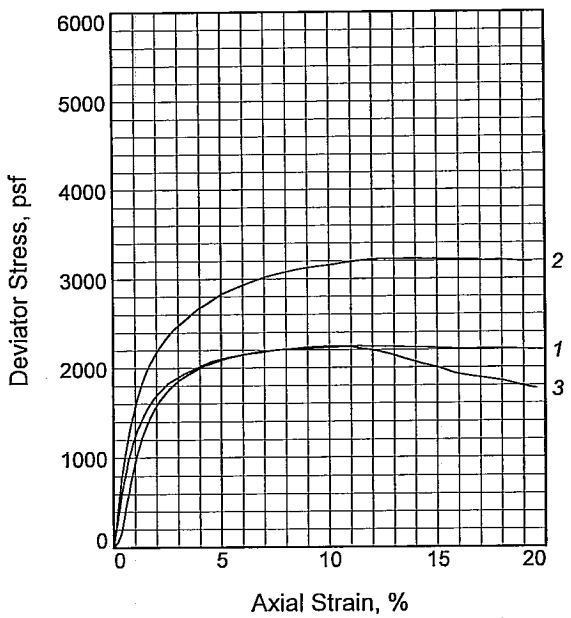
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-47UCL **Depth:** 5.7 **Sample Number:** 3C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP





Sample No.		1	2	3
Initial	Water Content, %	27.7	25.6	29.9
	Dry Density, pcf	97.9	98.3	94.7
	Saturation, %	104.1	97.1	104.2
	Void Ratio	0.7161	0.7081	0.7730
	Diameter, in.	1.418	1.429	1.423
	Height, in.	3.125	3.141	3.132
At Test	Water Content, %	27.7	25.6	29.9
	Dry Density, pcf	97.9	98.3	94.7
	Saturation, %	104.1	97.1	104.2
	Void Ratio	0.7161	0.7081	0.7730
	Diameter, in.	1.418	1.429	1.423
	Height, in.	3.125	3.141	3.132
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.97	20.60	41.75
Fail. Stress, psf		2244	3225	2234
Strain, %		10.6	13.8	10.6
Ult. Stress, psf		2220	3222	1995
Strain, %				
σ_1 Failure, psf		3247	6192	8246
σ_3 Failure, psf		1003	2967	6012

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: ST GR & T CL6 W/ LNS ML, RT

LL= 46 **PL=** 19 **PI=** 27

Assumed Specific Gravity= 2.69

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-47UCL **Depth:** 9.7

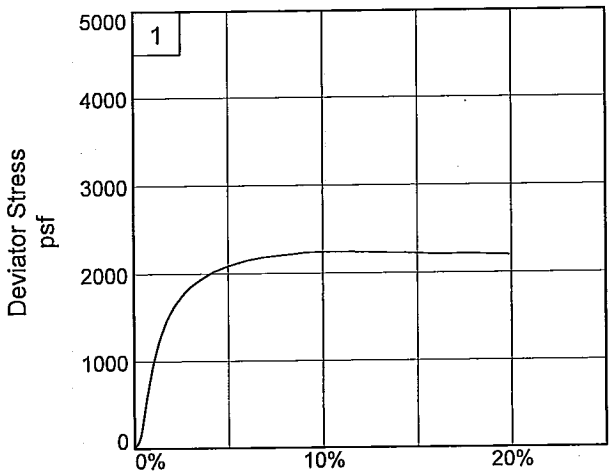
Sample Number: 4C

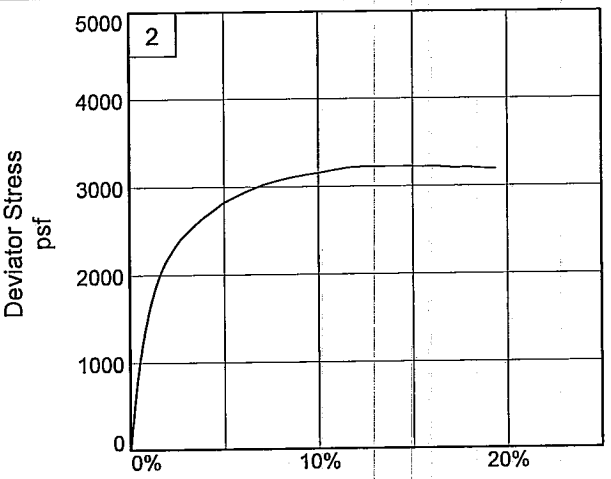
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

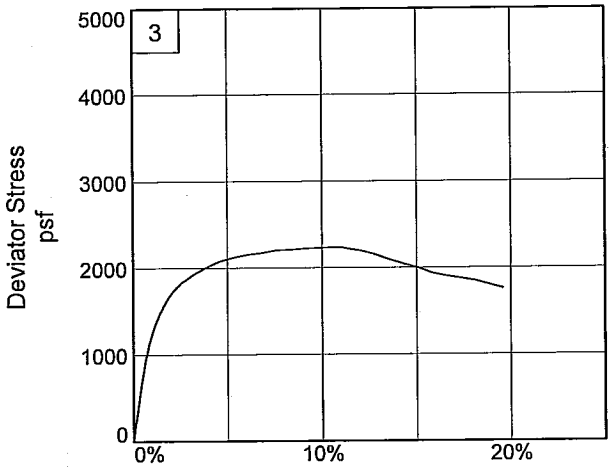
TRIAXIAL SHEAR TEST REPORT

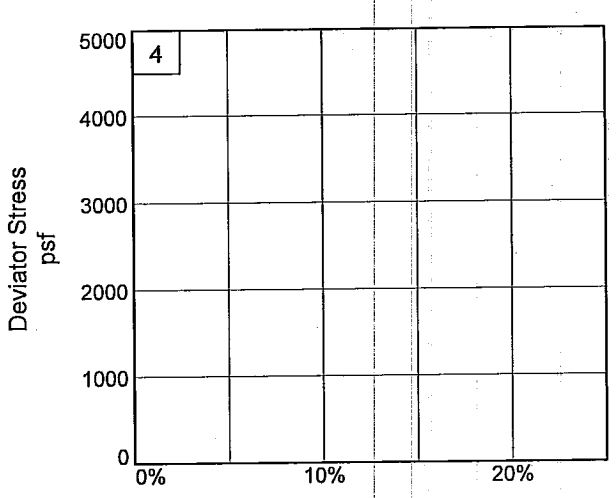
FFEBJV, LLC

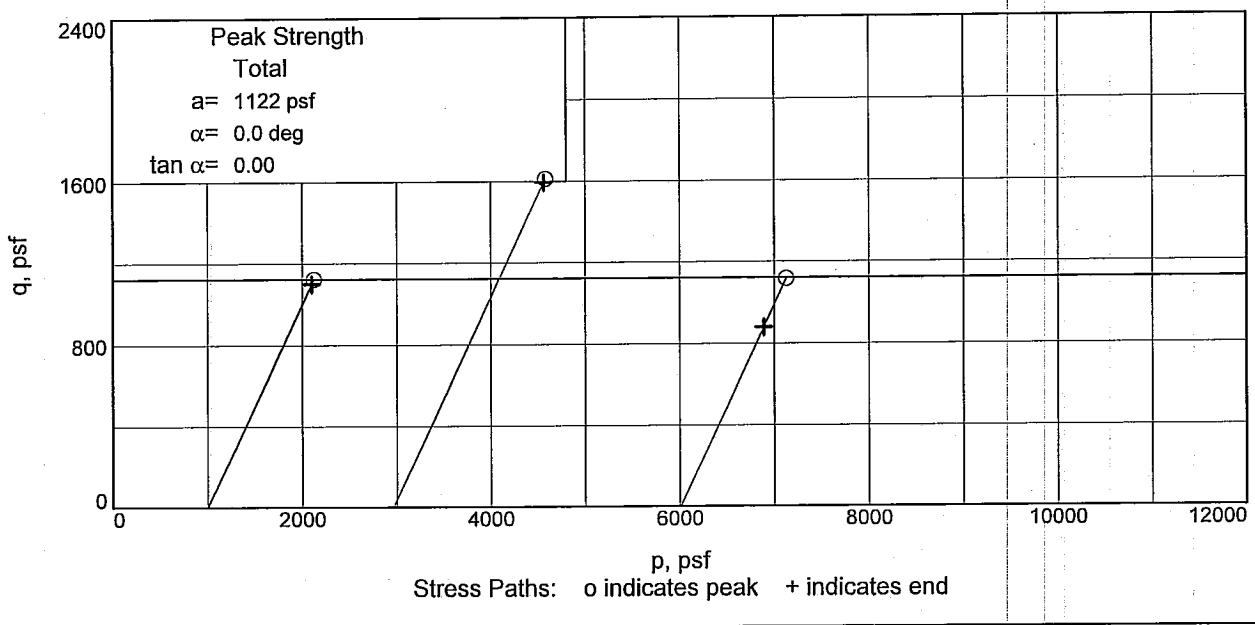
Tested By: DW/JP









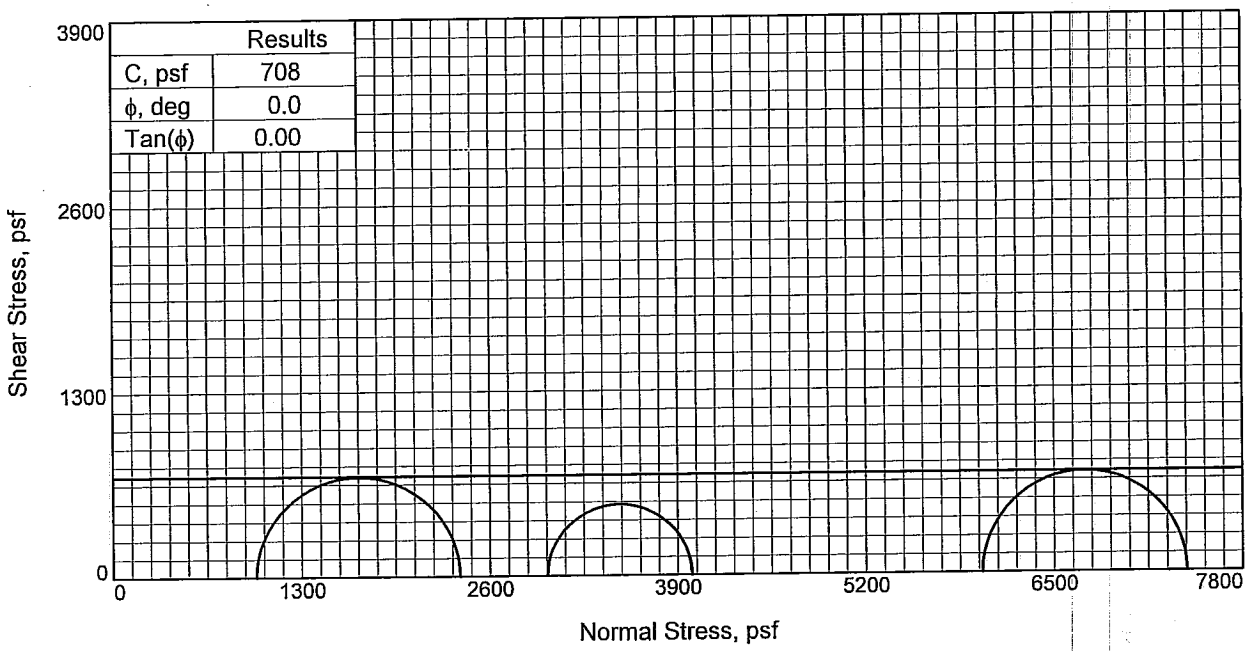


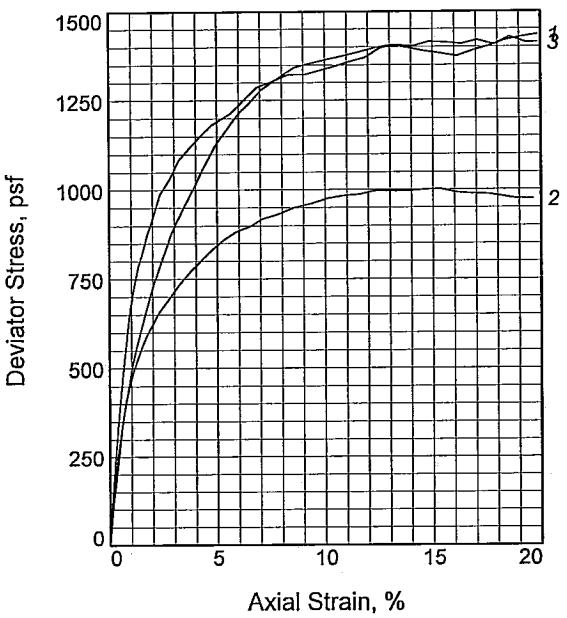
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-47UCL **Depth:** 9.7 **Sample Number:** 4C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP





Sample No.		1	2	3
Initial	Water Content, %	32.8	34.9	33.0
	Dry Density, pcf	91.0	88.8	90.9
	Saturation, %	104.4	104.8	104.1
	Void Ratio	0.8459	0.8981	0.8552
	Diameter, in.	1.415	1.419	1.414
	Height, in.	3.112	3.106	3.118
At Test	Water Content, %	32.8	34.9	33.0
	Dry Density, pcf	91.0	88.8	90.9
	Saturation, %	104.4	104.8	104.1
	Void Ratio	0.8459	0.8981	0.8552
	Diameter, in.	1.415	1.419	1.414
	Height, in.	3.112	3.106	3.118
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.85	20.80	41.69
Fail. Stress, psf		1405	1000	1414
Strain, %		13.1	14.6	14.8
Ult. Stress, psf		1382	1000	1414
Strain, %				
σ_1 Failure, psf		2392	3996	7417
σ_3 Failure, psf		987	2996	6003

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR & T CL6 W/ LNS ML, RT

LL= 43 **PL=** 18 **PI=** 25
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-47UCL **Depth:** 17.7
Sample Number: 6C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

TRIAXIAL SHEAR TEST REPORT

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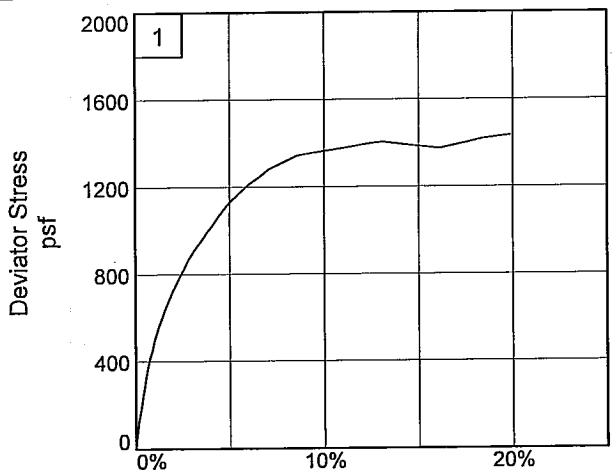
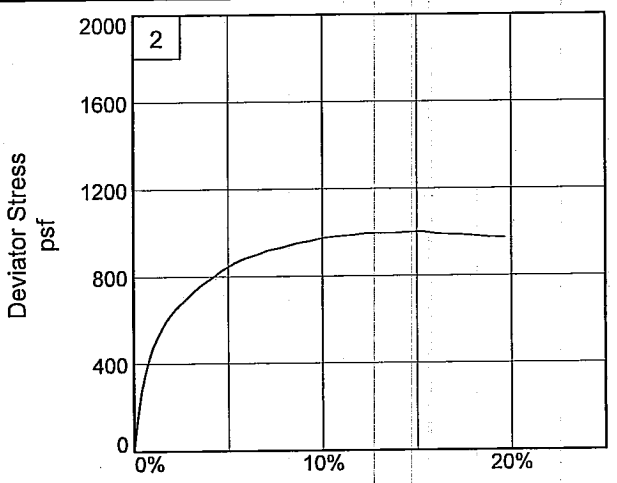
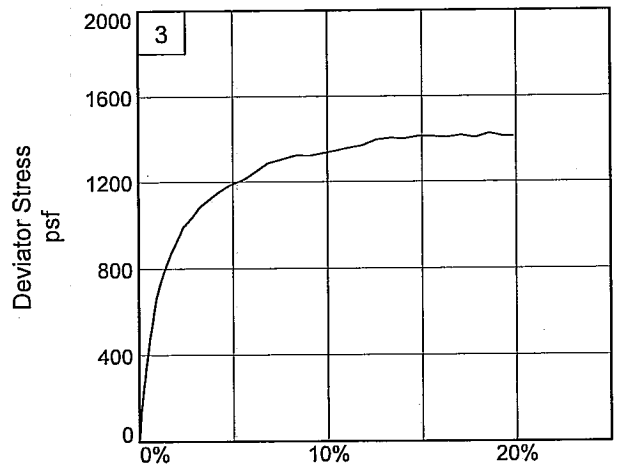
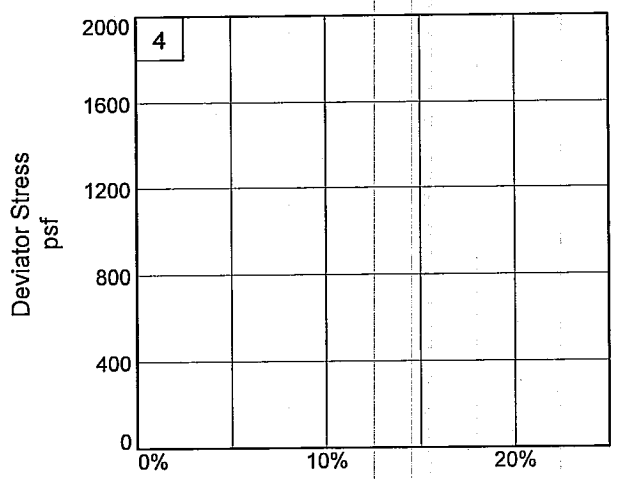
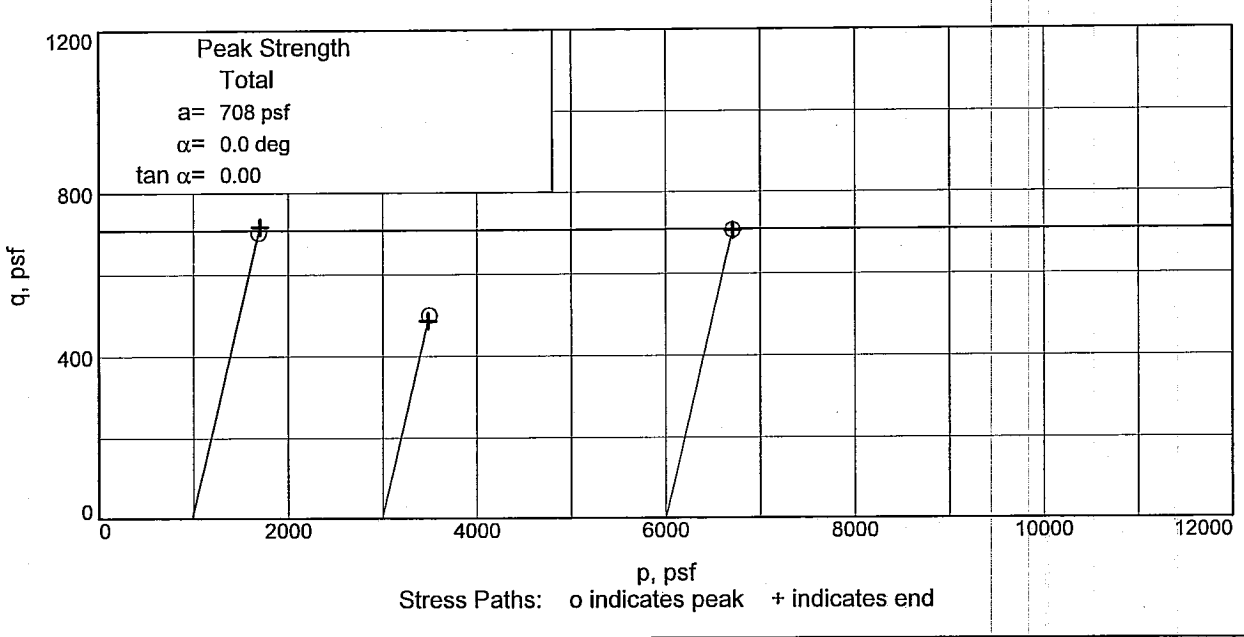
Tested By: DW/JP









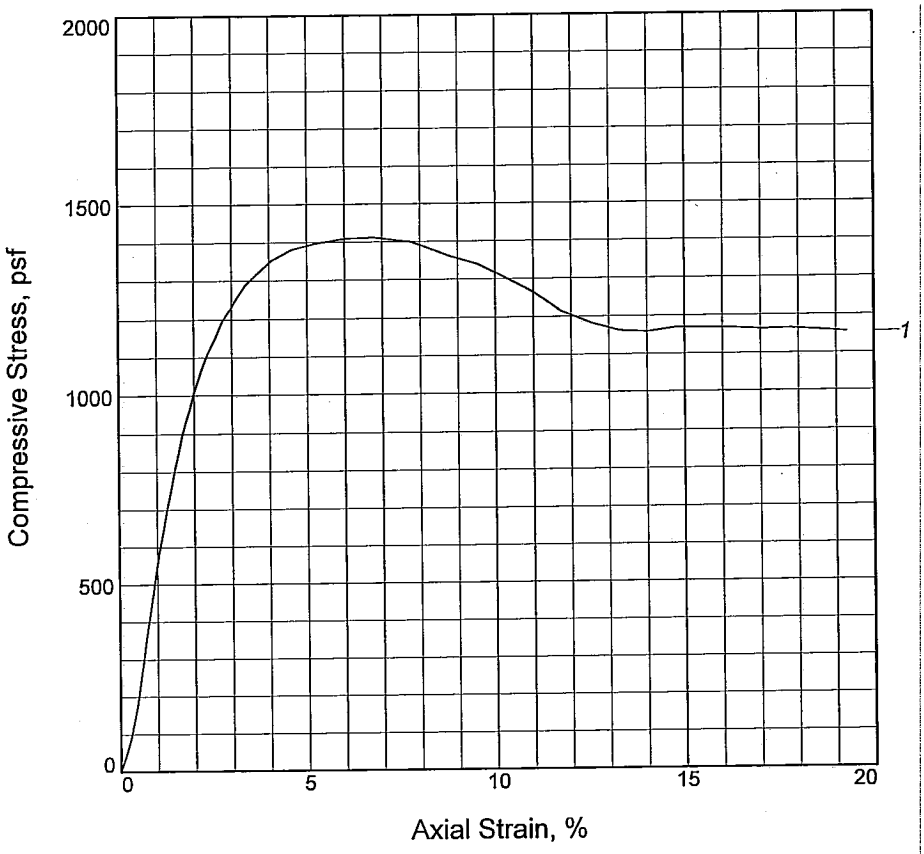


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-47UCL **Depth:** 17.7 **Sample Number:** 6C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1411			
Undrained shear strength, psf	705			
Failure strain, %	6.8			
Strain rate, in./min.	0.030			
Water content, %	33.3			
Wet density, pcf	117.7			
Dry density, pcf	88.3			
Saturation, %	98.9			
Void ratio	0.9087			
Specimen diameter, in.	1.371			
Specimen height, in.	3.015			
Height/diameter ratio	2.20			

Description: M BR & GR CH2

LL = 55	PL = 19	PI = 36	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

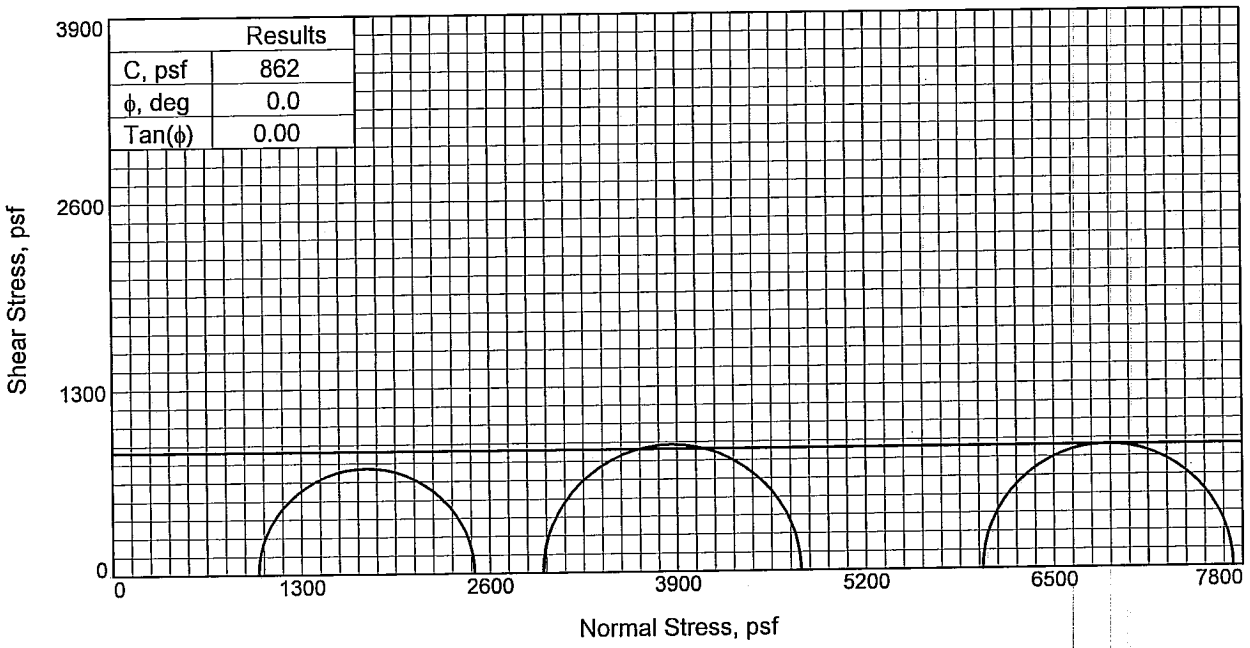
Client: U.S. Army Corps of Engineers

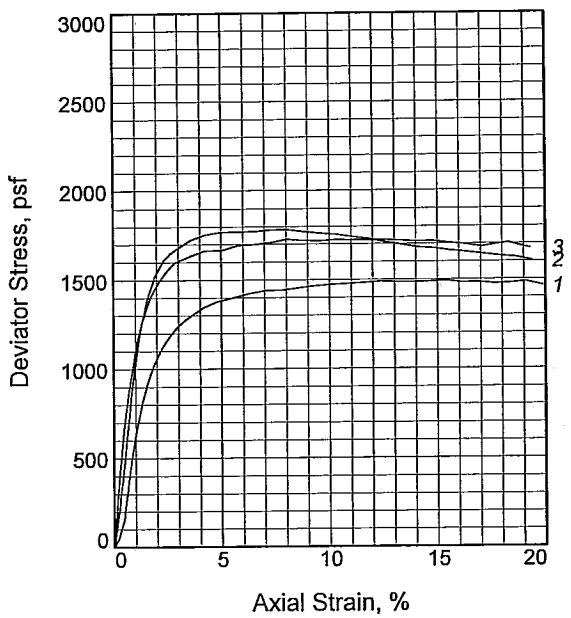
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-47UCL **Depth:** 21.7
Sample Number: 7C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB





Sample No.		1	2	3
Initial	Water Content, %	39.9	40.6	39.6
	Dry Density, pcf	80.2	80.5	80.8
	Saturation, %	96.5	99.0	97.0
	Void Ratio	1.1341	1.1237	1.1178
	Diameter, in.	1.425	1.431	1.427
	Height, in.	3.112	3.101	3.113
At Test	Water Content, %	39.9	40.6	39.6
	Dry Density, pcf	80.2	80.5	80.8
	Saturation, %	96.5	99.0	97.0
	Void Ratio	1.1341	1.1237	1.1178
	Diameter, in.	1.425	1.431	1.427
	Height, in.	3.112	3.101	3.113
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.97	20.61	41.70
Fail. Stress, psf		1488	1782	1728
Strain, %		12.3	7.3	8.0
Ult. Stress, psf		1485	1673	1719
Strain, %				
σ_1 Failure, psf		2492	4750	7734
σ_3 Failure, psf		1004	2968	6006

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH3

LL= 73 **PL=** 24 **PI=** 49
Assumed Specific Gravity= 2.74
Remarks:

Figure _____

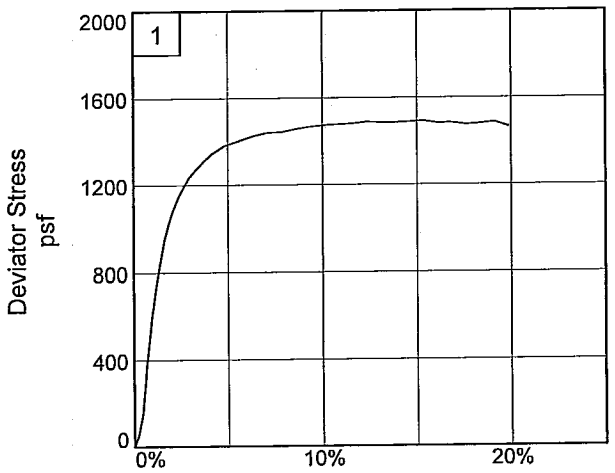
Client: U.S. Army Corps of Engineers

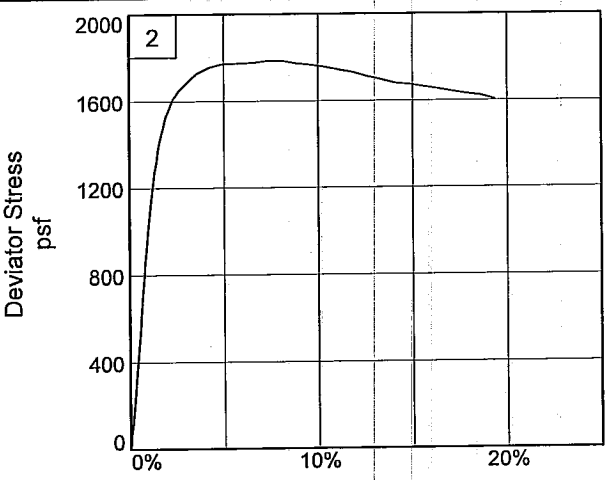
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-47UCL **Depth:** 25.7
Sample Number: 8C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

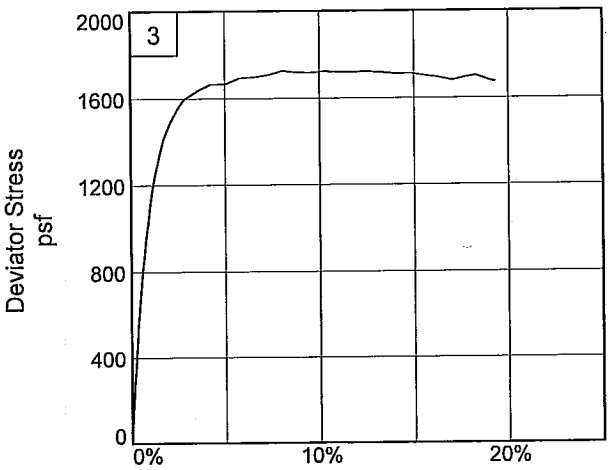
TRIAXIAL SHEAR TEST REPORT

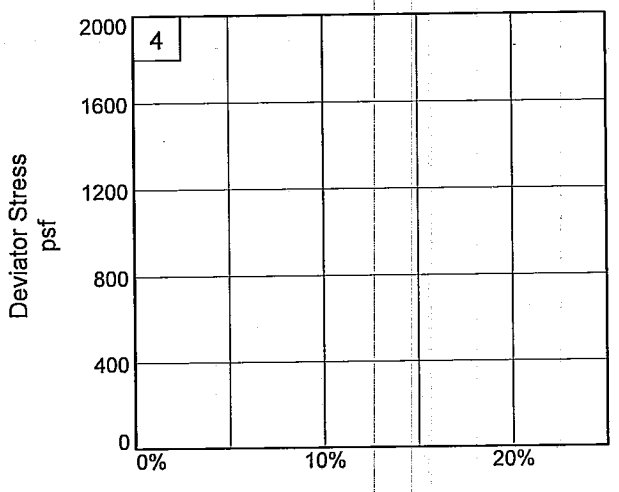
FFEBJV, LLC

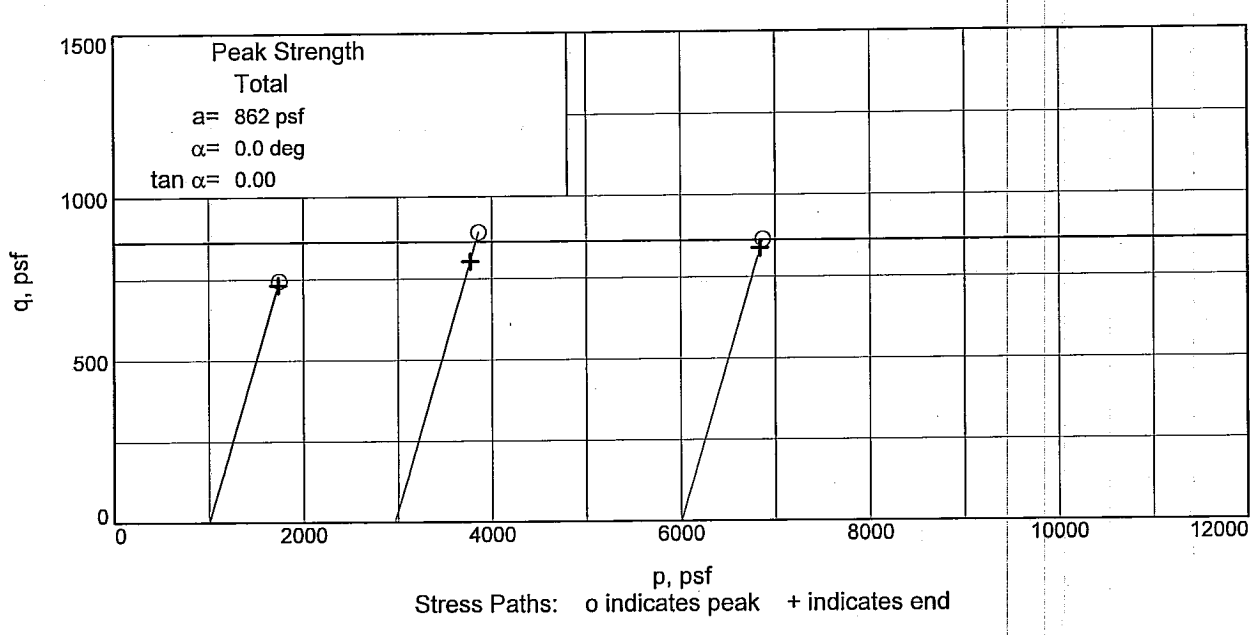
Tested By: DW/JP









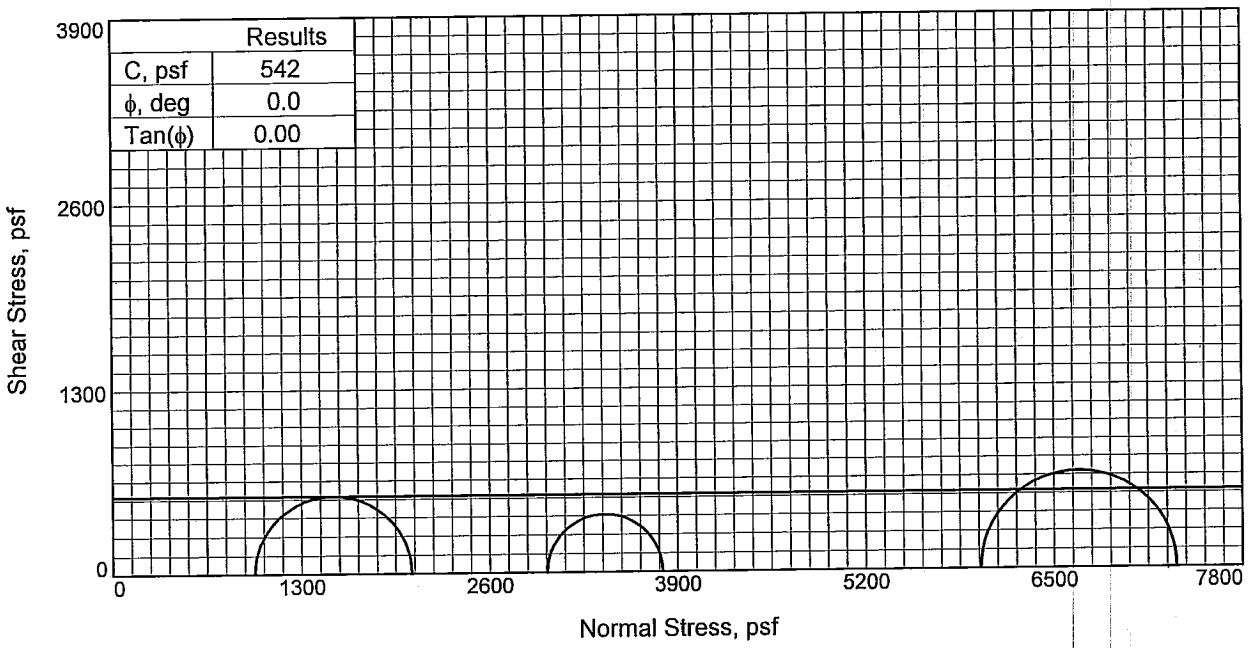


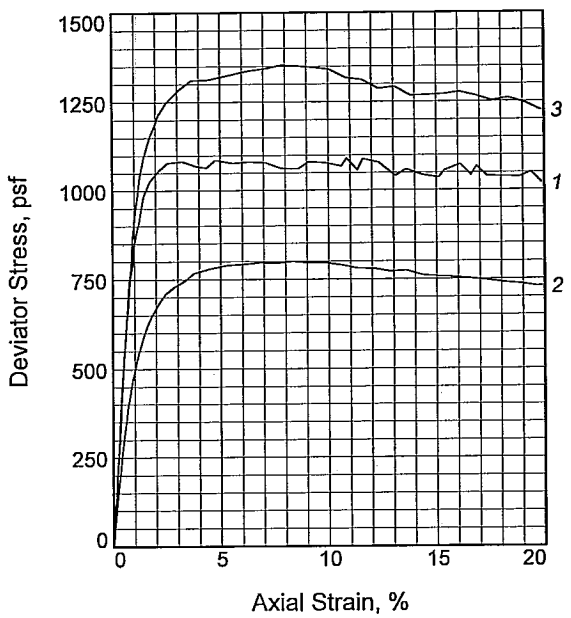
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-47UCL **Depth:** 25.7 **Sample Number:** 8C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP





Sample No.		1	2	3
Initial	Water Content, %	48.5	55.4	49.7
	Dry Density, pcf	72.3	69.3	72.8
	Saturation, %	97.3	103.3	101.0
	Void Ratio	1.3661	1.4685	1.3494
	Diameter, in.	1.436	1.406	1.423
	Height, in.	3.112	3.106	3.115
At Test	Water Content, %	48.5	55.4	49.7
	Dry Density, pcf	72.3	69.3	72.8
	Saturation, %	97.3	103.3	101.0
	Void Ratio	1.3661	1.4685	1.3494
	Diameter, in.	1.436	1.406	1.423
	Height, in.	3.112	3.106	3.115
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.79	20.80	41.61
Fail. Stress, psf		1083	800	1353
Strain, %		3.3	8.3	7.8
Ult. Stress, psf		1065	757	1271
Strain, %				
σ_1 Failure, psf		2060	3795	7346
σ_3 Failure, psf		977	2995	5993

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4

LL= 86 **PL=** 27 **PI=** 59
Assumed Specific Gravity= 2.74
Remarks:

Figure _____

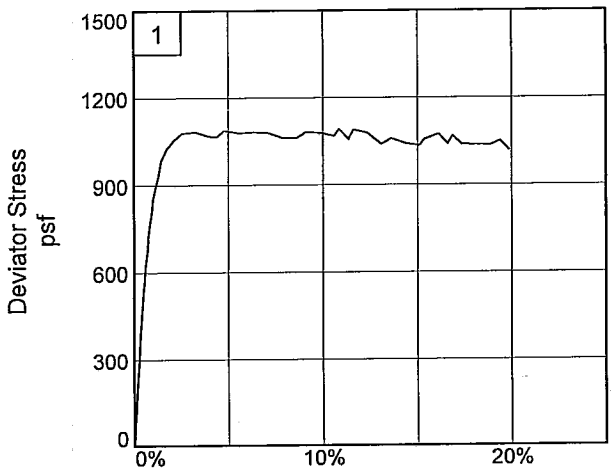
Client: U.S. Army Corps of Engineers

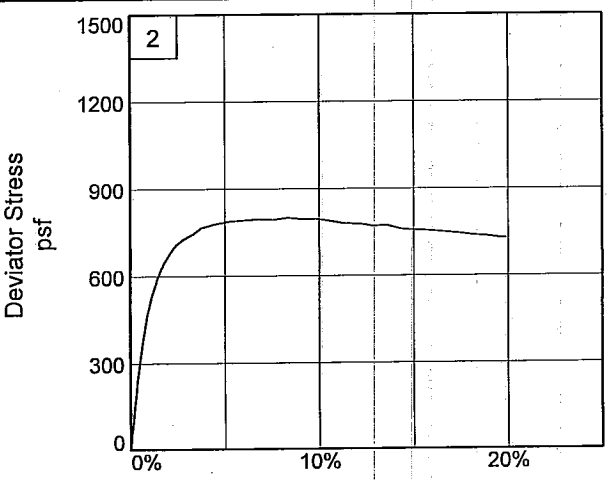
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-47UCL **Depth:** 29.7
Sample Number: 9C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

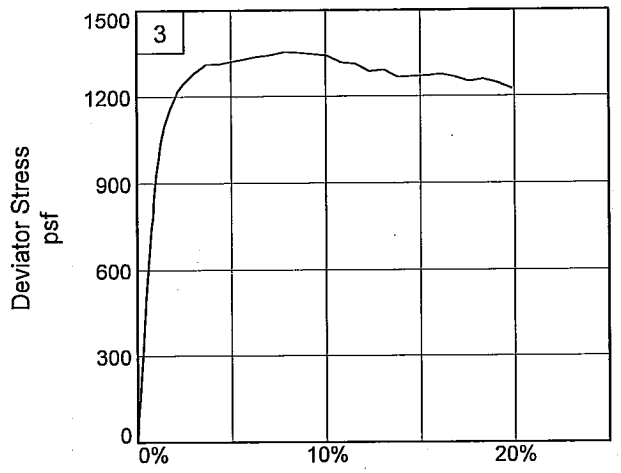
TRIAXIAL SHEAR TEST REPORT

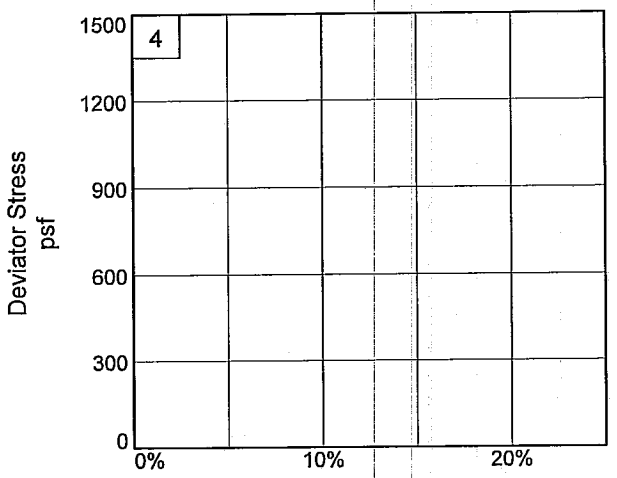
FFEBJV, LLC

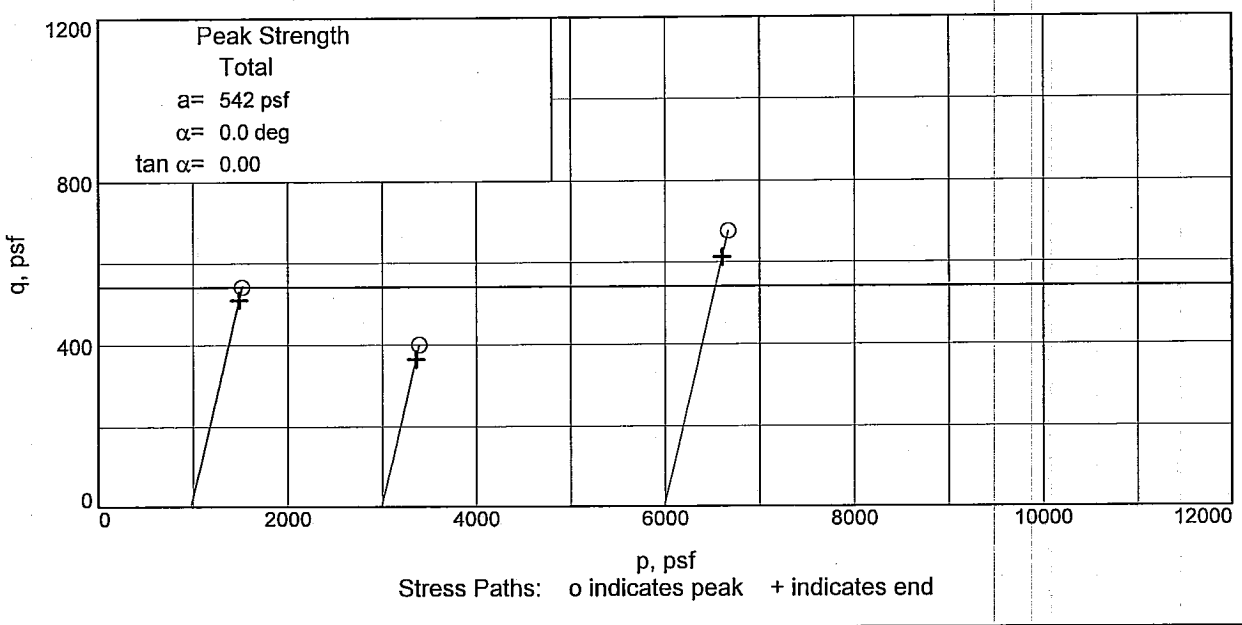
Tested By: DW/JP







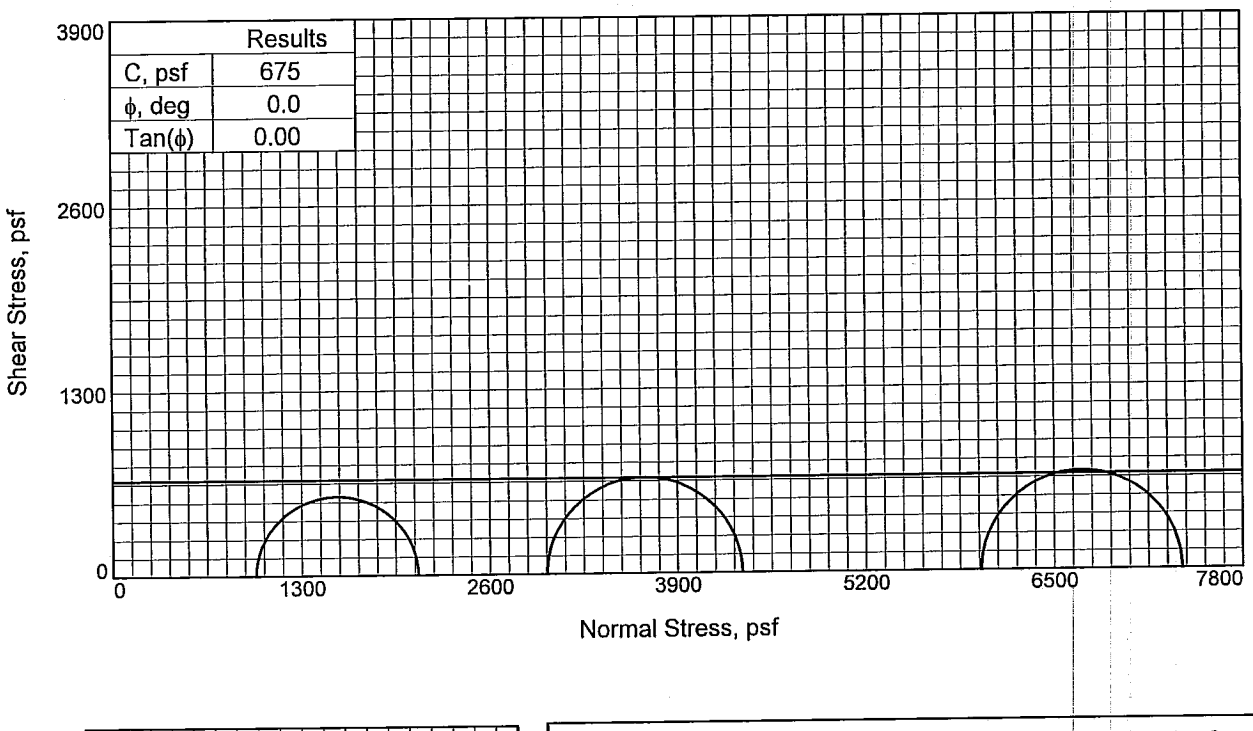


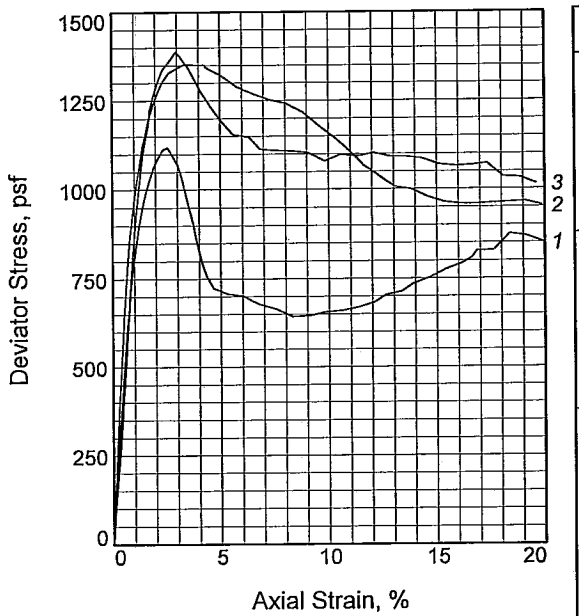


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-47UCL **Depth:** 29.7 **Sample Number:** 9C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP





Sample No.		1	2	3
Initial	Water Content, %	93.0	87.8	90.1
	Dry Density, pcf	48.8	49.8	48.7
	Saturation, %	103.8	100.6	100.2
	Void Ratio	2.3486	2.2868	2.3575
	Diameter, in.	1.393	1.425	1.416
	Height, in.	3.107	3.102	3.123
At Test	Water Content, %	93.0	87.8	90.1
	Dry Density, pcf	48.8	49.8	48.7
	Saturation, %	103.8	100.6	100.2
	Void Ratio	2.3486	2.2868	2.3575
	Diameter, in.	1.393	1.425	1.416
	Height, in.	3.107	3.102	3.123
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.84	20.78	41.63
Fail. Stress, psf		1119	1353	1387
Strain, %		2.5	3.3	3.0
Ult. Stress, psf		663	978	1070
Strain, %				
σ_1 Failure, psf		2103	4346	7382
σ_3 Failure, psf		984	2993	5994

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CHOA W/ WD

LL= 140 **PL=** 101 **PI=** 39
Assumed Specific Gravity= 2.62
Remarks:

Figure _____

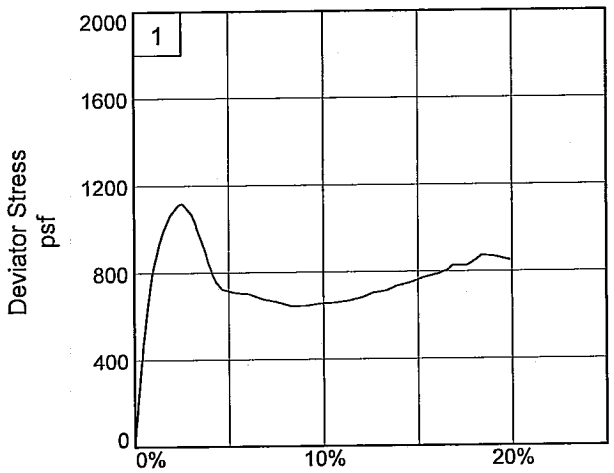
Client: U.S. Army Corps of Engineers

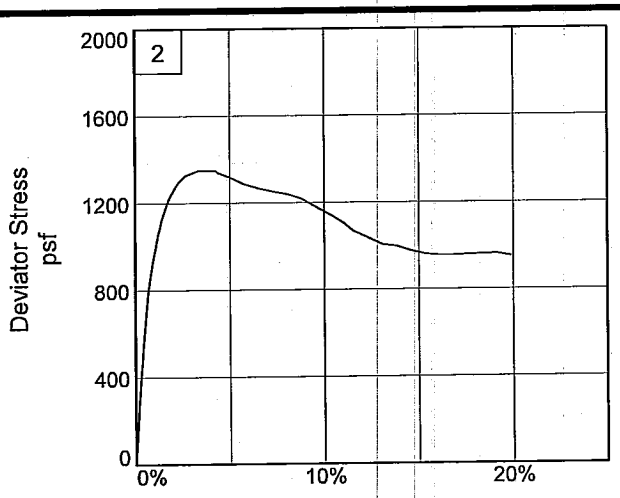
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-47UCL **Depth:** 33.7
Sample Number: 10C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

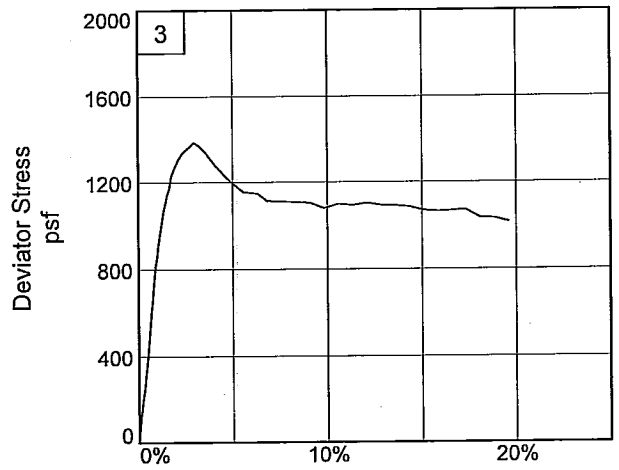
TRIAXIAL SHEAR TEST REPORT

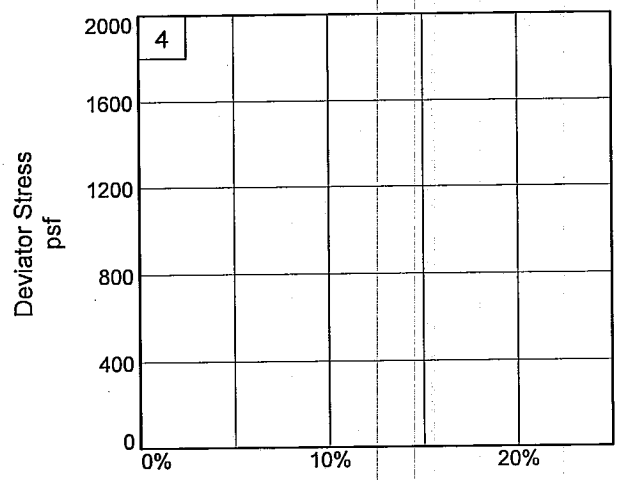
FFEBJV, LLC

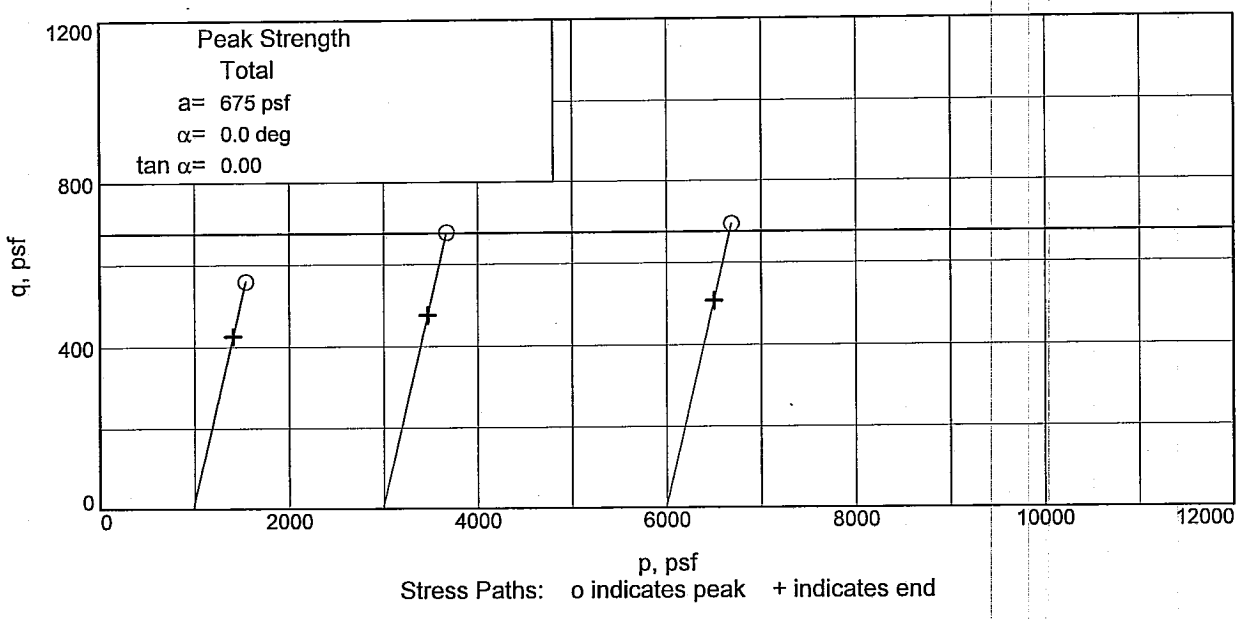
Tested By: DW/JP









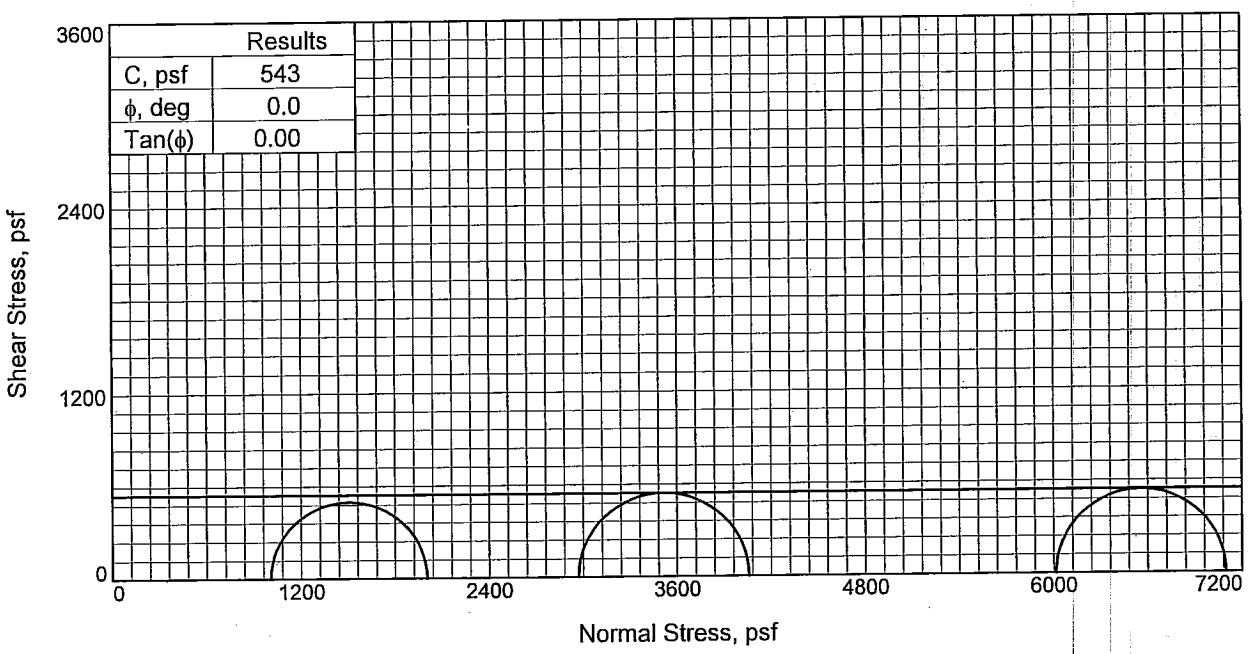


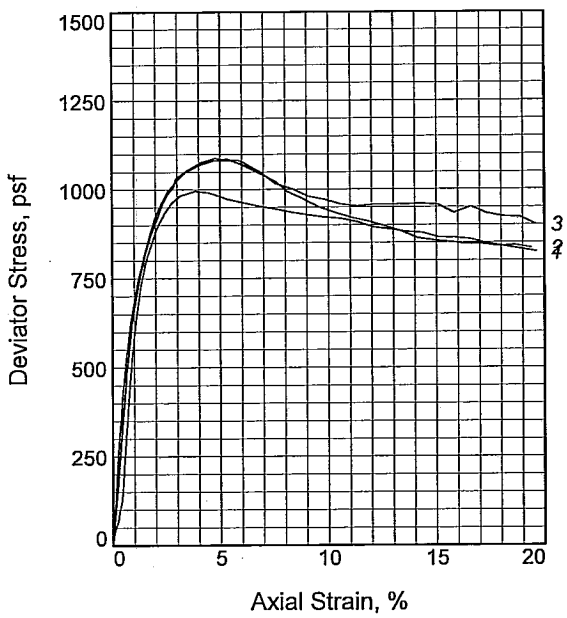
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-47UCL **Depth:** 33.7 **Sample Number:** 10C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP





Sample No.		1	2	3
Initial	Water Content, %	56.5	58.0	56.7
	Dry Density, pcf	68.4	66.1	68.3
	Saturation, %	103.1	100.1	103.3
	Void Ratio	1.5009	1.5864	1.5035
	Diameter, in.	1.410	1.426	1.417
	Height, in.	3.106	3.104	3.124
At Test	Water Content, %	56.5	58.0	56.7
	Dry Density, pcf	68.4	66.1	68.3
	Saturation, %	103.1	100.1	103.3
	Void Ratio	1.5009	1.5864	1.5035
	Diameter, in.	1.410	1.426	1.417
	Height, in.	3.106	3.104	3.124
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.99	20.62	41.77
Fail. Stress, psf		995	1088	1083
Strain, %		3.8	4.8	5.8
Ult. Stress, psf		864	856	952
Strain, %				
σ_1 Failure, psf		2002	4058	7098
σ_3 Failure, psf		1007	2970	6015

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ SIF

LL= 82 **PL=** 26 **PI=** 56
Assumed Specific Gravity= 2.74
Remarks:

Figure _____

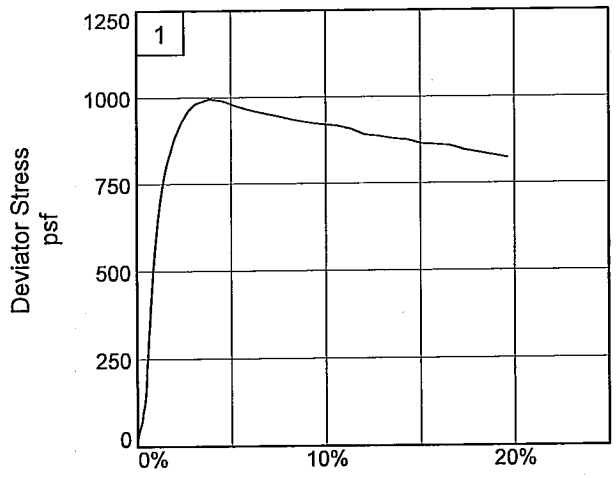
Client: U.S. Army Corps of Engineers

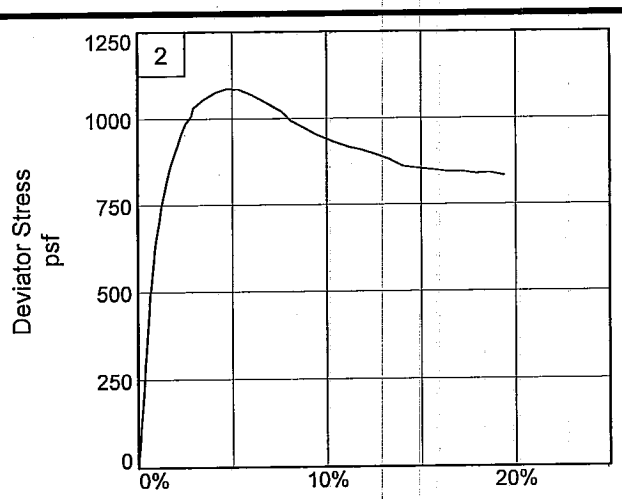
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-47UCL **Depth:** 37.7
Sample Number: 11C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

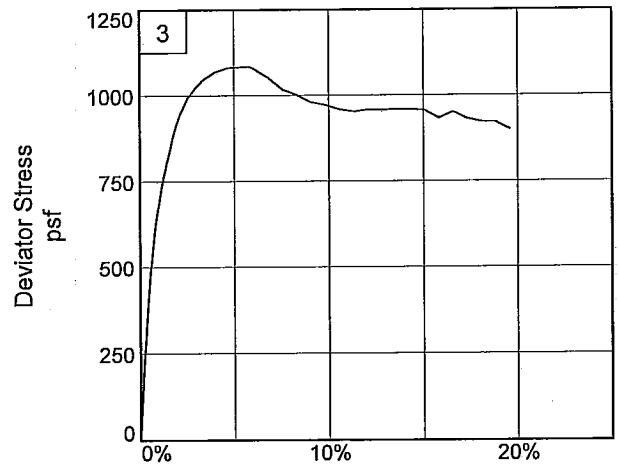
TRIAXIAL SHEAR TEST REPORT

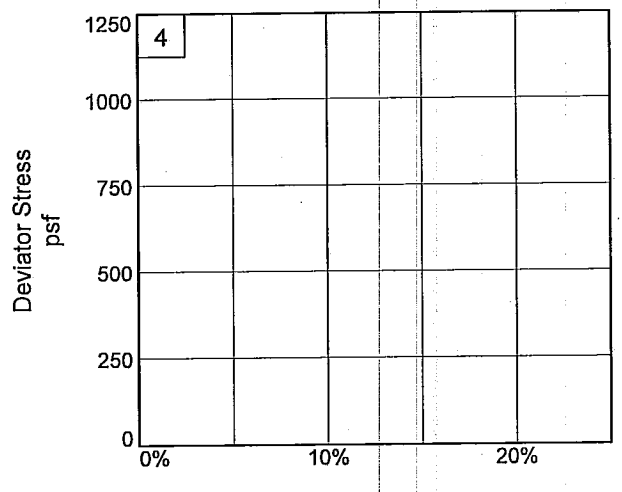
FFEBJV, LLC

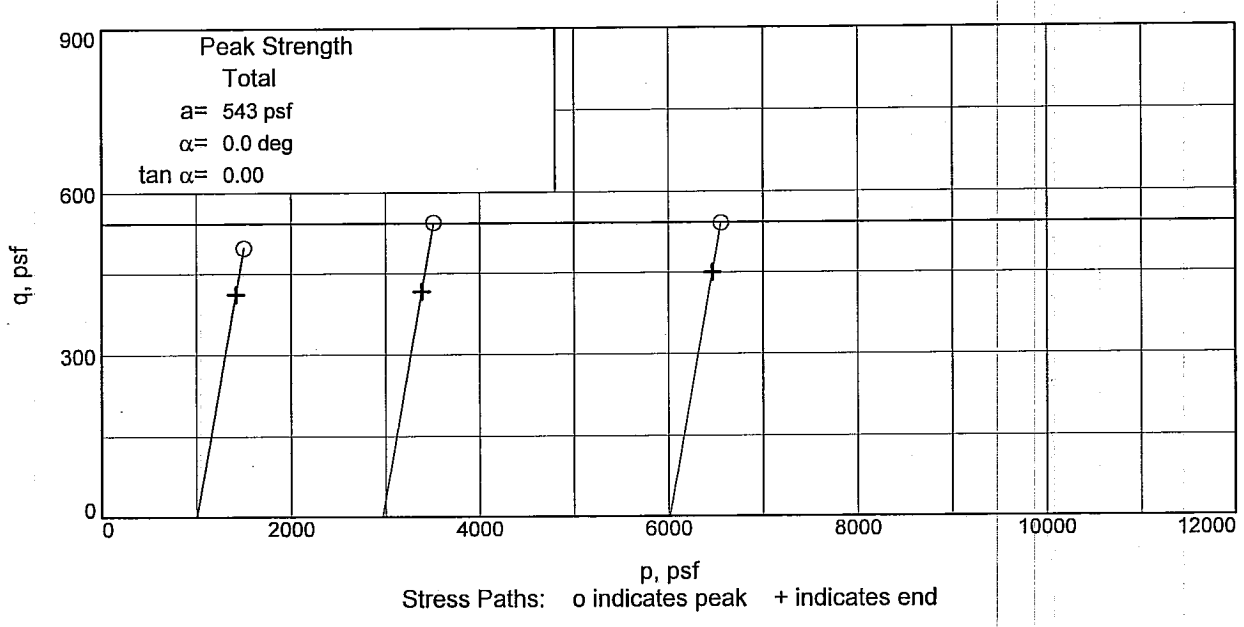
Tested By: DW/JP











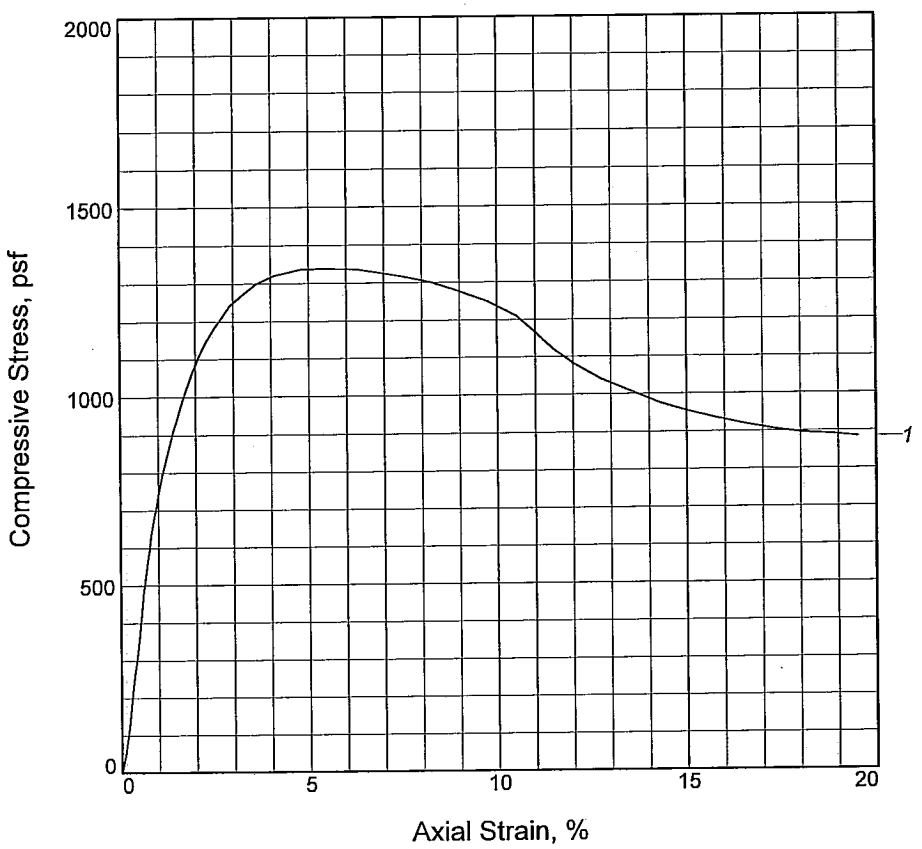
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-47UCL **Depth:** 37.7 **Sample Number:** 11C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1338			
Undrained shear strength, psf	669			
Failure strain, %	4.8			
Strain rate, in./min.	0.030			
Water content, %	51.7			
Wet density, pcf	105.9			
Dry density, pcf	69.8			
Saturation, %	97.7			
Void ratio	1.4493			
Specimen diameter, in.	1.373			
Specimen height, in.	3.016			
Height/diameter ratio	2.20			

Description: M GR CH3

LL = 75	PL = 25	PI = 50	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

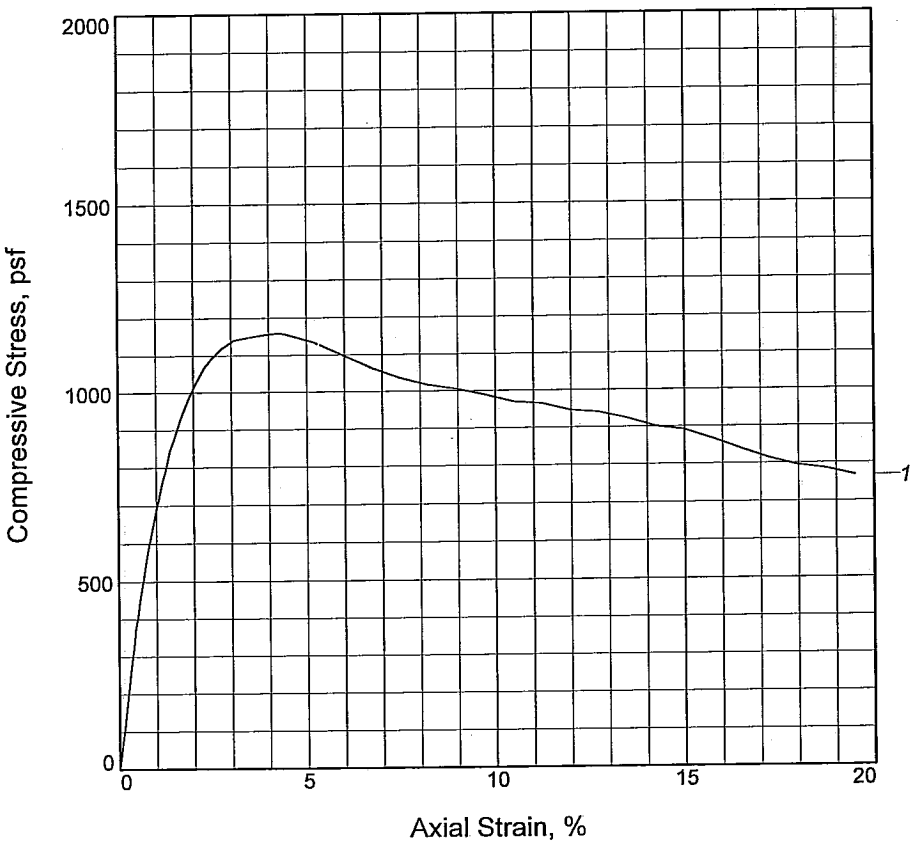
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-47UCL **Depth:** 41.7
Sample Number: 12C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1160			
Undrained shear strength, psf	580			
Failure strain, %	4.3			
Strain rate, in./min.	0.030			
Water content, %	46.1			
Wet density, pcf	107.5			
Dry density, pcf	73.6			
Saturation, %	95.5			
Void ratio	1.3244			
Specimen diameter, in.	1.358			
Specimen height, in.	3.013			
Height/diameter ratio	2.22			

Description: M GR CH3

LL = 58	**PL** = 21	**PI** = 37	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

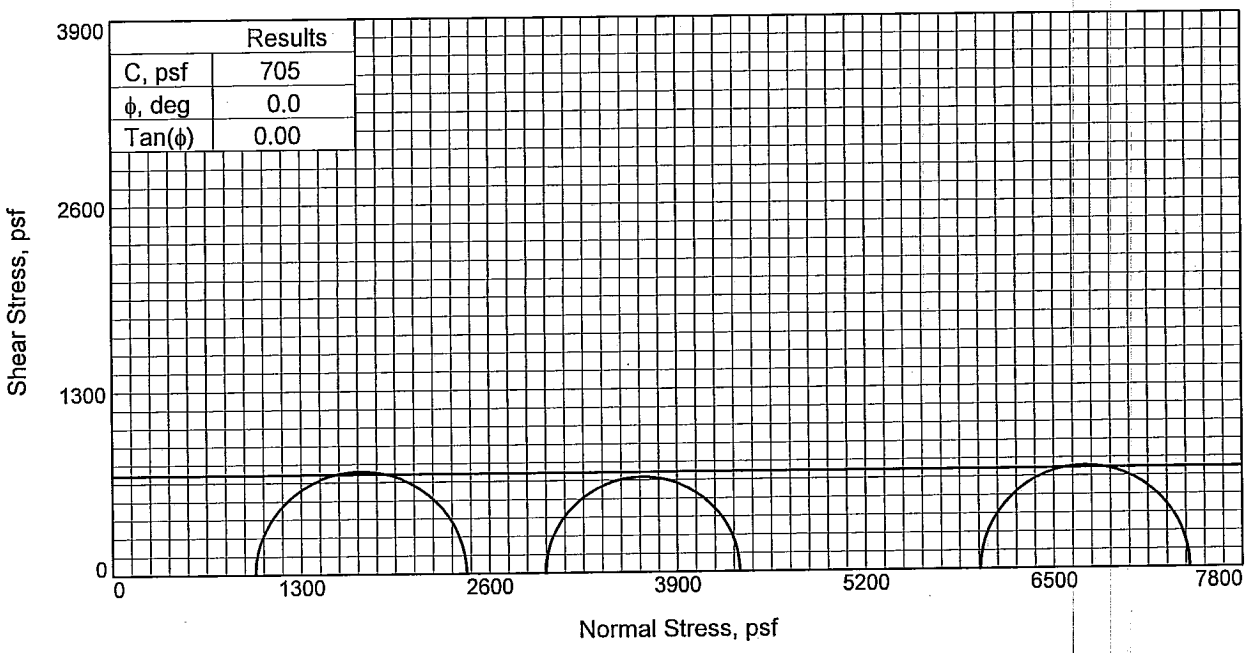
Client: U.S. Army Corps of Engineers

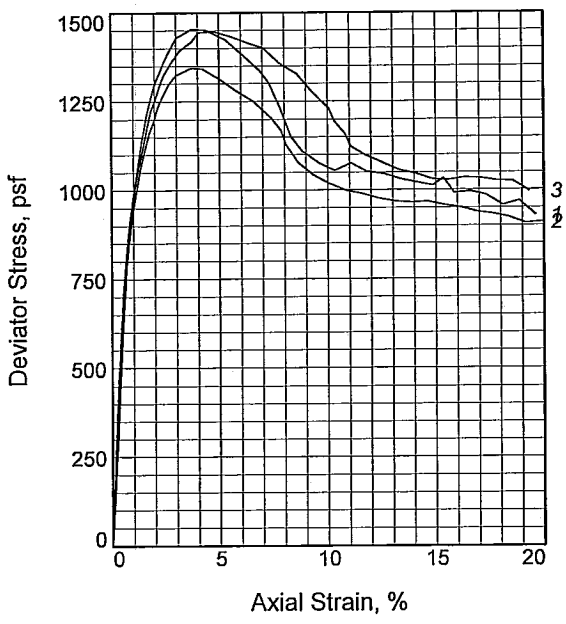
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-47UCL **Depth:** 44.8
Sample Number: 13B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB





Sample No.		1	2	3
Initial	Water Content, %	55.4	57.1	57.2
	Dry Density, pcf	67.2	67.1	66.8
	Saturation, %	98.1	101.1	100.4
	Void Ratio	1.5454	1.5483	1.5623
	Diameter, in.	1.416	1.416	1.413
	Height, in.	3.122	3.118	3.125
At Test	Water Content, %	55.4	57.1	57.2
	Dry Density, pcf	67.2	67.1	66.8
	Saturation, %	98.1	101.1	100.4
	Void Ratio	1.5454	1.5483	1.5623
	Diameter, in.	1.416	1.416	1.413
	Height, in.	3.122	3.118	3.125
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.84	20.75	41.61
Fail. Stress, psf		1455	1343	1447
Strain, %		3.7	3.7	4.8
Ult. Stress, psf		1012	957	1030
Strain, %				
σ_1 Failure, psf		2440	4331	7438
σ_3 Failure, psf		985	2988	5991

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ SL

LL= 88 **PL=** 29 **PI=** 59
Assumed Specific Gravity= 2.74
Remarks:

Figure _____

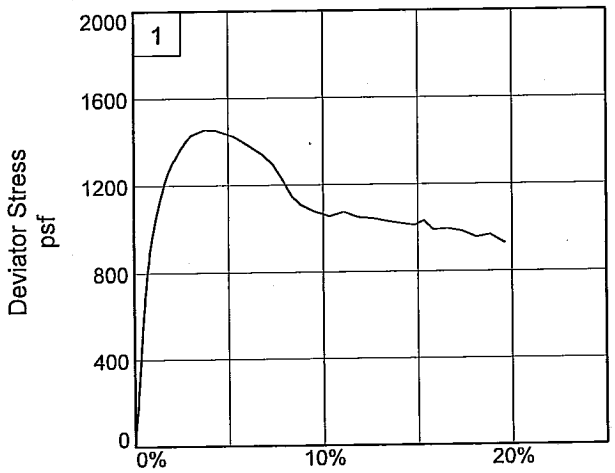
Client: U.S. Army Corps of Engineers

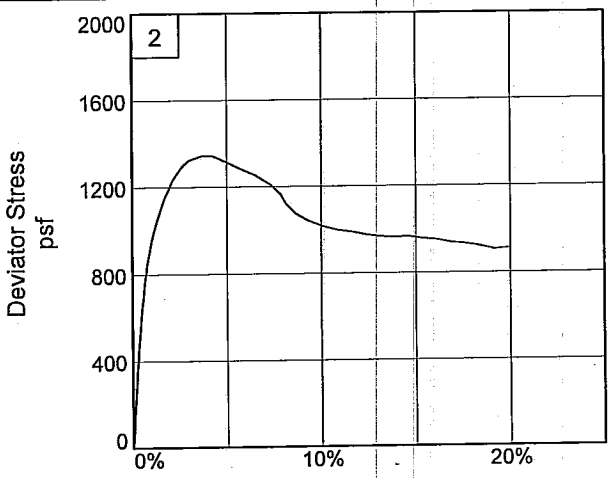
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-47UCL **Depth:** 53.7
Sample Number: 15C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

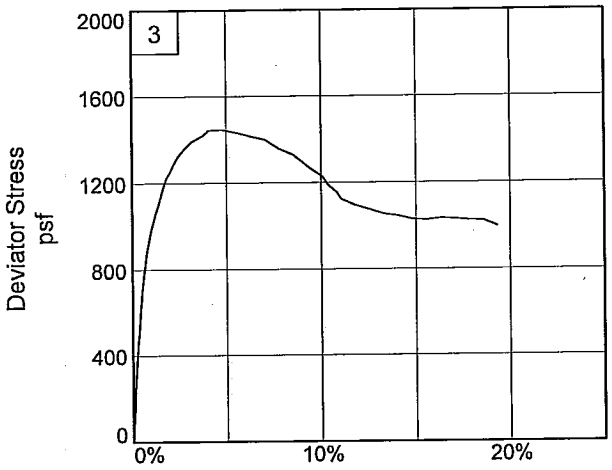
TRIAXIAL SHEAR TEST REPORT

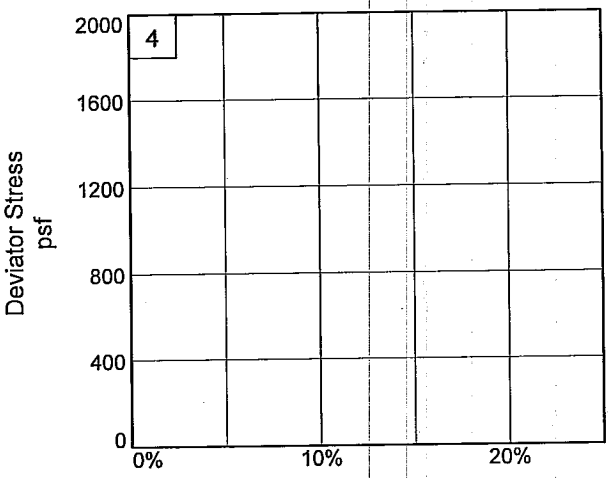
FFEBJV, LLC

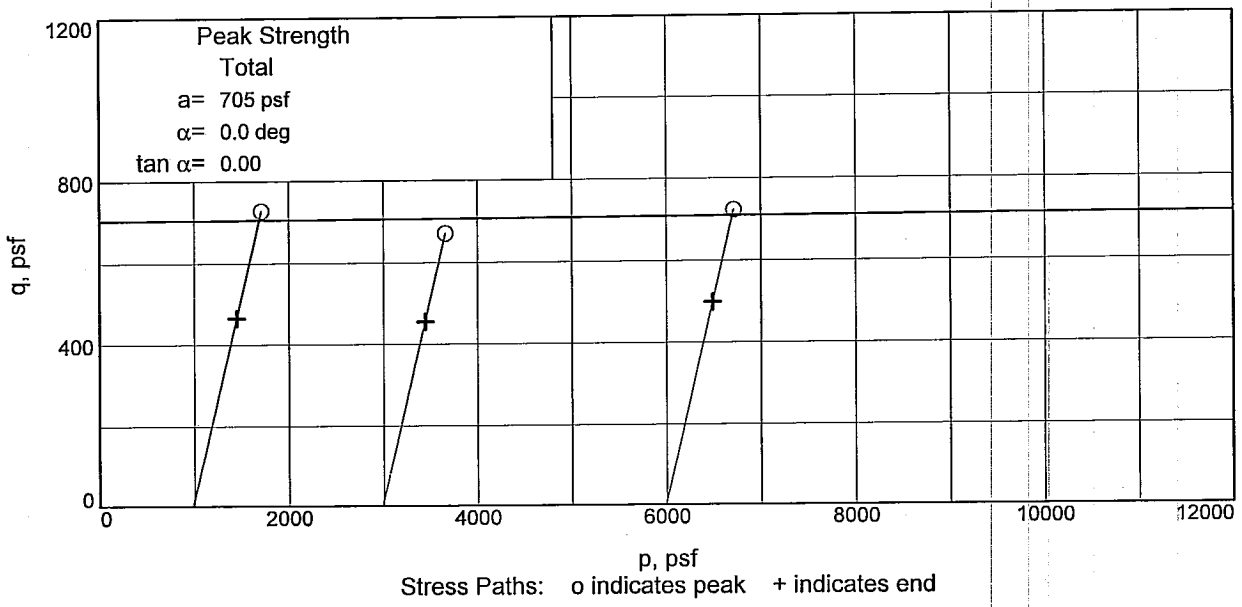
Tested By: DW/JP











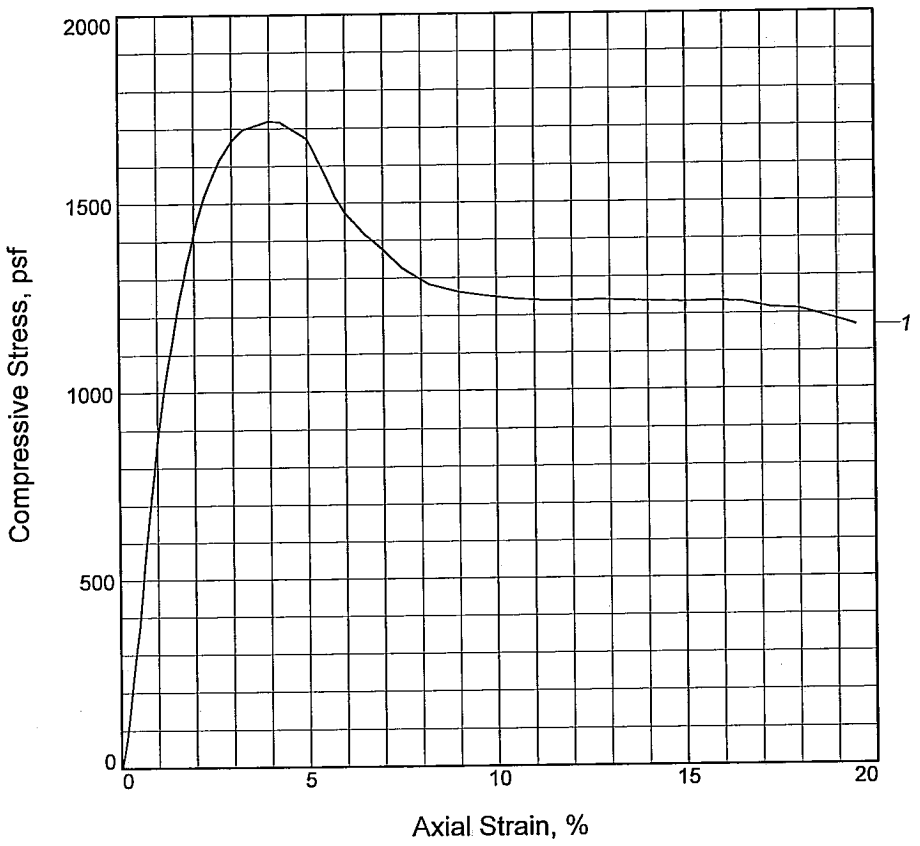
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-47UCL **Depth:** 53.7 **Sample Number:** 15C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1720			
Undrained shear strength, psf	860			
Failure strain, %	4.0			
Strain rate, in./min.	0.030			
Water content, %	45.7			
Wet density, pcf	107.9			
Dry density, pcf	74.1			
Saturation, %	96.2			
Void ratio	1.2914			
Specimen diameter, in.	1.380			
Specimen height, in.	3.024			
Height/diameter ratio	2.19			

Description: M GR CH3 W/ LNS ML

LL = 67	**PL** = 24	**PI** = 43	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-47UCL **Depth:** 57.7

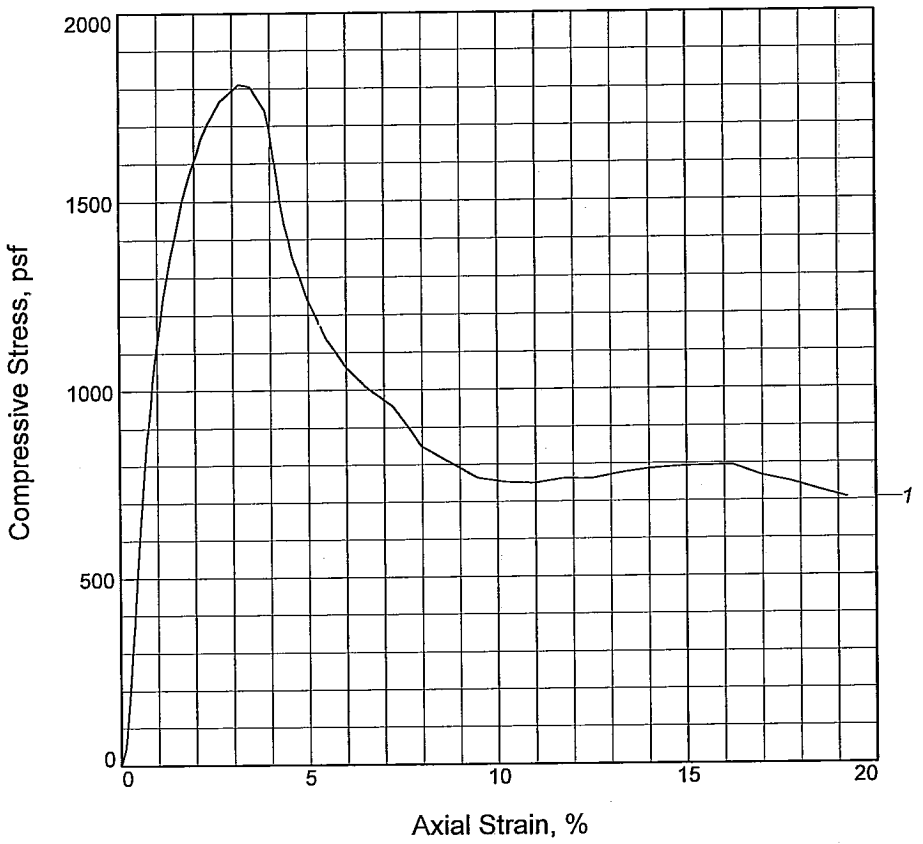
Sample Number: 16C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1810			
Undrained shear strength, psf	905			
Failure strain, %	3.2			
Strain rate, in./min.	0.030			
Water content, %	60.9			
Wet density, pcf	100.1			
Dry density, pcf	62.2			
Saturation, %	95.9			
Void ratio	1.7291			
Specimen diameter, in.	1.380			
Specimen height, in.	3.031			
Height/diameter ratio	2.20			

Description: M GR CH4 W/ ARS ML, SL

LL = 91	**PL** = 30	**PI** = 61	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

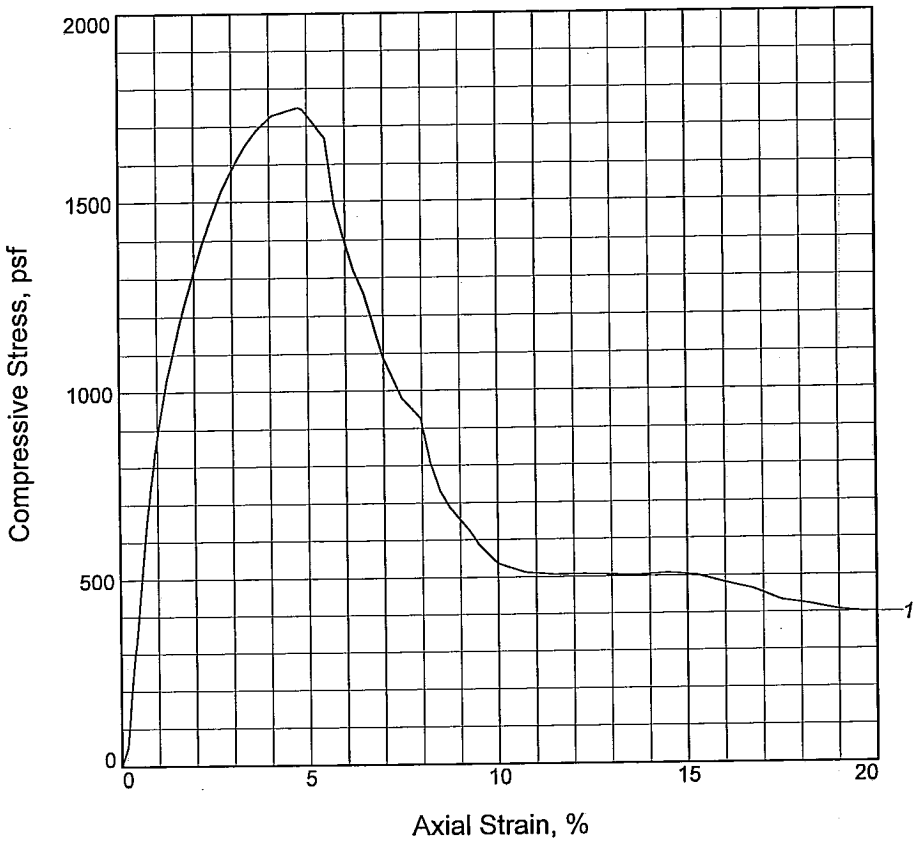
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-47UCL **Depth:** 61.7
Sample Number: 17C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1749			
Undrained shear strength, psf	874			
Failure strain, %	4.8			
Strain rate, in./min.	0.030			
Water content, %	66.7			
Wet density, pcf	98.7			
Dry density, pcf	59.2			
Saturation, %	96.7			
Void ratio	1.8905			
Specimen diameter, in.	1.366			
Specimen height, in.	3.023			
Height/diameter ratio	2.21			

Description: M GR CH4

LL = 102	**PL** = 32	**PI** = 70	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/28/07
Remarks:

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-47UCL **Depth:** 68.8
Sample Number: 19B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: JMB

BOR. WWHC-47UCL
STA. LAT N29^49'45.04" LONG W90^06'51.78"

16-17 APRIL 2007

GROUND EL. 11.9

0.0	0.8	20		CH		VST T					
0.8	2.0	16	2.0	CH		VST T					
2.0	2.8	26	2.8	CH	SIS	VST T GR					
2.8	4.0	29	4.0	CH		VST	RT	2001121	51	18	24 31
4.0	4.8	30		CH	SIS	ST T GR					
4.8	5.7	31		CH	SIS	ST T GR					
5.7	8.0	31	8.0	CH	SIS	M GR T	WD				
8.0	8.8	37	8.8	CH		ST GR					
8.8	9.6	30	9.7	CH	SIS	ST GR					
9.6	12.0	29		CL	SIS	ST GR T	RT				
12.0	12.8	30	12.8	CL	SIS	ST GR T					
12.8	16.0		16.0	NS							
16.0	16.8	41	16.8	CH	SIS	M GR					
16.8	17.7	31	17.7	CH		M GR					
17.7	20.0	37	20.0	CL	SIS	M GR T	RT				
20.0	20.8	35		CH		M GR					
20.8	21.7	34		CH		M GR					
21.7	22.6	33		CH		M GR		705118	55	19	33 220
22.6	24.0	34	24.0	CH		M GR					
24.0	24.8	57		CH	SIS	M GR					
24.8	25.7	37	25.7	CH	SIS	M GR					
25.7	26.6	41	26.6	CH		M GR					
26.6	28.0	49	28.0	CH	SIS	M GR					
28.0	28.8	57		CH		M GR					
28.8	29.7	55		CH		M GR					
29.7	30.6	59	30.6	CH		M GR					
30.6	32.0	43	32.0	CH	SIS	M GR					
32.0	32.8	40		CL		M GR					
32.8	33.7	32	33.7	CL		M GR					
33.7	34.6	54	34.6	CH	O	M GR	WD				
34.6	36.0	48		CH	SIS	M GR	O				
36.0	36.8	94		CH	SISSO	GR					
36.8	37.7	74	37.7	CH	SISSO	GR					
37.7	38.6	48		CH		M GR	SIF				
38.6	40.0	39		CH		M GR	SIF				
40.0	40.8	42		CH		M GR					

40.8 41.7 46 CH M GR
41.7 42.6 54 CH M GR 669106 75 25 52 420
42.6 44.0 52 CH M GR
44.0 44.8 57 CH M GR
44.8 45.7 60 45.7CH M GR 580108 58 21 46 451
45.7 46.6 53 CH SIS M GR
46.6 48.0 66 CH SIS M GR
48.0 48.8 52 CH SIS M GR
48.8 49.7 60 CH SIS M GR
49.7 50.6 56 50.6CH SIS M GR
50.6 52.0 61 CH M GR
52.0 52.8 63 52.8CH M GR
52.8 53.7 60 53.7CH SIS M GR
53.7 54.6 61 54.6CH M GR SL
54.6 56.0 53 CH SIS M GR
56.0 56.8 56 56.8CH SIS M GR
56.8 57.7 61 57.7CH M GR
57.7 58.6 57 CH SIS M GR 860108 67 24 46 580
58.6 60.0 56 CH SIS M GR
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64.8 65.7 59 CH SIS M GR
65.7 66.6 55 CH SIS M GR
66.6 68.0 56 68.0CH SIS M GR
68.0 68.8 72 CH M GR
68.8 69.7 64 69.7CH M GR 874 99102 32 67 691
69.7 70.6 51 70.6CH SIS M GR
70.6 72.0 59 72.0CH M GR
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 6.00/ 5.90 Water Con: 33.00
LL,PL,PI : 60, 20, 40 Dry Dens : 90.00
Cohesion : 0.441 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES

Test Type:(Q) Classif : CL
Depth/Ele: 10.00/ 1.90 Water Con: 28.00
LL,PL,PI : 46, 19, 27 Dry Dens : 97.00
Cohesion : 0.561 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 18.00/-6.10 Water Con: 34.00
LL,PL,PI : 43, 18, 25 Dry Dens : 91.00
Cohesion : 0.354 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 26.00/-14.1 Water Con: 40.00
LL,PL,PI : 73, 24, 49 Dry Dens : 81.00
Cohesion : 0.431 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 30.00/-18.1 Water Con: 51.00
LL,PL,PI : 86, 27, 59 Dry Dens : 71.00
Cohesion : 0.271 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CHO
Depth/Ele: 34.00/-22.1 Water Con: 90.00
LL,PL,PI : 140, 39,101 Dry Dens : 49.00
Cohesion : 0.338 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-26.1 Water Con: 57.00
LL,PL,PI : 82, 26, 56 Dry Dens : 68.00
Cohesion : 0.272 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 54.00/-42.1 Water Con: 57.00
LL,PL,PI : 88, 29, 59 Dry Dens : 67.00
Cohesion : 0.353 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CH
Depth/Ele: 36.8/-24.9 Water Con: 68.00
LL,PL,PI : 68, 28, 40 Dry Dens : 58.00
Cohesion : Saturat : 97.00
Shear Str: Frict Ang: 00.00
Norm Str: 1.070, 1.760
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.17	1.899
0.50	1.861
1.00	1.789
2.00	1.538
4.00	1.262
8.00	1.041
2.00	1.127
0.50	1.259

****

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

Project Number: TASK ORDER 0002
Boring: WWHC-47UPT

Current Date: 7/10/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1A	0.0	ST GR & T CL6 W/ LYS ML, RT	CL6		24												
1B	0.8	VST GR CL6 W/ LYS ML, RT	CL6		22												
2A	2.0	M GR & BR CH2 W/ WD	CH2		37												
3A	4.0	M GR CH3 W/ ARS ML, TR- O	CH3		36												
3B	4.8	M GR CH2 W/ CC	CH2		32												
3C	5.7	ST GR & T CL6	CL6	12	28	86	110	80	UC	-	1033	2065	48	21	27		
4A	8.0	M GR CL6 W/ CC	CL6		35												
4B	8.8	SO GR CL6 W/ CC	CL6		40												
4C	9.7	M T & GR CL4	CL4		34	88	117	99	UU	0	700		40	24	16		
4D	10.6	M GR & T CL4 W/ CC	CL4		33												
5A	12.0	M GR & T CL6 W/ CC	CL6		31												
5B	12.8	M GR & T CL6 W/ CC	CL6		33												
5C	13.7	M GR CL6	CL6		35	85	115	98	UU	0	834		45	25	20		
6A	16.0	SO GR CH3 W/ ARS ML, RT	CH3		50												
6B	16.8	SO GR CH3 W/ RT	CH3	3	48	68	100	86	UC	-	286	572	75	34	41		
6C	17.7	M GR CH2 W/ RT	CH2		41												
7A	20.0	M GR CH4 W/ ARS ML, RT	CH4		52												
7B	20.8	M GR CH4 W/ ARS ML, RT	CH4		49												
7C	21.7	M GR CH4 W/ ARS ML, RT	CH4		55	67	104	98	UU	0	623		82	30	52		
7D	23.2	GR ML2 W/ LYS CH, RT	ML2		38												
8A	24.0	GR ML2 W/ LYS CH	ML2		41												
8B	24.8	M GR CH4 W/ ARS ML, O	CH4		55												AL, Gs, CON
8C	25.7	M GR CH4 W/ ARS ML, O	CH4		66	64	99	100	UU	0	575		97	42	55		
8D	26.6	SO GR CH4 W/ ARS ML, O	CH4		80												
9A	28.0	SO GR CH4 W/ ARS ML, O, SIF	CH4		75												
9B	28.8	M GR CH4 W/ ARS ML, TR- O	CH4		52												AL, DSS
9C	29.7	M GR CH2 W/ LNS ML	CH2		37												
9D	30.6	M GR CH2 W/ LNS ML	CH2		36												
10A	32.0	M GR CH3 W/ LNS ML	CH3		50												
10B	32.8	M GR CH3 W/ LNS ML, ARS ML	CH3		50												
10C	33.7	M GR CH3 W/ ARS ML	CH3	4	56	67	105	99	UC	-	618	1237	74	29	45		
10D	34.6	M GR CH3 W/ LNS ML, ARS ML	CH3		52												
11A	36.0	M GR CH3 W/ LNS ML, ARS ML	CH3		49												
11B	36.8	M GR CH3 W/ LNS ML, ARS ML	CH3		55	67	104	98	UU	0	516		66	34	32		
11C	37.7	M GR CH4 W/ LNS ML, ARS ML	CH4		54												
12A	40.0	M GR CH4 W/ LNS ML, ARS ML	CH4		62												

Remarks: _____
FFEB JV, LLC

Checked By: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

Project Number: TASK ORDER 0002
Boring: WWHC-47UPT

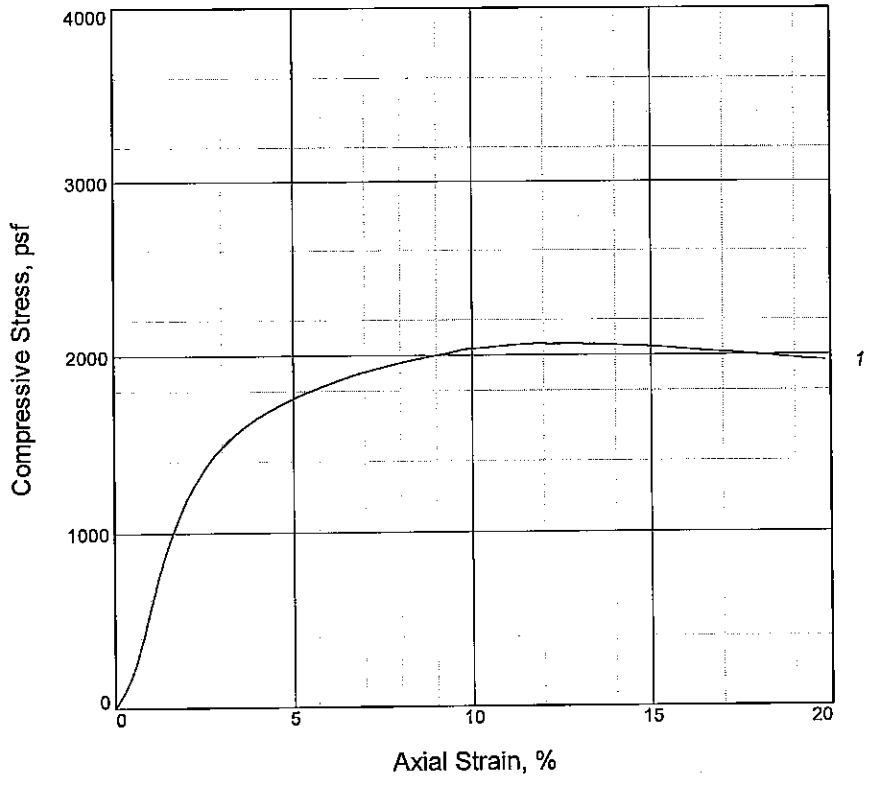
Current Date: 7/10/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
12B	40.8	M GR CH4 W/ ARS ML	CH4	7	55	68	105	100	UC	-	641	1282	75	30	45		
12C	41.7	M GR CH4 W/ ARS ML	CH4		59												
12D	42.6	M GR CH4	CH4		62												
13A	44.0	M GR CH4	CH4		63												
13B	44.8	M GR CH4 W/ ARS ML	CH4		59												Gs, AL, CON
13C	45.7	M GR CH4	CH4		66	60	100	97	UU	0	757		103	31	72		
13D	46.6	M GR CH4 W/ LNS ML, ARS ML	CH4		57												
14A	48.0	SO GR CH3 W/ ARS ML	CH3		56												
14B	48.8	SO GR CH3 W/ ARS ML	CH3		58												
14C	49.7	SO GR CH3 W/ ARS ML	CH3	2	60	63	101	97	UC	-	389	779	69	25	44		
14D	50.6	SO GR CH3 W/ ARS ML	CH3		55												
15A	52.0	M GR CH4	CH4		63												
15B	52.8	M GR CH4	CH4	2	62	62	101	97	UC	-	694	1388	92	36	56		
15C	53.7	M GR CH4 W/ ARS ML	CH4		46												
15D	54.6	M GR CH4 W/ ARS ML	CH4		60												
16A	56.0	M GR CH4 W/ ARS ML	CH4		60												
16B	56.8	M GR CH4 W/ ARS ML	CH4		56												
16C	57.7	ST GR CH4	CH4	3	61	63	101	97	UC	-	1050	2100	92	27	65		
16D	58.6	M GR CH4	CH4		56												
17A	60.0	M GR CH4	CH4		57												
17B	60.8	M GR CH4	CH4		56												
17C	61.7	M GR CH4	CH4		67	60	100	98	UU	0	770		95	33	62		
17D	62.6	M GR CH4	CH4		59												
18A	64.0	M GR CH4 W/ LYS SM, SIF	CH4		55												
19	66.0	GR ML W/ ARS CH	ML		32												
20A	68.0	M GR CH4 W/ ARS SM, SIF	CH4		55												
20B	68.8	M GR CH4 W/ ARS SM, SIF	CH4		50												
20C	69.7	ST GR CH4 W/ SIF	CH4	2	63	62	101	99	UC	-	1135	2270	101	30	71		
20D	70.6	M GR CH4 W/ ARS SM	CH4		54												

Remarks: _____
FFEB JV, LLC

Checked By: _____
File Name: TO 2

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2065			
Undrained shear strength, psf	1033			
Failure strain, %	11.8			
Strain rate, %/min.	1.00			
Water content, %	28.3			
Wet density, pcf	110.3			
Dry density, pcf	85.9			
Saturation, %	79.9			
Void ratio	0.9544			
Specimen diameter, in.	1.36			
Specimen height, in.	3.00			
Height/diameter ratio	2.21			

Description: ST GR & T CL6

LL = 48	PL = 21	PI = 27	Assumed GS= 2.69	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/1/07

Remarks:
Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

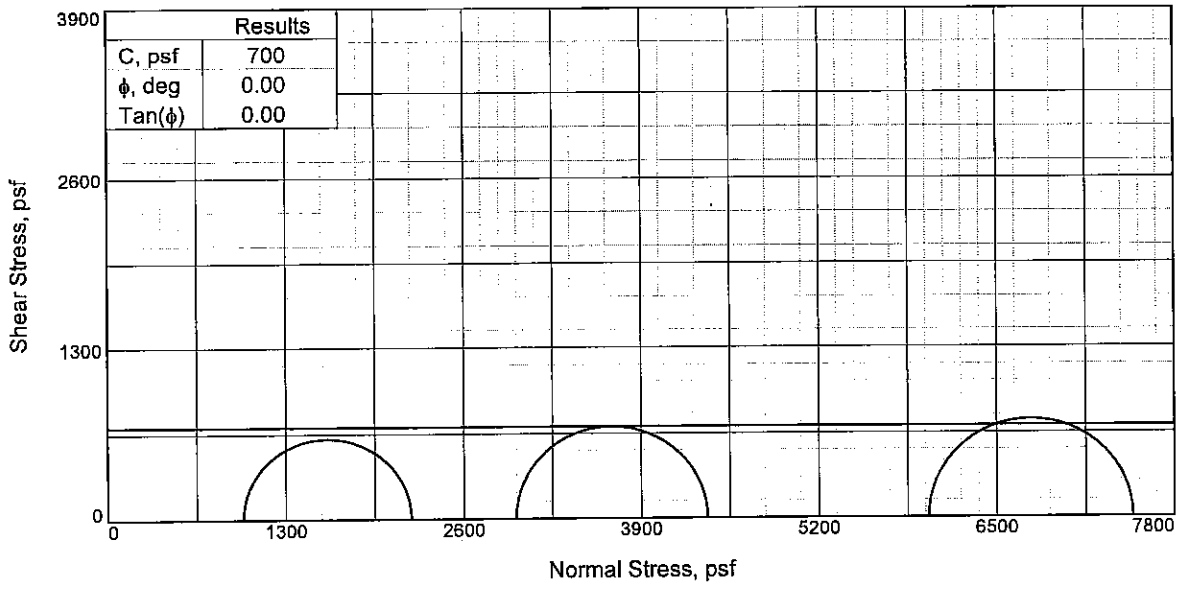
Client: U.S. ARMY CORPS OF ENGINEERS

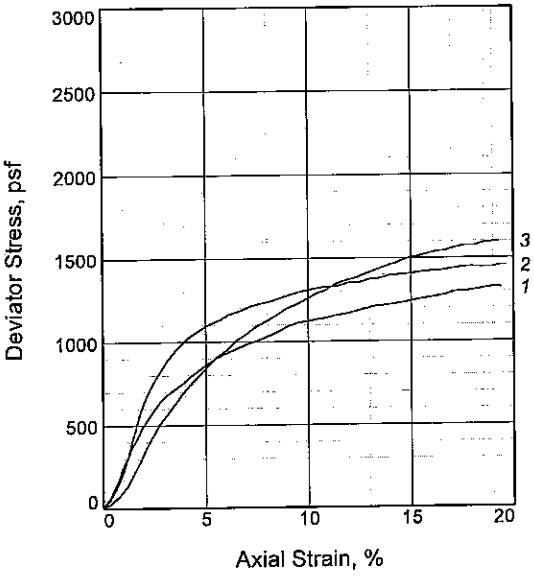
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-47UPT **Depth:** 5.70'
Sample Number: 3C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** RT





Sample No.		1	2	3
Initial	Water Content, %	33.8	33.6	33.4
	Dry Density, pcf	87.5	87.2	88.2
	Saturation, %	99.4	98.2	99.8
	Void Ratio	0.9120	0.9179	0.8972
	Diameter, in.	1.38	1.39	1.38
	Height, in.	3.08	3.05	3.09
At Test	Water Content, %	33.0	32.9	32.1
	Dry Density, pcf	87.5	87.2	88.2
	Saturation, %	97.0	96.0	95.8
	Void Ratio	0.9120	0.9179	0.8972
	Diameter, in.	1.38	1.39	1.37
	Height, in.	3.08	3.05	3.09
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.72	41.69
Fail. Stress, psf		1226	1402	1494
Strain, %		14.3	14.5	14.7
Ult. Stress, psf		1226	1397	1468
Strain, %				
σ_1 Failure, psf		2217	4385	7497
σ_3 Failure, psf		991	2984	6003

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M T & GR CL4

LL= 40 **PL=** 24 **PI=** 16

Assumed Specific Gravity= 2.68

Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-47UPT **Depth:** 9.70'

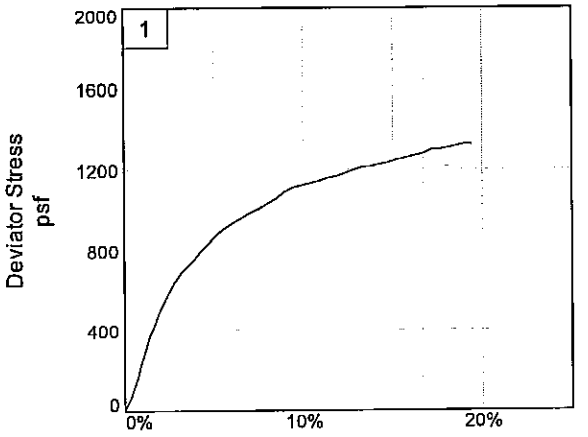
Sample Number: 4C

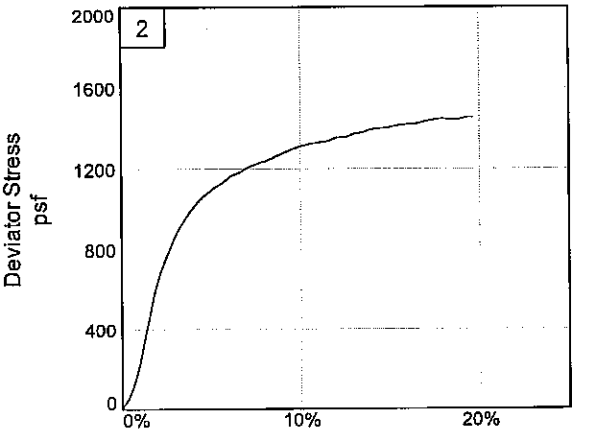
Proj. No.: 0022-0002 **Date Sampled:** 5/31/07

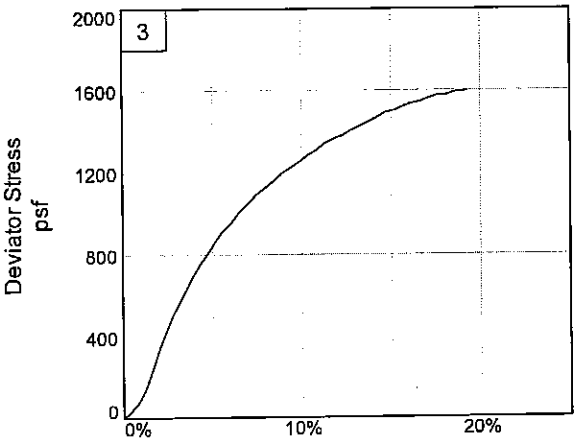
TRIAXIAL SHEAR TEST REPORT

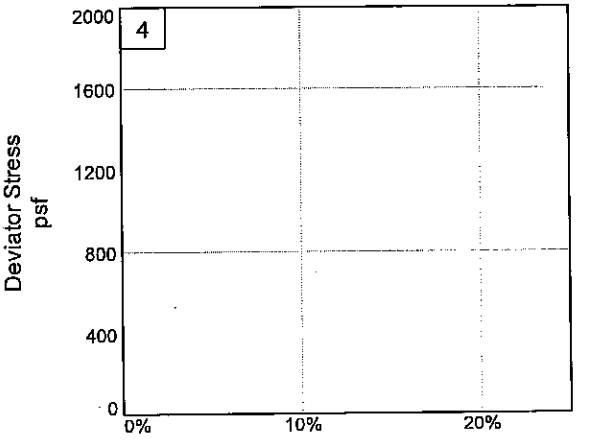
FFEBJV, LLC.

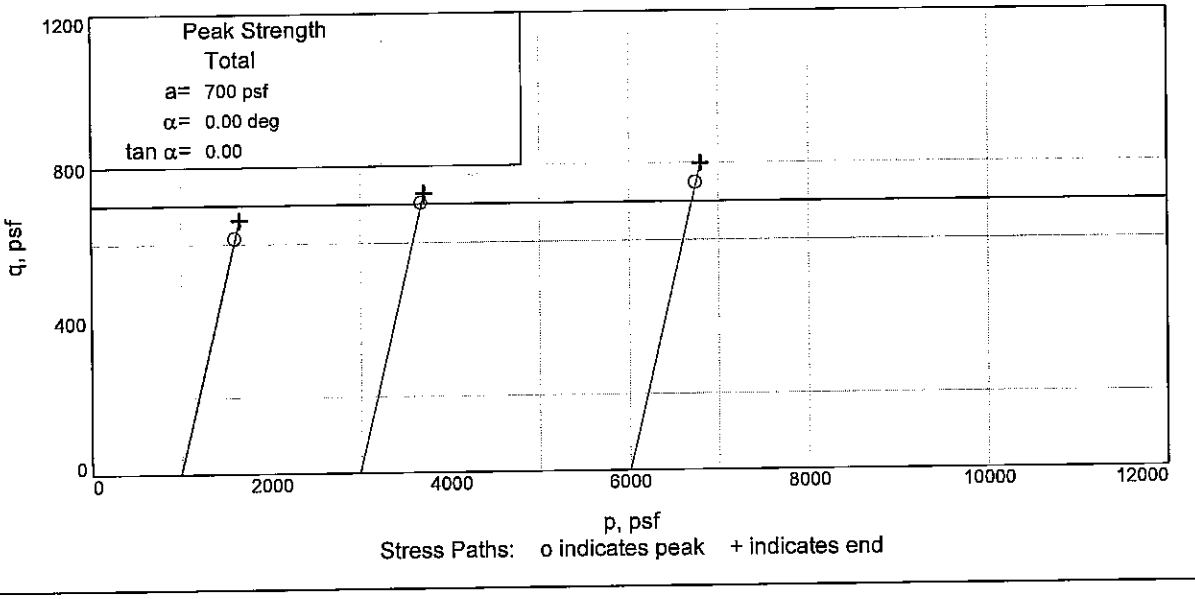
Tested By: CC **Checked By:** RT







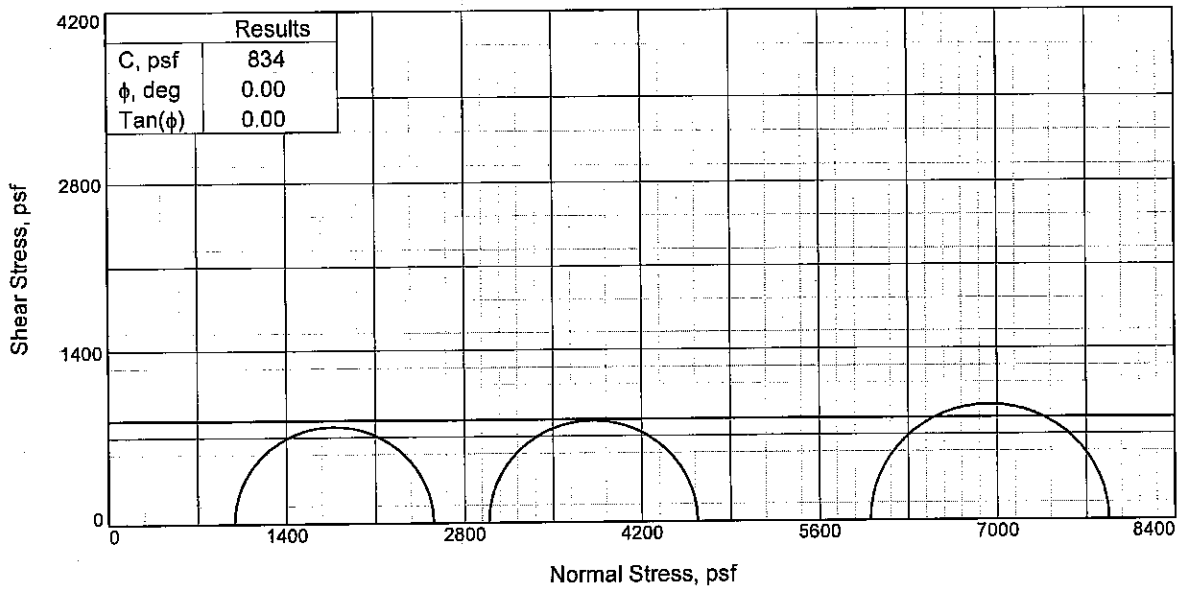


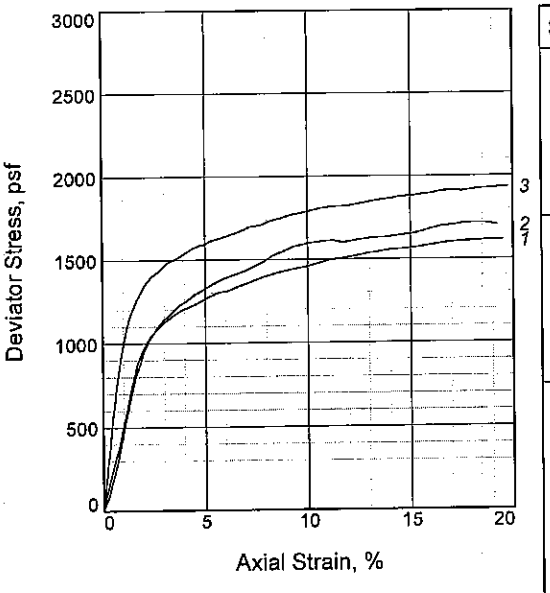


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-47UPT **Depth:** 9.70' **Sample Number:** 4C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** RT





Sample No.		1	2	3
Initial	Water Content, %	36.5	34.8	34.2
	Dry Density, pcf	83.9	85.1	87.4
	Saturation, %	98.1	95.9	99.3
	Void Ratio	1.0013	0.9802	0.9286
	Diameter, in.	1.40	1.39	1.39
	Height, in.	3.10	3.10	3.06
At Test	Water Content, %	35.4	34.3	33.6
	Dry Density, pcf	83.9	85.1	87.4
	Saturation, %	95.0	94.6	97.7
	Void Ratio	1.0013	0.9802	0.9286
	Diameter, in.	1.40	1.39	1.39
	Height, in.	3.10	3.10	3.06
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.78	41.67
Fail. Stress, psf		1565	1646	1876
Strain, %		14.9	14.6	14.6
Ult. Stress, psf		1565	1637	1876
Strain, %				
σ_1 Failure, psf		2556	4639	7877
σ_3 Failure, psf		991	2992	6001

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CL6

LL= 45 **PL=** 25 **PI=** 20

Assumed Specific Gravity= 2.69

Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-47UPT **Depth:** 13.70'

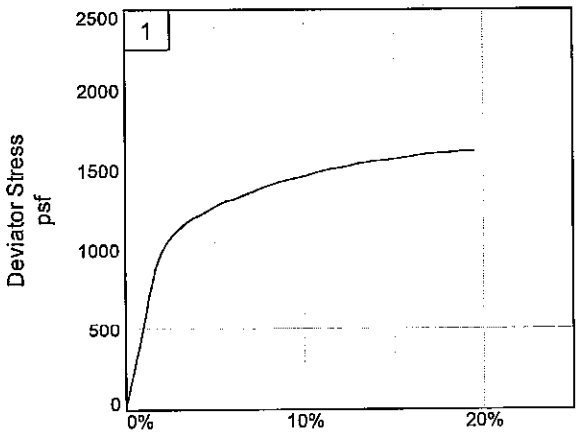
Sample Number: 5C

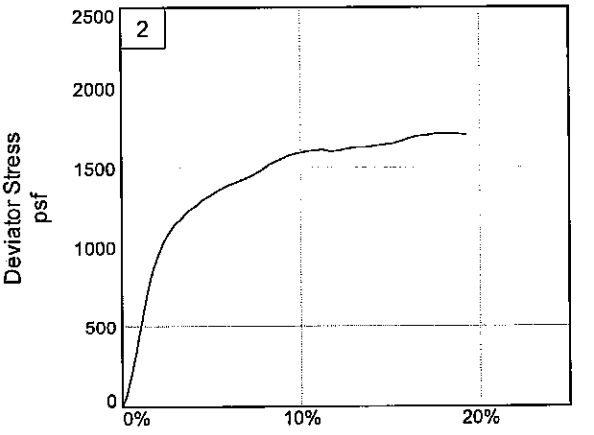
Proj. No.: 0022-0002 **Date Sampled:** 5/31/07

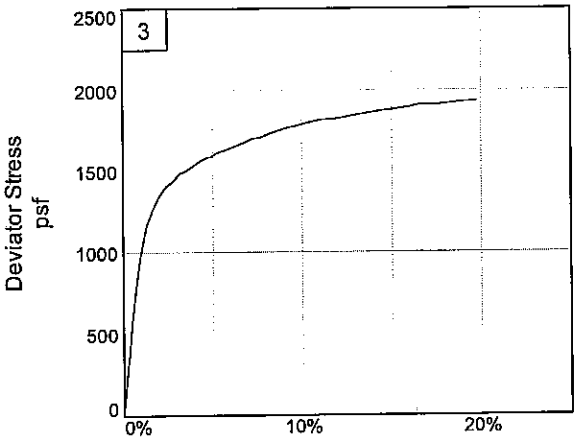
TRIAXIAL SHEAR TEST REPORT

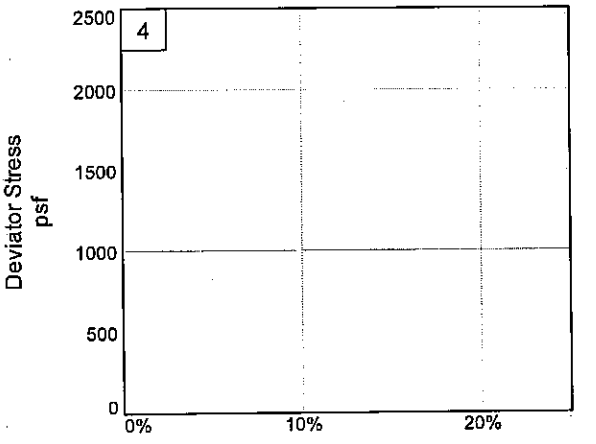
FFEBJV, LLC.

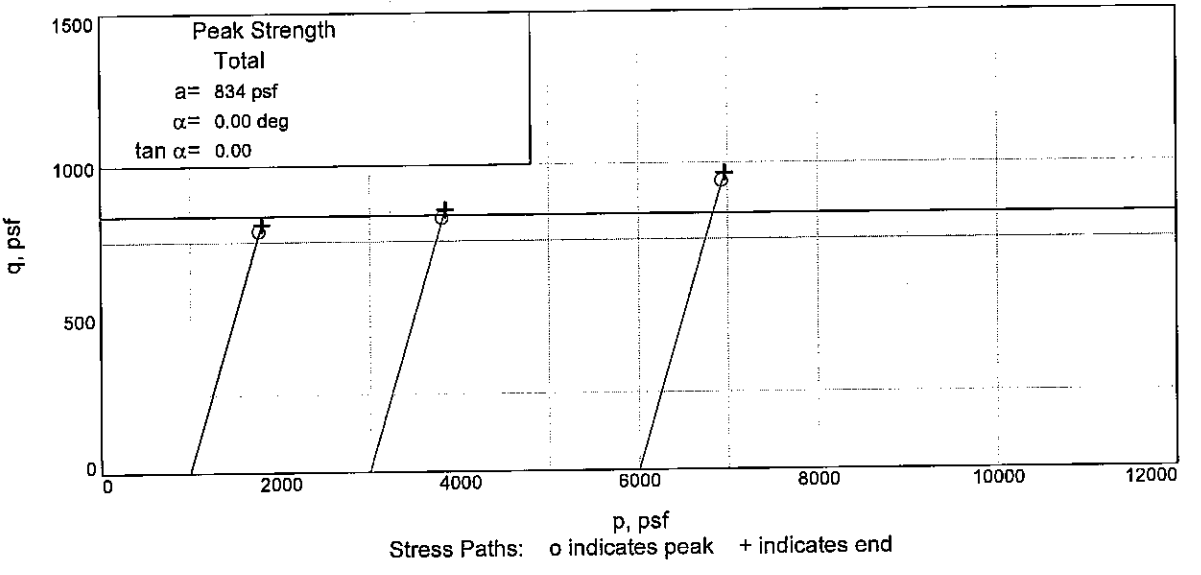
Tested By: CC **Checked By:** RT











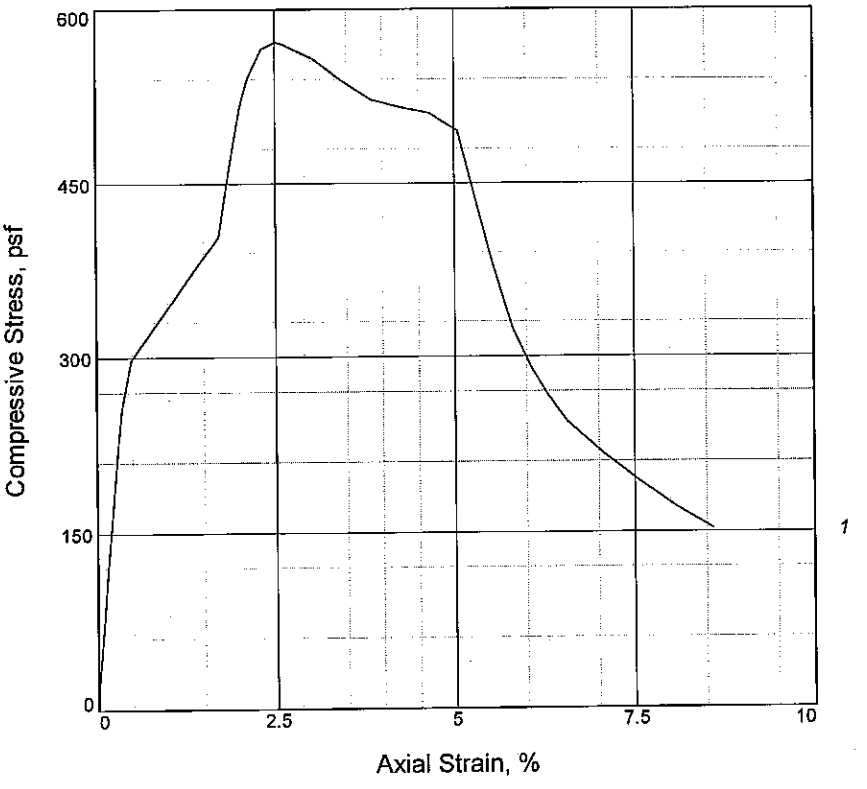
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-47UPT **Depth:** 13.70' **Sample Number:** 5C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	572			
Undrained shear strength, psf	286			
Failure strain, %	2.5			
Strain rate, %/min.	1.00			
Water content, %	48.0			
Wet density, pcf	99.8			
Dry density, pcf	67.4			
Saturation, %	85.6			
Void ratio	1.5384			
Specimen diameter, in.	1.35			
Specimen height, in.	3.00			
Height/diameter ratio	2.23			

Description: SO GR CH3 W/ RT

LL = 75	**PL** = 34	**PI** = 41	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/1/07

Remarks:
Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

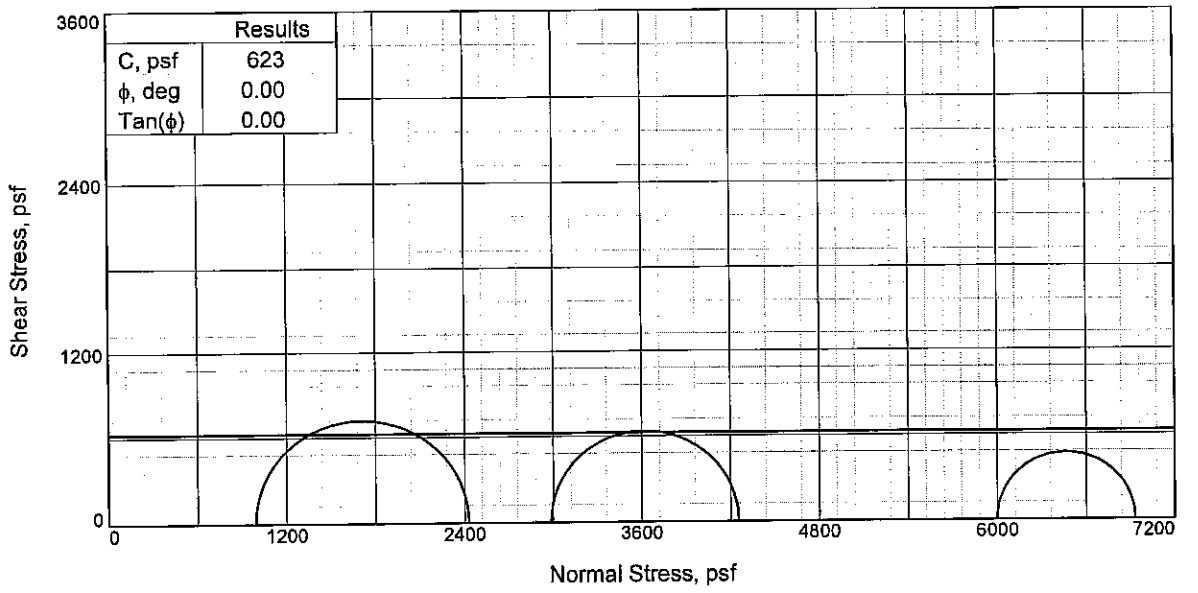
Client: U.S. ARMY CORPS OF ENGINEERS

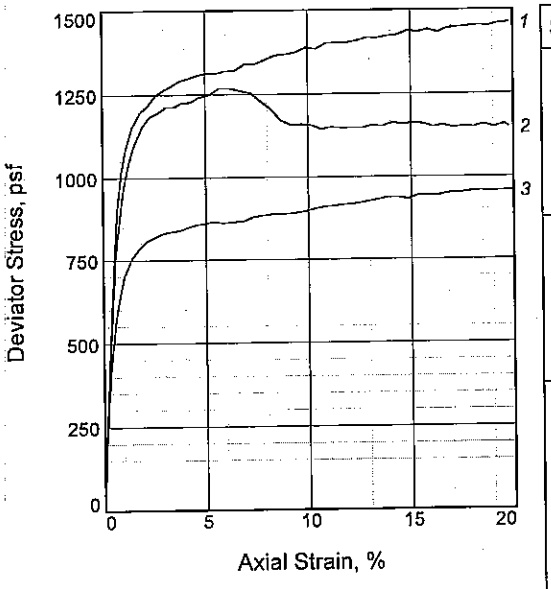
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-47UPT **Depth:** 16.80'
Sample Number: 6B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** RT





Sample No.		1	2	3
Initial	Water Content, %	53.7	52.7	59.9
	Dry Density, pcf	68.4	69.3	64.5
	Saturation, %	98.5	98.8	99.7
	Void Ratio	1.4817	1.4509	1.6339
	Diameter, in.	1.38	1.39	1.39
	Height, in.	3.05	3.05	3.00
At Test	Water Content, %	52.8	52.0	59.0
	Dry Density, pcf	68.4	69.3	64.5
	Saturation, %	96.8	97.6	98.3
	Void Ratio	1.4817	1.4509	1.6339
	Diameter, in.	1.38	1.39	1.39
	Height, in.	3.05	3.05	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	20.73	41.65
Fail. Stress, psf		1438	1269	933
Strain, %		14.9	5.7	14.9
Ult. Stress, psf		1438	1160	933
Strain, %				
σ_1 Failure, psf		2429	4254	6931
σ_3 Failure, psf		992	2986	5998

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH4 W/ ARS ML, RT

LL= 82 **PL=** 30 **PI=** 52

Assumed Specific Gravity= 2.72

Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-47UPT **Depth:** 21.7'

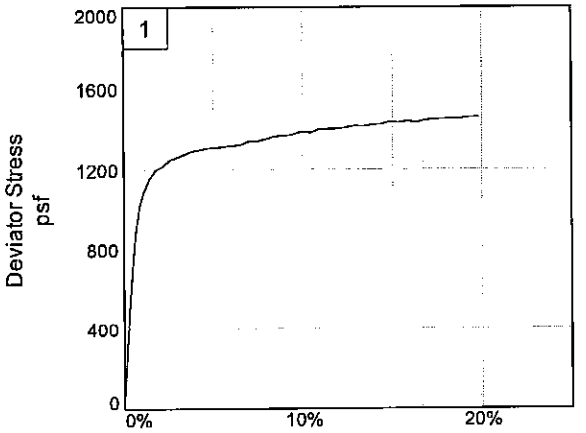
Sample Number: 7C

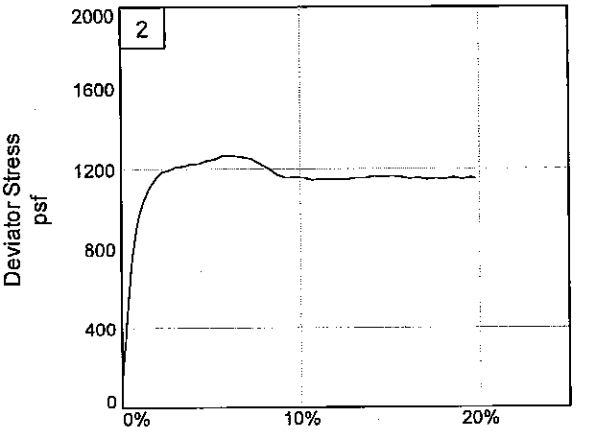
Proj. No.: 0022-0002 **Date Sampled:** 6-8-07

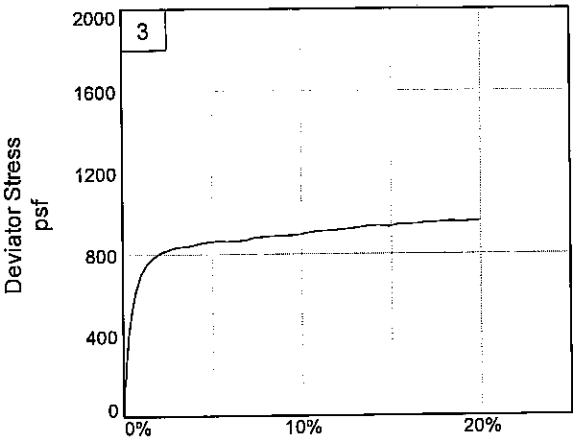
TRIAXIAL SHEAR TEST REPORT

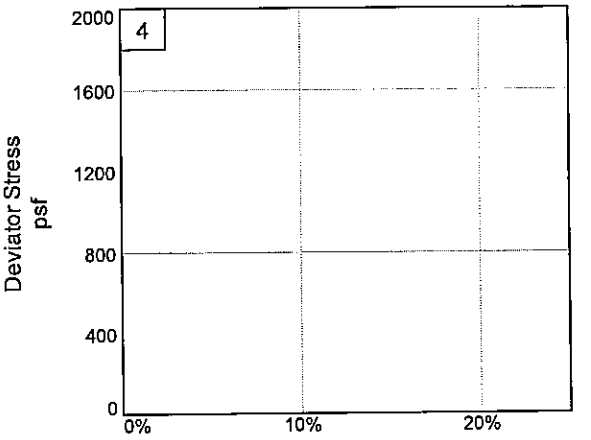
FFEBJV, LLC.

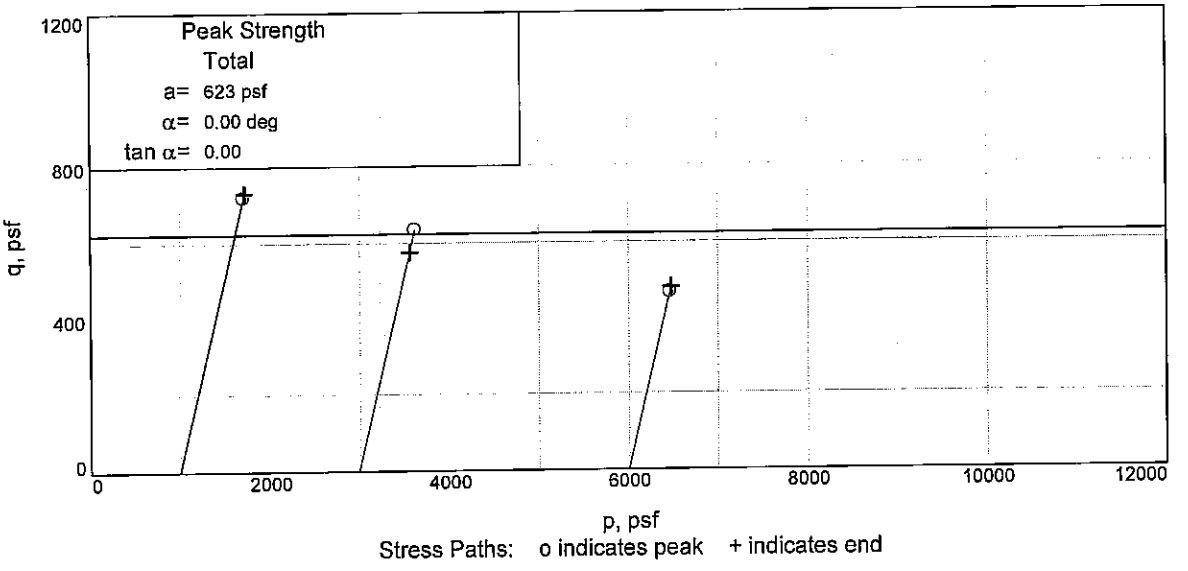
Tested By: CC **Checked By:** RT









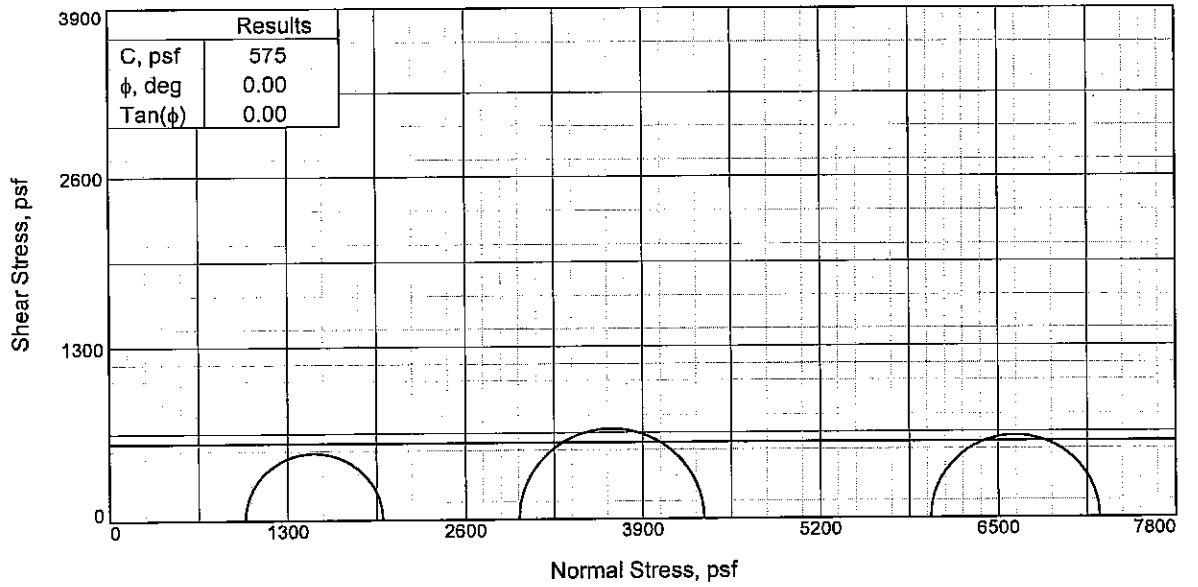


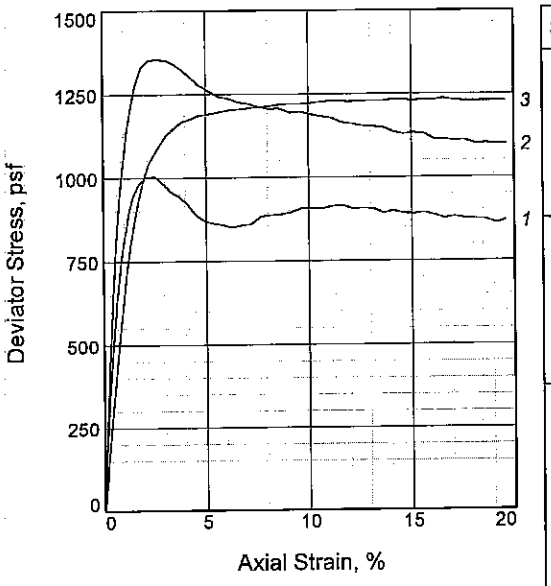
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-47UPT **Depth:** 21.7' **Sample Number:** 7C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** RT





Sample No.		1	2	3
Initial	Water Content, %	63.0	70.6	47.7
	Dry Density, pcf	62.2	58.0	74.1
	Saturation, %	99.1	99.8	99.9
	Void Ratio	1.7291	1.9255	1.3073
	Diameter, in.	1.39	1.39	1.40
	Height, in.	3.05	3.00	3.01
At Test	Water Content, %	62.6	69.4	47.0
	Dry Density, pcf	62.2	58.0	74.1
	Saturation, %	98.5	98.0	98.5
	Void Ratio	1.7291	1.9255	1.3073
	Diameter, in.	1.39	1.39	1.40
	Height, in.	3.05	3.00	3.01
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	20.79	41.72
Fail. Stress, psf		1004	1354	1233
Strain, %		2.5	2.3	14.6
Ult. Stress, psf		893	1130	1233
Strain, %				
σ_1 Failure, psf		1996	4348	7240
σ_3 Failure, psf		992	2994	6008

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH4 W/ ARS ML, O

LL= 97 **PL=** 42 **PI=** 55

Assumed Specific Gravity= 2.72

Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-47UPT **Depth:** 25.70'

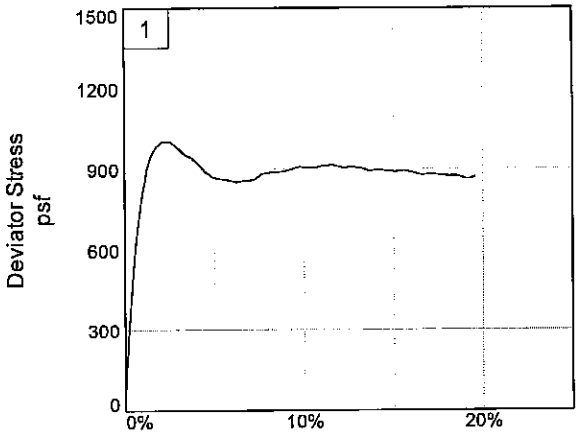
Sample Number: 8C

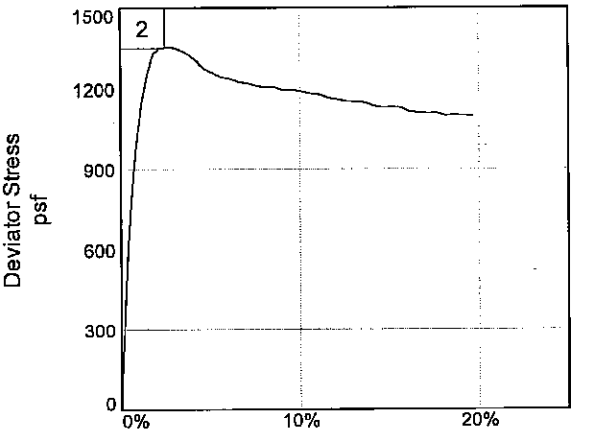
Proj. No.: 0022-0002 **Date Sampled:** 6/1/07

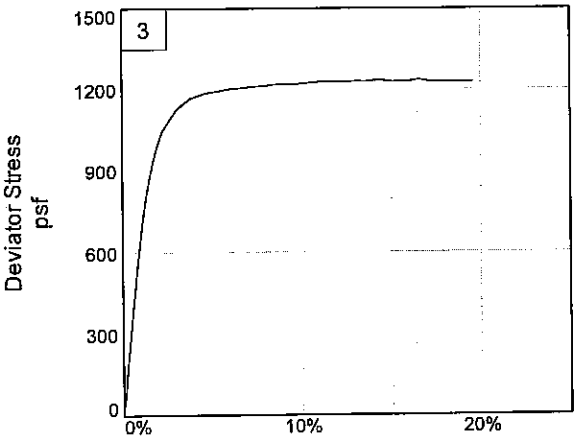
TRIAXIAL SHEAR TEST REPORT

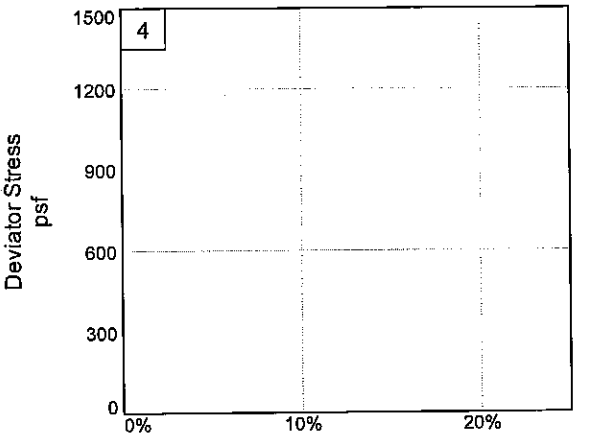
FFEBJV, LLC.

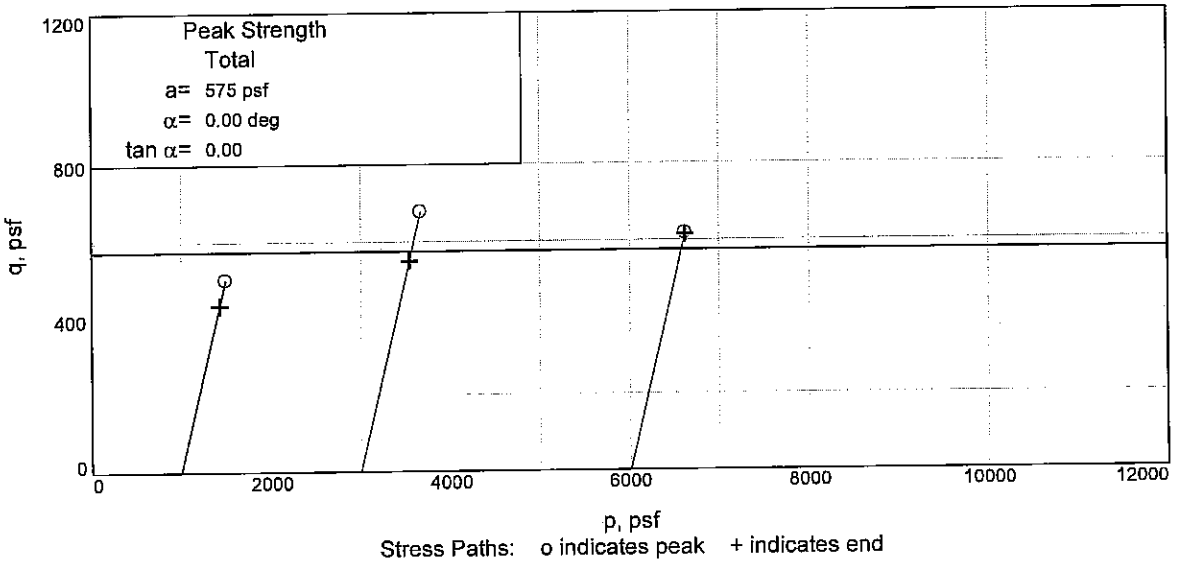
Tested By: CC **Checked By:** RT











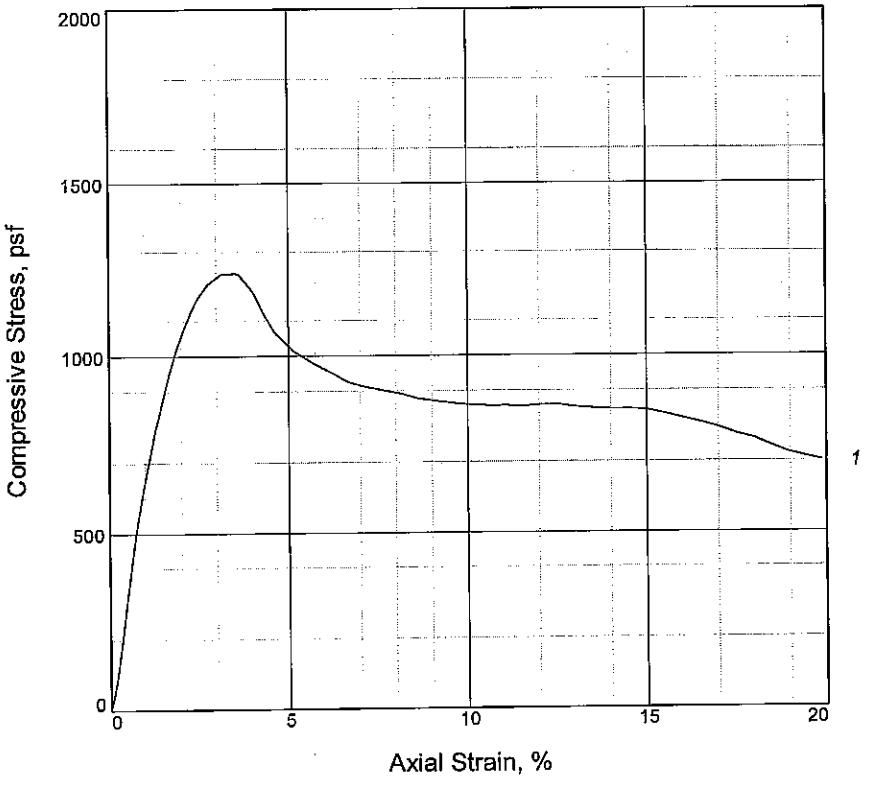
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-47UPT **Depth:** 25.70' **Sample Number:** 8C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1237			
Undrained shear strength, psf	618			
Failure strain, %	3.5			
Strain rate, %/min.	1.00			
Water content, %	55.6			
Wet density, pcf	104.6			
Dry density, pcf	67.2			
Saturation, %	99.1			
Void ratio	1.5254			
Specimen diameter, in.	1.39			
Specimen height, in.	3.05			
Height/diameter ratio	2.20			

Description: M GR CH3 W/ ARS ML

LL = 74	**PL** = 29	**PI** = 45	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6-1-07

Remarks:
Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

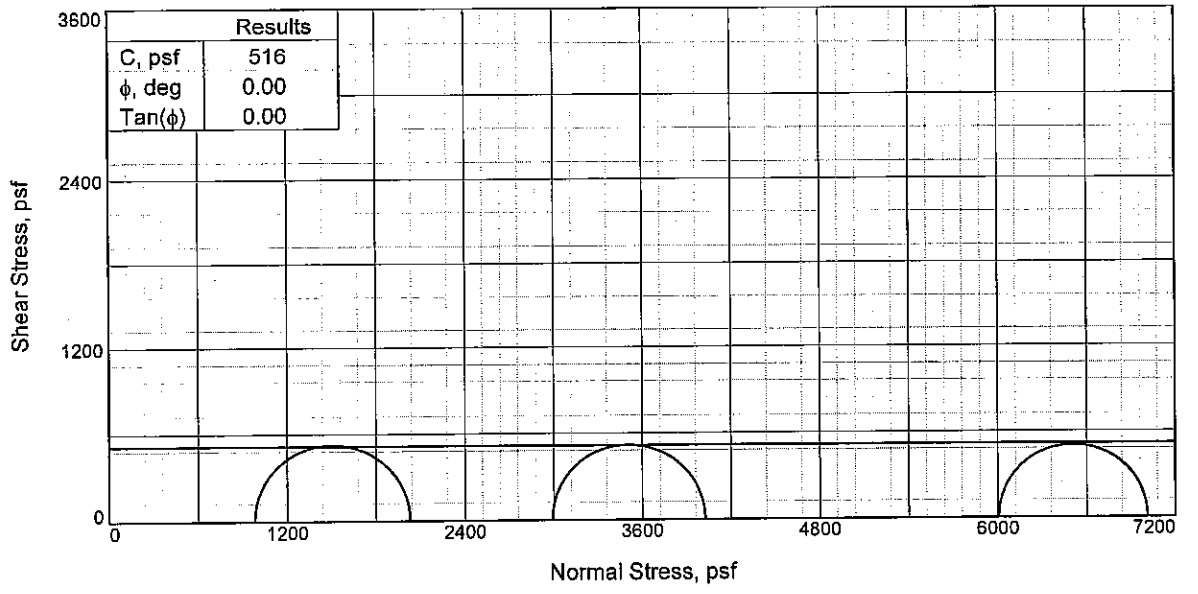
Client: U.S. ARMY CORPS OF ENGINEERS

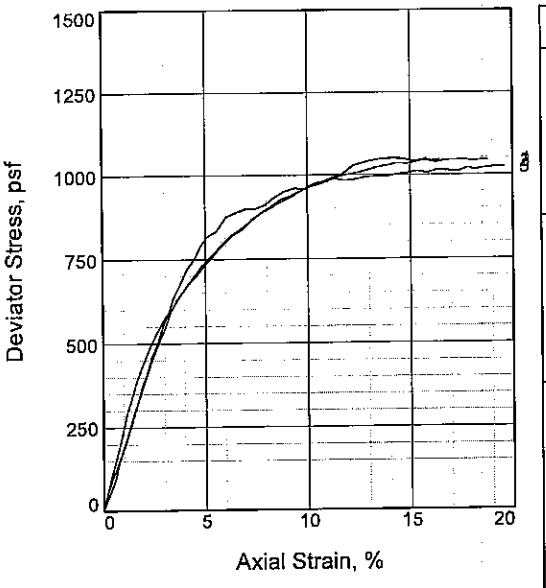
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-47UPT **Depth:** 33.70'
Sample Number: 10C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** RT





Sample No.		1	2	3
Initial	Water Content, %	54.3	58.9	53.0
	Dry Density, pcf	67.8	64.4	69.2
	Saturation, %	98.2	97.9	99.2
	Void Ratio	1.5044	1.6366	1.4537
	Diameter, in.	1.31	1.39	1.40
	Height, in.	3.15	3.20	3.00
At Test	Water Content, %	53.2	50.0	51.7
	Dry Density, pcf	67.8	64.4	69.2
	Saturation, %	96.2	83.1	96.8
	Void Ratio	1.5044	1.6366	1.4537
	Diameter, in.	1.31	1.39	1.40
	Height, in.	3.15	3.20	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.81	20.77	41.71
Fail. Stress, psf		1049	1034	1006
Strain, %		14.6	14.8	14.9
Ult. Stress, psf		1049	1034	1006
Strain, %				
σ_1 Failure, psf		2030	4025	7012
σ_3 Failure, psf		981	2991	6006

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH3 W/ ARS & LNS ML

LL= 66 **PL=** 34 **PI=** 32

Assumed Specific Gravity= 2.72

Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-47UPT **Depth:** 36.80'

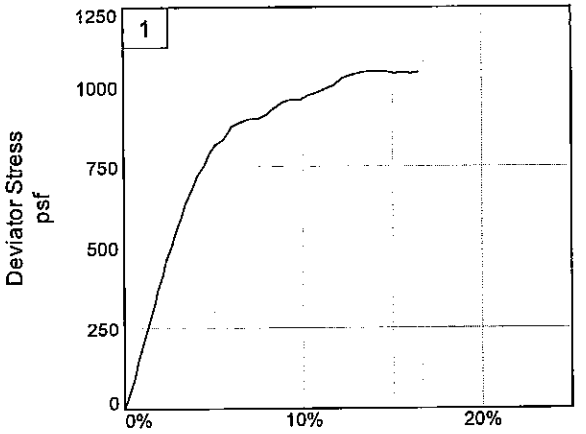
Sample Number: 11B

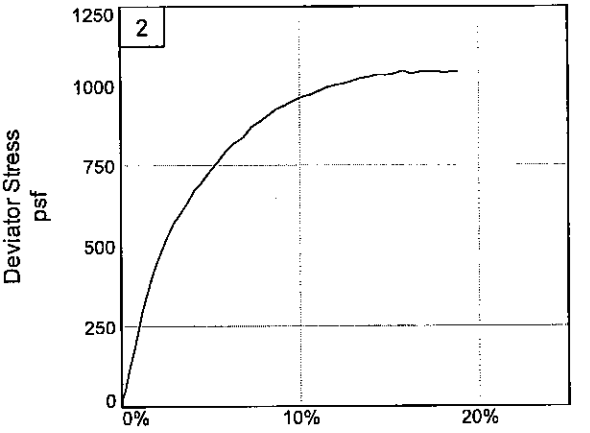
Proj. No.: 0022-0002 **Date Sampled:** 6/1/07

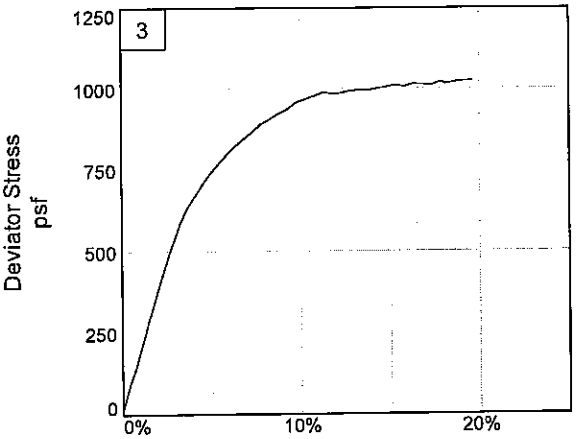
TRIAXIAL SHEAR TEST REPORT

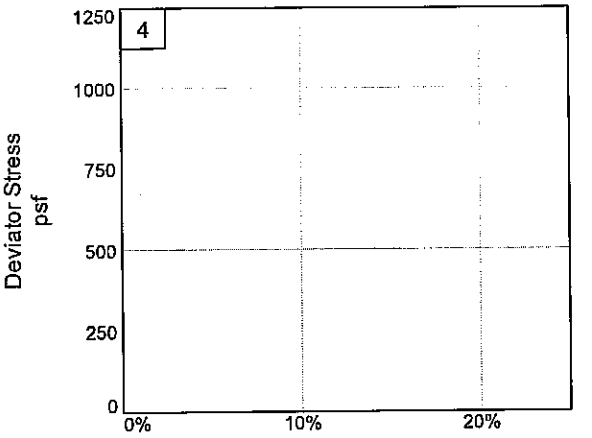
FFEBJV, LLC.

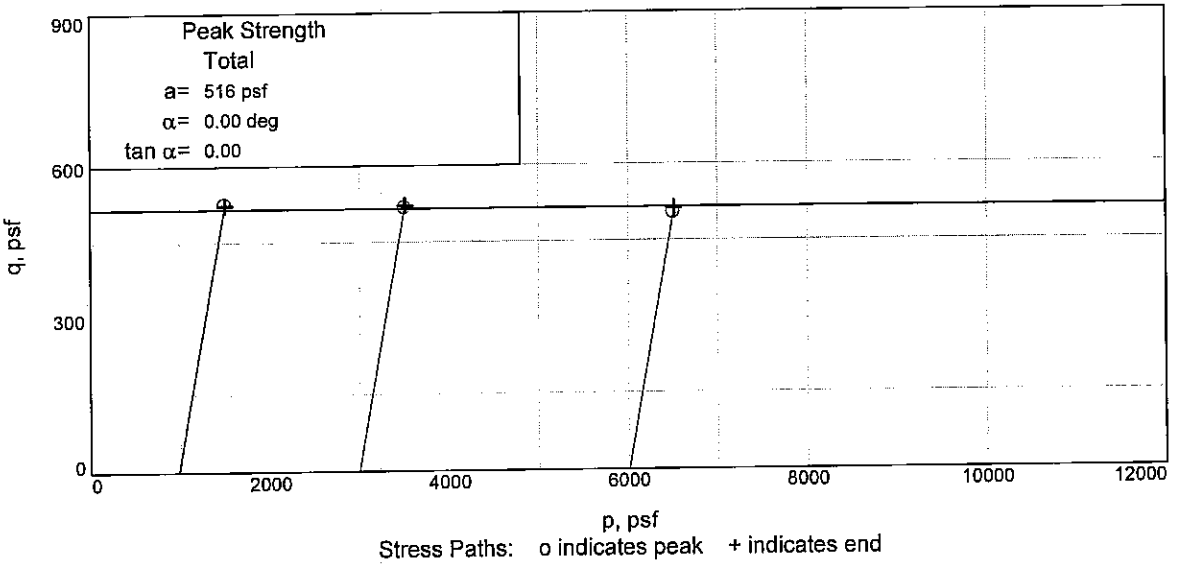
Tested By: CC **Checked By:** RT











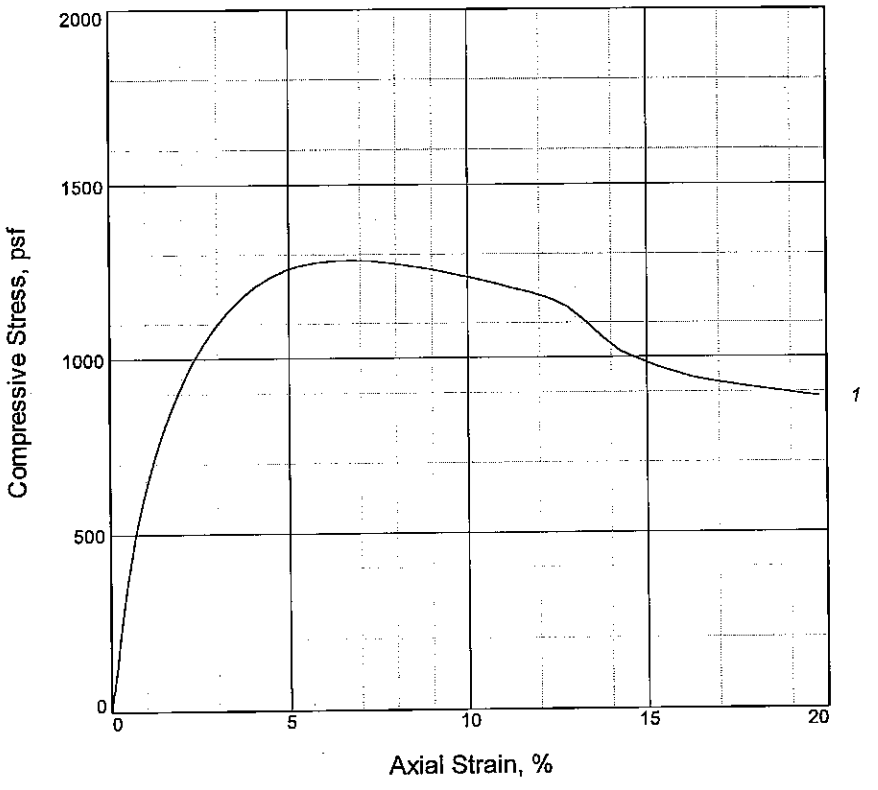
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-47UPT **Depth:** 36.80' **Sample Number:** 11B
Project No.: 0022-0002 Figure _____

FFEBJV, LLC.

Tested By: CC **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1282			
Undrained shear strength, psf	641			
Failure strain, %	6.8			
Strain rate, %/min.	1.00			
Water content, %	55.4			
Wet density, pcf	105.2			
Dry density, pcf	67.7			
Saturation, %	99.9			
Void ratio	1.5077			
Specimen diameter, in.	1.40			
Specimen height, in.	3.00			
Height/diameter ratio	2.14			

Description: M GR CH4 W/ ARS ML

LL = 75	**PL** = 30	**PI** = 45	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/1/07

Remarks:
Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

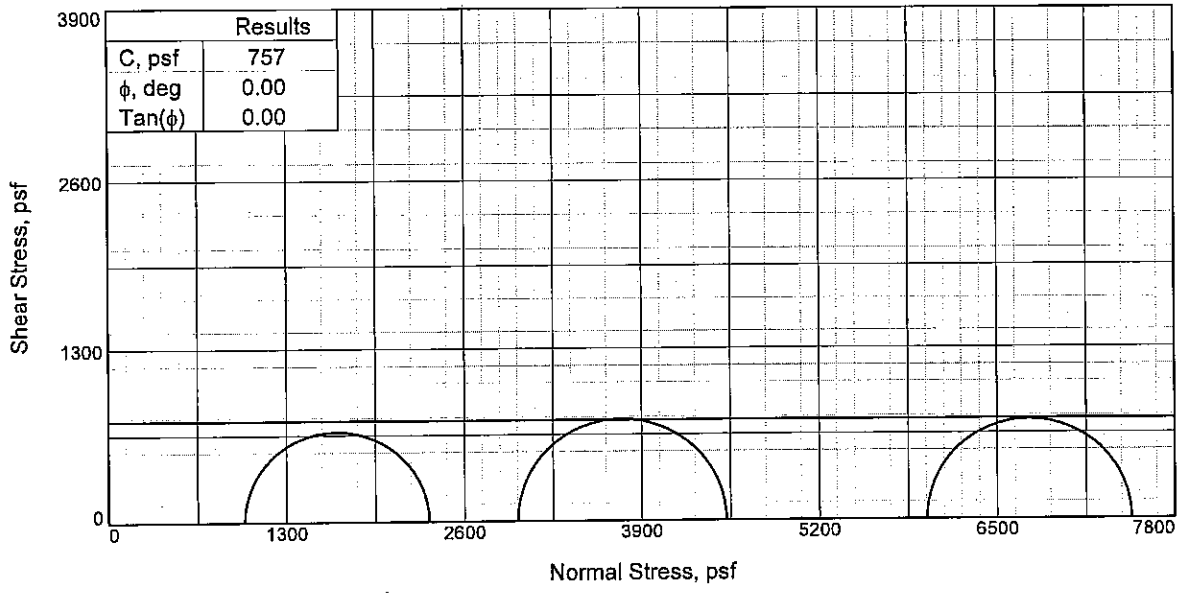
Client: U.S. ARMY CORPS OF ENGINEERS

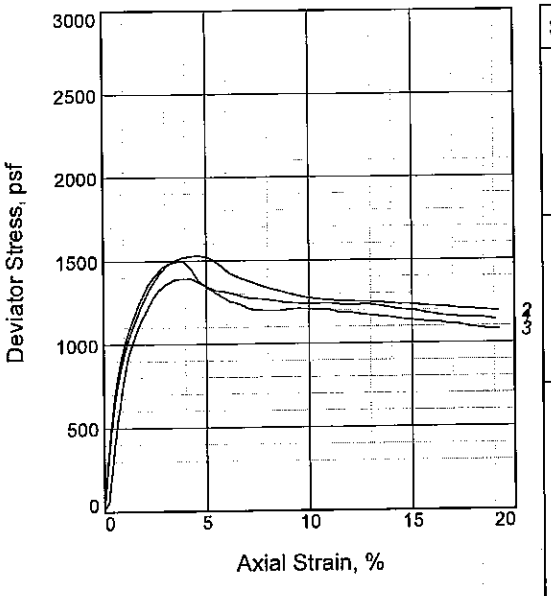
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-47UPT **Depth:** 40.80'
Sample Number: 12B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** RT





Sample No.		1	2	3
Initial	Water Content, %	65.7	65.5	65.5
	Dry Density, pcf	60.2	60.2	60.1
	Saturation, %	97.8	97.5	97.2
	Void Ratio	1.8407	1.8415	1.8471
	Diameter, in.	1.40	1.41	1.41
	Height, in.	3.10	3.10	3.10
At Test	Water Content, %	64.9	65.1	65.7
	Dry Density, pcf	60.2	60.2	60.1
	Saturation, %	96.6	96.9	97.5
	Void Ratio	1.8407	1.8415	1.8471
	Diameter, in.	1.40	1.41	1.41
	Height, in.	3.10	3.10	3.10
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	20.78	41.57
Fail. Stress, psf		1348	1528	1497
Strain, %		5.0	4.7	3.8
Ult. Stress, psf		1229	1235	1138
Strain, %				
σ_1 Failure, psf		2343	4520	7483
σ_3 Failure, psf		995	2992	5986

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH4

LL= 103 **PL=** 31 **PI=** 72

Assumed Specific Gravity= 2.74

Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-47UPT **Depth:** 45.70'

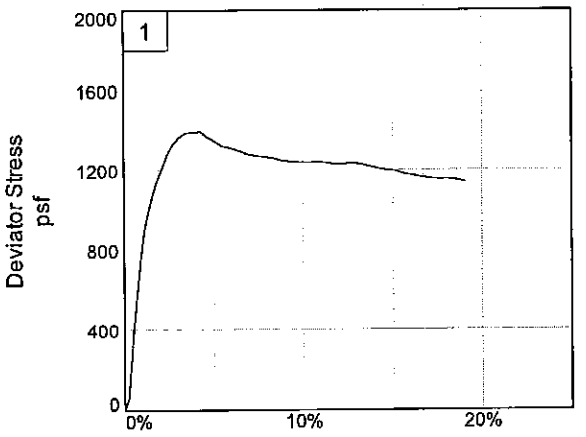
Sample Number: 13C

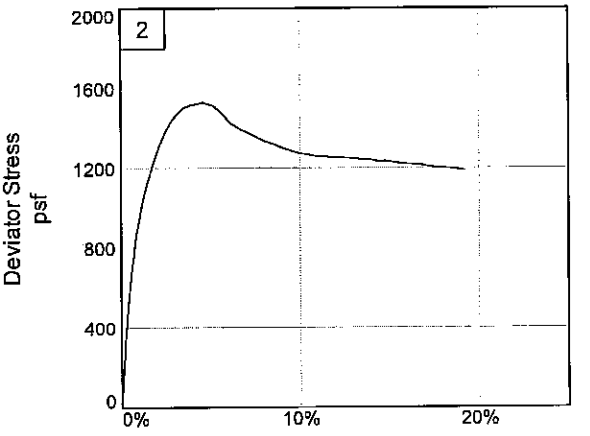
Proj. No.: 0022-0002 **Date Sampled:** 6/1/07

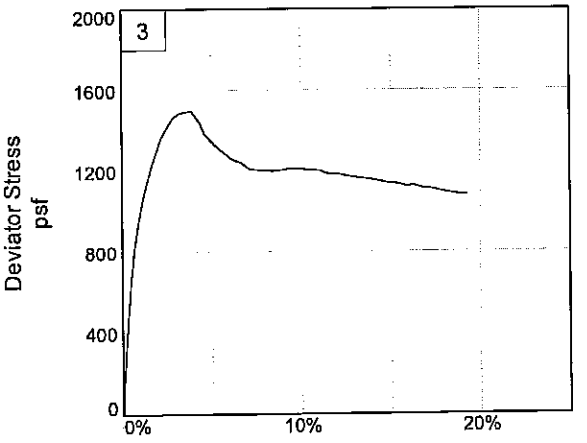
TRIAXIAL SHEAR TEST REPORT

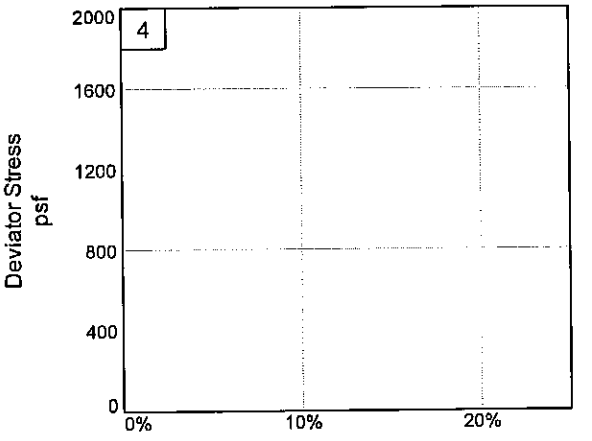
FFEBJV, LLC.

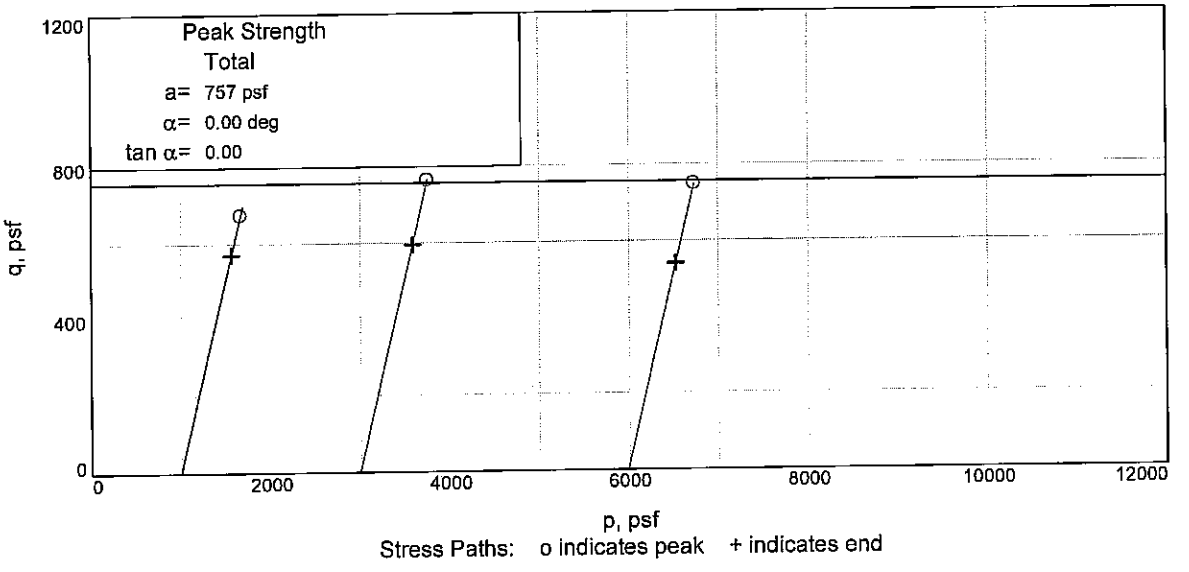
Tested By: CC **Checked By:** RT











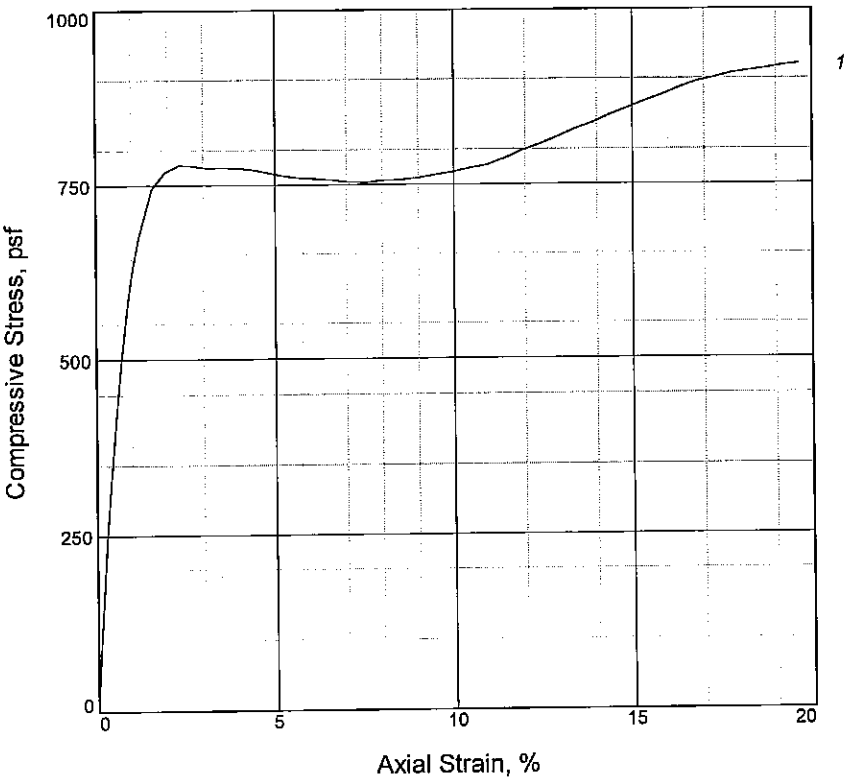
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-47UPT **Depth:** 45.70' **Sample Number:** 13C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	779			
Undrained shear strength, psf	389			
Failure strain, %	2.3			
Strain rate, %/min.	1.00			
Water content, %	60.3			
Wet density, pcf	101.0			
Dry density, pcf	63.0			
Saturation, %	96.8			
Void ratio	1.6942			
Specimen diameter, in.	1.32			
Specimen height, in.	3.10			
Height/diameter ratio	2.35			

Description: SO GR CH3 W/ ARS ML

LL = 69	**PL** = 25	**PI** = 44	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/1/07

Remarks:
Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

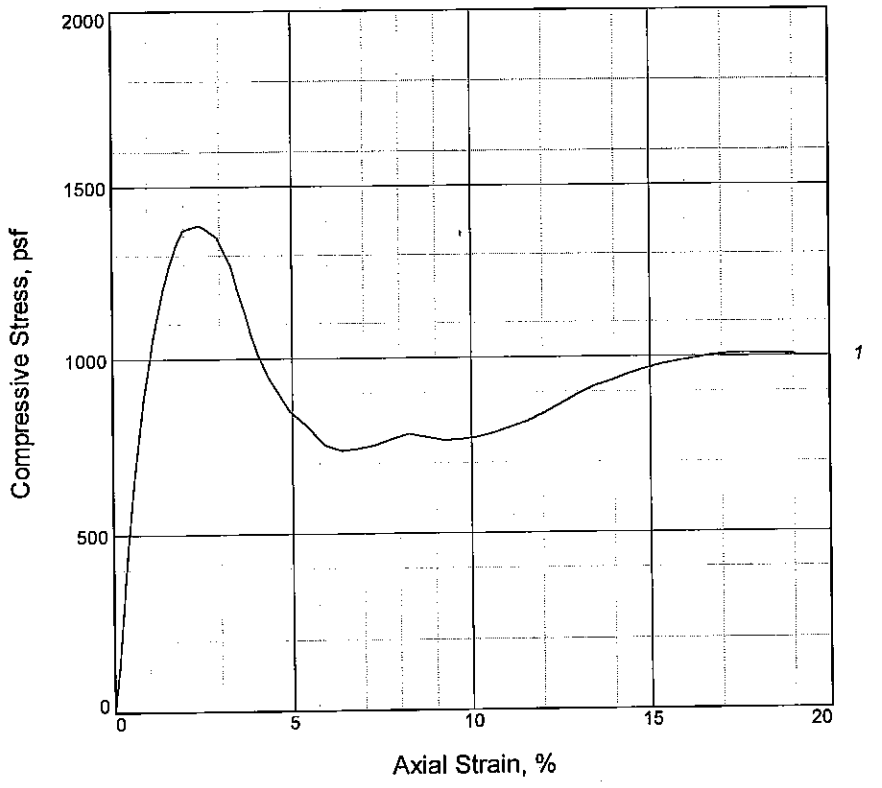
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-47UPT **Depth:** 49.70'
Sample Number: 14C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1388			
Undrained shear strength, psf	694			
Failure strain, %	2.4			
Strain rate, %/min.	1.00			
Water content, %	61.6			
Wet density, pcf	101.1			
Dry density, pcf	62.6			
Saturation, %	97.3			
Void ratio	1.7346			
Specimen diameter, in.	1.31			
Specimen height, in.	3.20			
Height/diameter ratio	2.44			

Description: M GR CH4

LL = 92	PL = 36	PI = 56	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/1/07

Remarks:
Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

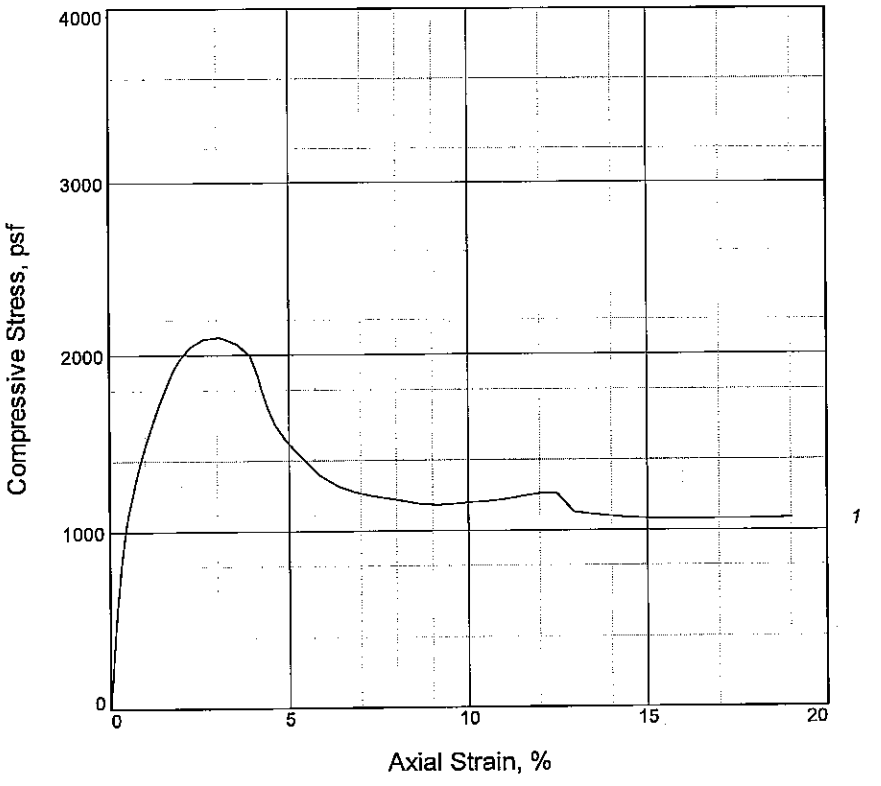
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-47UPT **Depth:** 52.80'
Sample Number: 15B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2100			
Undrained shear strength, psf	1050			
Failure strain, %	3.0			
Strain rate, %/min.	1.00			
Water content, %	60.9			
Wet density, pcf	101.1			
Dry density, pcf	62.9			
Saturation, %	96.9			
Void ratio	1.7216			
Specimen diameter, in.	1.31			
Specimen height, in.	3.20			
Height/diameter ratio	2.44			

Description: ST GR CH4

LL = 92	PL = 27	PI = 65	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/1/07

Remarks:
Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

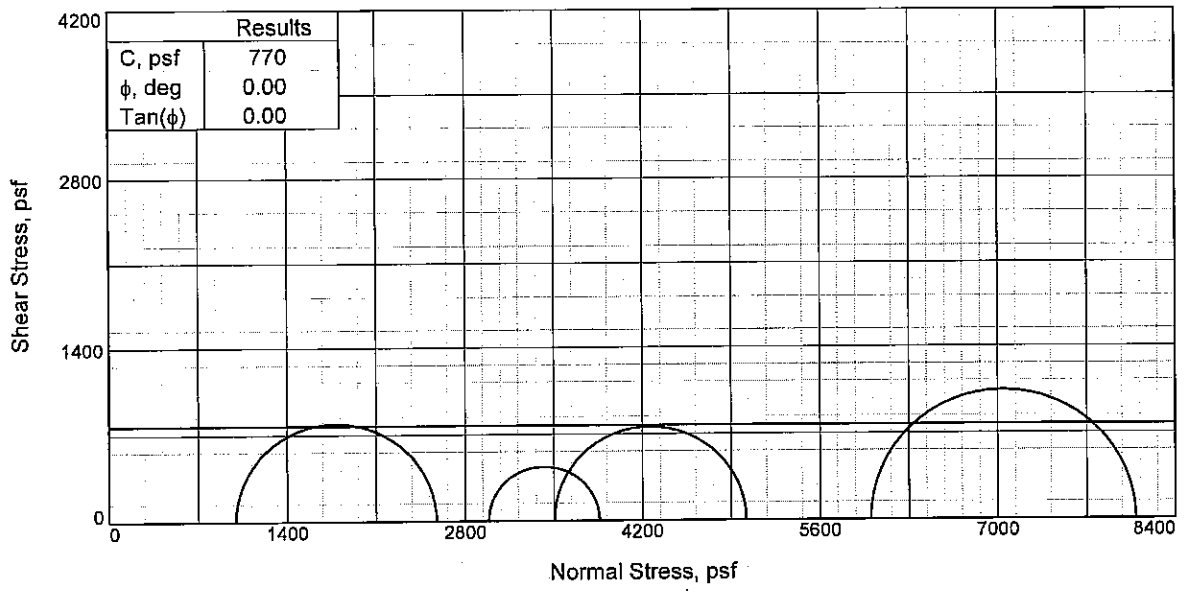
Client: U.S. ARMY CORPS OF ENGINEERS

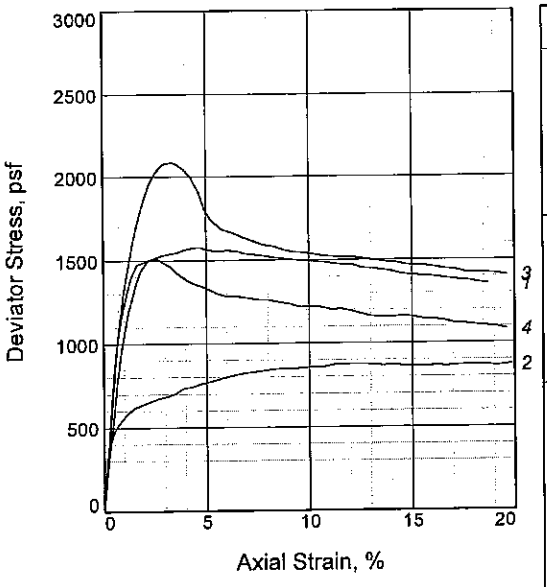
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-47UPT **Depth:** 57.70'
Sample Number: 16C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** RT





Sample No.		1	2	3	4
Initial	Water Content, %	73.5	66.2	65.7	62.5
	Dry Density, pcf	55.0	60.2	60.7	62.9
	Saturation, %	95.5	98.6	99.1	99.6
	Void Ratio	2.1098	1.8412	1.8166	1.7199
	Diameter, in.	1.40	1.40	1.40	1.40
	Height, in.	3.20	3.05	3.05	3.01
At Test	Water Content, %	72.9	66.1	65.3	60.7
	Dry Density, pcf	55.0	60.2	60.7	62.9
	Saturation, %	94.7	98.3	98.4	96.7
	Void Ratio	2.1098	1.8412	1.8166	1.7199
	Diameter, in.	1.40	1.40	1.40	1.40
	Height, in.	3.20	3.05	3.05	3.01
Strain rate, %/min.		1.00	1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.93	20.74	41.66	24.34
Fail. Stress, psf		1577	873	2087	1512
Strain, %		4.7	12.2	3.3	2.6
Ult. Stress, psf		1410	860	1406	1164
Strain, %					
σ_1 Failure, psf		2575	3860	8086	5017
σ_3 Failure, psf		997	2987	5999	3505

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4

LL= 95 **PL=** 33 **PI=** 62
Assumed Specific Gravity= 2.74
Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

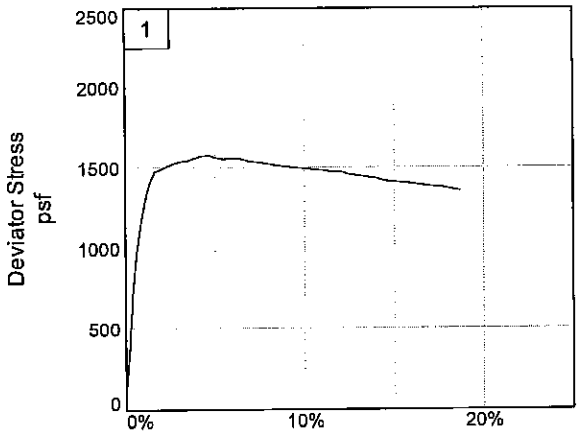
Client: U.S. ARMY CORPS OF ENGINEERS

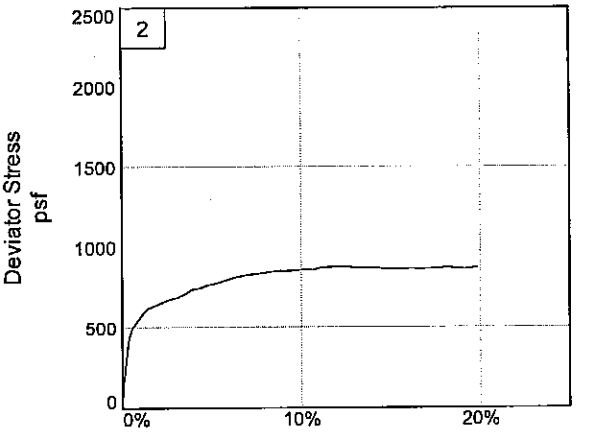
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-47UPT **Depth:** 61.70'
Sample Number: 17C
Proj. No.: 0022-0002 **Date Sampled:** 6/1/07

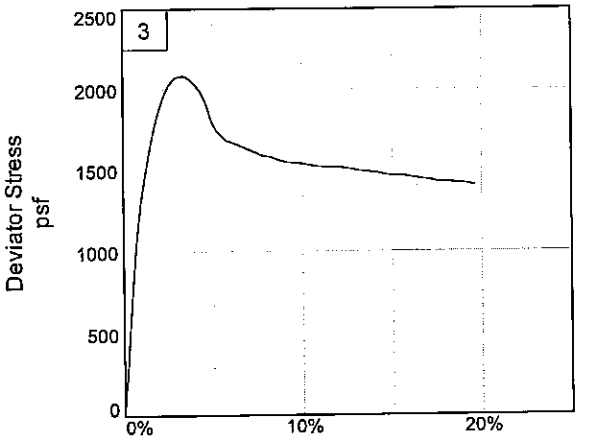
TRIAXIAL SHEAR TEST REPORT

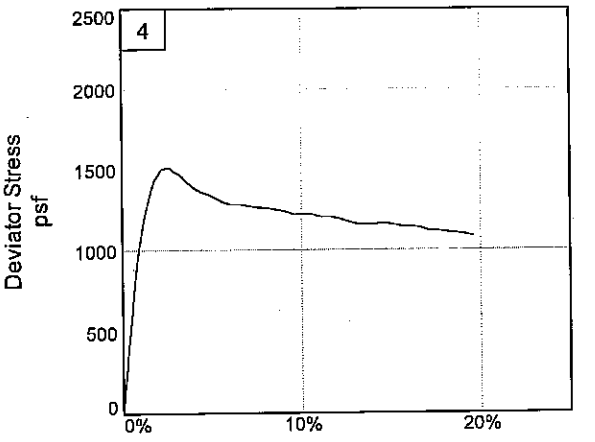
FFEBJV, LLC.

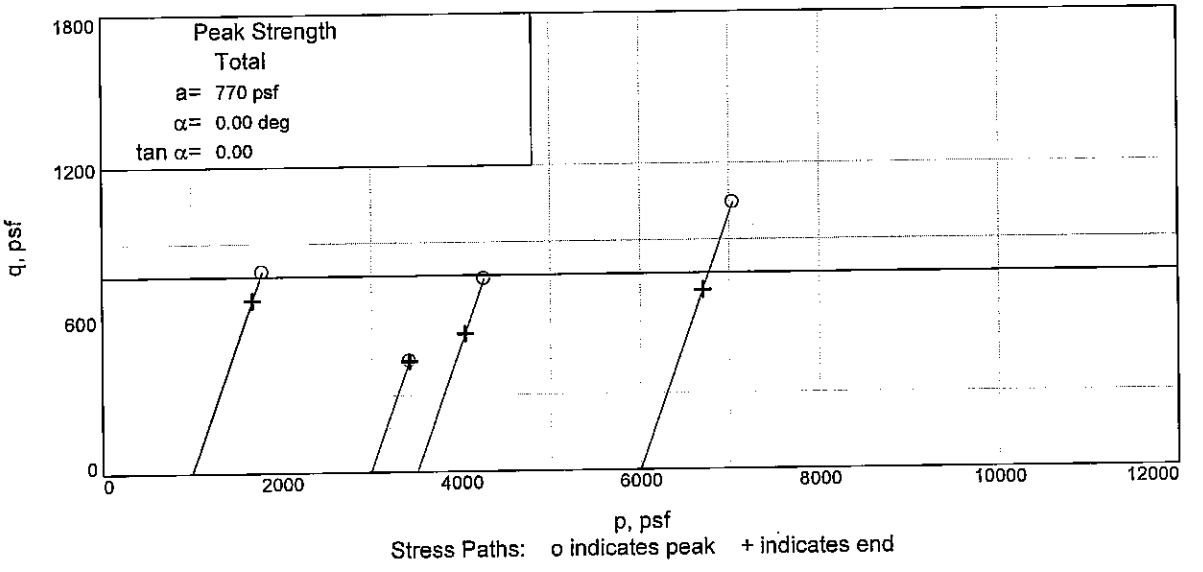
Tested By: CC _____ **Checked By:** RT _____











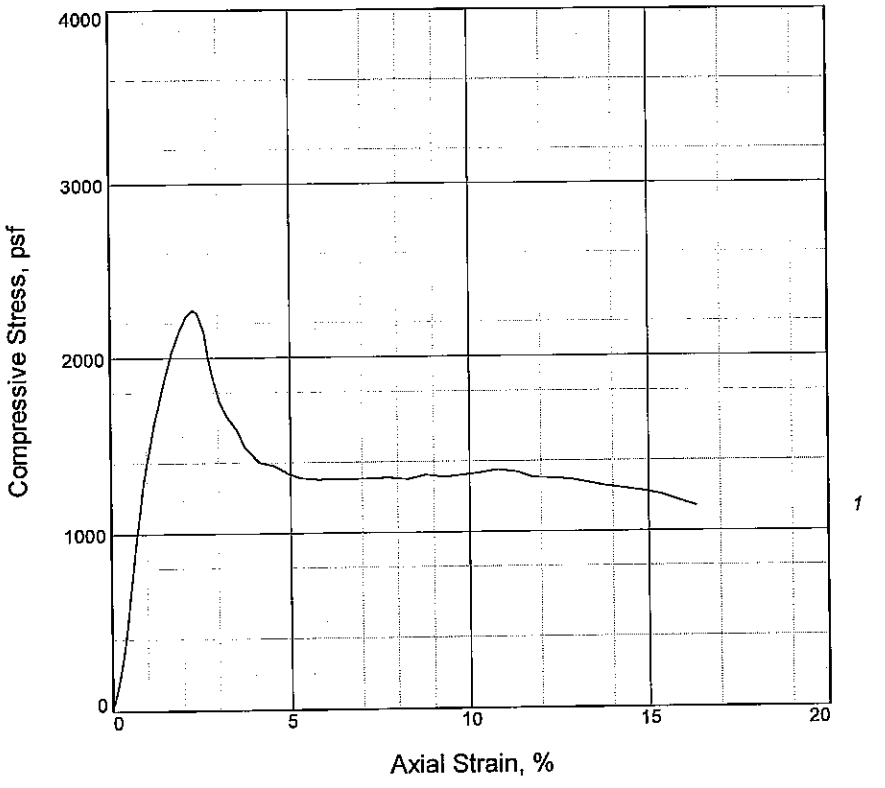
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-47UPT **Depth:** 61.70' **Sample Number:** 17C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2270			
Undrained shear strength, psf	1135			
Failure strain, %	2.3			
Strain rate, %/min.	1.00			
Water content, %	63.3			
Wet density, pcf	101.2			
Dry density, pcf	61.9			
Saturation, %	98.5			
Void ratio	1.7618			
Specimen diameter, in.	1.35			
Specimen height, in.	3.00			
Height/diameter ratio	2.23			

Description: ST GR CH4 W/ SIF

LL = 101	PL = 30	PI = 71	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/1/07

Remarks:
Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-47UPT **Depth:** 69.70'
Sample Number: 20C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** RT

Bor. WWHC-47UPT
STA. N 29^ 49' 45.37" W 090^ 06' 51.19"
Offset 60' from C/L
15-16 April 2007

GROUND EL. 4.1

0.0	0.8	24		CL	SISST	GR	T	RT				
0.8	2.0	22	2.0	CL	SISVSTGR			RT				
2.0	4.0	37	4.0	CH		M	GR	BR	WD			
4.0	4.8	36	4.8	CH	SIS	M	GR		TR-	O		
4.8	5.7	32	5.7	CH		M	GR		CC			
5.7	8.0	31		CL		ST	GR	T		1033	110	48 21 28 60
8.0	8.8	35		CL		M	GR		CC			
8.8	9.7	40		CL		SO	GR		CC			
9.7	10.6	34		CL		M	T	GR				
10.6	12.0	33		CL		M	GR	T	CC			
12.0	12.8	31		CL		M	GR	T	CC			
12.8	13.7	33		CL		M	GR	T	CC			
13.7	16.0	35	16.0	CL		M	GR					
16.0	16.8	50	16.8	CH	SISSO	GR		RT				
16.8	17.7	49		CH		SO	GR		RT	2861	00	75 34 48 171
17.7	20.0	41	20.0	CH		M	GR		RT			
20.0	20.8	52		CH	SIS	M	GR		RT			
20.8	21.7	49		CH	SIS	M	GR		RT			
21.7	23.2	48	23.2	CH	SIS	M	GR		RT			
23.2	24.0	38		ML		GR		CS	RT			
24.0	24.8	41	24.8	ML		GR		CS				
24.8	25.7	55		CH	SIS	M	GR		O			
25.7	26.6	54		CH	SIS	M	GR		O			
26.6	28.0	80		CH	SISSO	GR			O			
28.0	28.8	75		CH	SISSO	GR			O	SIF		
28.8	29.7	52		CH	SIS	M	GR		TR-	O		
29.7	30.6	37		CH	SIS	M	GR					
30.6	32.0	36		CH	SIS	M	GR					
32.0	32.8	50		CH	SIS	M	GR					
32.8	33.7	50		CH	SIS	M	GR					
33.7	34.6	47		CH	SIS	M	GR			6181	05	74 29 56 340
34.6	36.0	52		CH	SIS	M	GR					
36.0	36.8	49		CH	SIS	M	GR					
36.8	37.7	52		CH	SIS	M	GR					
37.7	40.0	54		CH	SIS	M	GR					
40.0	40.8	62		CH	SIS	M	GR					

```
 40.8 41.7 58     CH  SIS M GR                    641105 75 30      55 410
 41.7 42.6 59 42.6CH  SIS M GR
 42.6 44.0 62     CH      M GR
 44.0 44.8 63 44.8CH      M GR
 44.8 45.7 59 45.7CH  SIS M GR
 45.7 46.6 61 46.6CH      M GR
 46.6 48.0 57     CH  SIS M GR
 48.0 48.8 56     CH  SISSO GR
 48.8 49.7 58     CH  SISSO GR
 49.7 50.6 57     CH  SISSO GR                     389101 69 25      60 500
 50.6 52.0 55 52.0CH  SISSO GR
 52.0 52.8 63     CH      M GR
 52.8 53.7 61 53.7CH      M GR                     694101 92 36      62 531
 53.7 54.6 46     CH  SIS M GR
 54.6 56.0 60     CH  SIS M GR
 56.0 56.8 60     CH  SIS M GR
 56.8 57.7 56 57.7CH  SIS M GR
 57.7 58.6 58     CH     ST GR                   1050101 92 27      61 580
 58.6 60.0 56     CH      M GR
 60.0 60.8 57     CH      M GR
 60.8 61.7 56     CH      M GR
 61.7 62.6 60     CH      M GR
 62.6 64.0 59 64.0CH      M GR
 64.0 66.0 55 66.0CH  SS  M GR       SIF
 66.0 68.0    68.0SI       GR       CS             3
 68.0 68.8 55     CH      M GR        S SIF
 68.8 69.7 50     CH      M GR        S SIF
 69.7 70.6 56     CH     ST GR       SIF            1135101101 30      63 700
 70.6 72.0 54 72.0CH      M GR        S
999.9
*******************************************************************************
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q)                Classif  : CL
Depth/Ele:  10.0/-5.90          Water Con: 34.00
LL,PL,PI :  40, 24, 16          Dry Dens : 88.00
Cohesion :  0.350               Saturat  : 99.00
Shear Str:                   Frict Ang: 00.00
Toggles  :(     )(     )(     )(     )

*******************************************************************************
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q)                Classif  : CL
Depth/Ele: 14.00/-9.90          Water Con: 35.00
```

LL,PL,PI : 45, 25, 20 Dry Dens : 85.00
Cohesion : 0.417 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 22.00/-17.90 Water Con: 55.00
LL,PL,PI : 82, 30, 52 Dry Dens : 67.00
Cohesion : 0.312 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 26.00/-21.90 Water Con: 66.00
LL,PL,PI : 97, 42, 55 Dry Dens : 64.00
Cohesion : 0.288 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 37.10/-33.00 Water Con: 55.00
LL,PL,PI : 66, 34, 32 Dry Dens : 67.00
Cohesion : 0.258 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 46.00/-41.90 Water Con: 66.00
LL,PL,PI : 103, 31, 72 Dry Dens : 60.00
Cohesion : 0.379 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES

Test Type:(Q) Classif : CH
Depth/Ele: 62.00/-57.90 Water Con: 67.00
LL,PL,PI : 95, 33, 62 Dry Dens : 60.00
Cohesion : 0.385 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-48UCL

Current Date: 7/12/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	ST GR & T CH2 W/ LYS ML, RT	CH2		22												
1B	0.8	ST GR & T CH2 W/ LYS ML, RT	CH2		63												
2A	2.0	M GR & T CH2 W/ LNS ML, RT	CH2		30												
2B	2.8	M GR & T CH2 W/ LNS ML, RT	CH2		28												
3A	4.0	M GR & T CH2 W/ CC	CH2		32												
3B	4.8	M GR CH2 W/ LNS ML, WD	CH2		36												
3C	5.7	SO GR CH2 W/ LNS ML, RT	CH2		34	89	119	100	UU	0	457		51	16	35	0.31	
3D	6.6	M GR CL6	CL6		36												
4A	8.0	M GR CL6	CL6		43												
4B	8.8	SO GR CL6 W/ CC	CL6		32												
4C	9.7	SO GR CL6 W/ CC	CL6		34	88	118	100	UU	0	494		49	17	32	0.36	
5A	12.0	M GR CL6 W/ LNS ML	CL6		38												
5B	12.8	ST GR CL6 W/ LNS ML, WD, TR-O	CL6		29	96	124	100	UU	0	1341		44	18	26	0.55	
5C	13.7	M GR CH2 W/ TR- O, WD	CH2		35												
6A	16.0	M GR & T CH2 W/ CC	CH2		35												
6B	16.8	M GR & T CH2 W/ LYS ML	CH2		33												
6C	17.7	M GR & BR CH2 W/ LNS ML, WD	CH2		34	88	118	99	UU	0	784		54	19	35	0.57	
6D	18.6	M GR & BR CH2 W/ LNS ML, WD	CH2		34												
7A	20.0	M GR CH2 W/ ARS ML	CH2		40												
7B	20.8	M GR CH2 W/ LNS ML	CH2		35												
7C	21.7	M GR CH2 W/ RT	CH2		32	90	118	98	UU	0	978		50	24	26	0.47	
8A	24.0	M GR CH2	CH2		33												
8B	24.8	SO GR CL4-S W/ RT, ARS CH	CL4-S		34												
8C	25.7	SO GR CL4-S W/ RT, ARS CH	CL4-S	13	31	90	118	96	UC	--	461	922	27	23	4	0.1	
9A	28.0	SO GR CL4-S	CL4-S		31												
9B	28.8	SO GR CL4 W/ ARS CH	CL4		37												
9C	29.7	SO GR CL4 W/ ARS CH	CL4		35	87	118	100	UU	0	463		32	20	12	0.2	
10A	32.0	M GR CH3 W/ WD, ARS ML	CH3		49												
10B	32.8	M GR CHOA W/ ARS ML	CHOA		87	49	92	98	UU	0	628		127	32	95	0.4	
10C	33.7	SO GR CH4 W/ WD, ARS ML	CH4		73								*	*			GS, CON
11A	36.0	SO GR CH4 W/ WD, O, SIF	CH4		69												
11B	36.8	M GR CH4 W/ WD, O, SIF	CH4		63												
11C	37.7	M GR CH4 W/ WD, O, ARS ML	CH4		60	63	101	97	UU	0	601		78	25	53	0.34	
11D	38.6	M GR CH2 W/ RT	CH2		31												
12A	40.0	M GR CH2	CH2		33												
12B	40.4	M GR CH2 W/ CC	CH2	10	48	73	108	98	UC	--	583	1167	56	26	30	0.36	
12C1	41.3	M GR CH2	CH2		31												

Remarks: _____
FFEBJV, LLC.

Checked by: RNE
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-48UCL

Current Date: 7/12/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
12C2	41.7	M GR CH2	CH2		21												
12D	42.2	M GR CH3 W/ LNS ML	CH3		50												
13A	44.0	M GR CH3 W/ LNS SM	CH3		66												
13B	44.8	M GR CH3 W/ LNS ML & ARS SM	CH3		44												
13C	45.7	M GR CH3 W/ LNS SM	CH3		50	71	106	97	UU	0	518		60	21	39	0.32	
13D	46.6	M GR CH3 W/ LNS ML	CH3		56												
14A	48.0	SO GR CH4 W/ ARS ML	CH4		63												
14B	48.8	SO GR CH4 W/ LNS ML	CH4		61												
14C	49.7	SO GR CH4 W/ ARS ML	CH4	5	56	66	104	98	UC	--	464	927	82	34	48	0.36	
15A	52.0	M GR CH4 W/ LNS ML	CH4		62												
15B	52.8	M GR CH4 W/ ARS ML	CH4		58												
15C	53.7	M GR CH4 W/ ARS ML	CH4	5	63	62	100	97	UC	--	772	1544	89	26	63	0.38	
15D	54.6	M GR CH4 W/ ARS ML	CH4		62												
16A	56.0	SO GR CH3	CH3		59												
16B	56.8	SO GR CH3 W/ LNS ML	CH3		50												
16C	57.7	SO GR CH3 W/ LNS ML	CH3		55	67	104	98	UU	0	463		65	23	42	0.35	
17A	60.0	SO GR CH3 W/ ARS ML	CH3		55												
17B	60.8	M GR CH4 W/ ARS ML	CH4		55												
17C	61.7	M GR CH4 W/ ARS ML	CH4		55												
17D	62.6	M GR CH4	CH4		58												
18A	64.0	M GR CH4	CH4		58												
18B	64.8	M GR CH4	CH4		54												
18C	65.7	M GR CH4 W/ ARS ML	CH4	6	58	65	103	99	UC	--	779	1558	84	33	51	0.40	
18D	66.6	M GR CH4 W/ ARS ML	CH4		59												
19A	68.0	M GR CH4 W/ LNS SM	CH4		59												
19B	68.8	ST GR CH4 W/ LNS ML	CH4		57												
19C	69.7	ST GR CH4 W/ LNS ML, SL	CH4		62	62	101	99	UU	0	1036		94	28	66	0.1	
19D	70.6	ST GR CH4 W/ LNS ML, SL	CH4		56												
20A	72.0	M GR CH4 W/ SIF, LNS SP	CH4		57												
20B	72.8	M GR CL4-S W/ SIF, ARS CH	CL4-S		28												
20C	73.7	GR SP W/ SIF, ARS CH	SP		29												
21A	76.0	ST GR CH3	CH3		34												
21B	76.8	ST GR CH3 W/ SIF, ARS SP	CH3		33												
21C	77.7	ST GR CH4 W/ SIF, ARS SP	CH4	4	48	73	108	98	UC	--	1324	2648	72	22	50	0.47	
21D	78.6	ST GR CH4 W/ ARS SP	CH4		48												
22A	80.0	M GR CH2 W/ SIF	CH2		35												
22B	80.8	M GR CH2-S	CH2-S		29												

Remarks: _____
FFEBJV, LLC.

Checked by: RNE
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

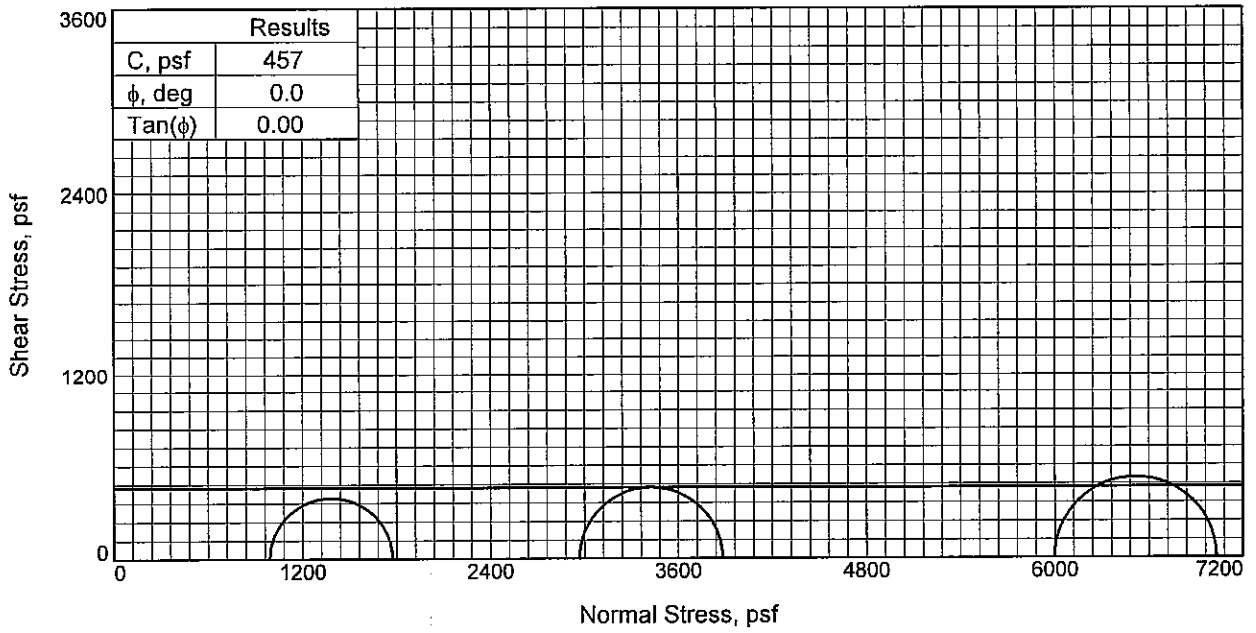
Project Number: 0022-0002
Boring: WWHC-48UCL

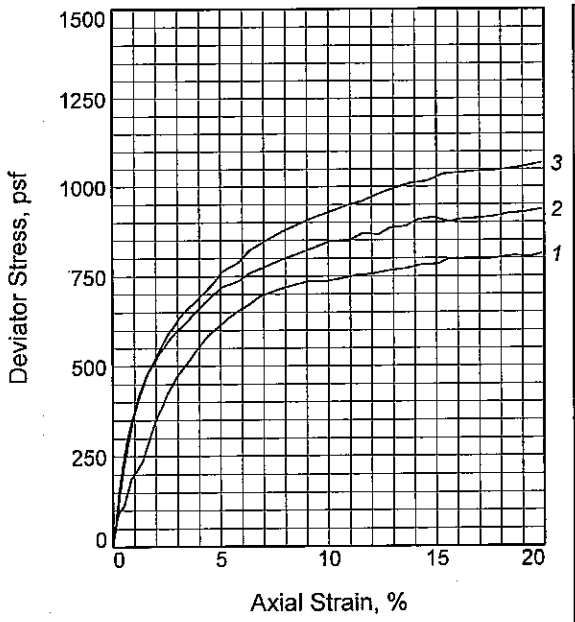
Current Date: 7/12/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
22C	81.7	M GR CL4 W/ LNS ML	CL4	3	34	84	112	91	UC	--	803	1606	39	18	21	0.42	
22D	82.6	M GR CL4 W/ ARS CH	CL4		31												
23A	84.0	M GR CH2	CH2		36												
23B	84.8	M GR CH2 W/ LNS ML	CH2		37												
23C	85.7	M GR CH2 W/ LNS ML	CH2		36												
23D	86.6	M GR CH2	CH2		37												
24A	88.0	ST GR CH2-S W/ SIF	CH2-S		44												
24B	88.8	ST GR CH2-S W/ SIF, LNS ML	CH2-S		44												
24C	89.7	ST GR CH2-S W/ SIF	CH2-S	3	37	81	111	93	UC	--	1335	2671	50	19	31	0.5	
24D	90.6	ST GR CH2-S W/ SIF	CH2-S		40												

Remarks: _____
FFEBJV, LLC.

Checked by: RNE
File Name: TO 2





Sample No.		1	2	3
Initial	Water Content, %	34.5	35.7	33.1
	Dry Density, pcf	88.7	87.8	90.2
	Saturation, %	103.4	104.6	102.8
	Void Ratio	0.9009	0.9200	0.8693
	Diameter, in.	1.410	1.405	1.401
	Height, in.	3.017	3.002	2.995
At Test	Water Content, %	34.5	35.7	33.1
	Dry Density, pcf	88.7	87.8	90.2
	Saturation, %	103.4	104.6	102.8
	Void Ratio	0.9009	0.9200	0.8693
	Diameter, in.	1.410	1.405	1.401
	Height, in.	3.017	3.002	2.995
Strain rate, in./min.		0.030	0.030	0.030
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	20.61	41.65
Fail. Stress, psf		783	913	1035
Strain, %		15.1	14.9	15.3
Ult. Stress, psf		783	913	1035
Strain, %				
σ_1 Failure, psf		1775	3882	7033
σ_3 Failure, psf		992	2968	5998

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH2 W/ LNS ML, RT

LL= 51 **PL=** 16 **PI=** 35
Assumed Specific Gravity= 2.70
Remarks:

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 5.7
Sample Number: 3C
Proj. No.: 0022-0002 **Date Sampled:** 7-11-07

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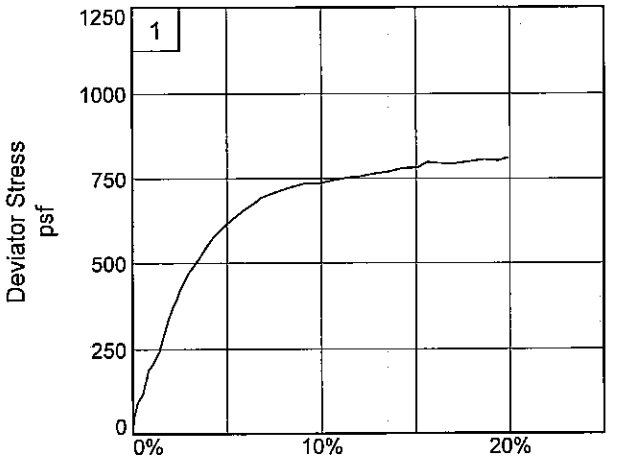
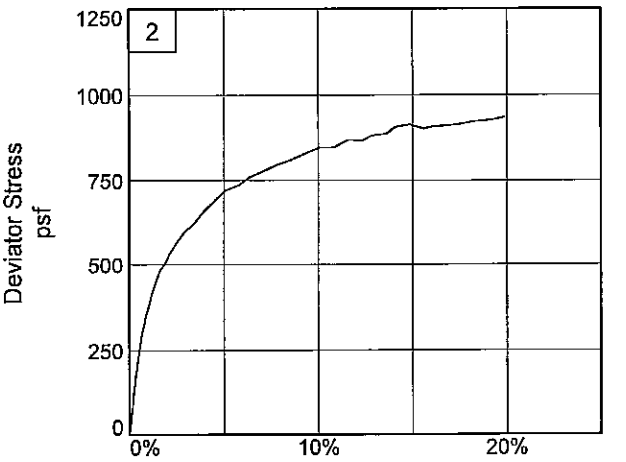
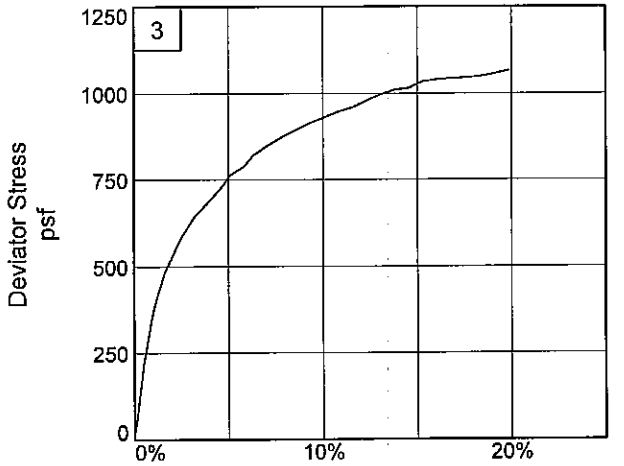
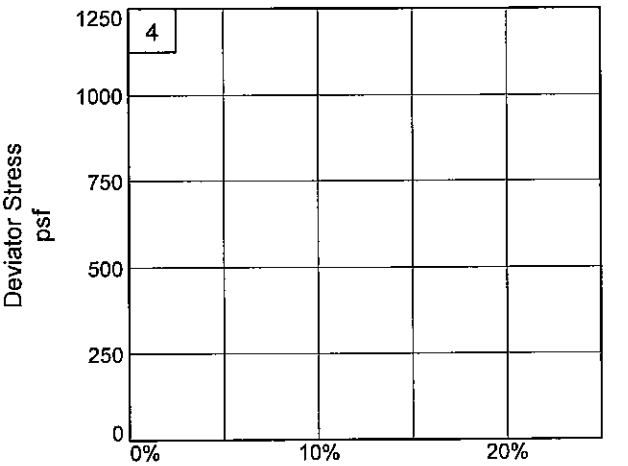
Figure _____

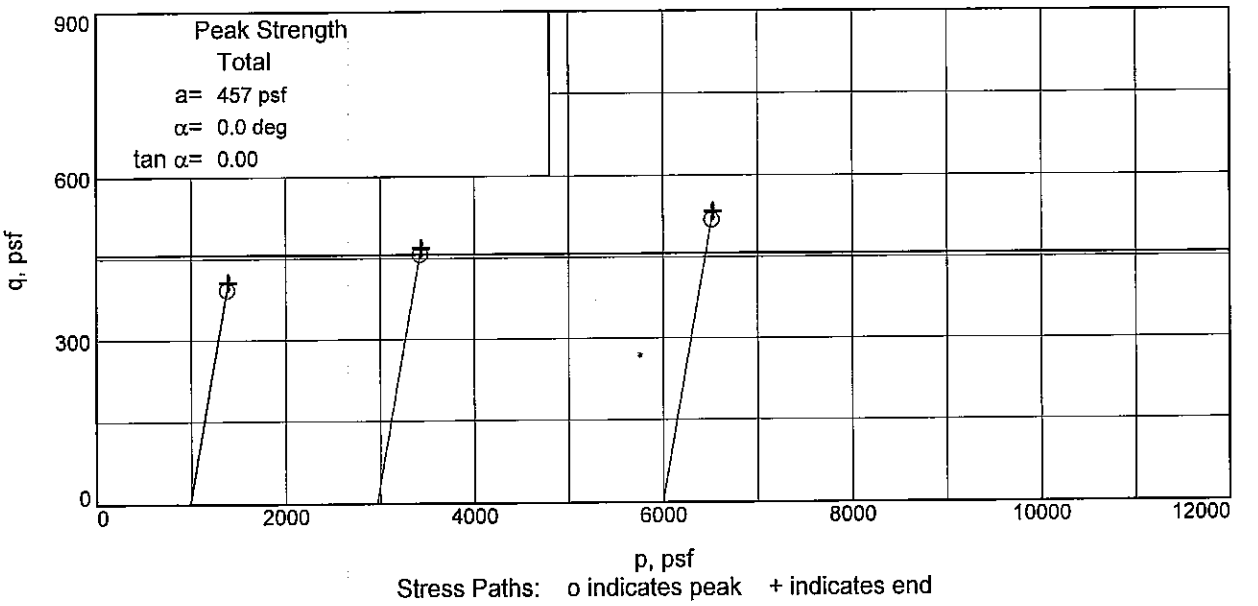
Tested By: DD









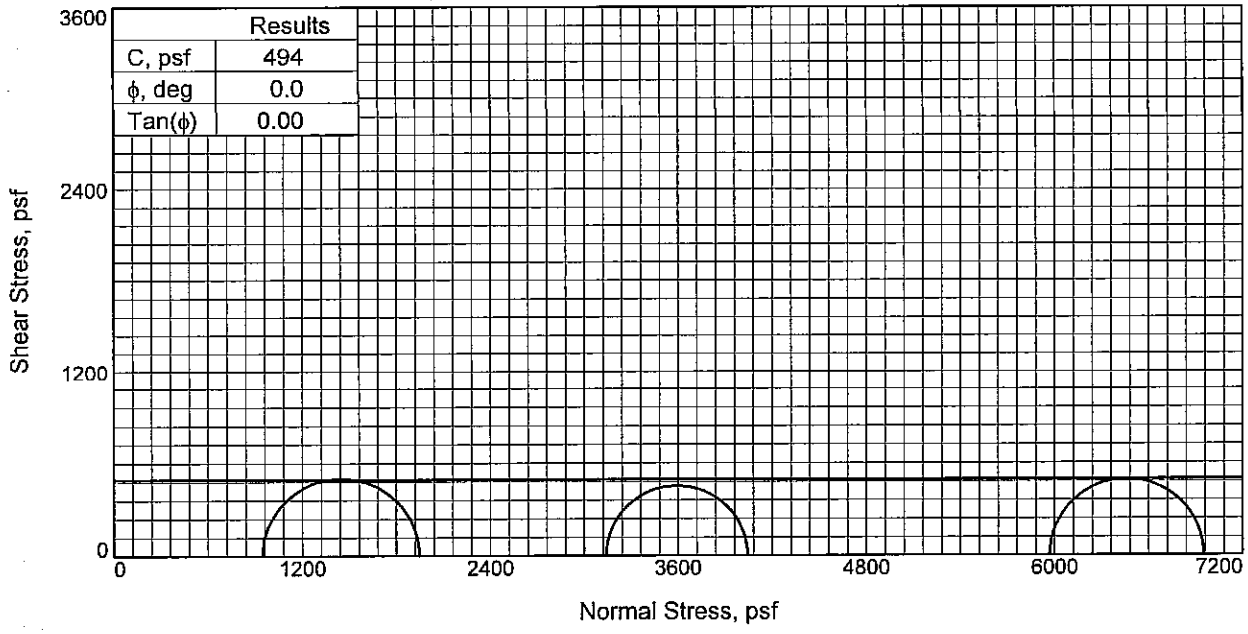


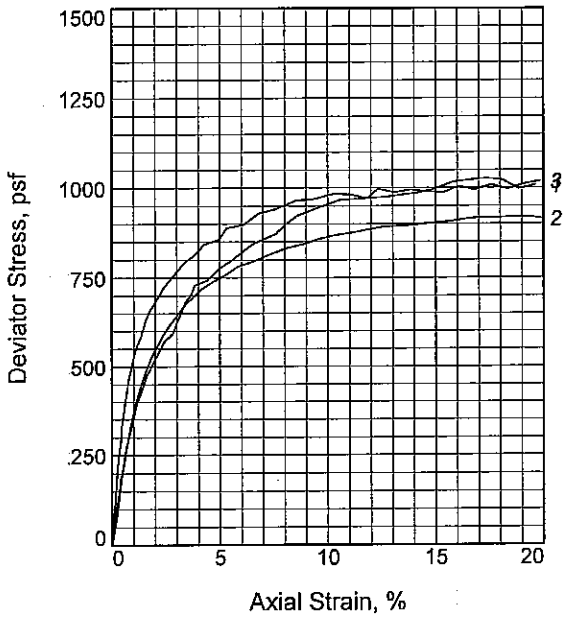
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UCL **Depth:** 5.7 **Sample Number:** 3C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD





Sample No.		1	2	3
Initial	Water Content, %	31.8	35.5	34.8
	Dry Density, pcf	91.4	85.5	88.0
	Saturation, %	102.6	99.4	103.6
	Void Ratio	0.8296	0.9570	0.9002
	Diameter, in.	1.401	1.424	1.429
	Height, in.	3.124	3.133	3.126
At Test	Water Content, %	31.8	35.5	34.8
	Dry Density, pcf	91.4	85.5	88.0
	Saturation, %	102.6	99.4	103.6
	Void Ratio	0.8296	0.9570	0.9002
	Diameter, in.	1.401	1.424	1.429
	Height, in.	3.124	3.133	3.126
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.58	21.81	41.45
Fail. Stress, psf		1000	902	983
Strain, %		15.1	14.9	10.3
Ult. Stress, psf		1000	902	986
Strain, %				
σ_1 Failure, psf		1947	4043	6953
σ_3 Failure, psf		948	3141	5969

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: SO GR CL6 W/ CC

LL= 49 **PL=** 17 **PI=** 32
Assumed Specific Gravity= 2.68
Remarks:

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 9.7
Sample Number: 4C
Proj. No.: 0022-0002 **Date Sampled:** 7-10-07

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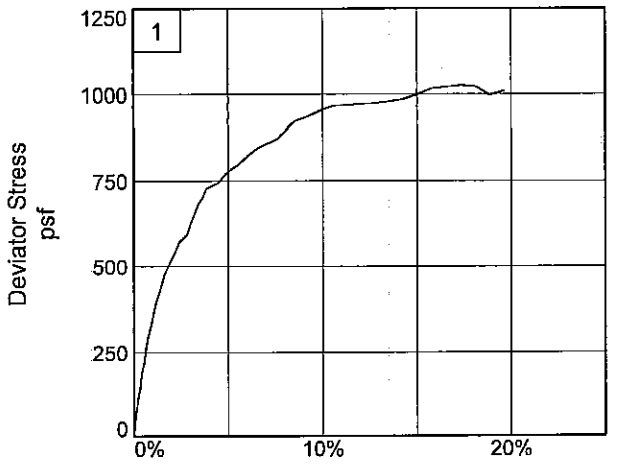
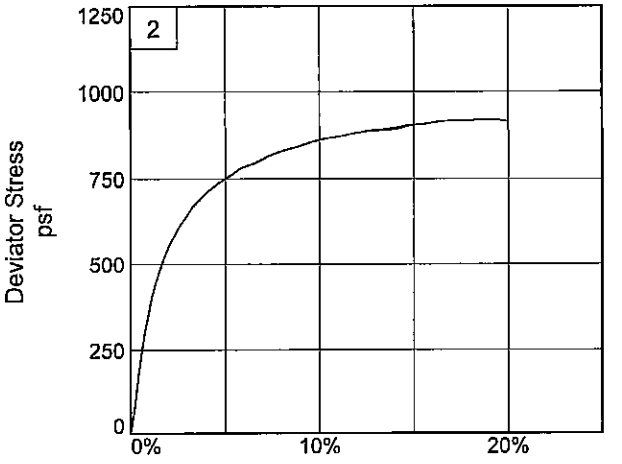
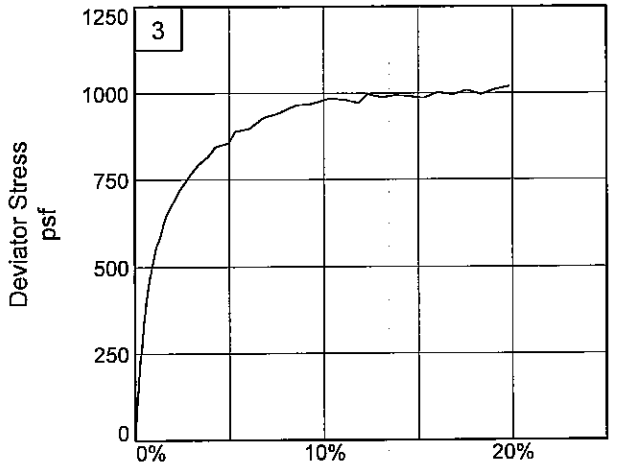
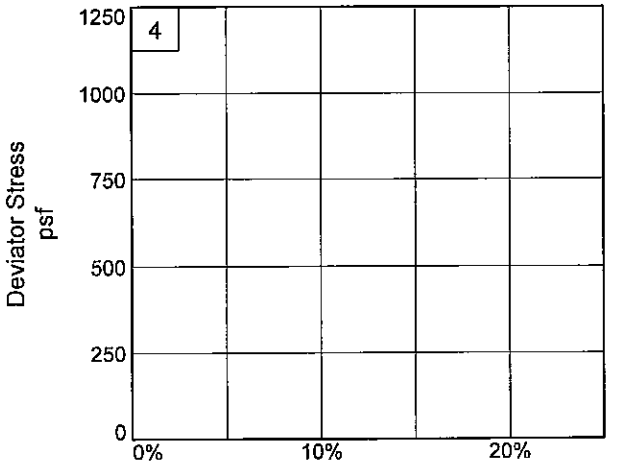
Figure _____

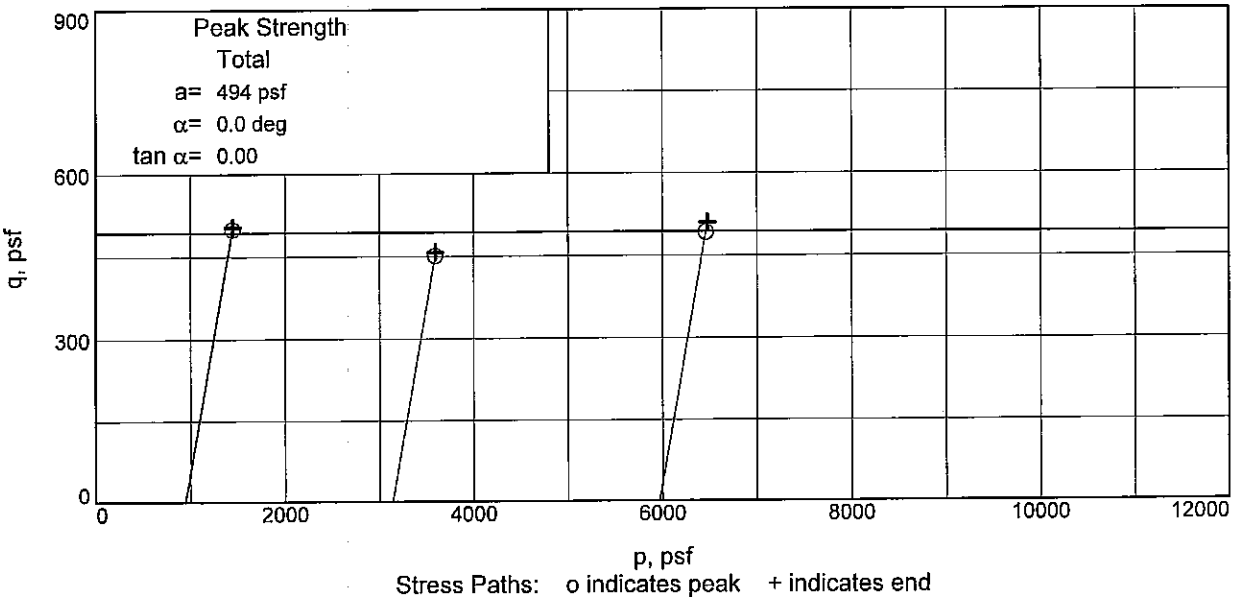
Tested By: JP









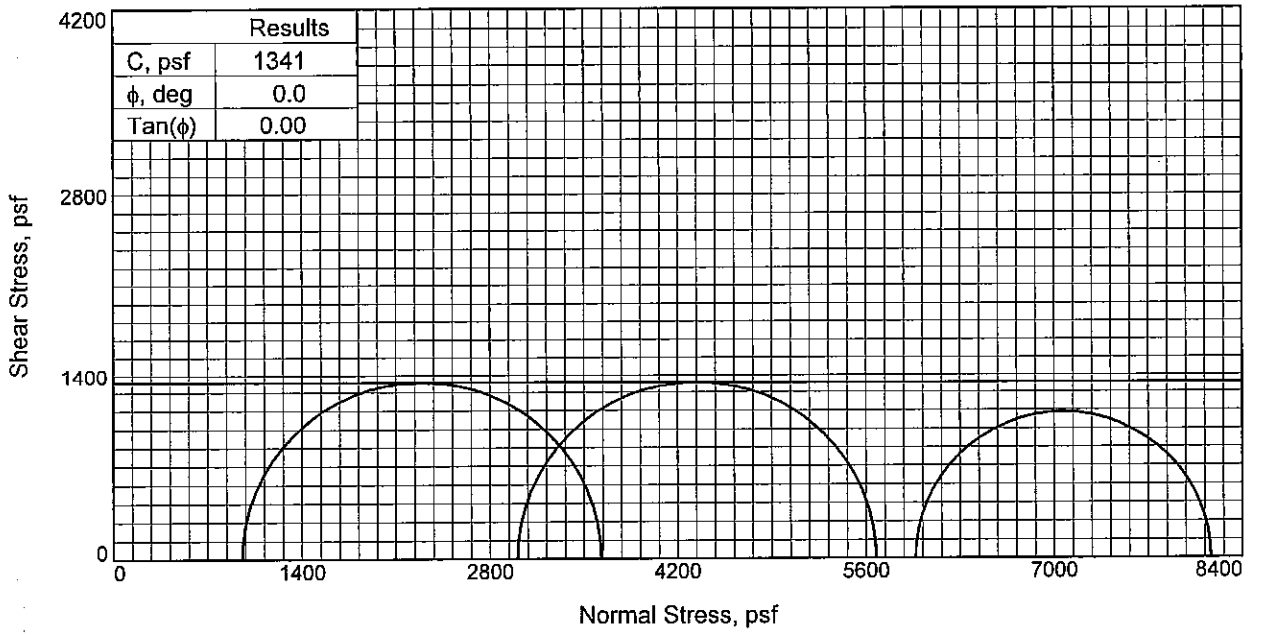


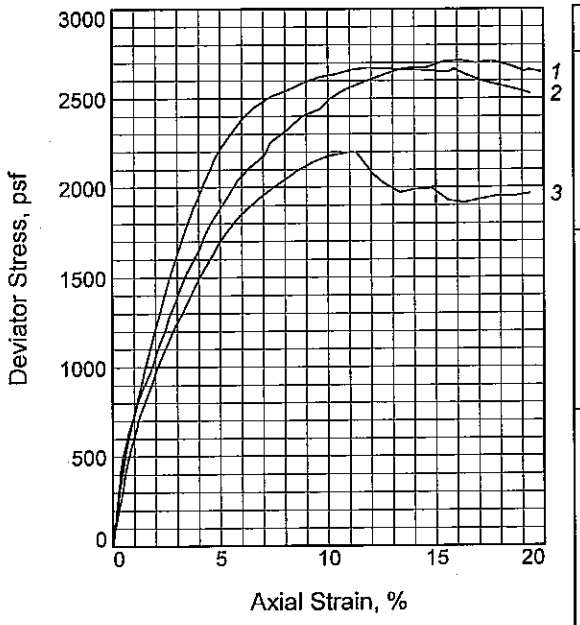
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UCL **Depth:** 9.7 **Sample Number:** 4C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: JP





Sample No.		1	2	3
Initial	Water Content, %	28.0	28.9	29.0
	Dry Density, pcf	97.3	96.6	95.2
	Saturation, %	104.2	106.0	102.4
	Void Ratio	0.7198	0.7311	0.7582
	Diameter, in.	1.402	1.414	1.407
	Height, in.	3.002	3.003	3.016
At Test	Water Content, %	28.0	28.9	29.0
	Dry Density, pcf	97.3	96.6	95.2
	Saturation, %	104.2	106.0	102.4
	Void Ratio	0.7198	0.7311	0.7582
	Diameter, in.	1.402	1.414	1.407
	Height, in.	3.002	3.003	3.016
Strain rate, in./min.		0.030	0.030	0.030
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.64	20.87	41.44
Fail. Stress, psf		2673	2670	2199
Strain, %		14.6	11.8	11.1
Ult. Stress, psf		2673	2652	1994
Strain, %				
σ_1 Failure, psf		3629	5676	8167
σ_3 Failure, psf		956	3005	5968

Type of Test: Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: ST GR CL6 W/ LNS ML, WD, TR-O

LL= 44 **PL=** 18 **PI=** 26

Assumed Specific Gravity= 2.68

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-48UCL **Depth:** 12.8

Sample Number: 5B

Proj. No.: 0022-0002 **Date Sampled:** 7-11-07

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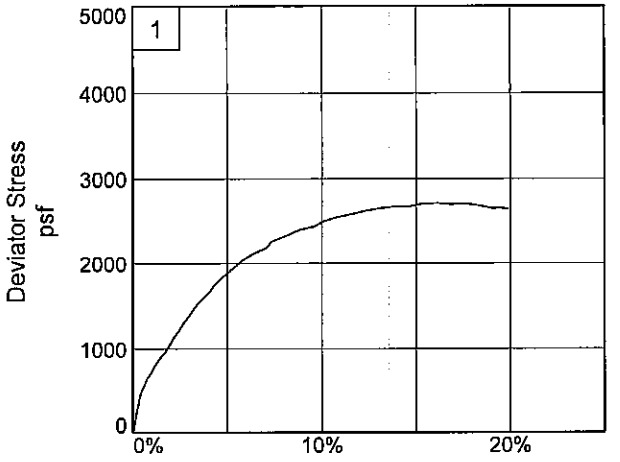
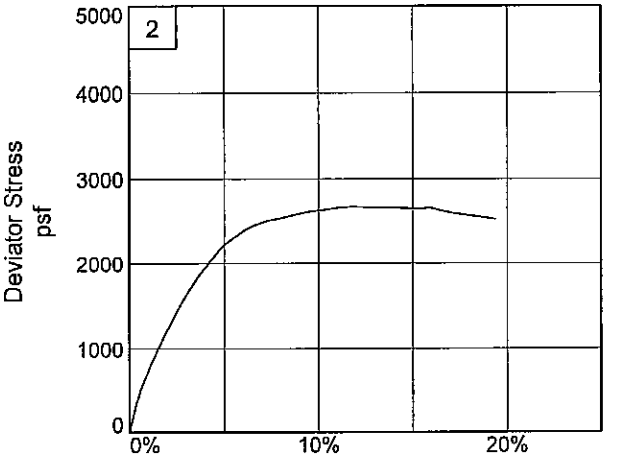
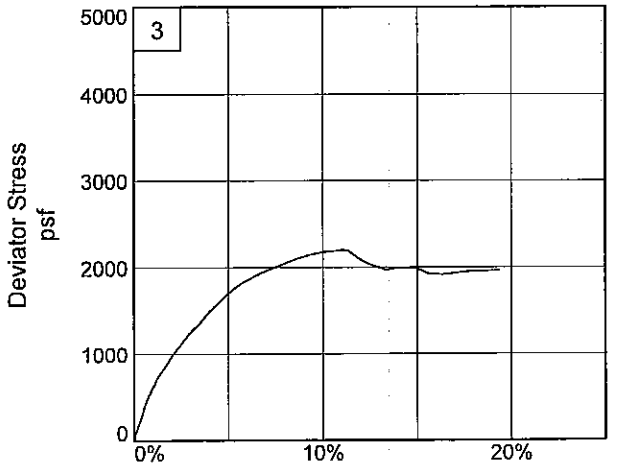
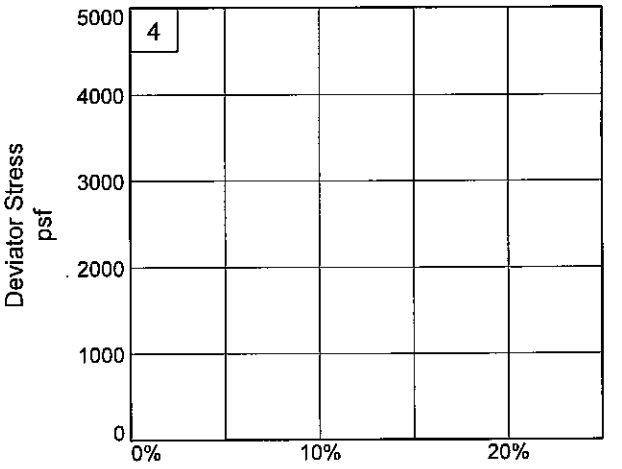
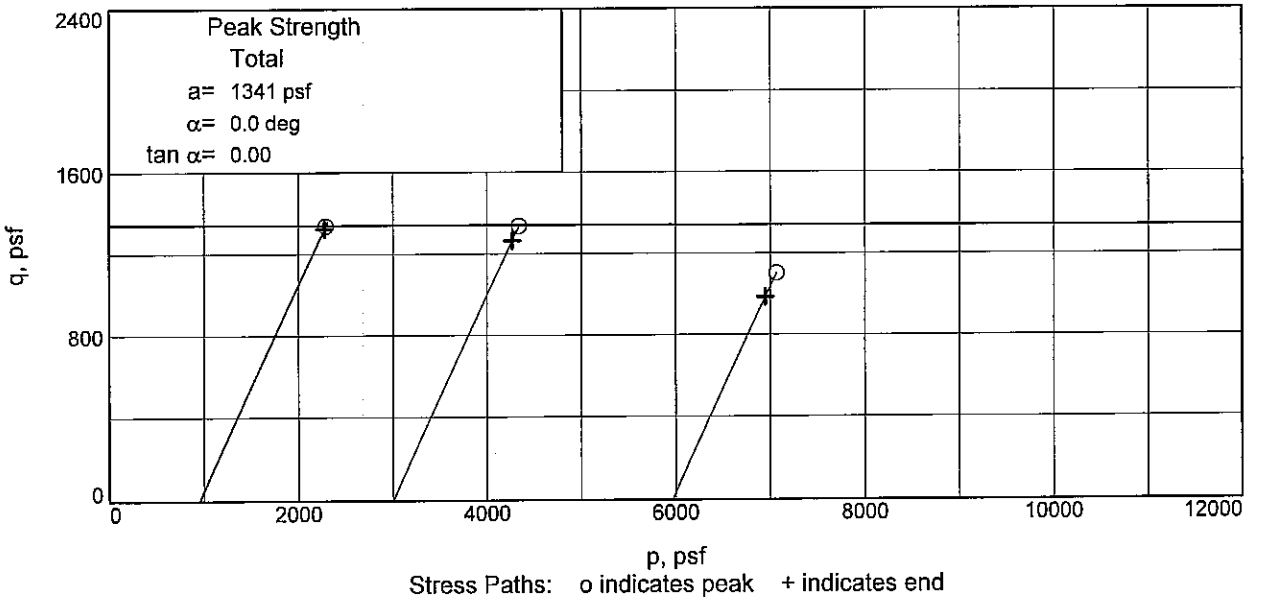
Tested By: DD









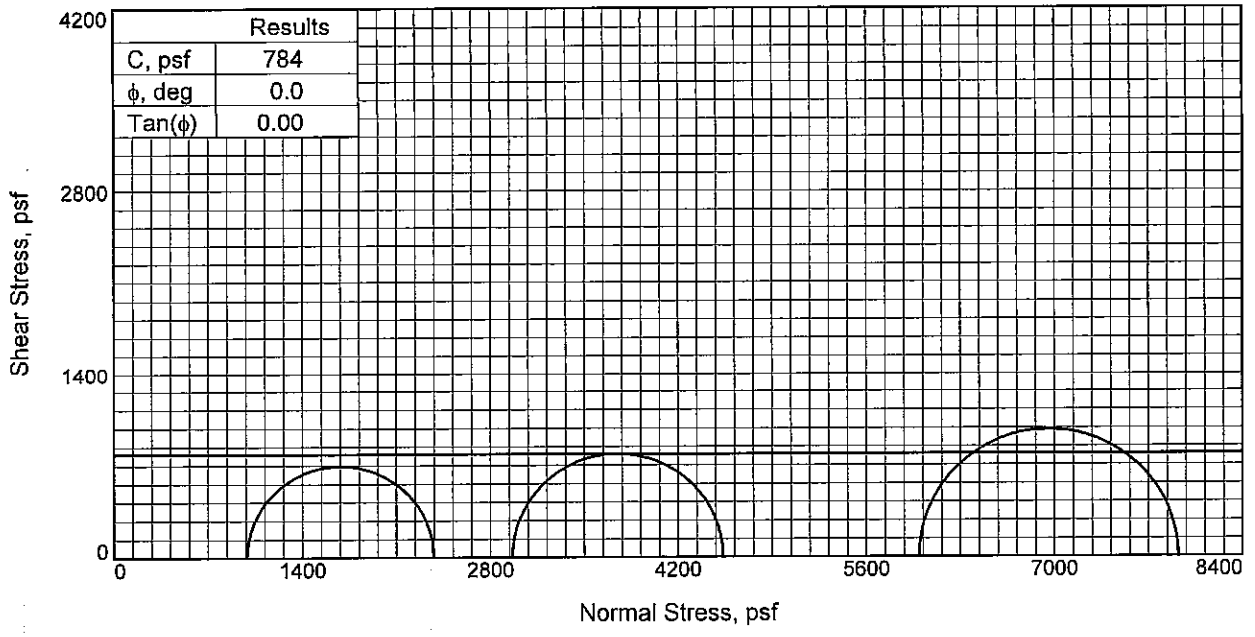


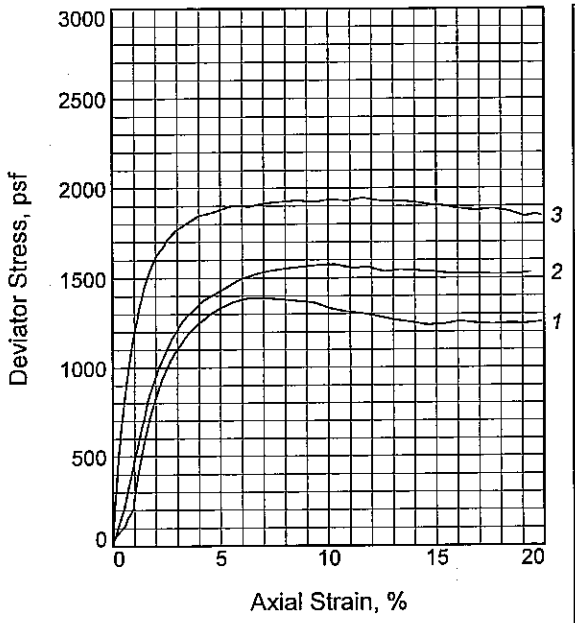
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UCL **Depth:** 12.8 **Sample Number:** 5B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD





Sample No.		1	2	3
Initial	Water Content, %	33.7	33.5	34.3
	Dry Density, pcf	88.6	88.1	86.8
	Saturation, %	100.8	99.3	98.1
	Void Ratio	0.9032	0.9124	0.9430
	Diameter, in.	1.414	1.420	1.413
	Height, in.	3.008	2.994	3.007
At Test	Water Content, %	33.7	33.5	34.3
	Dry Density, pcf	88.6	88.1	86.8
	Saturation, %	100.8	99.3	98.1
	Void Ratio	0.9032	0.9124	0.9430
	Diameter, in.	1.414	1.420	1.413
	Height, in.	3.008	2.994	3.007
Strain rate, in./min.		0.030	0.030	0.030
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.58	41.61
Fail. Stress, psf		1388	1571	1931
Strain, %		6.3	9.6	8.6
Ult. Stress, psf		1238	1536	1909
Strain, %				
σ_1 Failure, psf		2378	4535	7923
σ_3 Failure, psf		990	2964	5992

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR & BR CH2 W/ LNS ML, WD

LL= 54 **PL=** 19 **PI=** 35

Assumed Specific Gravity= 2.70

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-48UCL **Depth:** 17.7

Sample Number: 6C

Proj. No.: 0022-0002 **Date Sampled:** 7-11-07

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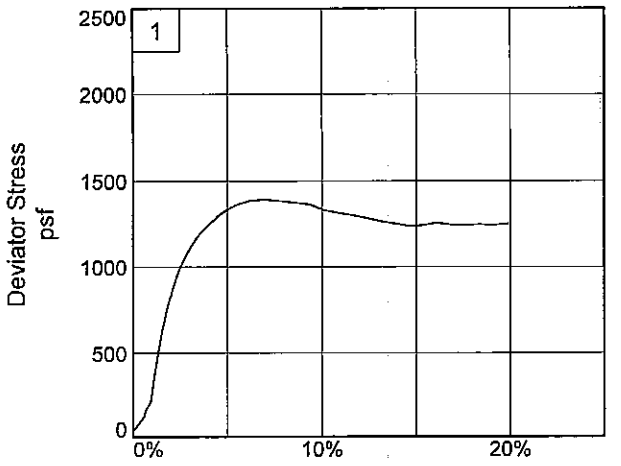
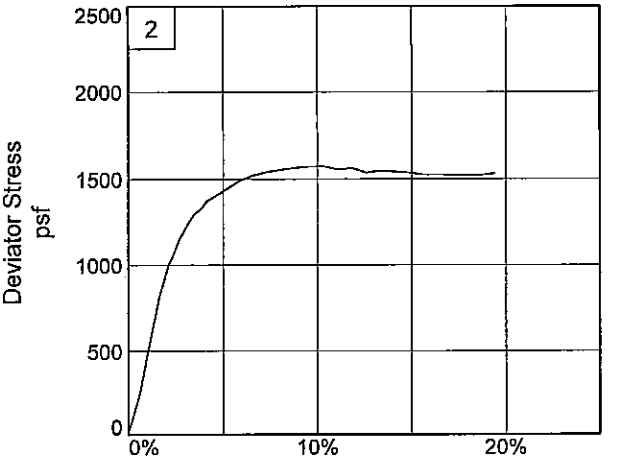
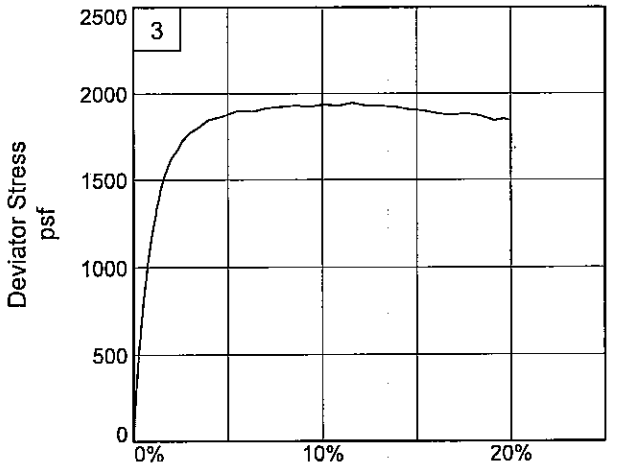
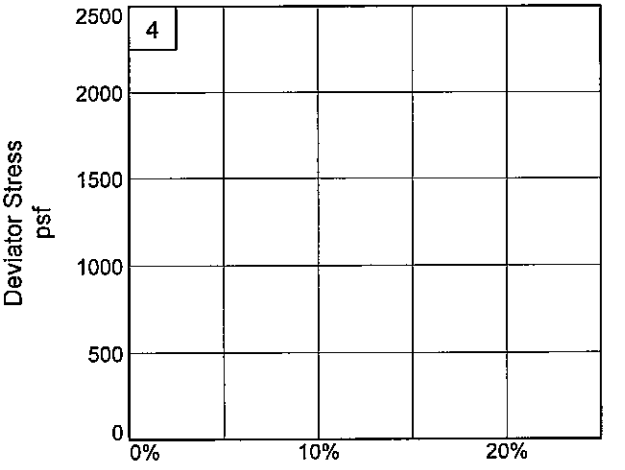
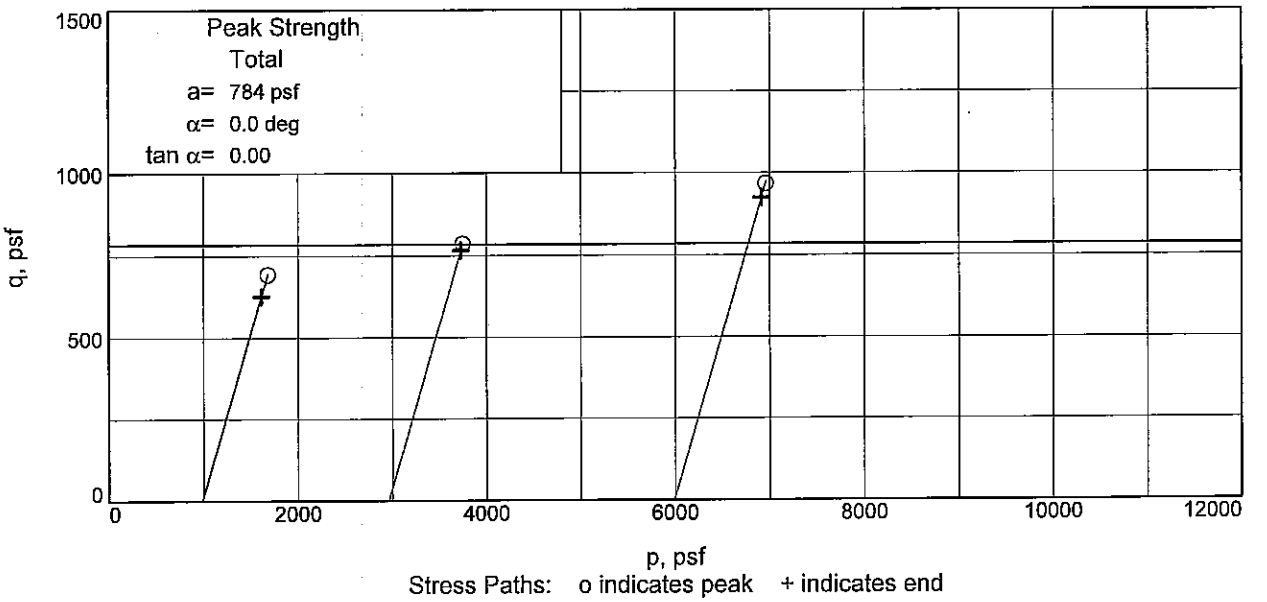
Tested By: DD









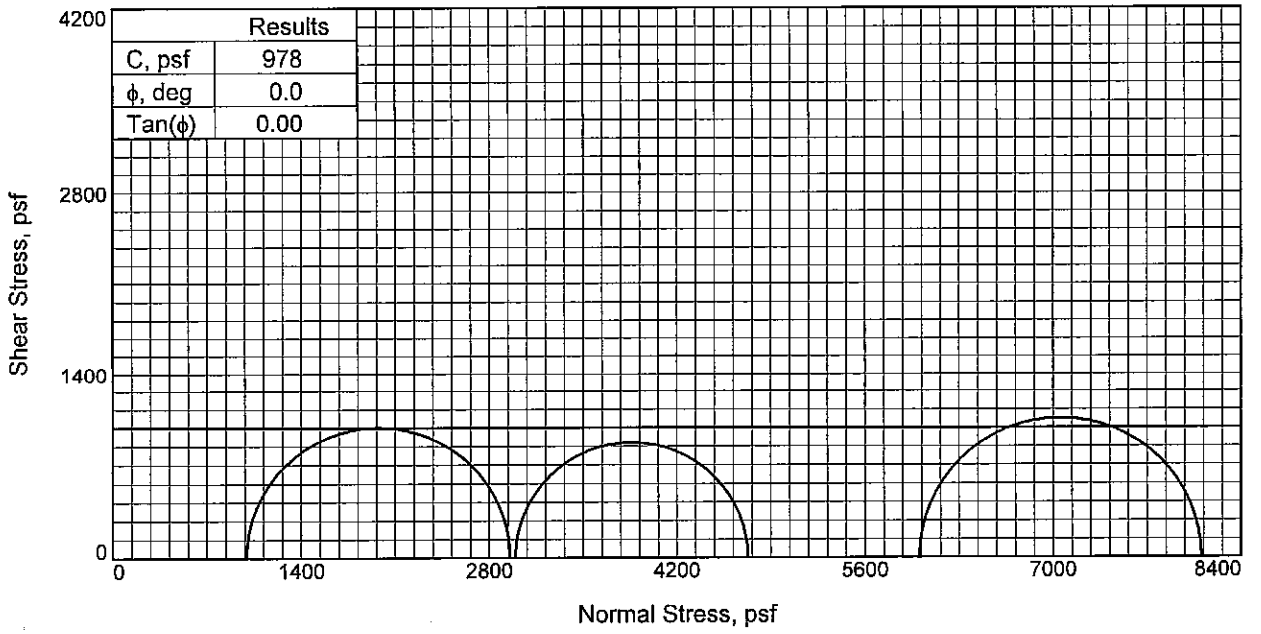


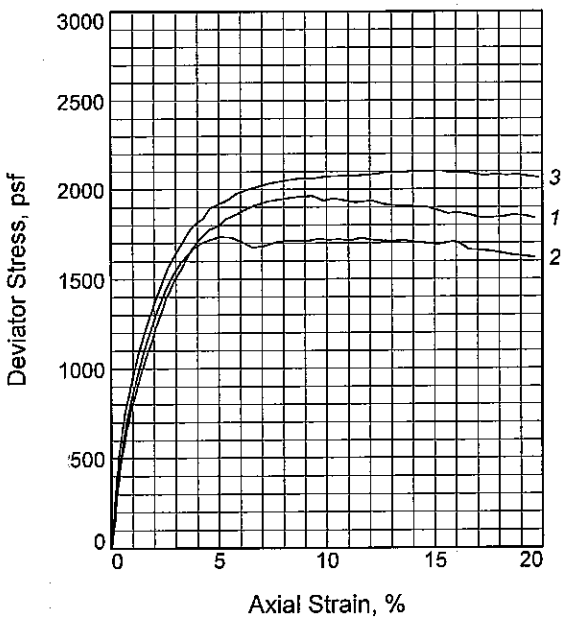
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UCL **Depth:** 17.7 **Sample Number:** 6C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD





Sample No.		1	2	3
Initial	Water Content, %	31.3	32.5	30.9
	Dry Density, pcf	90.6	89.0	90.2
	Saturation, %	98.3	98.1	96.2
	Void Ratio	0.8608	0.8933	0.8677
	Diameter, in.	1.419	1.455	1.417
	Height, in.	3.134	3.141	3.155
At Test	Water Content, %	31.3	32.5	31.0
	Dry Density, pcf	90.6	89.0	90.2
	Saturation, %	98.3	98.1	96.4
	Void Ratio	0.8608	0.8933	0.8677
	Diameter, in.	1.419	1.455	1.417
	Height, in.	3.134	3.141	3.155
Strain rate, in./min.		0.031	0.031	0.032
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.80	41.70
Fail. Stress, psf		1962	1734	2101
Strain, %		9.3	5.1	15.3
Ult. Stress, psf		1884	1674	2101
Strain, %				
σ_1 Failure, psf		2955	4729	8106
σ_3 Failure, psf		994	2995	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH2 W/ RT

LL= 50 **PL=** 24 **PI=** 26
Assumed Specific Gravity= 2.70
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 21.7
Sample Number: 7C
Proj. No.: 0022-0002 **Date Sampled:** 06/04/07

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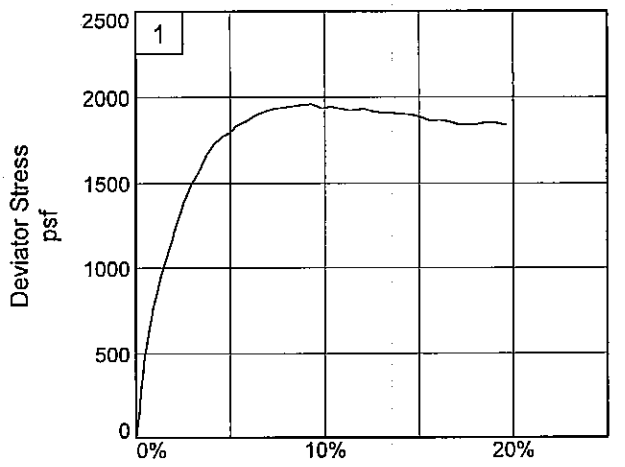
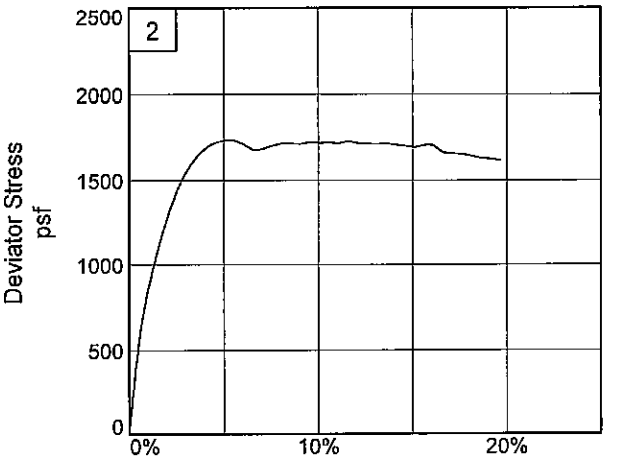
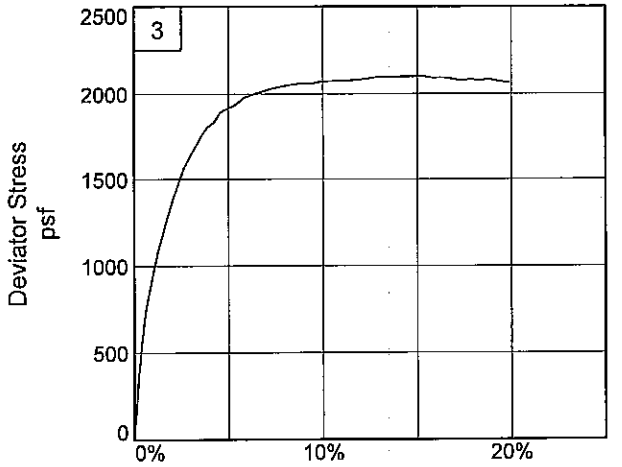
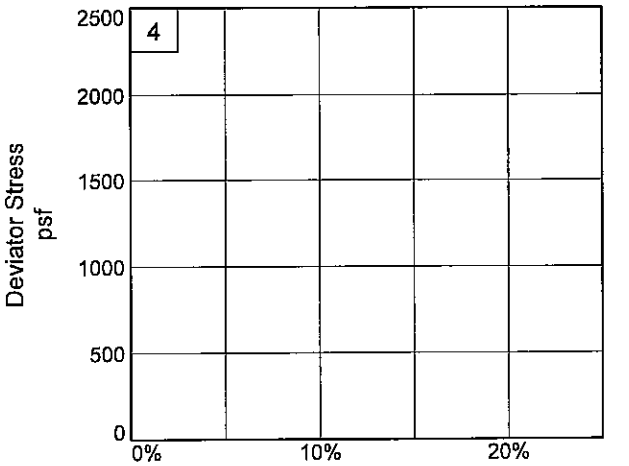
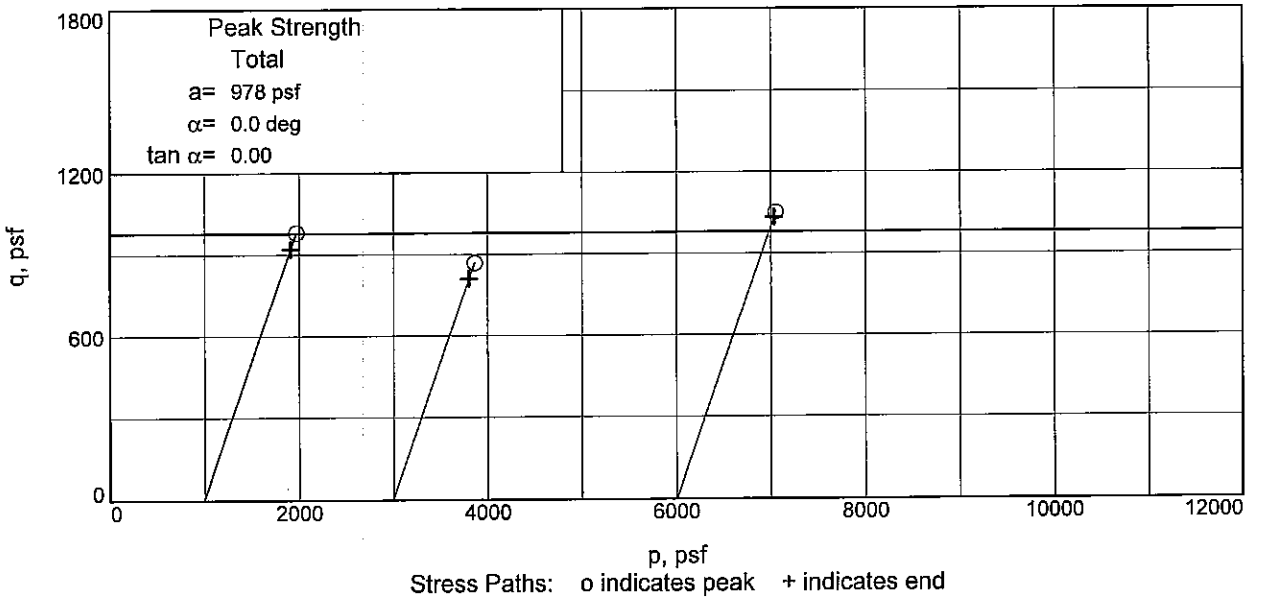
Tested By: DW **Checked By:** AB











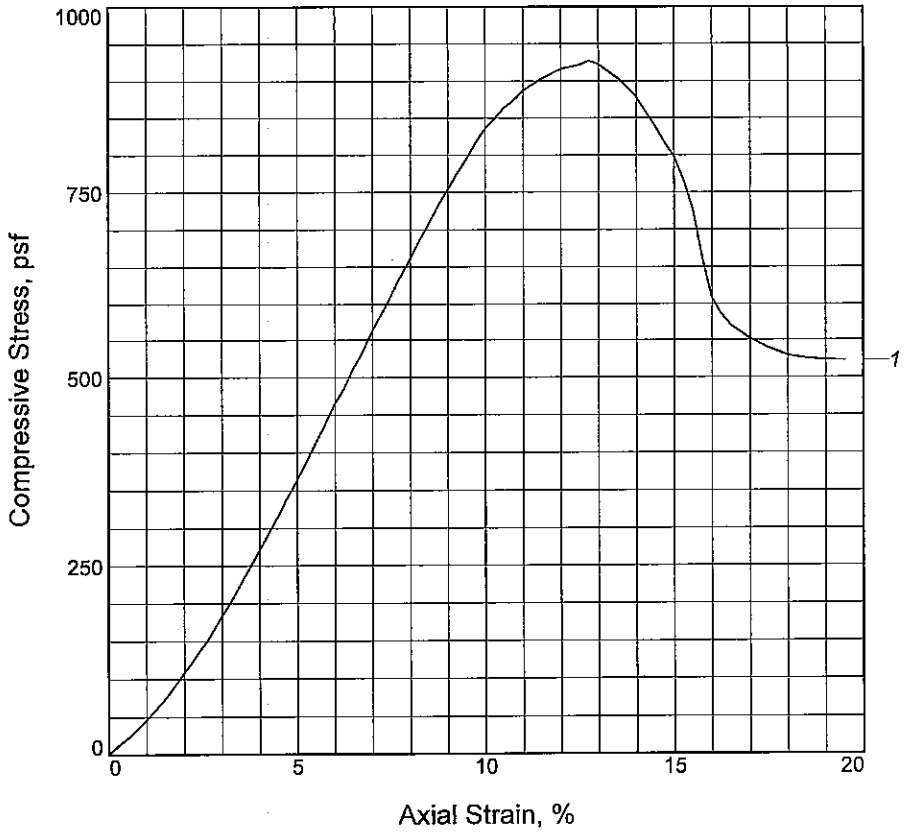
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UCL **Depth:** 21.7 **Sample Number:** 7C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW **Checked By:** AB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	922			
Undrained shear strength, psf	461			
Failure strain, %	12.5			
Strain rate, in./min.	0.032			
Water content, %	30.6			
Wet density, pcf	117.9			
Dry density, pcf	90.3			
Saturation, %	96.2			
Void ratio	0.8530			
Specimen diameter, in.	1.405			
Specimen height, in.	3.178			
Height/diameter ratio	2.26			

Description: SO GR CL4-S W/ RT, ARS CH

LL = 27	**PL =** 23	**PI =** 4	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 06/04/07
Remarks:

Figure _____

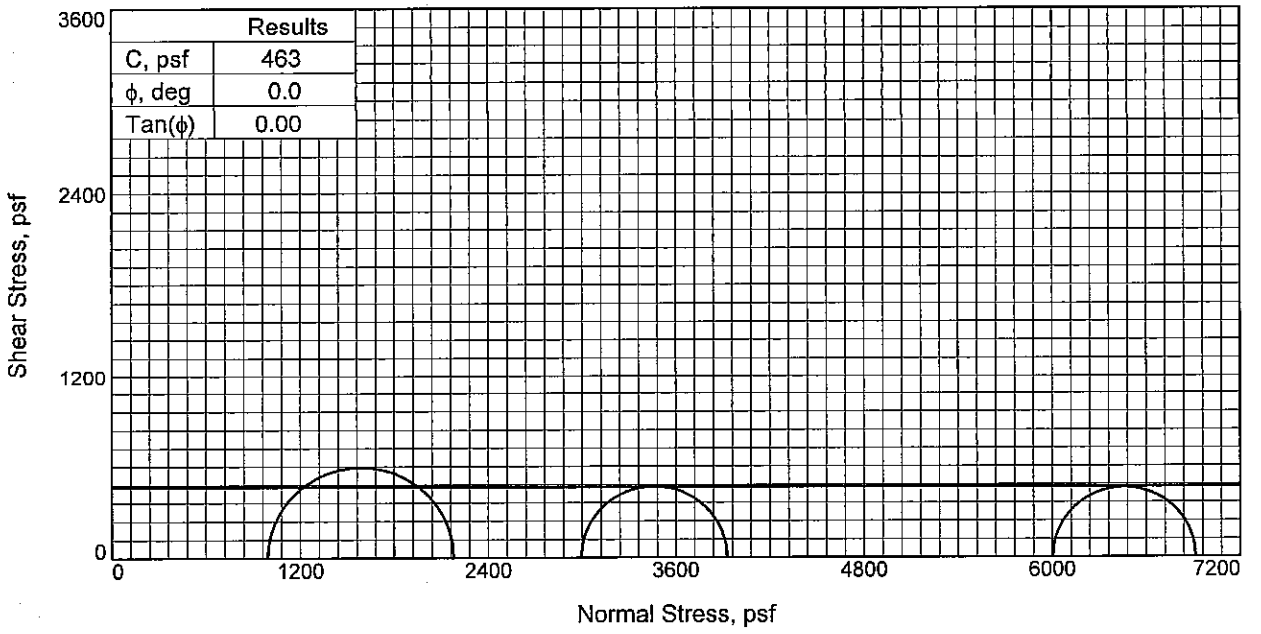
Client: U.S. Army Corps of Engineers

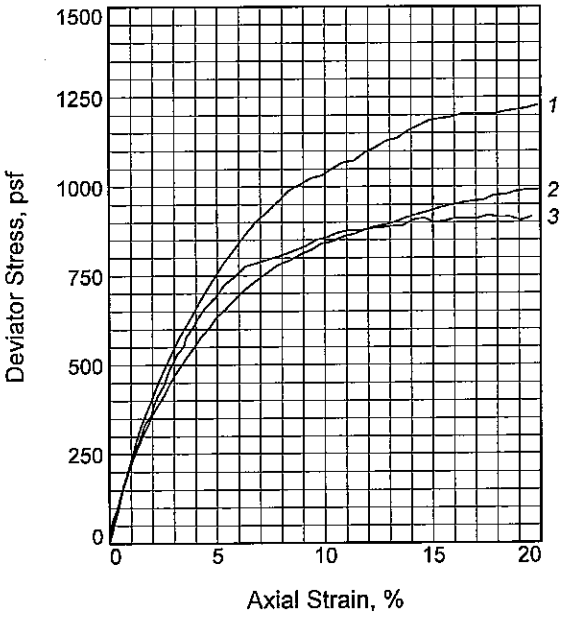
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 25.7
Sample Number: 8C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** AB





Sample No.		1	2	3
Initial	Water Content, %	33.7	36.7	35.8
	Dry Density, pcf	90.3	85.1	86.4
	Saturation, %	105.9	101.7	102.5
	Void Ratio	0.8521	0.9668	0.9354
	Diameter, in.	1.398	1.411	1.407
	Height, in.	3.117	3.141	3.134
At Test	Water Content, %	33.7	36.7	35.8
	Dry Density, pcf	90.3	85.1	86.4
	Saturation, %	105.9	101.8	102.5
	Void Ratio	0.8521	0.9668	0.9354
	Diameter, in.	1.398	1.411	1.407
	Height, in.	3.117	3.141	3.134
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.80	41.70
Fail. Stress, psf		1185	932	912
Strain, %		14.9	14.9	14.6
Ult. Stress, psf		1185	932	899
Strain, %				
σ_1 Failure, psf		2178	3927	6916
σ_3 Failure, psf		994	2995	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CL4 W/ ARS CH

LL= 32 **PL=** 20 **PI=** 12
Assumed Specific Gravity= 2.68
Remarks:

Figure _____

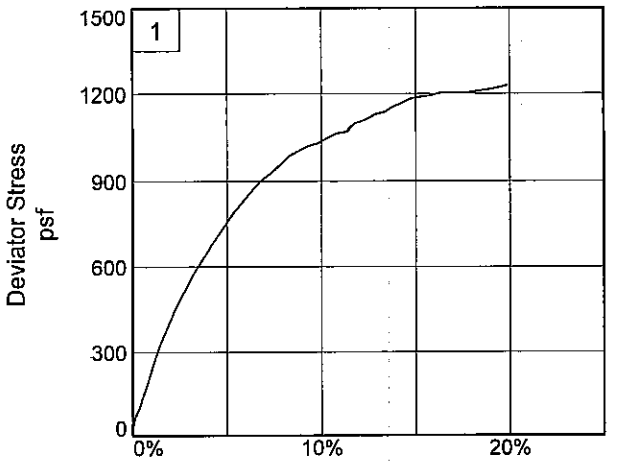
Client: U.S. Army Corps of Engineers

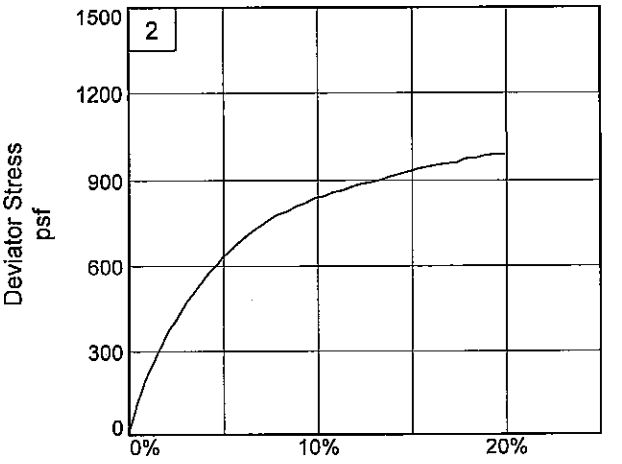
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 29.7
Sample Number: 9C
Proj. No.: 0022-0002 **Date Sampled:** 06/04/07

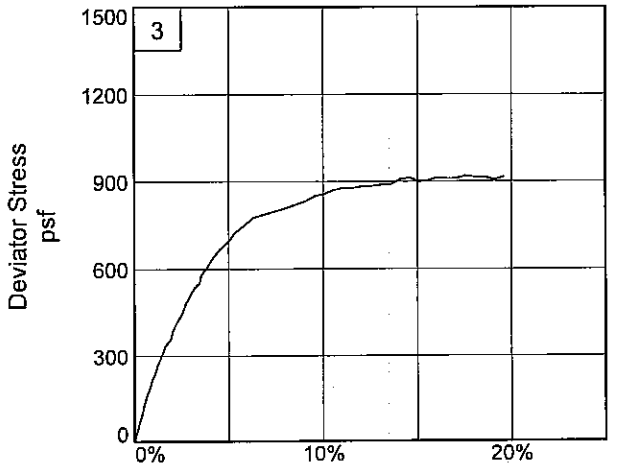
TRIAXIAL SHEAR TEST REPORT

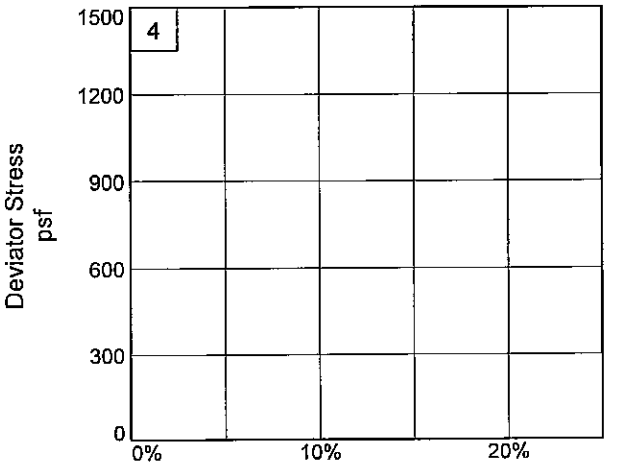
FFEBJV, LLC

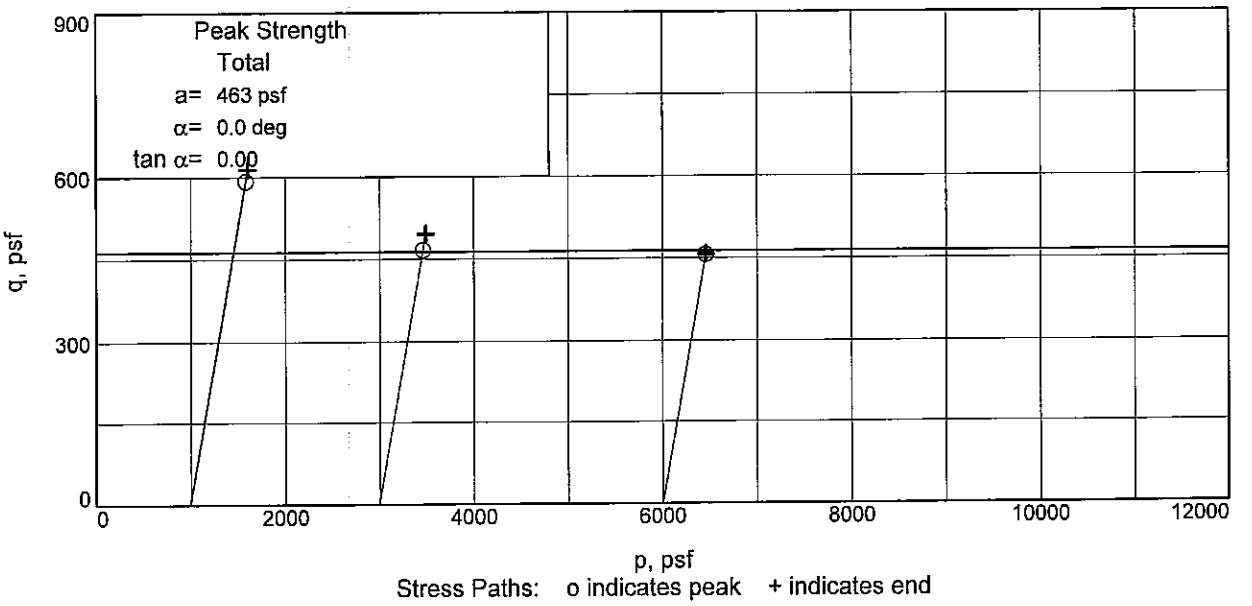
Tested By: DW **Checked By:** AB









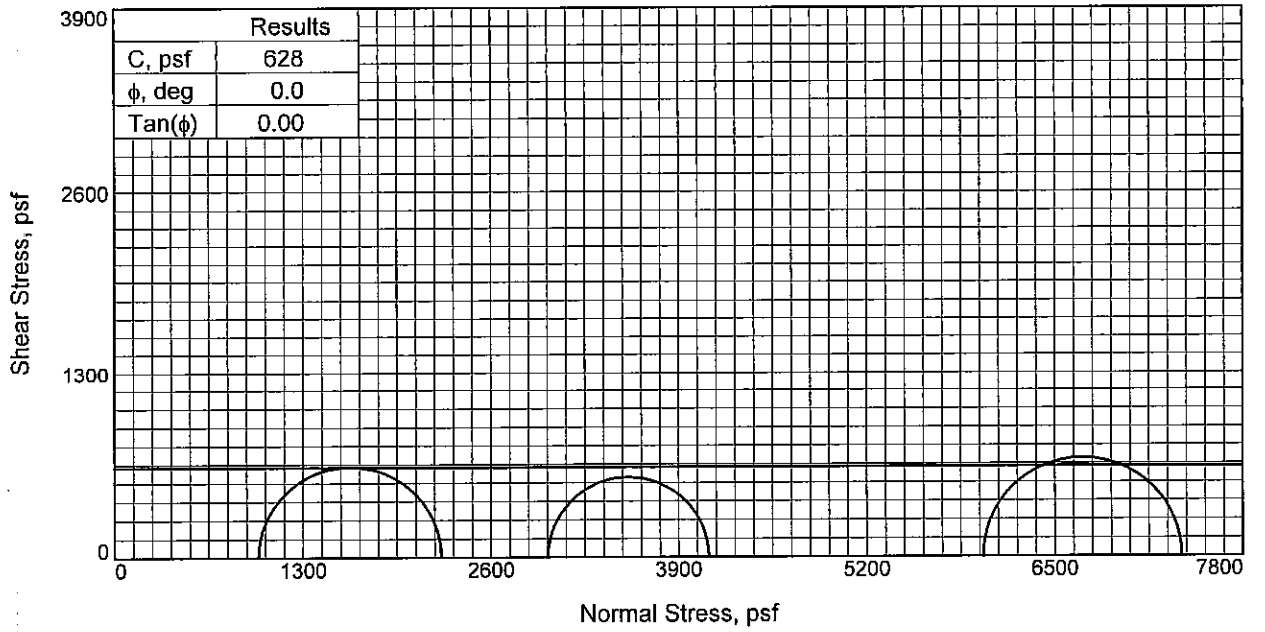


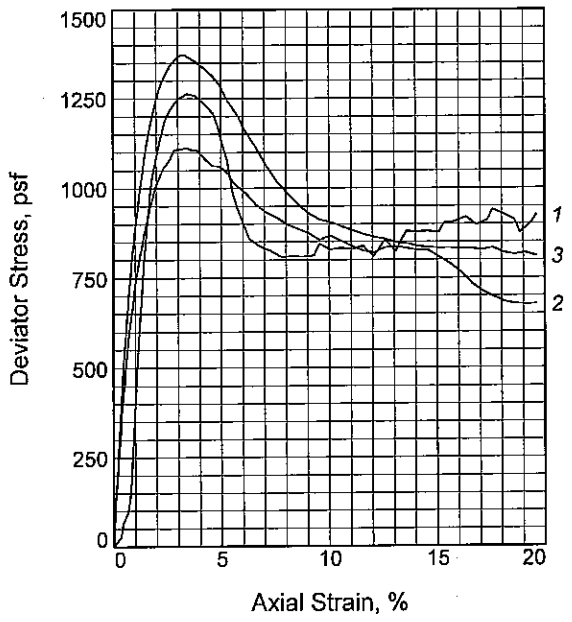
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UCL **Depth:** 29.7 **Sample Number:** 9C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW **Checked By:** AB





Sample No.		1	2	3
Initial	Water Content, %	84.0	90.8	87.6
	Dry Density, pcf	50.7	47.3	49.1
	Saturation, %	99.0	96.9	98.4
	Void Ratio	2.2236	2.4565	2.3320
	Diameter, in.	1.421	1.435	1.444
	Height, in.	3.143	3.135	3.133
At Test	Water Content, %	84.0	90.8	87.6
	Dry Density, pcf	50.7	47.3	49.1
	Saturation, %	99.0	96.9	98.4
	Void Ratio	2.2236	2.4565	2.3320
	Diameter, in.	1.421	1.435	1.444
	Height, in.	3.143	3.135	3.133
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.80	41.70
Fail. Stress, psf		1263	1113	1373
Strain, %		3.4	3.3	3.2
Ult. Stress, psf		808	808	831
Strain, %				
σ_1 Failure, psf		2256	4108	7378
σ_3 Failure, psf		994	2995	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CHOA W/ ARS ML

LL= 127 **PL=** 32 **PI=** 95
Assumed Specific Gravity= 2.62
Remarks:

Figure _____

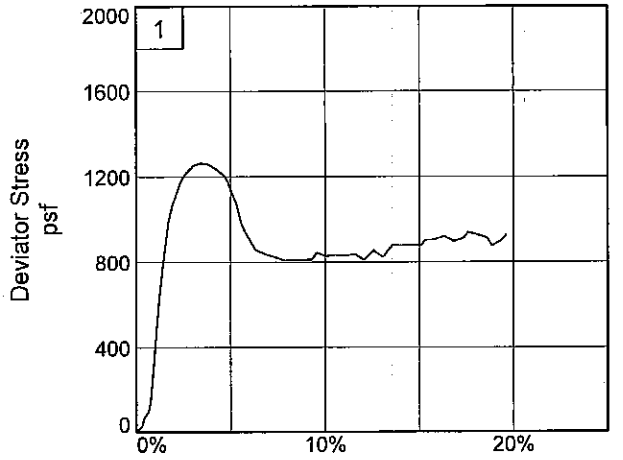
Client: U.S. Army Corps of Engineers

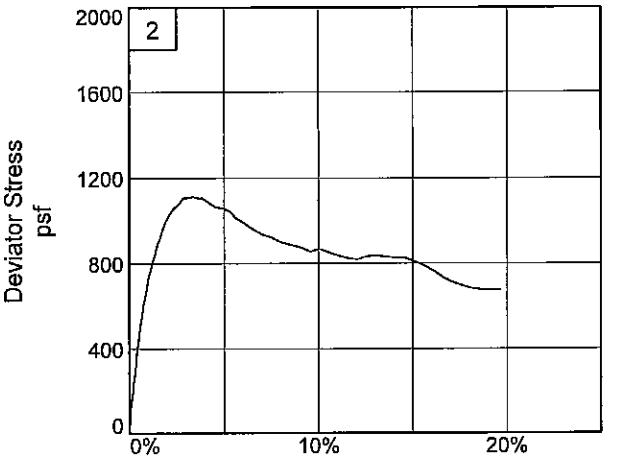
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 32.8
Sample Number: 10B
Proj. No.: 0022-0002 **Date Sampled:** 06/04/07

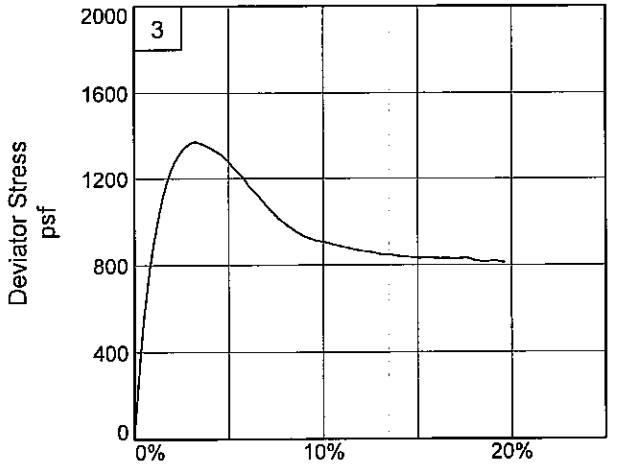
TRIAXIAL SHEAR TEST REPORT

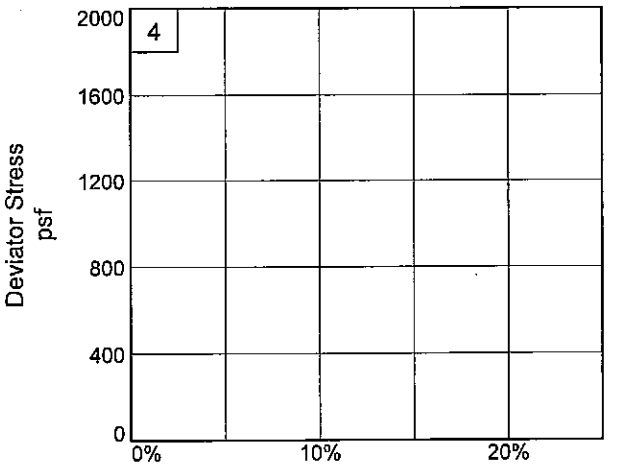
FFEBJV, LLC

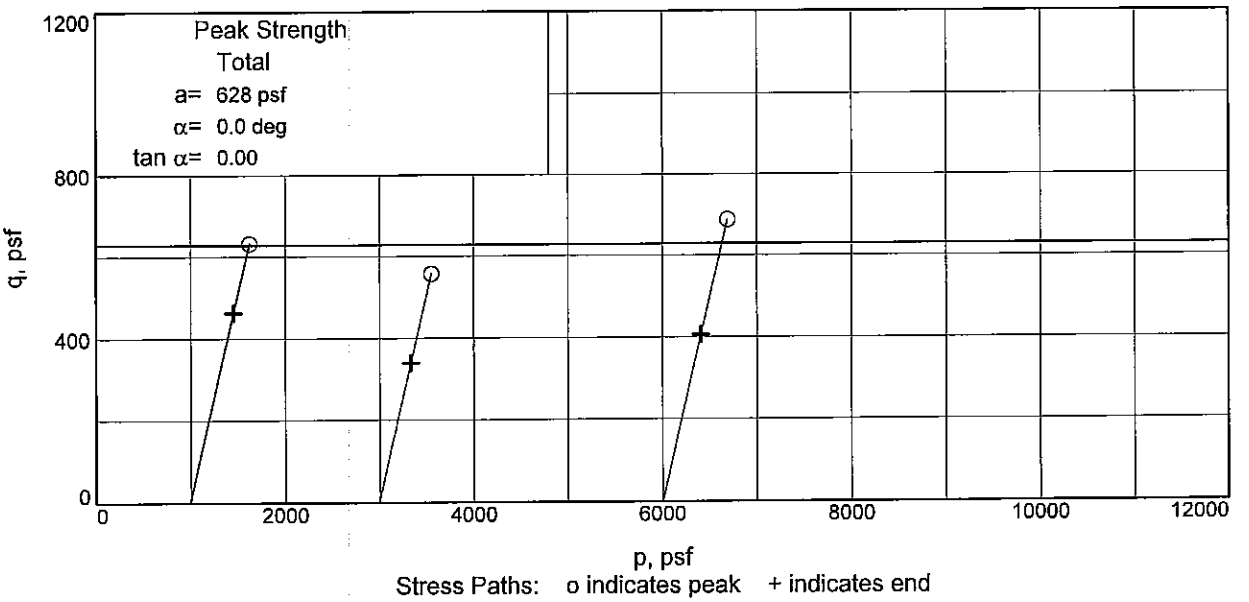
Tested By: DW **Checked By:** AB









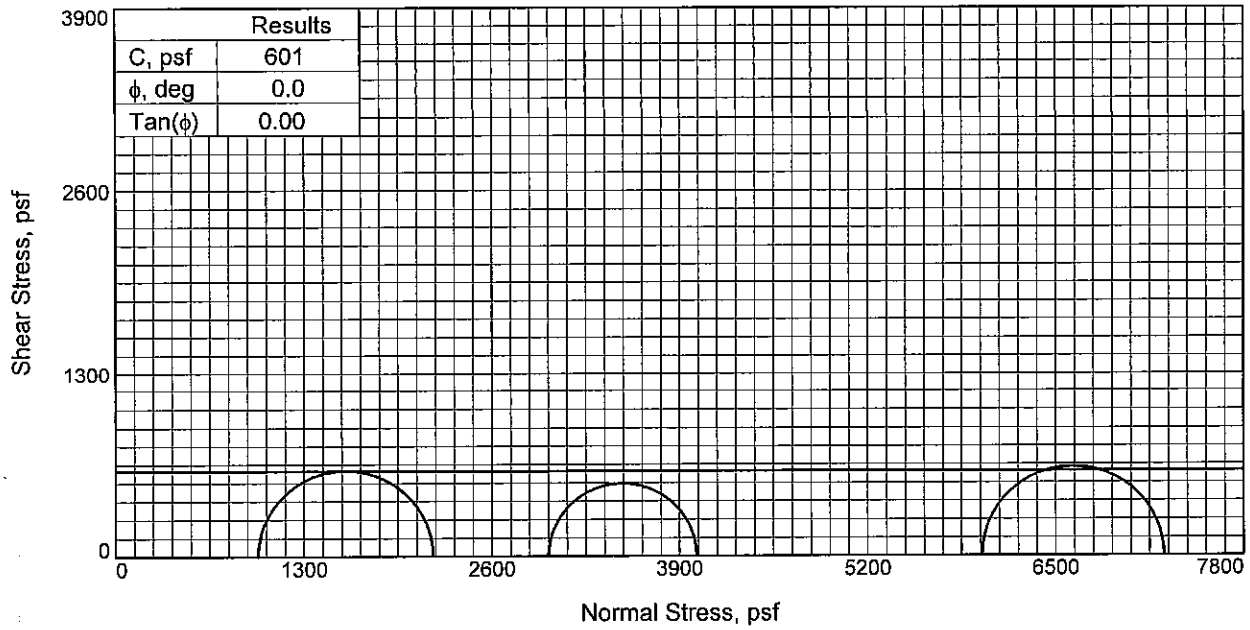


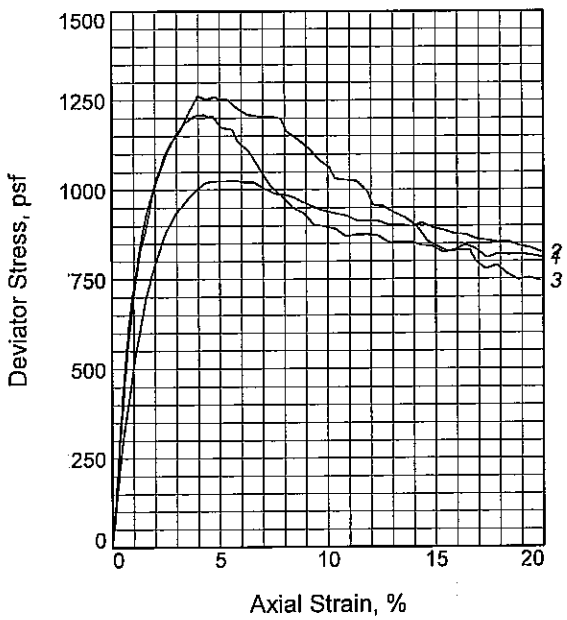
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UCL **Depth:** 32.8 **Sample Number:** 10B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW **Checked By:** AB





Sample No.		1	2	3
Initial	Water Content, %	58.1	62.4	60.8
	Dry Density, pcf	64.9	61.4	62.8
	Saturation, %	97.8	96.2	97.1
	Void Ratio	1.6148	1.7637	1.7024
	Diameter, in.	1.408	1.405	1.412
	Height, in.	3.145	3.140	3.141
At Test	Water Content, %	58.1	62.4	60.8
	Dry Density, pcf	64.9	61.4	62.8
	Saturation, %	97.8	96.2	97.1
	Void Ratio	1.6148	1.7637	1.7024
	Diameter, in.	1.408	1.405	1.412
	Height, in.	3.145	3.140	3.141
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.83	20.78	41.60
Fail. Stress, psf		1209	1024	1259
Strain, %		4.3	5.8	4.8
Ult. Stress, psf		841	894	841
Strain, %				
σ_1 Failure, psf		2193	4017	7250
σ_3 Failure, psf		984	2993	5991

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ WD, O, ARS ML

LL= 78 **PL=** 25 **PI=** 53
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

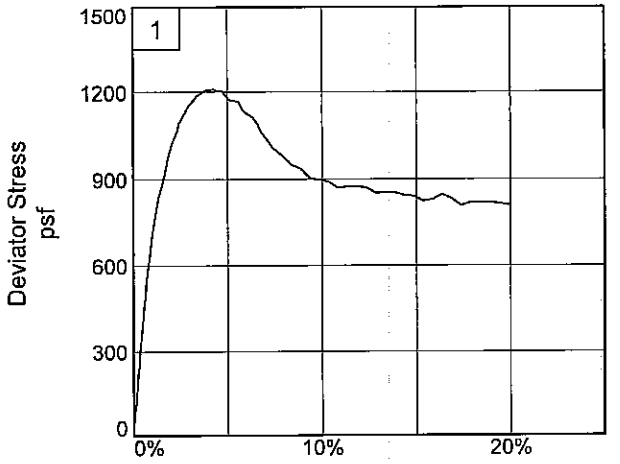
Client: U.S. Army Corps of Engineers

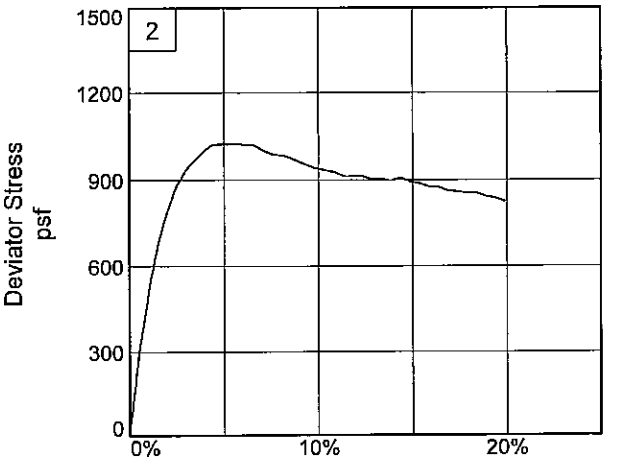
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 37.7
Sample Number: 11C
Proj. No.: 0022-0002 **Date Sampled:** 06/04/07

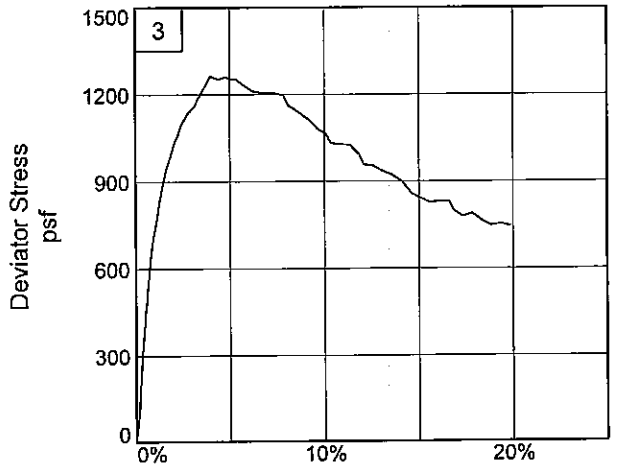
TRIAXIAL SHEAR TEST REPORT

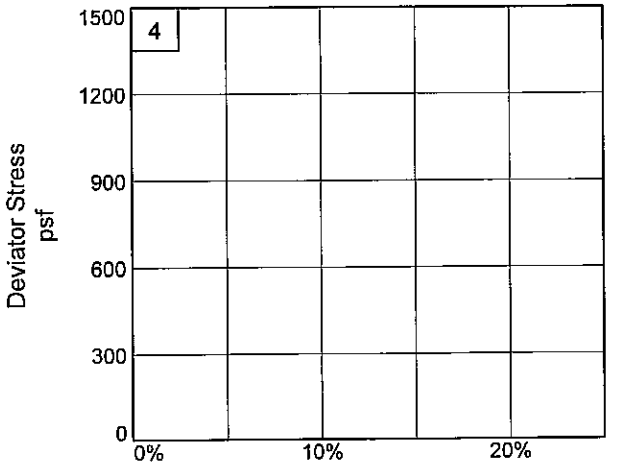
FFEBJV, LLC

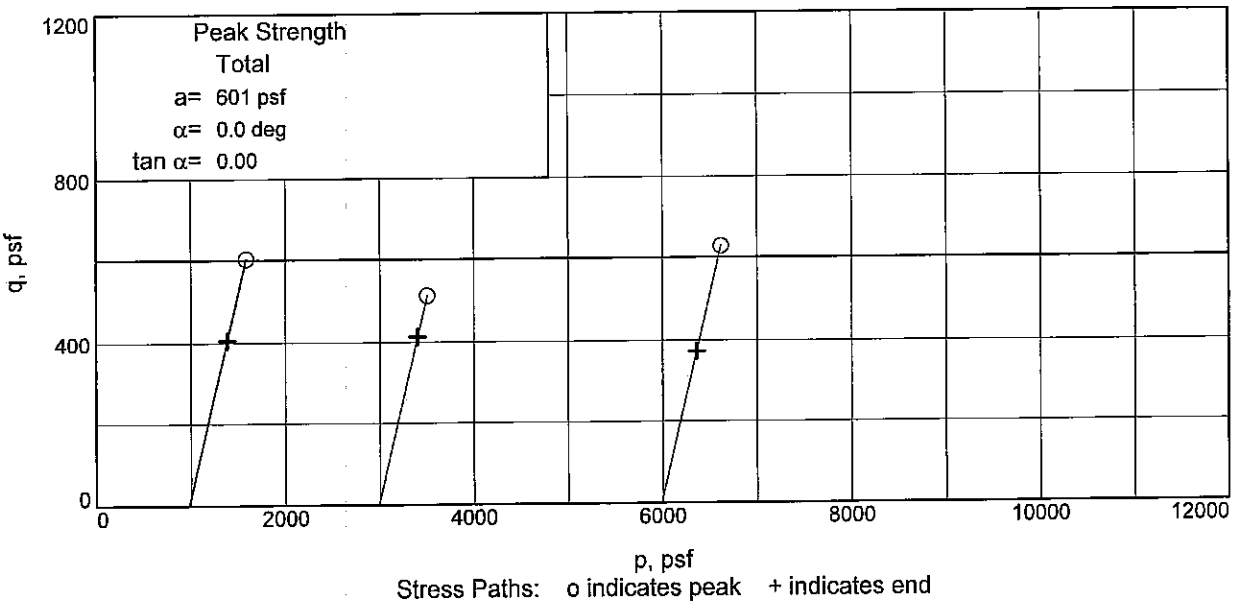
Tested By: DW **Checked By:** AB











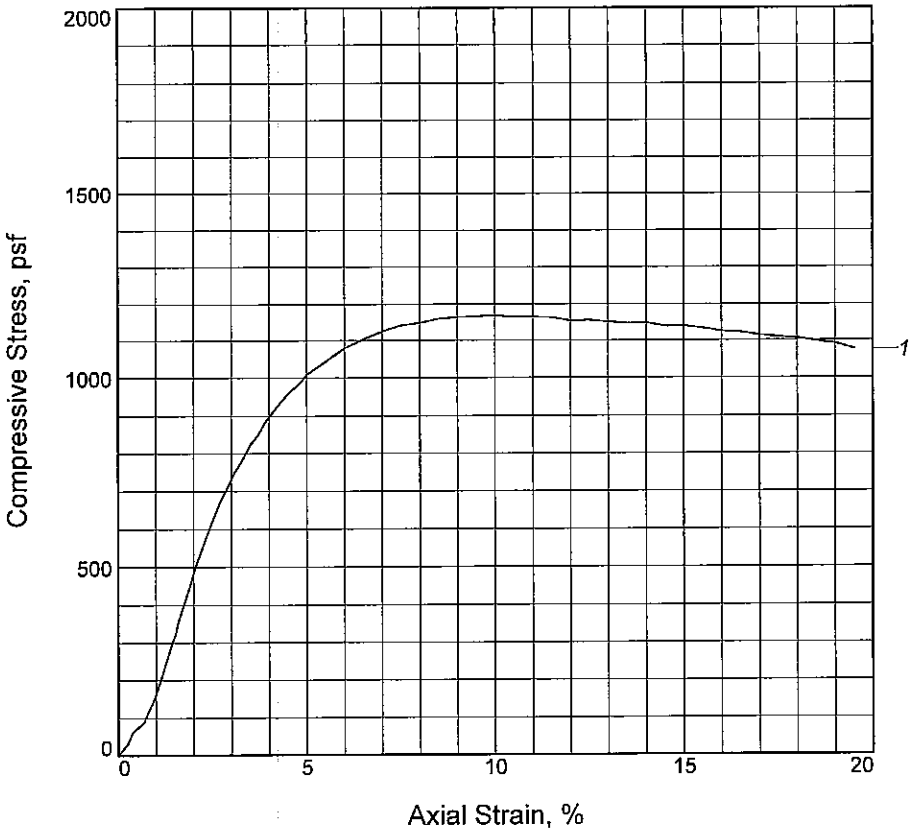
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UCL **Depth:** 37.7 **Sample Number:** 11C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW **Checked By:** AB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1167			
Undrained shear strength, psf	583			
Failure strain, %	10.0			
Strain rate, in./min.	0.031			
Water content, %	47.8			
Wet density, pcf	107.7			
Dry density, pcf	72.9			
Saturation, %	98.4			
Void ratio	1.3127			
Specimen diameter, in.	1.436			
Specimen height, in.	3.138			
Height/diameter ratio	2.19			

Description: M GR CH2 W/ CC, LNS CH

LL = 56	**PL =** 26	**PI =** 30	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 06/04/07
Remarks:

Figure _____

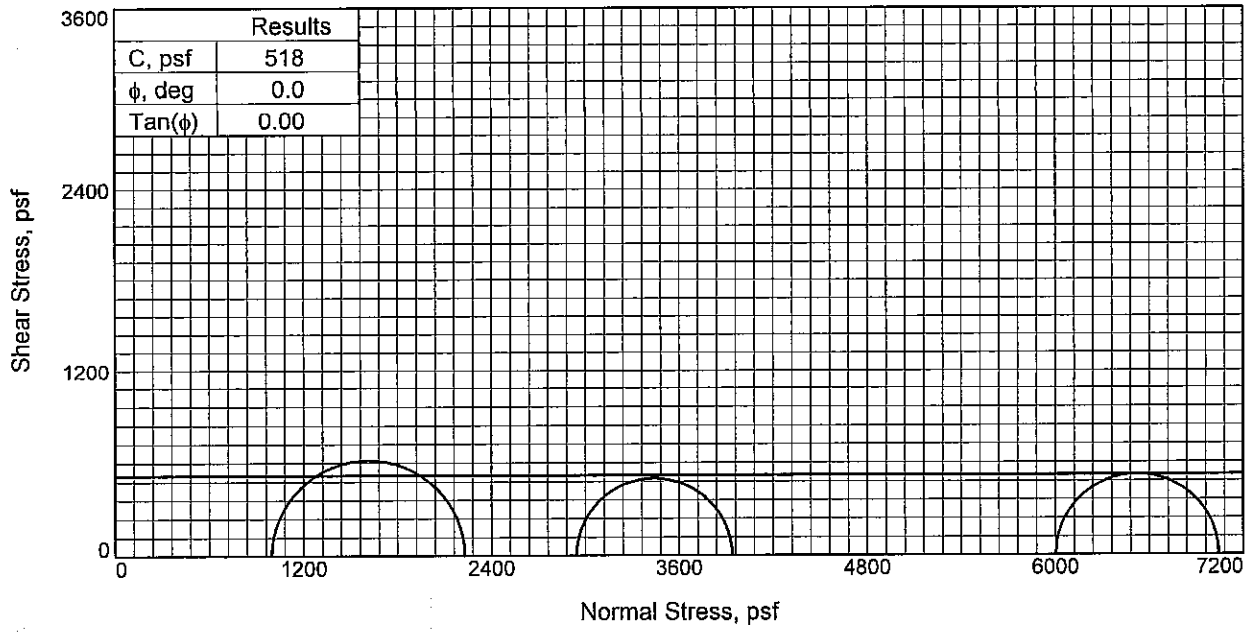
Client: U.S. Army Corps of Engineers

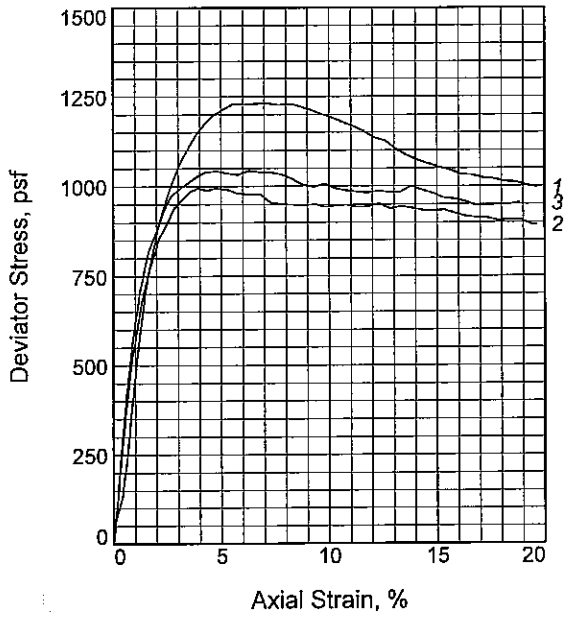
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 40.4
Sample Number: 12B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** AB





Sample No.		1	2	3
Initial	Water Content, %	47.4	50.9	51.2
	Dry Density, pcf	72.7	70.5	69.9
	Saturation, %	96.5	98.3	97.5
	Void Ratio	1.3364	1.4078	1.4290
	Diameter, in.	1.418	1.423	1.412
	Height, in.	3.144	3.145	3.145
At Test	Water Content, %	47.4	50.9	51.2
	Dry Density, pcf	72.7	70.5	69.9
	Saturation, %	96.5	98.3	97.5
	Void Ratio	1.3364	1.4078	1.4290
	Diameter, in.	1.418	1.423	1.412
	Height, in.	3.144	3.145	3.145
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	20.45	41.69
Fail. Stress, psf		1231	995	1042
Strain, %		7.1	4.0	4.8
Ult. Stress, psf		1051	931	980
Strain, %				
σ_1 Failure, psf		2229	3939	7045
σ_3 Failure, psf		998	2944	6003

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH3 W/ LNS SM

LL= 60 **PL=** 21 **PI=** 39
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

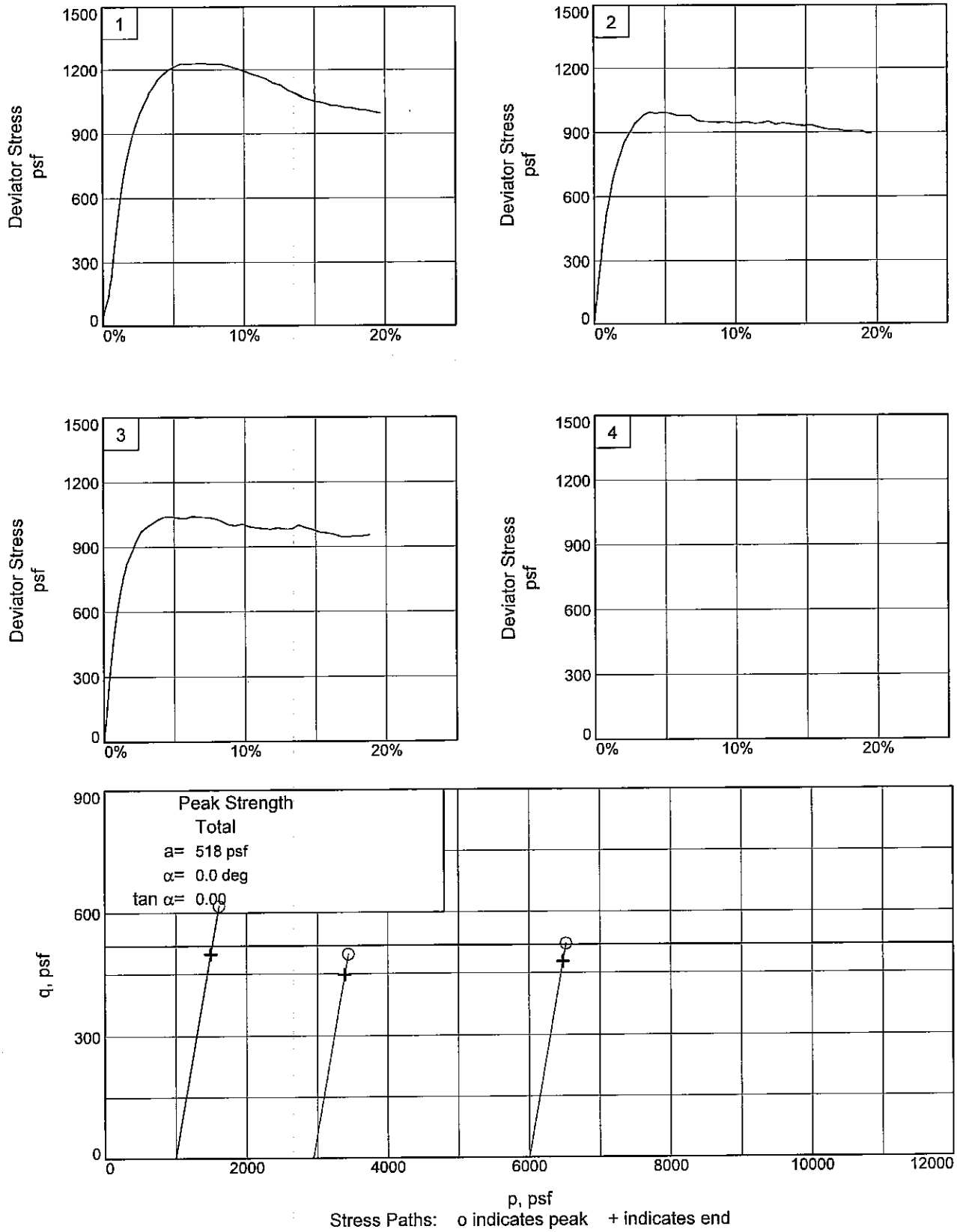
Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 45.7
Sample Number: 13C
Proj. No.: 0022-0002 **Date Sampled:** 06/04/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

Tested By: DW **Checked By:** AB

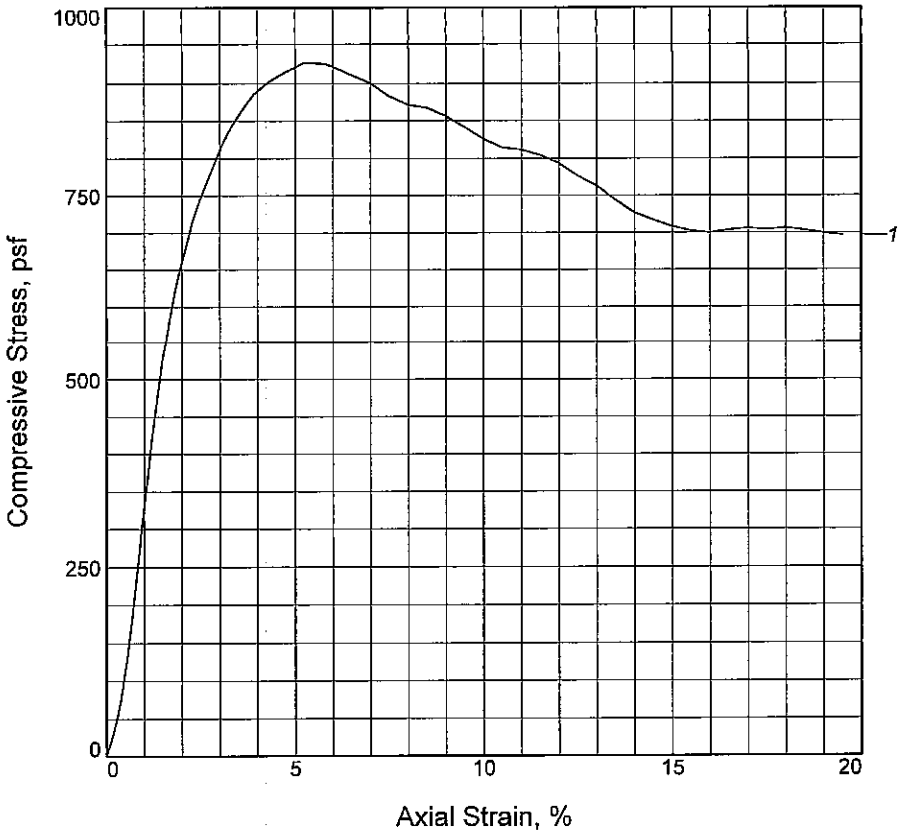


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UCL **Depth:** 45.7 **Sample Number:** 13C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW **Checked By:** AB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	927			
Undrained shear strength, psf	464			
Failure strain, %	5.2			
Strain rate, in./min.	0.031			
Water content, %	56.1			
Wet density, pcf	103.6			
Dry density, pcf	66.4			
Saturation, %	98.0			
Void ratio	1.5571			
Specimen diameter, in.	1.427			
Specimen height, in.	3.136			
Height/diameter ratio	2.20			

Description: SO GR CH4 W/ ARS ML

LL = 82	**PL =** 34	**PI =** 48	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 06/04/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

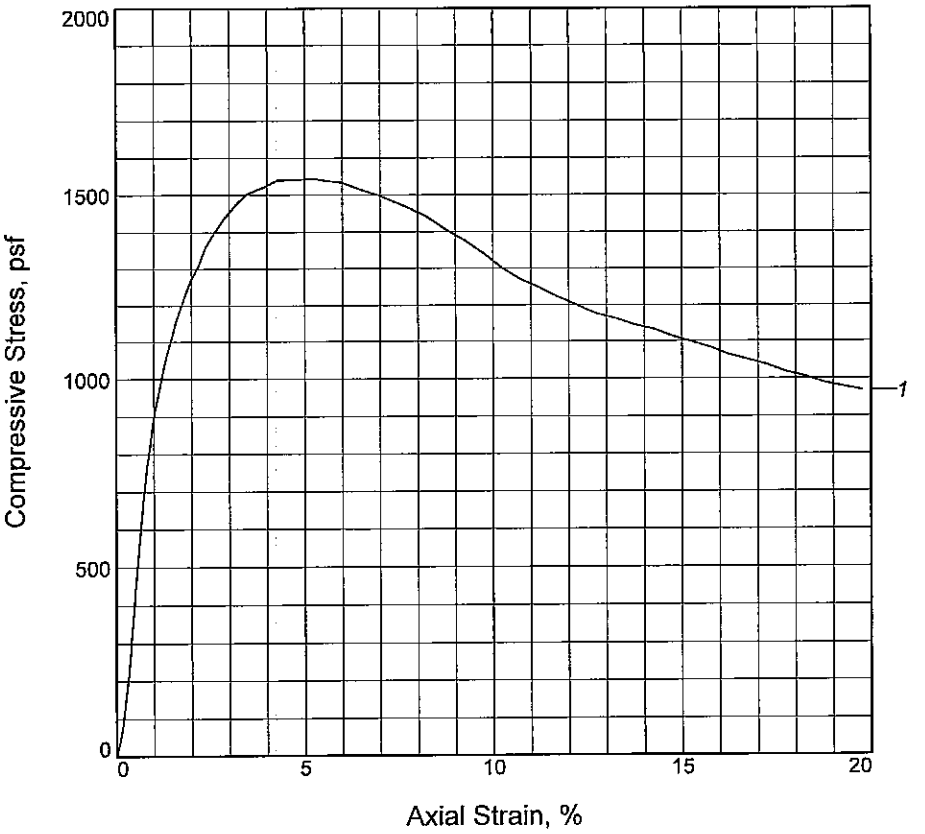
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 49.7
Sample Number: 14C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** AB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1544			
Undrained shear strength, psf	772			
Failure strain, %	5.2			
Strain rate, in./min.	0.031			
Water content, %	62.9			
Wet density, pcf	100.2			
Dry density, pcf	61.5			
Saturation, %	97.2			
Void ratio	1.7600			
Specimen diameter, in.	1.450			
Specimen height, in.	3.144			
Height/diameter ratio	2.17			

Description: M GR CH4 W/ ARS ML

LL = 89	**PL** = 26	**PI** = 63	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 0.38
Remarks:

Figure _____

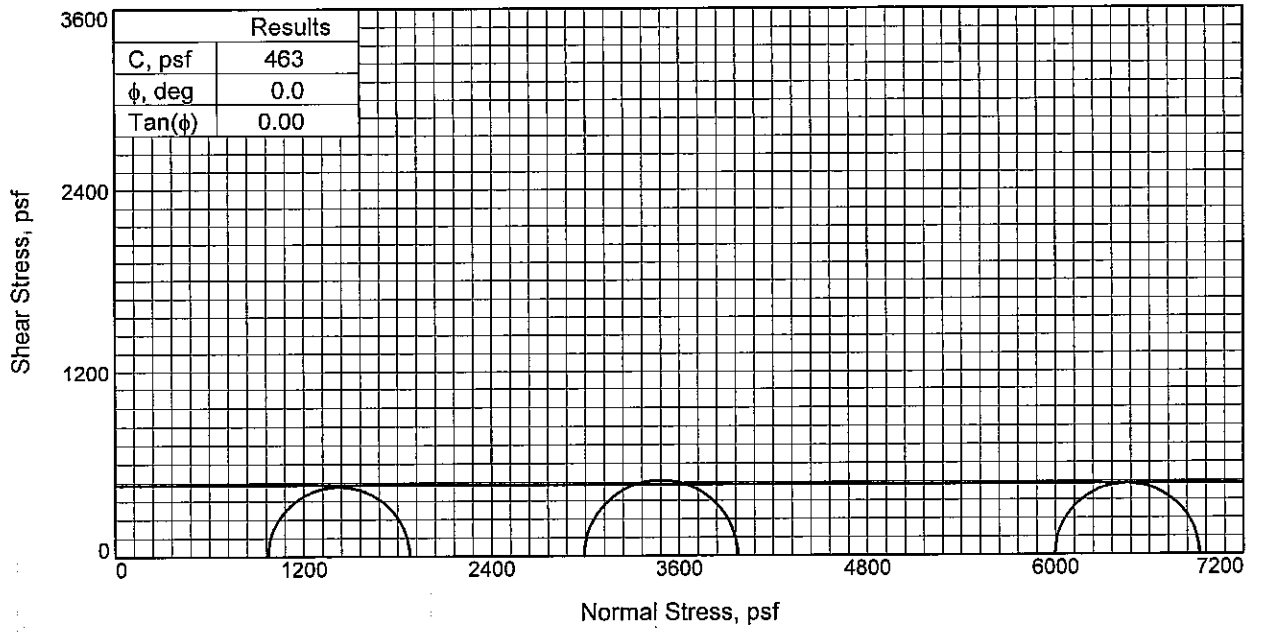
Client: U.S. Army Corps of Engineers

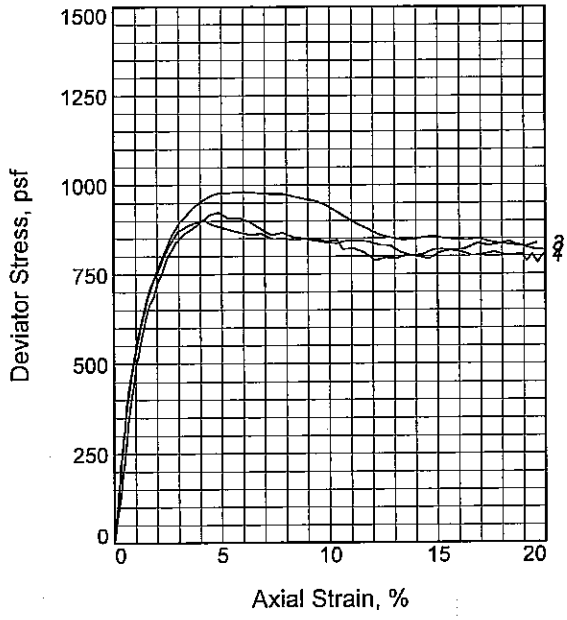
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 53.7
Sample Number: 15C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB





Sample No.		1	2	3
Initial	Water Content, %	54.9	54.0	54.7
	Dry Density, pcf	67.7	67.8	66.9
	Saturation, %	99.0	97.7	96.9
	Void Ratio	1.5073	1.5031	1.5368
	Diameter, in.	1.433	1.432	1.440
	Height, in.	3.134	3.148	3.145
At Test	Water Content, %	54.9	54.0	54.7
	Dry Density, pcf	67.7	67.8	66.9
	Saturation, %	99.0	97.7	96.9
	Void Ratio	1.5073	1.5031	1.5368
	Diameter, in.	1.433	1.432	1.440
	Height, in.	3.134	3.148	3.145
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.76	20.78	41.64
Fail. Stress, psf		902	981	923
Strain, %		4.2	5.8	4.9
Ult. Stress, psf		787	845	818
Strain, %				
σ_1 Failure, psf		1876	3973	6920
σ_3 Failure, psf		974	2992	5997

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH3 W/ LNS ML

LL= 65 **PL=** 23 **PI=** 42
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

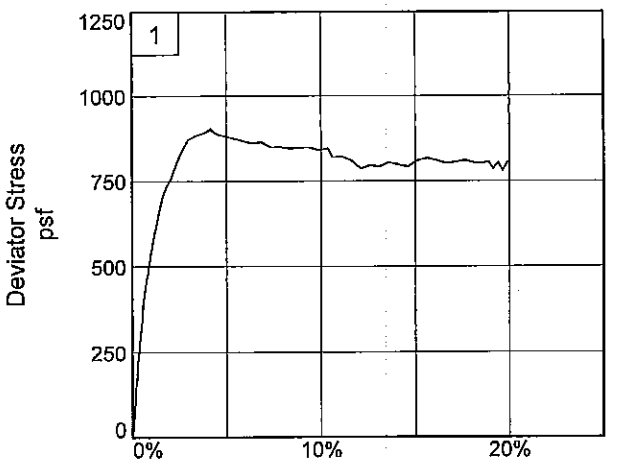
Client: U.S. Army Corps of Engineers

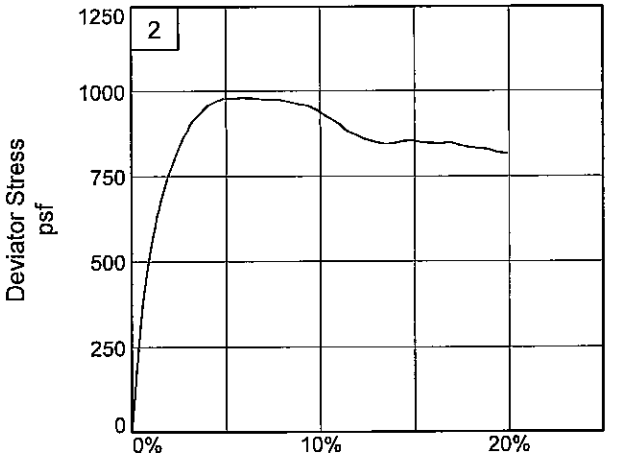
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 57.7
Sample Number: 16C
Proj. No.: 0022-0002 **Date Sampled:** 06/04/07

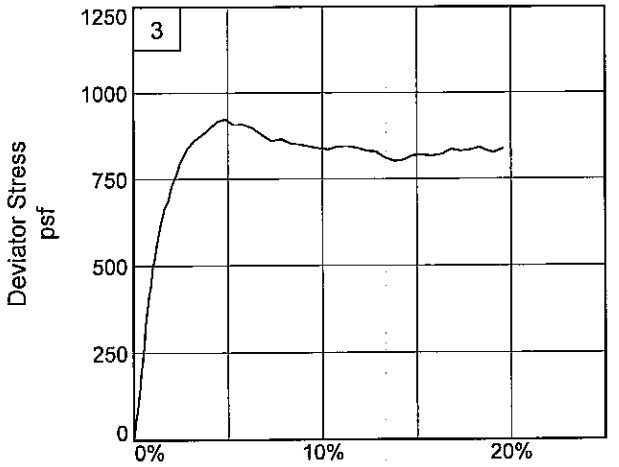
TRIAXIAL SHEAR TEST REPORT

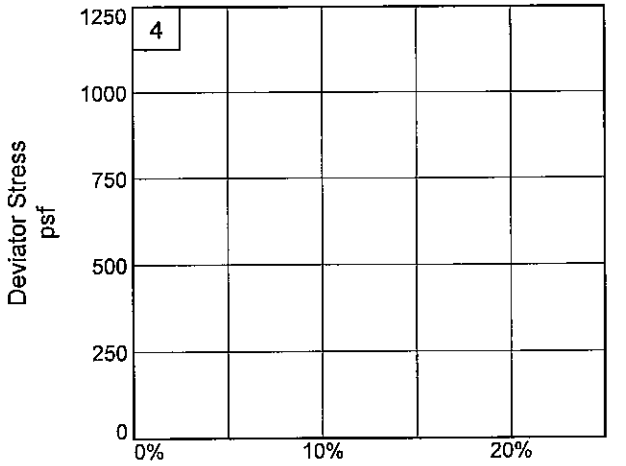
FFEBJV, LLC

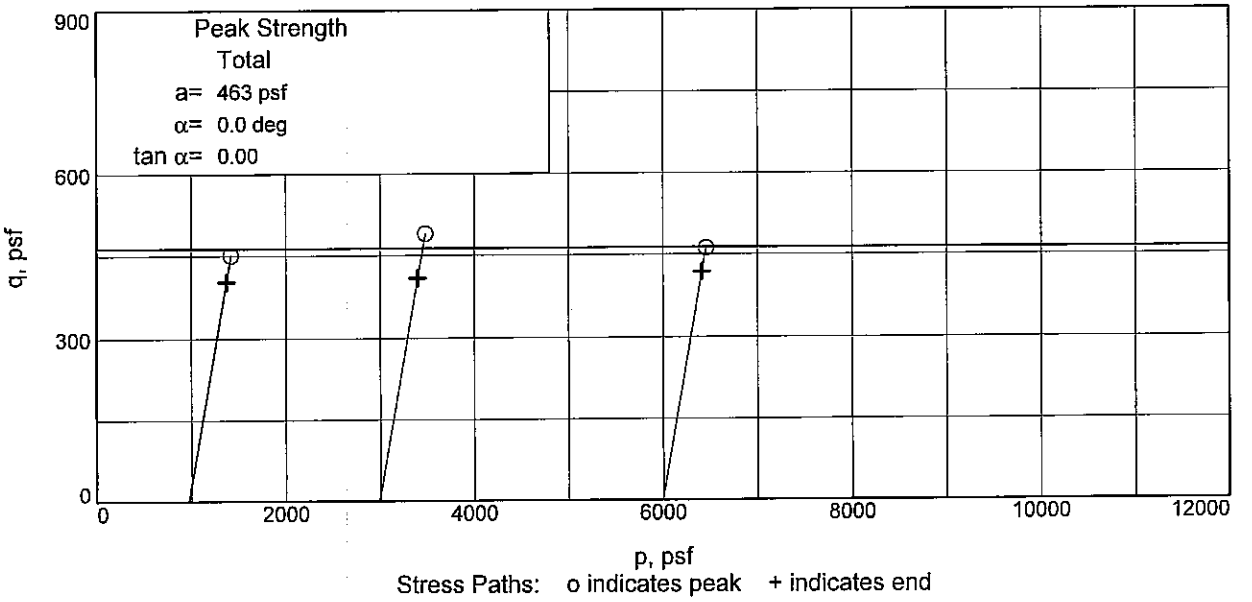
Tested By: DW _____ **Checked By:** AB _____











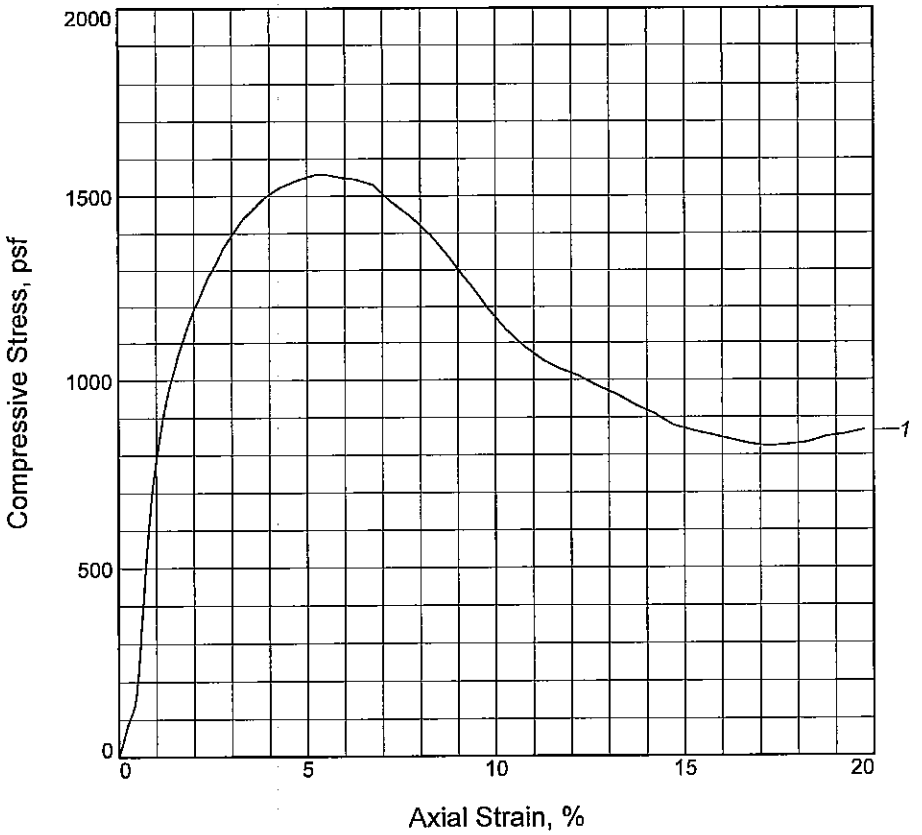
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UCL **Depth:** 57.7 **Sample Number:** 16C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW **Checked By:** AB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1558			
Undrained shear strength, psf	779			
Failure strain, %	5.5			
Strain rate, in./min.	0.031			
Water content, %	58.3			
Wet density, pcf	103.1			
Dry density, pcf	65.2			
Saturation, %	98.7			
Void ratio	1.6058			
Specimen diameter, in.	1.437			
Specimen height, in.	3.139			
Height/diameter ratio	2.18			

Description: M GR CH4 W/ ARS ML

LL = 84	**PL** = 33	**PI** = 51	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 06/04/07
Remarks:

Figure _____

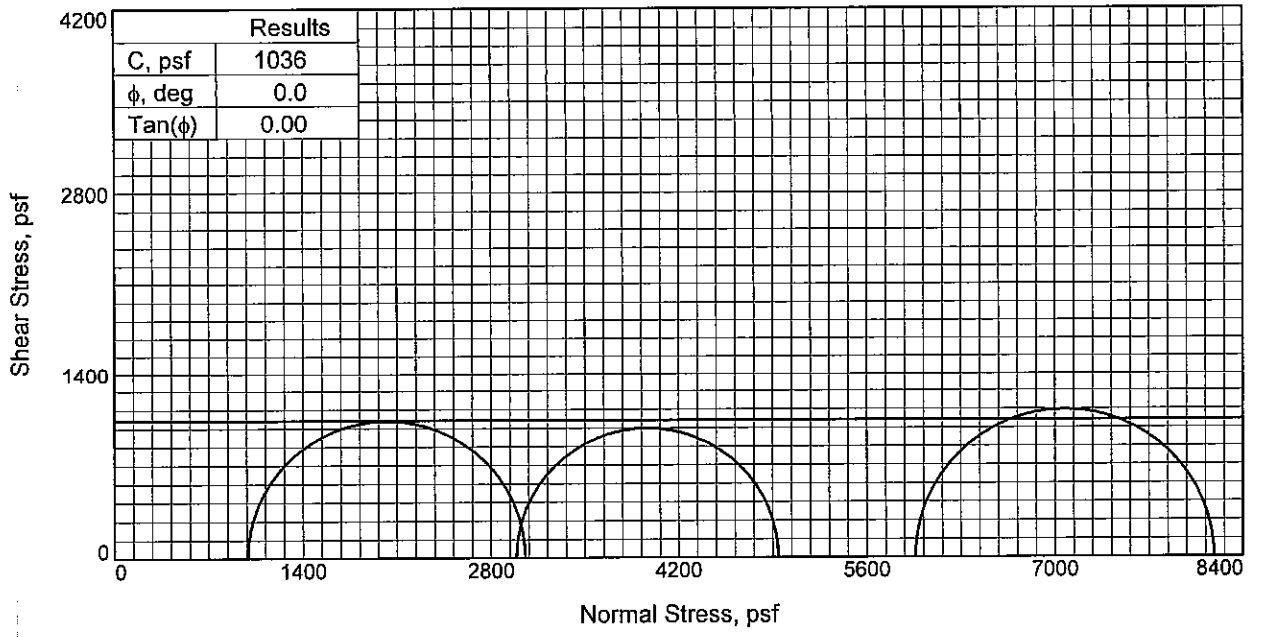
Client: U.S. Army Corps of Engineers

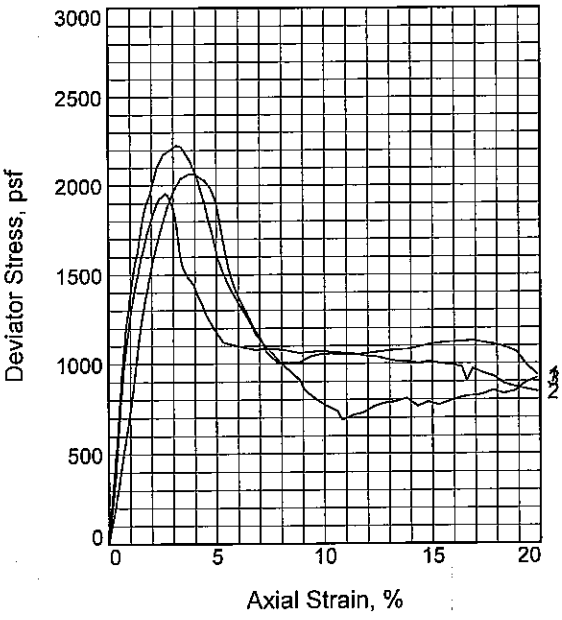
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 65.7
Sample Number: 18C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** AB





Sample No.		1	2	3
Initial	Water Content, %	61.8	62.9	62.2
	Dry Density, pcf	63.1	61.9	62.4
	Saturation, %	99.4	98.2	98.3
	Void Ratio	1.6902	1.7442	1.7215
	Diameter, in.	1.442	1.448	1.454
	Height, in.	3.142	3.138	3.139
At Test	Water Content, %	61.8	62.9	62.2
	Dry Density, pcf	63.1	61.9	62.4
	Saturation, %	99.4	98.2	98.3
	Void Ratio	1.6902	1.7442	1.7215
	Diameter, in.	1.442	1.448	1.454
	Height, in.	3.142	3.138	3.139
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.76	41.39
Fail. Stress, psf		2065	1953	2224
Strain, %		3.8	2.6	3.2
Ult. Stress, psf		1004	1011	686
Strain, %				
σ_1 Failure, psf		3055	4943	8185
σ_3 Failure, psf		990	2990	5961

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST GR CH4 W/ LNS ML, SL

LL= 94 **PL=** 28 **PI=** 66
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

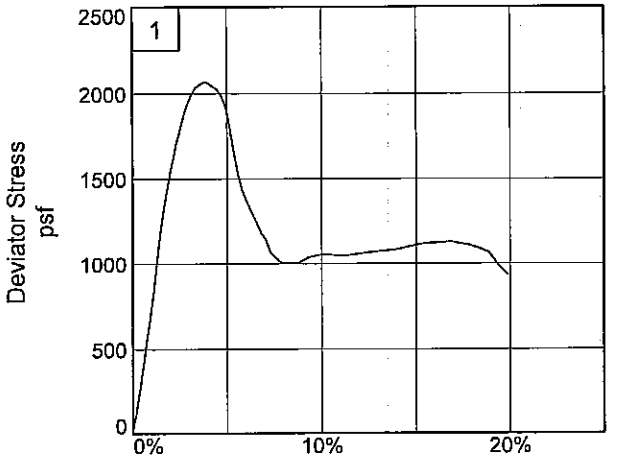
Client: U.S. Army Corps of Engineers

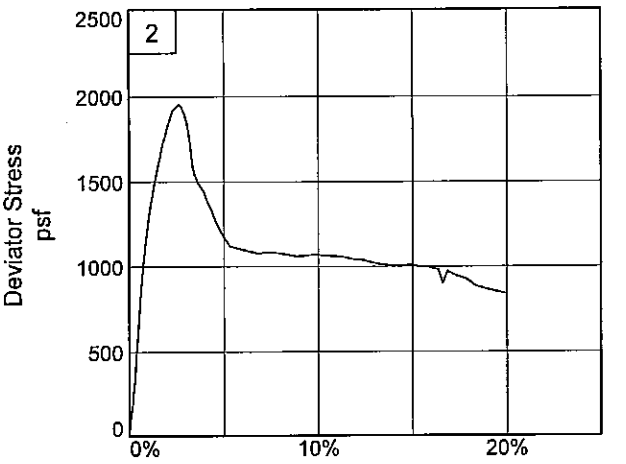
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 69.7
Sample Number: 19C
Proj. No.: 0022-0002 **Date Sampled:** 06/04/07

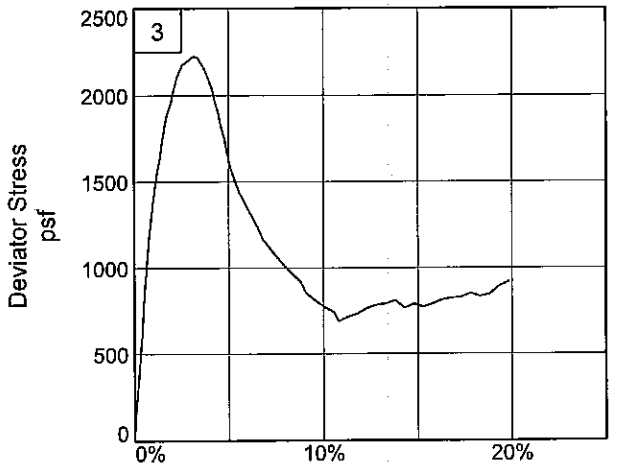
TRIAXIAL SHEAR TEST REPORT

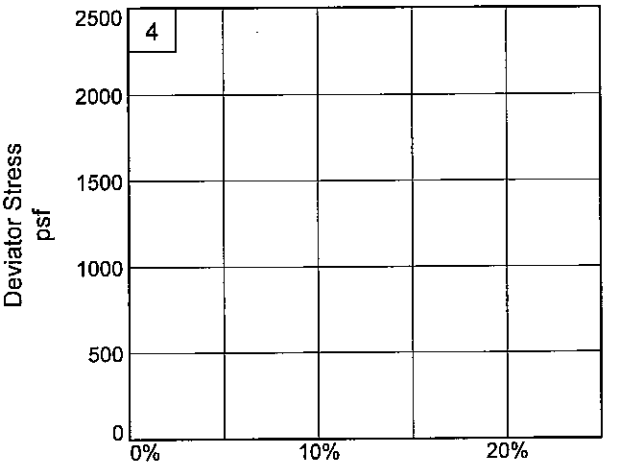
FFEBJV, LLC

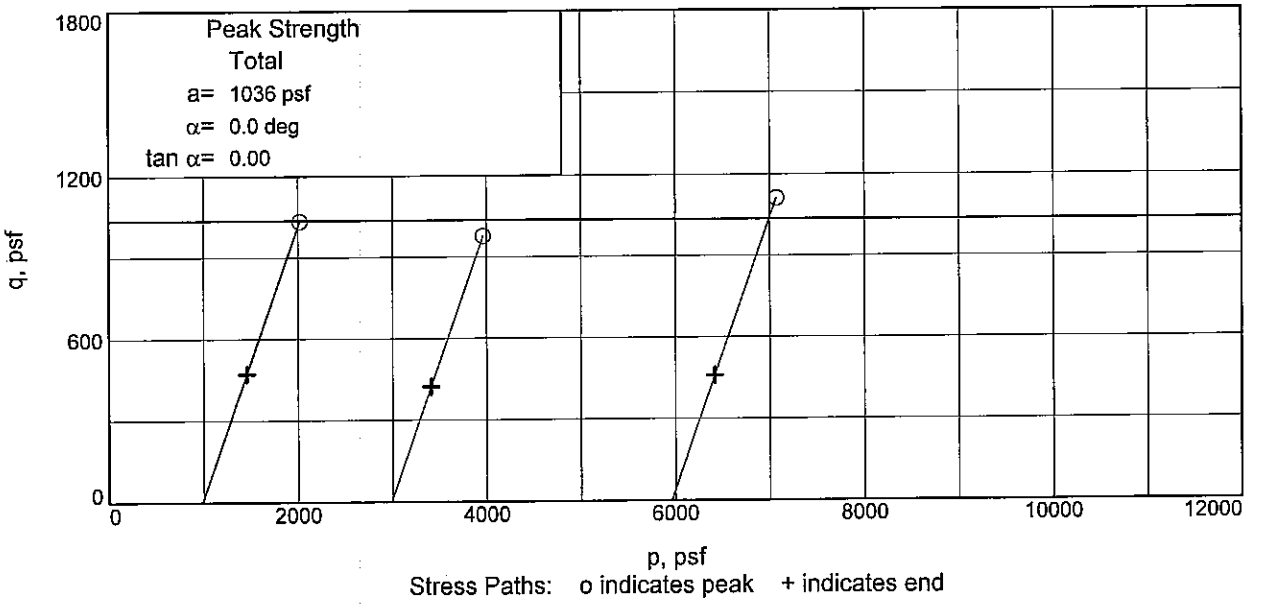
Tested By: DW **Checked By:** AB











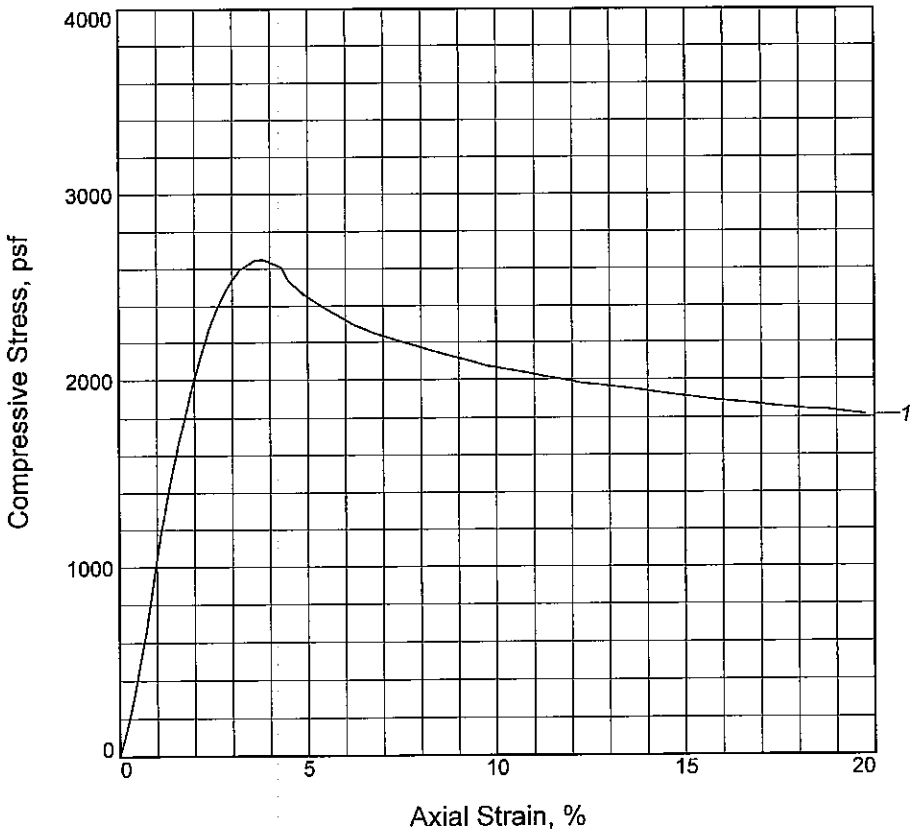
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UCL **Depth:** 69.7 **Sample Number:** 19C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW **Checked By:** AB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2648			
Undrained shear strength, psf	1324			
Failure strain, %	3.8			
Strain rate, in./min.	0.031			
Water content, %	47.8			
Wet density, pcf	108.0			
Dry density, pcf	73.1			
Saturation, %	97.7			
Void ratio	1.3416			
Specimen diameter, in.	1.439			
Specimen height, in.	3.135			
Height/diameter ratio	2.18			

Description: ST GR CH4 W/ SIF, ARS SP

LL = 72	**PL** = 22	**PI** = 50	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 06/04/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

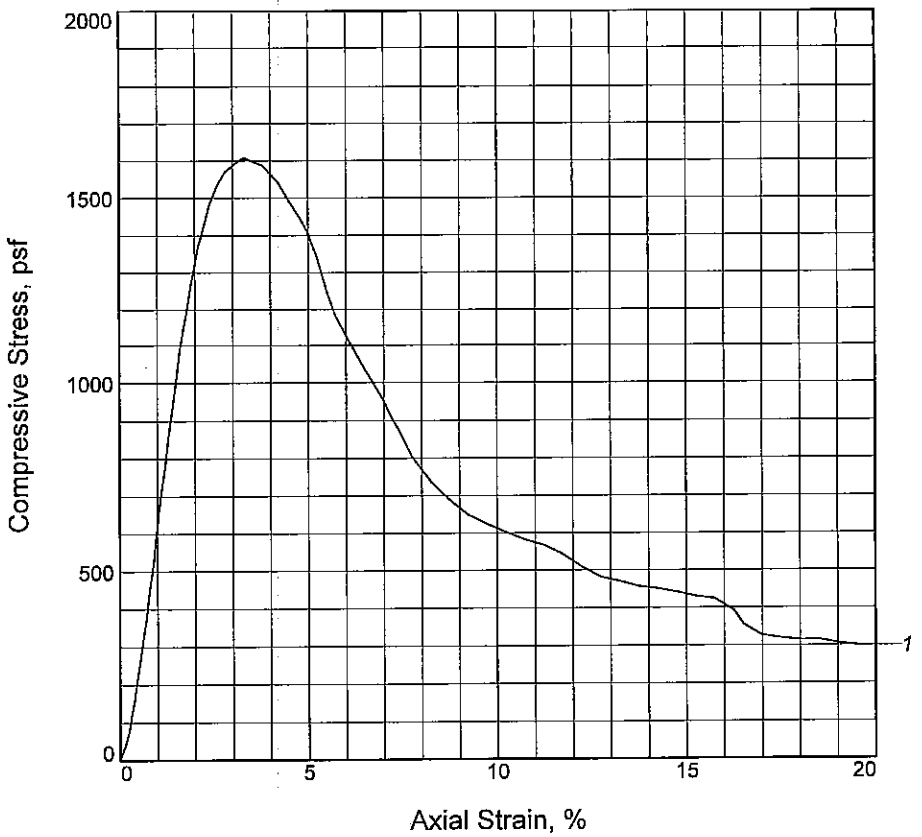
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 77.7
Sample Number: 21C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** AB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1606			
Undrained shear strength, psf	803			
Failure strain, %	3.3			
Strain rate, in./min.	0.031			
Water content, %	34.2			
Wet density, pcf	112.0			
Dry density, pcf	83.5			
Saturation, %	91.1			
Void ratio	1.0048			
Specimen diameter, in.	1.443			
Specimen height, in.	3.146			
Height/diameter ratio	2.18			

Description: M GR CL4 W/ LNS ML

LL = 39	**PL** = 18	**PI** = 21	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 06/04/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

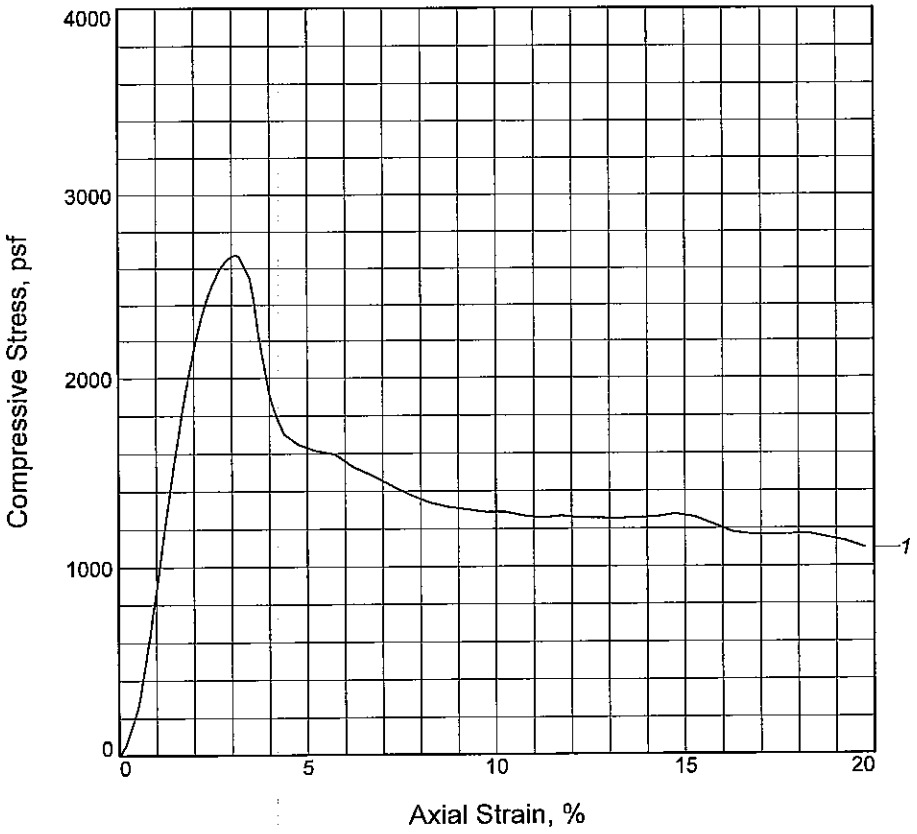
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 81.7
Sample Number: 22C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** AB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2671			
Undrained shear strength, psf	1335			
Failure strain, %	3.1			
Strain rate, in./min.	0.031			
Water content, %	37.4			
Wet density, pcf	111.2			
Dry density, pcf	80.9			
Saturation, %	93.3			
Void ratio	1.0831			
Specimen diameter, in.	1.461			
Specimen height, in.	3.144			
Height/diameter ratio	2.15			

Description: ST GR CH2-S W/ SIF

LL = 50	**PL** = 19	**PI** = 31	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 06/04/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UCL **Depth:** 89.7
Sample Number: 24C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** AB

BOR. WWHC-48UCL
STA. LAT N29^49'36.66" LONG W90^06'46.74"

25 APRIL 2007

GROUND EL. 12.0

0.0	0.8	22		CH	SISST	GR	T	RT					
0.8	2.0	63		CH	SISST	GR	T	RT					
2.0	2.8	30		CH	SIS M	GR	T	RT					
2.8	4.0	28	4.0	CH	SIS M	GR	T	RT					
4.0	4.8	32	4.8	CH	M	GR	T	CC					
4.8	5.7	36		CH	SIS M	GR		WD					
5.7	6.6	35	6.6	CH	SIS M	GR		RT					
6.6	8.0	36		CL	M	GR							
8.0	8.8	43		CL	M	GR							
8.8	9.7	32		CL	SO	GR		CC					
9.7	12.0	33	12.0	CL	SO	GR		CC					
12.0	12.8	38		CL	SIS M	GR							
12.8	13.7	37	13.7	CL	SIS M	GR		WD	TR-	O			
13.7	16.0	35		CH	M	GR		TR-	O	WD			
16.0	16.8	35	16.8	CH	M	GR	T	CC					
16.8	17.7	33		CH	SIS M	GR	T						
17.7	18.6	29		CH	SIS M	GR	BR	WD					
18.6	20.0	34		CH	SIS M	GR	BR	WD					
20.0	20.8	40		CH	SIS M	GR							
20.8	21.7	35	21.7	CH	SIS M	GR							
21.7	22.8	38		CH	M	GR		RT					
22.8	24.8	33	24.8	CH	M	GR							
24.8	25.7	34		CL	SO	GR		RT	CS				
25.7	28.0	32		CL	SO	GR		RT	CS	461118	27	23	31 260
28.0	28.8	49		CL	SO	GR							
28.8	29.7	37		CL	SO	GR		CS					
29.7	32.0	34	32.0	CL	SO	GR		CS					
32.0	32.8	49	32.8	CH	SIS M	GR		WD					
32.8	33.7	73	33.7	CH	O M	GR		SIS					
33.7	36.0	73	36.0	CH	SISSO	GR		WD					
36.0	36.8	69		CH	SO	GR		WD	O	SIF			
36.8	37.7	63	37.7	CH	M	GR		WD	O	SIF			
37.7	38.6	60	38.6	CH	SIS M	GR		WD	O				
38.6	40.0	31		CH	M	GR		RT					
40.0	40.4	33		CH	M	GR							
40.4	41.3	43		CH	M	GR		CC		583108	56	26	48 407

41.3 41.7 31 CH M GR
41.7 42.2 21 42.2CH M GR
42.2 44.0 50 44.0CH SIS M GR
44.0 44.8 66 44.8CH SS M GR
44.8 45.7 44 45.7CH SIS M GR S
45.7 46.6 60 46.6CH SS M GR
46.6 48.0 56 CH SIS M GR
48.0 48.8 63 CH SISSO GR
48.8 49.7 61 CH SISSO GR
49.7 52.0 59 CH SISSO GR 464104 82 34 56 500
52.0 52.8 62 CH SIS M GR
52.8 53.7 58 CH SIS M GR
53.7 54.6 57 CH SIS M GR 772100 89 26 63 540
54.6 56.0 62 56.0CH SIS M GR
56.0 56.8 59 56.8CH SO GR
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66.6 68.0 59 68.0CH SIS M GR
68.0 68.8 59 68.8CH SS M GR
68.8 69.7 57 CH SISST GR
69.7 70.6 62 CH SISST GR SL
70.6 72.0 56 72.0CH SISST GR SL
72.0 72.8 57 72.8CH SS M GR SIF
72.8 73.7 28 73.7CL M GR SIFCS
73.7 76.0 29 76.0SP GR SIFCS
76.0 76.8 34 CH ST GR
76.8 77.7 33 CH ST GR SIF S
77.7 78.6 54 CH ST GR SIF S 1324108 72 22 48 780
78.6 80.0 48 80.0CH ST GR S
80.0 80.8 35 80.8CH SIS M GR SIF
80.8 81.7 29 81.7CH M GR
81.7 82.6 47 82.6CL SIS M GR 803112 39 18 34 820
82.6 84.0 31 84.0CL M GR CS
84.0 84.8 36 84.8CH M GR
84.8 85.7 37 CH SIS M GR
85.7 86.6 36 86.6CH SIS M GR

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 86.6 88.0 37     CH      M GR
 88.0 88.8 44 88.8CH     ST GR       SIF
 88.8 89.7 44 89.7CH  SISST GR       SIF
 89.7 90.6 40     CH     ST GR       SIF             1335111 50 19      37 900
 90.6 92.0 40 92.0CH     ST GR       SIF
999.9
```

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 6.00/ 6.00 Water Con: 34.00
LL,PL,PI : 51, 16, 35 Dry Dens : 89.00
Cohesion : 0.229 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 10.00/ 2.00 Water Con: 34.00
LL,PL,PI : 49, 17, 32 Dry Dens : 88.00
Cohesion : 0.247 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 13.10/-1.10 Water Con: 29.00
LL,PL,PI : 44, 18, 26 Dry Dens : 96.00
Cohesion : 0.671 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 18.00/-6.00 Water Con: 34.00
LL,PL,PI : 54, 19, 35 Dry Dens : 88.00
Cohesion : 0.392 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 22.00/-10.0 Water Con: 32.00
LL,PL,PI : 50, 24, 26 Dry Dens : 90.00
Cohesion : 0.489 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 30.00/-18.0 Water Con: 35.00
LL,PL,PI : 32, 20, 12 Dry Dens : 87.00
Cohesion : 0.232 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 33.10/-21.1 Water Con: 87.00
LL,PL,PI : 127, 32, 95 Dry Dens : 49.00
Cohesion : 0.314 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-26.0 Water Con: 60.00
LL,PL,PI : 78, 25, 53 Dry Dens : 63.00
Cohesion : 0.301 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 46.00/-34.0 Water Con: 50.00
LL,PL,PI : 60, 21, 39 Dry Dens : 71.00
Cohesion : 0.259 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 58.00/-46.0 Water Con: 55.00
LL,PL,PI : 65, 23, 42 Dry Dens : 67.00
Cohesion : 0.225 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 70.00/-58.0 Water Con: 62.00
LL,PL,PI : 94, 28, 66 Dry Dens : 62.00
Cohesion : 0.518 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-48UFT

Current Date: 9/15/2008

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	VST BR CH2	CH2		16												
1B	0.8	VST BR CH2	CH2		23												
2A	2.0	ST GR & T CH2	CH2		29												
3A	4.0	M GR CH2	CH2		39												
3B	4.8	M GR CL6 W/ LNS ML, RT, WD	CL6		30	92	119	97	UU	0	716		46	16	30	0.43	
NS	5.7	NO SAMPLE	NS														
4A	8.0	M GN & GR CH3 W/ ARS ML	CH3		33												
4B	8.8	M T & GR CH3	CH3	5	34	85	114	93	UC	--	719	1438	61	26	35	0.57	
NS	9.7	NO SAMPLE	NS														
5A	12.0	M GR & T CH3	CH3		39												
NS	12.4	NO SAMPLE	NS														
6A	16.0	M T & GR CH3	CH3		35												
6B	16.8	SO GR CH3 W/ ARS ML	CH3		40												
6C	17.7	SO GR CH3 W/ ARS ML, SL, RT	CH3		38	83	114	98	UU	0	368		56	17	39	0.52	
7A	20.0	SO GR CH4 W/ ARS ML	CH4		44												
7B	20.8	SO GR CL6 W/ LNS CH	CL6		37	85	116	100					41	17	24		Gs, CON
7C	21.7	GR ML2 W/ ARS CH	ML2		31	97	126	100	UU	0	306		NP	NP		0.12	
8A	24.0	GR ML2 W/ LNS CH	ML2		31												
8B	24.8	GR ML2 W/ LNS CH	ML2		33												SV
8C	25.7	GR ML2 W/ LNS CH	ML2		34												
8D	26.6	M GR CL6	CL6		37												
9A	28.0	M GR CH4 W/ CC	CH4		76												
9B	28.8	M GR CH4 W/ ARS SM	CH4		72												
9C	29.7	M GR CH4 W/ WD, SL, SIF	CH4		67	59	98	96	UU	0	586		87	48	39	0.32	
9D	30.6	M GR CH4 W/ ARS SM	CH4		65												
10A	32.0	SO GR CL6 W/ LNS CH	CL4		36												
10B	32.8	SO GR CL4 W/ LNS ML	CL4	13	34	86	116	98	UC	--	437	873	33	23	10	0.22	
NS	33.2	NO SAMPLE	NS														
11A	36.0	SO GR CH2 W/ LNS ML	CH2		40												
11B	36.8	GR SM1 W/ LNS CH	SM1		27												
11C	37.7	SO GR CH4 W/ ARS SM, SL	CH4		58	66	104	100	UU	0	407		75	22	53	0.24	
12A	40.0	GR SM1	SM1		24												
12B	40.8	GR SM1	SM1		23												SV
12C	41.7	GR ML2 W/ LNS CH	ML2		24												
12D	42.6	M GR CH4 W/ LNS ML	CH4		56												
13A	44.0	M GR CH4 W/ LNS ML	CH4		66												
13B	44.8	M GR CH3 W/ LNS ML, SL	CH3		56	66	103	97	UU	0	768		76	35	41	0.30	

Remarks: 1 consol (7B) & 1 UU (7C) added WJY

Checked by: RNE

File Name: TO 2 WWHC

FFEBJV, LLC.

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-48UFT

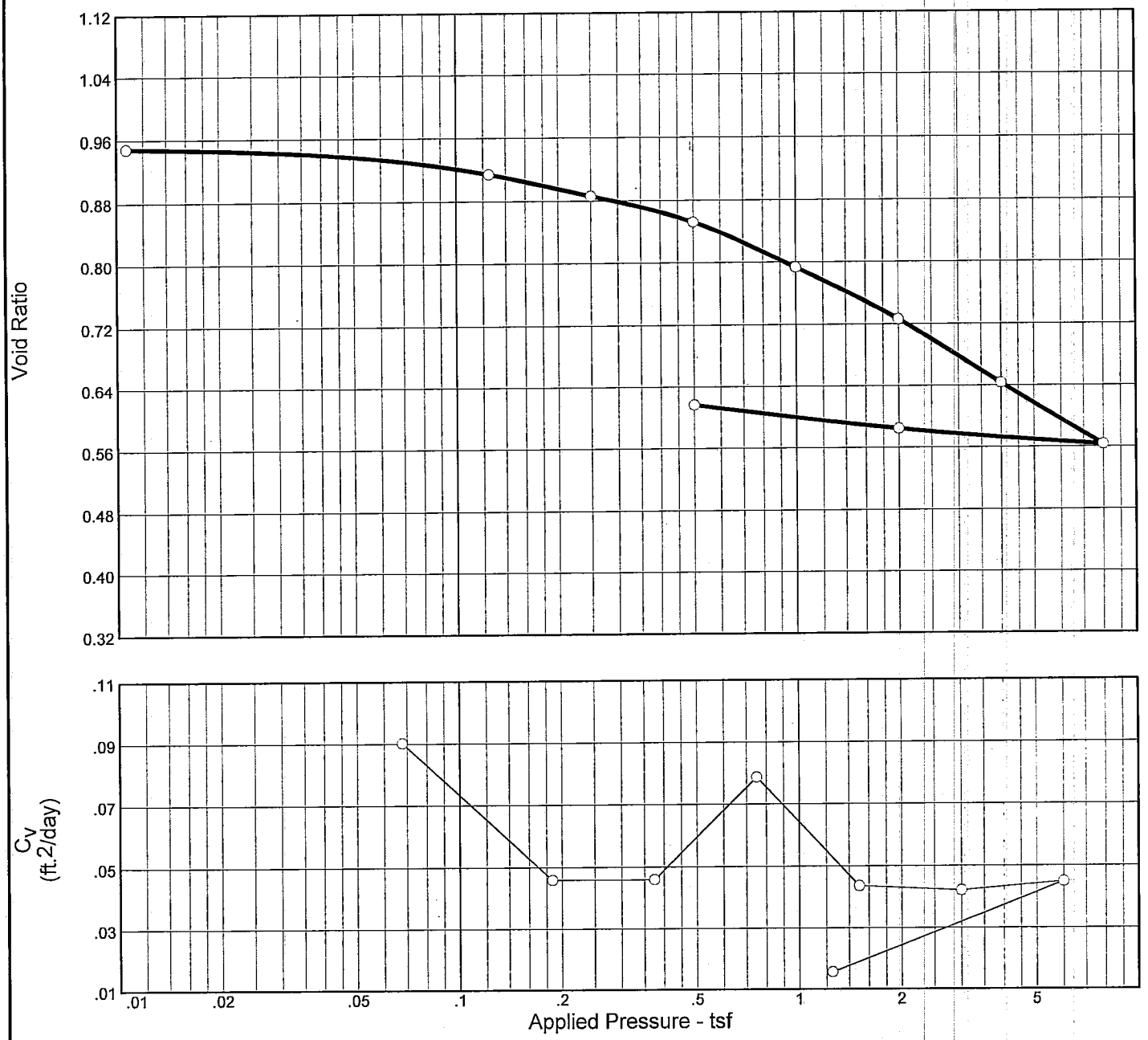
Current Date: 9/15/2008

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
13C	45.7	M GR CH3 W/ LNS ML, LNS SM	CH3		56												
13D	46.6	M GR CH3 W/ LNS SM	CH3		66												
14A	48.0	M GR CH3 W/ LNS ML	CH3		57												
14B	48.8	M GR CH3 W/ LNS ML	CH3		60												
14C	49.7	M GR CH3 W/ ARS ML	CH3	5	60	64	102	98	UC	--	726	1453	79	35	44	0.32	
14D	50.6	M GR CH3 W/ LNS ML	CH3		59												
15A	52.0	M GR CH4	CH4		62												
15B	52.8	M GR CH4 W/ LNS ML	CH4		58												
15C	53.7	M GR CH4 W/ LNS ML	CH4	5	57	66	103	98	UC	--	846	1692	79	24	55	0.39	
15D	54.6	M GR CH4 W/ ARS ML	CH4		63												
16	56.0	NO SAMPLE	NS														
17A	60.0	M GR CH3	CH3		59												
17B	60.8	M GR CH3 W/ SIF	CH3		57												
17C	61.7	M GR CH3 W/ ARS ML, SL	CH3	4	58	66	104	100	UC	--	673	1346	78	36	42	0.41	
17D	62.6	M GR CH3 W/ LNS ML	CH3		58												
18A	64.0	M GR CH4 W/ LNS & ARS ML	CH4		56												
18B	64.8	M GR CH4 W/ ARS ML	CH4		58												
18C	65.7	M GR CH4 W/ LNS SM	CH4		61												
18D	66.6	M GR CH4 W/ LNS SM	CH4		59												
19A	68.0	SO GR CL4-S W/ SIF	CL4-S		31												
19B	68.8	SO GR CL6 W/ SIF	CL6-S		31												
19C	69.7	SO GR CL4 W/ ARS SP, SIF	CL4	6	31	90	117	96	UC	--	330	659	33	23	10	0.23	
19D	70.6	SO GR CL4 W/ SIF, ARS SP	CL4		52												

Remarks: 1 consol (7B) & 1 UU (7C) added WJY
FFEBJV, LLC.

Checked by: RNE
File Name: TO 2 WWHC

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
100.6 %	35.9 %	85.3	41	24	2.66	0.74	0.27	0.948

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CL6 W/ LNS CH	CL6	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-48UFT **Sample No.:** 7B **Elev./Depth:** 20.8'

FFEBJV, LLC

St Rose, LA

Remarks:

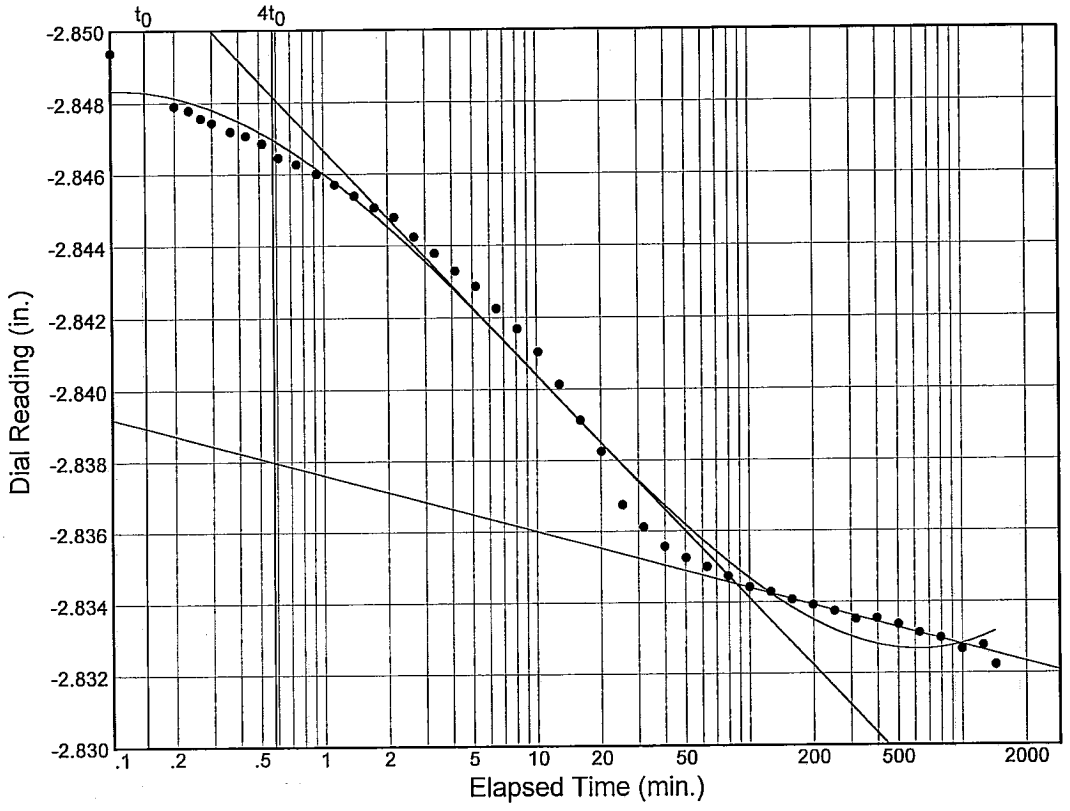
Tested by: CB
Calculated by: WJY
Checked by: WJY

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

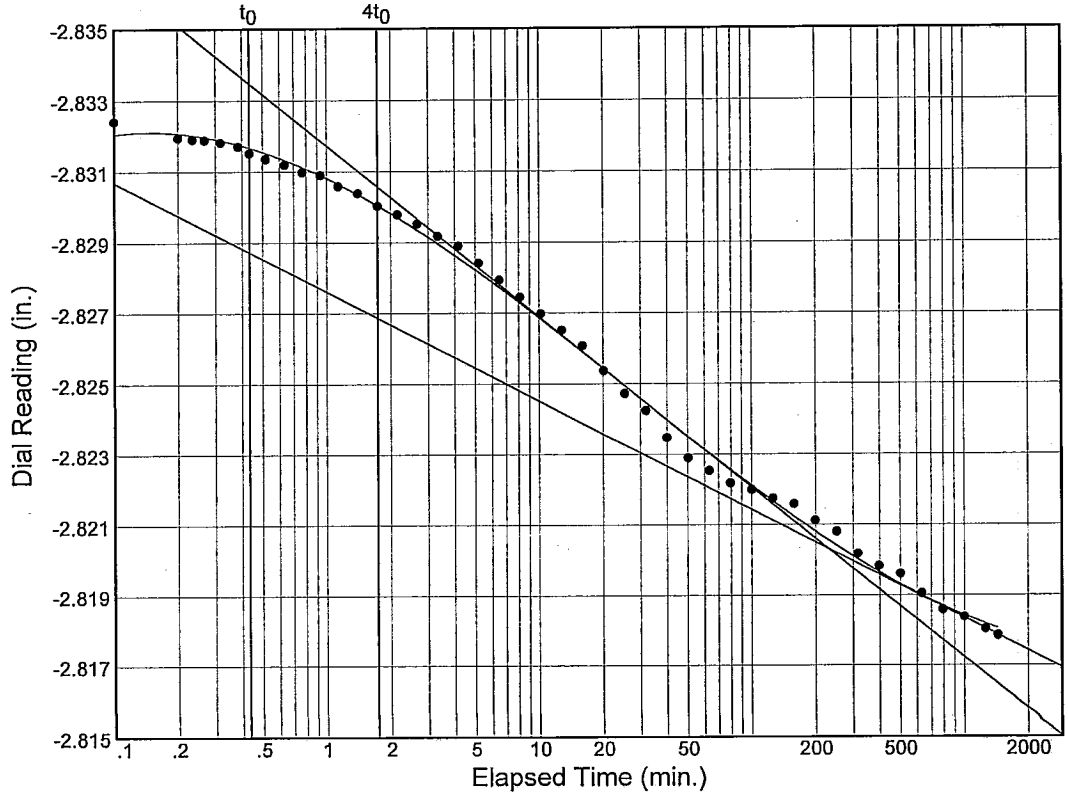
Source: WWHC-48UFT Sample No.: 7B Elev./Depth: 20.8'



Load No.= 2
Load= 0.13 tsf
D_0 = -2.84961
D_{50} = -2.84205
D_{100} = -2.83450
T_{50} = 5.40 min.

C_v @ T_{50}
0.09 ft.^{2}/day

C_α = 0.002



Load No.= 3
Load= 0.25 tsf
D_0 = -2.83330
D_{50} = -2.82681
D_{100} = -2.82032
T_{50} = 10.27 min.

C_v @ T_{50}
0.05 ft.^{2}/day

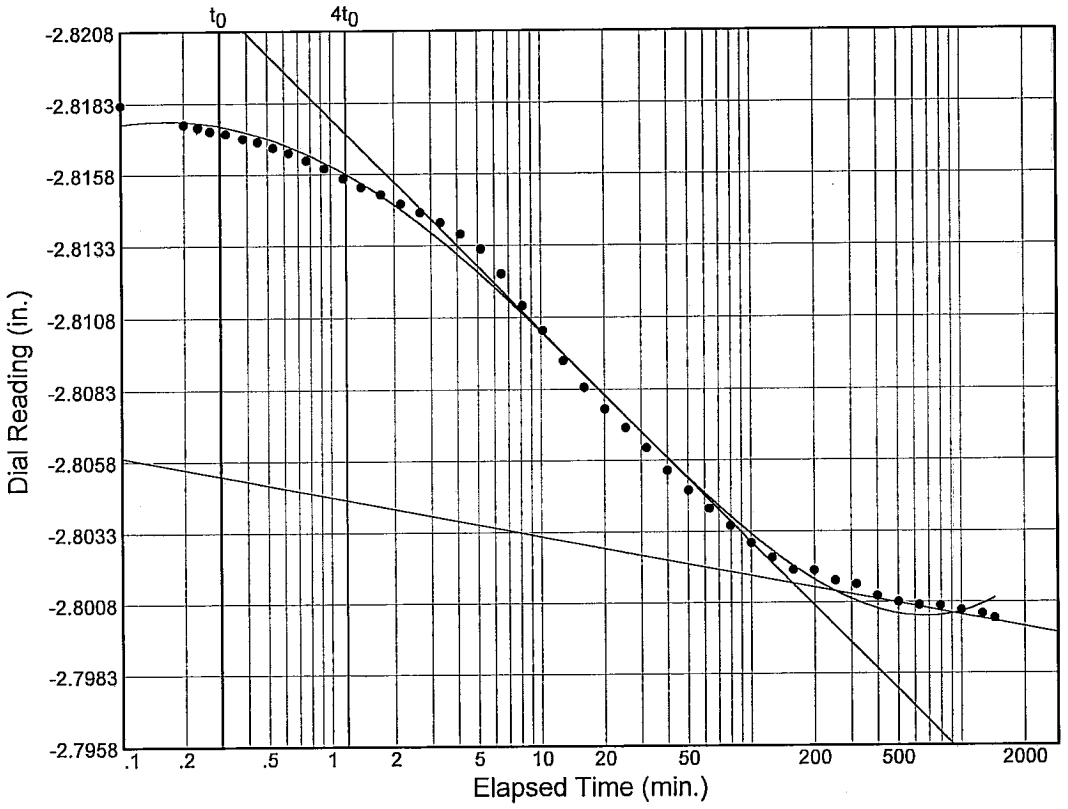
C_α = 0.003

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

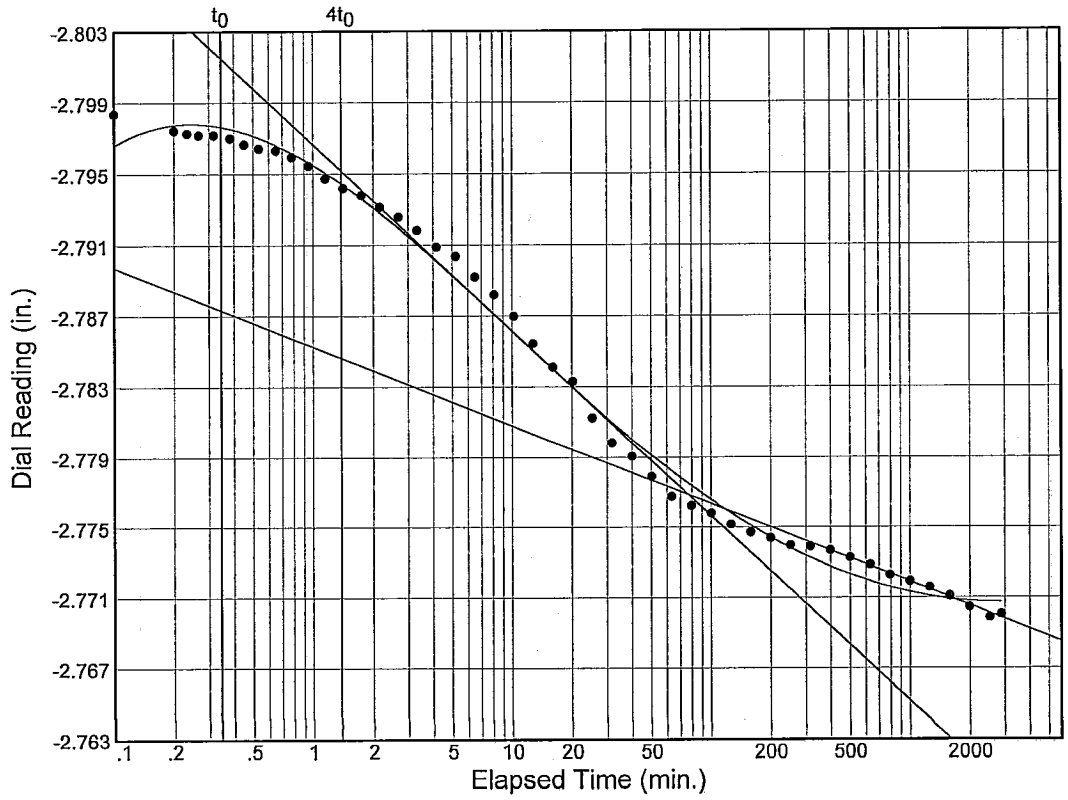
Source: WWHC-48UFT Sample No.: 7B Elev./Depth: 20.8'



Load No.= 4
Load= 0.50 tsf
D_0 = -2.81919
D_{50} = -2.81033
D_{100} = -2.80148
T_{50} = 9.93 min.

C_v @ T_{50}
0.05 ft.^{2}/day

C_α = 0.001



Load No.= 5
Load= 1.00 tsf
D_0 = -2.80083
D_{50} = -2.78885
D_{100} = -2.77687
T_{50} = 5.51 min.

C_v @ T_{50}
0.08 ft.^{2}/day

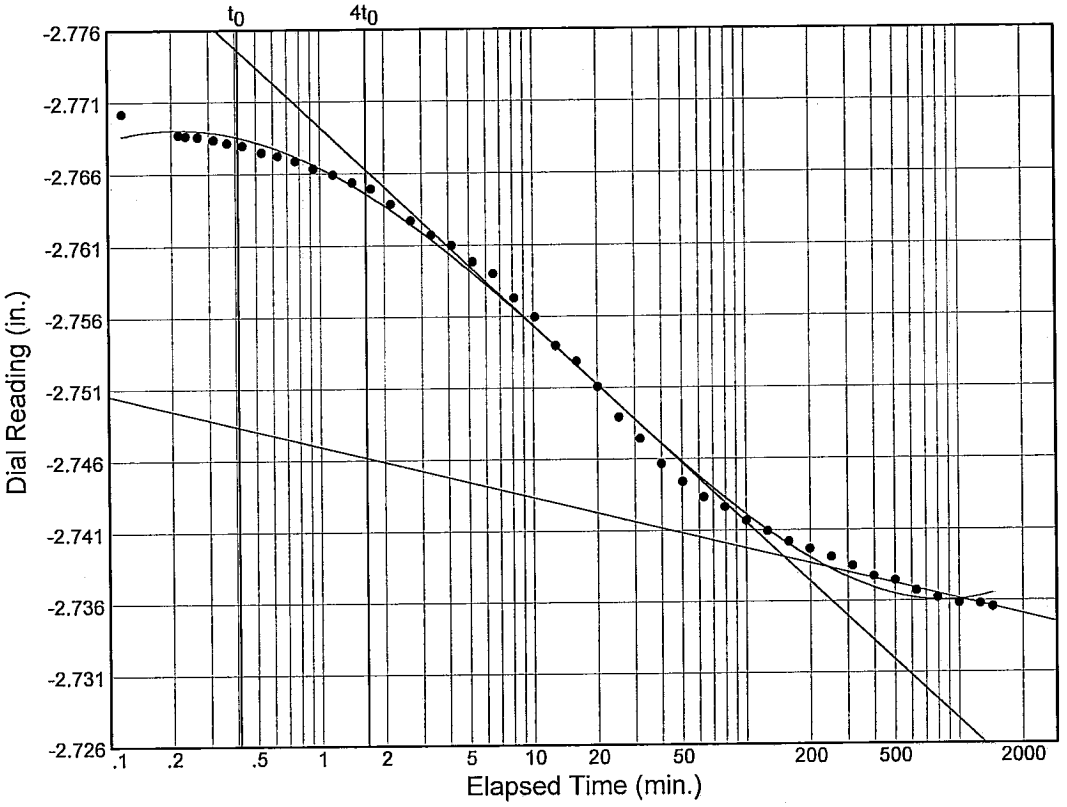
C_α = 0.005

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

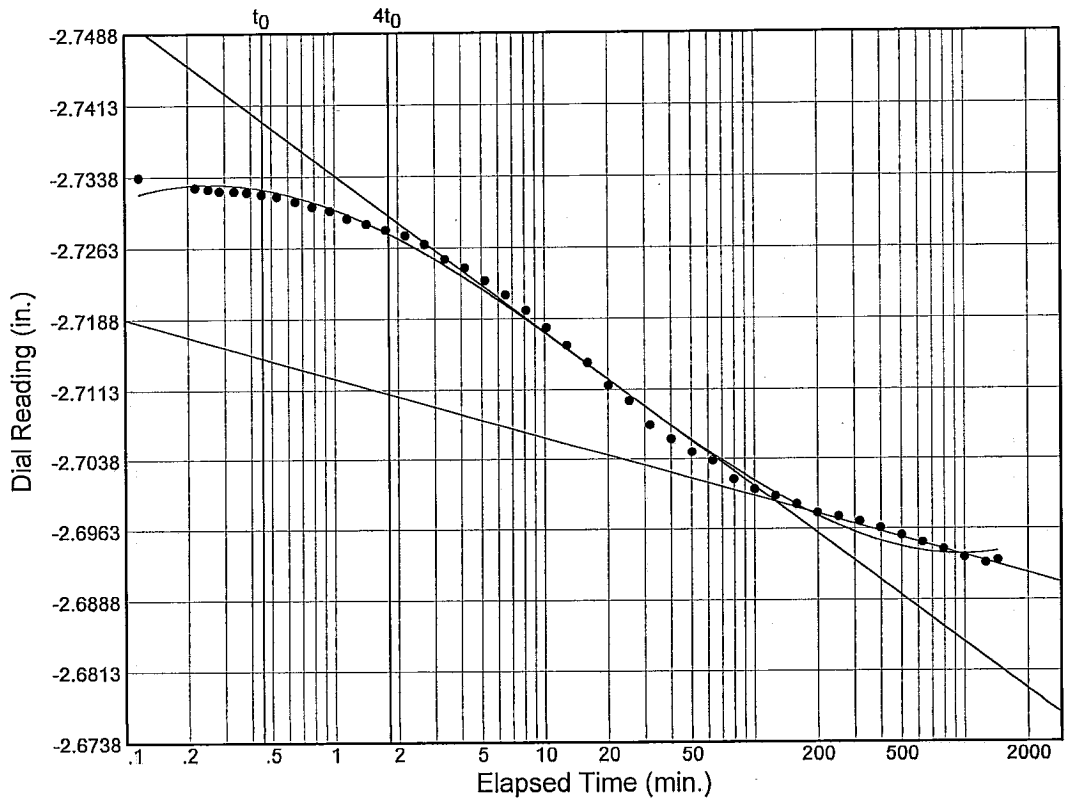
Source: WWHC-48UFT Sample No.: 7B Elev./Depth: 20.8'



Load No.= 6
Load= 2.00 tsf
D_0 = -2.77247
D_{50} = -2.75578
D_{100} = -2.73910
T_{50} = 9.30 min.

C_v @ T_{50}
0.04 ft.^{2}/day

C_α = 0.004



Load No.= 7
Load= 4.00 tsf
D_0 = -2.73717
D_{50} = -2.71819
D_{100} = -2.69921
T_{50} = 8.82 min.

C_v @ T_{50}
0.04 ft.^{2}/day

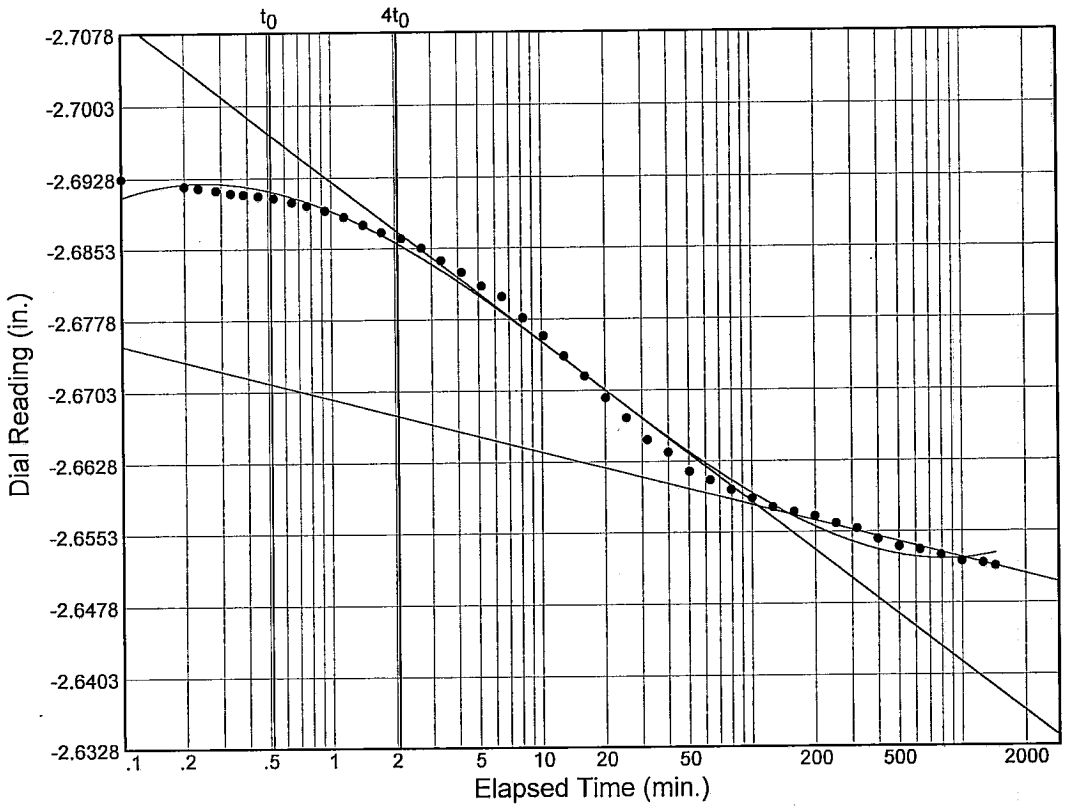
C_α = 0.007

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

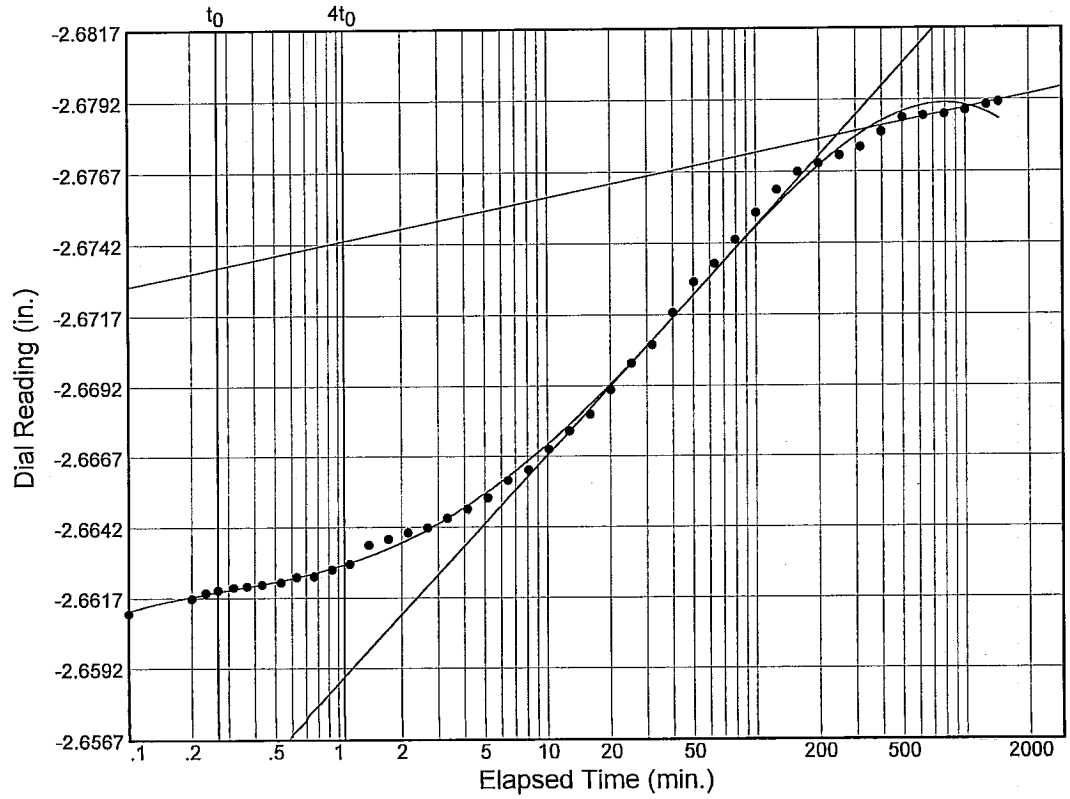
Source: WWHC-48UFT Sample No.: 7B Elev./Depth: 20.8'



Load No.= 8
Load= 8.00 tsf
D_0 = -2.69698
D_{50} = -2.67750
D_{100} = -2.65803
T_{50} = 7.49 min.

C_v @ T_{50}
0.04 ft.^{2}/day

C_α = 0.007



Load No.= 10
Load= 0.50 tsf
D_0 = -2.66093
D_{50} = -2.66946
D_{100} = -2.67798
T_{50} = 21.23 min.

C_v @ T_{50}
0.02 ft.^{2}/day

Figure

SWELL/CONSOLIDATION TEST DATA

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Contract No. W912P8-07-D-0022
Task Order No. 0002
Project Number: 0022-0002

Sample Data

Source: WWHC-48UFT
Sample No.: 7B
Elev. or Depth: 20.8'
Sample Length(in./cm.):
Location:
Description: SO GR CL6 W/ LNS CH
Liquid Limit: 41
Plasticity Index: 24
USCS: CL6 **AASHTO:** **Figure No.:**
Testing Remarks: Tested by: CB
Calculated by: WJY
Checked by: WJY

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST	
Wet w+t	= 135.86 g.	Consolidometer # = 20	Wet w+t	= 148.17 g.
Dry w+t	= 100.00 g.		Dry w+t	= 124.96 g.
Tare Wt.	= .00 g.	Spec. Gravity = 2.66	Tare Wt.	= 29.89 g.
Height	= 1.00 in.	Height = 1.00 in.		
Diameter	= 4.00 in.	Diameter = 4.00 in.		
Weight	= 382.01 g.	Defl. Table = n/a		
Moisture	= 35.9 %	Ht. Solids = 0.5144 in.	Moisture	= 24.4 %
Wet Den.	= 115.8 pcf	Dry Wt. = 281.18 g.*	Dry Wt.	= 95.07 g.
Dry Den.	= 85.3 pcf	Void Ratio = 0.948	Void Ratio	= 0.617
		Saturation = 100.6 %		

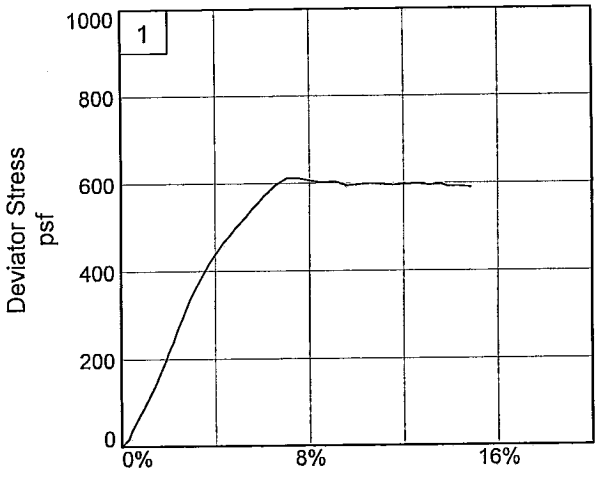
* Initial dry weight used in calculations

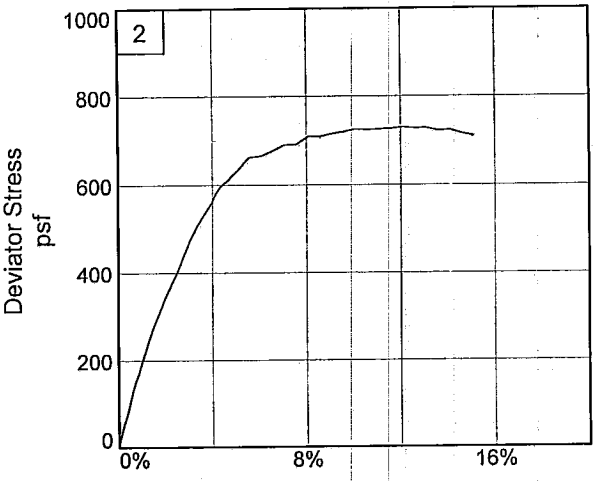
End-of-Load Summary

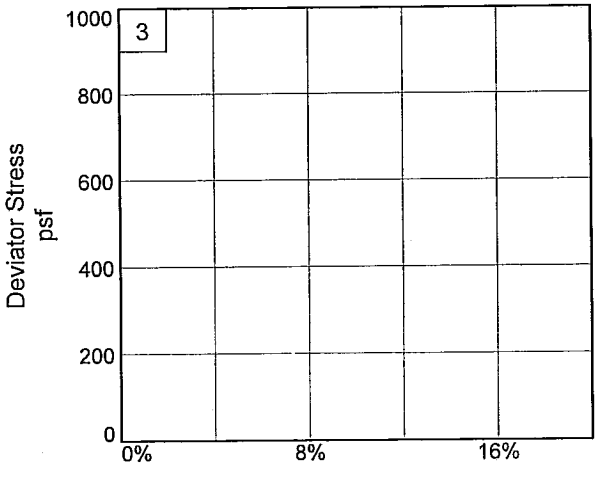
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-2.84943				0.948	
0.01	-2.84991	0.00000			0.949	0.0 Swell
0.13	-2.83223	0.00000	0.09	0.002	0.914	1.7 Comprs.
0.25	-2.81786	0.00000	0.05	0.003	0.887	3.2 Comprs.
0.50	-2.80024	0.00000	0.05	0.001	0.852	4.9 Comprs.
1.00	-2.77004	0.00000	0.08	0.005	0.794	7.9 Comprs.
2.00	-2.73557	0.00000	0.04	0.004	0.727	11.4 Comprs.
4.00	-2.69296	0.00000	0.04	0.007	0.644	15.6 Comprs.
8.00	-2.65164	0.00000	0.04	0.007	0.563	19.7 Comprs.

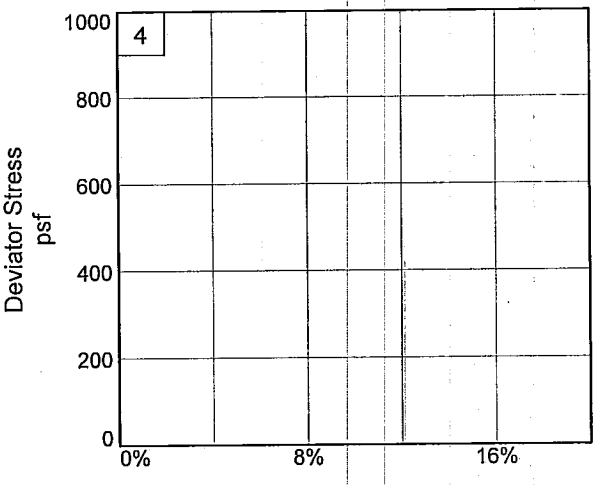
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v ($ft.^2/day$)	C_α	Void Ratio	% Compression /Swell
2.00	-2.66265	0.00000			0.585	18.6 Comprs.
0.50	-2.67912	0.00000	0.02		0.617	17.0 Comprs.

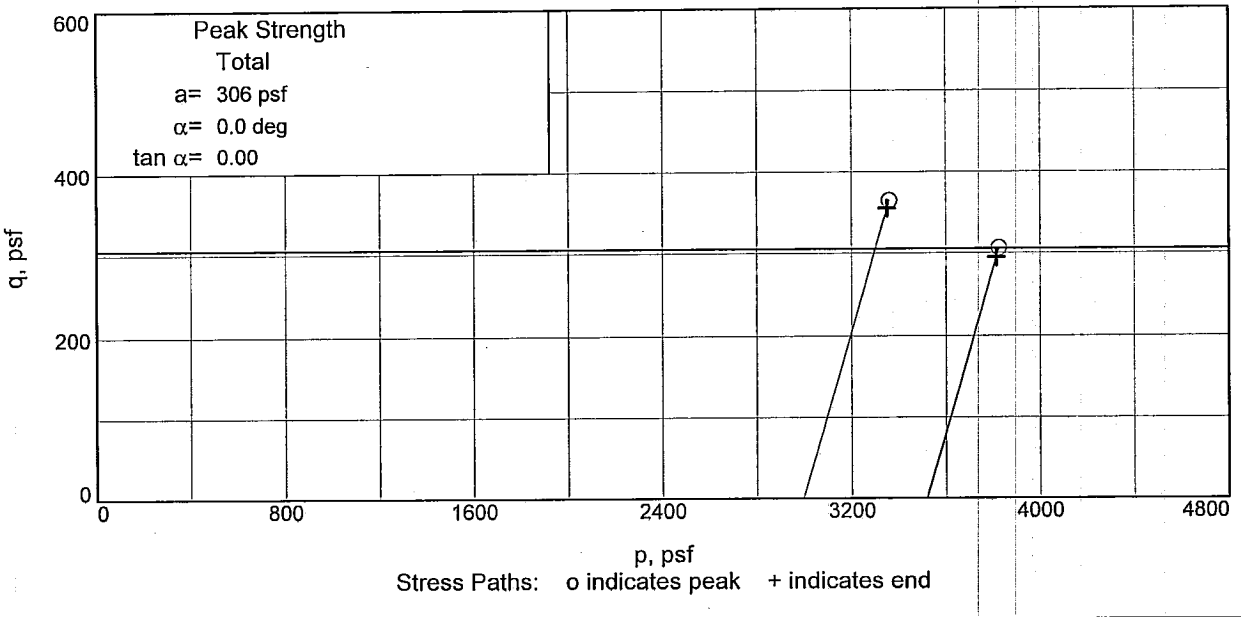
C_c = 0.27 P_c = 0.74 tsf C_r = 0.04







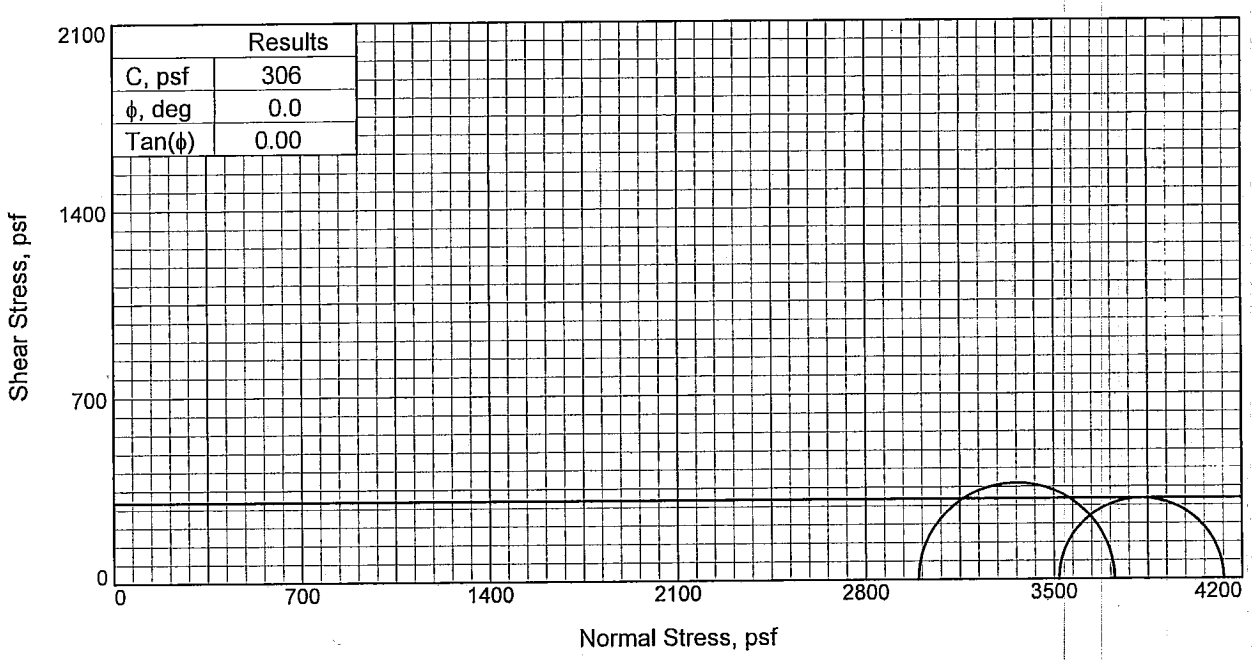


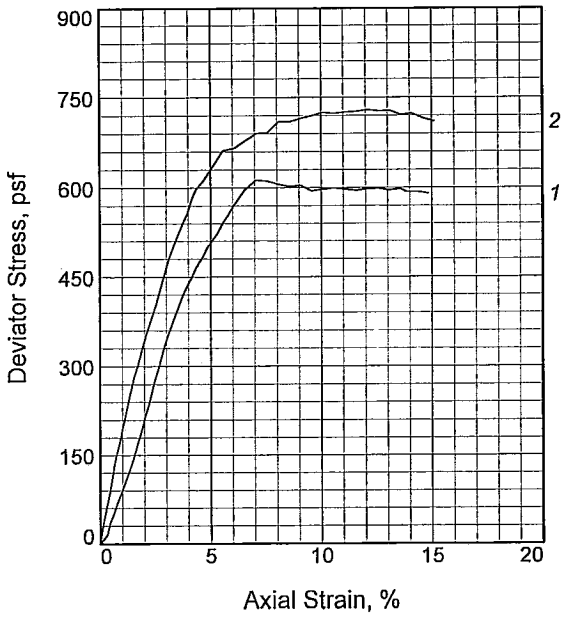


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UFT **Depth:** 21.7 **Sample Number:** 7C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JMB **Checked By:** WJY





Sample No.		1	2
Initial	Water Content, %	30.4	30.5
	Dry Density, pcf	96.0	97.3
	Saturation, %	106.1	109.7
	Void Ratio	0.7874	0.7649
	Diameter, in.	1.393	1.399
	Height, in.	3.266	3.294
At Test	Water Content, %	30.4	30.5
	Dry Density, pcf	96.0	97.3
	Saturation, %	106.1	109.7
	Void Ratio	0.7874	0.7649
	Diameter, in.	1.393	1.399
	Height, in.	3.266	3.294
Strain rate, %/min.		0.03	0.03
Back Pressure, psi		0.00	0.00
Cell Pressure, psi		24.44	20.80
Fail. Stress, psf		613	729
Strain, %		7.1	12.1
Ult. Stress, psf		590	710
Strain, %			
σ_1 Failure, psf		4132	3725
σ_3 Failure, psf		3519	2996

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: GR ML2 W/ ARS CH

LL= NP **PI=** NP

Assumed Specific Gravity= 2.75

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-48UFT **Depth:** 21.7

Sample Number: 7C

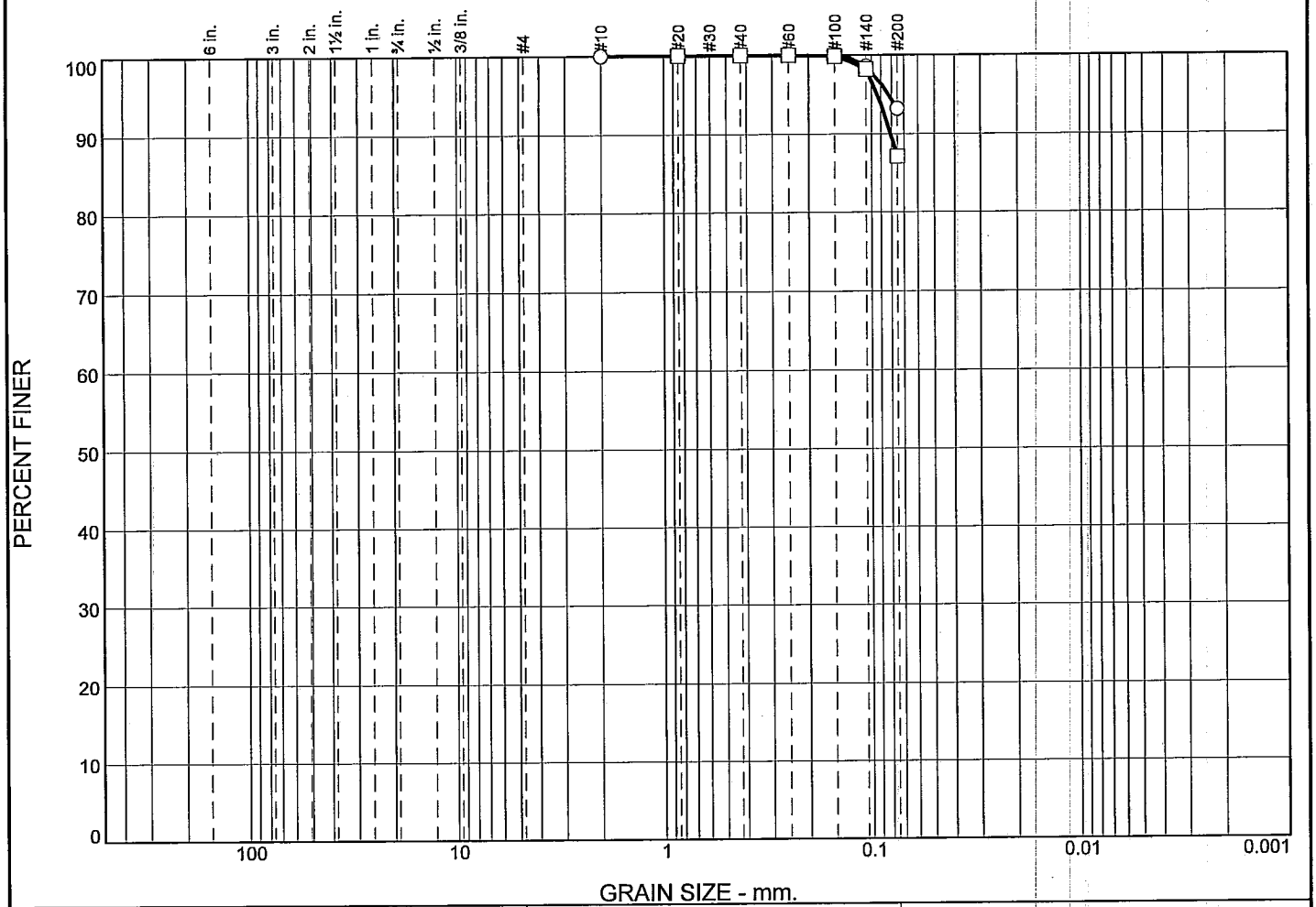
Proj. No.: 0022-0002 **Date Sampled:** 5/21/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

Tested By: DW/JMB **Checked By:** WJY

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	6.8	93.2	
□	0.0	0.0	0.0	0.0	0.0	12.9	87.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○										
□										

Material Description	USCS	AASHTO
○ GR ML2 W/ LNS CH	ML2	
□ GR ML2 W/ LNS CH	ML2	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Source of Sample:** WWHC-48UFT **Depth:** 24.8 **Sample Number:** 8B

□ **Source of Sample:** WWHC-48UFT **Depth:** 41.7 **Sample Number:** 12C

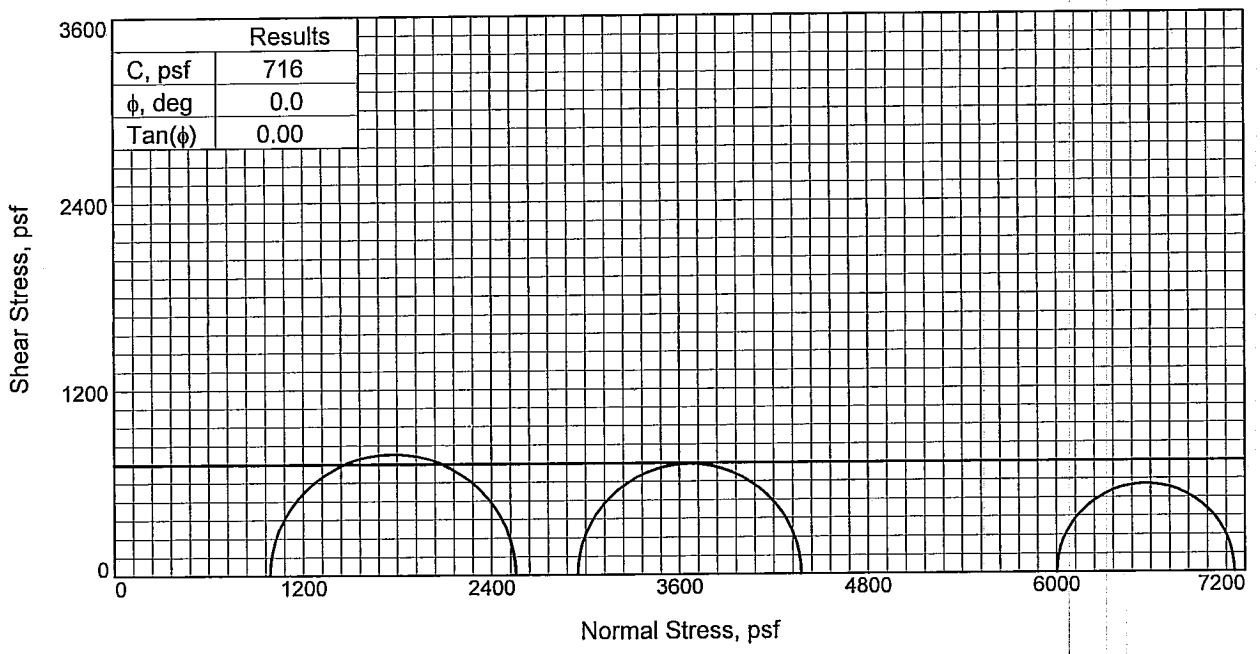
FFEBJV, LLC

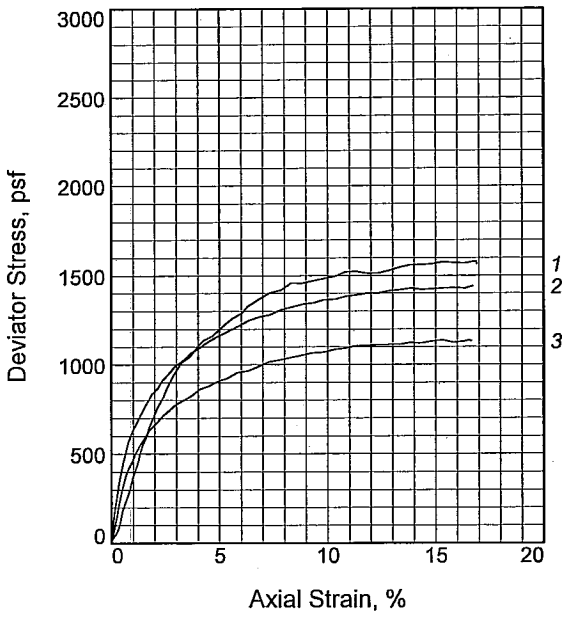
St Rose, LA

Remarks:

Figure

Tested By: CSM/BL





Sample No.		1	2	3
Initial	Water Content, %	28.2	29.9	31.0
	Dry Density, pcf	94.1	92.5	89.2
	Saturation, %	96.5	98.6	94.5
	Void Ratio	0.7851	0.8161	0.8827
	Diameter, in.	1.392	1.404	1.420
	Height, in.	3.136	3.141	3.137
At Test	Water Content, %	28.2	29.9	31.0
	Dry Density, pcf	94.1	92.5	89.2
	Saturation, %	96.5	98.6	94.5
	Void Ratio	0.7851	0.8161	0.8827
	Diameter, in.	1.392	1.404	1.420
	Height, in.	3.136	3.141	3.137
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.49	41.68
Fail. Stress, psf		1565	1424	1131
Strain, %		14.8	14.9	14.8
Ult. Stress, psf		1565	1424	1131
Strain, %				
σ_1 Failure, psf		2554	4374	7133
σ_3 Failure, psf		989	2950	6002

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CL6 W/ LNS ML, RT, WD

LL= 46 **PL=** 16 **PI=** 30

Assumed Specific Gravity= 2.69

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-48UFT **Depth:** 4.8

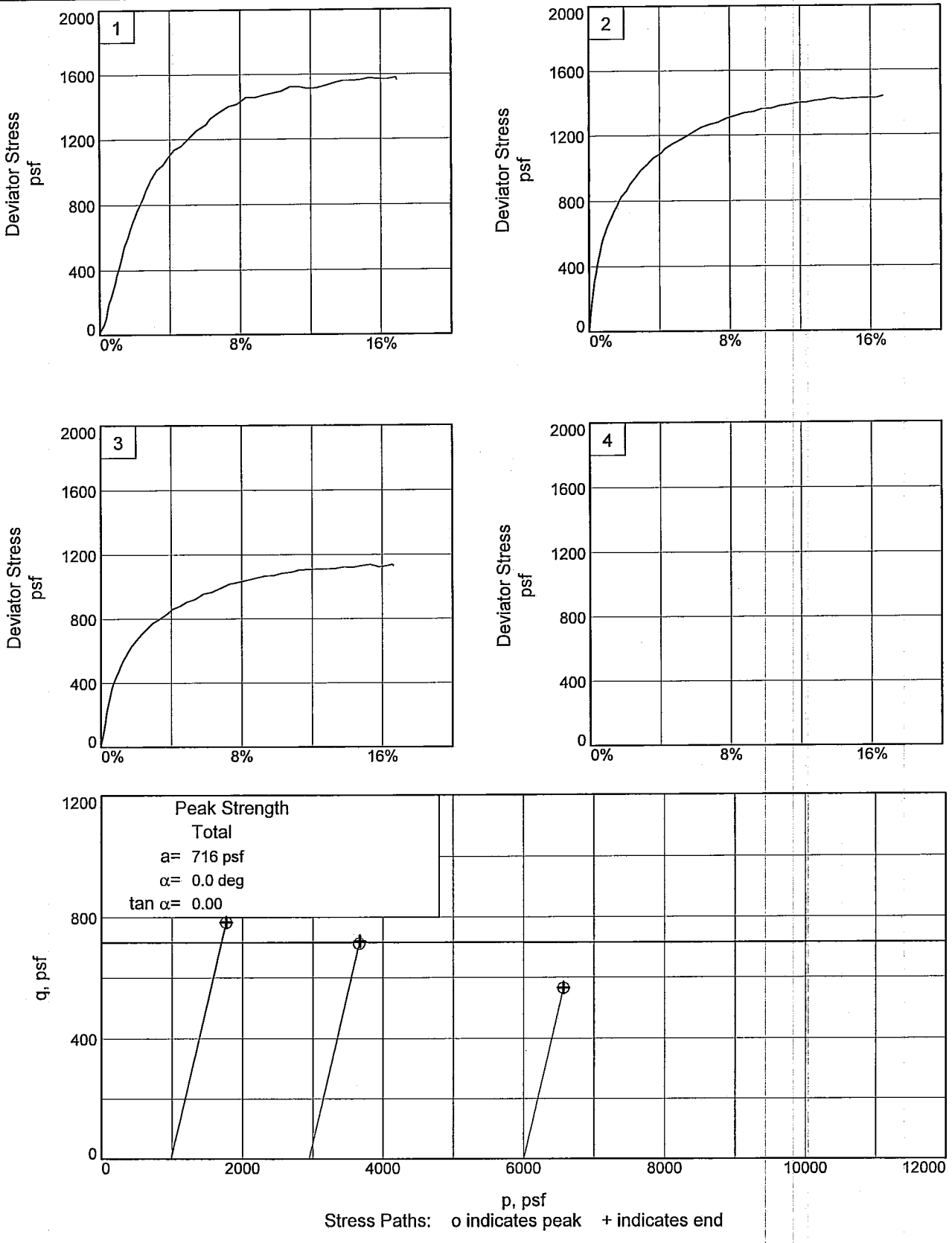
Sample Number: 3B

Proj. No.: 0022-0002 **Date Sampled:** 5/21/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

Tested By: DW/JMB

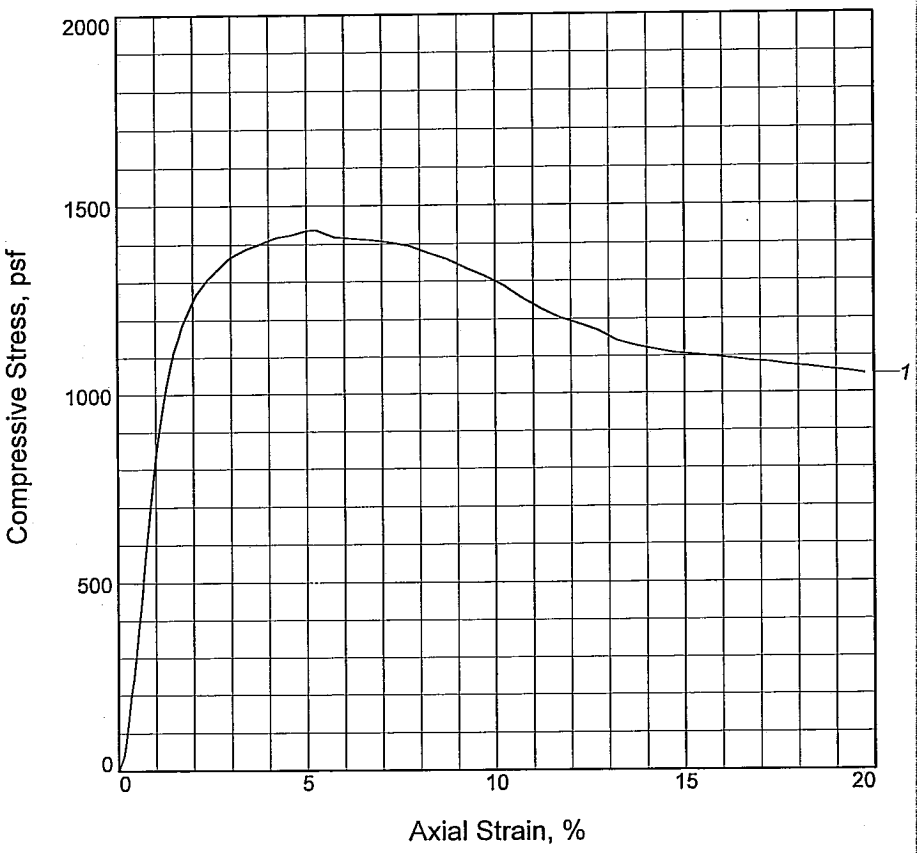


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UFT **Depth:** 4.8 **Sample Number:** 3B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1438			
Undrained shear strength, psf	719			
Failure strain, %	5.2			
Strain rate, in./min.	0.031			
Water content, %	34.1			
Wet density, pcf	114.2			
Dry density, pcf	85.2			
Saturation, %	92.7			
Void ratio	1.0088			
Specimen diameter, in.	1.393			
Specimen height, in.	3.142			
Height/diameter ratio	2.26			

Description: M T & GR CH3

LL = 61	**PL** = 26	**PI** = 35	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/21/07
Remarks:

Figure _____

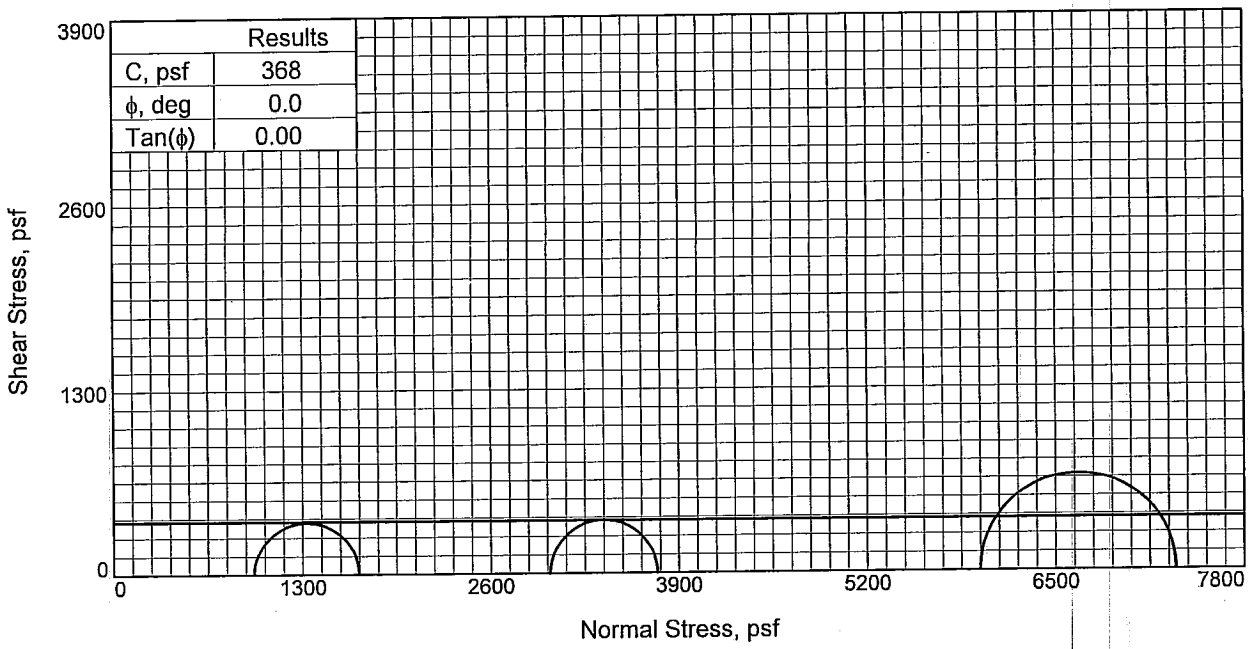
Client: U.S. Army Corps of Engineers

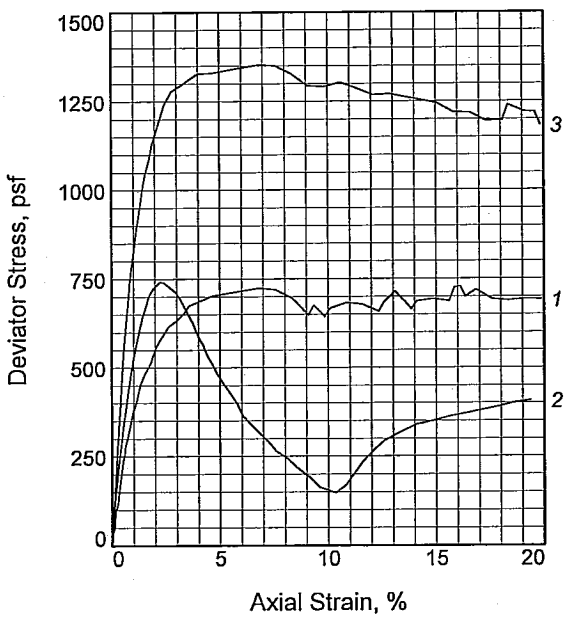
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UFT **Depth:** 8.8
Sample Number: 4B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB





Sample No.		1	2	3
Initial	Water Content, %	41.1	35.8	36.5
	Dry Density, pcf	79.5	84.2	84.6
	Saturation, %	98.6	95.7	98.5
	Void Ratio	1.1348	1.0161	1.0078
	Diameter, in.	1.395	1.402	1.392
	Height, in.	3.126	3.123	3.138
At Test	Water Content, %	41.1	35.8	36.5
	Dry Density, pcf	79.5	84.2	84.6
	Saturation, %	98.6	95.7	98.5
	Void Ratio	1.1348	1.0161	1.0078
	Diameter, in.	1.395	1.402	1.392
	Height, in.	3.126	3.123	3.138
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.70	20.89	41.51
Fail. Stress, psf		723	742	1353
Strain, %		6.8	2.2	6.8
Ult. Stress, psf		645	147	1244
Strain, %				
σ_1 Failure, psf		1689	3750	7330
σ_3 Failure, psf		966	3009	5977

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH3 W/ ARS ML, RT, SL

LL= 56 **PL=** 17 **PI=** 39
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

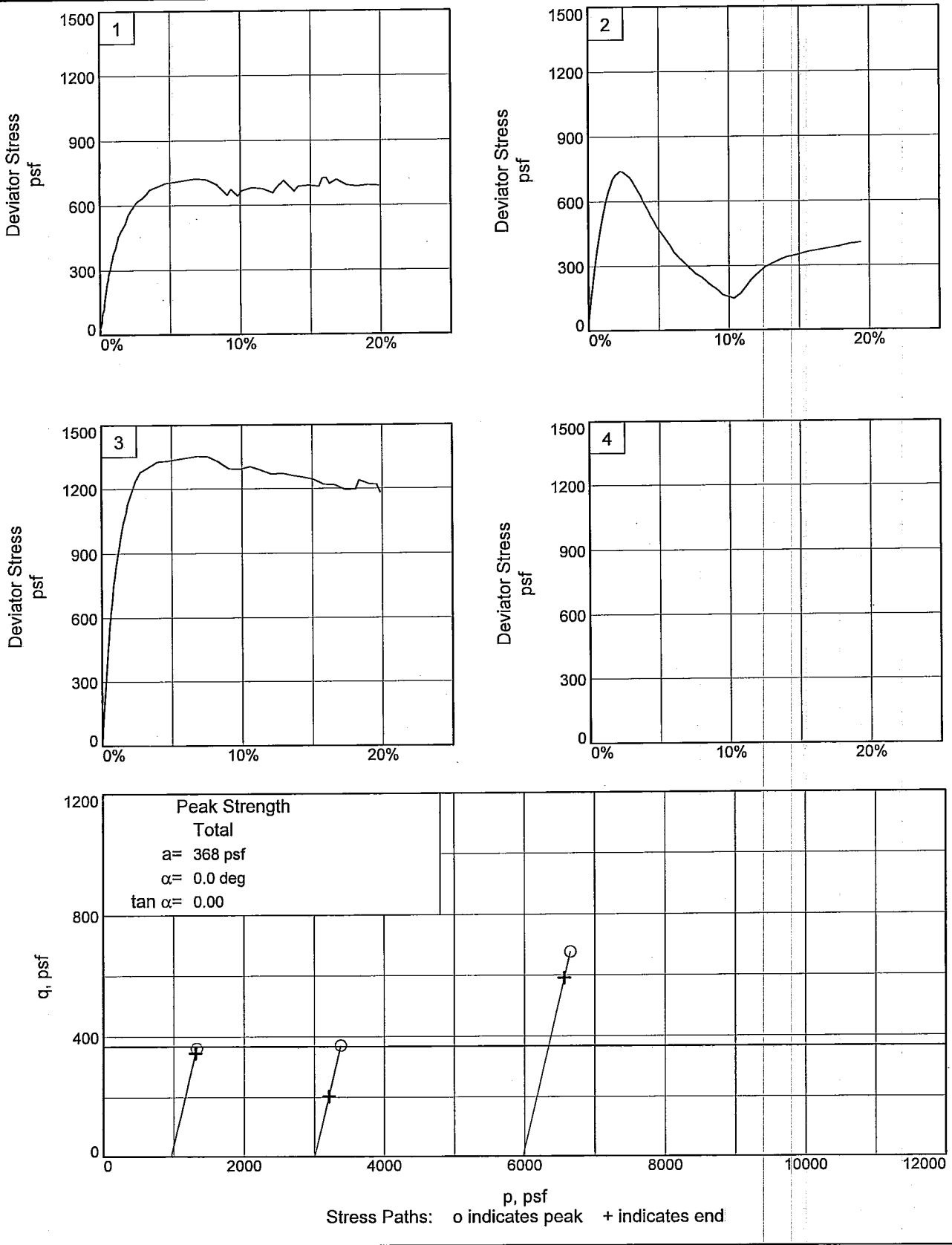
Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UFT **Depth:** 17.7
Sample Number: 6C
Proj. No.: 0022-0002 **Date Sampled:** 5/21/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC

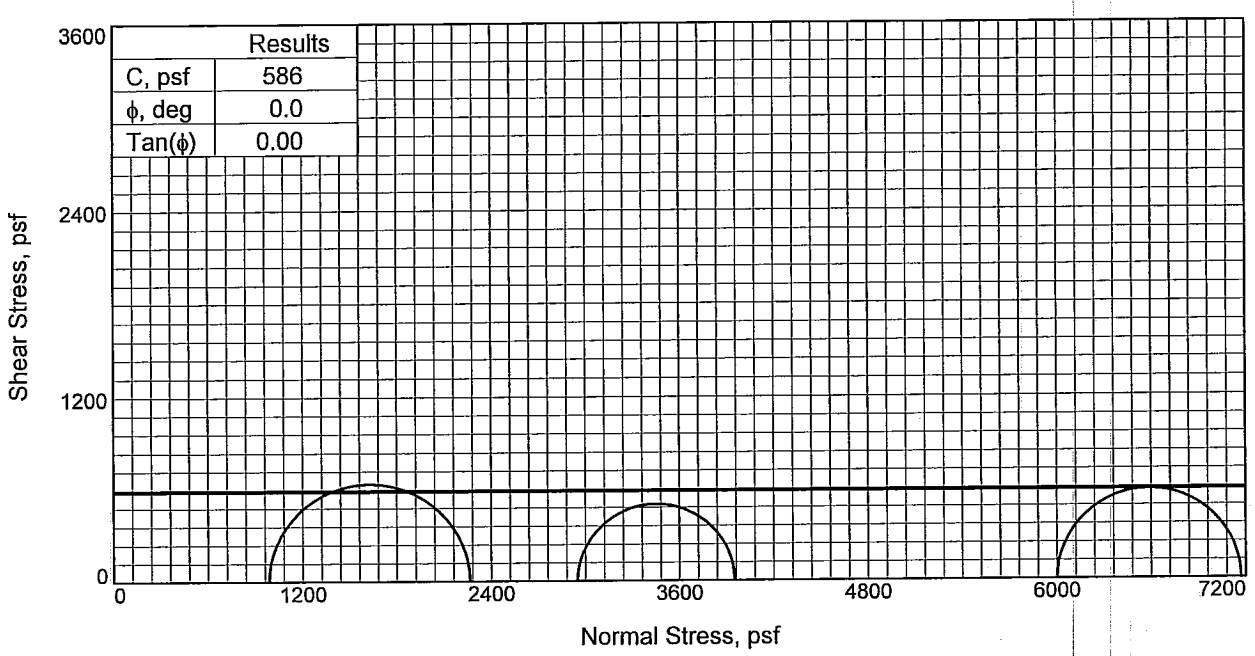
Tested By: DW/ JMB

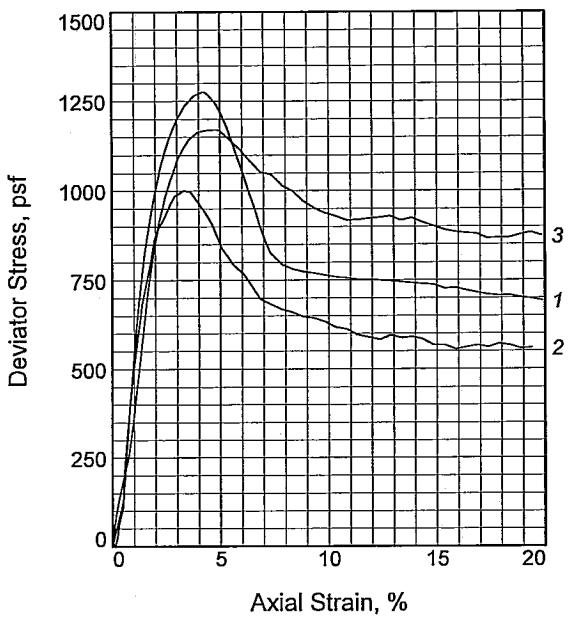


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UFT **Depth:** 17.7 **Sample Number:** 6C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/ JMB





Sample No.		1	2	3
Initial	Water Content, %	67.2	67.2	67.2
	Dry Density, pcf	58.7	58.8	58.4
	Saturation, %	96.2	96.3	95.5
	Void Ratio	1.9126	1.9113	1.9271
	Diameter, in.	1.396	1.396	1.416
	Height, in.	3.139	3.141	3.138
At Test	Water Content, %	67.2	67.2	67.2
	Dry Density, pcf	58.7	58.8	58.4
	Saturation, %	96.2	96.3	95.5
	Void Ratio	1.9126	1.9113	1.9271
	Diameter, in.	1.396	1.396	1.416
	Height, in.	3.139	3.141	3.138
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.48	41.68
Fail. Stress, psf		1276	1001	1170
Strain, %		4.3	3.3	4.8
Ult. Stress, psf		737	568	902
Strain, %				
σ_1 Failure, psf		2263	3951	7172
σ_3 Failure, psf		988	2949	6001

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ WD, SL, SIF

LL= 87 **PL=** 48 **PI=** 39
Assumed Specific Gravity= 2.74
Remarks:

Figure _____

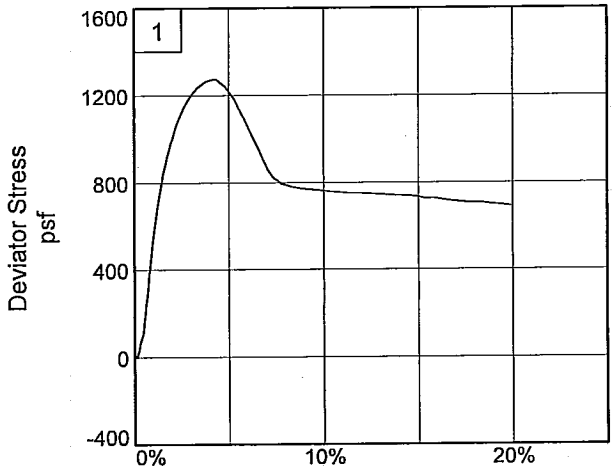
Client: U.S. Army Corps of Engineers

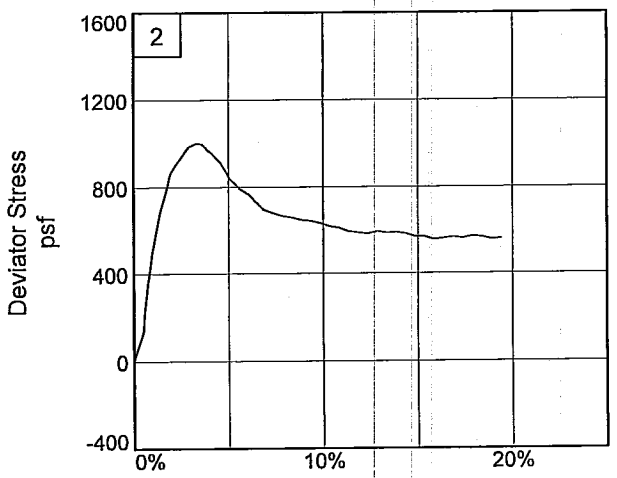
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UFT **Depth:** 29.7
Sample Number: 9C
Proj. No.: 0022-0002 **Date Sampled:** 5/21/07

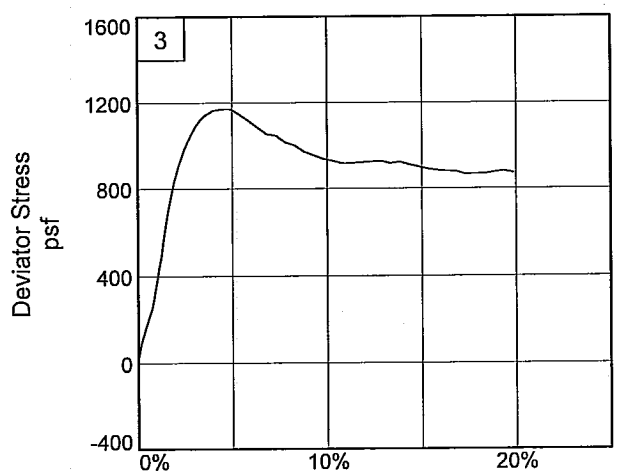
TRIAXIAL SHEAR TEST REPORT

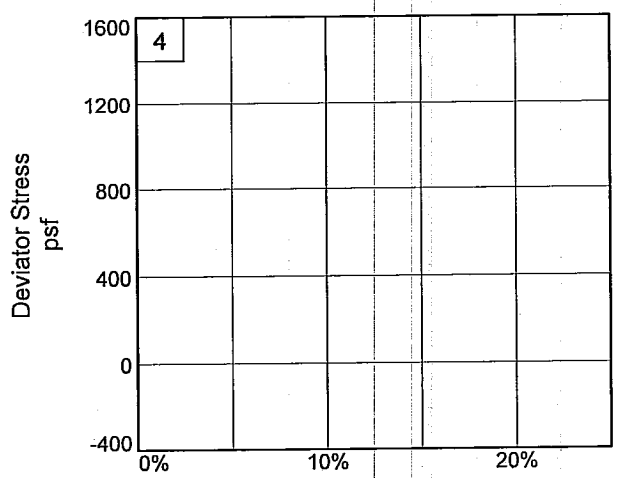
FFEBJV, LLC

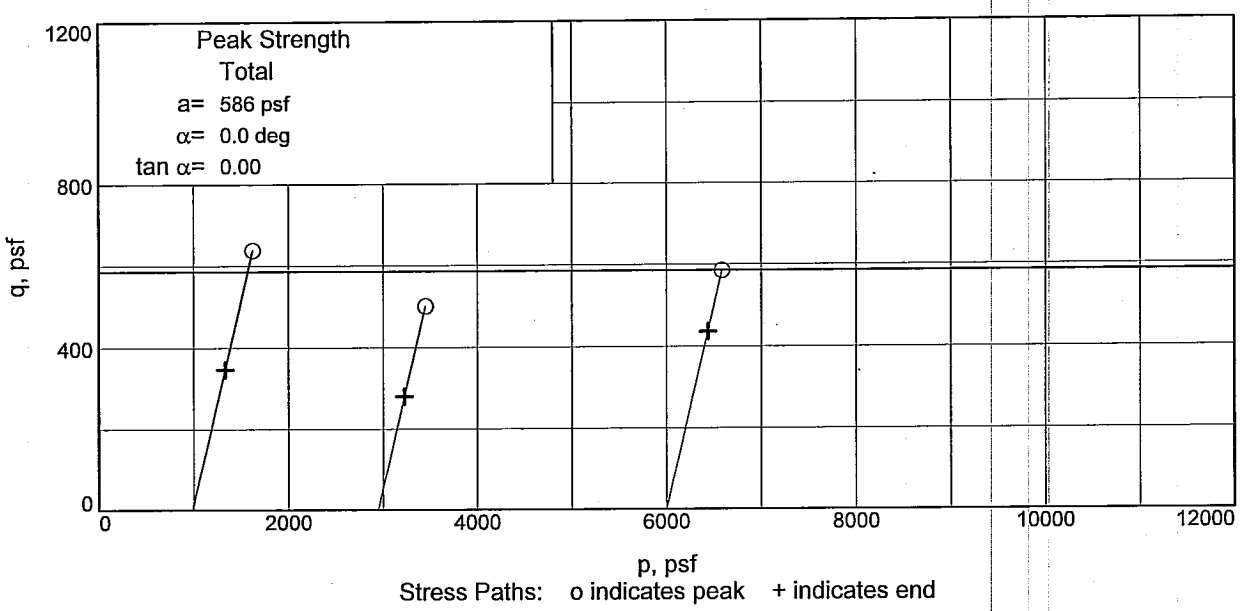
Tested By: DW/JMB











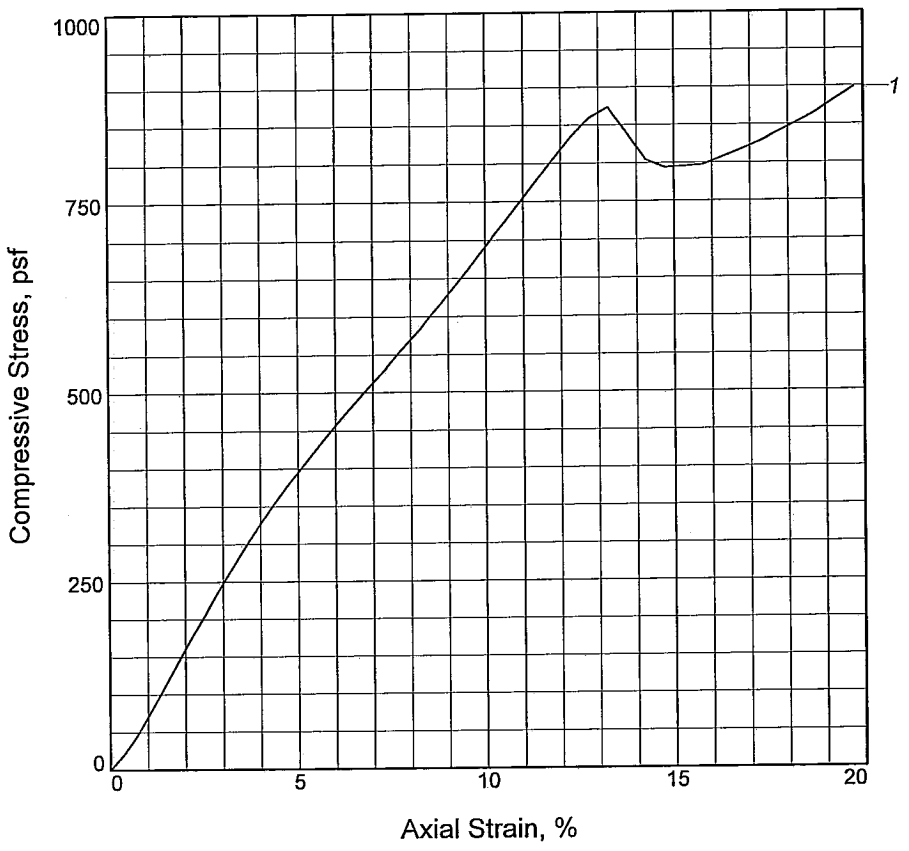
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UFT **Depth:** 29.7 **Sample Number:** 9C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	873			
Undrained shear strength, psf	437			
Failure strain, %	13.2			
Strain rate, in./min.	0.031			
Water content, %	34.4			
Wet density, pcf	116.0			
Dry density, pcf	86.3			
Saturation, %	98.1			
Void ratio	0.9388			
Specimen diameter, in.	1.392			
Specimen height, in.	3.116			
Height/diameter ratio	2.24			

Description: SO GR CL4 W/ LNS ML

LL = 33	PL = 23	PI = 10	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/21/07
Remarks:

Figure _____

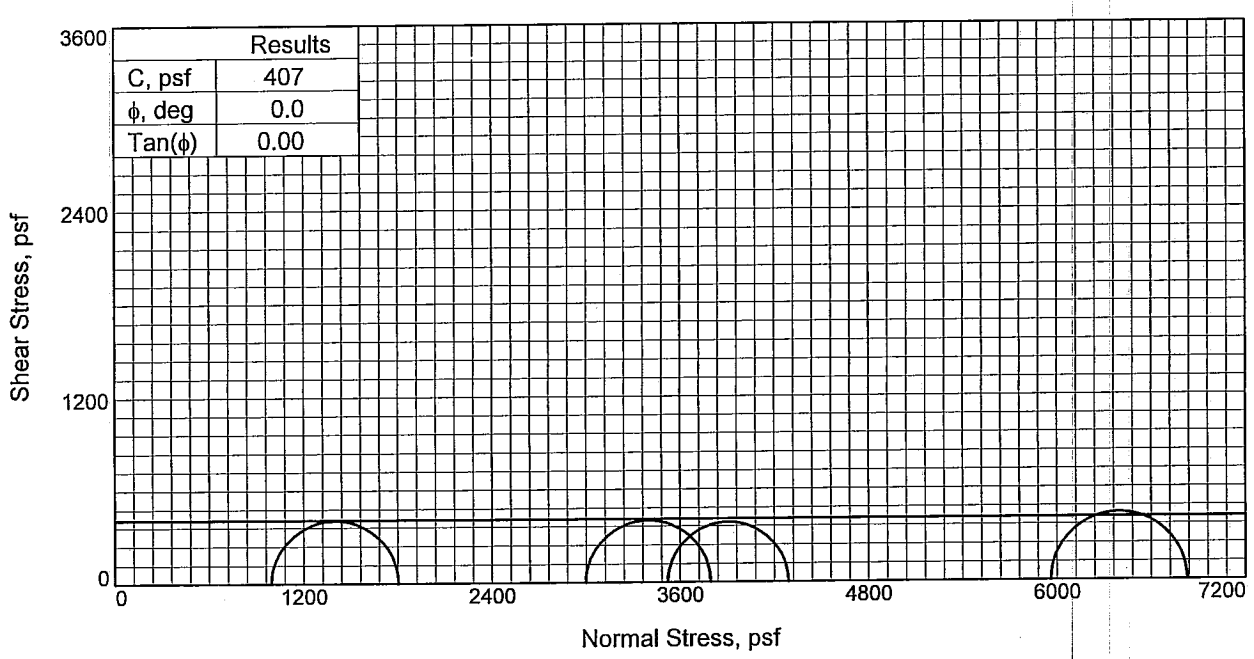
Client: U.S. Army Corps of Engineers

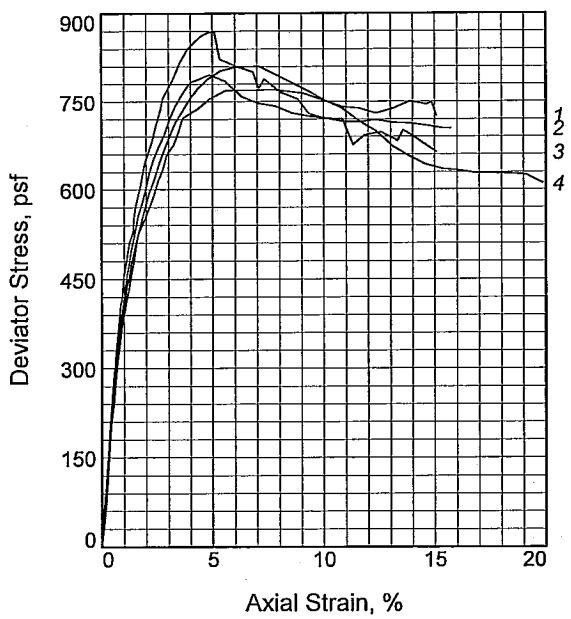
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UFT **Depth:** 32.8
Sample Number: 10B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB





Sample No.		1	2	3	4
Initial	Water Content, %	60.2	58.6	59.6	55.0
	Dry Density, pcf	64.1	65.2	64.8	68.1
	Saturation, %	99.4	99.2	100.0	100.2
	Void Ratio	1.6478	1.6055	1.6219	1.4938
	Diameter, in.	1.391	1.411	1.403	1.414
	Height, in.	3.155	3.137	3.137	3.126
At Test	Water Content, %	60.2	58.6	59.6	55.0
	Dry Density, pcf	64.1	65.2	64.8	68.1
	Saturation, %	99.4	99.2	100.0	100.2
	Void Ratio	1.6478	1.6055	1.6219	1.4938
	Diameter, in.	1.391	1.411	1.403	1.414
	Height, in.	3.155	3.137	3.137	3.126
Strain rate, in./min.		0.032	0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		24.45	20.82	41.39	6.90
Fail. Stress, psf		769	796	869	809
Strain, %		5.6	4.9	5.1	6.1
Ult. Stress, psf		726	704	664	635
Strain, %					
σ_1 Failure, psf		4290	3793	6829	1803
σ_3 Failure, psf		3521	2997	5960	994

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH4 W/ ARS SM, SL

LL= 75 **PL=** 22 **PI=** 53
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

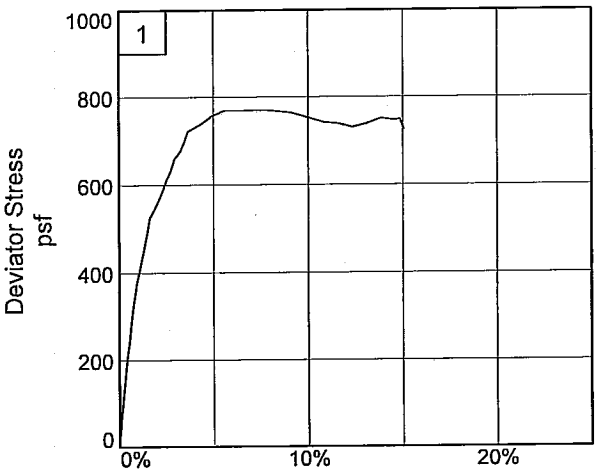
Client: U.S. Army Corps of Engineers

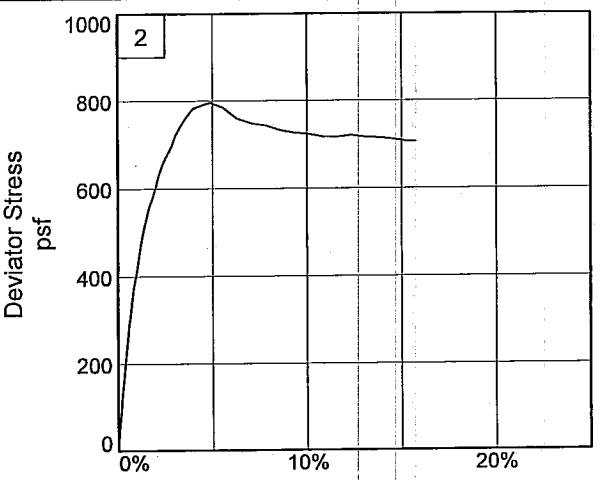
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UFT **Depth:** 37.7
Sample Number: 11C
Proj. No.: 0022-0002 **Date Sampled:** 5/21/07

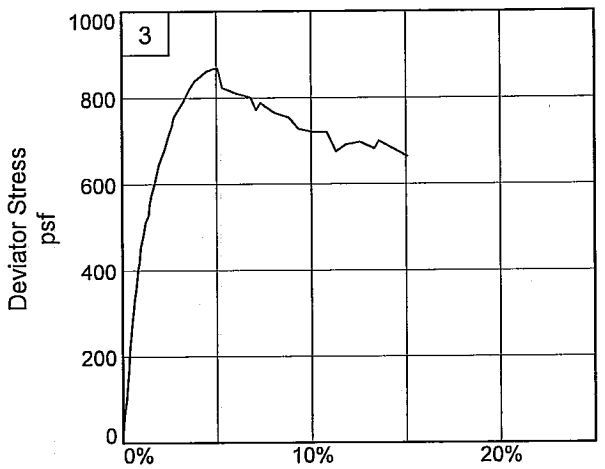
TRIAXIAL SHEAR TEST REPORT

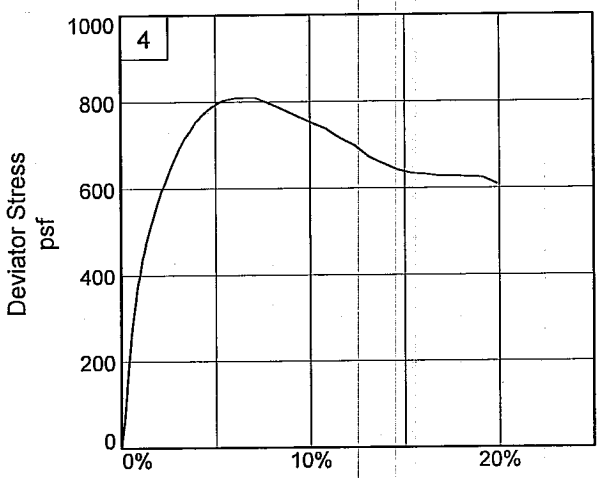
FFEBJV, LLC

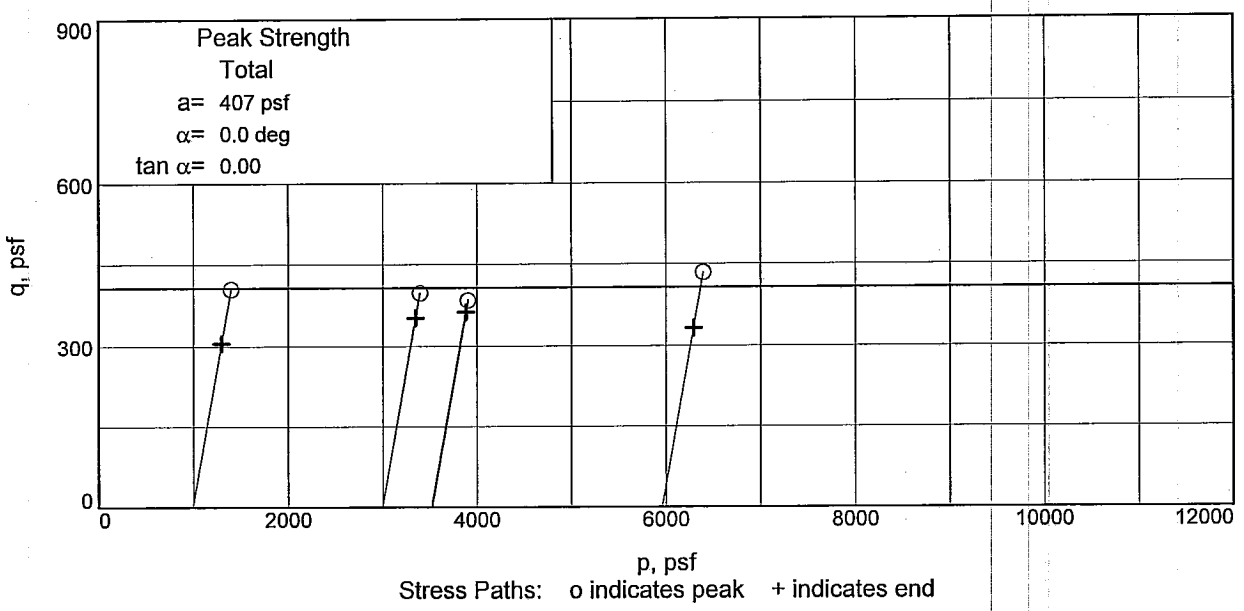
Tested By: DW/JMB







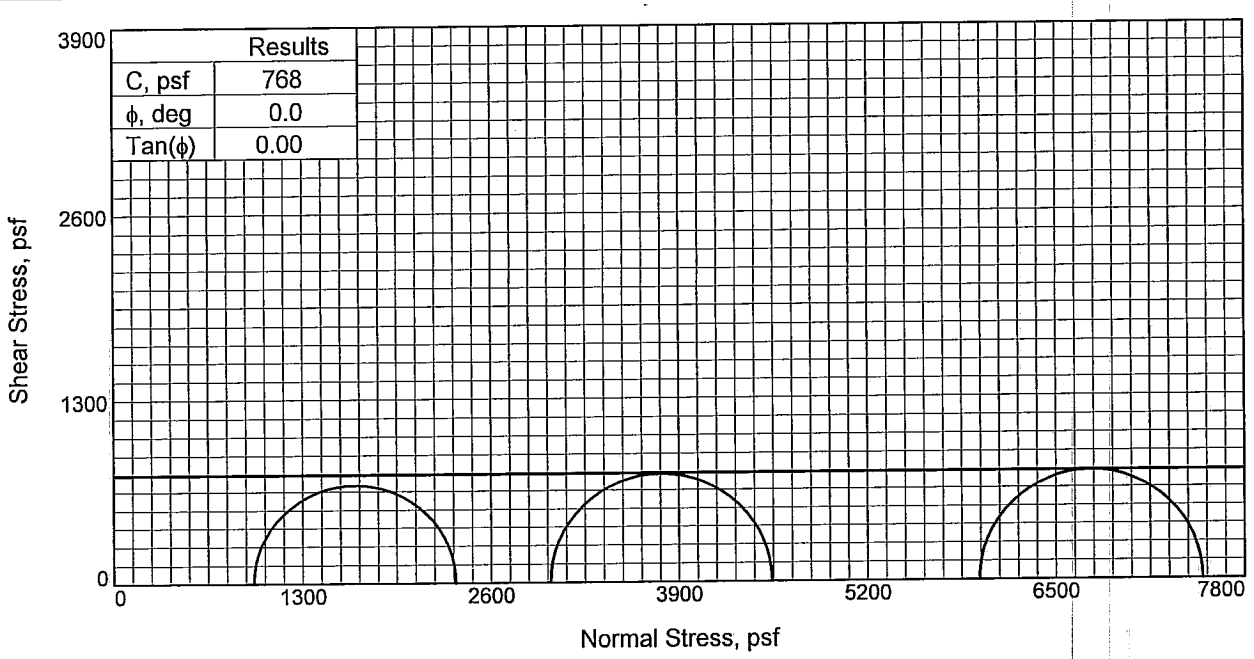


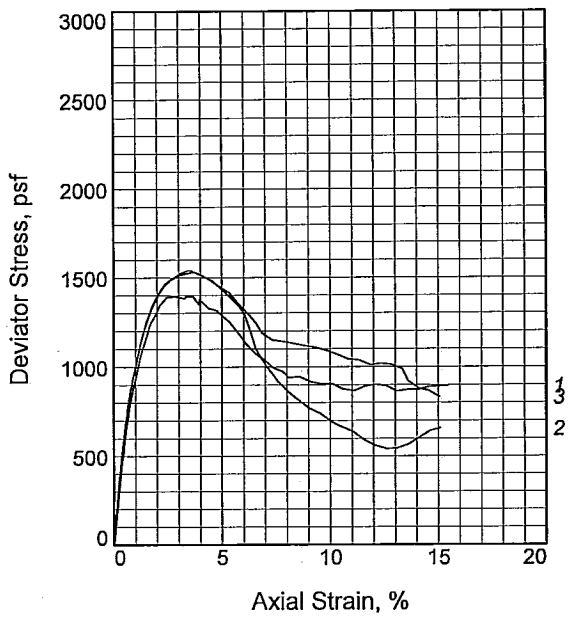


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UFT **Depth:** 37.7 **Sample Number:** 11C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JMB





Sample No.		1	2	3
Initial	Water Content, %	54.9	55.6	57.0
	Dry Density, pcf	66.7	66.0	66.5
	Saturation, %	96.7	96.0	99.7
	Void Ratio	1.5444	1.5741	1.5542
	Diameter, in.	1.413	1.412	1.403
	Height, in.	3.154	3.148	3.153
At Test	Water Content, %	54.9	55.6	57.0
	Dry Density, pcf	66.7	66.0	66.5
	Saturation, %	96.7	96.0	99.7
	Void Ratio	1.5444	1.5741	1.5542
	Diameter, in.	1.413	1.412	1.403
	Height, in.	3.154	3.148	3.153
Strain rate, in./min.		0.032	0.031	0.032
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.69	20.90	41.46
Fail. Stress, psf		1391	1530	1540
Strain, %		2.9	3.7	3.5
Ult. Stress, psf		864	542	832
Strain, %				
σ_1 Failure, psf		2355	4540	7511
σ_3 Failure, psf		964	3010	5971

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH3 W/ LNS ML, SL

LL= 76 **PL=** 35 **PI=** 41
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

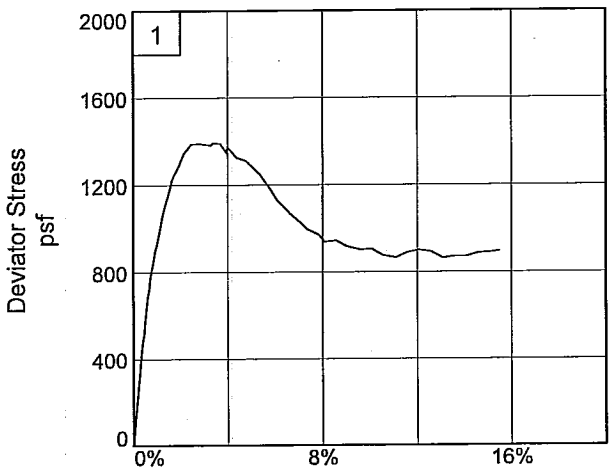
Client: U.S. Army Corps of Engineers

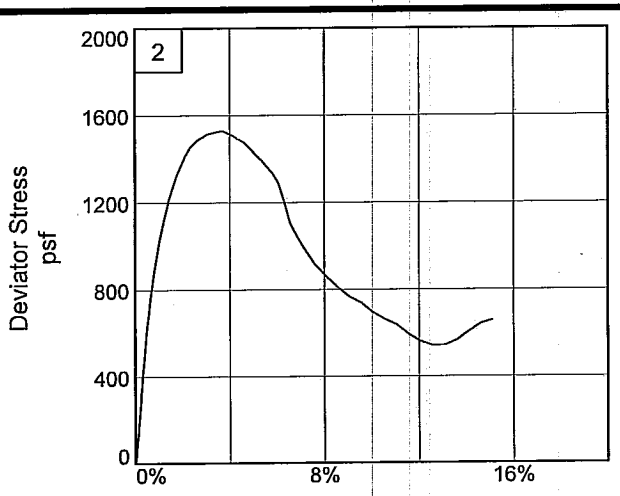
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UFT **Depth:** 44.8
Sample Number: 13B
Proj. No.: 0022-0002 **Date Sampled:** 5/21/07

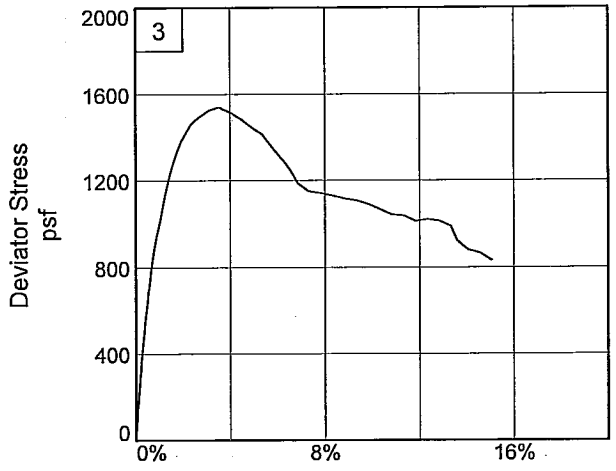
TRIAXIAL SHEAR TEST REPORT

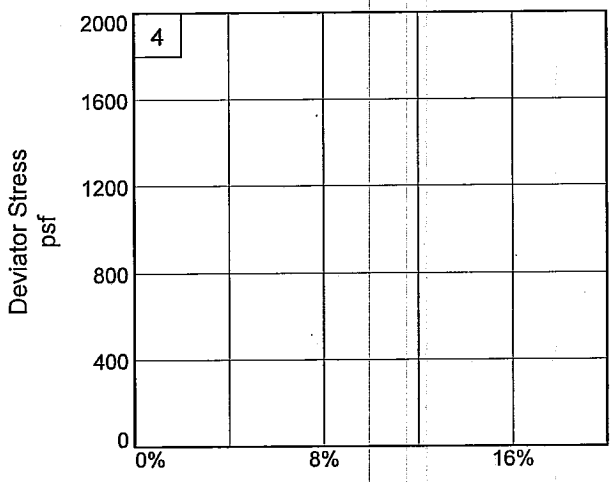
FFEBJV, LLC

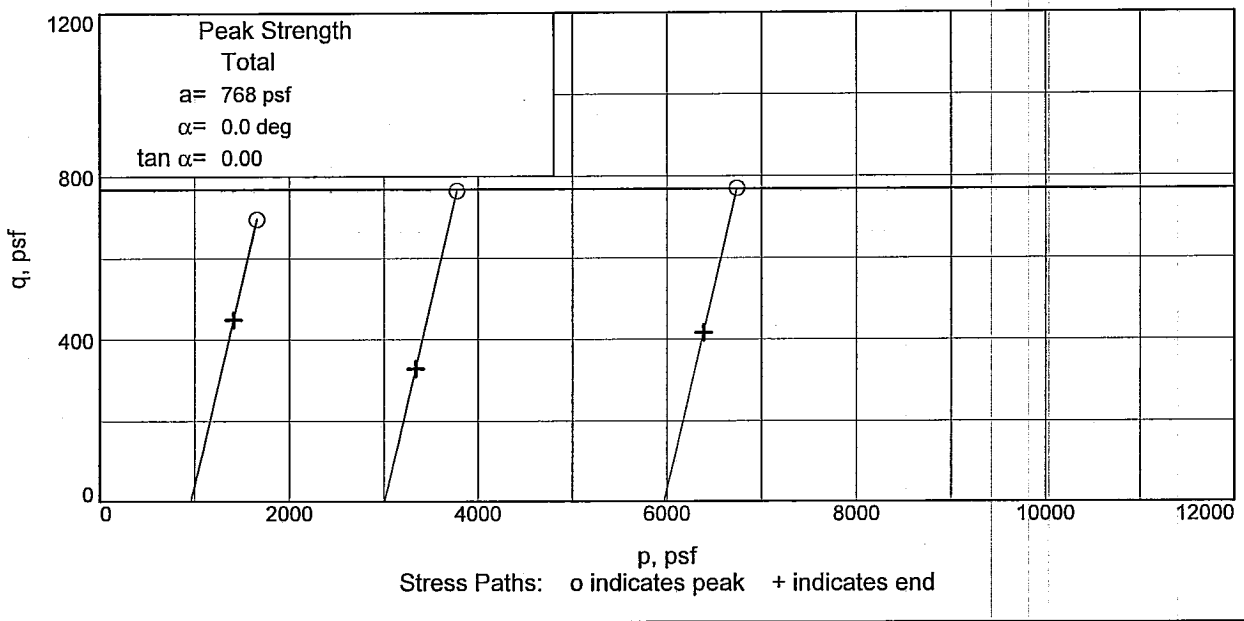
Tested By: DW











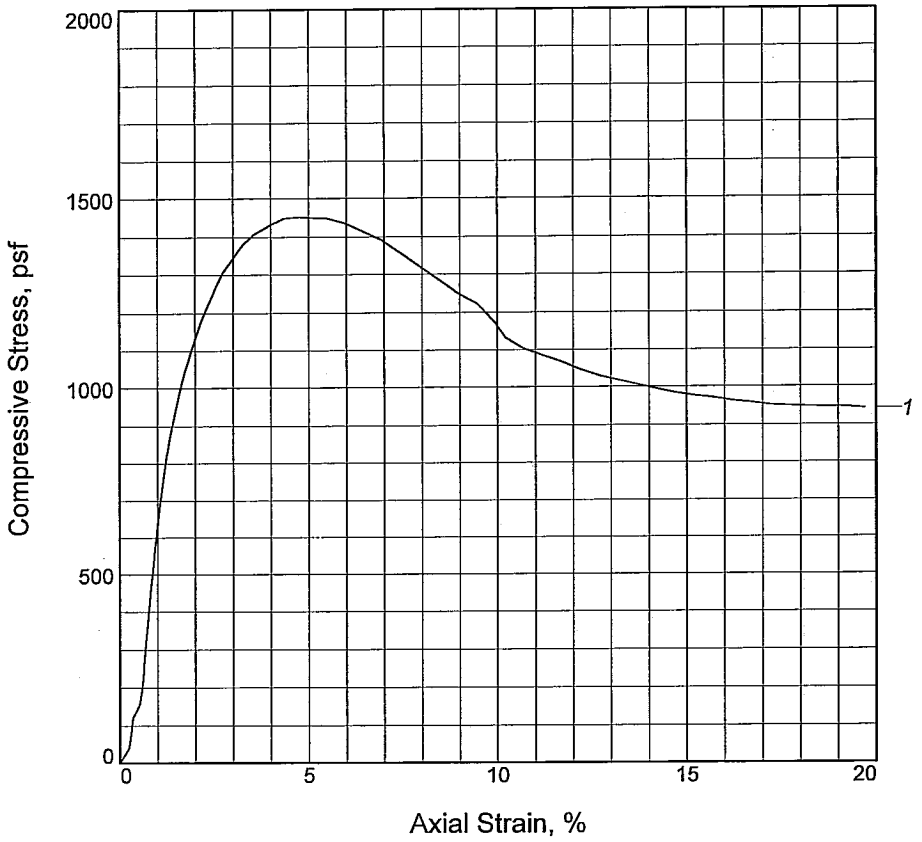
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-48UFT **Depth:** 44.8 **Sample Number:** 13B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1453			
Undrained shear strength, psf	726			
Failure strain, %	4.8			
Strain rate, in./min.	0.031			
Water content, %	59.5			
Wet density, pcf	102.2			
Dry density, pcf	64.1			
Saturation, %	98.1			
Void ratio	1.6507			
Specimen diameter, in.	1.400			
Specimen height, in.	3.145			
Height/diameter ratio	2.25			

Description: M GR CH3 W/ ARS ML

LL = 79	**PL** = 35	**PI** = 44	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/21/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

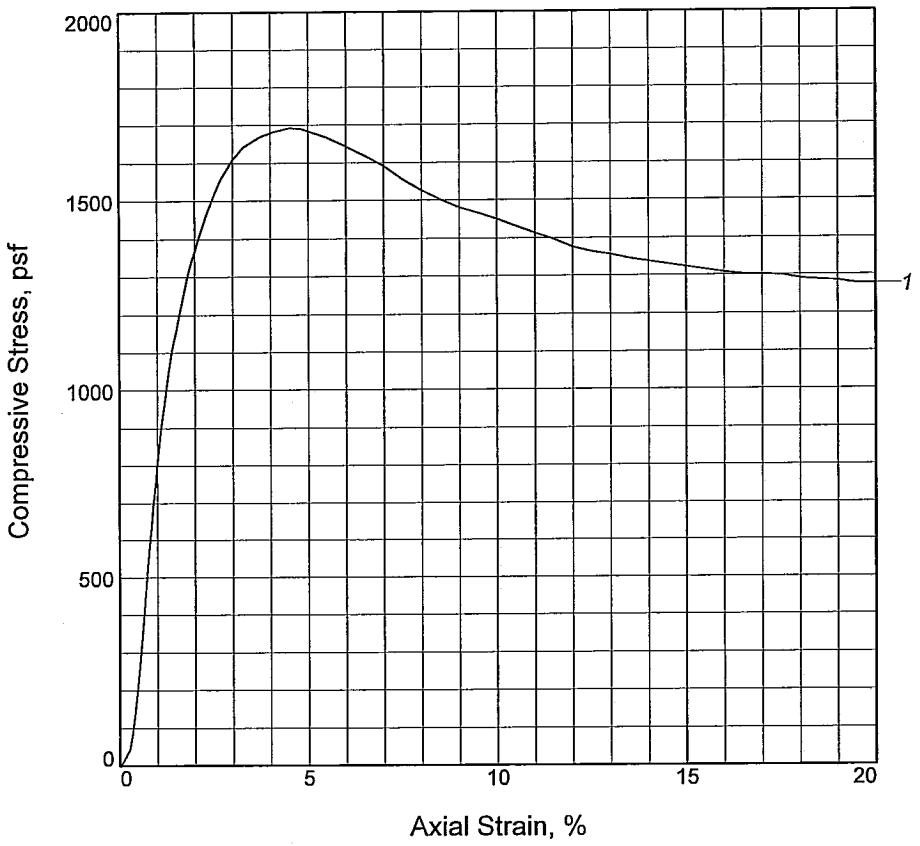
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UFT **Depth:** 49.7
Sample Number: 14C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1692			
Undrained shear strength, psf	846			
Failure strain, %	4.5			
Strain rate, in./min.	0.031			
Water content, %	56.7			
Wet density, pcf	103.1			
Dry density, pcf	65.8			
Saturation, %	97.6			
Void ratio	1.5802			
Specimen diameter, in.	1.402			
Specimen height, in.	3.146			
Height/diameter ratio	2.24			

Description: M GR CH4 W/ LNS ML

LL = 79	**PL** = 24	**PI** = 55	**Assumed GS**= 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/21/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

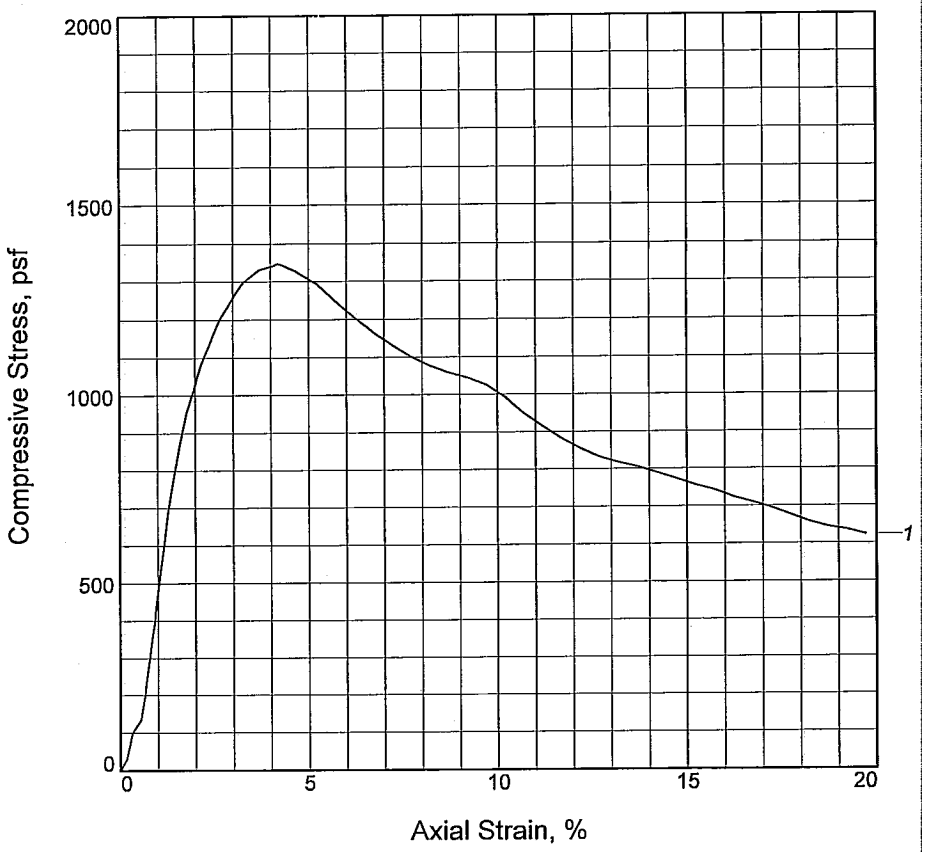
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UFT **Depth:** 53.7
Sample Number: 15C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1346			
Undrained shear strength, psf	673			
Failure strain, %	4.2			
Strain rate, in./min.	0.031			
Water content, %	58.3			
Wet density, pcf	104.2			
Dry density, pcf	65.8			
Saturation, %	100.4			
Void ratio	1.5789			
Specimen diameter, in.	1.398			
Specimen height, in.	3.136			
Height/diameter ratio	2.24			

Description: M GR CH3 W/ ARS ML, SL

LL = 78	PL = 36	PI = 42	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/21/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

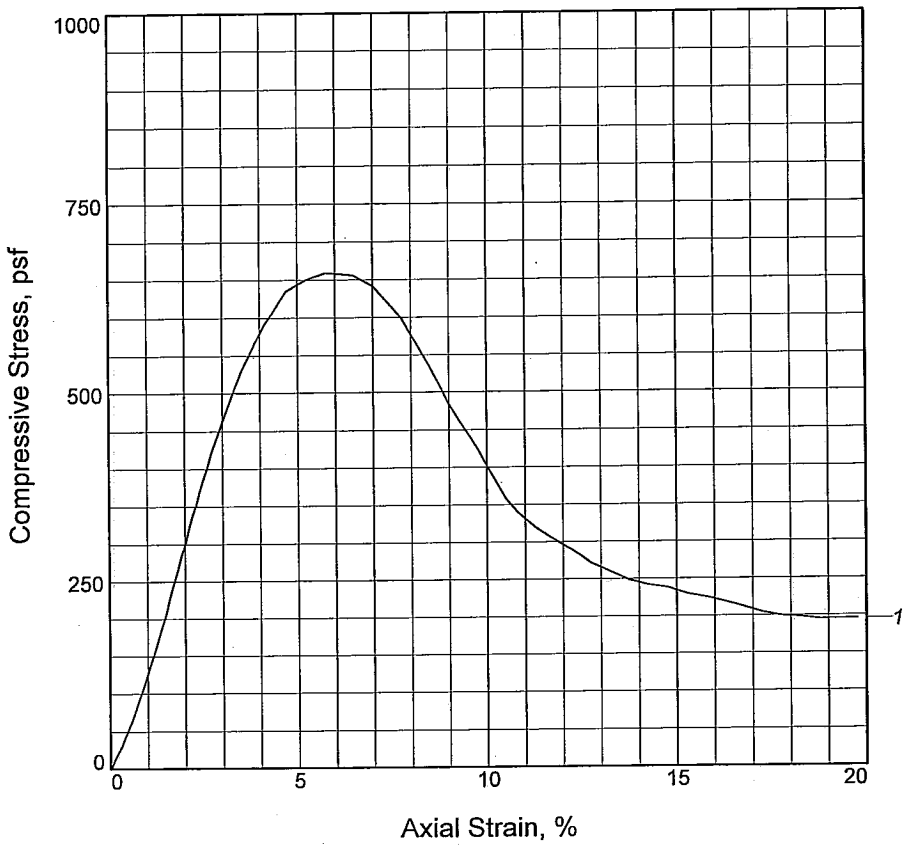
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UFT **Depth:** 61.7
Sample Number: 17C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	659			
Undrained shear strength, psf	330			
Failure strain, %	5.8			
Strain rate, in./min.	0.032			
Water content, %	30.9			
Wet density, pcf	117.3			
Dry density, pcf	89.6			
Saturation, %	95.5			
Void ratio	0.8677			
Specimen diameter, in.	1.387			
Specimen height, in.	3.165			
Height/diameter ratio	2.28			

Description: SO GR CL4 W/ ARS SP, SIF

LL = 33	**PL** = 23	**PI** = 10	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/21/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-48UFT **Depth:** 69.7
Sample Number: 19C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB

BOR. WWHC-48UFT
STA.
LAT 29^49'36.44"
LON 90^06'47.12"
OFFSET 40' FROM C/L
17 APRIL 2007
GROUND EL. 5.50

0.0	0.8	16		CH		VSTBR					
0.8	2.0	23		CH		VSTBR					
2.0	4.0	29		CH		ST GR	T				
4.0	4.8	39	4.8CH		M GR						
4.8	5.7	41	5.7CH	SIS	M GR		RT WD				
5.7	8.0		8.0NS								
8.0	8.8	33	8.8CH	SIS	M GN GR						
8.8	9.7	36	9.7CH		M	T GR		719114	61	26	34 91
9.7	12.0		12.0NS								
12.0	12.4	39	12.4CH		M GR	T					
12.4	16.0		16.0NS								
16.0	16.8	35	16.8CH		M	T GR					
16.8	17.7	40		CH	SISSO	GR					
17.7	20.0	39		CH	SISSO	GR	SL RT				
20.0	20.8	44	20.8CH	SISSO	GR						
20.8	21.7	37	21.7CL		SO	GR	CS				
21.7	24.0	31		ML		GR	CS				
24.0	24.8	31		ML		GR	CS				
24.8	25.7	33		ML		GR	CS				
25.7	26.6	34	26.6ML			GR	CS				
26.6	28.0	37	28.0CL		M GR						
28.0	28.8	76		CH		M GR	CC				
28.8	29.7	72		CH		M GR	S				
29.7	30.6	73		CH		M GR	WD SIFSL				
30.6	32.0	65	32.0CH		M GR		S				
32.0	32.8	36	32.8CL		SO	GR	CS				
32.8	33.2	35	33.2CL	SISSO	GR			437116	33	23	34 331
33.2	36.0		36.0NS								
36.0	36.8	40	36.8CH	SISSO	GR						
36.8	37.7	27	37.7SM			GR	CS				
37.7	40.0	59	40.0CH		SO	GR	S SL				
40.0	40.8	24		SM		GR					
40.8	41.7	23	41.7SM			GR					
41.7	42.6	24	42.6ML			GR	CS				
42.6	44.0	56		CH	SIS	M GR					

44.0 44.8 66 CH SIS M GR
44.8 45.7 63 CH SIS M GR SL
45.7 46.6 56 46.6CH SIS M GR SS
46.6 48.0 66 48.0CH SS M GR
48.0 48.8 57 CH SIS M GR
48.8 49.7 60 CH SIS M GR
49.7 50.6 58 CH SIS M GR 726102 79 35 60 500
50.6 52.0 59 52.0CH SIS M GR
52.0 52.8 62 52.8CH M GN
52.8 53.7 58 CH SIS M GR
53.7 54.6 59 CH SIS M GR 846103 79 24 57 540
54.6 56.0 63 56.0CH SIS M GR
56.0 60.0 60.0NS
60.0 60.8 59 60.8CH M GR
60.8 61.7 57 61.7CH M GR SIF
61.7 62.6 55 CH SIS M GR SL 673104 78 36 58 620
62.6 64.0 58 CH SIS M GR
64.0 64.8 56 CH SIS M GR
64.8 65.7 58 65.7CH SIS M GR
65.7 66.6 61 CH SS M GR
66.6 68.0 59 68.0CH SS M GR
68.0 68.8 31 CL SO GR SIF
68.8 69.7 31 CL SO GR SIF
69.7 70.6 49 CL SO GR S SIF 330117 33 23 31 700
70.6 72.0 52 72.0CL SO GR SIF S
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 5.10/ 0.40 Water Con: 30.00
LL,PL,PI : 46, 16, 30 Dry Dens : 92.00
Cohesion : 0.358 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 18.00/-12.5 Water Con: 38.00
LL,PL,PI : 56, 17, 39 Dry Dens : 83.00
Cohesion : 0.184 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : ML
Depth/Ele: 22.00/-16.5 Water Con: 31.00
LL,PL,PI : NP, NP, NP Dry Dens : 97.00
Cohesion : 0.153 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 30.00/-24.5 Water Con: 67.00
LL,PL,PI : 87, 47, 39 Dry Dens : 59.00
Cohesion : 0.293 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-32.5 Water Con: 58.00
LL,PL,PI : 75, 22, 53 Dry Dens : 66.00
Cohesion : 0.204 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 45.10/-39.6 Water Con: 56.00
LL,PL,PI : 76, 35, 41 Dry Dens : 66.00
Cohesion : 0.384 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CL
Depth/Ele: 20.8/-15.3 Water Con: 36.00
LL,PL,PI : 41, 17, 24 Dry Dens : 85.00
Cohesion : Saturat :100.00

Shear Str: Frict Ang: 00.00
Norm Str: 0.740, 0.820
Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.01	0.949
0.13	0.914
0.25	0.887
0.50	0.852
1.00	0.794
2.00	0.727
4.00	0.644
8.00	0.563
2.00	0.585
0.50	0.617

****

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-49UCL

Current Date: 7/10/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1A	0.0	VST T CL4 W/ LYS ML, RT	CL4		12												
1B	0.8	VST T CL4 W/ LYS ML, RT	CL4		13												
2A	2.0	VST GR & T CL4 W/ RT	CL4		16												
2B	2.8	VST GR & T CL4 W/ RT	CL4		19												
3A	4.0	ST GR & T CH2 W/ RT	CH2		29												
3B	4.8	ST T & GR CH4	CH4		36	85	116	99	UU	0	1750		86	24	62		
4A	6.0	ST GR & T CH2 W/ LYS ML, CC	CH2		29												
4B	6.8	ST T & GR CL4 W/ ARS SP	CL4	4	24	98	121	90	UC	-	1349	2697	41	24	17		
5A	8.0	M GR & T CL6	CL6		34												
5B	8.8	T & GR ML2 W/ ARS CL	ML2		26												
5C	9.7	M T & GR CL6	CL6		33	87	116	95	UU	0	667		44	20	24		
6A	12.0	M GR & T CH2 W/ ARS CL, CC	CH2		35												
6B	12.8	M GR CH2 W/ CC, WD	CH2		37												
6C	13.7	M GR CH3 W/ WD	CH3		51				UU				88	28	60		DIST
7A	16.0	ST GR CH3 W/ ARS ML, WD, RT	CH3		33												
7B	16.8	ST GR CH3	CH3	6	29	95	123	100	UC	-	1340	2680	63	18	45		
NS	17.3	No Sample	NS														
8A	20.0	M GR CH3 W/ ARS ML	CH3		39												
8B	20.8	SO GR & T CH3 W/ CC	CH3		37	85	116	99	UU	0	338		59	18	41		
NS	21.7	No Sample	NS														
9A	24.0	SO GR & T CH3	CH3		43												
9B	24.8	VSO T & GR CL6	CL6		44	76	109	100	UU	0	200		49	29	20		
9C	25.7	GR ML2	ML2		34												
10A	28.0	M GR CH3 W/ ARS ML	CH3		42												
10B	28.8	SO GR CL4 W/ LNS & LYS ML, WD	CL4		37												
10C	29.7	SO GR CL4	CL4		38	80	110	92	UU	0	454		39	25	14		
10D	30.6	SO GR CH2 W/ LNS & LYS ML	CH2		44												
11A	32.0	SO GR CH2 W/ LNS ML	CH2		40												
11B	32.8	SO GR CH2 W/ LNS & LYS ML	CH2		38												
11C	33.7	SO GR CH2 W/ LYS ML	CH2	5	44	77	111	100	UC	-	390	781	51	29	22		
12A	36.0	GR ML2	ML2		35												
12B	36.8	SO GR CH2 W/ LNS ML	CH2		40												
12C	37.7	SO GR CH2 W/ LYS ML	CH2		44	74	107	92	UU	0	317		50	24	26		
13A	40.0	SO GR CH2 W/ LNS & LYS ML	CH2		39												
13B	40.8	M GR CL4 W/ LNS ML	CL4		35												
13C	41.7	M GR CL4 W/ LNS CH	CL4	9	36	85	116	99	UC	-	697	1393	37	27	10		
13D	42.6	M GR CL4 W/ LNS ML	CL4		36												

Remarks: _____
FFEB JV, LLC

Checked By: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

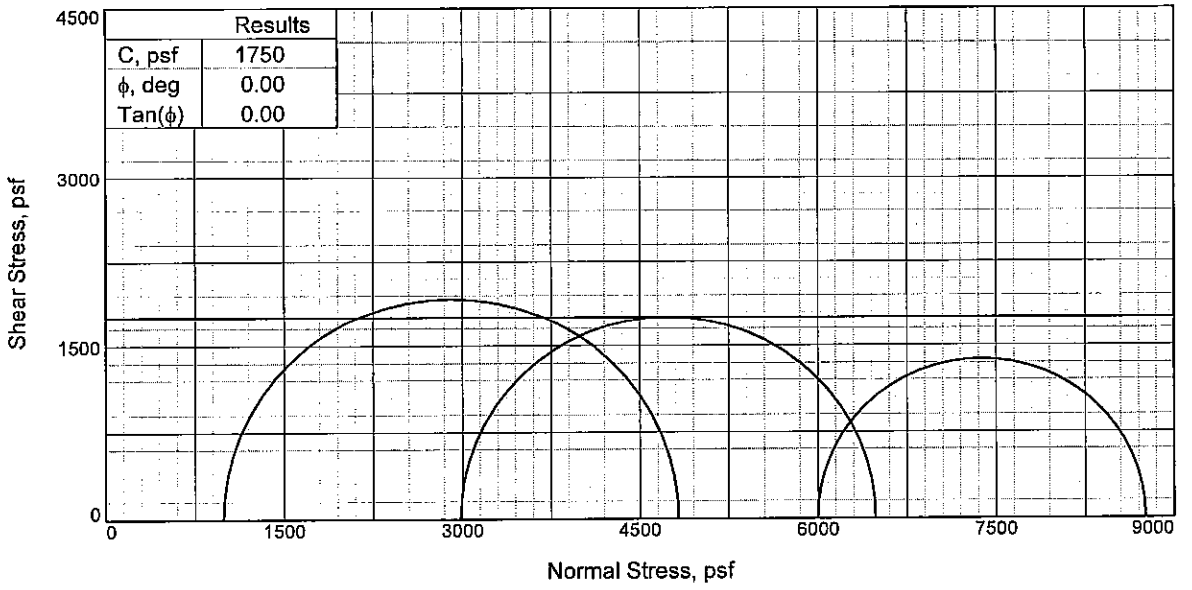
Project Number: 0022-0002
Boring: WWHC-49UCL

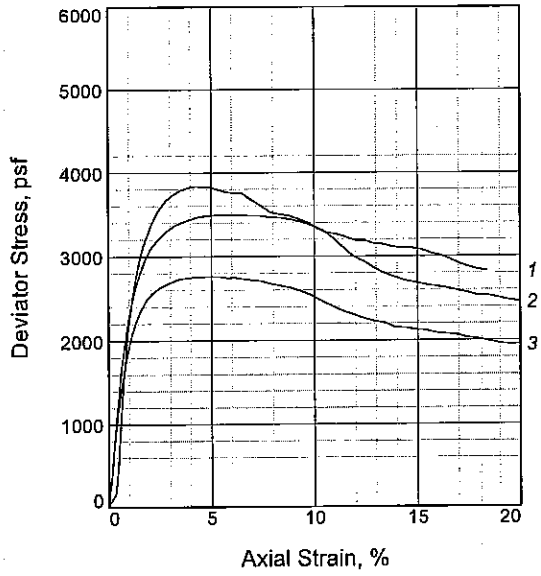
Current Date: 7/10/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
14A	44.0	GR ML2	ML2		28												
14B	44.8	M GR CL4-S W/ LNS ML	CL4-S		32												
14C	45.7	M GR CL4-S	CL4-S	14	30	92	120	99	UC	-	602	1203	33	28	5		
14D	46.6	M GR CL4-S	CL4-S		32												
15A	48.0	M GR CH2 W/ LYS ML	CH2		41												
15B	48.8	M GR CH2 W/ LYS ML	CH2		36												
15C	49.7	GR SM1	SM1		24												SV
16A	52.0	M GR CH3 W/ LNS ML	CH3		40												
16B	52.8	M GR CH3 W/ LNS & LYS ML	CH3		46	75	110	100	UU	0	625		59	27	32		
16C	53.7	M GR CL4	CL4		31												
17A	56.0	GR SM1	SM1		27												
17B	56.8	GR SM1	SM1		28												
17C	57.7	GR SM1	SM1		27												
18A	60.0	M GR CL4	CL4		30												
18B	60.8	M GR CL4	CL4		29												
18C	61.7	M GR CL4	CL4		31												
19A	64.0	M GR CL4 W/ LNS ML	CL4		29												
19B	64.8	M GR CL4 W/ LNS CH, LNS ML	CL4		32												
19C	65.7	GR ML2 W/ LNS CH	ML2	3	24	102	126	99	UC	-	762	1524	NP	NP			
20A	68.0	M GR CL6 W/ LNS & ARS CH	CL6		36												
20B	68.8	M GR CH3 W/ LNS & ARS ML	CH3		41												
20C	69.7	M GR CH3 W/ LYS ML	CH3	2	51	71	107	100	UC	-	996	1991	74	29	45		
20D	70.6	GR SM1	SM1		28												

Remarks: _____
FFEB JV, LLC

Checked By: _____
File Name: TC12





Sample No.		1	2	3
Initial	Water Content, %	37.2	35.6	36.5
	Dry Density, pcf	84.5	86.2	85.2
	Saturation, %	99.5	99.0	99.2
	Void Ratio	1.0248	0.9852	1.0079
	Diameter, in.	1.34	1.41	1.41
	Height, in.	3.30	3.00	3.00
At Test	Water Content, %	37.4	36.0	36.8
	Dry Density, pcf	84.5	86.2	85.2
	Saturation, %	100.0	100.0	100.0
	Void Ratio	1.0248	0.9852	1.0079
	Diameter, in.	1.34	1.41	1.41
	Height, in.	3.30	3.00	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.73	41.65
Fail. Stress, psf		3835	3500	2760
Strain, %		4.2	5.3	5.0
Ult. Stress, psf		3284	2752	2152
Strain, %				
σ_1 Failure, psf		4825	6485	8758
σ_3 Failure, psf		990	2985	5998

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: ST T & GR CH4

LL= 86 **PL=** 24 **PI=** 62

Assumed Specific Gravity= 2.74

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-49UCL **Depth:** 4.80'

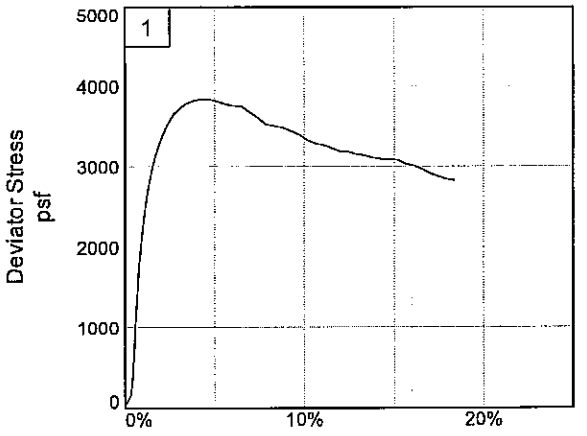
Sample Number: 3B

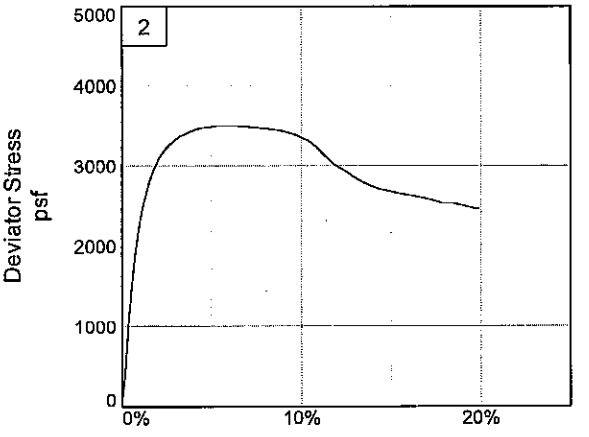
Proj. No.: 0022-0002 **Date Sampled:** 6/4/07

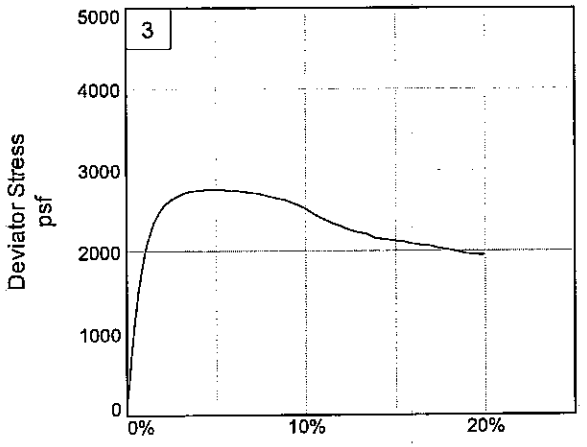
TRIAXIAL SHEAR TEST REPORT

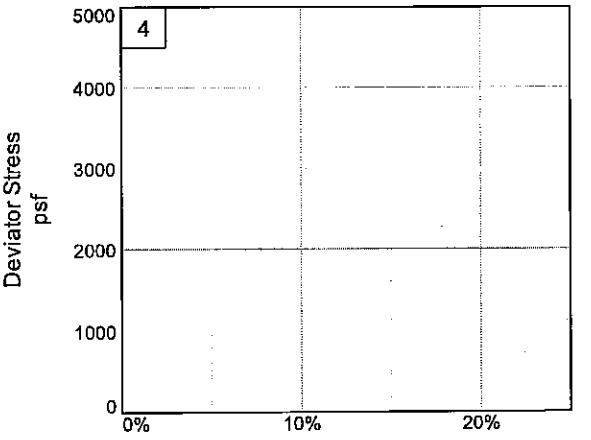
FFEBJV, LLC.

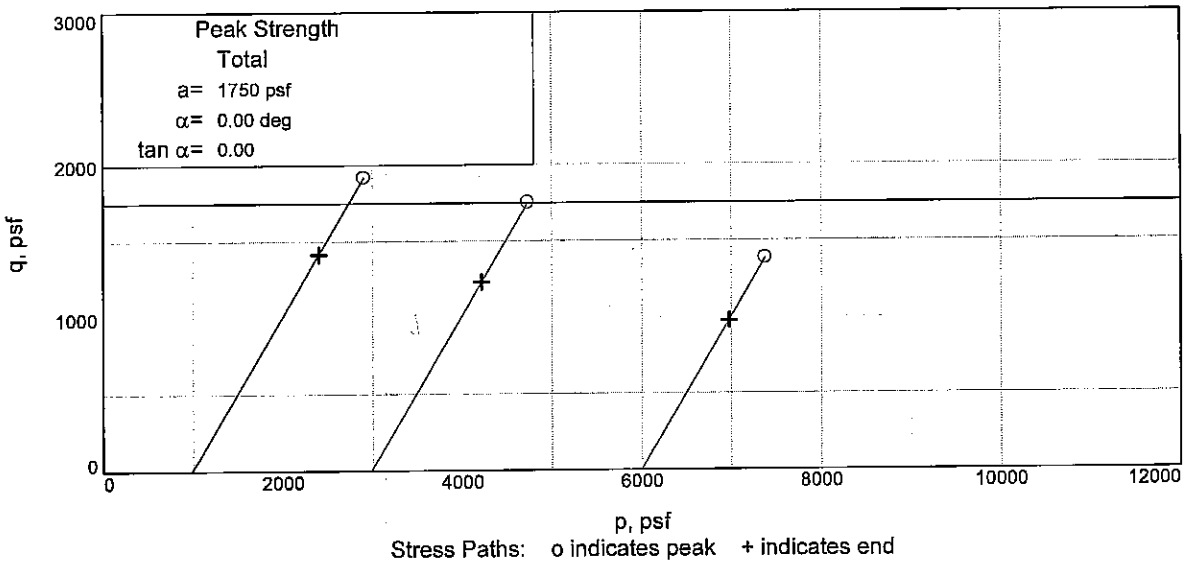
Tested By: CC **Checked By:** GMU











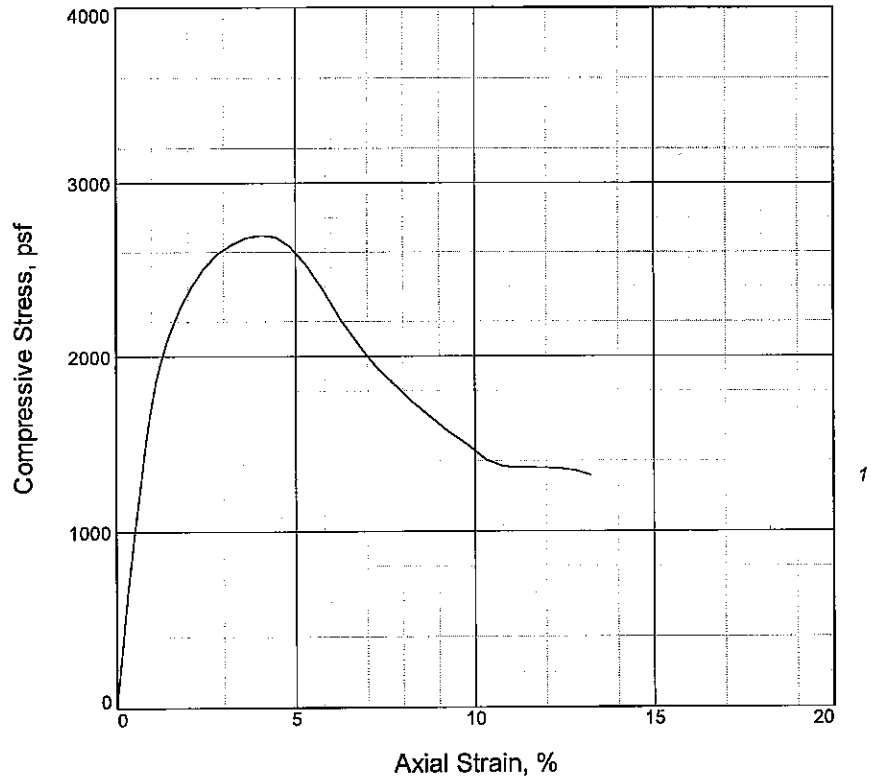
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-49UCL **Depth:** 4.80' **Sample Number:** 3B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2697			
Undrained shear strength, psf	1349			
Failure strain, %	4.0			
Strain rate, %/min.	1.00			
Water content, %	24.0			
Wet density, pcf	121.2			
Dry density, pcf	97.7			
Saturation, %	90.1			
Void ratio	0.7182			
Specimen diameter, in.	1.33			
Specimen height, in.	3.00			
Height/diameter ratio	2.26			

Description: ST T & GR CL4 W/ ARS SP

LL = 41	PL = 24	PI = 17	Assumed GS= 2.69	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/1/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

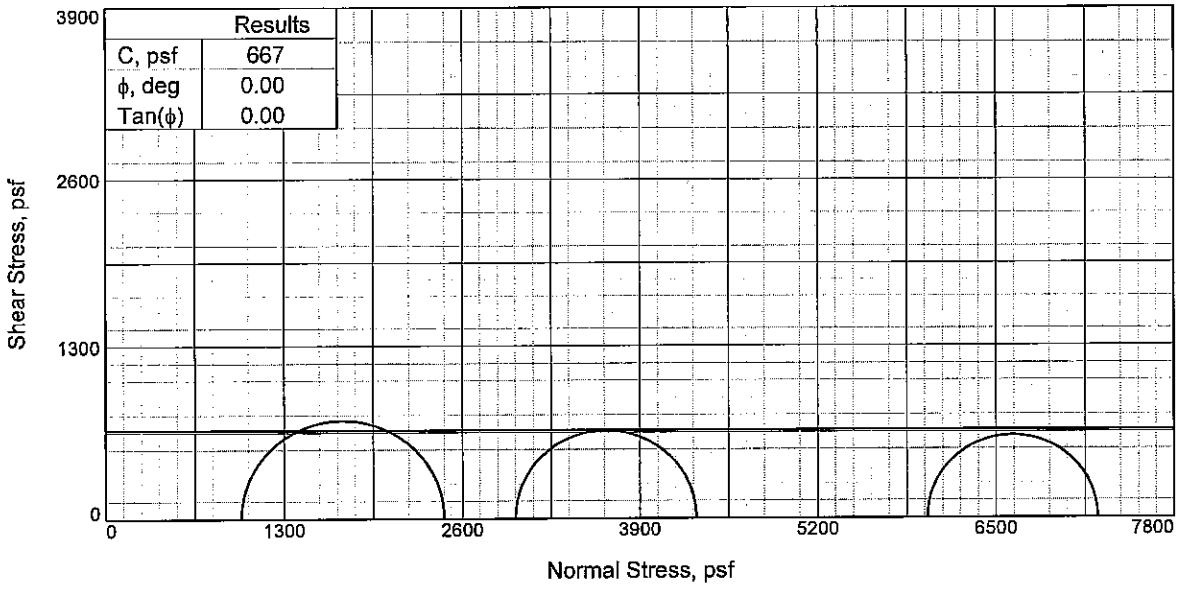
Client: U.S. ARMY CORPS OF ENGINEERS

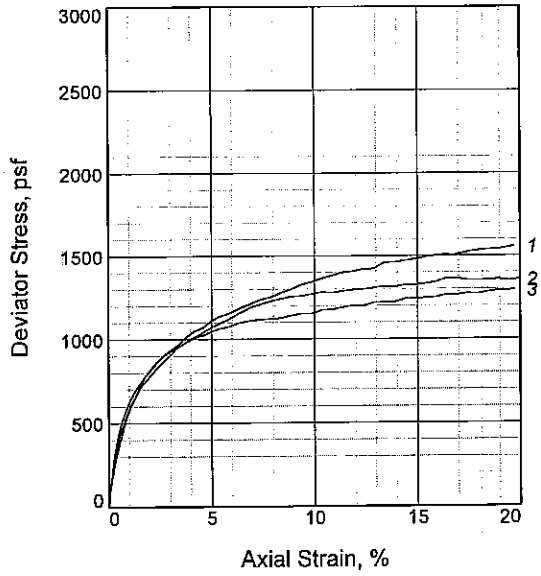
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UCL **Depth:** 6.80'
Sample Number: 4B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	32.3	33.6	32.4
	Dry Density, pcf	88.8	88.1	85.4
	Saturation, %	97.6	97.9	88.6
	Void Ratio	0.8905	0.9412	1.0020
	Diameter, in.	1.33	1.33	1.36
	Height, in.	3.00	3.00	3.00
At Test	Water Content, %	33.1	34.4	36.6
	Dry Density, pcf	88.8	88.1	85.4
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.8905	0.9412	1.0020
	Diameter, in.	1.33	1.33	1.36
	Height, in.	3.00	3.00	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.76	41.67
Fail. Stress, psf		1480	1324	1241
Strain, %		14.9	14.4	14.4
Ult. Stress, psf		1480	1324	1241
Strain, %				
σ_1 Failure, psf		2468	4314	7241
σ_3 Failure, psf		989	2990	6000

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M T & GR CL6

LL= 44 **PL=** 20 **PI=** 24

Assumed Specific Gravity= 2.69

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-49UCL **Depth:** 9.70'

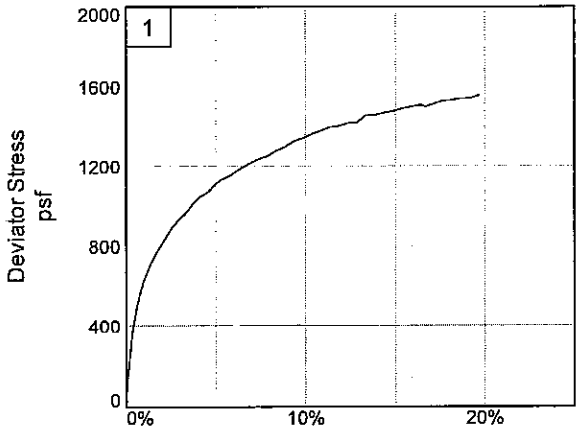
Sample Number: 5C

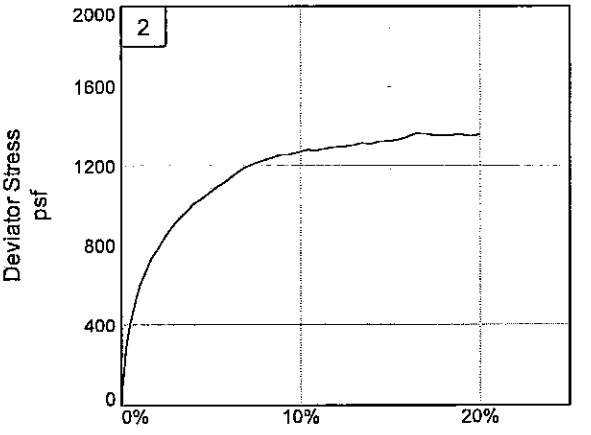
Proj. No.: 0022-0002 **Date Sampled:** 6/4/07

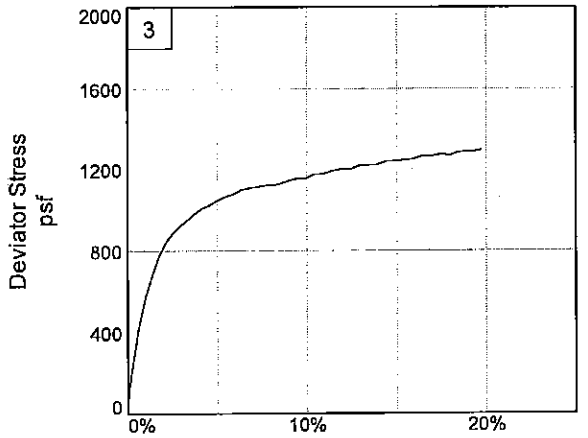
TRIAXIAL SHEAR TEST REPORT

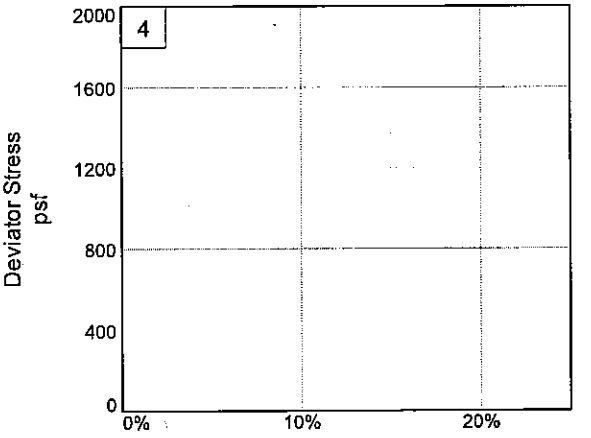
FFEBJV, LLC.

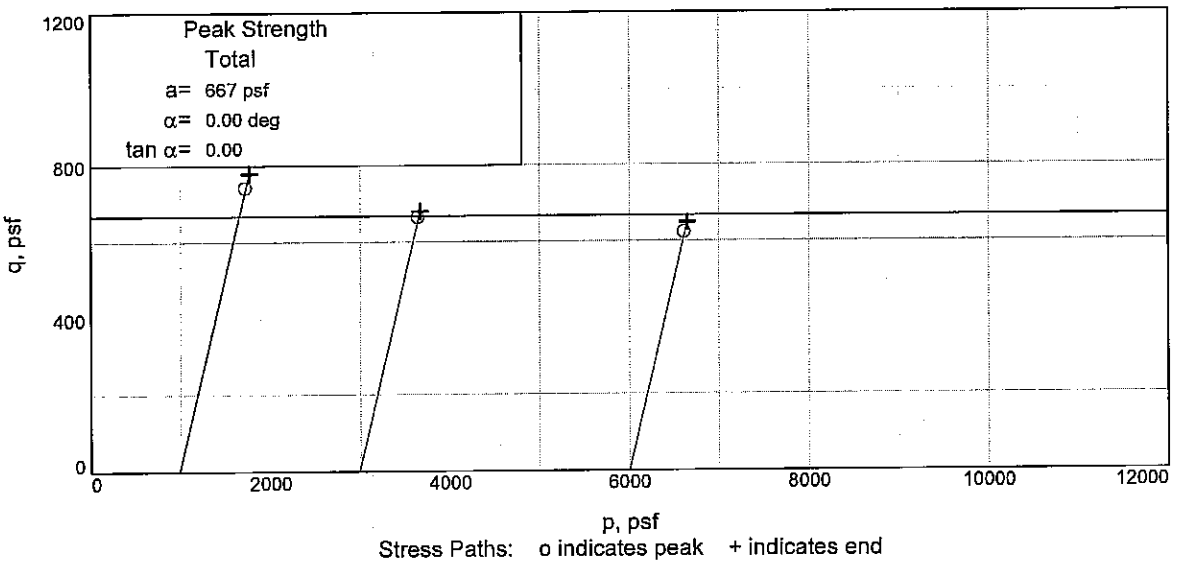
Tested By: CC **Checked By:** GMU











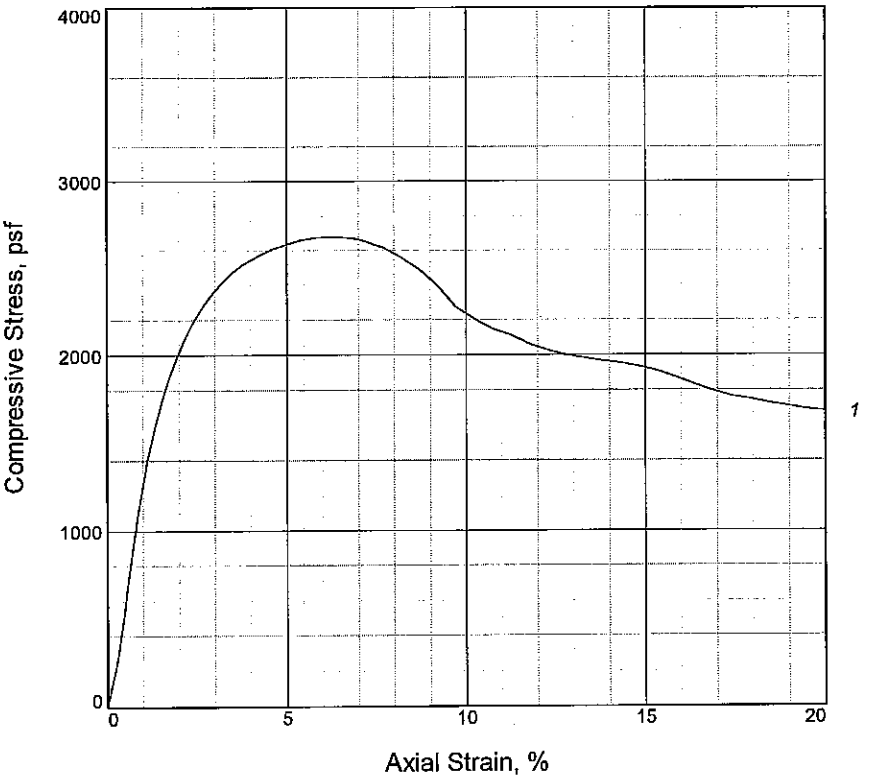
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-49UCL **Depth:** 9.70' **Sample Number:** 5C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2680			
Undrained shear strength, psf	1340			
Failure strain, %	6.4			
Strain rate, %/min.	1.00			
Water content, %	29.0			
Wet density, pcf	122.8			
Dry density, pcf	95.2			
Saturation, %	99.8			
Void ratio	0.7967			
Specimen diameter, in.	1.32			
Specimen height, in.	3.01			
Height/diameter ratio	2.27			

Description: ST GR CH3

LL = 63	**PL** = 18	**PI** = 45	**Assumed GS**= 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/1/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

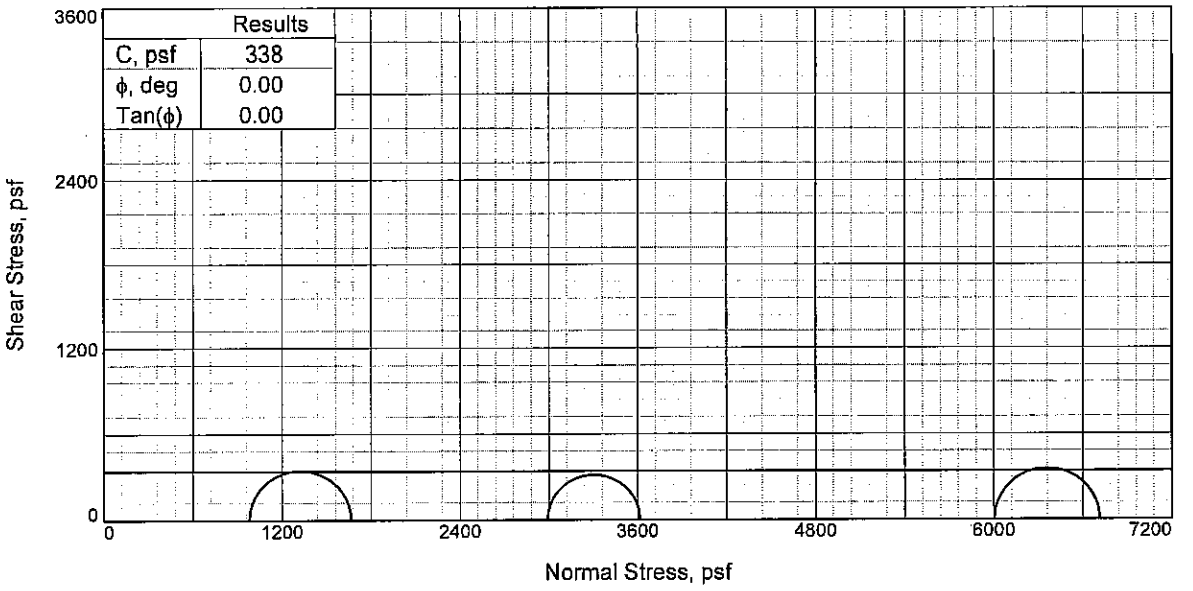
Client: U.S. ARMY CORPS OF ENGINEERS

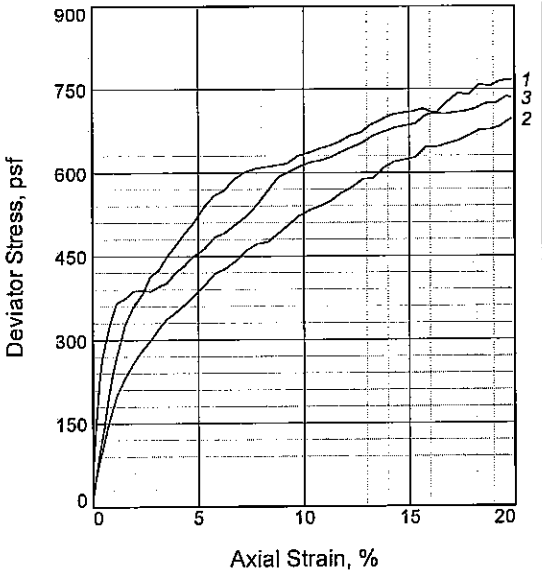
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UCL **Depth:** 16.80'
Sample Number: 7B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	36.6	37.1	37.2
	Dry Density, pcf	85.2	84.5	84.5
	Saturation, %	99.7	99.1	99.5
	Void Ratio	1.0073	1.0253	1.0235
	Diameter, in.	1.41	1.41	1.40
	Height, in.	3.00	3.00	3.04
At Test	Water Content, %	36.6	36.2	36.2
	Dry Density, pcf	85.2	84.5	84.5
	Saturation, %	99.7	96.6	97.0
	Void Ratio	1.0073	1.0253	1.0235
	Diameter, in.	1.41	1.41	1.40
	Height, in.	3.00	3.00	3.04
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.82	20.78	41.70
Fail. Stress, psf		685	623	708
Strain, %		14.8	14.8	14.7
Ult. Stress, psf		685	623	708
Strain, %				
σ_1 Failure, psf		1666	3615	6713
σ_3 Failure, psf		982	2992	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO T & GR CH3

LL= 59 **PL=** 18 **PI=** 41
Specific Gravity= 2.74
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

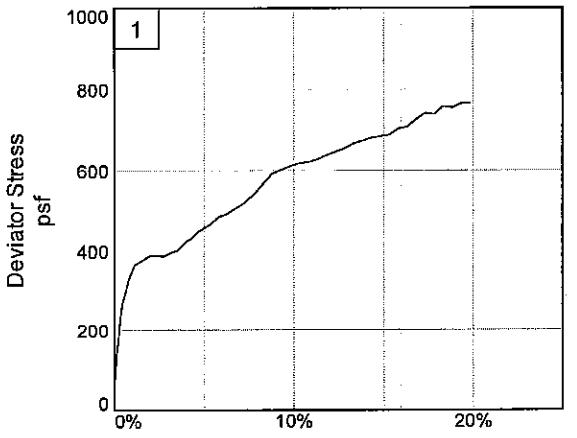
Client: U.S. ARMY CORPS OF ENGINEERS

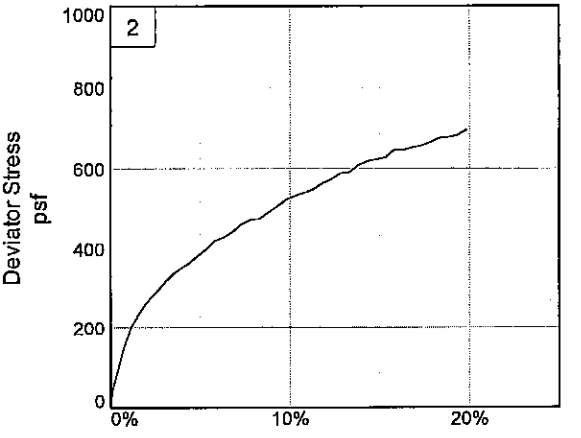
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UCL **Depth:** 20.80'
Sample Number: 8B
Proj. No.: 0022-0002 **Date Sampled:** 6/15/07

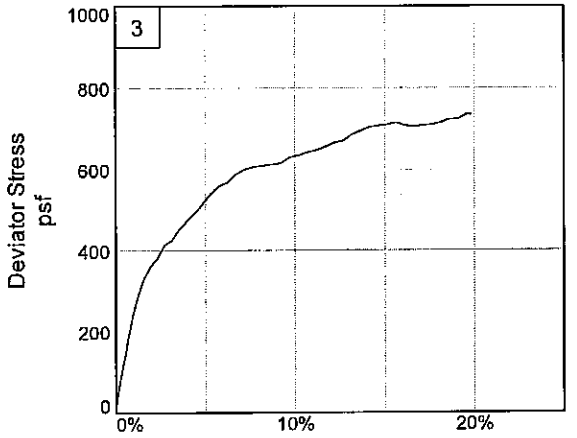
TRIAXIAL SHEAR TEST REPORT

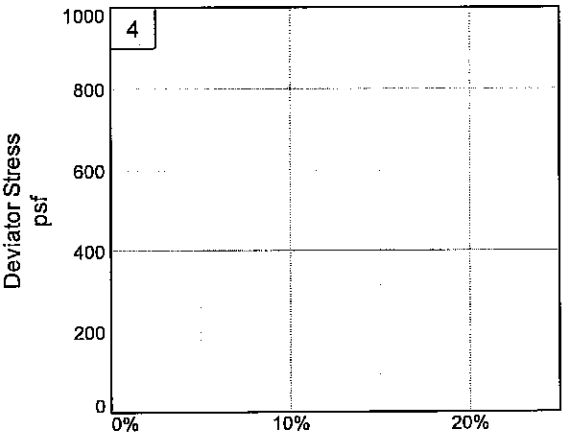
FFEBJV, LLC.

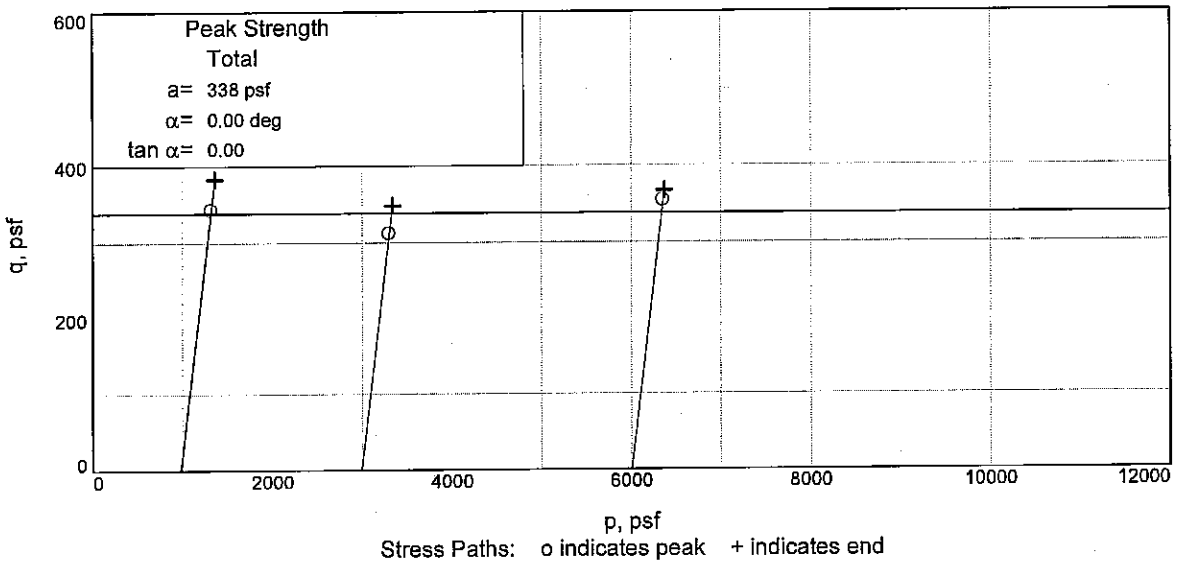
Tested By: CC **Checked By:** GMU







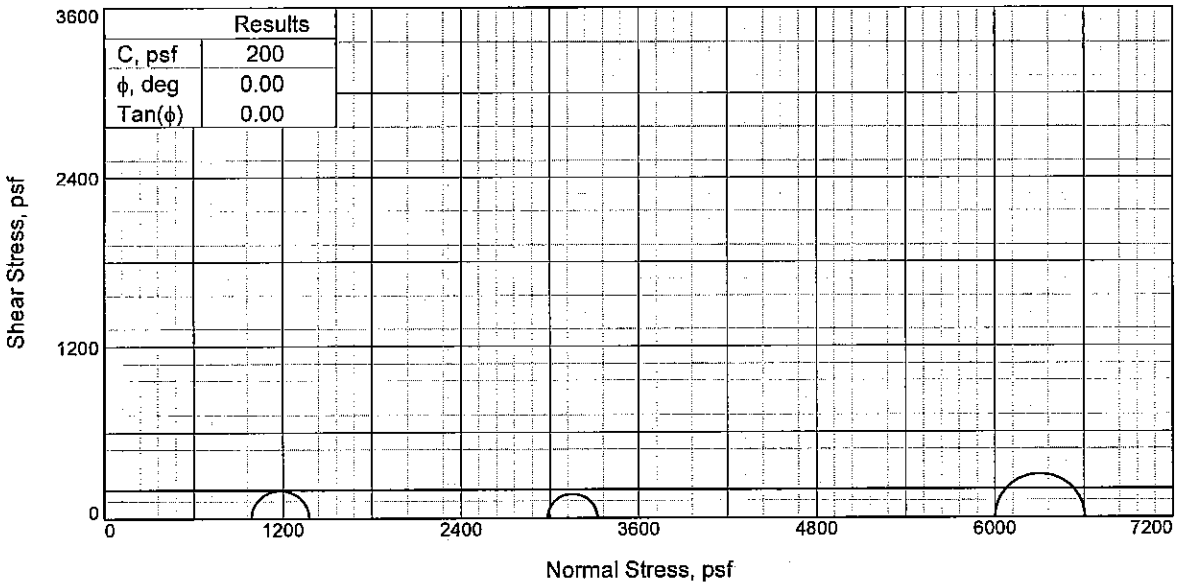


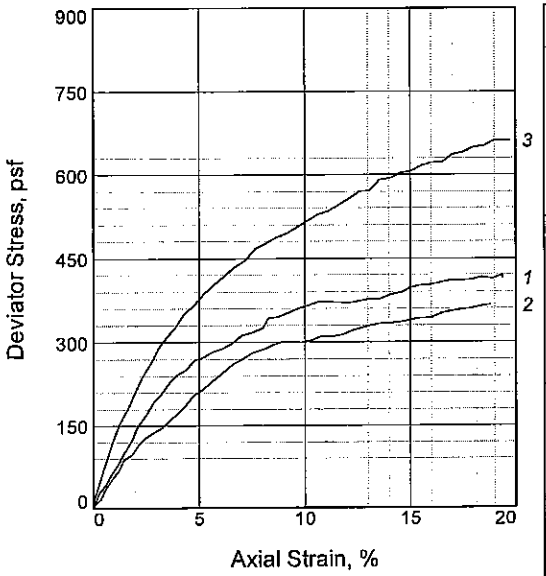


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-49UCL **Depth:** 20.80' **Sample Number:** 8B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	44.1	44.5	44.8
	Dry Density, pcf	76.7	76.3	76.1
	Saturation, %	99.6	99.6	99.7
	Void Ratio	1.1900	1.2023	1.2075
	Diameter, in.	1.41	1.39	1.40
	Height, in.	3.08	3.16	3.05
At Test	Water Content, %	42.3	42.7	43.4
	Dry Density, pcf	76.7	76.3	76.1
	Saturation, %	95.6	95.5	96.6
	Void Ratio	1.1900	1.2023	1.2075
	Diameter, in.	1.41	1.39	1.40
	Height, in.	3.08	3.16	3.05
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.73	41.67
Fail. Stress, psf		389	336	604
Strain, %		14.5	14.6	14.6
Ult. Stress, psf		389	336	604
Strain, %				
σ_1 Failure, psf		1378	3321	6605
σ_3 Failure, psf		989	2985	6001

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: VSO T & GR CL6

LL= 49 **PL=** 29 **PI=** 20

Assumed Specific Gravity= 2.69

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-49UCL **Depth:** 24.80'

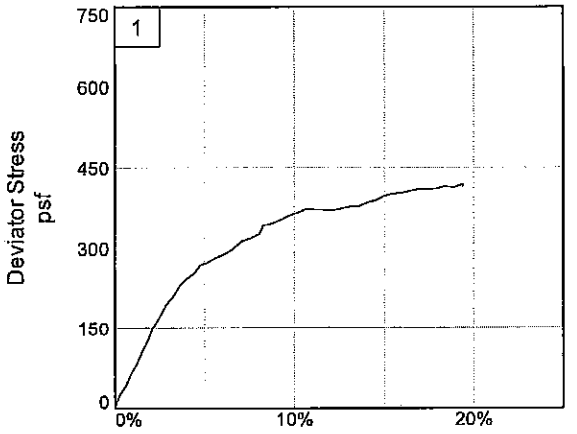
Sample Number: 9B

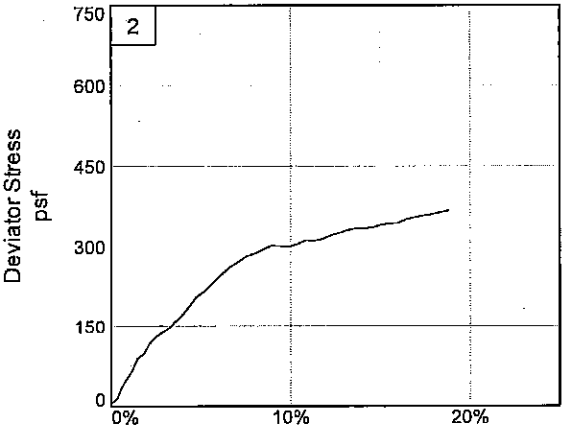
Proj. No.: 0022-0002 **Date Sampled:** 6/4/07

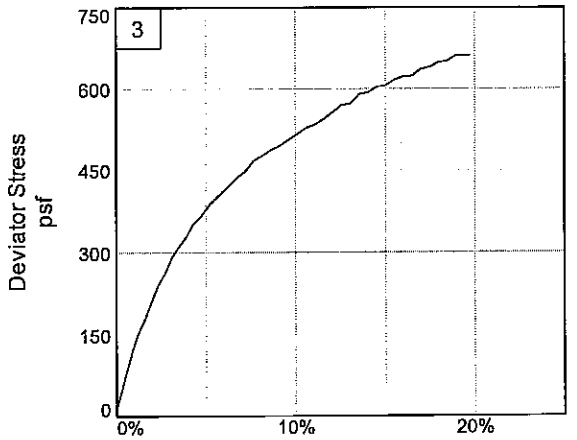
TRIAXIAL SHEAR TEST REPORT

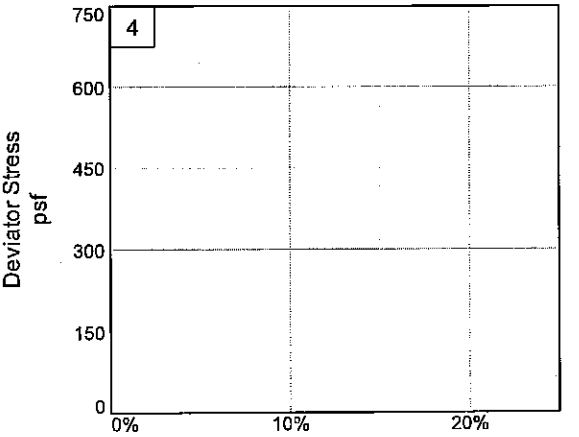
FFEBJV, LLC.

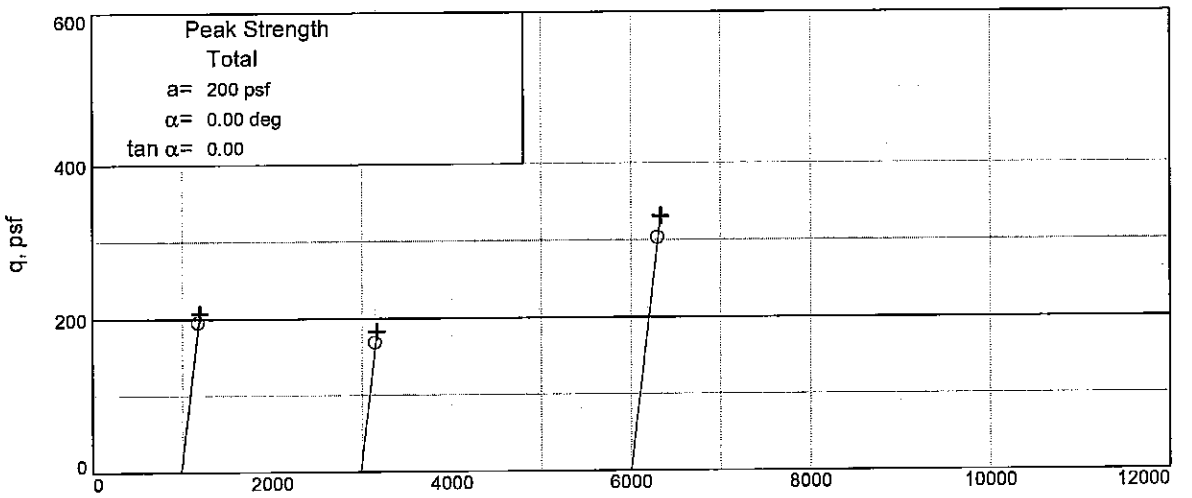
Tested By: CC **Checked By:** GMU









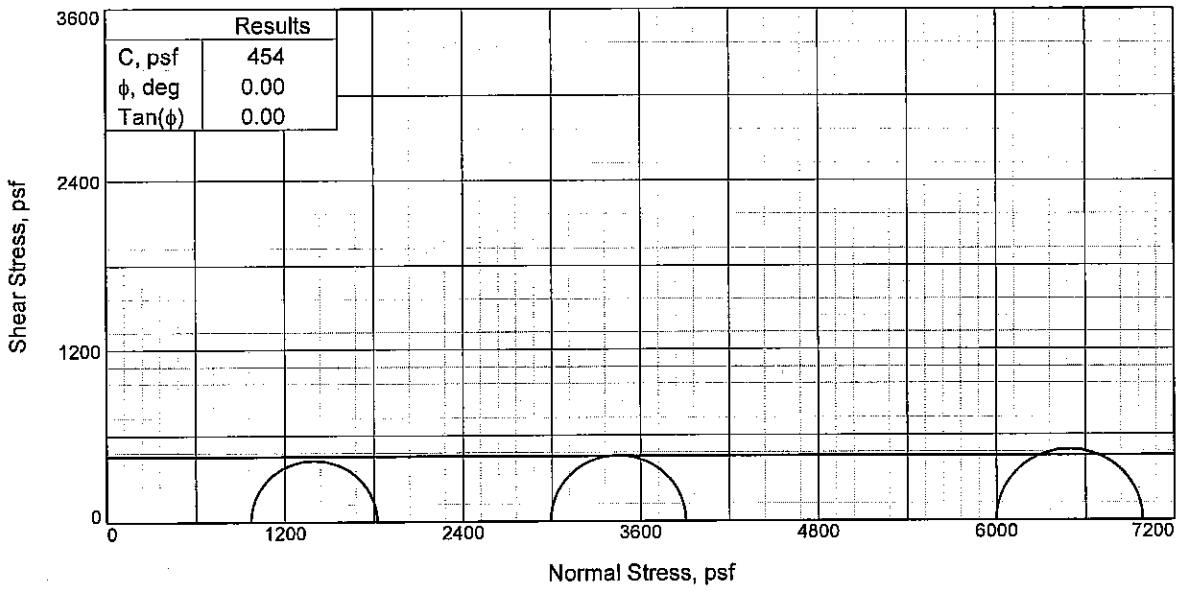


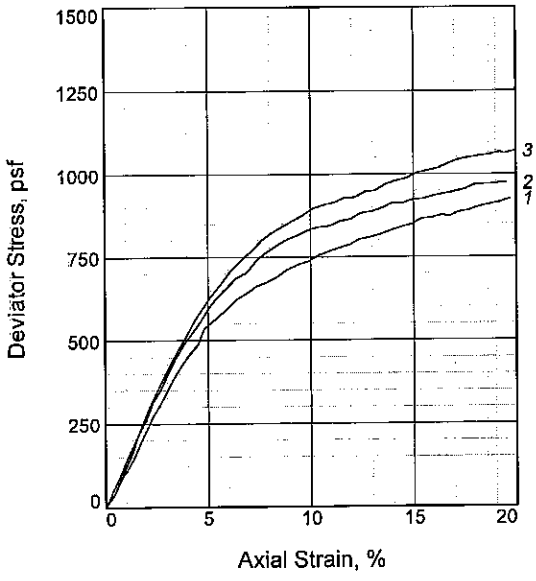
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-49UCL **Depth:** 24.80' **Sample Number:** 9B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	37.9	37.7	37.2
	Dry Density, pcf	80.1	79.8	80.0
	Saturation, %	93.4	92.2	91.3
	Void Ratio	1.0878	1.0961	1.0917
	Diameter, in.	1.33	1.32	1.32
	Height, in.	3.00	3.00	3.00
At Test	Water Content, %	36.4	36.2	35.9
	Dry Density, pcf	80.1	79.8	80.0
	Saturation, %	89.8	88.5	88.2
	Void Ratio	1.0878	1.0961	1.0917
	Diameter, in.	1.33	1.32	1.32
	Height, in.	3.00	3.00	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.75	20.78	41.65
Fail. Stress, psf		849	913	988
Strain, %		14.9	14.5	14.7
Ult. Stress, psf		849	913	988
Strain, %				
σ_1 Failure, psf		1821	3905	6986
σ_3 Failure, psf		972	2992	5998

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CL4

LL= 39 **PL=** 25 **PI=** 14
Assumed Specific Gravity= 2.68
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

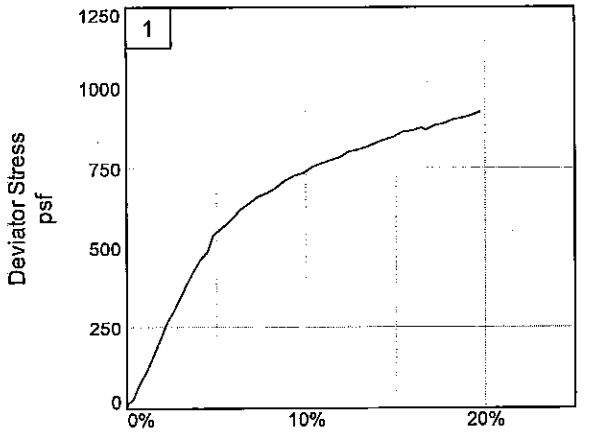
Client: U.S. ARMY CORPS OF ENGINEERS

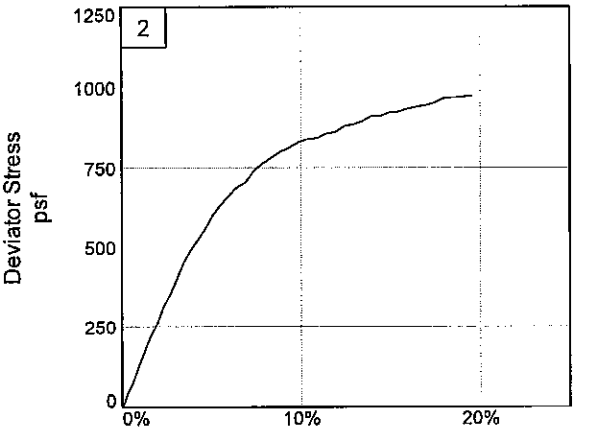
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UCL **Depth:** 29.70'
Sample Number: 10C
Proj. No.: 0022-0002 **Date Sampled:** 6/5/07

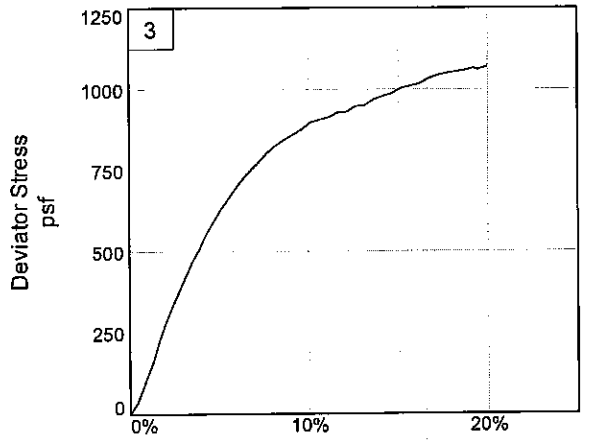
TRIAXIAL SHEAR TEST REPORT

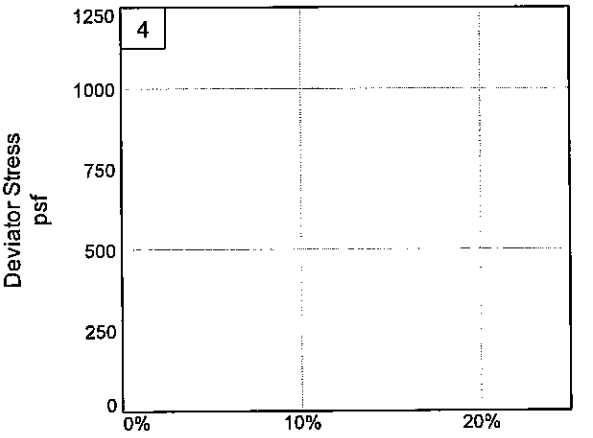
FFEBJV, LLC.

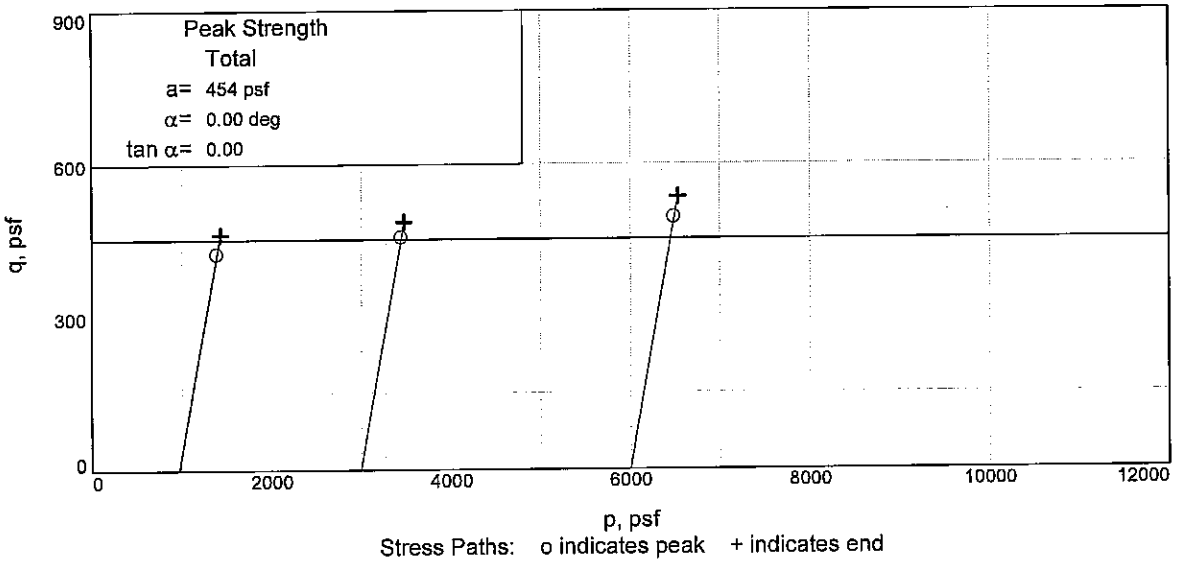
Tested By: CC **Checked By:** GMU











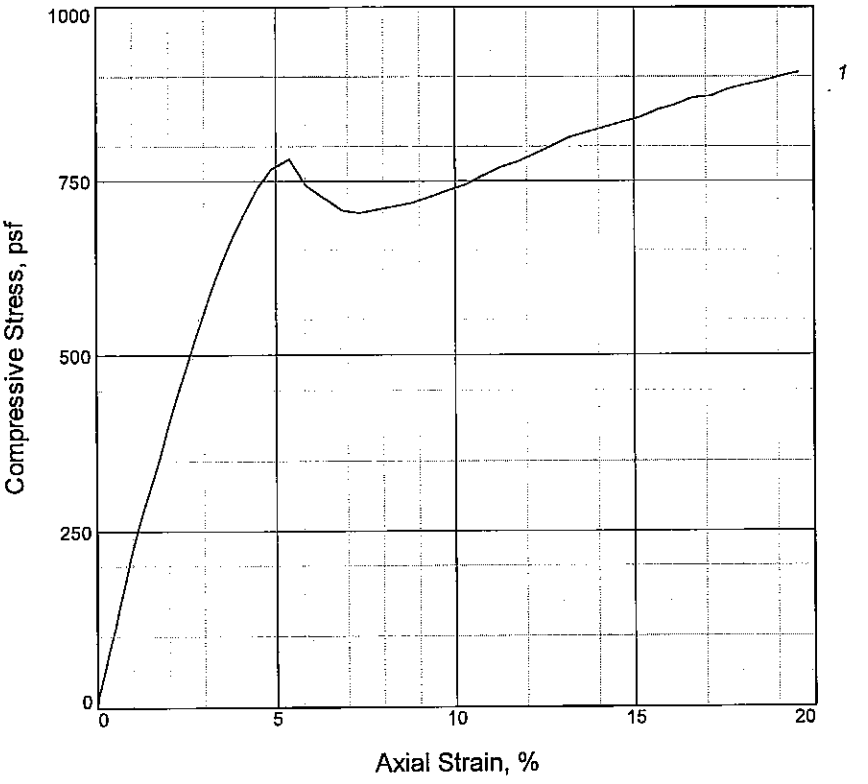
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-49UCL **Depth:** 29.70' **Sample Number:** 10C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	781			
Undrained shear strength, psf	390			
Failure strain, %	5.4			
Strain rate, %/min.	1.00			
Water content, %	43.6			
Wet density, pcf	111.0			
Dry density, pcf	77.3			
Saturation, %	99.6			
Void ratio	1.1801			
Specimen diameter, in.	1.39			
Specimen height, in.	3.06			
Height/diameter ratio	2.21			

Description: SO GR CH2 W/ LYS ML

LL = 51	PL = 29	PI = 22	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/8/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

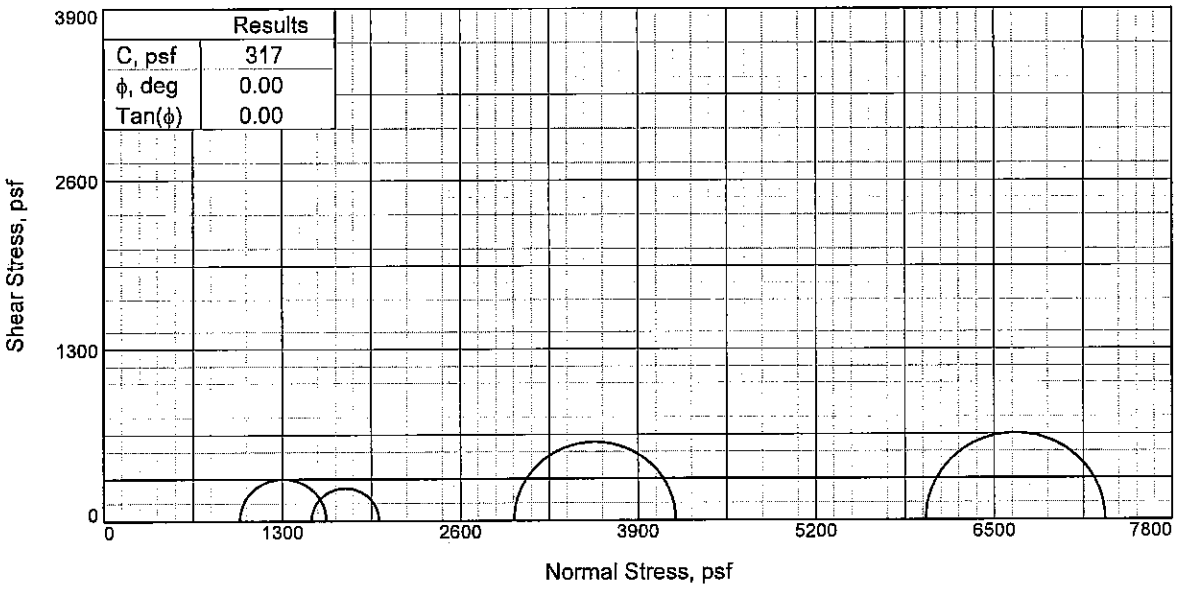
Client: U.S. ARMY CORPS OF ENGINEERS

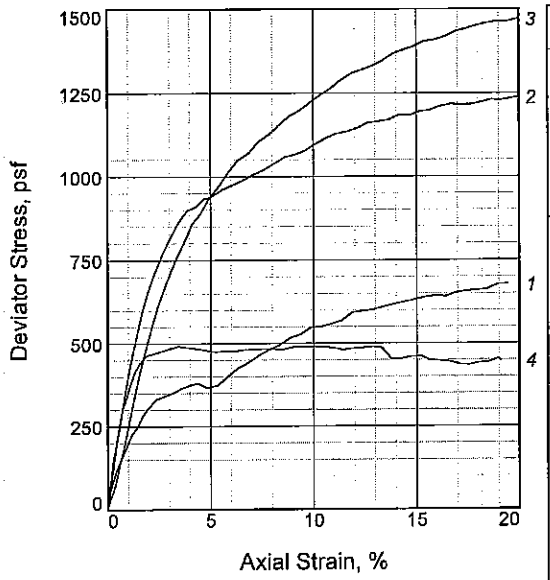
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UCL **Depth:** 33.70'
Sample Number: 11C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3	4
Initial	Water Content, %	44.1	44.8	37.5	50.0
	Dry Density, pcf	75.3	72.1	75.4	71.5
	Saturation, %	96.2	90.4	81.9	99.5
	Void Ratio	1.2370	1.3388	1.2369	1.3565
	Diameter, in.	1.32	1.34	1.35	1.29
	Height, in.	3.00	3.00	3.00	3.19
At Test	Water Content, %	42.7	44.0	38.6	39.5
	Dry Density, pcf	75.3	72.1	75.4	71.5
	Saturation, %	93.3	88.8	84.2	78.6
	Void Ratio	1.2370	1.3388	1.2369	1.3565
	Diameter, in.	1.32	1.34	1.35	1.29
	Height, in.	3.00	3.00	3.00	3.19
Strain rate, %/min.		1.00	1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.89	20.79	41.67	10.52
Fail. Stress, psf		631	1182	1310	491
Strain, %		14.9	14.7	11.9	3.4
Ult. Stress, psf		631	1182	1310	484
Strain, %					
σ_1 Failure, psf		1623	4176	7310	2006
σ_3 Failure, psf		992	2993	6001	1514

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH2 W/ LYS ML

LL= 50 **PL=** 24 **PI=** 26
Assumed Specific Gravity= 2.70
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

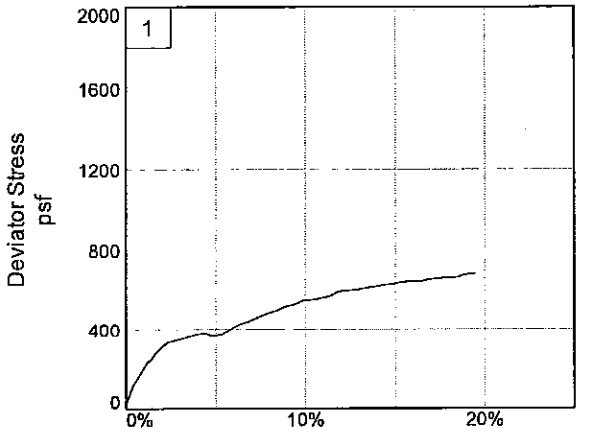
Client: U.S. ARMY CORPS OF ENGINEERS

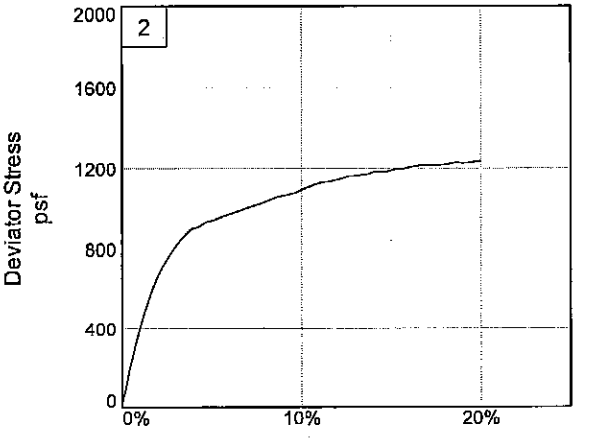
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UCL **Depth:** 37.70'
Sample Number: 12C
Proj. No.: 0022-0002 **Date Sampled:** 6/5/07

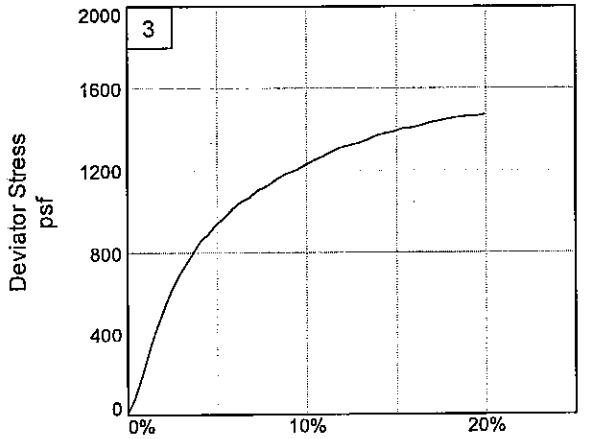
TRIAXIAL SHEAR TEST REPORT

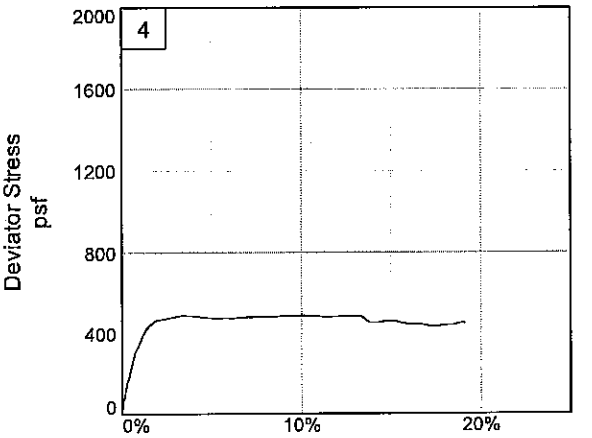
FFEBJV, LLC.

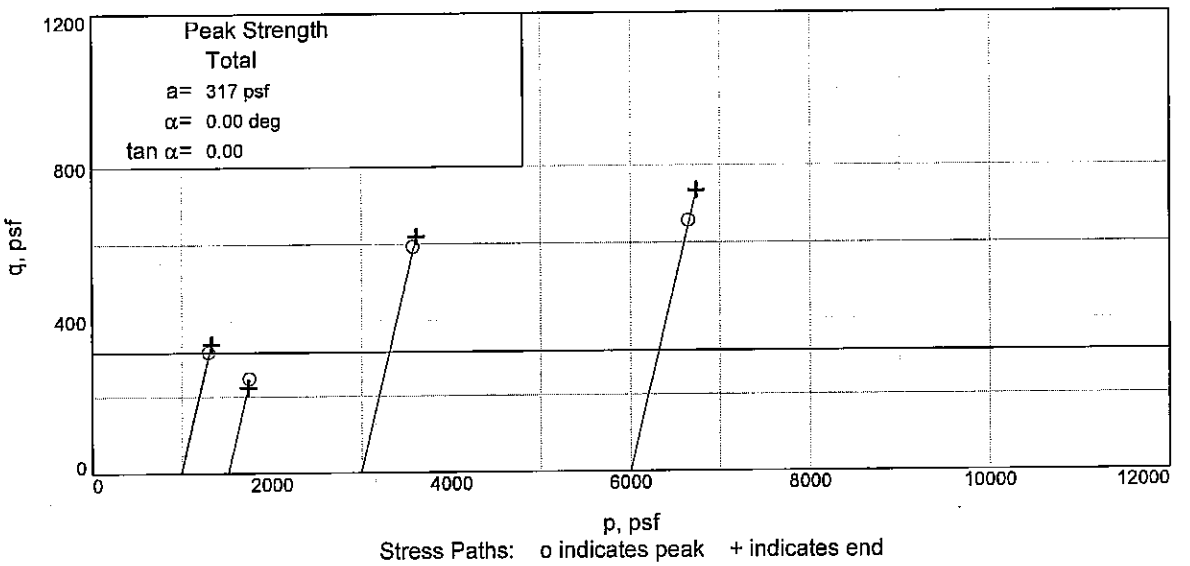
Tested By: CC **Checked By:** GMU











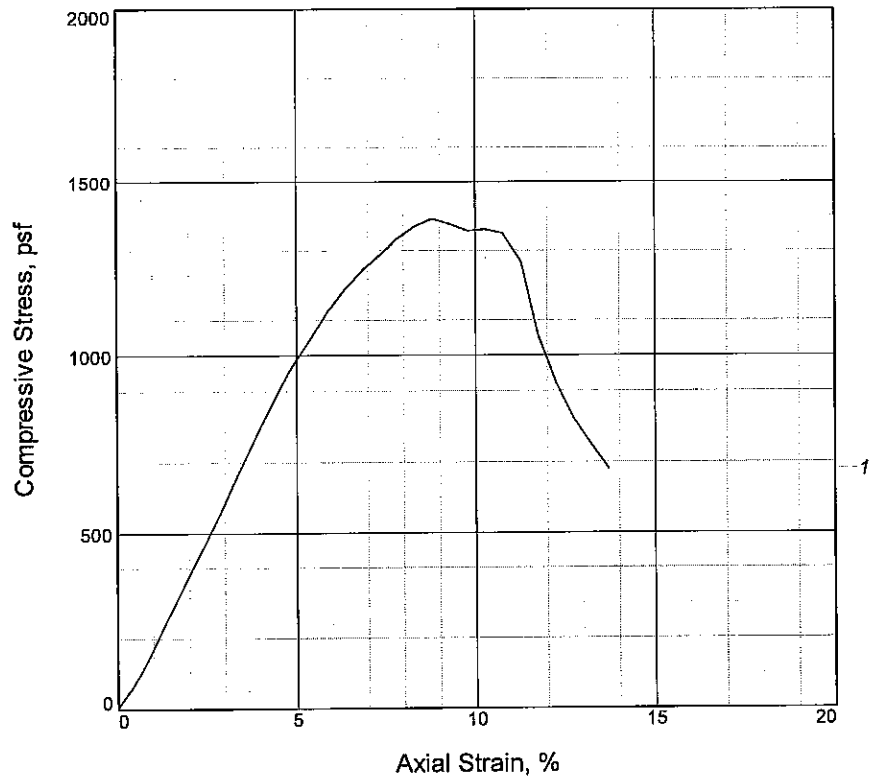
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-49UCL **Depth:** 37.70' **Sample Number:** 12C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1393			
Undrained shear strength, psf	697			
Failure strain, %	8.8			
Strain rate, %/min.	1.00			
Water content, %	35.6			
Wet density, pcf	115.5			
Dry density, pcf	85.1			
Saturation, %	99.3			
Void ratio	0.9578			
Specimen diameter, in.	1.38			
Specimen height, in.	3.03			
Height/diameter ratio	2.19			

Description: M GR CL4 W/ LNS CH

LL = 37	PL = 27	PI = 10	**Assumed GS=** 2.67	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/8/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

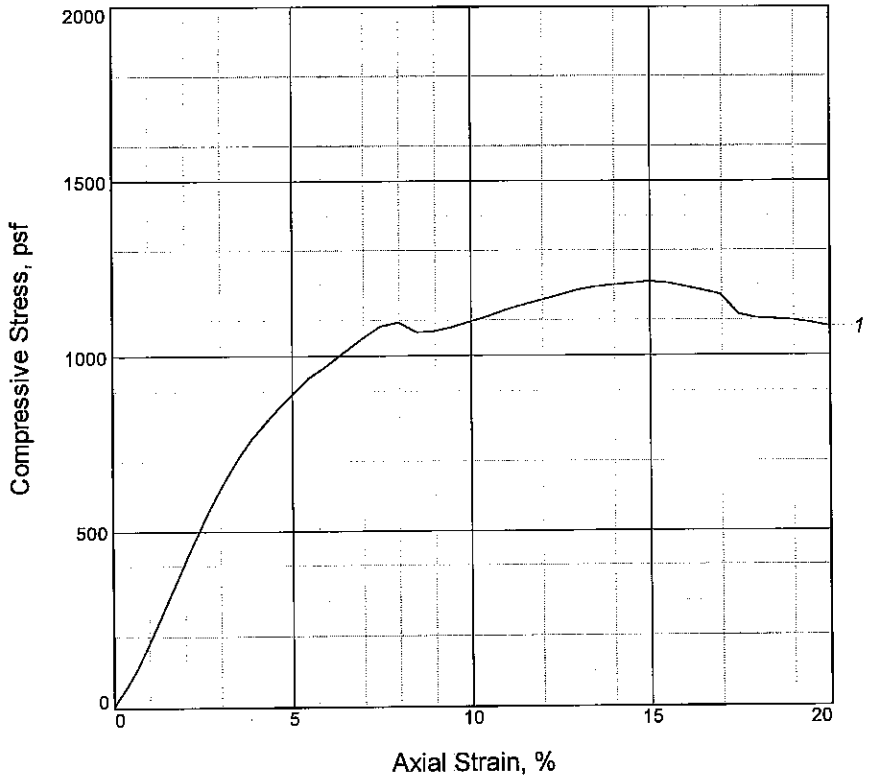
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UCL **Depth:** 41.70'
Sample Number: 13C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1203			
Undrained shear strength, psf	602			
Failure strain, %	14.5			
Strain rate, %/min.	1.00			
Water content, %	29.9			
Wet density, pcf	120.0			
Dry density, pcf	92.4			
Saturation, %	99.2			
Void ratio	0.8042			
Specimen diameter, in.	1.39			
Specimen height, in.	3.01			
Height/diameter ratio	2.17			

Description: M GR CL4-S

LL = 33	**PL** = 28	**PI** = 5	**Assumed GS=** 2.67	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/8/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

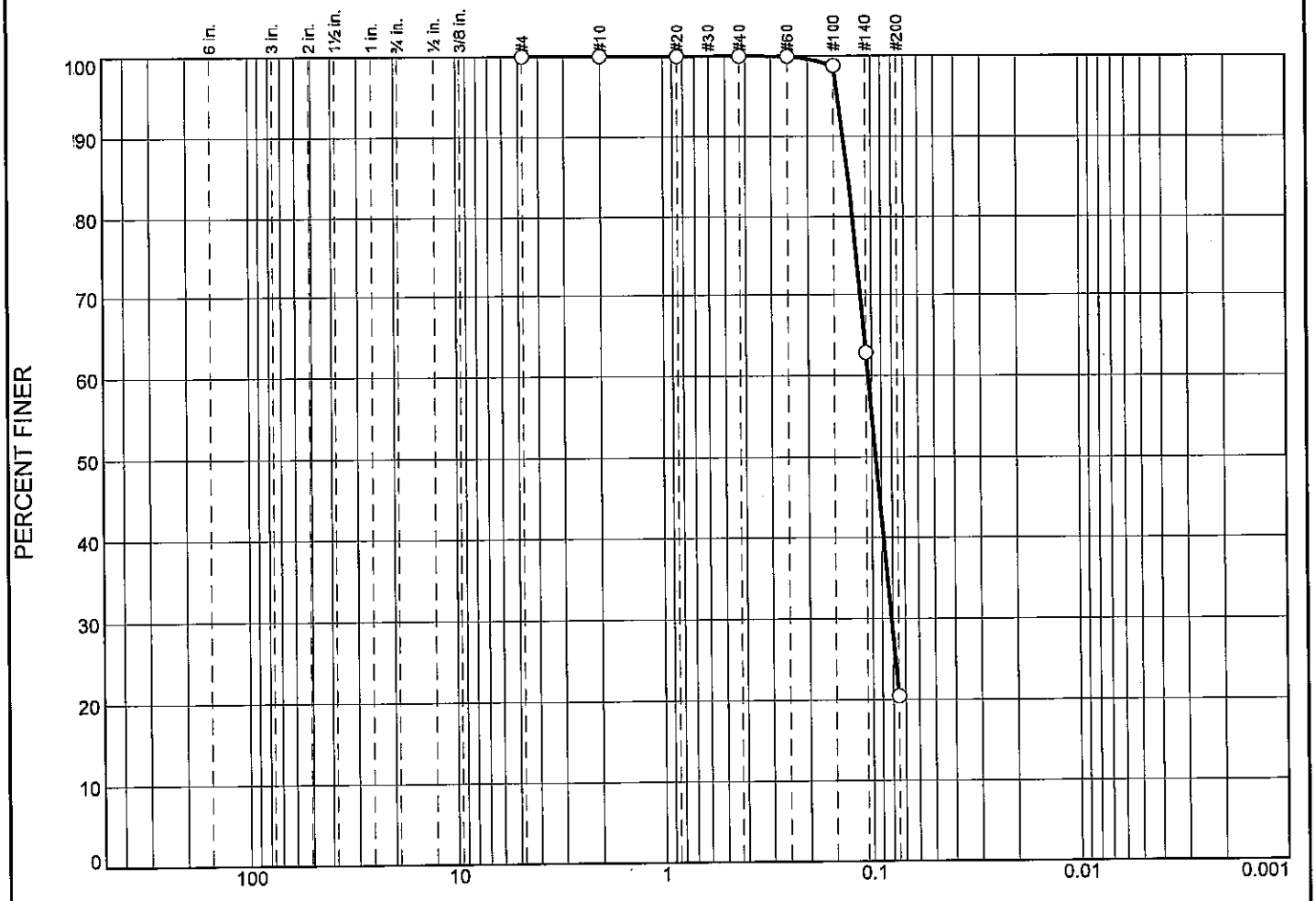
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UCL **Depth:** 45.70'
Sample Number: 14C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	79.6	20.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1277	0.1036	0.0955	0.0811				

Material Description	USCS	AASHTO
○ GR SM1	SM1	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

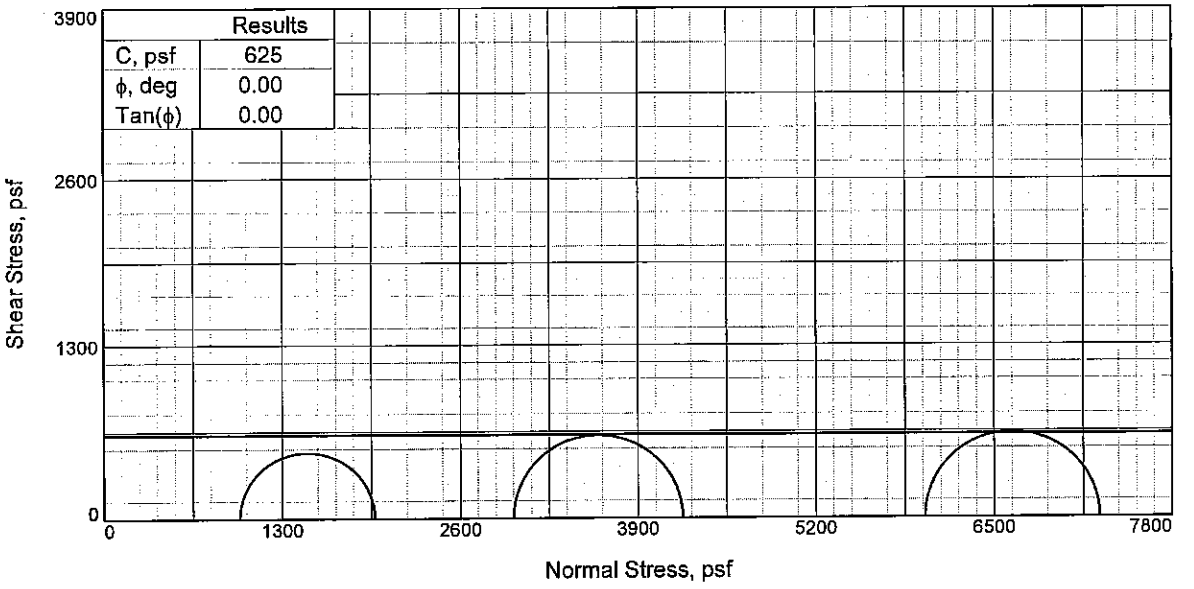
○ **Sample Source:** WWHC-49UCL **Depth:** 49.7 **Sample No.:** 15C

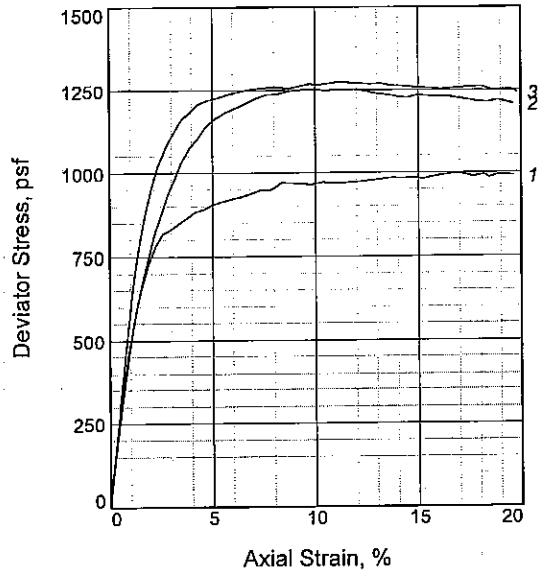
Remarks:

FFEBJV, LLC

St Rose, LA

Figure





Sample No.		1	2	3
Initial	Water Content, %	46.5	46.0	46.5
	Dry Density, pcf	74.9	75.3	74.9
	Saturation, %	99.8	99.8	99.8
	Void Ratio	1.2676	1.2537	1.2665
	Diameter, in.	1.40	1.40	1.41
	Height, in.	3.08	3.08	3.05
At Test	Water Content, %	46.0	45.5	46.2
	Dry Density, pcf	74.9	75.3	74.9
	Saturation, %	98.6	98.6	99.1
	Void Ratio	1.2676	1.2537	1.2665
	Diameter, in.	1.40	1.40	1.41
	Height, in.	3.08	3.08	3.05
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.76	41.64
Fail. Stress, psf		984	1238	1275
Strain, %		14.8	13.0	11.2
Ult. Stress, psf		984	1228	1265
Strain, %				
σ_1 Failure, psf		1975	4227	7270
σ_3 Failure, psf		991	2989	5996

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH3 W/ LYS ML

LL= 59 **PL=** 27 **PI=** 32

Assumed Specific Gravity= 2.72

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-49UCL **Depth:** 52.80'

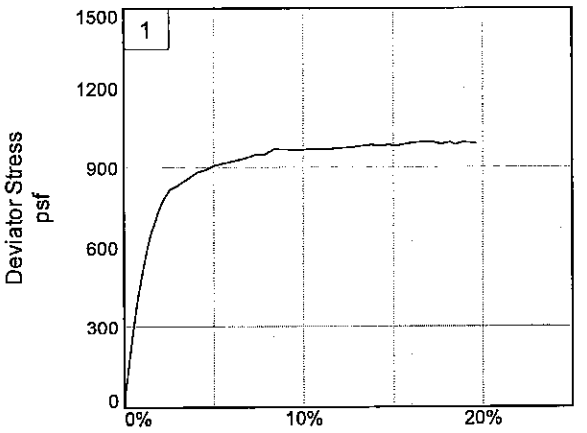
Sample Number: 16B

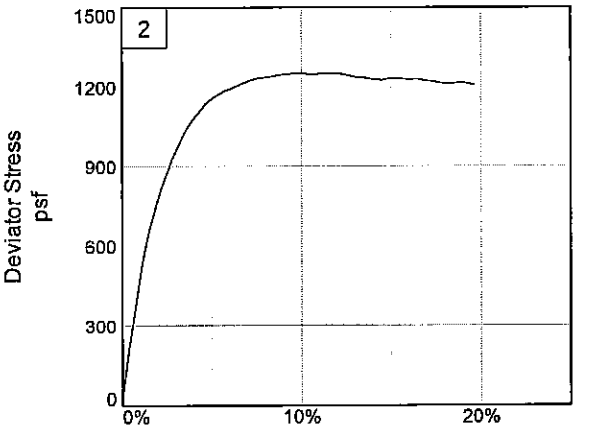
Proj. No.: 0022-0002 **Date Sampled:** 6/5/07

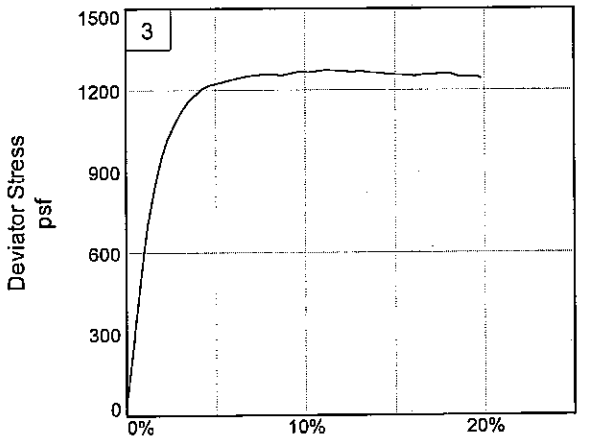
TRIAXIAL SHEAR TEST REPORT

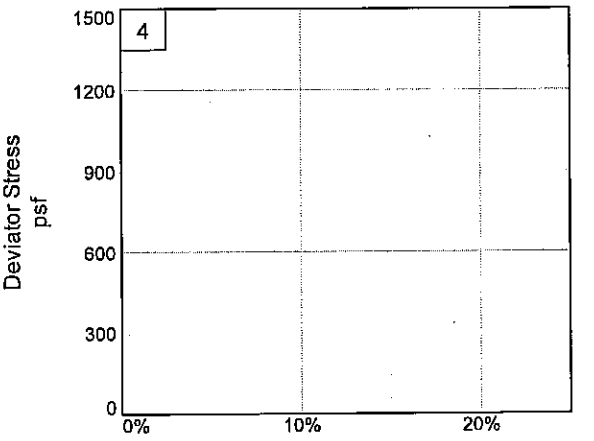
FFEBJV, LLC.

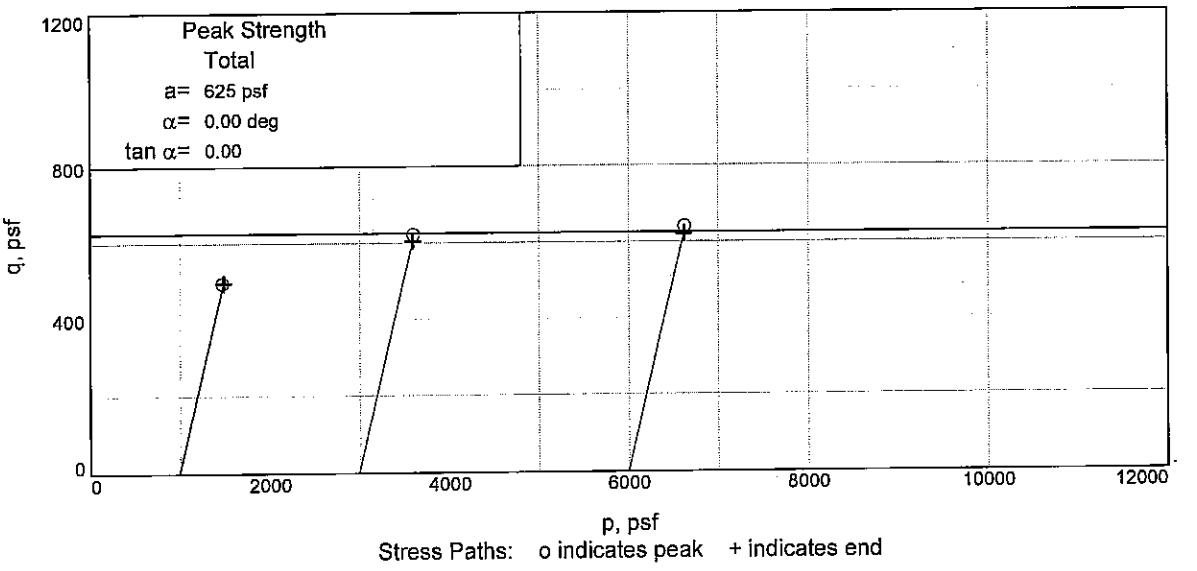
Tested By: CC **Checked By:** GMU









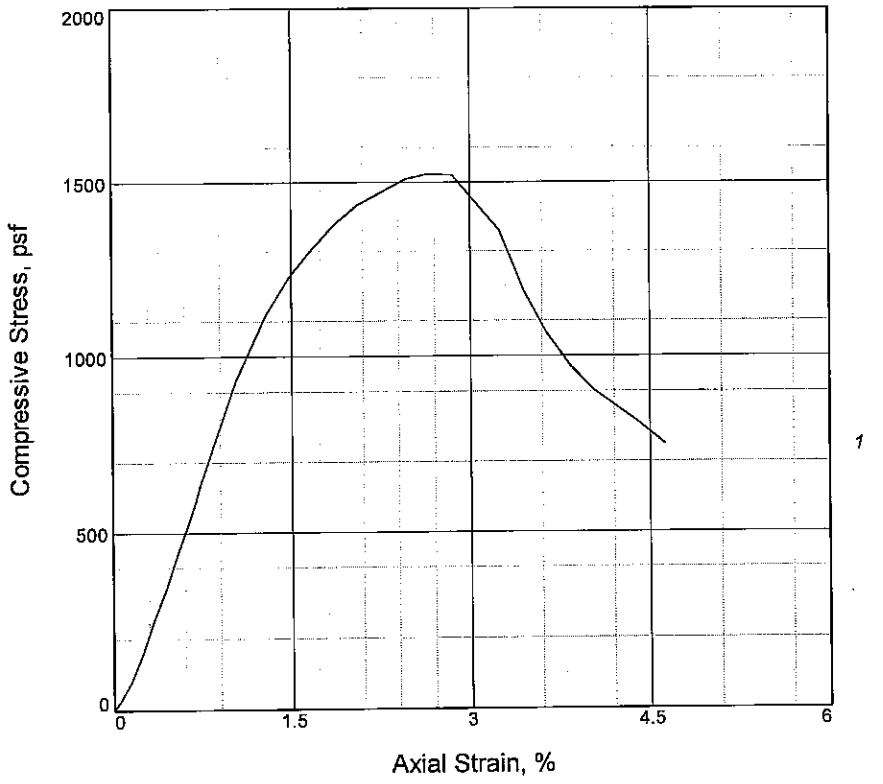


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-49UCL **Depth:** 52.80' **Sample Number:** 16B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1524			
Undrained shear strength, psf	762			
Failure strain, %	2.7			
Strain rate, %/min.	1.00			
Water content, %	23.8			
Wet density, pcf	125.7			
Dry density, pcf	101.5			
Saturation, %	99.1			
Void ratio	0.6416			
Specimen diameter, in.	1.38			
Specimen height, in.	3.03			
Height/diameter ratio	2.19			

Description: GR ML2 W/ LNS CH

LL = NP	**PL =**	**PI =** NP	**Assumed GS=** 2.67	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/8/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

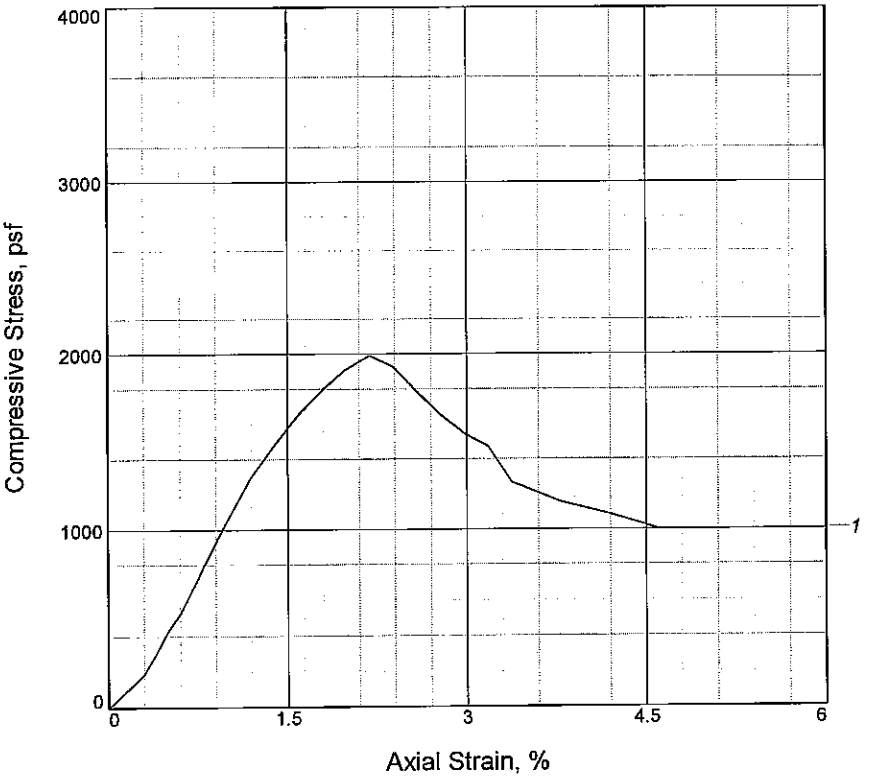
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UCL **Depth:** 65.70'
Sample Number: 19C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1991			
Undrained shear strength, psf	996			
Failure strain, %	2.2			
Strain rate, %/min.	1.00			
Water content, %	51.3			
Wet density, pcf	107.1			
Dry density, pcf	70.8			
Saturation, %	99.8			
Void ratio	1.3987			
Specimen diameter, in.	1.41			
Specimen height, in.	3.05			
Height/diameter ratio	2.17			

Description: M GR CH3 W/ LYS ML

LL = 74	PL = 29	PI = 45	Assumed GS= 2.72	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/8/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UCL **Depth:** 69.70'
Sample Number: 20C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

```
Bor. WWHC-49UCL
STA. N 29^49'27.23" W 90^6'42.10"

23-24 April 2007

GROUND EL. 14.0
  0.0  0.8 12      CL  SISVST T       RT
  0.8  2.0 13  2.0CL  SISVST T       RT
  2.0  2.8 16      CL     VSTGR  T    RT
  2.8  4.0 19  4.0CL     VSTGR  T    RT
  4.0  4.8 29      CH     ST GR  T    RT
  4.8  6.0 33  6.0CH     ST  T GR
  6.0  6.8 29  6.8CH  SISST GR  T    CC
  6.8  8.0 23      CL     ST  T GR     S              1349121 41 24      24  71
  8.0  8.8 34  8.8CL      M GR  T
  8.8  9.7 26  9.7ML         T GR    CS
  9.7 12.0 30 12.0CL      M  T GR
 12.0 12.8 35      CH      M GR  T    CS CC
 12.8 13.7 37      CH      M GR       CC WD
 13.7 16.0 51 16.0CH      M GR       WD                      88 28
 16.0 16.8 33 16.8CH  SISST GR       WD RT
 16.8 17.3 30 17.3CH     ST GR                        1340123 63 18      29 171
 17.3 20.0    20.0NS
 20.0 20.8 39 20.8CH  SIS M GR
 20.8 21.7 34 21.7CH     SO GR  T    CC
 21.7 24.0    24.0NS
 24.0 24.8 43 24.8CH     SO GR  T
 24.8 25.7 39 25.7CL     VSO T GR
 25.7 28.0 34 28.0ML        GR
 28.0 28.8 42 28.8CH  SIS M GR
 28.8 29.7 37 29.7CL  SISSO GR       WD
 29.7 30.6 35 30.6CL     SO GR
 30.6 32.0 44      CH  SISSO GR
 32.0 32.8 40      CH  SISSO GR
 32.8 33.7 38      CH  SISSO GR
 33.7 36.0 40 36.0CH  SISSO GR                         390111 51 29      44 340
 36.0 36.8 35 36.8ML        GR
 36.8 37.7 40      CH  SISSO GR
 37.7 40.0 41      CH  SISSO GR
 40.0 40.8 39 40.8CH  SISSO GR
 40.8 41.7 35 41.7CL  SIS M GR
 41.7 42.6 37 42.6CL      M GR       CS                697116 37 27      36 420
```

42.6 44.0 36 44.0CL SIS M GR
44.0 44.8 28 44.8ML GR
44.8 45.7 32 45.7CL SIS M GR S
45.7 46.6 34 46.6CL M GR S 602120 33 28 30 460
46.6 48.0 32 48.0CL M GR S
48.0 48.8 41 CH SIS M GR
48.8 49.7 36 49.7CH SIS M GR
49.7 52.0 24 52.0SM GR
52.0 52.8 40 CH SIS M GR
52.8 53.7 38 53.7CH SIS M GR
53.7 56.0 31 56.0CL M GR
56.0 56.8 27 SM GR
56.8 57.7 28 SM GR
57.7 60.0 27 60.0SM GR
60.0 60.8 30 CL M GR
60.8 61.7 29 CL M GR
61.7 64.0 31 64.0CL M GR
64.0 64.8 29 CL SIS M GR
64.8 65.7 32 65.7CL SIS M GR CS
65.7 68.0 30 68.0ML GR CS 762126 24 660
68.0 68.8 36 68.8CL M GR CS
68.8 69.7 41 CH SIS M GR
69.7 70.6 42 70.6CH SIS M GR 996107 74 29 51 700
70.6 72.0 28 72.0SM GR
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 5.10/8.90 Water Con: 36.00
LL,PL,PI : 86, 24, 62 Dry Dens : 85.00
Cohesion : 0.875 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 10.00/4.00 Water Con: 33.00
LL,PL,PI : 44, 20, 24 Dry Dens : 87.00
Cohesion : 0.334 Saturat : 95.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 21.10/-7.10 Water Con: 37.00
LL,PL,PI : 59, 18, 41 Dry Dens : 85.00
Cohesion : 0.169 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 25.10/-11.10 Water Con: 44.00
LL,PL,PI : 49, 29, 20 Dry Dens : 76.00
Cohesion : 0.100 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 30.00/-16.00 Water Con: 38.00
LL,PL,PI : 39, 25, 14 Dry Dens : 80.00
Cohesion : 0.227 Saturat : 92.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-24.00 Water Con: 44.00
LL,PL,PI : 50, 24, 26 Dry Dens : 74.00
Cohesion : 0.159 Saturat : 92.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 53.10/-39.10 Water Con: 46.00
LL,PL,PI : 59, 27, 32 Dry Dens : 75.00
Cohesion : 0.313 Saturat :100.00
Shear Str: Frict Ang: 00.00

Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

Project Number: TASK ORDER 0002
Boring: WWHC-49UPT

Current Date: 7/9/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1A	0.0	VST DGR & BR CH2 W/ LNS ML, RT	CH2		24												
1B	0.8	ST DGR & BR CH3 W/ ARS ML, RT	CH3		34												
1C	1.7	ST DGR & BR CH3 W/ ARS ML, RT	CH3	10	29	94	121	95	UC	-	1167	2334	61	24	37		
2A	4.0	ST GR & BR CH3 W/ ARS ML, O	CH3		40												
2B	4.8	ST GR & BR CH3 W/ ARS ML, O	CH3		35												
2C	5.7	M GR & BR CH3 W/ ARS ML, O	CH3		45	78	113	99	UU	0	853		63	24	39		
3A	8.0	T ML2 W/ O	ML2		35												
3B	8.8	M GR CL4 W/ O	CL4	15	35	87	117	100	UC	-	578	1156	41	25	16		
3C	9.7	M T CH2 W/ O	CH2		37												
3D	10.6	M T CH2-S W/ O	CH2-S		34												
4A	12.0	M GR CL6 W/ O	CL6		38												
4B	12.8	M GR CL6	CL6		37												
4C	13.7	M T & GR CL4	CL4		36	85	116	99	UU	0	675		38	25	13		
5A	16.0	SO GR CL4	CL4		38												
5B	16.8	SO GR CL4	CL4		30												
5C	17.7	SO GR CL4 W/ LNS ML	CL4		41	80	113	100	UU	0	408		44	28	16		
5D	18.6	M GR CH4 W/ ARS ML, LNS ML	CH4		54												
6A	20.0	M GR CH4 W/ ARS ML, LNS ML	CH4		57												
6B	20.8	M GR CH2	CH2		37												
6C	21.7	M GR CH4 W/ ARS ML	CH4		60	64	102	99	UU	0	562		79	29	50		
6D	22.6	SO GR CH4 W/ ARS ML	CH4		67												
7A	24.0	GR ML2 W/ LYS CH	ML2		37												
7B	24.8	SO GR CH3 W/ LYS ML	CH3		50												
7C	25.7	SO GR CH3 W/ LYS ML	CH3		49	73	109	100	UU	0	469		62	24	38		
7D	26.6	M GR CH3	CH3		52												
8A	28.0	M GR CL6	CL6		30												
8B	28.8	SO GR CL6	CL6		40												
9	30.0	GR SC5-S	SC5-S		32												SV
10	32.0	GR SC5-S W/ LYS ML	SC5-S		45												
11	34.0	GR SC5-S	SC5-S		25												
12	36.0	GR SC3-S	SC3-S		21												
13	38.0	GR SC3-S	SC3-S		23												
14	40.0	GR SC3-S	SC3-S		25												SV
15	42.0	GR SC3-S	SC3-S		26												
16	44.0	GR SC3-S	SC3-S		22												
17	46.0	GR SC3-S	SC3-S		27												
18	48.0	GR SC3-S	SC3-S		26												

Remarks: _____
FFEB JV, LLC

Checked By: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

Project Number: TASK ORDER 0002
Boring: WWHC-49UPT

Current Date: 7/9/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
19	50.0	GR SM1	SM1		27												SV
20	52.0	GR SM1	SM1		24												
21	54.0	GR SM1	SM1		26												
22	56.0	GR SM1	SM1		31												
23	58.0	GR SM1	SM1		29												
24	60.0	GR SM1-S	SM1-S		25												SV
25	62.0	GR SM1-S	SM1-S		25												
26	64.0	GR SM1-S	SM1-S		25												
27	66.0	GR SM1-S	SM1-S		22												
28	68.0	GR SM1-S	SM1-S		26												

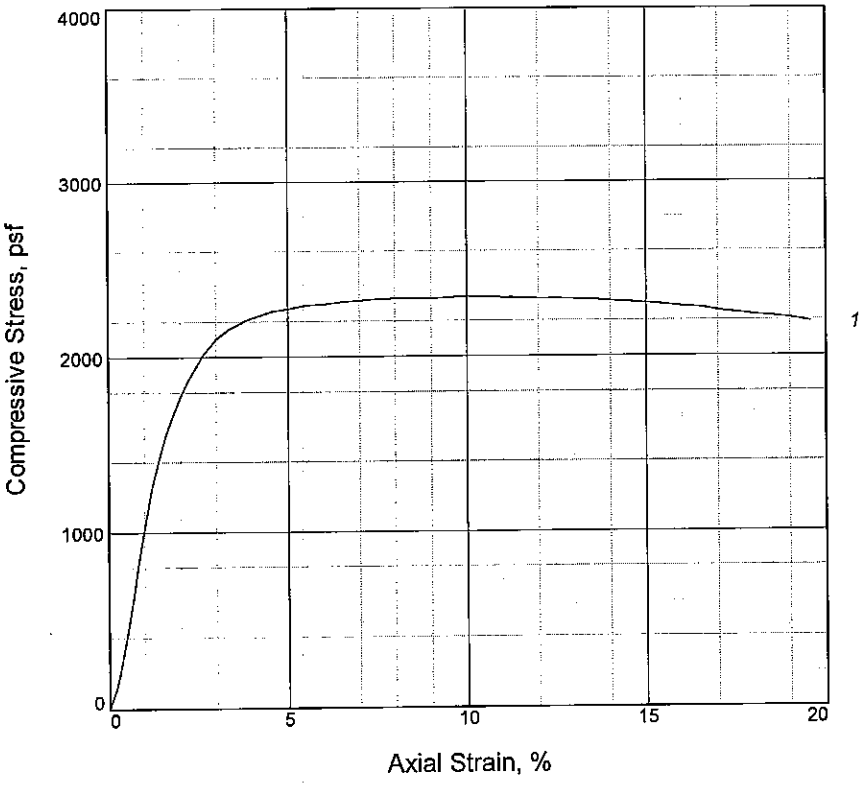
Remarks: _____

FFEB JV, LLC

Checked By: _____

File Name: TO 2

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2334			
Undrained shear strength, psf	1167			
Failure strain, %	10.0			
Strain rate, %/min.	1.00			
Water content, %	28.7			
Wet density, pcf	120.5			
Dry density, pcf	93.6			
Saturation, %	95.9			
Void ratio	0.8135			
Specimen diameter, in.	1.41			
Specimen height, in.	3.00			
Height/diameter ratio	2.12			

Description: ST DGR & BR CH3 W/ ARS ML, RT

LL = 61	PL = 24	PI = 37	GS= 2.72	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/8/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

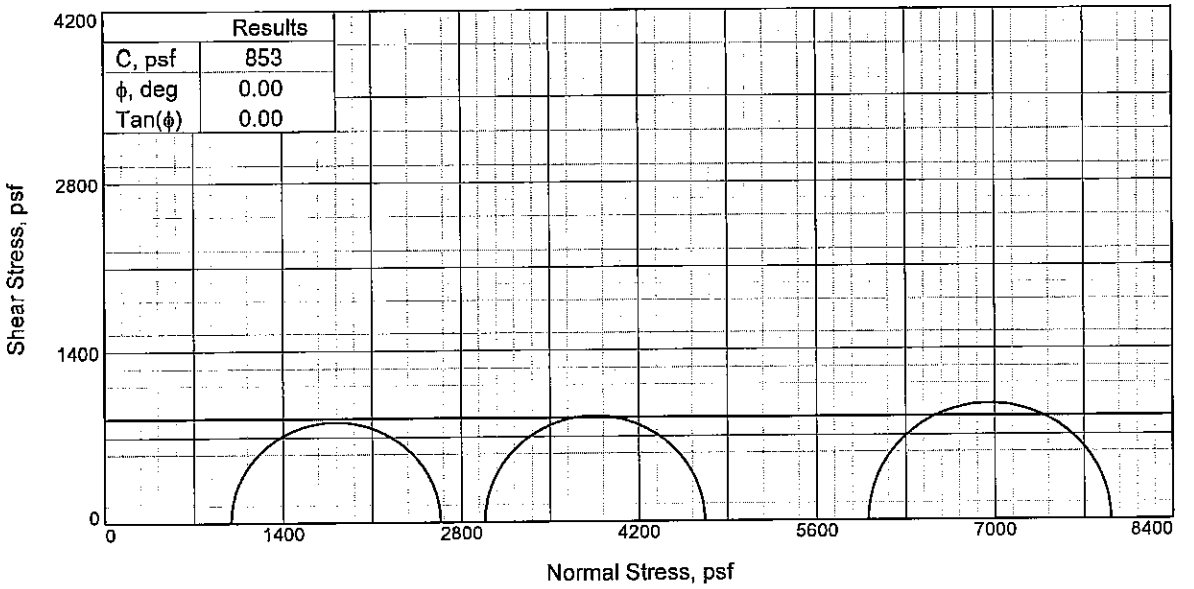
Client: U.S. ARMY CORPS OF ENGINEERS

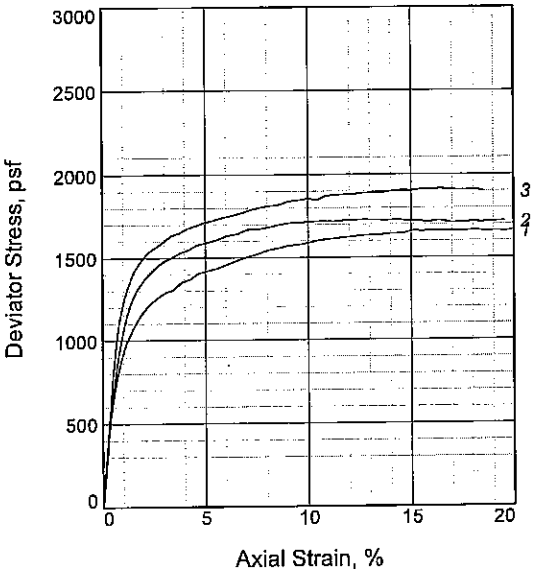
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UPT **Depth:** 1.70'
Sample Number: 1C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	35.0	34.6	48.2
	Dry Density, pcf	86.9	87.1	73.4
	Saturation, %	99.8	99.2	99.7
	Void Ratio	0.9541	0.9487	1.3136
	Diameter, in.	1.41	1.42	1.41
	Height, in.	3.01	3.00	3.27
At Test	Water Content, %	34.6	34.2	37.8
	Dry Density, pcf	86.9	87.1	73.4
	Saturation, %	98.6	98.2	78.4
	Void Ratio	0.9541	0.9487	1.3136
	Diameter, in.	1.41	1.42	1.41
	Height, in.	3.01	3.00	3.27
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.74	41.70
Fail. Stress, psf		1646	1732	1906
Strain, %		14.6	14.3	14.6
Ult. Stress, psf		1646	1732	1906
Strain, %				
σ_1 Failure, psf		2637	4717	7911
σ_3 Failure, psf		991	2986	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR & BR CH3 W/ ARS ML, O

LL= 63 **PL=** 24 **PI=** 39
Assumed Specific Gravity= 2.72
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

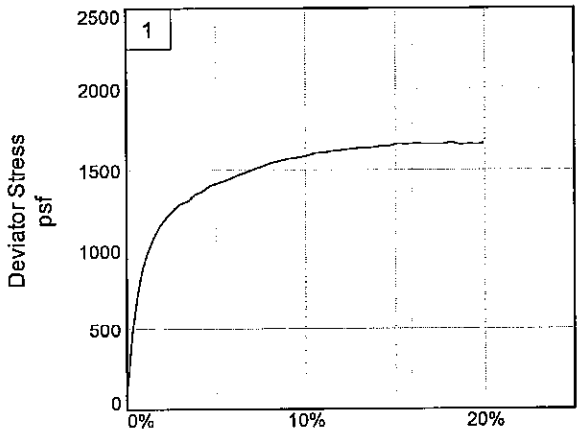
Client: U.S. ARMY CORPS OF ENGINEERS

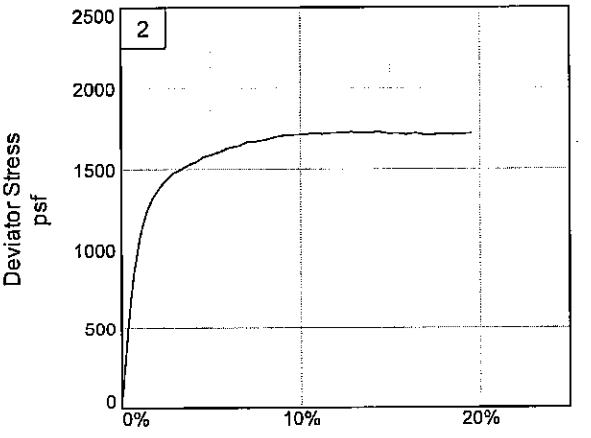
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UPT **Depth:** 5.70'
Sample Number: 2C
Proj. No.: 0022-0002 **Date Sampled:** 6/5/07

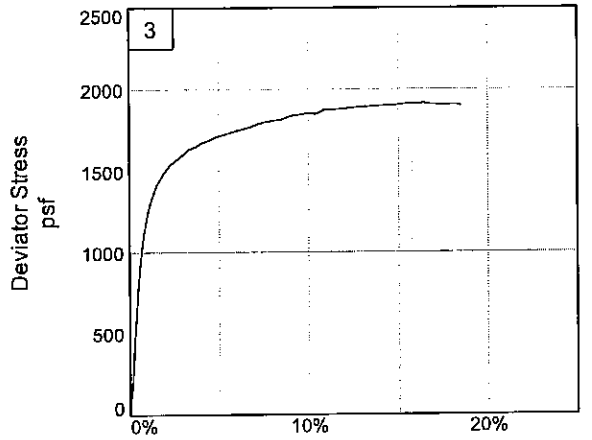
TRIAXIAL SHEAR TEST REPORT

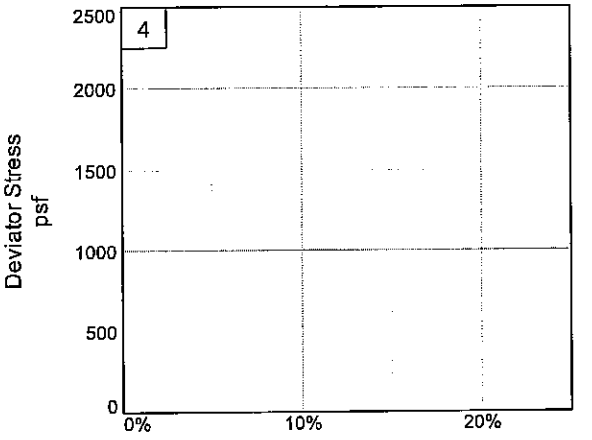
FFEBJV, LLC.

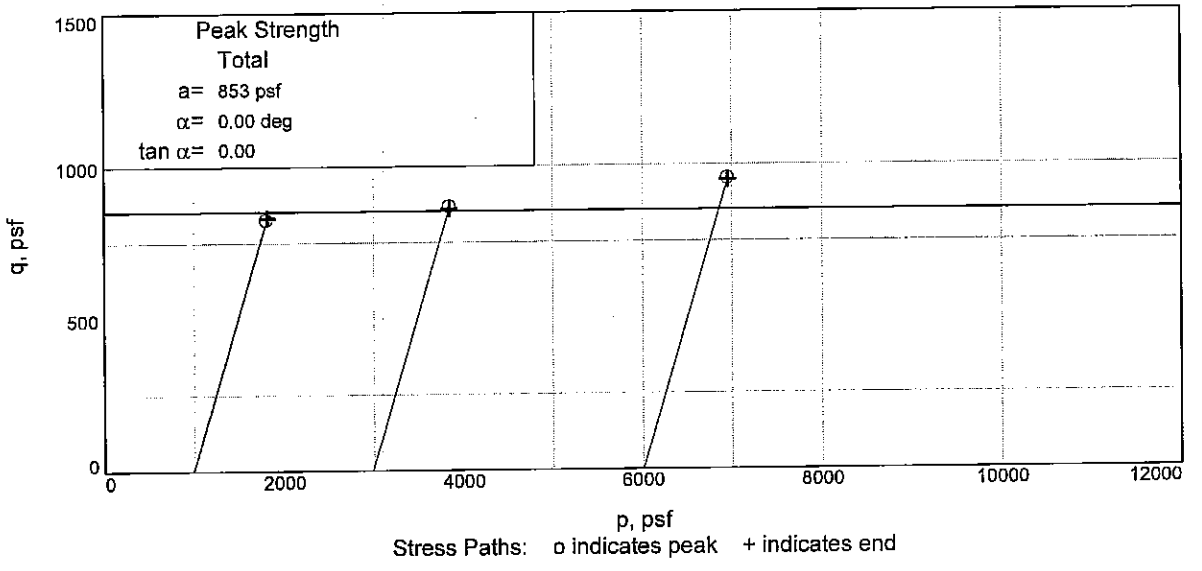
Tested By: CC **Checked By:** GMU











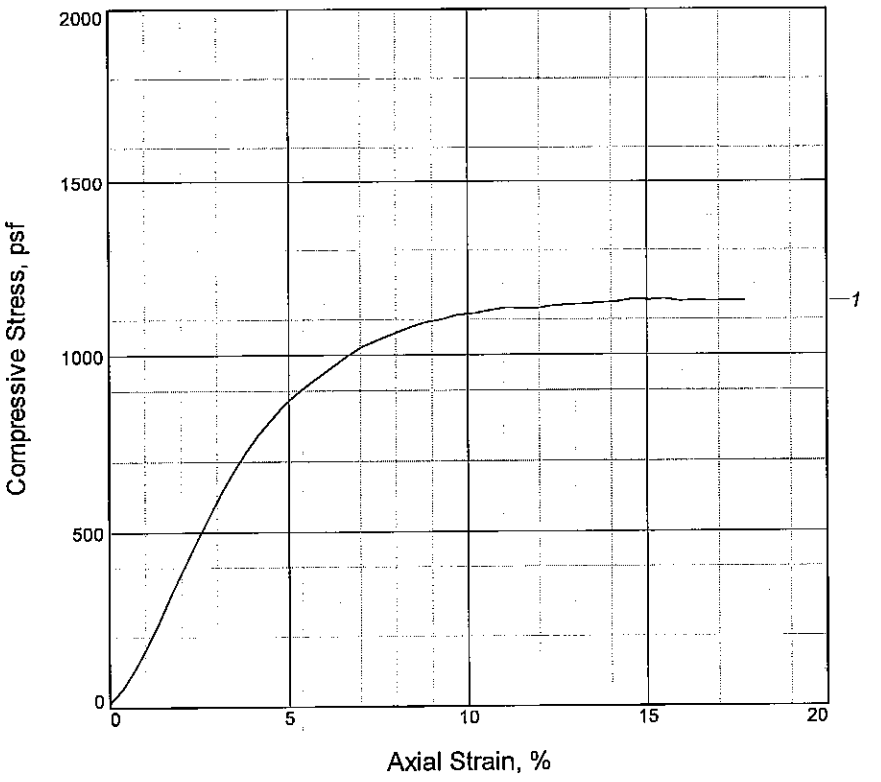
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-49UPT **Depth:** 5.70' **Sample Number:** 2C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1156			
Undrained shear strength, psf	578			
Failure strain, %	14.6			
Strain rate, %/min.	1.00			
Water content, %	34.7			
Wet density, pcf	116.9			
Dry density, pcf	86.7			
Saturation, %	99.8			
Void ratio	0.9360			
Specimen diameter, in.	1.33			
Specimen height, in.	3.33			
Height/diameter ratio	2.50			

Description: M GR CL4 W/ O

LL = 41	PL = 25	PI = 16	GS= 2.69	Type: UNDISTURBED

Project No.: 0022-0002

Date Sampled: 6/8/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

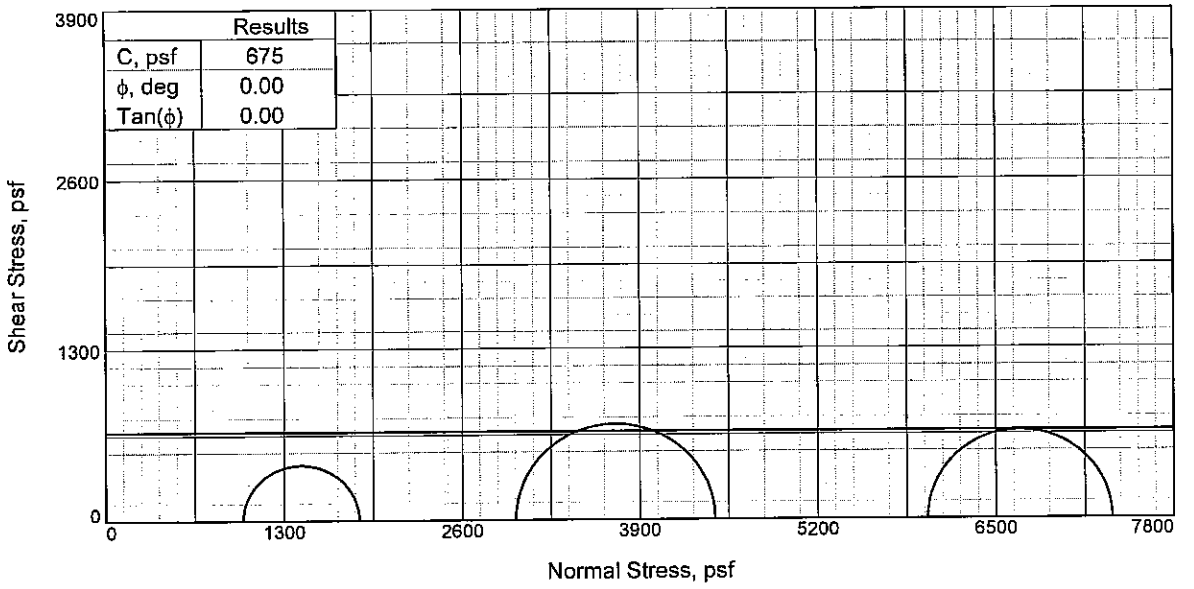
Source of Sample: WWHC-49UPT **Depth:** 8.80'

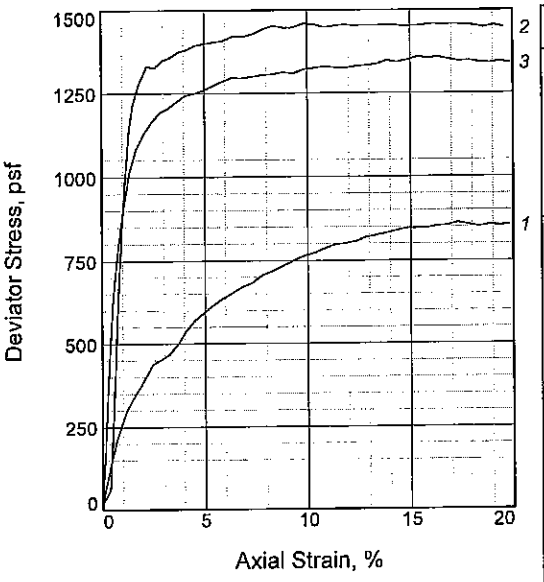
Sample Number: 3B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	34.9	38.7	34.8
	Dry Density, pcf	85.8	81.9	86.3
	Saturation, %	98.4	99.6	99.1
	Void Ratio	0.9495	1.0425	0.9394
	Diameter, in.	1.41	1.41	1.42
	Height, in.	3.00	3.09	3.00
At Test	Water Content, %	33.9	35.7	34.4
	Dry Density, pcf	85.8	81.9	86.3
	Saturation, %	95.7	91.7	98.0
	Void Ratio	0.9495	1.0425	0.9394
	Diameter, in.	1.41	1.41	1.42
	Height, in.	3.00	3.09	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.96	20.77	41.68
Fail. Stress, psf		847	1460	1348
Strain, %		14.8	9.8	14.9
Ult. Stress, psf		847	1456	1336
Strain, %				
σ_1 Failure, psf		1849	4451	7350
σ_3 Failure, psf		1002	2991	6002

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M T & GR CL4

LL= 38 **PL=** 25 **PI=** 13
Assumed Specific Gravity= 2.68
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

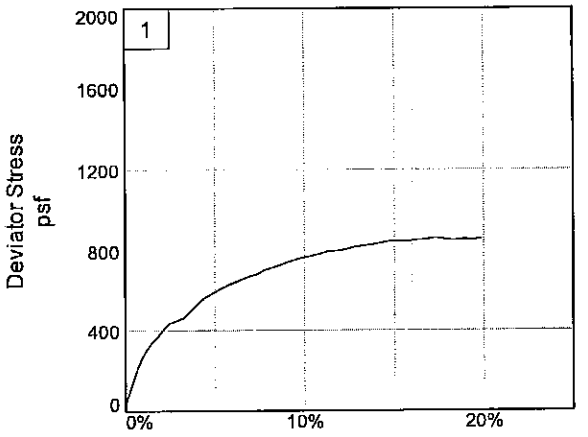
Client: U.S. ARMY CORPS OF ENGINEERS

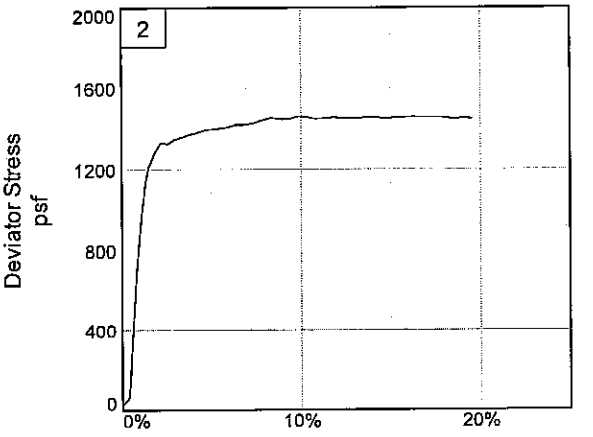
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UPT **Depth:** 13.70'
Sample Number: 4C
Proj. No.: 0022-0002 **Date Sampled:** 6/6/07

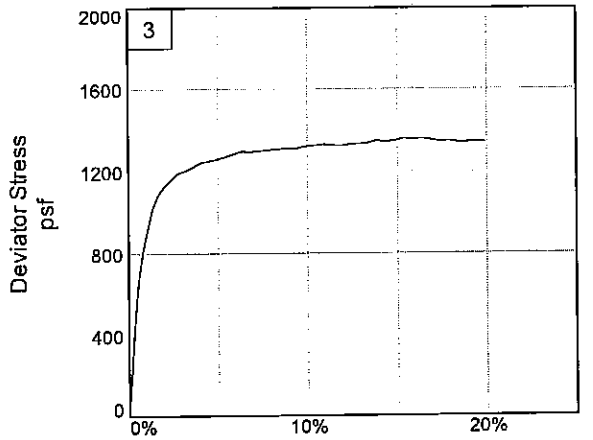
TRIAXIAL SHEAR TEST REPORT

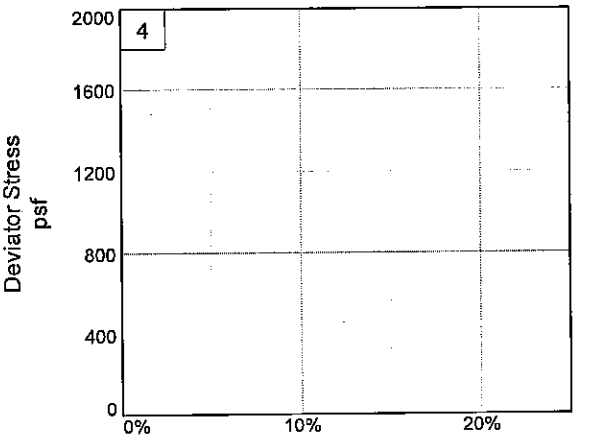
FFEBJV, LLC.

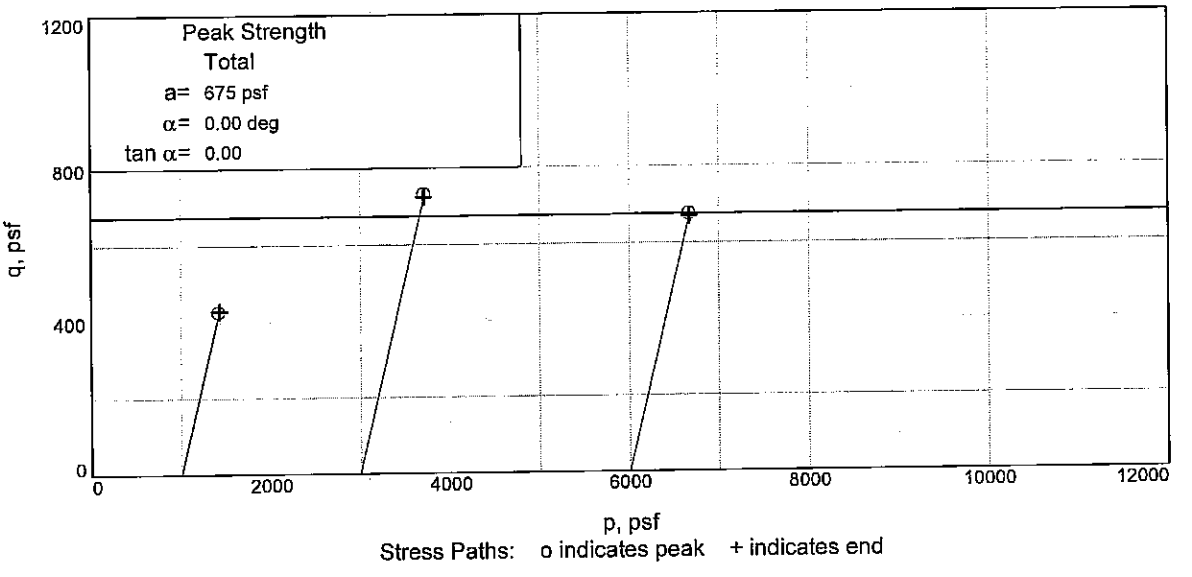
Tested By: CC **Checked By:** GMU









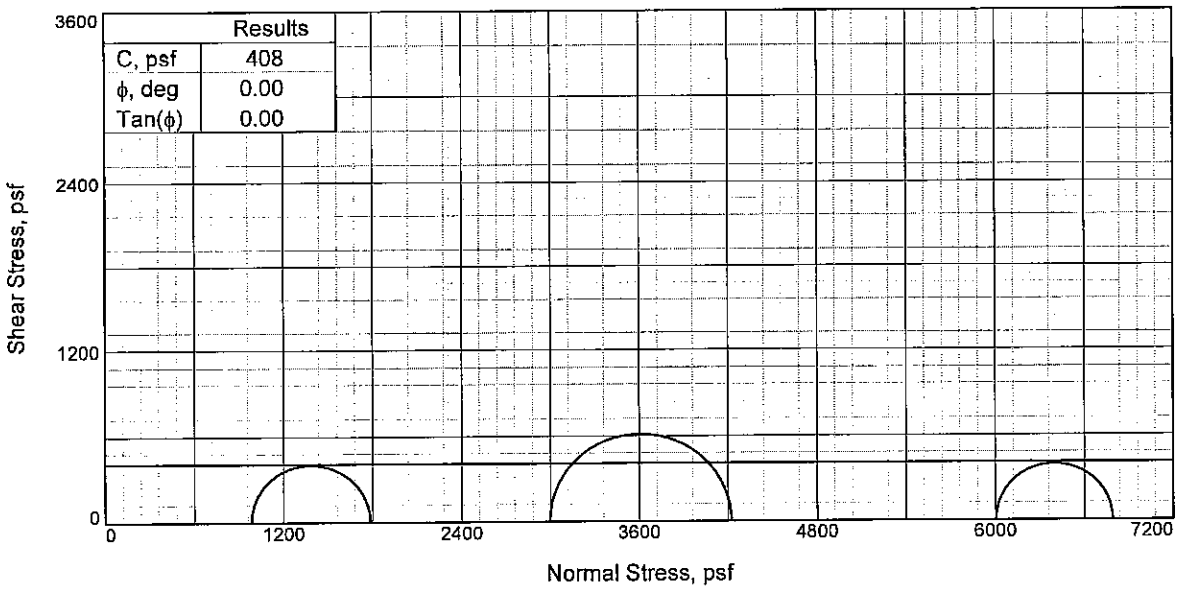


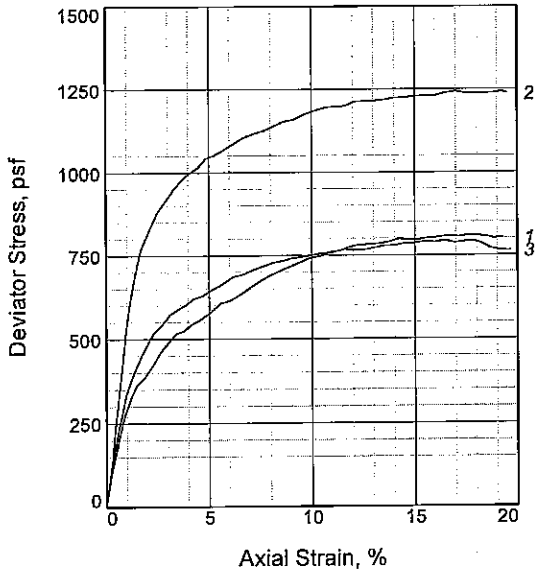
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-49UPT **Depth:** 13.70' **Sample Number:** 4C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	40.8	39.7	41.3
	Dry Density, pcf	79.7	80.9	79.2
	Saturation, %	99.8	99.8	99.8
	Void Ratio	1.0920	1.0608	1.1050
	Diameter, in.	1.39	1.40	1.40
	Height, in.	3.11	3.06	3.06
At Test	Water Content, %	40.0	44.5	40.6
	Dry Density, pcf	79.7	80.9	79.2
	Saturation, %	97.9	112.1	98.2
	Void Ratio	1.0920	1.0608	1.1050
	Diameter, in.	1.39	1.40	1.40
	Height, in.	3.11	3.06	3.06
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.84	20.81	41.70
Fail. Stress, psf		799	1225	785
Strain, %		14.3	14.6	14.5
Ult. Stress, psf		799	1225	785
Strain, %				
σ_1 Failure, psf		1784	4221	6790
σ_3 Failure, psf		985	2996	6005

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: SO GR CL4 W/ LNS ML

LL= 44 **PL=** 28 **PI=** 16

Assumed Specific Gravity= 2.67

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-49UPT **Depth:** 17.70'

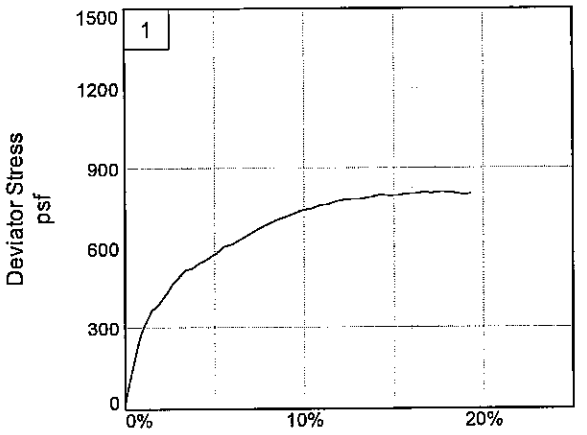
Sample Number: 5C

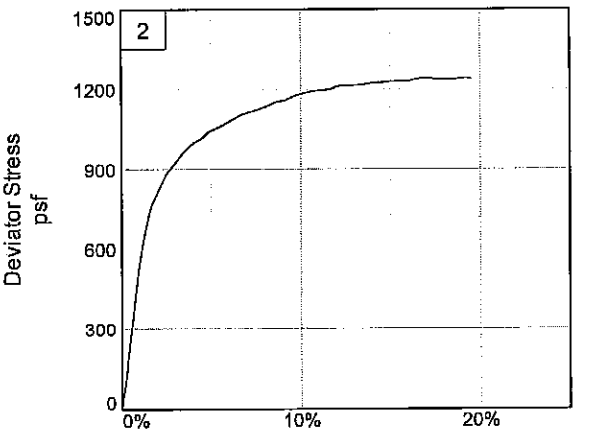
Proj. No.: 0022-0002 **Date Sampled:** 6/5/07

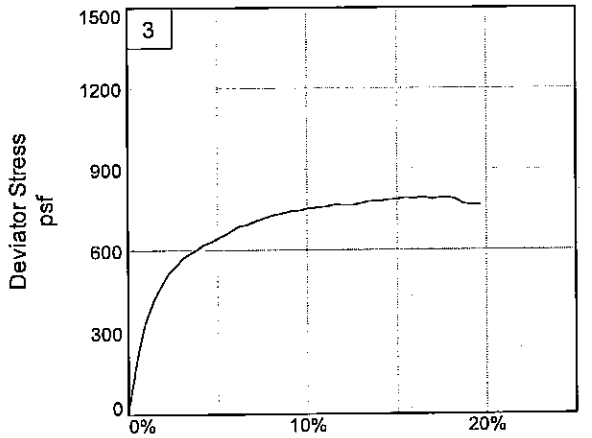
TRIAXIAL SHEAR TEST REPORT

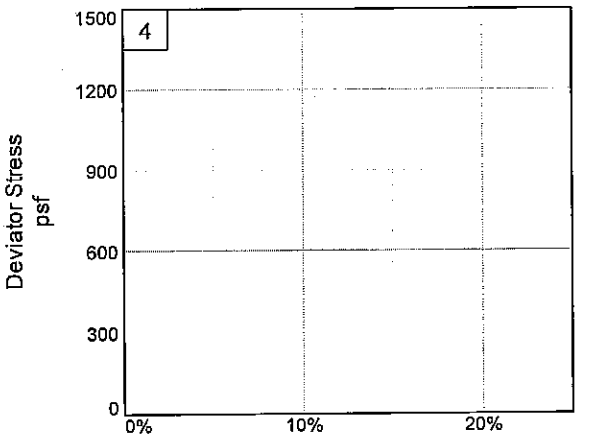
FFEBJV, LLC.

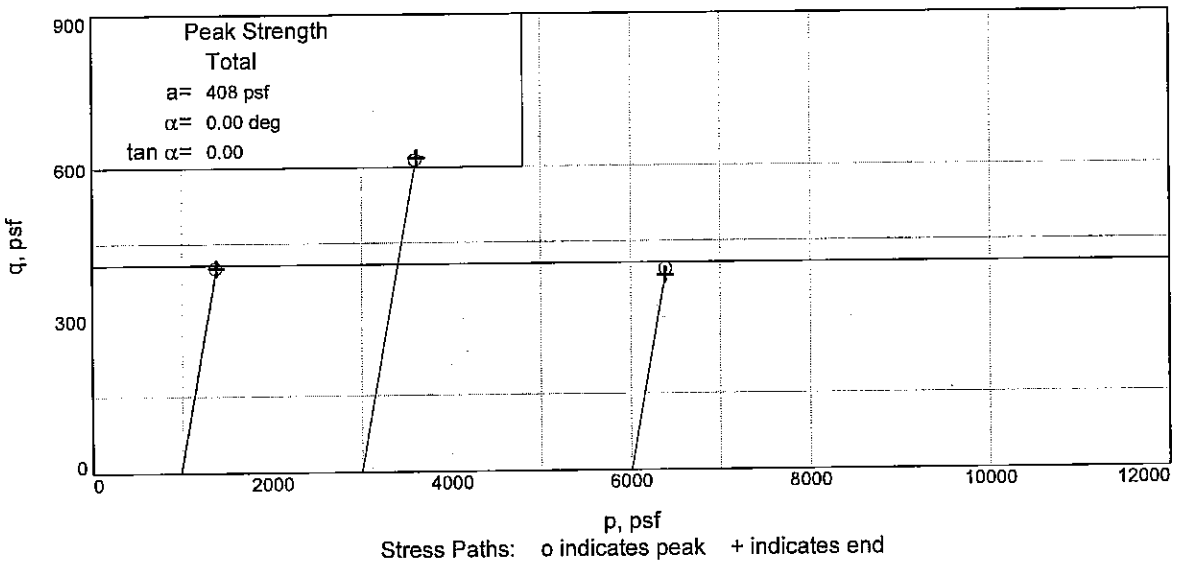
Tested By: CC **Checked By:** GMU









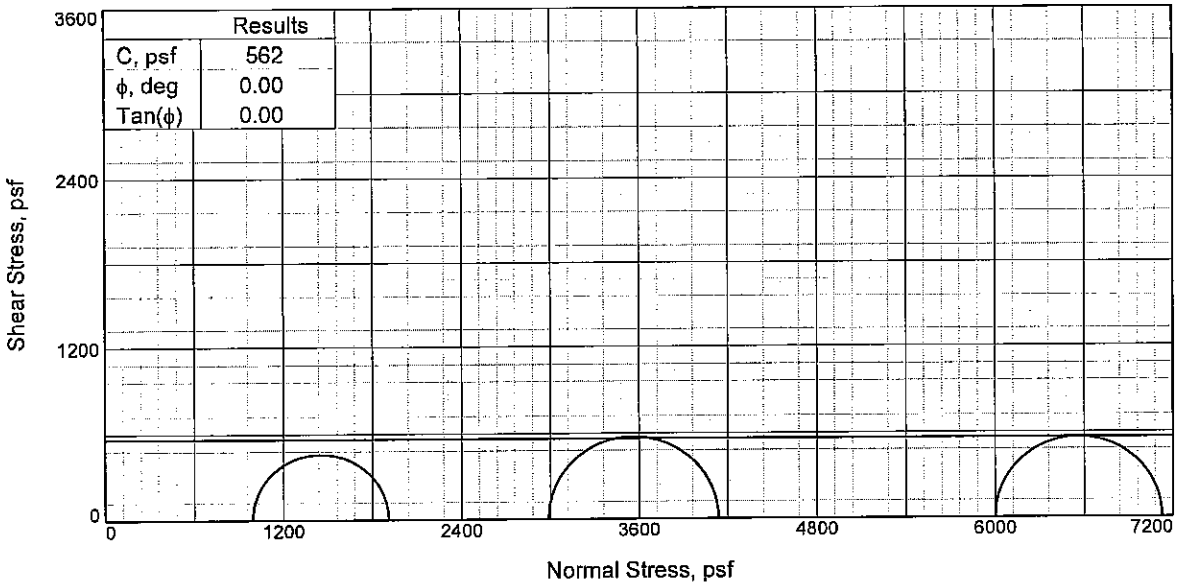


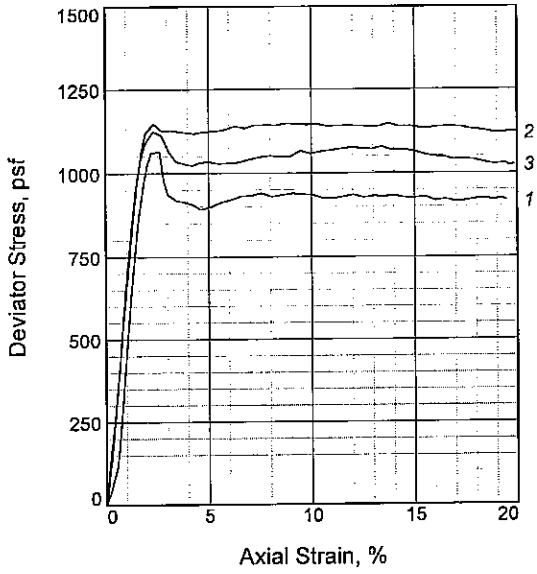
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-49UPT **Depth:** 17.70' **Sample Number:** 5C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	60.4	59.6	60.4
	Dry Density, pcf	64.0	64.7	64.0
	Saturation, %	99.5	99.8	99.2
	Void Ratio	1.6514	1.6243	1.6545
	Diameter, in.	1.41	1.42	1.41
	Height, in.	3.04	3.03	3.04
At Test	Water Content, %	59.3	57.8	58.7
	Dry Density, pcf	64.0	64.7	64.0
	Saturation, %	97.6	96.7	96.5
	Void Ratio	1.6514	1.6243	1.6545
	Diameter, in.	1.41	1.41	1.41
	Height, in.	3.04	3.03	3.04
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.75	41.67
Fail. Stress, psf		915	1147	1125
Strain, %		3.8	10.3	2.3
Ult. Stress, psf		930	1140	1068
Strain, %				
σ_1 Failure, psf		1909	4135	7125
σ_3 Failure, psf		994	2988	6000

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ ARS ML

LL= 79 **PL=** 29 **PI=** 50
Assumed Specific Gravity= 2.72
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

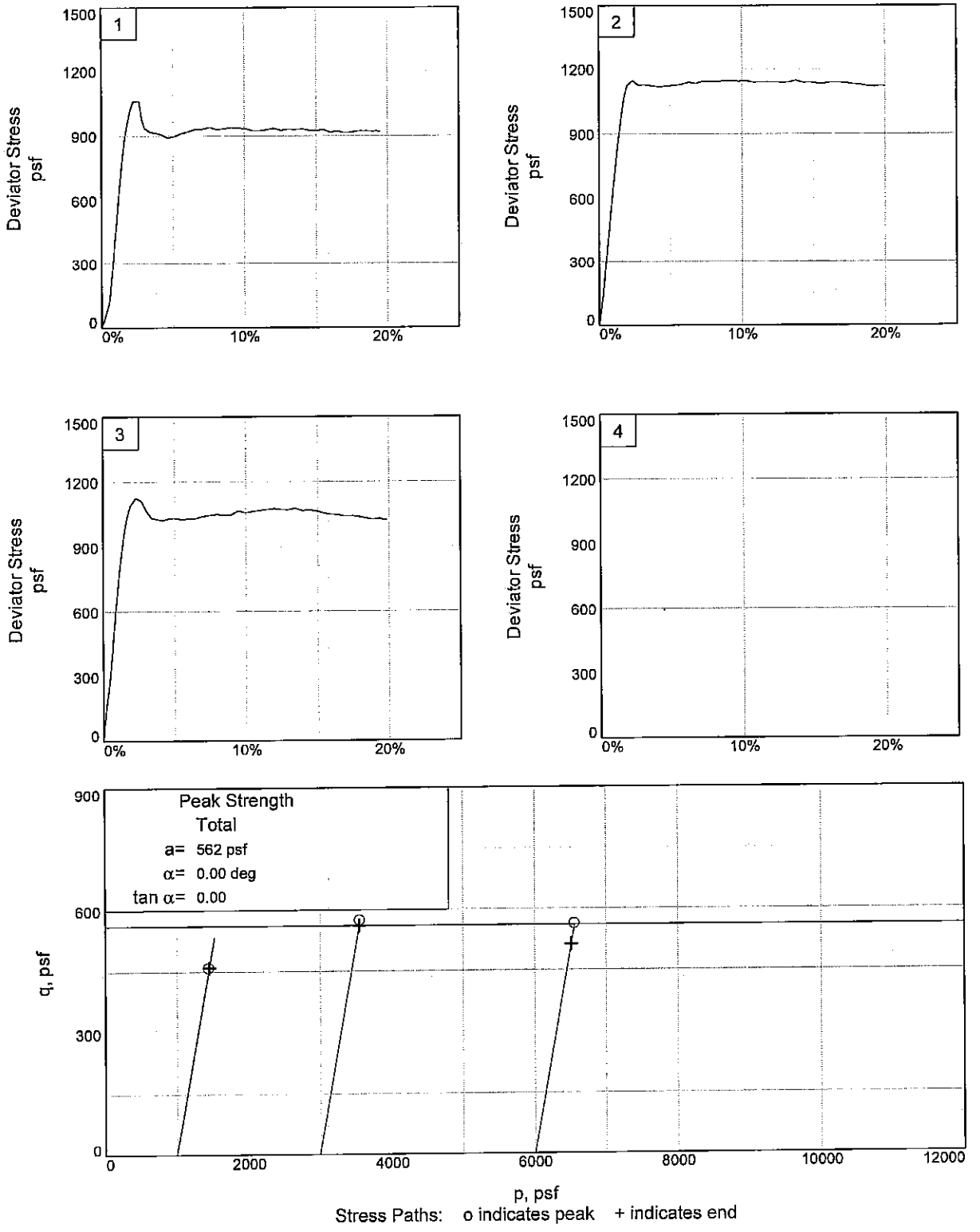
Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UPT **Depth:** 21.70'
Sample Number: 6C
Proj. No.: 0022-0002 **Date Sampled:** 6/6/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC.

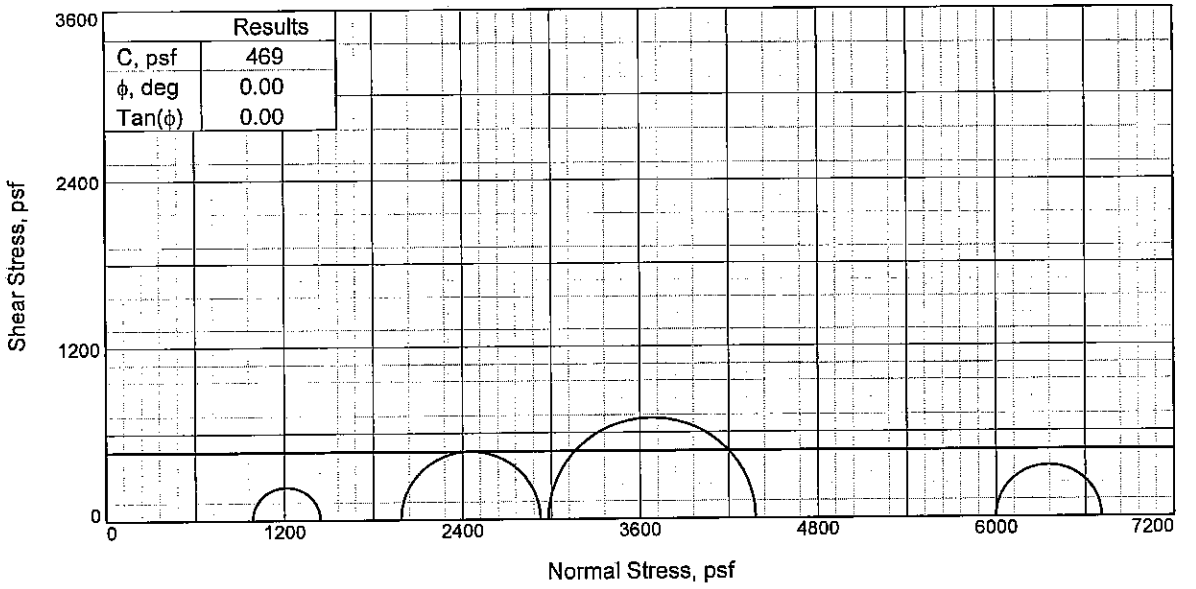
Tested By: CC **Checked By:** GMU

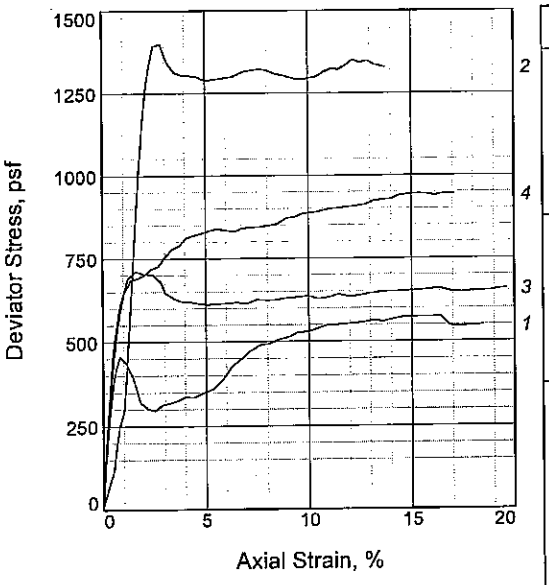


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-49UPT **Depth:** 21.70' **Sample Number:** 6C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3	4
Initial	Water Content, %	48.3	49.4	49.9	47.4
	Dry Density, pcf	73.3	72.3	71.9	74.1
	Saturation, %	99.7	99.7	99.8	99.8
	Void Ratio	1.3173	1.3474	1.3614	1.2909
	Diameter, in.	1.35	1.40	1.39	1.38
	Height, in.	3.27	3.04	3.04	3.18
At Test	Water Content, %	48.4	49.5	50.1	47.5
	Dry Density, pcf	73.3	72.3	71.9	74.1
	Saturation, %	100.0	100.0	100.0	100.0
	Void Ratio	1.3173	1.3474	1.3614	1.2909
	Diameter, in.	1.35	1.40	1.39	1.38
	Height, in.	3.27	3.04	3.04	3.18
Strain rate, %/min.		1.00	1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.85	20.70	41.65	13.79
Fail. Stress, psf		455	1399	712	940
Strain, %		0.8	2.8	1.6	14.5
Ult. Stress, psf		337	1304	621	940
Strain, %					
σ_1 Failure, psf		1442	4380	6710	2926
σ_3 Failure, psf		987	2980	5998	1986

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH3 W/ LYS ML

LL= 62 **PL=** 24 **PI=** 38
Assumed Specific Gravity= 2.72
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

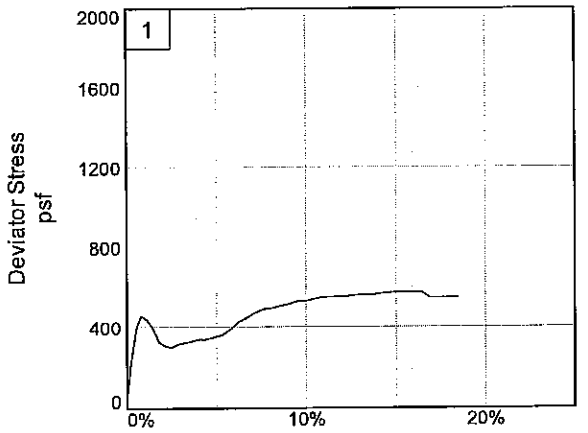
Client: U.S. ARMY CORPS OF ENGINEERS

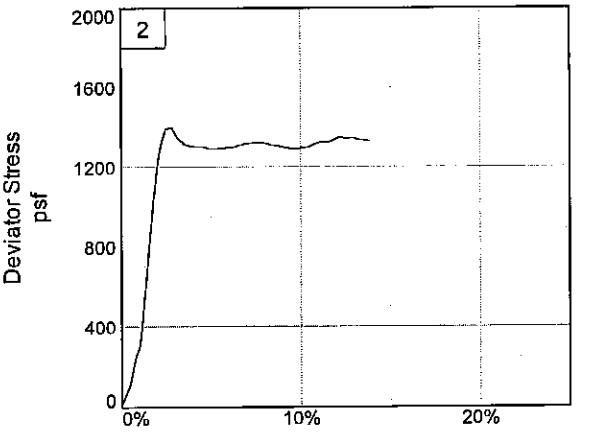
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-49UPT **Depth:** 25.70'
Sample Number: 7C
Proj. No.: 0022-0002 **Date Sampled:** 6/6/07

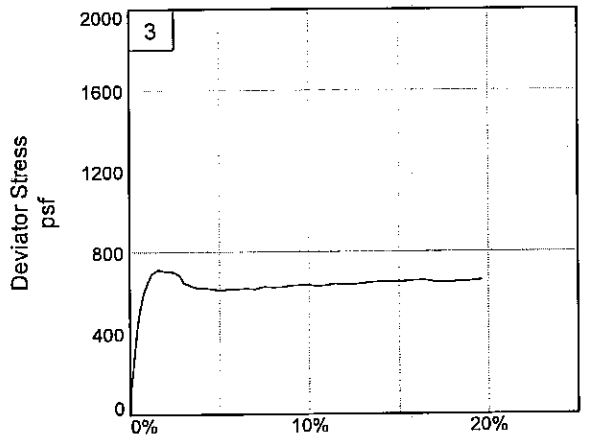
TRIAXIAL SHEAR TEST REPORT

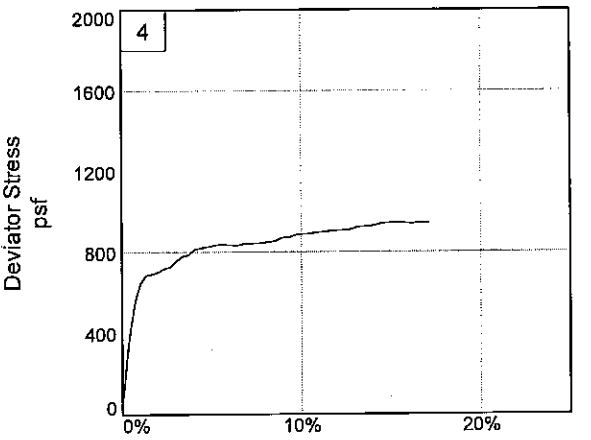
FFEBJV, LLC.

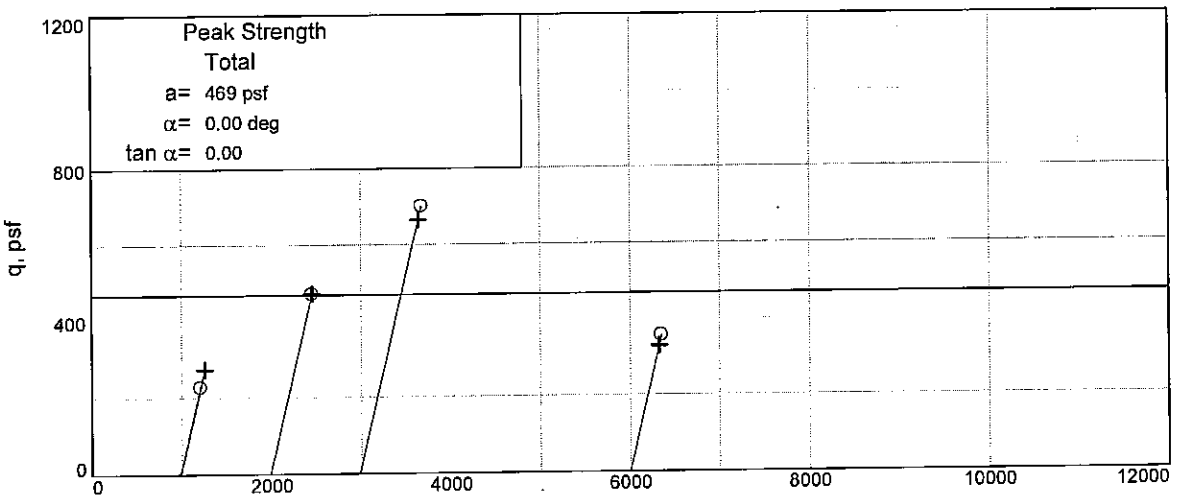
Tested By: CC **Checked By:** GMU











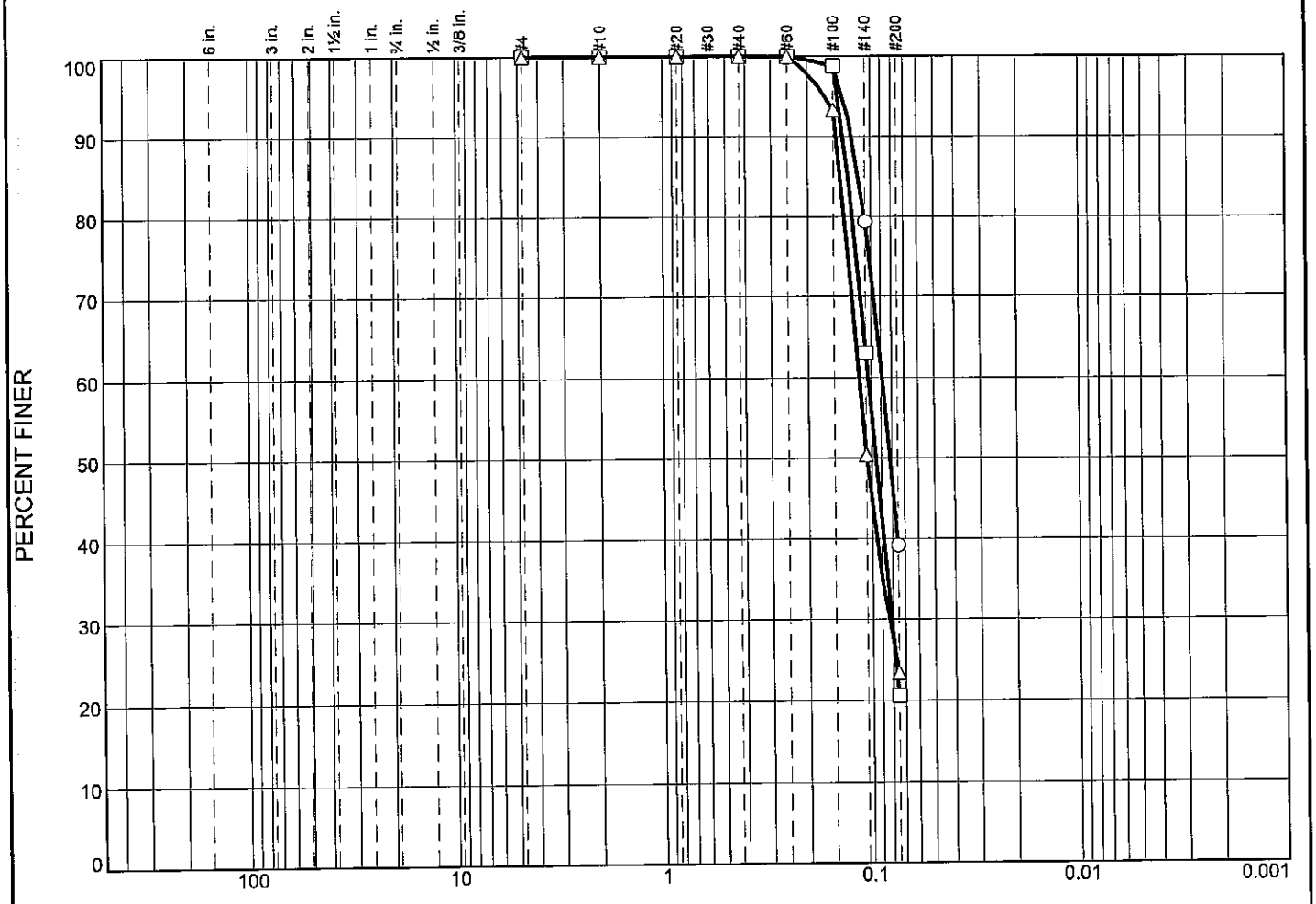
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-49UPT **Depth:** 25.70' **Sample Number:** 7C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	60.8	39.2	
□	0.0	0.0	0.0	0.0	0.0	79.4	20.6	
△	0.0	0.0	0.0	0.0	0.0	76.6	23.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1135	0.0885	0.0816					
□			0.1276	0.1034	0.0953	0.0810				
△			0.1385	0.1145	0.1056	0.0835				

Material Description	USCS	AASHTO
○ GR SC5-S	SC5-S	
□ GR SC3-S	SC3-S	
△ GR SM1	SM1	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Source of Sample:** WWHC-49UPT **Depth:** 30.0 **Sample Number:** 9

□ **Source of Sample:** WWHC-49UPT **Depth:** 40.0 **Sample Number:** 14

△ **Source of Sample:** WWHC-49UPT **Depth:** 50.0 **Sample Number:** 19

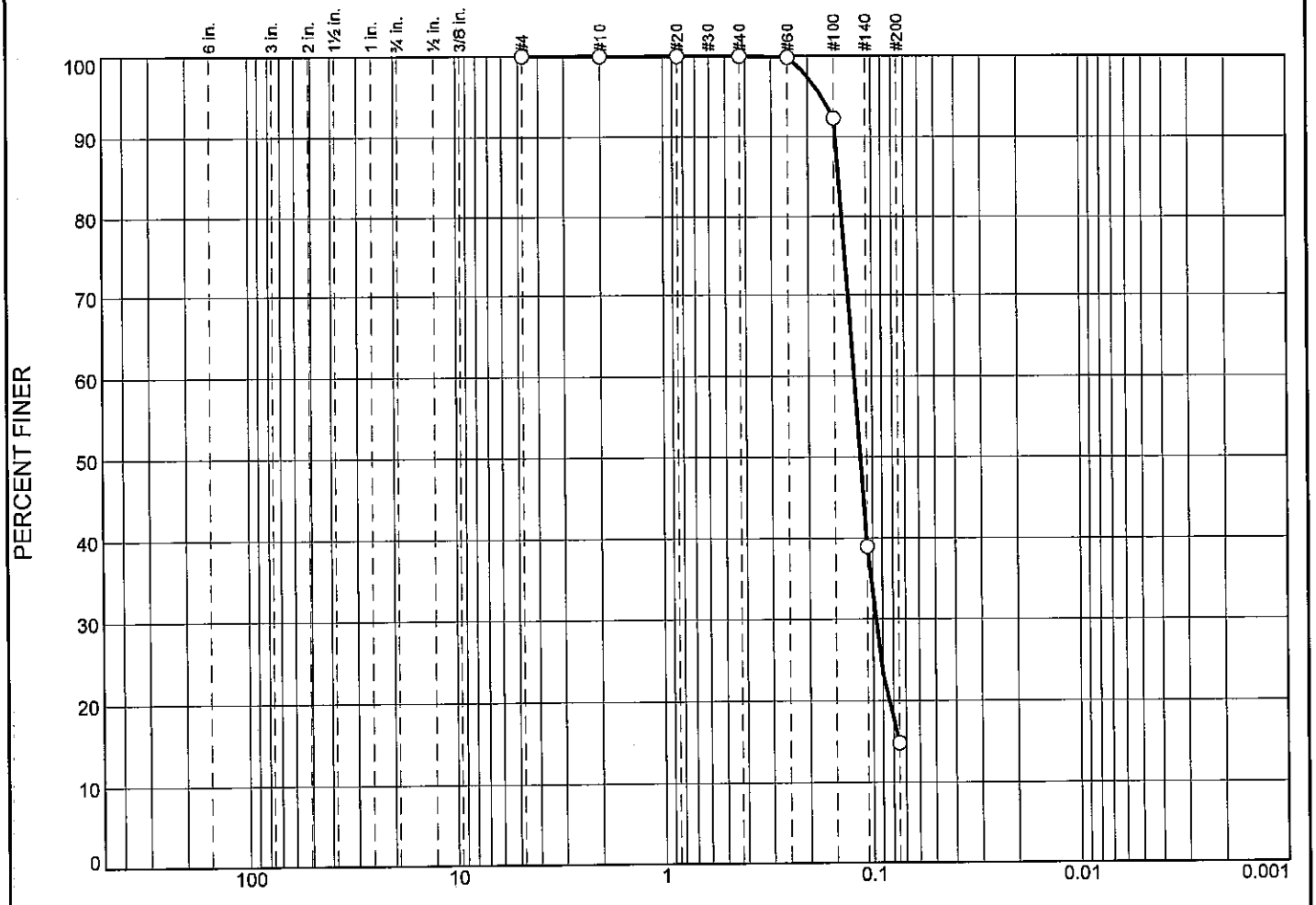
FFEBJV, LLC

St Rose, LA

Remarks:

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	85.2	14.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1417	0.1214	0.1143	0.0977	0.0753			

Material Description	USCS	AASHTO
○ GR SM1-S	SM1-S	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Source of Sample:** WWHC-49UPT **Depth:** 60.0 **Sample Number:** 24

Remarks:

FFEBJV, LLC

St Rose, LA

Figure

Bor. WWHC-49UPT
STA. N 29^ 49' 27.43" W 090^ 06' 41.25"
Offset 80' from C/L
15 April 2007

GROUND EL. 2.0
0.0 0.8 24 CH SISVSTDGRBR RT
0.8 1.7 34 CH SISST DGRBR RT
1.7 4.0 33 CH SISST DGRBR RT 1167121 61 24 29 20
4.0 4.8 40 CH SISST GR BR O
4.8 5.7 35 CH SISST GR BR O
5.7 8.0 36 8.0CH SIS M GR BR O
8.0 8.8 35 8.8ML T O
8.8 9.7 64 9.7CL M GR O 578117 41 25 35 91
9.7 10.6 37 CH M T O
10.6 12.0 34 12.0CH M T S O
12.0 12.8 38 CL M GR O
12.8 13.7 37 CL M GR
13.7 16.0 39 CL M T GR
16.0 16.8 38 CL SO GR
16.8 17.7 30 17.7CL SO GR
17.7 18.6 42 18.6CL SISSO GR
18.6 20.0 54 CH SIS M GR
20.0 20.8 57 20.8CH SIS M GR
20.8 21.7 37 21.7CH M GR
21.7 22.6 48 CH SIS M GR
22.6 24.0 67 24.0CH SISSO GR
24.0 24.8 37 24.8ML GR CS
24.8 25.7 50 CH SISSO GR
25.7 26.6 45 26.6CH SISSO GR
26.6 28.0 52 28.0CH M GR
28.0 28.8 30 CL M GR
28.8 30.0 40 30.0CL SO GR
30.0 32.0 32 32.0SC GR 20
32.0 34.0 45 34.0SC SIS GR 25
34.0 36.0 25 SC GR 24
36.0 38.0 21 SC GR 28
38.0 40.0 23 SC GR 26
40.0 42.0 25 SC GR 23
42.0 44.0 26 SC GR 27
44.0 46.0 22 SC GR 29
46.0 48.0 27 SC GR 21

48.0 50.0 26 50.0SC GR 24
50.0 52.0 27 SM GR 26
52.0 54.0 24 SM GR 24
54.0 56.0 26 SM GR 30
56.0 58.0 31 SM GR 40
58.0 60.0 29 SM GR 14
60.0 62.0 25 SM GR 27
62.0 64.0 25 SM GR 20
64.0 66.0 25 SM GR 26
66.0 68.0 22 SM GR 36
68.0 70.0 26 70.0SM GR 33
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 6.00/-4.00 Water Con: 45.00
LL,PL,PI : 63, 24, 39 Dry Dens : 78.00
Cohesion : 0.427 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 14.00/-12.00 Water Con: 36.00
LL,PL,PI : 38, 25, 13 Dry Dens : 85.00
Cohesion : 0.338 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 18.00/-16.00 Water Con: 41.00
LL,PL,PI : 44, 28, 16 Dry Dens : 80.00
Cohesion : 0.204 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 22.00/-20.00 Water Con: 60.00

LL,PL,PI : 79, 29, 50 Dry Dens : 64.00
Cohesion : 0.281 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 26.00/-24.00 Water Con: 49.00
LL,PL,PI : 62, 24, 38 Dry Dens : 73.00
Cohesion : 0.235 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-50UCL

Current Date: 7/3/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	VST LBR & LGR CL6 W/ RT	CL6		15												
1B	0.8	VST LBR & LGR CL6 W/ RT	CL6	**	15	**	**	**	UC	**	**	**	48	17	31	1.0	UC
2A	2.0	VST LBR & LGR CL6 W/ RT	CL6		23												
2B	2.8	VST LBR & LGR CL6 W/ RT	CL6		19												
3A	4.0	ST LBR & LGR CL4	CL4		25												
3B	4.8	ST LBR & LGR CL4	CL4		26	98	123	97	UU	0	1023		34	20	14	0.38	
NS	5.7	NO SAMPLE	NS														
4A	8.0	ST LBR & LGR CL6	CL6		26												
4B	8.8	ST LBR & LGR CH2	CH2		26	99	124	99	UU	0	1086		51	19	32	0.25	
NS	9.7	NO SAMPLE	NS														
5A	12.0	M LBR CH2	CH2		33												
5B	12.8	M LBR & LGR CH2	CH2		33												
5C	13.7	M LGR & LBR CH4 W/ WD	CH4		26	98	124	96	UU	0	867		95	21	74	0.25	
6A	16.0	M GR CH3	CH3		45												
6B	16.8	M GR & LBR CH3 W/ WD	CH3		39												
6C	17.7	M GR & LBR CH3 W/ WD	CH3		36	84	115	96	UU	0	658		63	18	45	0.55	
7A	20.0	SO GR & LBR CL6	CL6		33												
7B	20.8	SO GR & LBR CL6	CL6		34												
7C	21.7	SO GR & LBR CL6 W/ WD	CL6	8	34	89	118	100	UC	--	373	746	48	18	30	0.29	
8A	24.0	SO BR & GR CL6	CL6		35												
8B	24.8	SO GR CL6 W/ LNS ML, WD	CL6		33												
8C	25.7	SO GR CL6 W/ WD	CL6		34												
8D	26.6	SO GR CL6 W/ ARS CH	CL6		33												
9A	28.0	SO GR CL6 W/ LNS CH	CL6		37												
9B	28.8	GR SM1 W/ WD, LYS CH	SM1		29												
9C	29.7	SO GR CL4-S W/ LNS ML, SM	CL4-S		50	71	106	98	UU	0	454		31	24	7	0.24	
10A	32.0	M GR CH2 W/ LNS ML, WD	CH2		57												
10B	32.8	M GR CH2 W/ LNS ML, WD	CH2		45								**	**			Gs, CON
10C	33.7	GR SP W/ WD, ARS CL & CH	SP		32	91	121	100	UU	0	583		NP	NP		0.15	
11A	36.0	GR SP	SP		25												
11B	36.6	GR SP W/ LNS CH	SP		25												
11C	37.7	SO GR CL6 W/ ARS & LNS SP	CL6		45	75	109	98	UU	0	377		42	15	27	0.25	
12A	40.0	SO GR CL6 W/ LNS ML	CL6		47												
12B	40.8	VSO GR CL4 W/ ARS SP	CL4	3	26	98	123	97	UC	--	193	387	32	15	17	0.23	
12C	41.7	GR SP	SP		24												
13A	44.0	GR SP	SP		26												
13B	44.8	GR SP W/ LNS CH	SP		26												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

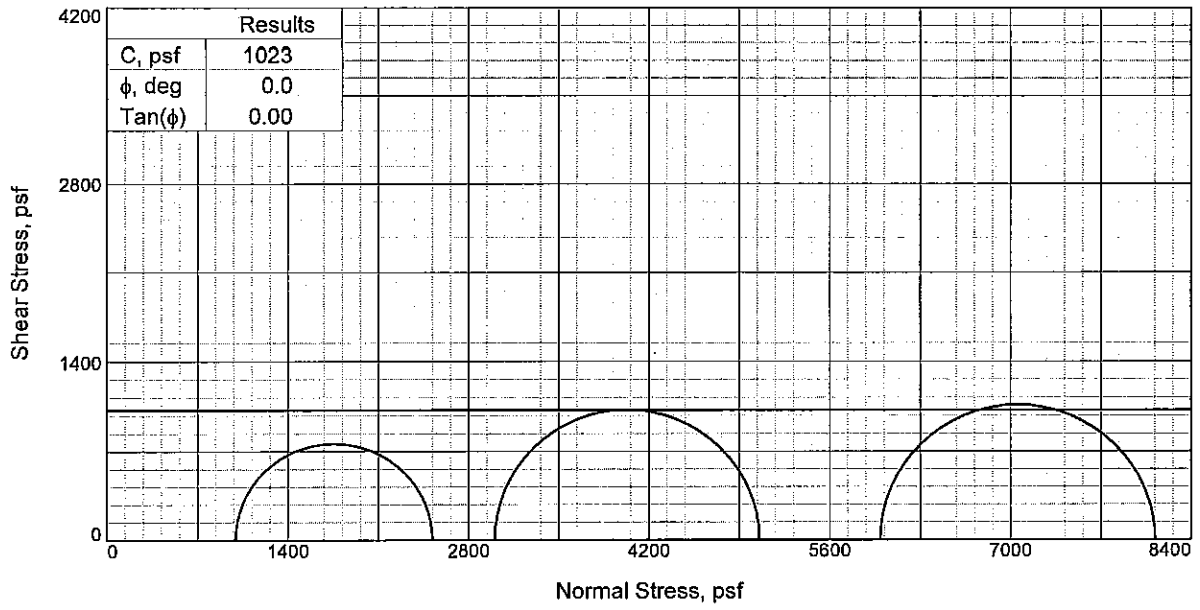
Project Number: 0022-0002
Boring: WWHC-50UCL

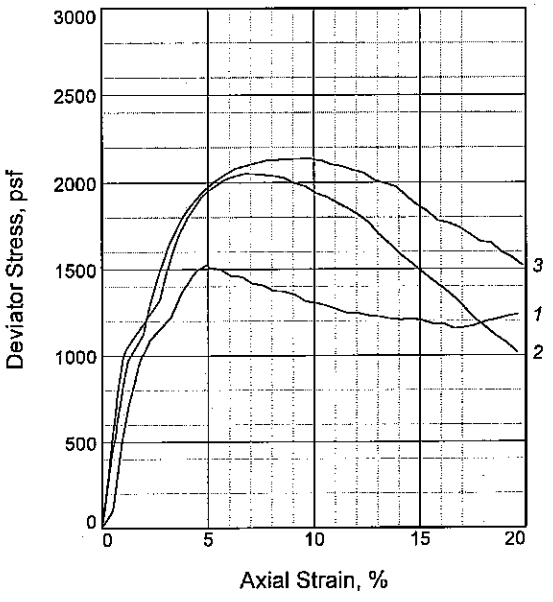
Current Date: 7/3/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
13C	45.7	GR SP W/ WD	SP		27												SV
13D	46.6	GR SP W/ LNS CH	SP		24												
14A	48.0	GR SP	SP		26												
14B	48.8	GR SP W/ LNS CH	SP		26												
14C	49.7	GR SP	SP		19												
15A	52.0	GR SP	SP		23												
15B	52.8	GR SP	SP		29												
15C	53.7	GR SP	SP		23												
16A	56.0	GR SP	SP		23												
16B	56.8	GR SP	SP		22												
16C	57.7	GR SP	SP		22												
17	60.0	T SP	SP		21												SV
18	62.0	T SP	SP		20												
19	64.0	T SP	SP		20												
20	66.0	T SP	SP		22												
21	68.0	T SP	SP		22												
22	70.0	T SP	SP		21												SV
23	72.0	T SP	SP		21												
24	74.0	T SP	SP		21												
25	76.0	T SP	SP		20												
26	78.0	T SP	SP		23												
27	80.0	T SP	SP		22												SV
28	82.0	T SP	SP		21												
29	84.0	T SP	SP		23												
30	86.0	T SP	SP		22												
31	88.0	T SP	SP		22												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2





Specimen No.		1	2	3
Initial	Water Content, %	23.5	27.2	26.5
	Dry Density, pcf	101.1	97.7	94.9
	Saturation, %	96.1	102.5	92.9
	Void Ratio	0.6554	0.7123	0.7633
	Diameter, in.	1.43	1.42	1.42
	Height, in.	3.19	3.13	3.12
At Test	Water Content, %	23.5	27.2	26.5
	Dry Density, pcf	101.1	97.7	94.9
	Saturation, %	96.1	102.5	92.9
	Void Ratio	0.6554	0.7123	0.7633
	Diameter, in.	1.43	1.42	1.42
	Height, in.	3.19	3.13	3.12
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	20.86	41.60
Fail. Stress, psf		1524	2052	2130
Strain, %		5.0	6.8	10.1
Ult. Stress, psf		1203	1484	1834
Strain, %				
σ_1 Failure, psf		2518	5055	8120
σ_3 Failure, psf		995	3003	5991

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: ST LBR & LGR CL4

LL= 34 **PL=** 20 **PI=** 14

Assumed Specific Gravity= 2.68

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

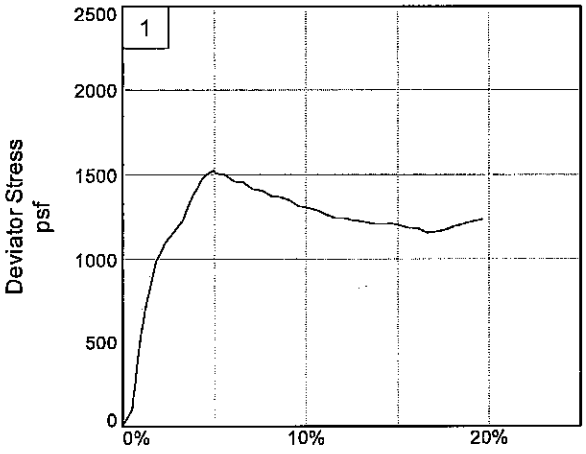
Source of Sample: WWHC-50UCL **Depth:** 4.8

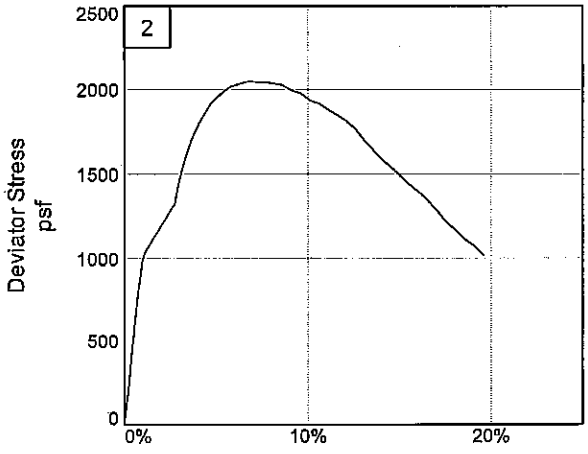
Sample Number: 3B

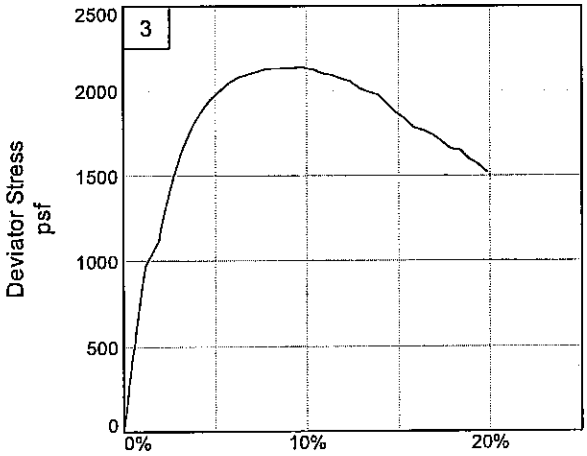
Proj. No.: 0022-0002 **Date Sampled:** 4-18-07

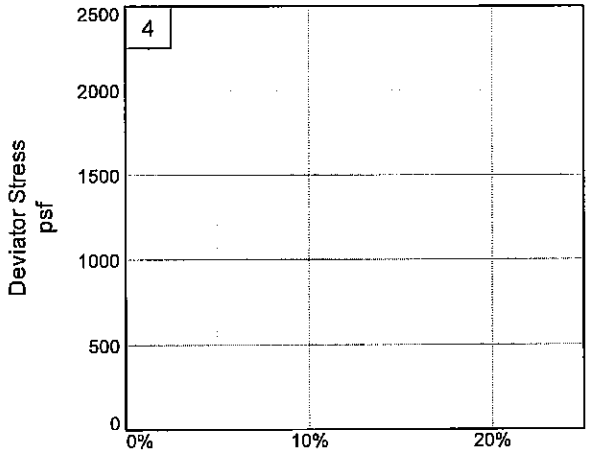
TRIAXIAL SHEAR TEST REPORT

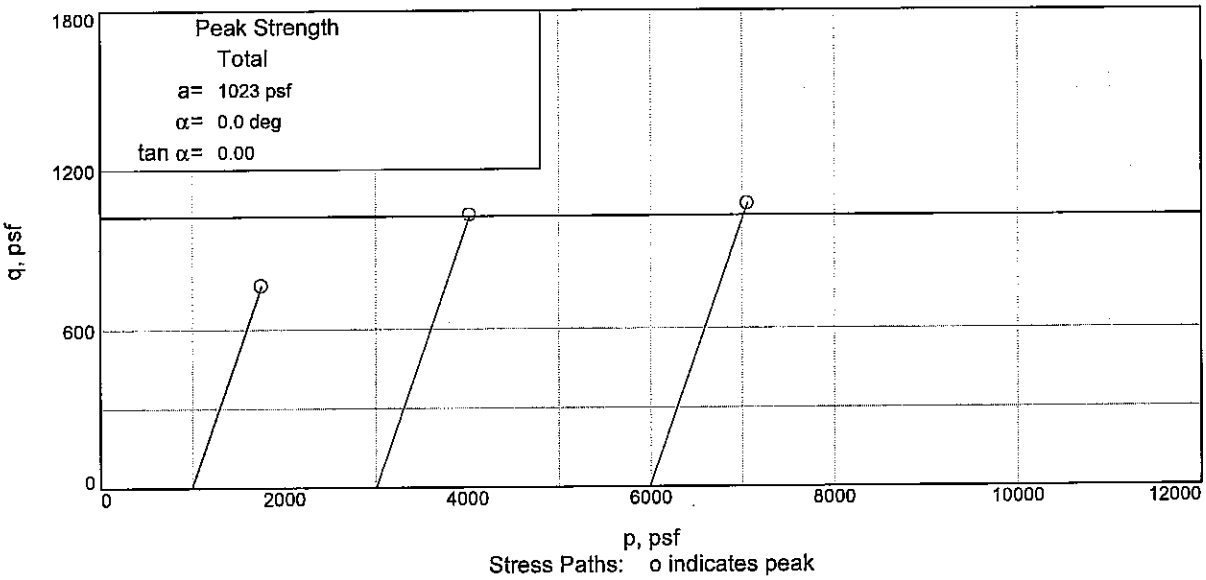
FFEBJV, LLC







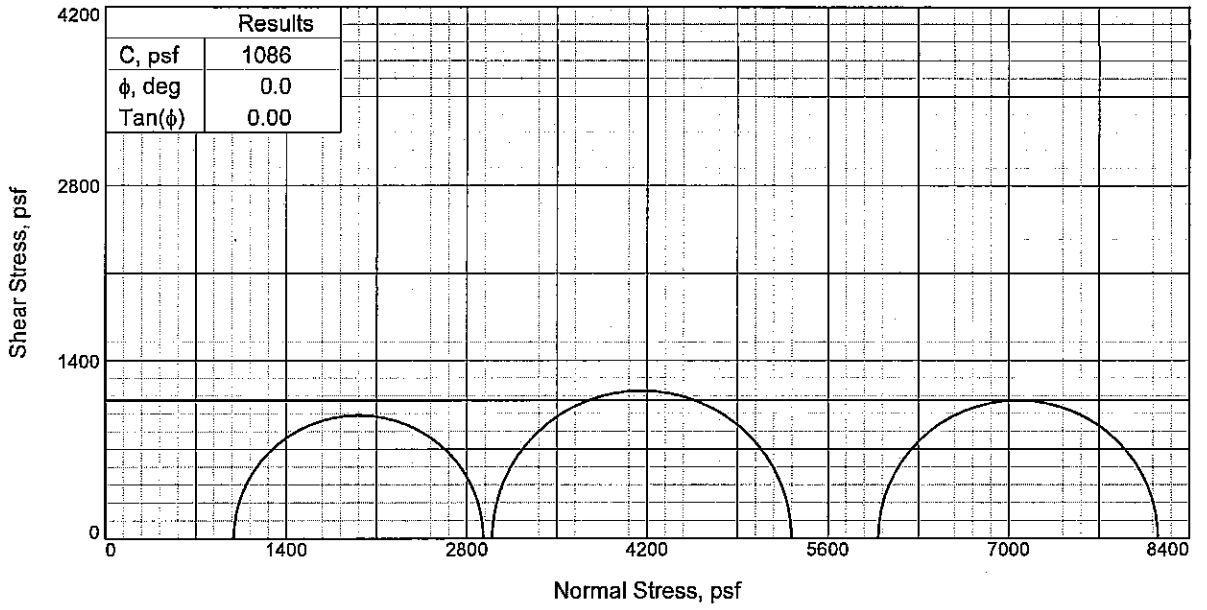


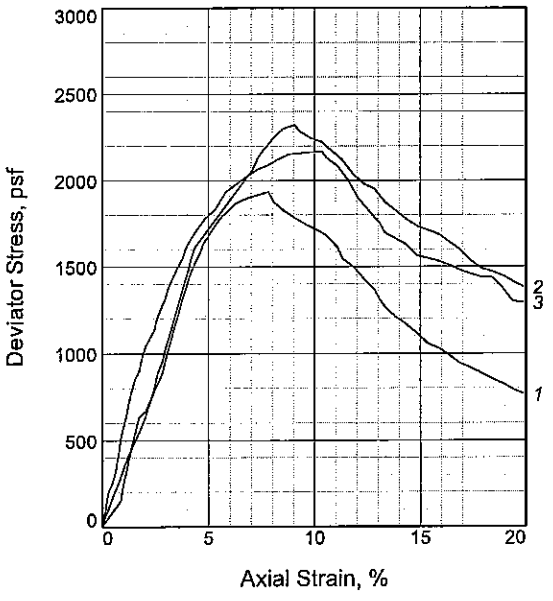


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-50UCL **Depth:** 4.8 **Sample Number:** 3B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	25.5	25.4	26.3
	Dry Density, pcf	100.3	99.1	97.1
	Saturation, %	101.2	97.8	96.7
	Void Ratio	0.6809	0.7008	0.7351
	Diameter, in.	1.41	1.43	1.42
	Height, in.	3.15	3.12	3.17
At Test	Water Content, %	25.5	25.4	26.3
	Dry Density, pcf	100.3	99.1	97.1
	Saturation, %	101.2	97.8	96.7
	Void Ratio	0.6809	0.7008	0.7351
	Diameter, in.	1.41	1.43	1.42
	Height, in.	3.15	3.12	3.17
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	20.82	41.60
Fail. Stress, psf		1935	2321	2168
Strain, %		7.8	9.1	10.3
Ult. Stress, psf		1112	1732	1564
Strain, %				
σ_1 Failure, psf		2929	5319	8158
σ_3 Failure, psf		995	2998	5990

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: ST LBR & LGR CH2

LL= 51 **PL=** 19 **PI=** 32

Assumed Specific Gravity= 2.7

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

Source of Sample: WWHC-50UCL **Depth:** 8.8

Sample Number: 4B

Proj. No.: 0022-0002 **Date Sampled:** 4-18-07

TRIAXIAL SHEAR TEST REPORT

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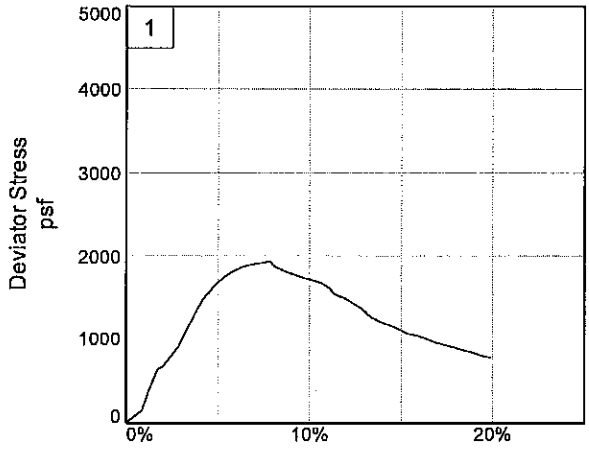
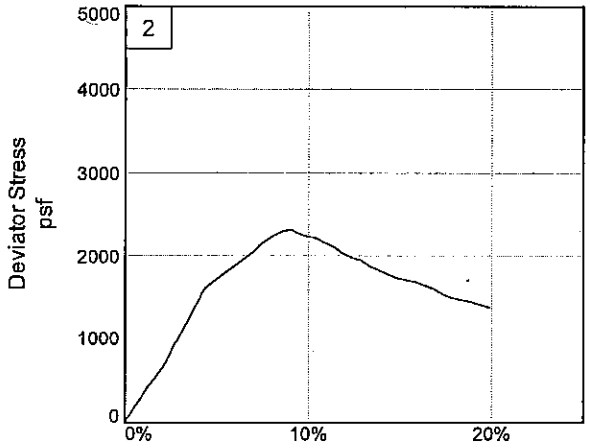
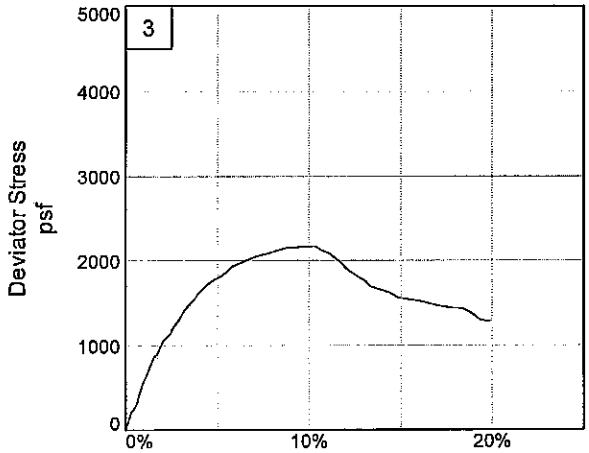
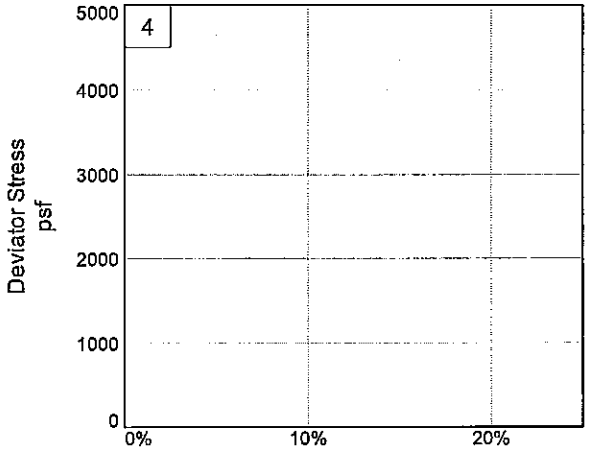
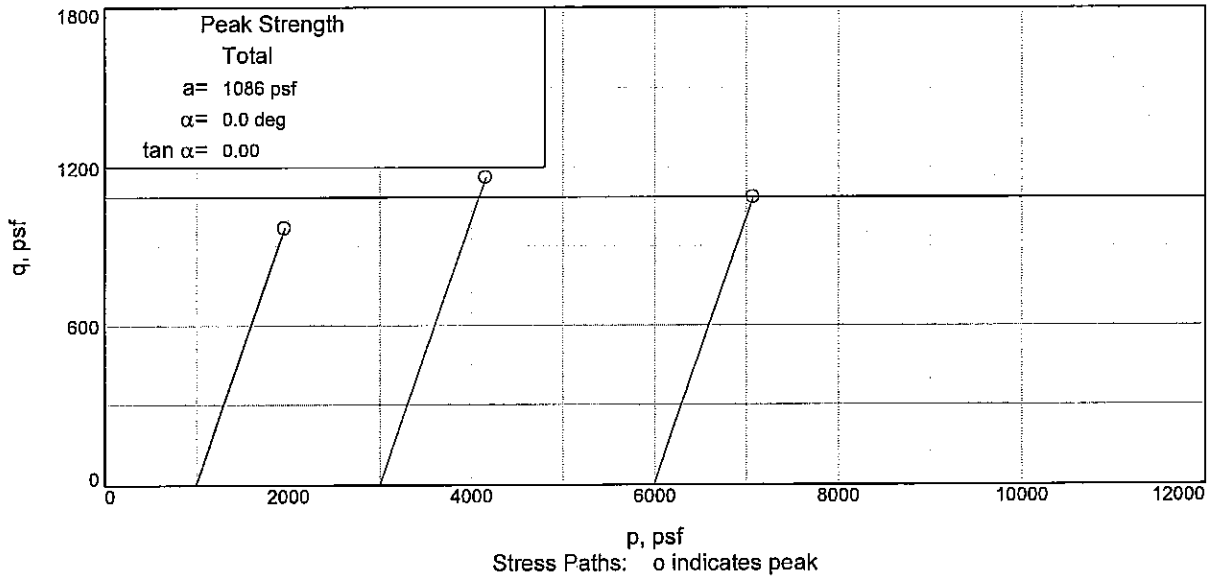






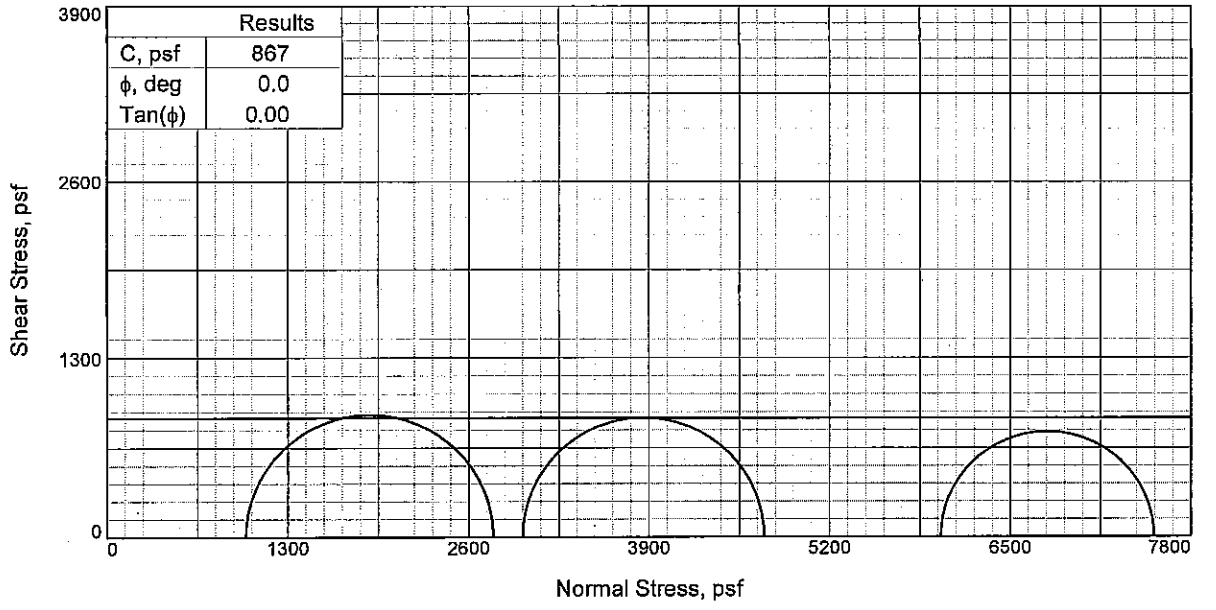


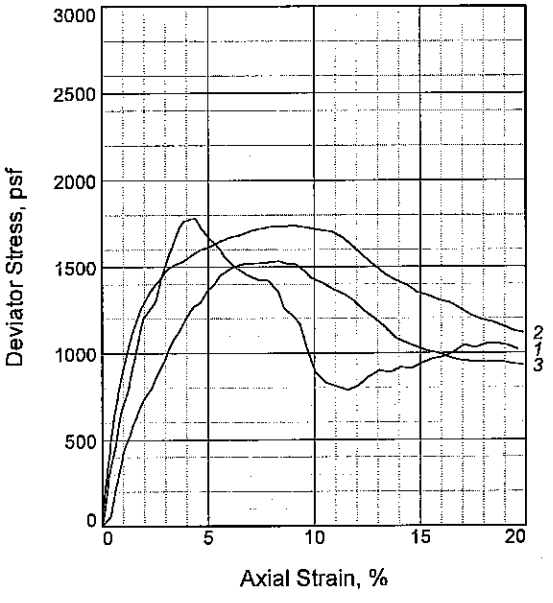


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-50UCL **Depth:** 8.8 **Sample Number:** 4B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	24.3	27.4	26.6
	Dry Density, pcf	100.8	96.5	97.1
	Saturation, %	95.6	97.3	95.6
	Void Ratio	0.6975	0.7725	0.7620
	Diameter, in.	1.41	1.40	1.41
	Height, in.	3.14	3.19	3.22
At Test	Water Content, %	24.3	27.4	26.6
	Dry Density, pcf	100.8	96.5	97.1
	Saturation, %	95.6	97.3	95.6
	Void Ratio	0.6975	0.7725	0.7620
	Diameter, in.	1.41	1.40	1.41
	Height, in.	3.14	3.19	3.22
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	20.77	41.67
Fail. Stress, psf		1781	1740	1534
Strain, %		4.3	9.1	8.3
Ult. Stress, psf		787	1352	1035
Strain, %				
σ_1 Failure, psf		2779	4730	7534
σ_3 Failure, psf		998	2990	6000

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M LGR & LBR CH4 W/ WD

LL= 95 **PL=** 21 **PI=** 74

Assumed Specific Gravity= 2.74

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

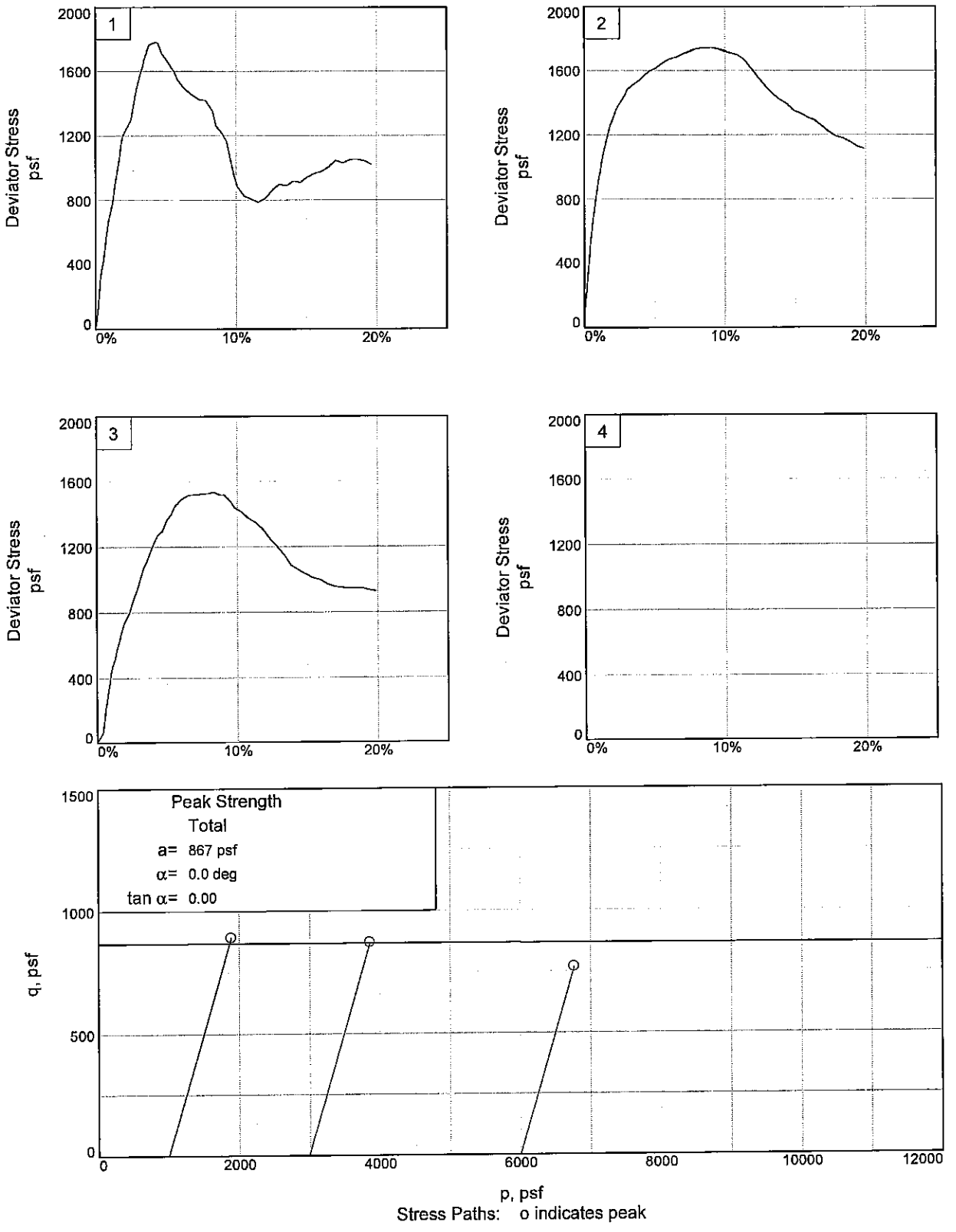
Source of Sample: WWHC-50UCL **Depth:** 13.7

Sample Number: 5C

Proj. No.: 0022-0002 **Date Sampled:** 4-18-07

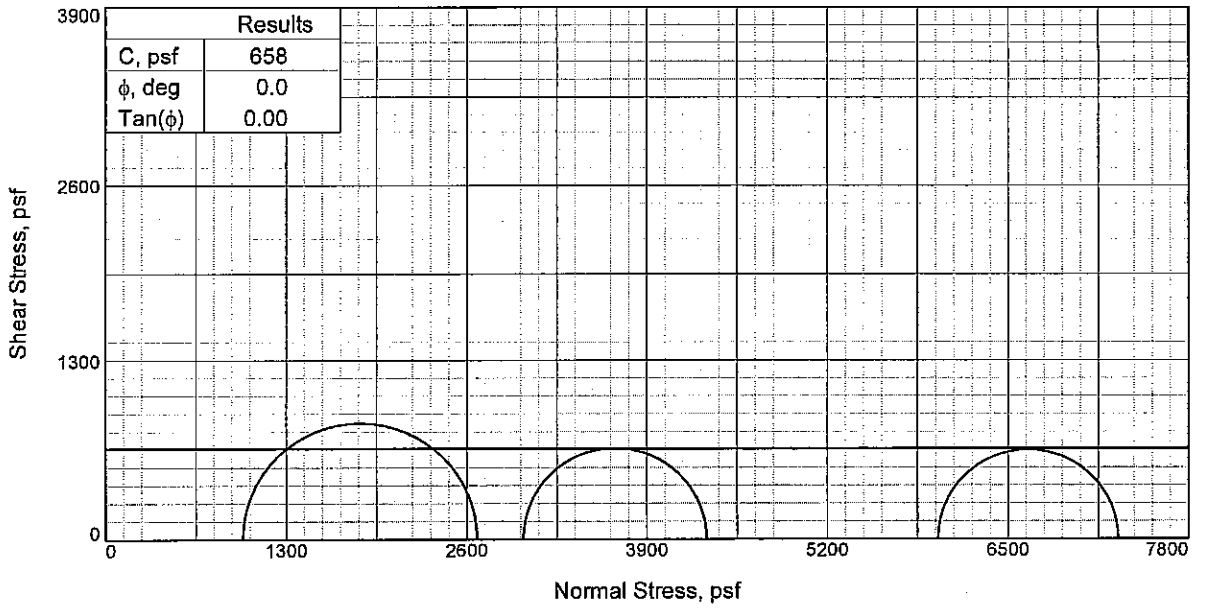
TRIAXIAL SHEAR TEST REPORT

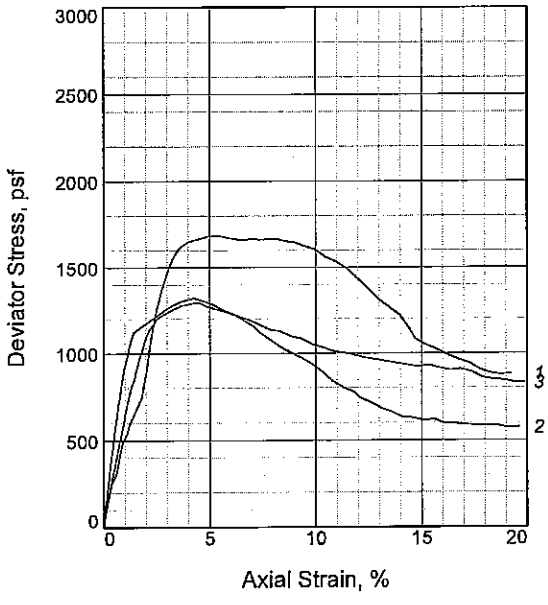
FFEBJV, LLC



Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-50UCL **Depth:** 13.7 **Sample Number:** 5C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	34.4	37.2	36.9
	Dry Density, pcf	86.2	83.0	83.7
	Saturation, %	95.7	96.0	96.7
	Void Ratio	0.9846	1.0608	1.0446
	Diameter, in.	1.43	1.41	1.41
	Height, in.	3.21	3.26	3.20
At Test	Water Content, %	34.4	37.2	36.9
	Dry Density, pcf	86.2	83.0	83.7
	Saturation, %	95.7	96.2	96.7
	Void Ratio	0.9846	1.0608	1.0446
	Diameter, in.	1.43	1.41	1.41
	Height, in.	3.21	3.26	3.20
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.89	41.65
Fail. Stress, psf		1686	1322	1297
Strain, %		5.4	4.2	4.5
Ult. Stress, psf		1080	615	922
Strain, %				
σ_1 Failure, psf		2675	4330	7294
σ_3 Failure, psf		989	3009	5997

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR & LBR CH3 W/ WD

LL= 63 **PL=** 18 **PI=** 45

Assumed Specific Gravity= 2.74

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

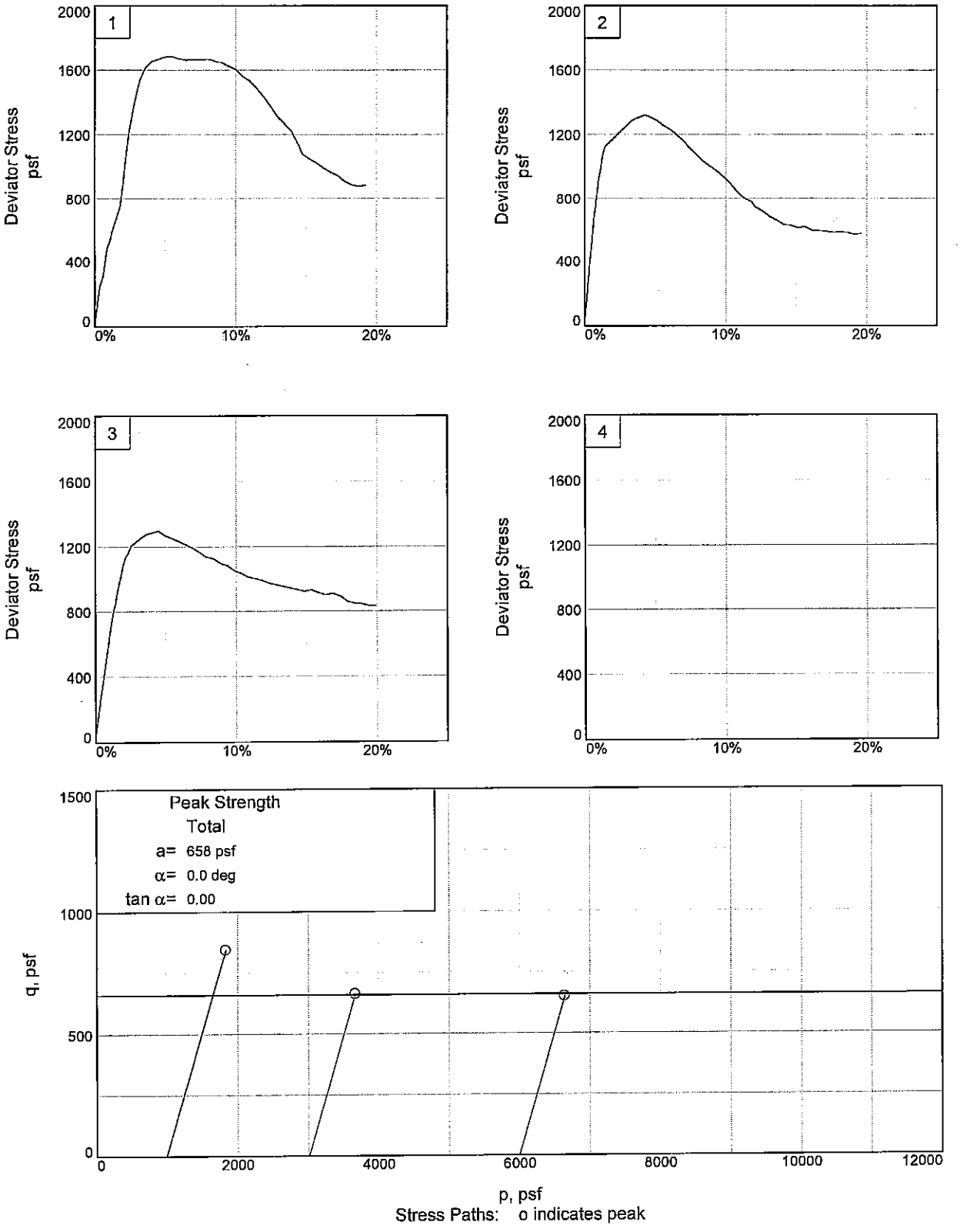
Source of Sample: WWHC-50UCL **Depth:** 17.7

Sample Number: 6C

Proj. No.: 0022-0002 **Date Sampled:** 4-18-07

TRIAXIAL SHEAR TEST REPORT

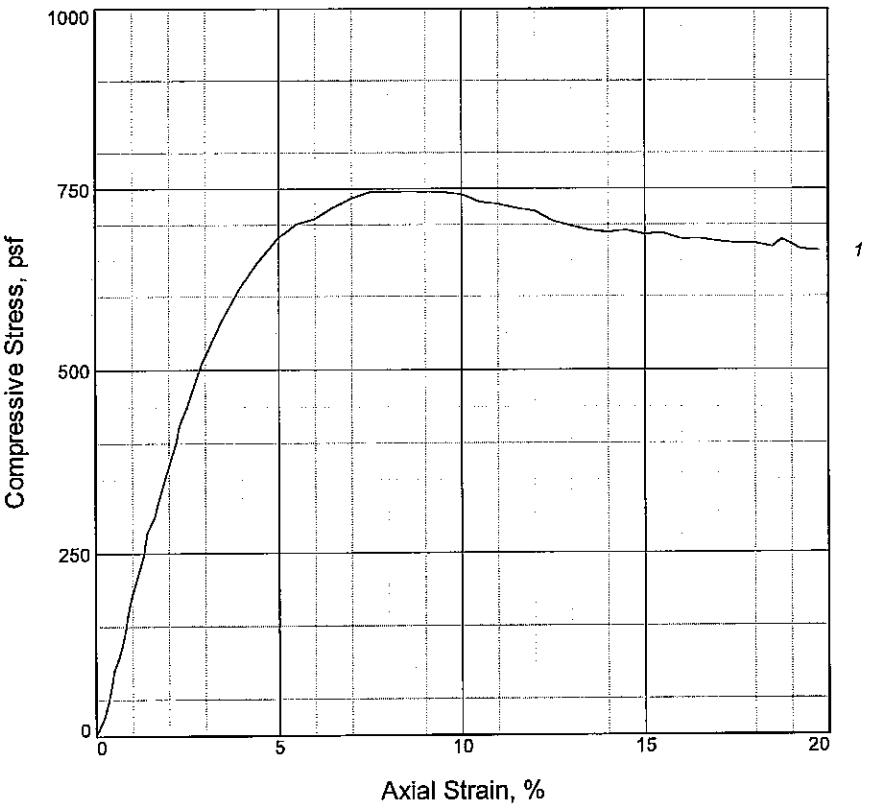
FFEBJV, LLC



Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-50UCL **Depth:** 17.7 **Sample Number:** 6C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	746			
Undrained shear strength, psf	373			
Failure strain, %	8.0			
Strain rate, in./min.	0.03			
Water content, %	33.6			
Wet density, pcf	118.2			
Dry density, pcf	88.5			
Saturation, %	100.5			
Void ratio	0.8985			
Specimen diameter, in.	1.39			
Specimen height, in.	3.21			
Height/diameter ratio	2.31			

Description: SO GR & LBR CL6 W/ WD

LL = 48	PL = 18	PI = 30	**Assumed GS=** 2.69	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-18-07
Remarks:

Figure _____

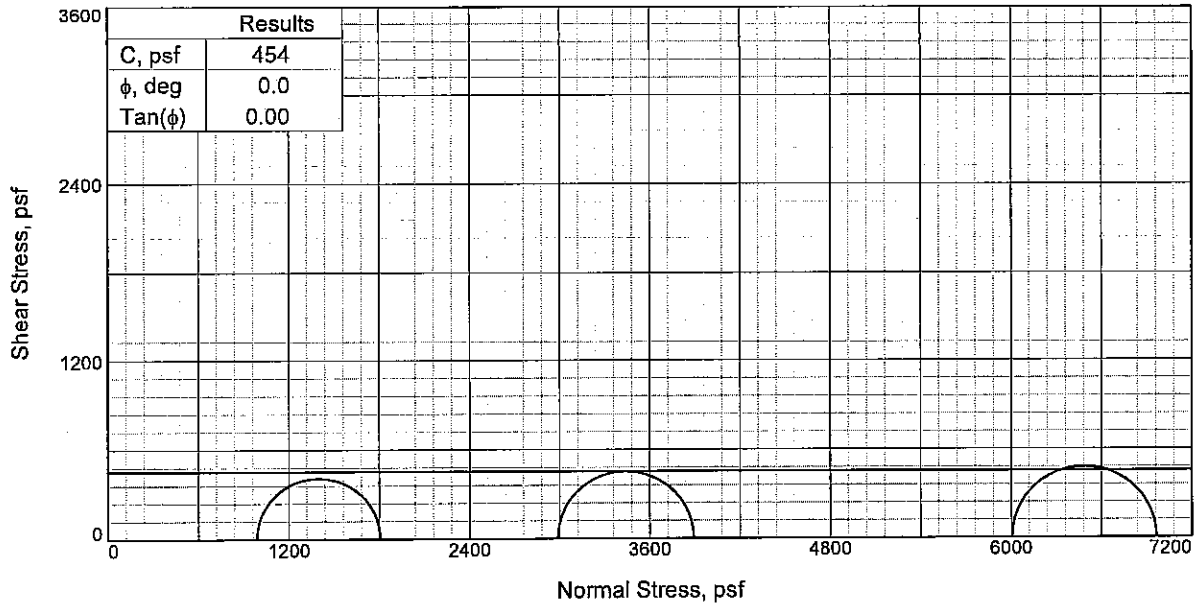
Client: FFEB JV, New Orleans, Louisiana

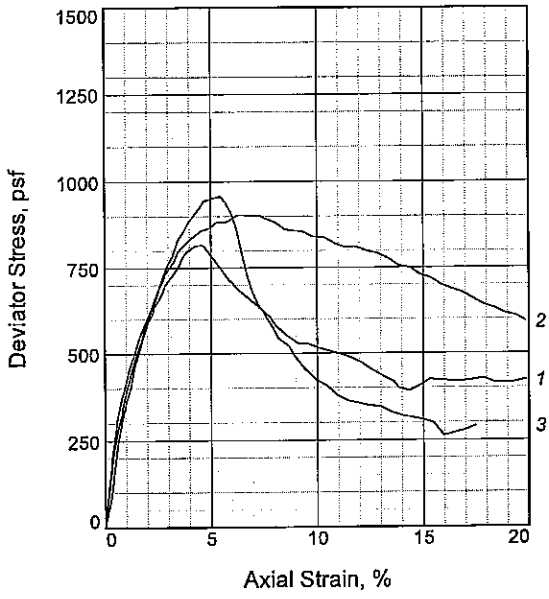
Project: Westwego to Harvey Canal

Source of Sample: WWHC-50UCL **Depth:** 21.7
Sample Number: 7C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	51.7	49.6	47.7
	Dry Density, pcf	69.7	70.8	72.9
	Saturation, %	99.2	97.5	98.7
	Void Ratio	1.3987	1.3626	1.2944
	Diameter, in.	1.38	1.39	1.39
	Height, in.	3.14	3.13	3.18
At Test	Water Content, %	51.7	49.6	47.7
	Dry Density, pcf	69.7	70.8	72.9
	Saturation, %	99.2	97.5	98.7
	Void Ratio	1.3987	1.3626	1.2944
	Diameter, in.	1.38	1.39	1.39
	Height, in.	3.14	3.13	3.18
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.75	41.71
Fail. Stress, psf		818	904	958
Strain, %		4.6	6.3	5.4
Ult. Stress, psf		405	730	309
Strain, %				
σ_1 Failure, psf		1806	3892	6965
σ_3 Failure, psf		989	2988	6007

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: SO GR CL4-S W/ LNS ML, SM

LL= 31 **PL=** 24 **PI=** 7

Assumed Specific Gravity= 2.68

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

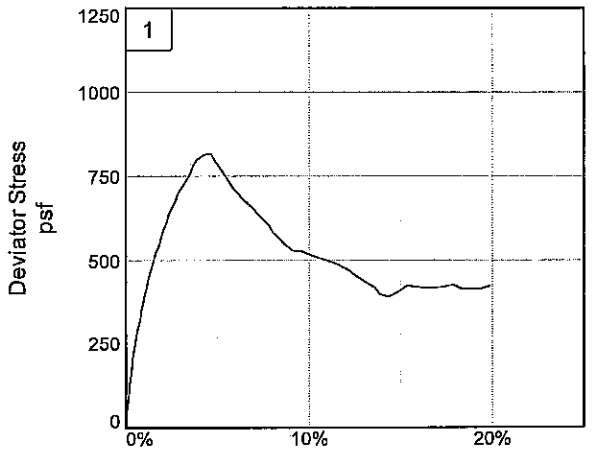
Source of Sample: WWHC-50UCL **Depth:** 29.7

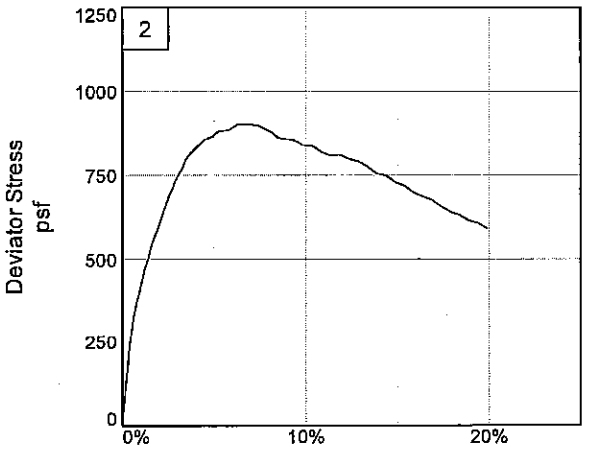
Sample Number: 9C

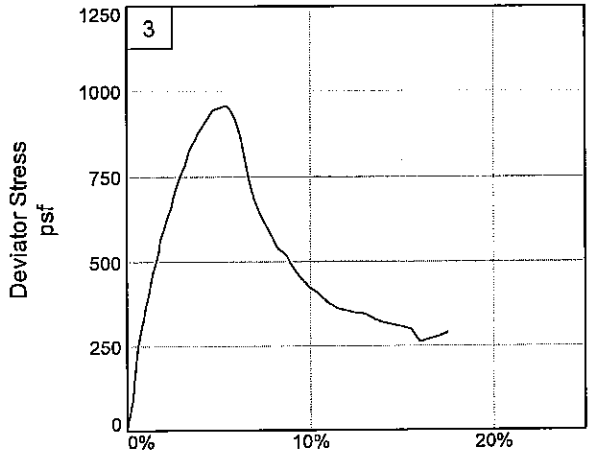
Proj. No.: 0022-0002 **Date Sampled:** 4-18-07

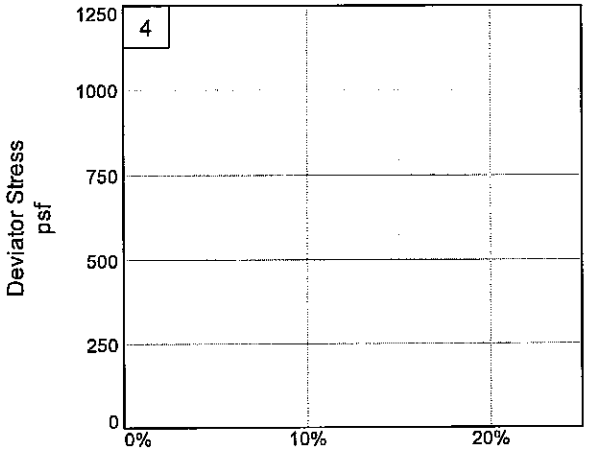
TRIAXIAL SHEAR TEST REPORT

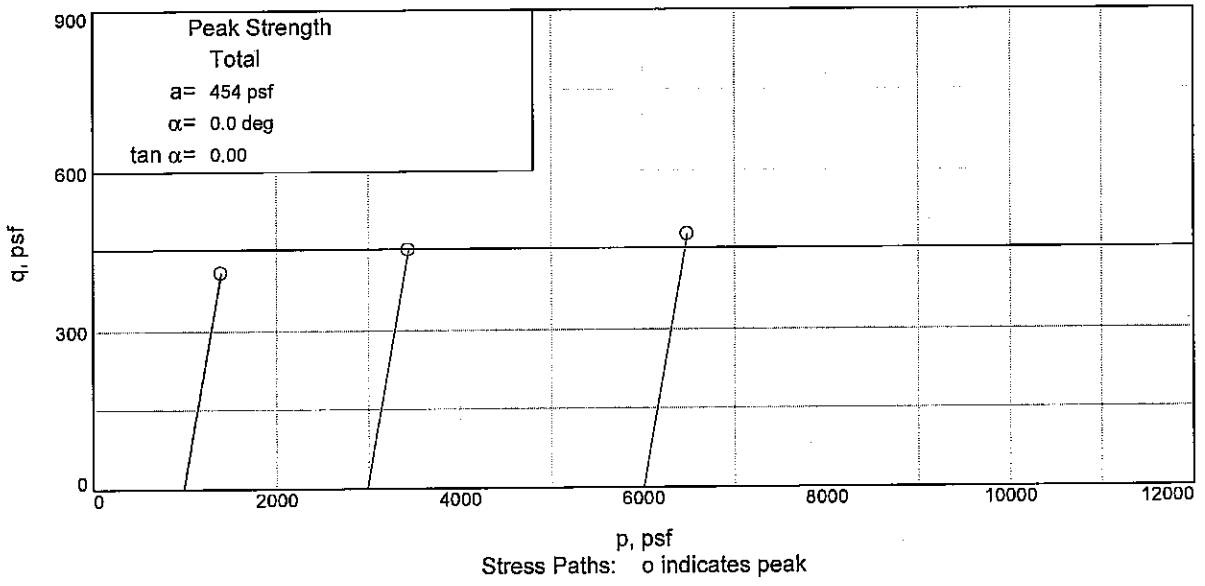
FFEBJV, LLC







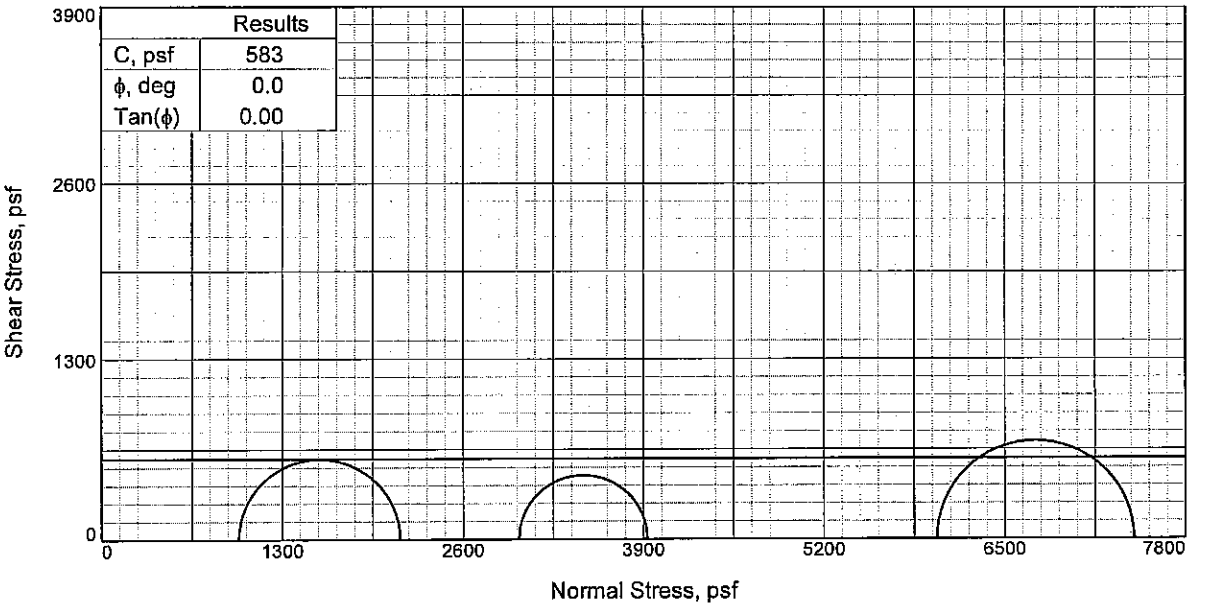


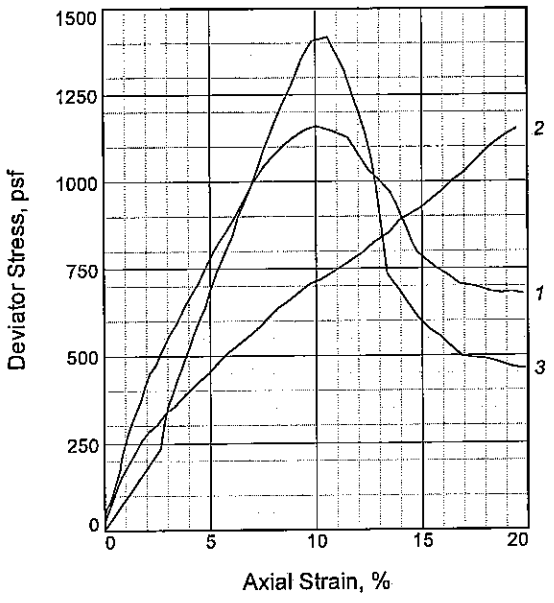


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-50UCL **Depth:** 29.7 **Sample Number:** 9C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	33.0	33.8	30.3
	Dry Density, pcf	92.0	88.8	93.0
	Saturation, %	109.5	104.0	103.3
	Void Ratio	0.7976	0.8626	0.7780
	Diameter, in.	1.35	1.38	1.38
	Height, in.	3.05	3.13	3.08
At Test	Water Content, %	33.0	33.8	30.3
	Dry Density, pcf	92.0	88.8	93.0
	Saturation, %	109.5	104.0	103.3
	Void Ratio	0.7976	0.8626	0.7780
	Diameter, in.	1.35	1.38	1.38
	Height, in.	3.05	3.13	3.08
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.86	41.75
Fail. Stress, psf		1160	924	1417
Strain, %		10.0	15.0	10.6
Ult. Stress, psf		797	924	606
Strain, %				
σ_1 Failure, psf		2147	3928	7430
σ_3 Failure, psf		988	3004	6013

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: GR SP W/ ARS CL, CH, WD

LL= NP **PI=** NP

Assumed Specific Gravity= 2.65

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

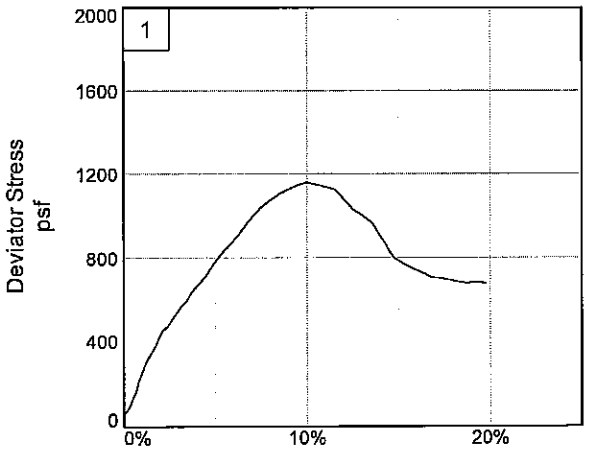
Source of Sample: WWHC-50UCL **Depth:** 33.7

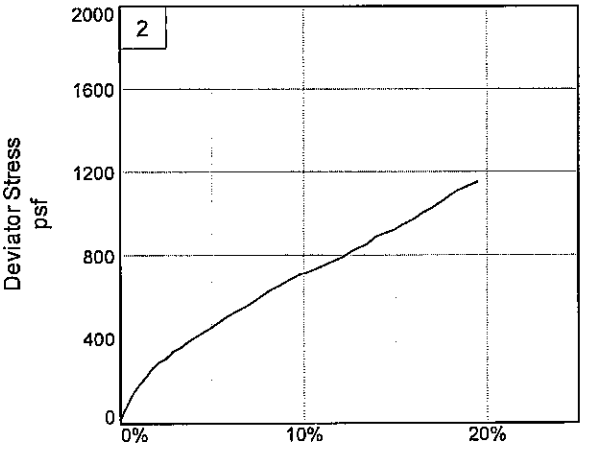
Sample Number: 10C

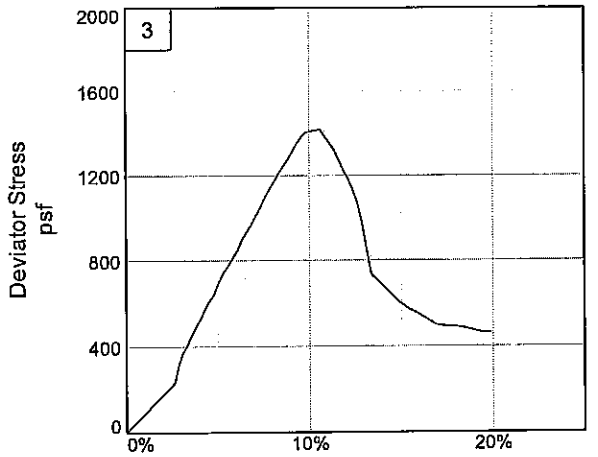
Proj. No.: 0022-0002 **Date Sampled:** 4-18-07

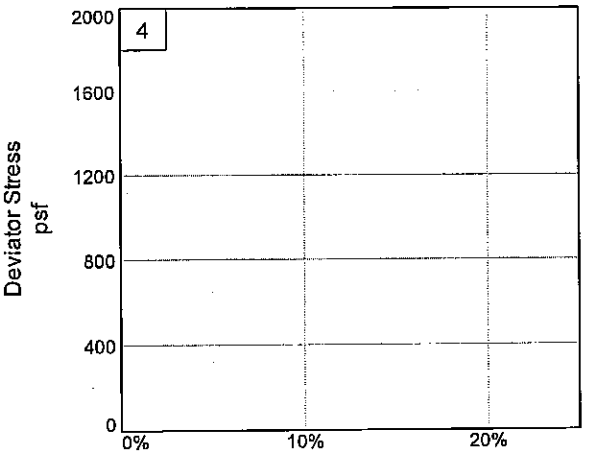
TRIAXIAL SHEAR TEST REPORT

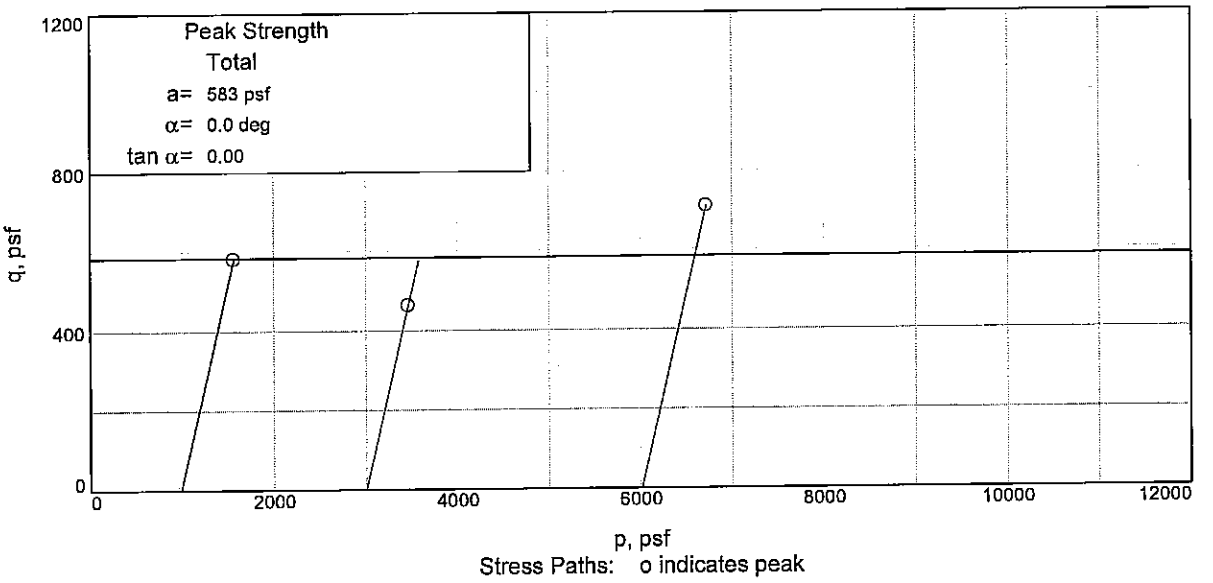
FFEBJV, LLC







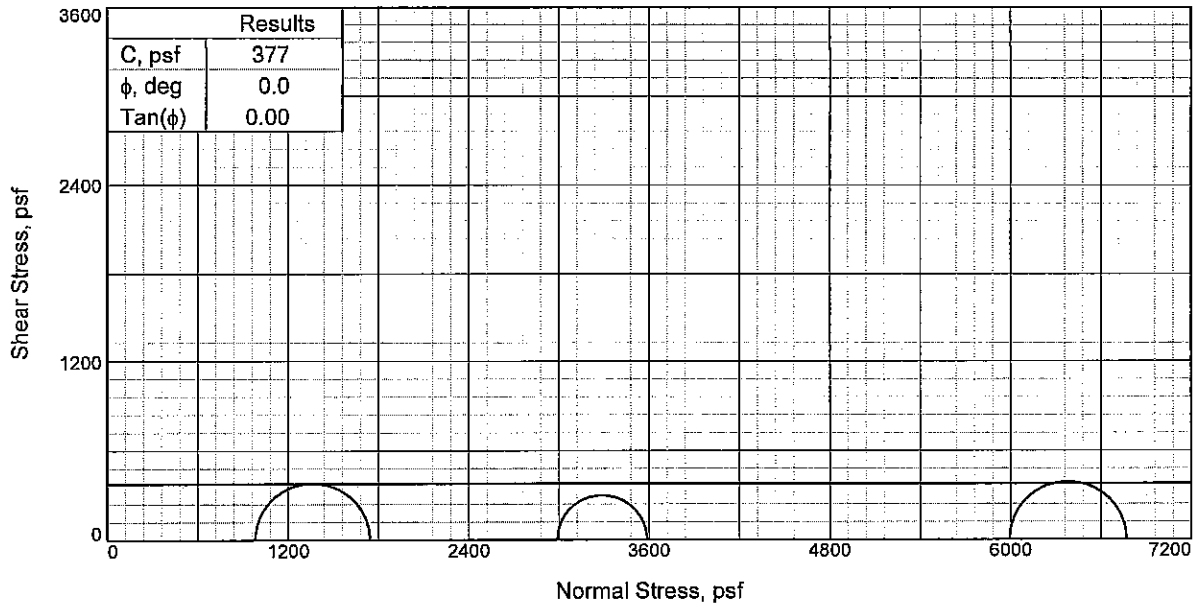


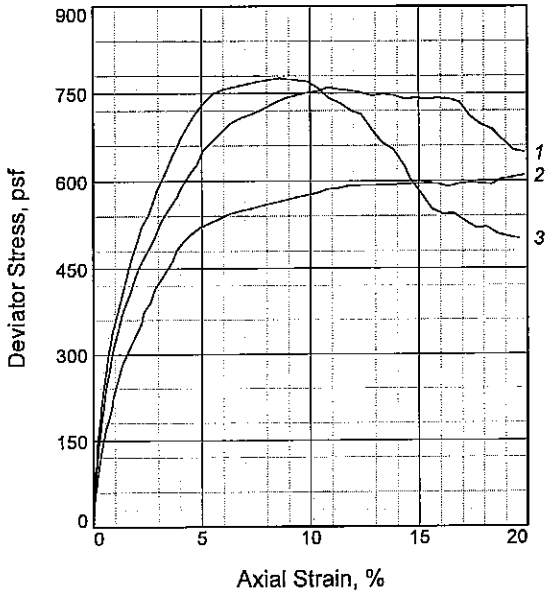


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-50UCL **Depth:** 33.7 **Sample Number:** 10C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	44.7	44.8	44.1
	Dry Density, pcf	75.6	74.1	76.4
	Saturation, %	98.5	95.2	99.1
	Void Ratio	1.2207	1.2655	1.1981
	Diameter, in.	1.40	1.42	1.41
	Height, in.	3.17	3.22	3.11
At Test	Water Content, %	44.7	44.8	44.1
	Dry Density, pcf	75.6	74.1	76.4
	Saturation, %	98.5	95.2	99.1
	Void Ratio	1.2207	1.2655	1.1981
	Diameter, in.	1.40	1.42	1.41
	Height, in.	3.17	3.22	3.11
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.82	20.77	41.62
Fail. Stress, psf		760	595	776
Strain, %		10.8	14.8	8.6
Ult. Stress, psf		742	595	578
Strain, %				
σ_1 Failure, psf		1742	3585	6770
σ_3 Failure, psf		982	2990	5993

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CL6 W/ ARS & LNS SP

LL= 42 **PL=** 15 **PI=** 27
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

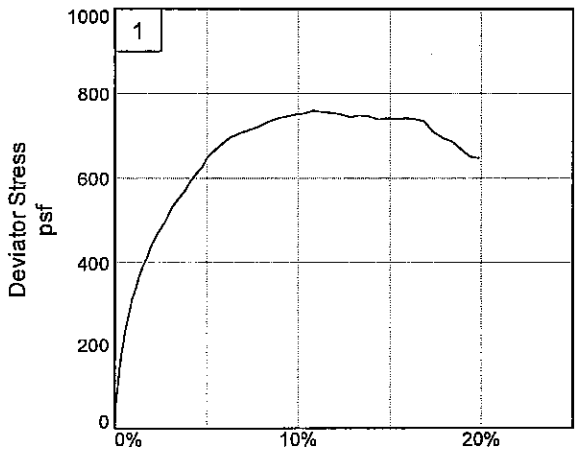
Client: FFEB JV, New Orleans, Louisiana

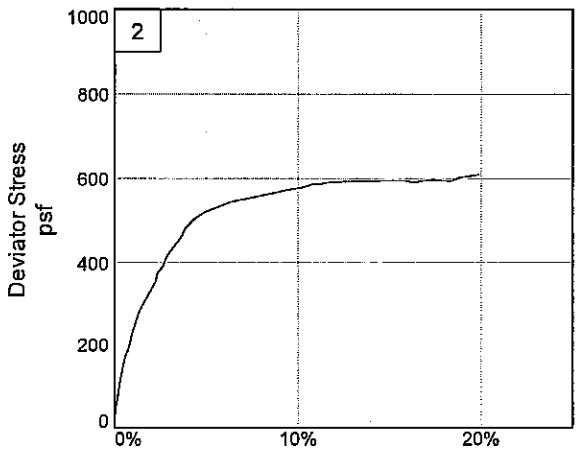
Project: Westwego to Harvey Canal

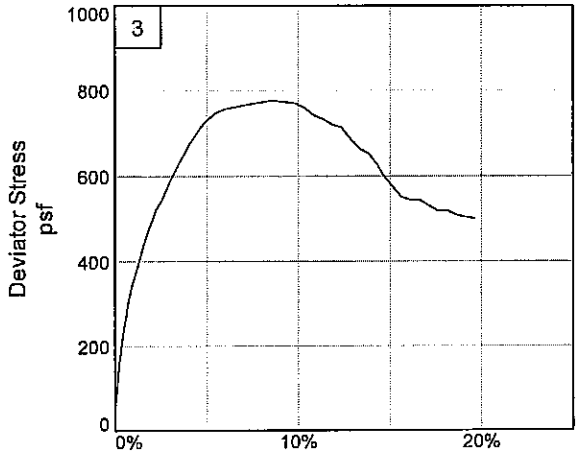
Source of Sample: WWHC-50UCL **Depth:** 37.7
Sample Number: 11C
Proj. No.: 0022-0002 **Date Sampled:** 4-18-07

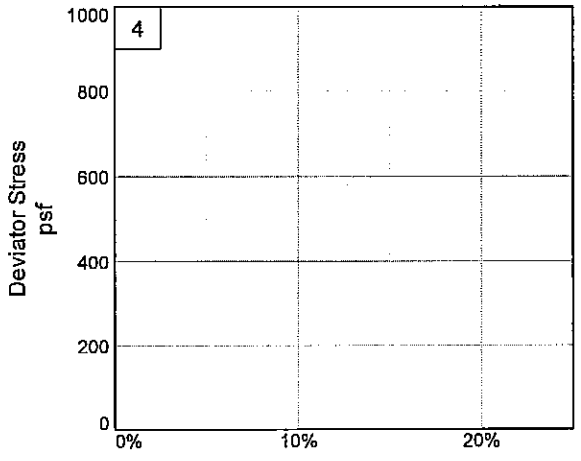
TRIAXIAL SHEAR TEST REPORT

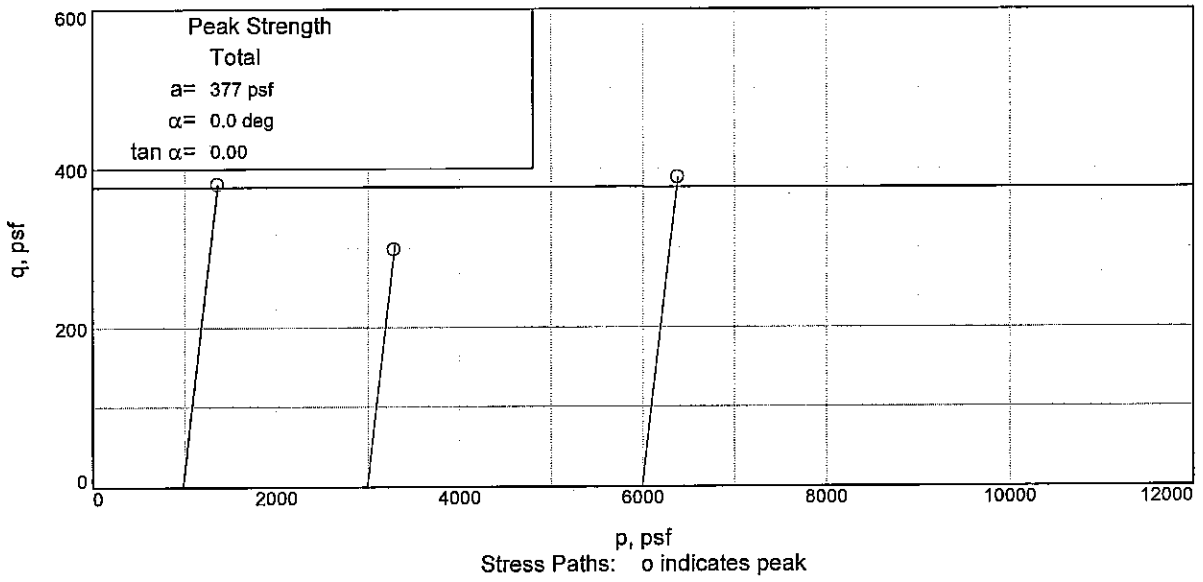
FFEBJV, LLC









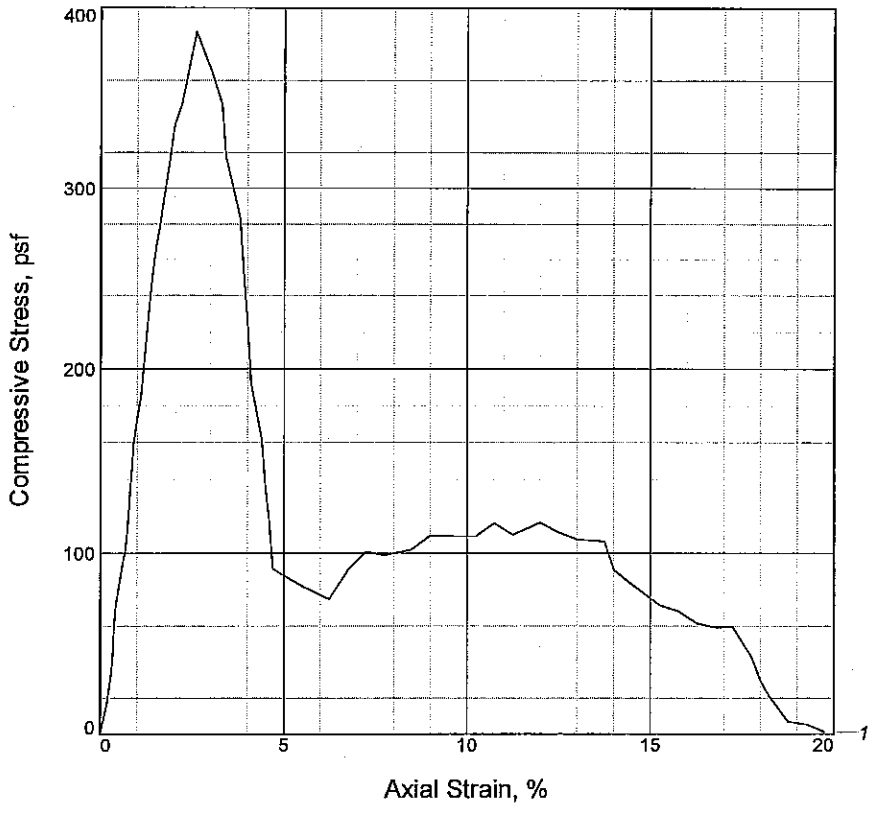


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-50UCL **Depth:** 37.7 **Sample Number:** 11C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	387			
Undrained shear strength, psf	193			
Failure strain, %	2.6			
Strain rate, in./min.	0.03			
Water content, %	25.9			
Wet density, pcf	123.0			
Dry density, pcf	97.7			
Saturation, %	97.4			
Void ratio	0.7122			
Specimen diameter, in.	1.38			
Specimen height, in.	3.18			
Height/diameter ratio	2.31			

Description: VSO GR CL4 W/ ARS SP

LL = 32	**PL** = 15	**PI** = 17	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-18-07
Remarks:

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

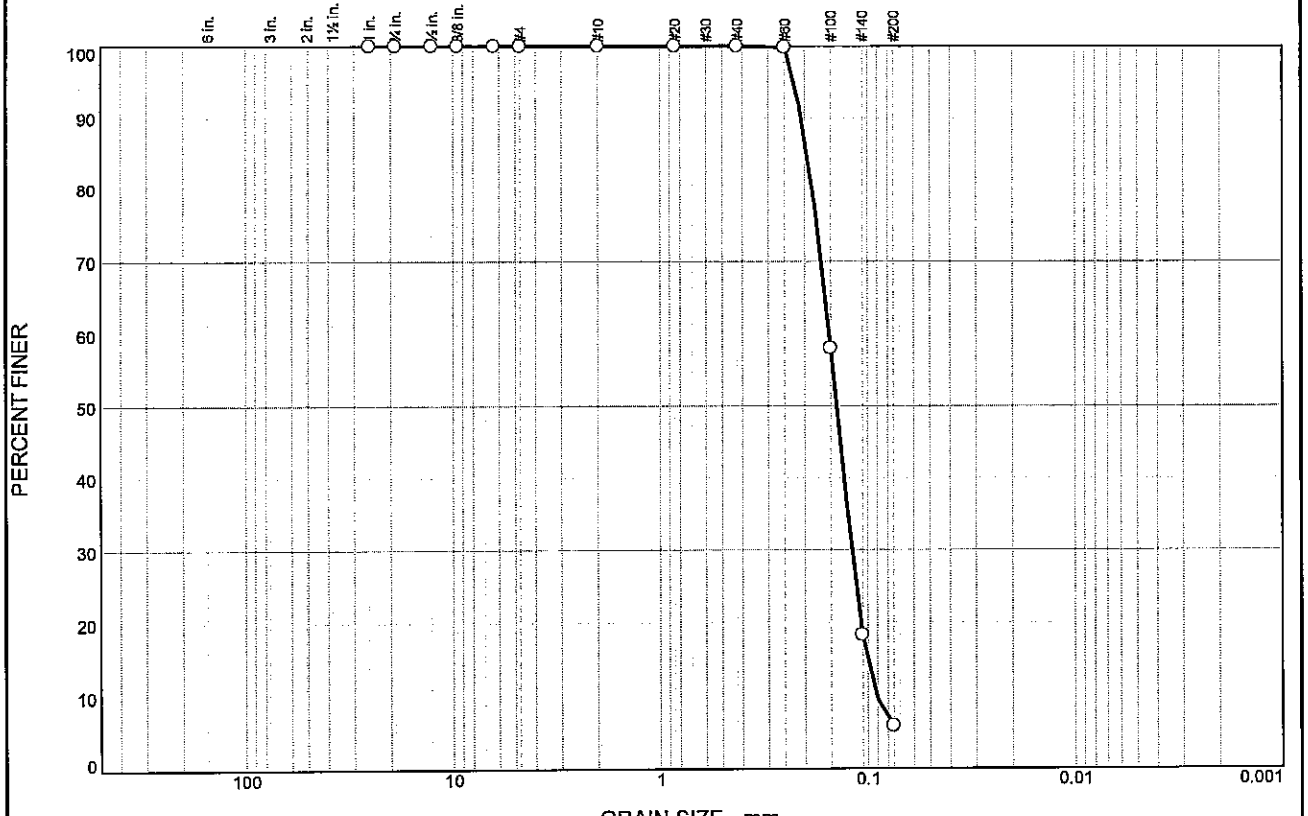
Source of Sample: WWHC-50UCL **Depth:** 40.8
Sample Number: 12B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	94.2	5.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.1947	0.1524	0.1406	0.1195	0.1012	0.0911	1.03	1.67

	Material Description	USCS	AASHTO
○	GR SP W/ WD	SP	

Project No. 0022-0002 **Client:** FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

○ **Source of Sample:** WWHC-50UCL **Depth:** 45.7 **Sample Number:** 13C

Remarks:

FFEBJV, LLC

Lexington, KY

Figure

Tested By: DL **Checked By:** WRM

BOR. WWHC-50UCL
STA. LAT N29^49'17.99" LONG W90^06'38.75"

18-19 APRIL 2007

GROUND EL. 13.4

0.0	0.8	15		CL	VSTLBRLGR	RT					
0.8	2.0	15		CL	VSTLBRLGR	RT		48	17		
2.0	2.8	23		CL	VSTLBRLGR	RT					
2.8	4.0	19		CL	VSTLBRLGR	RT					
4.0	4.8	25		CL	ST LBRLGR						
4.8	5.7	28	5.7CL		ST LBRLGR						
5.7	8.0		8.0NS								
8.0	8.8	26	8.8CL		ST LBRLGR						
8.8	9.7	29	9.7CH		ST LBRLGR						
9.7	12.0		12.0NS								
12.0	12.8	33		CH	M LBR						
12.8	13.7	33		CH	M LBRLGR						
13.7	16.0	35		CH	M LGRLBR	WD					
16.0	16.8	45		CH	M GR						
16.8	17.7	39		CH	M GR LBR	WD					
17.7	20.0	35	20.0CH		M GR LBR	WD					
20.0	20.8	33		CL	SO GR LBR						
20.8	21.7	34		CL	SO GR LBR						
21.7	24.0	34	24.0CL		SO GR LBR	WD	373118	48	18	34	220
24.0	24.8	35	24.8CL		SO BR GR						
24.8	25.7	33	25.7CL		SISSO GR	WD					
25.7	26.6	34		CL	SO GR	WD					
26.6	28.0	33		CL	SO GR	CS					
28.0	28.8	37	28.8CL		SO GR	CS					
28.8	29.7	29	29.7SM		GR	WD CS					
29.7	32.0	48	32.0CL		SISSO GR	SS					
32.0	32.8	57		CH	SIS M GR	WD					
32.8	33.7	45	33.7CH		SIS M GR	WD					
33.7	36.0	35		SP	GR	WD CS					
36.0	36.8	25		SP	GR						
36.8	37.7	25	37.7SP		GR	CS					
37.7	40.0	45	40.0CL		SS SO GR						
40.0	40.8	47	40.8CL		SISSO GR						
40.8	41.7	38	41.7CL		VSOGR	S	193123	32	15	26	411
41.7	44.0	24		SP	GR						
44.0	44.8	26		SP	GR						

44.8	45.7	26	SP	GR	CS	
45.7	46.6	27	SP	GR	WD	.0911
46.6	48.0	24	SP	GR	CS	
48.0	48.8	26	SP	GR		
48.8	49.7	26	SP	GR	CS	
49.7	52.0	19	SP	GR		
52.0	52.8	23	SP	GR		
52.8	53.7	29	SP	GR		
53.7	56.0	23	SP	GR		
56.0	56.8	23	SP	GR		
56.8	57.7	22	SP	GR		
57.7	60.0	22	SP	GR		
60.0	62.0	21	SP	T	11	
62.0	64.0	20	SP	T	17	
64.0	66.0	20	SP	T	15	
66.0	68.0	22	SP	T	17	
68.0	70.0	22	SP	T	16	
70.0	72.0	21	SP	T	18	
72.0	74.0	21	SP	T	21	
74.0	76.0	21	SP	T	21	
76.0	78.0	20	SP	T	25	
78.0	80.0	23	SP	T	24	
80.0	82.0	22	SP	T	23	
82.0	84.0	21	SP	T	22	
84.0	86.0	23	SP	T	19	
86.0	88.0	22	SP	T	24	
88.0	90.0	22	90.0SP	T	29	

999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 5.10/ 8.30 Water Con: 26.00
LL,PL,PI : 34, 20, 14 Dry Dens : 98.00
Cohesion : 0.512 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 9.10/ 4.30 Water Con: 26.00
LL,PL,PI : 51, 19, 32 Dry Dens : 99.00
Cohesion : 0.543 Saturat : 99.00

Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 14.00/-0.60 Water Con: 26.00
LL,PL,PI : 95, 21, 74 Dry Dens : 98.00
Cohesion : 0.434 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 18.00/-4.60 Water Con: 36.00
LL,PL,PI : 63, 18, 45 Dry Dens : 84.00
Cohesion : 0.329 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 30.00/-16.6 Water Con: 50.00
LL,PL,PI : 31, 24, 7 Dry Dens : 71.00
Cohesion : 0.227 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : SP
Depth/Ele: 34.00/-20.6 Water Con: 32.00
LL,PL,PI : , , Dry Dens : 91.00
Cohesion : 0.292 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 38.00/-24.6 Water Con: 45.00

LL,PL,PI : 42, 15, 27 Dry Dens : 75.00
Cohesion : 0.189 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program

Assigned By: _____

Current Date: 8/26/2008

Project Number: 0022-0002
Boring: WWHC-50UFT

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	ST GR & BR CH2 W/ RT	CH2		27												
1B	0.8	ST GR & BR CH2 W/ RT	CH2	8	21	103	125	90	UC	--	1965	3930	53	17	36	0.11	
2A	2.0	ST T CH2 W/ O	CH2		30												
3A	4.0	M BR & GR CH2	CH2		33												
3B	4.8	M GR CH3 W/ ARS ML, WD, RT	CH3		41												
3C	5.7	M GR CH4 W/ ARS ML, WD	CH4		38	84	116	100	UU	0	892		77	20	57	0.55	
4A	8.0	M GR CH3 W/ RT, ARS ML	CH3		43												
4B	8.8	M GR CH3 W/ ARS ML, RT	CH3		38	81	112	94	UU	0	725		68	18	50	0.31	
NS	9.7	NO SAMPLE	NS														
5A	12.0	SO GR & BR CL4 W/ WD	CL4		39												
5B	12.8	SO GR & BR CL4	CL4		34												
5C	13.7	VSO GR & BR CL4 W/ ARS CH	CL4	14	33	90	120	100	UC	--	156	312	36	19	17	0.15	
6A	16.0	M GR CH3 W/ LNS ML	CH3		53												
6B	16.8	M GR CL4 W/ LNS ML	CL4		34	86	116	97	UU	0	662		32	22	10	0.34	
6C	17.7	SO GR CL6 W/ LNS CH	CL6		36												
7A	20.0	SO GR CL6 W/ RT, ARS CH	CL6		47												
7B	20.8	SO GR CH2	CH2		43	79	112	100	UU	0	355		56	19	37	0.25	
7C	21.7	SO GR CL6 W/ RT, WD	CL6		42												
7D	22.6	GR ML2 W/ WD	ML2		32												
8A	24.0	M GR CH2 W/ LNS ML	CH2		42								72	29	43		Gs, CON
8B	24.8'	M GR CH3 W/ LNS ML & ARS SP	CH3		38	80	112	95					44	20	24	0.20	
8C	25.7	M GR CL6 W/ ARS SP, LNS CH	CL6		38	85	117	100	UU	0	563						
8D	26.6	GR SP W/ LNS CH	SP		26												
9A	28.0	SO GR CH4 W/ SL, LNS ML	CH4		67												
9B	28.8	SO GR CH4 W/ SL, LNS ML	CH4		62												
9C	29.7	SO GR CH4 W/ LNS ML, SL	CH4		49	73	109	100	UU	0	462		70	20	50	0.23	
9D	30.6	M GR CH4 W/ SL, LNS ML	CH4		57												
10A	32.0	GR ML1	ML1		29												
10B	32.8	GR ML1	ML1		28												
10C	33.7	GR ML1 W/ LNS CH	ML1	6	47	75	111	100	UC	--	361	721	NP	NP		0.25	
11A	36.0	M GR CH4 W/ LYS SP, LNS ML	CH4		59												
11B	36.8	GR ML1 W/ LNS CH	ML1		23												
11C	37.7	GR ML1	ML1		26												
12A	40.0	GR ML1 W/ ARS CH	ML1		28												
12B	40.8	GR ML1 W/ LNS CH	ML1		27												SV
12C	41.7	GR ML1 W/ LNS CH	ML1		24												
12D	42.6	GR SP W/ LNS CH	SP		23												

Remarks: 1 consolidation (8B) added WJY

FFEBJV, LLC.

Checked by: JC

File Name: TO 2 WWHC

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program

Assigned By: _____

Current Date: 8/26/2008

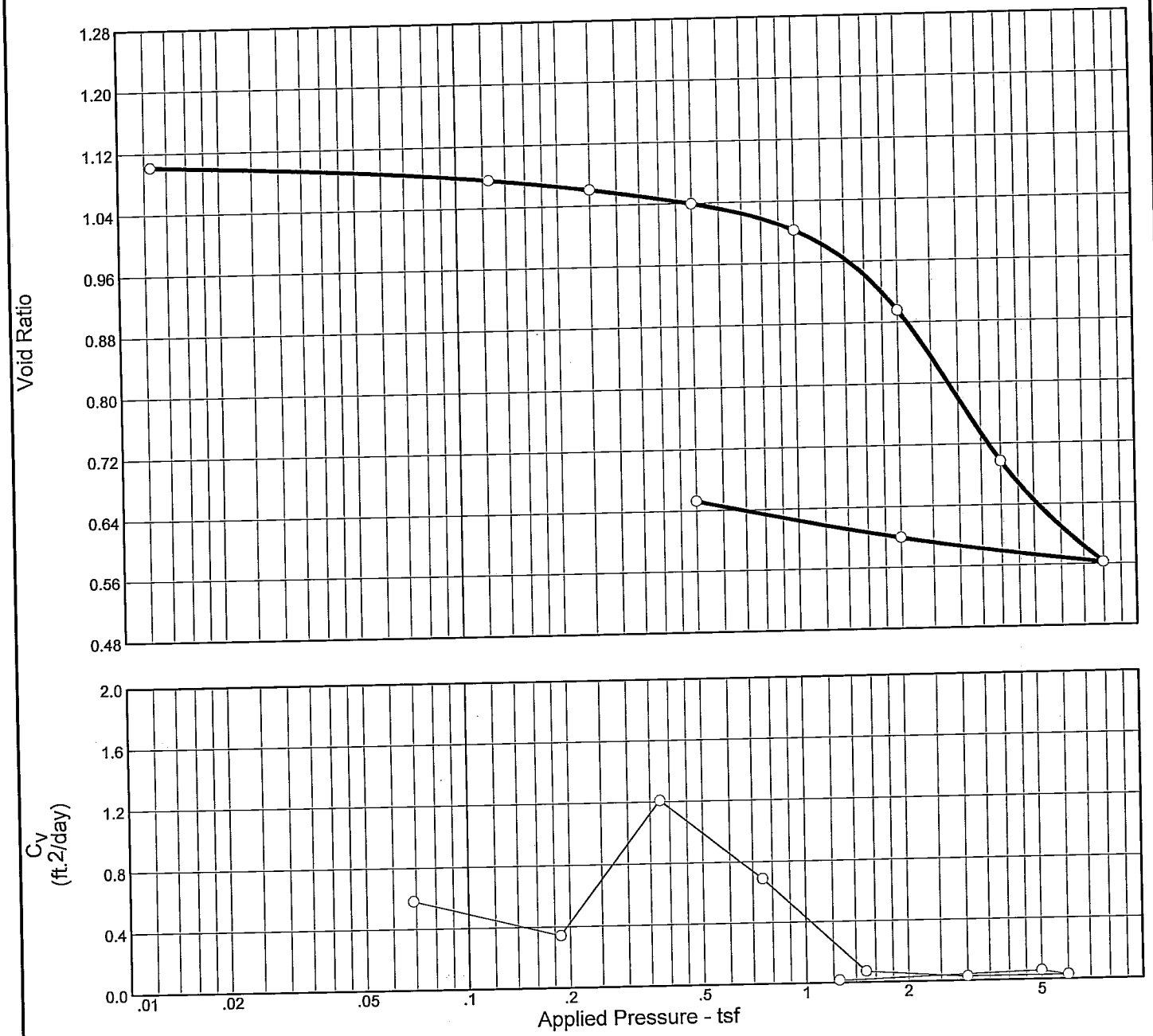
Project Number: 0022-0002
Boring: WWHC-50UFT

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
13A	44.0	GR SP W/ ARS CH	SP		23												
13B	44.8	GR SP W/ ARS CH	SP		23												
13C	45.7	GR SP W/ LNS CH	SP		23												
14A	48.0	GR SP	SP		24												
14B	48.8	GR SP	SP		22												
14C	49.7	GR SP	SP		21												
15A	52.0	GR SP W/ ARS CH	SP		23												
15B	52.8	GR SP	SP		25												SV
15C	53.7	GR SP	SP		24												
15D	54.6	GR SP	SP		21												
16A	56.0	GR SP	SP		26												
16B	56.8	GR SP	SP		25												
16C	57.7	GR SP	SP		23												
17A	60.0	GR SP	SP		19												
17B	60.8	GR SP	SP		28												
17C	61.7	GR SP	SP		25												
17D	62.6	GR SP	SP		22												
18A	64.0	GR SP	SP		27												
18B	64.8	GR SP	SP		26												
18C	65.7	GR SP	SP		27												
19	68.0	GR SP W/ ARS CH	SP		35												

Remarks: 1 consolidation (SB) added WJY
FFEBJV, LLC.

Checked by: JC
File Name: TO 2 WWHC

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
95.3 %	38.6 %	80.8	72	43	2.72	1.60	0.66	1.102

MATERIAL DESCRIPTION	USCS	AASHTO
M GR CH3 W/ LNS ML & ARS SP	CH3	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source: WWHC-50UFT **Sample No.:** 8B **Elev./Depth:** 24.8'

FFEBJV, LLC

St Rose, LA

Remarks:

Tested by: CB
Calculated by: MR
Checked by: WJY

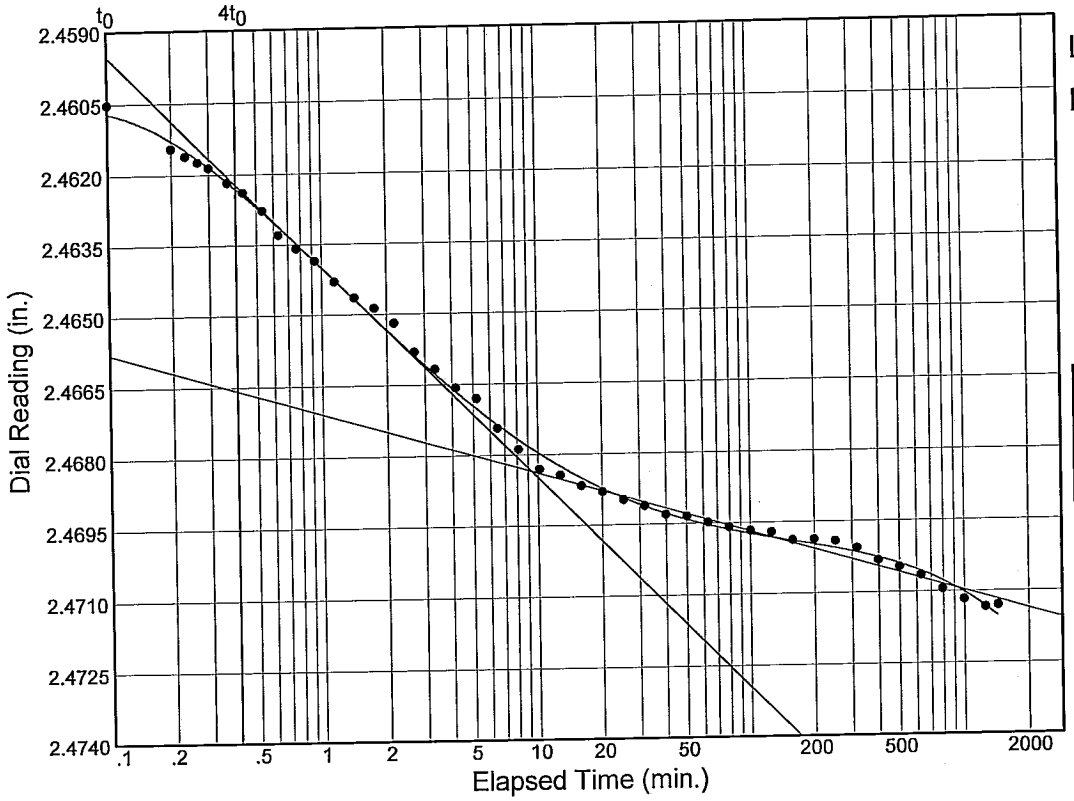
Specific Gravity is assumed.

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

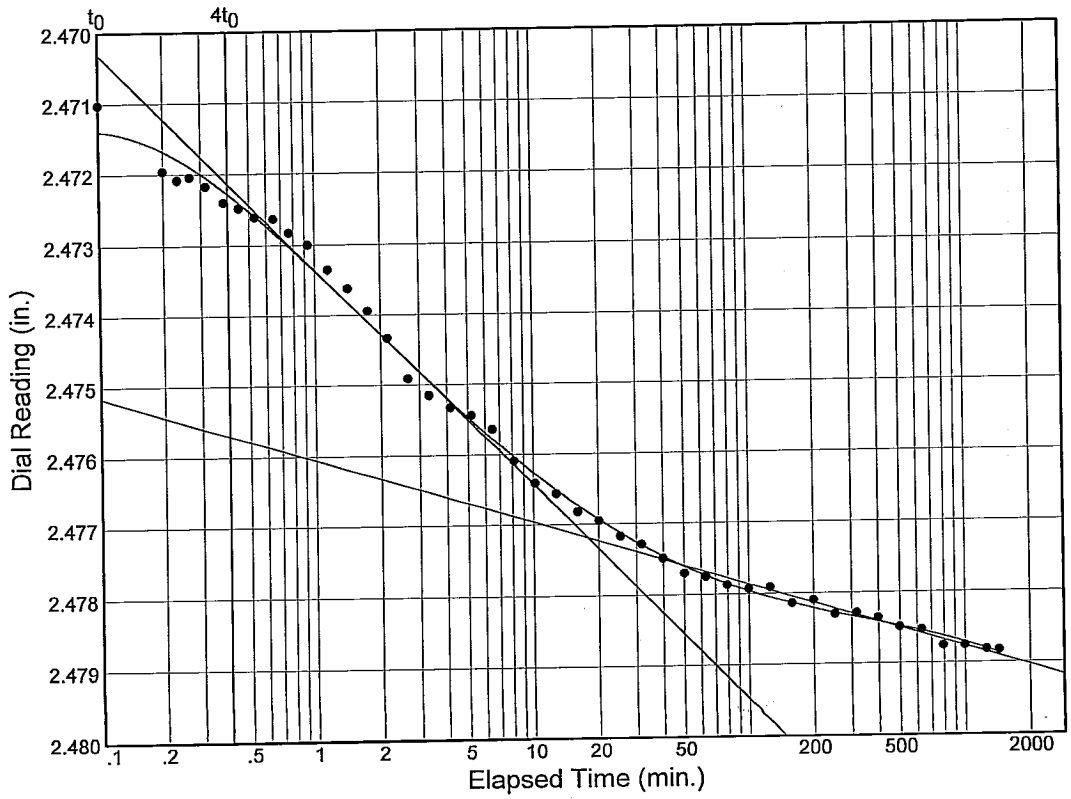
Source: WWHC-50UFT Sample No.: 8B Elev./Depth: 24.8'



Load No.= 2
Load= 0.13 tsf
D_0 = 2.45911
D_{50} = 2.46373
D_{100} = 2.46834
T_{50} = 0.87 min.

C_v @ T_{50}
0.58 ft.^{2}/day

C_α = 0.001



Load No.= 3
Load= 0.25 tsf
D_0 = 2.47052
D_{50} = 2.47385
D_{100} = 2.47718
T_{50} = 1.44 min.

C_v @ T_{50}
0.34 ft.^{2}/day

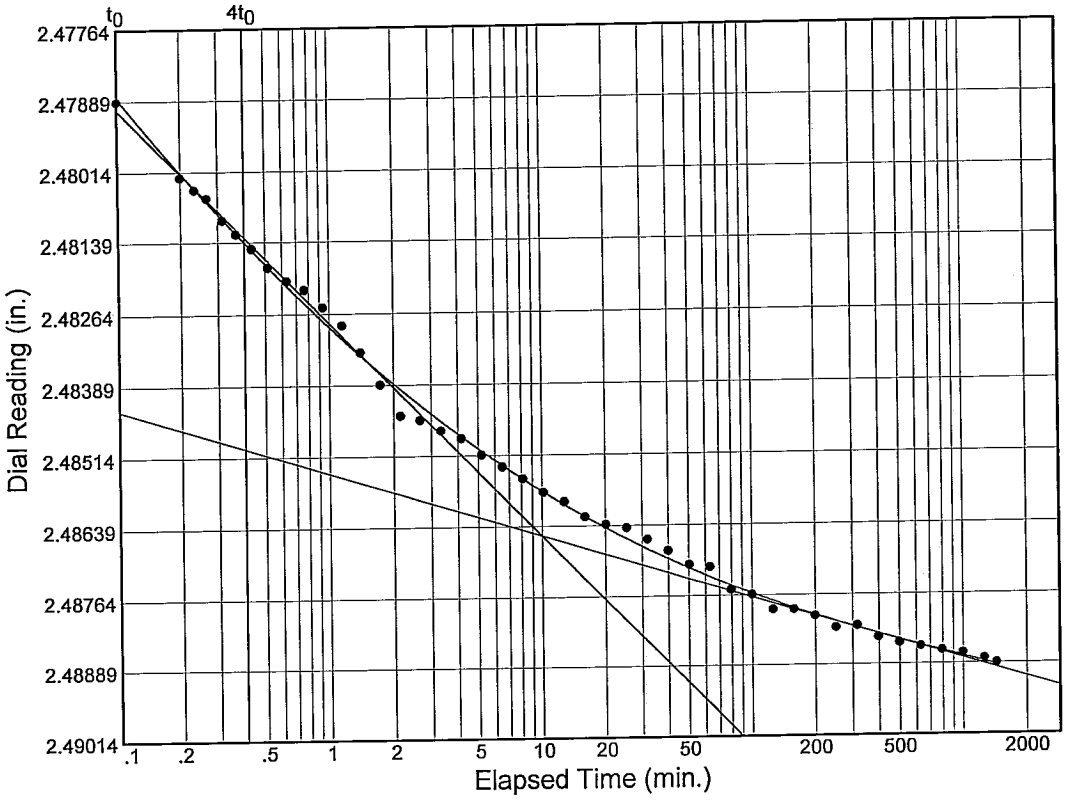
C_α = 0.001

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

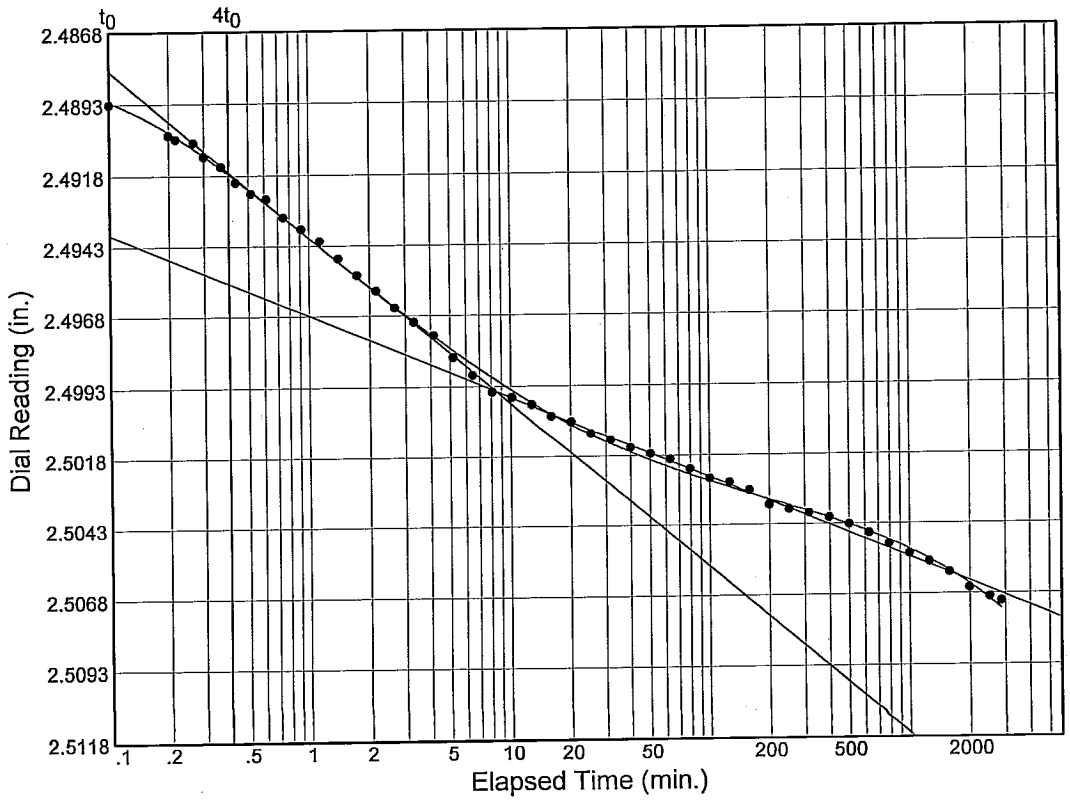
Source: WWHC-50UFT Sample No.: 8B Elev./Depth: 24.8'



Load No.= 4
Load= 0.50 tsf
D_0 = 2.47626
D_{50} = 2.48141
D_{100} = 2.48655
T_{50} = 0.40 min.

C_v @ T_{50}
1.21 ft.^{2}/day

C_α = 0.001



Load No.= 5
Load= 1.00 tsf
D_0 = 2.48668
D_{50} = 2.49307
D_{100} = 2.49946
T_{50} = 0.69 min.

C_v @ T_{50}
0.69 ft.^{2}/day

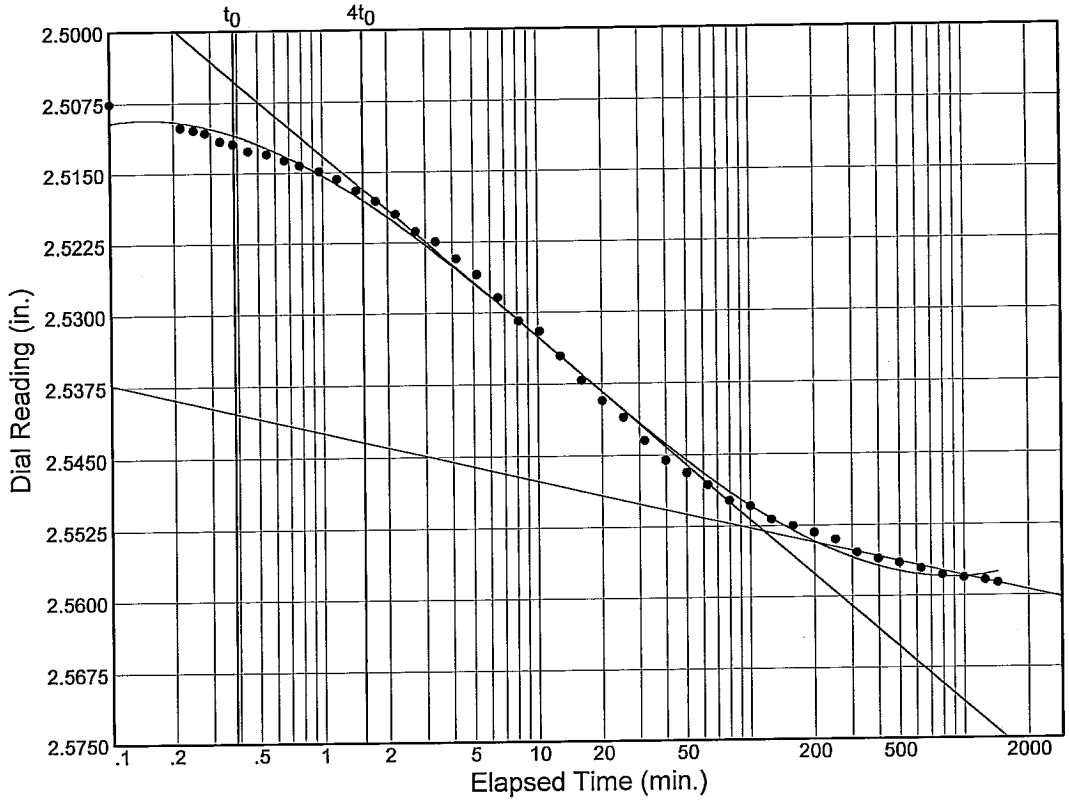
C_α = 0.003

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

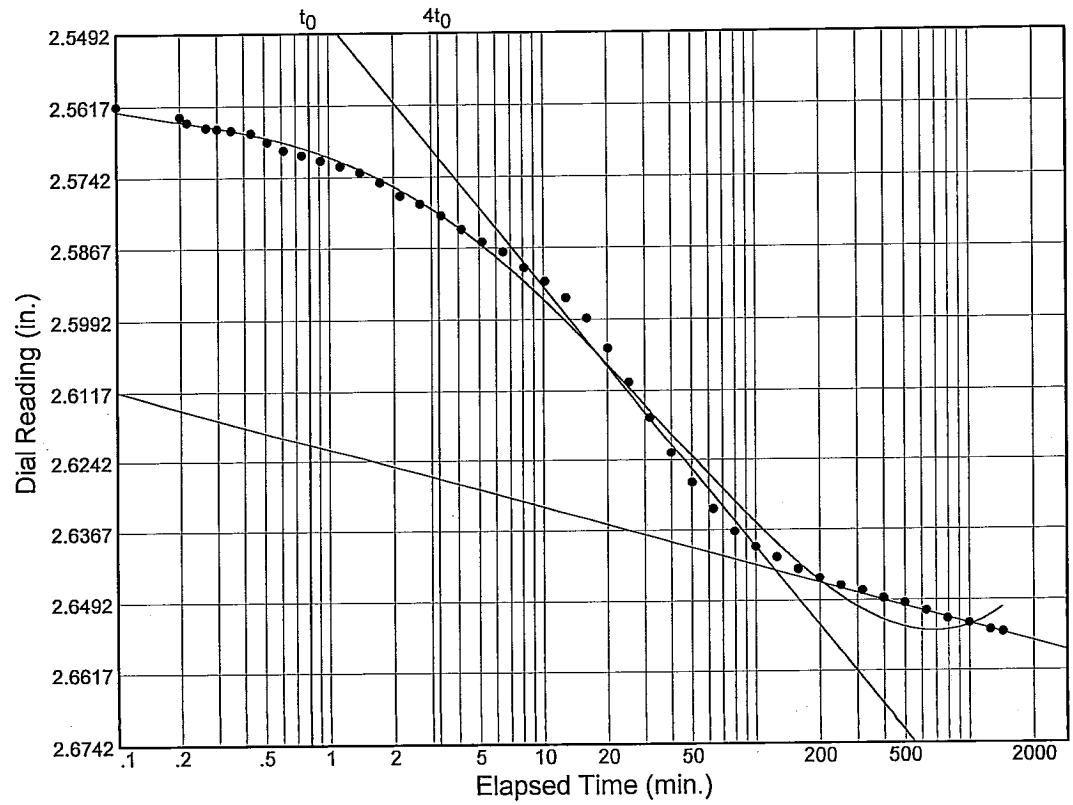
Source: WWHC-50UFT Sample No.: 8B Elev./Depth: 24.8'



Load No.= 6
Load= 2.00 tsf
D_0 = 2.50392
D_{50} = 2.52847
D_{100} = 2.55302
T_{50} = 6.14 min.

C_v @ T_{50}
0.07 ft.^{2}/day

C_α = 0.005



Load No.= 7
Load= 4.00 tsf
D_0 = 2.55821
D_{50} = 2.60102
D_{100} = 2.64382
T_{50} = 13.94 min.

C_v @ T_{50}
0.03 ft.^{2}/day

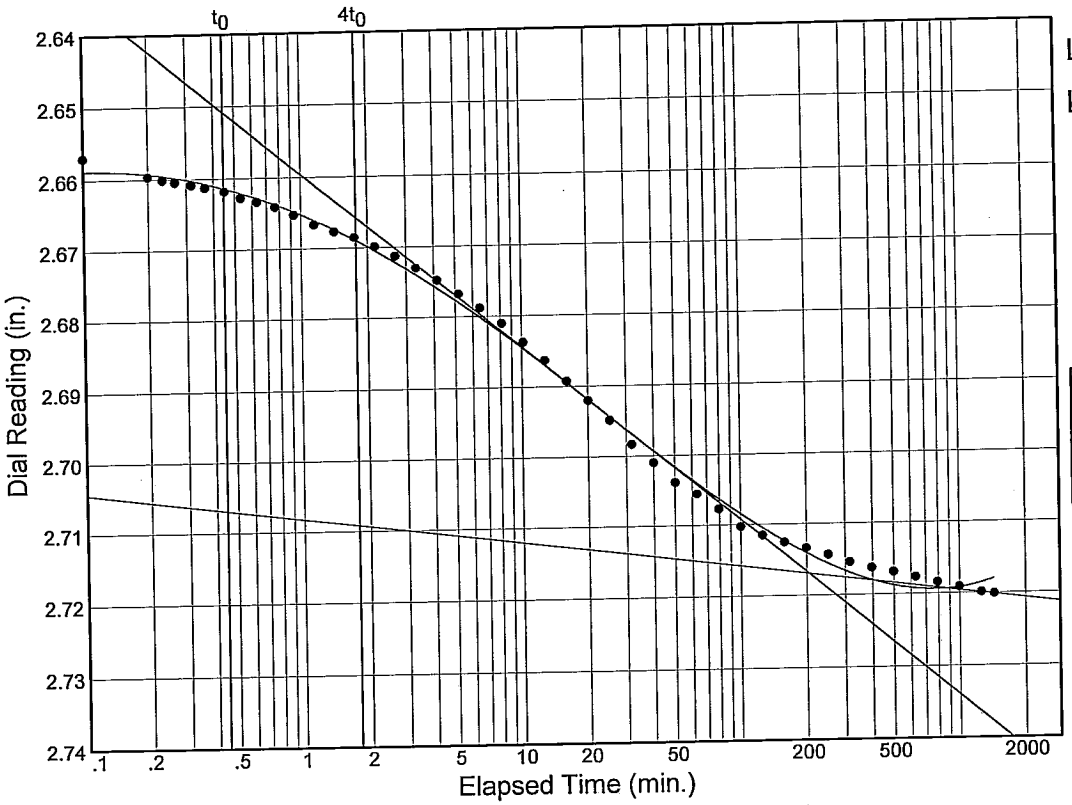
C_α = 0.011

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

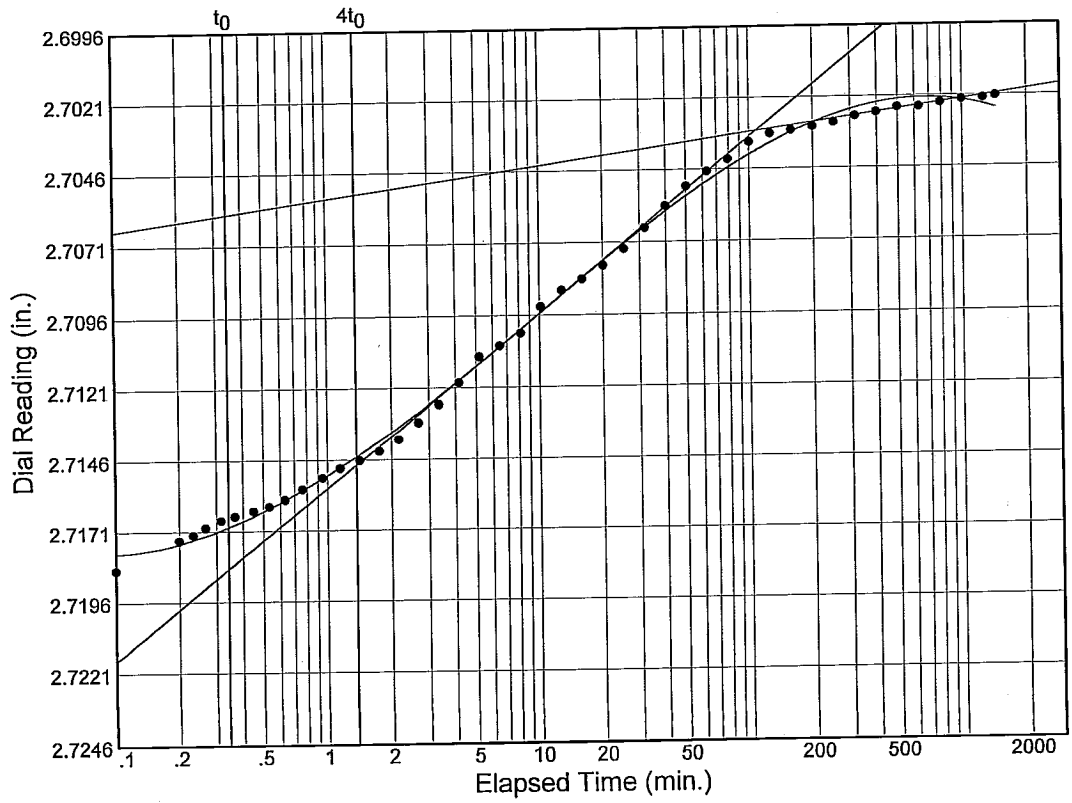
Source: WWHC-50UFT Sample No.: 8B Elev./Depth: 24.8'



Load No.= 8
Load= 8.00 tsf
D_0 = 2.65369
D_{50} = 2.68531
D_{100} = 2.71692
T_{50} = 10.80 min.

C_v @ T_{50}
0.03 ft.^{2}/day

C_α = 0.005



Load No.= 9
Load= 2.00 tsf
D_0 = 2.71942
D_{50} = 2.71134
D_{100} = 2.70327
T_{50} = 5.05 min.

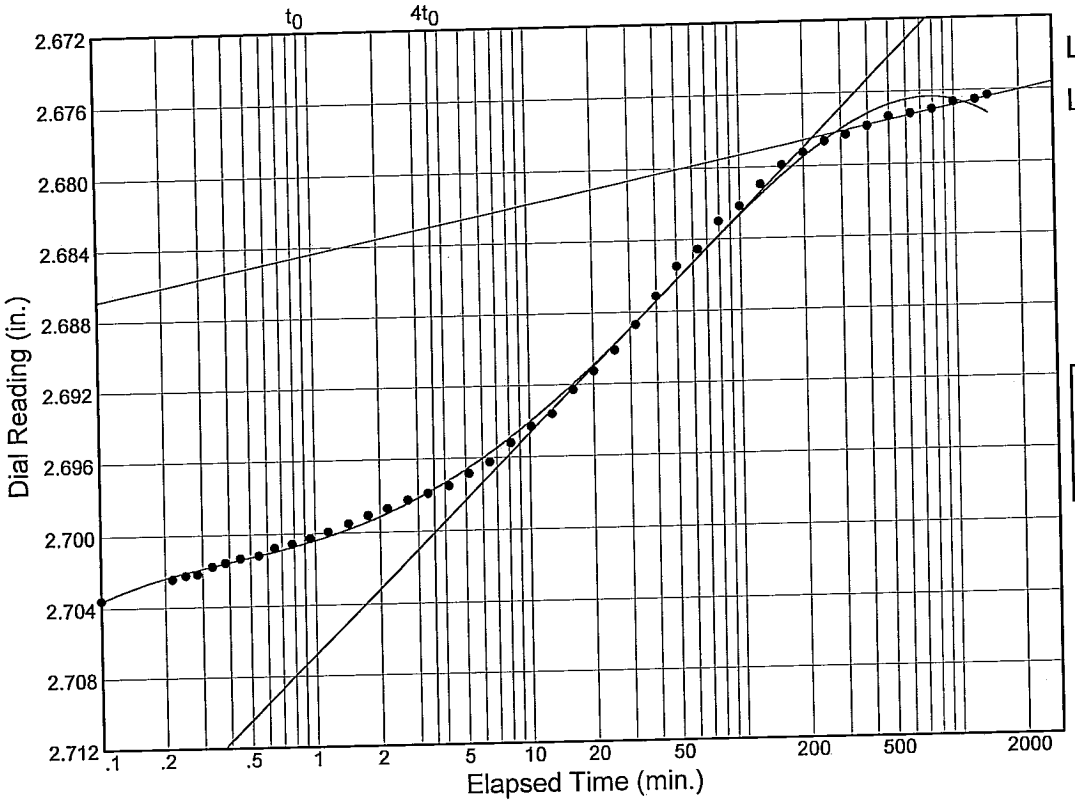
C_v @ T_{50}
0.06 ft.^{2}/day

Figure

Dial Reading vs. Time

Project No.: 0022-0002
Project: Westbank 100-yr Boring Program

Source: WWHC-50UFT Sample No.: 8B Elev./Depth: 24.8'



Load No.= 10

Load= 0.50 tsf

D_0 = 2.70342

D_{50} = 2.69092

D_{100} = 2.67842

T_{50} = 20.09 min.

C_v @ T_{50}
0.02 ft.^{2}/day

Figure

SWELL/CONSOLIDATION TEST DATA

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Contract No. W912P8-07-D-0022
Task Order No. 0002
Project Number: 0022-0002

Sample Data

Source: WWHC-50UFT
Sample No.: 8B
Elev. or Depth: 24.8'
Location:
Description: M GR CH3 W/ LNS ML & ARS SP
Liquid Limit: 72
USCS: CH3
AASHTO:
Testing Remarks: Tested by: CB
Calculated by: MR
Checked by: WJY

Specific Gravity is assumed.

Sample Length(in./cm.):

Plasticity Index: 43
Figure No.:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST		AFTER TEST	
Wet w+t =	138.64 g.	Consolidometer # =	20	Wet w+t =	115.93 g.
Dry w+t =	100.00 g.			Dry w+t =	93.19 g.
Tare Wt. =	.00 g.	Spec. Gravity =	2.72	Tare Wt. =	32.37 g.
Height =	1.02 in.	Height =	1.02 in.		
Diameter =	4.00 in.	Diameter =	4.00 in.		
Weight =	375.39 g.	Defl. Table =	n/a		
Moisture =	38.6 %	Ht. Solids =	0.4844 in.	Moisture =	37.4 %
Wet Den. =	112.0 pcf	Dry Wt. =	270.77 g.*	Dry Wt. =	60.82 g.
Dry Den. =	80.8 pcf	Void Ratio =	1.102	Void Ratio =	0.653
		Saturation =	95.3 %		

*** Initial dry weight used in calculations**

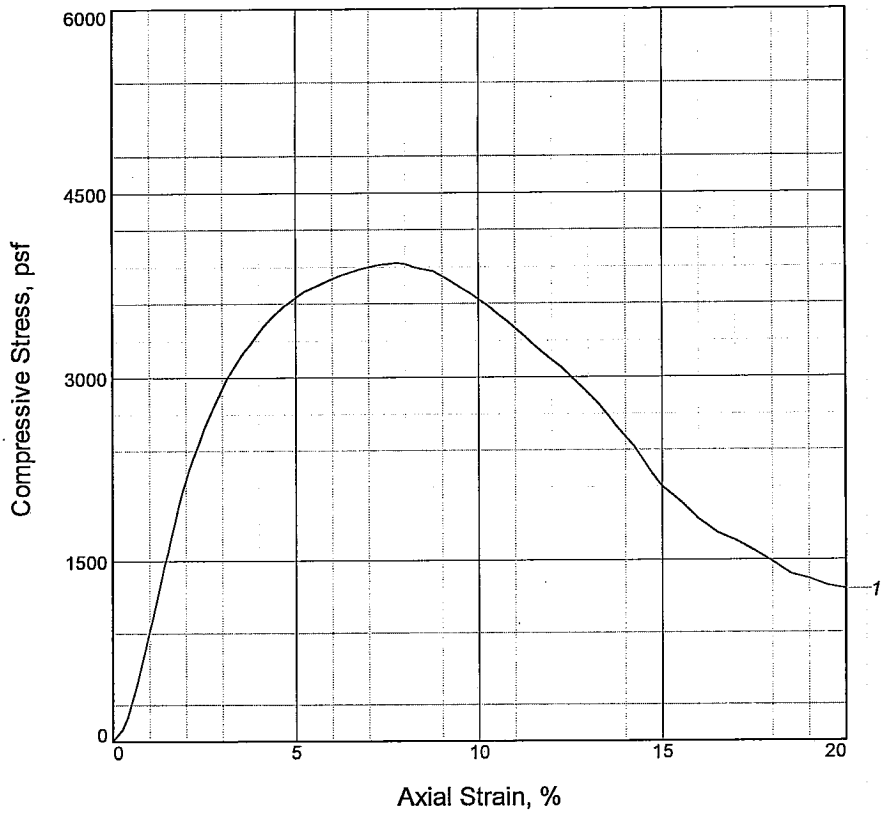
End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	2.45865				1.102	
0.01	2.45856	0.00000			1.102	0.0 Swell
0.13	2.47130	0.00000	0.58	0.001	1.076	1.2 Comprs.
0.25	2.47883	0.00000	0.34	0.001	1.061	2.0 Comprs.
0.50	2.48889	0.00000	1.21	0.001	1.040	3.0 Comprs.
1.00	2.50707	0.00000	0.69	0.003	1.002	4.8 Comprs.
2.00	2.55866	0.00000	0.07	0.005	0.896	9.8 Comprs.
4.00	2.65492	0.00000	0.03	0.011	0.697	19.3 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v ($ft.^2$/day)	C_α	Void Ratio	% Compression /Swell
8.00	2.72012	0.00000	0.03	0.005	0.562	25.7 Comprs.
2.00	2.70213	0.00000	0.06		0.600	23.9 Comprs.
0.50	2.67630	0.00000	0.02		0.653	21.4 Comprs.

C_c = 0.66 P_c = 1.60 tsf C_r = 0.08

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	3930			
Undrained shear strength, psf	1965			
Failure strain, %	7.8			
Strain rate, in./min.	0.03			
Water content, %	21.4			
Wet density, pcf	124.6			
Dry density, pcf	102.6			
Saturation, %	89.9			
Void ratio	0.6427			
Specimen diameter, in.	1.45			
Specimen height, in.	3.18			
Height/diameter ratio	2.20			

Description: ST GR & BR CH2 W/ RT

LL = 53	**PL** = 17	**PI** = 36	**Assumed GS**= 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-18-07
Remarks:

Figure _____

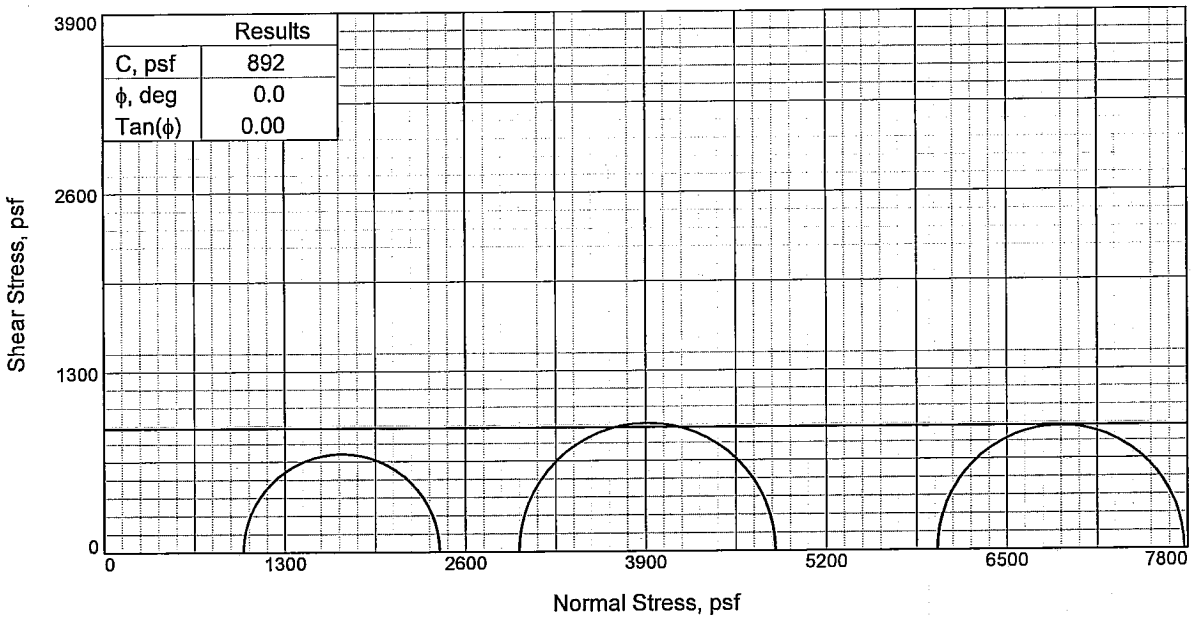
Client: FFEB JV, New Orleans, Louisiana

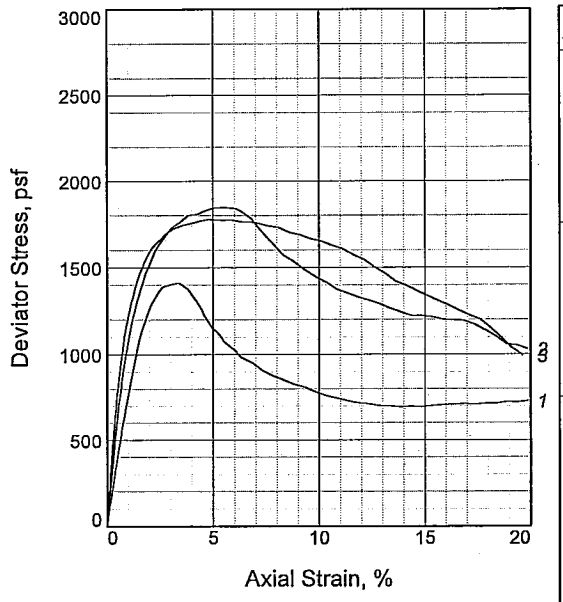
Project: Westwego to Harvey Canal

Source of Sample: WWHC-50UFT **Depth:** 0.8
Sample Number: 1B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	38.1	37.2	38.1
	Dry Density, pcf	83.2	85.4	84.6
	Saturation, %	99.6	102.4	102.8
	Void Ratio	1.0407	0.9881	1.0069
	Diameter, in.	1.43	1.41	1.41
	Height, in.	3.14	3.16	3.18
At Test	Water Content, %	38.1	37.2	38.1
	Dry Density, pcf	83.2	85.4	84.6
	Saturation, %	99.6	102.4	102.8
	Void Ratio	1.0407	0.9881	1.0069
	Diameter, in.	1.43	1.41	1.41
	Height, in.	3.14	3.16	3.18
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.94	20.74	41.65
Fail. Stress, psf		1412	1846	1777
Strain, %		3.3	5.6	4.8
Ult. Stress, psf		695	1224	1339
Strain, %				
σ_1 Failure, psf		2412	4833	7775
σ_3 Failure, psf		1000	2987	5998

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH4 W/ ARS ML, WD

LL= 77 **PL=** 20 **PI=** 57

Assumed Specific Gravity= 2.72

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

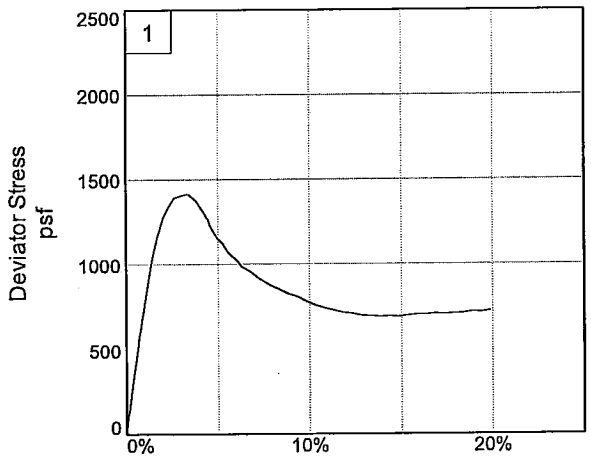
Source of Sample: WWHC-50UFT **Depth:** 5.7

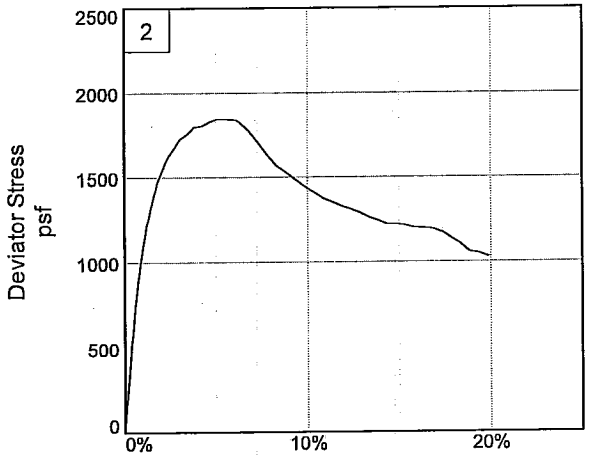
Sample Number: 3C

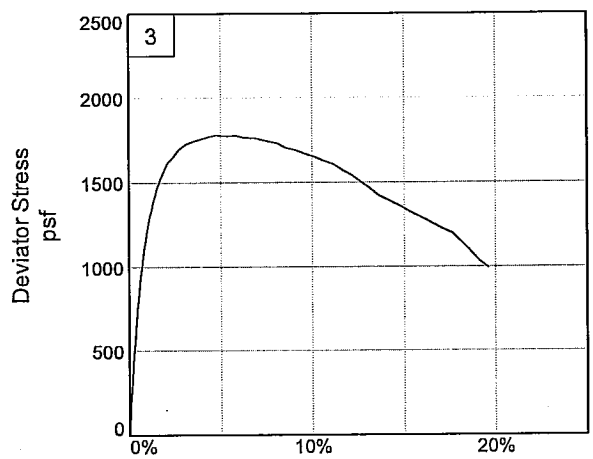
Proj. No.: 0022-0002 **Date Sampled:** 4-18-07

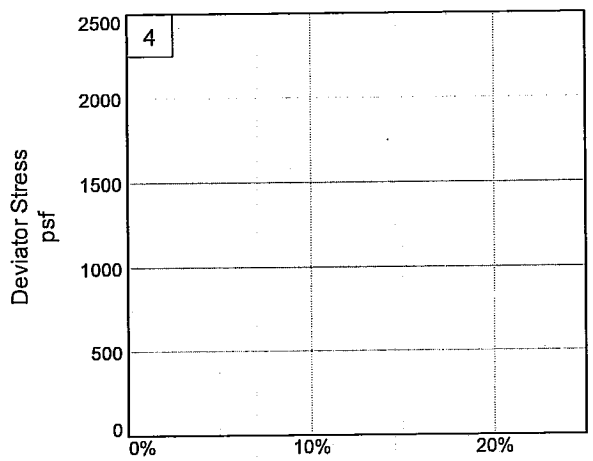
TRIAXIAL SHEAR TEST REPORT

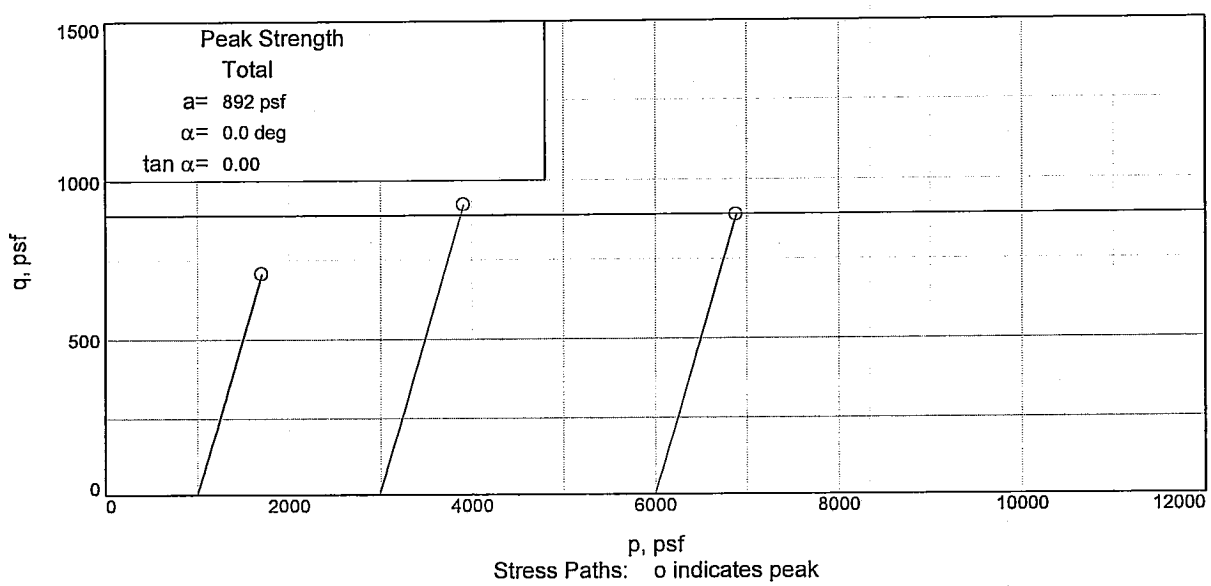
FFEBJV, LLC







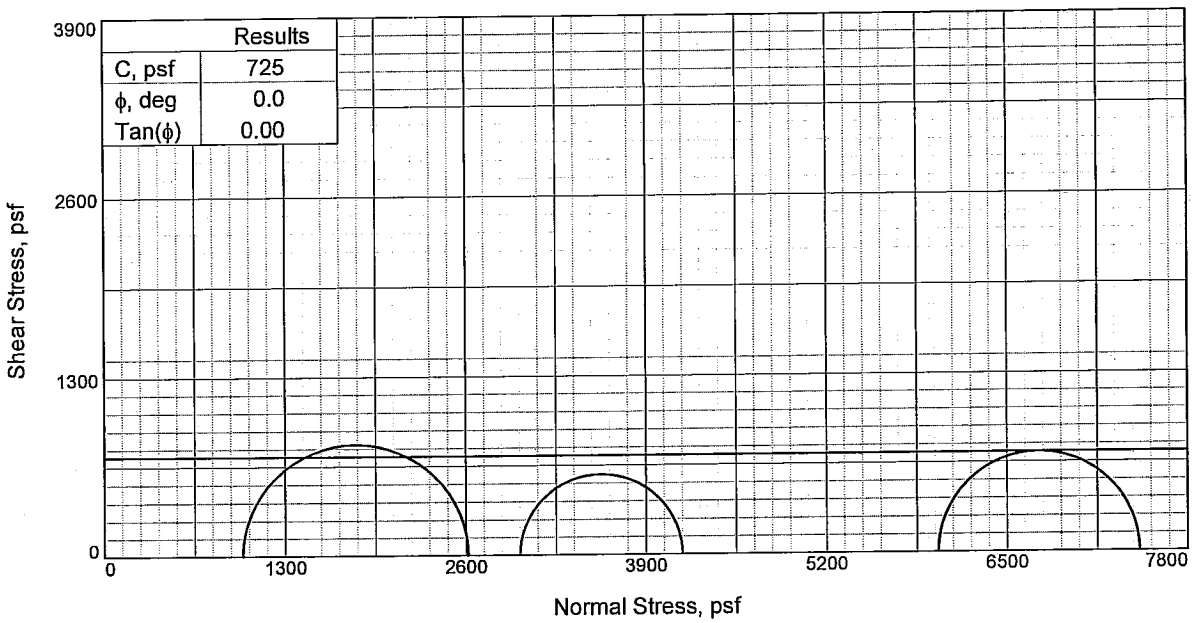


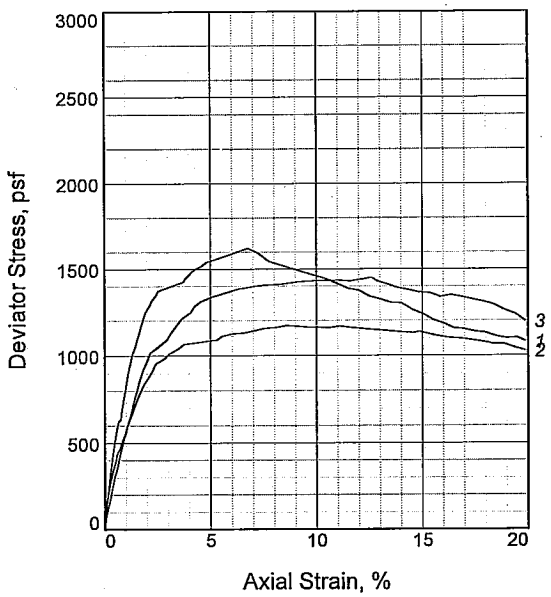


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-50UFT **Depth:** 5.7 **Sample Number:** 3C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	35.1	42.7	35.6
	Dry Density, pcf	84.0	76.1	83.9
	Saturation, %	93.3	94.3	94.4
	Void Ratio	1.0224	1.2307	1.0244
	Diameter, in.	1.39	1.41	1.41
	Height, in.	3.18	3.21	3.13
At Test	Water Content, %	35.1	42.7	35.6
	Dry Density, pcf	84.0	76.1	83.9
	Saturation, %	93.3	94.3	94.4
	Void Ratio	1.0224	1.2307	1.0244
	Diameter, in.	1.39	1.41	1.41
	Height, in.	3.18	3.21	3.13
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.76	41.69
Fail. Stress, psf		1622	1171	1451
Strain, %		6.8	8.6	12.6
Ult. Stress, psf		1238	1138	1364
Strain, %				
σ_1 Failure, psf		2616	4161	7454
σ_3 Failure, psf		994	2990	6003

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH3 W/ ARS ML, RT

LL= 68 **PL=** 18 **PI=** 50
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

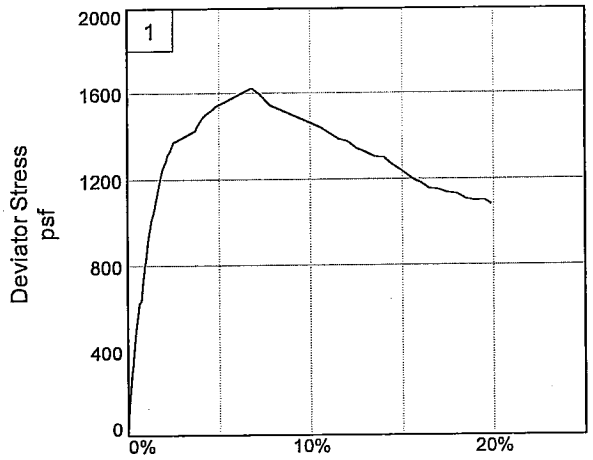
Client: FFEB JV, New Orleans, Louisiana

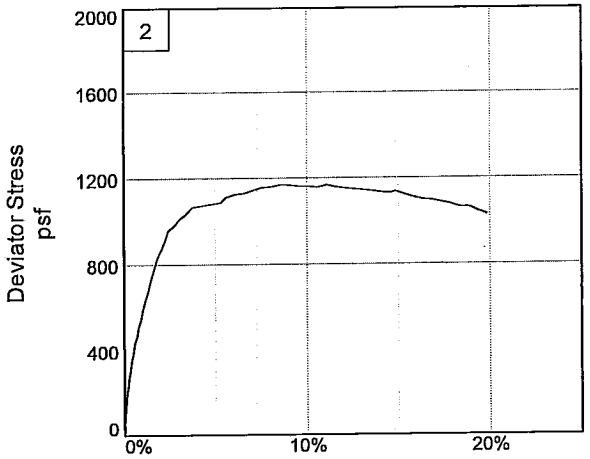
Project: Westwego to Harvey Canal

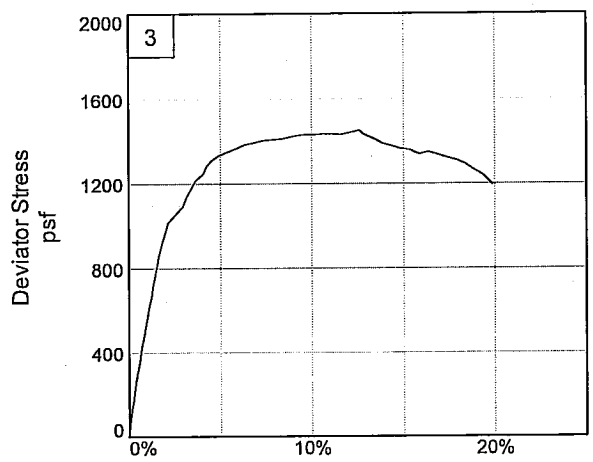
Source of Sample: WWHC-50UFT **Depth:** 8.8
Sample Number: 4B
Proj. No.: 0022-0002 **Date Sampled:** 4/18/2007

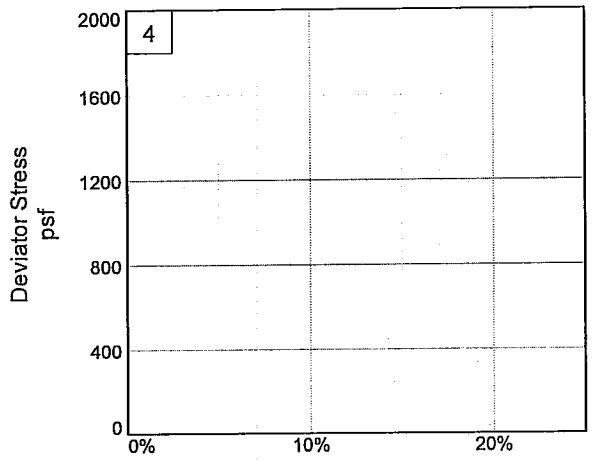
TRIAXIAL SHEAR TEST REPORT

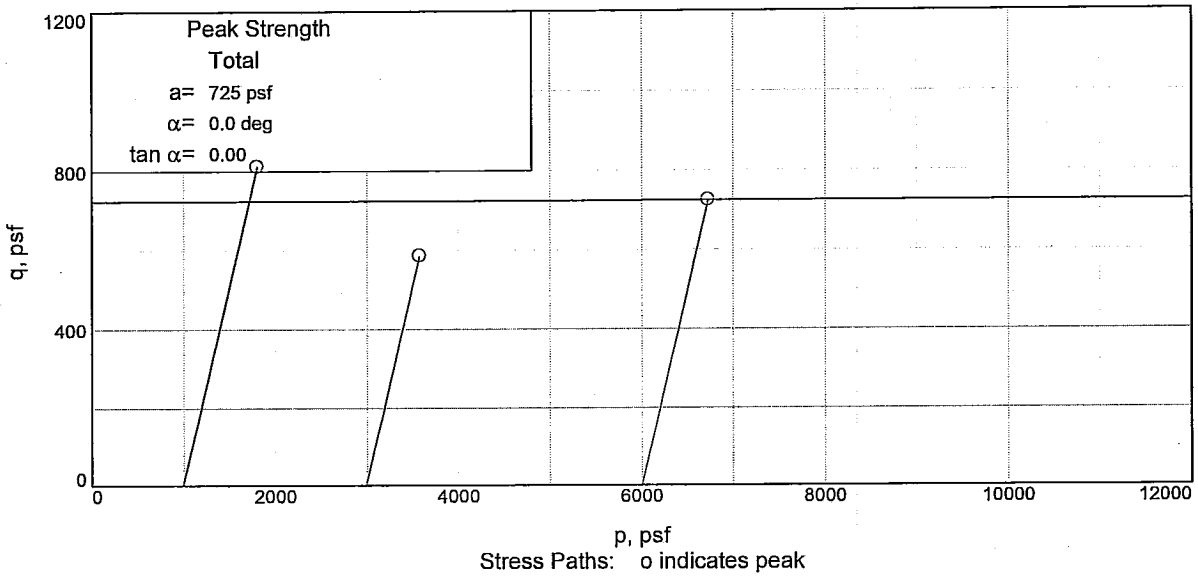
FFEBJV, LLC









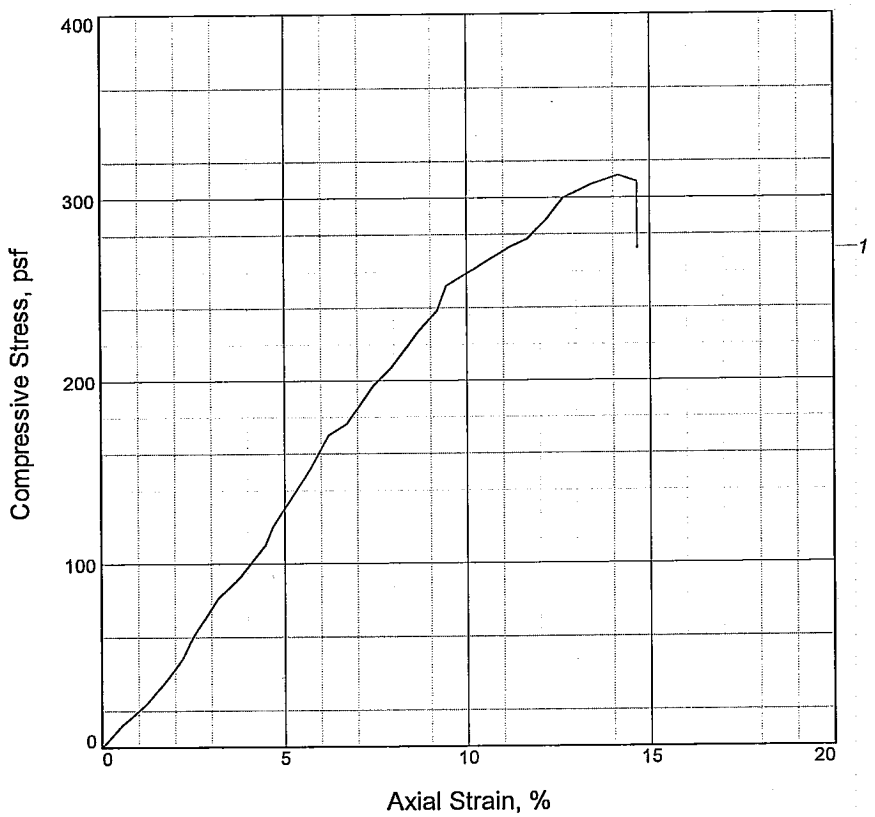


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-50UFT **Depth:** 8.8 **Sample Number:** 4B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	312			
Undrained shear strength, psf	156			
Failure strain, %	14.2			
Strain rate, in./min.	0.03			
Water content, %	32.6			
Wet density, pcf	119.8			
Dry density, pcf	90.3			
Saturation, %	102.5			
Void ratio	0.8526			
Specimen diameter, in.	1.44			
Specimen height, in.	2.85			
Height/diameter ratio	1.98			

Description: VSO GR & BR CL4 W/ ARS CH

LL = 36	**PL =** 19	**PI =** 17	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4/18/2007
Remarks:

Client: FFEB JV, New Orleans, Louisiana

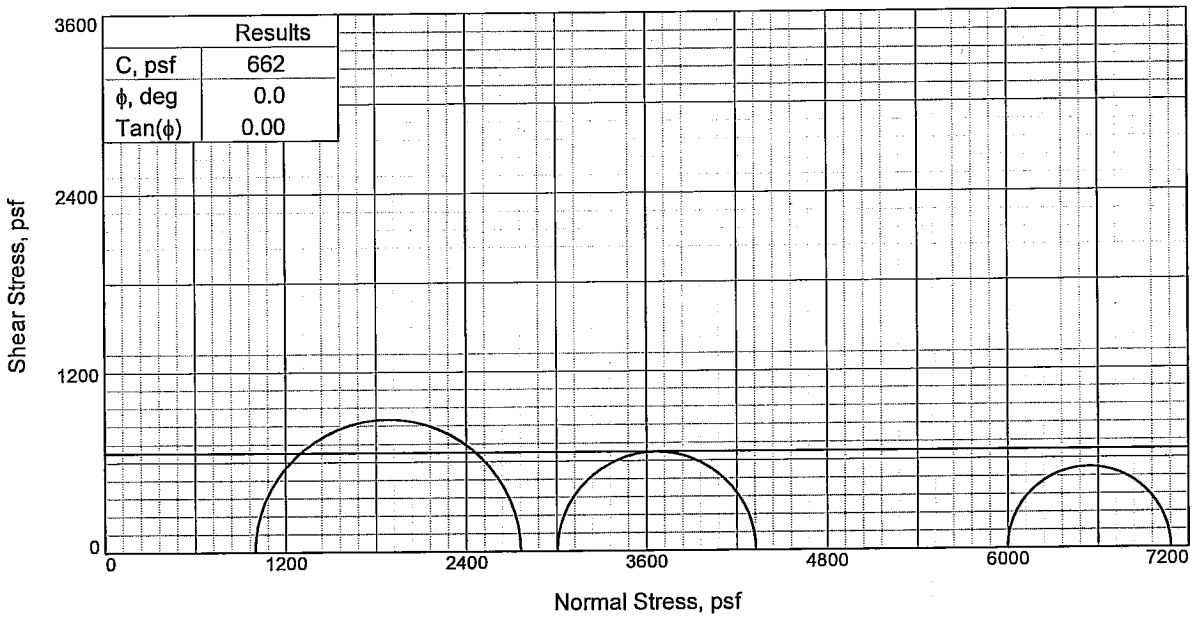
Project: Westwego to Harvey Canal

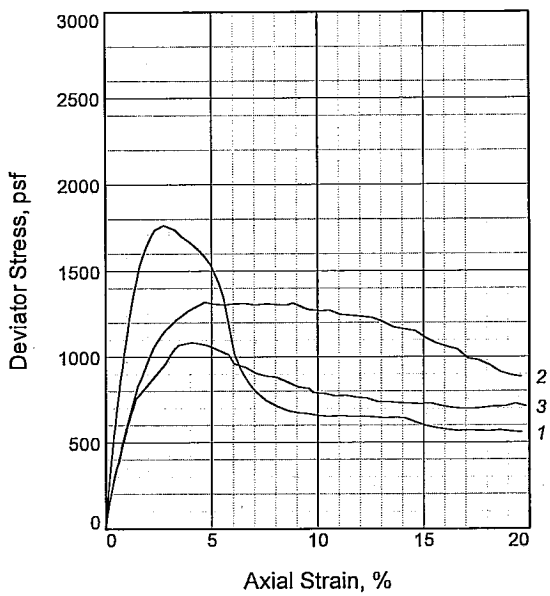
Source of Sample: WWHC-50UFT **Depth:** 13.7
Sample Number: 5C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____





Specimen No.		1	2	3
Initial	Water Content, %	34.1	33.7	34.2
	Dry Density, pcf	85.6	87.7	85.3
	Saturation, %	95.7	99.6	95.2
	Void Ratio	0.9540	0.9073	0.9615
	Diameter, in.	1.42	1.40	1.40
	Height, in.	3.28	3.18	3.23
At Test	Water Content, %	34.1	32.8	34.2
	Dry Density, pcf	85.6	87.7	85.3
	Saturation, %	95.7	97.0	95.2
	Void Ratio	0.9540	0.9073	0.9615
	Diameter, in.	1.42	1.40	1.40
	Height, in.	3.28	3.18	3.23
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	20.87	41.65
Fail. Stress, psf		1766	1320	1084
Strain, %		2.7	4.7	4.1
Ult. Stress, psf		599	1111	725
Strain, %				
σ_1 Failure, psf		2762	4324	7081
σ_3 Failure, psf		996	3005	5997

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL4 W/ LNS ML

LL= 32 **PL=** 22 **PI=** 10
Assumed Specific Gravity= 2.68
Remarks:

Figure _____

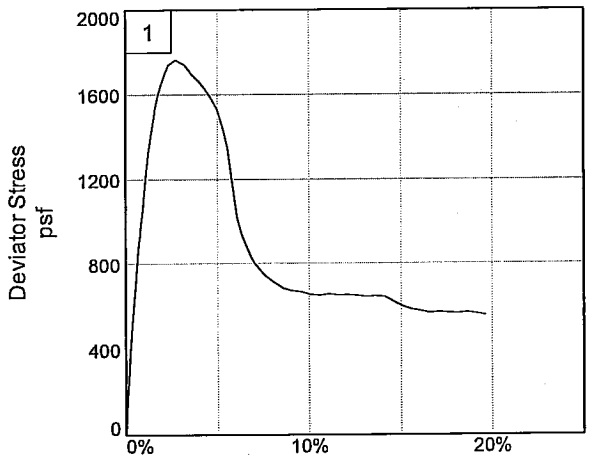
Client: FFEB JV, New Orleans, Louisiana

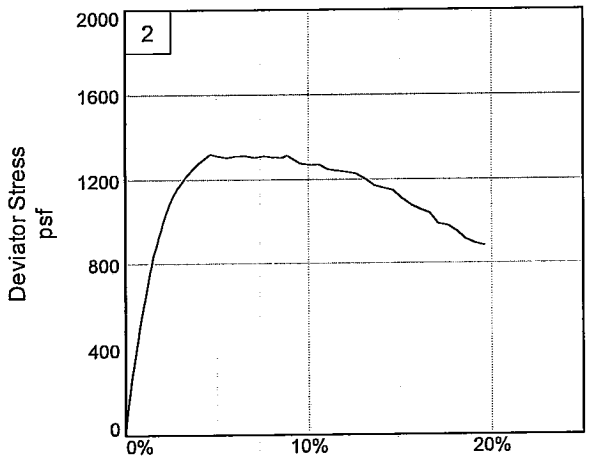
Project: Westwego to Harvey Canal

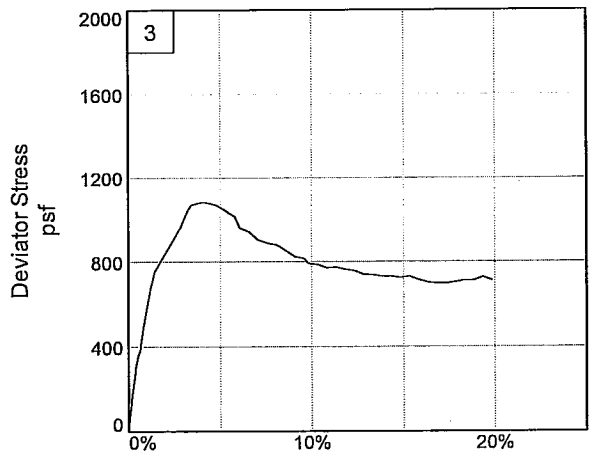
Source of Sample: WWHC-50UFT **Depth:** 16.8
Sample Number: 6B
Proj. No.: 0022-0002 **Date Sampled:** 4-18-07

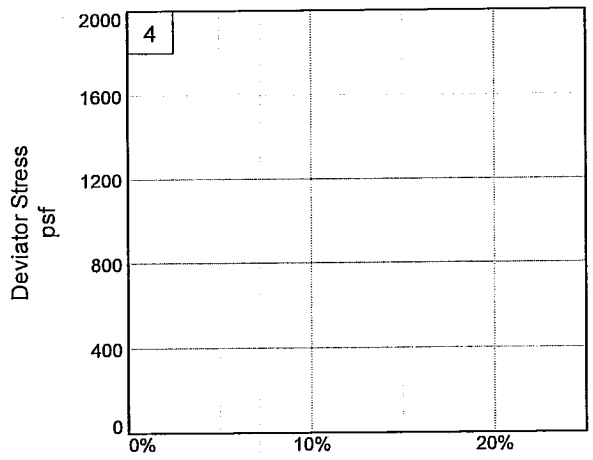
TRIAXIAL SHEAR TEST REPORT

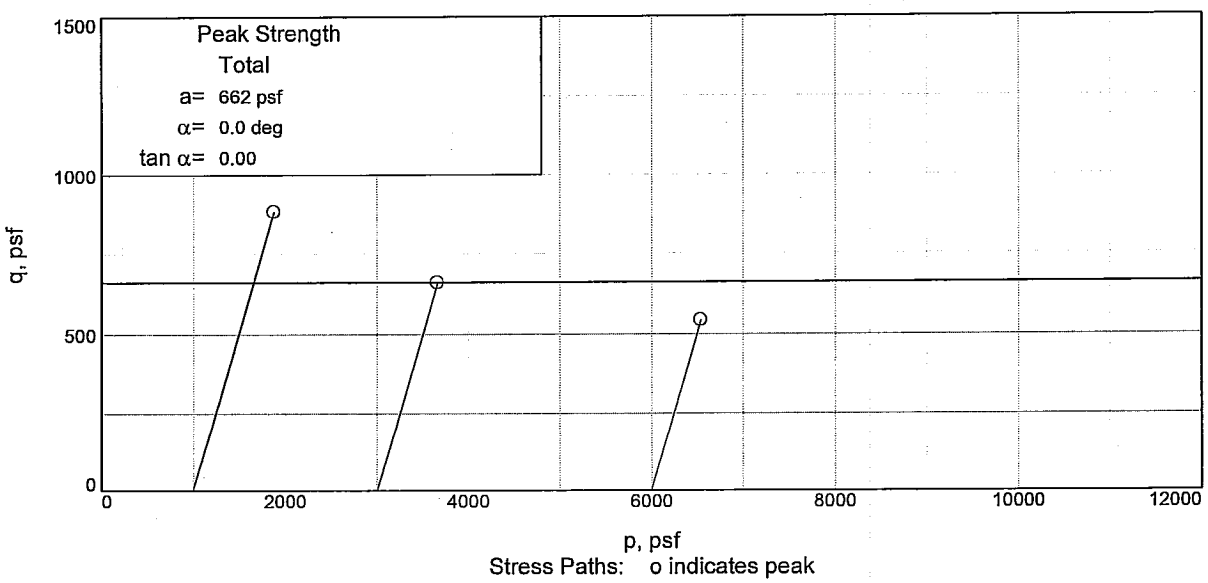
FFEBJV, LLC







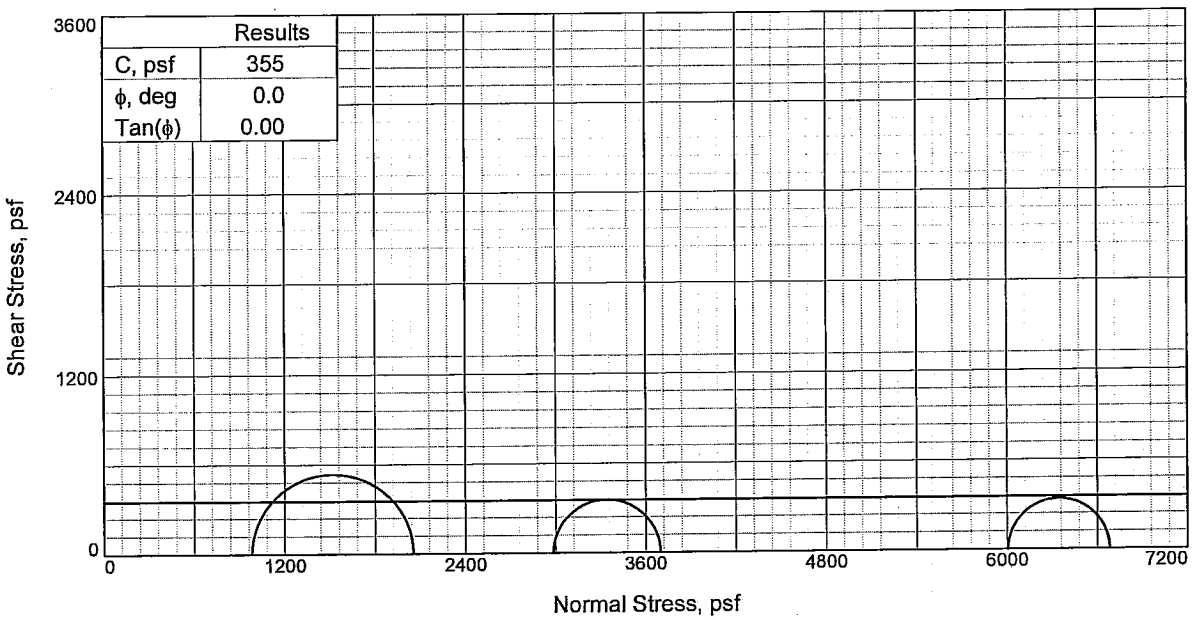


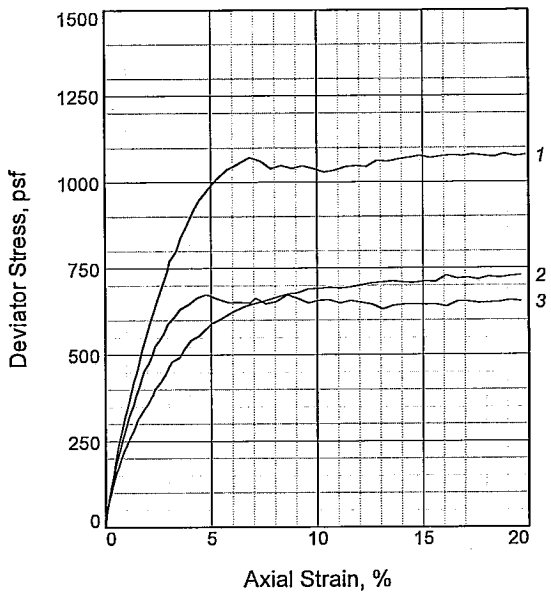


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-50UFT **Depth:** 16.8 **Sample Number:** 6B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	40.1	43.8	44.3
	Dry Density, pcf	80.4	77.7	78.2
	Saturation, %	98.8	101.1	103.5
	Void Ratio	1.0963	1.1685	1.1548
	Diameter, in.	1.39	1.38	1.38
	Height, in.	3.16	3.11	3.15
At Test	Water Content, %	40.1	43.8	44.3
	Dry Density, pcf	80.4	77.7	78.2
	Saturation, %	98.8	101.1	103.5
	Void Ratio	1.0963	1.1685	1.1548
	Diameter, in.	1.39	1.38	1.38
	Height, in.	3.16	3.11	3.15
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.81	20.73	41.71
Fail. Stress, psf		1072	712	675
Strain, %		6.8	13.6	4.8
Ult. Stress, psf		1029	711	644
Strain, %				
σ_1 Failure, psf		2053	3697	6681
σ_3 Failure, psf		981	2984	6007

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH2

LL= 56 **PL=** 19 **PI=** 37
Assumed Specific Gravity= 2.7
Remarks:

Figure _____

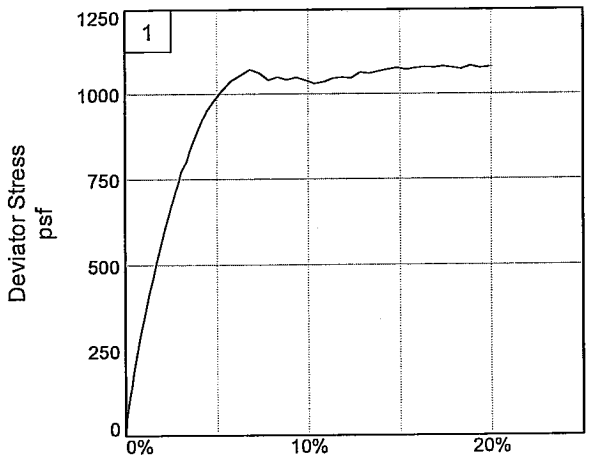
Client: FFEB JV, New Orleans, Louisiana

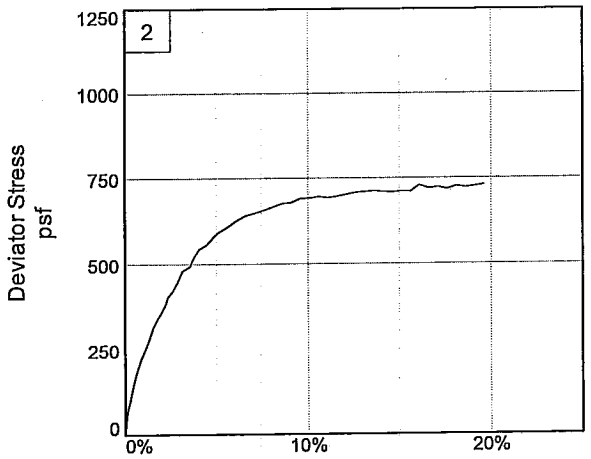
Project: Westwego to Harvey Canal

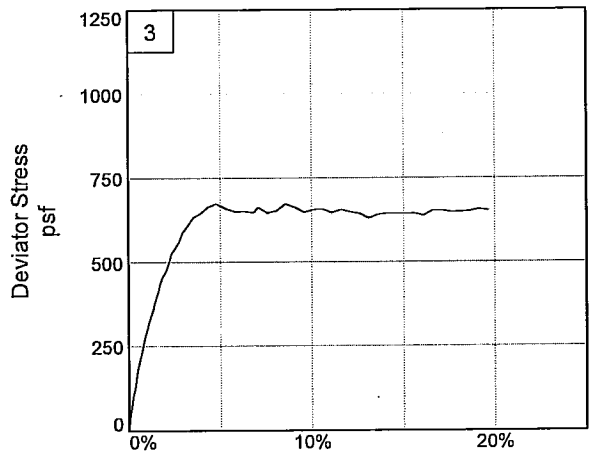
Source of Sample: WWHC-50UFT **Depth:** 20.8
Sample Number: 7B
Proj. No.: 0022-0002 **Date Sampled:** 4-18-07

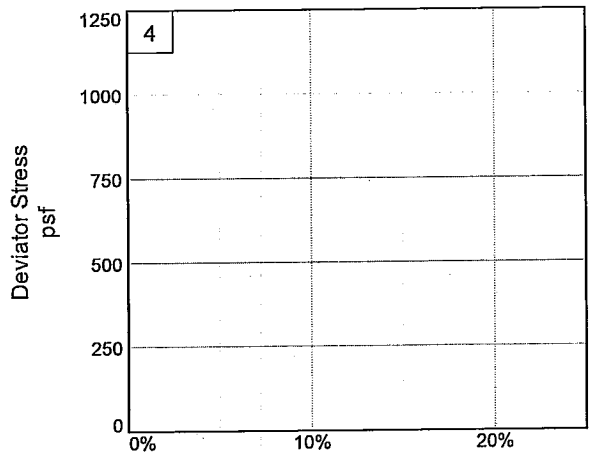
TRIAXIAL SHEAR TEST REPORT

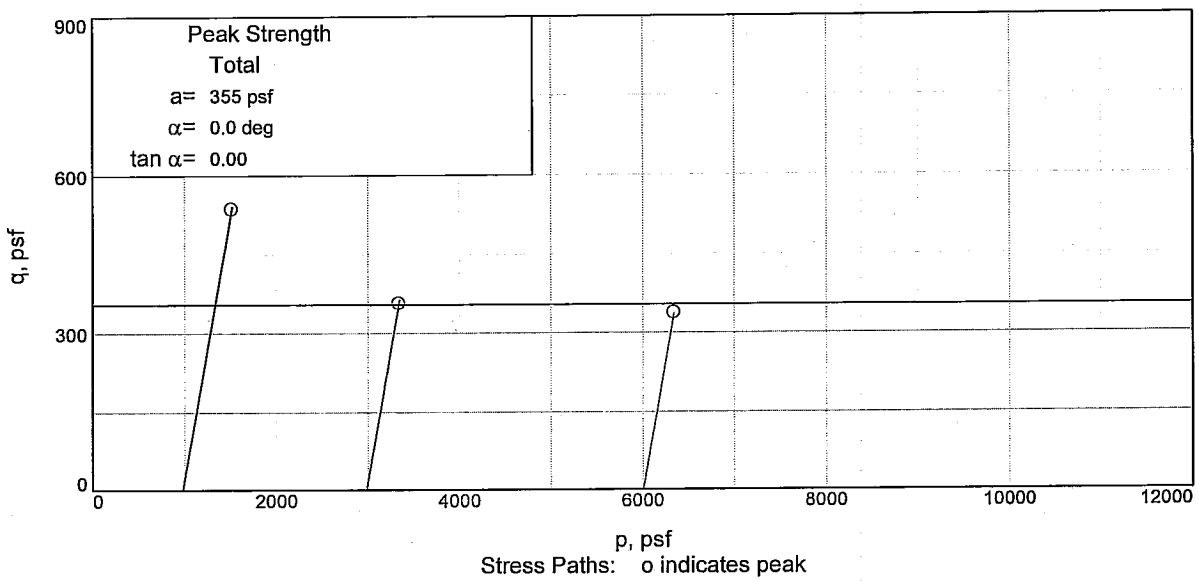
FFEBJV, LLC





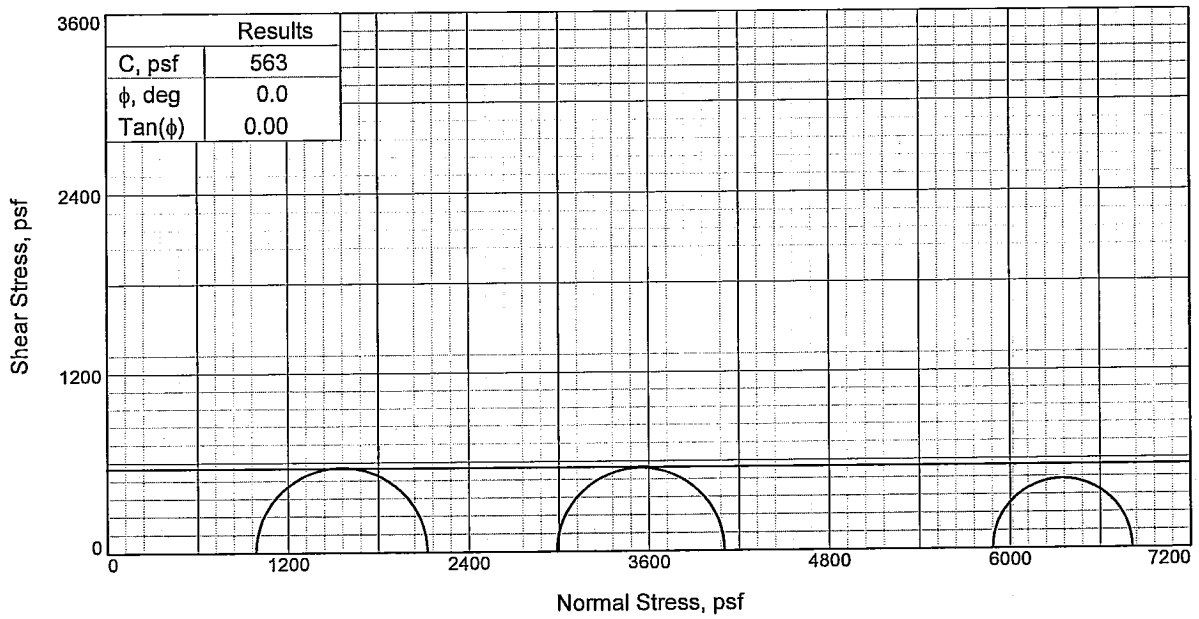


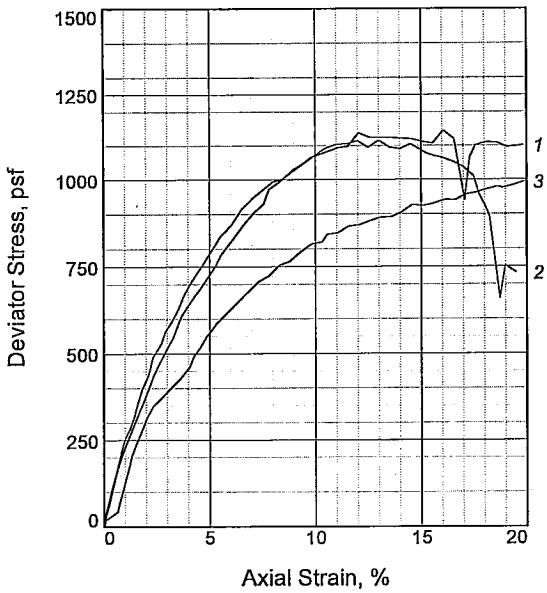




Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-50UFT **Depth:** 20.8 **Sample Number:** 7B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	38.1	37.7	37.6
	Dry Density, pcf	84.7	84.9	85.0
	Saturation, %	104.2	103.7	103.5
	Void Ratio	0.9821	0.9781	0.9764
	Diameter, in.	1.38	1.36	1.38
	Height, in.	3.07	3.14	3.14
At Test	Water Content, %	38.1	37.7	37.6
	Dry Density, pcf	84.7	84.9	85.0
	Saturation, %	104.2	103.7	103.5
	Void Ratio	0.9821	0.9781	0.9764
	Diameter, in.	1.38	1.36	1.38
	Height, in.	3.07	3.14	3.14
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.85	20.74	40.86
Fail. Stress, psf		1137	1114	927
Strain, %		12.1	12.0	14.6
Ult. Stress, psf		1111	1095	924
Strain, %				
σ_1 Failure, psf		2124	4101	6811
σ_3 Failure, psf		986	2986	5884

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CL6 W/ ARS SP, LNS CH

LL= 44 **PL=** 20 **PI=** 24

Assumed Specific Gravity= 2.69

Remarks:

Figure _____

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

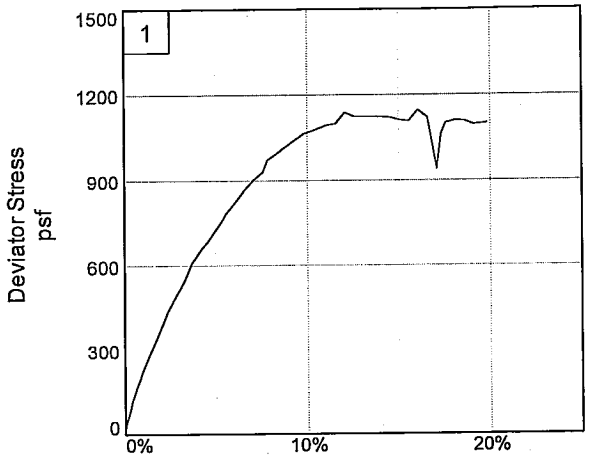
Source of Sample: WWHC-50UFT **Depth:** 25.7

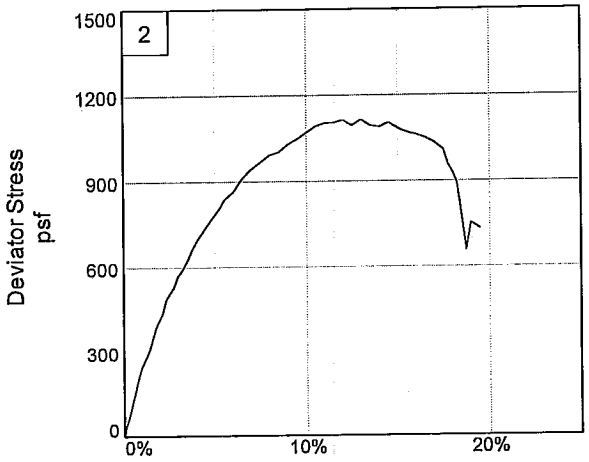
Sample Number: 8C

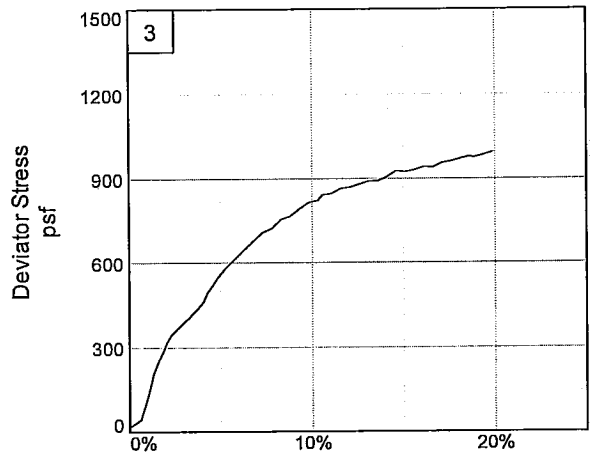
Proj. No.: 0022-0002 **Date Sampled:** 4-18-07

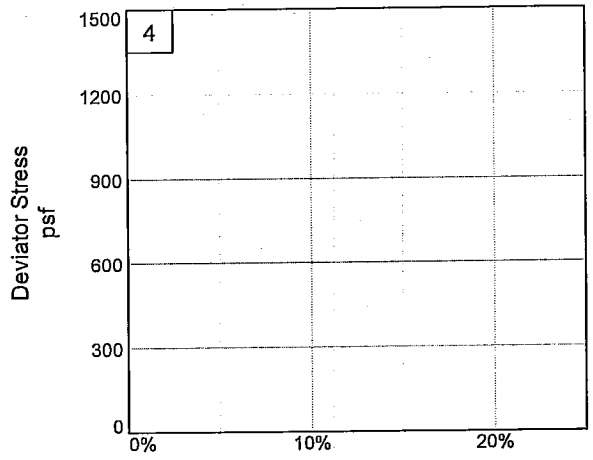
TRIAXIAL SHEAR TEST REPORT

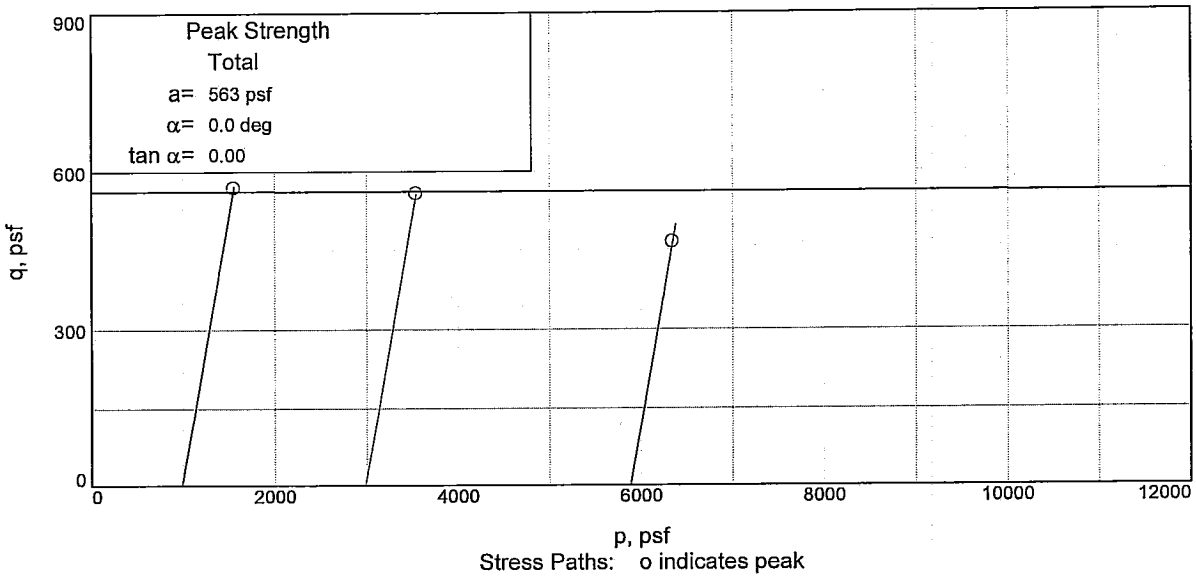
FFEBJV, LLC











p, psf

Stress Paths: o indicates peak

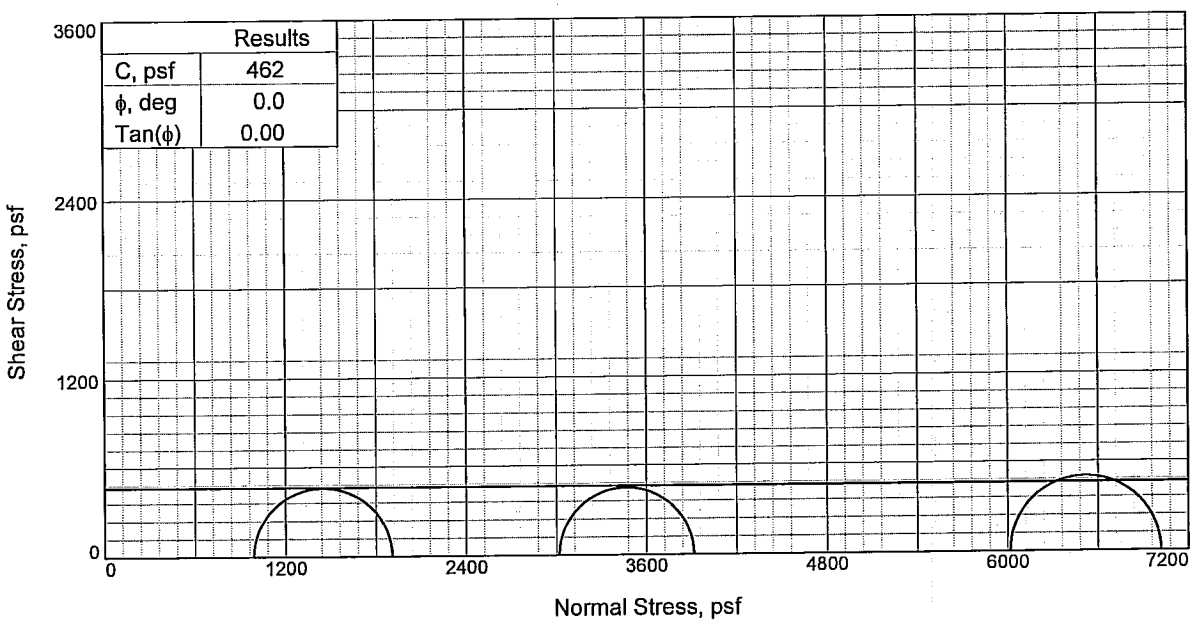
Client: FFEB JV, New Orleans, Louisiana

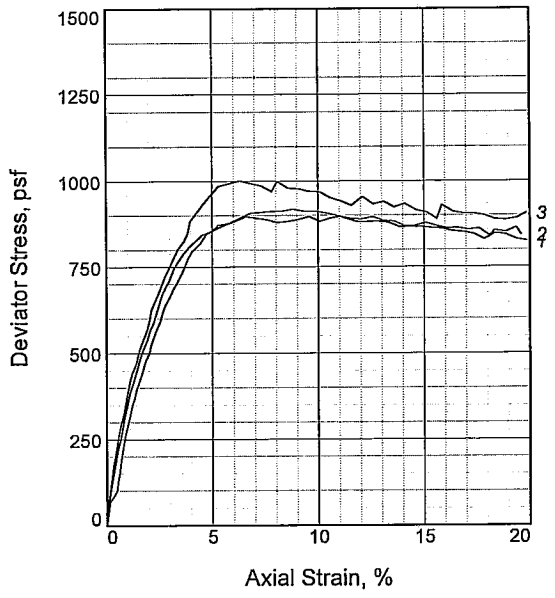
Project: Westwego to Harvey Canal

Source of Sample: WWHC-50UFT **Depth:** 25.7 **Sample Number:** 8C

Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Specimen No.		1	2	3
Initial	Water Content, %	51.0	50.9	46.4
	Dry Density, pcf	71.6	72.1	74.6
	Saturation, %	100.6	101.7	98.4
	Void Ratio	1.3893	1.3727	1.2932
	Diameter, in.	1.40	1.39	1.40
	Height, in.	3.13	3.16	3.16
At Test	Water Content, %	51.0	50.9	46.4
	Dry Density, pcf	71.6	72.1	74.6
	Saturation, %	100.6	101.7	98.4
	Void Ratio	1.3893	1.3727	1.2932
	Diameter, in.	1.40	1.39	1.40
	Height, in.	3.13	3.16	3.16
Strain rate, in./min.		0.03	0.03	0.03
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.96	41.77
Fail. Stress, psf		919	897	1002
Strain, %		8.8	6.6	6.3
Ult. Stress, psf		867	878	909
Strain, %				
σ_1 Failure, psf		1906	3915	7018
σ_3 Failure, psf		987	3018	6015

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH4 W/ LNS ML, SL

LL= 70 **PL=** 20 **PI=** 50
Assumed Specific Gravity= 2.74
Remarks:

Figure _____

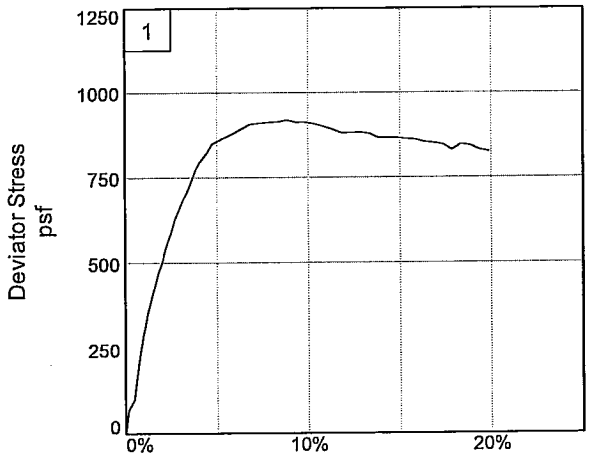
Client: FFEB JV, New Orleans, Louisiana

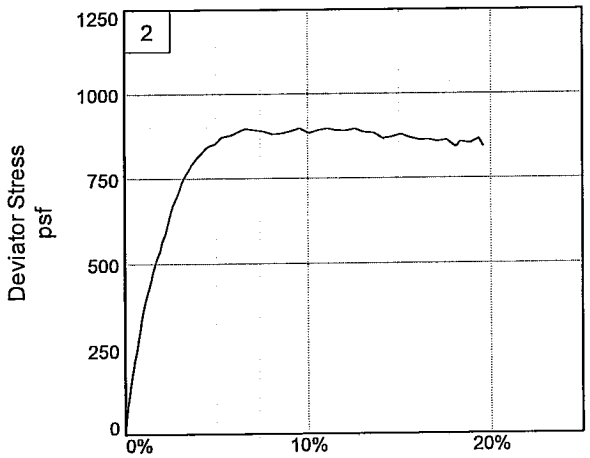
Project: Westwego to Harvey Canal

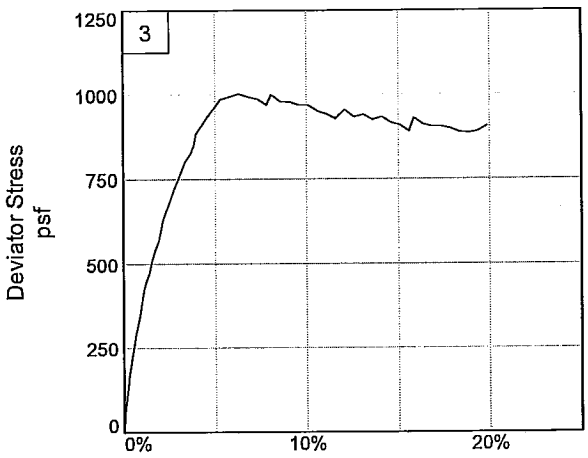
Source of Sample: WWHC-50UFT **Depth:** 29.7
Sample Number: 9C
Proj. No.: 0022-0002 **Date Sampled:** 4-18-07

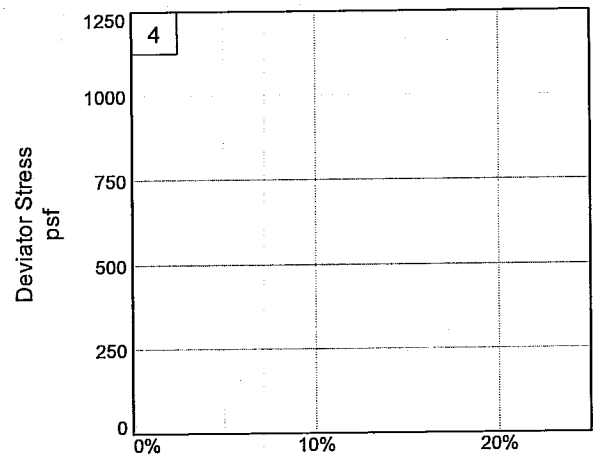
TRIAXIAL SHEAR TEST REPORT

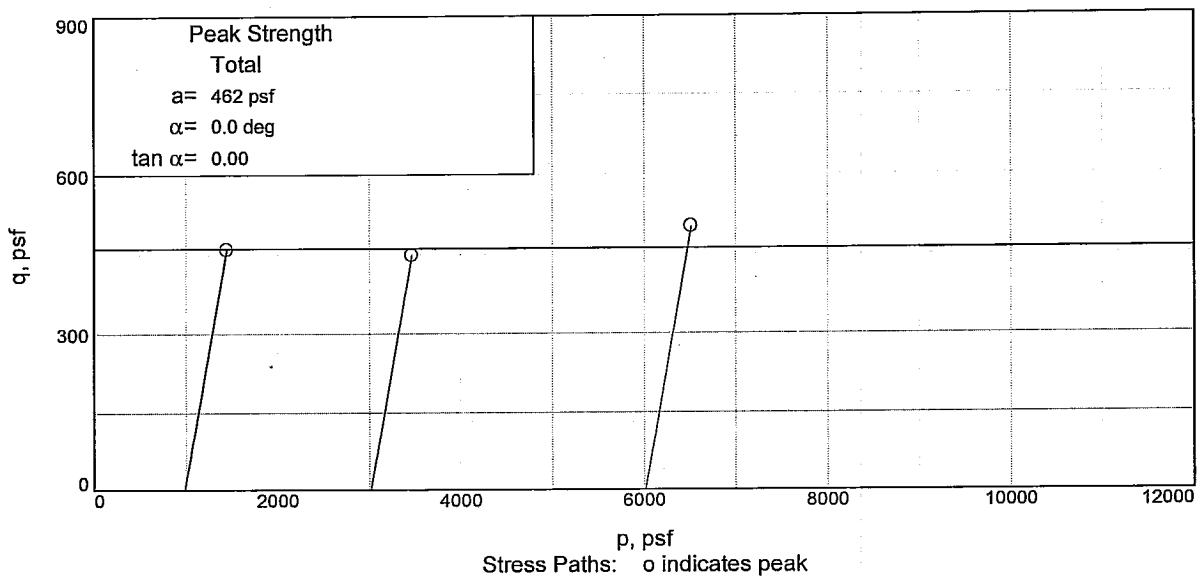
FFEBJV, LLC









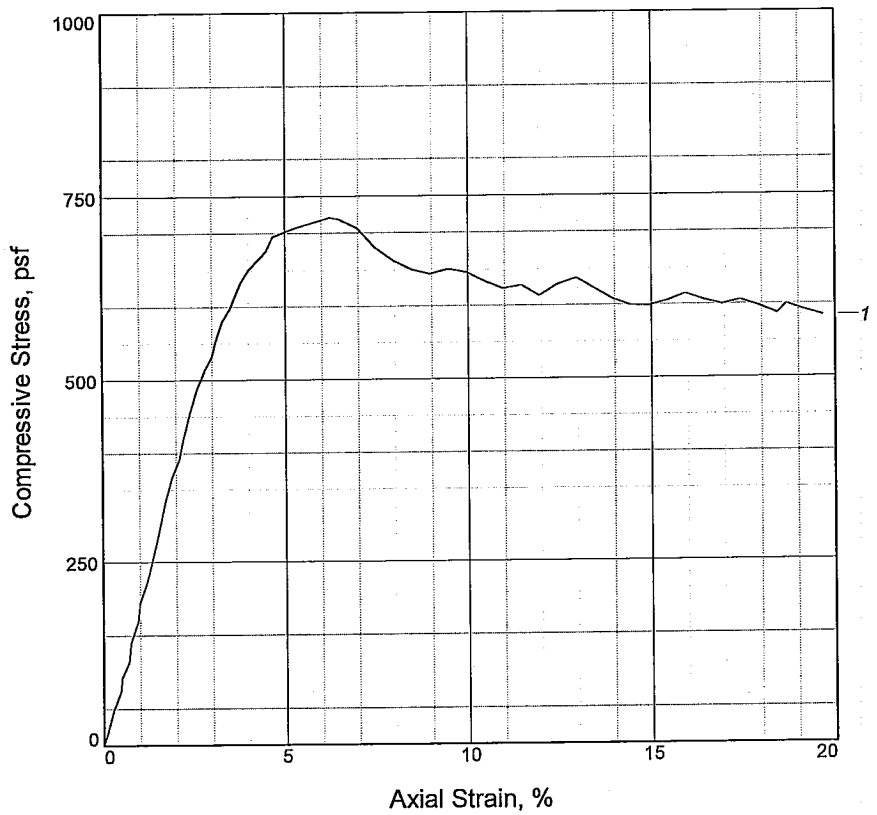


Stress Paths: o indicates peak

Client: FFEB JV, New Orleans, Louisiana
Project: Westwego to Harvey Canal
Source of Sample: WWHC-50UFT **Depth:** 29.7 **Sample Number:** 9C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	721			
Undrained shear strength, psf	361			
Failure strain, %	6.2			
Strain rate, in./min.	0.03			
Water content, %	47.0			
Wet density, pcf	110.8			
Dry density, pcf	75.4			
Saturation, %	104.3			
Void ratio	1.1948			
Specimen diameter, in.	1.38			
Specimen height, in.	3.17			
Height/diameter ratio	2.31			

Description: GR ML1 W/ LNS CH

LL = NP	**PL =**	**PI =** NP	**Assumed GS=** 2.65	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 4-18-07
Remarks:

Client: FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

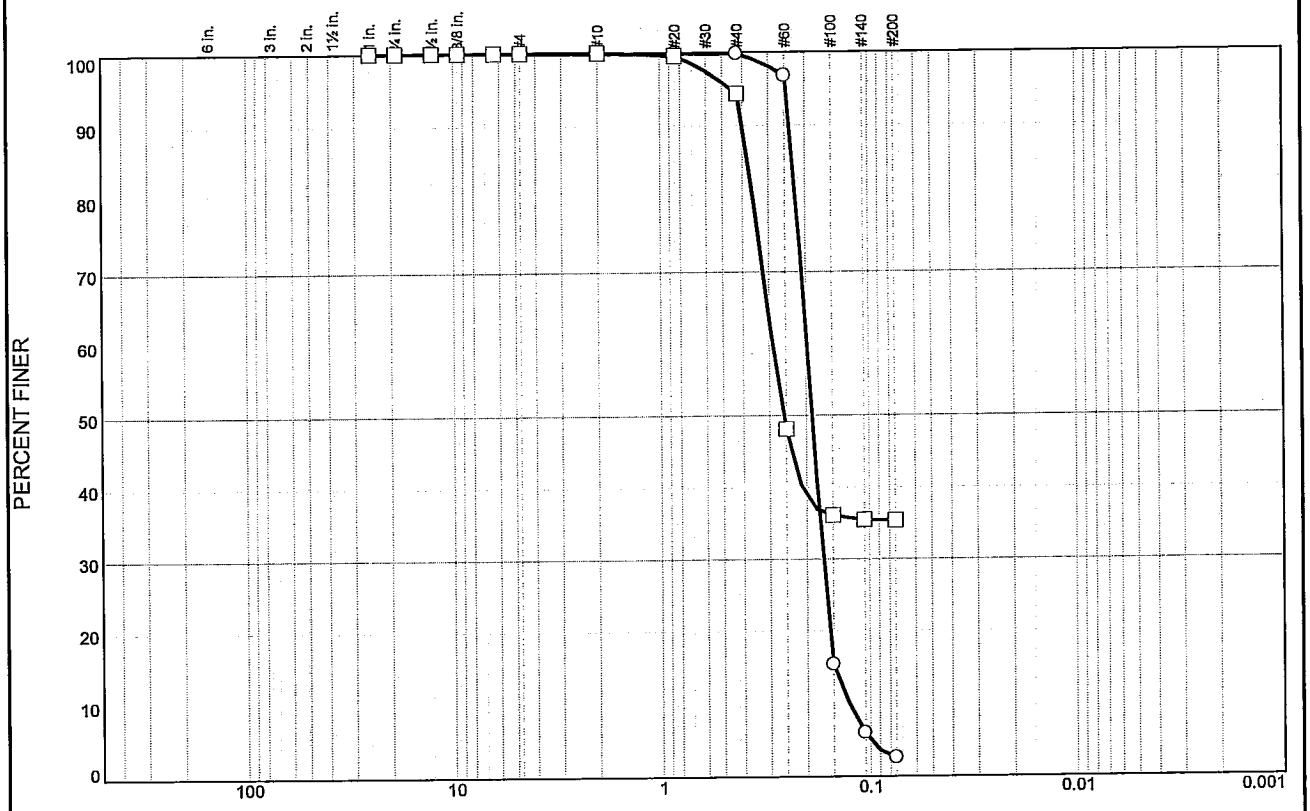
Source of Sample: WWHC-50UFT **Depth:** 33.7
Sample Number: 10C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.1	0.0	0.1	97.2	2.6	
□	0.0	0.0	0.0	0.0	5.6	59.0	35.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2287	0.1982	0.1879	0.1676	0.1482	0.1263	1.12	1.57
□			0.3759	0.2894	0.2568					

	Material Description	USCS	AASHTO
○	GR SP	SP	
□	GR ML1 W/ LNS CH	ML1	

Project No. 0022-0002 **Client:** FFEB JV, New Orleans, Louisiana

Project: Westwego to Harvey Canal

○ **Source of Sample:** WWHC-50UFT **Depth:** 53.7 **Sample Number:** 15C

□ **Source of Sample:** WWHC-50UFT **Depth:** 41.7 **Sample Number:** 12C

FFEBJV, LLC

Lexington, KY

Remarks:

Figure

Tested By: ○ EH □ DL **Checked By:** WRM

BOR. WWHC-50UFT
STA.
LAT 29^49'17.78"
LON 90^06'39.20"
16-17 APRIL 2007

GROUND EL. 6.00

0.0	0.8	27		CH	ST GR BR	RT					
0.8	2.0	25		CH	ST GR BR	RT		1965125	53	17	21 11
2.0	4.0	30		CH	ST T	O					
4.0	4.8	33	4.8CH		M BR GR						
4.8	5.7	41		CH	SIS M GR	WD RT					
5.7	8.0	42		CH	SIS M GR	WD					
8.0	8.8	43		CH	SIS M GR	RT					
8.8	9.7	43	9.7CH		SIS M GR	RT					
9.7	12.0		12.0NS								
12.0	12.8	39		CL	SO GR BR	WD					
12.8	13.7	34		CL	SO GR BR						
13.7	16.0	35	16.0CL		VSOGR BR	CS		156120	36	19	33 140
16.0	16.8	53	16.8CH		SIS M GR						
16.8	17.7	43	17.7CL		SIS M GR						
17.7	20.0	36		CL	SO GR	CS					
20.0	20.8	47	20.8CL		SO GR	RT CS					
20.8	21.7	40	21.7CH		SO GR						
21.7	22.6	42	22.6CL		SO GR	RT WD					
22.6	24.0	32	24.0ML		GR	WD					
24.0	24.8	42		CH	SIS M GR						
24.8	25.7	38	25.7CH		SIS M GR	S					
25.7	26.6	37	26.6CL		M GR	S CS					
26.6	28.0	26	28.0SP		GR	CS					
28.0	28.8	67		CH	SISSO GR	SL					
28.8	29.7	62		CH	SISSO GR	SL					
29.7	30.6	58		CH	SISSO GR	SL					
30.6	32.0	57	32.0CH		SIS M GR	SL					
32.0	32.8	59		ML	GR						
32.8	33.7	28	33.7ML		GR						
33.7	36.0	49	36.0ML		GR	CS		361111		47	340
36.0	36.8	59	36.8CH		SIS M GR	SS					
36.8	37.7	23		ML	GR	CS					
37.7	40.0	26		ML	GR						
40.0	40.8	28		ML	GR	CS					
40.8	41.7	27		ML	GR	CS					

41.7 42.6 24 42.6ML GR CS
42.6 44.0 23 SP GR CS
44.0 44.8 23 SP GR CS
44.8 45.7 23 SP GR CS
45.7 48.0 23 SP GR CS
48.0 48.8 24 SP GR
48.8 49.7 22 SP GR
49.7 52.0 21 SP GR
52.0 52.8 23 SP GR CS
52.8 53.7 25 SP GR
53.7 54.6 24 SP GR ..1263
54.6 56.0 21 SP GR
56.0 56.8 26 SP GR
56.8 57.7 25 SP GR
57.7 60.0 23 SP GR
60.0 60.8 19 SP GR
60.8 61.7 28 SP GR
61.7 62.6 25 SP GR
62.6 64.0 22 SP GR
64.0 64.8 27 SP GR
64.8 65.7 26 SP GR
65.7 68.0 27 SP GR
68.0 70.0 35 70.0SP GR CS 12
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 6.00/ 0.00 Water Con: 38.00
LL,PL,PI : 77, 20, 57 Dry Dens : 84.00
Cohesion : 0.446 Saturat :102.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 9.10/-3.10 Water Con: 38.00
LL,PL,PI : 68, 18, 50 Dry Dens : 81.00
Cohesion : 0.363 Saturat : 94.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 17.10/-11.1 Water Con: 34.00
LL,PL,PI : 32, 22, 10 Dry Dens : 86.00
Cohesion : 0.331 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 21.10/-15.1 Water Con: 43.00
LL,PL,PI : 56, 19, 37 Dry Dens : 79.00
Cohesion : 0.178 Saturat :101.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 26.00/-20.0 Water Con: 38.00
LL,PL,PI : 44, 20, 24 Dry Dens : 85.00
Cohesion : 0.282 Saturat :104.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 30.00/-24.0 Water Con: 49.00
LL,PL,PI : 70, 20, 50 Dry Dens : 73.00
Cohesion : 0.231 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(C) Classif : CH
Depth/Ele: 24.8/-18.8 Water Con: 39.00
LL,PL,PI : 72, 29, 43 Dry Dens : 74.00
Cohesion : Saturat : 82.00
Shear Str: Frict Ang: 00.00
Norm Str: 1.600, 1.122

Toggles :( )( )( )( )
Test Data:

Pressure	Void Ratio
0.01	1.285
0.13	1.257
0.25	1.240
0.50	1.217
1.00	1.176
2.00	1.060
4.00	0.844
8.00	0.698
2.00	0.739
0.50	0.797

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-51UCL

Current Date: 7/2/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	VST T CL4 W/ O	CL4		13												
1B	0.8	VST T CL4 W/ O, LNS ML	CL4		22												
2A	2.0	T ML2 W/ LNS CH, O	ML2		21												
2B	2.8	T ML2 W/ LNS CH, O	ML2		19												
3A	4.0	SO T CL6 W/ O	CL6		38												
3B	4.8	VSO LBR & GR CL6 W/ ARS CH	CL6		37	84	115	99	UU	0	186		50	20	30	0.10	
3C	5.7	ST T CL6 W/ O	CL6		39												
3D	6.6	ST T CH2 W/ O	CH2		35												
4A	8.0	ST T CH2 W/ O	CH2		30												
4B	8.8	ST T & GR CH2	CH2	11	33	89	118	98	UC	--	1061	2123	56	22	34	0.60	
4C	9.7	M GR CH3 W/ ARS & LNS ML, O	CH3		49												
5A	12.0	M GR CH3 W/ ARS ML, O	CH3		36												
5B	12.8	M GR & T CH4 W/ ARS ML, WD, SL	CH4		38	85	114	98	UU	0	849		84	23	61	0.50	
NS	13.7	NO SAMPLE	NS														
6A	16.0	SO GR CL4 W/ O	CL4		35												
6B	16.8	SO GR CL4 W/ O	CL4		33												
6C	17.7	SO GR CL4 W/ WD	CL4		34	88	117	98	UU	0	463		40	20	20	0.24	
7A	20.0	SO T CL4 W/ LNS CH, O	CL4		37												
7B	20.8	SO T CL4 W/ LNS CH, O	CL4		32												
7C	21.7	SO BR & T CL4-S	CL4-S	7	34	86	114	96	UC	--	412	824	27	23	4	0.10	
7D	22.6	SO GR CL4 W/ O	CL4		33												
8A	24.0	SO GR CL4	CL4		41												
8B	24.8	M GR CL4 W/ O	CL4		35												
8C	25.7	M GR CL4-S W/ LNS CH	CL4-S		35	86	117	101	UU	0	979		31	25	6	0.15	
8D	26.6	SO GR CL6	CL6		46												
9A	28.0	SO GR CL6 W/ LNS ML, O	CL6		45												
9B	28.8	M GR CH4 W/ LNS ML	CH4		64	62	102	99	UU	0	608		82	24	58	0.29	
9C	29.7	M GR CH3	CH3		46												
9D	30.6	M GR CH3	CH3		44												
10A	32.0	ST GR CH3 W/ LNS ML	CH3		34												
10B	32.8	GR SC1	SC1		25												
10C	33.7	GR SC1	SC1		26												SV
10D	34.6	GR SC1	SC1		29												
11A	36.0	GR SC1	SC1		29												
11B	36.8	GR SC1	SC1		28												
11C	37.7	M GR CH3 W/ LNS ML, ARS SM	CH3	9	49	73	108	101	UC	--	415	830	69	21	48	0.30	
12A	40.0	M GR CL6-S W/ LYS CH	CL6-S		36												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

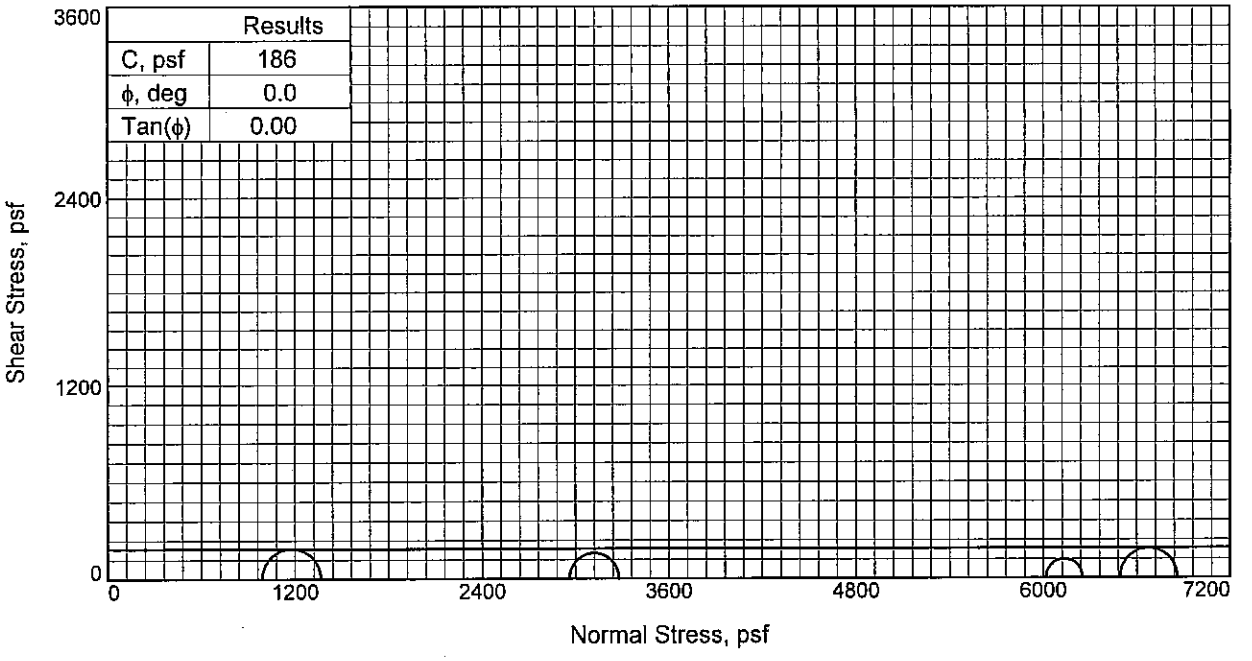
Project Number: 0022-0002
Boring: WWHC-51UCL

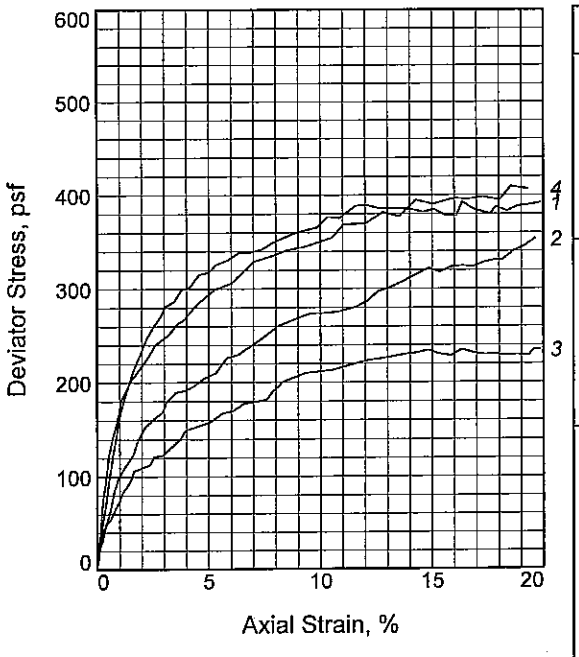
Current Date: 7/2/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
12B	40.8	M GR CL6-S W/ LNS CH	CL6-S		30												
12C	41.7	SO GR CL6	CL6		48	74	107	101	UU	0	409		50	19	31	0.25	
12D	42.6	SO GR CL6	CL6		41												
13A	44.0	GR SM1	SM1		28												
13B	44.8	GR SM1	SM1		34												
13C	45.7	GR SP W/ LYS CH	SP		22												
14	48.0	GR SC5-S	SC5-S		31												SV
15	50.0	GR SC5-S W/ SIF	SC5-S		26												
16	52.0	GR & T SC1 W/ O	SC1		19												
17	54.0	GR & T SC1 W/ O	SC1		20												
18	56.0	GR SC1	SC1		23												
19	58.0	GR SC1	SC1		17												SV
20	60.0	GR & T SC1	SC1		20												
21	62.0	GR SC1	SC1		18												
22	64.0	GR SC1	SC1		18												
23	66.0	GR SC1	SC1		20												
24	68.0	GR SC1	SC1		19												SV

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2





Sample No.		1	2	3	4
Initial	Water Content, %	39.2	35.5	40.0	35.0
	Dry Density, pcf	78.0	87.4	81.3	87.1
	Saturation, %	91.6	103.7	101.1	101.5
	Void Ratio	1.1520	0.9214	1.0644	0.9276
	Diameter, in.	1.424	1.434	1.403	1.404
	Height, in.	3.126	3.136	3.125	3.120
At Test	Water Content, %	39.2	35.5	40.0	35.0
	Dry Density, pcf	78.0	87.4	81.3	87.1
	Saturation, %	91.6	103.7	101.1	101.5
	Void Ratio	1.1520	0.9214	1.0644	0.9276
	Diameter, in.	1.424	1.434	1.403	1.404
	Height, in.	3.126	3.136	3.125	3.120
Strain rate, in./min.		0.031	0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.87	20.56	41.79	45.09
Fail. Stress, psf		376	318	234	368
Strain, %		10.3	15.3	14.8	11.0
Ult. Stress, psf		388	318	234	390
Strain, %					
σ_1 Failure, psf		1366	3279	6252	6861
σ_3 Failure, psf		989	2961	6018	6493

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: VSO LBR & GR CL6 W/ ARS CH

LL= 50 **PL=** 20 **PI=** 30

Assumed Specific Gravity= 2.69

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

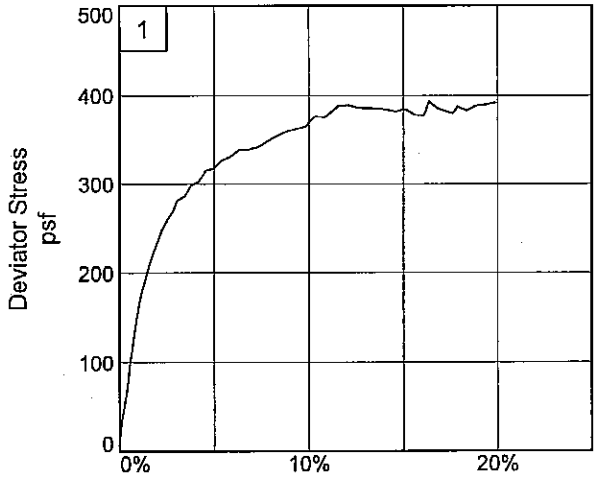
Source of Sample: WWHC-51UCL **Depth:** 4.8

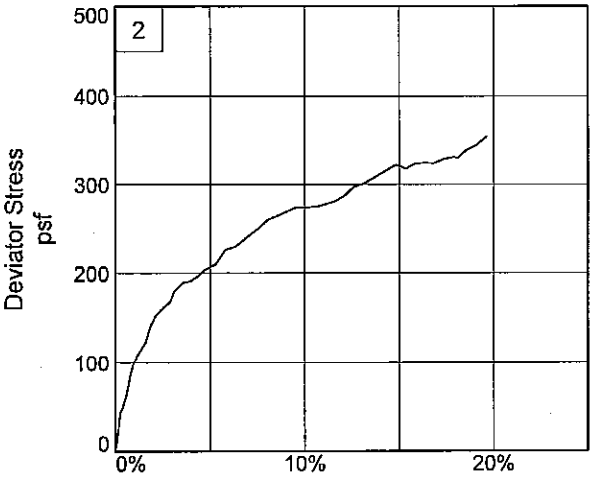
Sample Number: 3B

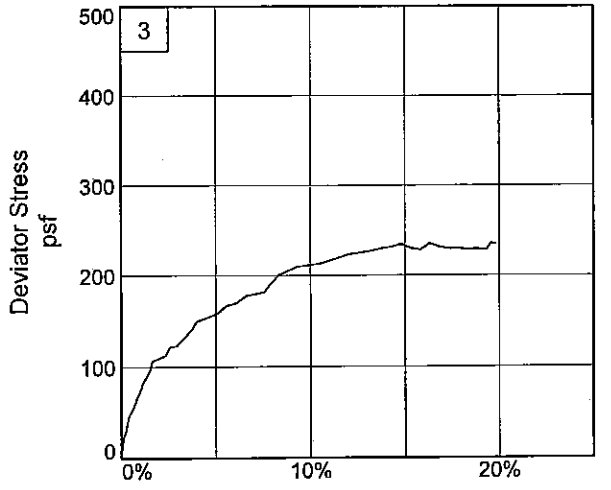
Proj. No.: 0022-0002 **Date Sampled:**

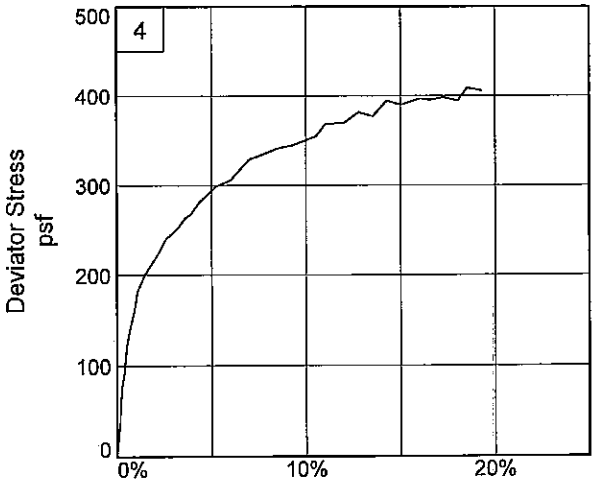
TRIAXIAL SHEAR TEST REPORT

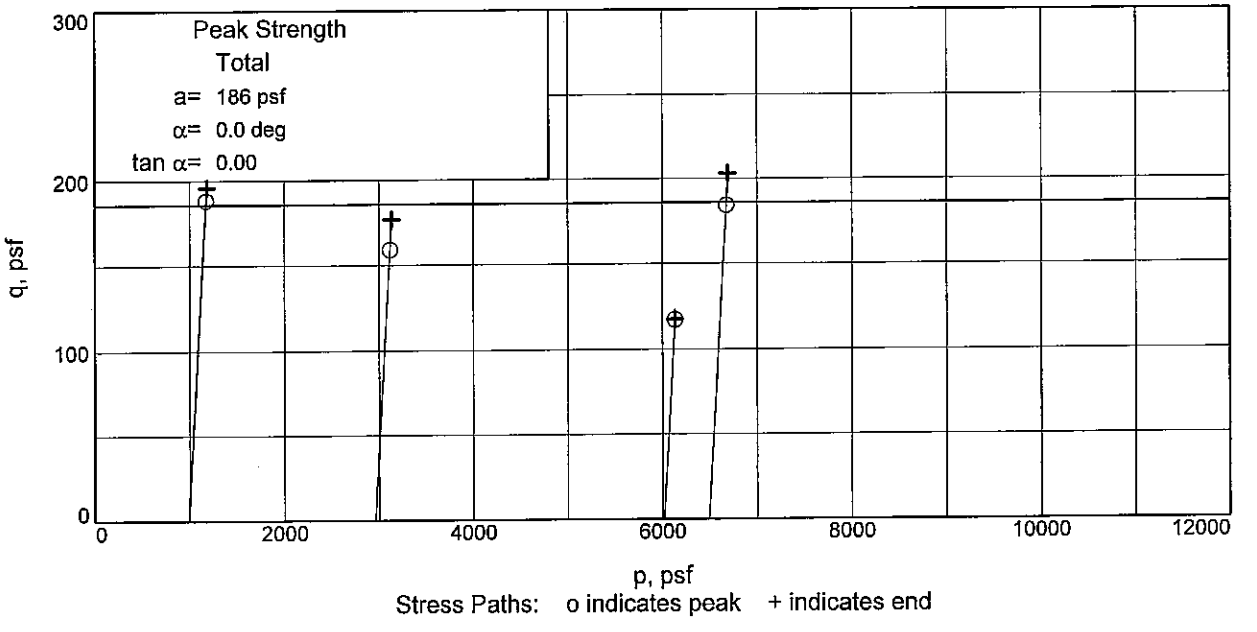
FFEBJV, LLC







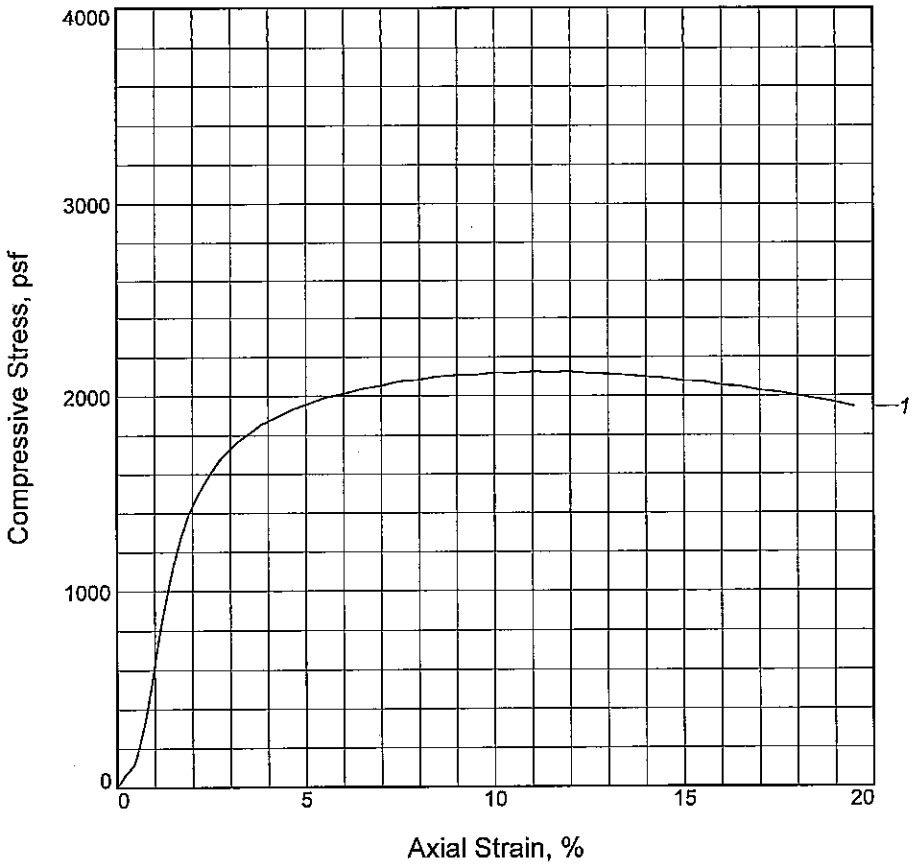




Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-51UCL **Depth:** 4.8 **Sample Number:** 3B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2123			
Undrained shear strength, psf	1061			
Failure strain, %	11.0			
Strain rate, in./min.	0.031			
Water content, %	32.5			
Wet density, pcf	117.5			
Dry density, pcf	88.6			
Saturation, %	97.8			
Void ratio	0.8947			
Specimen diameter, in.	1.435			
Specimen height, in.	3.126			
Height/diameter ratio	2.18			

Description: ST T & GR CH2

LL = 56	**PL** = 22	**PI** = 34	**GS**= 2.69	**Type:** Undisturbed

Project No.: 0022-0002

Date Sampled:

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

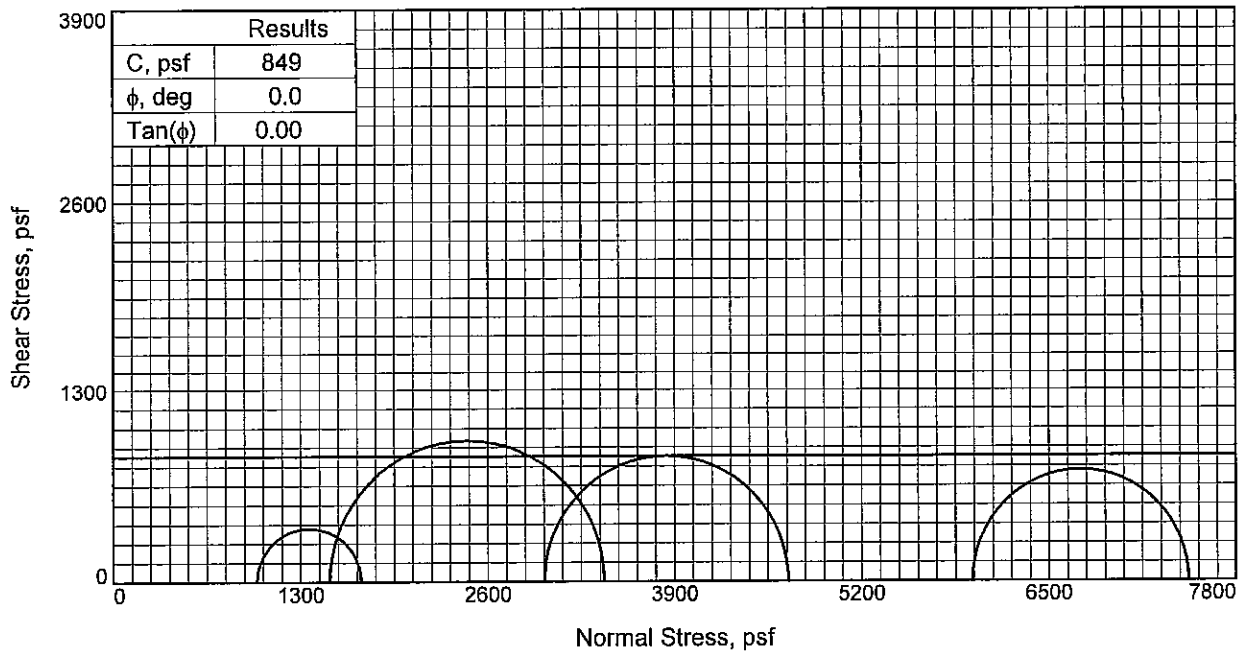
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

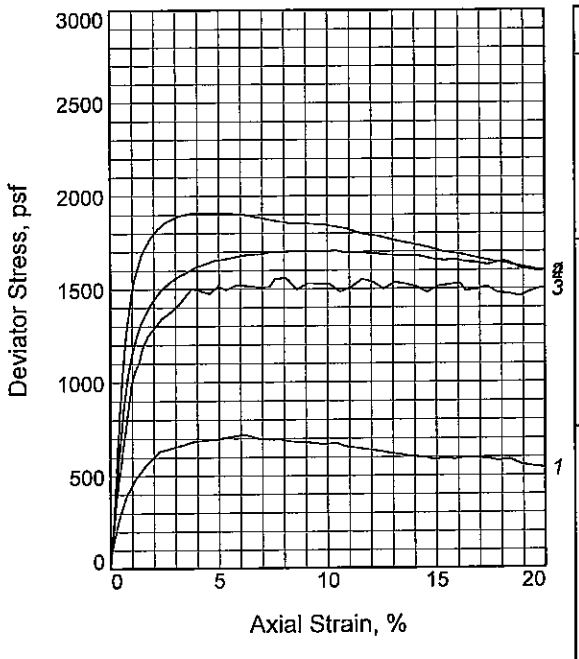
Source of Sample: WWHC-51UCL **Depth:** 8.8

Sample Number: 4B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC





Sample No.		1	2	3	4
Initial	Water Content, %	42.3	38.2	38.2	36.4
	Dry Density, pcf	78.4	82.1	82.2	84.9
	Saturation, %	98.8	97.3	97.4	98.4
	Void Ratio	1.1646	1.0681	1.0669	1.0142
	Diameter, in.	1.405	1.449	1.457	1.408
	Height, in.	3.132	3.133	3.141	3.126
At Test	Water Content, %	42.3	38.2	38.2	36.4
	Dry Density, pcf	78.4	82.1	82.2	84.9
	Saturation, %	98.8	97.3	97.4	98.4
	Void Ratio	1.1646	1.0681	1.0669	1.0142
	Diameter, in.	1.405	1.449	1.457	1.408
	Height, in.	3.132	3.133	3.141	3.126
Strain rate, in./min.		0.031	0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.93	20.79	41.45	10.43
Fail. Stress, psf		721	1697	1502	1909
Strain, %		6.1	7.8	3.8	3.8
Ult. Stress, psf		585	1656	1511	1721
Strain, %					
σ_1 Failure, psf		1719	4691	7471	3411
σ_3 Failure, psf		998	2994	5969	1502

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR & T CH4 W/ ARS ML, WD, SL

LL= 84 **PL=** 23 **PI=** 61

Assumed Specific Gravity= 2.72

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

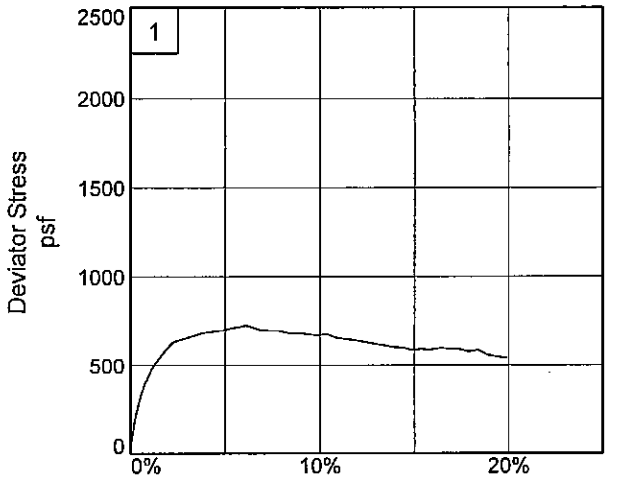
Source of Sample: WWHC-51UCL **Depth:** 12.8

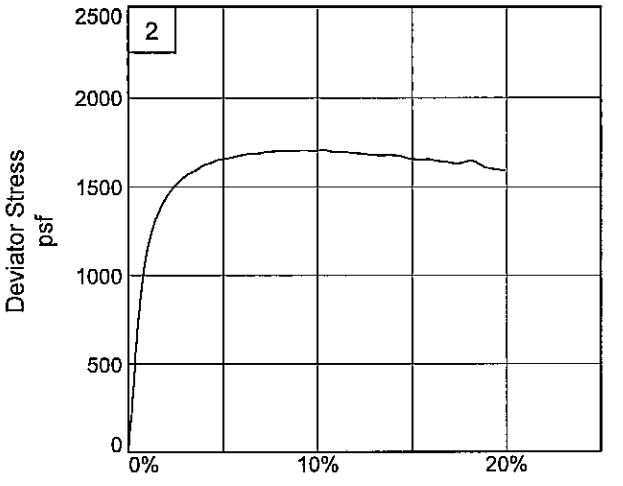
Sample Number: 5B

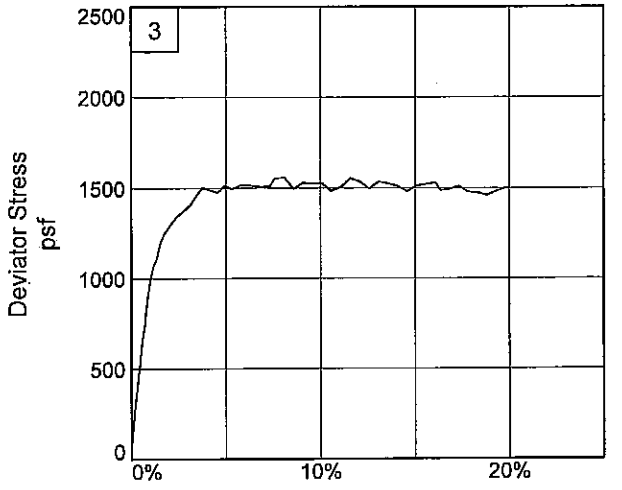
Proj. No.: 0022-0002 **Date Sampled:** 6-26-07

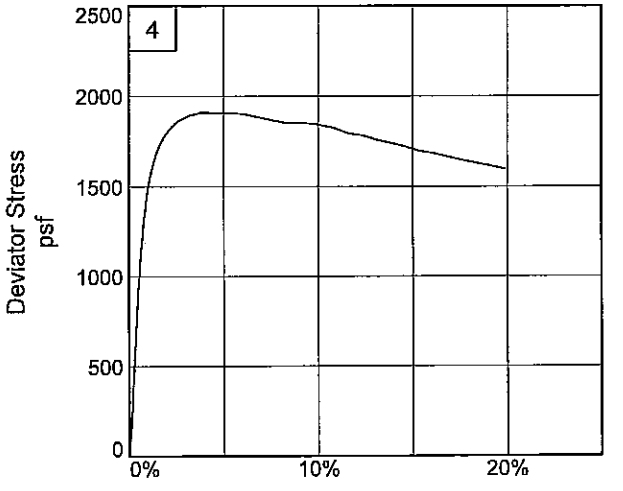
TRIAXIAL SHEAR TEST REPORT

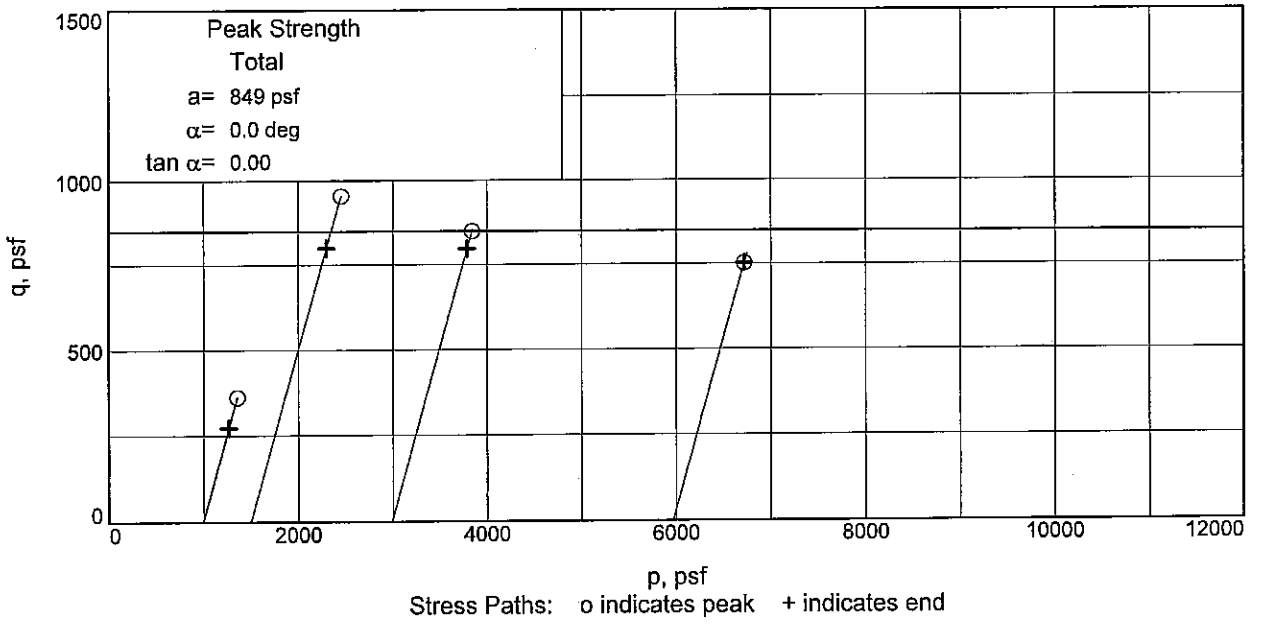
FFEBJV, LLC







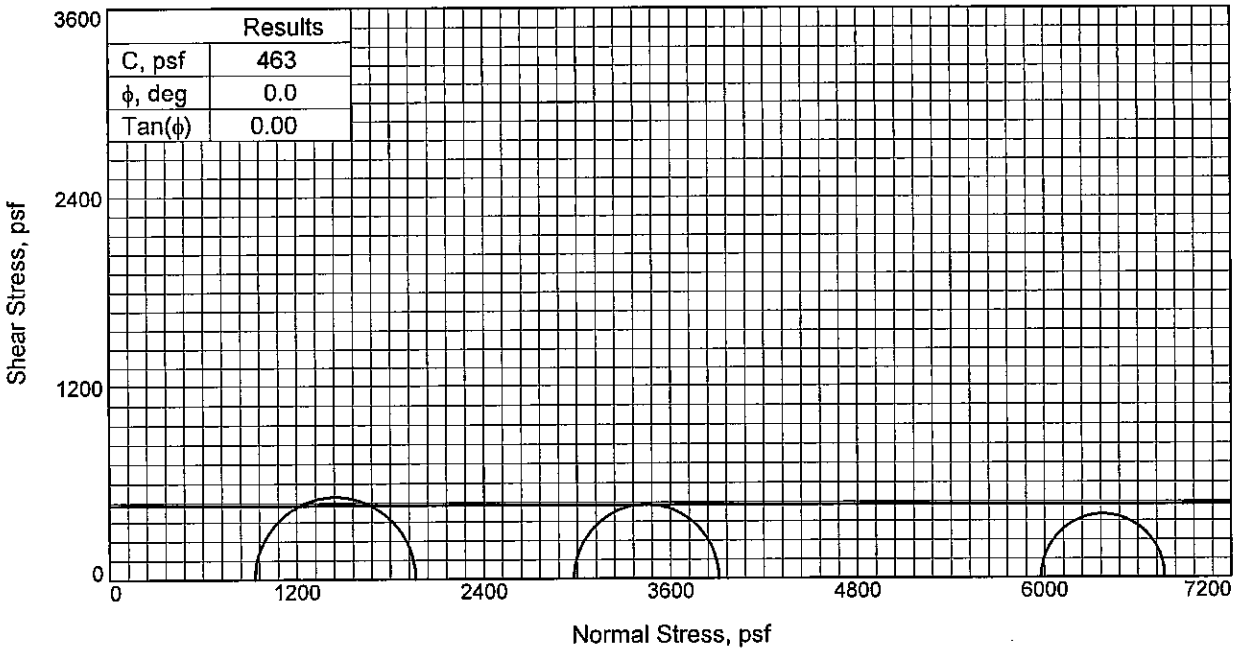


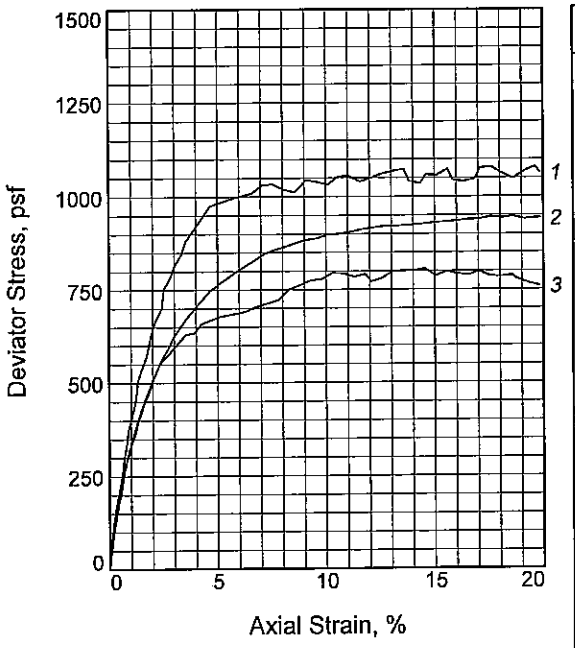


Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-51UCL **Depth:** 12.8 **Sample Number:** 5B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Sample No.		1	2	3
Initial	Water Content, %	33.6	33.3	34.0
	Dry Density, pcf	88.1	87.6	87.3
	Saturation, %	100.2	98.1	99.4
	Void Ratio	0.8981	0.9105	0.9172
	Diameter, in.	1.418	1.432	1.431
	Height, in.	3.123	3.130	3.126
At Test	Water Content, %	33.6	33.3	34.0
	Dry Density, pcf	88.1	87.6	87.3
	Saturation, %	100.2	98.1	99.4
	Void Ratio	0.8981	0.9105	0.9172
	Diameter, in.	1.418	1.432	1.431
	Height, in.	3.123	3.130	3.126
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.47	20.69	41.51
Fail. Stress, psf		1030	930	794
Strain, %		7.1	15.1	10.3
Ult. Stress, psf		1012	930	771
Strain, %				
σ_1 Failure, psf		1962	3910	6771
σ_3 Failure, psf		932	2980	5977

Type of Test:
Unconsolidated Undrained

Sample Type: Undisturbed

Description: SO GR CL4 W/ WD

LL= 40 **PL=** 20 **PI=** 20

Assumed Specific Gravity= 2.68

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

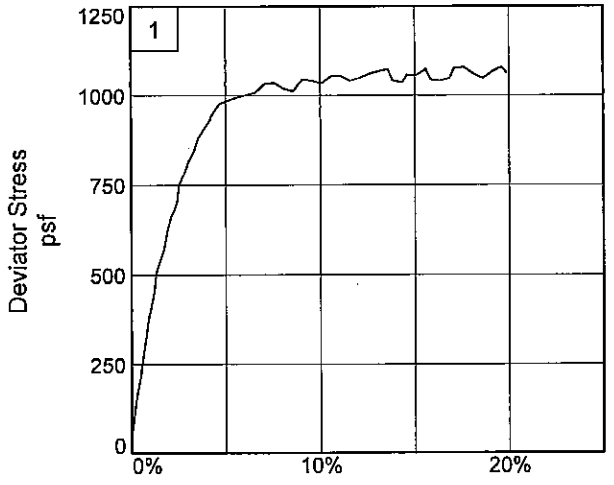
Source of Sample: WWHC-51UCL **Depth:** 17.7

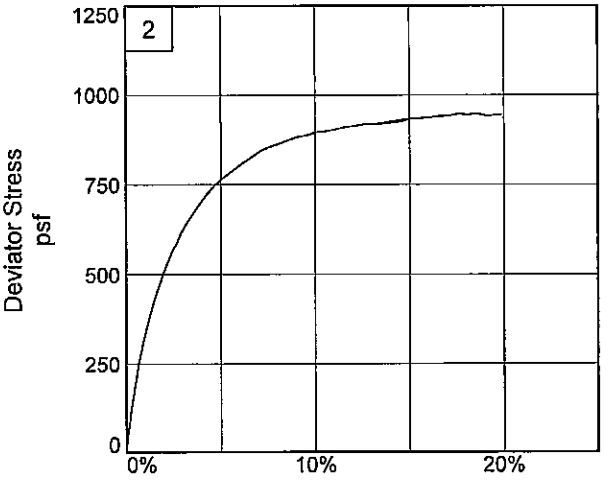
Sample Number: 6C

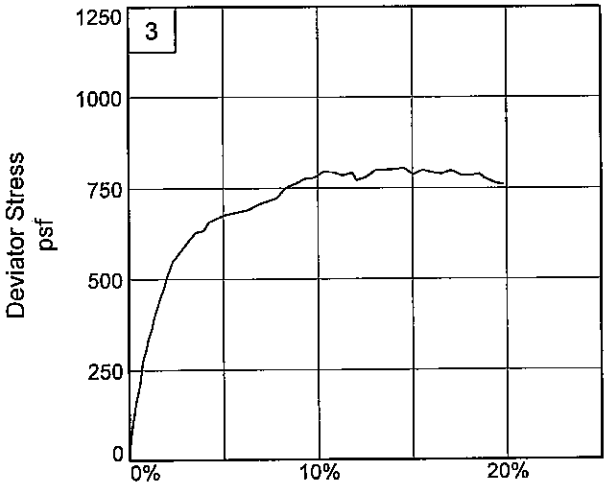
Proj. No.: 0022-0002 **Date Sampled:**

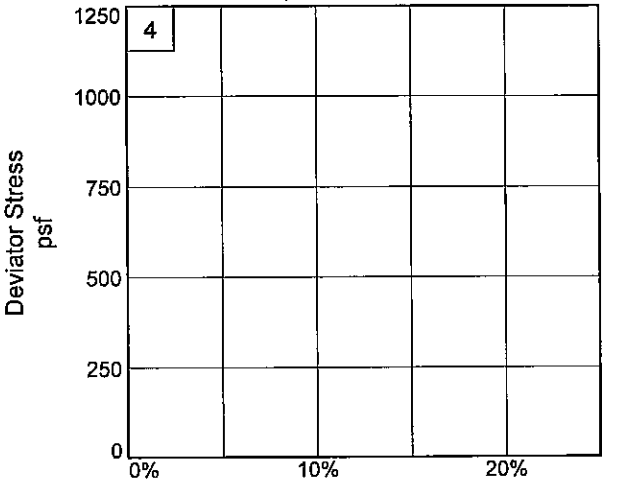
TRIAXIAL SHEAR TEST REPORT

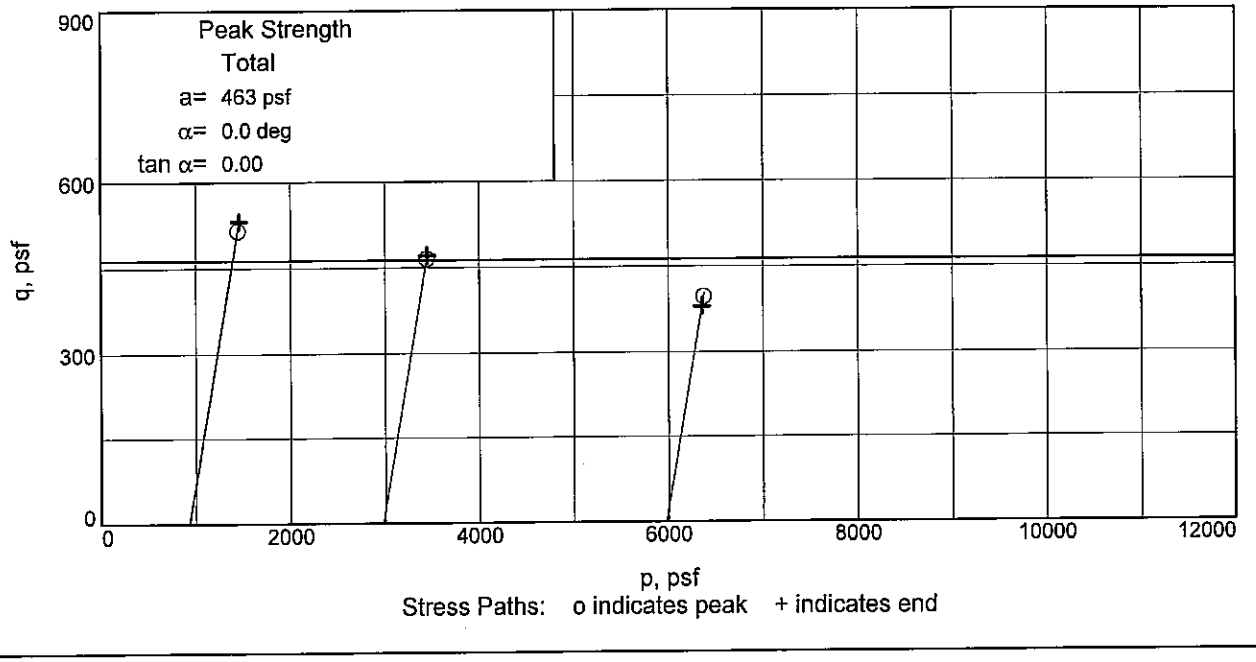
FFEBJV, LLC









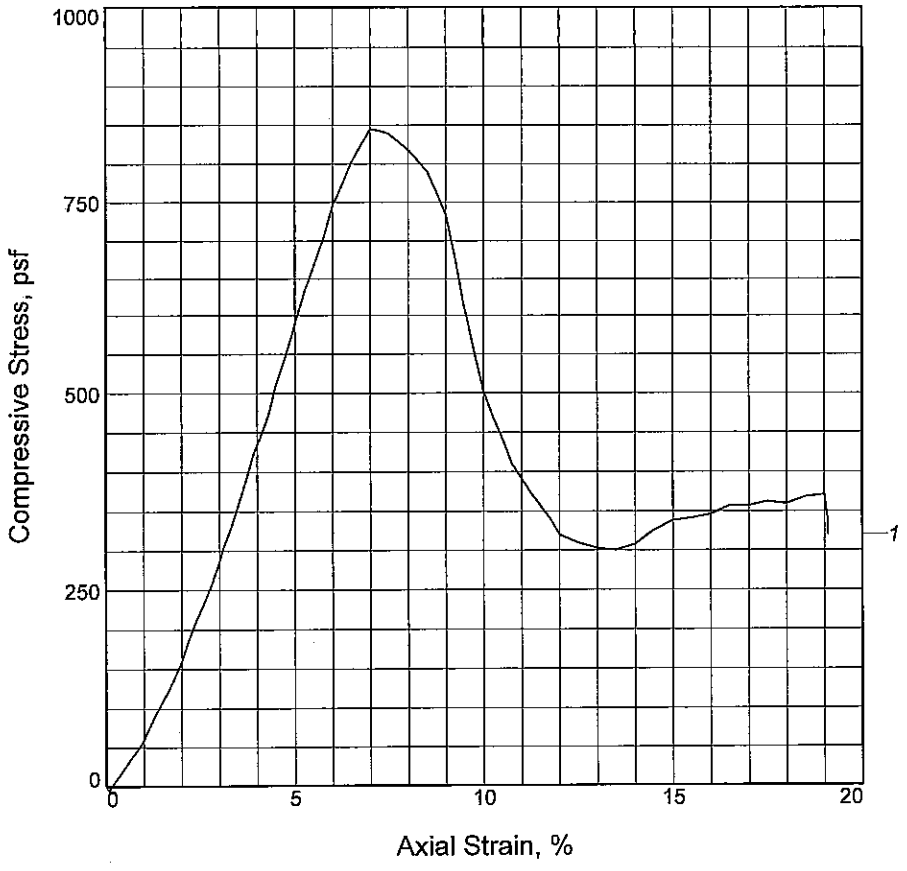


Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-51UCL **Depth:** 17.7 **Sample Number:** 6C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	824			
Undrained shear strength, psf	412			
Failure strain, %	6.8			
Strain rate, in./min.	0.031			
Water content, %	33.6			
Wet density, pcf	114.9			
Dry density, pcf	86.0			
Saturation, %	96.0			
Void ratio	0.9309			
Specimen diameter, in.	1.404			
Specimen height, in.	3.121			
Height/diameter ratio	2.22			

Description: SO BR & T CL4-S

LL = 27	**PL** = 23	**PI** = 4	**GS**= 2.66	**Type:** Undisturbed

Project No.: 0022-0002

Date Sampled:

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

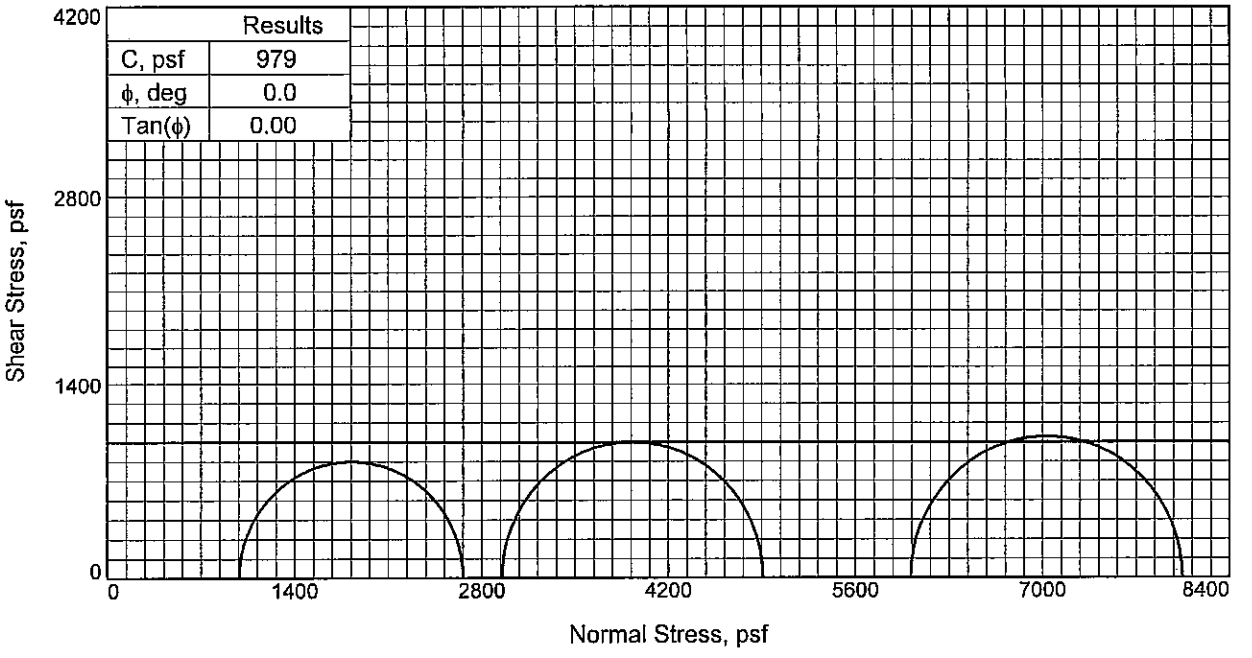
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

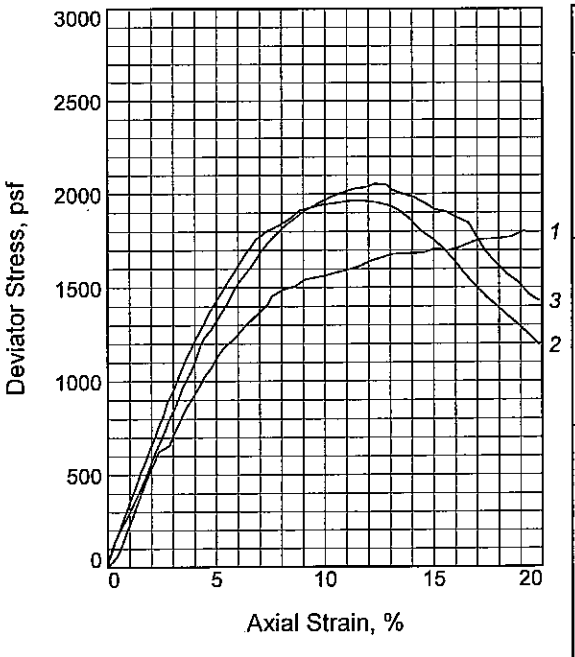
Source of Sample: WWHC-51UCL **Depth:** 21.7

Sample Number: 7C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC





Sample No.		1	2	3
Initial	Water Content, %	35.5	35.2	35.4
	Dry Density, pcf	85.5	86.3	86.6
	Saturation, %	100.1	101.2	102.6
	Void Ratio	0.9425	0.9251	0.9177
	Diameter, in.	1.409	1.402	1.404
	Height, in.	3.112	3.146	3.116
At Test	Water Content, %	35.5	35.2	35.4
	Dry Density, pcf	85.5	86.3	86.6
	Saturation, %	100.1	101.2	102.6
	Void Ratio	0.9425	0.9251	0.9177
	Diameter, in.	1.409	1.402	1.404
	Height, in.	3.112	3.146	3.116
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.84	20.51	41.77
Fail. Stress, psf		1676	1957	2034
Strain, %		13.1	10.8	11.8
Ult. Stress, psf		1709	1767	1914
Strain, %				
σ_1 Failure, psf		2662	4910	8049
σ_3 Failure, psf		986	2953	6014

Type of Test:
Unconsolidated Undrained

Sample Type: Undisturbed

Description: M GR CL4-S W/ LNS CH

LL= 31 **PL=** 25 **PI=** 6

Assumed Specific Gravity= 2.66

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

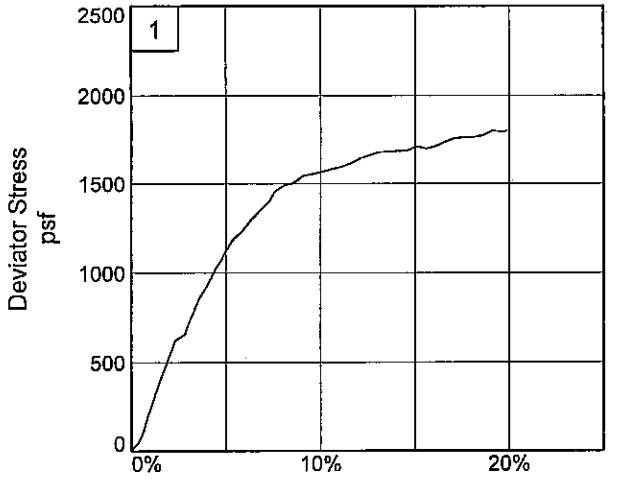
Source of Sample: WWHC-51UCL **Depth:** 25.7

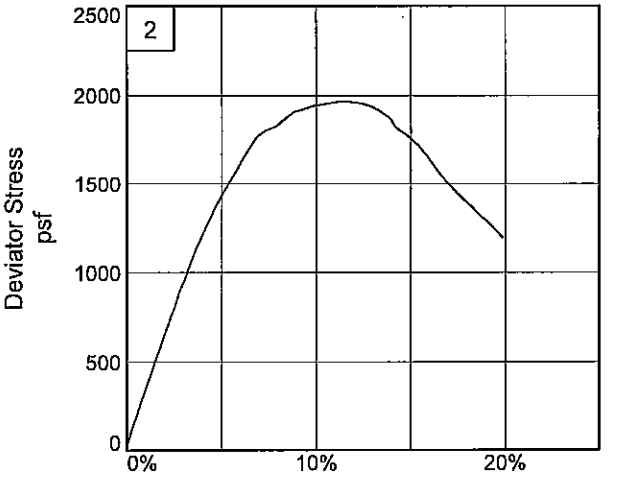
Sample Number: 8C

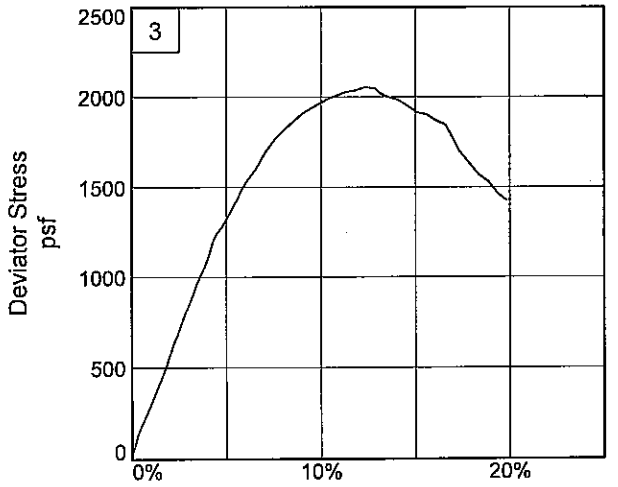
Proj. No.: 0022-0002 **Date Sampled:**

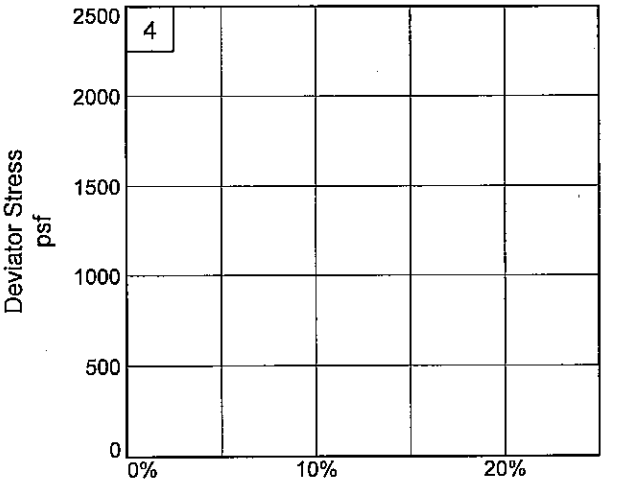
TRIAXIAL SHEAR TEST REPORT

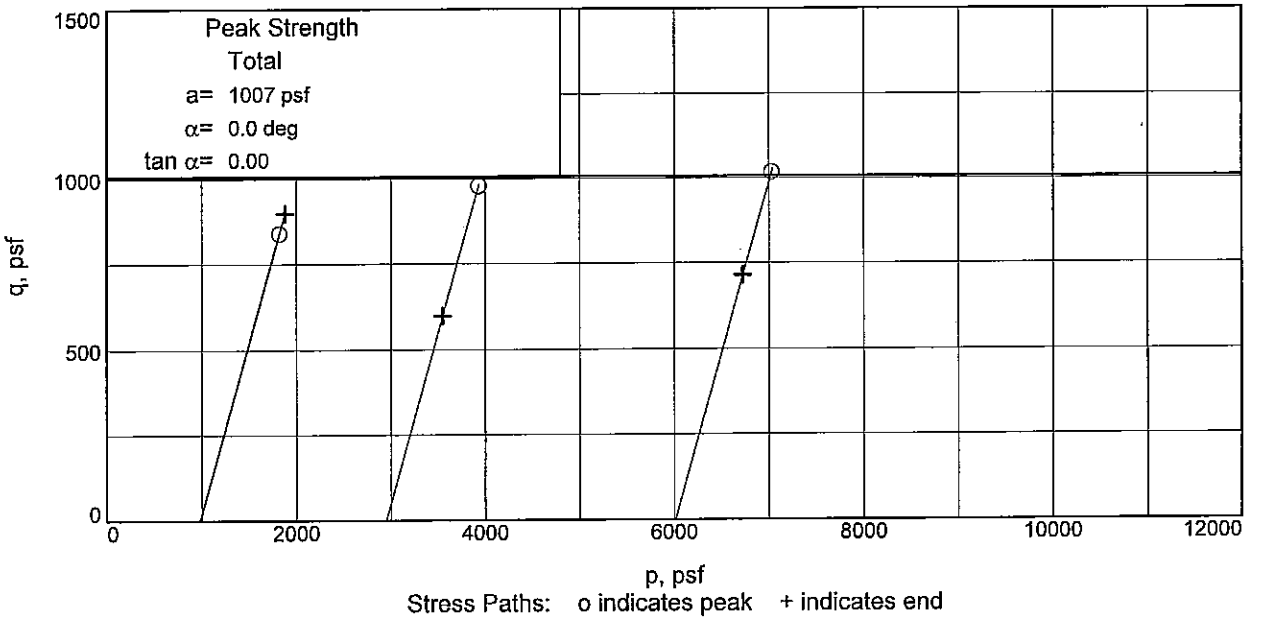
FFEBJV, LLC







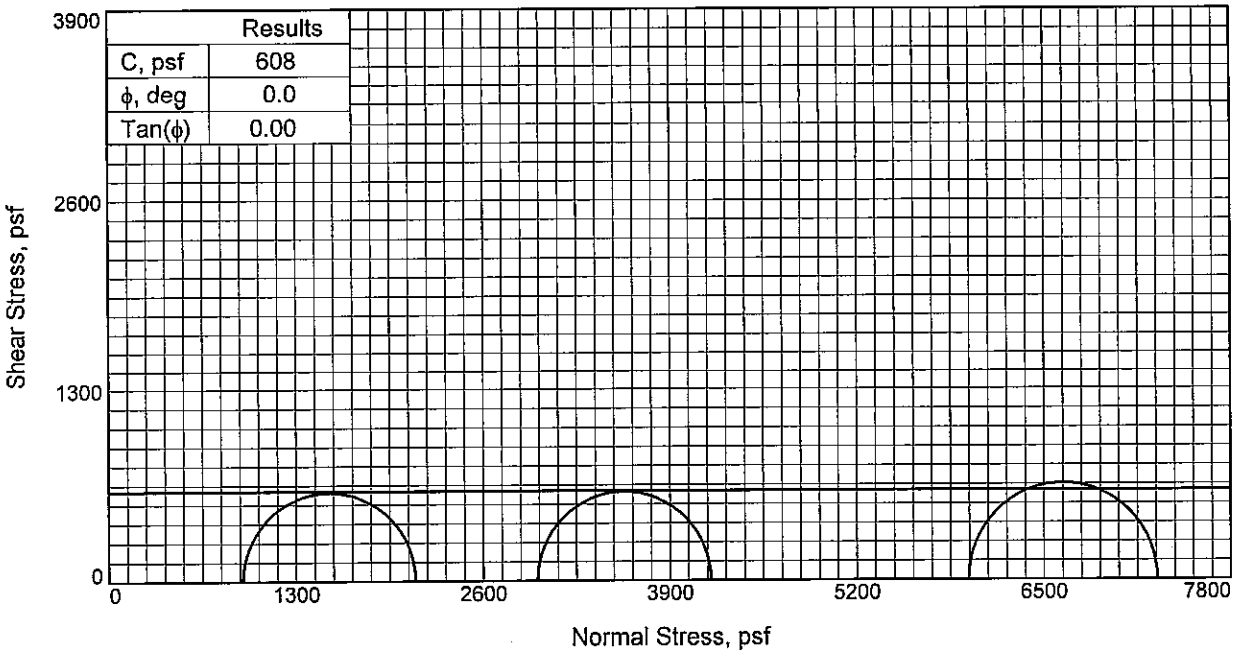


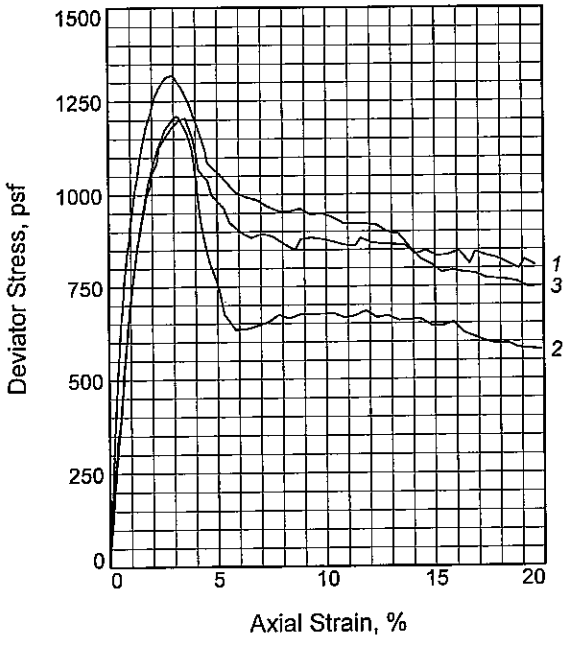


Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-51UCL **Depth:** 25.7 **Sample Number:** 8C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Sample No.		1	2	3
Initial	Water Content, %	61.1	65.0	64.5
	Dry Density, pcf	63.4	61.0	62.0
	Saturation, %	98.6	98.8	100.6
	Void Ratio	1.6985	1.8027	1.7572
	Diameter, in.	1.421	1.417	1.420
	Height, in.	3.134	3.144	3.141
At Test	Water Content, %	61.1	65.0	64.5
	Dry Density, pcf	63.4	61.0	62.0
	Saturation, %	98.6	98.8	100.6
	Void Ratio	1.6985	1.8027	1.7572
	Diameter, in.	1.421	1.417	1.420
	Height, in.	3.134	3.144	3.141
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.46	20.69	41.50
Fail. Stress, psf		1198	1206	1313
Strain, %		3.2	3.0	2.6
Ult. Stress, psf		882	633	954
Strain, %				
σ_1 Failure, psf		2129	4185	7288
σ_3 Failure, psf		931	2979	5976

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: M GR CH4 W/ LNS ML

LL= 82 **PL=** 24 **PI=** 58
Assumed Specific Gravity= 2.74
Remarks:

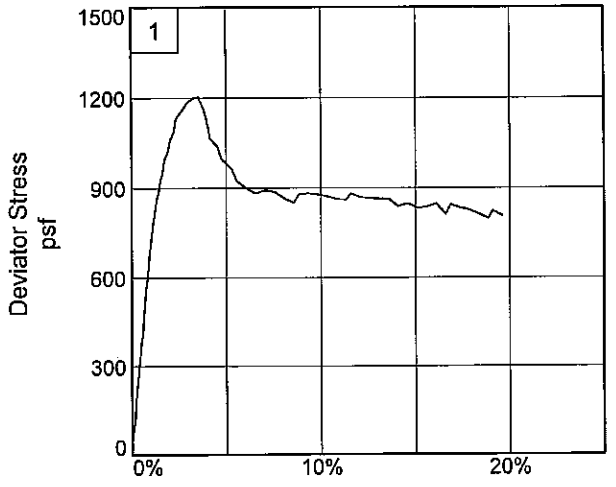
Figure _____

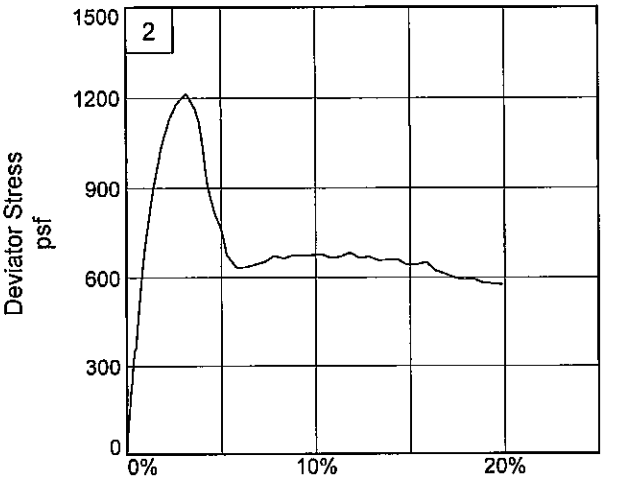
Client: U.S. Army Corps of Engineers

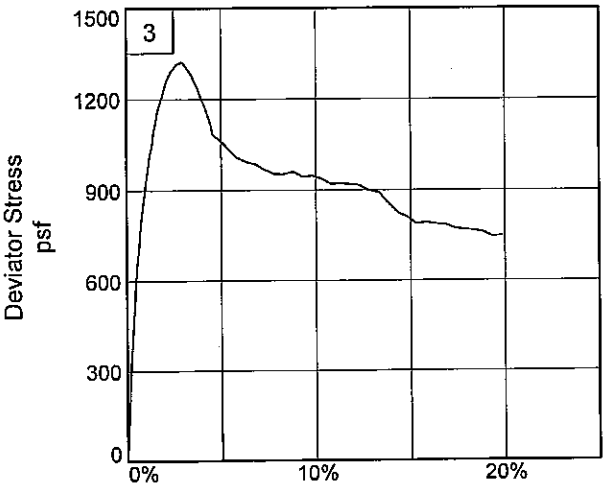
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-51UCL **Depth:** 28.8
Sample Number: 9B
Proj. No.: 0022-0002 **Date Sampled:**

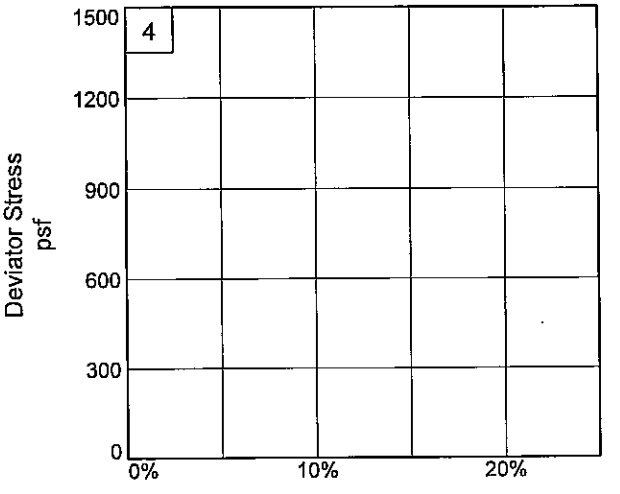
TRIAXIAL SHEAR TEST REPORT

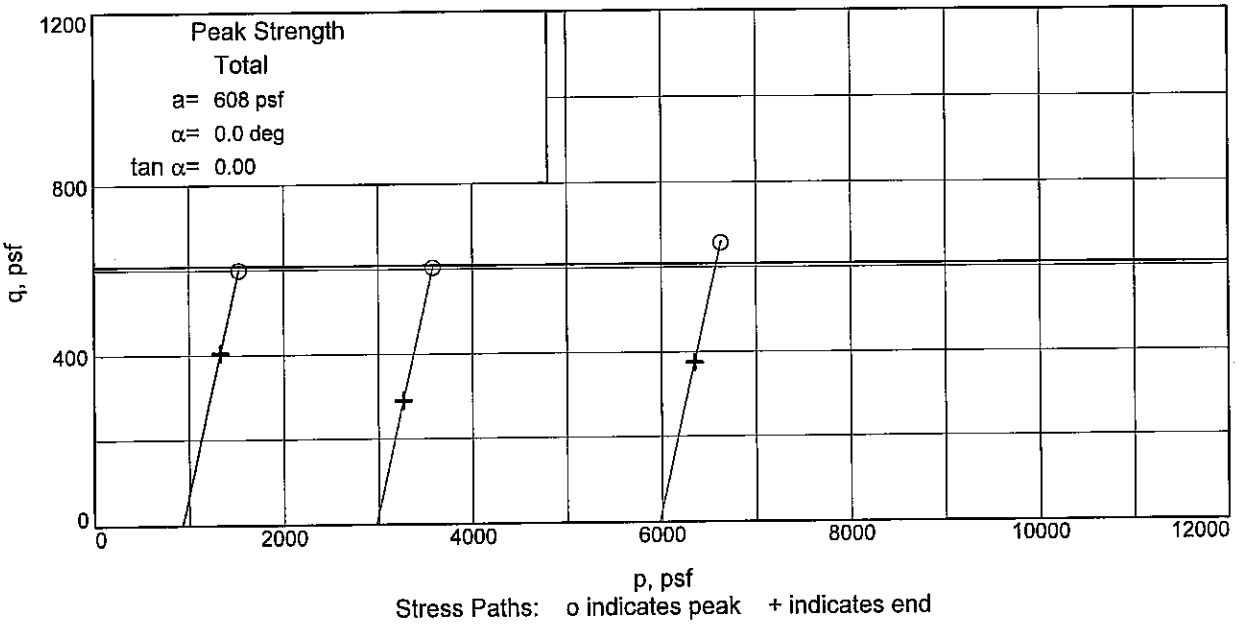
FFEBJV, LLC









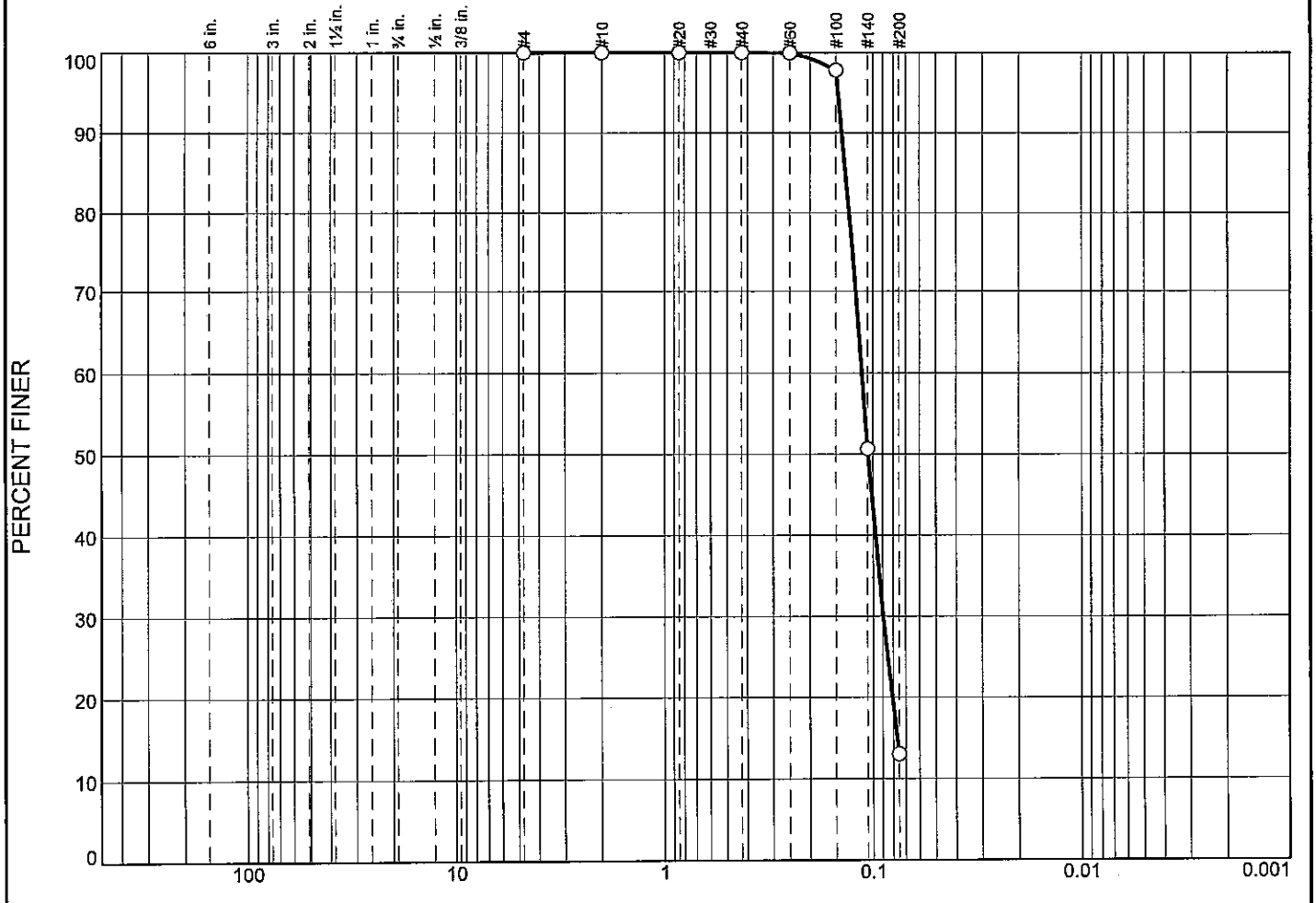


Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-51UCL **Depth:** 28.8 **Sample Number:** 9B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	87.0	13.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1339	0.1130	0.1055	0.0892	0.0766			

Material Description	USCS	AASHTO
○ GR SC1	SC1	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Sample Source:** WWHC-51UCL **Depth:** 33.7 **Sample No.:** 10C

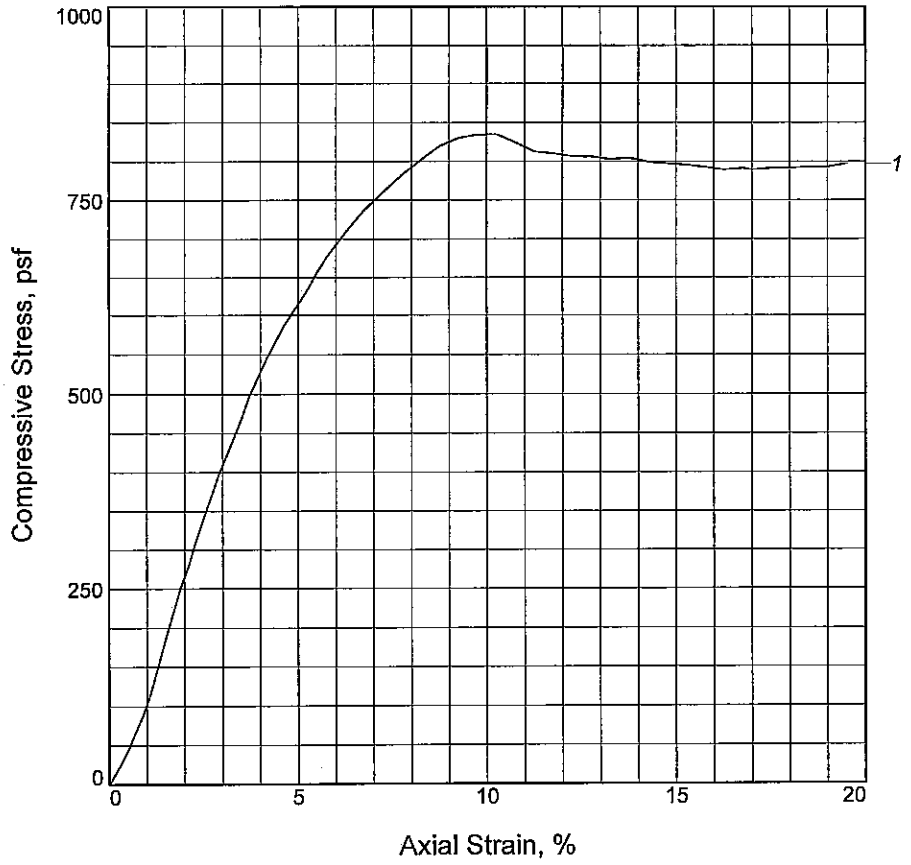
Remarks:

FFEBJV, LLC

St Rose, LA

Figure

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	830			
Undrained shear strength, psf	415			
Failure strain, %	9.3			
Strain rate, in./min.	0.029			
Water content, %	49.0			
Wet density, pcf	108.2			
Dry density, pcf	72.6			
Saturation, %	100.5			
Void ratio	1.3124			
Specimen diameter, in.	1.415			
Specimen height, in.	2.901			
Height/diameter ratio	2.05			

Description: SO GR CH3 W/ LNS ML, ARS SM

LL = 69	**PL** = 21	**PI** = 48	**Assumed GS=** 2.69	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled:
Remarks:

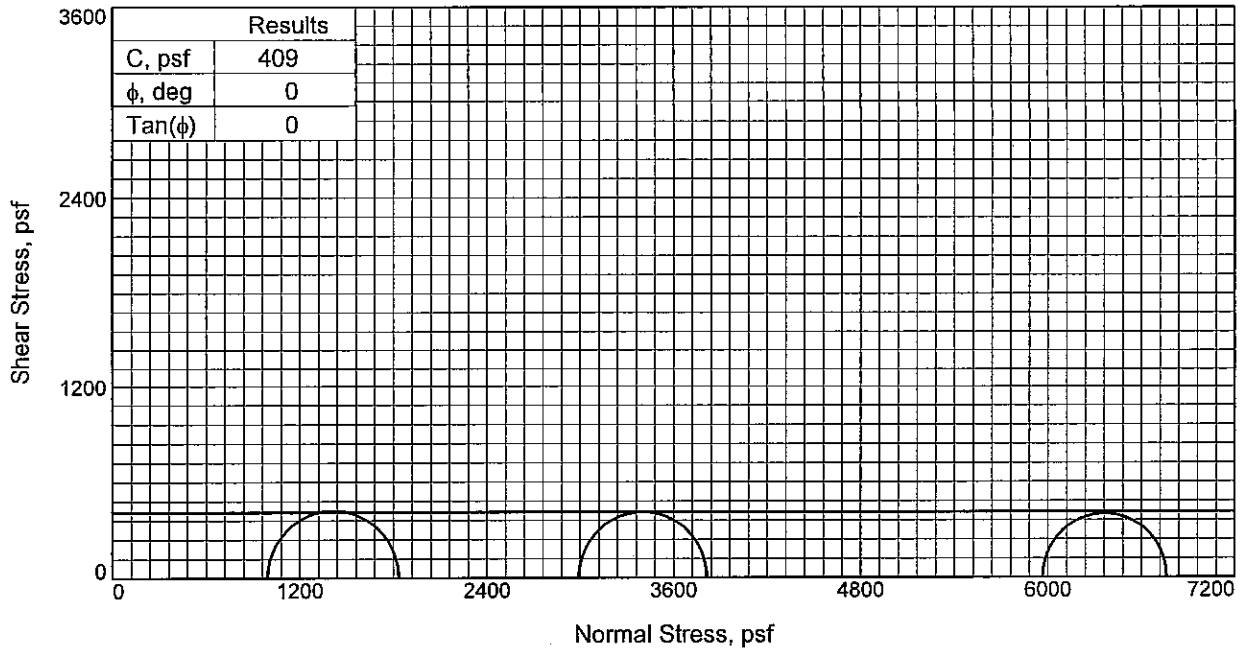
Figure _____

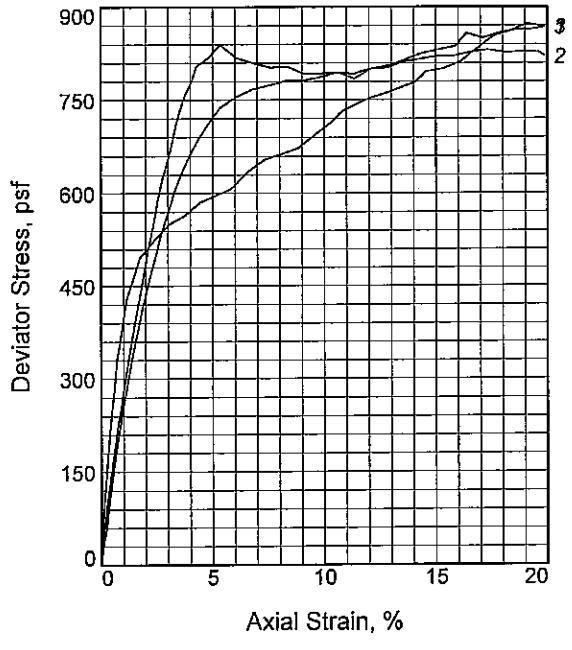
Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-51UCL **Depth:** 37.7
Sample Number: 11C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC





Sample No.		1	2	3
Initial	Water Content, %	50.7	49.7	44.3
	Dry Density, pcf	71.6	72.3	77.1
	Saturation, %	101.3	100.9	100.9
	Void Ratio	1.3526	1.3299	1.1864
	Diameter, in.	1.411	1.410	1.395
	Height, in.	3.138	3.137	3.135
At Test	Water Content, %	50.7	49.7	44.3
	Dry Density, pcf	71.6	72.3	77.1
	Saturation, %	101.3	100.9	100.9
	Void Ratio	1.3526	1.3299	1.1864
	Diameter, in.	1.411	1.410	1.395
	Height, in.	3.138	3.137	3.135
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	20.78	41.43
Fail. Stress, psf		839	821	796
Strain, %		5.3	15.1	14.6
Ult. Stress, psf		785	821	796
Strain, %				
σ_1 Failure, psf		1834	3813	6763
σ_3 Failure, psf		995	2992	5967

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: SO GR CL6

LL= 50 **PL=** 19 **PI=** 31
Assumed Specific Gravity= 2.7
Remarks:

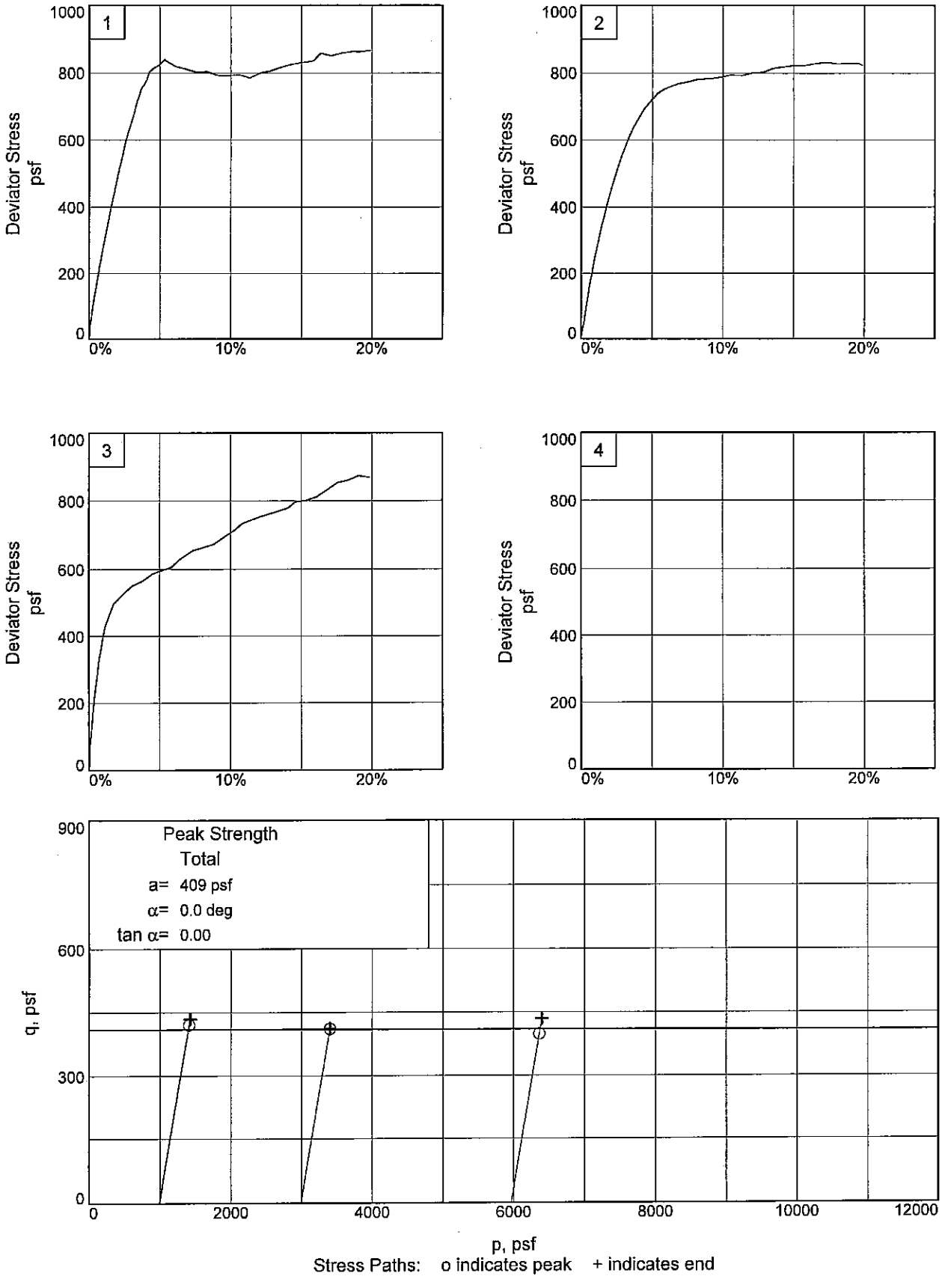
Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-51UCL **Depth:** 41.7
Sample Number: 12C
Proj. No.: 0022-0002 **Date Sampled:**

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC



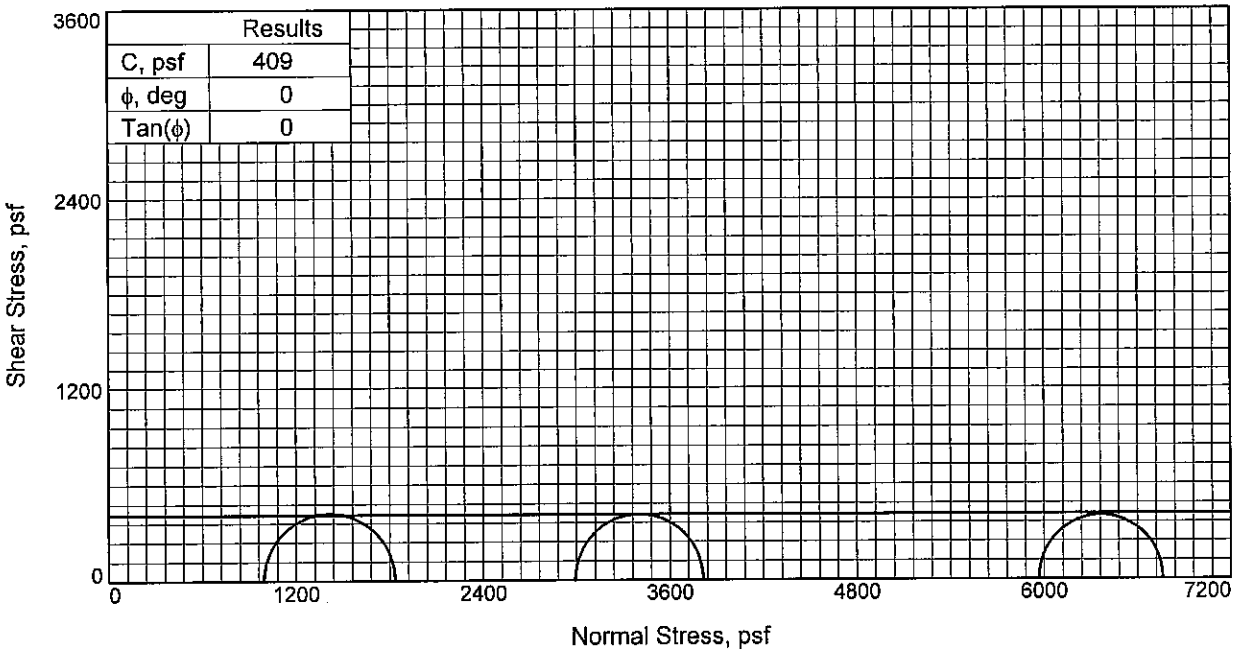
Client: U.S. Army Corps of Engineers

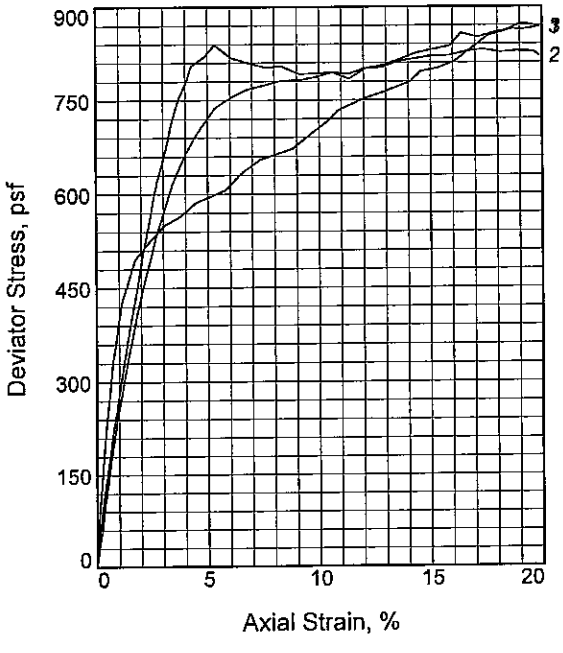
Project: Westbank 100-yr Boring Program

Source of Sample: WWHC-51UCL **Depth:** 41.7 **Sample Number:** 12C

Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC





Sample No.		1	2	3
Initial	Water Content, %	50.7	49.7	44.3
	Dry Density, pcf	71.6	72.3	77.1
	Saturation, %	101.3	100.9	100.9
	Void Ratio	1.3526	1.3299	1.1864
	Diameter, in.	1.411	1.410	1.395
	Height, in.	3.138	3.137	3.135
At Test	Water Content, %	50.7	49.7	44.3
	Dry Density, pcf	71.6	72.3	77.1
	Saturation, %	101.3	100.9	100.9
	Void Ratio	1.3526	1.3299	1.1864
	Diameter, in.	1.411	1.410	1.395
	Height, in.	3.138	3.137	3.135
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	20.78	41.43
Fail. Stress, psf		839	821	796
Strain, %		5.3	15.1	14.6
Ult. Stress, psf		785	821	796
Strain, %				
σ_1 Failure, psf		1834	3813	6763
σ_3 Failure, psf		995	2992	5967

Type of Test:
Unconsolidated Undrained

Sample Type: Undisturbed

Description: M GR CL6

LL= 50 **PL=** 19 **PI=** 31

Assumed Specific Gravity= 2.7

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

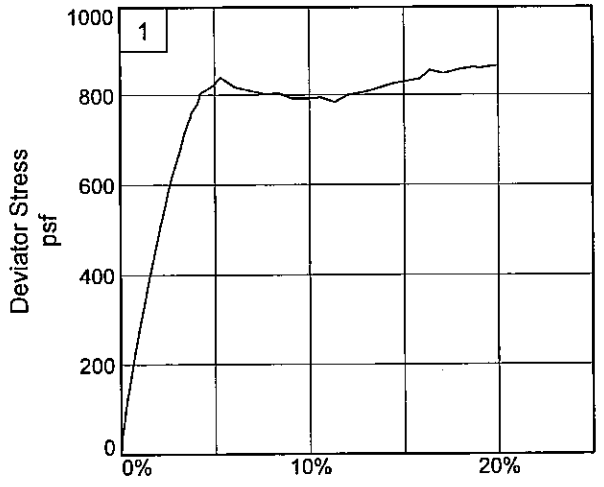
Source of Sample: WWHC-51UCL **Depth:** 41.7

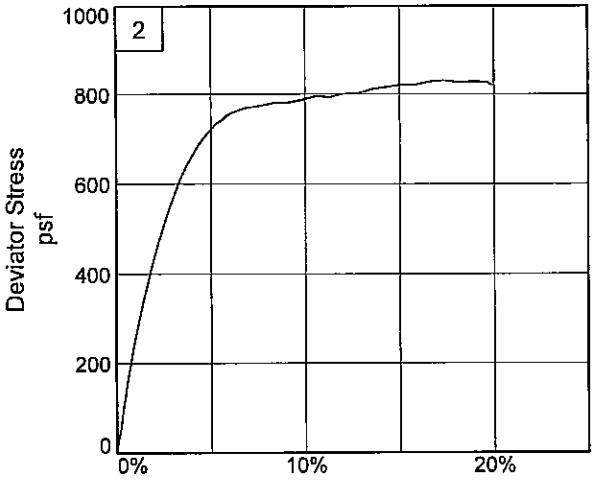
Sample Number: 12C

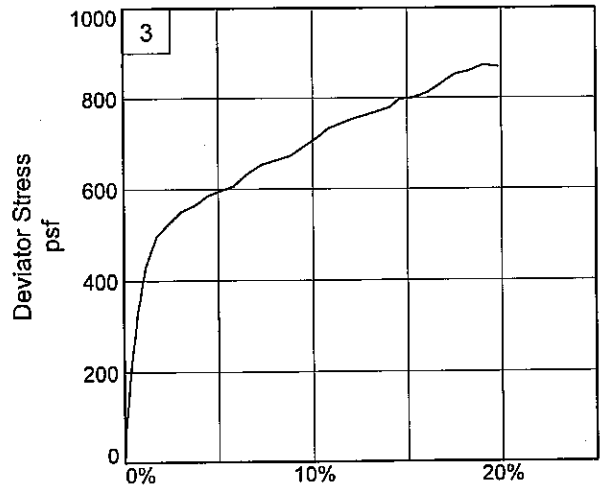
Proj. No.: 0022-0002 **Date Sampled:**

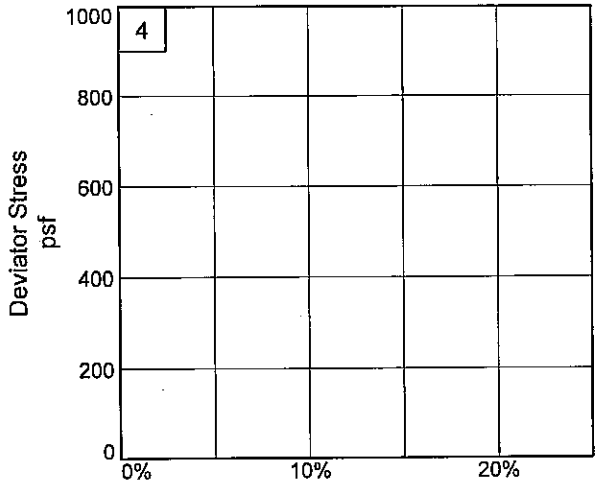
TRIAXIAL SHEAR TEST REPORT

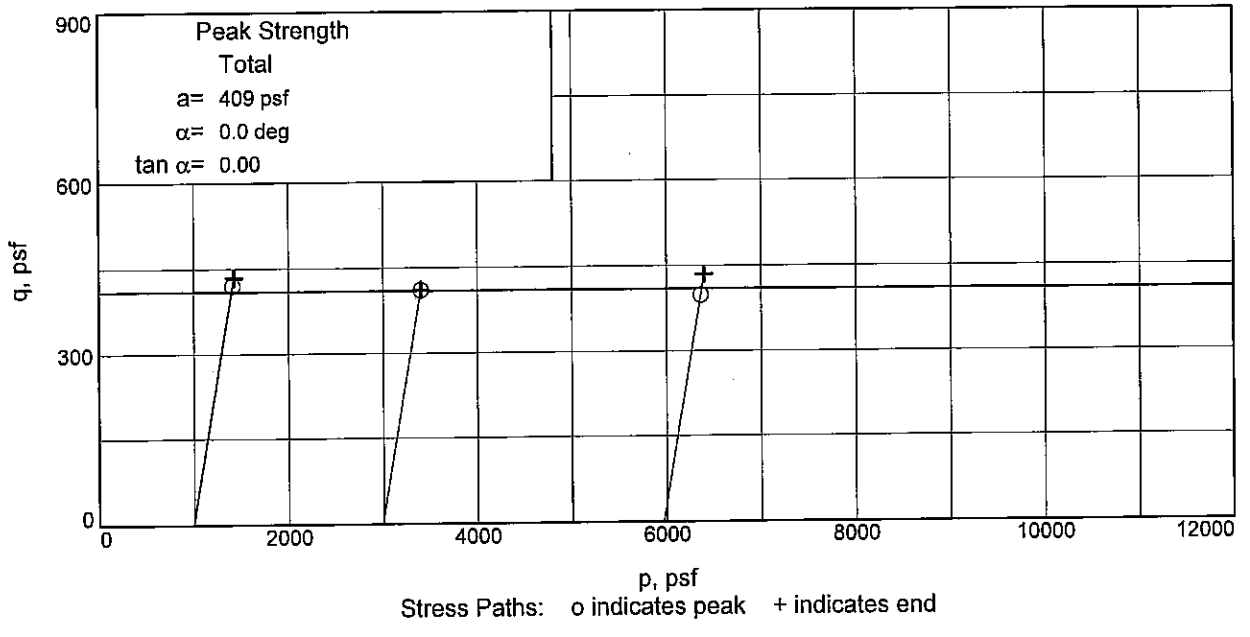
FFEBJV, LLC









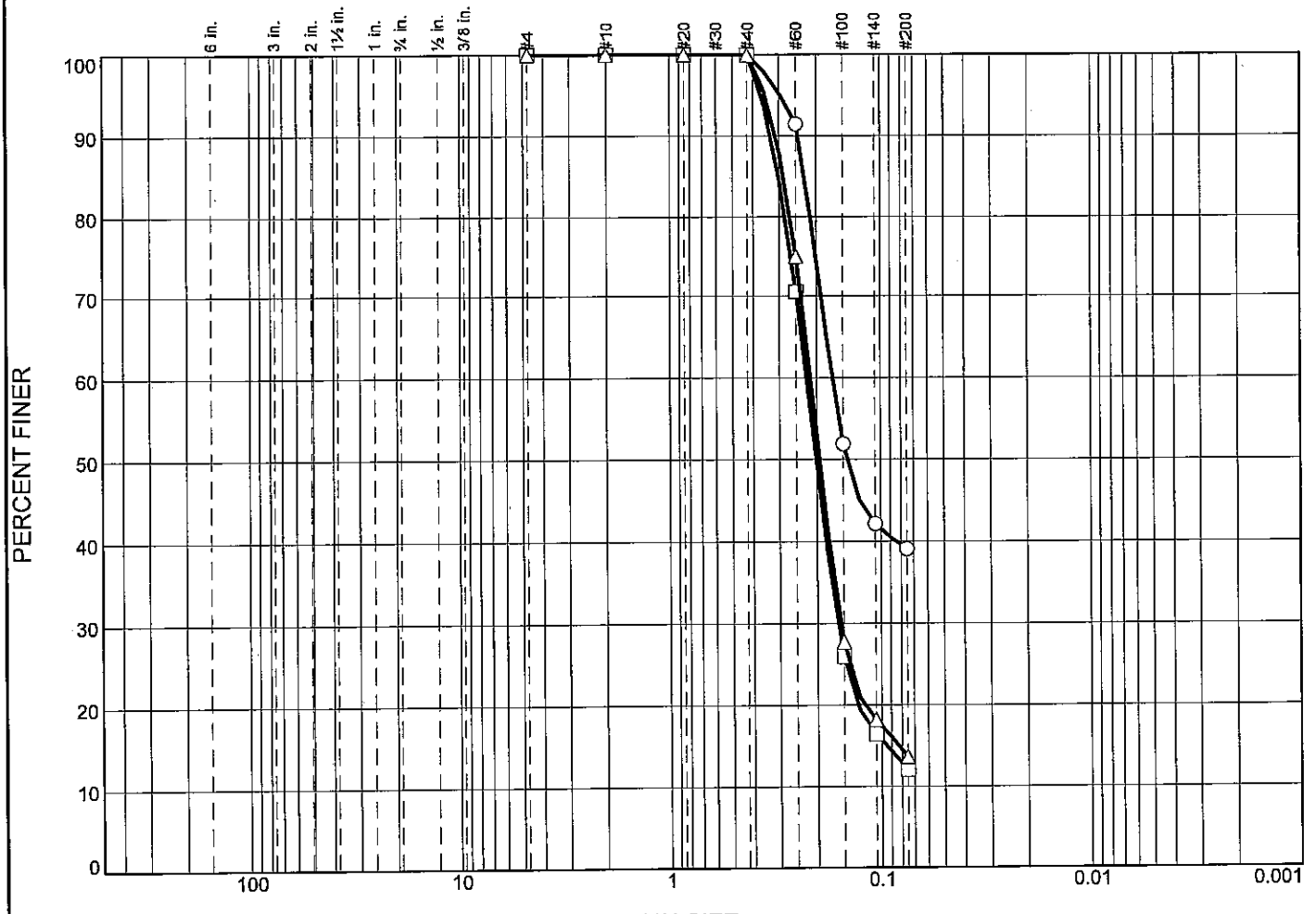


Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-51UCL **Depth:** 41.7 **Sample Number:** 12C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	60.9	39.1	
□	0.0	0.0	0.0	0.0	0.1	87.8	12.1	
△	0.0	0.0	0.0	0.0	0.0	86.4	13.6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2272	0.1687	0.1447					
□			0.3025	0.2231	0.2014	0.1600	0.0944			
△			0.2856	0.2138	0.1942	0.1554	0.0829			

	Material Description	USCS	AASHTO
○	GR SC5-S	SC5-S	
□	GR SC1	SC1	
△	GR SC1	SC1	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Source of Sample:** WWHC-51UCL **Depth:** 48.0 **Sample Number:** 14

□ **Source of Sample:** WWHC-51UCL **Depth:** 58.0 **Sample Number:** 19

△ **Source of Sample:** WWHC-51UCL **Depth:** 68.0 **Sample Number:** 24

FFEBJV, LLC

St Rose, LA

Remarks:

Figure

```
BOR. WWHC-51UCL
STA. LAT N29^49'08.27" LONG W90^06'40.64"

23-24 APRIL 2007

GROUND EL. 13.0
  0.0  0.8 13  0.8CL     VST T        O
  0.8  2.0 22  2.0CL  SISVST T        O
  2.0  2.8 21     ML         T       CS  O
  2.8  4.0 19  4.0ML         T       CS  O
  4.0  4.8 38     CL     SO  T        O
  4.8  5.7 45     CL     VSOLBRGR    CS
  5.7  6.6 39  6.6CL     ST  T        O
  6.6  8.0 35     CH     ST  T        O
  8.0  8.8 30     CH     ST  T        O
  8.8  9.7 33  9.7CH     ST  T GR                   1061118 56 22      33  91
  9.7 12.0 49     CH  SIS M GR        O
 12.0 12.8 36     CH  SIS M GR        O
 12.8 13.7 36 13.7CH  SIS M GR  T    WD SL
 13.7 16.0    16.0NS
 16.0 16.8 35     CL     SO GR        O
 16.8 17.7 33     CL     SO GR        O
 17.7 20.0 33     CL     SO GR       WD
 20.0 20.8 37     CL     SO  T       CS  O
 20.8 21.7 32     CL     SO  T       CS  O
 21.7 22.6 33     CL     SO BR T      S               412114 27 23      34 220
 22.6 24.0 35     CL     SO GR        O
 24.0 24.8 41     CL     SO GR
 24.8 25.7 35     CL     SO GR        O
 25.7 26.6 36     CL     SO GR       CS  S
 26.6 28.0 46 28.0CL     SO GR
 28.0 28.8 45 28.8CL  SISSO GR        O
 28.8 29.7 53 29.7CH  SIS M GR
 29.7 30.6 40     CH      M GR
 30.6 32.0 44 32.0CH      M GR
 32.0 32.8 34 32.8CH  SISST GR
 32.8 33.7 25     SC       GR
 33.7 34.6 26     SC       GR
 34.6 36.0 29     SC       GR
 36.0 36.8 29     SC       GR
 36.8 37.7 28 37.7SC       GR
 37.7 40.0 47 40.0CH  SIS M GR        S               415108 69 21      49 380
```

40.0 40.8 36 CL M GR CS S
40.8 41.7 30 CL M GR CS S
41.7 42.6 36 CL SO GR
42.6 44.0 41 44.0CL SO GR
44.0 44.8 28 SM GR CS
44.8 45.7 34 45.7SM GR
45.7 48.0 22 48.0SP GR CS
48.0 50.0 31 SC GR 13
50.0 52.0 26 SC GR SIF 26
52.0 54.0 19 SC GR T O 29
54.0 56.0 20 SC GR T O 32
56.0 58.0 23 SC GR 38
58.0 60.0 17 SC GR 37
60.0 62.0 20 SC GR T 39
62.0 64.0 18 SC GR 41
64.0 66.0 18 SC GR 48
66.0 68.0 20 SC GR 48
68.0 69.5 19 69.5SC GR 51
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 5.10/7.90 Water Con: 37.00
LL,PL,PI : 50, 20, 30 Dry Dens : 84.00
Cohesion : 0.093 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 13.10/-0.10 Water Con: 38.00
LL,PL,PI : 84, 23, 61 Dry Dens : 85.00
Cohesion : 0.425 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 18.00/-5.00 Water Con: 34.00
LL,PL,PI : 40, 20, 20 Dry Dens : 88.00
Cohesion : 0.232 Saturat : 98.00

Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 26.00/-13.0 Water Con: 35.00
LL,PL,PI : 31, 25, 6 Dry Dens : 86.00
Cohesion : 0.490 Saturat :101.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 29.10/-16.1 Water Con: 64.00
LL,PL,PI : 82, 24, 56 Dry Dens : 62.00
Cohesion : 0.304 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 42.00/-29.0 Water Con: 48.00
LL,PL,PI : 50, 19, 31 Dry Dens : 74.00
Cohesion : 0.205 Saturat :101.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-51UPT

Current Date: 6/30/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	M GR & T CH2 W/ LYS ML, O, RT	CH2		35												
1B	0.8	M GR CH3 W/ ARS ML, WD, O	CH3		51												
1C	1.7	M BR & GR CH3 W/ O, RT	CH3	3	39	79	109	90	UC	--	517	1034	73	31	42	0.36	
1D	2.6	M GR & T CH3 W/ ARS ML, RT	CH3		45												
2A	4.0	M GR & T CH3 W/ O, RT	CH3		43												
2B	4.8	M GR & T CH3 W/ O, LNS ML	CH3		35	87	118	91	UU	0	799		61	24	37	0.66	
NS	5.7	NO SAMPLE	NS														
3A	8.0	M GR & T CL6 W/ CC	CL6		35												
3B	8.8	M GR & T CL6 W/ LNS ML, CC	CL6		33												
3C	9.7	M GR & T CL6 W/ LNS ML, CC	CL6		36	86	117	102	UU	0	615		49	25	24	0.43	
3D	10.6	GR ML2 W/ ARS CL	ML2		34												
4A	12.0	M GR CL6 W/ LNS & LYS ML, RT	CL6		35												
4B	12.8	SO GR CL6 W/ LNS ML, RT	CL6		41								**	**			Gs, CON
4C	13.7	SO GR CL6 W/ LNS & LYS ML	CL6		43	79	113	103	UU	0	289		46	22	24	0.20	
5A	16.0	SO GR CH3 W/ LNS ML, RT	CH3		54												
5B	16.8	GR ML2 W/ LYS CH	ML2		37												
5C	17.7	SO GR CH3 W/ LNS & LYS ML, RT	CH3	7	51	71	107	99	UC	--	406	812	65	19	46	0.23	
5D	18.6	SO GR CH2 W/ LNS ML, RT	CH2		41												
6A	20.0	SO GR CH2 W/ LNS ML, RT	CH2		40												
6B	20.8	GR ML2 W/ LYS CH	ML2		36												
6C	21.7	SO GR CL6 W/ LNS ML & CH, RT	CL6		40	82	115	102	UU	0	389		47	16	31	0.22	
6D	22.6	SO GR CL6 W/ LNS ML & CH, RT	CL6		38												
7A	24.0	GR ML2 W/ LYS CH	ML2		43												
7B	24.8	SO GR CL6 W/ LYS SM	CL6		33												
7C	25.7	SO GR CH3 W/ LNS ML	CH3		48	74	110	102	UU	0	469		62	18	44	0.30	
7D	26.6	SO GR CH3 W/ LNS & ARS ML	CH3		49												
8A	28.0	SO GR CH2 W/ ARS SM	CH2		41												
8B	28.8	GR SM1-S	SM1-S		26												SV
NS	29.7	NO SAMPLE	NS														
9	32.0	M GR CL6 W/ LYS SP	CL6		32												
10	34.0	GR SP	SP		25												
11	36.0	M GR CH2 W/ LYS SP	CH2		43												
12	38.0	GR SP	SP		24												
13	40.0	GR SP	SP		23												SV
14	42.0	GR SP	SP		23												
15	44.0	GR SP	SP		25												
16	46.0	GR SP W/ ARS ML	SP		25												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-51UPT

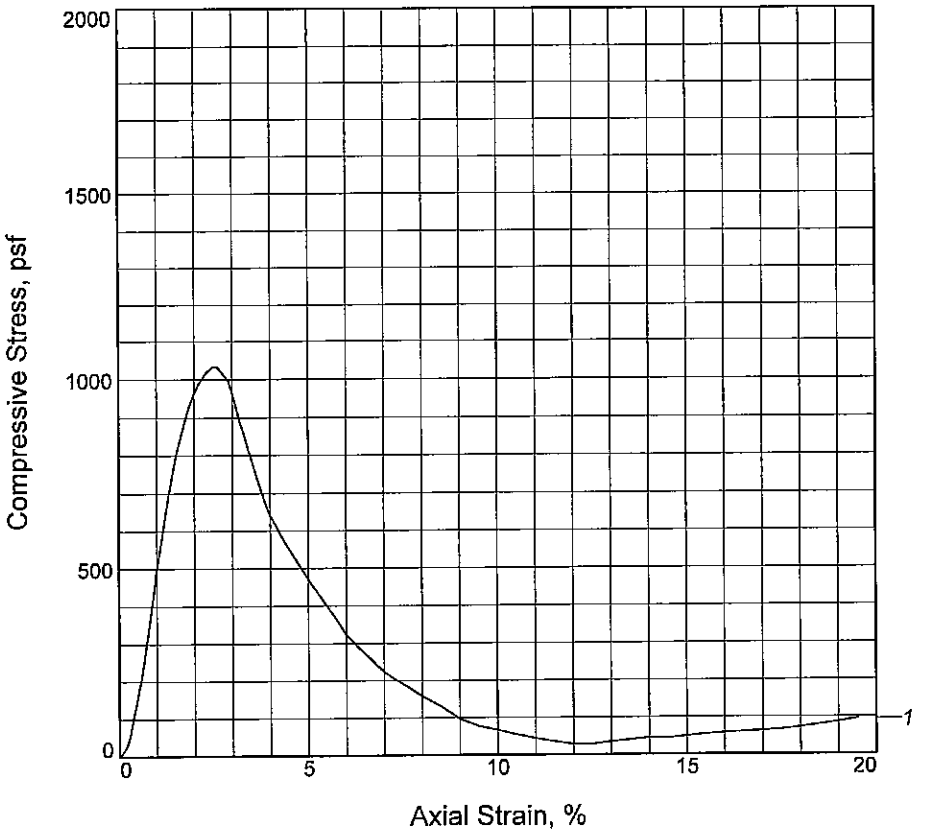
Current Date: 6/30/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
17	48.0	GR SP	SP		23												
18	50.0	GR SP	SP		23												SV
19	52.0	GR SP	SP		23												
20	54.0	GR SP	SP		23												
21	56.0	GR SP	SP		22												
22	58.0	GR SP W/ TR- O	SP		23												
23	60.0	GR SP	SP		24												SV
24	62.0	GR SP	SP		23												
25	64.0	GR SP	SP		22												
26	66.0	GR SP	SP		21												
27	68.0	GR SP	SP		22												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO/2

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1034			
Undrained shear strength, psf	517			
Failure strain, %	2.5			
Strain rate, in./min.	0.030			
Water content, %	38.6			
Wet density, pcf	109.3			
Dry density, pcf	78.9			
Saturation, %	90.4			
Void ratio	1.1691			
Specimen diameter, in.	1.362			
Specimen height, in.	3.002			
Height/diameter ratio	2.20			

Description: M BR & GR CH3 W/ O, RT

LL = 73	**PL** = 31	**PI** = 42	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/1/07
Remarks:

Figure _____

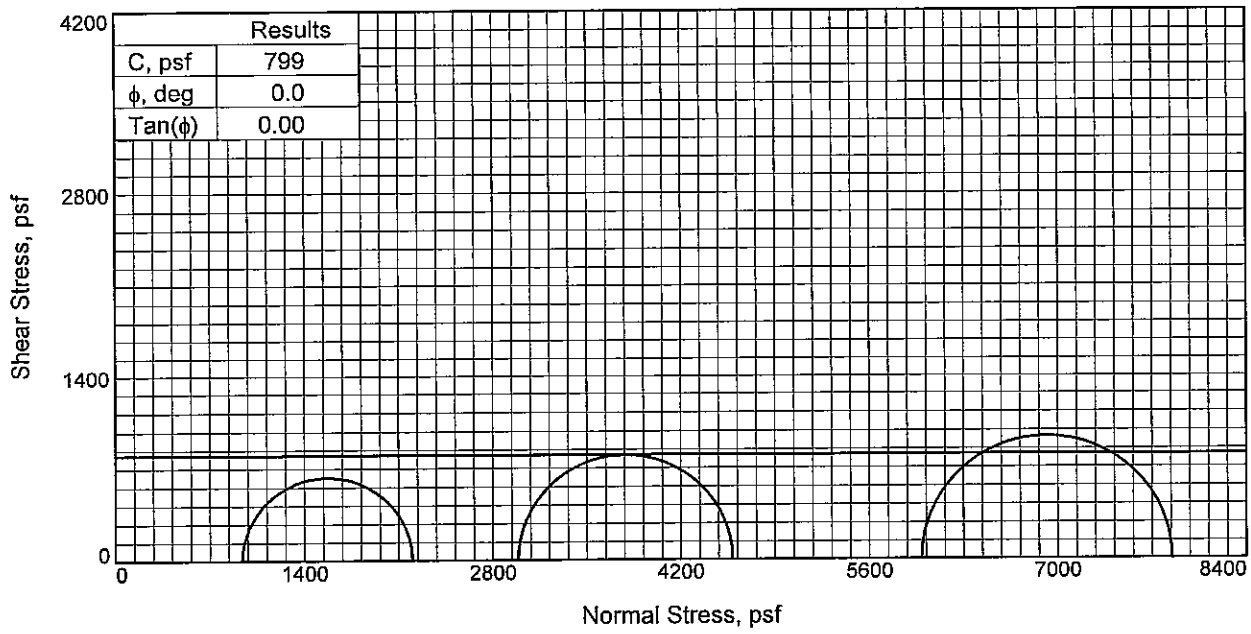
Client: U.S. Army Corps of Engineers

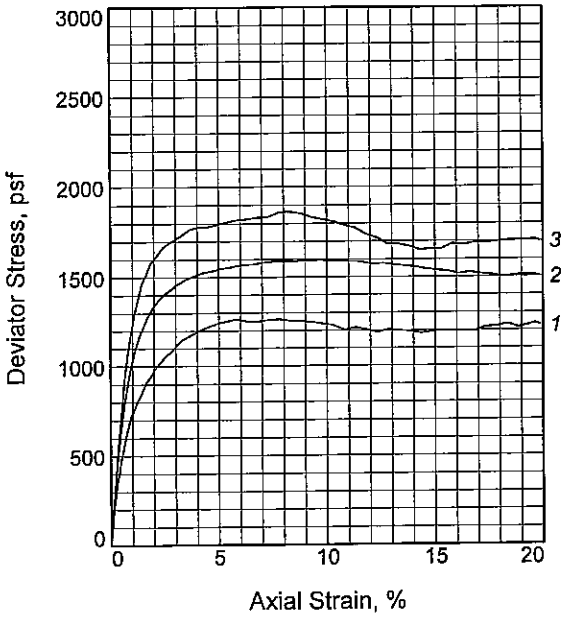
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-51UPT **Depth:** 1.7
Sample Number: 1C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** AD





Sample No.		1	2	3
Initial	Water Content, %	34.5	34.7	35.5
	Dry Density, pcf	87.3	87.8	86.4
	Saturation, %	99.3	101.1	99.9
	Void Ratio	0.9450	0.9332	0.9656
	Diameter, in.	1.415	1.395	1.406
	Height, in.	3.134	3.128	3.134
At Test	Water Content, %	34.5	34.7	35.5
	Dry Density, pcf	87.3	87.8	86.4
	Saturation, %	99.3	101.1	99.9
	Void Ratio	0.9450	0.9332	0.9656
	Diameter, in.	1.415	1.395	1.406
	Height, in.	3.134	3.128	3.134
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.53	20.76	41.58
Fail. Stress, psf		1262	1595	1863
Strain, %		5.8	9.6	8.3
Ult. Stress, psf		1182	1535	1649
Strain, %				
σ_1 Failure, psf		2202	4584	7850
σ_3 Failure, psf		940	2989	5987

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR & T CH3 W/ O, LNS ML

LL= 61 **PL=** 24 **PI=** 37
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

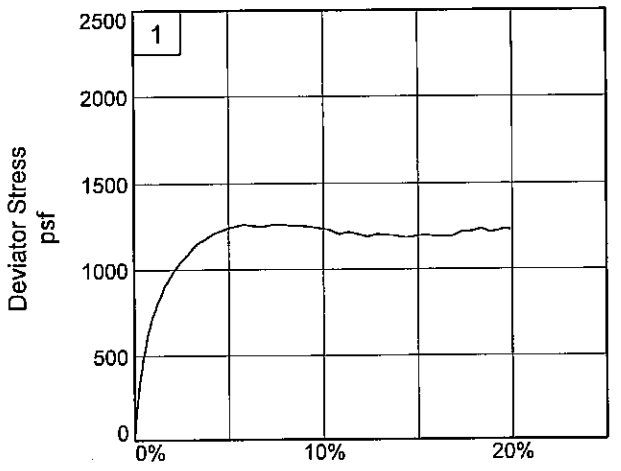
Client: U.S. Army Corps of Engineers

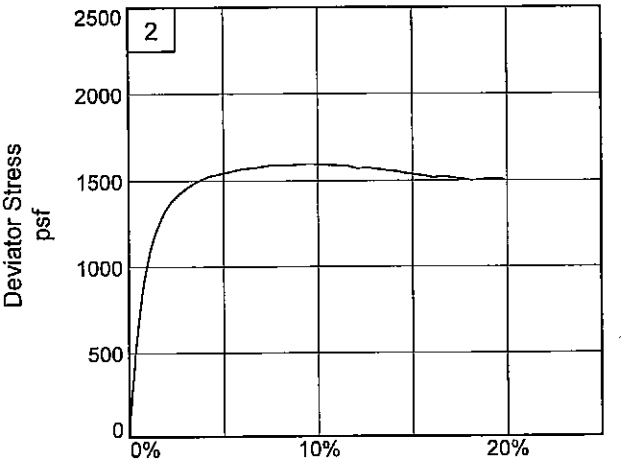
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-51UPT **Depth:** 4.8
Sample Number: 2B
Proj. No.: 0022-0002 **Date Sampled:** 6/2/07

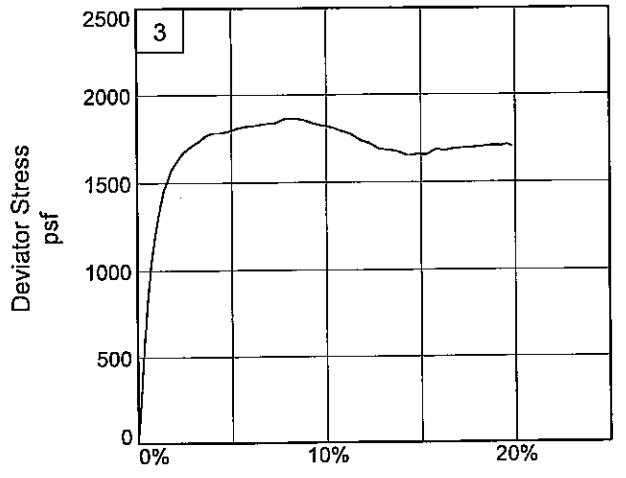
TRIAXIAL SHEAR TEST REPORT

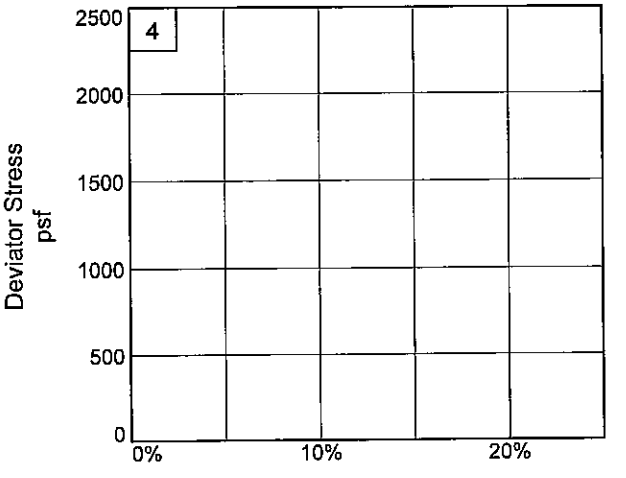
FFEBJV, LLC

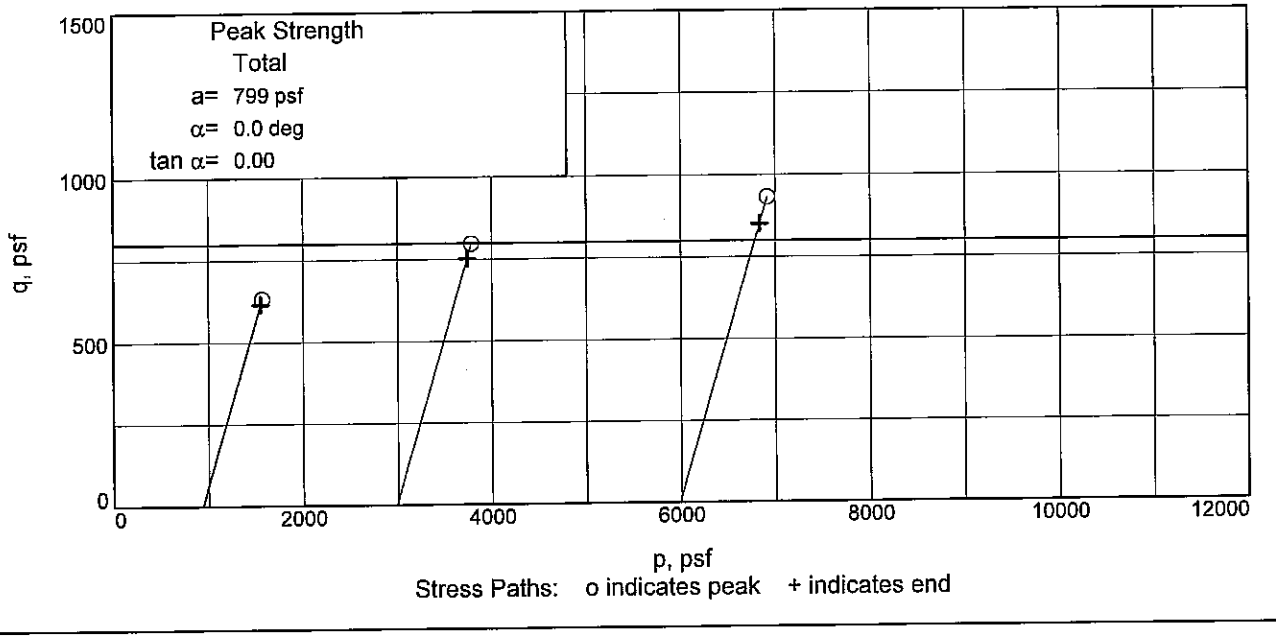
Tested By: DD/JMB **Checked By:** AD









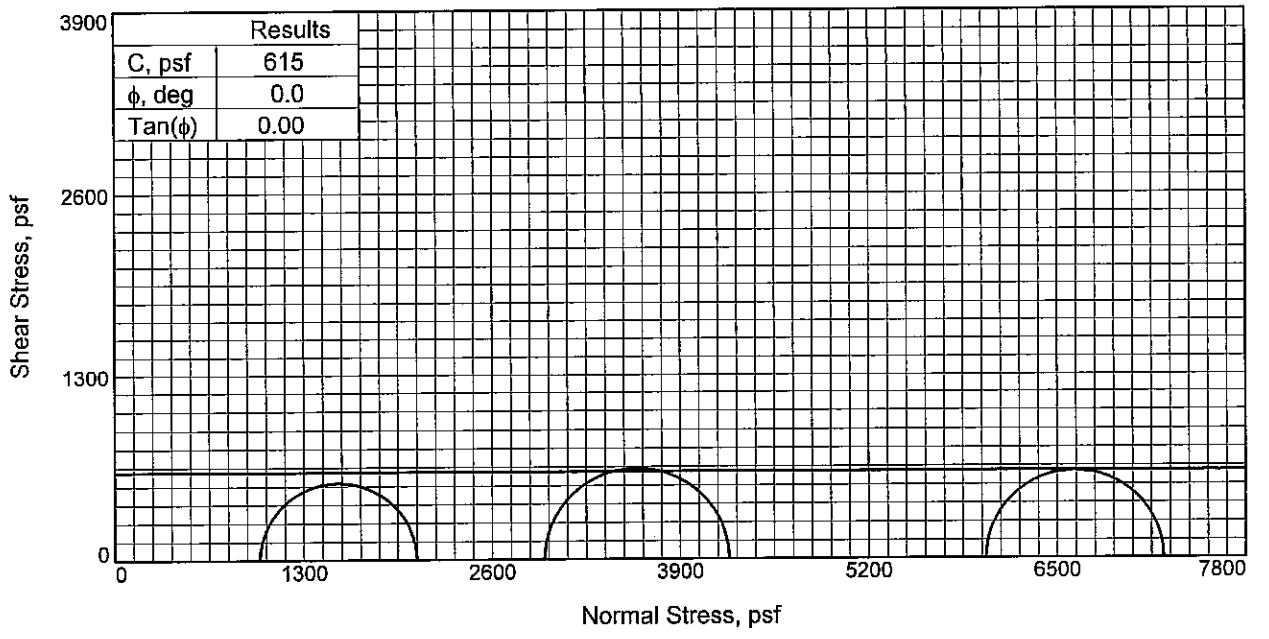


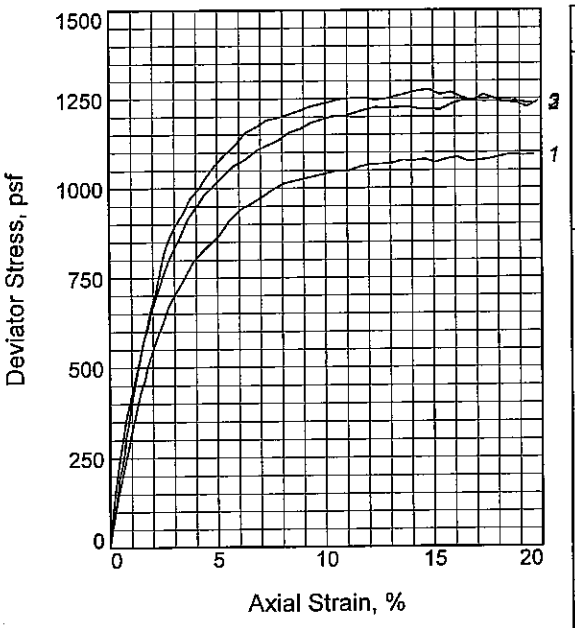
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-51UPT **Depth:** 4.8 **Sample Number:** 2B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB **Checked By:** AD





Sample No.		1	2	3
Initial	Water Content, %	36.1	35.7	36.1
	Dry Density, pcf	86.8	86.7	85.3
	Saturation, %	103.8	102.5	100.3
	Void Ratio	0.9353	0.9371	0.9689
	Diameter, in.	1.429	1.445	1.448
	Height, in.	3.129	3.135	3.126
At Test	Water Content, %	36.1	35.7	36.1
	Dry Density, pcf	86.8	86.7	85.3
	Saturation, %	103.8	102.5	100.3
	Void Ratio	0.9353	0.9371	0.9689
	Diameter, in.	1.429	1.445	1.448
	Height, in.	3.129	3.135	3.126
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	20.57	41.72
Fail. Stress, psf		1080	1276	1226
Strain, %		14.6	14.8	12.3
Ult. Stress, psf		1071	1276	1221
Strain, %				
σ_1 Failure, psf		2079	4238	7234
σ_3 Failure, psf		998	2962	6008

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR & T CL6 W/ LNS ML, CC

LL= 49 **PL=** 25 **PI=** 24
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

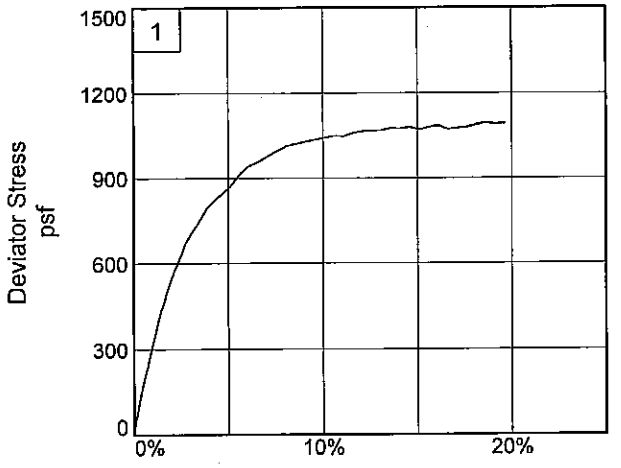
Client: U.S. Army Corps of Engineers

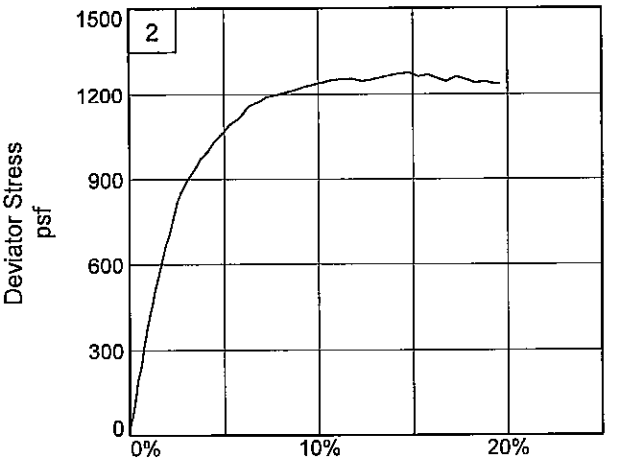
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-51UPT **Depth:** 9.7
Sample Number: 3C
Proj. No.: 0022-0002 **Date Sampled:** 6/2/07

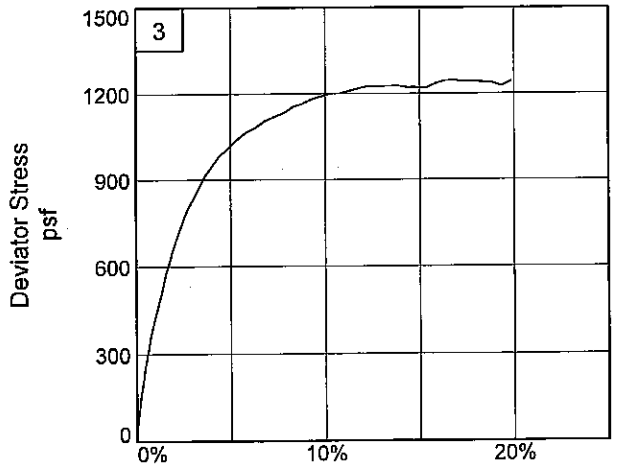
TRIAXIAL SHEAR TEST REPORT

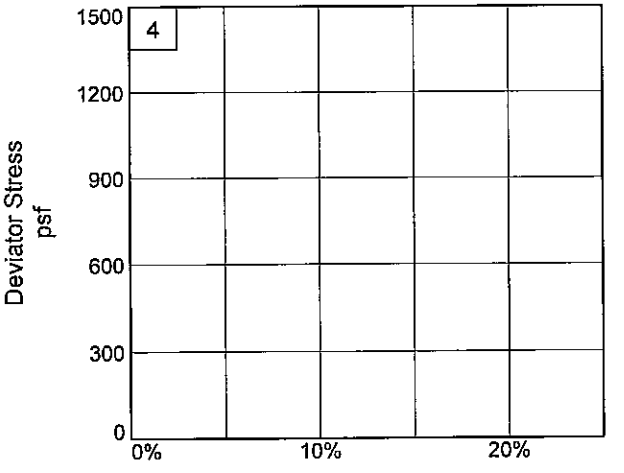
FFEBJV, LLC

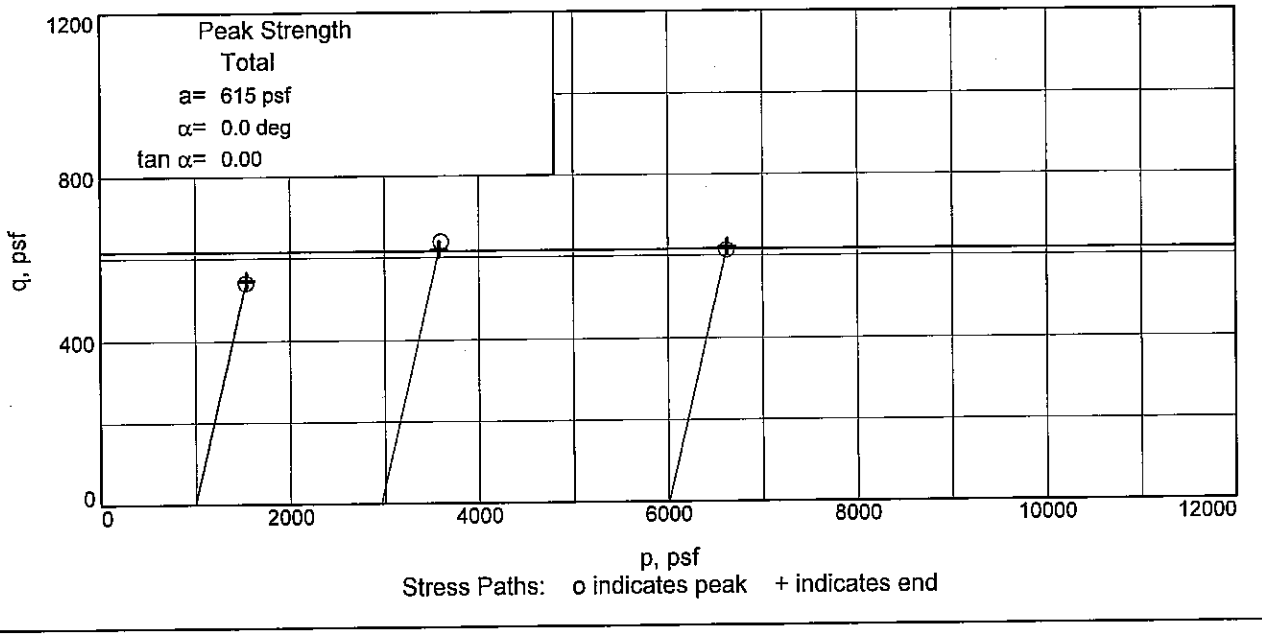
Tested By: DD/JMB







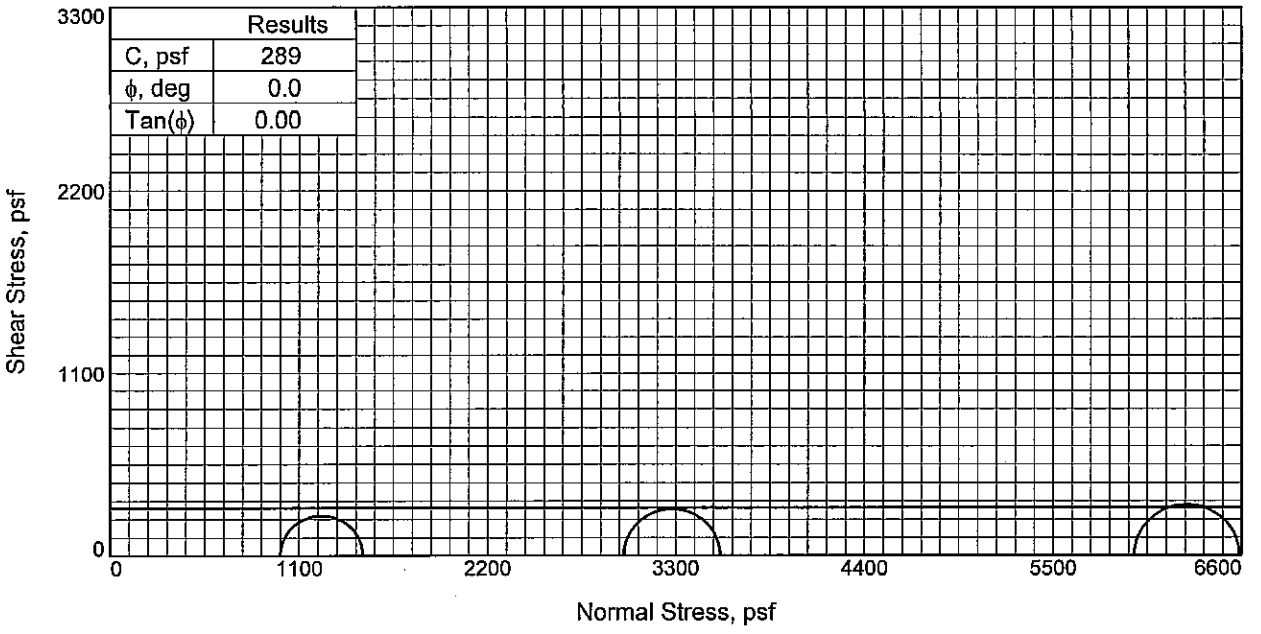


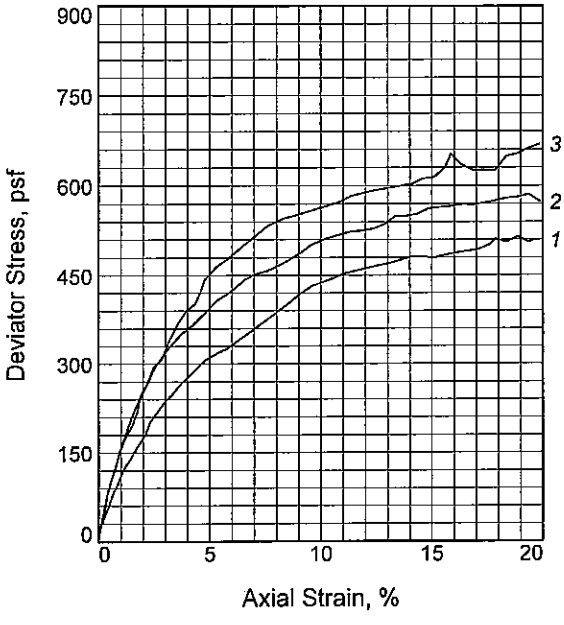


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-51UPT **Depth:** 9.7 **Sample Number:** 3C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB





Sample No.		1	2	3
Initial	Water Content, %	44.9	42.3	43.2
	Dry Density, pcf	77.3	79.2	79.3
	Saturation, %	103.2	101.5	103.9
	Void Ratio	1.1716	1.1207	1.1189
	Diameter, in.	1.414	1.416	1.404
	Height, in.	3.145	3.149	3.147
At Test	Water Content, %	44.9	42.3	43.2
	Dry Density, pcf	77.3	79.2	79.3
	Saturation, %	103.2	101.5	103.9
	Void Ratio	1.1716	1.1207	1.1189
	Diameter, in.	1.414	1.416	1.404
	Height, in.	3.145	3.149	3.147
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.82	41.49
Fail. Stress, psf		481	562	613
Strain, %		14.1	14.9	15.1
Ult. Stress, psf		479	562	613
Strain, %				
σ_1 Failure, psf		1472	3560	6588
σ_3 Failure, psf		991	2998	5975

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CL6 W/ LNS & LYS ML

LL= 46 **PL=** 22 **PI=** 24
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

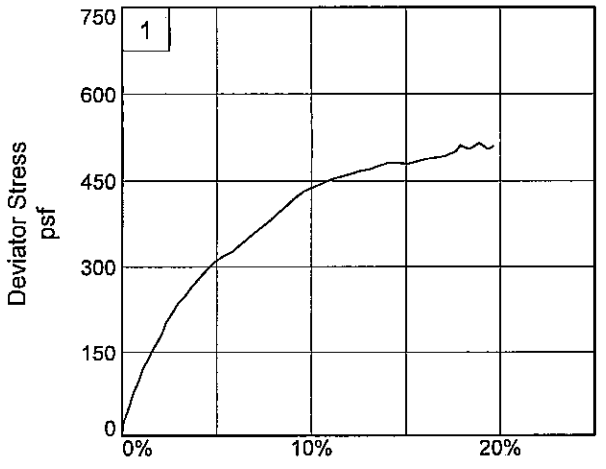
Client: U.S. Army Corps of Engineers

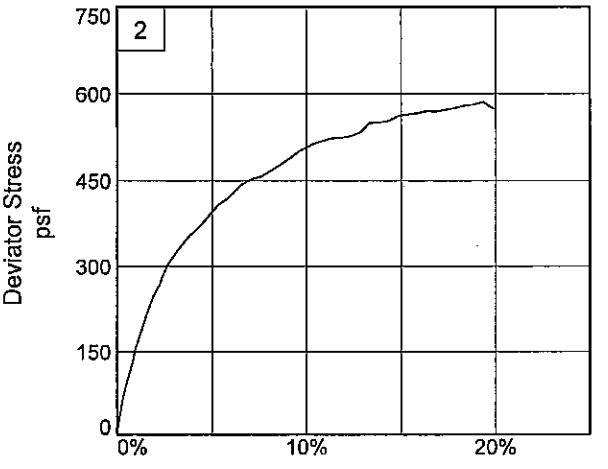
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-51UPT **Depth:** 13.7
Sample Number: 4C
Proj. No.: 0022-0002 **Date Sampled:** 6/2/07

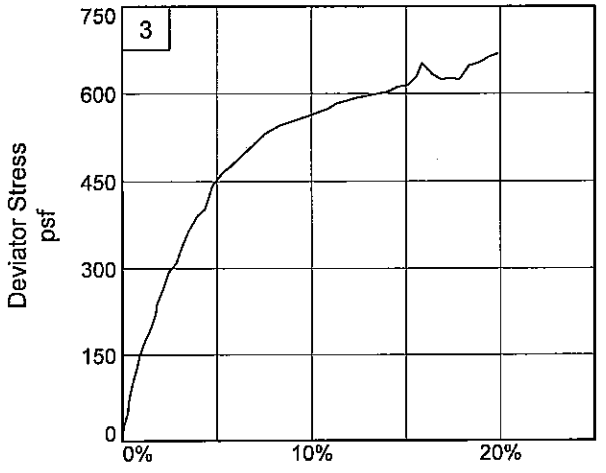
TRIAXIAL SHEAR TEST REPORT

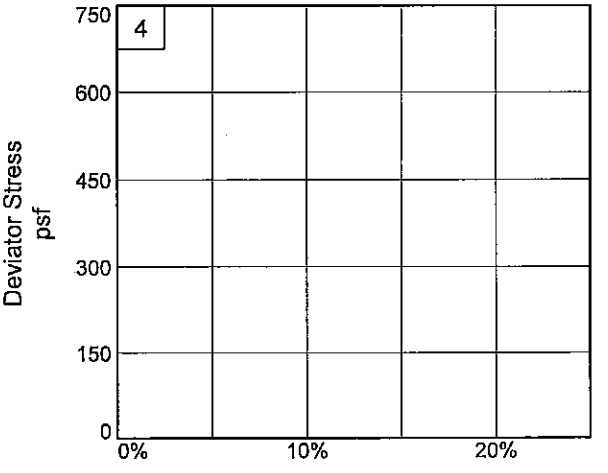
FFEBJV, LLC

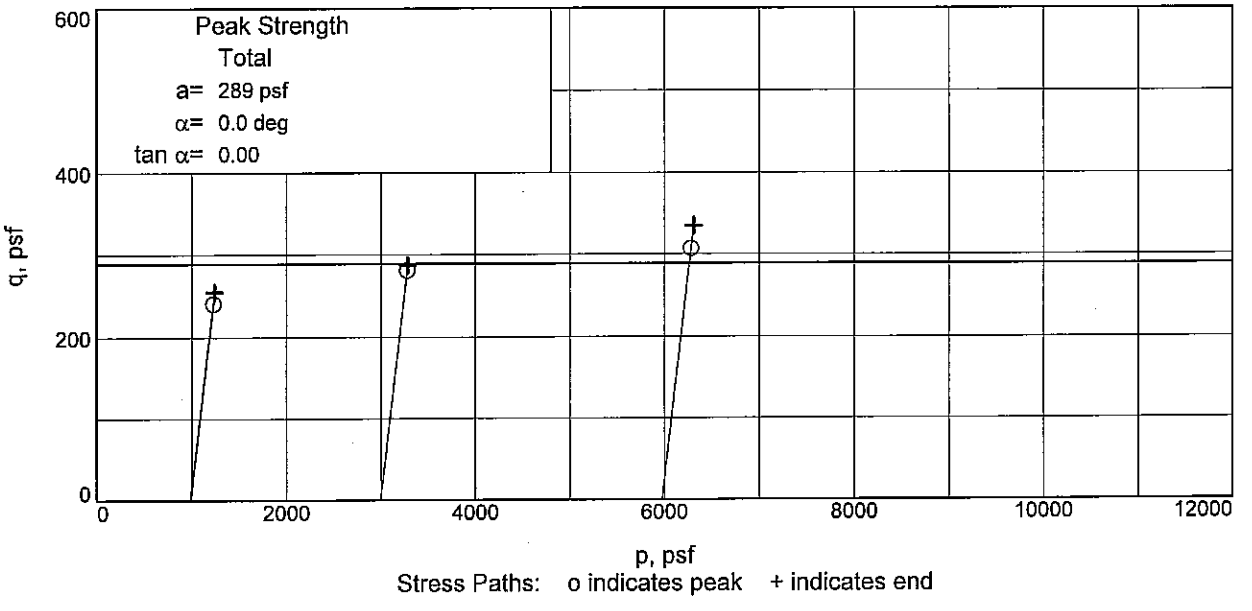
Tested By: DD/JMB **Checked By:** AD









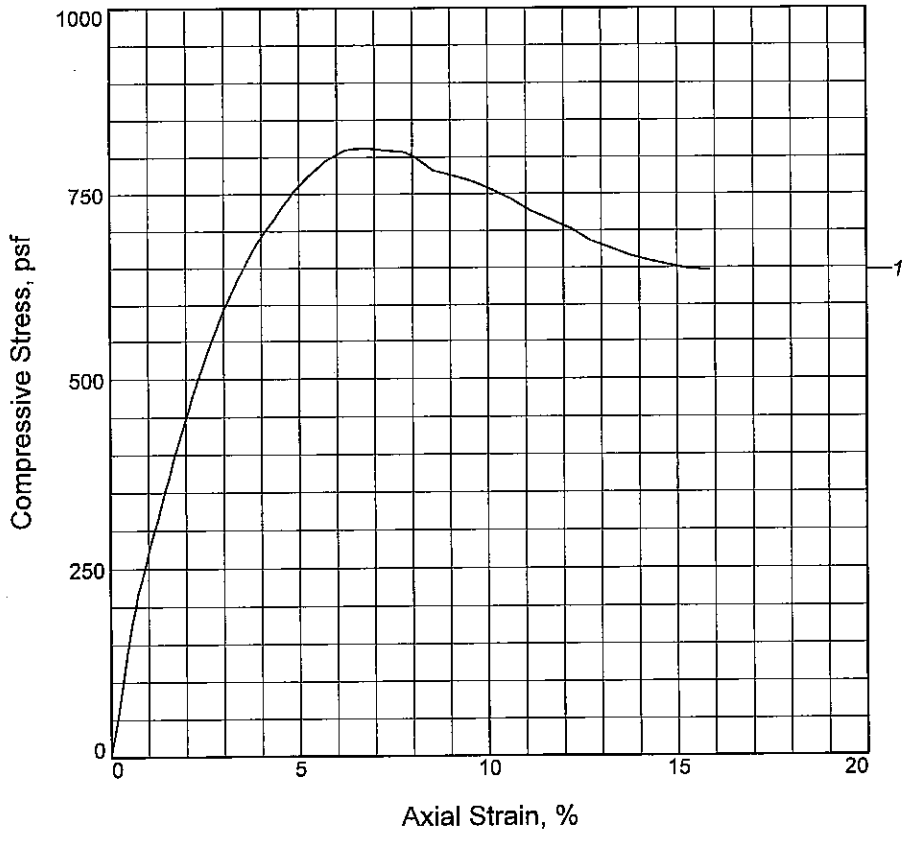


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-51UPT **Depth:** 13.7 **Sample Number:** 4C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB **Checked By:** AD

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	812			
Undrained shear strength, psf	406			
Failure strain, %	6.7			
Strain rate, in./min.	0.030			
Water content, %	50.9			
Wet density, pcf	107.0			
Dry density, pcf	70.9			
Saturation, %	99.4			
Void ratio	1.3947			
Specimen diameter, in.	1.368			
Specimen height, in.	3.011			
Height/diameter ratio	2.20			

Description: SO GR CH3 W/ LNS & LYS ML, RT

LL = 65	**PL =** 19	**PI =** 46	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/1/07
Remarks:

Figure _____

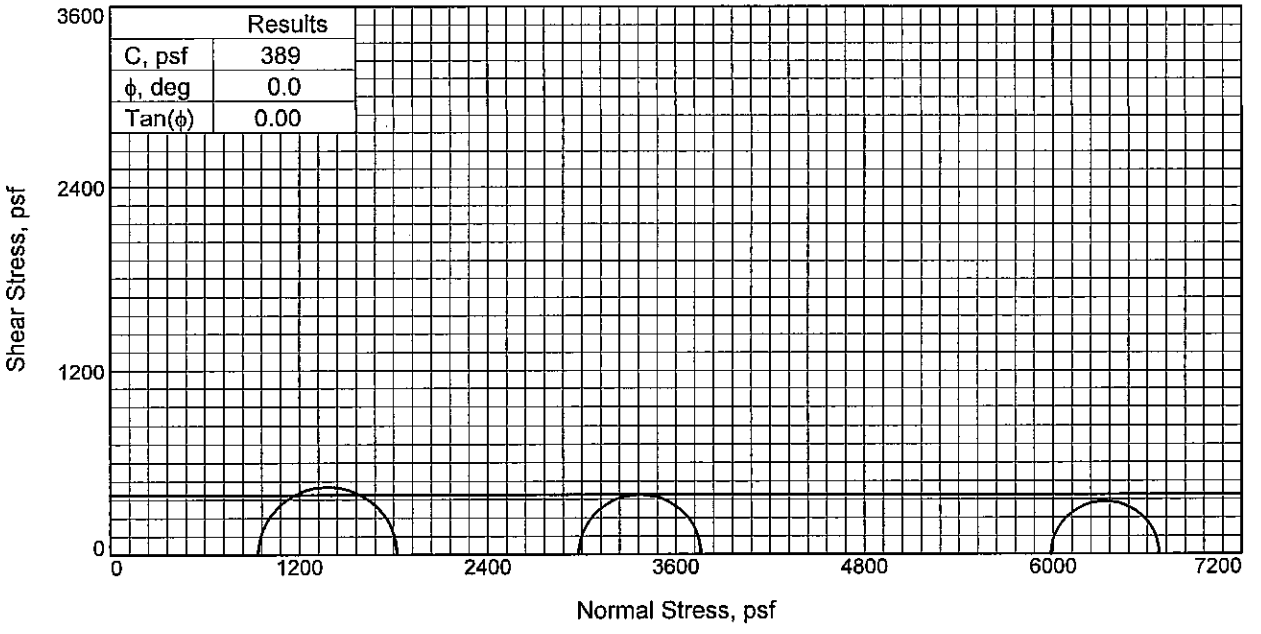
Client: U.S. Army Corps of Engineers

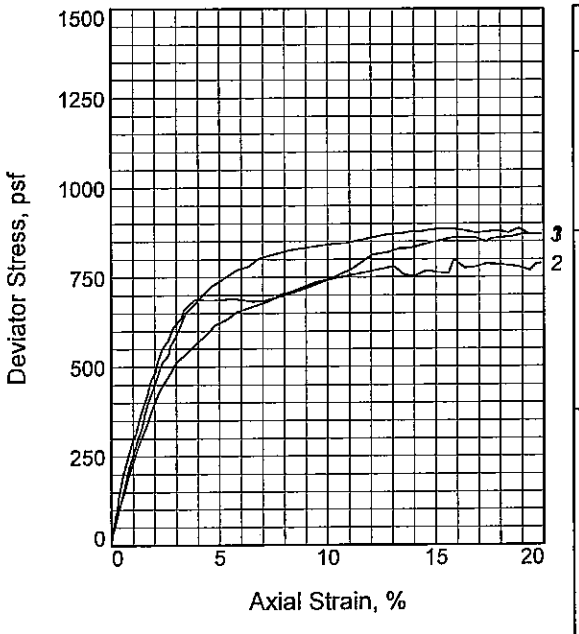
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-51UPT **Depth:** 17.7
Sample Number: 5C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: TB **Checked By:** AD





Sample No.		1	2	3
Initial	Water Content, %	39.7	40.3	38.7
	Dry Density, pcf	81.9	81.4	83.2
	Saturation, %	101.7	102.0	102.1
	Void Ratio	1.0492	1.0624	1.0184
	Diameter, in.	1.418	1.405	1.408
	Height, in.	3.141	3.133	3.126
At Test	Water Content, %	39.7	40.3	38.7
	Dry Density, pcf	81.9	81.4	83.2
	Saturation, %	101.7	102.0	102.1
	Void Ratio	1.0492	1.0624	1.0184
	Diameter, in.	1.418	1.405	1.408
	Height, in.	3.141	3.133	3.126
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.52	20.70	41.58
Fail. Stress, psf		883	779	687
Strain, %		14.9	13.1	3.9
Ult. Stress, psf		883	754	847
Strain, %				
σ_1 Failure, psf		1822	3760	6675
σ_3 Failure, psf		939	2981	5988

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CL6 W/ LNS ML & CH, RT

LL= 47 **PL=** 16 **PI=** 31
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

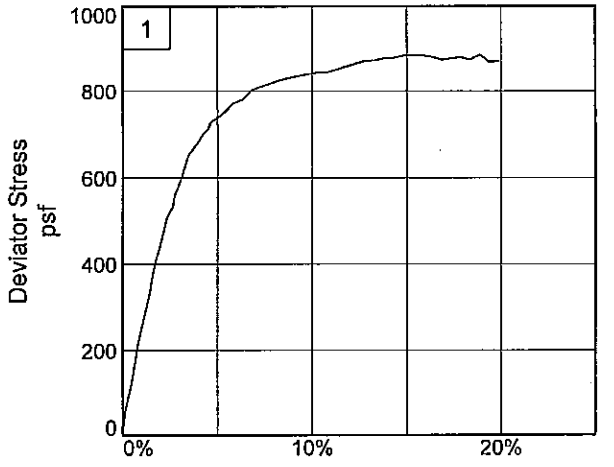
Client: U.S. Army Corps of Engineers

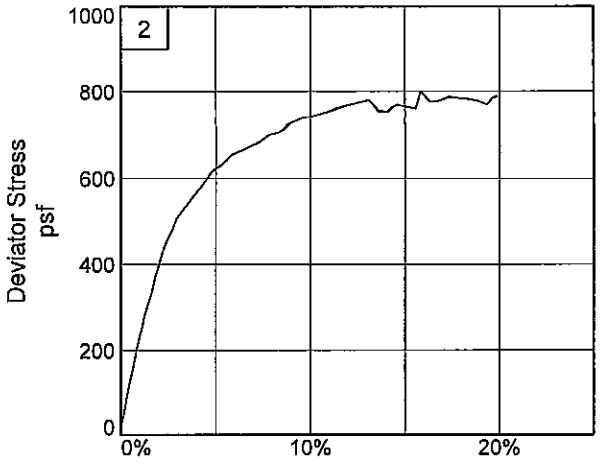
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-51UPT **Depth:** 21.7
Sample Number: 6C
Proj. No.: 0022-0002 **Date Sampled:** 6/2/07

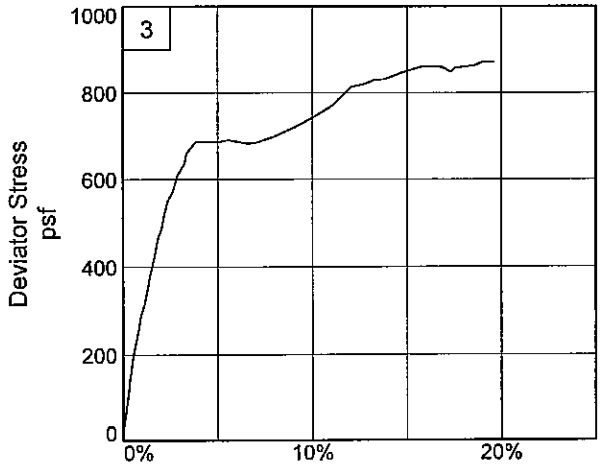
TRIAXIAL SHEAR TEST REPORT

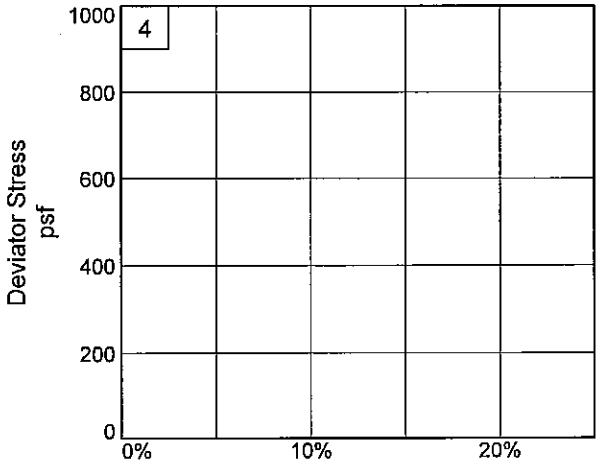
FFEBJV, LLC

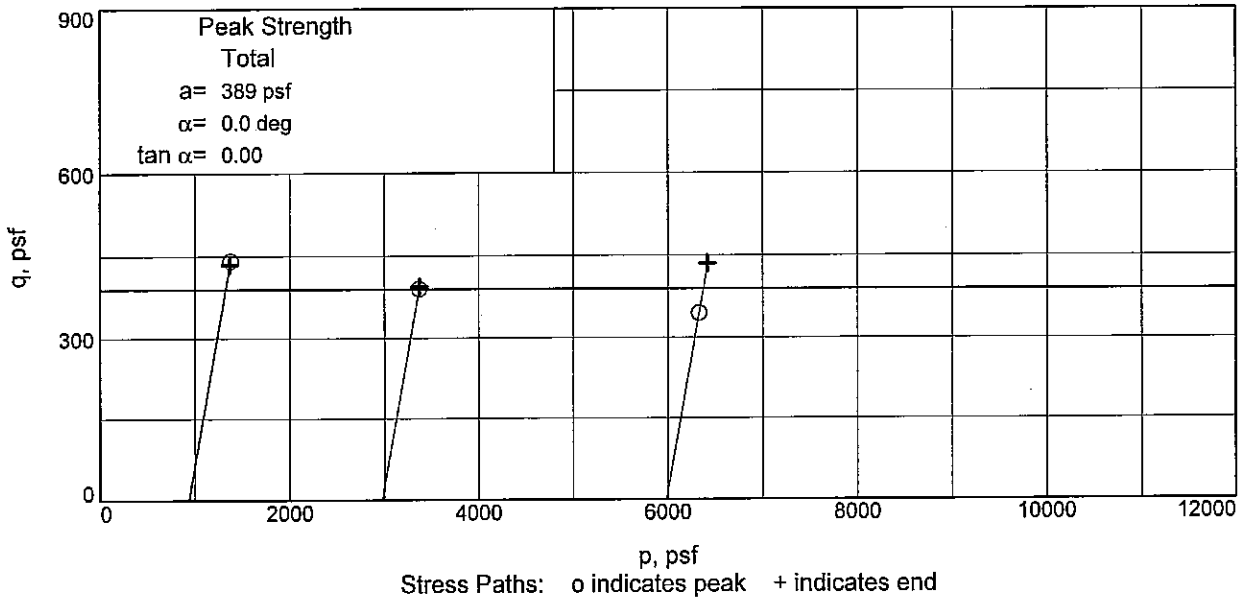
Tested By: DD/JMB **Checked By:** AD







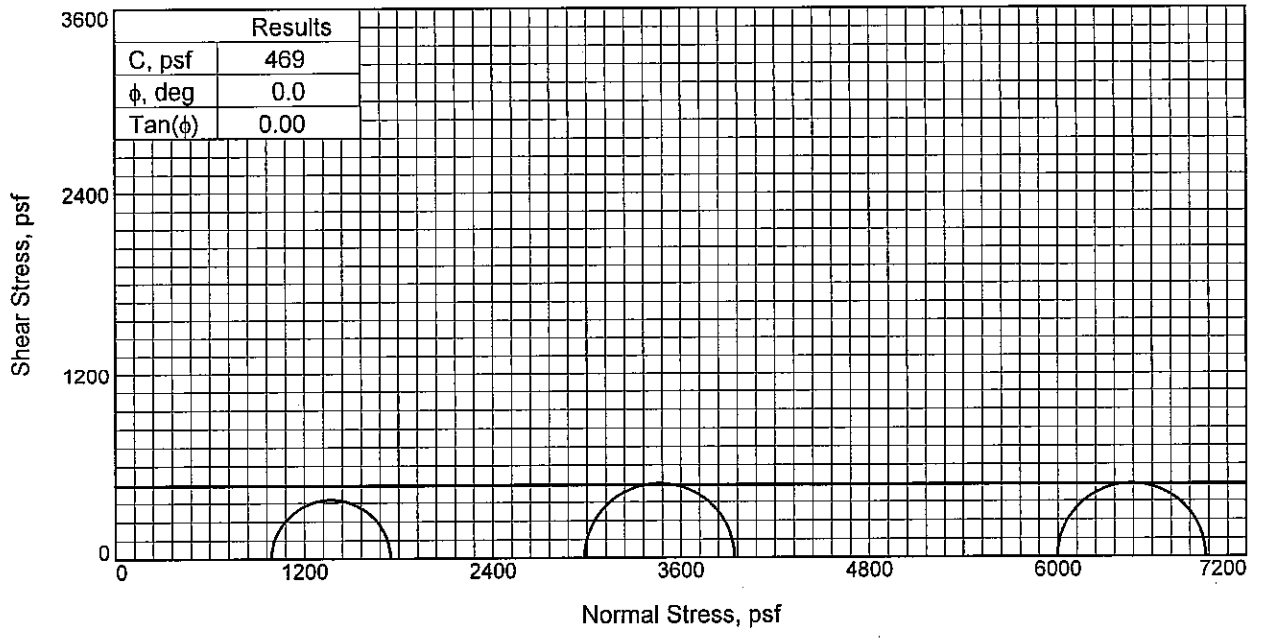


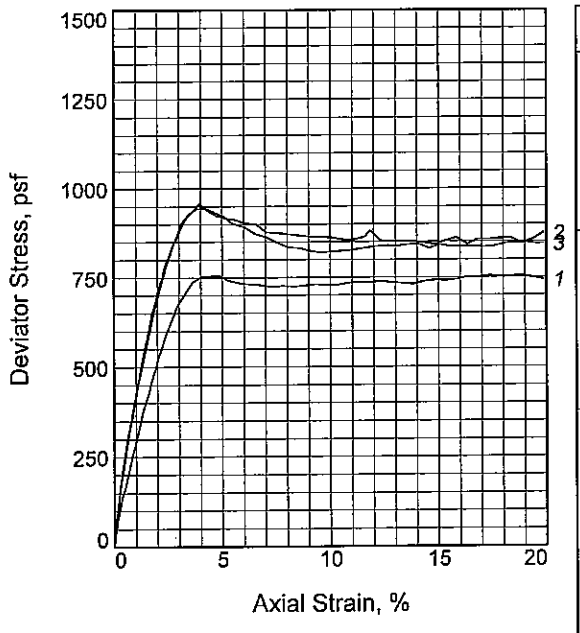


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-51UPT **Depth:** 21.7 **Sample Number:** 6C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB **Checked By:** AD





Sample No.		1	2	3
Initial	Water Content, %	47.9	47.8	49.0
	Dry Density, pcf	75.0	73.8	74.2
	Saturation, %	103.0	99.9	103.4
	Void Ratio	1.2649	1.3021	1.2885
	Diameter, in.	1.413	1.422	1.409
	Height, in.	3.131	3.126	3.134
At Test	Water Content, %	47.9	47.8	49.0
	Dry Density, pcf	75.0	73.8	74.2
	Saturation, %	103.0	99.9	103.4
	Void Ratio	1.2649	1.3021	1.2885
	Diameter, in.	1.413	1.422	1.409
	Height, in.	3.131	3.126	3.134
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.73	41.65
Fail. Stress, psf		756	957	944
Strain, %		4.9	4.0	4.3
Ult. Stress, psf		723	842	819
Strain, %				
σ_1 Failure, psf		1747	3942	6942
σ_3 Failure, psf		991	2985	5998

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH3 W/ LNS ML

LL= 62 **PL=** 18 **PI=** 44
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

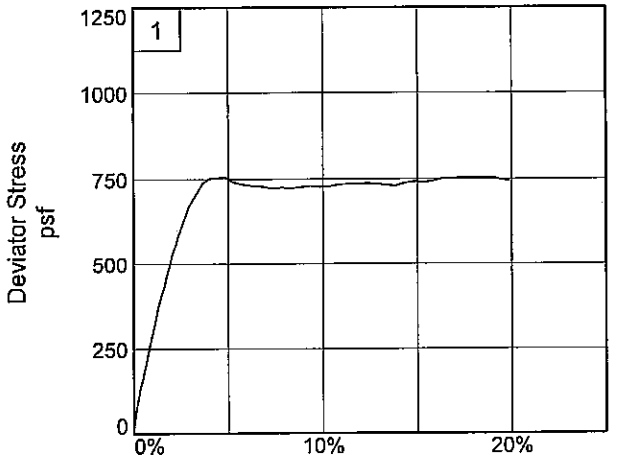
Client: U.S. Army Corps of Engineers

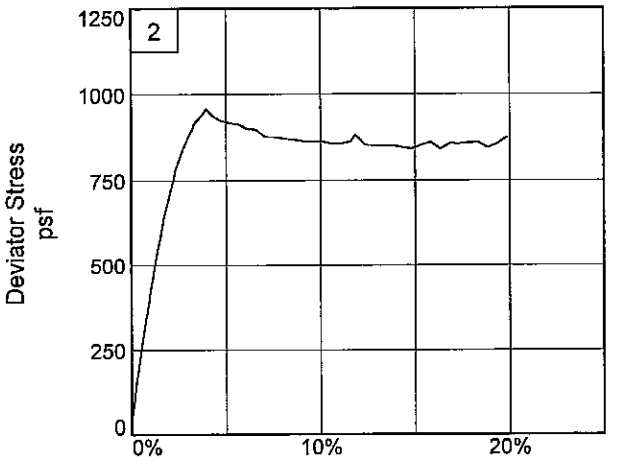
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-51UPT **Depth:** 25.7
Sample Number: 7C
Proj. No.: 0022-0002 **Date Sampled:** 6/2/07

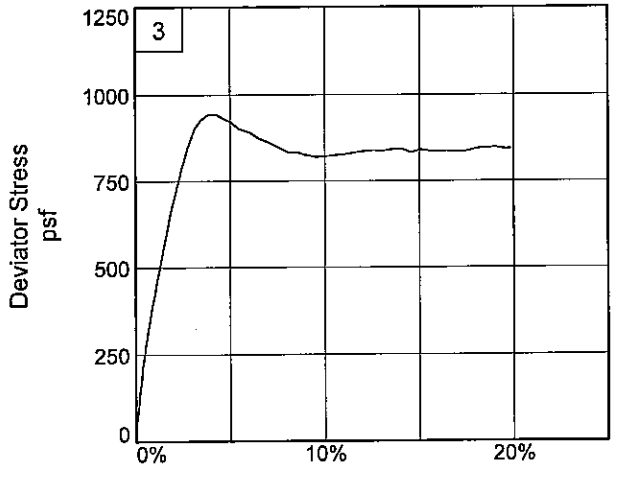
TRIAXIAL SHEAR TEST REPORT

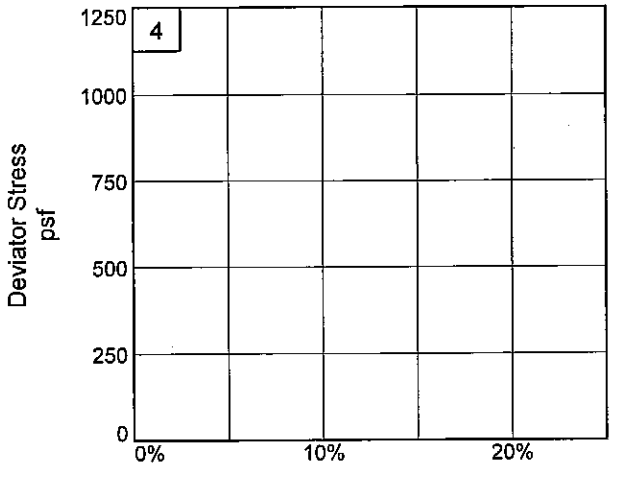
FFEBJV, LLC

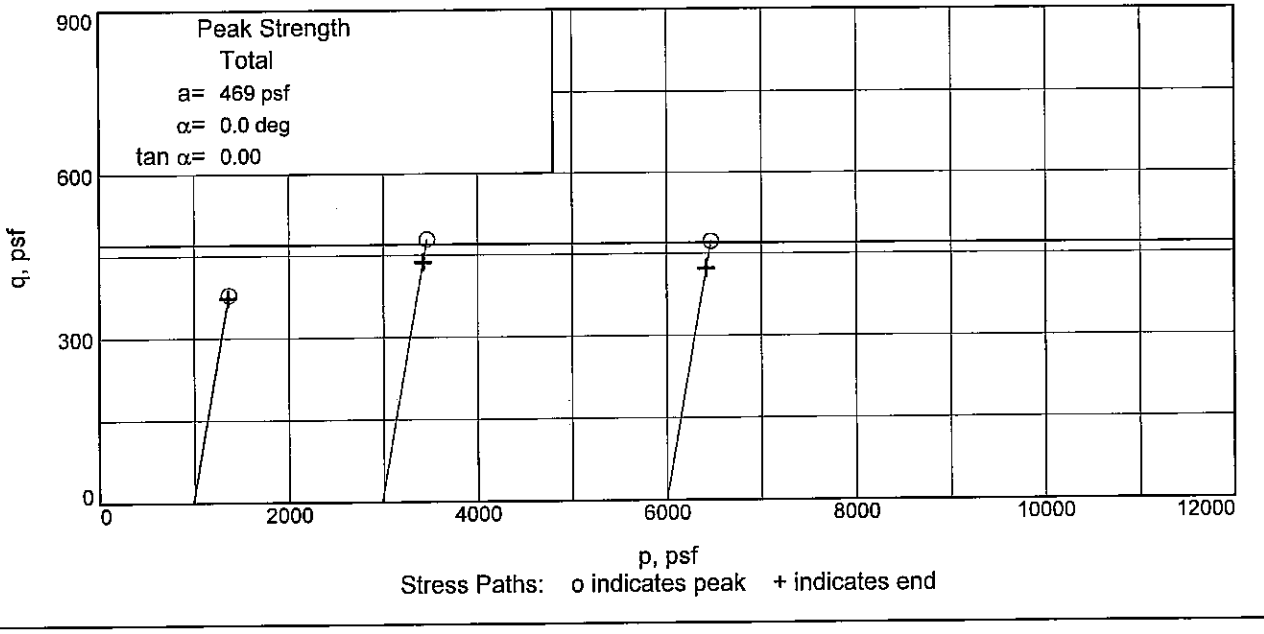
Tested By: DD/JMB **Checked By:** AD









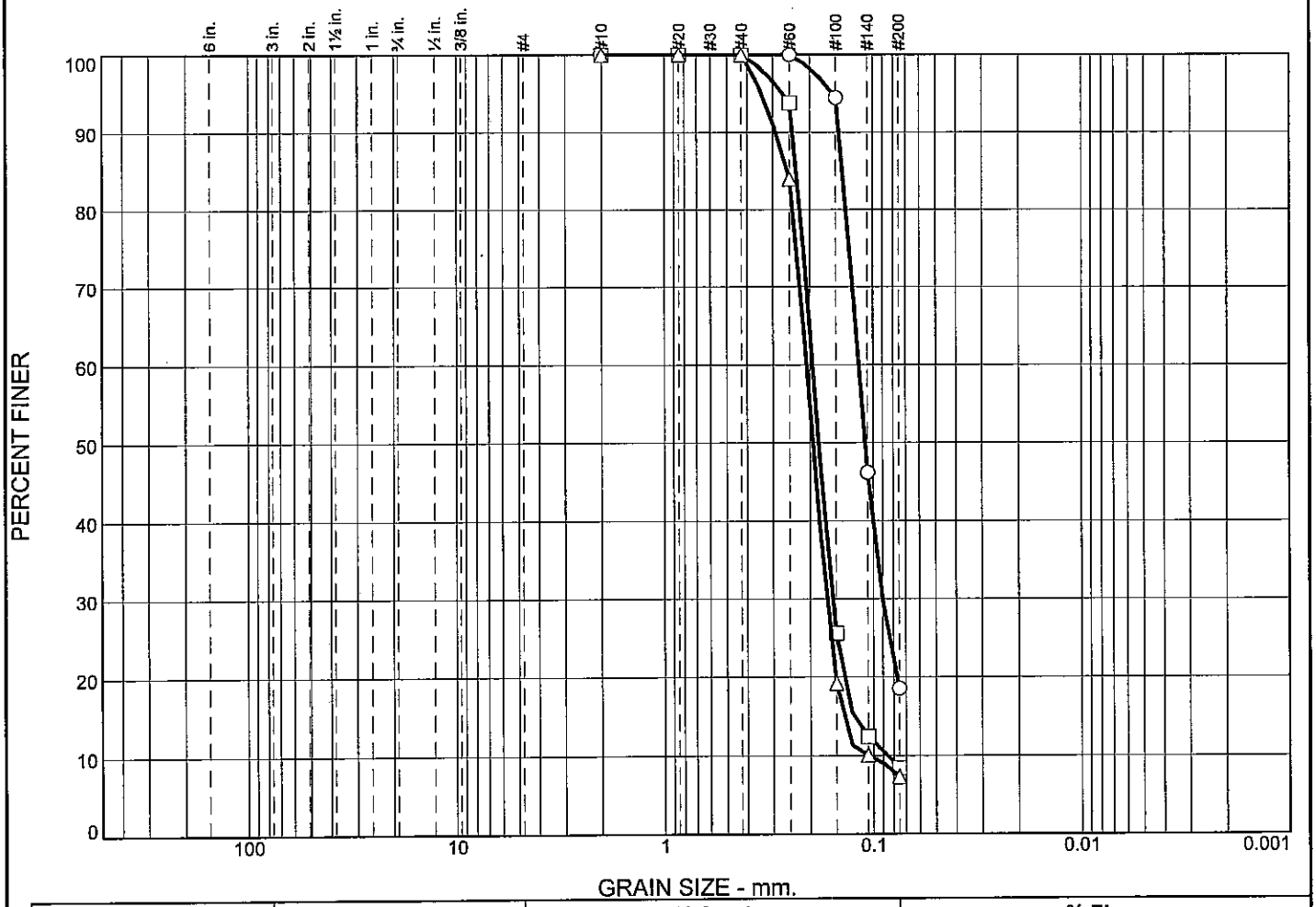


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-51UPT **Depth:** 25.7 **Sample Number:** 7C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB **Checked By:** AD

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	81.5	18.5	
□	0.0	0.0	0.0	0.0	0.0	91.6	8.4	
△	0.0	0.0	0.0	0.0	0.0	92.7	7.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1384	0.1170	0.1092	0.0899				
□			0.2307	0.1939	0.1817	0.1566	0.1244	0.0857	1.48	2.26
△			0.2566	0.2071	0.1934	0.1669	0.1407	0.1048	1.28	1.98

Material Description	USCS	AASHTO
○ GR SM1-S	SM1-S	
□ GR SP	SP	
△ GR SP	SP	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Source of Sample:** WWHC-51UPT **Depth:** 28.8 **Sample Number:** 8B

□ **Source of Sample:** WWHC-51UPT **Depth:** 40.0 **Sample Number:** 13

△ **Source of Sample:** WWHC-51UPT **Depth:** 50.0 **Sample Number:** 18

FFEBJV, LLC

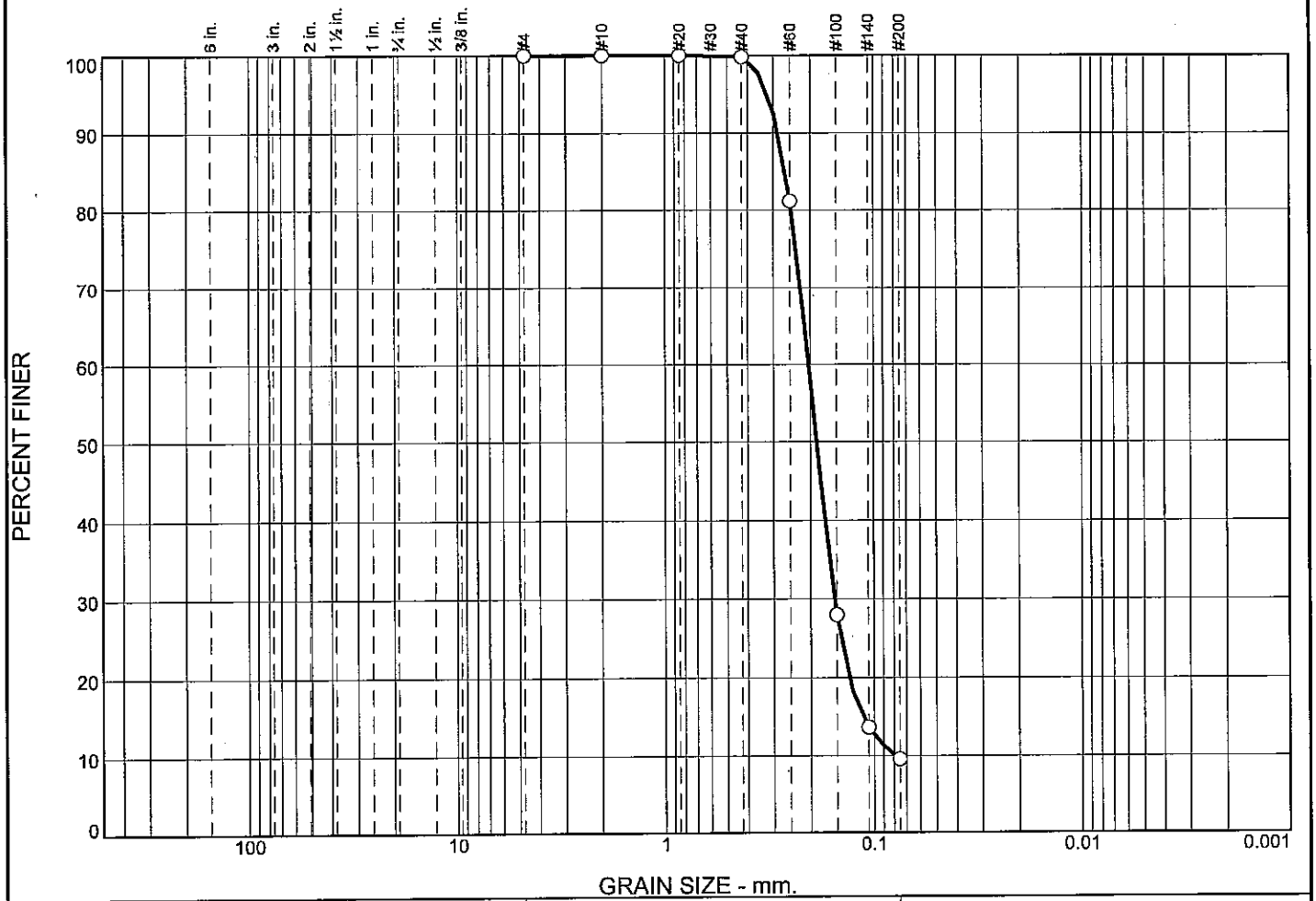
St Rose, LA

Remarks:

Figure

Tested By: CSM/BL

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.2	90.3	9.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.2626	0.2037	0.1868	0.1538	0.1133	0.0791	1.47	2.58

	Material Description	USCS	AASHTO
○	GR SP	SP	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Source of Sample:** WWHC-51UPT **Depth:** 60.0 **Sample Number:** 23

FFEBJV, LLC

St Rose, LA

Remarks:

Figure

Tested By: CSM/BL

```
BOR. WWHC-51UPT
STA. LAT N29^49'08.01" LONG W90^06'39.78"

12-13 APRIL 2007

GROUND EL. 2.60
  0.0  0.8 35     CH  SIS M GR  T     O RT
  0.8  1.7 51  1.7CH  SIS M GR       WD  O
  1.7  2.6 46  2.6CH      M BR GR     O RT             517109 73 31      39  20
  2.6  4.0 45  4.0CH  SIS M GR  T    RT
  4.0  4.8 43  4.8CH      M GR  T    O RT
  4.8  5.7 35  5.7CH  SIS M GR  T     O
  5.7  8.0     8.0NS
  8.0  8.8 35  8.8CL      M GR  T    CC
  8.8  9.7 33     CL  SIS M GR  T    CC
  9.7 10.6 33 10.6CL  SIS M GR  T    CC
 10.6 12.0 34 12.0ML        GR       CS
 12.0 12.8 35     CL  SIS M GR       RT
 12.8 13.7 41     CL  SISSO GR       RT
 13.7 16.0 42 16.0CL  SISSO GR
 16.0 16.8 54 16.8CH  SISSO GR       RT
 16.8 17.7 37 17.7ML        GR       CS
 17.7 18.6 34     CH  SISSO GR       RT                406107 65 19      51 180
 18.6 20.0 41     CH  SISSO GR       RT
 20.0 20.8 40 20.8CH  SISSO GR       RT
 20.8 21.7 36 21.7ML        GR       CS
 21.7 22.6 39     CL  SISSO GR       CS RT
 22.6 24.0 38 24.0CL  SISSO GR       CS RT
 24.0 24.8 43 24.8ML        GR       CS
 24.8 25.7 33 25.7CL  SS SO GR
 25.7 26.6 46     CH  SISSO GR
 26.6 28.0 49 28.0CH  SISSO GR
 28.0 28.8 41 28.8CH     SO GR        S
 28.8 29.7 26 29.7SM        GR
 29.7 32.0    32.0NS
 32.0 34.0 32 34.0CL  SS  M GR                      24
 34.0 36.0 25 36.0SP        GR                   25
 36.0 38.0 43 38.0CH  SS  M GR                      29
 38.0 40.0 24     SP        GR                  32
 40.0 42.0 23     SP        GR                  29          .0857
 42.0 44.0 23     SP        GR                  29
 44.0 46.0 25 46.0SP        GR                   29
```

```
 46.0 48.0 25 48.0SP  SIS   GR                40
 48.0 50.0 23     SP       GR                48
 50.0 52.0 23     SP       GR                39          .1048
 52.0 54.0 23     SP       GR                40
 54.0 56.0 23     SP       GR                37
 56.0 58.0 22     SP       GR                44
 58.0 60.0 23     SP       GR      TR- O       41
 60.0 62.0 24     SP       GR                41          .0791
 62.0 64.0 23     SP       GR                45
 64.0 66.0 22     SP       GR                50
 66.0 68.0 21     SP       GR                58
 68.0 70.0 22 70.0SP       GR                  74
999.9
**************************************************************************
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q)              Classif  : CH
Depth/Ele:  5.10/-2.50       Water Con: 35.00
LL,PL,PI :  61, 24, 37       Dry Dens : 87.00
Cohesion :  0.400            Saturat  : 91.00
Shear Str:                 Frict Ang: 00.00
Toggles  :(    )(    )(    )(    )

**************************************************************************
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q)              Classif  : CL
Depth/Ele: 10.00/-7.40       Water Con: 36.00
LL,PL,PI :  49, 25, 24       Dry Dens : 86.00
Cohesion :  0.308            Saturat  :102.00
Shear Str:                 Frict Ang: 00.00
Toggles  :(    )(    )(    )(    )

**************************************************************************
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q)              Classif  : CL
Depth/Ele: 14.00/-11.4       Water Con: 43.00
LL,PL,PI :  46, 22, 24       Dry Dens : 79.00
Cohesion :  0.145            Saturat  :103.00
Shear Str:                 Frict Ang: 00.00
Toggles  :(    )(    )(    )(    )

**************************************************************************
SHEAR STRENGTH DESIGN VALUES
Test Type:(Q)              Classif  : CL
```

Depth/Ele: 22.00/-19.4 Water Con: 40.00
LL,PL,PI : 47, 16, 31 Dry Dens : 82.00
Cohesion : 0.195 Saturat :102.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 26.00/-23.4 Water Con: 48.00
LL,PL,PI : 62, 18, 44 Dry Dens : 74.00
Cohesion : 0.235 Saturat :102.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

Project Number: TASK ORDER 0002 Current Date: 7/9/2007

Boring: WWHC-52UCL

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1A	0.0	VST T & GR CL4 W/ LYS ML, RT	CL4		17												
1B	0.8	VST T & GR CL4 W/ LYS ML, RT	CL4		18												
2A	2.0	T & GR ML2 W/ LYS CH	ML2		21												
2B	2.8	VST T & GR CH2 W/ LYS ML	CH2		23												
3A	4.0	ST T & GR CH3 W/ ARS ML	CH3		38												
3B	4.8	M GR & T CH3 W/ ARS ML	CH3		34												
3C	5.7	M GR & T CH3 W/ ARS ML	CH3		33	86	114	91	UU	0	717		65	23	42		
3D	6.6	M GR & T CH3 W/ ARS ML	CH3		33												
4A	8.0	M GR CH3 W/ WD	CH3		37												
4B	8.8	M GR CH3 W/ WD	CH3		36												
4C	9.7	M GR CH3	CH3		39	81	113	97	UU	0	650		77	23	54		
4D	10.6	M GR CH3	CH3		33												
5A	12.0	M GR CH3	CH3		42												
5B	12.8	M GR CH3 W/ O	CH3		46	73	107	93	UU	0	864		80	30	50		
5C	13.7	M GR CH3 W/ TR- O	CH3		42												
6A	16.0	M GR CH3 W/ O	CH3		50												
6B	16.8	M GR & T CH2	CH2		35												
6C	17.7	M GR & T CH3	CH3		34	88	118	98	UU	0	930		70	22	48		
7A	20.0	M T & GR CH2 W/ LYS ML, O	CH2		40												
7B	20.8	M T & GR CH2 W/ LYS ML, O	CH2		33												
7C	21.7	M T & GR CL4 W/ LYS ML	CL4	6	31	91	119	100	UC	-	681	1362	38	18	20		
7D	22.6	M GR CL6 W/ LYS ML	CL6		34												
8A	24.0	M GR CL6	CL6		34												
8B	24.8	M GR CL6	CL6		33												
8C	25.7	M GR CL6 W/ LNS ML	CL6		36				CU								AL
8D	26.6	M GR CL6 W/ LNS ML	CL6		36												
9A	28.0	M GR CL6	CL6		35												
9B	28.8	M GR CH2 W/ LNS ML	CH2		38												
9C	29.7	M GR CH4 W/ LYS ML	CH4		60	64	102	99	UU	0	516		85	35	50		
9D	30.6	M GR CH3 W/ LNS ML	CH3		45												
10A	32.0	M GR CH3 W/ LNS ML	CH3		43												
10B	32.8	M GR CH3	CH3		38												
10C	33.7	SO GR CH4 W/ LYS ML	CH4		64	62	102	98	UU	0	377		88	22	66		
11A	36.0	SO GR CH4 W/ LNS ML	CH4		58												
11B	36.8	M GR CL6 W/ LNS ML	CL6		42	78	111	98	UU	0	615		45	28	17		
11C	37.7	M GR CH2	CH2		54								53	33	20		Gs, CON
11D	38.6	GR SM1 W/ ARS CH	SM1		30												

Remarks: _____

FFEB JV, LLC

Checked By: _____

File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

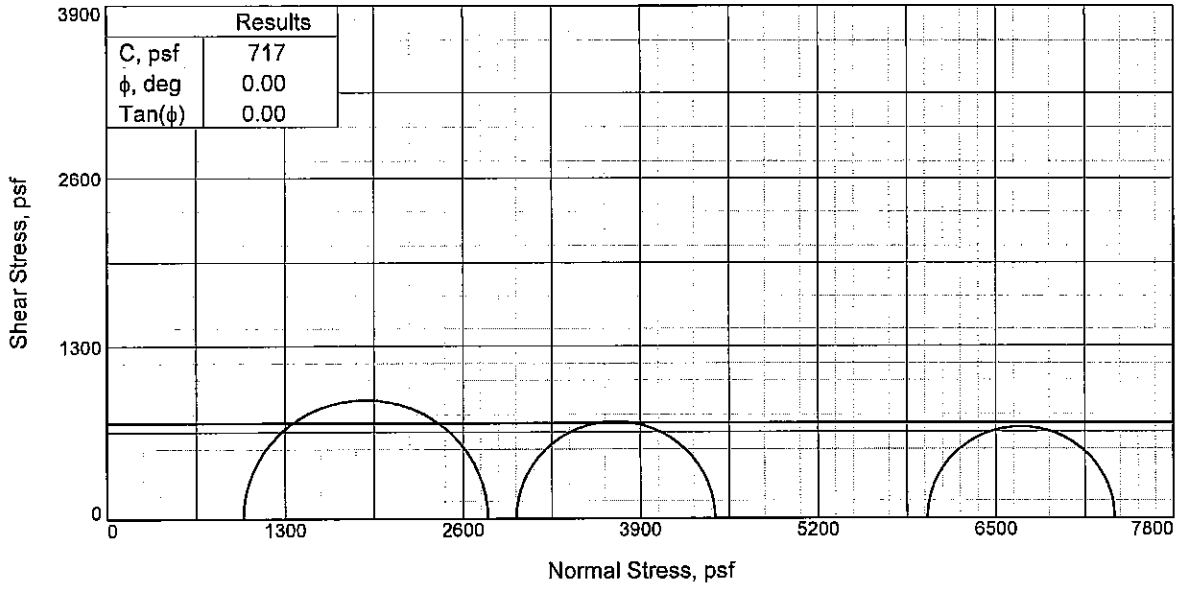
Project Number: TASK ORDER 0002
Boring: WWHC-52UCL

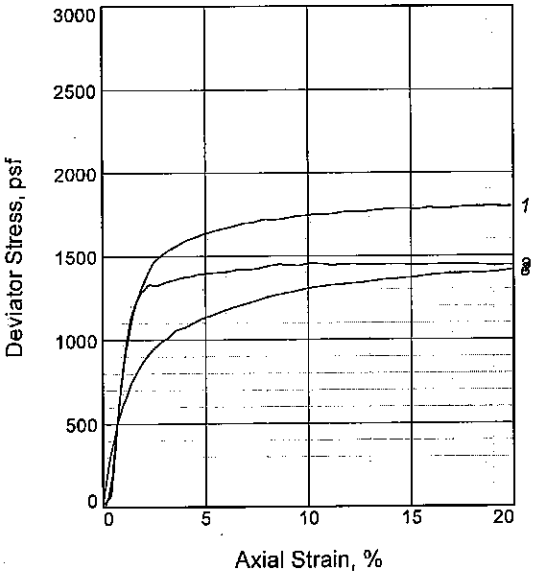
Current Date: 7/9/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
12A	40.0	M GR CL6	CL6		37												
12B	40.8	M GR CL6 W/ LYS ML	CL6	13	41	79	112	100	UC	-	694	1388	46	25	21		
12C	41.7	M GR CL4	CL4		32												
12D	42.6	M GR CL4 W/ LYS SP	CL4		26												
13A	44.0	M GR CH2 W/ LYS SP	CH2		39												
13B	44.8	M GR CH2 W/ LYS SP	CH2		33												
13C	45.7	GR SM1	SM1	5	29	95	122	100	UC	-	581	1162	NP	NP			
13D	46.6	GR SM1	SM1		36												
14	48.0	GR SM1	SM1		29												
15	50.0	GR SM1	SM1		29												SV
16	52.0	GR SM1	SM1		30												
17	54.0	GR SM1	SM1		28												
18	56.0	GR SM1	SM1		26												
19	58.0	GR SM1	SM1		27												
20	60.0	GR SM1	SM1		30												SV
21	62.0	GR SM1	SM1		27												
22	64.0	GR & T SP	SP		22												
23	66.0	GR & T SP	SP		22												
24	68.0	T SP	SP		20												
25	70.0	GR & T SP	SP		24												SV
26	72.0	GR & T SP	SP		21												
27	74.0	GR SP	SP		22												
28	76.0	GR SP	SP		24												
29	78.0	GR SP	SP		25												
30	80.0	GR SM1-S	SM1-S		28												SV
31	82.0	GR SM1-S	SM1-S		34												
32	84.0	GR SM1-S	SM1-S		32												
33	86.0	GR & T SM1-S	SM1-S		21												
34	88.0	GR & T SM1-S	SM1-S		24												

Remarks: _____
FFEB JV, LLC

Checked By: _____
File Name: TO 2





Sample No.		1	2	3
Initial	Water Content, %	33.0	33.7	33.2
	Dry Density, pcf	84.5	87.0	85.3
	Saturation, %	88.3	95.4	90.6
	Void Ratio	1.0233	0.9669	1.0054
	Diameter, in.	1.41	1.41	1.41
	Height, in.	3.00	3.00	3.00
At Test	Water Content, %	32.4	33.4	32.9
	Dry Density, pcf	84.5	87.0	85.3
	Saturation, %	86.8	94.6	89.7
	Void Ratio	1.0233	0.9669	1.0054
	Diameter, in.	1.41	1.41	1.41
	Height, in.	3.00	3.00	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.92	20.77	41.66
Fail. Stress, psf		1785	1455	1369
Strain, %		14.4	10.1	14.9
Ult. Stress, psf		1785	1448	1369
Strain, %				
σ_1 Failure, psf		2782	4446	7367
σ_3 Failure, psf		996	2991	5999

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR & T CH3 W/ ARS ML

LL= 65 **PL=** 23 **PI=** 42
Assumed Specific Gravity= 2.74
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

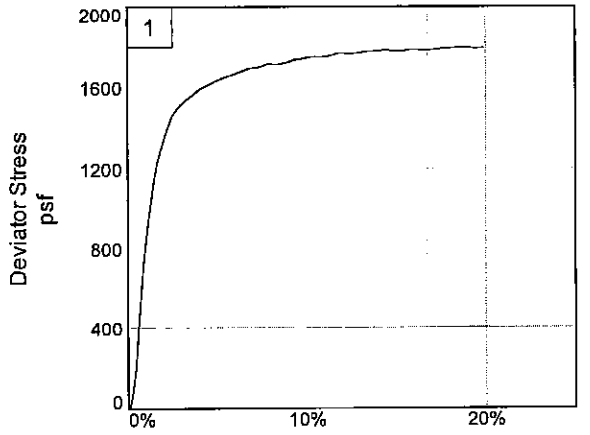
Client: U.S. ARMY CORPS OF ENGINEERS

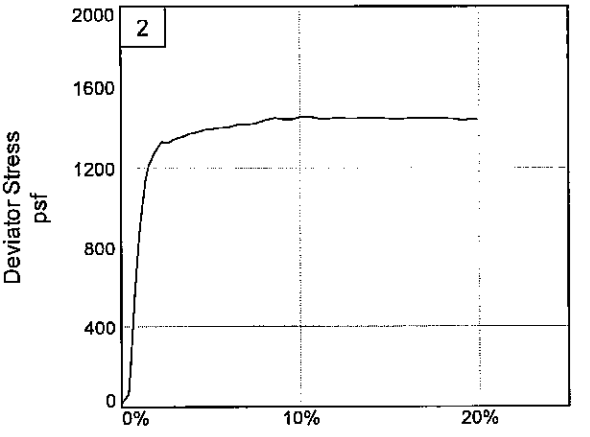
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-52UCL **Depth:** 5.70'
Sample Number: 3C
Proj. No.: 0022-0002 **Date Sampled:** 6-6-07

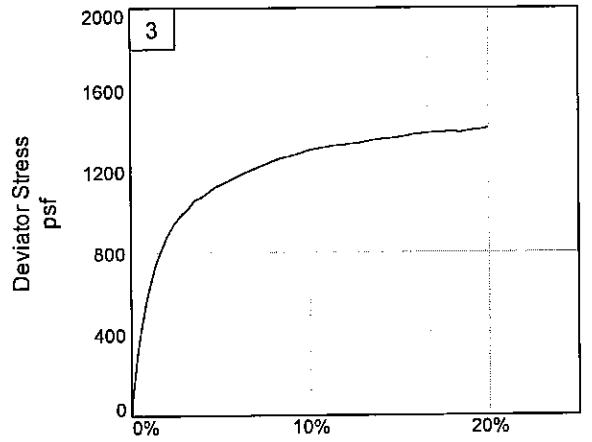
TRIAXIAL SHEAR TEST REPORT

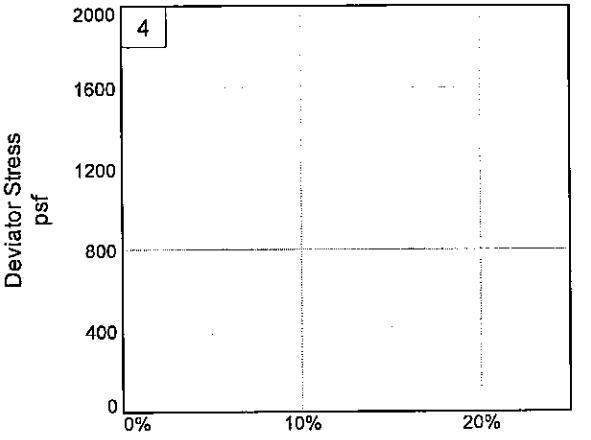
FFEBJV, LLC.

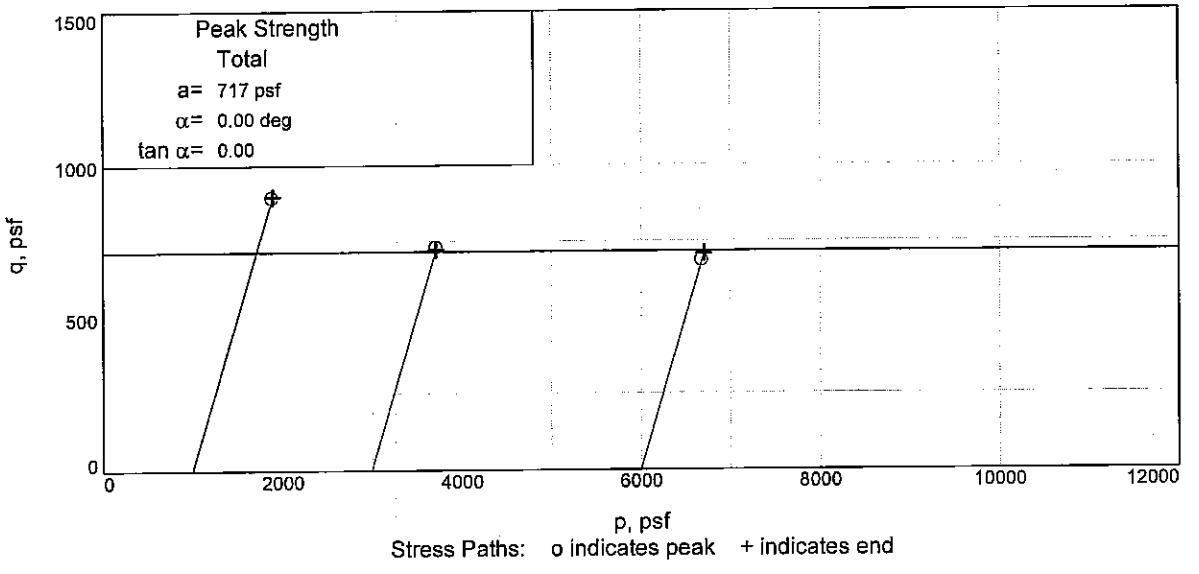
Tested By: CC **Checked By:** RT









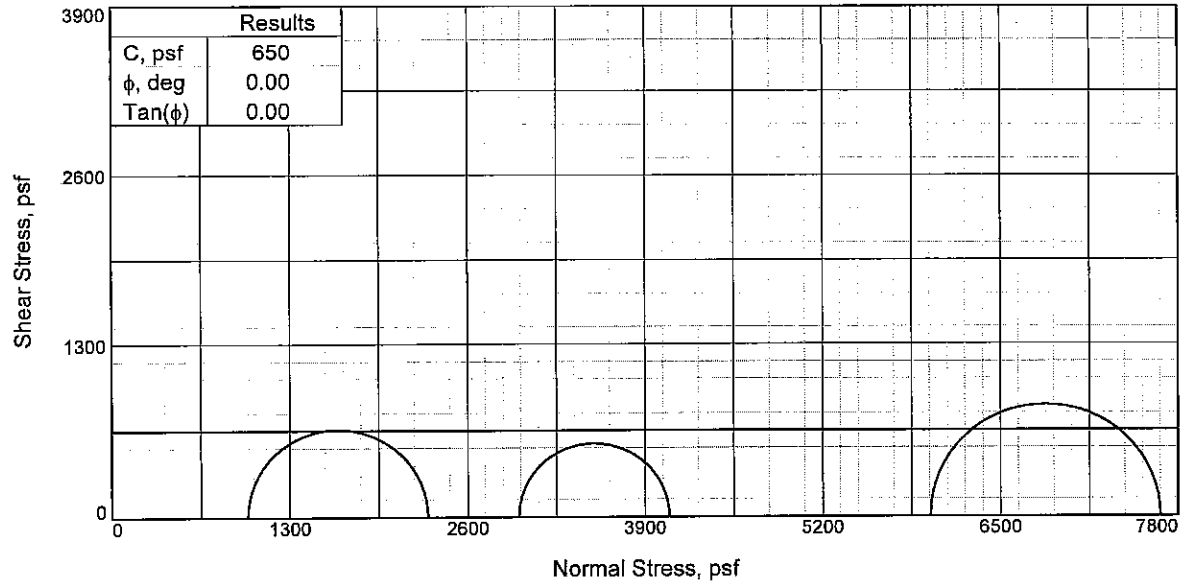


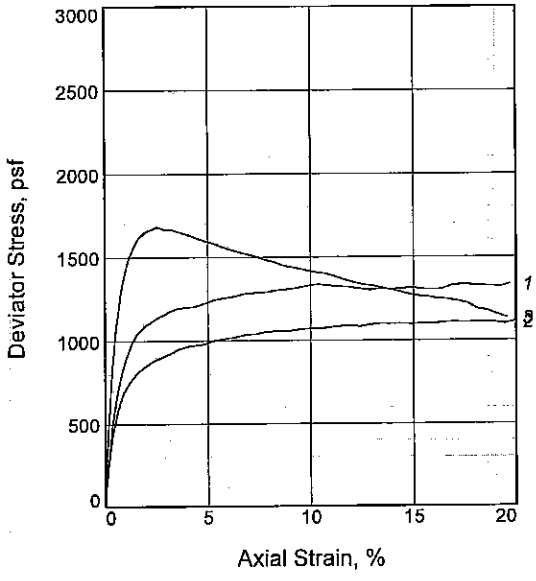
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-52UCL **Depth:** 5.70' **Sample Number:** 3C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** RT





Sample No.		1	2	3
Initial	Water Content, %	40.3	36.9	40.9
	Dry Density, pcf	79.9	83.3	79.3
	Saturation, %	96.7	96.1	97.0
	Void Ratio	1.1403	1.0533	1.1565
	Diameter, in.	1.41	1.41	1.41
	Height, in.	3.00	3.00	3.05
At Test	Water Content, %	39.7	37.6	41.2
	Dry Density, pcf	79.9	83.3	79.3
	Saturation, %	95.3	97.7	97.7
	Void Ratio	1.1403	1.0533	1.1565
	Diameter, in.	1.41	1.41	1.41
	Height, in.	3.00	3.00	3.05
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	20.67	41.58
Fail. Stress, psf		1314	1101	1682
Strain, %		14.9	14.4	2.5
Ult. Stress, psf		1314	1099	1280
Strain, %				
σ_1 Failure, psf		2309	4077	7669
σ_3 Failure, psf		994	2976	5987

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH3

LL= 77 **PL=** 23 **PI=** 54

Assumed Specific Gravity= 2.74

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-52UCL **Depth:** 9.70'

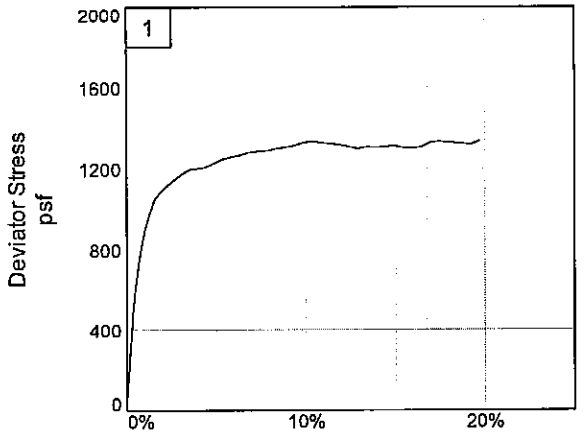
Sample Number: 4C

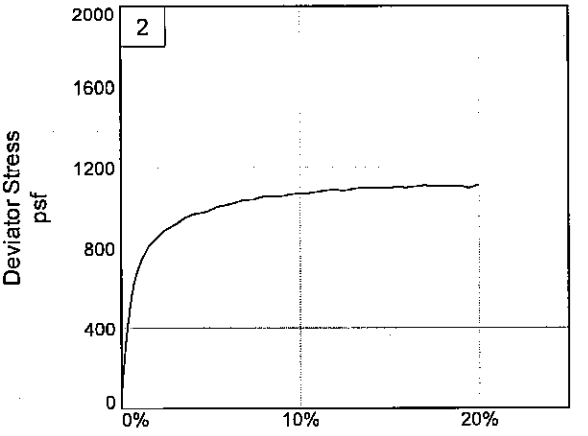
Proj. No.: 0022-0002 **Date Sampled:** 6-6-07

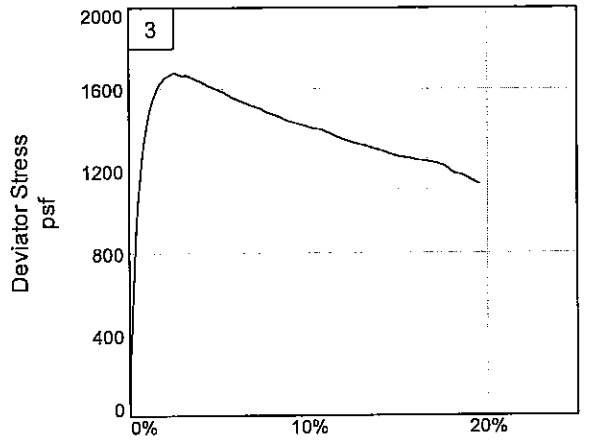
TRIAXIAL SHEAR TEST REPORT

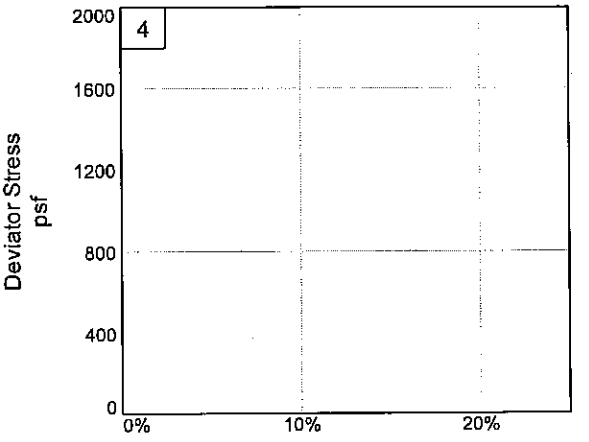
FFEBJV, LLC.

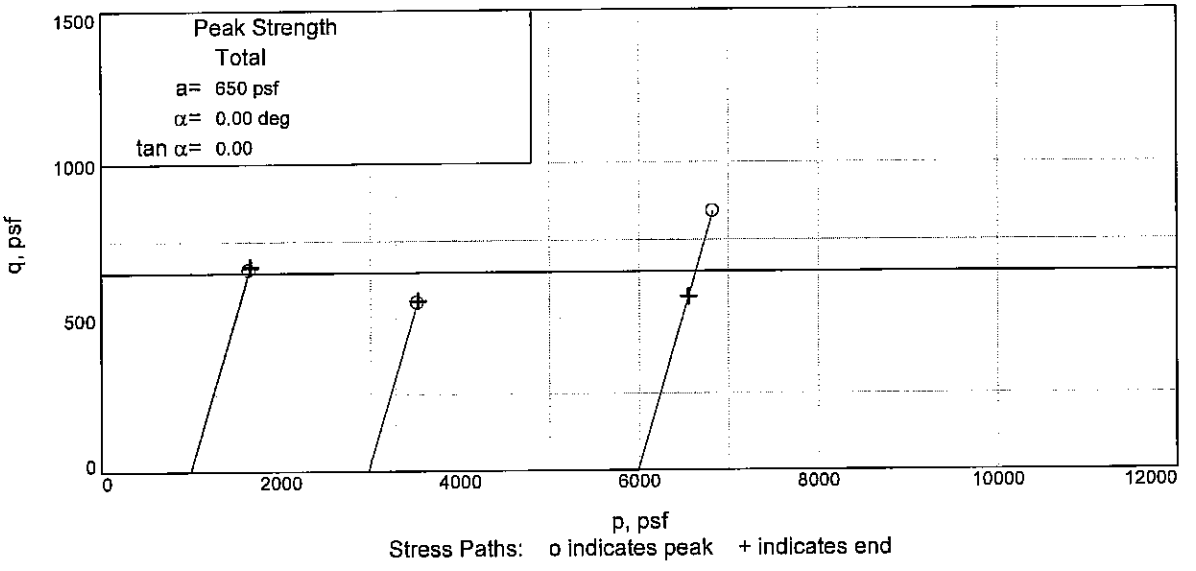
Tested By: CC **Checked By:** RT









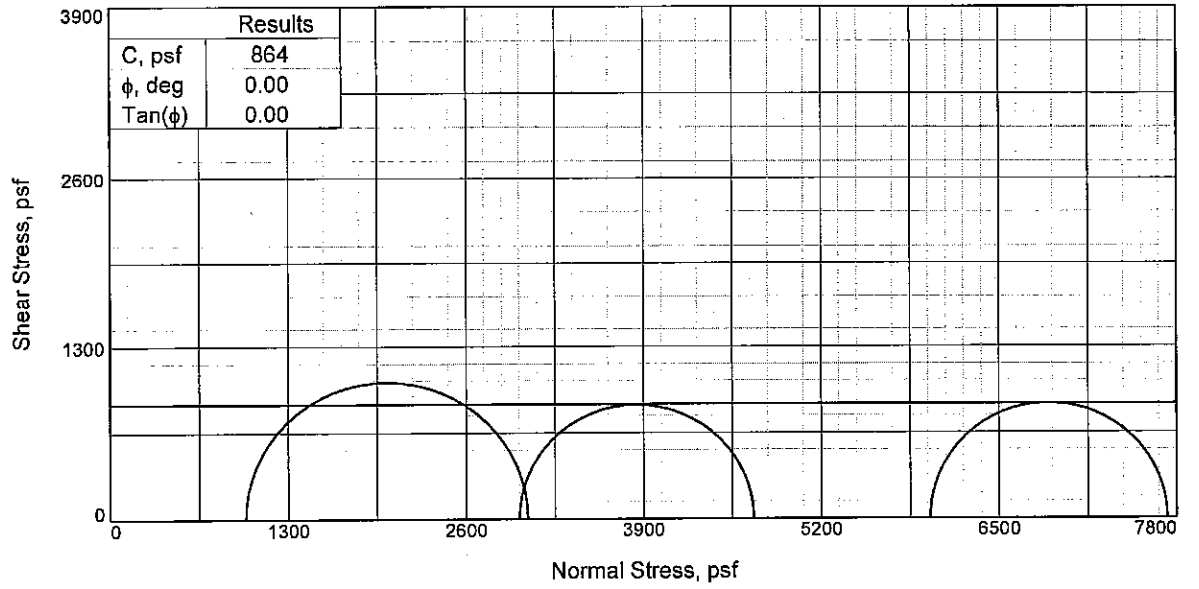


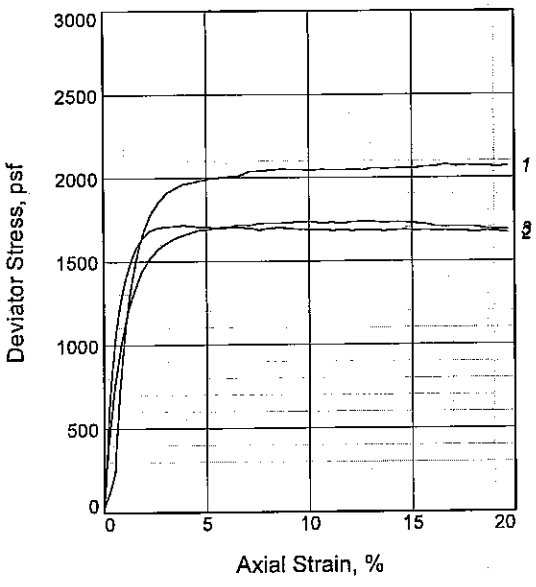
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-52UCL **Depth:** 9.70' **Sample Number:** 4C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** RT





Sample No.		1	2	3
Initial	Water Content, %	43.5	45.6	47.8
	Dry Density, pcf	75.5	72.7	70.3
	Saturation, %	94.2	92.3	91.3
	Void Ratio	1.2650	1.3523	1.4329
	Diameter, in.	1.40	1.40	1.41
	Height, in.	3.00	3.00	3.00
At Test	Water Content, %	42.8	45.8	47.1
	Dry Density, pcf	75.5	72.7	70.3
	Saturation, %	92.7	92.7	90.1
	Void Ratio	1.2650	1.3523	1.4329
	Diameter, in.	1.40	1.40	1.41
	Height, in.	3.00	3.00	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.77	41.63
Fail. Stress, psf		2061	1715	1736
Strain, %		14.7	3.9	12.1
Ult. Stress, psf		2061	1682	1735
Strain, %				
σ_1 Failure, psf		3052	4706	7731
σ_3 Failure, psf		991	2990	5995

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH3 W/ O

LL= 80 **PL=** 30 **PI=** 50

Assumed Specific Gravity= 2.74

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-52UCL **Depth:** 12.80'

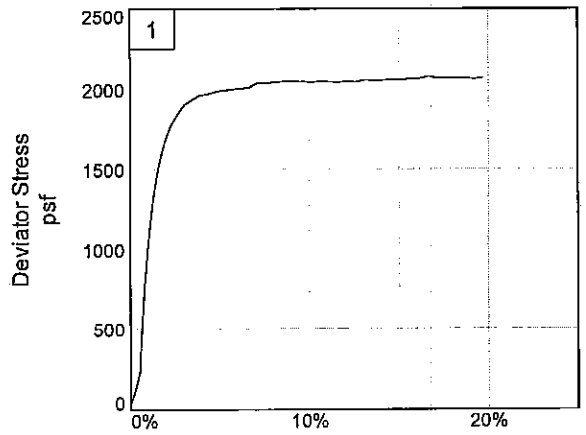
Sample Number: 5B

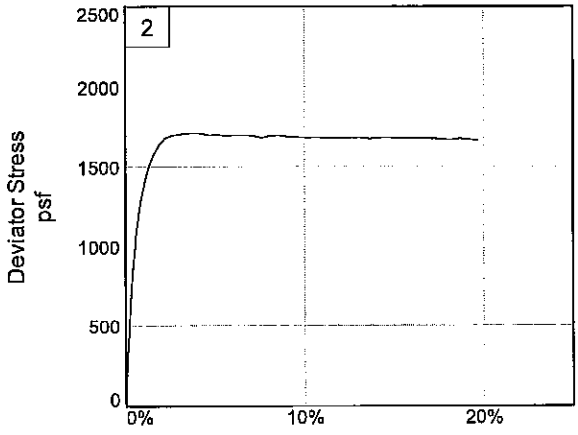
Proj. No.: 0022-0002 **Date Sampled:** 6-7-07

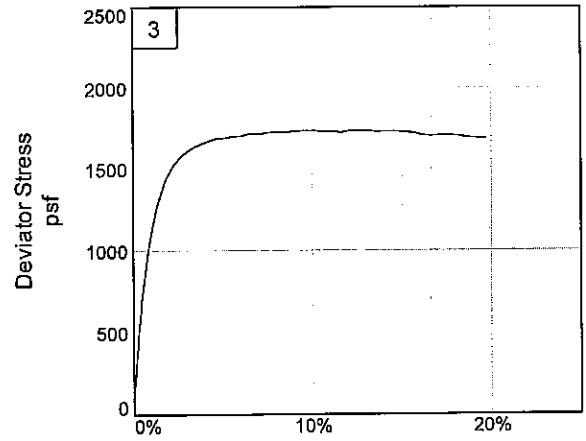
TRIAXIAL SHEAR TEST REPORT

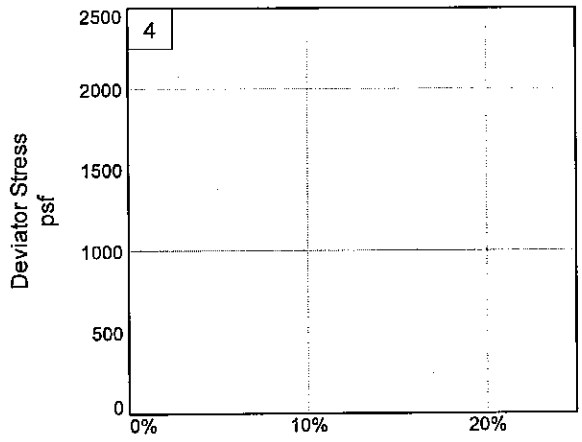
FFEBJV, LLC.

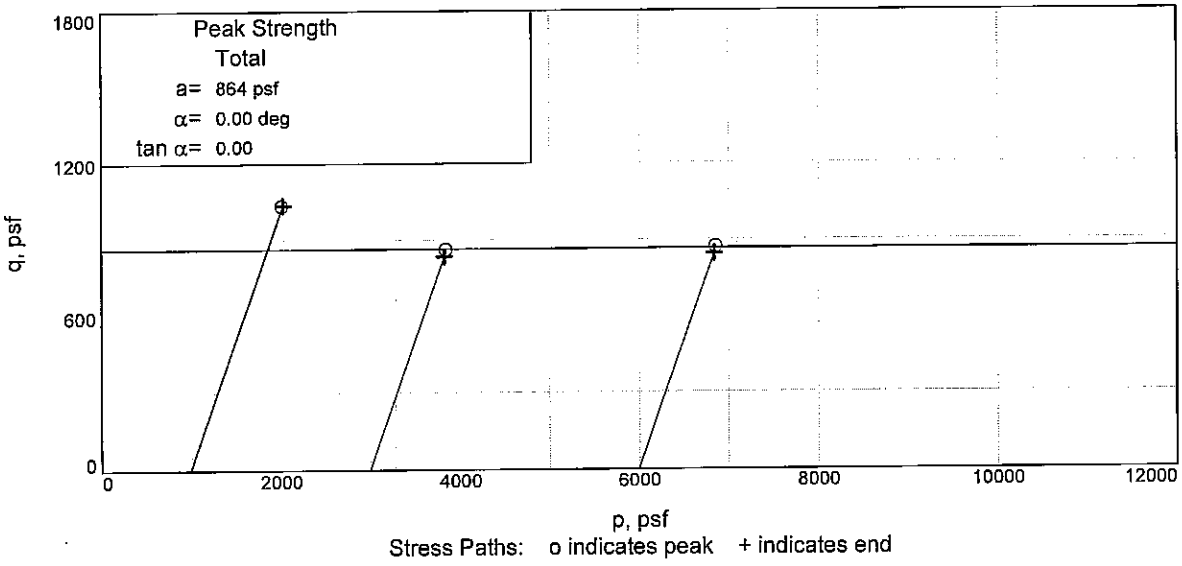
Tested By: CC _____ **Checked By:** RT _____









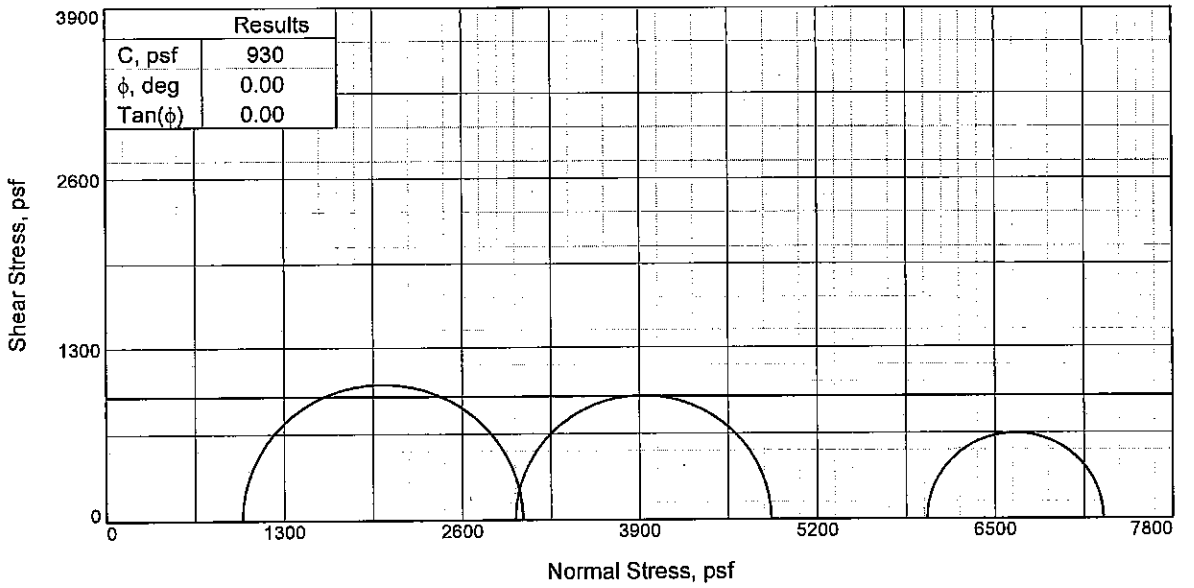


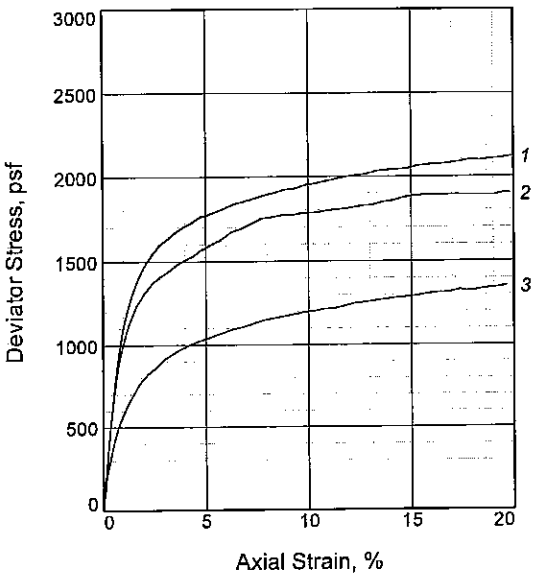
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-52UCL **Depth:** 12.80' **Sample Number:** 5B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** RT





Sample No.		1	2	3
Initial	Water Content, %	33.6	34.3	33.0
	Dry Density, pcf	88.1	86.9	89.3
	Saturation, %	97.7	97.0	98.9
	Void Ratio	0.9413	0.9693	0.9155
	Diameter, in.	1.40	1.40	1.41
	Height, in.	3.00	3.05	3.00
At Test	Water Content, %	32.9	34.0	32.7
	Dry Density, pcf	88.1	86.9	89.3
	Saturation, %	95.8	96.0	97.9
	Void Ratio	0.9413	0.9693	0.9155
	Diameter, in.	1.40	1.40	1.41
	Height, in.	3.00	3.05	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	20.76	41.69
Fail. Stress, psf		2050	1873	1289
Strain, %		14.9	14.6	14.9
Ult. Stress, psf		2050	1873	1289
Strain, %				
σ_1 Failure, psf		3045	4863	7292
σ_3 Failure, psf		996	2990	6003

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR & T CH3

LL= 70 **PL=** 22 **PI=** 48
Assumed Specific Gravity= 2.74
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

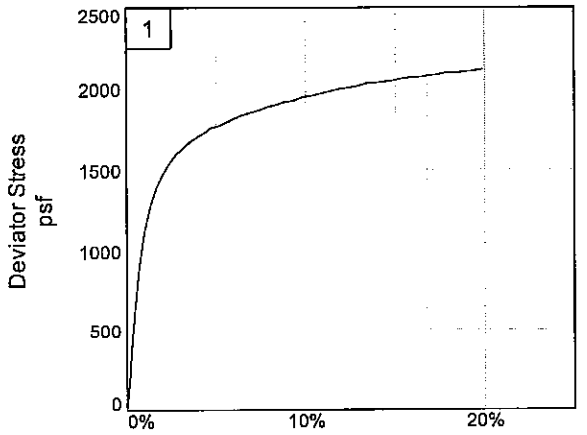
Client: U.S. ARMY CORPS OF ENGINEERS

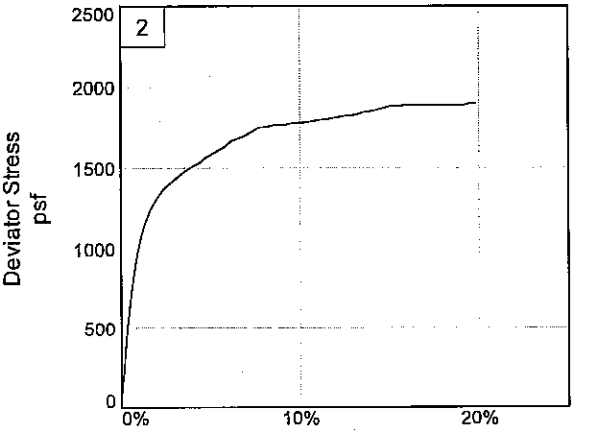
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-52UCL **Depth:** 17.70'
Sample Number: 6C
Proj. No.: 0022-0002 **Date Sampled:** 6-7-07

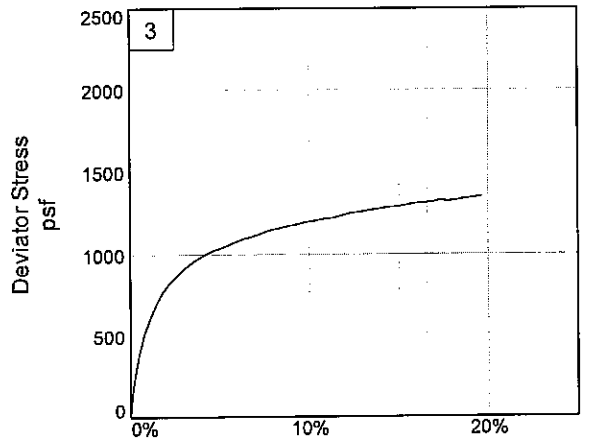
TRIAXIAL SHEAR TEST REPORT

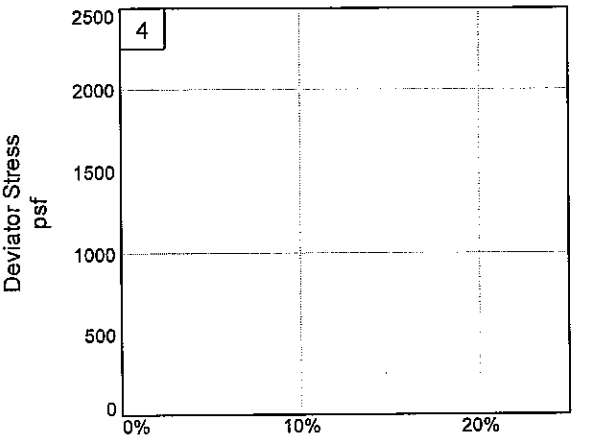
FFEBJV, LLC.

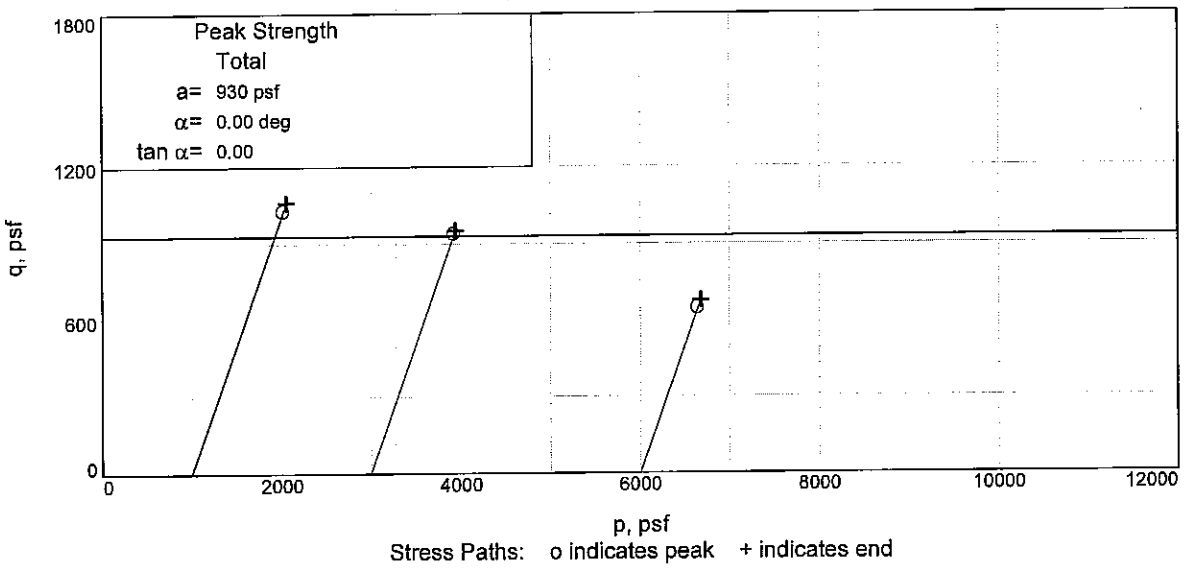
Tested By: CC **Checked By:** RT









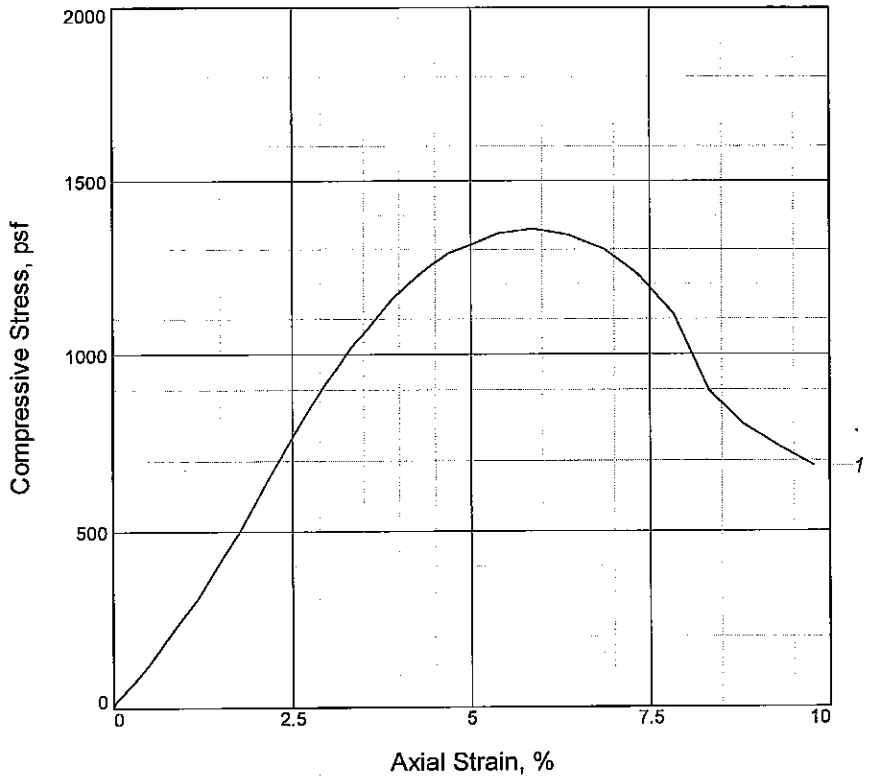


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-52UCL **Depth:** 17.70' **Sample Number:** 6C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1362			
Undrained shear strength, psf	681			
Failure strain, %	5.9			
Strain rate, %/min.	1.00			
Water content, %	31.4			
Wet density, pcf	119.0			
Dry density, pcf	90.6			
Saturation, %	99.4			
Void ratio	0.8469			
Specimen diameter, in.	1.30			
Specimen height, in.	3.05			
Height/diameter ratio	2.34			

Description: M T & GR CL4 W/ LYS ML

LL = 38	PL = 18	PI = 20	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/8/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

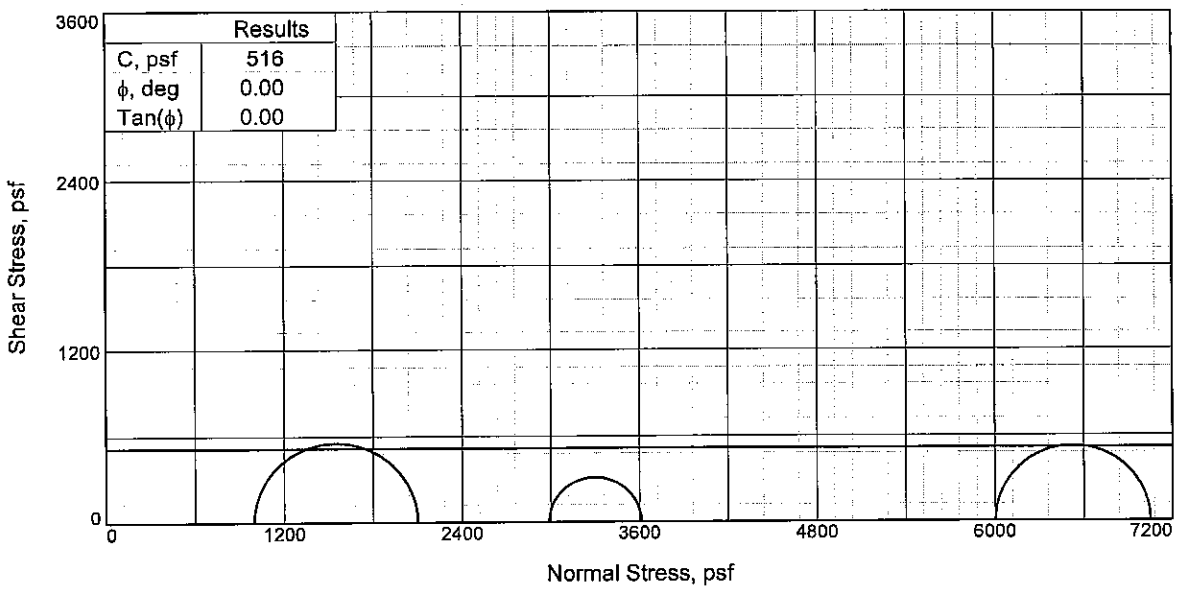
Client: U.S. ARMY CORPS OF ENGINEERS

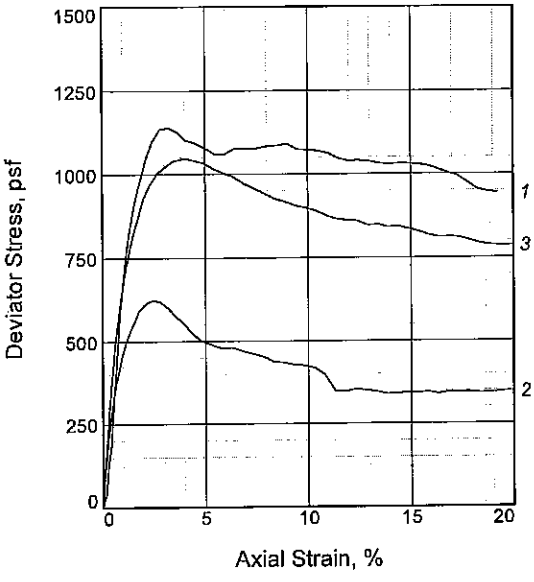
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-52UCL **Depth:** 21.70'
Sample Number: 7C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	58.9	61.3	59.4
	Dry Density, pcf	65.1	63.6	64.5
	Saturation, %	99.7	99.7	99.0
	Void Ratio	1.6078	1.6706	1.6317
	Diameter, in.	1.41	1.42	1.42
	Height, in.	3.01	3.01	3.00
At Test	Water Content, %	57.6	59.8	58.3
	Dry Density, pcf	65.1	63.6	64.5
	Saturation, %	97.4	97.4	97.2
	Void Ratio	1.6078	1.6706	1.6317
	Diameter, in.	1.41	1.41	1.42
	Height, in.	3.01	3.01	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	20.75	41.69
Fail. Stress, psf		1104	623	1048
Strain, %		4.0	2.5	4.1
Ult. Stress, psf		1033	343	844
Strain, %				
σ_1 Failure, psf		2102	3612	7052
σ_3 Failure, psf		998	2989	6004

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH4 W/ LYS ML

LL= 85 **PL=** 35 **PI=** 50

Assumed Specific Gravity= 2.72

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-52UCL **Depth:** 29.70'

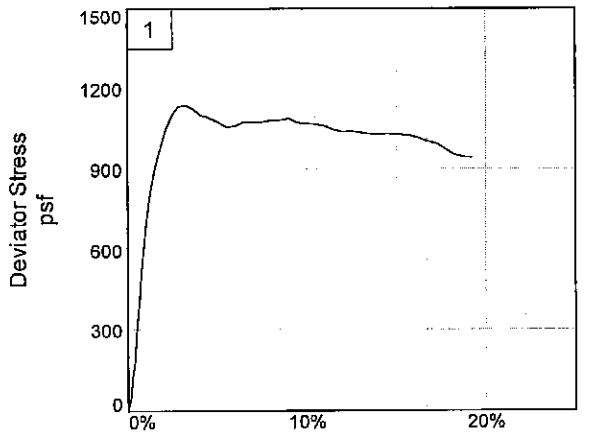
Sample Number: 9C

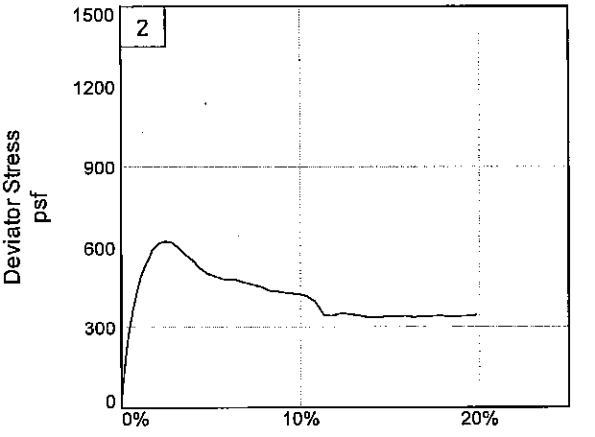
Proj. No.: 0022-0002 **Date Sampled:** 6-7-07

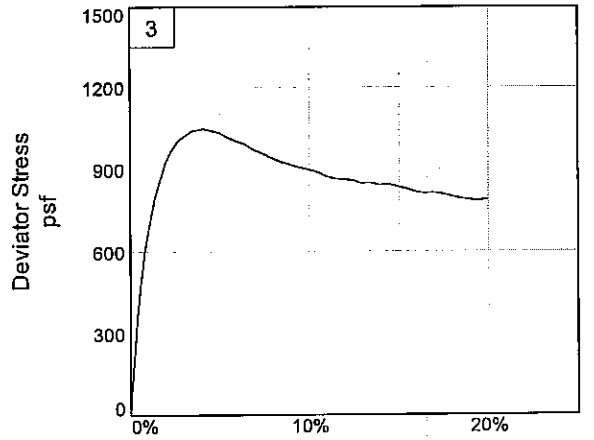
TRIAXIAL SHEAR TEST REPORT

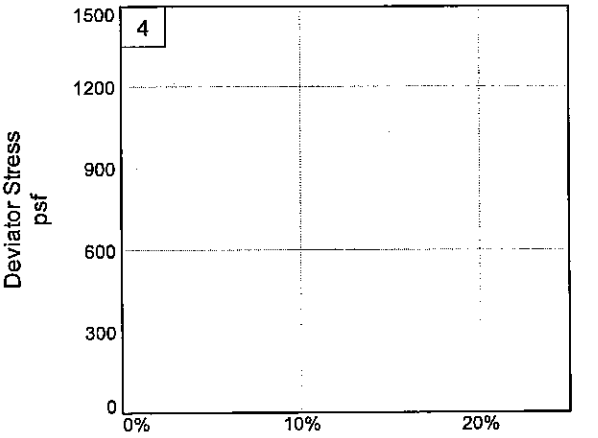
FFEBJV, LLC.

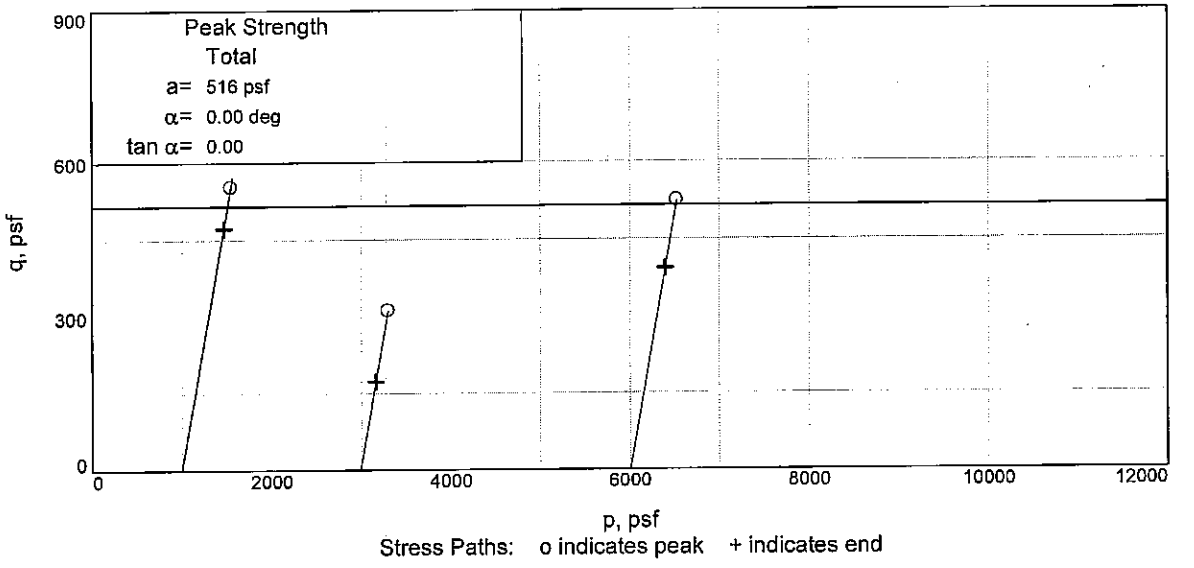
Tested By: CC _____ **Checked By:** RT _____









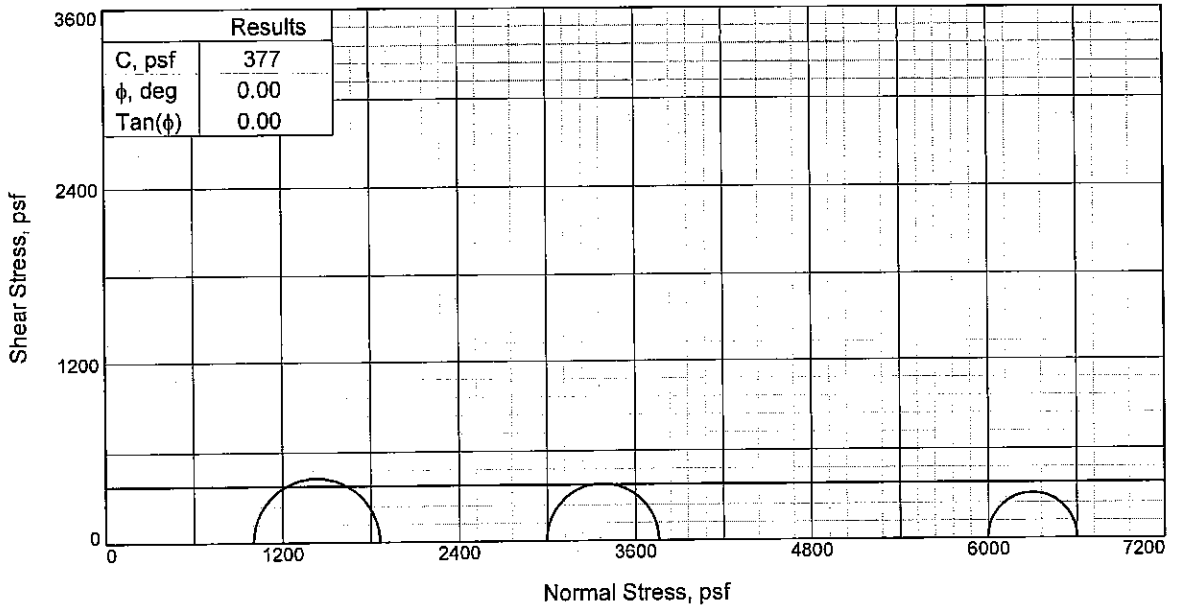


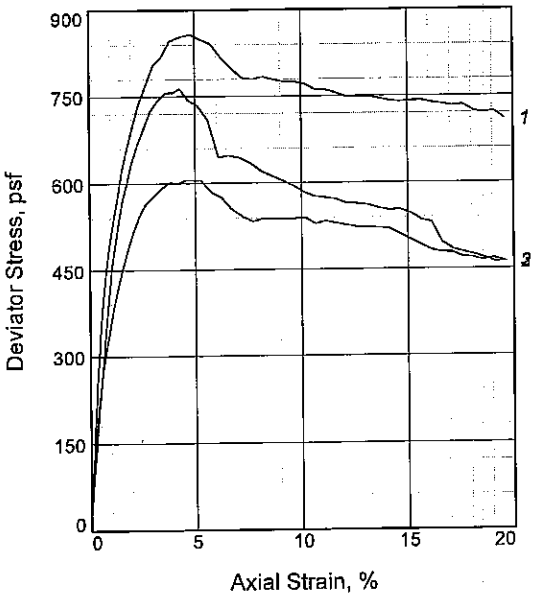
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-52UCL **Depth:** 29.70' **Sample Number:** 9C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** RT





Sample No.		1	2	3
Initial	Water Content, %	62.0	63.8	65.4
	Dry Density, pcf	62.4	61.8	60.8
	Saturation, %	98.1	99.2	99.2
	Void Ratio	1.7197	1.7490	1.7921
	Diameter, in.	1.41	1.42	1.41
	Height, in.	3.05	3.00	3.05
At Test	Water Content, %	60.3	62.5	63.3
	Dry Density, pcf	62.4	61.8	60.8
	Saturation, %	95.3	97.3	96.1
	Void Ratio	1.7197	1.7490	1.7921
	Diameter, in.	1.41	1.42	1.41
	Height, in.	3.05	3.00	3.05
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.97	20.80	41.64
Fail. Stress, psf		857	763	606
Strain, %		4.8	4.3	4.6
Ult. Stress, psf		740	554	523
Strain, %				
σ_1 Failure, psf		1860	3759	6601
σ_3 Failure, psf		1003	2996	5996

Type of Test:
Unconsolidated Undrained

Sample Type: 3

Description: SO GR CH4 W/ LYS ML

LL= 88 **PL=** 22 **PI=** 66

Assumed Specific Gravity= 2.72

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

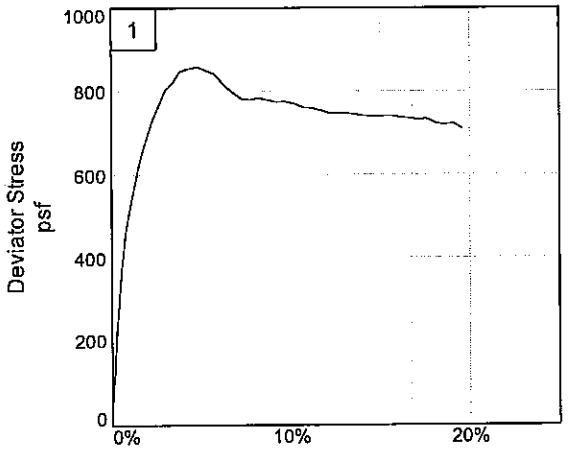
Source of Sample: WWHC-52UCL **Depth:** 33.70'

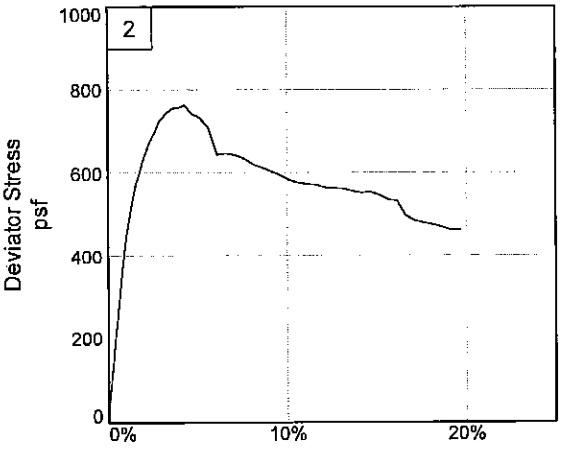
Sample Number: 10C

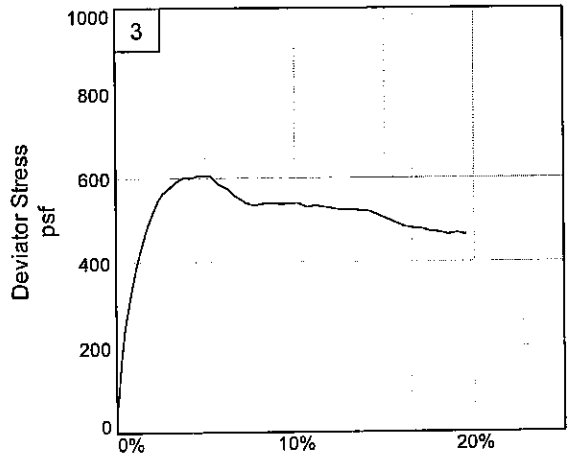
Proj. No.: 0022-0002 **Date Sampled:** 6-7-07-

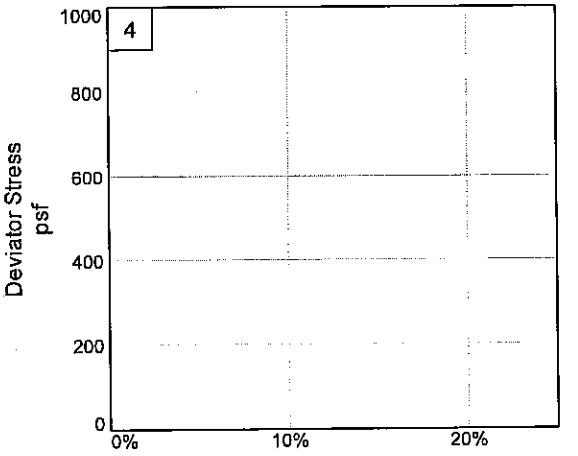
TRIAXIAL SHEAR TEST REPORT

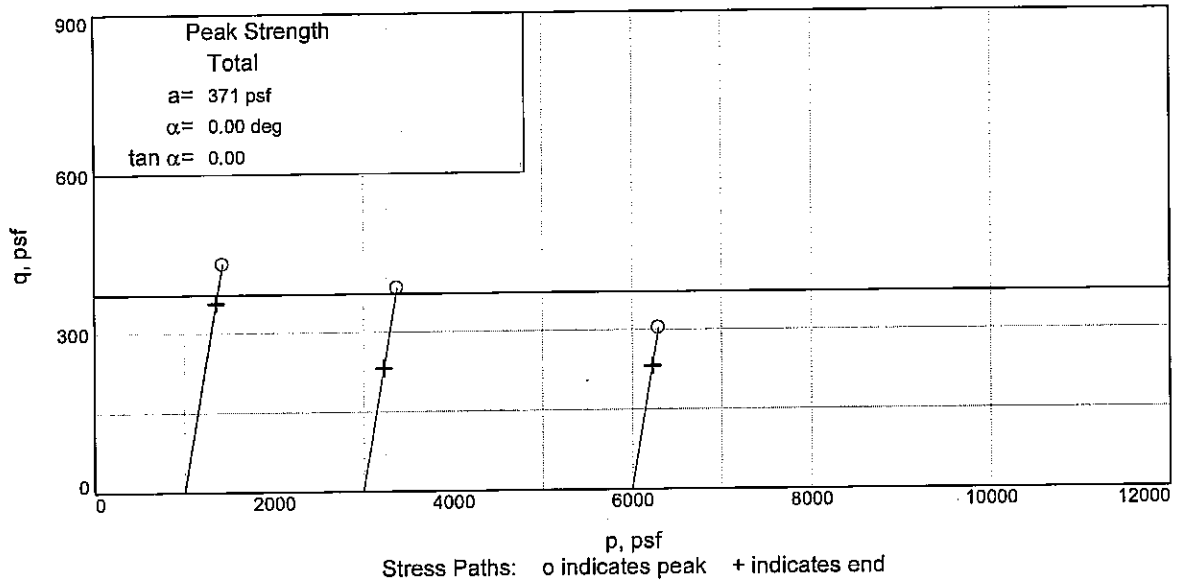
FFEBJV, LLC.







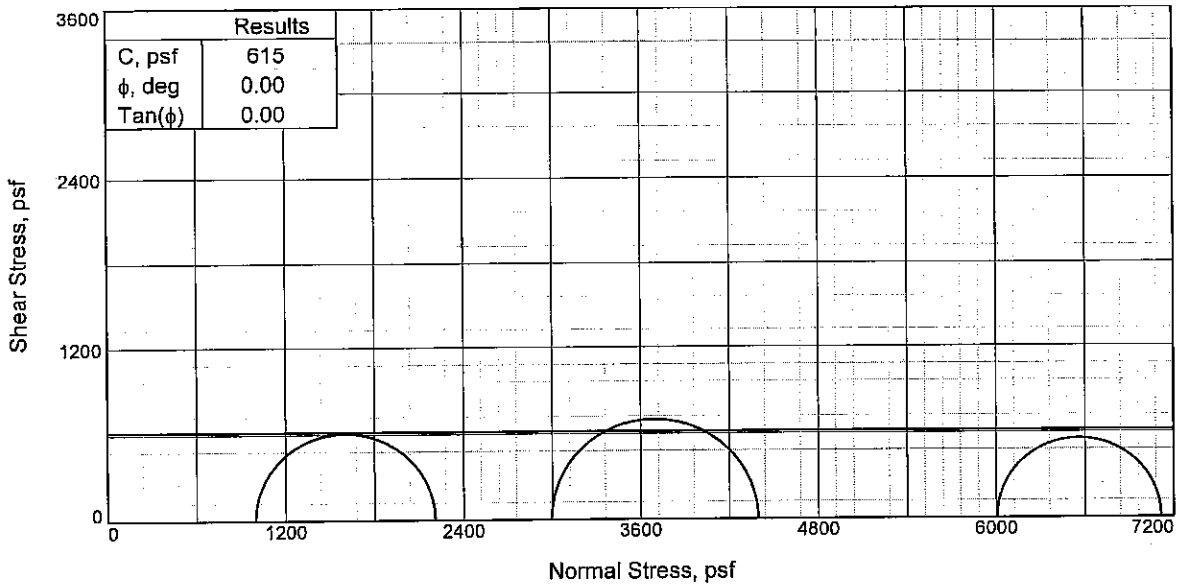


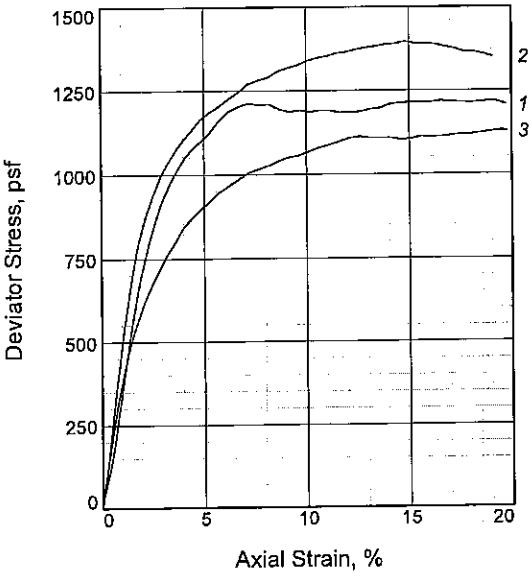


Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-52UCL **Depth:** 33.70' **Sample Number:** 10C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.





Sample No.		1	2	3
Initial	Water Content, %	42.1	42.6	41.9
	Dry Density, pcf	78.2	77.1	78.7
	Saturation, %	98.7	97.1	99.2
	Void Ratio	1.1485	1.1793	1.1348
	Diameter, in.	1.40	1.38	1.38
	Height, in.	3.05	3.15	3.05
At Test	Water Content, %	40.6	41.1	40.8
	Dry Density, pcf	78.2	77.1	78.7
	Saturation, %	95.0	93.7	96.8
	Void Ratio	1.1485	1.1793	1.1348
	Diameter, in.	1.40	1.38	1.38
	Height, in.	3.05	3.15	3.05
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	20.80	41.70
Fail. Stress, psf		1212	1397	1109
Strain, %		14.6	14.8	13.6
Ult. Stress, psf		1209	1388	1109
Strain, %				
σ_1 Failure, psf		2210	4392	7114
σ_3 Failure, psf		997	2996	6005

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CL6 W/ LNS ML

LL= 45 **PL=** 28 **PI=** 17

Assumed Specific Gravity= 2.69

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-52UCL **Depth:** 36.80'

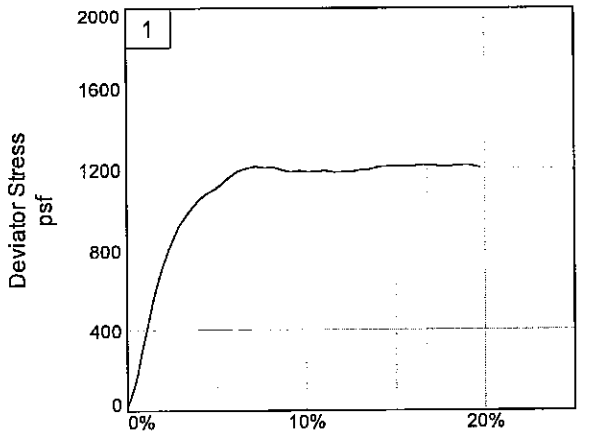
Sample Number: 11B

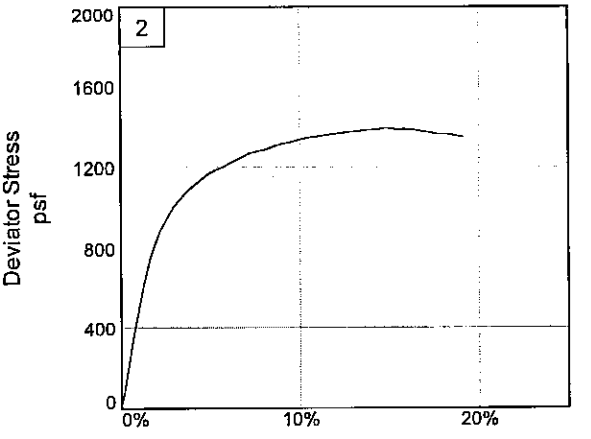
Proj. No.: 0022-0002 **Date Sampled:** 6-7-07

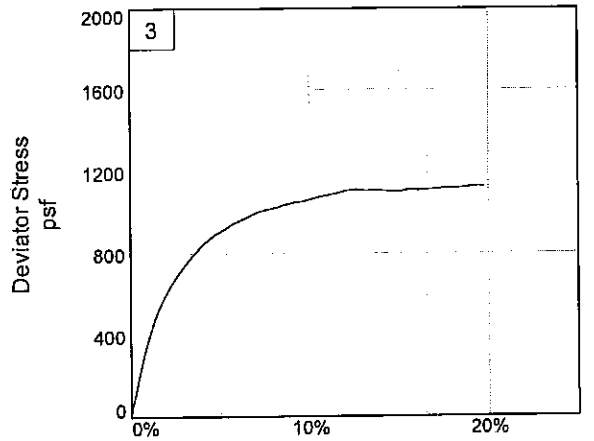
TRIAXIAL SHEAR TEST REPORT

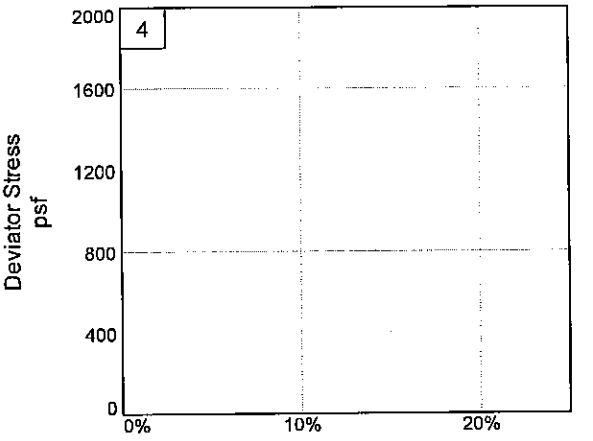
FFEBJV, LLC.

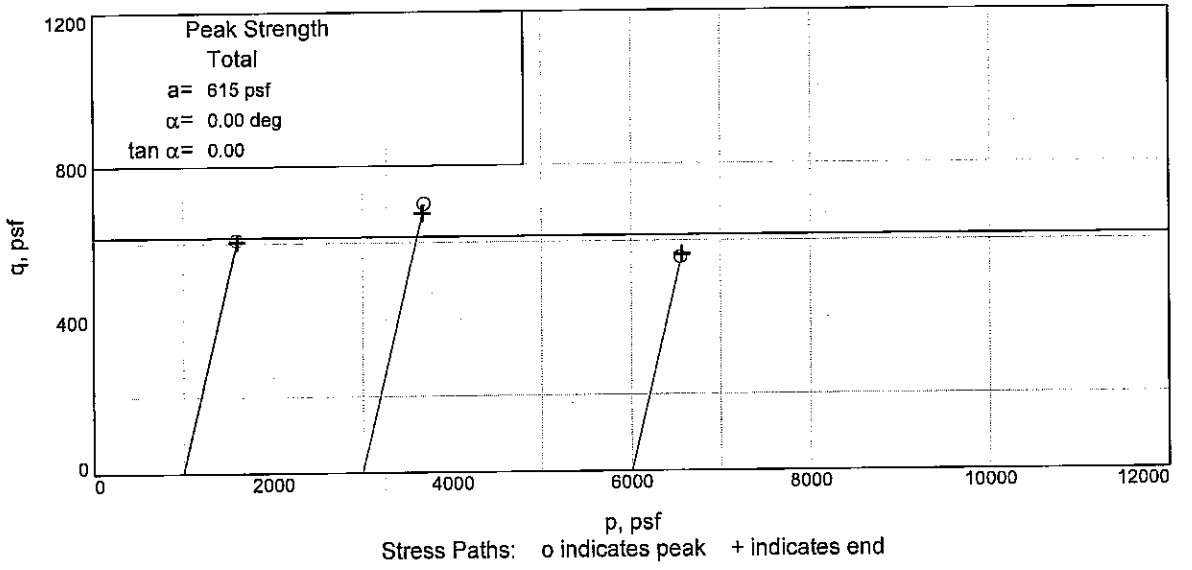
Tested By: CC **Checked By:** RT











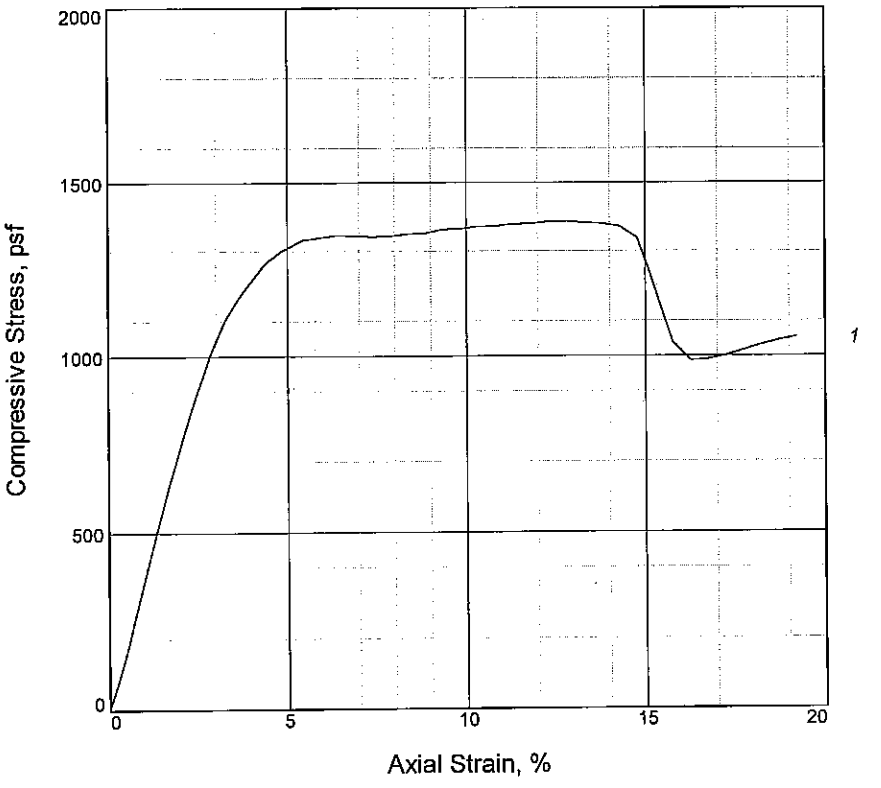
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-52UCL **Depth:** 36.80' **Sample Number:** 11B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1388			
Undrained shear strength, psf	694			
Failure strain, %	12.8			
Strain rate, %/min.	1.00			
Water content, %	41.3			
Wet density, pcf	112.2			
Dry density, pcf	79.4			
Saturation, %	99.9			
Void ratio	1.1075			
Specimen diameter, in.	1.33			
Specimen height, in.	3.05			
Height/diameter ratio	2.29			

Description: M GR CL6 W/ LYS ML

LL = 46	**PL** = 25	**PI** = 21	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/8/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

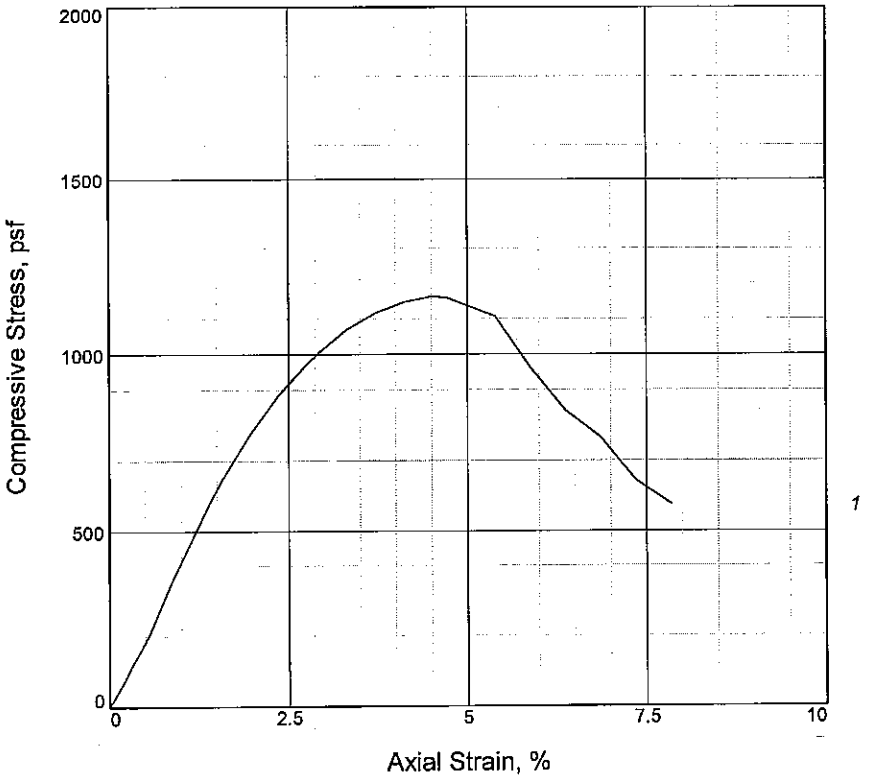
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-52UCL **Depth:** 40.80'
Sample Number: 12B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1162			
Undrained shear strength, psf	581			
Failure strain, %	4.5			
Strain rate, %/min.	1.00			
Water content, %	29.3			
Wet density, pcf	120.8			
Dry density, pcf	93.4			
Saturation, %	99.3			
Void ratio	0.7904			
Specimen diameter, in.	1.32			
Specimen height, in.	3.03			
Height/diameter ratio	2.30			

Description: GR ML3

LL = NP	PL =	PI = NP	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/8/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

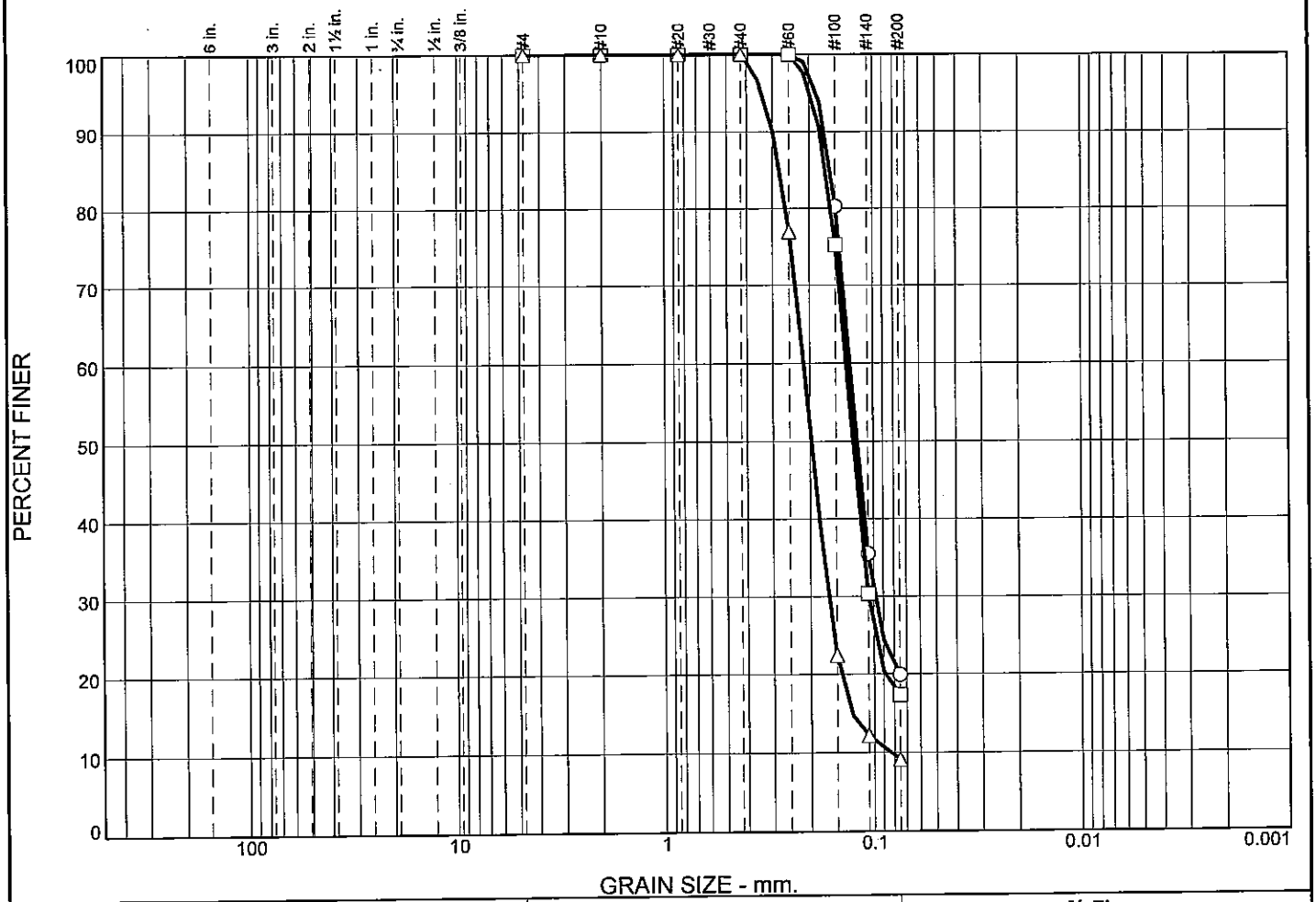
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-52UCL **Depth:** 45.70'
Sample Number: 13C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	80.1	19.9	
□	0.0	0.0	0.0	0.0	0.0	82.7	17.3	
△	0.0	0.0	0.0	0.0	0.0	90.9	9.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1573	0.1284	0.1196	0.0994				
□			0.1657	0.1335	0.1244	0.1056				
△			0.2761	0.2137	0.1966	0.1642	0.1278	0.0833	1.52	2.57

	Material Description	USCS	AASHTO
○	GR SM1	SM1	
□	GR SM1	SM1	
△	GR & T SP	SP	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Source of Sample:** WWHC-52UCL **Depth:** 50.0 **Sample Number:** 15

□ **Source of Sample:** WWHC-52UCL **Depth:** 60.0 **Sample Number:** 20

△ **Source of Sample:** WWHC-52UCL **Depth:** 70.0 **Sample Number:** 25

FFEBJV, LLC

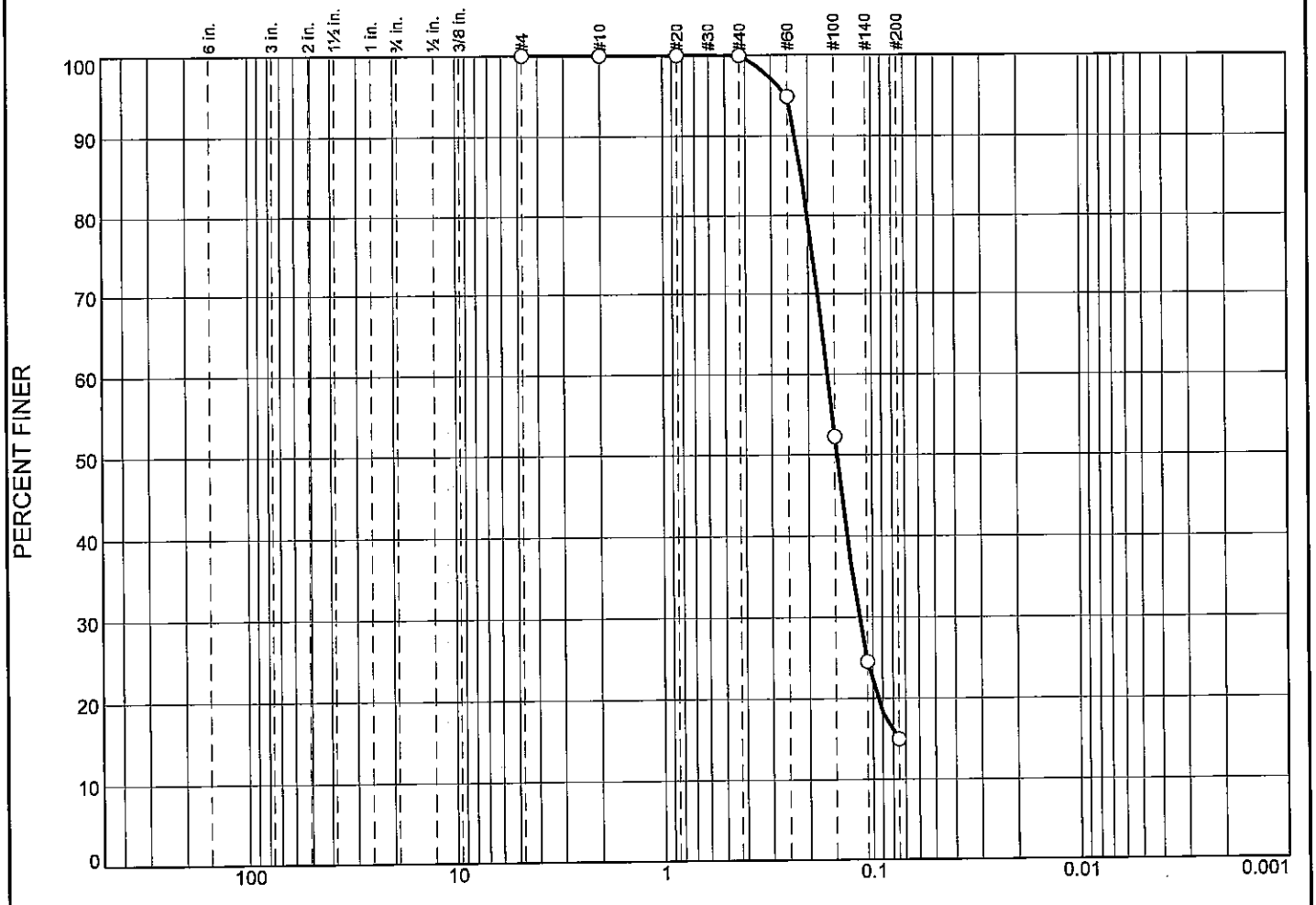
St Rose, LA

Remarks:

Figure

Tested By: JE **Checked By:** GMU

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	85.0	15.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.2139	0.1624	0.1465	0.1159	0.0751			

	Material Description	USCS	AASHTO
○	GR SM1-S	SM1-S	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Source of Sample:** WWHC-52UCL **Depth:** 80.0 **Sample Number:** 30

Remarks:

FFEBJV, LLC

St Rose, LA

Figure

Bor. WWHC-52UCL
STA. N 29^ 48' 58.56" W 090^ 06' 43.83"

17-18 April 2007

GROUND EL. 14.2

0.0	0.8	17		CL	SISVST	T	GR		RT		
0.8	2.0	18	2.0	CL	SISVST	T	GR		RT		
2.0	2.8	21	2.8	ML		T	GR		CS		
2.8	4.0	23		CH	SISVST	T	GR				
4.0	4.8	38		CH	SISST	T	GR				
4.8	5.7	34		CH	SIS M	GR	T				
5.7	6.6	36		CH	SIS M	GR	T				
6.6	8.0	33	8.0	CH	SIS M	GR	T				
8.0	8.8	37		CH	M	GR		WD			
8.8	9.7	36		CH	M	GR		WD			
9.7	10.6	40		CH	M	GR					
10.6	12.0	33		CH	M	GR					
12.0	12.8	42		CH	M	GR					
12.8	13.7	48		CH	M	GR		O			
13.7	16.0	42		CH	M	GR		TR- O			
16.0	16.8	50		CH	M	GR		O			
16.8	17.7	35		CH	M	GR	T				
17.7	20.0	35	20.0	CH	M	GR	T				
20.0	20.8	40		CH	SIS M	T	GR		O		
20.8	21.7	33	21.7	CH	SIS M	T	GR		O		
21.7	22.6	33		CL	SIS M	T	GR		681119	38	18 31 220
22.6	24.0	34	24.0	CL	SIS M	GR					
24.0	24.8	34		CL	M	GR					
24.8	25.7	33	25.7	CL	M	GR					
25.7	26.6	36		CL	SIS M	GR					
26.6	28.0	36	28.0	CL	SIS M	GR					
28.0	28.8	35	28.8	CL	M	GR					
28.8	29.7	38		CH	SIS M	GR					
29.7	30.6	55		CH	SIS M	GR					
30.6	32.0	45		CH	SIS M	GR					
32.0	32.8	43	32.8	CH	SIS M	GR					
32.8	33.7	38	33.7	CH	M	GR					
33.7	36.0	52		CH	SISSO	GR					
36.0	36.8	58	36.8	CH	SISSO	GR					
36.8	37.7	38	37.7	CL	SIS M	GR					
37.7	38.6	54	38.6	CH	M	GR					

38.6 40.0 30 40.0SM GR CS
40.0 40.8 37 40.8CL M GR
40.8 41.7 38 41.7CL SIS M GR 694112 46 25 41 411
41.7 42.6 32 42.6CL M GR
42.6 44.0 26 44.0CL SS M GR
44.0 44.8 39 CH SS M GR
44.8 45.7 33 45.7CH SS M GR
45.7 46.6 38 SM GR 581122 29 460
46.6 48.0 36 SM GR
48.0 50.0 29 SM GR 15
50.0 52.0 29 SM GR 17
52.0 54.0 30 SM GR 19
54.0 56.0 28 SM GR 16
56.0 58.0 26 SM GR 18
58.0 60.0 27 SM GR 17
60.0 62.0 30 SM GR 18
62.0 64.0 27 64.0SM GR 20
64.0 66.0 22 SP GR T 31
66.0 68.0 22 SP GR T 35
68.0 70.0 20 SP T 40
70.0 72.0 24 SP GR T 43 .0833
72.0 74.0 21 SP GR T 37
74.0 76.0 22 SP GR 34
76.0 78.0 24 SP GR 24
78.0 80.0 25 80.0SP GR 21
80.0 82.0 28 SM GR 27
82.0 84.0 34 SM GR 38
84.0 86.0 32 SM GR 47
86.0 88.0 21 SM GR T 43
88.0 90.0 24 90.0SM GR T 46
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 6.00/8.20 Water Con: 33.00
LL,PL,PI : 65, 23, 42 Dry Dens : 86.00
Cohesion : 0.359 Saturat : 91.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH

Depth/Ele: 10.00/4.20 Water Con: 39.00
LL,PL,PI : 77, 23, 54 Dry Dens : 81.00
Cohesion : 0.325 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 13.10/1.10 Water Con: 46.00
LL,PL,PI : 80, 30, 50 Dry Dens : 73.00
Cohesion : 0.432 Saturat : 93.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 18.00/-3.80 Water Con: 34.00
LL,PL,PI : 70, 22, 48 Dry Dens : 88.00
Cohesion : 0.465 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 30.00/-15.80 Water Con: 60.00
LL,PL,PI : 85, 35, 50 Dry Dens : 64.00
Cohesion : 0.258 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 34.00/-19.80 Water Con: 64.00
LL,PL,PI : 88, 22, 66 Dry Dens : 62.00
Cohesion : 0.189 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 37.10/-22.90 Water Con: 42.00
LL,PL,PI : 45, 28, 17 Dry Dens : 78.00
Cohesion : 0.308 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-52UFT

Current Date: 7/5/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	VST BR & GR CL4 W/ RT	CL4		20												
1B	0.8	VST BR & GR CL4 W/ RT	CL4		20												
2A	2.0	ST BR & GR CH2	CH2		29												
3A	4.0	M BR & GR CH3 W/ ARS ML, RT	CH3		48												
3B	4.8	M BR & GR CH3 W/ ARS ML, RT	CH3		44												
3C	5.7	ST GR & T CH3 W/ ARS ML, WD	CH3		34	87	116	97	UU	0	1014		63	23	40	0.50	
4A	8.0	M GR CH3 W/ WD	CH3		41												
4B	8.8	M GR CH3 W/ ARS ML, WD	CH3		37	84	115	100	UU	0	902		80	25	55	0.60	
4C	9.7	M GR & BR CH3 W/ ARS ML, WD	CH3		37												
5A	12.0	M GR CH3 W/ WD	CH3		44												
5B	12.8	M GR CH3 W/ ARS ML, WD, O	CH3		38												
5C	13.7	M GR CH3 W/ ARS ML, WD	CH3		35												
6A	16.0	M GR & BR CH3 W/ ARS ML	CH3		40												
6B	16.8	M GR CH3 W/ ARS ML	CH3		36												
6C	17.7	GR ML2	ML2	9	33	86	115	95	UC	--	401	802	NP	NP		0.17	
7A	20.0	M GR CH3 W/ LNS ML, WD	CH3		43												
7B	20.8	M GR CL4 W/ WD, LNS CH	CL4		34												
7C	21.7	M GR CL4 W/ RT	CL4		37	84	115	100	UU	0	674		37	25	12	0.20	
7D	22.6	M GR CL4 W/ LNS CH	CL4		38												
8A	24.0	GR ML2 W/ ARS CH	ML2		34												
8B	24.8	M GR CH2 W/ LNS ML	CH2		41												
8C	25.7	M GR CH2 W/ LNS ML	CH2		42	79	112	99	UU	0	615		51	22	29	0.33	
8D	26.6	M GR CH4 W/ LNS ML	CH4		58												
9A	28.0	M GR CH4 W/ LNS ML	CH4		45												
9B	28.8	M GR CH4 W/ LNS ML	CH4		58								**	**			Gs, CON
9C	29.7	M GR CH4 W/ LNS ML, SL	CH4		65	61	101	100	UU	0	598		82	23	59	0.30	
9D	30.6	M GR CL6 W/ LNS CH	CL6		38												
10A	32.0	GR ML2 W/ LNS CH, WD	ML2		30												
10B	32.8	GR ML2 W/ ARS CH, WD	ML2		28												
10C	33.7	SO GR CH3 W/ LNS ML	CH3		57	67	106	100	UU	0	371		72	21	51	0.24	
10D	35.7	M GR CH4 W/ LNS ML	CH4		46												
11A	36.0	M GR CH4 W/ LNS ML	CH4		56												
11B	36.8	M GR CH4 W/ LNS ML	CH4		50												
11C	37.7	M GR CH4 W/ LNS ML, SL	CH4		59	65	103	99	UU	0	715		77	22	55	0.38	
11D	38.6	M GR CH2 W/ LNS ML	CH2		38												
12A	40.0	M GR CH2 W/ LNS ML, ARS SP	CH2		46												
12B	40.8	M GR CH2 W/ LNS ML	CH2	7	45	73	105	92	UC	--	530	1060	**	**		0.32	

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

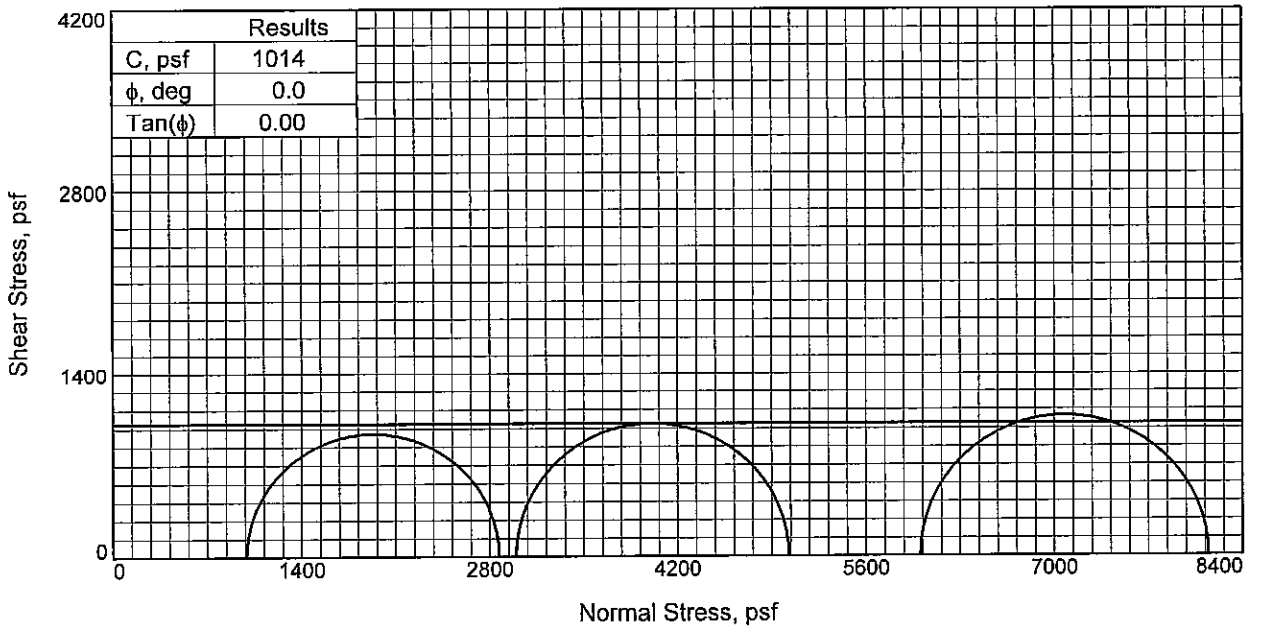
Project Number: 0022-0002
Boring: WWHC-52UFT

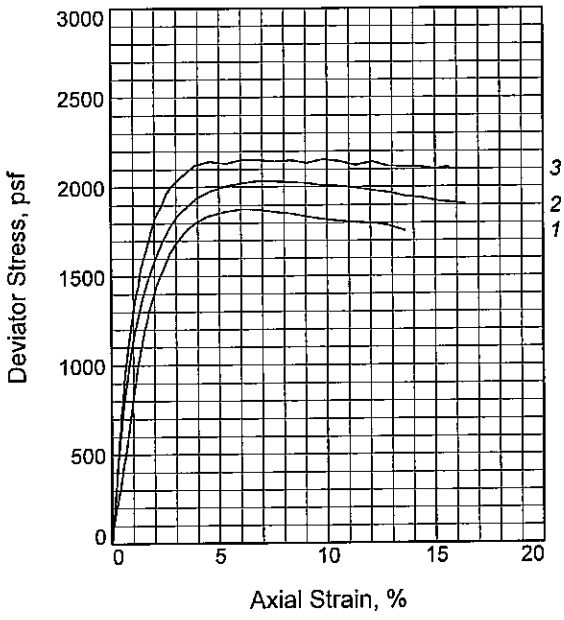
Current Date: 7/5/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
12C	41.7	M GR CH2 W/ LNS SP	CH2		35												
13A	44.0	M GR CL6 W/ ARS CH, LNS SP	CL6		40												
13B	44.8	GR ML2-S W/ ARS CH	ML2-S		27												
13C	45.7	GR ML2-S W/ ARS CH	ML2-S		26												SV
13D	46.6	GR ML2-S W/ ARS CH	ML2-S		26												
14	48.0	M GR CL6 W/ ARS CH	CL6		38												
15	50.0	GR SP W/ ARS CH	SP		27												
16	52.0	GR SP W/ ARS CH	SP		26												
17	54.0	GR SP W/ ARS CH	SP		23												
18A	56.0	GR SP	SP		25												
18B	56.8	GR SP	SP		24												
18C	57.7	GR SP	SP		23												SV
19A	60.0	GR SP	SP		23												
19B	60.8	GR SP	SP		23												
20	62.0	GR SP	SP		35												
21	64.0	GR SP	SP		26												
22	66.0	GR SP	SP		23												
23	68.0	GR SP	SP		26												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2





Sample No.		1	2	3
Initial	Water Content, %	33.0	34.7	34.9
	Dry Density, pcf	87.6	86.3	86.2
	Saturation, %	95.5	97.5	97.9
	Void Ratio	0.9394	0.9675	0.9706
	Diameter, in.	1.418	1.427	1.420
	Height, in.	3.137	3.123	3.114
At Test	Water Content, %	32.6	34.7	34.9
	Dry Density, pcf	87.6	86.3	86.2
	Saturation, %	94.5	97.5	97.9
	Void Ratio	0.9394	0.9675	0.9706
	Diameter, in.	1.418	1.427	1.420
	Height, in.	3.137	3.123	3.114
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	20.80	41.70
Fail. Stress, psf		1877	2032	2143
Strain, %		6.1	6.8	4.6
Ult. Stress, psf		1755	1920	2130
Strain, %				
σ_1 Failure, psf		2870	5028	8148
σ_3 Failure, psf		992	2996	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST GR & T CH3 W/ ARS ML, WD

LL= 63 **PL=** 23 **PI=** 40
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

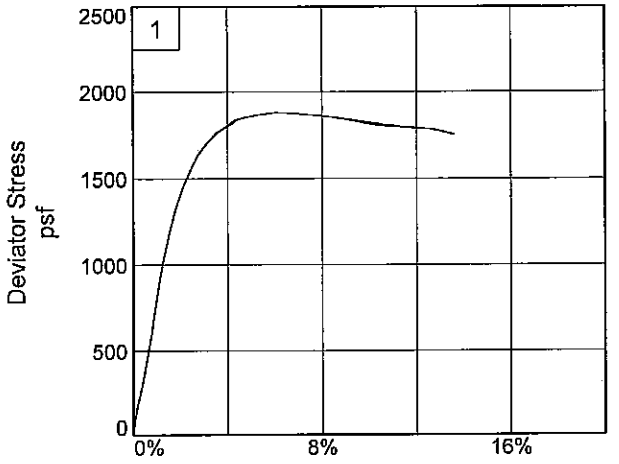
Client: U.S. Army Corps of Engineers

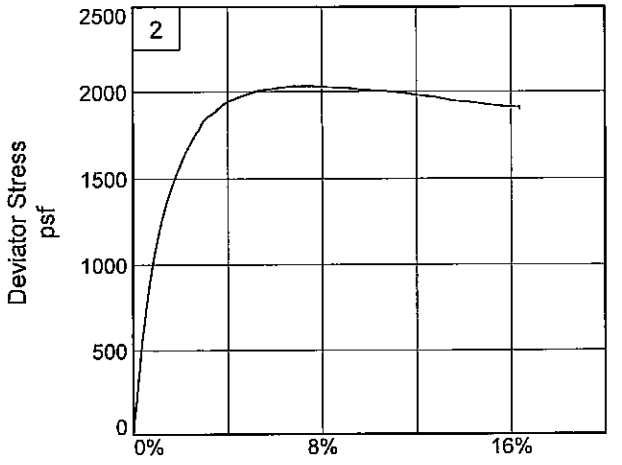
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-52UFT **Depth:** 5.7
Sample Number: 3C
Proj. No.: 0022-0002 **Date Sampled:** 6/28/07

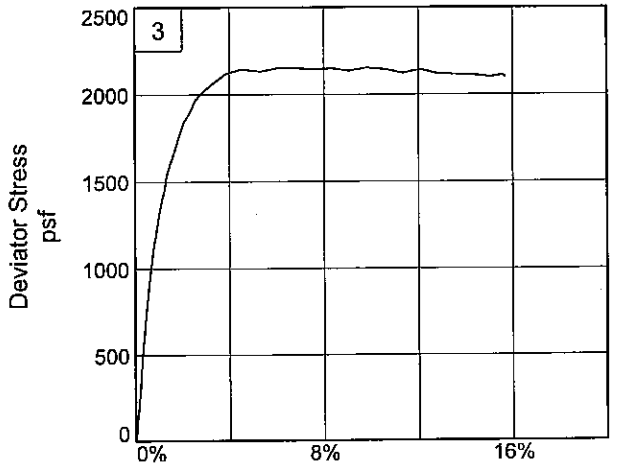
TRIAXIAL SHEAR TEST REPORT

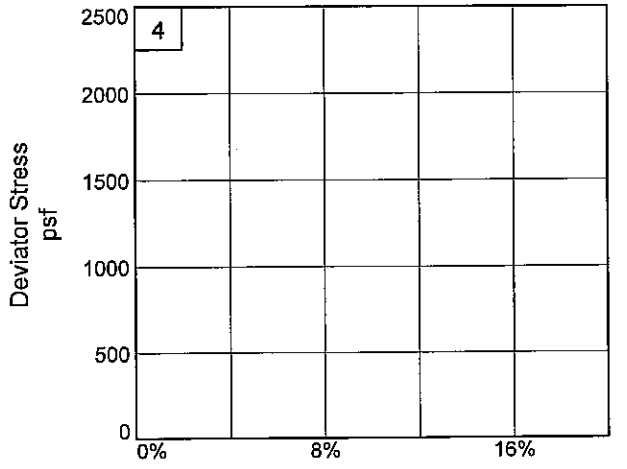
FFEBJV, LLC

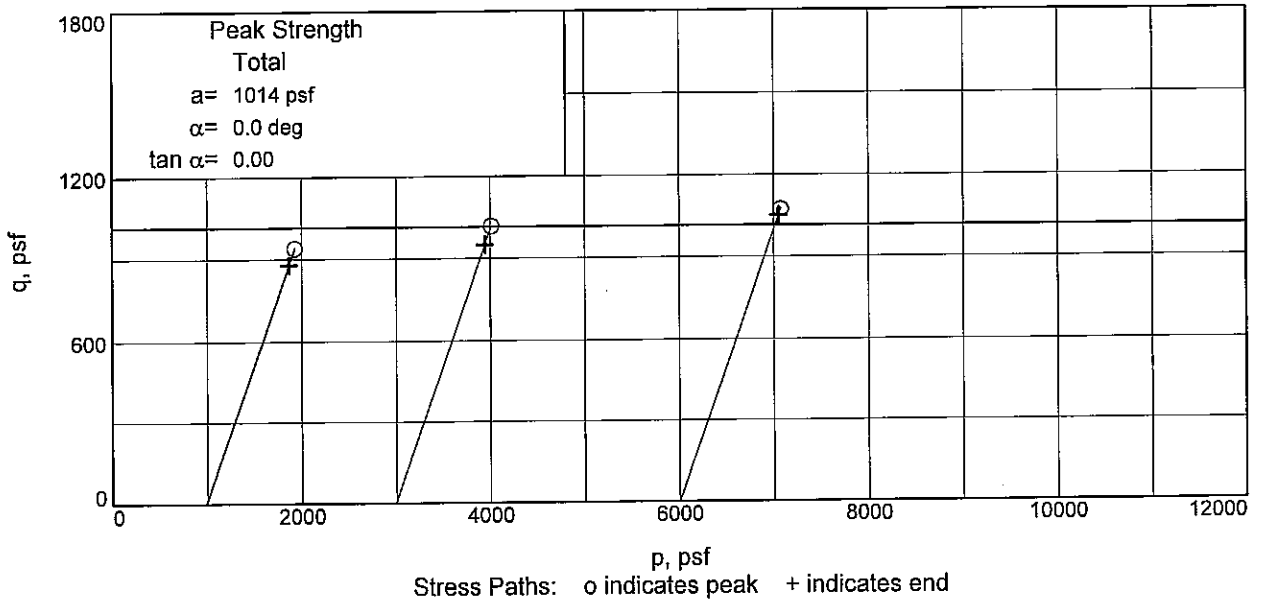
Tested By: DW/JP







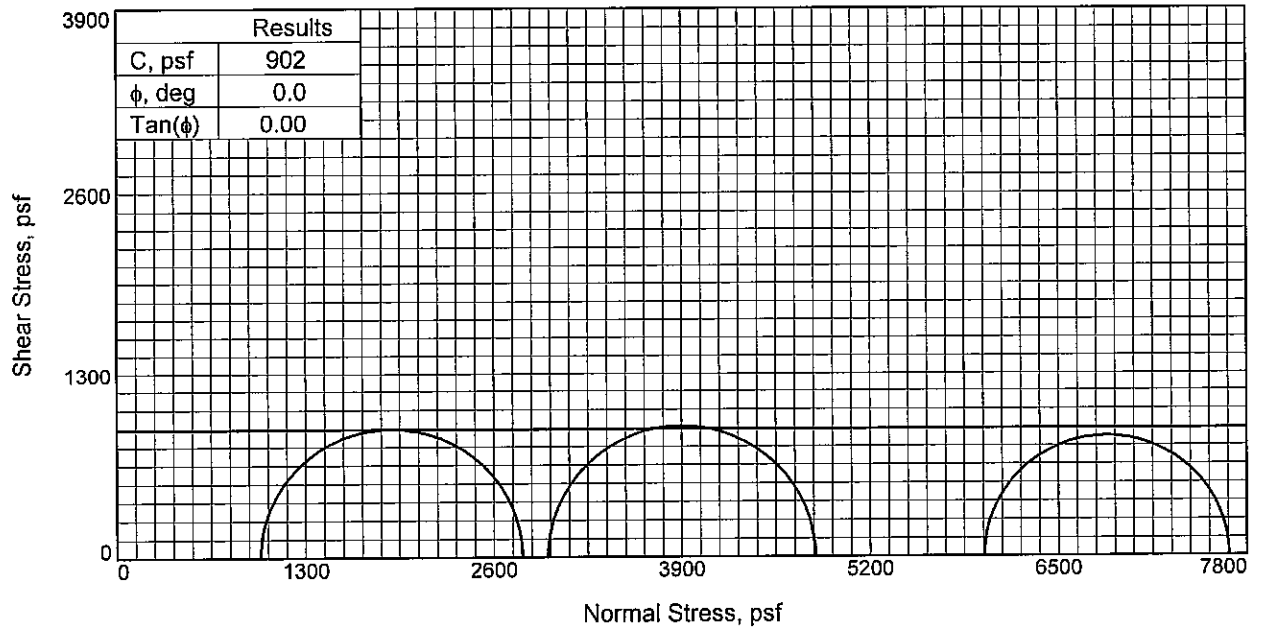


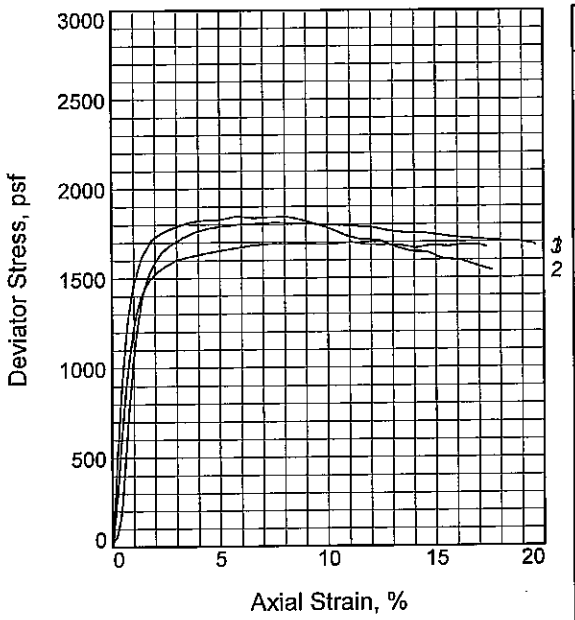


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-52UFT **Depth:** 5.7 **Sample Number:** 3C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP





Sample No.		1	2	3
Initial	Water Content, %	37.7	38.1	36.4
	Dry Density, pcf	83.8	83.4	84.7
	Saturation, %	100.1	100.0	98.6
	Void Ratio	1.0252	1.0367	1.0036
	Diameter, in.	1.421	1.430	1.431
	Height, in.	3.131	3.130	3.131
At Test	Water Content, %	26.2	38.1	36.4
	Dry Density, pcf	83.8	83.4	84.7
	Saturation, %	69.5	100.0	98.6
	Void Ratio	1.0252	1.0367	1.0036
	Diameter, in.	1.421	1.430	1.431
	Height, in.	3.131	3.130	3.131
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.66	41.58
Fail. Stress, psf		1810	1847	1691
Strain, %		7.5	5.8	7.3
Ult. Stress, psf		1738	1603	1690
Strain, %				
σ_1 Failure, psf		2798	4822	7679
σ_3 Failure, psf		988	2975	5988

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH3 W/ ARS ML, WD

LL= 80 **PL=** 25 **PI=** 55
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

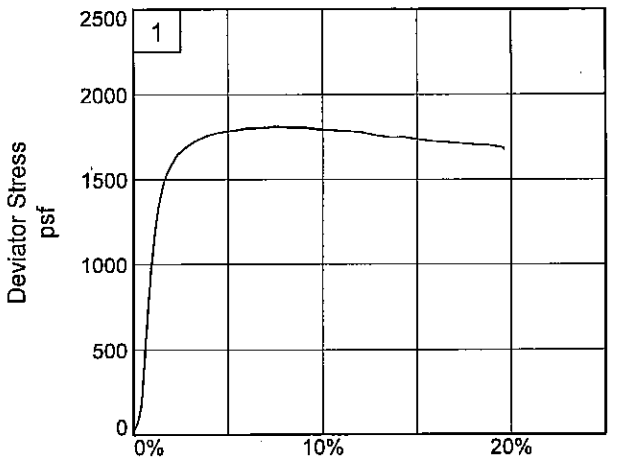
Client: U.S. Army Corps of Engineers

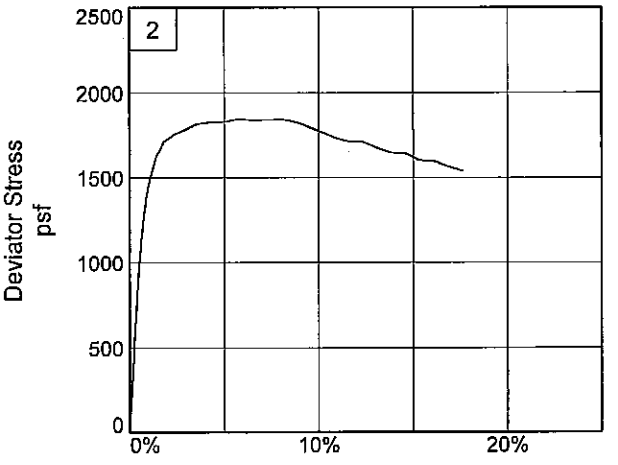
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-52UFT **Depth:** 8.8
Sample Number: 4B
Proj. No.: 0022-0002 **Date Sampled:** 6/38/07

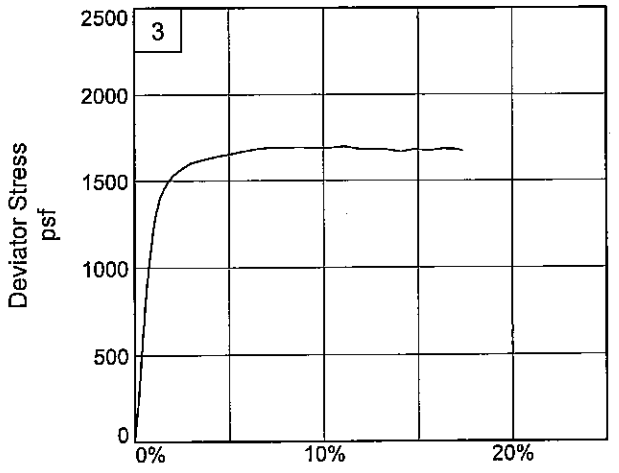
TRIAXIAL SHEAR TEST REPORT

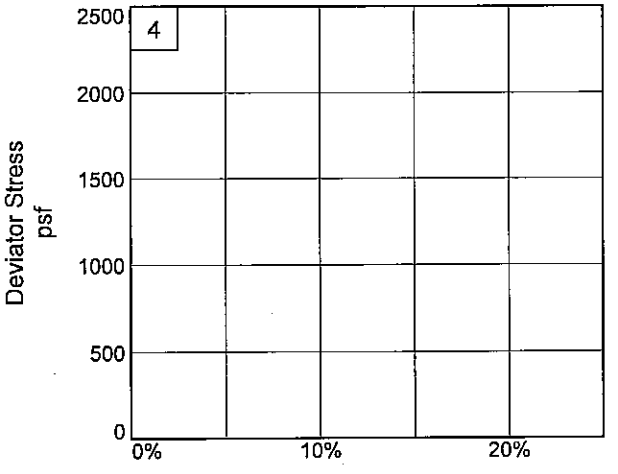
FFEBJV, LLC

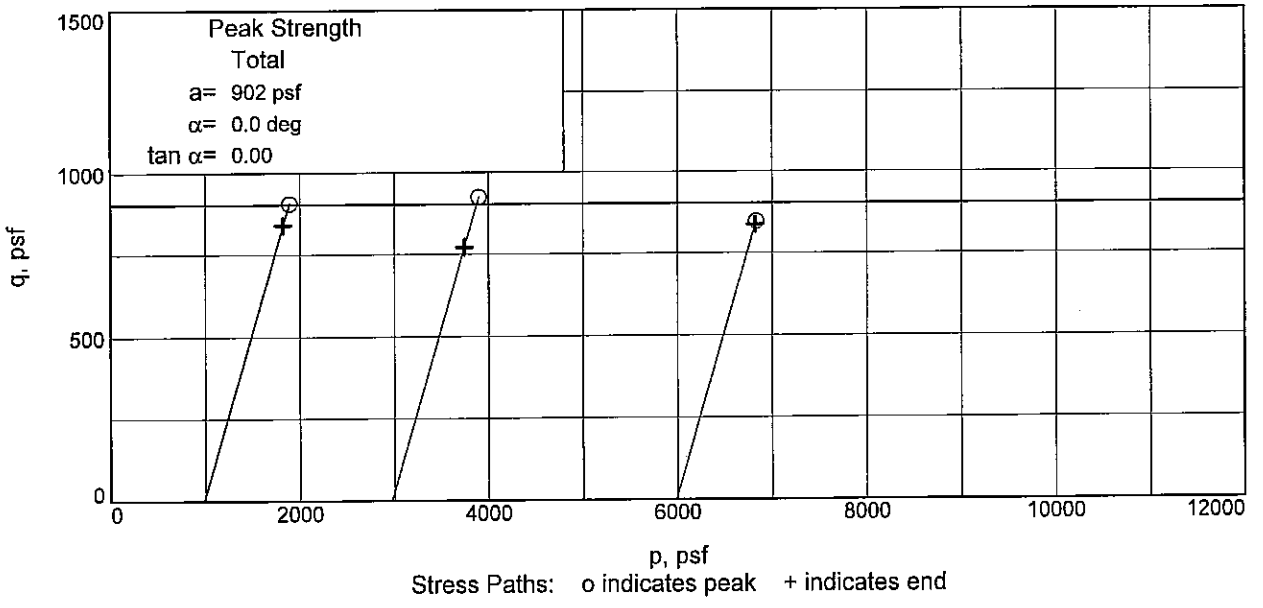
Tested By: DW/JP











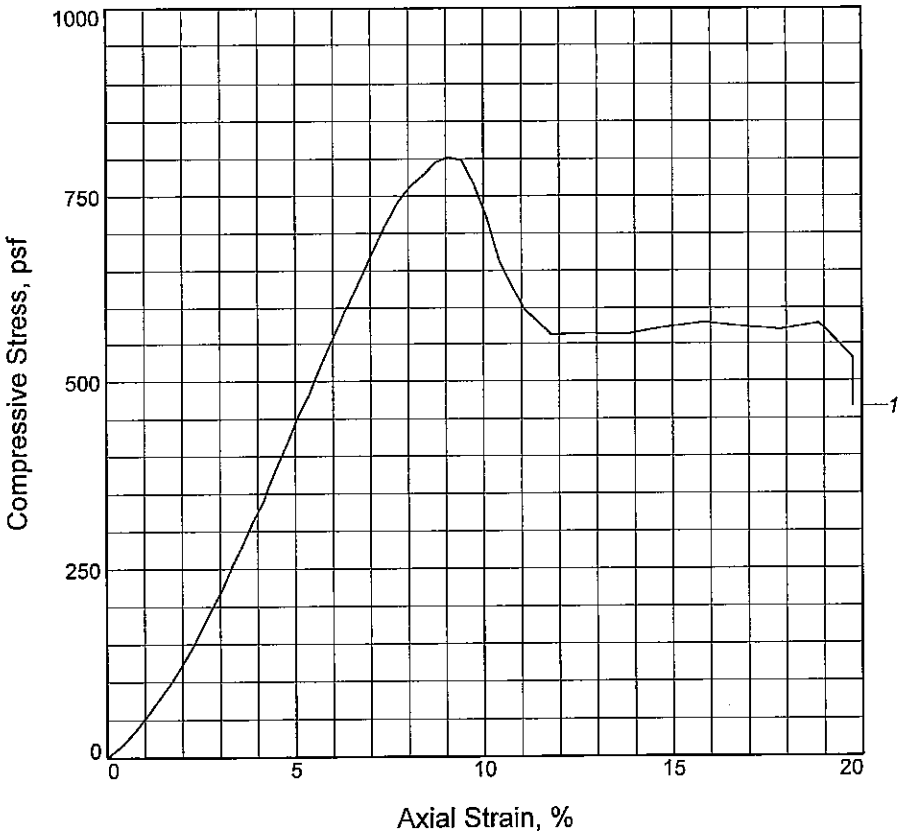
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-52UFT **Depth:** 8.8 **Sample Number:** 4B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	802			
Undrained shear strength, psf	401			
Failure strain, %	9.1			
Strain rate, in./min.	0.039			
Water content, %	33.2			
Wet density, pcf	115.1			
Dry density, pcf	86.4			
Saturation, %	95.1			
Void ratio	0.9359			
Specimen diameter, in.	1.379			
Specimen height, in.	2.859			
Height/diameter ratio	2.07			

Description: GR ML2

LL = NP	**PL =**	**PI =** NP	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/28/07
Remarks:

Client: U.S. Army Corps of Engineers

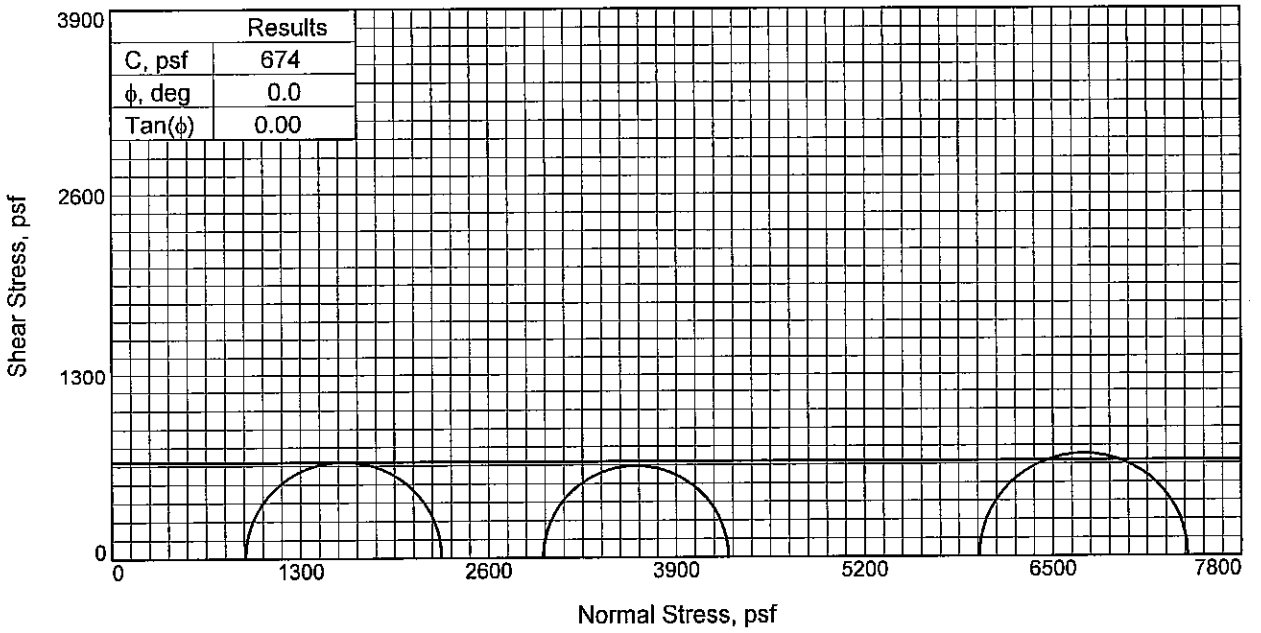
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-52UFT **Depth:** 17.7
Sample Number: 6C

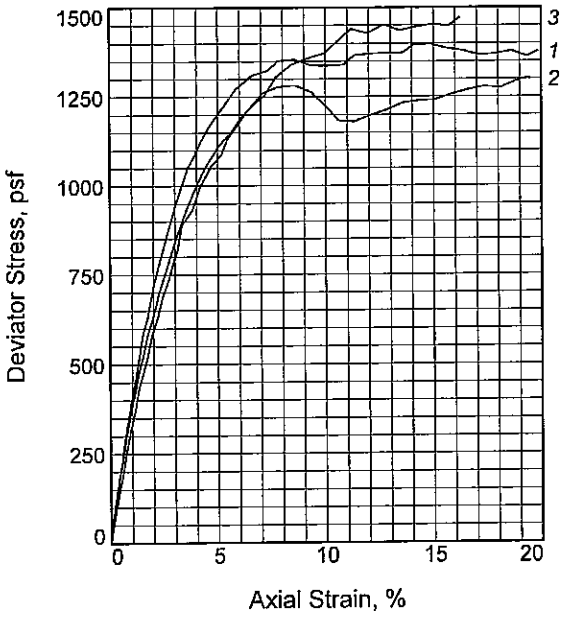
UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: JMB





Sample No.		1	2	3
Initial	Water Content, %	37.8	37.7	36.9
	Dry Density, pcf	83.5	83.3	84.3
	Saturation, %	100.9	100.3	100.5
	Void Ratio	1.0038	1.0074	0.9842
	Diameter, in.	1.408	1.410	1.412
	Height, in.	3.130	3.119	3.129
At Test	Water Content, %	37.8	37.7	36.9
	Dry Density, pcf	83.5	83.3	84.3
	Saturation, %	100.9	100.3	100.5
	Void Ratio	1.0038	1.0074	0.9842
	Diameter, in.	1.408	1.410	1.412
	Height, in.	3.130	3.119	3.129
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.39	20.68	41.61
Fail. Stress, psf		1355	1282	1440
Strain, %		8.6	8.6	11.2
Ult. Stress, psf		1337	1180	1427
Strain, %				
σ_1 Failure, psf		2275	4260	7431
σ_3 Failure, psf		920	2978	5992

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTUBED
Description: M GR CL4 W/ RT

LL= 37 **PL=** 25 **PI=** 12
Assumed Specific Gravity= 2.68
Remarks:

Client: U.S. Army Corps of Engineers

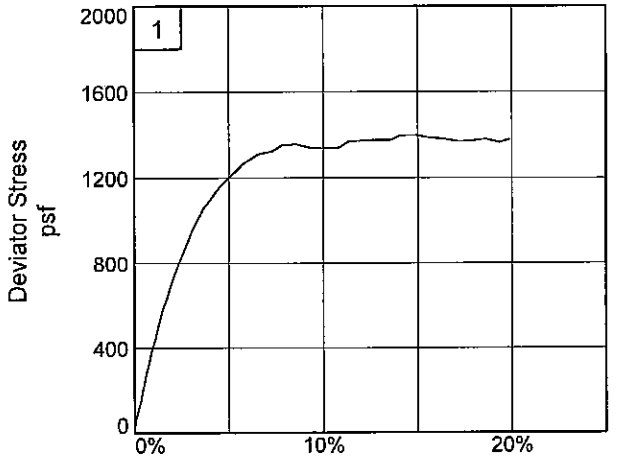
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-52UFT **Depth:** 21.7
Sample Number: 7C
Proj. No.: 0022-0002 **Date Sampled:** 6/28/07

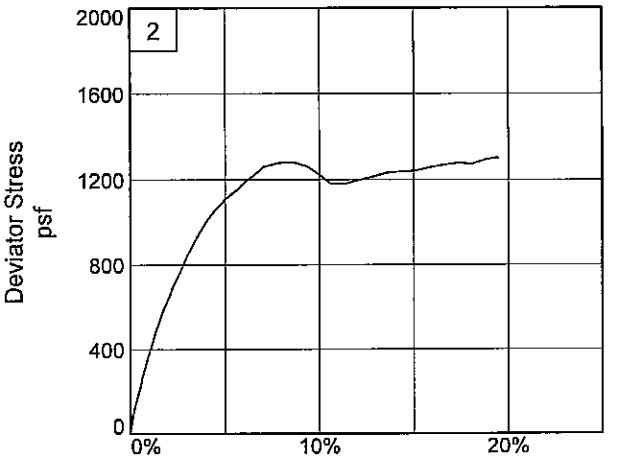
TRIAXIAL SHEAR TEST REPORT

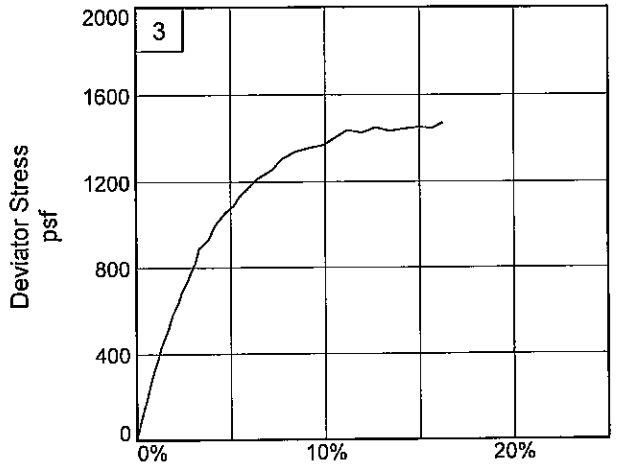
FFEBJV, LLC

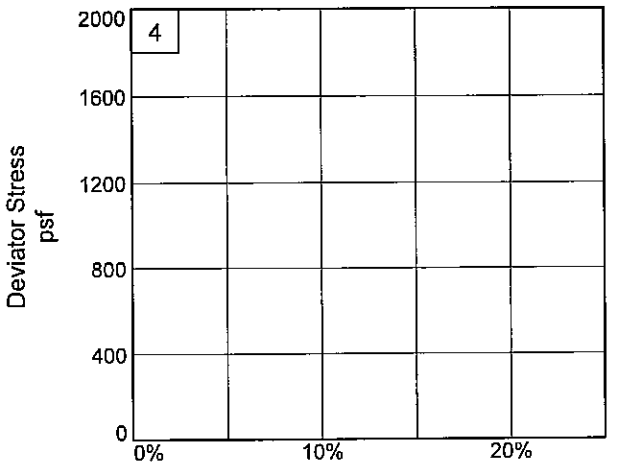
Figure _____

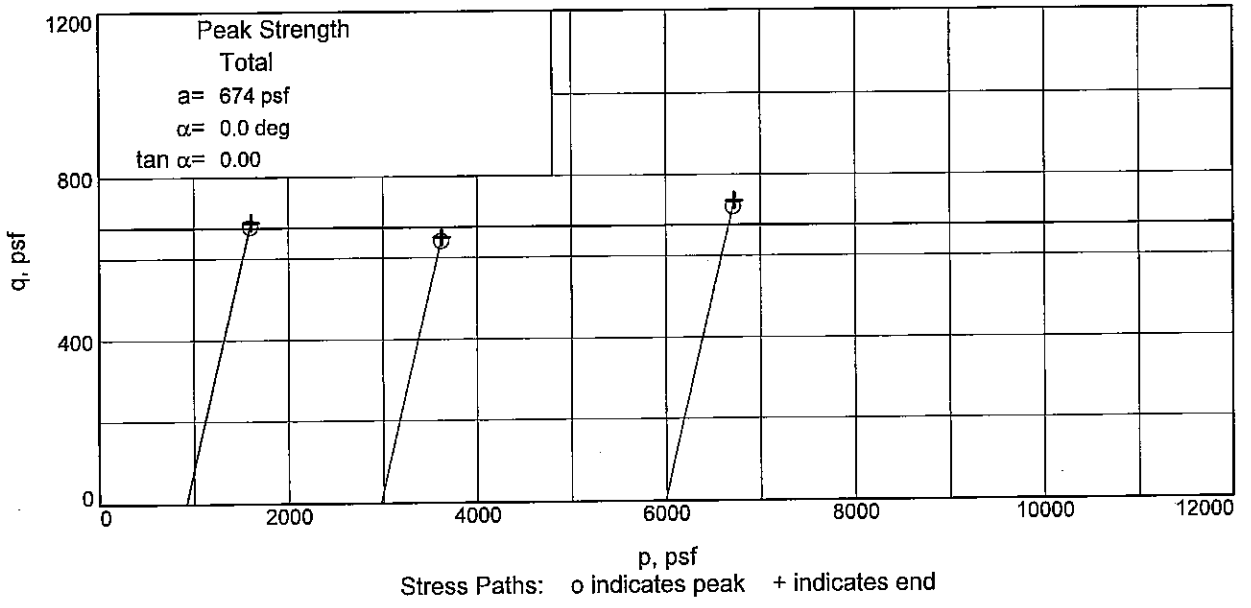
Tested By: DW/JP







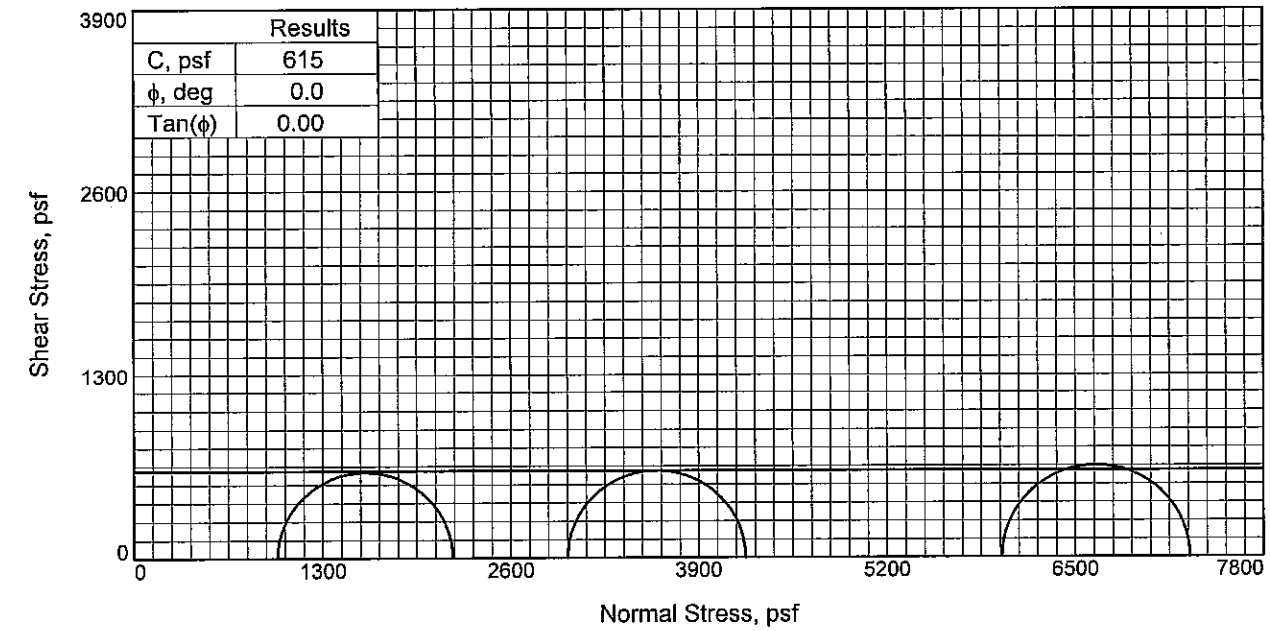


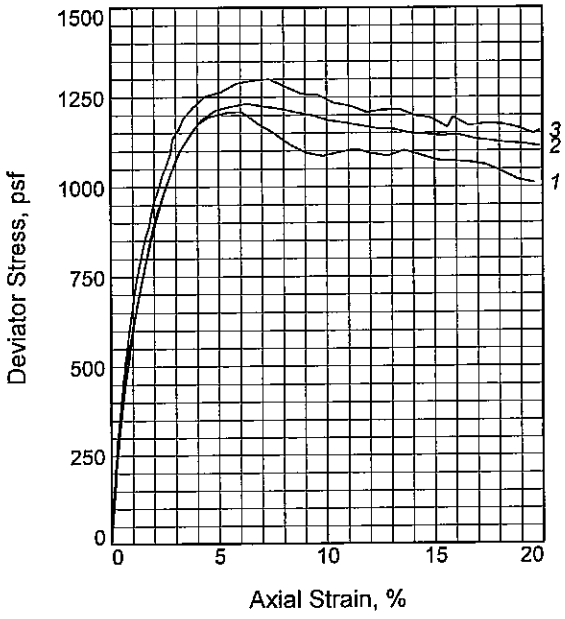


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-52UFT **Depth:** 21.7 **Sample Number:** 7C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP





Sample No.		1	2	3
Initial	Water Content, %	41.3	42.4	42.4
	Dry Density, pcf	79.1	78.3	78.3
	Saturation, %	98.7	99.4	99.2
	Void Ratio	1.1301	1.1528	1.1525
	Diameter, in.	1.420	1.420	1.422
	Height, in.	3.135	3.132	3.143
At Test	Water Content, %	41.3	42.4	17036.7
	Dry Density, pcf	79.1	78.3	78.3
	Saturation, %	98.7	99.4	39913.4
	Void Ratio	1.1301	1.1528	1.1525
	Diameter, in.	1.420	1.420	1.422
	Height, in.	3.135	3.132	3.143
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.79	41.62
Fail. Stress, psf		1210	1232	1299
Strain, %		6.1	6.3	7.3
Ult. Stress, psf		1086	1143	1191
Strain, %				
σ_1 Failure, psf		2199	4225	7293
σ_3 Failure, psf		989	2993	5994

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH2 W/ LNS ML

LL= 51 **PL=** 22 **PI=** 29
Assumed Specific Gravity= 2.70
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-52UFT **Depth:** 25.7
Sample Number: 8C
Proj. No.: 0022-0002 **Date Sampled:** 6/28/07

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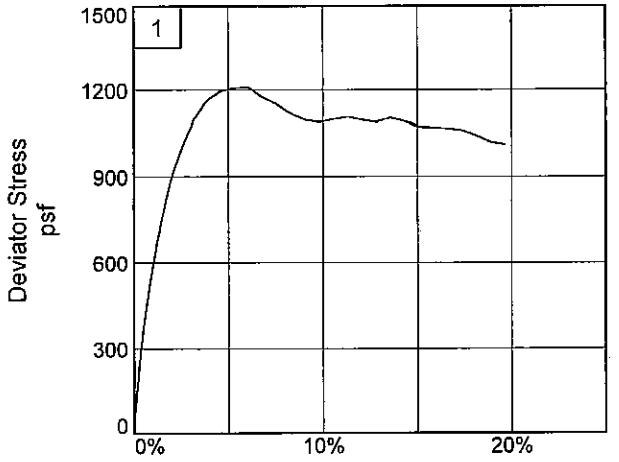
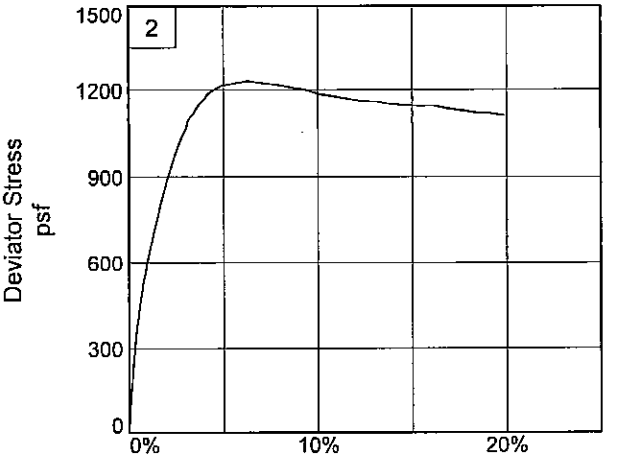
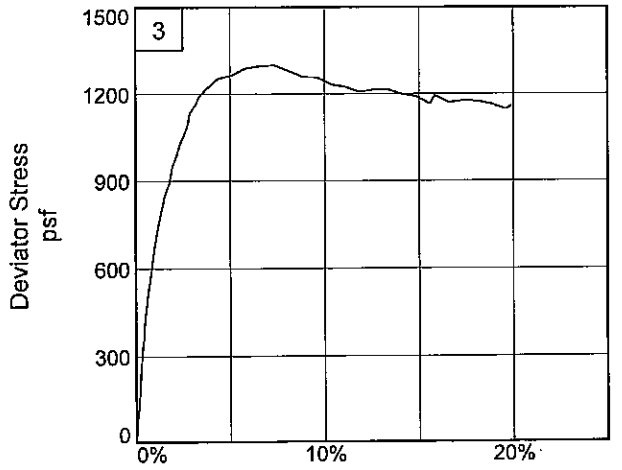
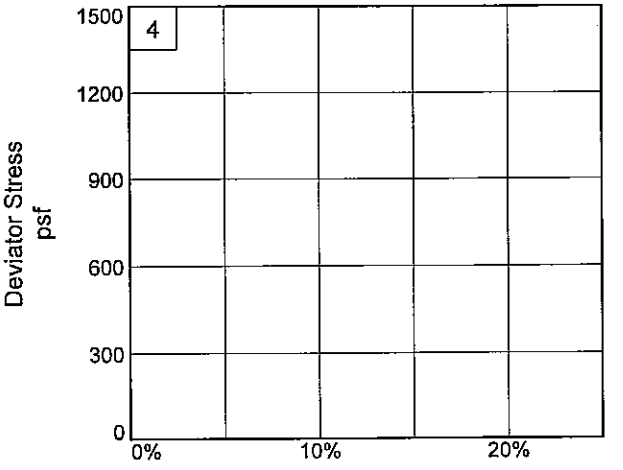
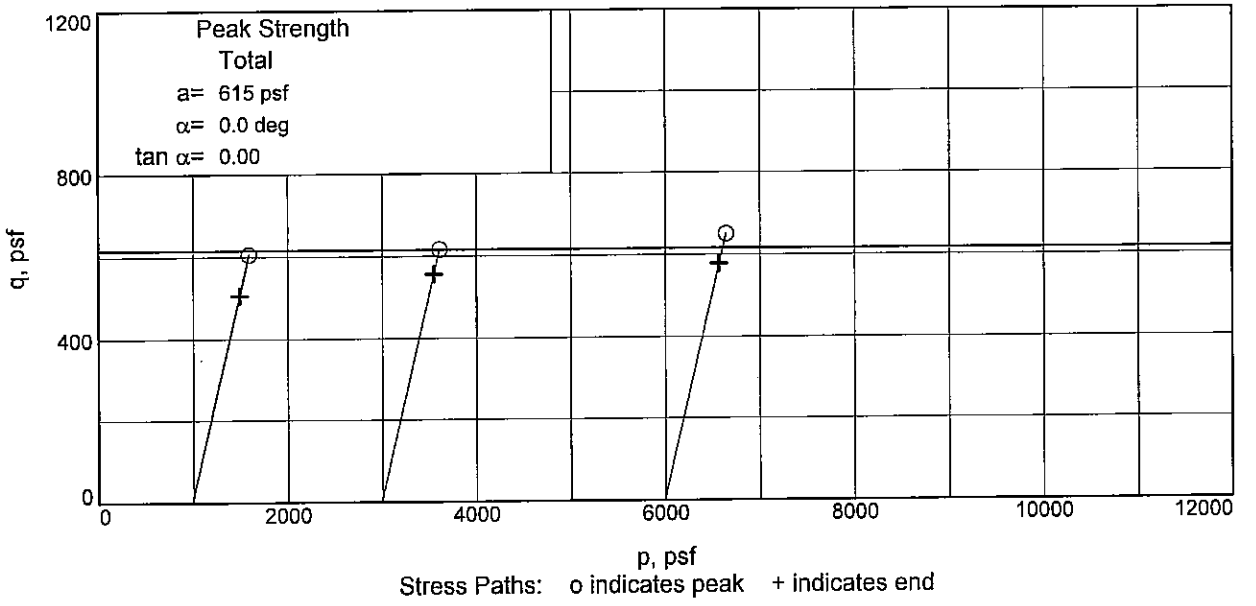
Tested By: DW/JP









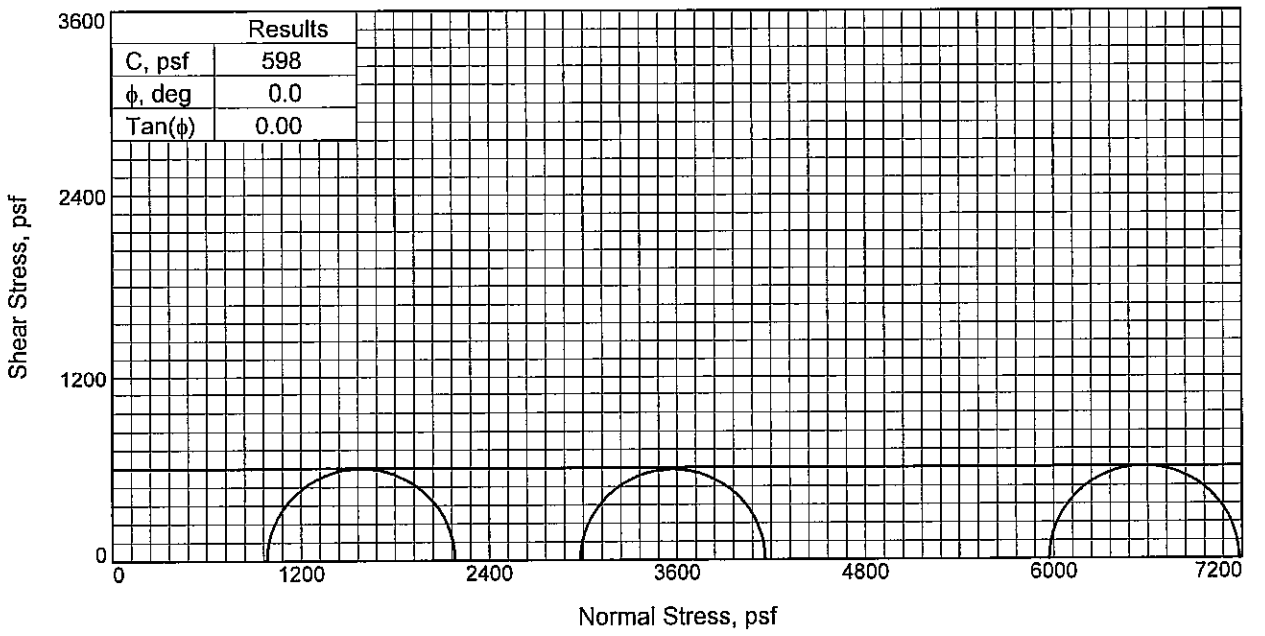


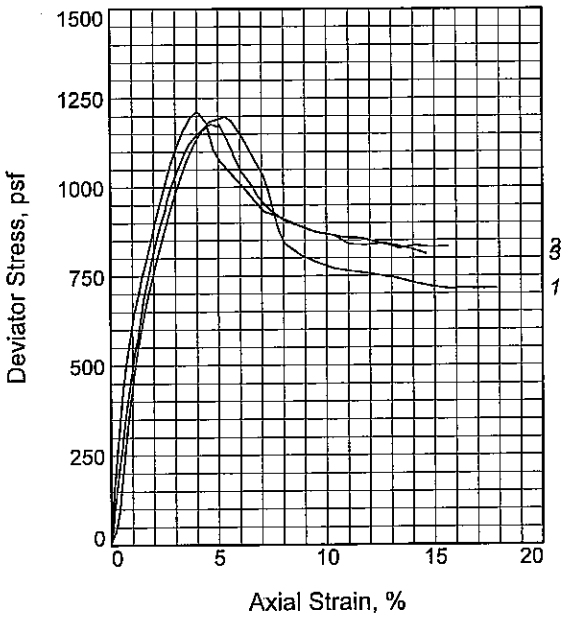
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-52UFT **Depth:** 25.7 **Sample Number:** 8C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP





Sample No.		1	2	3
Initial	Water Content, %	64.9	62.5	68.3
	Dry Density, pcf	61.5	62.2	59.5
	Saturation, %	100.3	98.4	100.2
	Void Ratio	1.7618	1.7284	1.8547
	Diameter, in.	1.426	1.428	1.423
	Height, in.	3.138	3.142	3.134
At Test	Water Content, %	64.9	62.5	68.3
	Dry Density, pcf	61.5	62.2	59.5
	Saturation, %	100.3	98.4	100.2
	Void Ratio	1.7618	1.7284	1.8547
	Diameter, in.	1.426	1.428	1.423
	Height, in.	3.138	3.142	3.134
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.83	20.72	41.47
Fail. Stress, psf		1197	1178	1210
Strain, %		5.3	4.7	4.0
Ult. Stress, psf		720	830	812
Strain, %				
σ_1 Failure, psf		2180	4162	7182
σ_3 Failure, psf		984	2984	5972

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ LNS ML, SL

LL= 82 **PL=** 23 **PI=** 59
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-52UFT **Depth:** 29.7
Sample Number: 9C
Proj. No.: 0022-0002 **Date Sampled:** 6/28/07

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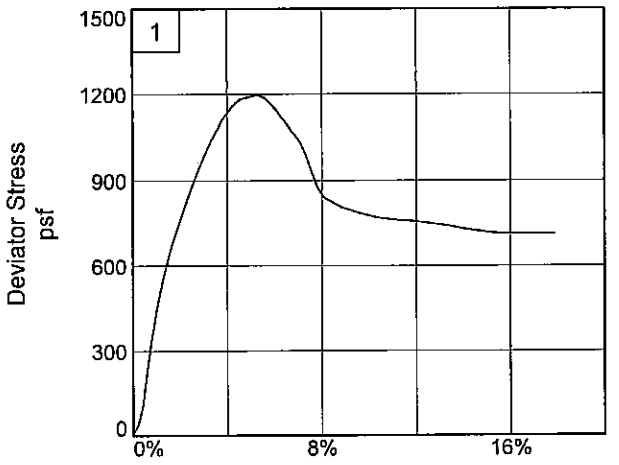
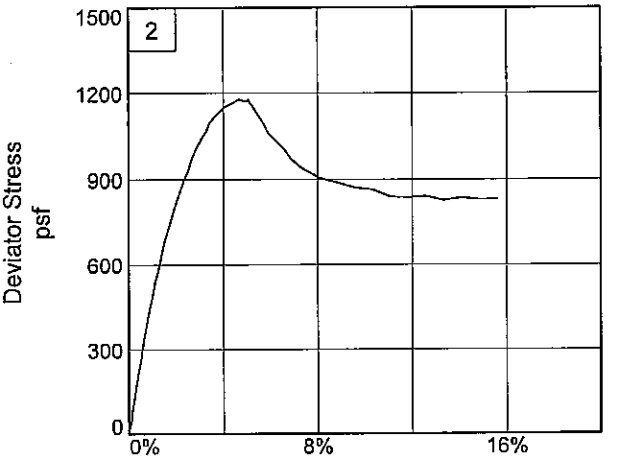
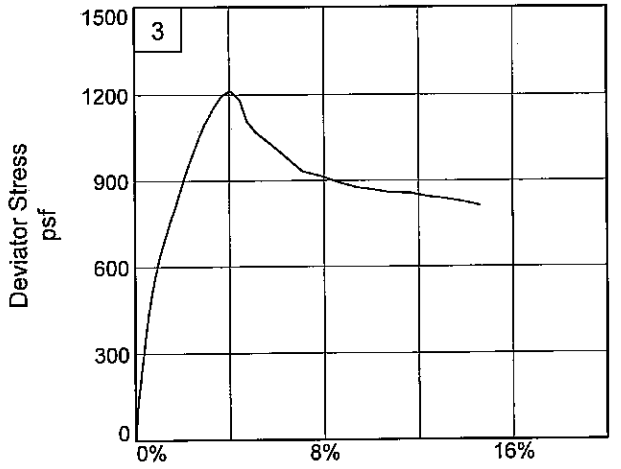
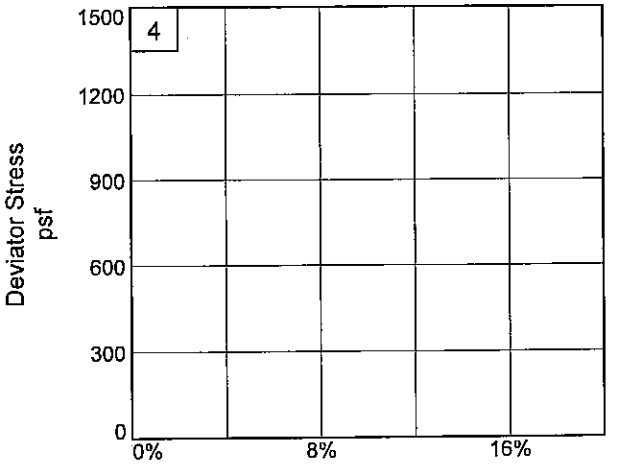
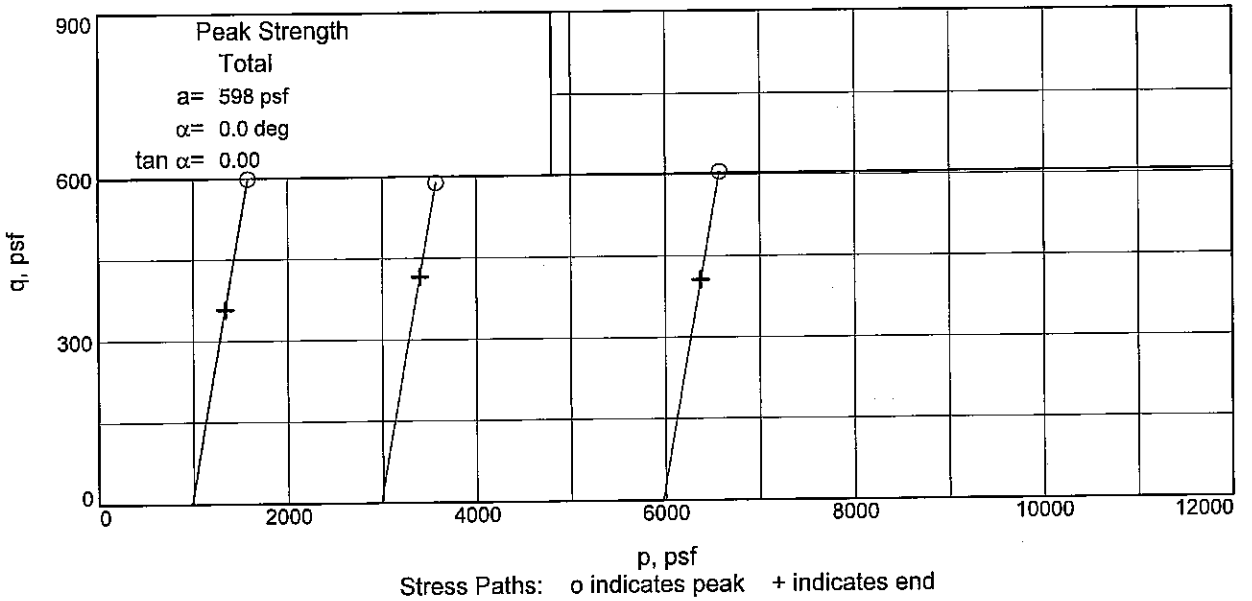
Tested By: DW









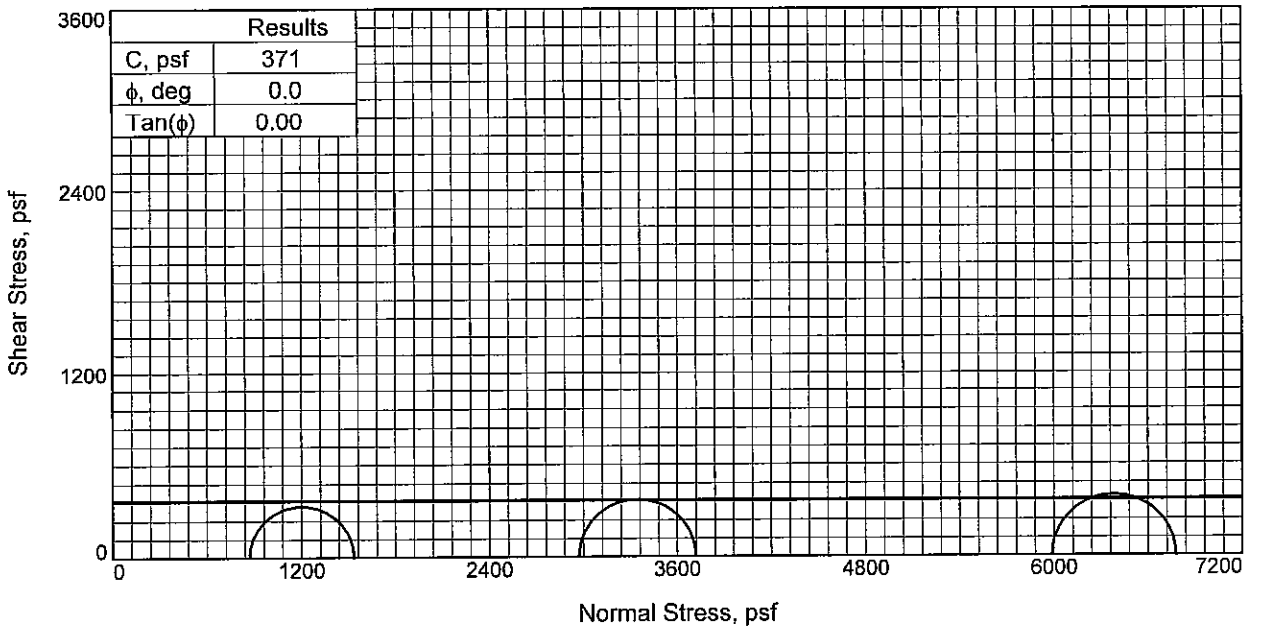


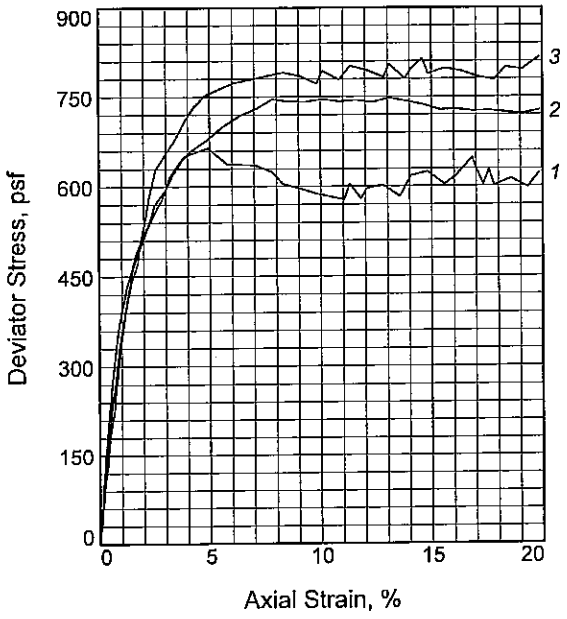
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-52UFT **Depth:** 29.7 **Sample Number:** 9C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW





Sample No.		1	2	3
Initial	Water Content, %	56.7	56.4	58.6
	Dry Density, pcf	67.3	67.5	67.2
	Saturation, %	101.3	101.3	104.4
	Void Ratio	1.5222	1.5142	1.5273
	Diameter, in.	1.416	1.413	1.425
	Height, in.	3.141	3.129	3.138
At Test	Water Content, %	56.7	56.4	58.6
	Dry Density, pcf	67.3	67.5	67.2
	Saturation, %	101.3	101.3	104.4
	Void Ratio	1.5222	1.5142	1.5273
	Diameter, in.	1.416	1.413	1.425
	Height, in.	3.141	3.129	3.138
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.04	20.64	41.58
Fail. Stress, psf		664	746	791
Strain, %		4.9	7.8	8.3
Ult. Stress, psf		577	741	772
Strain, %				
σ_1 Failure, psf		1534	3718	6778
σ_3 Failure, psf		870	2972	5987

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH3 W/ LNS ML

LL= 72 **PL=** 21 **PI=** 51
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

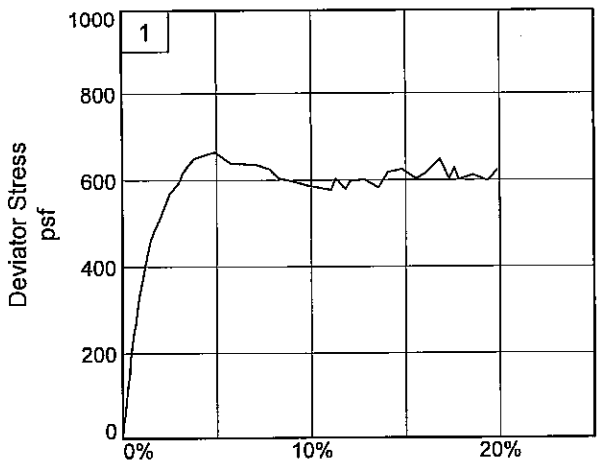
Client: U.S. Army Corps of Engineers

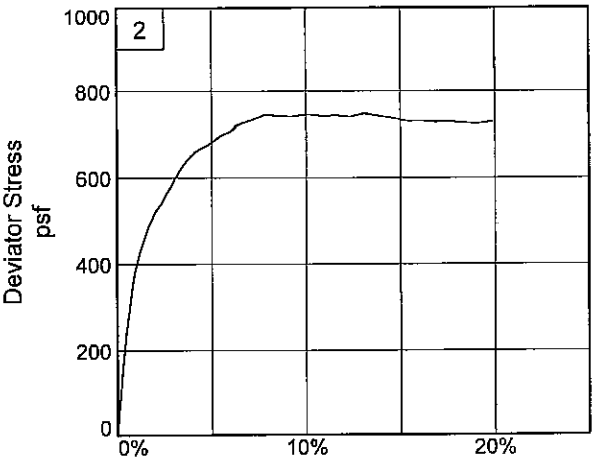
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-52UFT **Depth:** 33.7
Sample Number: 10C
Proj. No.: 0022-0002 **Date Sampled:** 6/28/07

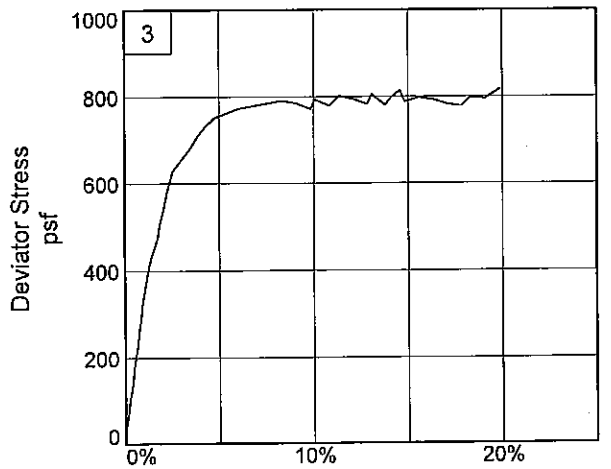
TRIAXIAL SHEAR TEST REPORT

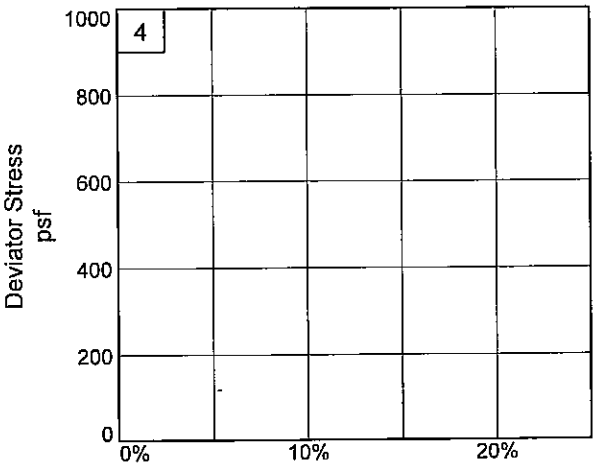
FFEBJV, LLC

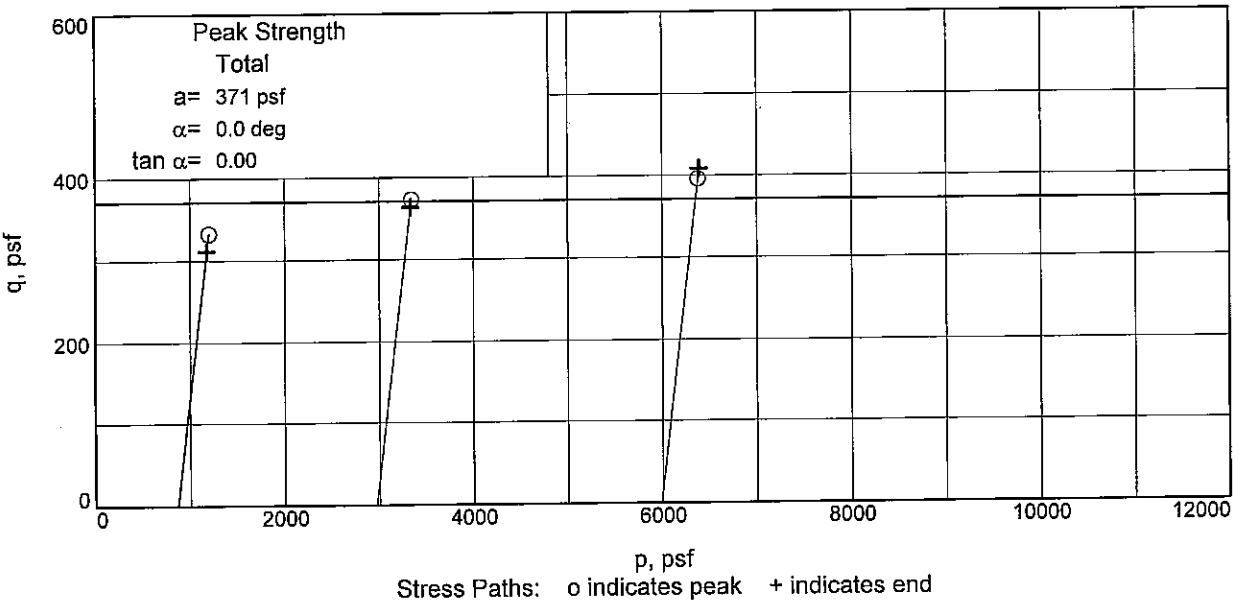
Tested By: DW/JP









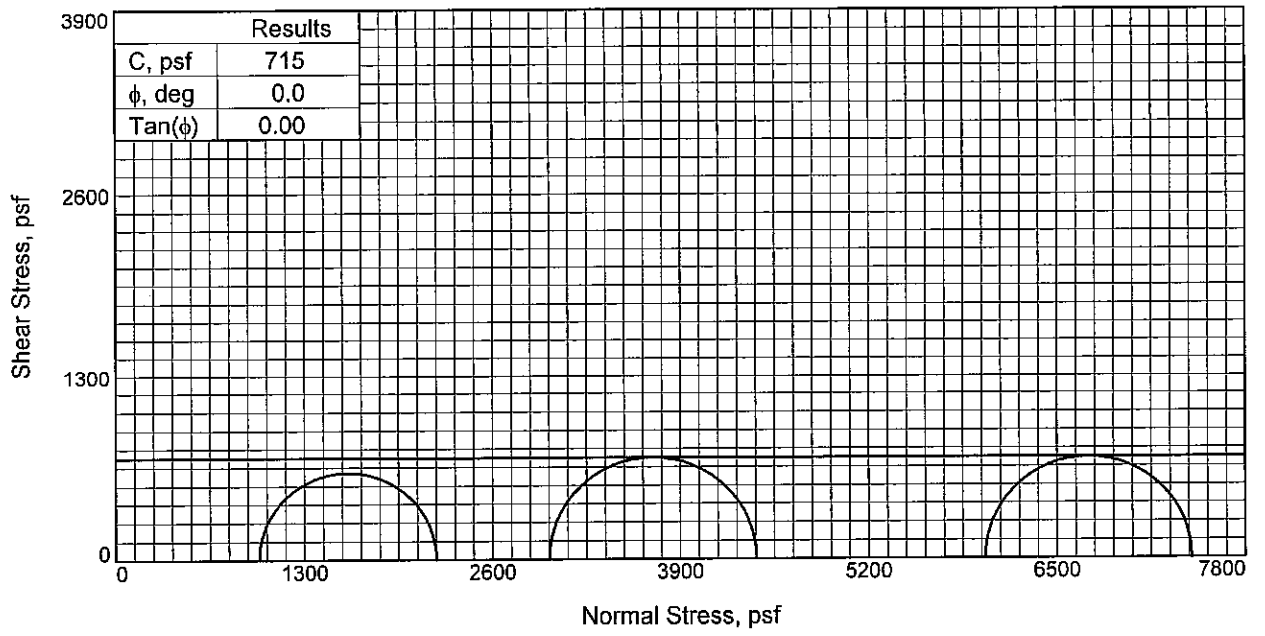


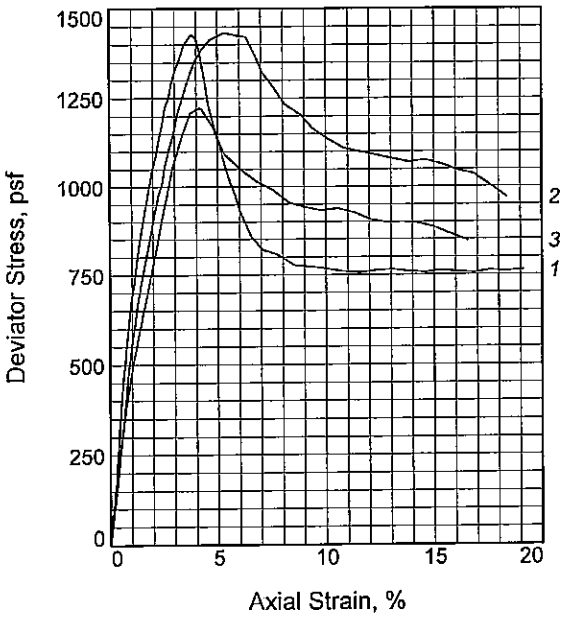
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-52UFT **Depth:** 33.7 **Sample Number:** 10C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP





Sample No.		1	2	3
Initial	Water Content, %	59.9	57.3	58.7
	Dry Density, pcf	64.7	65.7	65.3
	Saturation, %	99.8	97.8	99.3
	Void Ratio	1.6439	1.6052	1.6201
	Diameter, in.	1.426	1.437	1.429
	Height, in.	3.101	3.140	3.122
At Test	Water Content, %	59.9	57.3	58.7
	Dry Density, pcf	64.7	65.7	65.3
	Saturation, %	99.8	97.8	99.3
	Void Ratio	1.6439	1.6052	1.6201
	Diameter, in.	1.426	1.437	1.429
	Height, in.	3.101	3.140	3.122
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.79	41.70
Fail. Stress, psf		1222	1432	1426
Strain, %		4.1	5.3	3.8
Ult. Stress, psf		756	1070	883
Strain, %				
σ_1 Failure, psf		2212	4426	7431
σ_3 Failure, psf		990	2994	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ LNS ML, SL

LL= 77 **PL=** 22 **PI=** 55
Assumed Specific Gravity= 2.74
Remarks:

Figure _____

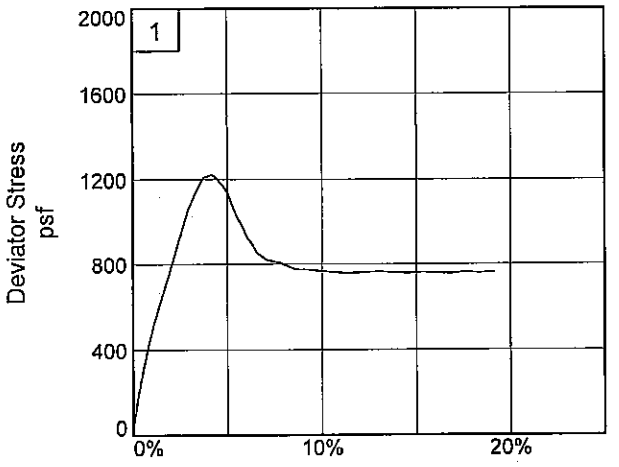
Client: U.S. Army Corps of Engineers

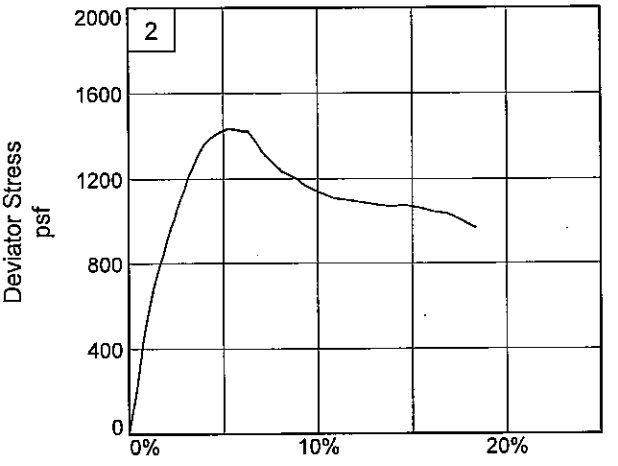
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-52UFT **Depth:** 37.7
Sample Number: 11C
Proj. No.: 0022-0002 **Date Sampled:** 6/28/07

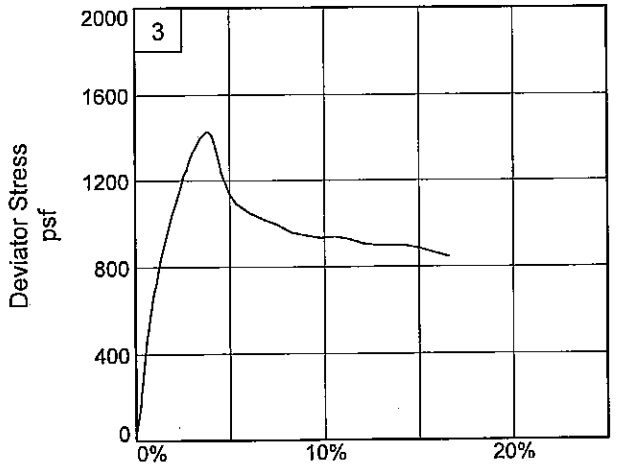
TRIAXIAL SHEAR TEST REPORT

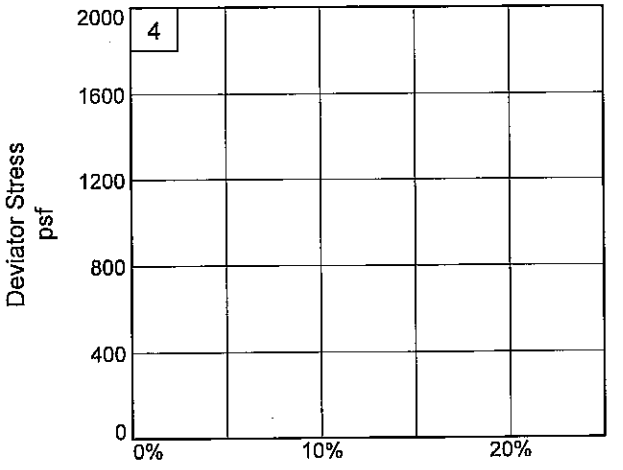
FFEBJV, LLC

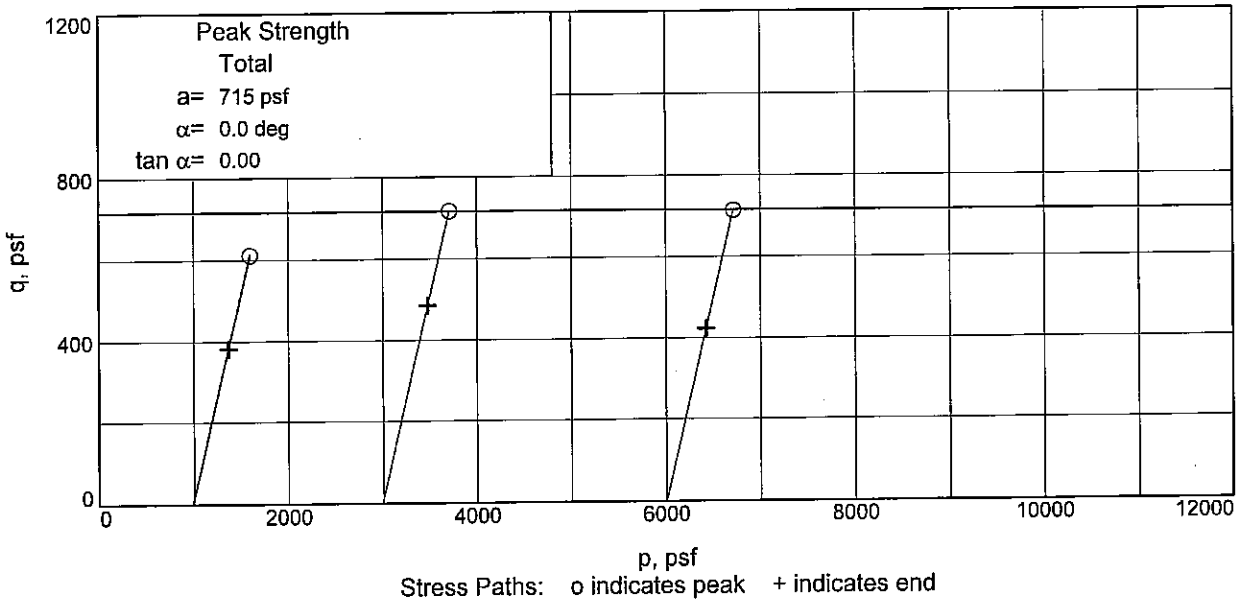
Tested By: DW/JP











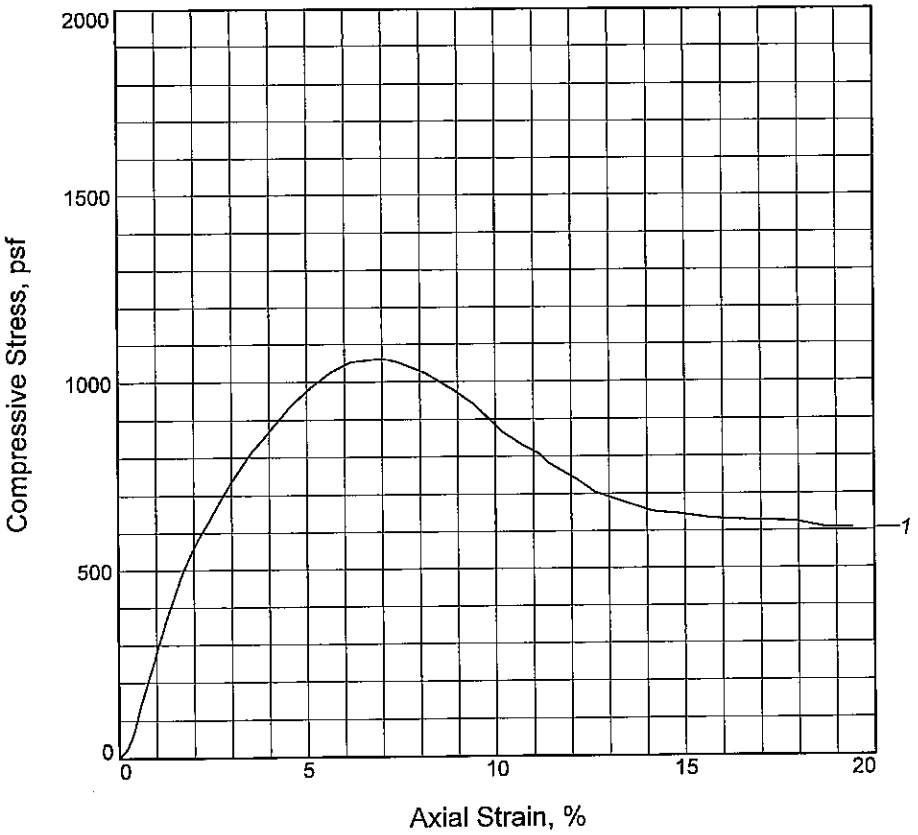
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-52UFT **Depth:** 37.7 **Sample Number:** 11C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1060			
Undrained shear strength, psf	530			
Failure strain, %	6.9			
Strain rate, in./min.	0.030			
Water content, %	44.8			
Wet density, pcf	105.4			
Dry density, pcf	72.8			
Saturation, %	92.2			
Void ratio	1.3074			
Specimen diameter, in.	1.380			
Specimen height, in.	3.015			
Height/diameter ratio	2.18			

Description: M GR CH2 W/ LNS ML

LL = **	PL =	PI = **	**Assumed GS=** 2.69	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/28/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

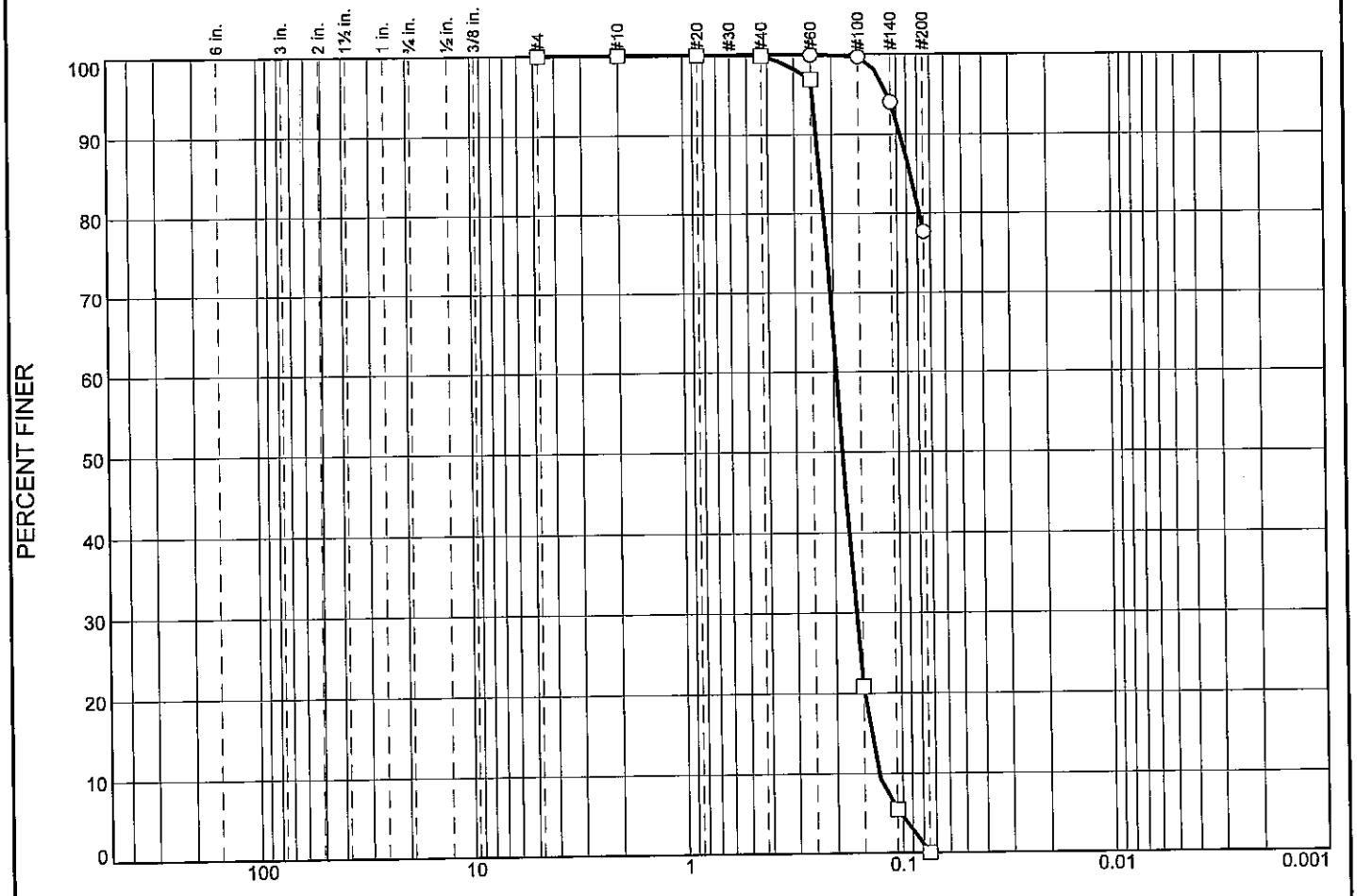
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-52UFT **Depth:** 40.8
Sample Number: 12B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	22.3	77.7	
□	0.0	0.0	0.0	0.0	0.1	99.9	0.0	0.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0860							
□			0.2267	0.1943	0.1833	0.1615	0.1405	0.1288	1.04	1.51

Material Description	USCS	AASHTO
○ GR ML2-S W/ ARS CH	ML2-S	
□ GR SP	SP	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Source of Sample:** WWHC-52UFT **Depth:** 45.7 **Sample Number:** 13C

□ **Source of Sample:** WWHC-52UFT **Depth:** 57.7 **Sample Number:** 18C

FFEBJV, LLC

St Rose, LA

Remarks:

Figure

Tested By: VRF/TSL

BOR. WWHC-52UFT
STA. LAT N29^48'58.76" LONG W90^06'44.20"
OFFSET 40' FROM C/L
14-16 APRIL 2007

GROUND EL. 6.70

0.0	0.8	20		CL	VST BR GR		RT		
0.8	2.0	20	2.0	CL	VST BR GR		RT		
2.0	4.0	29	4.0	CH	ST BR GR				
4.0	4.8	48		CH	SIS M BR GR		RT		
4.8	5.7	44		CH	SIS M BR GR		RT		
5.7	8.0	39	8.0	CH	SISST GR	T	WD		
8.0	8.8	41	8.8	CH	M GR		WD		
8.8	9.7	45		CH	SIS M GR		WD		
9.7	12.0	37	12.0	CH	SIS M GR BR		WD		
12.0	12.8	44	12.8	CH	M GR		WD		
12.8	13.7	38		CH	SIS M GR		WD O		
13.7	16.0	35		CH	SIS M GR		WD		
16.0	16.8	40		CH	SIS M GR BR				
16.8	17.7	36	17.7	CH	SIS M GR				
17.7	20.0	35	20.0	ML	GR			401115	33 180
20.0	20.8	43	20.8	CH	SIS M GR		WD		
20.8	21.7	34		CL	M GR		CS		
21.7	22.6	37		CL	M GR		RT		
22.6	24.0	38	24.0	CL	M GR		CS		
24.0	24.8	34	24.8	ML	GR		CS		
24.8	25.7	41	25.7	CH	SIS M GR				
25.7	26.6	54		CH	SIS M GR				
26.6	28.0	58		CH	SIS M GR				
28.0	28.8	45		CH	SIS M GR				
28.8	29.7	58		CH	SIS M GR				
29.7	30.6	58	30.6	CH	SIS M GR		SL		
30.6	32.0	38	32.0	CL	M GR		CS		
32.0	32.8	30		ML	GR		CS WD		
32.8	33.7	28	33.7	ML	GR		CS WD		
33.7	34.6	52		CH	SISSO GR				
34.6	36.0	46		CH	SIS M GR				
36.0	36.8	56		CH	SIS M GR				
36.8	37.7	50		CH	SIS M GR				
37.7	38.6	54		CH	SIS M GR		SL		
38.6	40.0	38		CH	SIS M GR				
40.0	40.8	46		CH	SIS M GR		S		

40.8 41.7 43 41.7CH SIS M GR 530105 45 411
41.7 44.0 35 44.0CH SS M GR
44.0 44.8 40 44.8CL SS M GR CS
44.8 45.7 27 ML GR CS
45.7 46.6 26 ML GR CS
46.6 48.0 26 48.0ML GR CS
48.0 50.0 38 50.0CL M GR CS 6
50.0 52.0 27 SP GR CS 8
52.0 54.0 26 SP GR CS 11
54.0 56.0 23 SP GR CS 9
56.0 56.8 25 SP GR
56.8 57.7 24 SP GR
57.7 60.0 23 SP GR .1288
60.0 60.8 23 SP GR
60.8 62.0 23 SP GR
62.0 64.0 35 SP GR 6
64.0 66.0 26 SP GR 16
66.0 68.0 23 SP GR 11
68.0 70.0 26 70.0SP GR 15
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 6.00/ 0.70 Water Con: 34.00
LL,PL,PI : 63, 23, 40 Dry Dens : 87.00
Cohesion : 0.507 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 9.10/-2.40 Water Con: 37.00
LL,PL,PI : 80, 25, 55 Dry Dens : 84.00
Cohesion : 0.451 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 22.00/-15.3 Water Con: 37.00
LL,PL,PI : 37, 25, 12 Dry Dens : 84.00

Cohesion : 0.337 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 26.00/-19.3 Water Con: 42.00
LL,PL,PI : 51, 22, 29 Dry Dens : 79.00
Cohesion : 0.308 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 30.00/-23.3 Water Con: 65.00
LL,PL,PI : 82, 23, 59 Dry Dens : 61.00
Cohesion : 0.299 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 34.00/-27.3 Water Con: 57.00
LL,PL,PI : 72, 21, 51 Dry Dens : 67.00
Cohesion : 0.186 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-31.3 Water Con: 59.00
LL,PL,PI : 77, 22, 55 Dry Dens : 65.00
Cohesion : 0.358 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

Project Number: TASK ORDER 0002
Boring: WWHC-53UCL

Current Date: 7/5/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1A	0.0	VST LBR & GR CL4 W/ RT	CL4		21												
1B	0.8	VST LBR & GR CL4 W/ RT	CL4		25												
2A	2.0	M T CL4 W/ RT	CL4		22												
2B	2.8	M T & GR CH3 W/ ARS ML, RT	CH3	10	27	92	117	86	UC	-	928	1856	62	20	42		
3A	4.0	M BR & GR CH3	CH3		34												
3B	4.8	M BR & GR CH3	CH3		35												
3C	5.7	M GR & T CH3 W/ ARS ML	CH3		38	84	115	100	UU	0	800		75	23	52		
4A	8.0	M GR CH3	CH3		41												
4B	8.8	M LBR & GR CH2	CH2		35												
4C	9.7	M LBR & GR CH2	CH2		32	90	119	99	UU	0	633		53	19	34		
5A	12.0	M DGR & GR CH3 W/ ARS ML, O	CH3		37												
5B	12.8	M GR & LBR CH3 W/ RT, O	CH3		40												
5C	13.7	M GR & T CH4 W/ RT, O	CH4		39	82	114	98	UU	0	583		89	22	67		
6A	16.0	M LBR & LGR CH2	CH2		32												
6B	16.8	M LBR & LGR CH2	CH2		32												
6C	17.7	VST LBR & LGR CH2	CH2	4	25	95	119	87	UC	-	2009	4017	52	19	33		
7A	20.0	M GR & LBR CL4	CL4		34												
7B	20.8	M GR & LBR CL4	CL4		33												
7C	21.7	M GR & LBR CL4	CL4		33	88	117	97	UU	0	575		36	22	14		
7D	22.6	SO GR & LBR CL4	CL4		38												
8A	24.0	SO GR CL4-S W/ LNS ML	CL4-S		42												
8B	24.8	SO GR CL4-S W/ LNS ML	CL4-S		40												
8C	25.7	SO GR CL4-S W/ LNS ML	CL4-S		40	81	113	100	UU	0	477		35	28	7		
9A	28.0	M GR CH3	CH3		52												
9B	28.8	M GR CL6-S W/ LNS ML	CL6-S		43	78	111	100	UU	0	617		45	28	17		
9C	29.7	M GR CL6	CL6		38												
9D	30.6	M GR CH3 W/ LNS ML	CH3		52												
10A	32.0	M GR CH3 W/ LNS ML	CH3		53												
10B	32.8	M GR CH3 W/ LNS ML	CH3		54												Gs, Con, AL
10C	33.7	M GR CH2 W/ LNS ML	CH2		44	77	111	100	UU	0	600		50	24	26		
10D	34.6	M GR CH3 W/ LNS ML	CH3		55												
11A	36.0	SO GR CH2 W/ LNS ML	CH2		47												
11B	36.8	SO GR CH2 W/ LNS ML	CH2		46												
11C	37.7	SO GR CH2 W/ LNS ML	CH2		45												UU, AL
12A	40.0	SO GR CL6 W/ LNS CH	CL6		35												
12B	40.8	SO GR CL6	CL6		47												

Remarks: _____
FFEB JV, LLC

Checked By: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

Project Number: TASK ORDER 0002
Boring: WWHC-53UCL

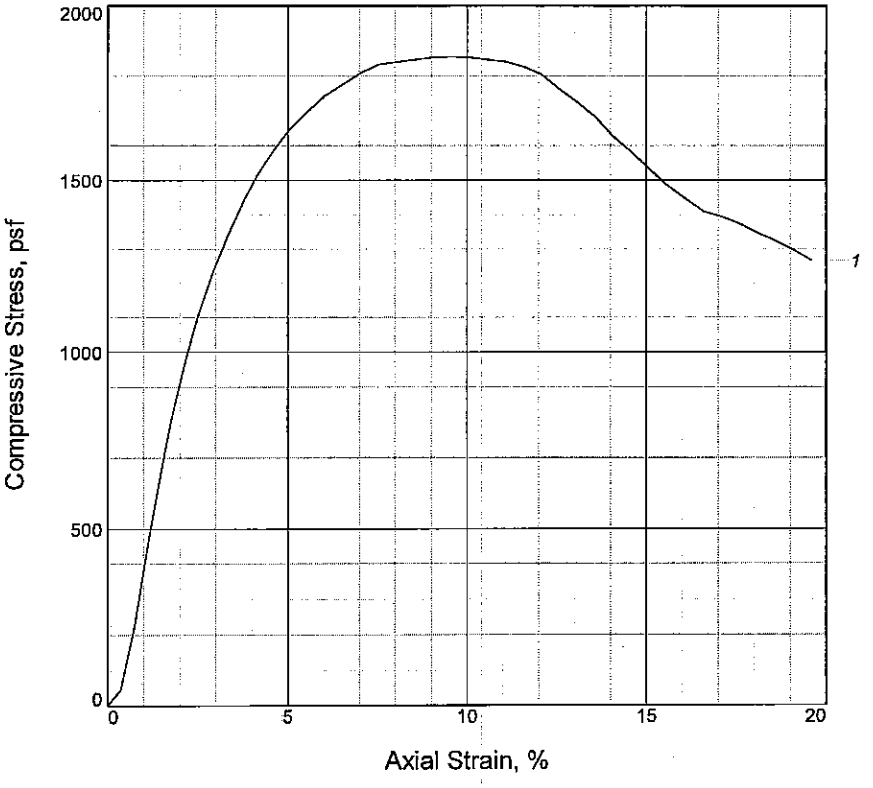
Current Date: 7/5/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
12C	41.7	SO GR CH4	CH4		75	56	98	100	UU	0	446		103	33	70		
13A	44.0	GR SM1	SM1		30												
13B	44.8	SO GR CL4-S	CL4-S		36												
13C	45.7	SO GR CL4-S W/ LNS CH	CL4-S	3	38	81	111	94	UC	-	468	937	40	35	5		
13D	46.6	GR SM1-S	SM1-S		26												
14A	48.0	GR SM1-S	SM1-S		27												
14B	48.8	GR SM1-S	SM1-S		27												
14C	49.7	GR SM1-S	SM1-S		29												SV
15A	52.0	GR SP	SP		24												
15B	52.8	GR SP	SP		22												
15C	53.7	GR SP	SP		25												
16A	56.0	GR SP	SP		22												
16B	56.8	GR SP	SP		21												
16C	57.7	GR SP	SP		25												SV
17A	60.0	GR SP	SP		26												
17B	60.8	GR SP	SP		24												
17C	61.7	GR SP W/ LNS ML	SP		27												
18A	64.0	GR SP	SP		29												
18B	64.8	GR SP W/ LNS ML	SP		25												
18C	65.7	GR SP	SP		23												
19A	68.0	GR SP	SP		25												
19B	68.8	GR SP	SP		22												
19C	69.7	GR SP	SP		24												SV

Remarks: _____
FFEB JV, LLC

Checked By: _____
File Name: TO 2

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1856			
Undrained shear strength, psf	928			
Failure strain, %	9.6			
Strain rate, %/min.	20.00			
Water content, %	26.7			
Wet density, pcf	116.9			
Dry density, pcf	92.3			
Saturation, %	85.7			
Void ratio	0.8534			
Specimen diameter, in.	1.40			
Specimen height, in.	3.01			
Height/diameter ratio	2.15			

Description: M T & GR CH3 W/ ARS ML, RT

LL = 62	**PL** = 20	**PI** = 42	**GS**= 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/23/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

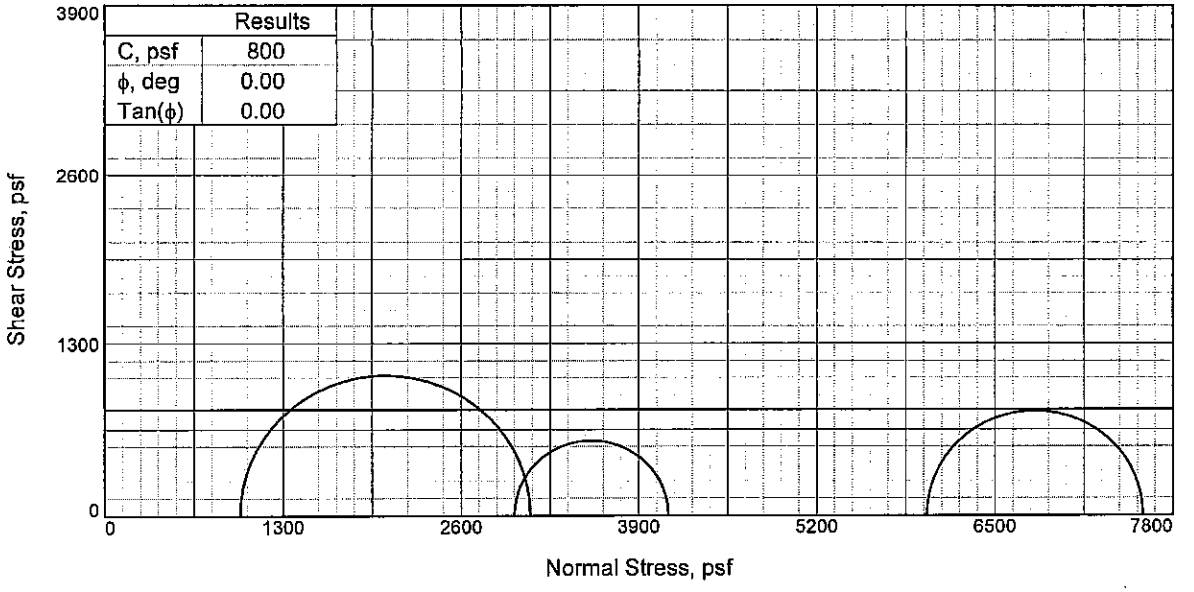
Client: U.S. ARMY CORPS OF ENGINEERS

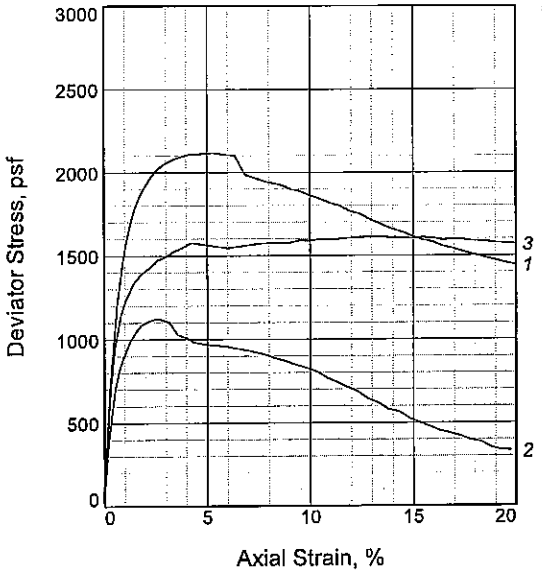
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-53UCL **Depth:** 2.80'
Sample Number: 2B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	36.8	39.5	35.8
	Dry Density, pcf	84.5	81.8	85.9
	Saturation, %	99.1	99.8	99.7
	Void Ratio	1.0107	1.0757	0.9763
	Diameter, in.	1.40	1.39	1.39
	Height, in.	3.00	3.03	3.03
At Test	Water Content, %	35.9	39.5	36.0
	Dry Density, pcf	84.5	81.8	85.9
	Saturation, %	96.7	100.0	100.2
	Void Ratio	1.0107	1.0757	0.9763
	Diameter, in.	1.40	1.39	1.39
	Height, in.	3.00	3.03	3.03
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.77	41.69
Fail. Stress, psf		2118	1126	1577
Strain, %		5.3	2.6	4.2
Ult. Stress, psf		1618	567	1605
Strain, %				
σ_1 Failure, psf		3106	4116	7581
σ_3 Failure, psf		988	2990	6004

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR & T CH3 W/ ARS ML

LL= 75 **PL=** 23 **PI=** 52

Assumed Specific Gravity= 2.72

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-53UCL **Depth:** 5.70'

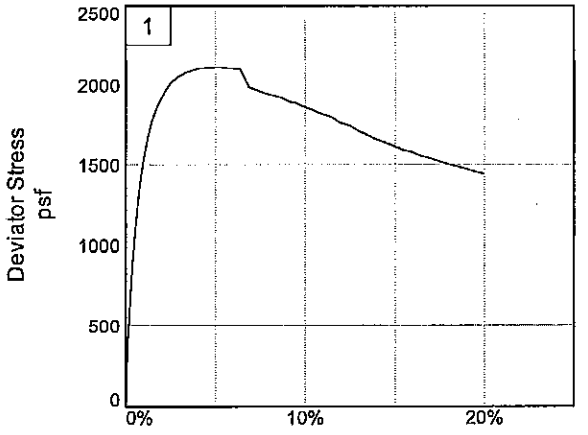
Sample Number: 3C

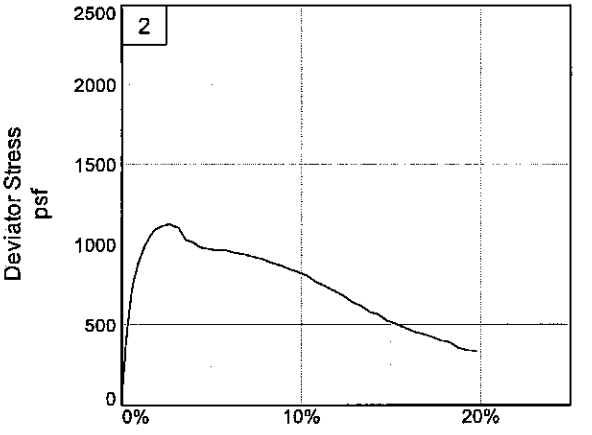
Proj. No.: 0022-0002 **Date Sampled:** 5-24-07

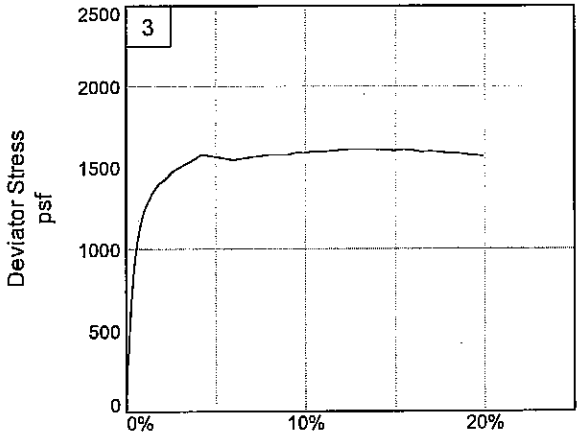
TRIAXIAL SHEAR TEST REPORT

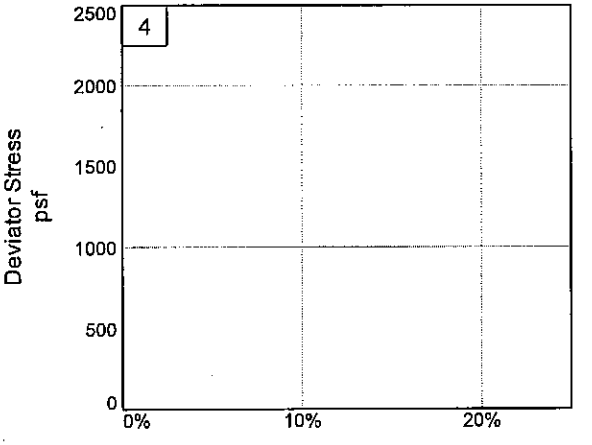
FFEBJV, LLC.

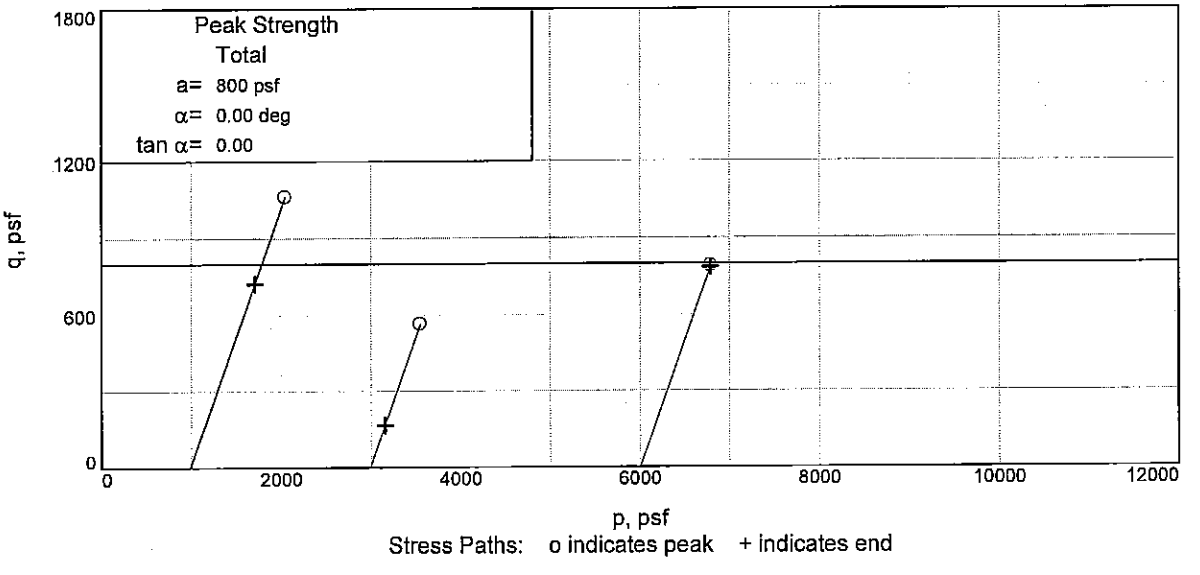
Tested By: LP **Checked By:** GMU









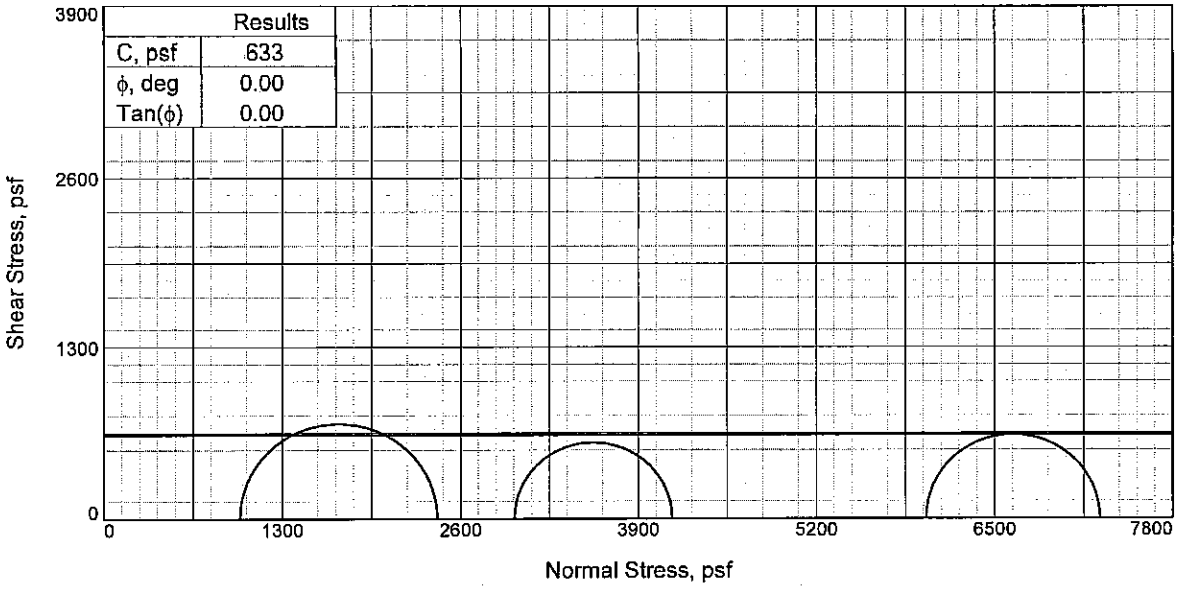


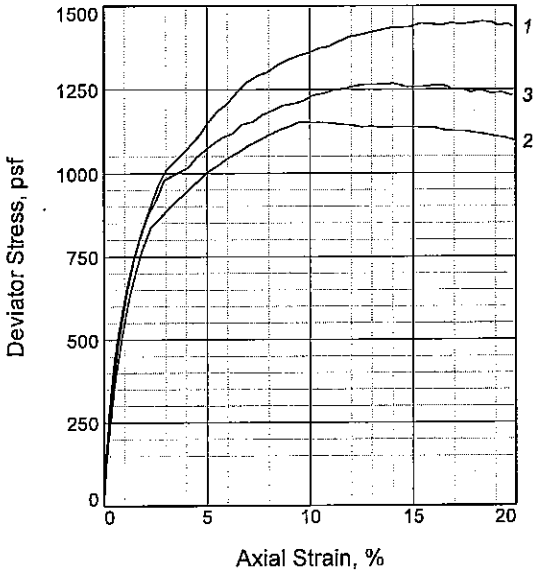
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-53UCL **Depth:** 5.70' **Sample Number:** 3C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: LP **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	33.0	31.8	31.8
	Dry Density, pcf	88.9	90.5	90.4
	Saturation, %	99.3	99.5	99.4
	Void Ratio	0.8964	0.8633	0.8650
	Diameter, in.	1.38	1.39	1.39
	Height, in.	3.04	3.03	3.05
At Test	Water Content, %	31.9	31.5	31.7
	Dry Density, pcf	88.9	90.5	90.4
	Saturation, %	96.2	98.6	99.0
	Void Ratio	0.8964	0.8633	0.8650
	Diameter, in.	1.38	1.39	1.39
	Height, in.	3.04	3.03	3.05
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	20.79	41.67
Fail. Stress, psf		1438	1152	1267
Strain, %		14.9	10.5	14.1
Ult. Stress, psf		1438	1138	1257
Strain, %				
σ_1 Failure, psf		2430	4146	7268
σ_3 Failure, psf		992	2994	6000

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M LBR & GR CH2

LL= 53 **PL=** 19 **PI=** 34
Assumed Specific Gravity= 2.70
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

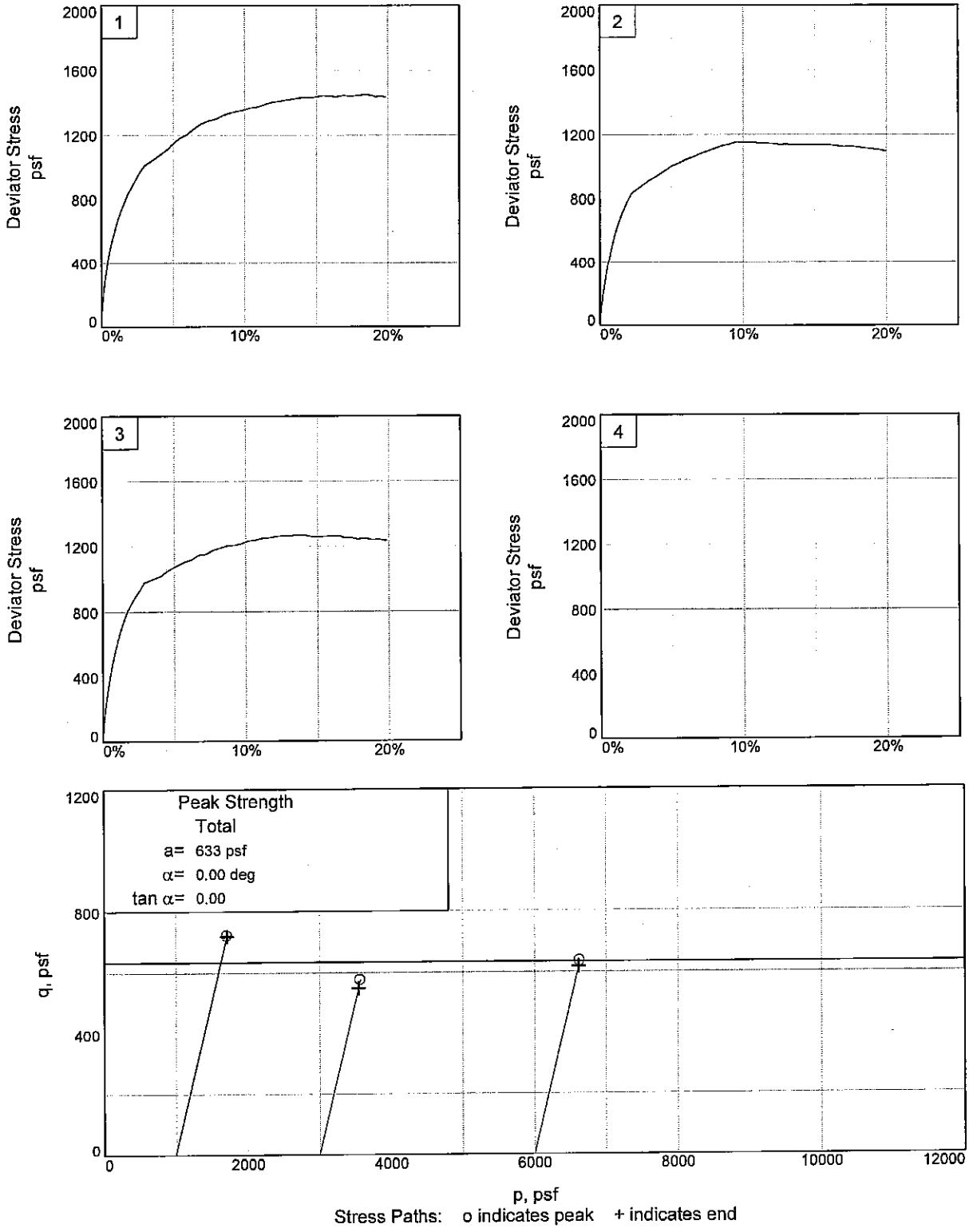
Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-53UCL **Depth:** 9.70'
Sample Number: 4C
Proj. No.: 0022-0002 **Date Sampled:** 5-24-07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC.

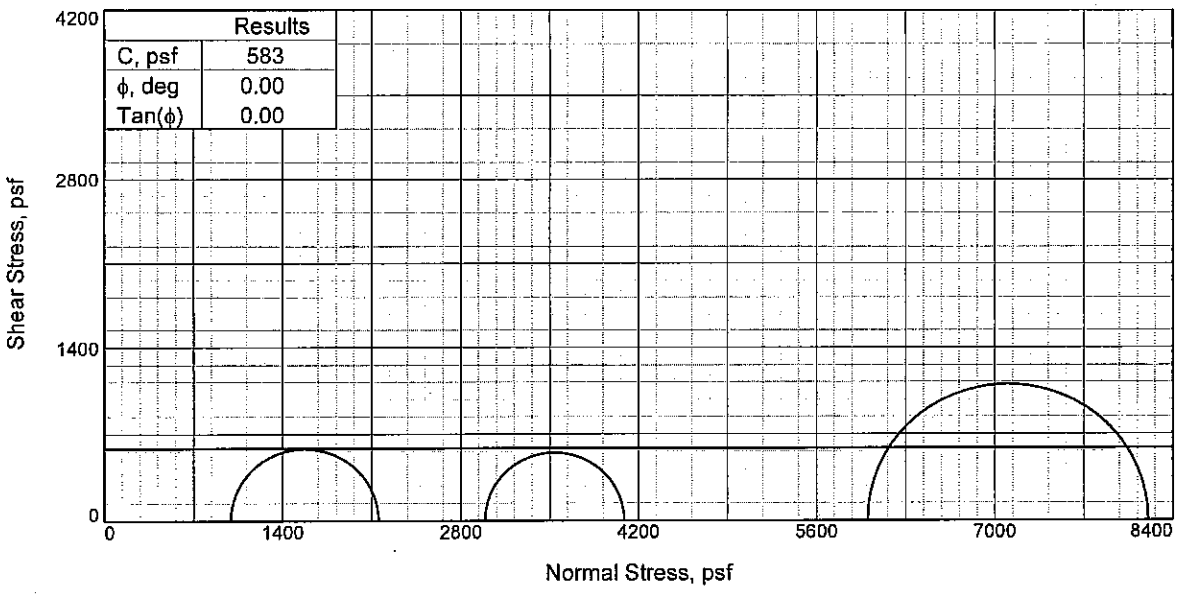
Tested By: LP **Checked By:** GMU

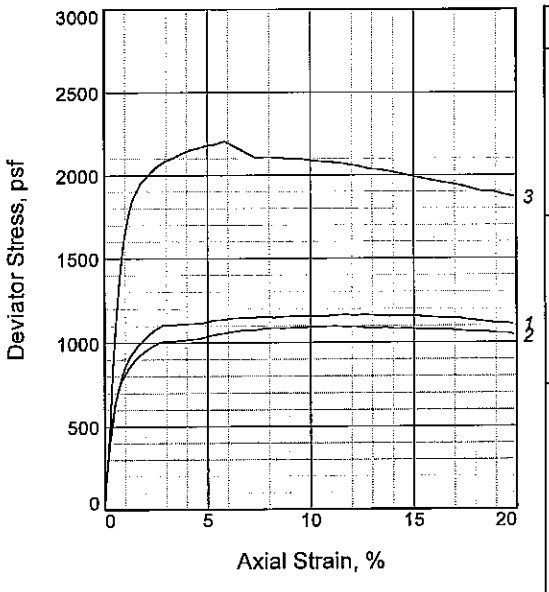


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-53UCL **Depth:** 9.70' **Sample Number:** 4C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: LP **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	41.0	38.5	38.3
	Dry Density, pcf	79.8	81.8	83.0
	Saturation, %	98.4	96.9	98.9
	Void Ratio	1.1424	1.0898	1.0601
	Diameter, in.	1.40	1.40	1.40
	Height, in.	3.05	3.05	3.00
At Test	Water Content, %	40.3	38.5	38.1
	Dry Density, pcf	79.8	81.8	83.0
	Saturation, %	96.7	96.8	98.4
	Void Ratio	1.1424	1.0898	1.0601
	Diameter, in.	1.40	1.40	1.40
	Height, in.	3.05	3.05	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.77	41.68
Fail. Stress, psf		1160	1096	2205
Strain, %		14.6	10.2	5.8
Ult. Stress, psf		1160	1087	1995
Strain, %				
σ_1 Failure, psf		2153	4086	8207
σ_3 Failure, psf		994	2990	6001

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR & T CH4 W/ RT, O

LL= 89 **PL=** 22 **PI=** 67

Assumed Specific Gravity= 2.74

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-53UCL **Depth:** 13.70'

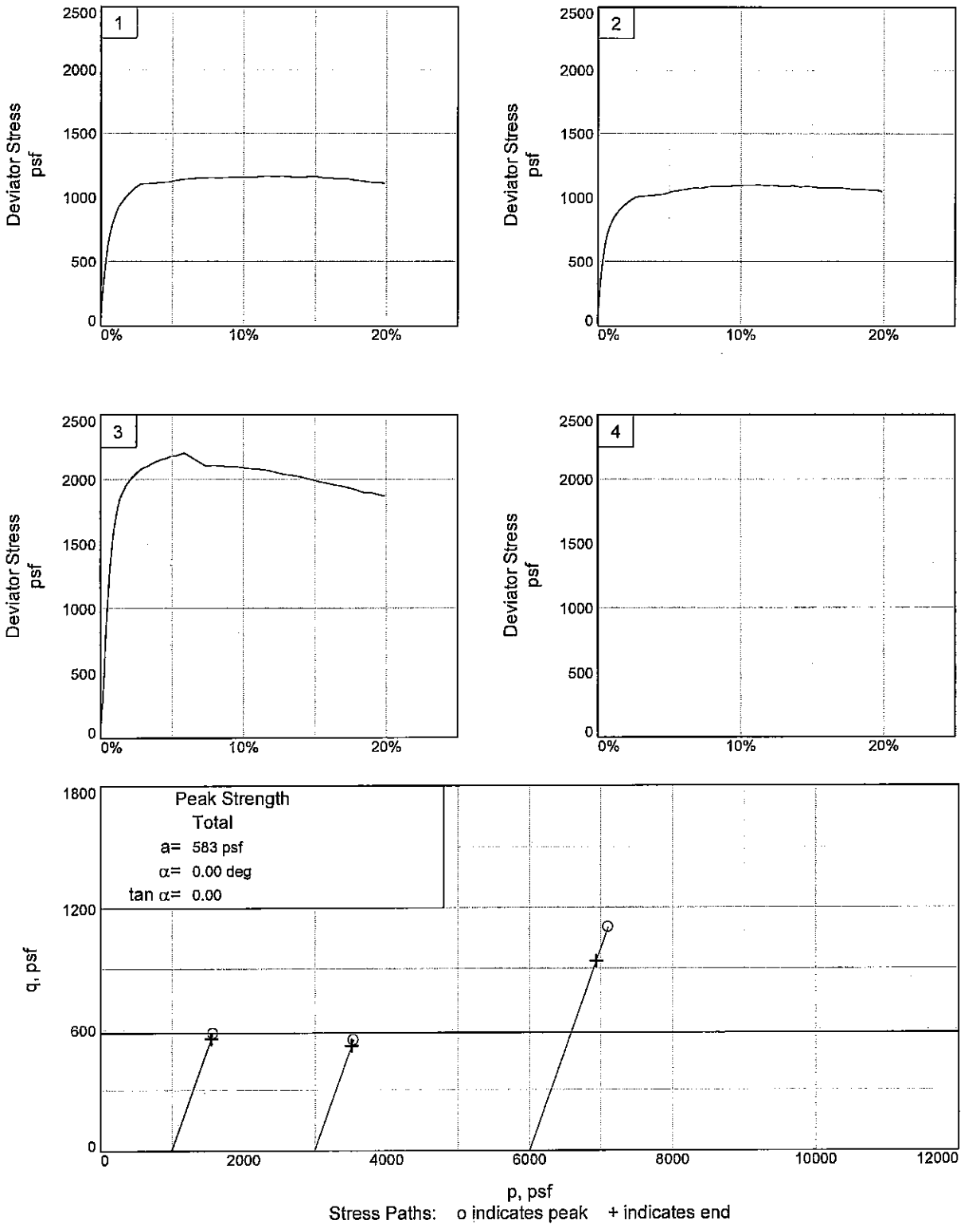
Sample Number: 5C

Proj. No.: 0022-0002 **Date Sampled:** 5-24-07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC.

Tested By: LP **Checked By:** GMU

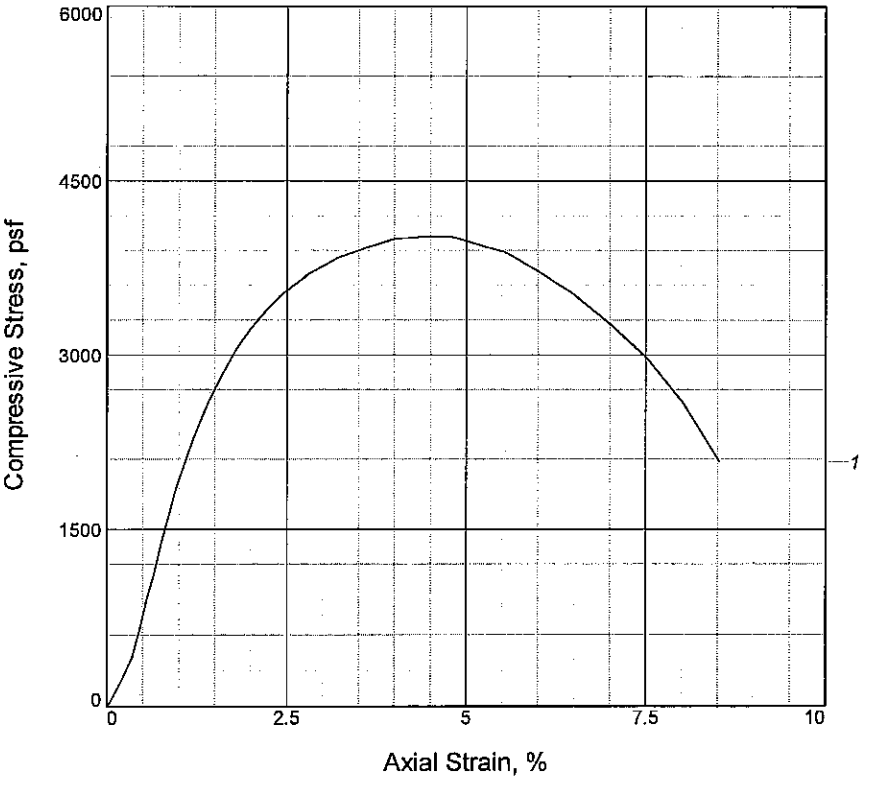


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-53UCL **Depth:** 13.70' **Sample Number:** 5C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: LP **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	4017			
Undrained shear strength, psf	2009			
Failure strain, %	4.4			
Strain rate, %/min.	1.00			
Water content, %	25.0			
Wet density, pcf	118.9			
Dry density, pcf	95.1			
Saturation, %	87.3			
Void ratio	0.7720			
Specimen diameter, in.	1.39			
Specimen height, in.	3.00			
Height/diameter ratio	2.16			

Description: VST LBR & LGR CH2

LL = 52	**PL** = 19	**PI** = 33	**GS**= 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/23/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

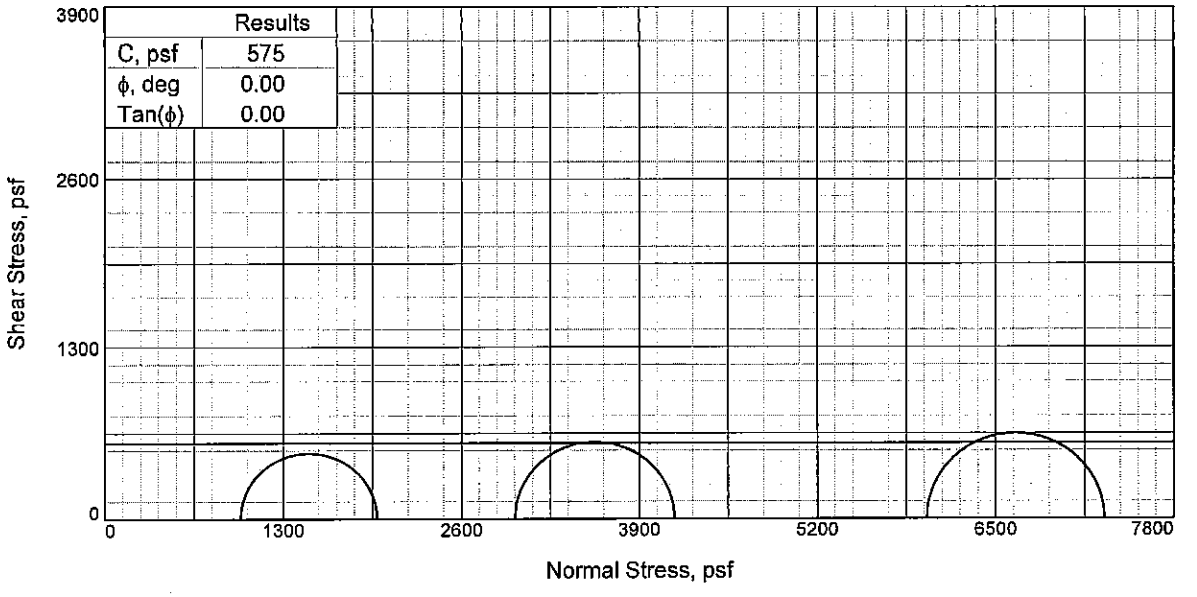
Client: U.S. ARMY CORPS OF ENGINEERS

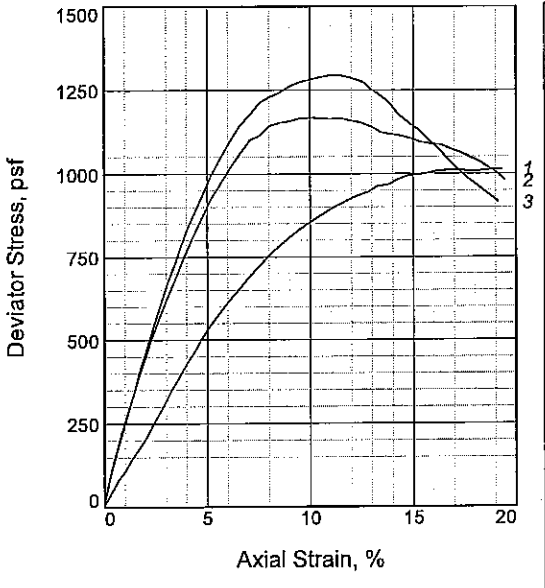
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-53UCL **Depth:** 17.70'
Sample Number: 6C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	35.9	35.3	35.0
	Dry Density, pcf	85.0	85.9	86.1
	Saturation, %	99.5	99.7	99.5
	Void Ratio	0.9675	0.9477	0.9432
	Diameter, in.	1.38	1.37	1.37
	Height, in.	3.11	3.09	3.11
At Test	Water Content, %	36.1	35.4	35.2
	Dry Density, pcf	85.0	85.9	86.1
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.9675	0.9477	0.9432
	Diameter, in.	1.38	1.37	1.37
	Height, in.	3.11	3.09	3.11
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.77	41.65
Fail. Stress, psf		995	1167	1295
Strain, %		14.8	10.0	11.4
Ult. Stress, psf		995	1106	1178
Strain, %				
σ_1 Failure, psf		1985	4158	7293
σ_3 Failure, psf		990	2991	5998

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR & LBR CL4

LL= 36 **PL=** 22 **PI=** 14
Assumed Specific Gravity= 2.68
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

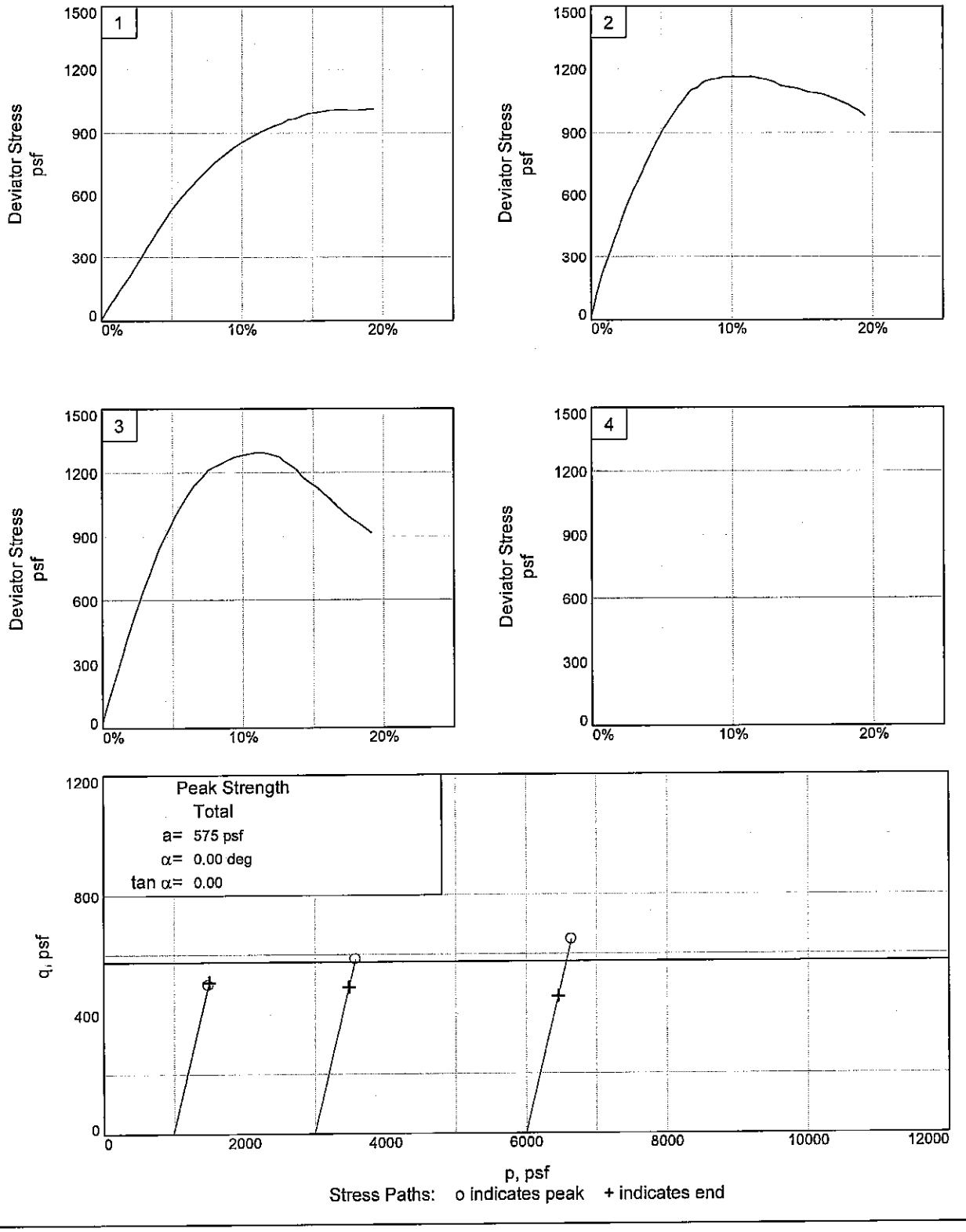
Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-53UCL **Depth:** 21.70'
Sample Number: 7C
Proj. No.: 0022-0002 **Date Sampled:** 5-23-07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC.

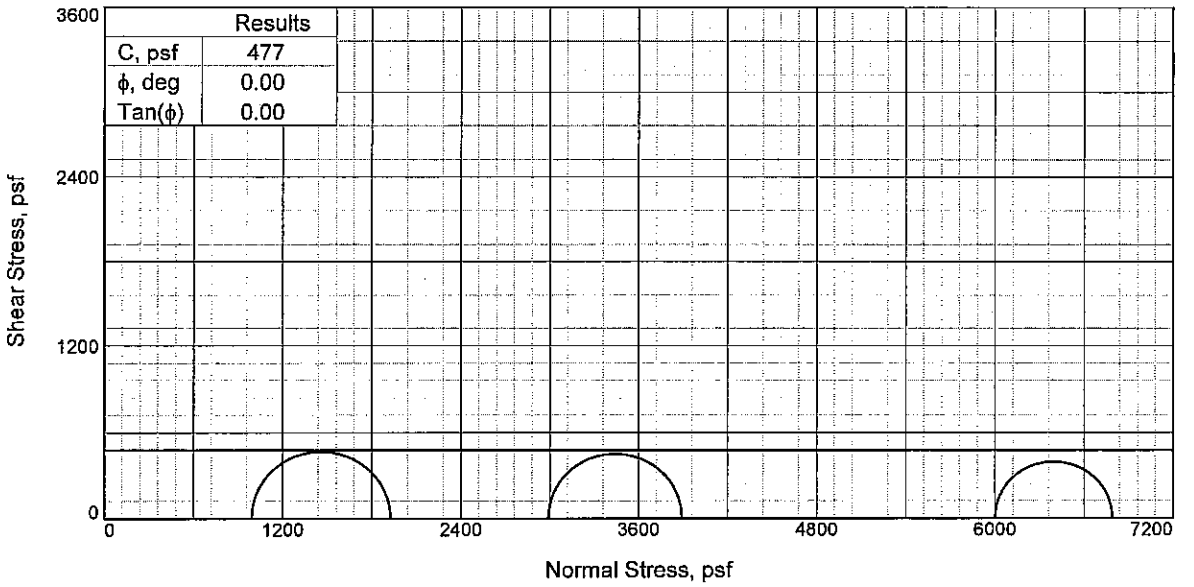
Tested By: LP **Checked By:** GMU

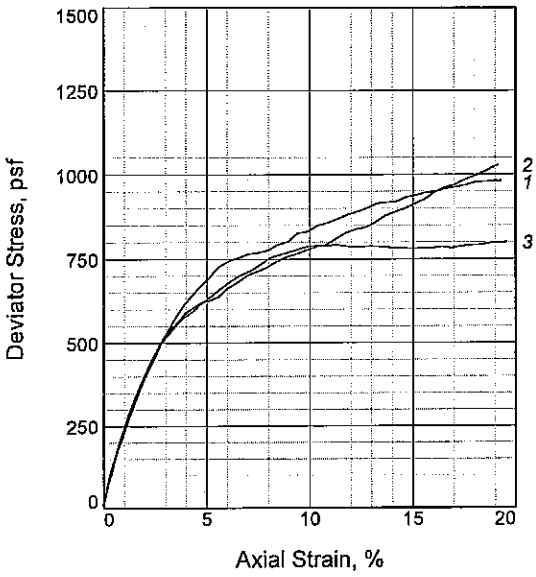


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-53UCL **Depth:** 21.70' **Sample Number:** 7C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: LP **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	40.0	39.9	39.3
	Dry Density, pcf	80.7	80.8	81.3
	Saturation, %	99.7	99.8	99.5
	Void Ratio	1.0737	1.0715	1.0591
	Diameter, in.	1.38	1.37	1.39
	Height, in.	3.09	3.10	3.05
At Test	Water Content, %	36.6	36.1	36.0
	Dry Density, pcf	80.7	80.8	81.3
	Saturation, %	91.3	90.4	91.0
	Void Ratio	1.0737	1.0715	1.0591
	Diameter, in.	1.38	1.37	1.39
	Height, in.	3.09	3.10	3.05
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	20.77	41.67
Fail. Stress, psf		934	901	791
Strain, %		14.7	14.6	10.6
Ult. Stress, psf		934	901	783
Strain, %				
σ_1 Failure, psf		1926	3892	6791
σ_3 Failure, psf		992	2991	6001

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: SO GR CL4-S W/ LNS ML

LL= 35 **PL=** 28 **PI=** 7

Assumed Specific Gravity= 2.68

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-53UCL **Depth:** 26.60'

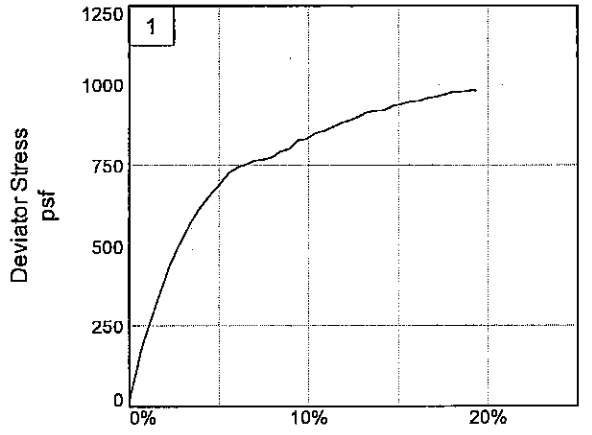
Sample Number: 8C

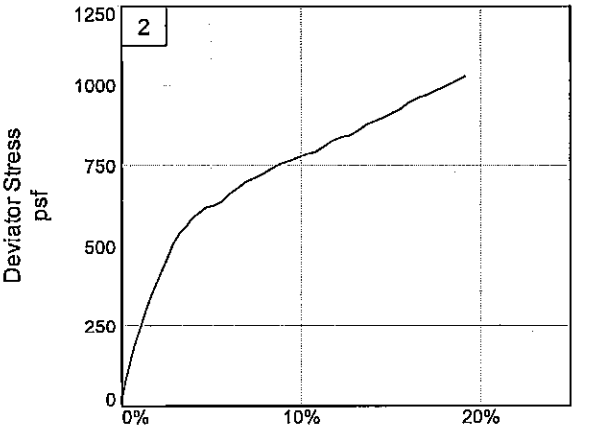
Proj. No.: 0022-0002 **Date Sampled:** 5-24-07

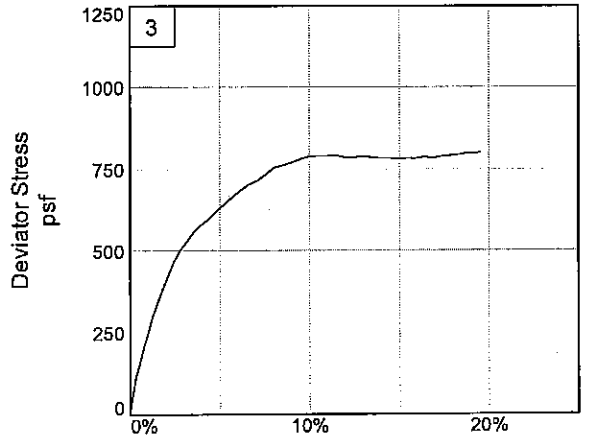
TRIAXIAL SHEAR TEST REPORT

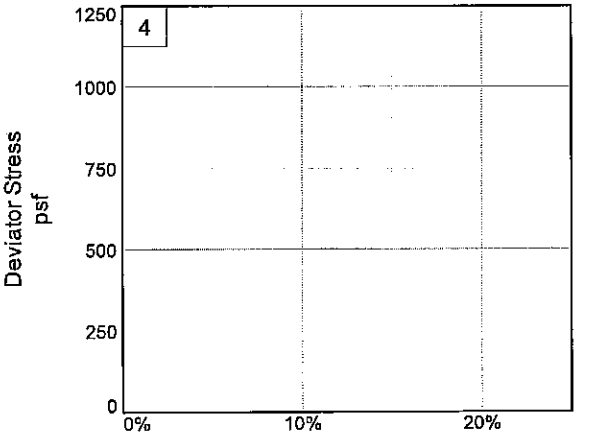
FFEBJV, LLC.

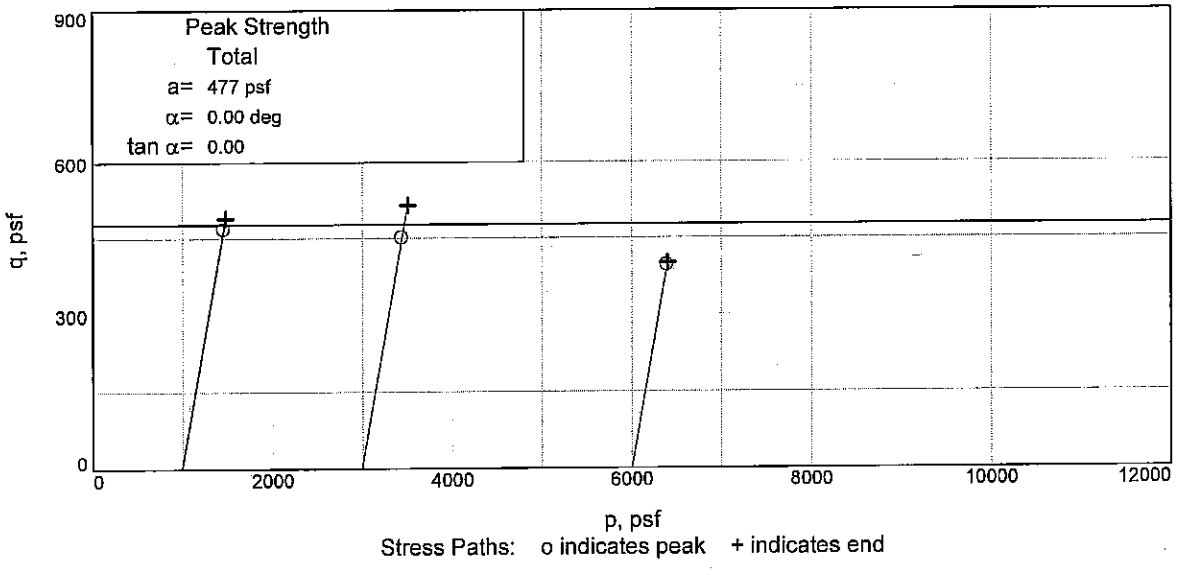
Tested By: LP **Checked By:** GMU









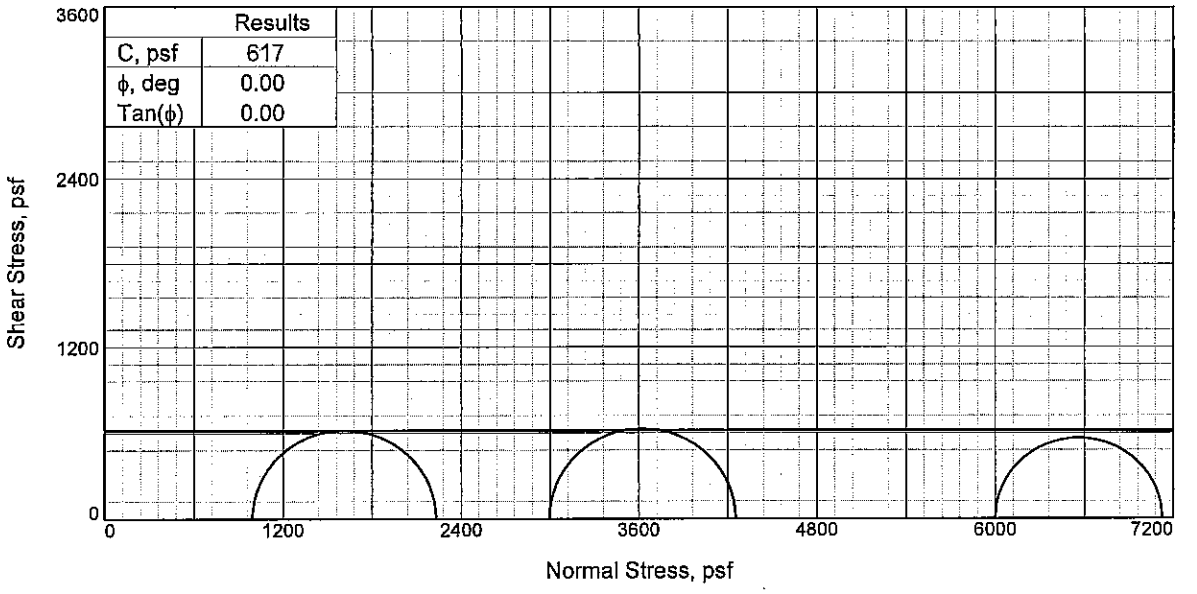


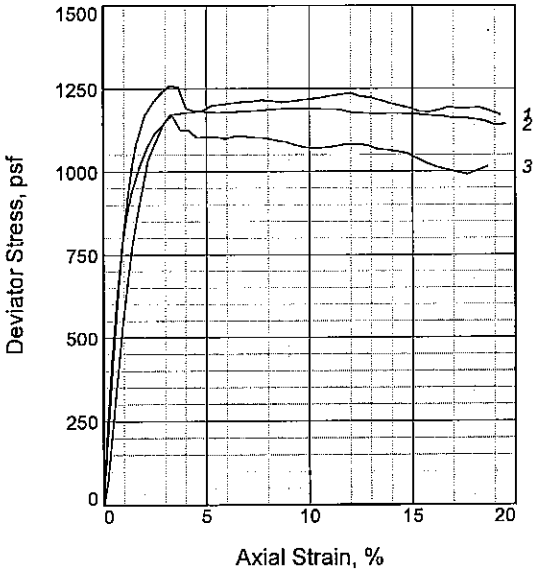
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-53UCL **Depth:** 26.60' **Sample Number:** 8C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: LP **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	43.9	39.5	45.3
	Dry Density, pcf	76.8	81.4	75.5
	Saturation, %	99.6	99.8	99.5
	Void Ratio	1.1855	1.0639	1.2249
	Diameter, in.	1.36	1.37	1.38
	Height, in.	3.14	3.02	3.07
At Test	Water Content, %	41.4	38.5	42.9
	Dry Density, pcf	76.8	81.4	75.5
	Saturation, %	93.9	97.5	94.1
	Void Ratio	1.1855	1.0639	1.2249
	Diameter, in.	1.36	1.37	1.38
	Height, in.	3.14	3.02	3.07
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	20.80	41.67
Fail. Stress, psf		1236	1257	1125
Strain, %		12.0	3.2	4.1
Ult. Stress, psf		1207	1176	1102
Strain, %				
σ_1 Failure, psf		2231	4252	7125
σ_3 Failure, psf		995	2995	6000

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL6-S W/ LNS ML

LL= 45 **PL=** 28 **PI=** 17
Assumed Specific Gravity= 2.69
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

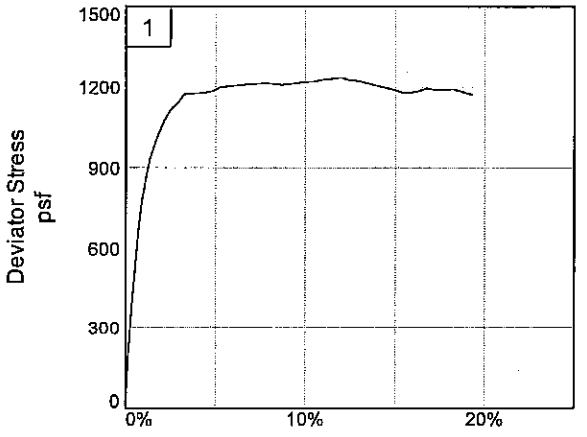
Client: U.S. ARMY CORPS OF ENGINEERS

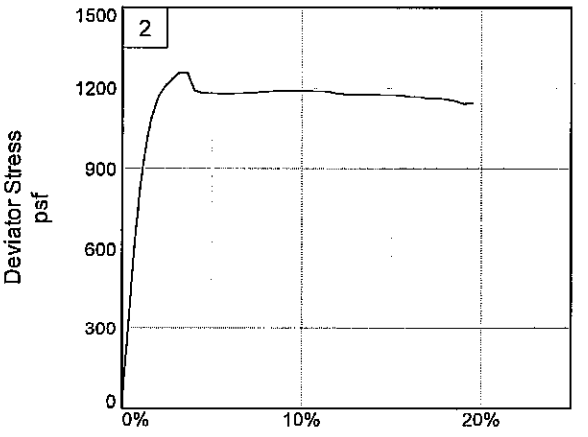
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-53UCL **Depth:** 28.80'
Sample Number: 9B
Proj. No.: 0022-0002 **Date Sampled:** 5-24-07

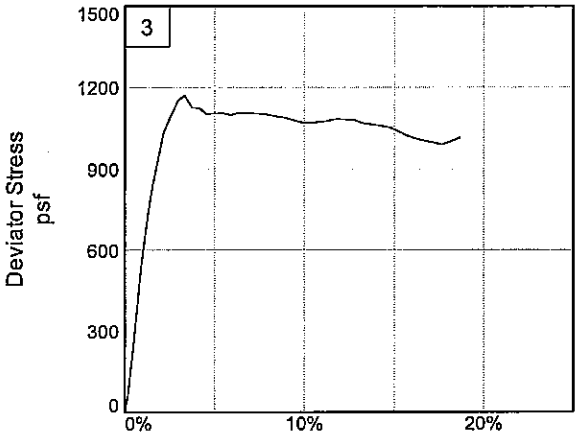
TRIAXIAL SHEAR TEST REPORT

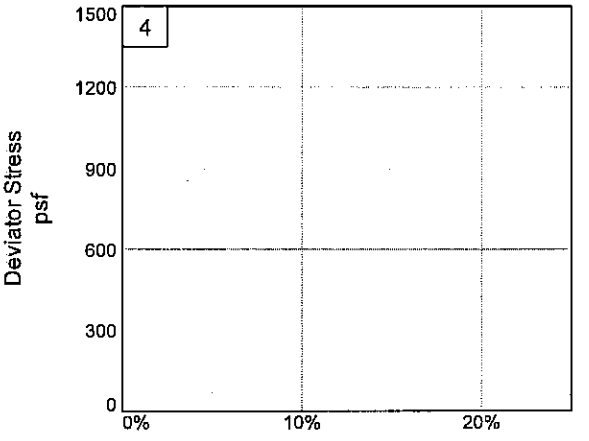
FFEBJV, LLC.

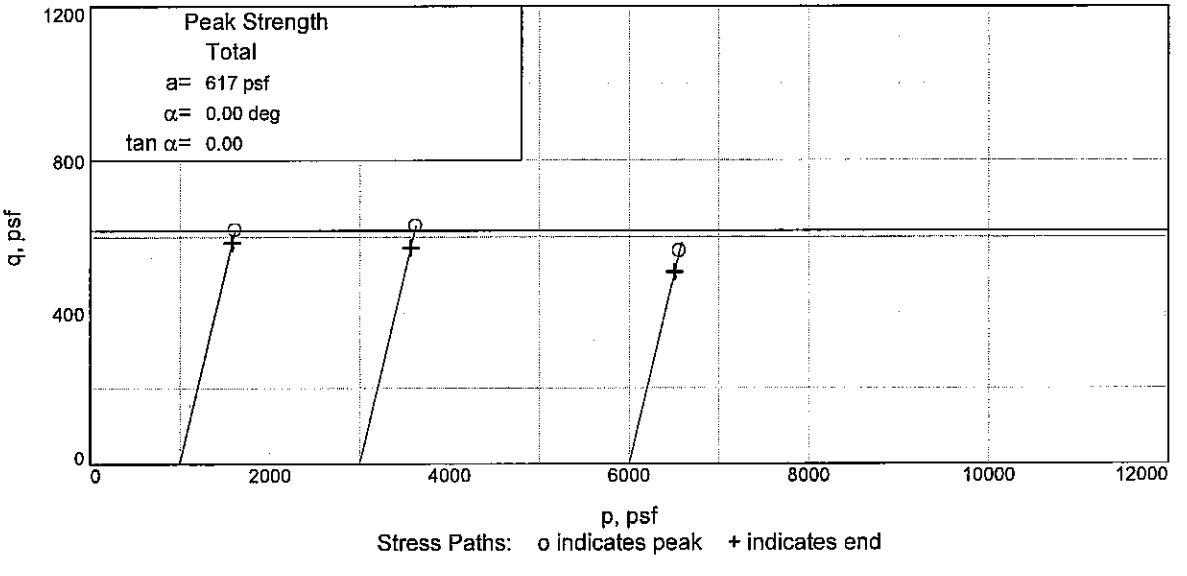
Tested By: CC **Checked By:** GMU









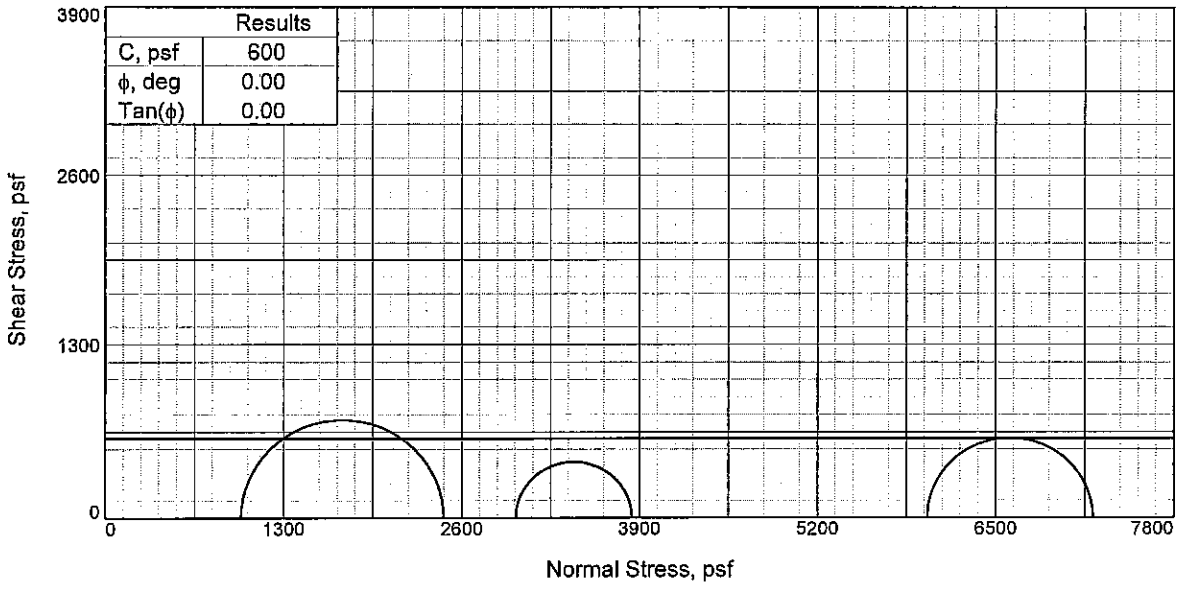


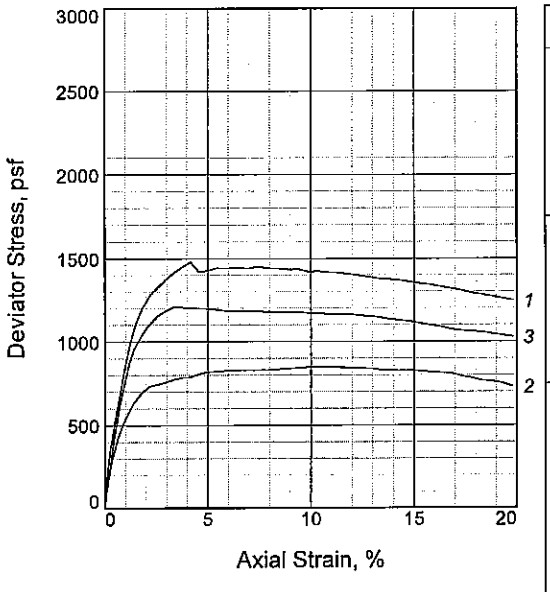
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-53UCL **Depth:** 28.80' **Sample Number:** 9B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	44.7	43.1	44.5
	Dry Density, pcf	76.1	77.9	76.5
	Saturation, %	99.4	99.9	99.7
	Void Ratio	1.2140	1.1650	1.2044
	Diameter, in.	1.38	1.38	1.38
	Height, in.	3.05	3.05	3.04
At Test	Water Content, %	43.8	42.6	44.1
	Dry Density, pcf	76.1	77.9	76.5
	Saturation, %	97.5	98.7	98.9
	Void Ratio	1.2140	1.1650	1.2044
	Diameter, in.	1.38	1.38	1.38
	Height, in.	3.05	3.05	3.04
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	20.81	41.67
Fail. Stress, psf		1479	848	1208
Strain, %		4.2	10.9	3.4
Ult. Stress, psf		1358	826	1119
Strain, %				
σ_1 Failure, psf		2468	3844	7209
σ_3 Failure, psf		990	2996	6001

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH2 W/ LNS ML

LL= 50 **PL=** 24 **PI=** 26

Assumed Specific Gravity= 2.70

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-53UCL **Depth:** 33.70'

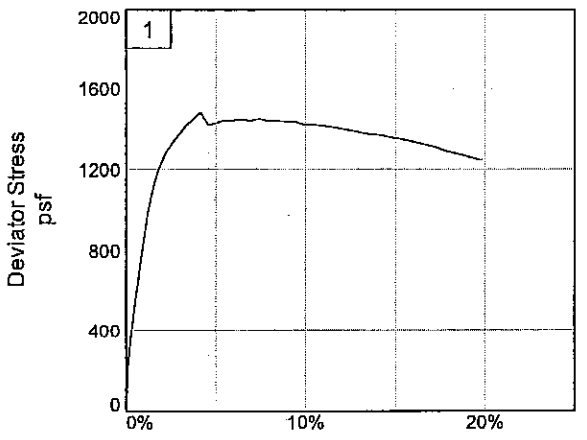
Sample Number: 10C

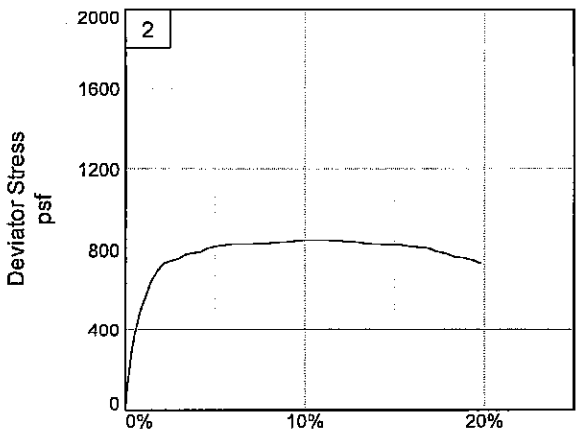
Proj. No.: 0022-0002 **Date Sampled:** 5-24-07

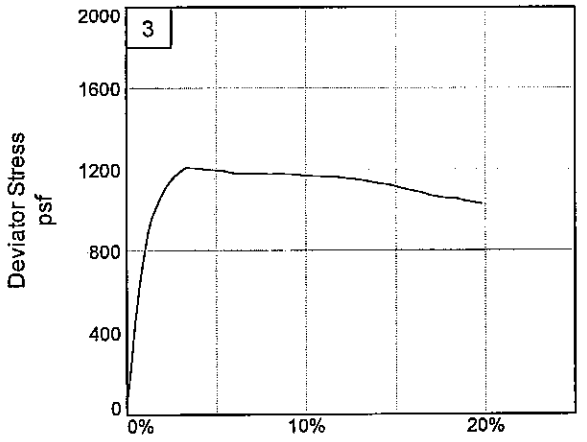
TRIAXIAL SHEAR TEST REPORT

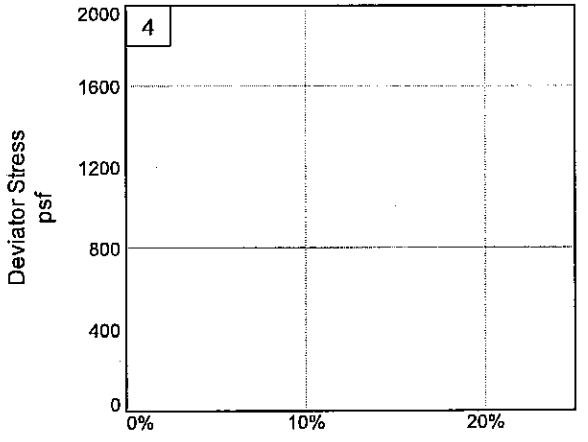
FFEBJV, LLC.

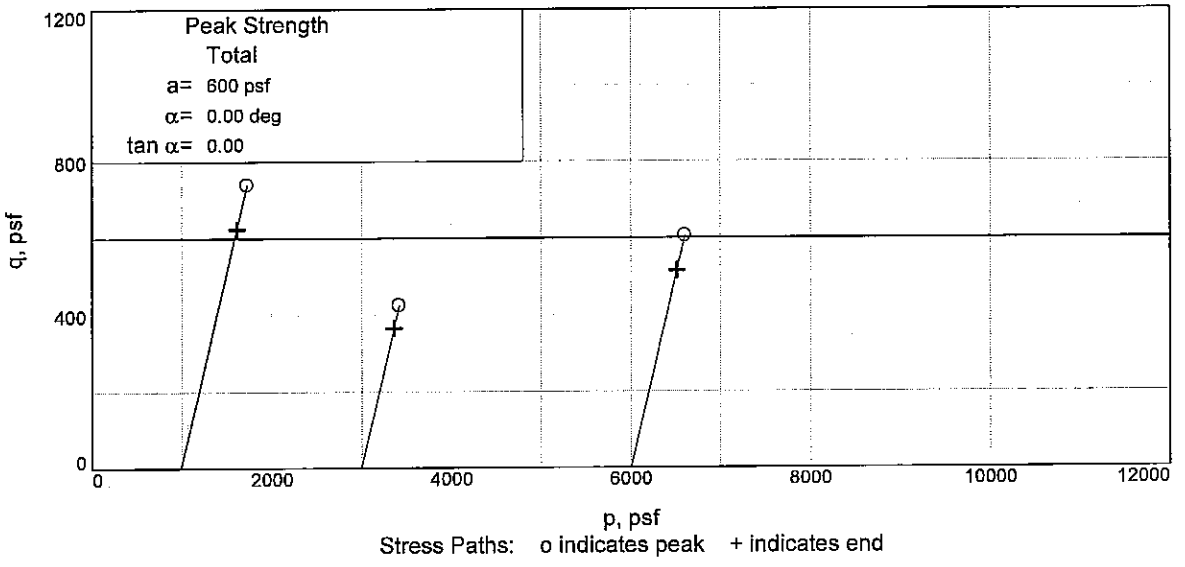
Tested By: CC **Checked By:** GMU









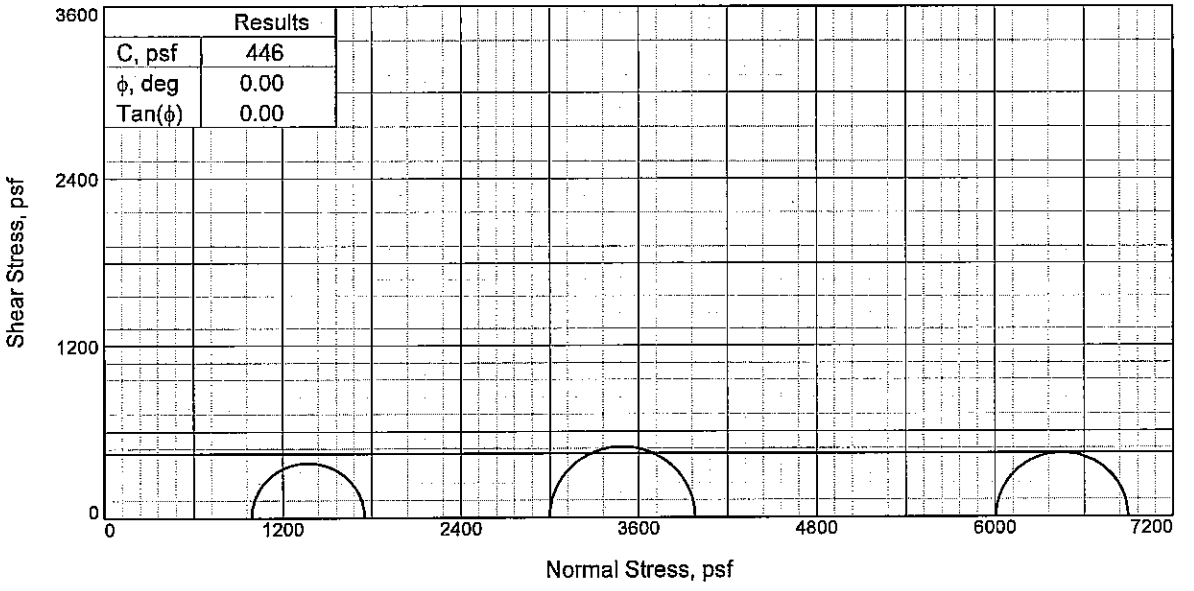


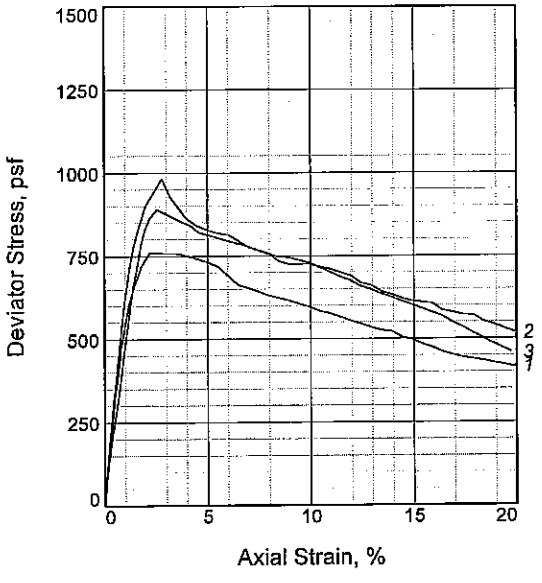
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-53UCL **Depth:** 33.70' **Sample Number:** 10C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	73.1	79.5	71.6
	Dry Density, pcf	56.8	53.8	57.7
	Saturation, %	99.6	99.9	99.8
	Void Ratio	2.0130	2.1813	1.9641
	Diameter, in.	1.38	1.38	1.38
	Height, in.	3.03	3.04	3.06
At Test	Water Content, %	72.0	76.9	70.2
	Dry Density, pcf	56.8	53.8	57.7
	Saturation, %	98.0	96.6	97.9
	Void Ratio	2.0130	2.1813	1.9641
	Diameter, in.	1.38	1.38	1.38
	Height, in.	3.03	3.04	3.06
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.82	41.71
Fail. Stress, psf		759	982	889
Strain, %		2.2	2.8	2.6
Ult. Stress, psf		498	615	604
Strain, %				
σ_1 Failure, psf		1750	3980	6896
σ_3 Failure, psf		991	2998	6006

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: SO GR CH4

LL= 103 **PL=** 33 **PI=** 70

Assumed Specific Gravity= 2.74

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-53UCL **Depth:** 41.70'

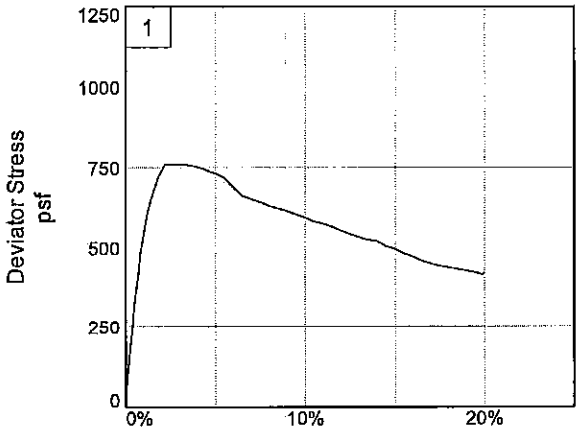
Sample Number: 12C

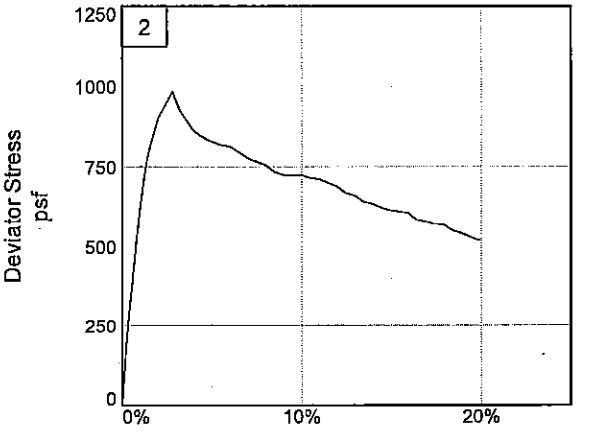
Proj. No.: 0022-0002 **Date Sampled:** 5-24-07

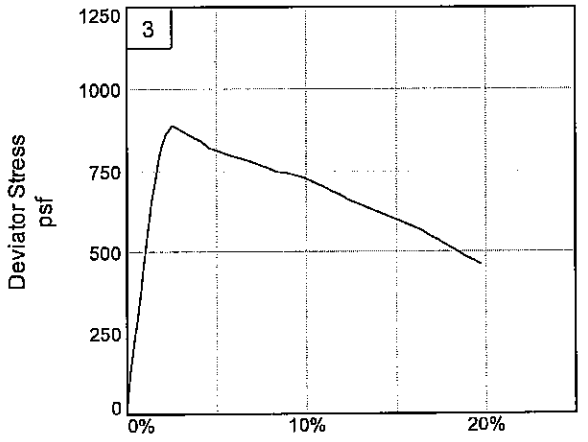
TRIAXIAL SHEAR TEST REPORT

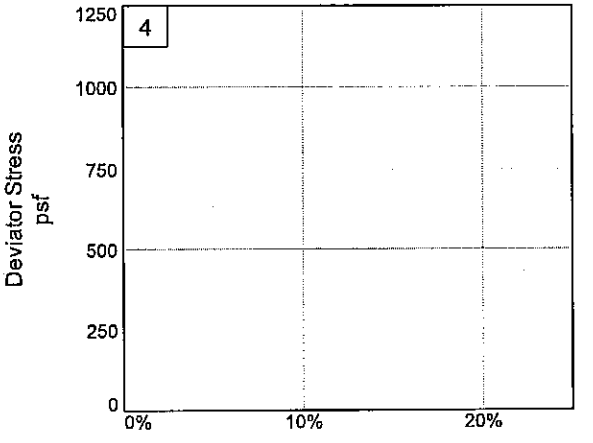
FFEBJV, LLC.

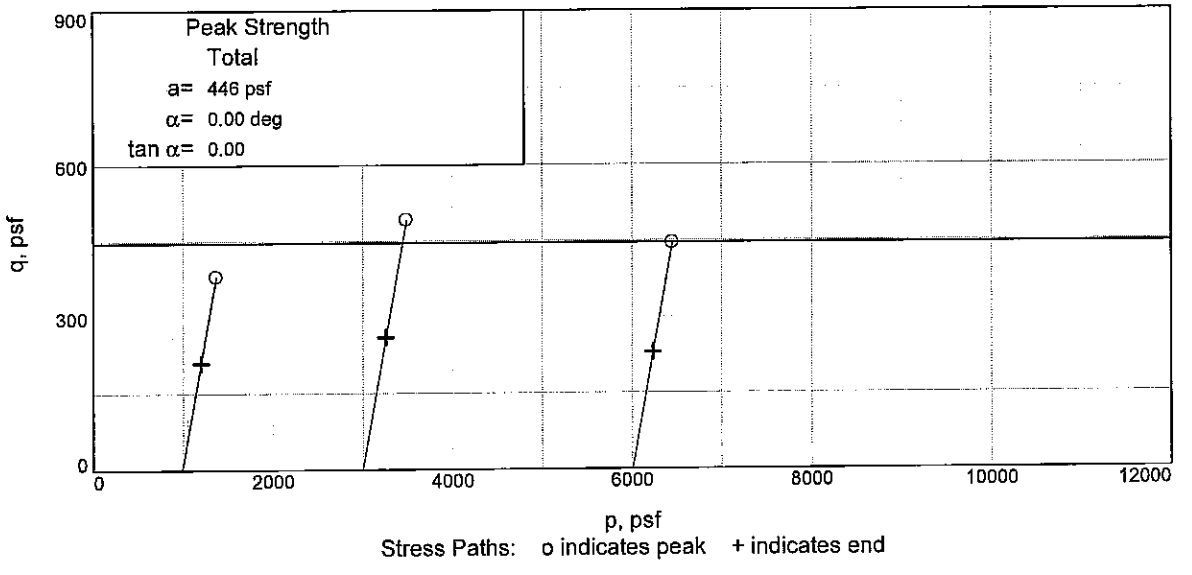
Tested By: CC **Checked By:** GMU











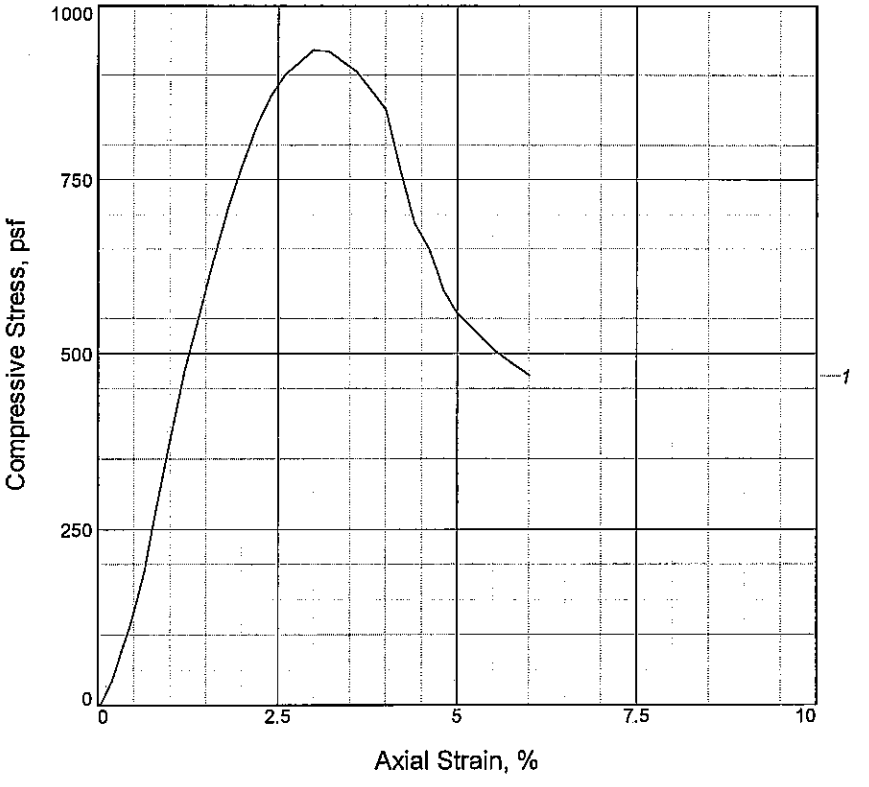
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-53UCL **Depth:** 41.70' **Sample Number:** 12C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	937			
Undrained shear strength, psf	468			
Failure strain, %	3.0			
Strain rate, %/min.	1.00			
Water content, %	37.8			
Wet density, pcf	111.1			
Dry density, pcf	80.7			
Saturation, %	93.6			
Void ratio	1.0897			
Specimen diameter, in.	1.39			
Specimen height, in.	3.00			
Height/diameter ratio	2.16			

Description: SO GR CL4-S W/ LNS CH

LL = 40	**PL** = 35	**PI** = 5	**GS**= 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/24/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487 and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

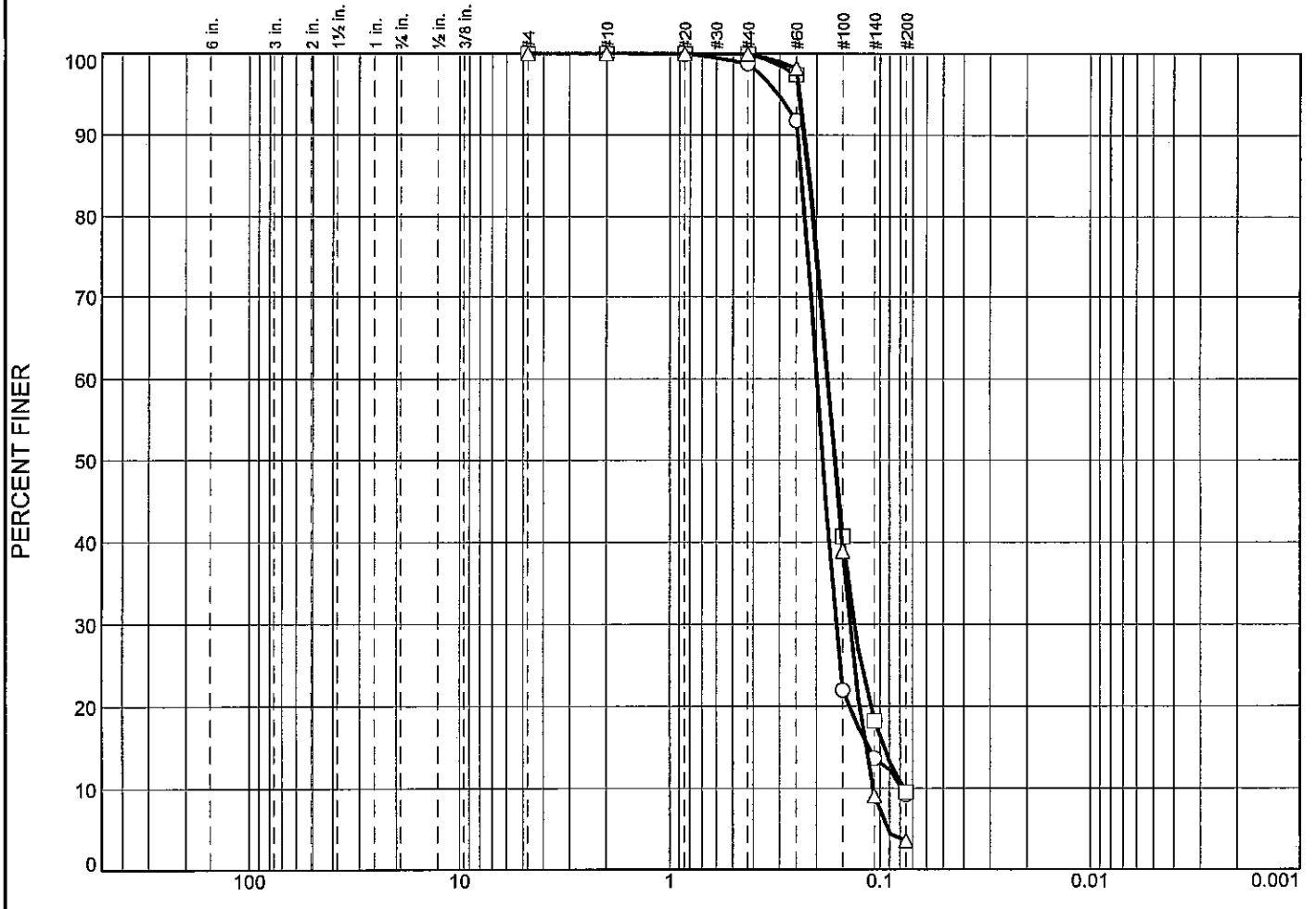
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-53UCL **Depth:** 45.70'
Sample Number: 13C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: CC **Checked By:** GMU

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	1.3	89.5	9.2	
□	0.0	0.0	0.0	0.0	0.0	90.5	9.5	
△	0.0	0.0	0.0	0.0	0.0	96.4	3.6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2353	0.1985	0.1865	0.1621	0.1136	0.0783	1.69	2.54
□			0.2177	0.1772	0.1633	0.1325	0.0962	0.0769	1.29	2.30
△			0.2156	0.1766	0.1638	0.1387	0.1173	0.1081	1.01	1.63

Material Description	USCS	AASHTO
○ GR SM1-S	SM1-S	
□ GR SP	SP	
△ GR SP	SP	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Sample Source:** WWHC-53UCL **Depth:** 49.7 **Sample No.:** 14C

□ **Sample Source:** WWHC-53UCL **Depth:** 57.7 **Sample No.:** 16C

△ **Source of Sample:** WWHC-53UCL **Depth:** 69 **Sample Number:** 19C

FFEBJV, LLC

St Rose, LA

Remarks:

Figure

Bor. WWHC-53UCL
STA. N 29^48'49.78" W 090^06'47.92"

16 April 2007

GROUND EL. 13.5

0.0	0.8	21	0.8	CL	VSTLBRGR	RT					
0.8	2.0	25	2.0	CL	VSTLBRGR	RT					
2.0	2.8	22	2.8	CL	M T	RT					
2.8	4.0	33	4.0	CH	SIS M T GR	RT	928117	62	20	27	31
4.0	4.8	34		CH	M BR GR						
4.8	5.7	35	5.7	CH	M BR GR						
5.7	8.0	37	8.0	CH	SIS M GR T						
8.0	8.8	41		CH	M GR						
8.8	9.7	35		CH	M LBRGR						
9.7	12.0	34	12.0	CH	M LBRGR						
12.0	12.8	37	12.8	CH	SIS M DGRGR	O					
12.8	13.7	40		CH	M GR LBR	RT O					
13.7	16.0	38		CH	M GR T	RT O					
16.0	16.8	32		CH	M LBRLGR						
16.8	17.7	32		CH	M LBRLGR						
17.7	20.0	33	20.0	CH	VSTLBRLGR		2009119	52	19	25	180
20.0	20.8	34		CL	M GR LBR						
20.8	21.7	33		CL	M GR LBR						
21.7	22.6	33		CL	M GR LBR						
22.6	24.0	38	24.0	CL	SO GR LBR						
24.0	24.8	42		CL	SISSO GR	S					
24.8	25.7	40		CL	SISSO GR	S					
25.7	28.0	37	28.0	CL	SISSO GR	S					
28.0	28.8	52	28.8	CH	M GR						
28.8	29.7	43	29.7	CL	SIS M GR	S					
29.7	30.6	38	30.6	CL	M GR						
30.6	32.0	52		CH	SIS M GR						
32.0	32.8	53		CH	SIS M GR						
32.8	33.7	54		CH	SIS M GR						
33.7	34.6	40		CH	SIS M GR						
34.6	36.0	55		CH	SIS M GR						
36.0	36.8	47		CH	SISSO GR						
36.8	37.7	46		CH	SISSO GR						
37.7	40.0	45	40.0	CH	SISSO GR						
40.0	40.8	35		CL	SO GR	CS					
40.8	41.7	47	41.7	CL	SO GR						

41.7 44.0 61 44.0CH SO GR
44.0 44.8 30 44.8SM GR
44.8 45.7 36 45.7CL SO GR S
45.7 46.6 31 46.6CL SO GR CS S 468111 40 35 38 460
46.6 48.0 26 SM GR
48.0 48.8 27 SM GR
48.8 49.7 27 SM GR
49.7 52.0 29 52.0SM GR .0783
52.0 52.8 24 SP GR
52.8 53.7 22 SP GR
53.7 56.0 25 SP GR
56.0 56.8 22 SP GR
56.8 57.7 21 SP GR
57.7 60.0 25 SP GR .0769
60.0 60.8 26 SP GR
60.8 61.7 24 61.7SP GR
61.7 64.0 27 64.0SP SIS GR
64.0 64.8 29 64.8SP GR
64.8 65.7 25 65.7SP SIS GR
65.7 68.0 23 SP GR
68.0 68.8 25 SP GR
68.8 69.7 22 SP GR
69.7 72.0 24 72.0SP GR .1081
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 6.00/7.50 Water Con: 38.00
LL,PL,PI : 75, 23, 52 Dry Dens : 84.00
Cohesion : 0.400 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 10.00/3.50 Water Con: 32.00
LL,PL,PI : 53, 19, 34 Dry Dens : 90.00
Cohesion : 0.317 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 14.00/-0.50 Water Con: 39.00
LL,PL,PI : 89, 22, 67 Dry Dens : 82.00
Cohesion : 0.292 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 22.00/-8.50 Water Con: 33.00
LL,PL,PI : 36, 22, 14 Dry Dens : 88.00
Cohesion : 0.288 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 26.00/-12.50 Water Con: 40.00
LL,PL,PI : 35, 28, 7 Dry Dens : 81.00
Cohesion : 0.239 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 29.10/-15.60 Water Con: 43.00
LL,PL,PI : 45, 28, 17 Dry Dens : 78.00
Cohesion : 0.309 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 34.00/-20.50 Water Con: 44.00
LL,PL,PI : 50, 24, 26 Dry Dens : 77.00
Cohesion : 0.300 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES

Test Type:(Q) Classif : CH

Depth/Ele: 42.00/-28.50 Water Con: 75.00

LL,PL,PI : 103, 33, 70 Dry Dens : 56.00

Cohesion : 0.223 Saturat :100.00

Shear Str: Frict Ang: 00.00

Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-53UPT

Current Date: 7/3/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	T ML2 W/ LYS CH, O	ML2		20												
1B	0.8	T ML2 W/ LNS CH	ML2		17												
2	2.0	T ML2	ML2		18												
3A	4.0	M BR CH4 W/ ARS ML	CH4		39												
3B	4.8	M BR CH4 W/ ARS ML	CH4		38												
3C	5.7	M LGR & T CH4 W/ WD	CH4		36	84	114	94	UU	0	772		82	23	59	0.63	
4A	8.0	M T CH3	CH3		35												
4B	8.8	SO T CL6	CL6		35												
4C	9.7	SO GR & BR CL4 W/ ARS CH	CL4	7	33	90	120	100	UC	--	399	797	42	17	25	0.30	
4D	10.6	SO T CL4	CL4		33												
5A	12.0	M GR & T CH2	CH2		38												
5B	12.8	M GR & T CH2	CH2		35												
5C	13.7	M GR CH2 W/ LNS ML, SM, WD	CH2		41	80	113	100	UU	0	709		56	18	38	0.40	
5D	14.6	M GR & T CH2	CH2		36												
6A	16.0	M GR CL4-S W/ LYS CH	CL4-S		36												
6B	16.8	M GR CL4-S W/ LYS CH	CL4-S		38												
6C	17.7	M GR CL4-S W/ LNS CH	CL4-S		36	86	117	100	UU	0	746		27	20	7	0.20	
6D	18.6	M GR CL4-S W/ LNS CH	CL4-S		38												
7A	20.0	M GR CH4 W/ ARS & LNS ML	CH4		52												
7B	20.8	M GR CH4 W/ ARS & LNS ML	CH4		43												
7C	21.7	M GR CH4 W/ LNS ML	CH4		58	67	105	100	UU	0	549		71	26	45	0.27	
7D	22.6	M GR CH4 W/ ARS & LNS ML	CH4		59												
8A	24.0	M GR CH4	CH4		45												
8B	24.8	SO GR CH2	CH2		42												
8C	25.7	SO GR CH3 W/ LNS ML	CH3		61	65	105	100	UU	0	469		69	24	45	0.28	
8D	26.6	GR ML2	ML2		38												
9A	28.0	M GR CH3	CH3		49												
9B	28.8	M GR CL6 W/ LNS CH	CL6	11	40	82	115	100	UC	--	568	1136	42	20	22	0.40	
9C	29.7	M GR CL6 W/ LYS CH	CL6		40												
10	32.0	GR ML2	ML2		30												
11	34.0	GR ML2	ML2		31												
12A	36.0	M GR CH3-S	CH3-S		52												
12B	36.8	GR ML2 W/ LYS CH	ML2		32												SV
13	38.0	GR ML2	ML2		31												
14	40.0	GR ML2	ML2		27												
15	42.0	GR ML2 W/ ARS CH	ML2		32												
16A	44.0	GR SM1	SM1		23												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

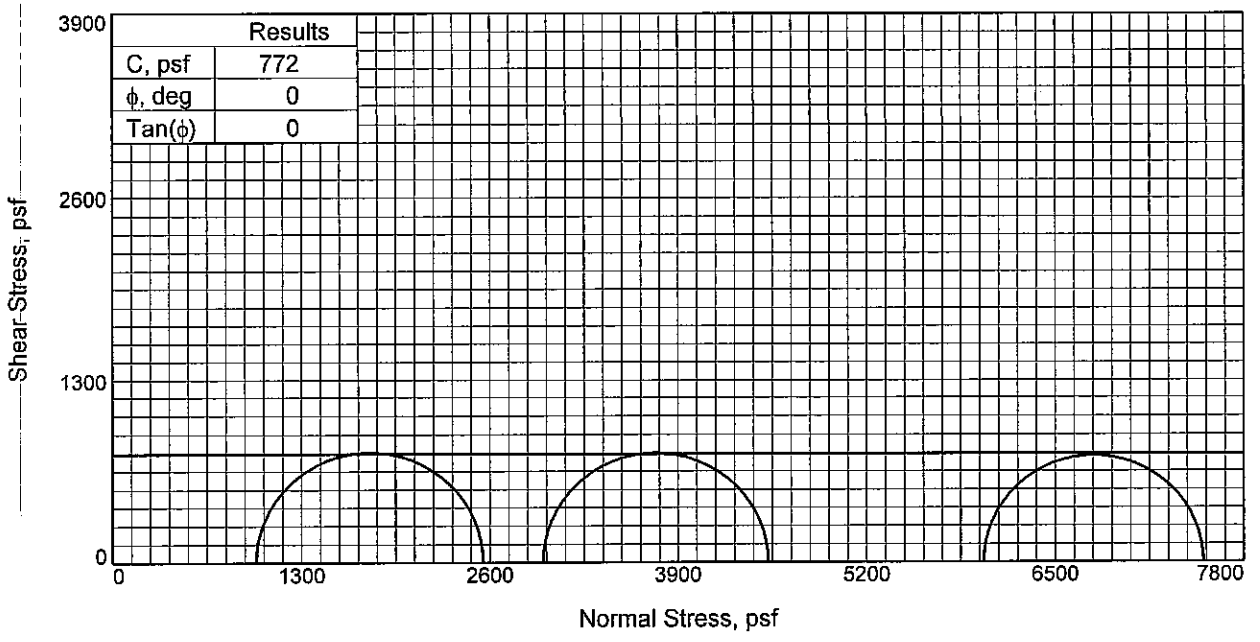
Project Number: 0022-0002
Boring: WWHC-53UPT

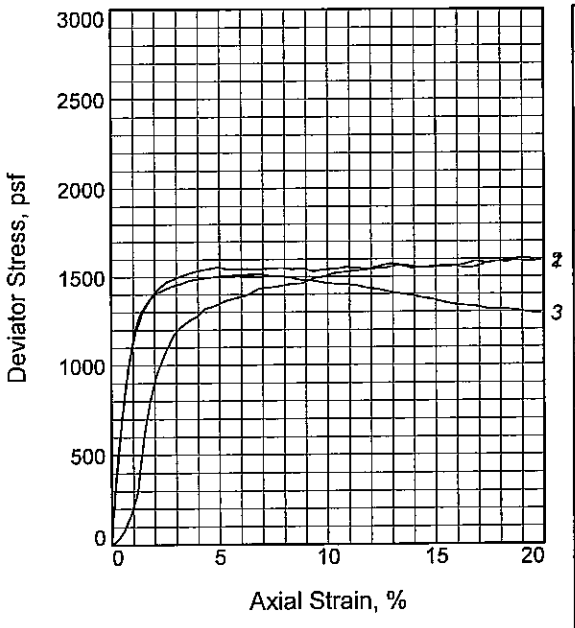
Current Date: 7/3/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
16B	44.8	GR SM1 W/ LYS & LNS CH	SM1		56												SV
17	46.0	GR SP	SP		21												
18	48.0	GR SP	SP		21												
19	50.0	GR SP	SP		24												
20	52.0	GR SP	SP		30												SV
21	54.0	GR SM1-S	SM1-S		25												
22	56.0	GR SM1-S	SM1-S		25												
23	58.0	GR SM1-S	SM1-S		26												
24	60.0	GR SM1-S	SM1-S		25												
25	62.0	GR SM1-S	SM1-S		26												SV
26	64.0	GR SM1-S	SM1-S		26												
27	66.0	GR SM1-S	SM1-S		24												
28	68.5	GR SM1-S	SM1-S		24												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2





Sample No.		1	2	3
Initial	Water Content, %	35.5	34.7	36.4
	Dry Density, pcf	84.0	84.0	83.5
	Saturation, %	93.8	91.6	95.1
	Void Ratio	1.0360	1.0370	1.0496
	Diameter, in.	1.379	1.392	1.377
	Height, in.	3.118	3.128	3.126
At Test	Water Content, %	35.5	34.7	36.4
	Dry Density, pcf	84.0	84.0	83.5
	Saturation, %	93.8	91.6	95.1
	Void Ratio	1.0360	1.0370	1.0496
	Diameter, in.	1.379	1.392	1.377
	Height, in.	3.118	3.128	3.126
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.61	41.72
Fail. Stress, psf		1565	1555	1515
Strain, %		13.3	5.0	6.8
Ult. Stress, psf		1548	1543	1370
Strain, %				
σ_1 Failure, psf		2554	4523	7522
σ_3 Failure, psf		988	2968	6007

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M LGR & T CH4 W/ WD

LL= 82 **PL=** 23 **PI=** 59
Assumed Specific Gravity= 2.74
Remarks:

Client: U.S. Army Corps of Engineers

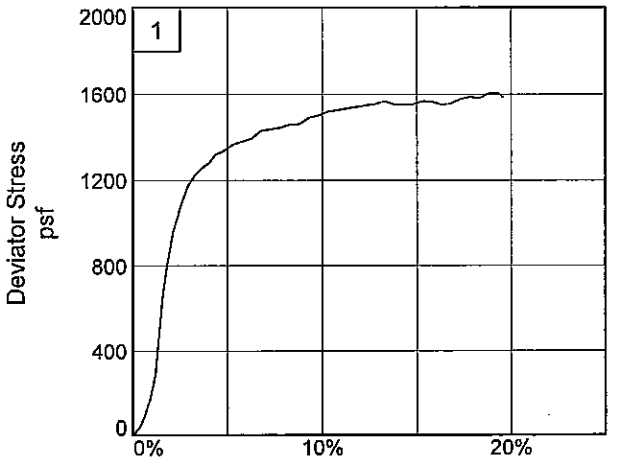
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-53UPT **Depth:** 5.7
Sample Number: 3C
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

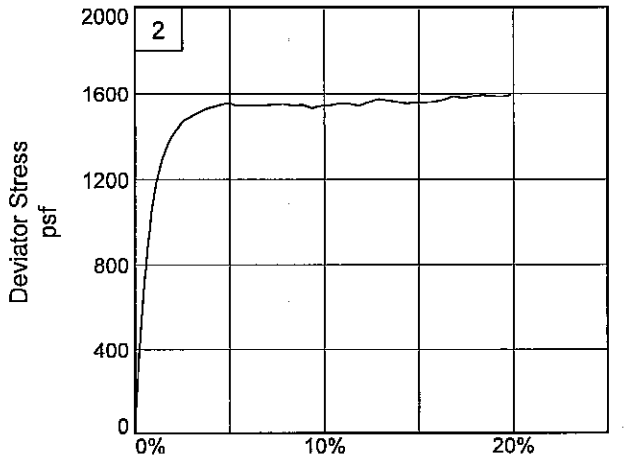
TRIAXIAL SHEAR TEST REPORT

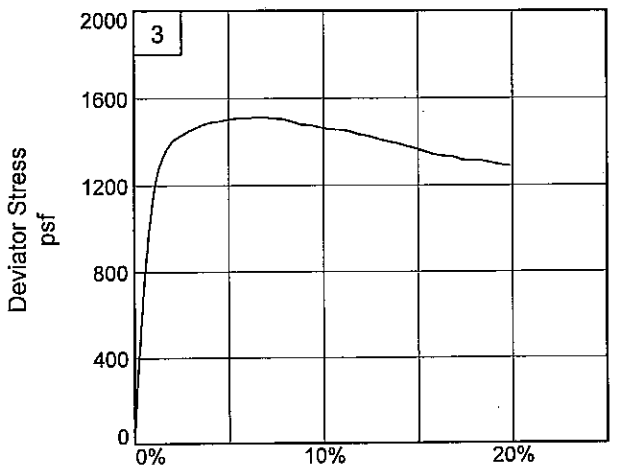
FFEBJV, LLC

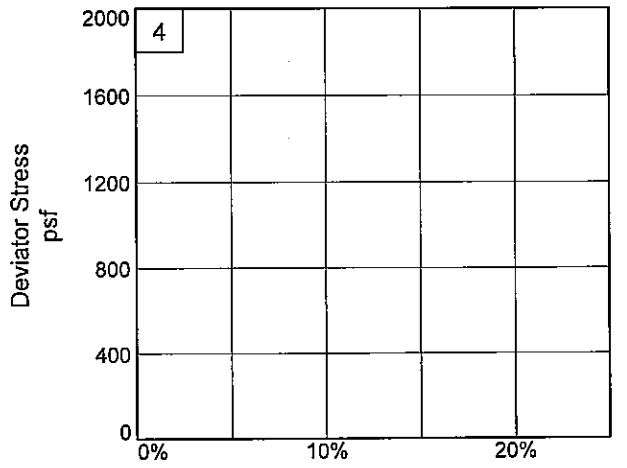
Figure _____

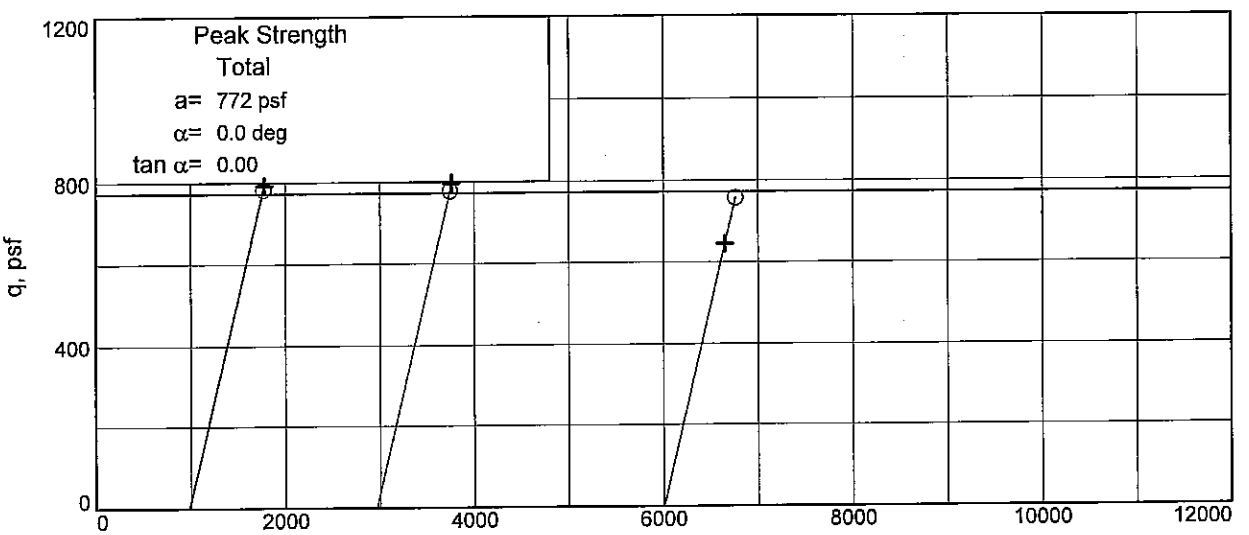
Tested By: DW/DD











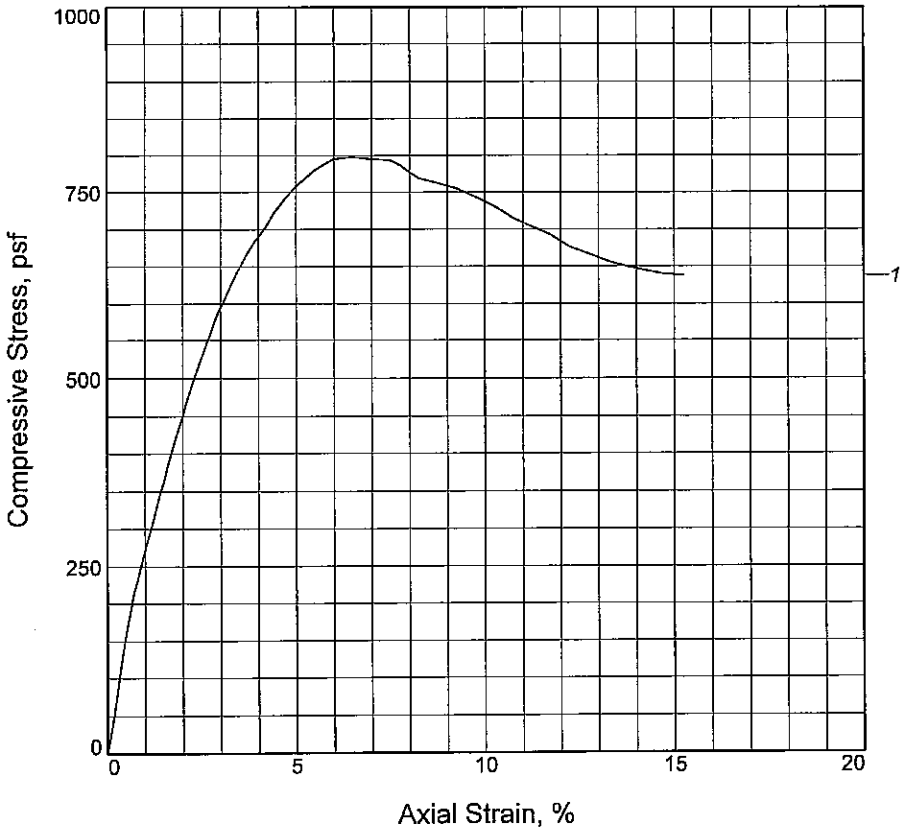
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-53UPT **Depth:** 5.7 **Sample Number:** 3C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	797			
Undrained shear strength, psf	399			
Failure strain, %	6.5			
Strain rate, in./min.	0.031			
Water content, %	32.5			
Wet density, pcf	119.5			
Dry density, pcf	90.2			
Saturation, %	101.9			
Void ratio	0.8552			
Specimen diameter, in.	1.382			
Specimen height, in.	3.128			
Height/diameter ratio	2.26			

Description: SO GR & BR CL*A* W/ ARS CH

LL = 42	**PL** = 17	**PI** = 25	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/15/07
Remarks:

Figure _____

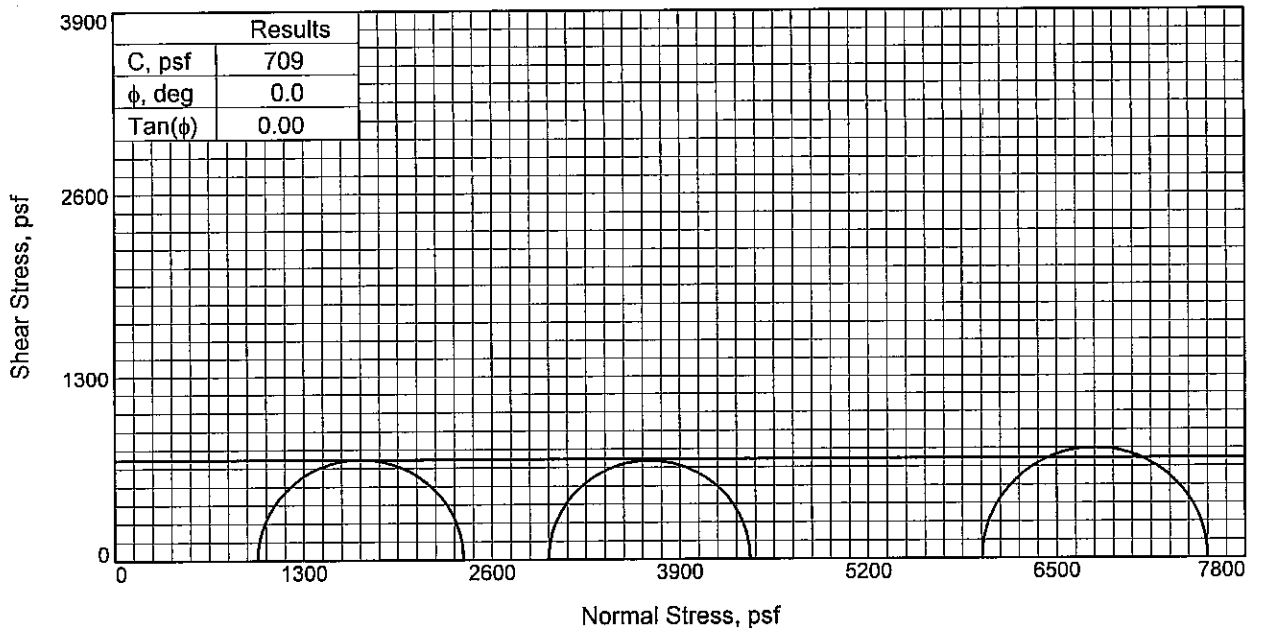
Client: U.S. Army Corps of Engineers

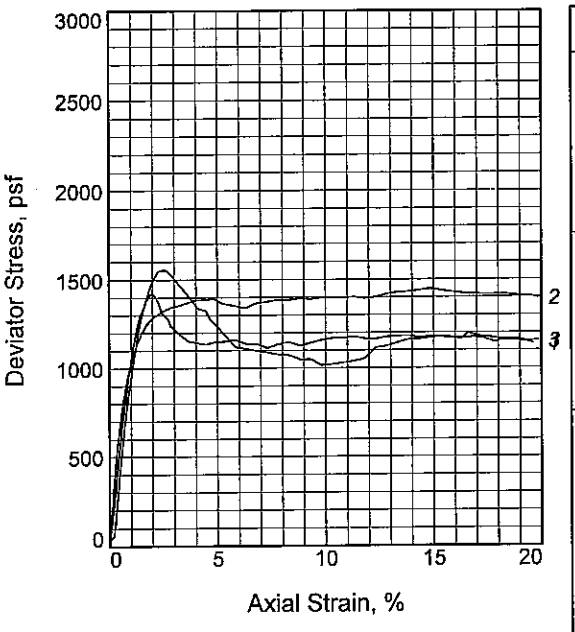
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-53UPT **Depth:** 9.7
Sample Number: 4C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: DW





Sample No.		1	2	3
Initial	Water Content, %	42.8	40.6	39.4
	Dry Density, pcf	77.9	80.8	81.1
	Saturation, %	99.4	101.0	98.7
	Void Ratio	1.1638	1.0867	1.0794
	Diameter, in.	1.373	1.374	1.365
	Height, in.	3.132	3.129	3.132
At Test	Water Content, %	42.8	40.6	39.4
	Dry Density, pcf	77.9	80.8	81.1
	Saturation, %	99.4	101.0	98.7
	Void Ratio	1.1638	1.0867	1.0794
	Diameter, in.	1.373	1.374	1.365
	Height, in.	3.132	3.129	3.132
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.83	20.78	41.56
Fail. Stress, psf		1420	1394	1557
Strain, %		1.9	4.8	2.6
Ult. Stress, psf		1133	1338	1014
Strain, %				
σ_1 Failure, psf		2403	4385	7542
σ_3 Failure, psf		983	2992	5985

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH2 W/ LNS SM, WD, ML

LL= 56 **PL=** 18 **PI=** 38
Assumed Specific Gravity= 2.70
Remarks:

Client: U.S. Army Corps of Engineers

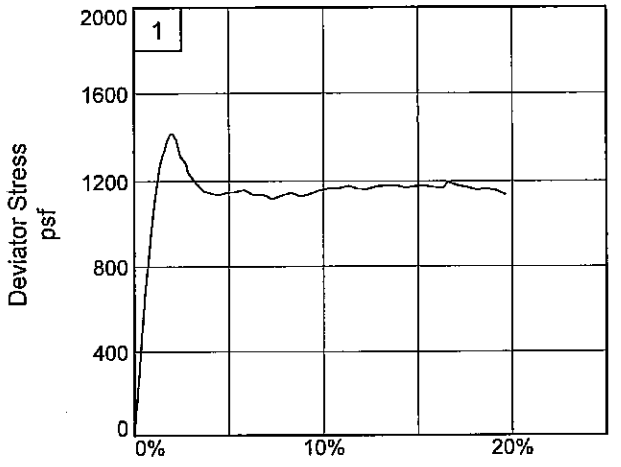
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-53UPT **Depth:** 13.7
Sample Number: 5C
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

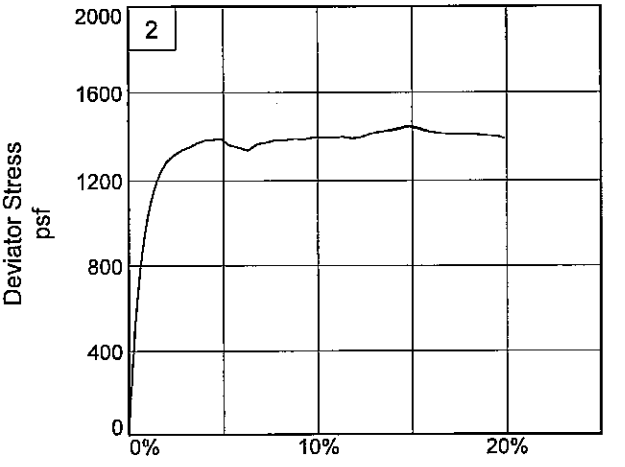
TRIAXIAL SHEAR TEST REPORT

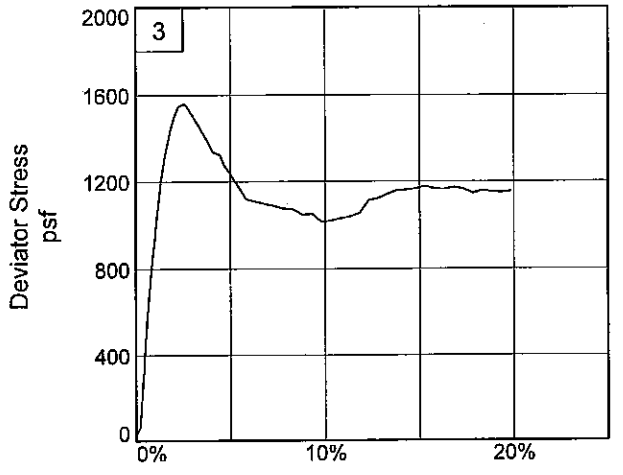
FFEBJV, LLC

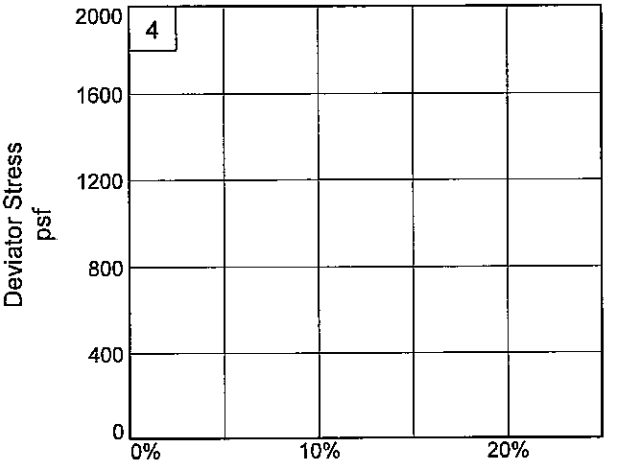
Figure _____

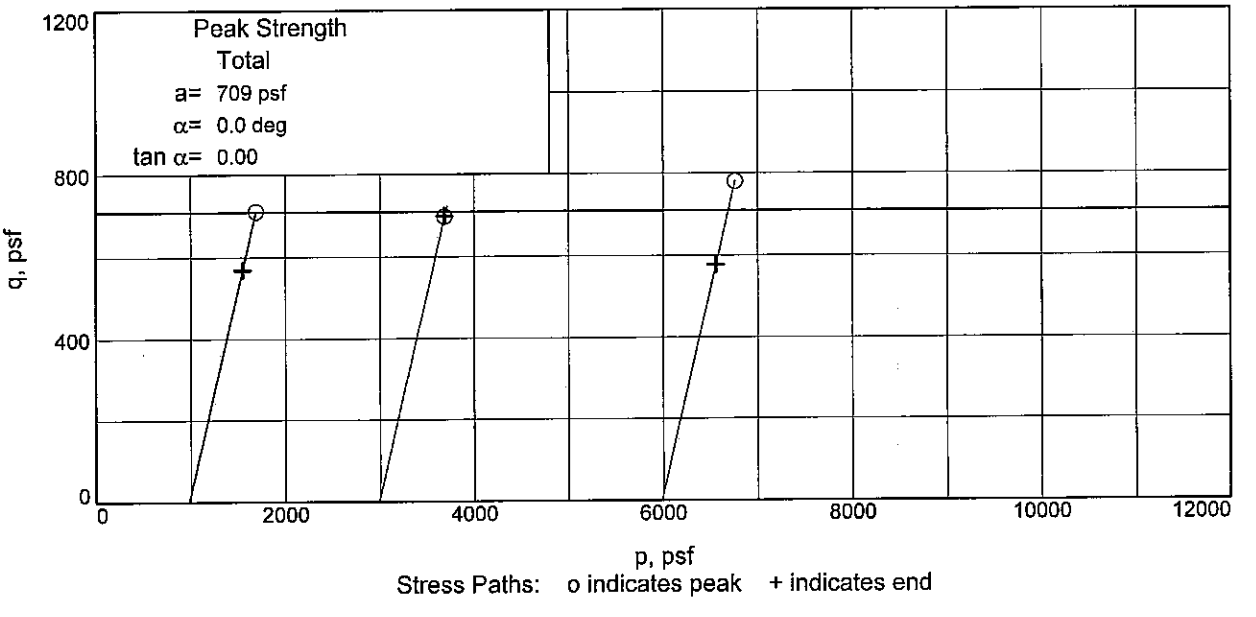
Tested By: DD/DW









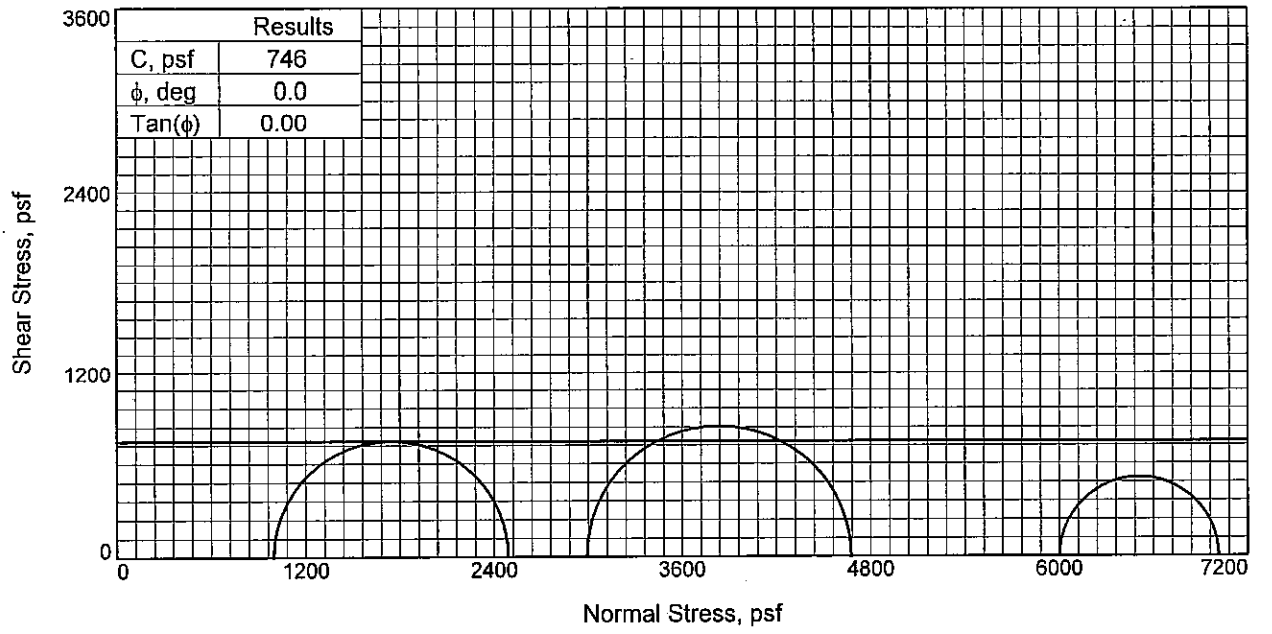


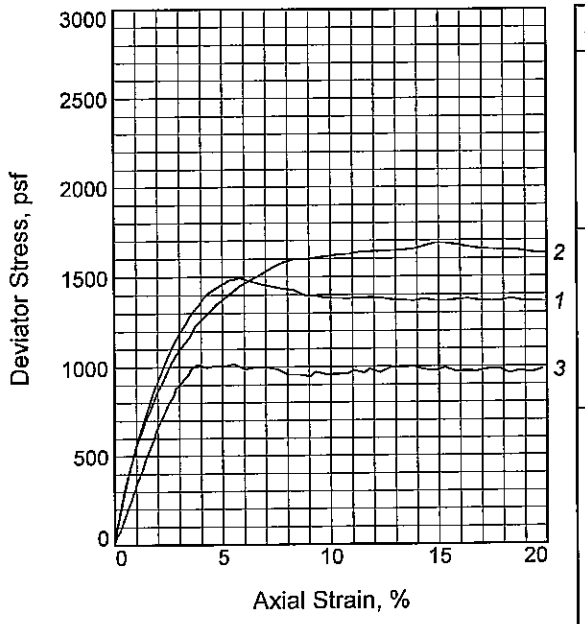
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-53UPT **Depth:** 13.7 **Sample Number:** 5C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/DW





Sample No.		1	2	3
Initial	Water Content, %	35.6	35.5	35.5
	Dry Density, pcf	85.7	83.8	88.4
	Saturation, %	99.8	95.1	106.2
	Void Ratio	0.9606	1.0034	0.9007
	Diameter, in.	1.325	1.410	1.381
	Height, in.	3.129	3.164	3.128
At Test	Water Content, %	35.6	35.5	35.5
	Dry Density, pcf	85.7	83.8	88.4
	Saturation, %	99.8	95.1	106.2
	Void Ratio	0.9606	1.0034	0.9007
	Diameter, in.	1.325	1.410	1.381
	Height, in.	3.129	3.164	3.128
Strain rate, in./min.		0.031	0.032	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	20.77	41.68
Fail. Stress, psf		1493	1684	1014
Strain, %		5.8	14.9	3.8
Ult. Stress, psf		1364	1684	997
Strain, %				
σ_1 Failure, psf		2490	4676	7016
σ_3 Failure, psf		997	2991	6002

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL4-S W/ LNS CH

LL= 27 **PL=** 20 **PI=** 7
Assumed Specific Gravity= 2.69
Remarks:

Client: U.S. Army Corps of Engineers

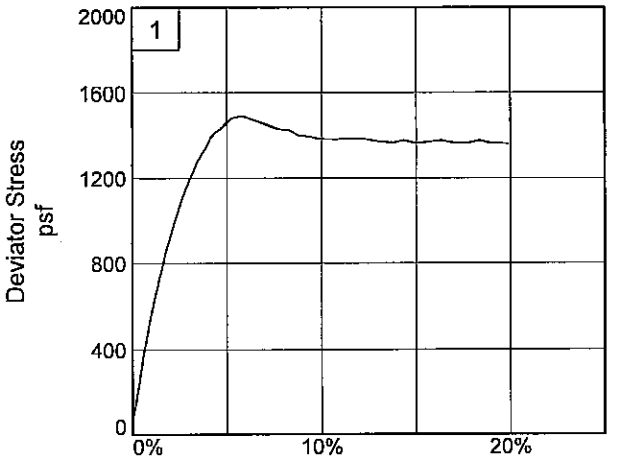
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-53UPT **Depth:** 17.7
Sample Number: 6C
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

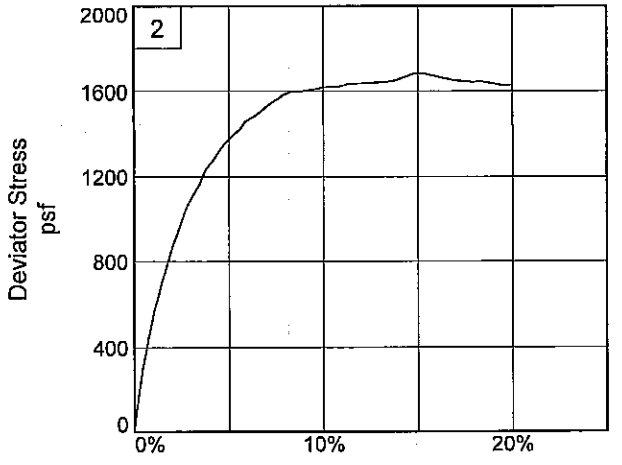
TRIAXIAL SHEAR TEST REPORT

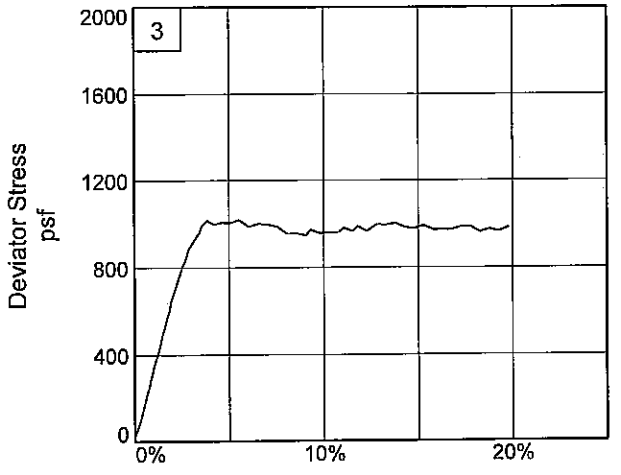
FFEBJV, LLC

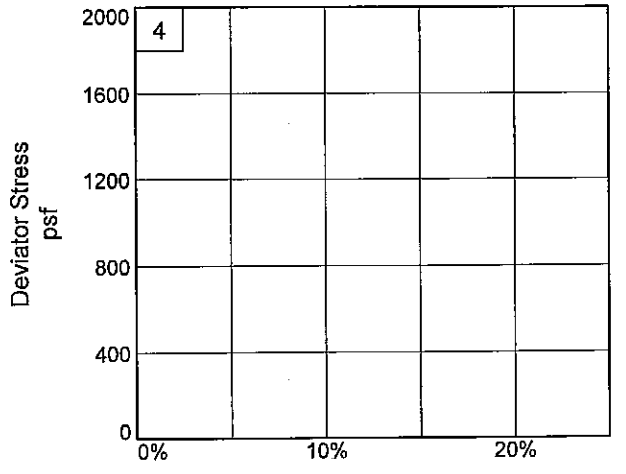
Figure _____

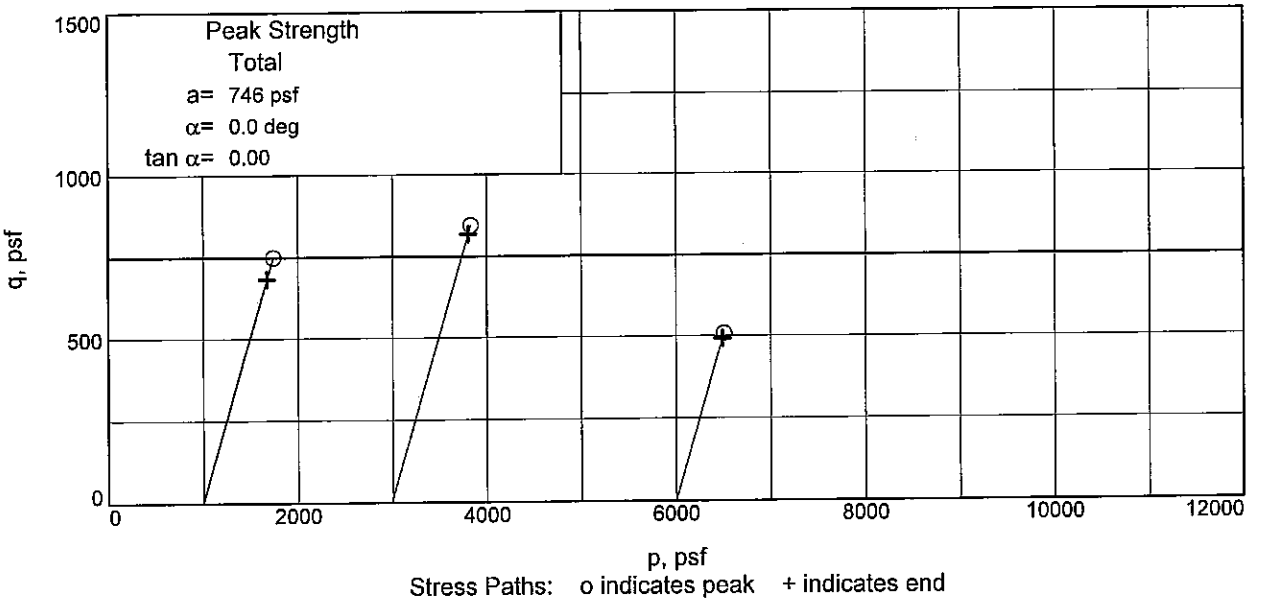
Tested By: DD/DW







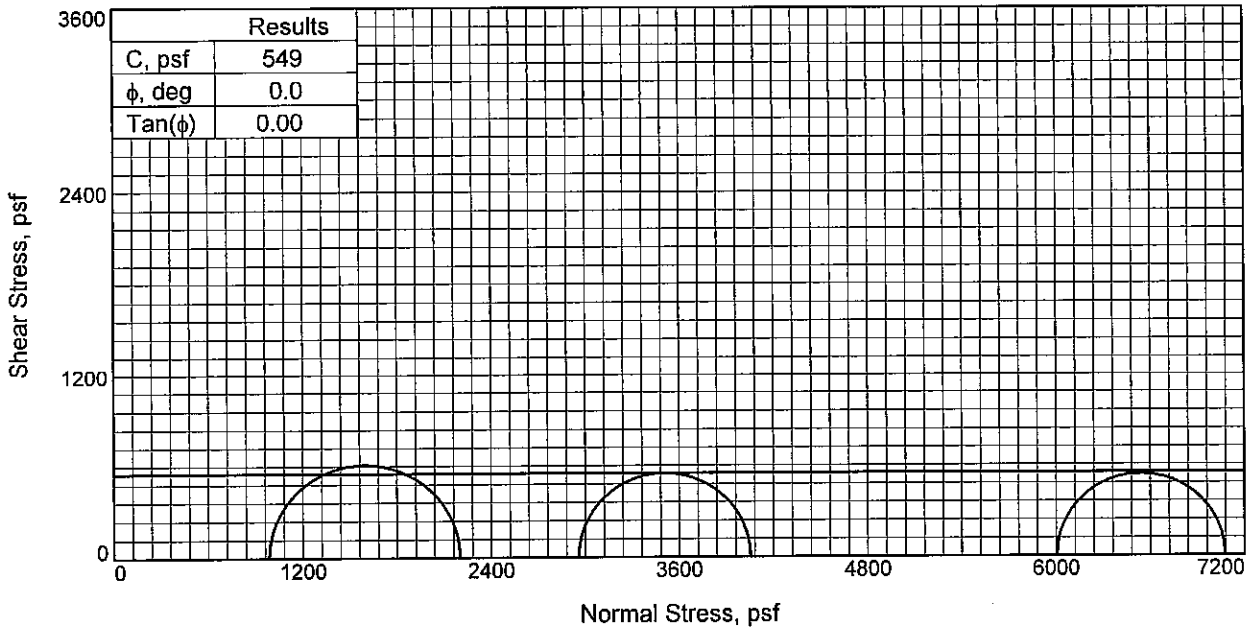


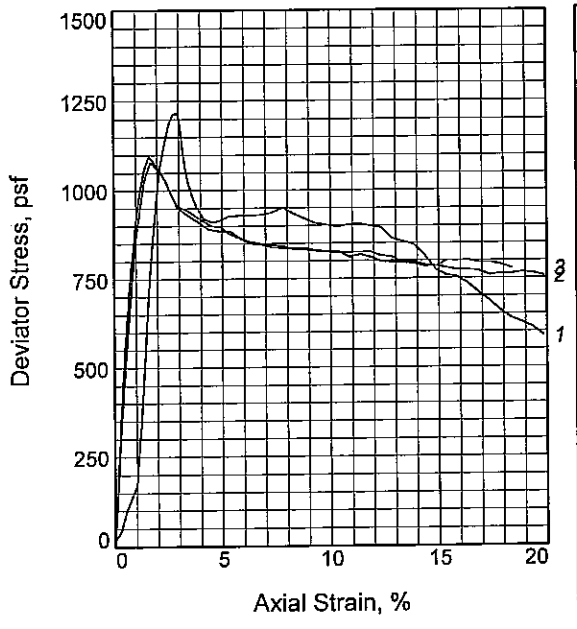


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-53UPT **Depth:** 17.7 **Sample Number:** 6C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/DW





Sample No.		1	2	3
Initial	Water Content, %	59.5	58.2	55.9
	Dry Density, pcf	65.5	66.8	67.8
	Saturation, %	101.6	102.8	100.9
	Void Ratio	1.5935	1.5402	1.5052
	Diameter, in.	1.395	1.394	1.398
	Height, in.	3.132	3.130	3.130
At Test	Water Content, %	59.5	58.2	55.9
	Dry Density, pcf	65.5	66.8	67.8
	Saturation, %	101.6	102.8	100.9
	Void Ratio	1.5935	1.5402	1.5052
	Diameter, in.	1.395	1.394	1.398
	Height, in.	3.132	3.130	3.130
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.85	20.55	41.70
Fail. Stress, psf		1215	1095	1072
Strain, %		2.9	1.6	1.8
Ult. Stress, psf		910	785	799
Strain, %				
σ_1 Failure, psf		2202	4054	7077
σ_3 Failure, psf		986	2959	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ LNS ML

LL= 71 **PL=** 26 **PI=** 45
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

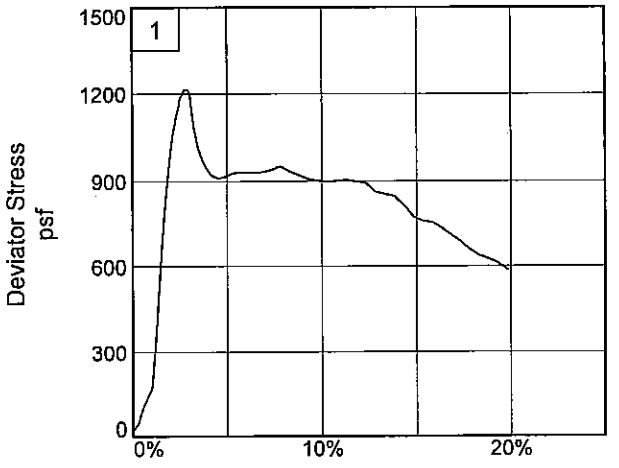
Client: U.S. Army Corps of Engineers

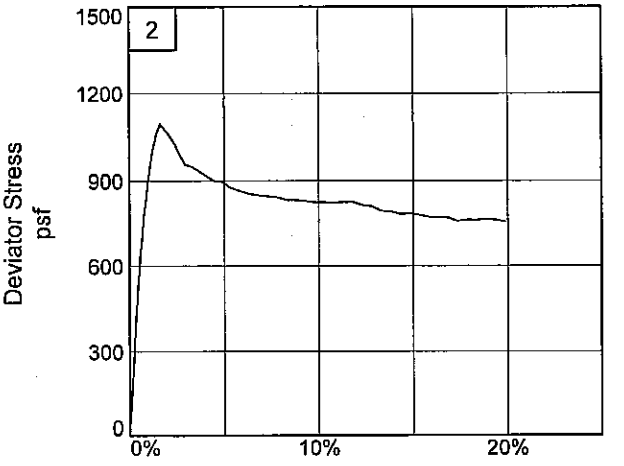
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-53UPT **Depth:** 21.7
Sample Number: 7C
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

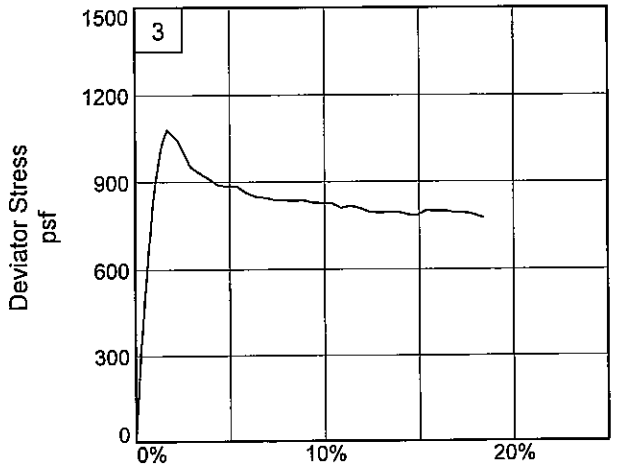
TRIAXIAL SHEAR TEST REPORT

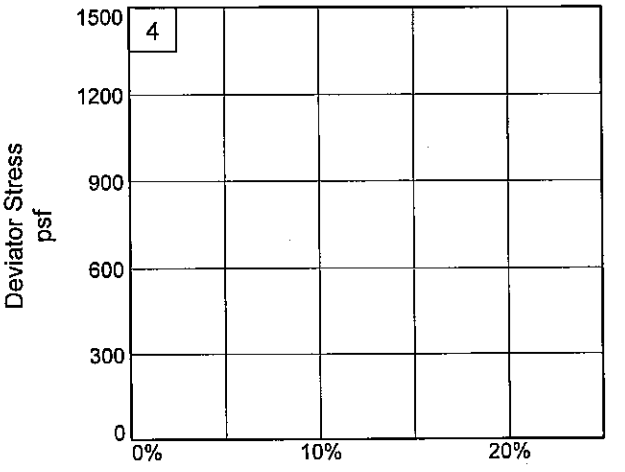
FFEBJV, LLC

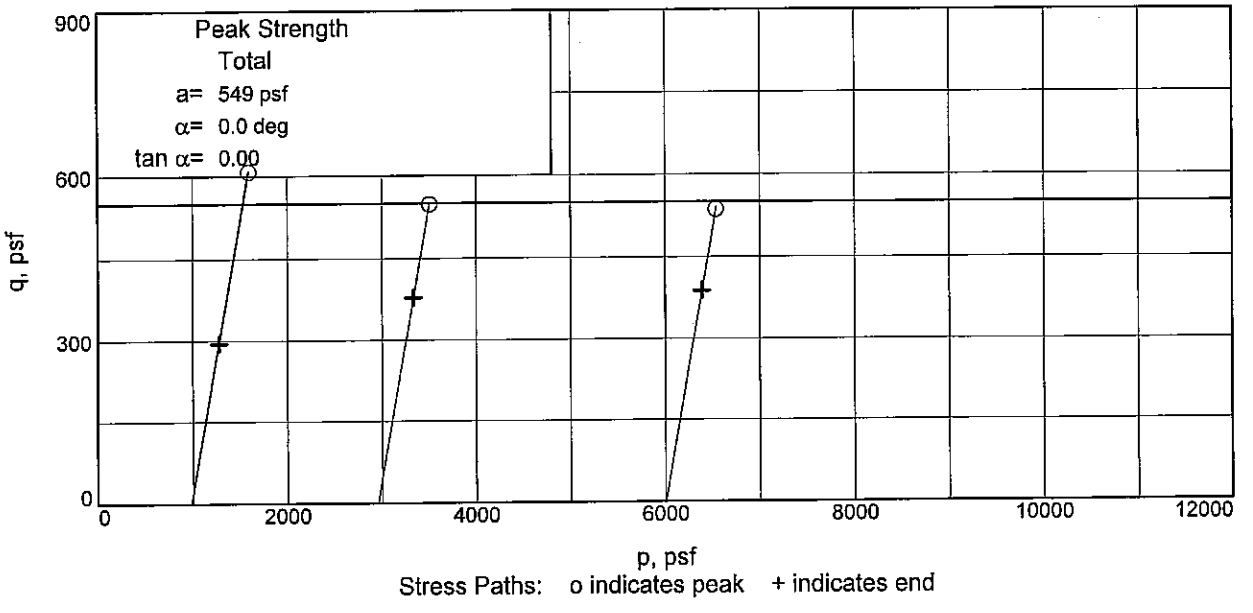
Tested By: DD/DW







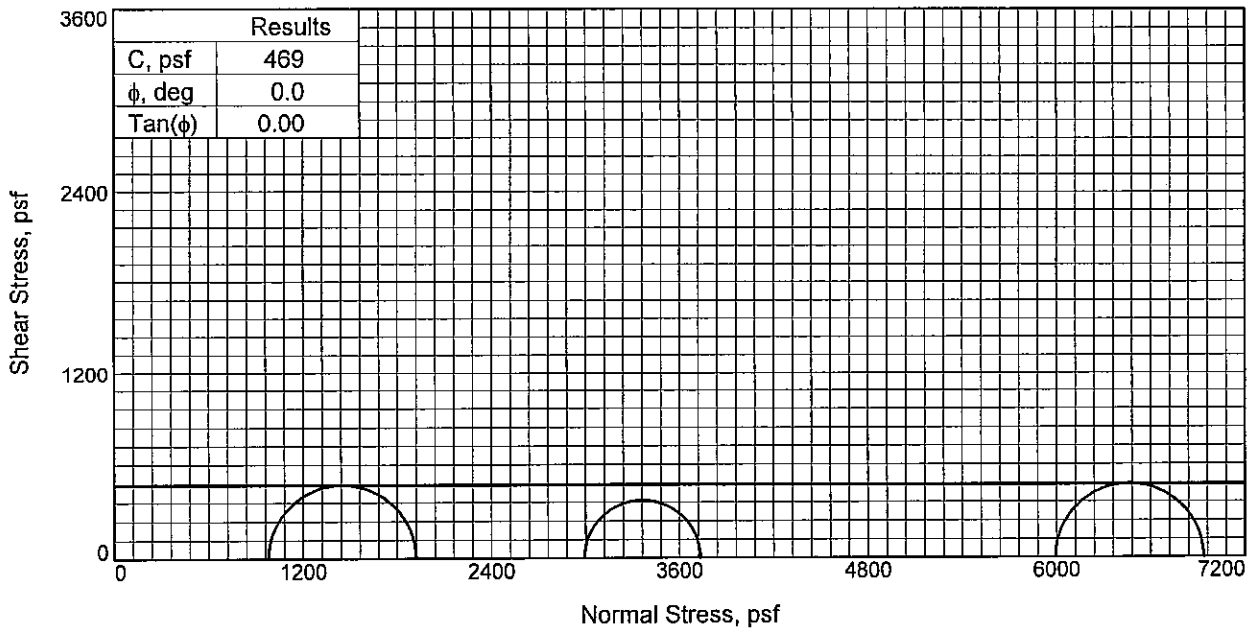


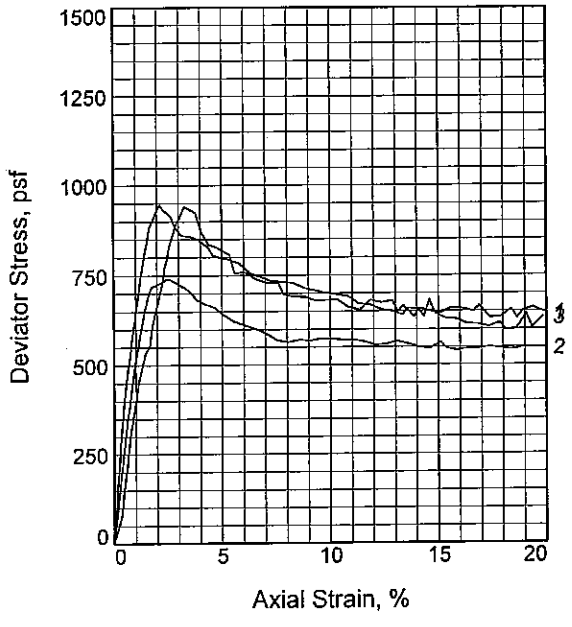


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-53UPT **Depth:** 21.7 **Sample Number:** 7C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/DW





Sample No.		1	2	3
Initial	Water Content, %	60.2	60.6	62.6
	Dry Density, pcf	65.8	65.4	64.8
	Saturation, %	103.5	103.3	105.1
	Void Ratio	1.5821	1.5953	1.6204
	Diameter, in.	1.384	1.388	1.382
	Height, in.	3.125	3.126	3.115
At Test	Water Content, %	60.2	60.6	62.6
	Dry Density, pcf	65.8	65.4	64.8
	Saturation, %	103.5	103.3	105.1
	Void Ratio	1.5821	1.5953	1.6204
	Diameter, in.	1.384	1.388	1.382
	Height, in.	3.125	3.126	3.115
Strain rate, in./min.		0.313	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.80	20.79	41.62
Fail. Stress, psf		940	740	945
Strain, %		3.3	2.4	2.1
Ult. Stress, psf		653	564	639
Strain, %				
σ_1 Failure, psf		1920	3733	6937
σ_3 Failure, psf		980	2993	5993

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH3 W/ LNS ML

LL= 69 **PL=** 24 **PI=** 45
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

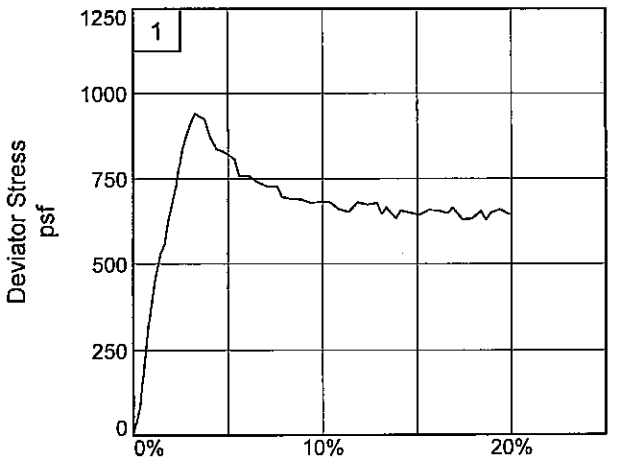
Client: U.S. Army Corps of Engineers

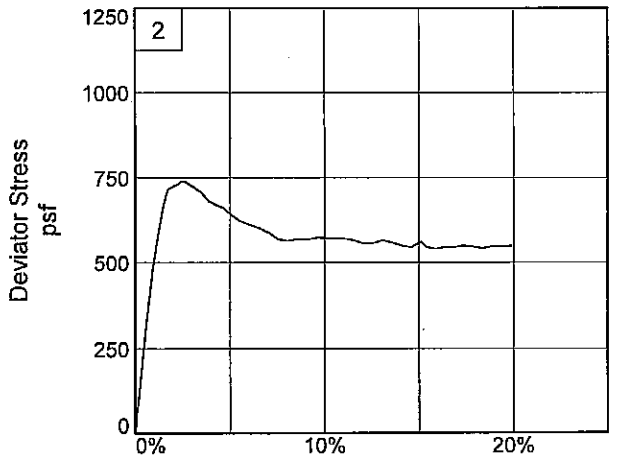
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-53UPT **Depth:** 25.7
Sample Number: 8C
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

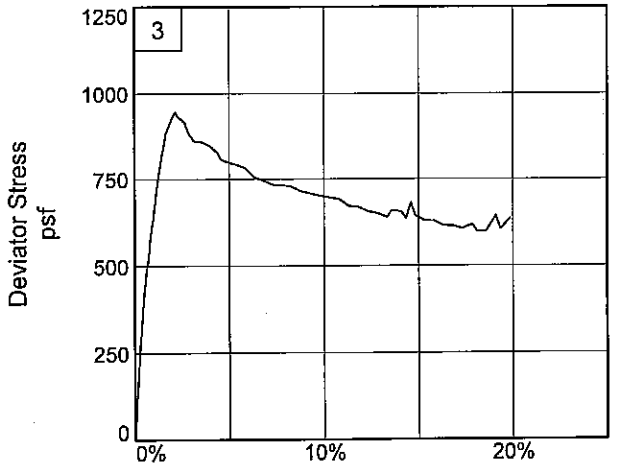
TRIAXIAL SHEAR TEST REPORT

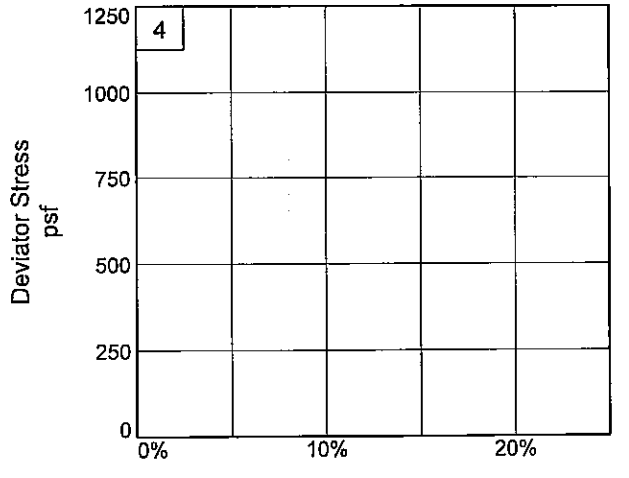
FFEBJV, LLC

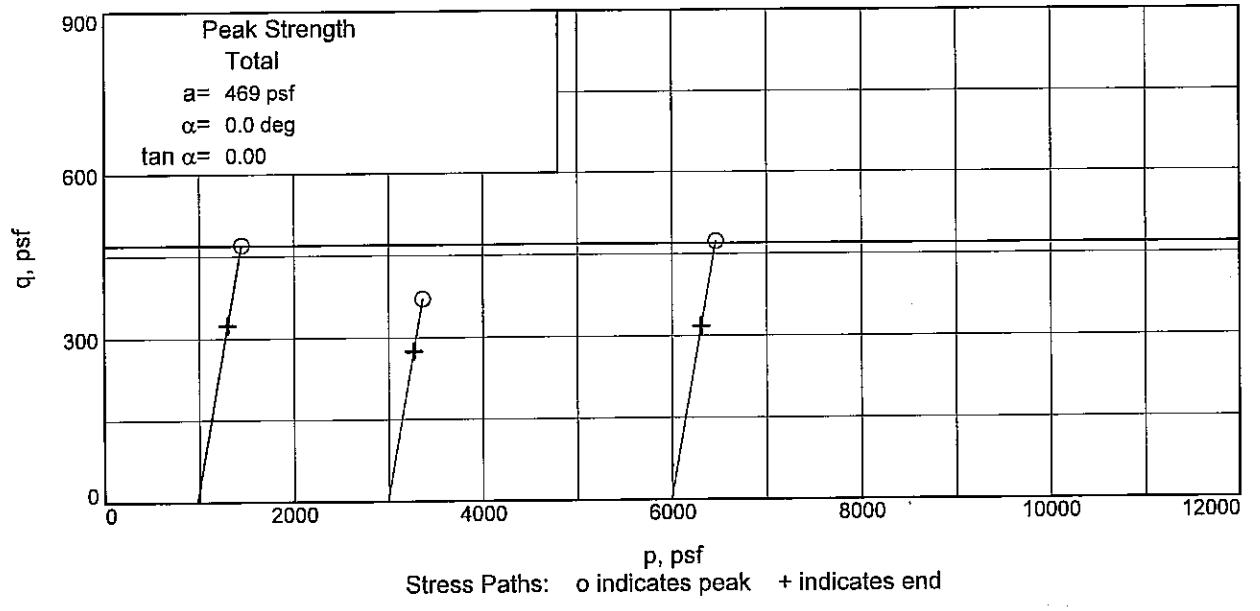
Tested By: DD/DW









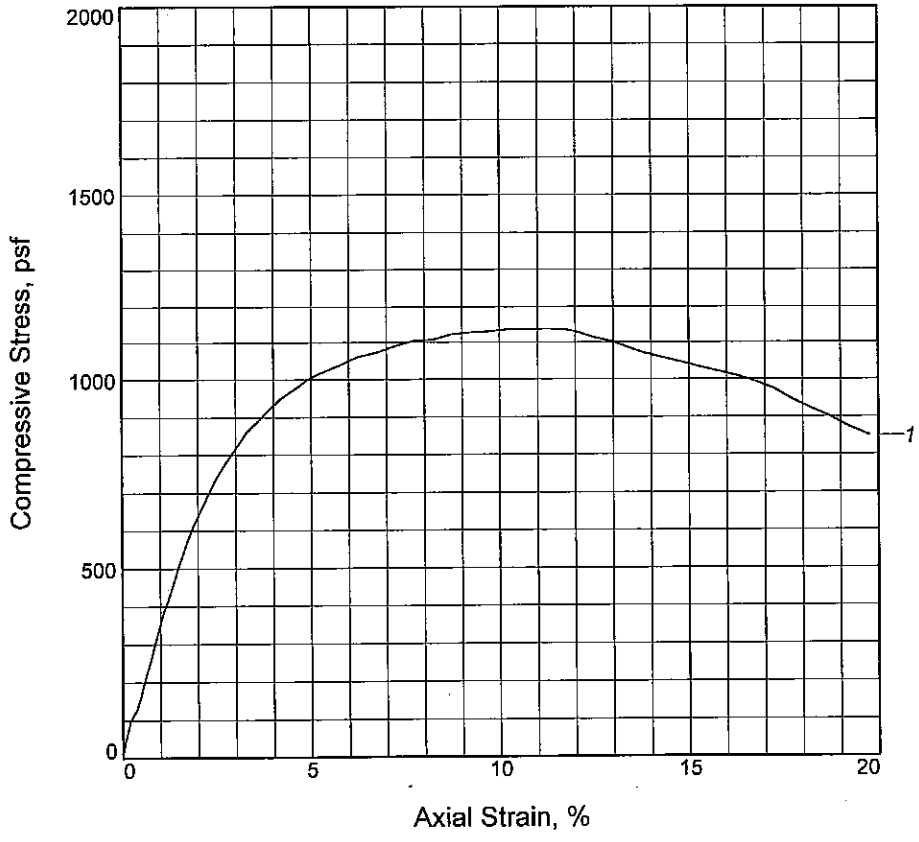


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-53UPT **Depth:** 25.7 **Sample Number:** 8C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/DW

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1136			
Undrained shear strength, psf	568			
Failure strain, %	11.2			
Strain rate, in./min.	0.031			
Water content, %	40.2			
Wet density, pcf	115.2			
Dry density, pcf	82.2			
Saturation, %	103.6			
Void ratio	1.0427			
Specimen diameter, in.	1.394			
Specimen height, in.	3.109			
Height/diameter ratio	2.23			

Description: M GR CL6 W/ LNS CH

LL = 43	**PL** = 20	**PI** = 23	**Assumed GS=** 2.69	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/15/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

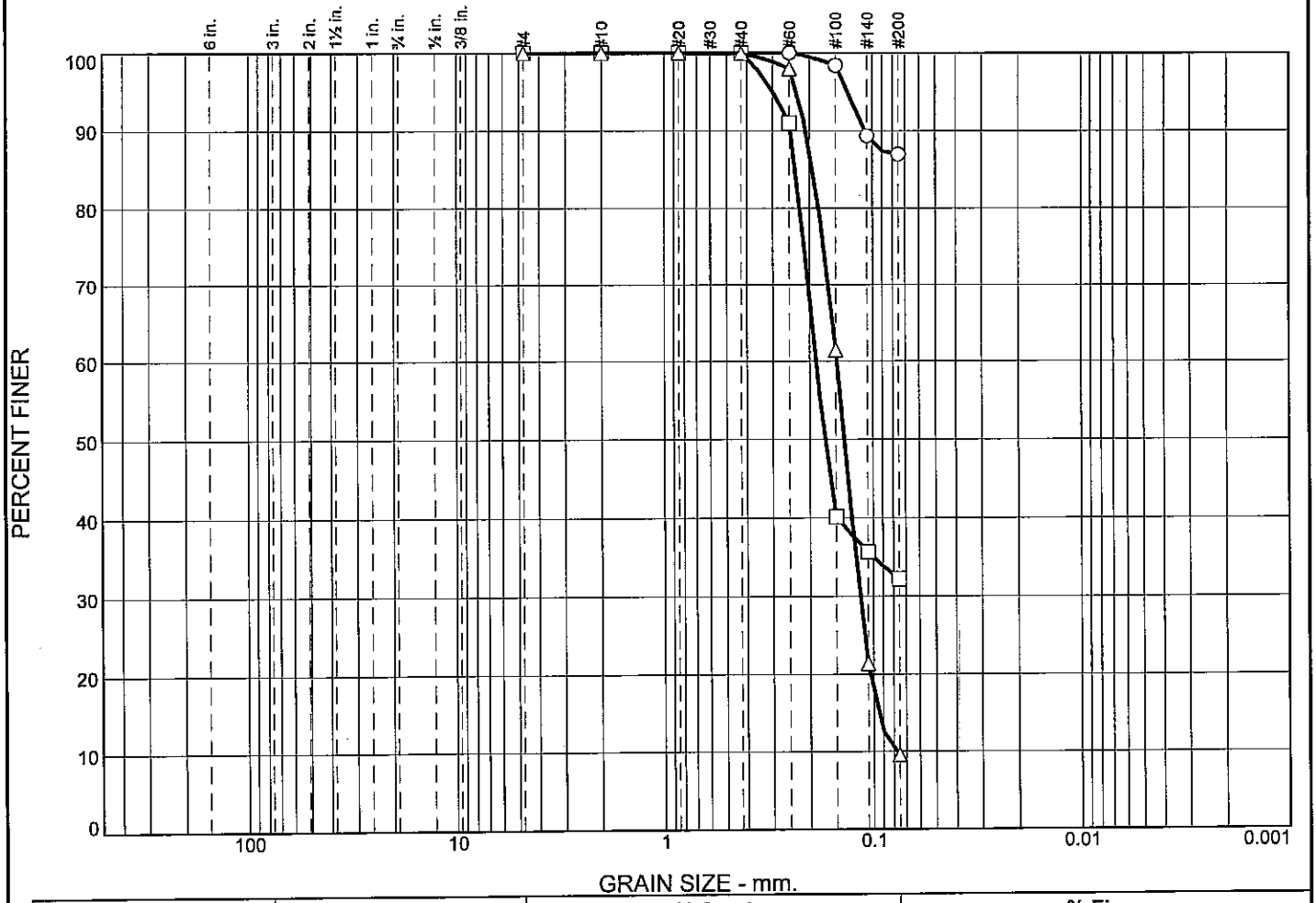
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-53UPT **Depth:** 28.8
Sample Number: 9B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: DW

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	13.1	86.9	
□	0.0	0.0	0.0	0.0	0.0	67.8	32.2	
△				0.0	0.1	90.4	9.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○										
□			0.2334	0.1865	0.1699					
△			0.1929	0.1483	0.1367	0.1160	0.0956	0.0783	1.16	1.89

Material Description	USCS	AASHTO
○ GR ML2 W/ LYS CH	ML2	
□ GR SM1 W/ LYS & LNS CH	SM1	
△ GR SP	SP	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Source of Sample:** WWHC-53UPT **Depth:** 36.8 **Sample Number:** 12B

□ **Source of Sample:** WWHC-53UPT **Depth:** 44.8 **Sample Number:** 16B

△ **Source of Sample:** WWHC-53UPT **Depth:** 52.0 **Sample Number:** 20

FFEBJV, LLC

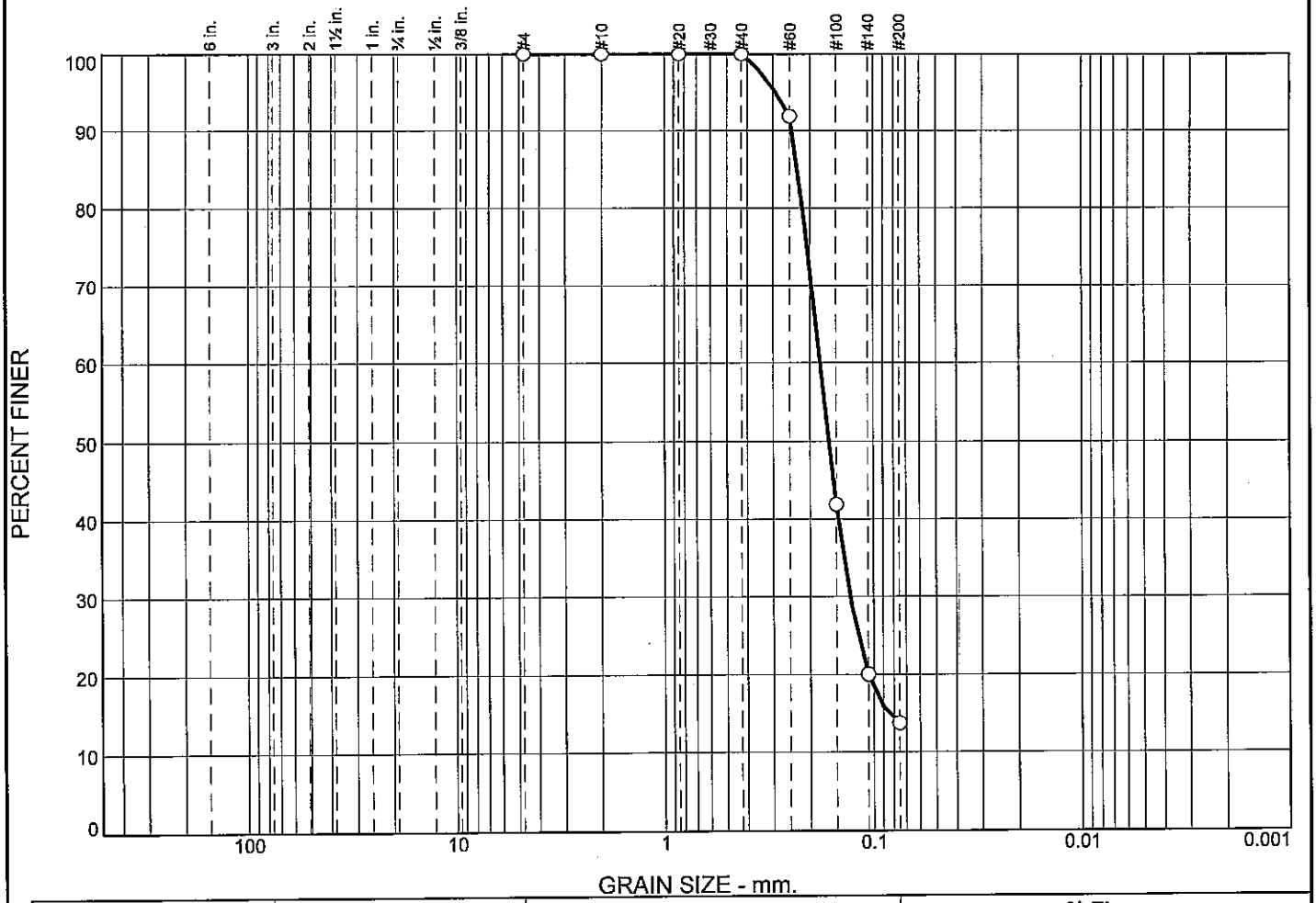
St Rose, LA

Remarks:

Figure

Tested By: ○ CSM/YSL □ CSM/TSL △ CSM/TSL

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	86.3	13.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2285	0.1789	0.1629	0.1291	0.0848			

Material Description	USCS	AASHTO
○ GR SM1-S	SM1-S	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Source of Sample:** WWHC-53UPT **Depth:** 62.0 **Sample Number:** 25

Remarks:

FFEBJV, LLC

St Rose, LA

Figure

Tested By: CSM/TSL

BOR. WWHC-53UPT
STA. LAT N29^48'49.35" LONG W90^06'47.52"
Offset 55' from C/L
11-12 APRIL 2007

GROUND EL. 5.20

0.0	0.8	20		ML		T		CS	O			
0.8	2.0	17		ML		T		CS				
2.0	4.0	18	4.0	ML		T				7		
4.0	4.8	39		CH	SIS	M	BR					
4.8	5.7	38	5.7	CH	SIS	M	BR					
5.7	8.0	35		CH		M	LGR	T	WD			
8.0	8.8	35	8.8	CH		M	T					
8.8	9.7	35		CL		SO	T					
9.7	10.6	32		CL		SO	GR	BR	CS	399	120	42 17 33 100
10.6	12.0	33	12.0	CL		SO	T					
12.0	12.8	38		CH		M	GR	T				
12.8	13.7	35	13.7	CH		M	GR	T				
13.7	14.6	34	14.6	CH	SIS	M	GR		SS WD			
14.6	16.0	36	16.0	CH		M	GR	T				
16.0	16.8	36		CL		M	GR		CS	S		
16.8	17.7	38		CL		M	GR		CS	S		
17.7	18.6	36		CL		M	GR		CS	S		
18.6	20.0	38	20.0	CL		M	GR		CS	S		
20.0	20.8	52		CH	SIS	M	GR					
20.8	21.7	43		CH	SIS	M	GR					
21.7	22.6	53		CH	SIS	M	GR					
22.6	24.0	59	24.0	CH	SIS	M	GR					
24.0	24.8	45		CH		M	GR					
24.8	25.7	42	25.7	CH		SO	GR					
25.7	26.6	48	26.6	CH	SIS	SO	GR					
26.6	28.0	38	28.0	ML		GR						
28.0	28.8	49	28.8	CH		M	GR					
28.8	29.7	46		CL		M	GR		CS	568	115	42 20 40 291
29.7	32.0	40	32.0	CH		M	GR		CS			
32.0	34.0	30		ML		GR				11		
34.0	36.0	31	36.0	ML		GR				10		
36.0	36.8	52	36.8	CH		M	GR		S			
36.8	38.0	32		ML		GR		CS				
38.0	40.0	31		ML		GR				13		
40.0	42.0	27		ML		GR				14		
42.0	44.0	32	44.0	ML		GR		CS		13		

44.0	44.8	23	SM	GR				
44.8	46.0	56	46.0SM	GR	CS			
46.0	48.0	21	SP	GR		13		
48.0	50.0	21	SP	GR		16		
50.0	52.0	24	SP	GR		21		
52.0	54.0	30	54.0SP	GR		24	.0783	
54.0	56.0	25	SM	GR		22		
56.0	58.0	25	SM	GR		20		
58.0	60.0	26	SM	GR		21		
60.0	62.0	25	SM	GR		16		
62.0	64.0	26	SM	GR		19		
64.0	66.0	26	SM	GR		25		
66.0	68.0	24	SM	GR		22		
68.0	70.0	24	70.0SM	GR		20		

999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 6.00/-0.80 Water Con: 36.00
LL,PL,PI : 81, 23, 59 Dry Dens : 84.00
Cohesion : 0.386 Saturat : 94.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 14.00/-8.80 Water Con: 41.00
LL,PL,PI : 56, 18, 38 Dry Dens : 80.00
Cohesion : 0.355 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 18.00/-12.8 Water Con: 36.00
LL,PL,PI : 27, 20, 7 Dry Dens : 86.00
Cohesion : 0.373 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 22.00/-16.8 Water Con: 58.00
LL,PL,PI : 71, 26, 45 Dry Dens : 67.00
Cohesion : 0.275 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 26.00/-20.8 Water Con: 61.00
LL,PL,PI : 69, 24, 45 Dry Dens : 65.00
Cohesion : 0.235 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-54UCL

Current Date: 7/5/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	ST BR & GR CH2 W/ RT	CH2		28												
1B	0.8	ST BR & GR CH4 W/ ARS ML, RT	CH4	2	34	83	111	87	UC	--	1383	2765	88	23	65	0.85	
2A	2.0	ST GR & T CH3 W/ ARS ML	CH3		36												
2B	2.8	GR & T ML2 W/ LYS CH, RT, O	ML2		28												
3A	4.0	M GR CH4 W/ ARS ML	CH4		42												
3B	4.8	M GR CH4 W/ ARS ML	CH4		45												
3C	5.7	M GR CH4 W/ ARS ML	CH4		43	77	110	96	UU	0	506		74	20	54	0.33	
3D	6.6	M GR CH4 W/ ARS ML	CH4		39												
4A	8.0	M GR CH4 W/ ARS ML	CH4		50												
4B	8.8	M GR CH3 W/ ARS ML, RT	CH3		42												
4C	9.7	ST GR CH3 W/ ARS ML, RT	CH3		35	85	115	95	UU	0	1256		69	23	46	0.70	
5A	12.0	ST GR CH4 W/ ARS ML	CH4		43												
5B	12.8	ST GR & T CH4 W/ ARS ML, CC	CH4		36	85	116	99	UU	0	1043		73	19	54	0.65	
5C	13.7	ST GR & T CH4 W/ ARS ML, CC	CH4		32												
6A	16.0	GR & T ML2 W/ ARS CH, CC	ML2		36												
6B	16.8	GR & T ML2 W/ ARS CH, CC	ML2		37												
6C	17.7	SO GR & T CL4 W/ CC	CL4	9	34	88	117	100	UC	--	402	803	39	20	19	0.23	
7A	20.0	SO GR CL4 W/ LNS ML	CL4		39												
7B	20.8	SO GR CL4 W/ LNS & LYS ML	CL4		39												
7C	21.7	SO GR CL4 W/ LNS ML	CL4		38	86	119	100	UU	0	370		36	23	13	0.21	
7D	22.6	SO GR CL4 W/ RT	CL4		36												
8A	24.0	SO GR CL4-S W/ LYS ML, CC	CL4-S		33												
8B	24.8	SO GR CL4-S W/ CC	CL4-S		33												
8C	25.7	SO GR CL4-S W/ RT	CL4-S		36	87	119	100	UU	0	373		30	22	8	0.14	
8D	26.6	SO GR CL6 W/ LNS ML	CL6		39												
9A	28.0	GR ML2	ML2		33												
9B	28.8	GR ML2	ML2		34												
9C	29.7	GR ML2 W/ ARS CH	ML2	9	32	92	121	100	UC	--	472	944	NP	N/P		0.20	
9D	30.6	GR ML2	ML2		36												
10A	32.0	GR ML2	ML2		33												
10B	32.8	GR ML2	ML2		34												
10C	33.7	M GR CL6 W/ LNS & LYS ML	CL6		44	77	111	100	UU	0	615		48	19	29	0.20	
10D	34.6	M GR CL6 W/ LNS & LYS ML	CL6		44												
11A	36.0	M GR CL6 W/ LNS ML	CL6		45												
11B	36.8	M GR CL6 W/ LNS & LYS ML	CL6		39												
11C	37.7	M GR CH3 W/ LNS & ARS ML	CH3		57	76	104	100	UU	0	555		73	23	50	0.28	
11D	38.6	M GR CH3 W/ LNS & ARS ML	CH3		50												

Remarks: _____
FFEBJV, LLC.

Checked by: RNE
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-54UCL

Current Date: 7/5/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
12A	40.0	M GR CH2 W/ LNS ML	CH2		44												
12B	40.8	M GR CH2 W/ LNS ML	CH2		41												
12C	41.7	M GR CH2 W/ LNS ML	CH2		49	74	110	100	UU	0	543		54	20	34	0.32	
13A	44.0	GR ML2 W/ LYS CH	ML2		38												
13B	44.8	GR ML2 W/ LYS CL	ML2		33												
13C	45.7	M GR CL4 W/ LNS ML	CL4	3	36	85	115	99	UC	–	625	1249	38	23	15	0.35	
13D	46.6	M GR CH3 W/ LNS ML	CH3		52												
14A	48.0	GR ML2 W/ ARS CH	ML2		33												
14B	48.8	M GR CL6 W/ LNS ML	CL6		39												
14C	49.7	M GR CL6 W/ LNS ML	CL6	5	40	78	109	92	UC	–	571	1142	42	19	23	0.32	
14D	50.6	M GR CL6 W/ LNS & ARS ML	CL6		42												
15A	52.0	M GR CH3 W/ LNS ML	CH3		38												
15B	52.8	M GR CH3 W/ LNS & LYS ML	CH3	3	42	77	110	97	UC	–	917	1834	61	21	40	0.40	
15C	53.7	GR ML2 W/ ARS CH	ML2		31												
15D	54.6	GR ML2 W/ ARS CH	ML2		35												
16A	56.0	M GR CL6 W/ LNS ML	CL6		39												
16B	56.8	M GR CL6 W/ LNS & LYS ML	CL6		34												
16C	57.7	SO GR CL6 W/ LYS CH	CL6	5	34	82	109	85	UC	–	423	847	43	20	23	0.35	
16D	58.6	SO GR CL6 W/ LYS CH	CL6		33												
17A	60.0	SO GR CL6	CL6		35												
17B	60.8	M GR CL6	CL6		39												
17C	61.7	M GR CH3 W/ LNS & ARS ML	CH3		50	73	109	100	UU	0	735		59	21	38	0.43	
18A	64.0	M GR CH3 W/ LNS & ARS ML	CH3		37												
18B	64.8	GR ML2	ML2		28												SV
18C	65.7	GR ML2	ML2		29												
19	66.0	GR SM1 W/ ARS CL	SM1		24												
20	68.0	GR SM1 W/ ARS CL	SM1		29												
21	70.0	GR ML2 W/ ARS CL	ML2		34												
22A	72.0	M GR CH2 W/ LYS SM	CH2		35												
22B	72.8	GR SP W/ LYS & ARS CH	SP		31												SV
22C	73.7	GR SM1	SM1		26												
23	76.0	GR SM1	SM1		28												
24	78.0	GR SM1	SM1		40												
25	80.0	GR SM1 W/ ARS CL	SM1		27												
26	82.0	GR SM1	SM1		31												
27	84.0	GR SM1	SM1		28												SV
28	86.0	GR SM1	SM1		30												

Remarks: _____
FFEBJV, LLC.

Checked by: RNE
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-54UCL

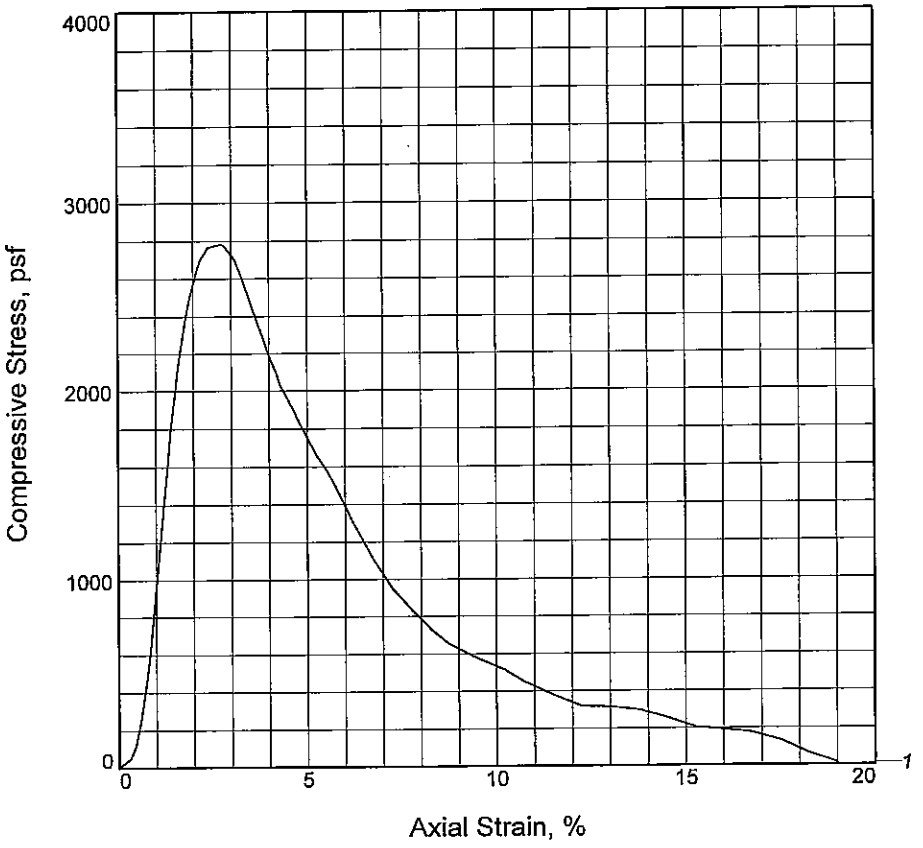
Current Date: 7/5/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
29	88.0	GR SM1	SM1		27												
30	90.0	GR SM1	SM1		28												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2765			
Undrained shear strength, psf	1383			
Failure strain, %	2.4			
Strain rate, in./min.	0.031			
Water content, %	33.9			
Wet density, pcf	110.7			
Dry density, pcf	82.7			
Saturation, %	87.4			
Void ratio	1.0538			
Specimen diameter, in.	1.343			
Specimen height, in.	3.014			
Height/diameter ratio	2.24			

Description: ST BR & GR CH4 W/ ARS ML, RT

LL = 88	**PL** = 23	**PI** = 65	**Assumed GS=** 2.72	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

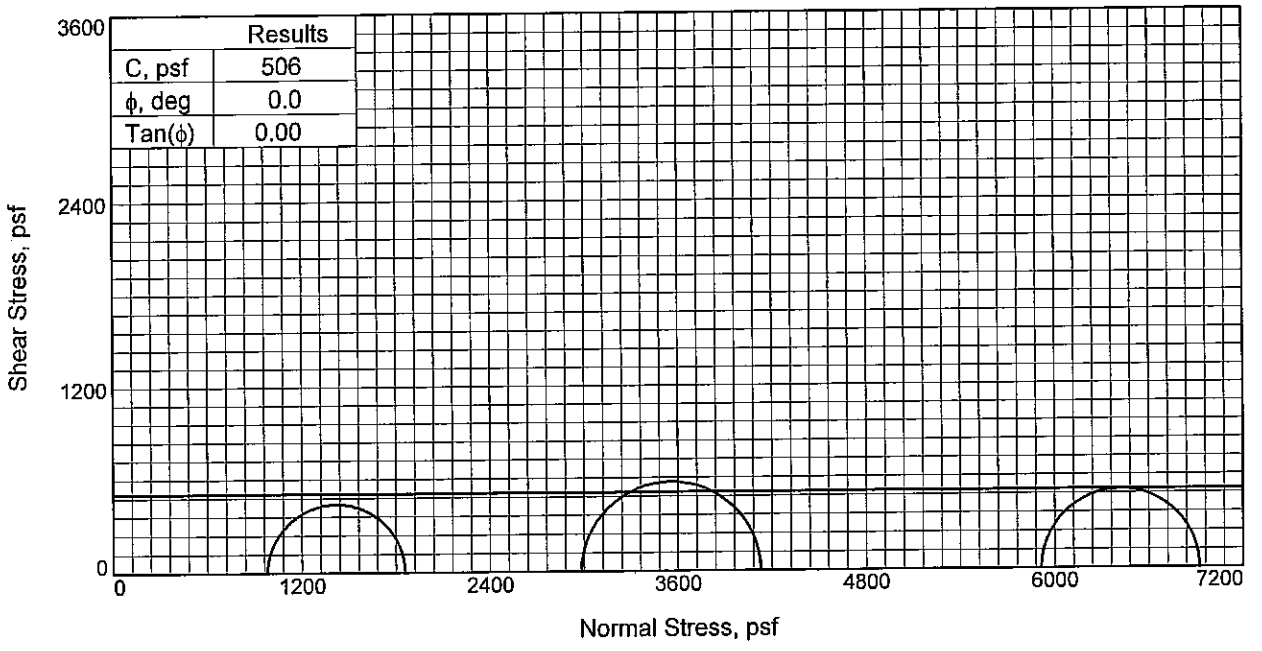
Client: U.S. Army Corps of Engineers

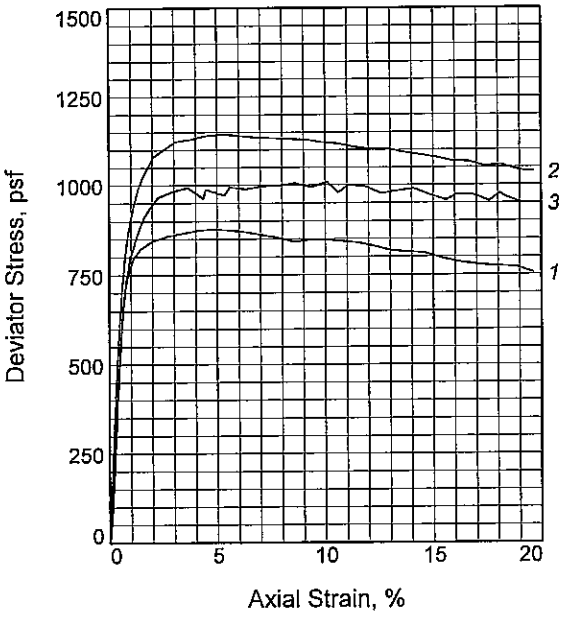
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 0.8
Sample Number: 1B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** SH





Sample No.		1	2	3
Initial	Water Content, %	44.6	46.4	38.9
	Dry Density, pcf	76.0	72.7	81.6
	Saturation, %	98.0	94.2	97.6
	Void Ratio	1.2417	1.3442	1.0884
	Diameter, in.	1.416	1.427	1.421
	Height, in.	3.154	3.128	3.129
At Test	Water Content, %	44.6	46.4	38.9
	Dry Density, pcf	76.0	72.7	81.6
	Saturation, %	98.0	94.2	97.6
	Void Ratio	1.2417	1.3442	1.0884
	Diameter, in.	1.416	1.427	1.421
	Height, in.	3.154	3.128	3.129
Strain rate, in./min.		0.032	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.80	20.71	41.07
Fail. Stress, psf		877	1144	1009
Strain, %		4.8	5.3	10.1
Ult. Stress, psf		841	1078	971
Strain, %				
σ_1 Failure, psf		1857	4127	6923
σ_3 Failure, psf		980	2982	5914

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: M GR CH4 W/ ARS ML

LL= 74 **PL=** 20 **PI=** 54
Assumed Specific Gravity= 2.73
Remarks:

Figure _____

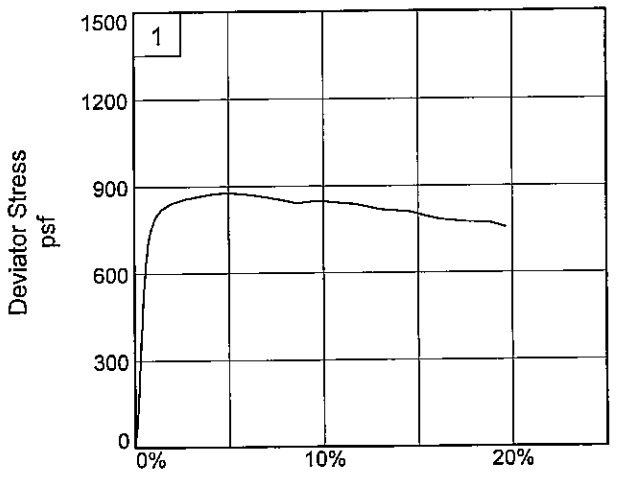
Client: U.S. Army Corps of Engineers

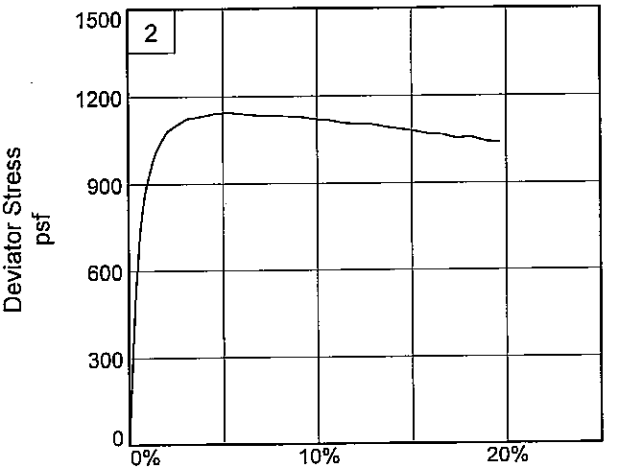
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 5.7
Sample Number: 3C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

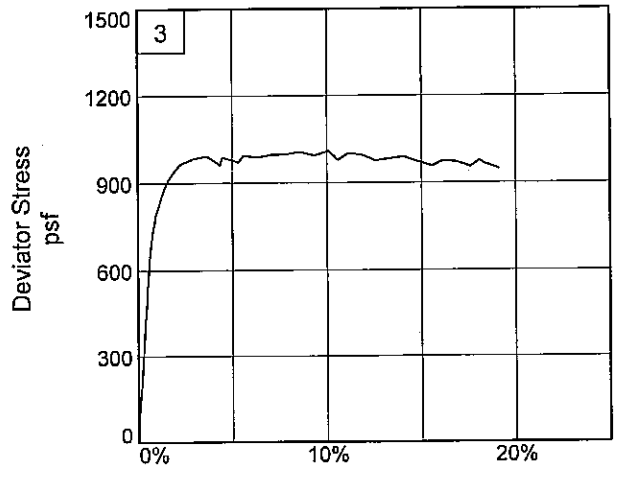
TRIAXIAL SHEAR TEST REPORT

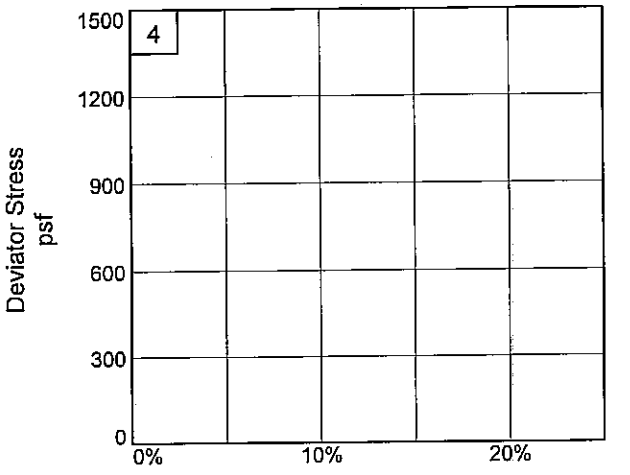
FFEBJV, LLC

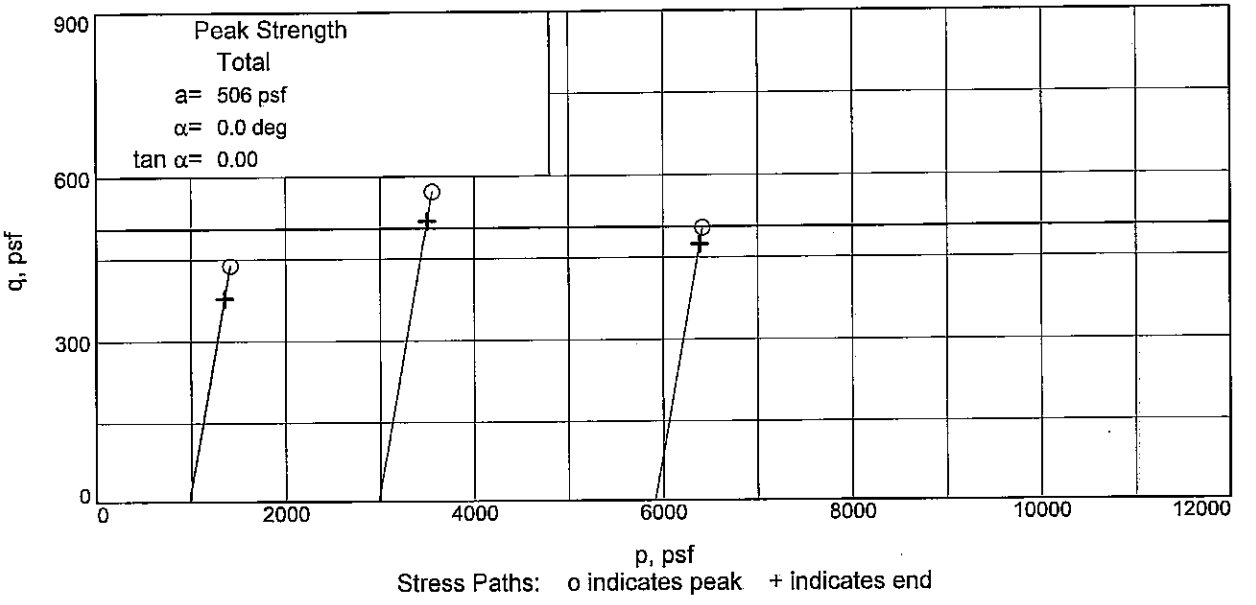
Tested By: DW/JP **Checked By:** SH







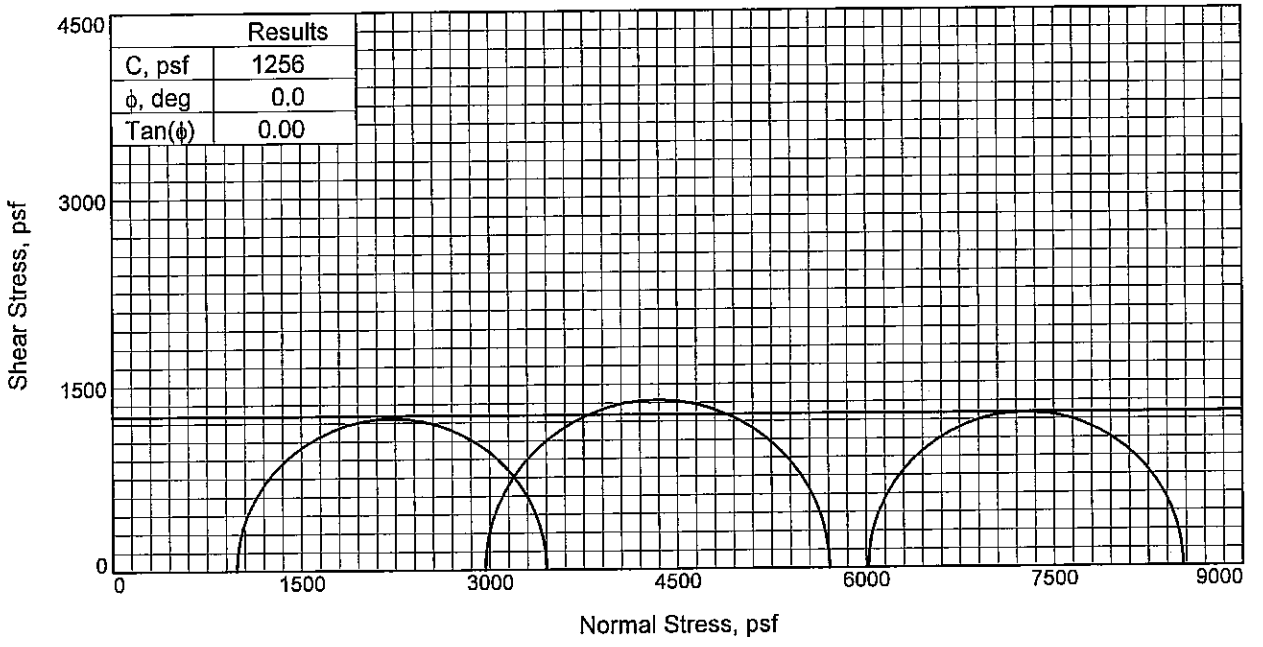


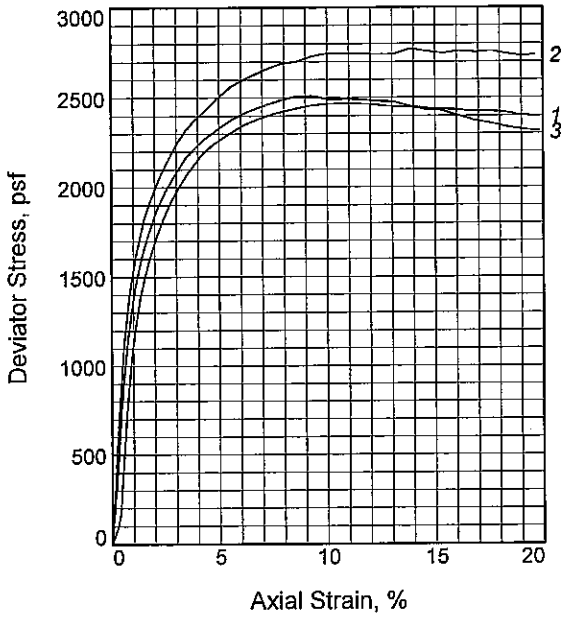


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-54UCL **Depth:** 5.7 **Sample Number:** 3C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP **Checked By:** SH





Sample No.		1	2	3
Initial	Water Content, %	35.2	34.0	35.3
	Dry Density, pcf	84.7	86.4	85.0
	Saturation, %	95.0	95.2	95.8
	Void Ratio	1.0115	0.9736	1.0054
	Diameter, in.	1.425	1.430	1.433
	Height, in.	3.131	3.114	3.129
At Test	Water Content, %	35.2	34.0	35.3
	Dry Density, pcf	84.7	86.4	85.0
	Saturation, %	95.0	95.2	95.8
	Void Ratio	1.0115	0.9736	1.0054
	Diameter, in.	1.425	1.430	1.433
	Height, in.	3.131	3.114	3.129
Strain rate, in./min.		0.313	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.84	20.58	41.79
Fail. Stress, psf		2468	2746	2508
Strain, %		10.6	10.1	8.6
Ult. Stress, psf		2436	2742	2428
Strain, %				
σ_1 Failure, psf		3453	5710	8526
σ_3 Failure, psf		985	2964	6018

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: ST GR CH3 W/ ARS ML, RT

LL= 69 **PL=** 23 **PI=** 46
Assumed Specific Gravity= 2.73
Remarks:

Figure _____

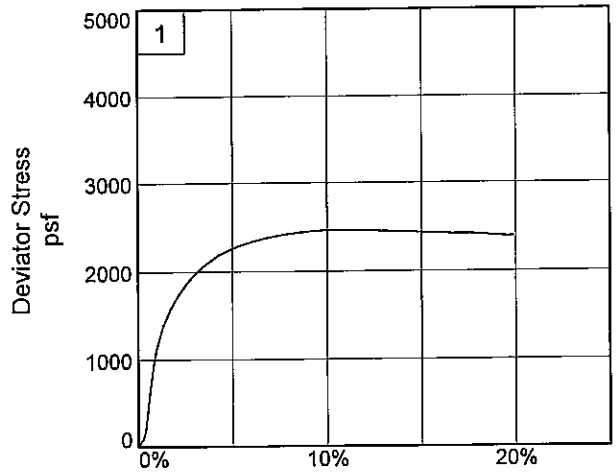
Client: U.S. Army Corps of Engineers

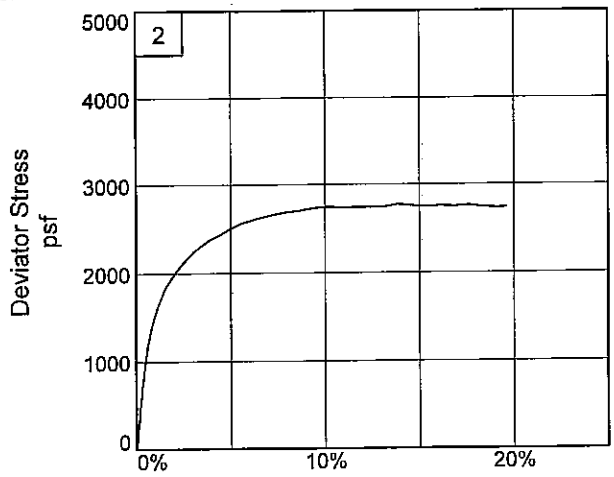
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 9.7
Sample Number: 4C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

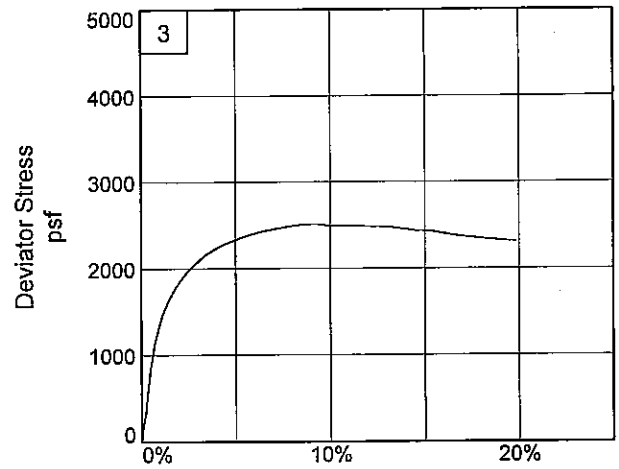
TRIAXIAL SHEAR TEST REPORT

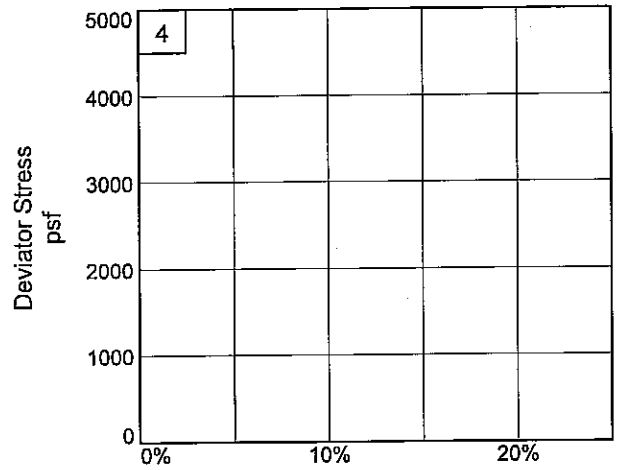
FFEBJV, LLC

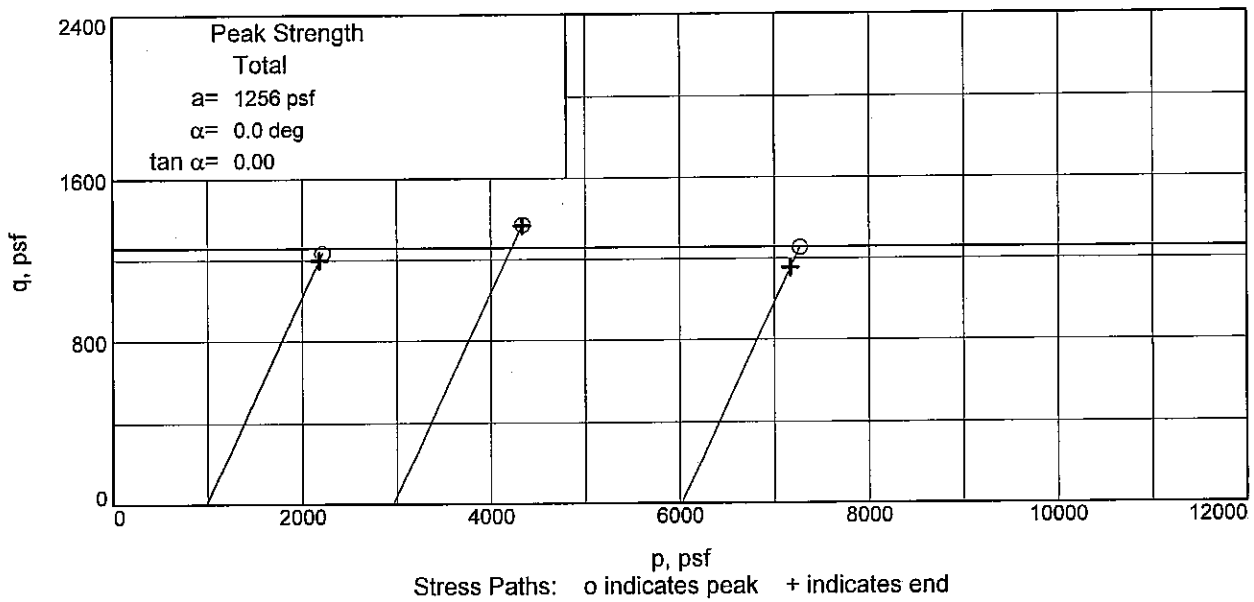
Tested By: DW **Checked By:** SH







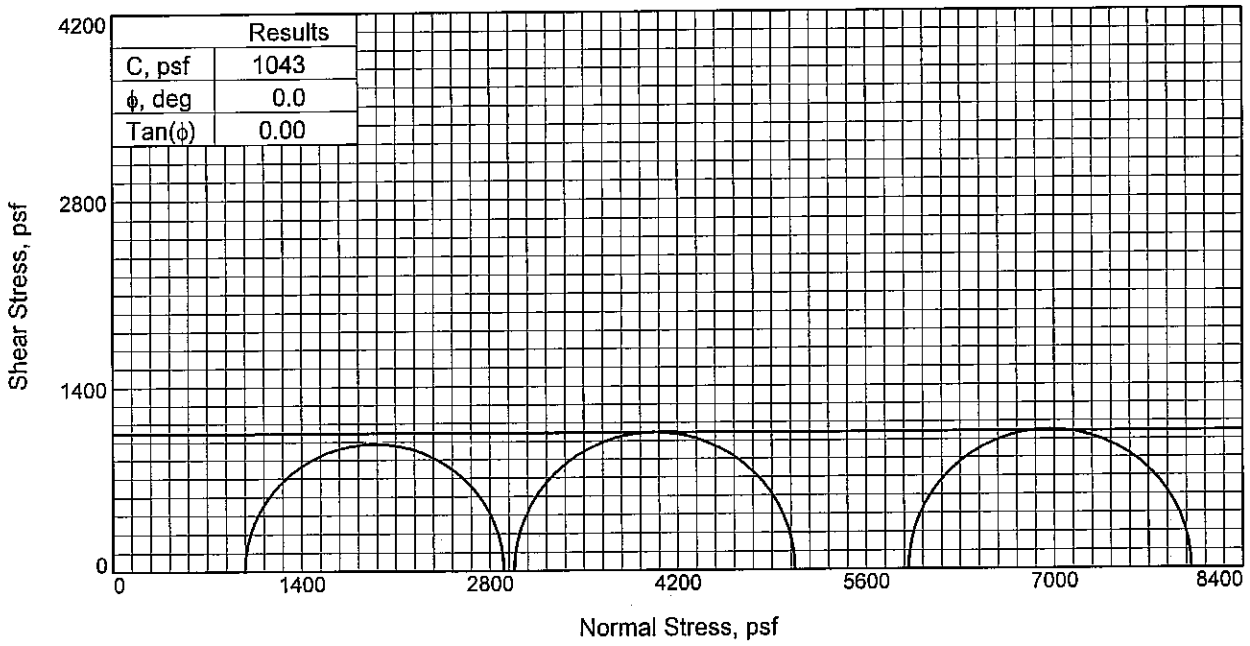


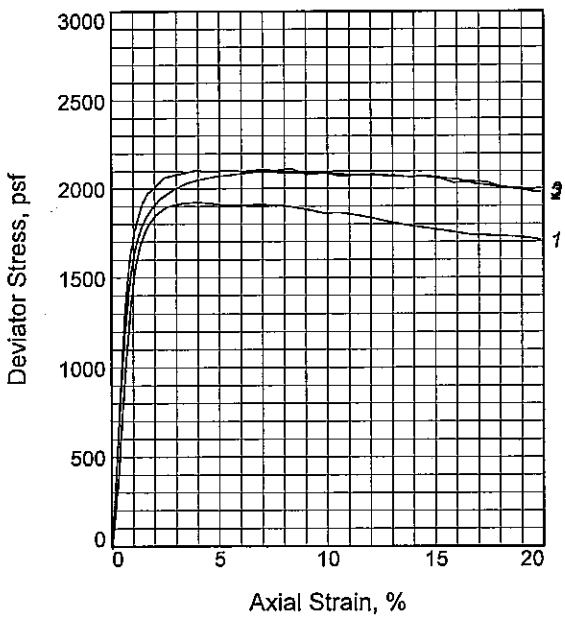


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-54UCL **Depth:** 9.7 **Sample Number:** 4C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW **Checked By:** SH





Sample No.		1	2	3
Initial	Water Content, %	37.6	35.7	35.8
	Dry Density, pcf	84.0	85.5	85.7
	Saturation, %	99.7	98.0	99.0
	Void Ratio	1.0284	0.9942	0.9875
	Diameter, in.	1.418	1.427	1.419
	Height, in.	3.127	3.132	3.134
At Test	Water Content, %	37.6	35.7	35.8
	Dry Density, pcf	84.0	85.5	85.7
	Saturation, %	99.7	98.0	99.0
	Void Ratio	1.0284	0.9942	0.9875
	Diameter, in.	1.418	1.427	1.419
	Height, in.	3.127	3.132	3.134
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.80	20.70	41.07
Fail. Stress, psf		1924	2090	2103
Strain, %		3.9	7.8	3.9
Ult. Stress, psf		1906	2065	2096
Strain, %				
σ_1 Failure, psf		2903	5071	8017
σ_3 Failure, psf		979	2981	5914

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: ST GR & T CH4 W/ ARS ML, CC

LL= 73 **PL=** 19 **PI=** 54
Assumed Specific Gravity= 2.73
Remarks:

Figure _____

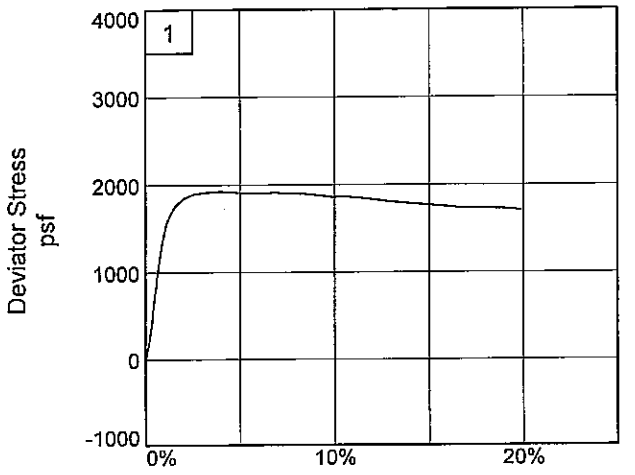
Client: U.S. Army Corps of Engineers

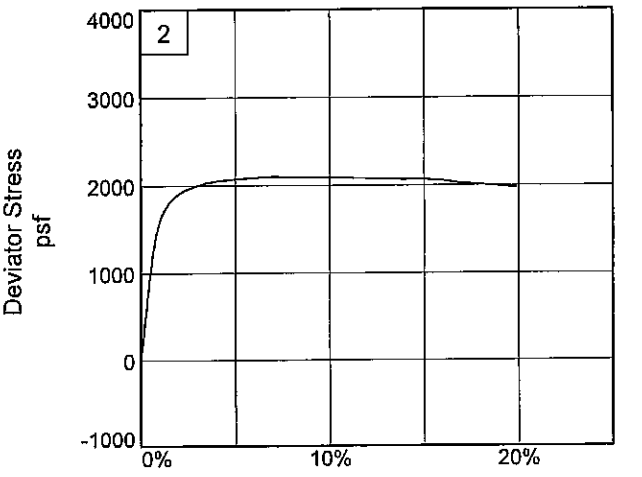
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 12.8
Sample Number: 5B
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

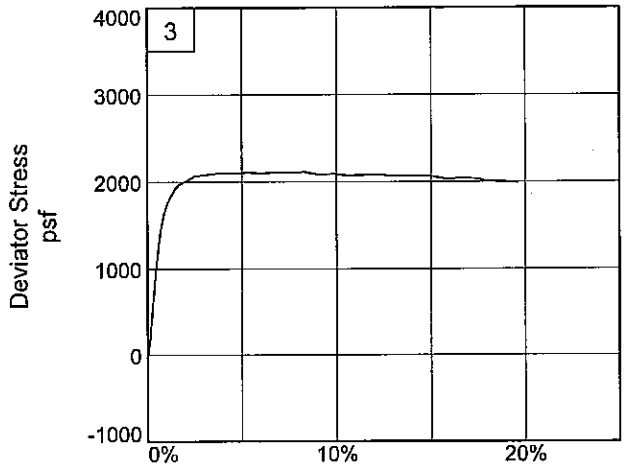
TRIAXIAL SHEAR TEST REPORT

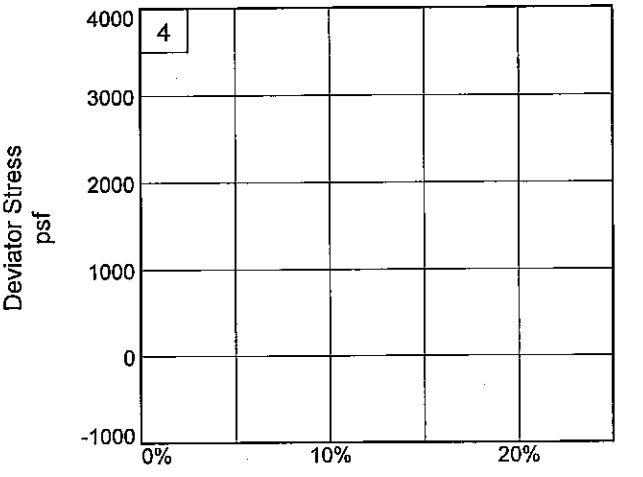
FFEBJV, LLC

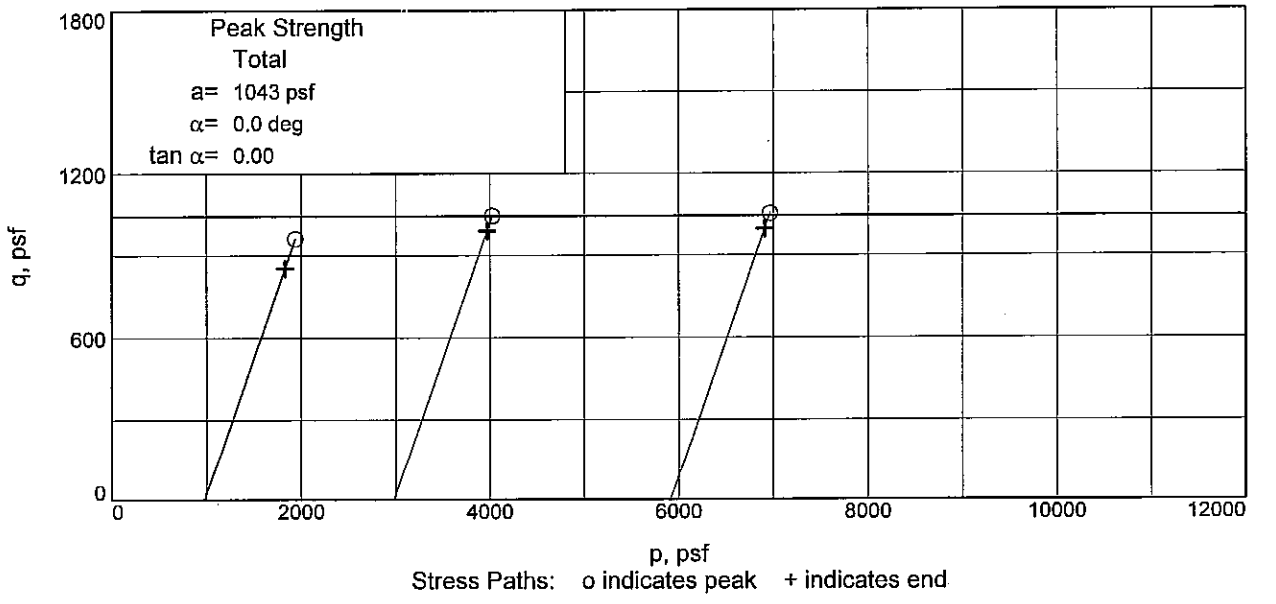
Tested By: DW/JP **Checked By:** SH









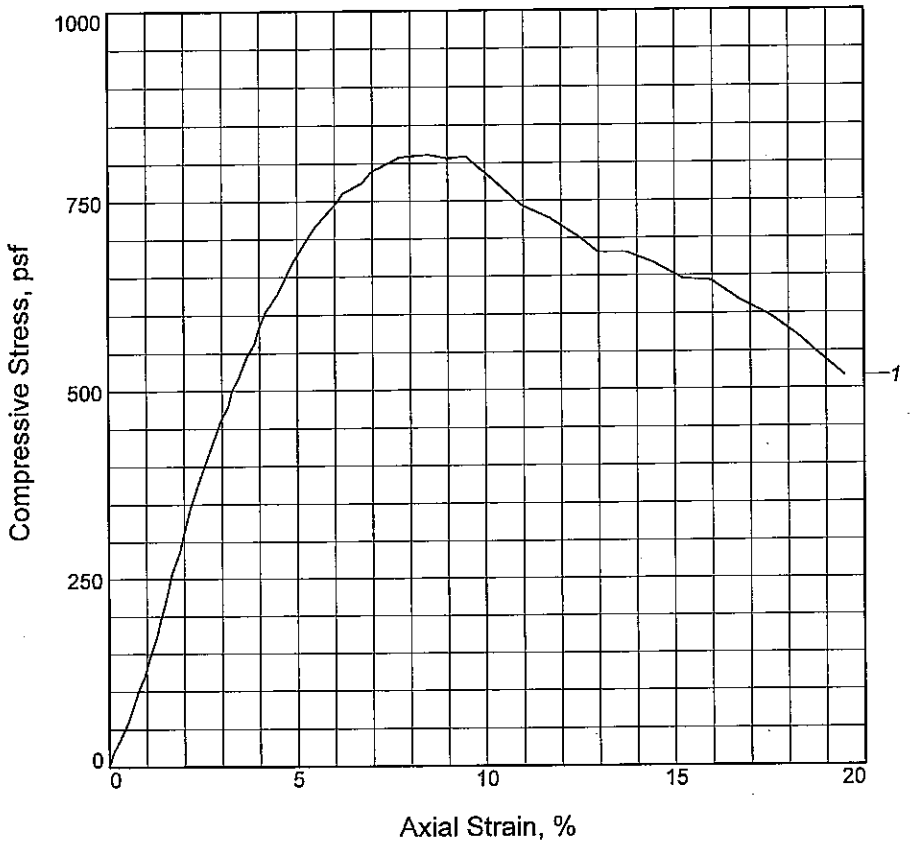


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-54UCL **Depth:** 12.8 **Sample Number:** 5B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP **Checked By:** SH

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	808			
Undrained shear strength, psf	404			
Failure strain, %	9.5			
Strain rate, in./min.	0.030			
Water content, %	33.9			
Wet density, pcf	117.2			
Dry density, pcf	87.5			
Saturation, %	99.8			
Void ratio	0.9110			
Specimen diameter, in.	1.358			
Specimen height, in.	2.984			
Height/diameter ratio	2.20			

Description: SO GR & T CL4 W/ CC

LL = 39	**PL =** 20	**PI =** 19	**Assumed GS=** 2.68	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

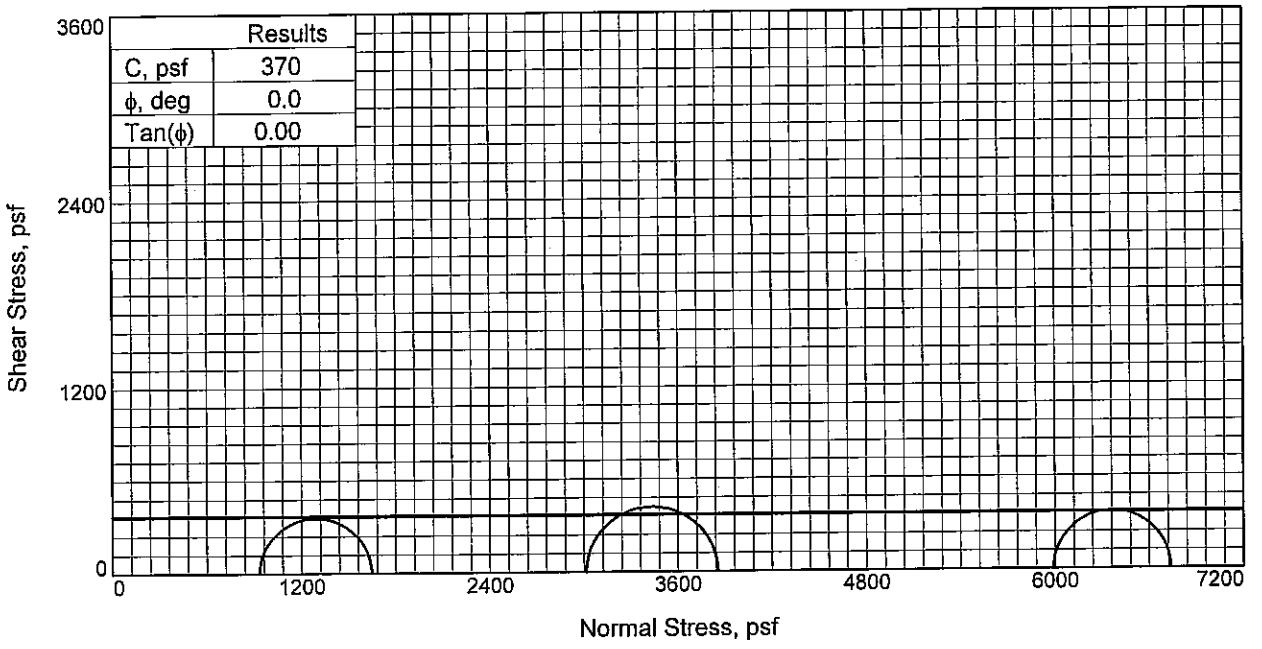
Client: U.S. Army Corps of Engineers

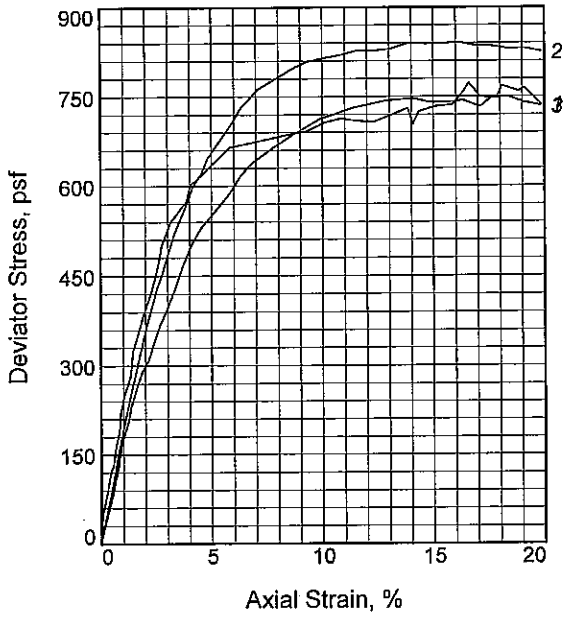
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 17.7
Sample Number: 6C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** SH





Sample No.		1	2	3
Initial	Water Content, %	37.6	37.7	38.1
	Dry Density, pcf	86.4	86.4	86.5
	Saturation, %	107.5	107.9	109.4
	Void Ratio	0.9373	0.9365	0.9347
	Diameter, in.	1.392	1.394	1.378
	Height, in.	3.093	3.091	3.077
At Test	Water Content, %	37.6	37.7	38.2
	Dry Density, pcf	86.4	86.4	86.5
	Saturation, %	107.5	107.9	109.5
	Void Ratio	0.9373	0.9365	0.9347
	Diameter, in.	1.392	1.394	1.378
	Height, in.	3.093	3.091	3.077
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.47	20.93	41.59
Fail. Stress, psf		714	839	747
Strain, %		10.8	15.4	14.1
Ult. Stress, psf		709	839	740
Strain, %				
σ_1 Failure, psf		1646	3853	6736
σ_3 Failure, psf		932	3014	5989

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: SO GR CL4 W/ LNS ML

LL= 36 **PL=** 23 **PI=** 13
Assumed Specific Gravity= 2.68
Remarks:

Figure _____

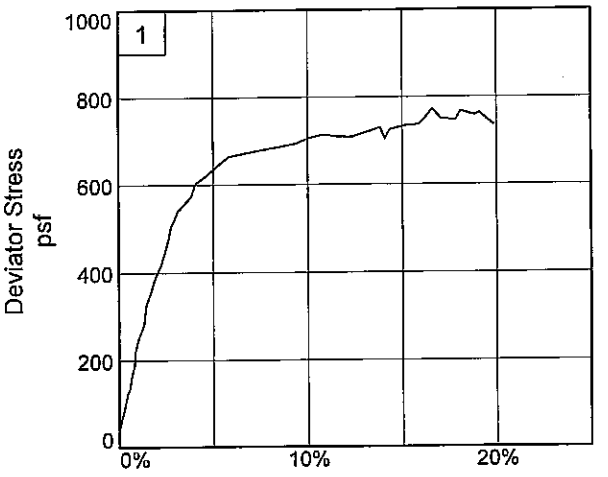
Client: U.S. Army Corps of Engineers

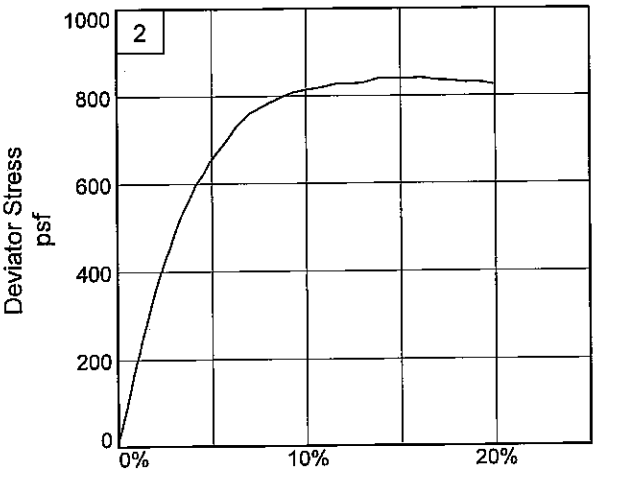
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 21.7
Sample Number: 7C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

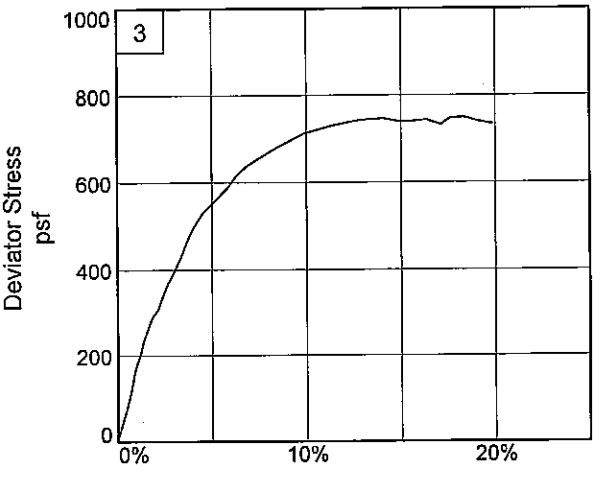
TRIAXIAL SHEAR TEST REPORT

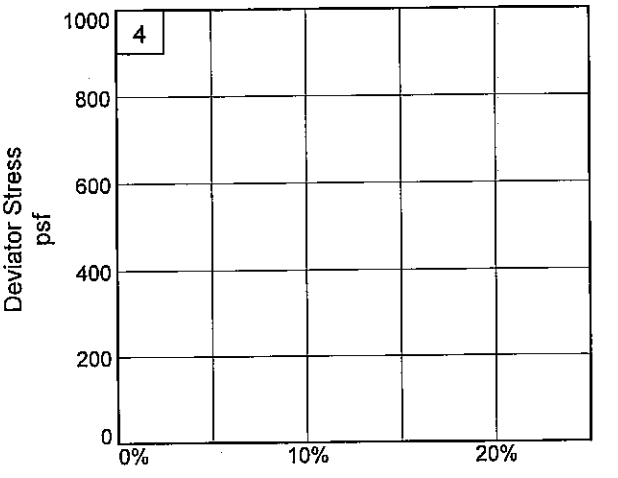
FFEBJV, LLC

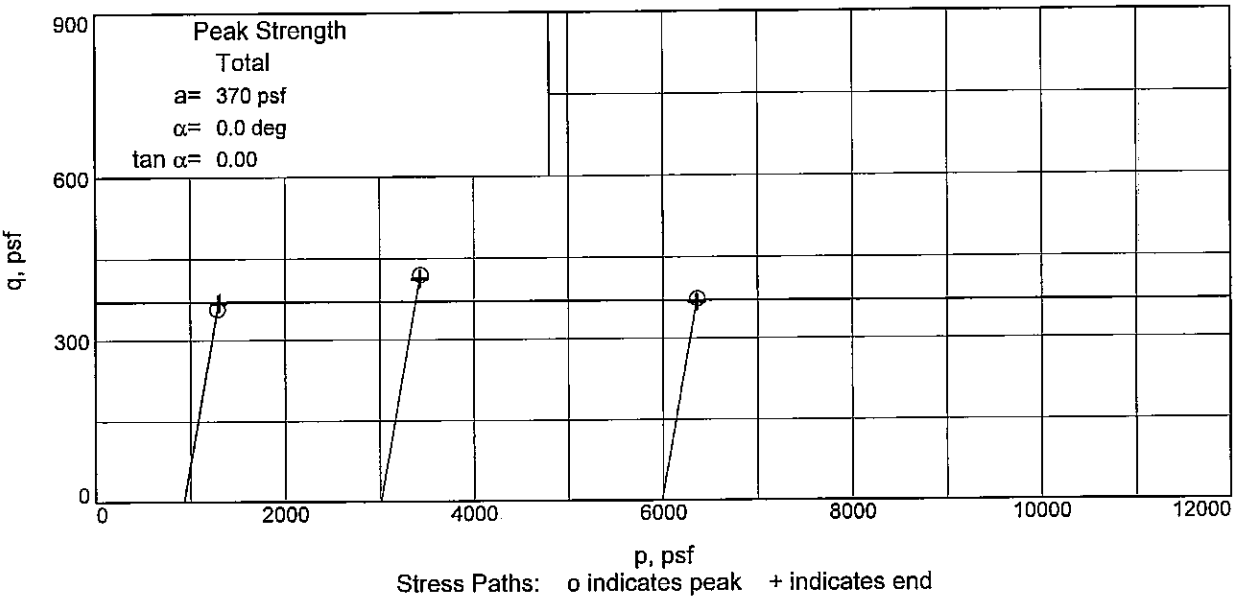
Tested By: DW/JP **Checked By:** SH









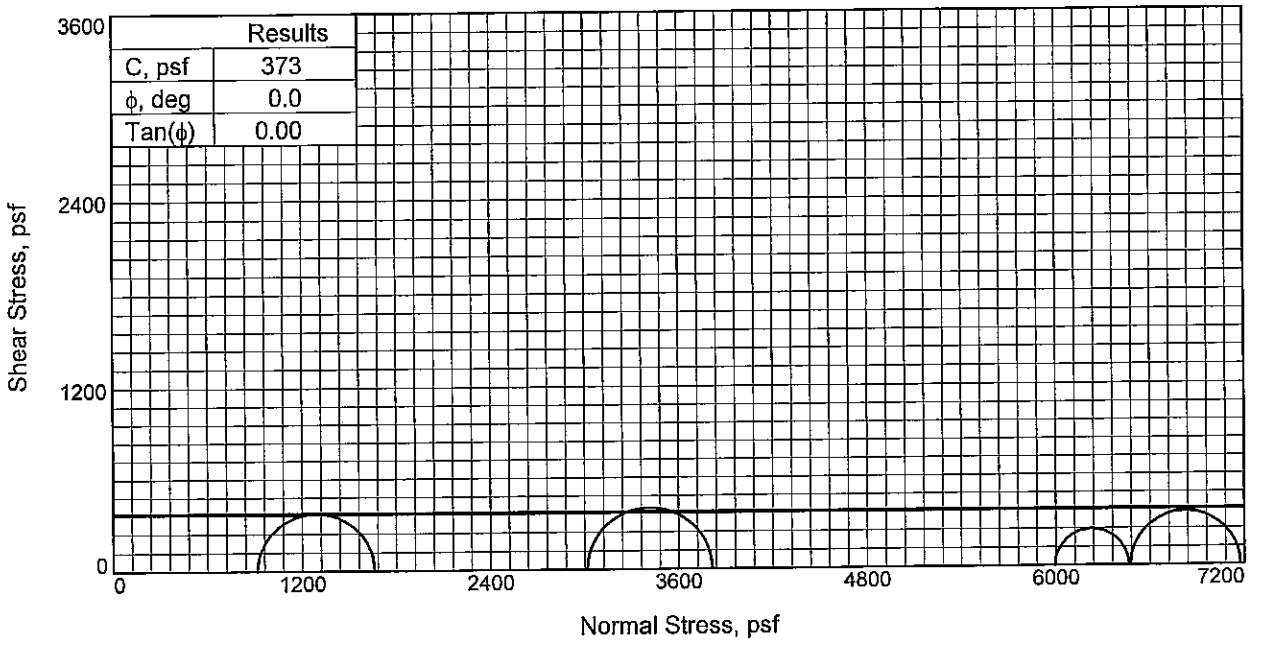


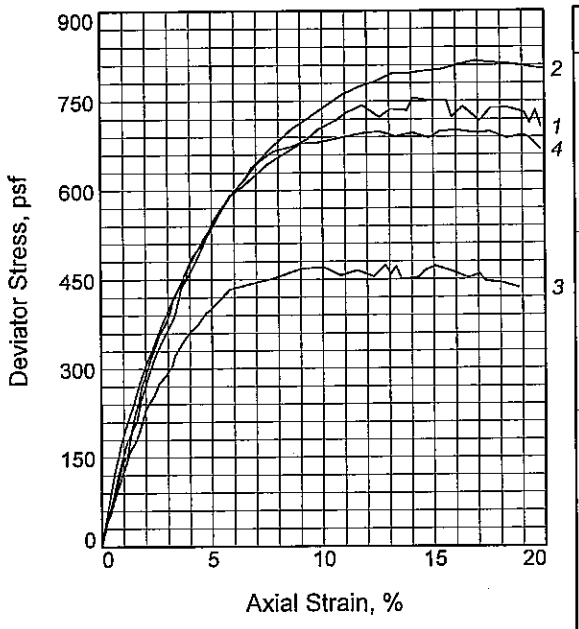
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-54UCL **Depth:** 21.7 **Sample Number:** 7C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP **Checked By:** SH





Sample No.		1	2	3	4
Initial	Water Content, %	36.1	36.5	37.7	35.3
	Dry Density, pcf	89.8	86.4	86.2	87.4
	Saturation, %	112.1	104.4	107.3	103.7
	Void Ratio	0.8630	0.9372	0.9406	0.9133
	Diameter, in.	1.347	1.376	1.373	1.406
	Height, in.	3.155	3.090	3.087	3.129
At Test	Water Content, %	36.1	36.2	37.7	35.3
	Dry Density, pcf	89.8	86.4	86.2	87.4
	Saturation, %	112.1	103.4	107.3	103.7
	Void Ratio	0.8630	0.9372	0.9406	0.9133
	Diameter, in.	1.347	1.376	1.373	1.406
	Height, in.	3.155	3.090	3.087	3.129
Strain rate, in./min.		0.032	0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.36	20.95	41.63	44.97
Fail. Stress, psf		743	796	470	699
Strain, %		11.8	13.1	10.0	12.6
Ult. Stress, psf		724	803	456	688
Strain, %					
σ_1 Failure, psf		1659	3812	6464	7175
σ_3 Failure, psf		916	3017	5994	6476

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: SO GR CL4-S W/ RT

LL= 30 **PL=** 22 **PI=** 8
Assumed Specific Gravity= 2.68
Remarks:

Figure _____

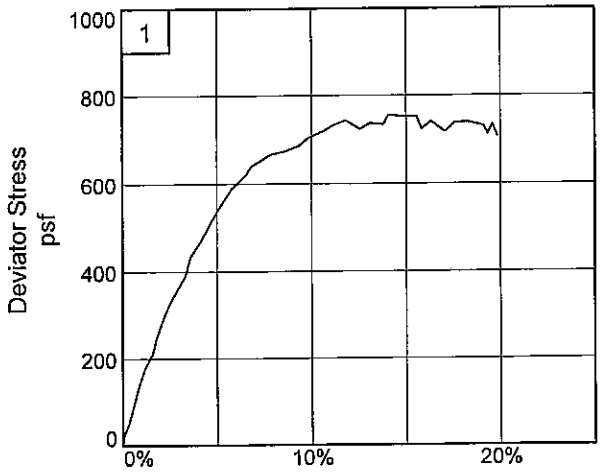
Client: U.S. Army Corps of Engineers

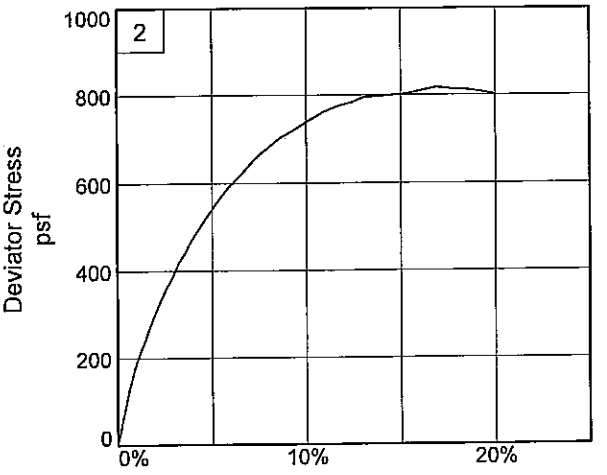
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 25.7
Sample Number: 8C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

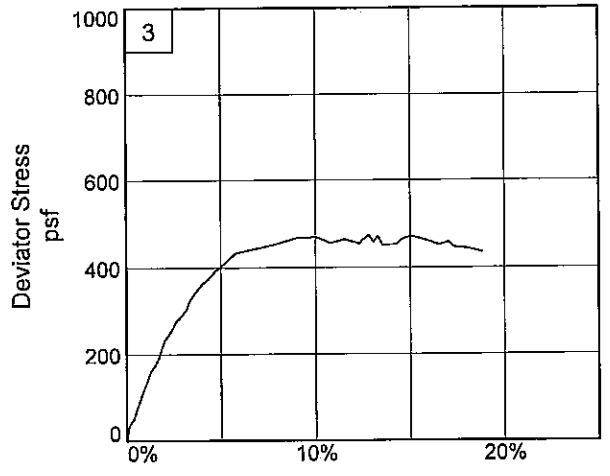
TRIAXIAL SHEAR TEST REPORT

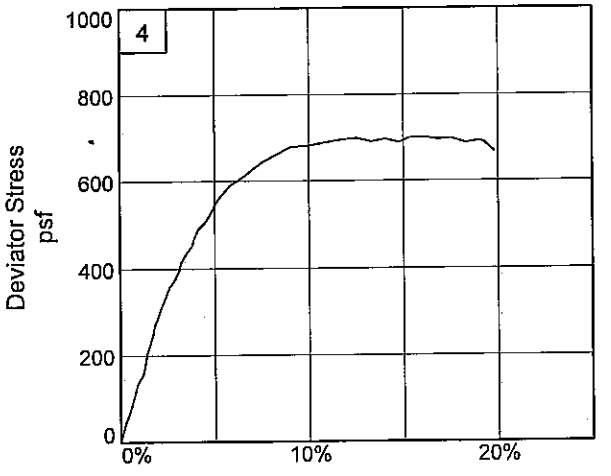
FFEBJV, LLC

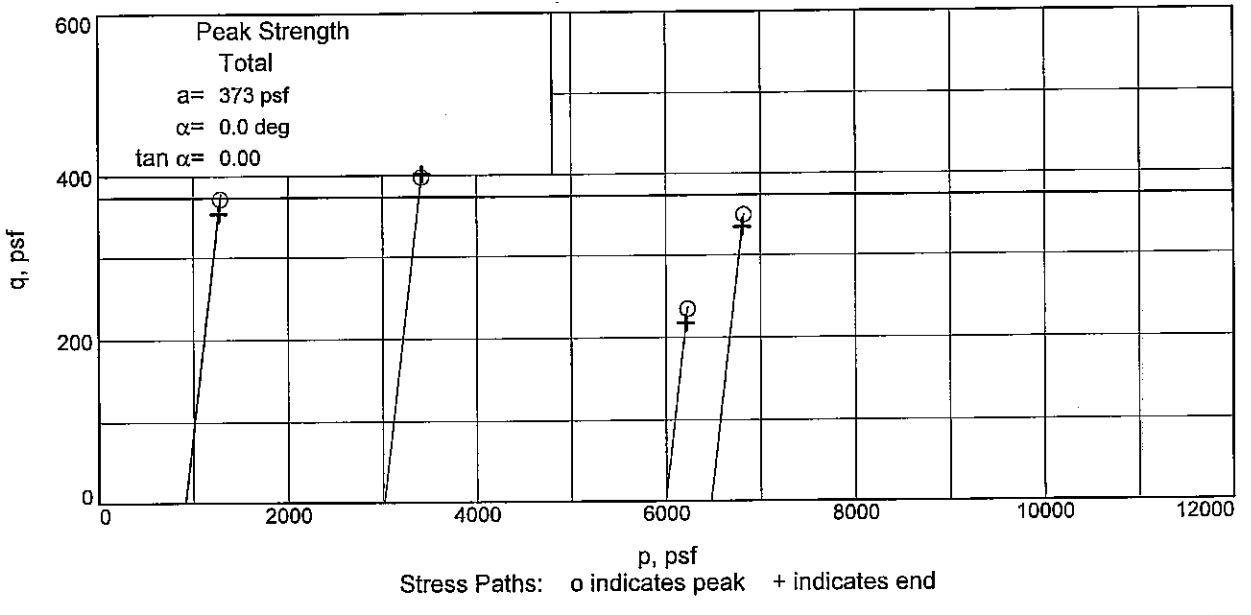
Tested By: DW/JP **Checked By:** SH









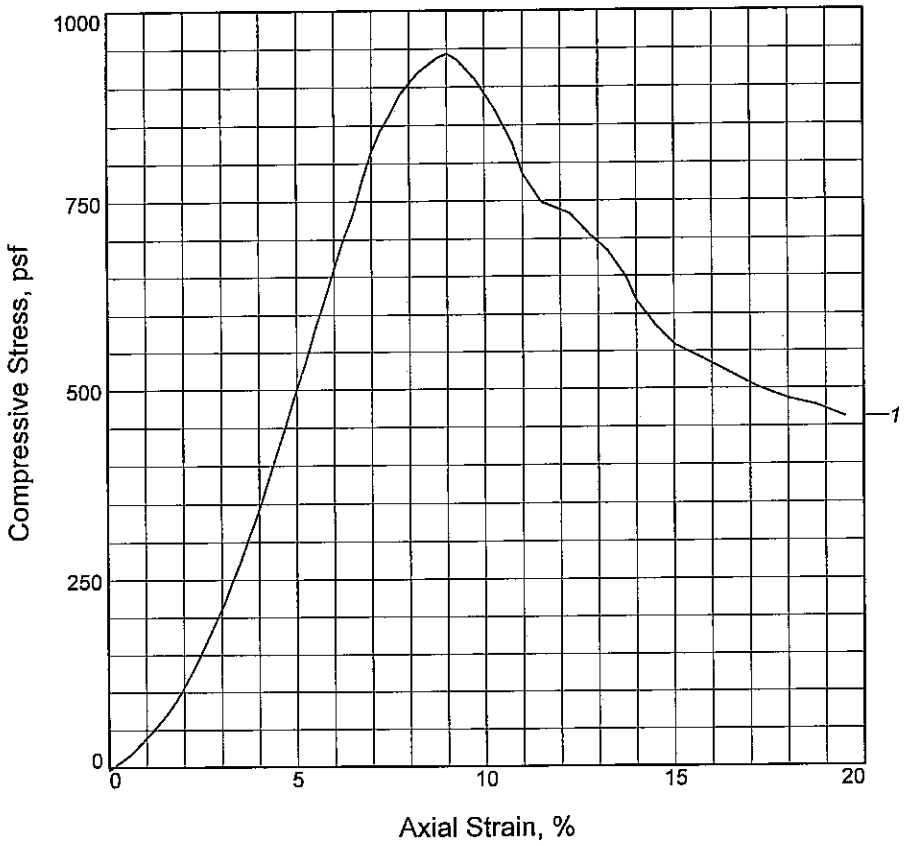


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-54UCL **Depth:** 25.7 **Sample Number:** 8C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP **Checked By:** SH

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	944			
Undrained shear strength, psf	472			
Failure strain, %	9.0			
Strain rate, in./min.	0.029			
Water content, %	31.5			
Wet density, pcf	121.3			
Dry density, pcf	92.2			
Saturation, %	104.2			
Void ratio	0.8074			
Specimen diameter, in.	1.353			
Specimen height, in.	2.945			
Height/diameter ratio	2.18			

Description: GR ML2 W/ ARS CH

LL = NP	**PL =**	**PI =** NP	**Assumed GS=** 2.67	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

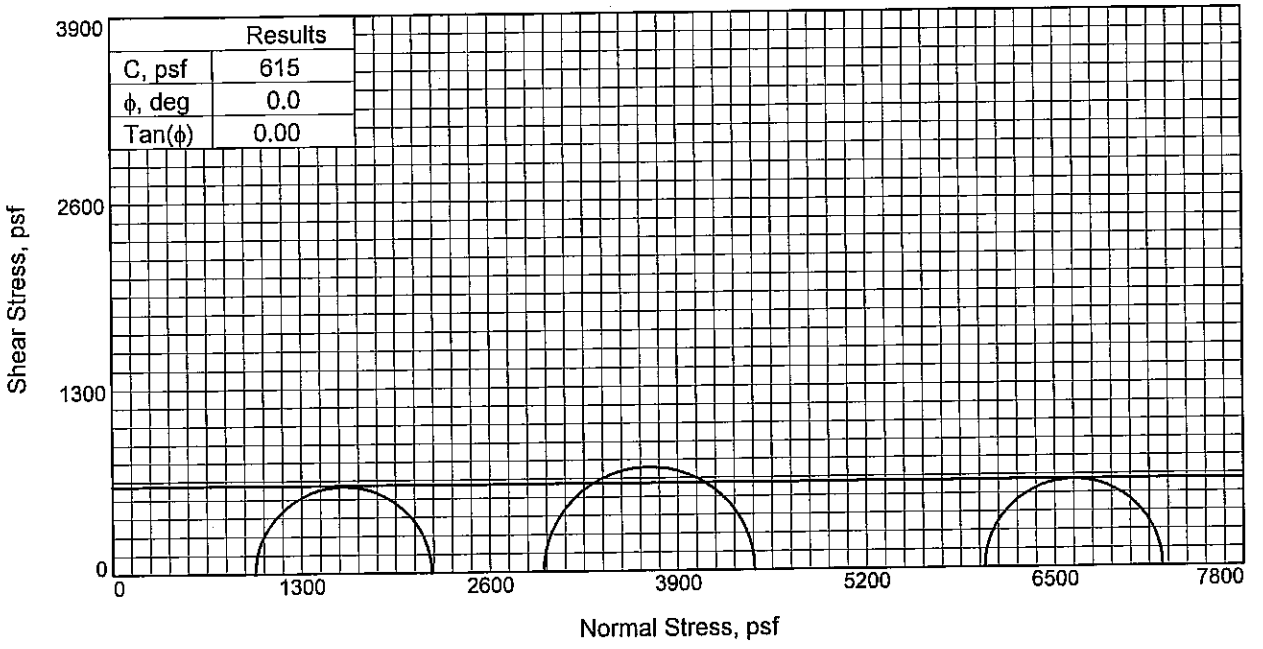
Client: U.S. Army Corps of Engineers

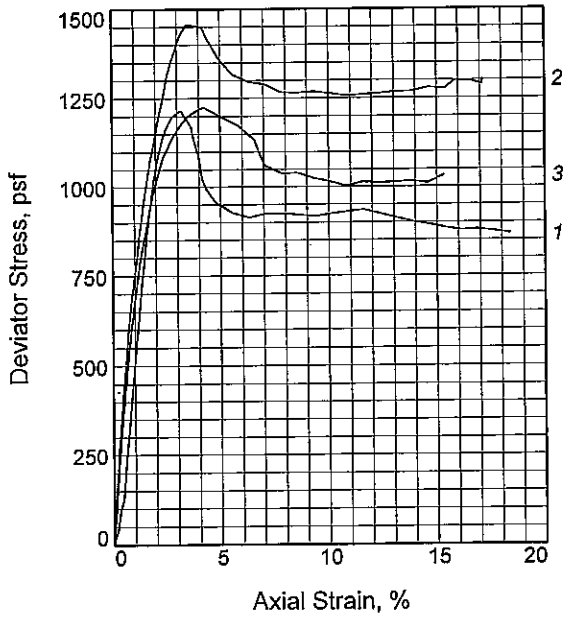
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 29.7
Sample Number: 9C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** SH





Sample No.		1	2	3
Initial	Water Content, %	45.9	41.8	45.3
	Dry Density, pcf	75.6	79.8	75.9
	Saturation, %	101.1	101.8	100.7
	Void Ratio	1.2216	1.1042	1.2114
	Diameter, in.	1.411	1.408	1.416
	Height, in.	3.080	3.102	3.126
At Test	Water Content, %	45.9	41.8	45.3
	Dry Density, pcf	75.6	79.8	75.9
	Saturation, %	101.1	101.8	100.7
	Void Ratio	1.2216	1.1042	1.2114
	Diameter, in.	1.411	1.408	1.416
	Height, in.	3.080	3.102	3.126
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.82	20.64	41.78
Fail. Stress, psf		1215	1457	1225
Strain, %		3.2	3.5	4.3
Ult. Stress, psf		914	1257	1002
Strain, %				
σ_1 Failure, psf		2196	4428	7241
σ_3 Failure, psf		982	2972	6016

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: M GR CL6 W/ LNS & LYS ML

LL= 48 **PL=** 19 **PI=** 29
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

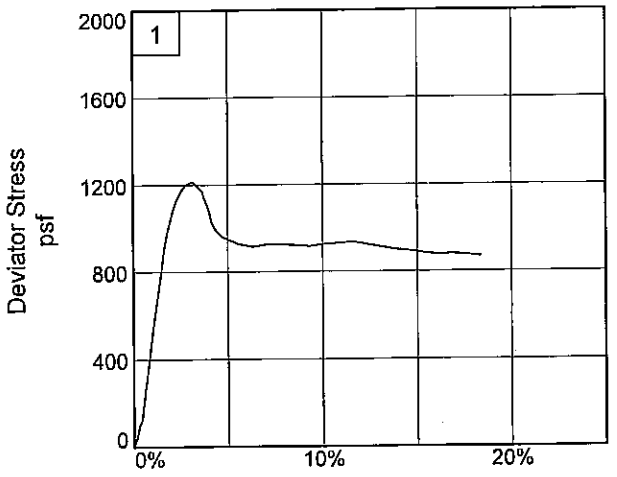
Client: U.S. Army Corps of Engineers

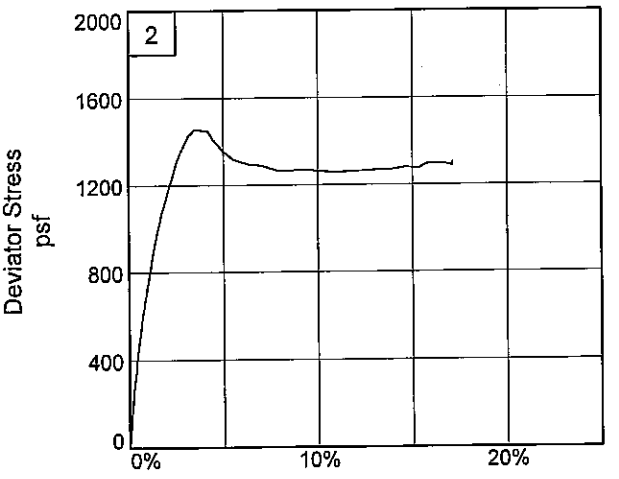
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 33.7
Sample Number: 10C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

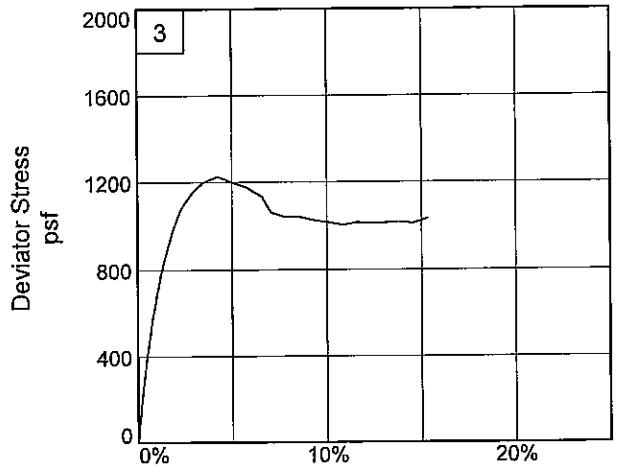
TRIAXIAL SHEAR TEST REPORT

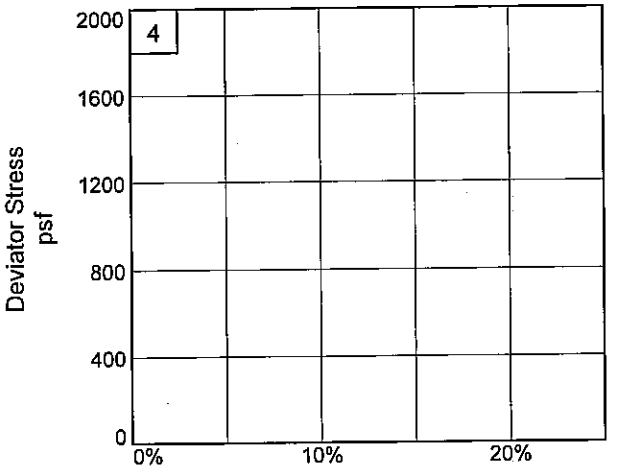
FFEBJV, LLC

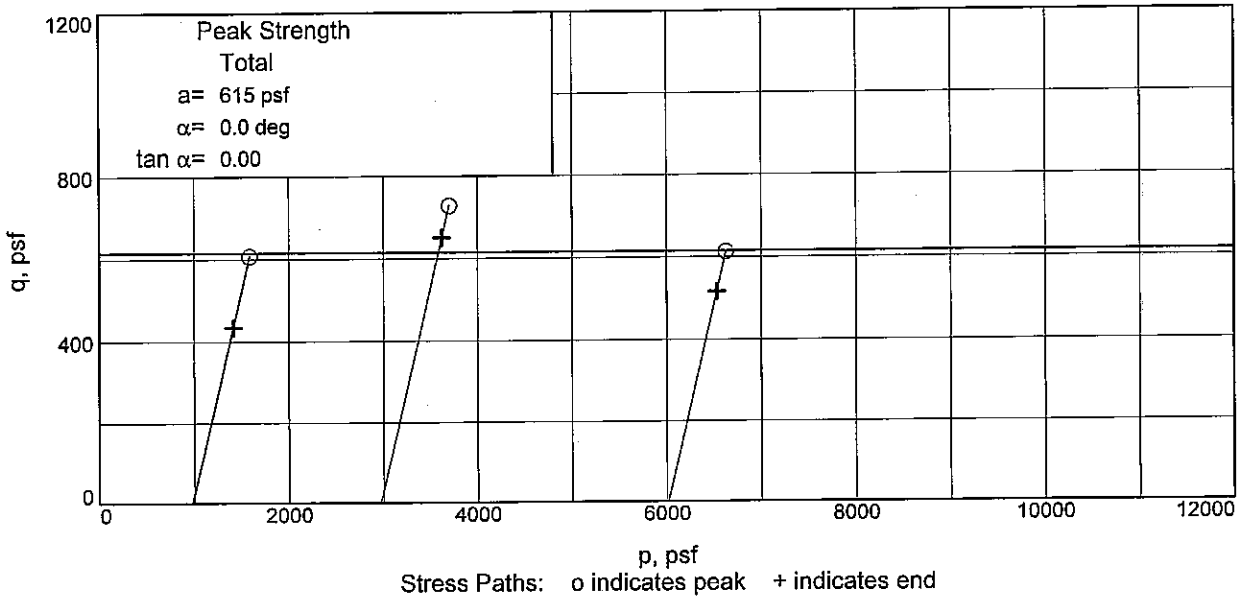
Tested By: DW/JP **Checked By:** SH







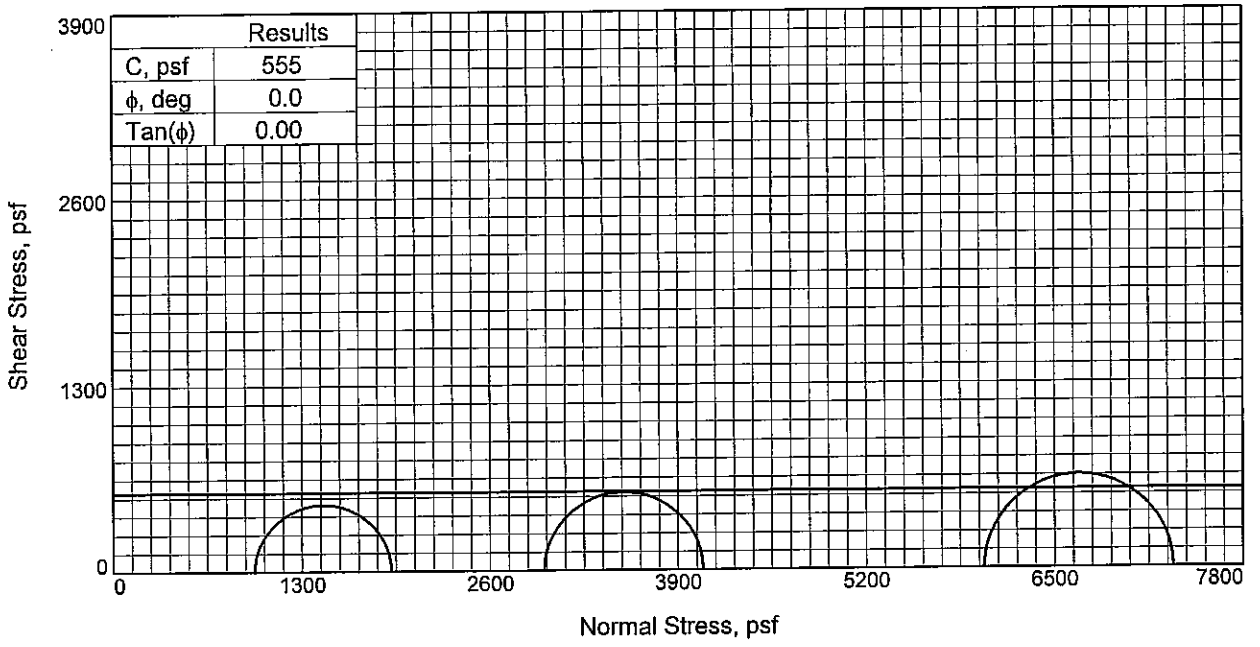


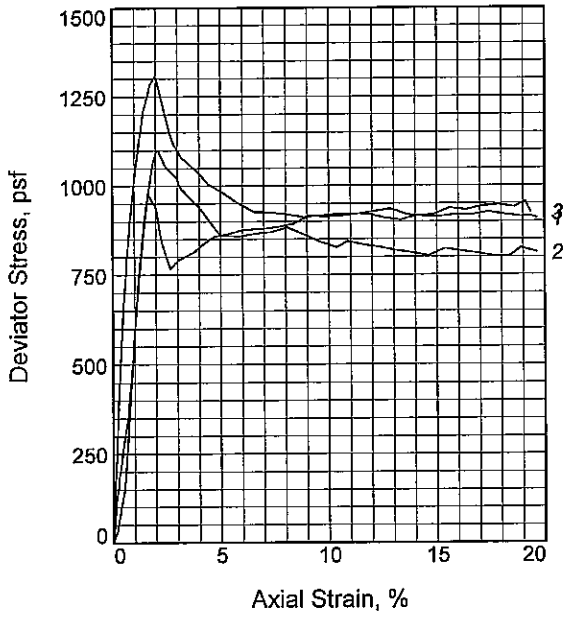


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-54UCL **Depth:** 33.7 **Sample Number:** 10C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP **Checked By:** SH





Sample No.		1	2	3
Initial	Water Content, %	58.4	57.3	56.2
	Dry Density, pcf	65.5	66.0	67.3
	Saturation, %	99.7	99.2	100.5
	Void Ratio	1.5956	1.5709	1.5217
	Diameter, in.	1.419	1.428	1.423
	Height, in.	3.139	3.138	3.127
At Test	Water Content, %	58.4	57.3	56.2
	Dry Density, pcf	65.5	66.0	67.3
	Saturation, %	99.7	99.2	100.5
	Void Ratio	1.5956	1.5709	1.5217
	Diameter, in.	1.419	1.428	1.423
	Height, in.	3.139	3.138	3.127
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.77	20.65	41.75
Fail. Stress, psf		942	1099	1307
Strain, %		1.6	2.0	1.9
Ult. Stress, psf		807	860	912
Strain, %				
σ_1 Failure, psf		1917	4072	7319
σ_3 Failure, psf		975	2973	6013

Type of Test: Unconsolidated Undrained
Sample Type: Undisturbed
Description: M GR CH3 W/ LNS & ARS ML

LL= 73 **PL=** 23 **PI=** 50
Assumed Specific Gravity= 2.723
Remarks:

Figure _____

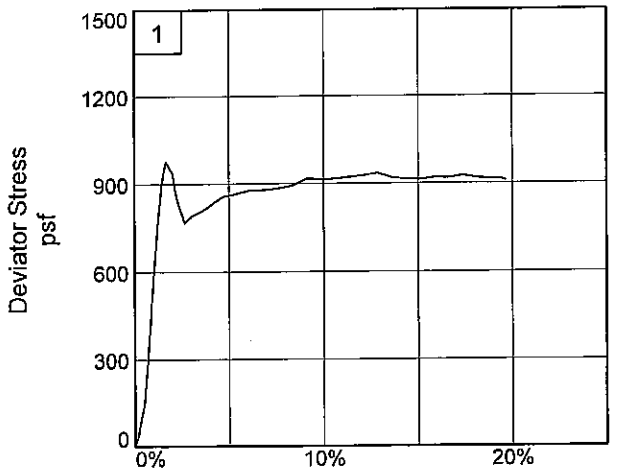
Client: U.S. Army Corps of Engineers

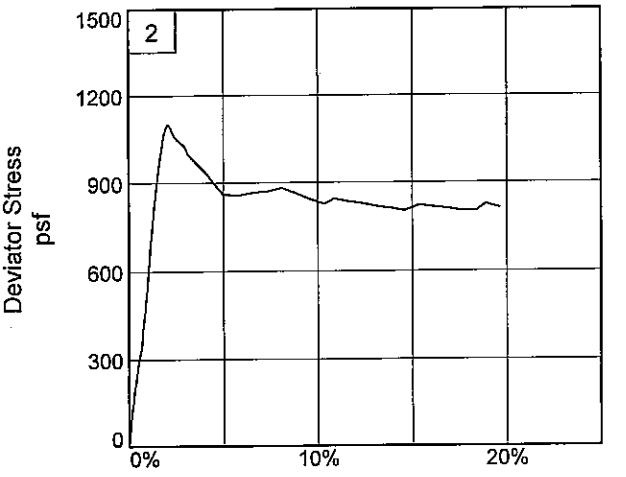
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 37.7
Sample Number: 11C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

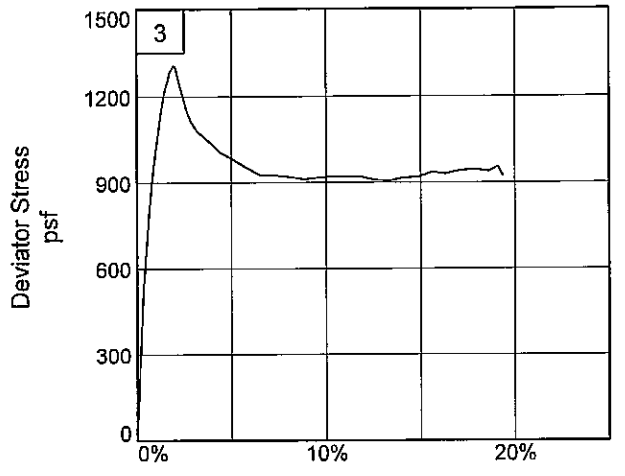
TRIAXIAL SHEAR TEST REPORT

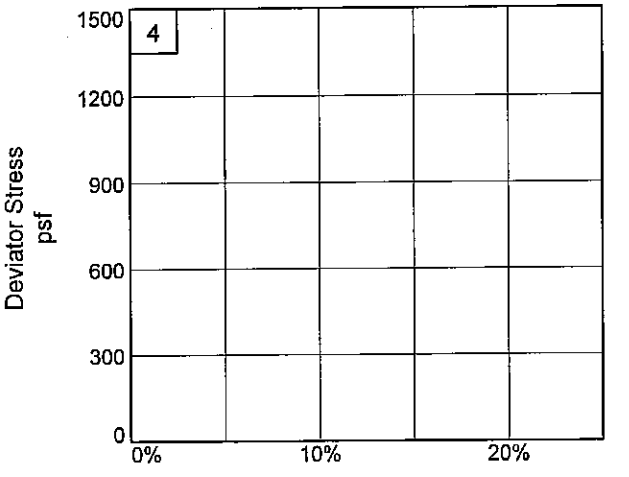
FFEBJV, LLC

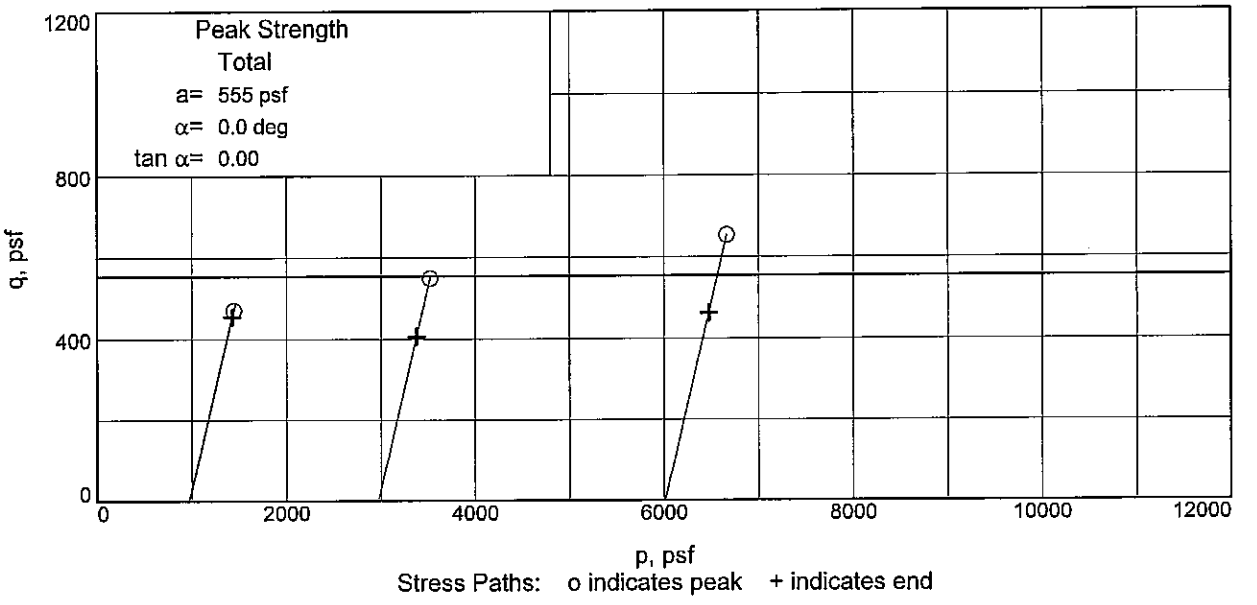
Tested By: DW/JP **Checked By:** SH







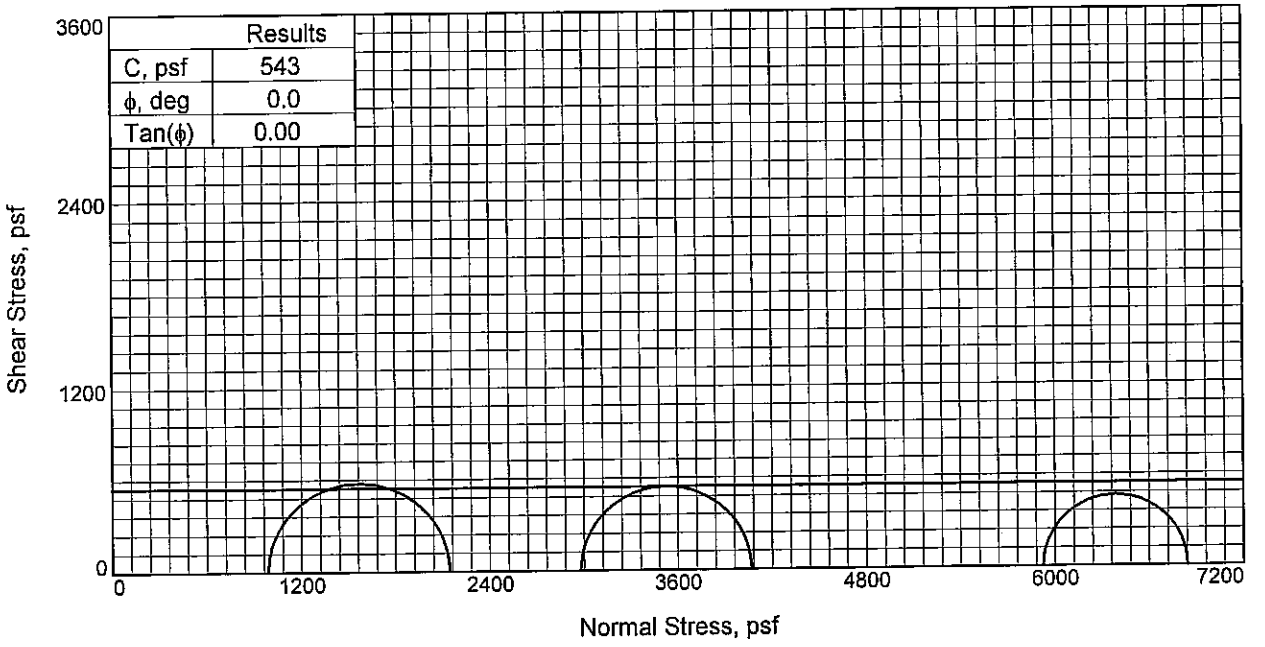


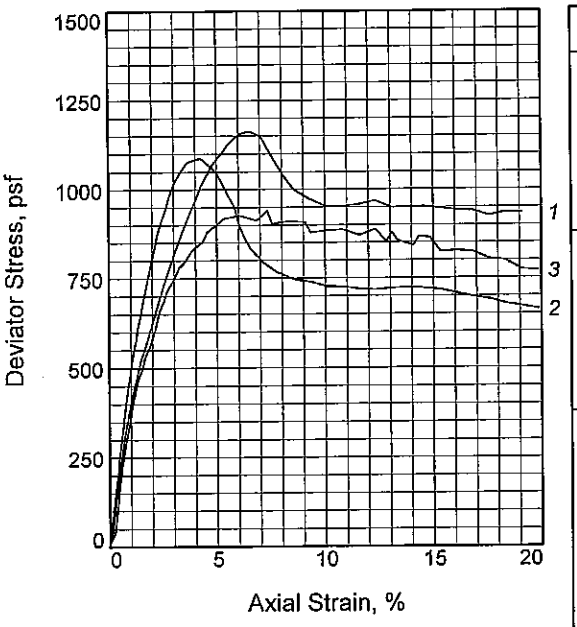


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-54UCL **Depth:** 37.7 **Sample Number:** 11C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP **Checked By:** SH





Sample No.		1	2	3
Initial	Water Content, %	48.1	49.2	50.5
	Dry Density, pcf	74.5	73.7	72.6
	Saturation, %	103.0	103.4	103.3
	Void Ratio	1.2618	1.2860	1.3212
	Diameter, in.	1.418	1.418	1.411
	Height, in.	3.120	3.108	3.121
At Test	Water Content, %	48.1	49.2	50.5
	Dry Density, pcf	74.5	73.7	72.6
	Saturation, %	103.0	103.4	103.3
	Void Ratio	1.2618	1.2860	1.3212
	Diameter, in.	1.418	1.418	1.411
	Height, in.	3.120	3.108	3.121
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.69	41.14
Fail. Stress, psf		1155	1088	919
Strain, %		6.0	4.3	5.3
Ult. Stress, psf		952	717	824
Strain, %				
σ_1 Failure, psf		2142	4066	6843
σ_3 Failure, psf		987	2979	5924

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: M GR CH2 W/ LNS ML

LL= 54 **PL=** 20 **PI=** 34
Assumed Specific Gravity= 2.7
Remarks:

Figure _____

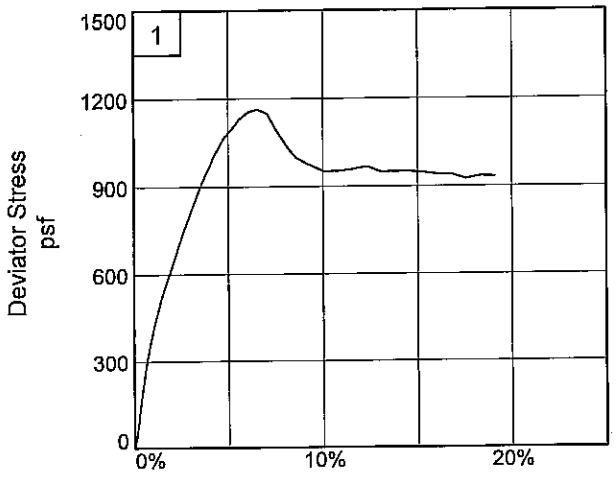
Client: U.S. Army Corps of Engineers

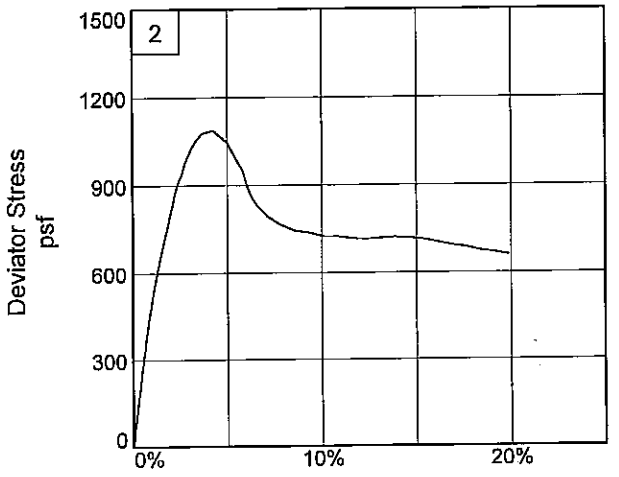
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 41.7
Sample Number: 12C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

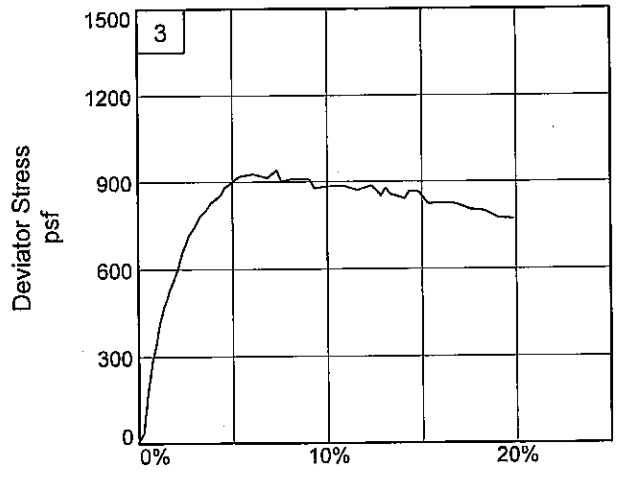
TRIAXIAL SHEAR TEST REPORT

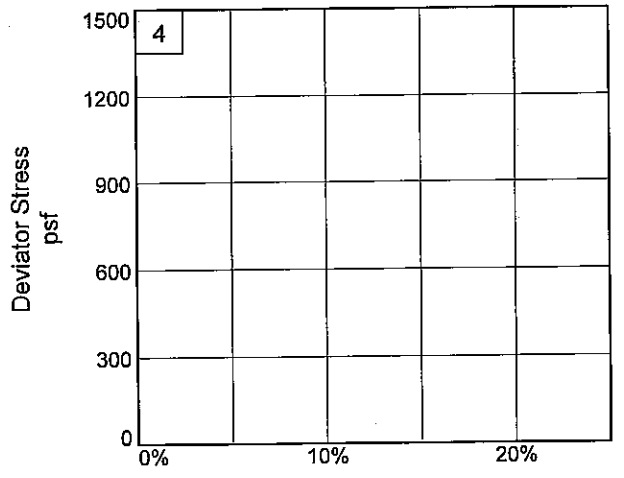
FFEBJV, LLC

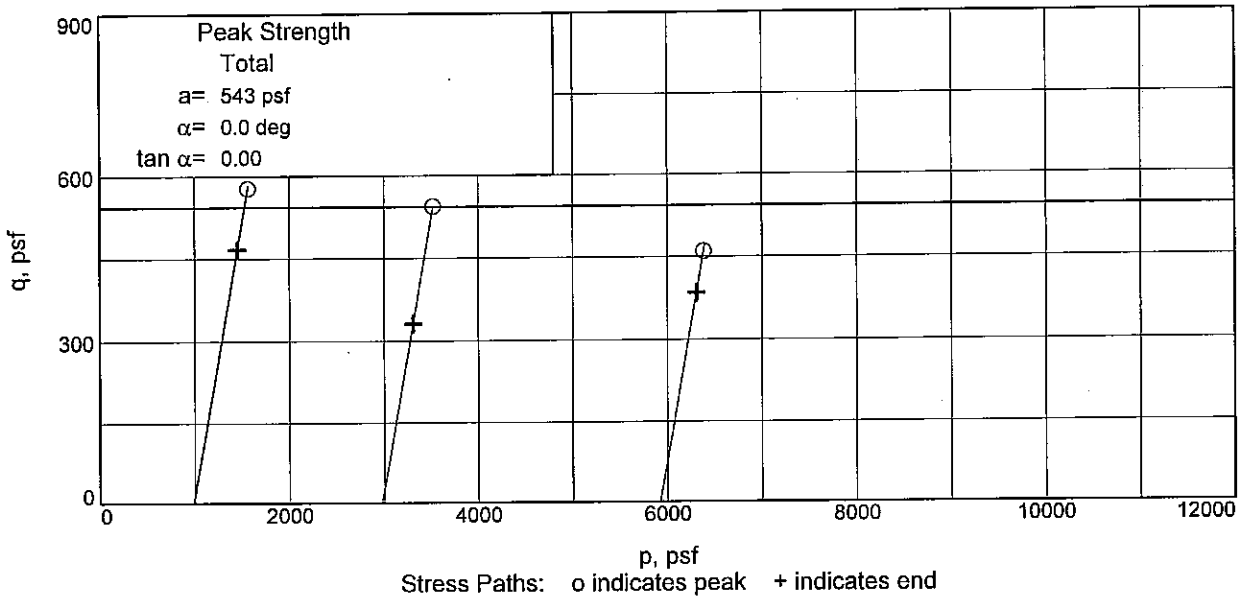
Tested By: DW/JP **Checked By:** SH









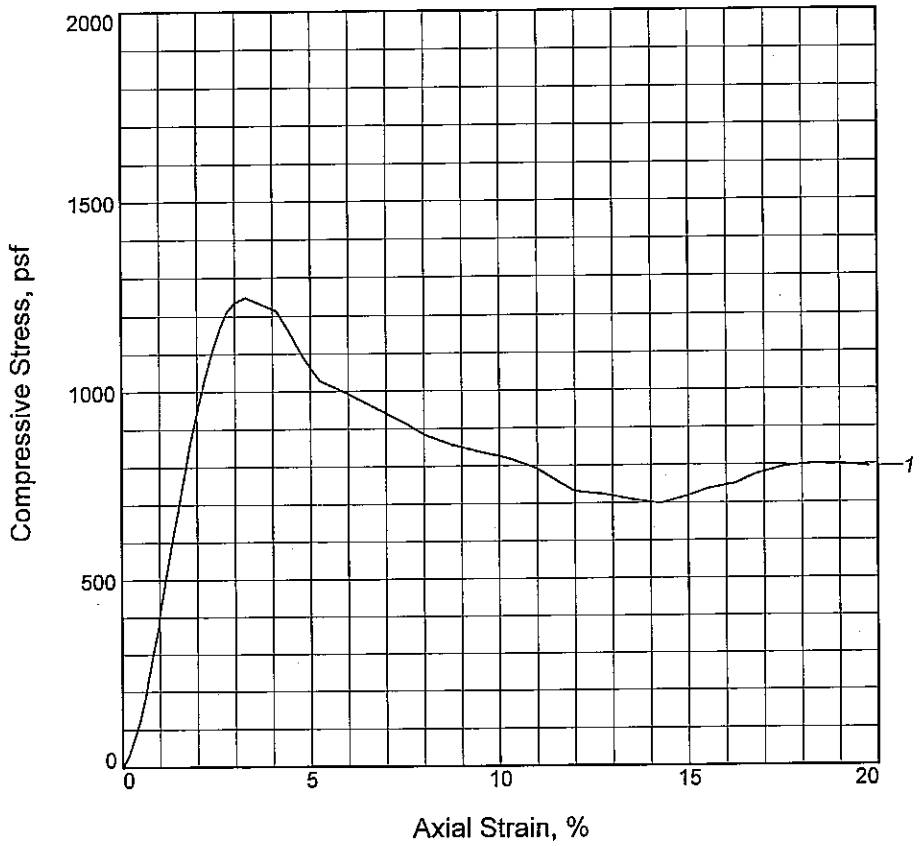


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-54UCL **Depth:** 41.7 **Sample Number:** 12C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP **Checked By:** SH

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1249			
Undrained shear strength, psf	625			
Failure strain, %	3.3			
Strain rate, in./min.	0.030			
Water content, %	35.6			
Wet density, pcf	115.3			
Dry density, pcf	85.1			
Saturation, %	98.7			
Void ratio	0.9670			
Specimen diameter, in.	1.385			
Specimen height, in.	3.010			
Height/diameter ratio	2.17			

Description: M GR CL4 W/ LNS ML

LL = 38	**PL** = 23	**PI** = 15	**Assumed GS**= 2.68	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

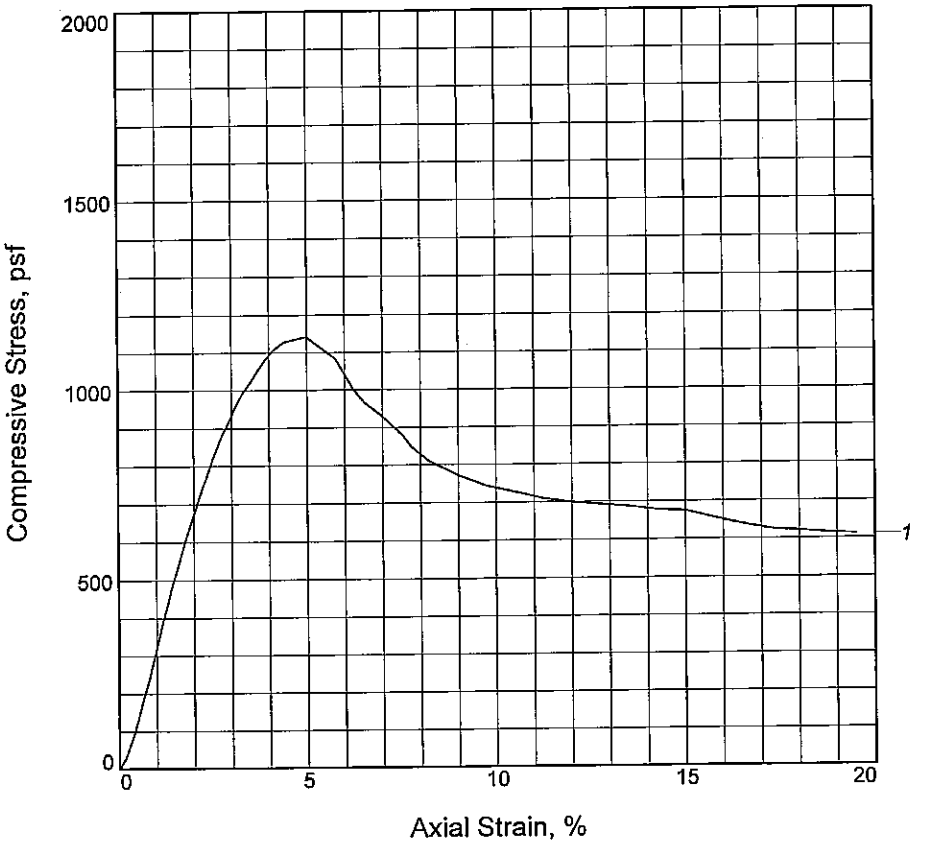
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 45.7
Sample Number: 13C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** SH

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1142			
Undrained shear strength, psf	571			
Failure strain, %	5.0			
Strain rate, in./min.	0.030			
Water content, %	40.0			
Wet density, pcf	108.5			
Dry density, pcf	77.5			
Saturation, %	92.3			
Void ratio	1.1669			
Specimen diameter, in.	1.380			
Specimen height, in.	3.007			
Height/diameter ratio	2.18			

Description: M GR CL6 W/ LNS ML

LL = 42	**PL** = 19	**PI** = 23	**Assumed GS=** 2.69	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

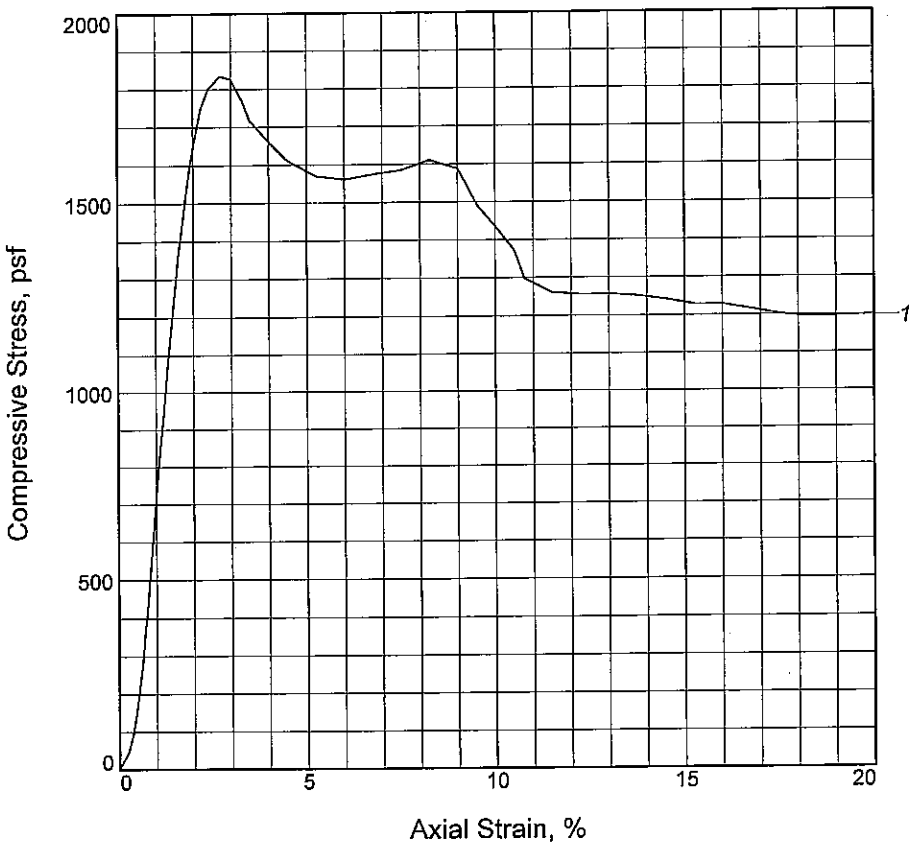
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 49.7
Sample Number: 14C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** SH

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1834			
Undrained shear strength, psf	917			
Failure strain, %	2.7			
Strain rate, in./min.	0.030			
Water content, %	42.1			
Wet density, pcf	14.8			
Dry density, pcf	10.4			
Saturation, %	7.5			
Void ratio	15.2052			
Specimen diameter, in.	1.361			
Specimen height, in.	3.025			
Height/diameter ratio	2.22			

Description: M GR CH3 W/ LNS & LYS ML

LL = 61	**PL** = 21	**PI** = 40	**Assumed GS=** 2.7	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

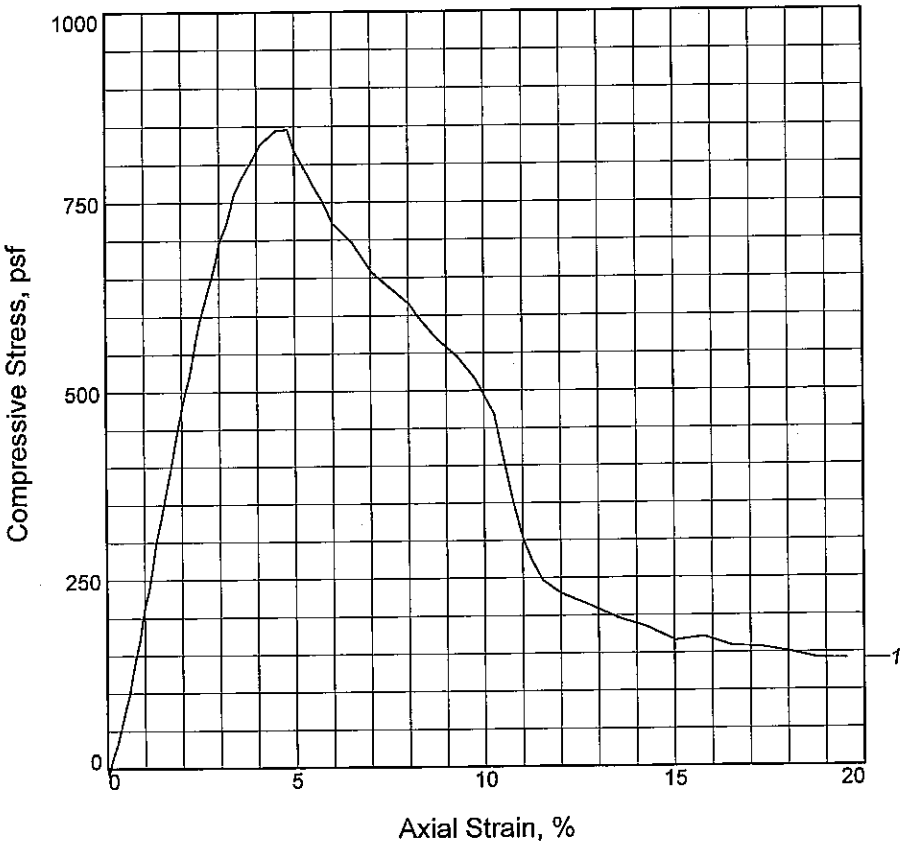
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 52.8
Sample Number: 15B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** SH

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	847			
Undrained shear strength, psf	423			
Failure strain, %	4.8			
Strain rate, in./min.	0.030			
Water content, %	33.5			
Wet density, pcf	109.2			
Dry density, pcf	81.8			
Saturation, %	85.3			
Void ratio	1.0595			
Specimen diameter, in.	1.379			
Specimen height, in.	3.033			
Height/diameter ratio	2.20			

Description: SO GR CL6 W/ LYS CH

LL = 43	**PL** = 20	**PI** = 23	**Assumed GS**= 2.7	**Type:** Undisturbed

Project No.: 0022-0002
Date Sampled: 6/27/07
Remarks:

Figure _____

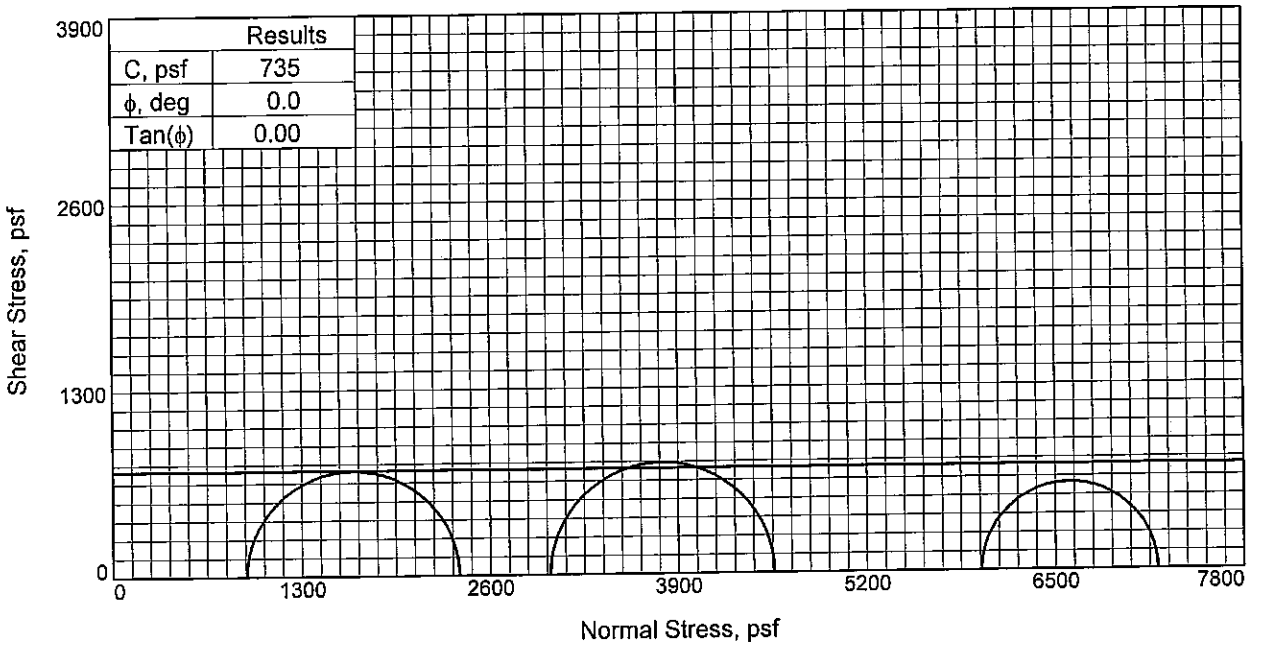
Client: U.S. Army Corps of Engineers

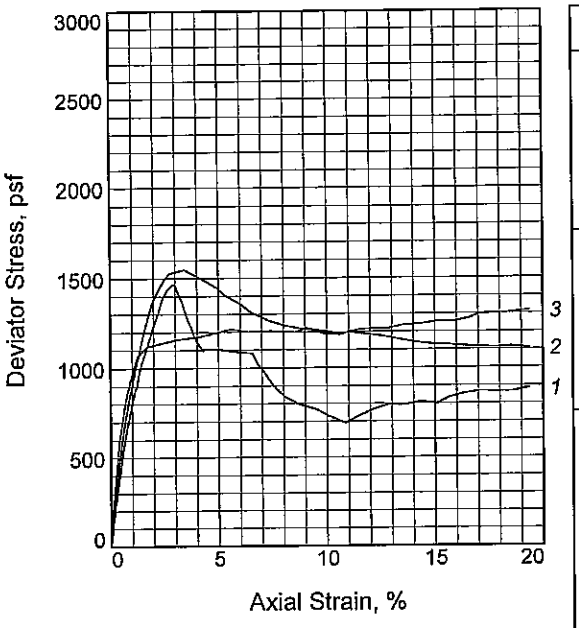
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 57.7
Sample Number: 16C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB **Checked By:** SH





Sample No.		1	2	3
Initial	Water Content, %	50.0	49.5	50.4
	Dry Density, pcf	72.3	73.2	72.0
	Saturation, %	101.0	102.0	101.0
	Void Ratio	1.3479	1.3198	1.3574
	Diameter, in.	1.429	1.424	1.426
	Height, in.	3.119	3.124	3.123
At Test	Water Content, %	50.0	49.5	50.4
	Dry Density, pcf	72.3	73.2	72.0
	Saturation, %	101.0	102.0	101.0
	Void Ratio	1.3479	1.3198	1.3574
	Diameter, in.	1.429	1.424	1.426
	Height, in.	3.119	3.124	3.123
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.39	20.93	41.60
Fail. Stress, psf		1464	1548	1215
Strain, %		2.9	3.4	5.6
Ult. Stress, psf		1102	1130	1201
Strain, %				
σ_1 Failure, psf		2385	4561	7205
σ_3 Failure, psf		921	3013	5990

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: M GR CH3 W/ LNS & ARS ML

LL= 59 **PL=** 21 **PI=** 38
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

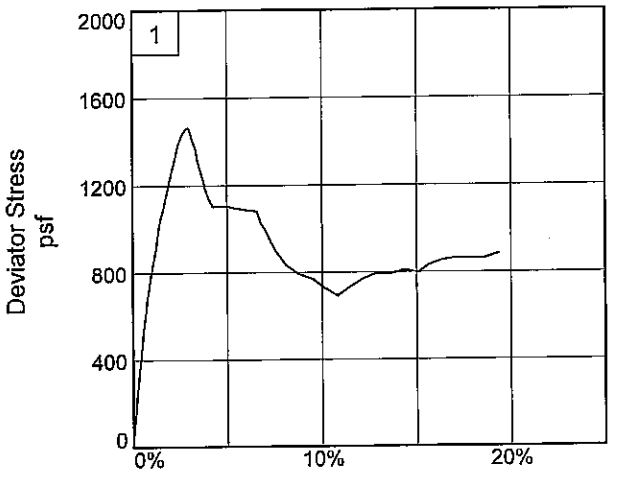
Client: U.S. Army Corps of Engineers

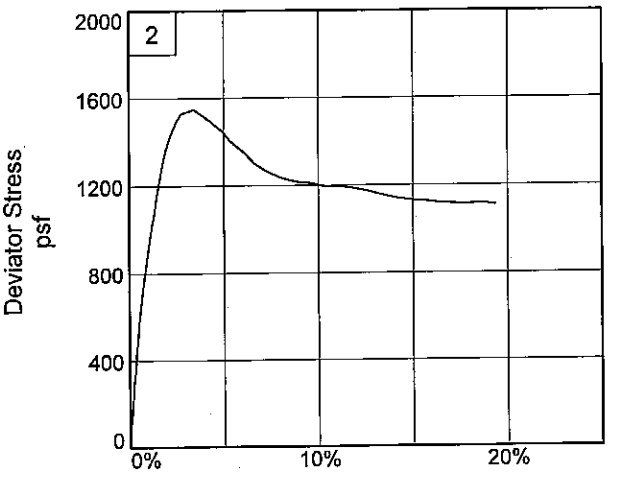
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-54UCL **Depth:** 61.7
Sample Number: 17C
Proj. No.: 0022-0002 **Date Sampled:** 6/27/07

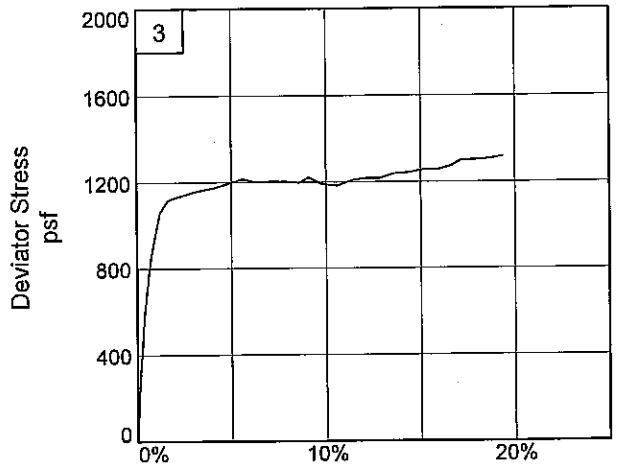
TRIAXIAL SHEAR TEST REPORT

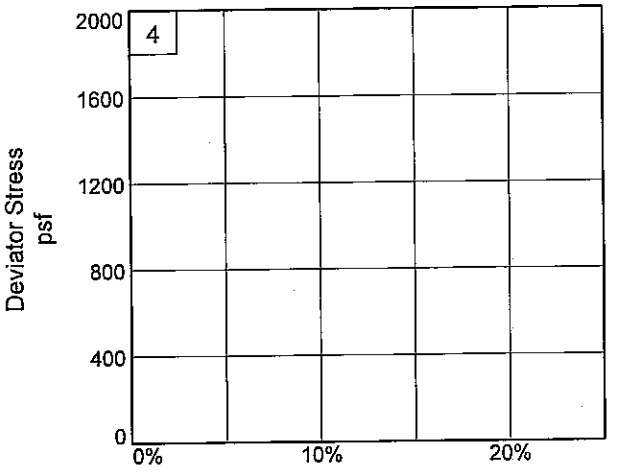
FFEBJV, LLC

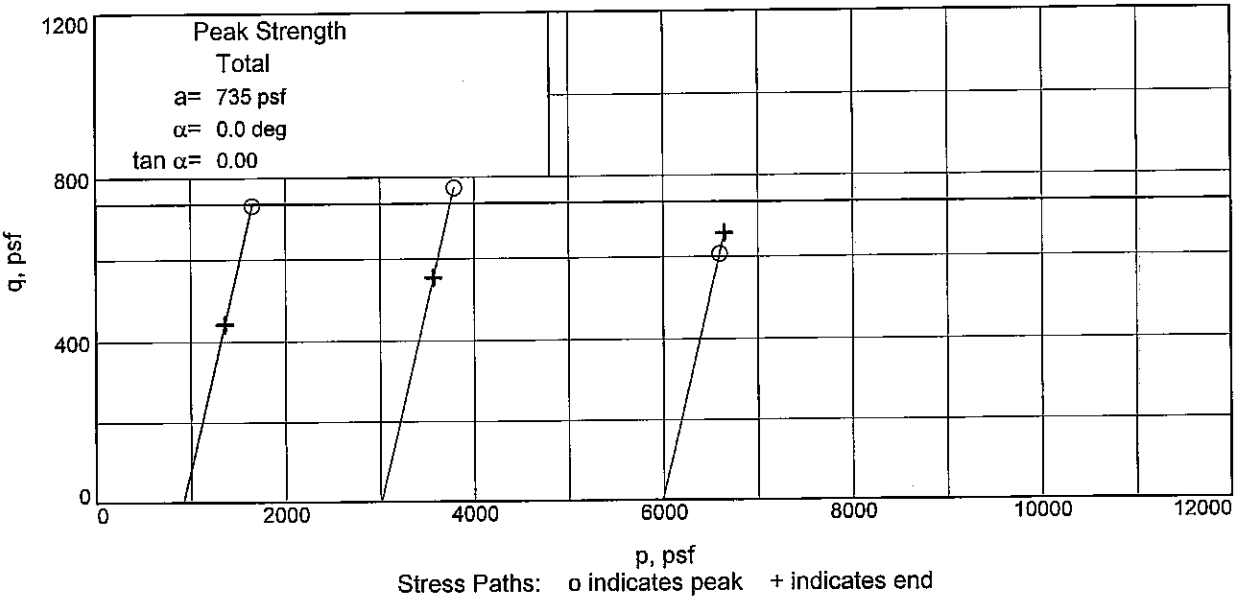
Tested By: DW/JP **Checked By:** SH









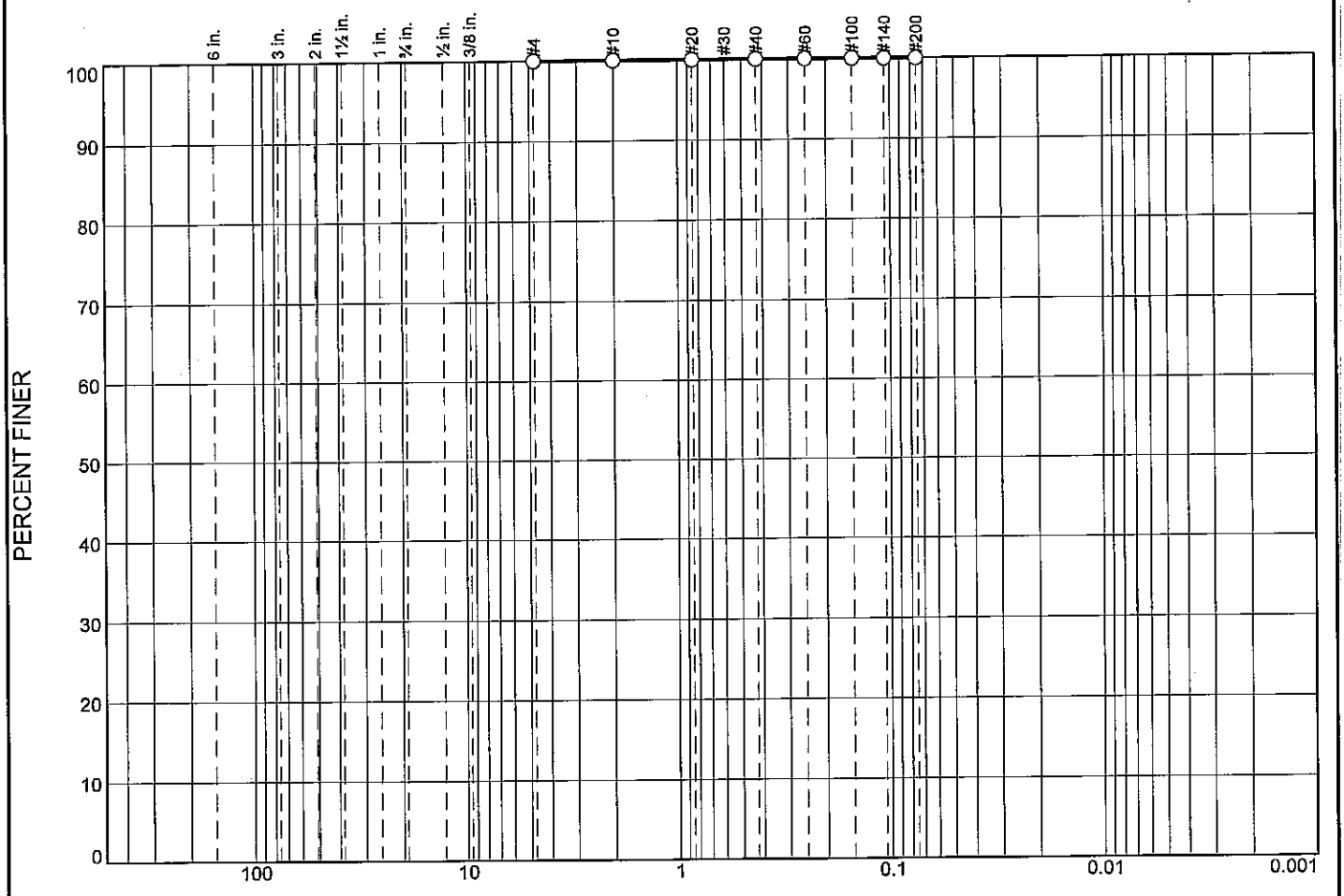


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-54UCL **Depth:** 61.7 **Sample Number:** 17C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP **Checked By:** SH

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	0.1	99.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○										

Material Description	USCS	AASHTO
○ GR ML2	ML2	

Project No. 0022-0002 **Client:** U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program

Jefferson Parish, La.

○ **Source of Sample:** WWHC-54UCL **Depth:** 64.8 **Sample Number:** 18B

Remarks:

FFEBJV, LLC

St Rose, LA

Figure

Tested By: CSM/TSL **Checked By:** SH

BOR. WWHC-54UCL
STA. LAT N29^48'42.00" LONG W90^06'55.27"

13-15 APRIL 2007

GROUND EL. 13.3

0.0	0.8	28	0.8	CH		ST BR GR		RT				
0.8	2.0	35		CH		SISST BR GR		RT	1383	111	88 23	34 11
2.0	2.8	36	2.8	CH		SISST GR		T				
2.8	4.0	28	4.0	ML		GR		T	CS	RT		
4.0	4.8	42		CH		SIS M GR						
4.8	5.7	45		CH		SIS M GR						
5.7	6.6	44		CH		SIS M GR						
6.6	8.0	39		CH		SIS M GR						
8.0	8.8	50		CH		SIS M GR						
8.8	9.7	42		CH		SISST GR		RT				
9.7	12.0	43		CH		SISST GR		RT				
12.0	12.8	43		CH		SISST GR						
12.8	13.7	38		CH		SISST GR		T	CC			
13.7	16.0	32	16.0	CH		SISST GR		T	CC			
16.0	16.8	36		ML		GR		T	CS	CC		
16.8	17.7	37	17.7	ML		GR		T	CS	CC		
17.7	20.0	35	20.0	CL		SO GR		T	CC		402	117 39 20 34 180
20.0	20.8	39		CL		SISSO GR						
20.8	21.7	39		CL		SISSO GR						
21.7	22.6	36	22.6	CL		SISSO GR						
22.6	24.0	36	24.0	CL		SO GR		RT				
24.0	24.8	33	24.8	CL		SISSO GR		CC				
24.8	25.7	33		CL		SO GR		CC				
25.7	26.6	35	26.6	CL		SO GR		RT				
26.6	28.0	39	28.0	CL		SISSO GR						
28.0	28.8	33		ML		GR						
28.8	29.7	34		ML		GR						
29.7	30.6	34		ML		GR		CS		472	121	32 300
30.6	32.0	36		ML		GR						
32.0	32.8	33		ML		GR						
32.8	33.7	34	33.7	ML		GR						
33.7	34.6	39		CL		SIS M GR						
34.6	36.0	44		CL		SIS M GR						
36.0	36.8	45		CL		SIS M GR						
36.8	37.7	39	37.7	CL		SIS M GR						
37.7	38.6	47		CH		SIS M GR						

38.6 40.0 50 CH SIS M GR
40.0 40.8 44 CH SIS M GR
40.8 41.7 41 CH SIS M GR
41.7 44.0 45 44.0CH SIS M GR
44.0 44.8 38 ML GR CS
44.8 45.7 33 45.7ML GR CS
45.7 46.6 38 46.6CL SIS M GR 625115 38 23 36 460
46.6 48.0 52 48.0CH SIS M GR
48.0 48.8 33 48.8ML GR CS
48.8 49.7 39 CL SIS M GR
49.7 50.6 39 CL SIS M GR 571109 42 19 40 500
50.6 52.0 42 52.0CL SIS M GR
52.0 52.8 38 CH SIS M GR
52.8 53.7 39 53.7CH SIS M GR 917110 61 21 42 531
53.7 54.6 31 ML GR CS
54.6 56.0 35 56.0ML GR CS
56.0 56.8 39 CL SIS M GR
56.8 57.7 34 57.7CL SIS M GR
57.7 58.6 33 CL SO GR CS 423109 43 20 34 580
58.6 60.0 33 CL SO GR CS
60.0 60.8 35 CL SO GR
60.8 61.7 39 61.7CL M GR
61.7 64.0 44 CH SIS M GR
64.0 64.8 37 64.8CH SIS M GR
64.8 65.7 28 ML GR
65.7 66.0 29 66.0ML GR
66.0 68.0 24 SM GR CS 16
68.0 70.0 29 70.0SM GR CS 8
70.0 72.0 29 72.0ML GR CS 5
72.0 72.8 35 72.8CH SS M GR
72.8 73.7 31 73.7SP GR CS
73.7 76.0 26 SM GR
76.0 78.0 28 SM GR 17
78.0 80.0 40 SM GR 18
80.0 82.0 27 SM GR CS 15
82.0 84.0 31 SM GR 19
84.0 86.0 28 SM GR 17
86.0 88.0 30 SM GR 17
88.0 90.0 27 SM GR 19
90.0 92.0 28 92.0SM GR 22
999.9
****

SHEAR STRENGTH DESIGN VALUES

Test Type:(Q) Classif : CH
Depth/Ele: 6.00/ 7.30 Water Con: 43.00
LL,PL,PI : 74, 20, 54 Dry Dens : 77.00
Cohesion : 0.253 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 10.00/ 3.30 Water Con: 35.00
LL,PL,PI : 69, 23, 46 Dry Dens : 85.00
Cohesion : 0.628 Saturat : 95.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 13.10/-0.20 Water Con: 36.00
LL,PL,PI : 73, 19, 54 Dry Dens : 85.00
Cohesion : 0.522 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 22.00/-8.70 Water Con: 38.00
LL,PL,PI : 36, 23, 13 Dry Dens : 86.00
Cohesion : 0.185 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 26.00/-12.7 Water Con: 36.00
LL,PL,PI : 30, 22, 8 Dry Dens : 87.00
Cohesion : 0.187 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 34.00/-20.7 Water Con: 44.00
LL,PL,PI : 48, 19, 29 Dry Dens : 77.00
Cohesion : 0.308 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-24.7 Water Con: 57.00
LL,PL,PI : 73, 23, 50 Dry Dens : 76.00
Cohesion : 0.278 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 42.00/-28.7 Water Con: 49.00
LL,PL,PI : 54, 20, 34 Dry Dens : 74.00
Cohesion : 0.272 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 62.00/-48.7 Water Con: 50.00
LL,PL,PI : 59, 21, 38 Dry Dens : 73.00
Cohesion : 0.368 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2 **Assigned By:** _____

Project Number: 19667
Boring: WWHC-54UFT

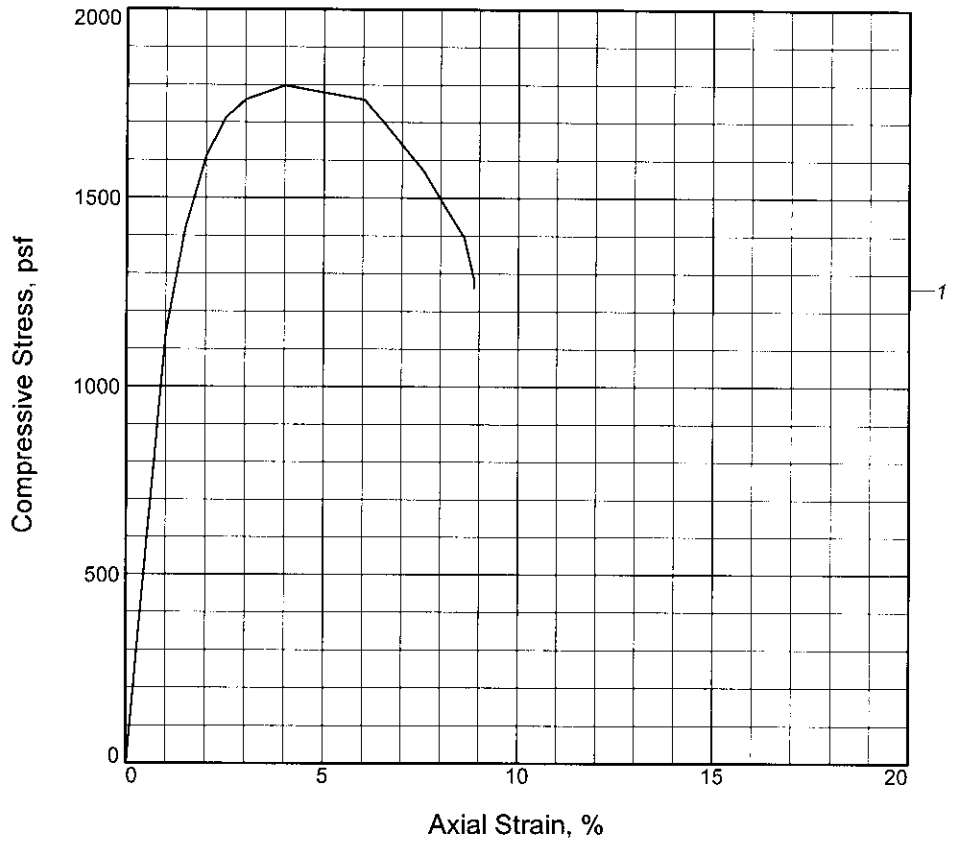
Current Date: 6/21/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
2B	3.1	M T & GR CH4 W/ RT	CH4	4	37	81	111	92	UC	--	899	1798	77	25	52	0.500	
3B	5.1	M GR & T CH4 W/ WD	CH4		41	76	107	90	UU	0	953		83	27	56	0.500	
4C	10	M GR & T CH2	CH2		34	85	114	94	UU	0	707		56	20	36	0.300	
5C	14	M GR & T CL4	CL4		33	87	116	97	UU	0	519		35	22	13	0.140	
6C	18	SO GR CH2	CH2	4	47	73	107	96	UC	--	479	958	53	21	32	0.270	
7B	21.1												*	*			CONS
7C	22	M GR CL4	CL4		34	86	115	96	UU	0	781		36	22	14	0.150	
8C	26	M GR CH2	CH2		47	74	108	98	UU	0	559		56	22	34	0.150	
9B	29.1	M GR CL6	CL6	4	42	79	113	100	UC	--	727	1454	50	19	31	0.220	
10B	33.1	M GR CL6-S	CL6-S		40	79	111	96	UU	0	516		46	23	23	0.200	
11C	38	SO GR CL4	CL4	9	33	86	115	95	UC	--	485	970	34	18	16	0.150	
12C	42	M GR CL6	CL6		40	79	111	97	UU	0	823		50	19	31	0.290	
13B	45.1												*	*			CONS
14C	50	ST GR CL6	CL6	5	36	81	110	90	UC	--	1193	2386	46	23	23	0.380	
15B	53.1	M GR CH4 W/ ARS SM, SL	CH4		54	67	103	95	UU	0	984		92	33	59	0.450	
16C	58																
17C	62	M GR CL4	CL4	5	28	95	121	99	UC	--	888	1775	31	14	17	0.340	
19C	70	M GR & T CL6-S	CL6-S	6	31	91	119	97	UC	--	808	1616	40	21	19	0.370	

Remarks: _____
FFEB JV

Checked by: _____
File Name: 19667

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1798.0			
Undrained shear strength, psf	899.0			
Failure strain, %	4.0			
Strain rate, in./min.	0.057			
Water content, %	36.9			
Wet density, pcf	111.4			
Dry density, pcf	81.3			
Saturation, %	91.7			
Void ratio	1.1031			
Specimen diameter, in.	1.391			
Specimen height, in.	2.929			
Height/diameter ratio	2.11			

Description: M T & GR CH4 W/ RT

LL = 77	**PL** = 25	**PI** = 52	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 19667
Date Sampled: 6-8-07
Remarks:
TORVANE = 0.500tsf

Figure 1

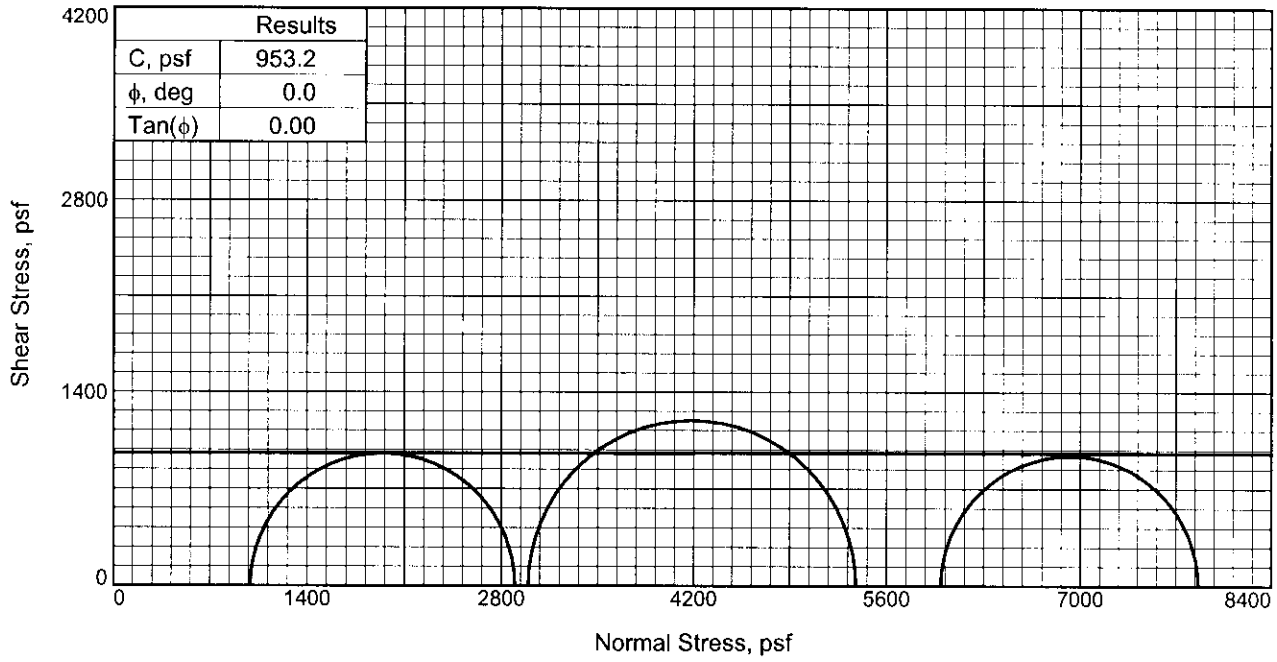
Client: U.S.A.C.E - NEW ORLEANS DISTRICT

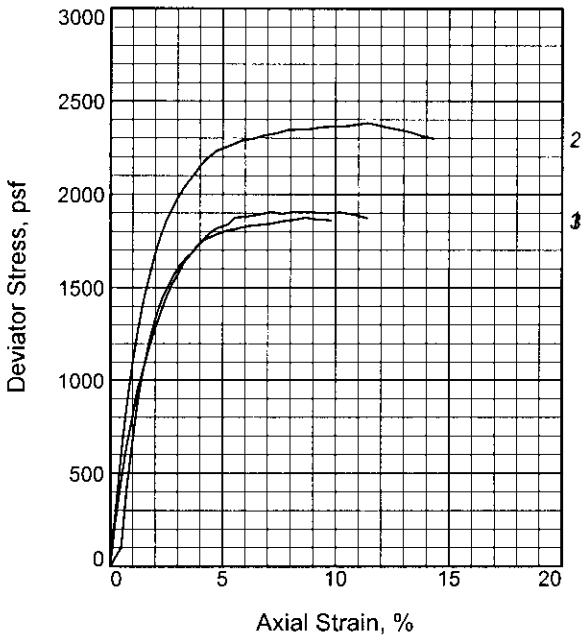
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 3.1
Sample Number: 2B

UNCONFINED COMPRESSION TEST

FFEB JV

Tested By: WS **Checked By:** BD





Specimen No.		1	2	3
Initial	Water Content, %	42.0	41.3	40.9
	Dry Density, pcf	75.5	76.1	76.0
	Saturation, %	90.9	90.7	89.6
	Void Ratio	1.2663	1.2470	1.2495
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	42.0	41.3	40.9
	Dry Density, pcf	75.5	76.1	76.0
	Saturation, %	90.9	90.7	89.6
	Void Ratio	1.2663	1.2470	1.2495
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.030	0.030
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		1904.9	2382.6	1873.2
Strain, %		7.1	11.4	8.7
Ult. Stress, psf		1869.8	2296.9	1857.7
Strain, %				
σ_1 Failure, psf		2898.5	5377.8	7863.6
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR & T CH4 W/ WD

LL= 83 **PL=** 27 **PI=** 56

Assumed Specific Gravity= 2.74

Remarks: TORVANE = 0.500tsf

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

Source of Sample: WWHC-54UFT **Depth:** 5.1

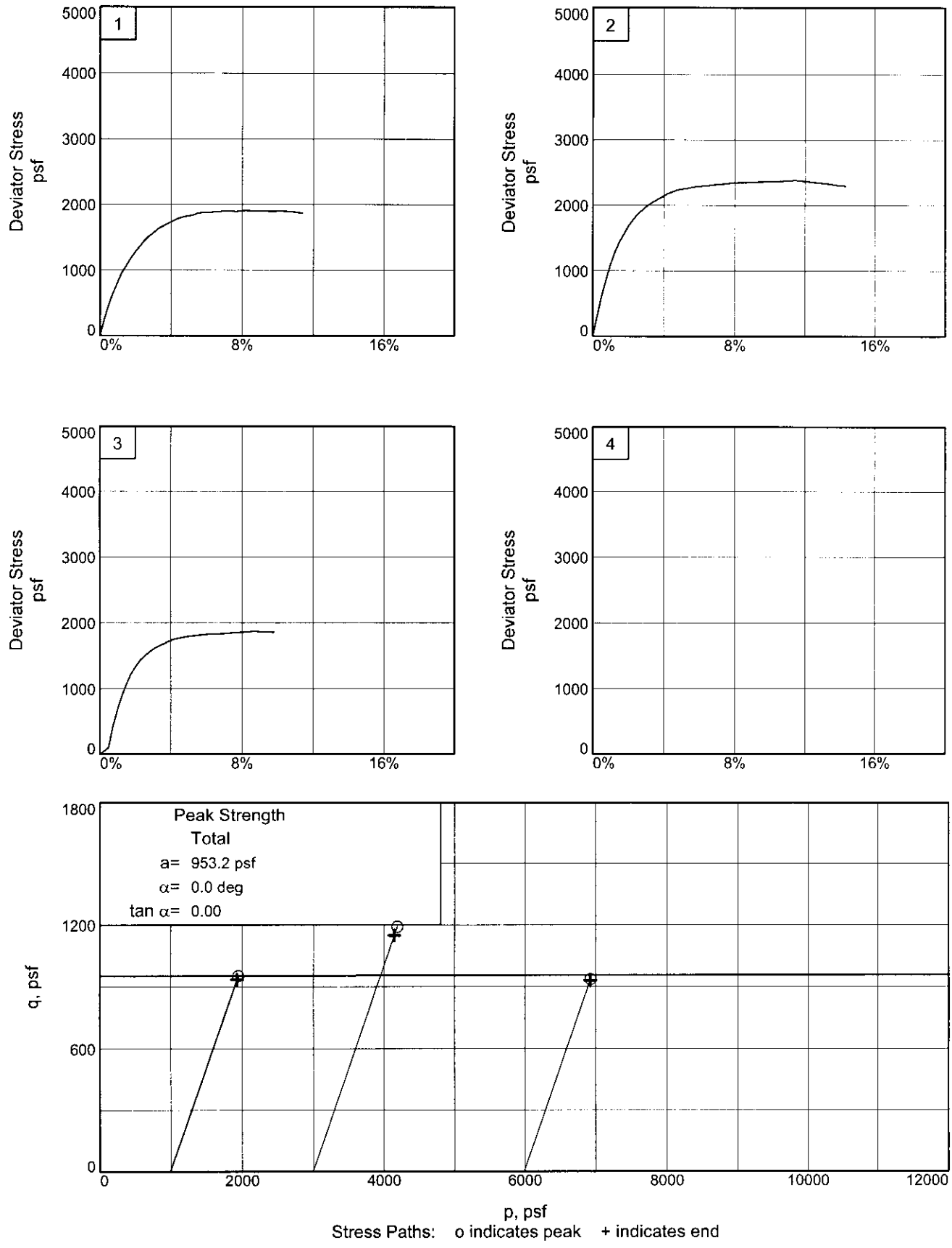
Sample Number: 3B

Proj. No.: 19667 **Date Sampled:** 6-8-07

TRIAXIAL SHEAR TEST REPORT

FFEB JV

Figure 1



Client: U.S.A.C.E - NEW ORLEANS DISTRICT

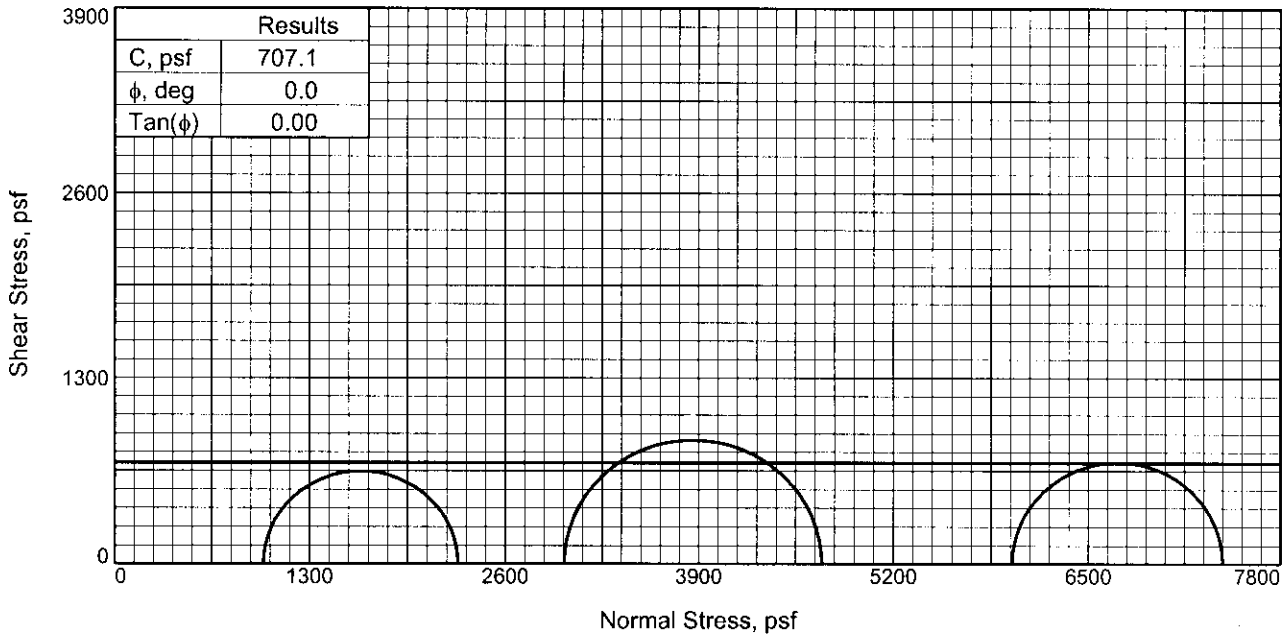
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

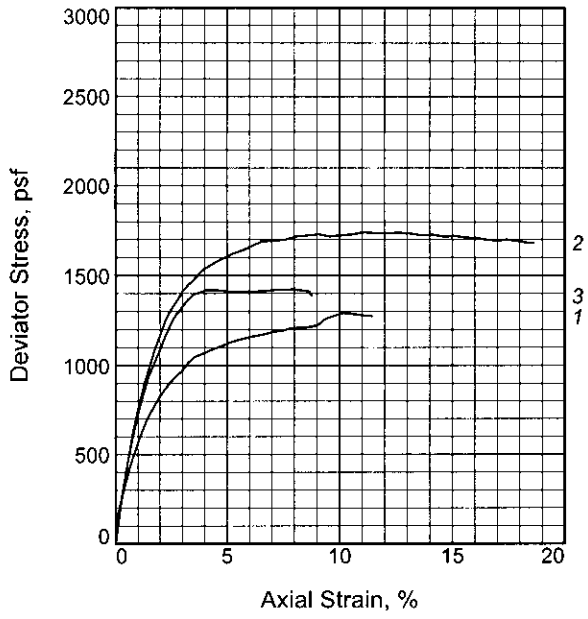
Source of Sample: WWHC-54UFT **Depth:** 5.1 **Sample Number:** 3B

Project No.: 19667

Figure 2

FFEB JV





Specimen No.		1	2	3
Initial	Water Content, %	35.7	32.3	33.7
	Dry Density, pcf	84.1	86.4	85.4
	Saturation, %	95.9	91.7	93.4
	Void Ratio	1.0043	0.9504	0.9744
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	35.7	32.3	33.7
	Dry Density, pcf	84.1	86.4	85.4
	Saturation, %	95.9	91.7	93.4
	Void Ratio	1.0043	0.9504	0.9744
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.029	0.029
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		1291.3	1728.6	1419.3
Strain, %		10.2	9.1	4.6
Ult. Stress, psf		1272.6	1682.2	1387.6
Strain, %				
σ_1 Failure, psf		2284.9	4723.8	7409.7
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR & T CH2

LL= 56 **PL=** 20 **PI=** 36
Assumed Specific Gravity= 2.70
Remarks: TORVANE = 0.300 tsf

Figure 1

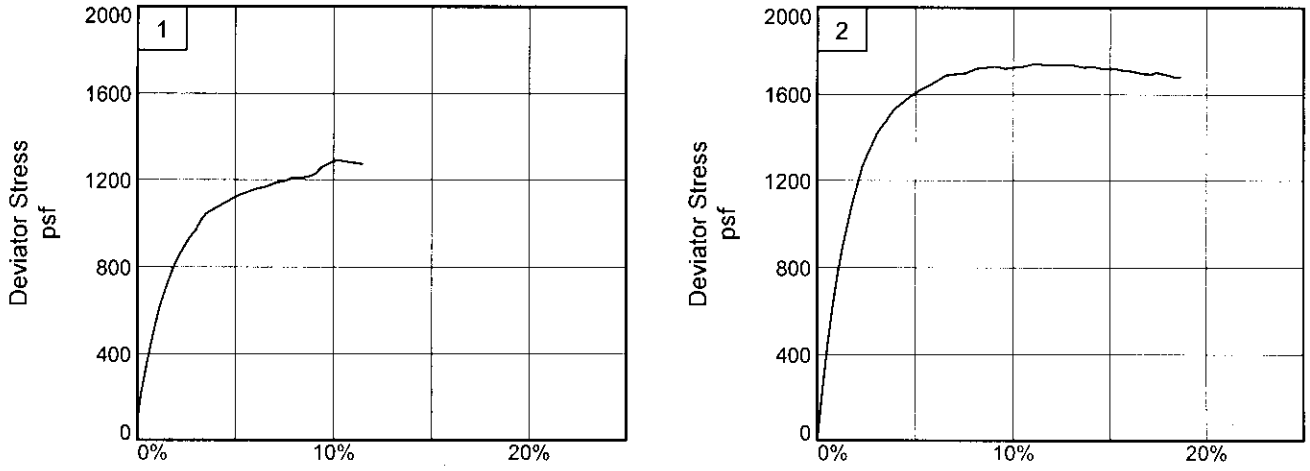
Client: U.S.A.C.E - NEW ORLEANS DISTRICT

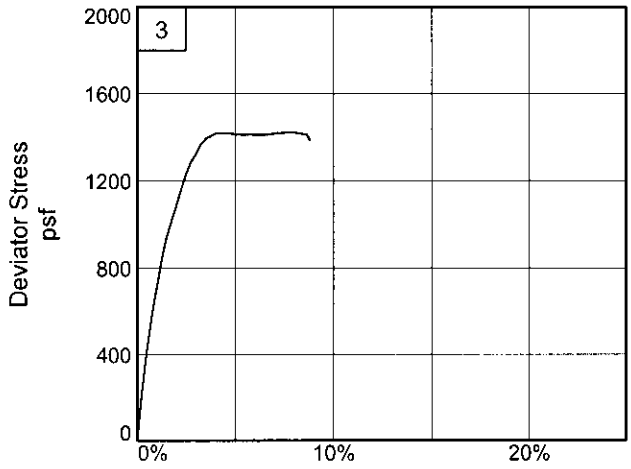
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 10
Sample Number: 4C
Proj. No.: 19667 **Date Sampled:** 6-8-07

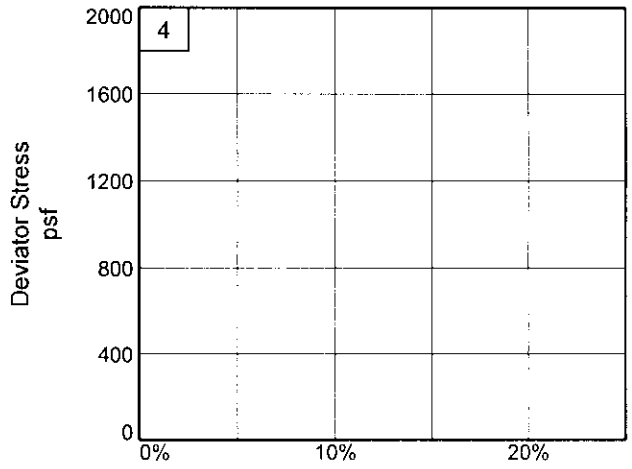
TRIAXIAL SHEAR TEST REPORT

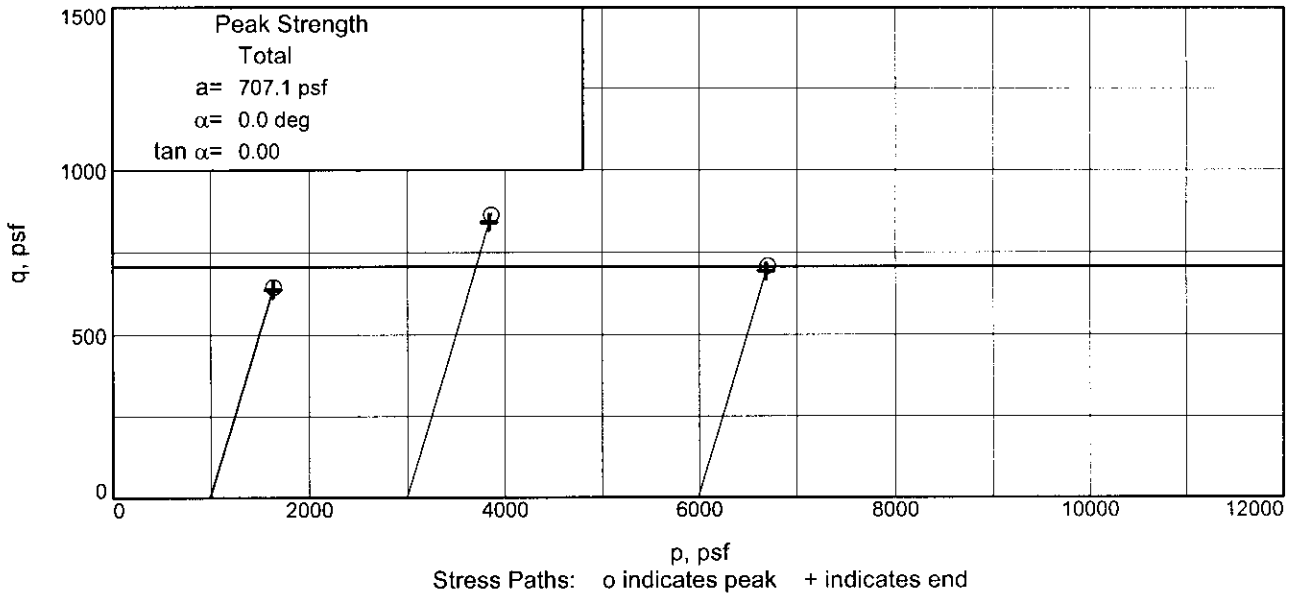
FFEB JV

Tested By: WS **Checked By:** BD





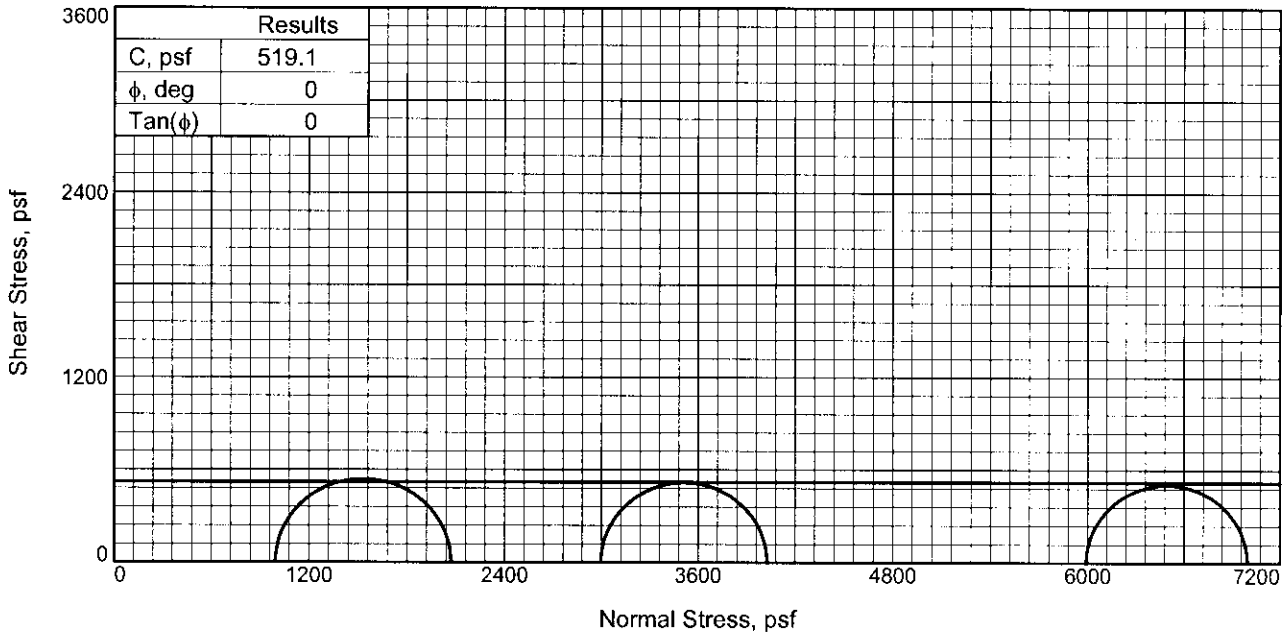


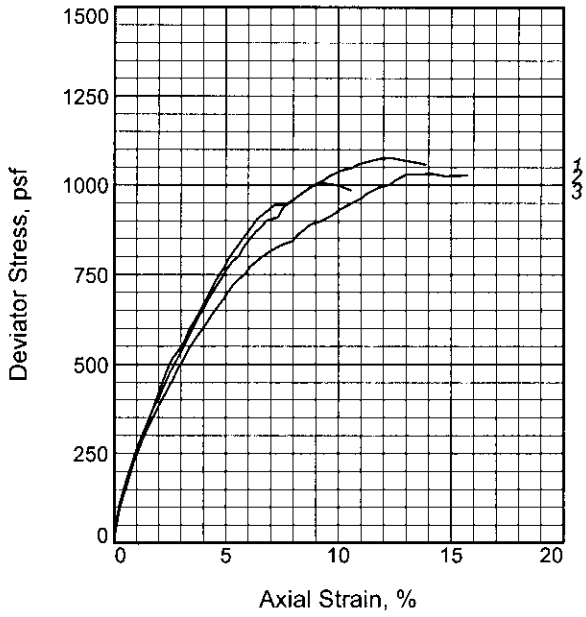


Client: U.S.A.C.E - NEW ORLEANS DISTRICT
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 10 **Sample Number:** 4C
Project No.: 19667 **Figure** 2

FFEB JV

Tested By: WS **Checked By:** BD





Specimen No.		1	2	3
Initial	Water Content, %	33.2	33.1	32.7
	Dry Density, pcf	88.4	86.7	86.4
	Saturation, %	100.1	95.8	94.1
	Void Ratio	0.8853	0.9233	0.9289
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	33.2	33.1	32.7
	Dry Density, pcf	88.4	86.7	86.4
	Saturation, %	100.1	95.8	94.1
	Void Ratio	0.8853	0.9233	0.9289
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.030	0.030
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		1076.0	1031.7	1007.0
Strain, %		12.4	14.2	9.2
Ult. Stress, psf		1057.6	1027.3	985.1
Strain, %				
σ_1 Failure, psf		2069.6	4026.9	6997.4
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR & T CL4

LL= 35 **PL=** 22 **PI=** 13
Assumed Specific Gravity= 2.67
Remarks: TORVANE = 0.140tsf

Figure 1

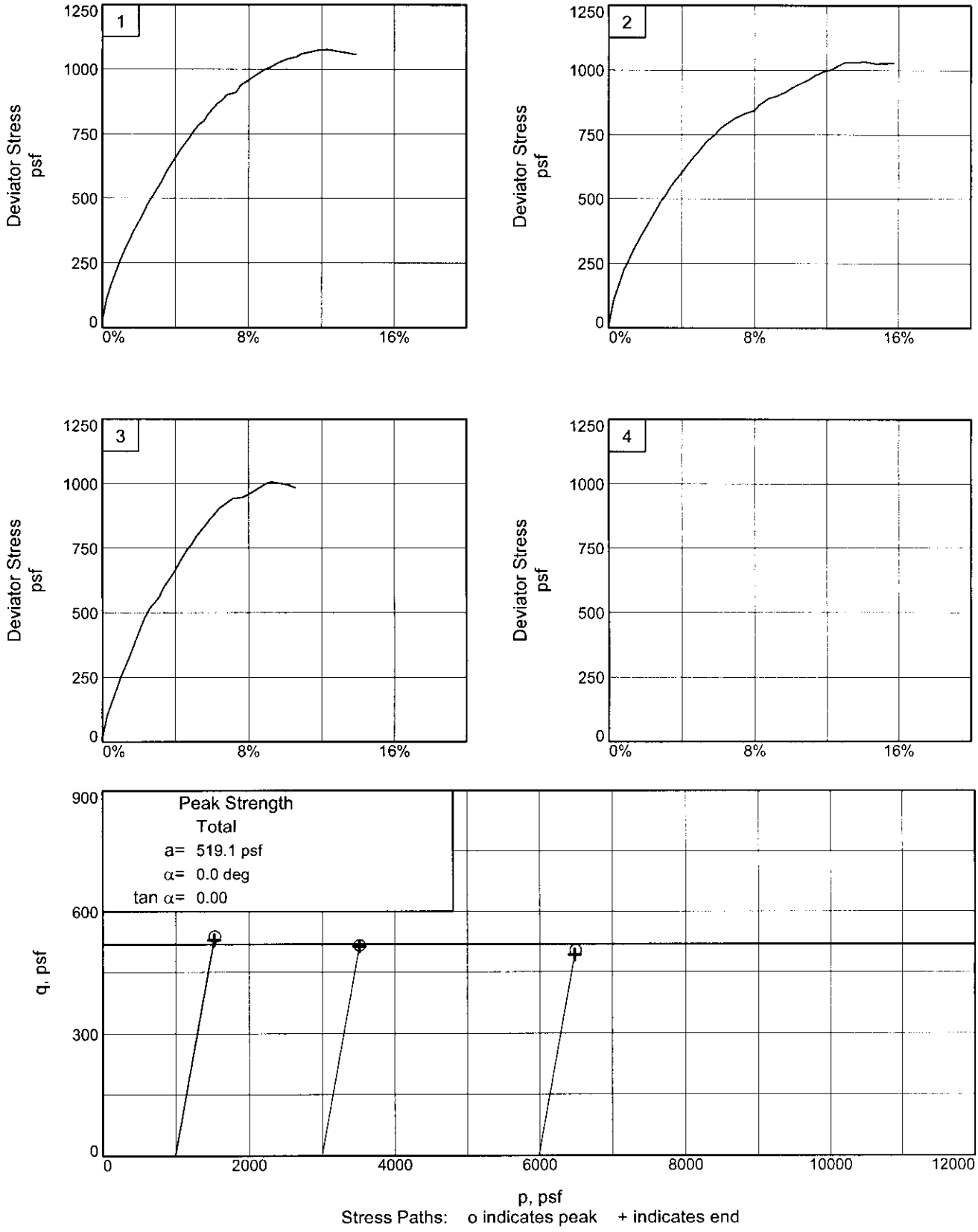
Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 14
Sample Number: 5C
Proj. No.: 19667 **Date Sampled:** 6-11-07

TRIAXIAL SHEAR TEST REPORT

FFEB JV

Tested By: WS **Checked By:** BD



Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

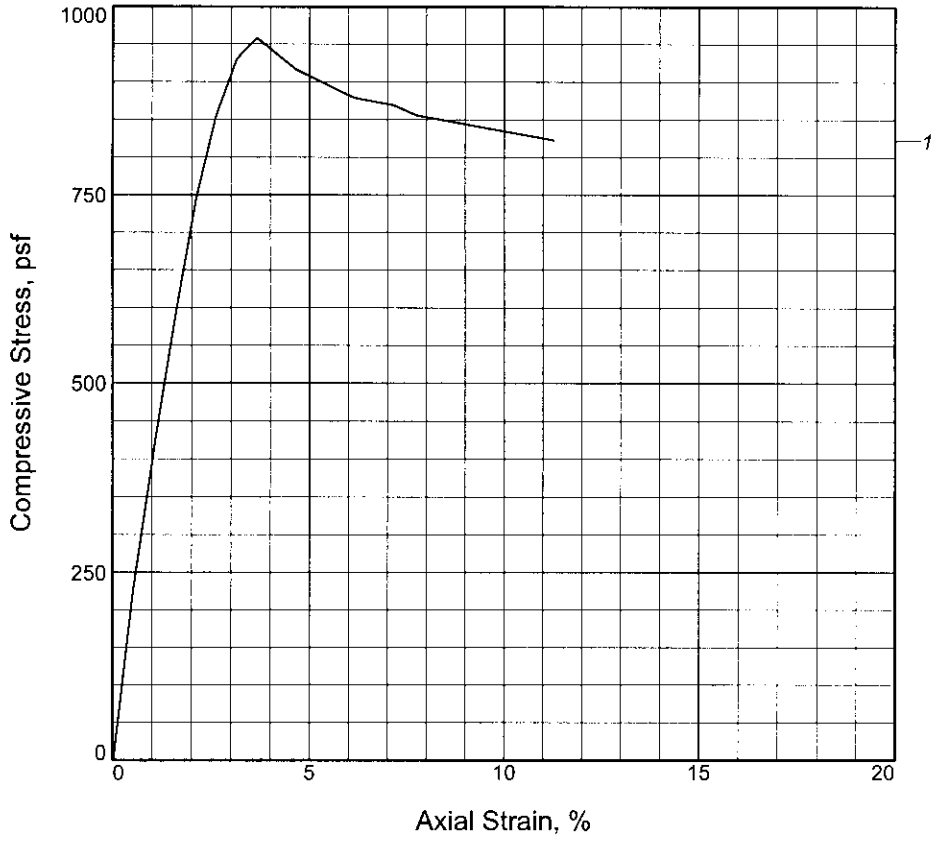
Source of Sample: WWHC-54UFT **Depth:** 14 **Sample Number:** 5C

Project No.: 19667 **Figure** 2

FFEB JV

Tested By: WS **Checked By:** BD

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	958.1			
Undrained shear strength, psf	479.1			
Failure strain, %	3.7			
Strain rate, in./min.	0.059			
Water content, %	47.0			
Wet density, pcf	106.6			
Dry density, pcf	72.5			
Saturation, %	95.7			
Void ratio	1.3243			
Specimen diameter, in.	1.395			
Specimen height, in.	2.949			
Height/diameter ratio	2.11			

Description: SO GR CH2

LL = 53	**PL =** 21	**PI =** 32	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 19667
Date Sampled: 6-14-07
Remarks:
TORVANE = 0.270tsf

Figure 1

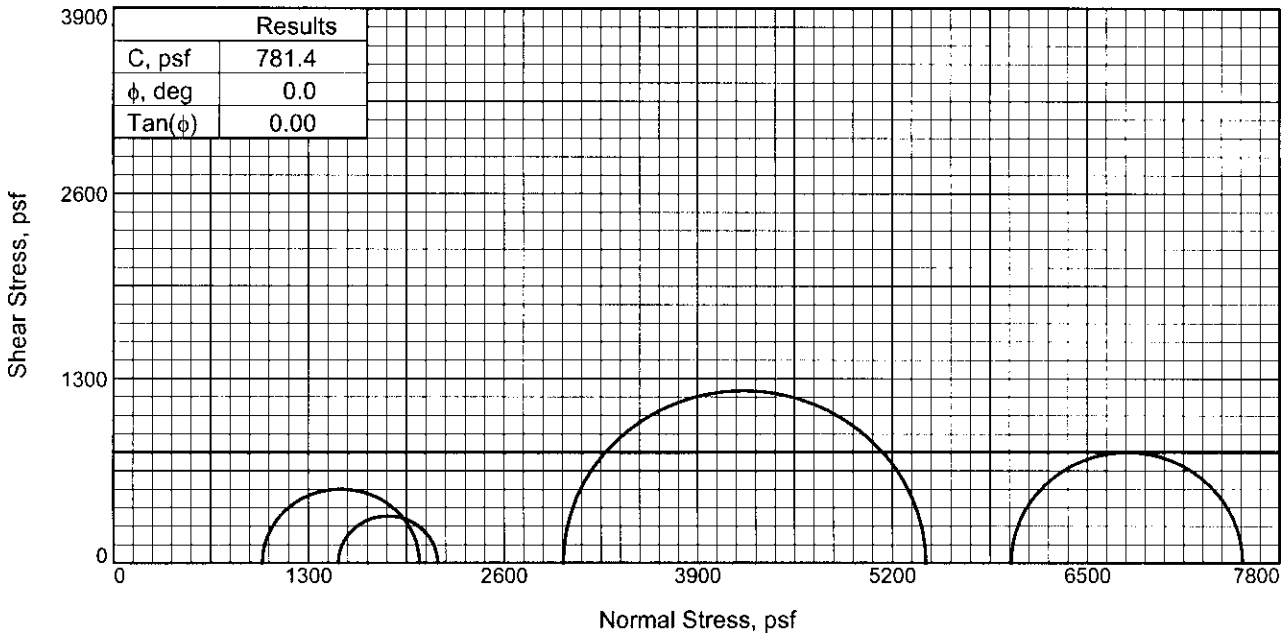
Client: U.S.A.C.E - NEW ORLEANS DISTRICT

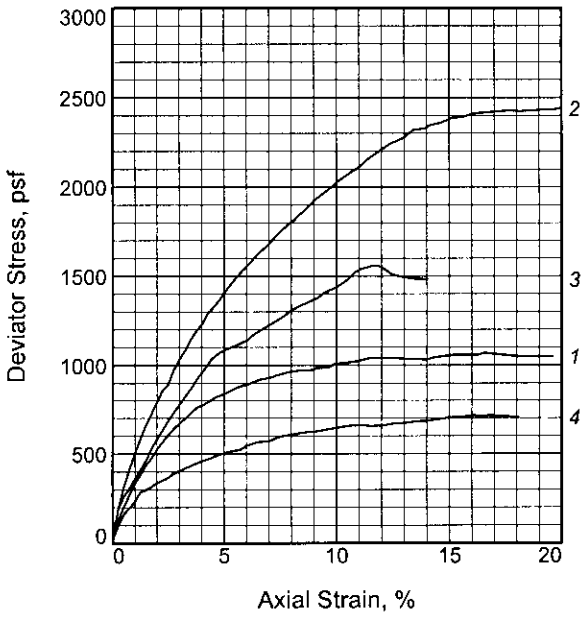
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 18
Sample Number: 6C

UNCONFINED COMPRESSION TEST

FFEB JV

Tested By: BD **Checked By:** BD





Specimen No.		1	2	3	4
Initial	Water Content, %	33.3	35.4	34.1	42.3
	Dry Density, pcf	87.9	83.9	85.2	78.5
	Saturation, %	99.2	95.8	95.0	100.5
	Void Ratio	0.8965	0.9862	0.9568	1.1225
	Diameter, in.	1.371	1.391	1.391	1.388
	Height, in.	2.906	2.929	2.929	2.947
At Test	Water Content, %	33.3	35.4	34.1	42.3
	Dry Density, pcf	87.9	83.9	85.2	78.5
	Saturation, %	99.2	95.8	95.0	100.5
	Void Ratio	0.8965	0.9862	0.9568	1.1225
	Diameter, in.	1.371	1.391	1.391	1.388
	Height, in.	2.906	2.929	2.929	2.947
Strain rate, in./min.		0.029	0.024	0.031	0.029
Back Pressure, psi		0.000	0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600	10.400
Fail. Stress, psf		1041.9	2427.4	1559.5	658.4
Strain, %		12.5	17.6	11.6	11.0
Ult. Stress, psf		1048.7	2441.3	1481.3	704.1
Strain, %					
σ_1 Failure, psf		2035.5	5422.6	7549.9	2156.0
σ_3 Failure, psf		993.6	2995.2	5990.4	1497.6

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL4

LL= 36 **PL=** 22 **PI=** 14
Assumed Specific Gravity= 2.67
Remarks: TORVANE = 0.150tsf

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

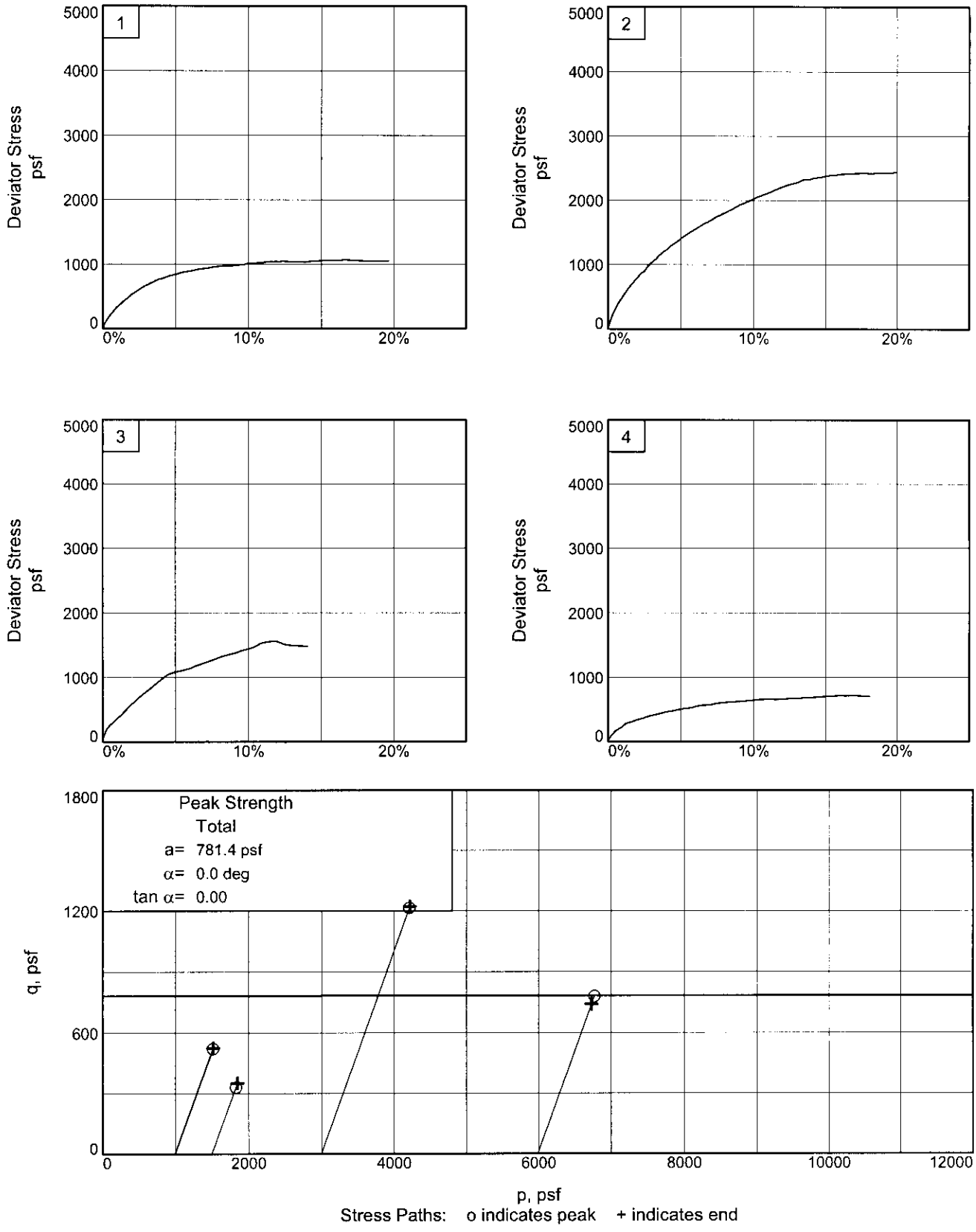
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 22
Sample Number: 7C
Proj. No.: 19667 **Date Sampled:** 6-11-07

TRIAXIAL SHEAR TEST REPORT

FFEB JV

Figure 1

Tested By: WS **Checked By:** BD



Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

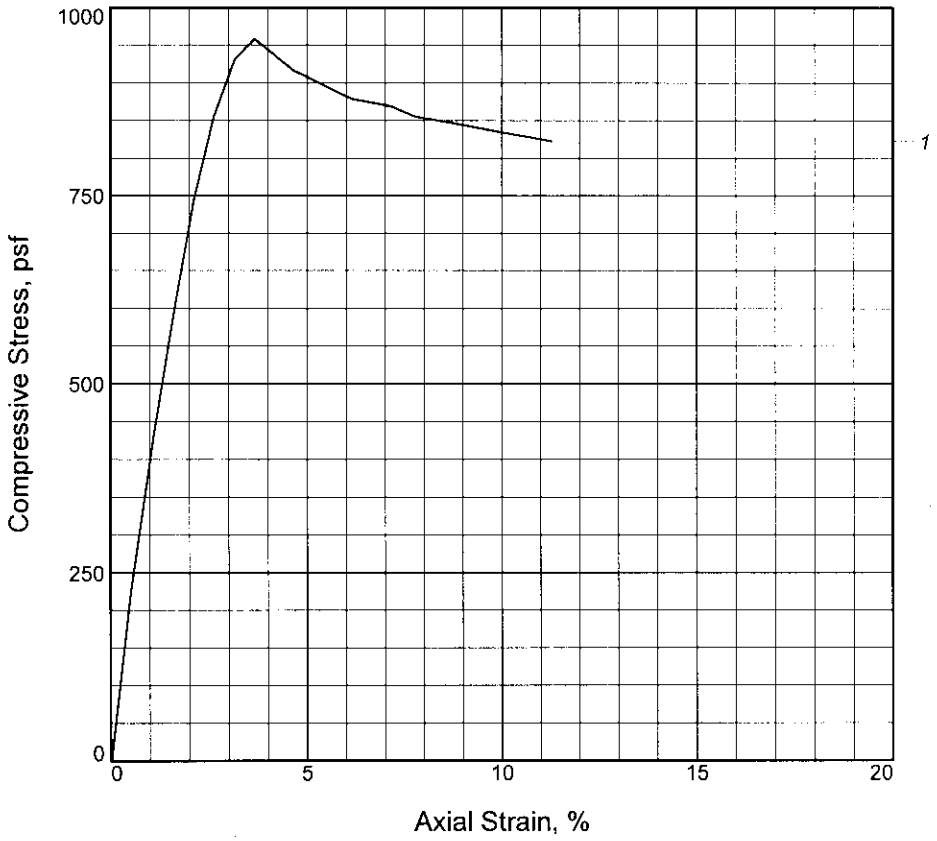
Source of Sample: WWHC-54UFT **Depth:** 22 **Sample Number:** 7C

Project No.: 19667 **Figure** 2

FFEB JV

Tested By: WS **Checked By:** BD

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	958.1			
Undrained shear strength, psf	479.1			
Failure strain, %	3.7			
Strain rate, in./min.	0.059			
Water content, %	47.0			
Wet density, pcf	106.6			
Dry density, pcf	72.5			
Saturation, %	95.7			
Void ratio	1.3243			
Specimen diameter, in.	1.395			
Specimen height, in.	2.949			
Height/diameter ratio	2.11			

Description: SO GR CH2

LL = 53	**PL =** 21	**PI =** 32	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 19667
Date Sampled: 6-14-07
Remarks:
TORVANE = 0.270tsf

Figure 1

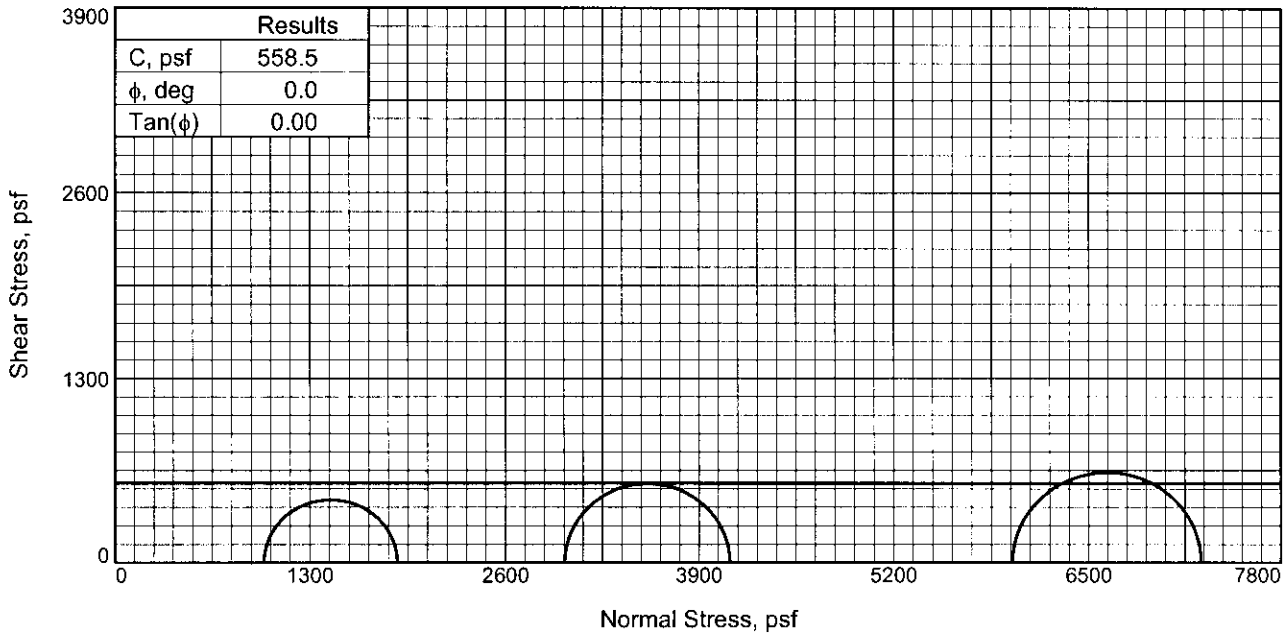
Client: U.S.A.C.E - NEW ORLEANS DISTRICT

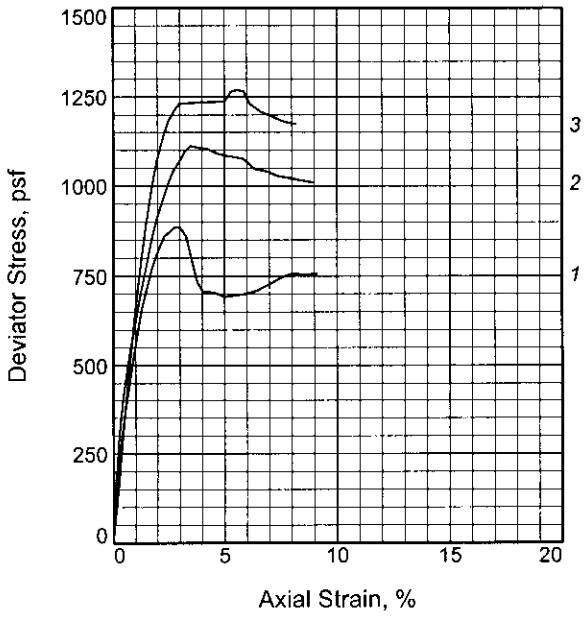
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 18
Sample Number: 6C

UNCONFINED COMPRESSION TEST

FFEB JV

Tested By: BD **Checked By:** BD





Specimen No.		1	2	3
Initial	Water Content, %	47.3	46.9	46.9
	Dry Density, pcf	73.3	73.5	74.0
	Saturation, %	98.2	98.0	99.1
	Void Ratio	1.3011	1.2919	1.2782
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	47.3	46.9	46.9
	Dry Density, pcf	73.3	73.5	74.0
	Saturation, %	98.2	98.0	99.1
	Void Ratio	1.3011	1.2919	1.2782
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.029	0.030
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		885.7	1111.4	1269.7
Strain, %		2.8	3.5	5.6
Ult. Stress, psf		756.2	1010.3	1173.1
Strain, %				
σ_1 Failure, psf		1879.3	4106.6	7260.1
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH2

LL= 56 **PL=** 22 **PI=** 34
Assumed Specific Gravity= 2.70
Remarks: TORVANE = 0.150tsf

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

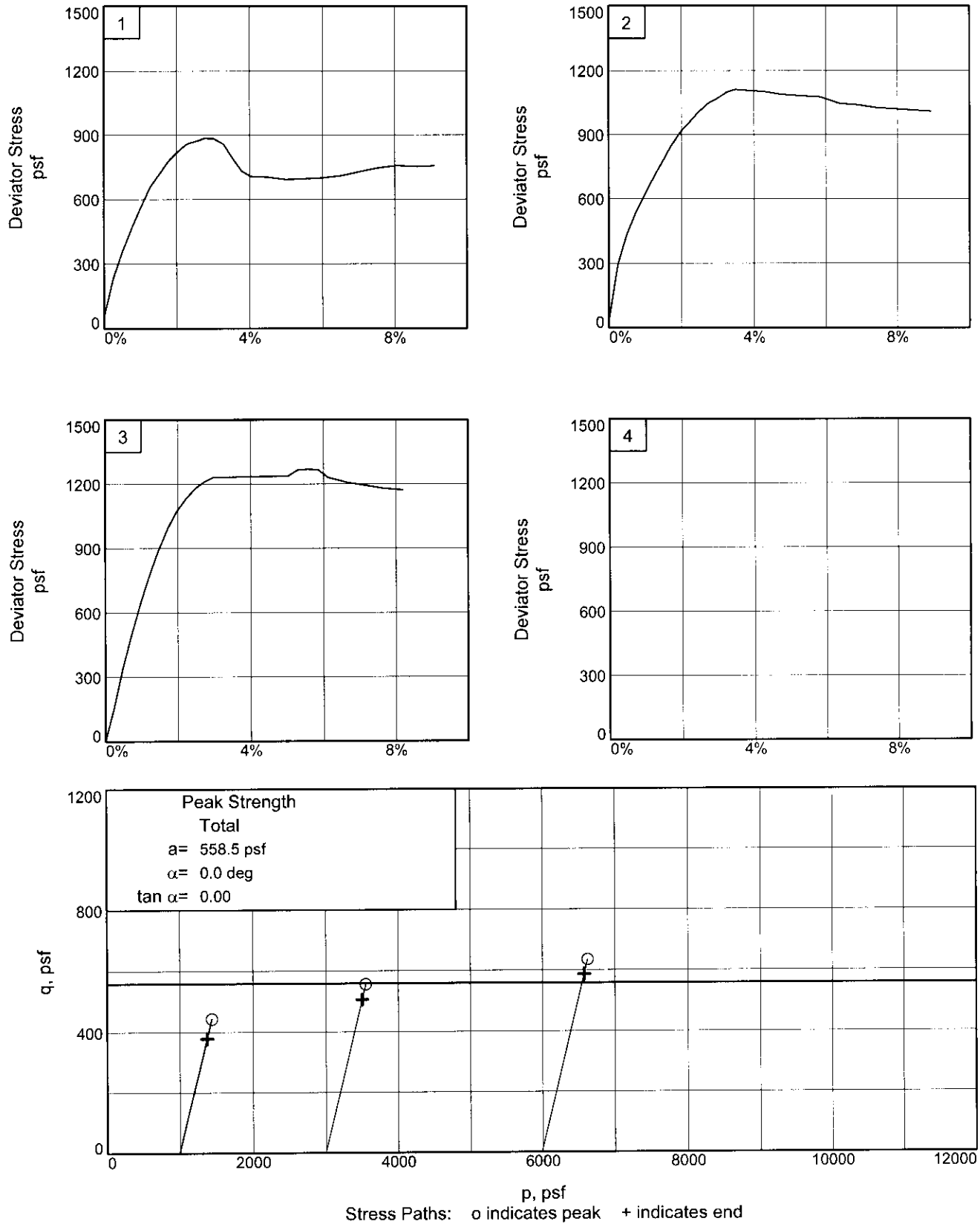
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 26
Sample Number: 8C
Proj. No.: 19667 **Date Sampled:** 6-11-07

TRIAXIAL SHEAR TEST REPORT

FFEB JV

Figure 1

Tested By: WS **Checked By:** BD



Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

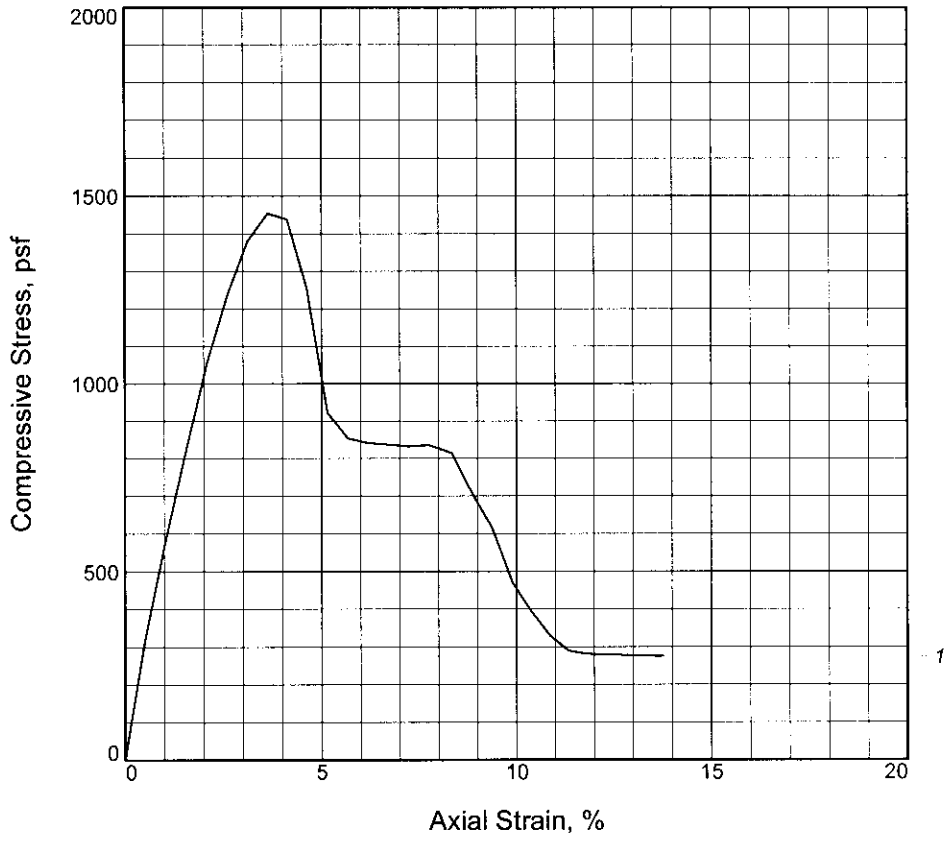
Source of Sample: WWHC-54UFT **Depth:** 26 **Sample Number:** 8C

Project No.: 19667 **Figure** 2

FFEB JV

Tested By: WS **Checked By:** BD

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1453.7			
Undrained shear strength, psf	726.9			
Failure strain, %	3.6			
Strain rate, in./min.	0.059			
Water content, %	41.8			
Wet density, pcf	112.5			
Dry density, pcf	79.4			
Saturation, %	100.4			
Void ratio	1.1238			
Specimen diameter, in.	1.393			
Specimen height, in.	2.943			
Height/diameter ratio	2.11			

Description: M GR CL6

LL = 50	**PL =** 19	**PI =** 31	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 19667
Date Sampled: 6-14-07
Remarks:
TORVANE = 0.220tsf

Figure 1

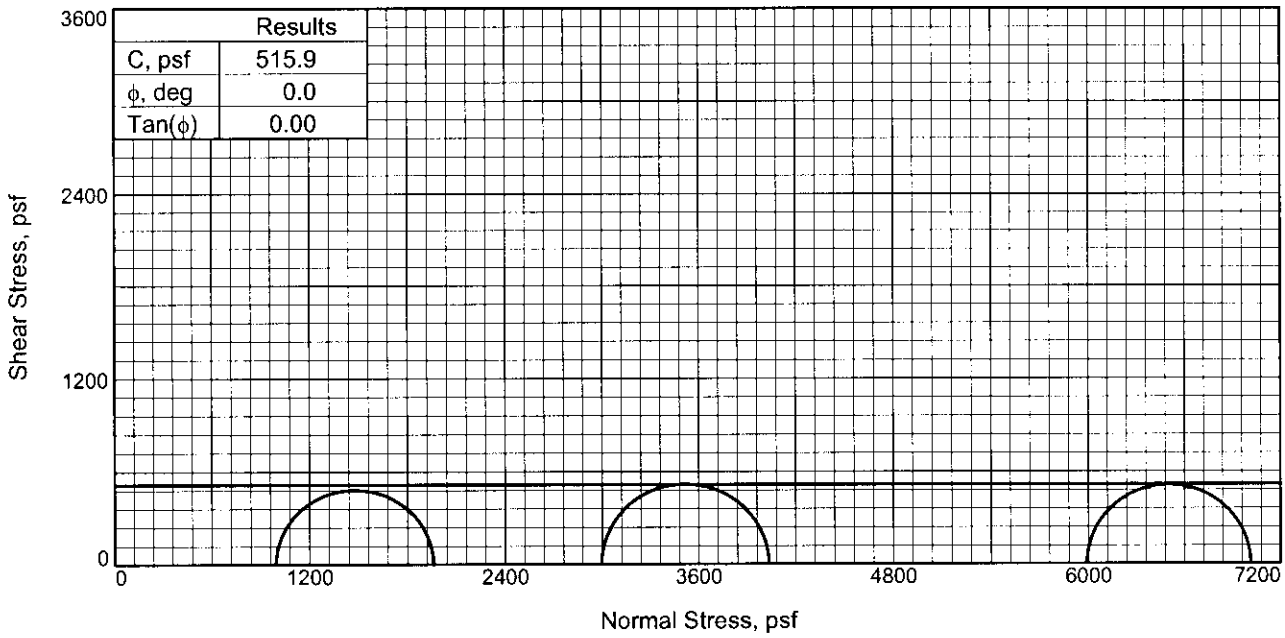
Client: U.S.A.C.E - NEW ORLEANS DISTRICT

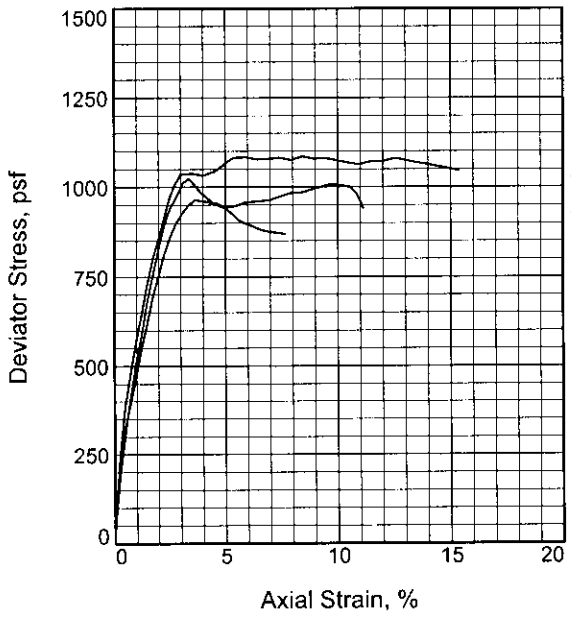
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 29.1
Sample Number: 9B

UNCONFINED COMPRESSION TEST

FFEB JV

Tested By: BD **Checked By:** BD





Specimen No.		1	2	3
Initial	Water Content, %	39.6	41.1	39.5
	Dry Density, pcf	79.7	78.0	79.7
	Saturation, %	96.2	95.9	95.9
	Void Ratio	1.1075	1.1529	1.1076
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	39.6	41.1	39.5
	Dry Density, pcf	79.7	78.0	79.7
	Saturation, %	96.2	95.9	95.9
	Void Ratio	1.1075	1.1529	1.1076
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.030	0.030	0.030
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		963.9	1038.3	1023.4
Strain, %		3.6	3.5	3.4
Ult. Stress, psf		869.2	1045.8	941.2
Strain, %				
σ_1 Failure, psf		1957.5	4033.5	7013.8
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL6-S

LL= 46 **PL=** 23 **PI=** 23
Assumed Specific Gravity= 2.69
Remarks: TORVANE = 0.200tsf

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

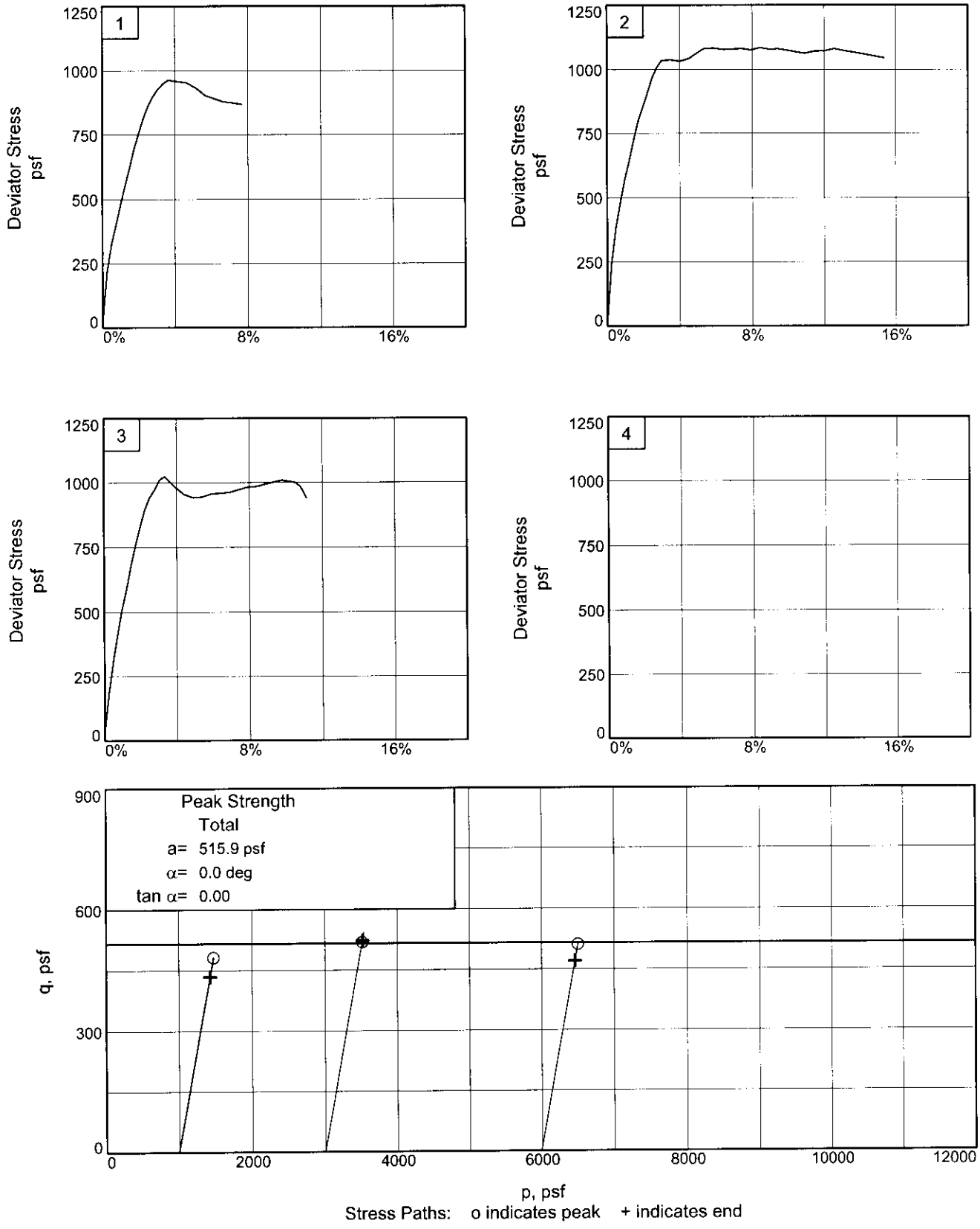
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 33.1
Sample Number: 10B
Proj. No.: 19667 **Date Sampled:** 6-12-07

TRIAXIAL SHEAR TEST REPORT

FFEB JV

Figure 1

Tested By: BD **Checked By:** BD



Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

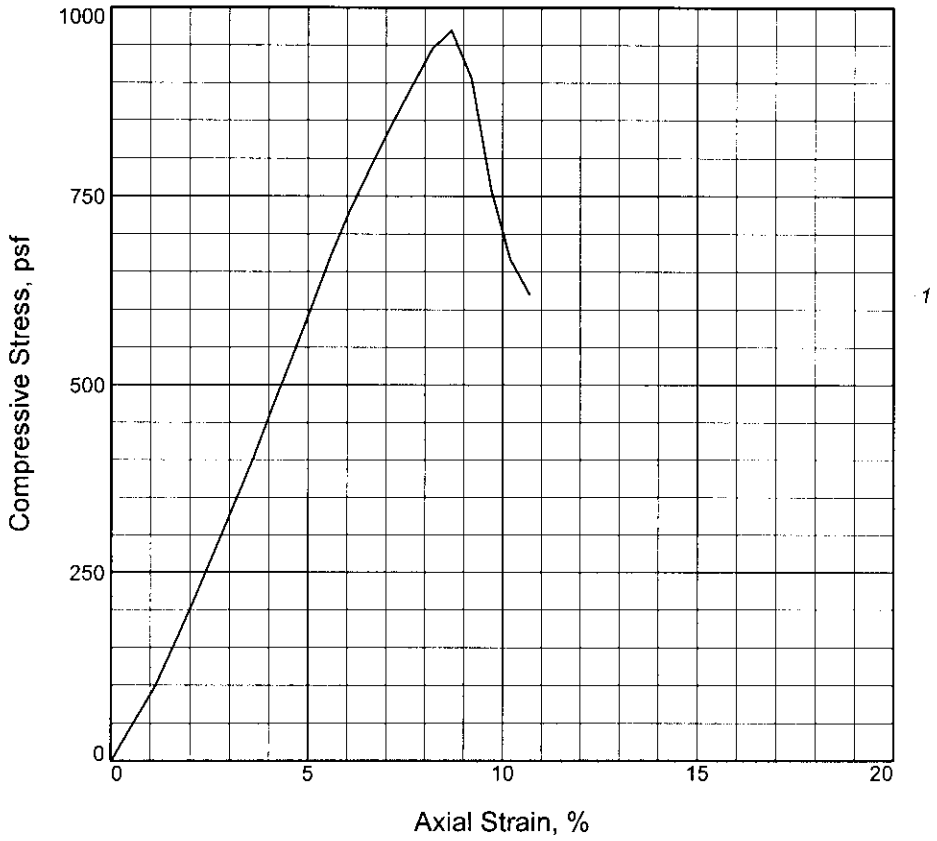
Source of Sample: WWHC-54UFT **Depth:** 33.1 **Sample Number:** 10B

Project No.: 19667 **Figure** 2

FFEB JV

Tested By: BD **Checked By:** BD

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	969.7			
Undrained shear strength, psf	484.9			
Failure strain, %	8.7			
Strain rate, in./min.	0.059			
Water content, %	33.1			
Wet density, pcf	114.7			
Dry density, pcf	86.2			
Saturation, %	94.5			
Void ratio	0.9341			
Specimen diameter, in.	1.411			
Specimen height, in.	2.966			
Height/diameter ratio	2.10			

Description: SO GR CL4

LL = 34	**PL =** 18	**PI =** 16	**Assumed GS=** 2.67	**Type:** UNDISTURBED

Project No.: 19667
Date Sampled: 6-14-07
Remarks:
TORVANE = 0.150tsf

Figure 1

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

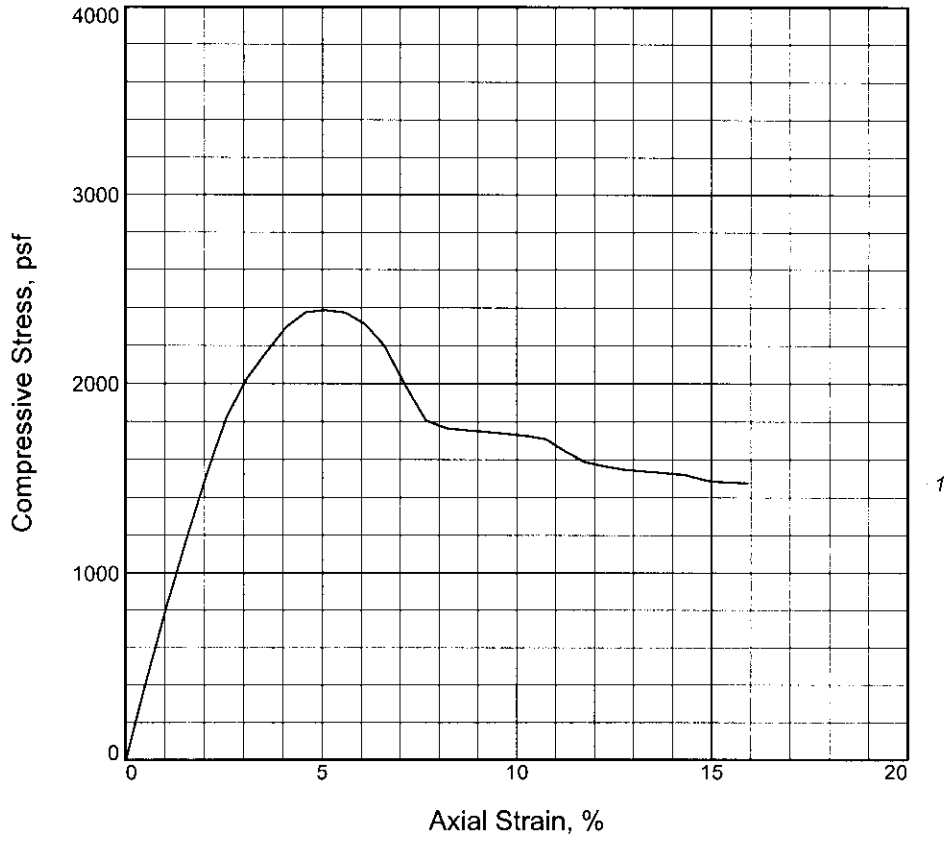
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 38
Sample Number: 11C

UNCONFINED COMPRESSION TEST

FFEB JV

Tested By: BD **Checked By:** BD

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	2386.1			
Undrained shear strength, psf	1193.0			
Failure strain, %	5.1			
Strain rate, in./min.	0.057			
Water content, %	36.1			
Wet density, pcf	110.3			
Dry density, pcf	81.0			
Saturation, %	90.2			
Void ratio	1.0797			
Specimen diameter, in.	1.407			
Specimen height, in.	2.943			
Height/diameter ratio	2.09			

Description: ST GR CL6

LL = 46	**PL =** 23	**PI =** 23	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 19667
Date Sampled: 6-14-07
Remarks:
TORVANE = 0.380tsf

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

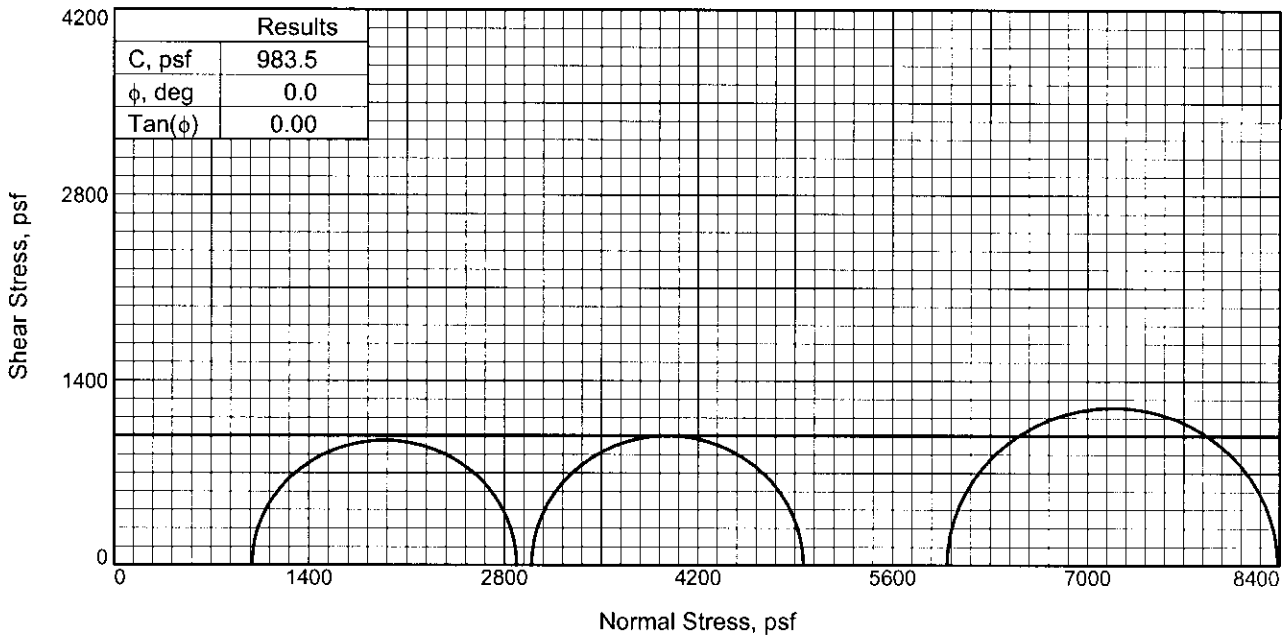
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 50
Sample Number: 14C

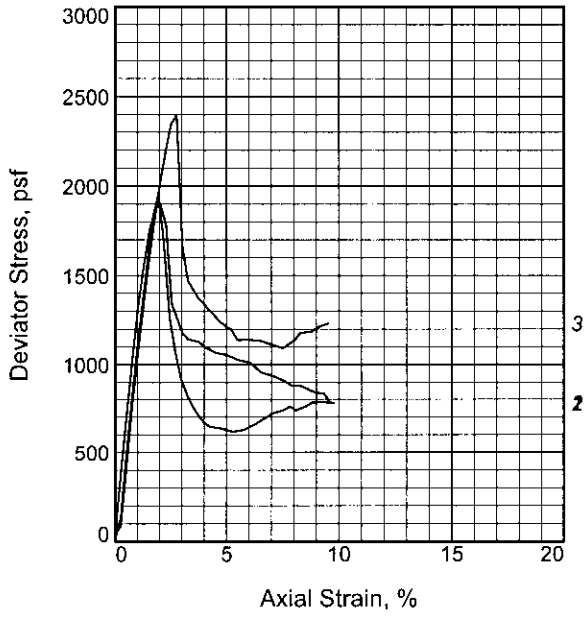
UNCONFINED COMPRESSION TEST

FFEB JV

Figure 1

Tested By: BD **Checked By:** BD





Specimen No.		1	2	3
Initial	Water Content, %	60.2	49.1	52.7
	Dry Density, pcf	63.5	69.6	68.0
	Saturation, %	97.5	92.3	95.3
	Void Ratio	1.6923	1.4570	1.5152
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	60.2	49.1	52.7
	Dry Density, pcf	63.5	69.6	68.0
	Saturation, %	97.5	92.3	95.3
	Void Ratio	1.6923	1.4570	1.5152
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.029	0.029
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		1893.4	1965.0	2395.6
Strain, %		2.0	2.0	2.8
Ult. Stress, psf		780.5	779.0	1232.7
Strain, %				
σ_1 Failure, psf		2887.0	4960.2	8386.0
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ ARS SM, SL

LL= 92 **PL=** 33 **PI=** 59
Assumed Specific Gravity= 2.74
Remarks: TORVANE = 0.450tsf

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

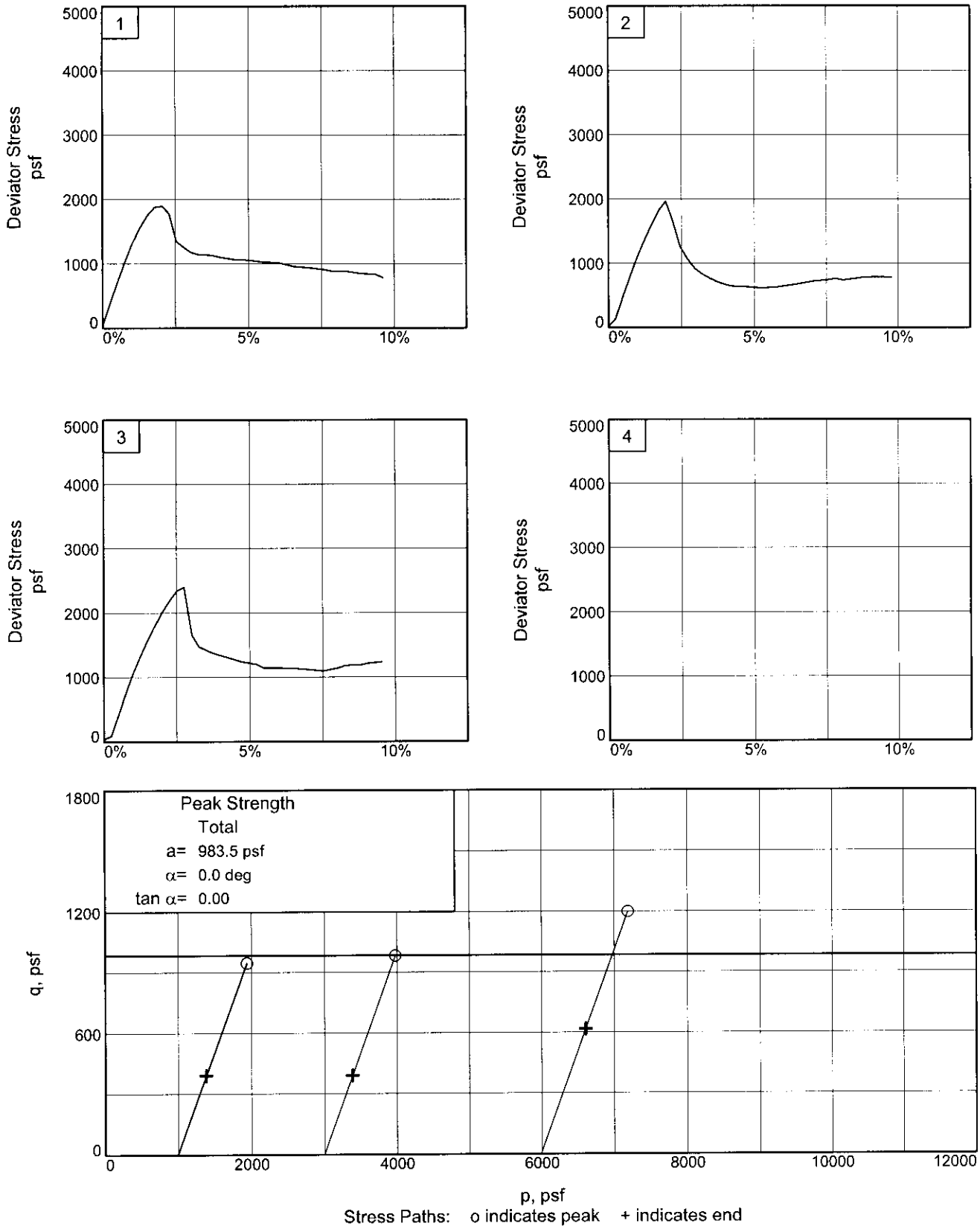
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 53.1
Sample Number: 15B
Proj. No.: 19667 **Date Sampled:** 6-12-07

TRIAXIAL SHEAR TEST REPORT

FFEB JV

Figure 1

Tested By: BD **Checked By:** BD

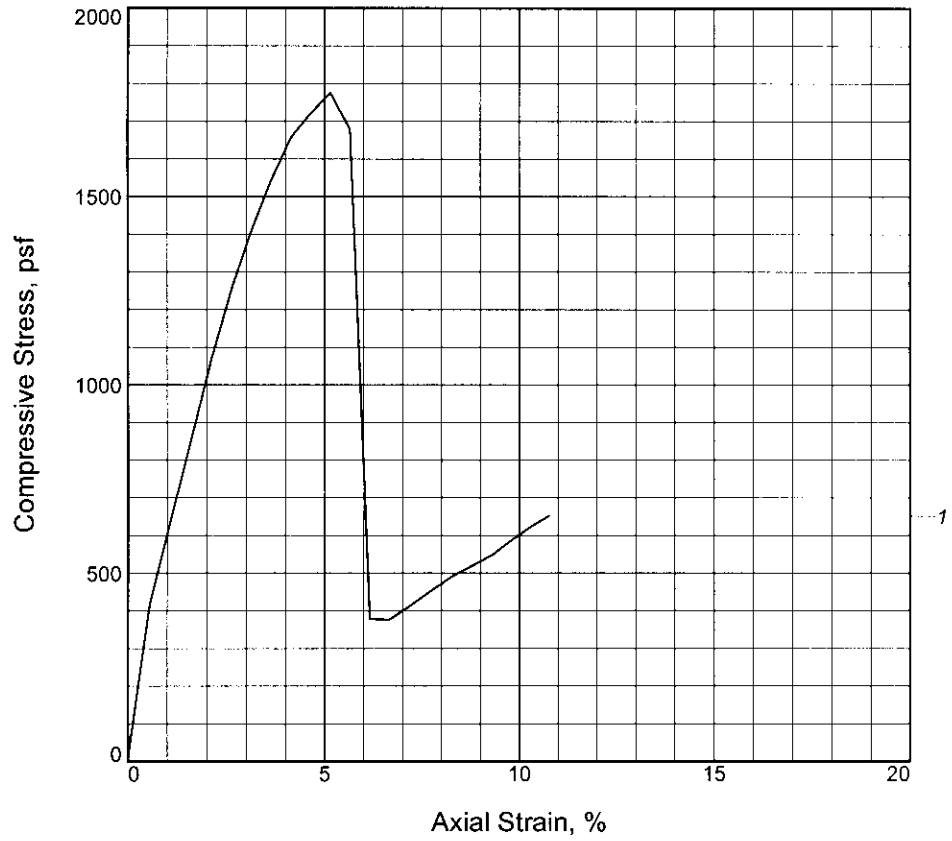


Client: U.S.A.C.E - NEW ORLEANS DISTRICT
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 53.1 **Sample Number:** 15B
Project No.: 19667 **Figure** 2

FFEB JV

Tested By: BD **Checked By:** BD

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1775.2			
Undrained shear strength, psf	887.6			
Failure strain, %	5.2			
Strain rate, in./min.	0.058			
Water content, %	28.3			
Wet density, pcf	121.4			
Dry density, pcf	94.6			
Saturation, %	99.1			
Void ratio	0.7621			
Specimen diameter, in.	1.392			
Specimen height, in.	2.933			
Height/diameter ratio	2.11			

Description: M GR CL4

LL = 31	**PL** = 14	**PI** = 17	**Assumed GS=** 2.67	**Type:** UNDISTURBED

Project No.: 19667
Date Sampled: 6-14-07
Remarks:
TORVANE = 0.340tsf

Figure 1

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

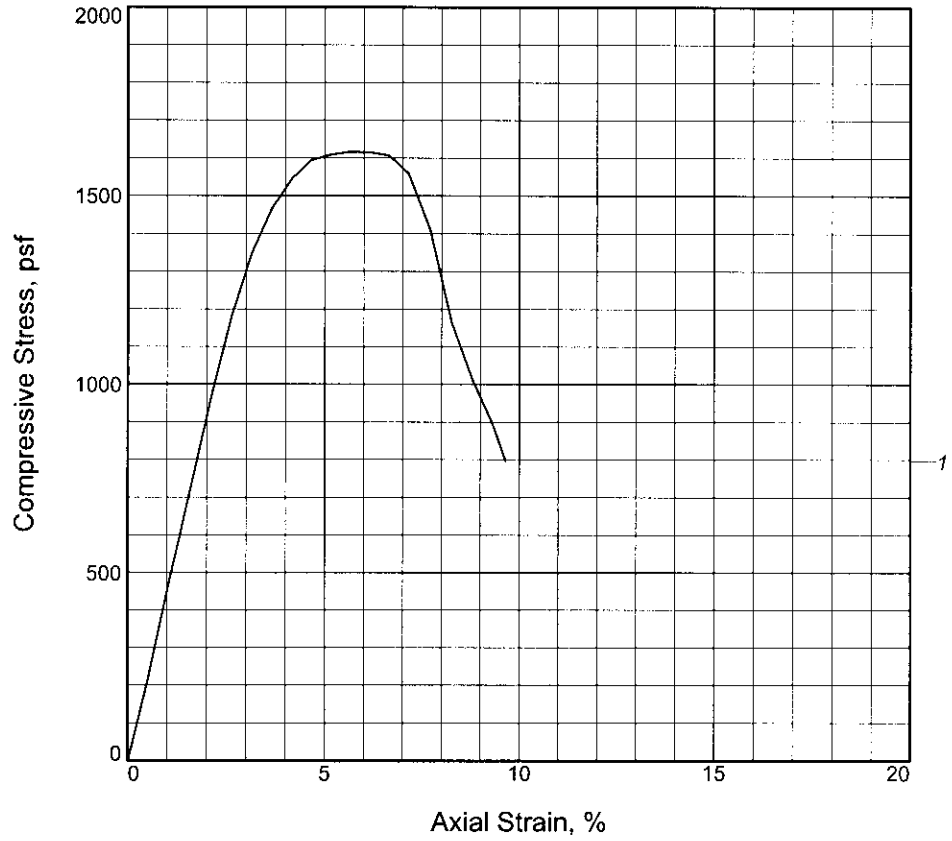
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 62
Sample Number: 17C

UNCONFINED COMPRESSION TEST

FFEB JV

Tested By: BD **Checked By:** BD

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1615.7			
Undrained shear strength, psf	807.8			
Failure strain, %	5.6			
Strain rate, in./min.	0.057			
Water content, %	30.6			
Wet density, pcf	118.8			
Dry density, pcf	91.0			
Saturation, %	97.2			
Void ratio	0.8458			
Specimen diameter, in.	1.392			
Specimen height, in.	2.938			
Height/diameter ratio	2.11			

Description: M GR & T CL6-S

LL = 40	**PL =** 21	**PI =** 19	**Assumed GS=** 2.69	**Type:** UNDISTURBED

Project No.: 19667
Date Sampled: 6-14-07
Remarks:
TORVANE = 0.370tsf

Figure 1

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-54UFT **Depth:** 70
Sample Number: 19C

UNCONFINED COMPRESSION TEST

FFEB JV

Tested By: BD **Checked By:** BD

BOR. WWHC-54UFT
STA. LAT N29^48'42.01" LONG W90^06'55.11"

14 APRIL 2007

GROUND EL. 6.20

0.0	0.8	27		CH	VSTLBR		RT		
0.8	2.0	31		CH	VSTLBR		RT		
2.0	2.8	37		CH	M LBR		O		
2.8	4.0	42		CH	M T GR		O	899111 77 25	37 34
4.0	4.8	35		CH	M GR		O		
4.8	8.0	39		CH	M GR T		RT		
8.0	8.8	52		CH	M GR		O		
8.8	9.7	37		CH	M GR				
9.7	12.0	35		CH	M GR T				
12.0	12.8	34	12.8CH		M LBR		O SIS		
12.8	13.7	32		CL	M LBR				
13.7	14.6	32		CL	M GR T				
14.6	16.0	33	16.0CL		M LBR				
16.0	16.8	36		CH SIS	M GR		WD		
16.8	17.7	38	17.7CH	SIS	M GR		WD		
17.7	18.6	43	18.6CH		SO GR			479106 53 21	47 183
18.6	20.0	43	20.0CH	SIS	GR		SS RT		
20.0	20.8	35		CL	SO GR		CS		
20.8	21.7	36		CL	SO GR				
21.7	24.0	35		CL	M GR				
24.0	24.8	35		CL	SO GR				
24.8	25.7	40	25.7CL		SO GR		CS		
25.7	28.0	46	28.0CH		M GR				
28.0	28.8	56	28.8CH	SIS	M GR				
28.8	29.7	40		CL	M GR			727113 50 19	42 294
29.7	30.6	33		CL	M GR				
30.6	32.0	31		CL	M GR				
32.0	32.8	31		CL	M GR				
32.8	33.7	36	33.7CL		M GR				
33.7	36.0		36.0NS						
36.0	36.8	36		CL	SO GR				
36.8	37.7	34		CL	M GR				
37.7	38.6	34		CL	SO GR			485115 34 18	33 383
38.6	40.0	38		CL	M GR				
40.0	40.8	33		CL	M GR				
40.8	41.7	38		CL	M GR				

41.7 44.0 38 44.0CL M GR
44.0 44.8 41 CH SIS M GR
44.8 45.7 45 45.7CH SIS M GR SS
45.7 46.6 38 CL M GR
46.6 48.0 30 CL M GR
48.0 48.8 34 CL M GR
48.8 49.7 42 CL ST GR SS
49.7 50.6 46 50.6CL ST GR 1193110 46 23 36 503
50.6 52.0 29 52.0SM GR
52.0 52.8 38 52.8CL M GR
52.8 53.7 52 53.7CH M GR S SL
53.7 56.0 35 CL M GR
56.0 56.8 30 56.8CL M GR
56.8 57.7 30 SM GR CS
57.7 60.0 29 60.0SM GR CS
60.0 60.8 28 CL M GR
60.8 61.7 28 CL M GR
61.7 62.6 27 62.6CL M GR 888121 31 14 28 623
62.6 64.0 30 64.0CL SS M GR CS
64.0 64.8 27 SM GR CS
64.8 65.7 26 65.7SM GR CS
65.7 66.6 26 CL SS M GR
66.6 68.0 27 68.0CL SS M GR
68.0 68.8 30 CL M GR
68.8 69.7 31 CL M GR
69.7 70.6 42 70.6CL M GR T 808119 40 21 31 703
70.6 72.0 30 72.0SM GR CS
999.9
****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 5.40/ 0.80 Water Con: 41.00
LL,PL,PI : 83, 27, 56 Dry Dens : 76.00
Cohesion : 0.477 Saturat : 90.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 10.30/ -4.10 Water Con: 34.00
LL,PL,PI : 56, 20, 36 Dry Dens : 85.00
Cohesion : 0.354 Saturat : 94.00

Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CL
Depth/Ele: 14.30/ -8.10 Water Con: 33.00
LL,PL,PI : 35, 22, 13 Dry Dens : 87.00
Cohesion : 0.260 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CL
Depth/Ele: 22.30/ -16.1 Water Con: 34.00
LL,PL,PI : 36, 22, 14 Dry Dens : 86.00
Cohesion : 0.391 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 26.30/ -20.1 Water Con: 47.00
LL,PL,PI : 56, 22, 34 Dry Dens : 74.00
Cohesion : 0.280 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CL
Depth/Ele: 33.40/ -27.2 Water Con: 40.00
LL,PL,PI : 46, 23, 23 Dry Dens : 79.00
Cohesion : 0.258 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CL
Depth/Ele: 42.30/ -36.1 Water Con: 40.00

LL,PL,PI : 50, 19, 31 Dry Dens : 79.00
Cohesion : 0.412 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 53.40/ -47.2 Water Con: 54.00
LL,PL,PI : 92, 33, 59 Dry Dens : 67.00
Cohesion : 0.492 Saturat : 95.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-55UCL

Current Date: 7/3/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A	0.0	T ML2 W/ LNS CH	ML2		17												
1B	0.8	T ML2 W/ LNS CH	ML2		21												
2A	2.0	T ML2 W/ LNS CH	ML2		22												
2B	2.8	T ML2 W/ LNS CH	ML2		21												
3A	4.0	T ML2 W/ LYS CH	ML2		28												
3B	4.8	T ML2 W/ LYS CH	ML2	**	27	**	**	**	UC	**	**	**	**	**			
3C	5.7	T ML2 W/ LNS CH	ML2		26												
4A	8.0	ST GR & BR CH2 W/ LNS ML	CH2		34												
4B	8.8	ST GR CH2 W/ SL, WD, SIF	CH2		32	90	118	98	UU	0	1050		54	17	37	0.48	
4C	9.7	ST GR CH2	CH2		35												
5A	12.0	M GR CH3 W/ ARS & LNS ML	CH3		52												
5B	12.8	M DGR CH3 W/ ARS ML, CC	CH3		39	81	113	98	UU	0	815		72	30	42	0.57	
5C	13.7	M GR CH3 W/ ARS ML	CH3		37												
6A	16.0	M GR CH3 W/ ARS ML	CH3		41												
6B	16.8	M GR CH3 W/ ARS & LNS ML	CH3		40												
6C	17.7	M BR & GR CL6	CL6		34	88	118	100	UU	0	595		49	21	28	0.40	
7A	20.0	M GR & BR CL6	CL6		35												
7B	20.8	M GR & BR CL6 W/ LYS CH	CL6		35												
7C	21.7	SO BR & GR CL6	CL6	15	34	88	119	100	UC	--	487	975	49	20	29	0.40	
7D	22.6	SO GR & BR CL6 W/ LYS CH	CL6		35												
8A	24.0	SO GR CL6 W/ LYS CH	CL6		39												
8B	24.8	M GR CL6 W/ LYS CH	CL6		39								**	**			Gs, CON
8C	25.7	M GR CL4 W/ CC	CL4		35	86	117	100	UU	0	531		36	22	14	0.11	
8D	26.6	M GR CL6 W/ LYS CH	CL6		39												
9A	28.0	M GR CH4	CH4		58												
9B	28.8	M DGR CH4 W/ SL	CH4		70	58	98	97	UU	0	666		103	41	62	0.30	
9C	29.7	M GR CH4 W/ ARS & LNS ML	CH4		56												
9D	30.6	M GR CH4	CH4		61												
10A	32.0	M GR CH4 W/ ARS ML	CH4		70												
10B	32.8	M GR CH4	CH4		71												
10C	33.7	M DGR CH4 W/ ARS ML, RT, SIF	CH4		71	57	98	98	UU	0	581		80	25	55	0.30	
10D	34.6	SO GR CL6 W/ LNS ML	CL6		46												
11A	36.0	SO GR CL4 W/ LNS CH	CL4		40												
11B	36.8	SO GR CL4 W/ LNS CH	CL4		35												
11C	37.7	SO GR CL4 W/ LNS ML & SM	CL4		42	80	114	100	UU	0	438		43	24	19	0.22	
11D	38.6	SO GR CL4 W/ LNS CH	CL4		44												
12A	40.0	M GR CL6 W/ LNS CH	CL6		42												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

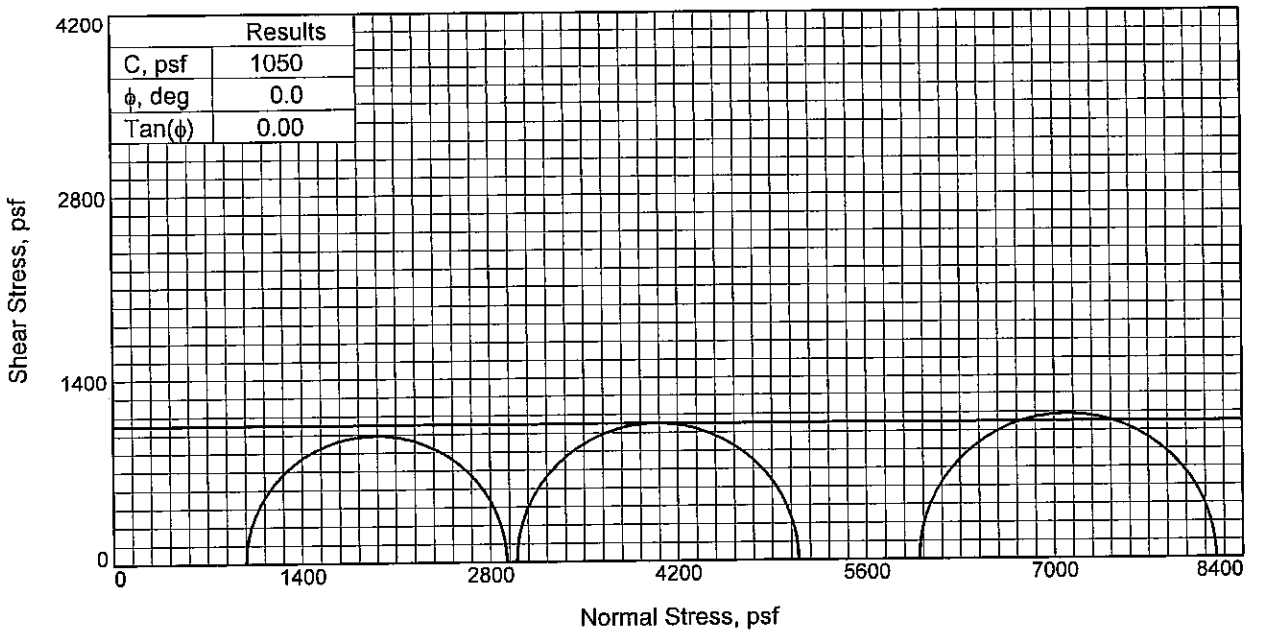
Project Number: 0022-0002
Boring: WWHC-55UCL

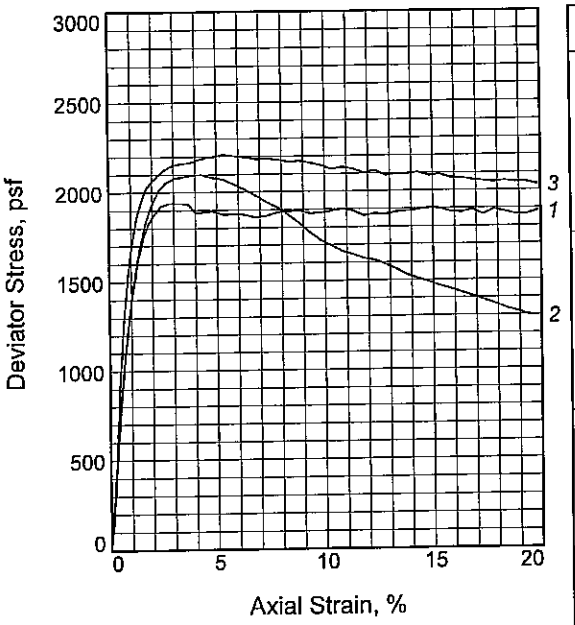
Current Date: 7/3/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
12B	40.8	M GR CH4 W/ LNS & ARS ML	CH4		51												
12C	41.7	M GR CH4 W/ SL	CH4	4	62	63	103	100	UC	--	641	1283	85	25	60	0.33	
13A	44.0	M GR CH4 W/ LNS ML	CH4		48												
13B	44.8	M DGR CH4 W/ ARS ML, SL	CH4		68	60	102	100	UU	0	748		90	35	55	0.30	
13C	45.7	M GR CH4	CH4		58												
13D	46.6	M GR CH4 W/ ARS & LNS ML	CH4		47												
14A	48.0	M GR CH4	CH4		62												
14B	48.8	M GR CH3	CH3		48												
14C	49.7	M GR CH3 W/ SL	CH3	5	42	75	110	100	UC	--	738	1475	66	29	37	0.35	
14D	50.6	M GR CH3	CH3		56												
15A	52.0	M GR CH3	CH3		58												
15B	52.8	M GR CH3	CH3		55												
15C	53.7	M GR CH3	CH3	5	54	68	105	98	UC	--	624	1248	78	34	44	0.32	
15D	54.6	SO GR CH3	CH3		57												
16A	56.0	SO GR CH3	CH3		55												
16B	56.8	SO GR CH3	CH3		55												
16C	57.7	SO GR CH3 W/ SL	CH3	2	55	68	104	98	UC	--	349	699	78	34	44	0.30	
17A	60.0	SO GR CH3	CH3		61												
17B	60.8	SO GR CH3	CH3		59												
17C	61.7	SO DGR CH3 W/ SL	CH3		58	66	104	100	UU	0	500		80	42	38	0.30	
18A	64.0	SO GR CH3	CH3		56												
18B	64.8	SO GR CH3	CH3		54												
18C	65.7	SO GR CH3	CH3		54												
18D	66.6	SO GR CH3	CH3		55												
19A	68.0	M GR CH4 W/ ARS & LNS SM	CH4		61												
19B	68.8	M GR CH4 W/ LNS SM	CH4		59												
19C	69.7	ST GR CH4 W/ SIF, SL	CH4	3	60	64	102	99	UC	--	1049	2098	80	37	43	0.36	
19D	70.6	M GR CH4 W/ LYS SM, SIF	CH4		65												

Remarks: _____
FFEBJV, LLC.

Checked by: _____
File Name: TO 2





Sample No.		1	2	3
Initial	Water Content, %	31.5	32.1	31.8
	Dry Density, pcf	89.6	90.5	89.6
	Saturation, %	96.4	100.4	97.4
	Void Ratio	0.8807	0.8622	0.8820
	Diameter, in.	1.361	1.376	1.382
	Height, in.	3.132	3.127	3.145
At Test	Water Content, %	31.5	32.1	31.8
	Dry Density, pcf	89.6	90.5	89.6
	Saturation, %	96.4	100.4	97.4
	Void Ratio	0.8807	0.8622	0.8820
	Diameter, in.	1.361	1.376	1.382
	Height, in.	3.132	3.127	3.145
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.83	20.81	41.62
Fail. Stress, psf		1937	2099	2209
Strain, %		2.8	4.3	5.3
Ult. Stress, psf		1881	1486	2083
Strain, %				
σ_1 Failure, psf		2920	5095	8202
σ_3 Failure, psf		983	2996	5993

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST GR CH2 W/ SL, WD, SIF

LL= 54 **PL=** 17 **PI=** 37
Assumed Specific Gravity= 2.70
Remarks:

Figure _____

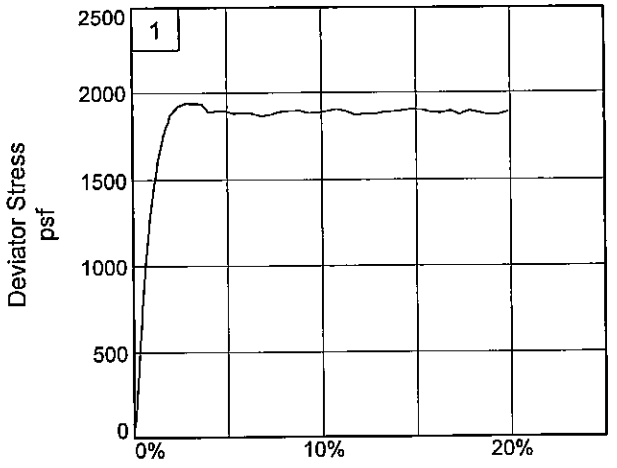
Client: U.S. Army Corps of Engineers

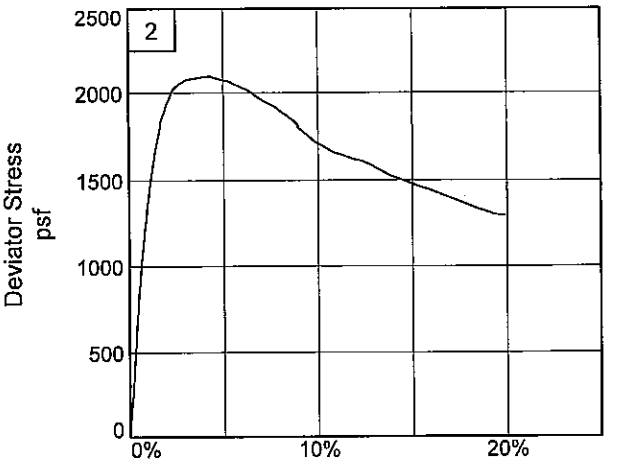
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 8.8
Sample Number: 4B
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

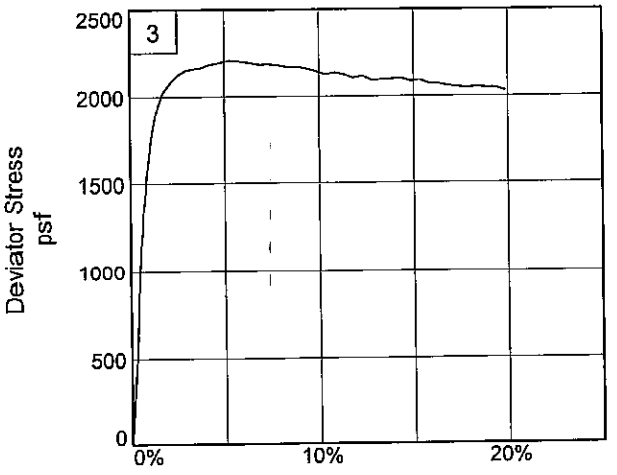
TRIAXIAL SHEAR TEST REPORT

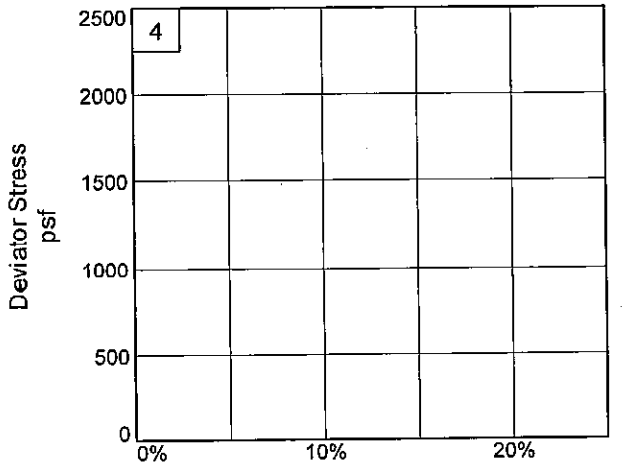
FFEBJV, LLC

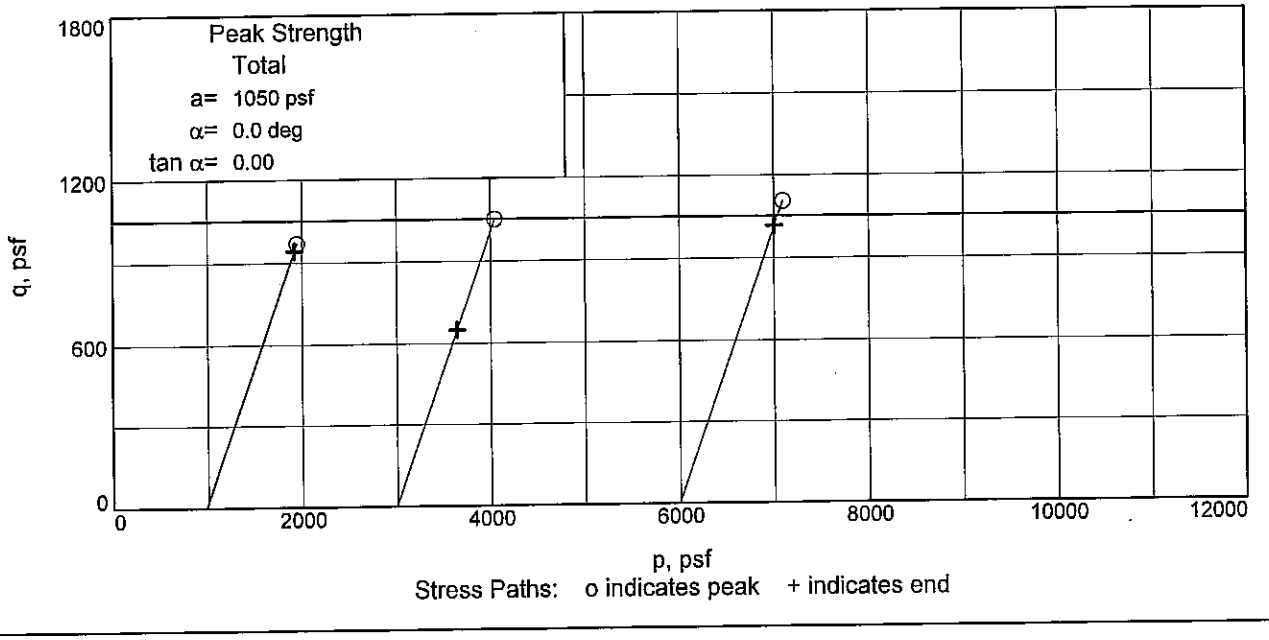
Tested By: DW/DD









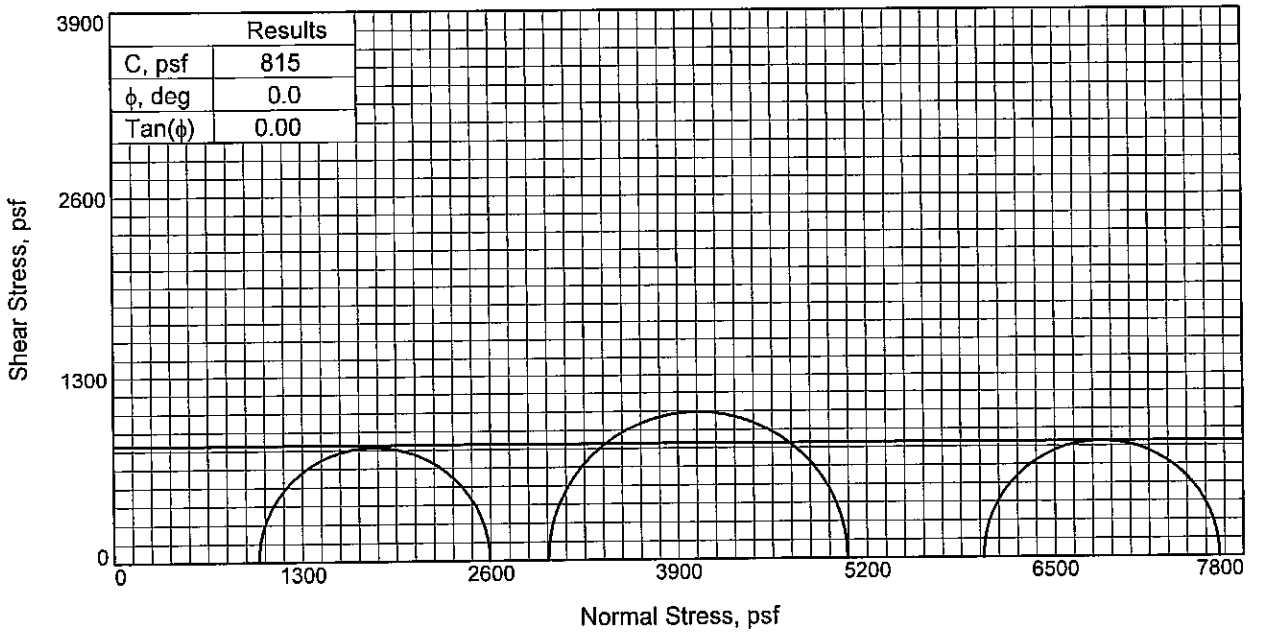


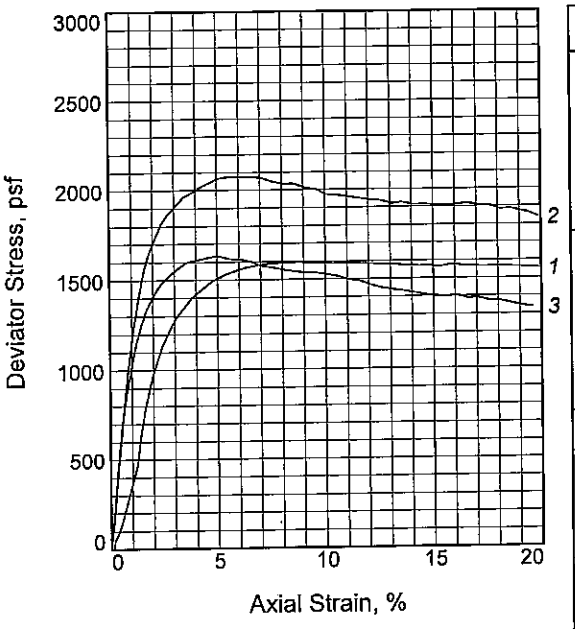
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UCL **Depth:** 8.8 **Sample Number:** 4B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD





Sample No.		1	2	3
Initial	Water Content, %	39.7	37.6	40.3
	Dry Density, pcf	80.3	83.2	80.3
	Saturation, %	96.7	98.4	98.5
	Void Ratio	1.1159	1.0399	1.1137
	Diameter, in.	1.373	1.379	1.406
	Height, in.	3.132	3.134	3.124
At Test	Water Content, %	39.7	37.6	40.3
	Dry Density, pcf	80.3	83.2	80.3
	Saturation, %	96.7	98.4	98.5
	Void Ratio	1.1159	1.0399	1.1137
	Diameter, in.	1.373	1.379	1.406
	Height, in.	3.132	3.134	3.124
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	20.83	41.71
Fail. Stress, psf		1596	2066	1629
Strain, %		8.3	5.1	4.8
Ult. Stress, psf		1588	1913	1398
Strain, %				
σ_1 Failure, psf		2594	5066	7635
σ_3 Failure, psf		998	3000	6006

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: M DGR CH3 W/ ARS ML, CC

LL= 72 **PL=** 30 **PI=** 42
Assumed Specific Gravity= 2.72
Remarks:

Client: U.S. Army Corps of Engineers

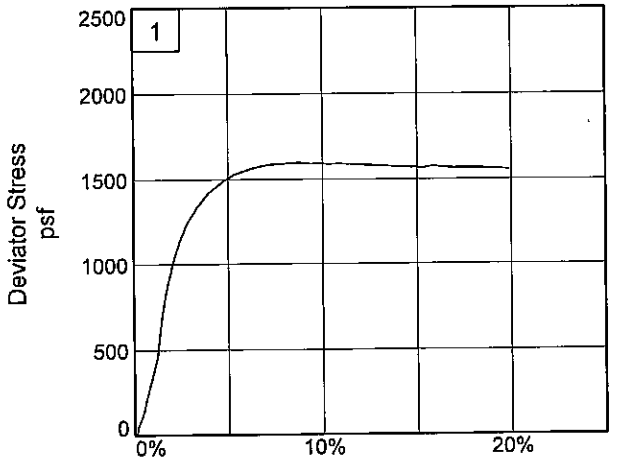
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 12.8
Sample Number: 5B
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

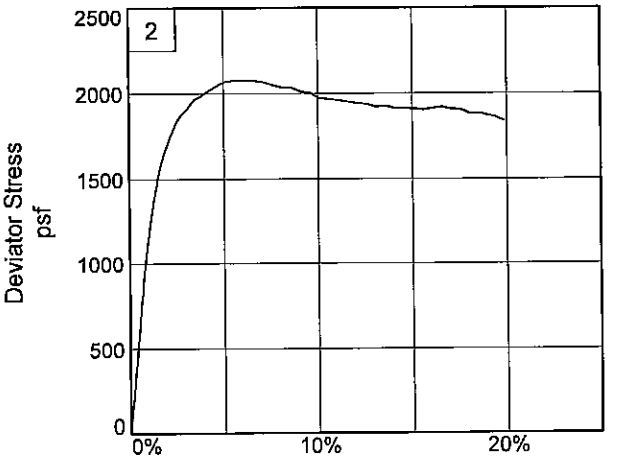
TRIAXIAL SHEAR TEST REPORT

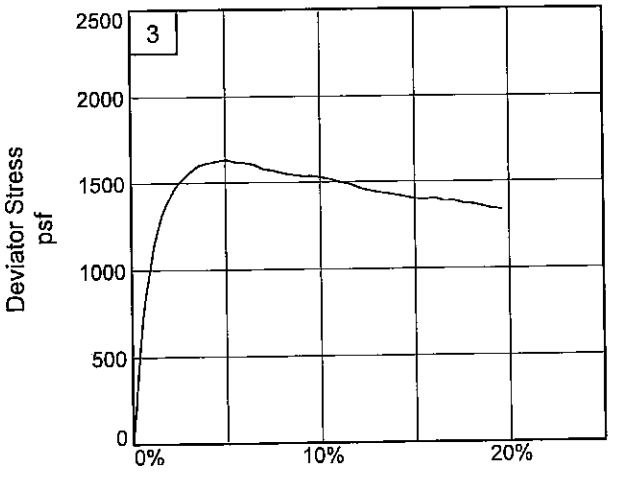
FFEBJV, LLC

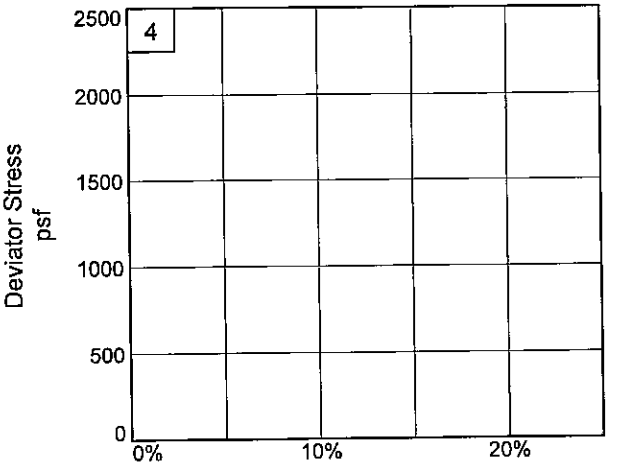
Figure _____

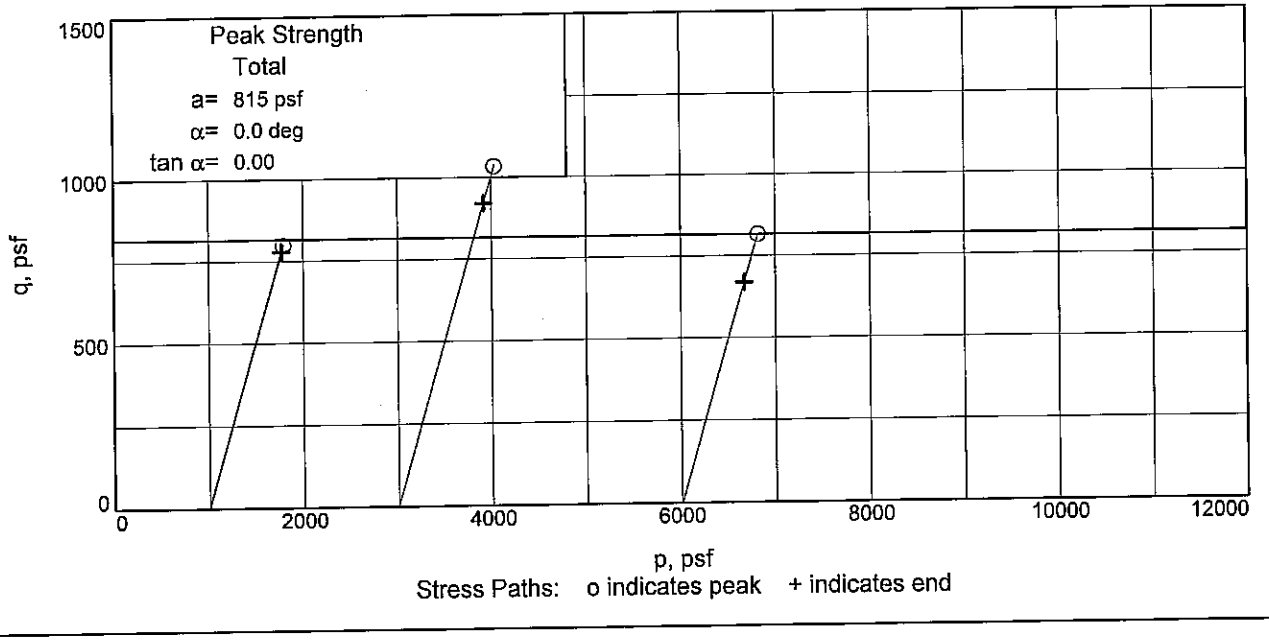
Tested By: DW/DD









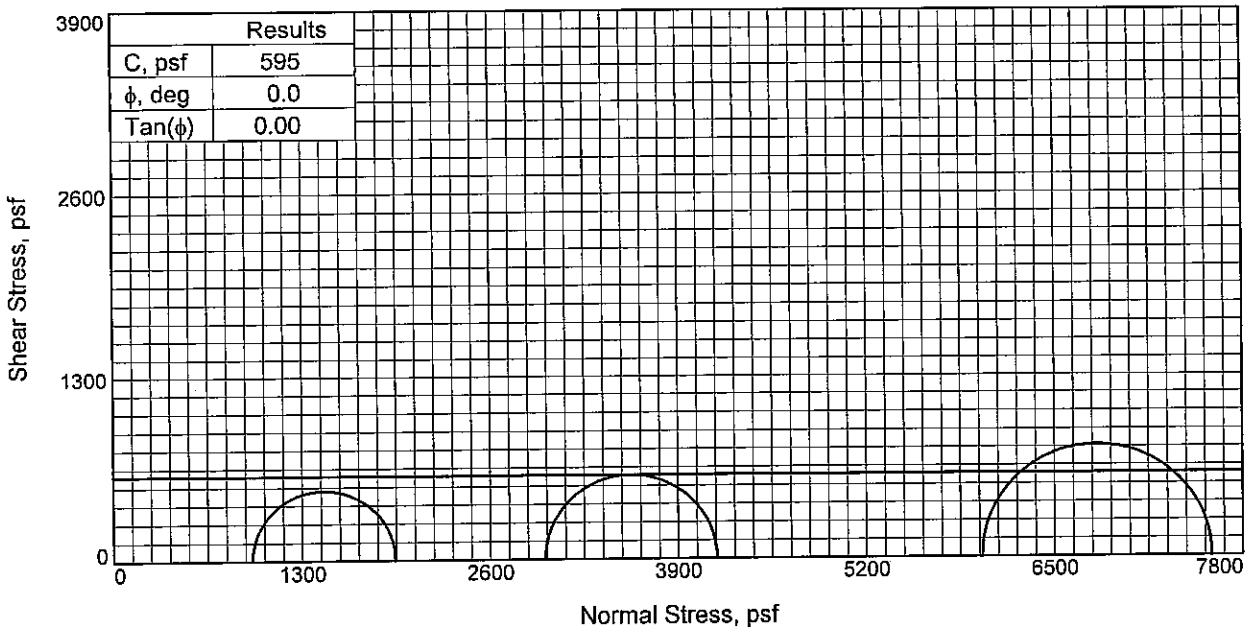


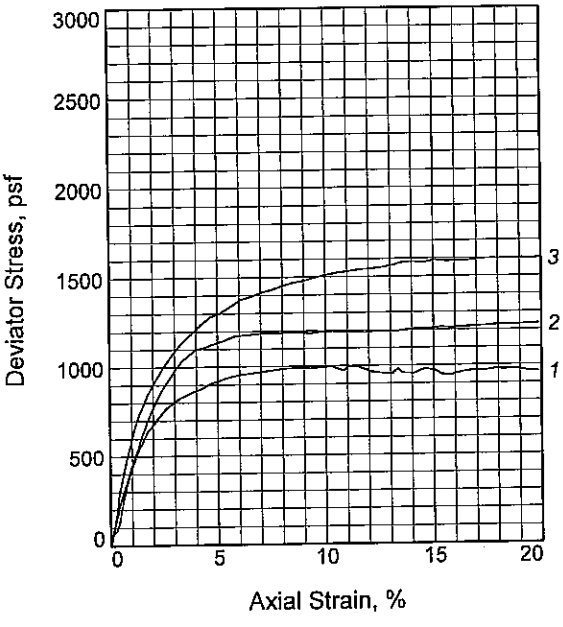
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UCL **Depth:** 12.8 **Sample Number:** 5B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD





Sample No.		1	2	3
Initial	Water Content, %	36.7	32.2	32.0
	Dry Density, pcf	85.2	90.3	89.7
	Saturation, %	101.6	100.6	98.7
	Void Ratio	0.9714	0.8602	0.8711
	Diameter, in.	1.451	1.474	1.475
	Height, in.	3.107	3.132	3.108
At Test	Water Content, %	36.7	32.2	32.0
	Dry Density, pcf	85.2	90.3	89.7
	Saturation, %	101.6	100.6	98.7
	Void Ratio	0.9714	0.8602	0.8711
	Diameter, in.	1.451	1.474	1.475
	Height, in.	3.107	3.132	3.108
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.65	20.70	41.66
Fail. Stress, psf		986	1189	1589
Strain, %		8.1	7.3	15.1
Ult. Stress, psf		985	1185	1589
Strain, %				
σ_1 Failure, psf		1943	4170	7587
σ_3 Failure, psf		957	2980	5999

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M BR & GR CL6

LL= 49 **PL=** 21 **PI=** 28
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

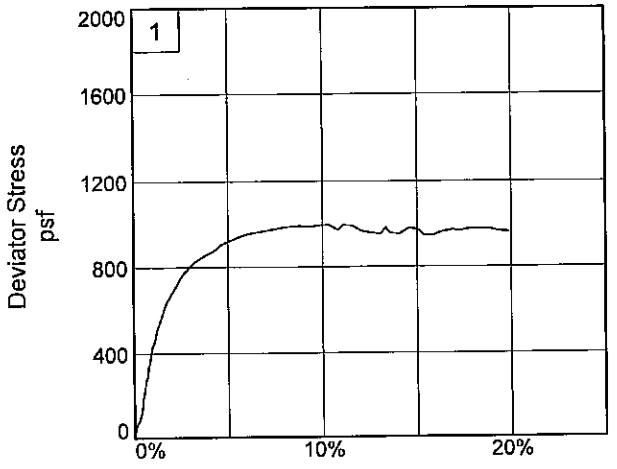
Client: U.S. Army Corps of Engineers

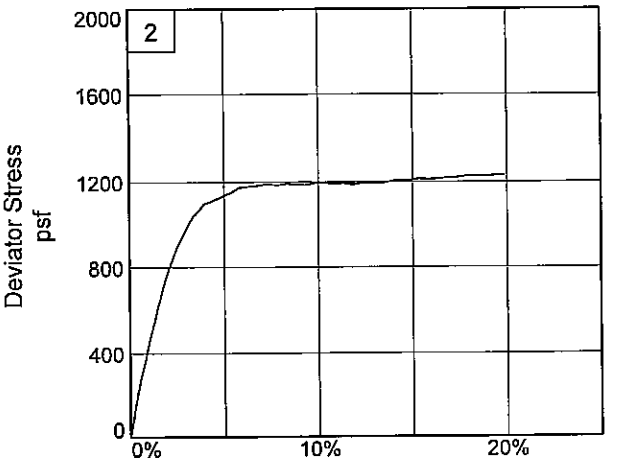
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 17.7
Sample Number: 6C
Proj. No.: 0022-0002 **Date Sampled:** 5/12/07

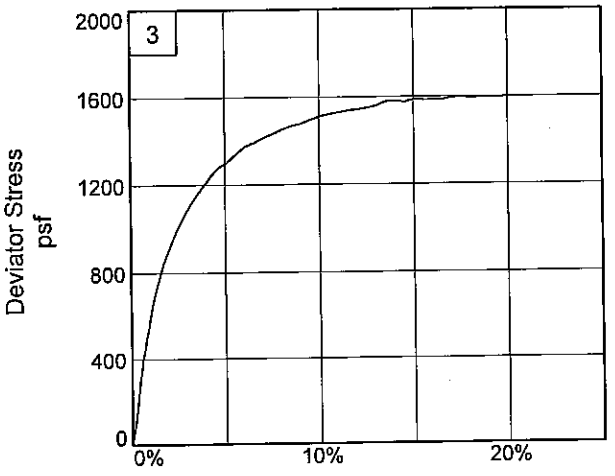
TRIAXIAL SHEAR TEST REPORT

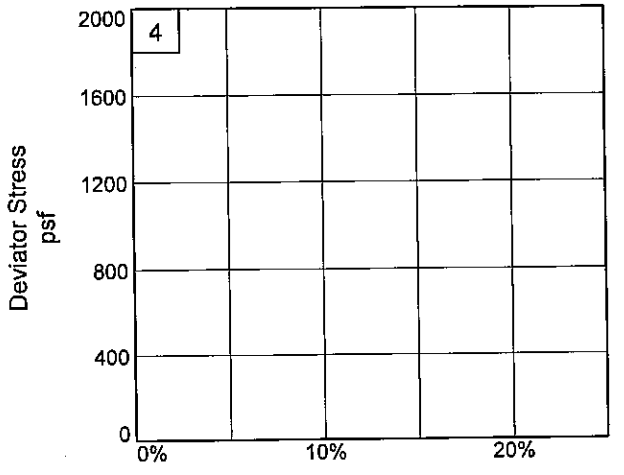
FFEBJV, LLC

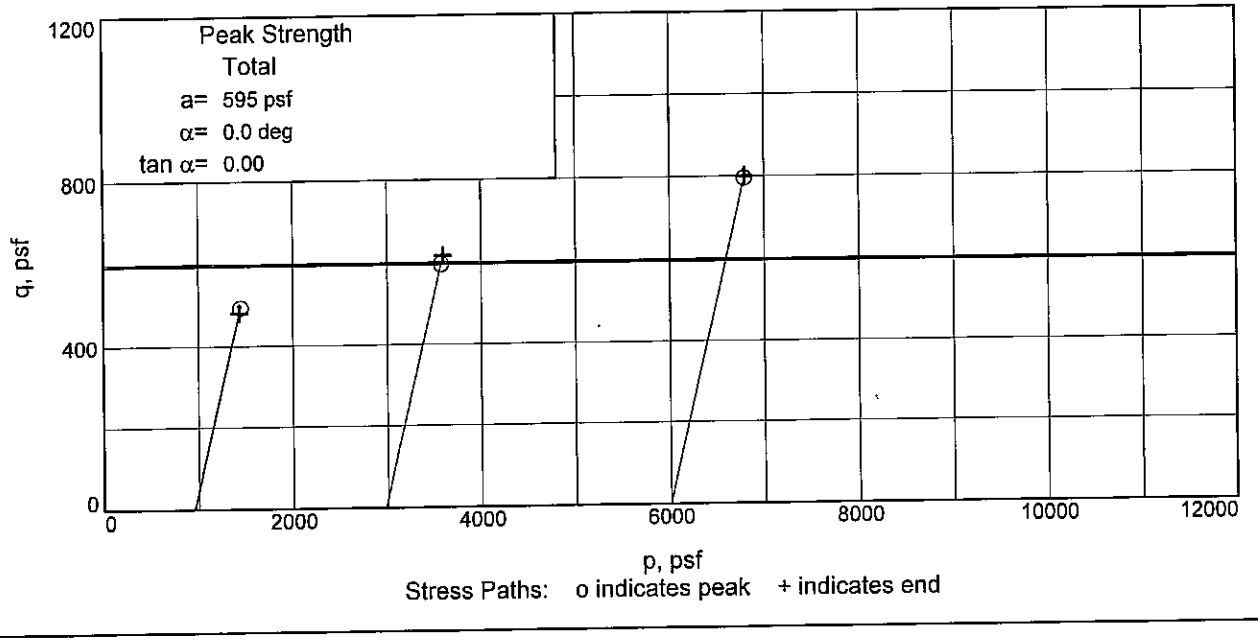
Tested By: DW/JP









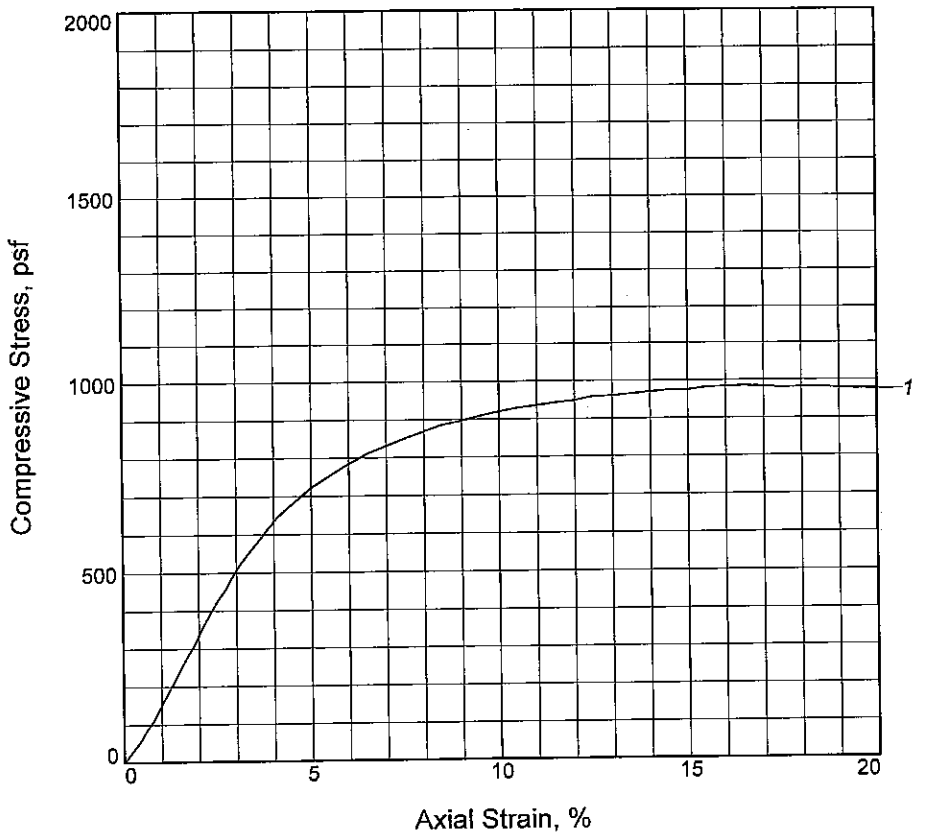


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UCL **Depth:** 17.7 **Sample Number:** 6C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	975			
Undrained shear strength, psf	487			
Failure strain, %	15.0			
Strain rate, in./min.	0.030			
Water content, %	34.1			
Wet density, pcf	118.5			
Dry density, pcf	88.4			
Saturation, %	102.0			
Void ratio	0.9000			
Specimen diameter, in.	1.405			
Specimen height, in.	2.991			
Height/diameter ratio	2.13			

Description: SO BR & GR CL6

LL = 49	**PL** = 20	**PI** = 29	**Assumed GS=** 2.69	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/14/07
Remarks:

Figure _____

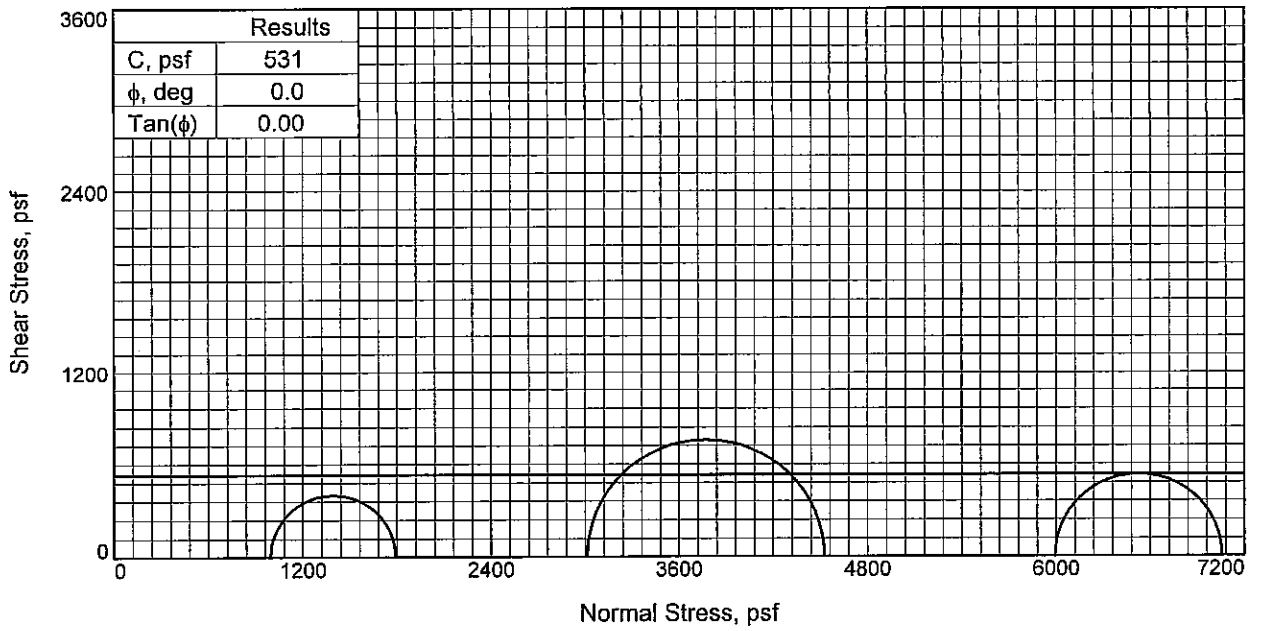
Client: U.S. Army Corps of Engineers

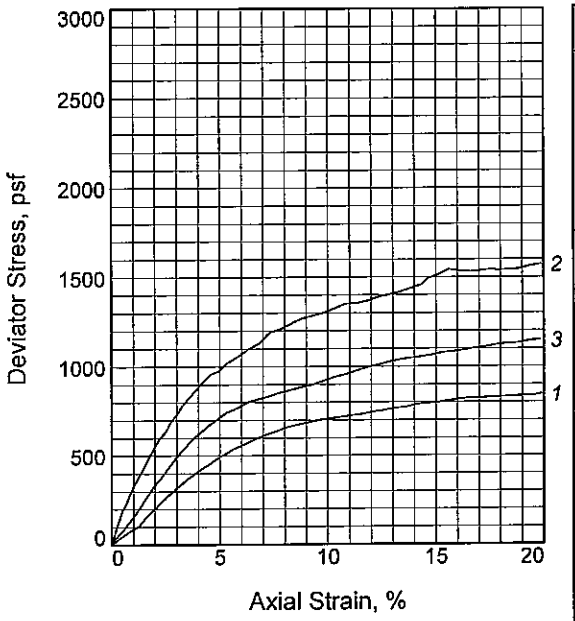
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 21.7
Sample Number: 7C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: BB





Sample No.		1	2	3
Initial	Water Content, %	35.8	34.8	35.5
	Dry Density, pcf	85.2	87.1	86.8
	Saturation, %	99.6	101.4	102.6
	Void Ratio	0.9633	0.9210	0.9280
	Diameter, in.	1.447	1.452	1.424
	Height, in.	3.089	3.083	3.092
At Test	Water Content, %	35.8	34.8	35.5
	Dry Density, pcf	85.2	87.1	86.8
	Saturation, %	99.6	101.4	102.6
	Void Ratio	0.9633	0.9210	0.9280
	Diameter, in.	1.447	1.452	1.424
	Height, in.	3.089	3.083	3.092
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.93	41.63
Fail. Stress, psf		797	1512	1064
Strain, %		15.1	15.1	14.8
Ult. Stress, psf		797	1512	1064
Strain, %				
σ_1 Failure, psf		1791	4526	7058
σ_3 Failure, psf		994	3014	5994

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL4 W/ CC

LL= 36 **PL=** 22 **PI=** 14
Assumed Specific Gravity= 2.68
Remarks:

Figure _____

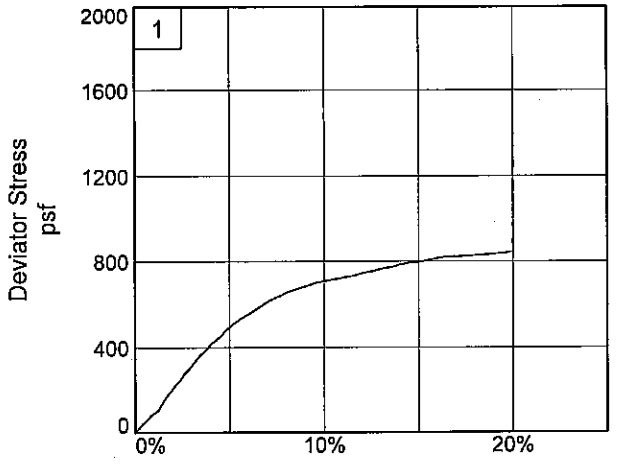
Client: U.S. Army Corps of Engineers

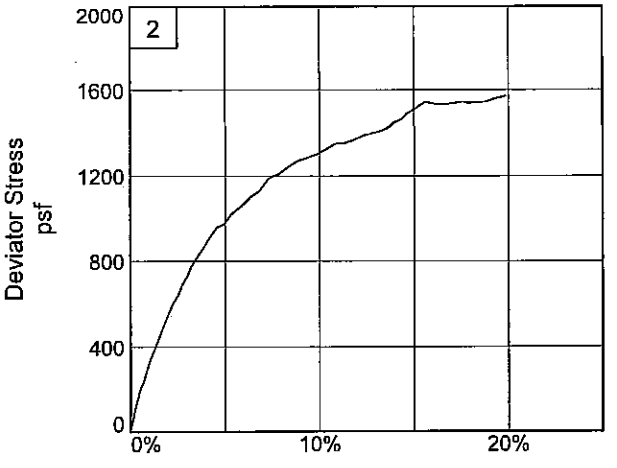
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 25.7
Sample Number: 8C
Proj. No.: 0022-0002 **Date Sampled:** 5-12-07

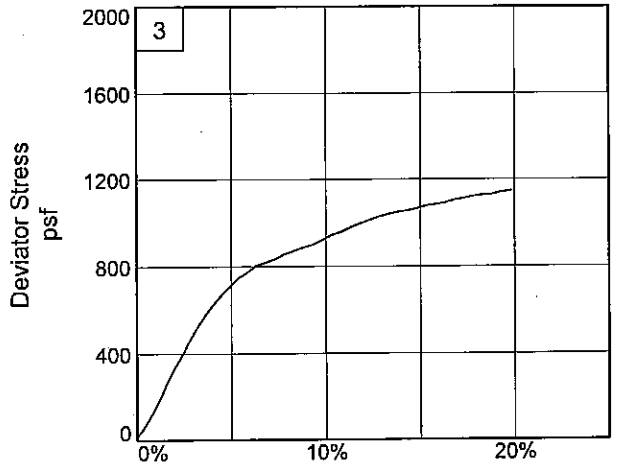
TRIAXIAL SHEAR TEST REPORT

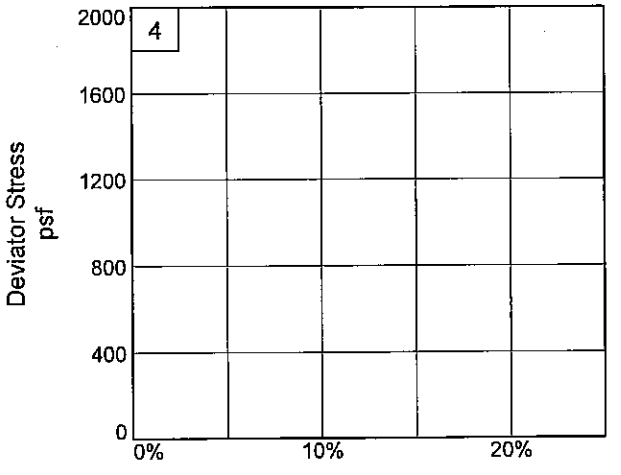
FFEBJV, LLC

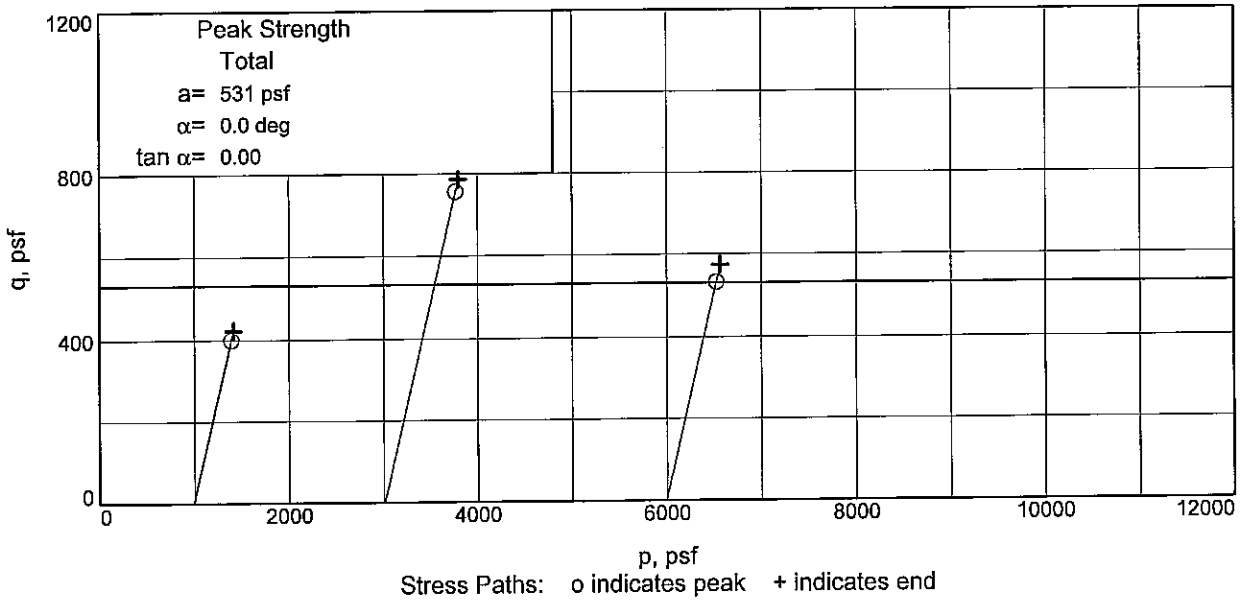
Tested By: DW/JP









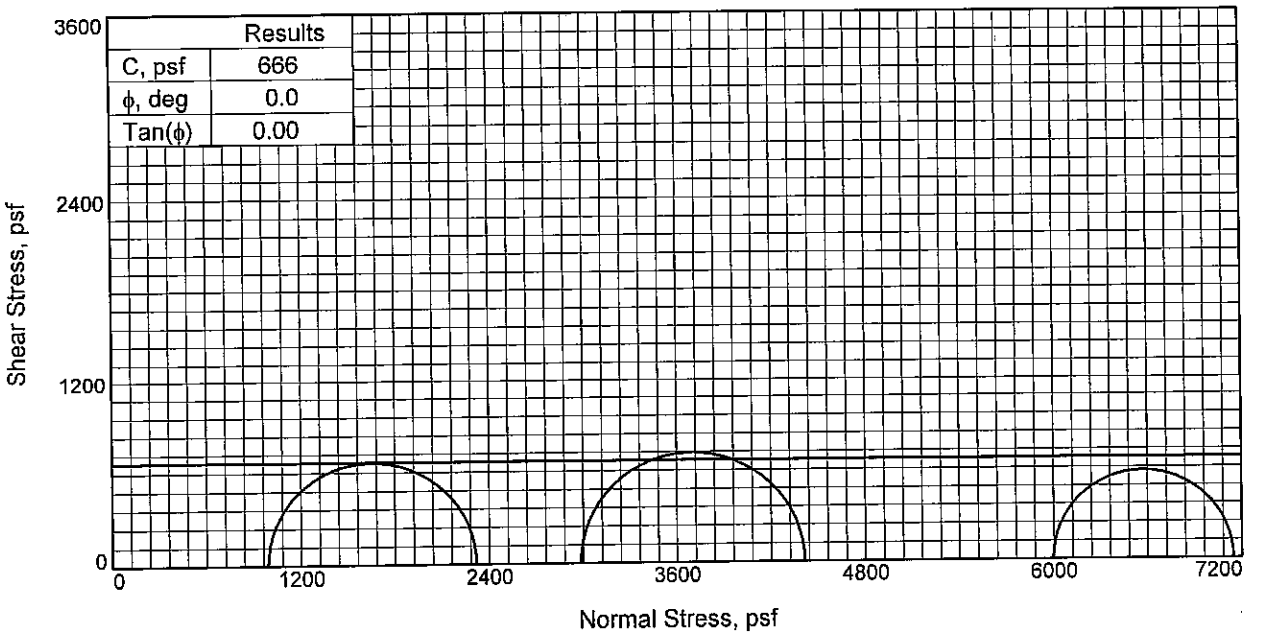


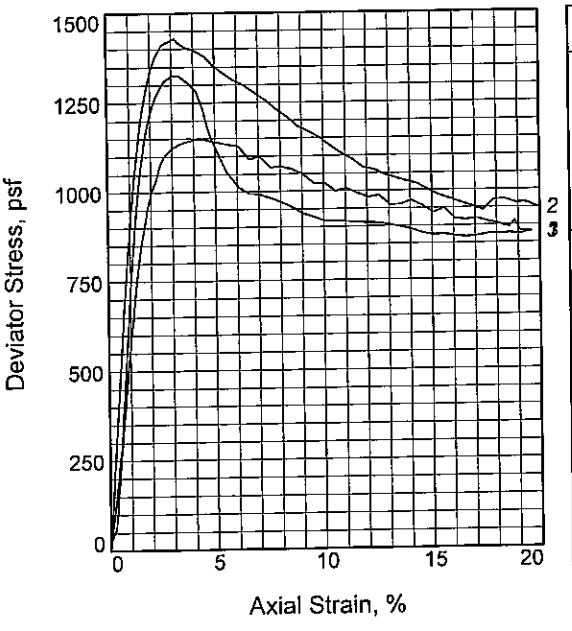
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UCL **Depth:** 25.7 **Sample Number:** 8C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP





Sample No.		1	2	3
Initial	Water Content, %	68.0	68.8	72.6
	Dry Density, pcf	58.3	58.1	56.1
	Saturation, %	96.4	96.9	97.1
	Void Ratio	1.9324	1.9436	2.0472
	Diameter, in.	1.443	1.424	1.435
	Height, in.	3.125	3.132	3.136
At Test	Water Content, %	68.0	68.8	72.6
	Dry Density, pcf	58.3	58.1	56.1
	Saturation, %	96.4	96.9	97.1
	Void Ratio	1.9324	1.9436	2.0472
	Diameter, in.	1.443	1.424	1.435
	Height, in.	3.125	3.132	3.136
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.73	41.64
Fail. Stress, psf		1327	1428	1149
Strain, %		3.0	3.2	4.3
Ult. Stress, psf		874	1001	936
Strain, %				
σ_1 Failure, psf		2318	4412	7146
σ_3 Failure, psf		991	2985	5997

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M DGR CH4 W/ SL

LL= 103 **PL=** 41 **PI=** 62
Assumed Specific Gravity= 2.74
Remarks:

Figure _____

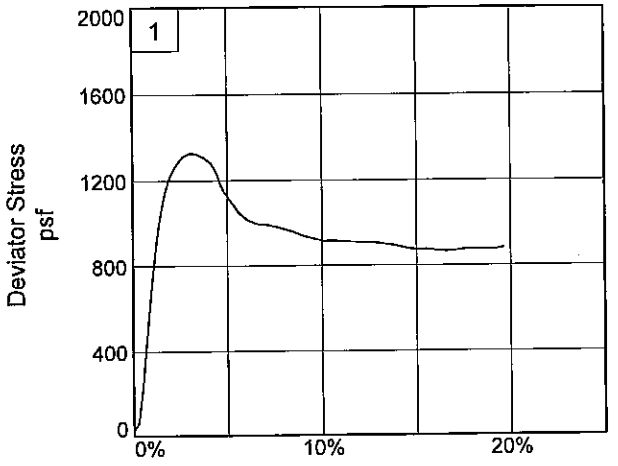
Client: U.S. Army Corps of Engineers

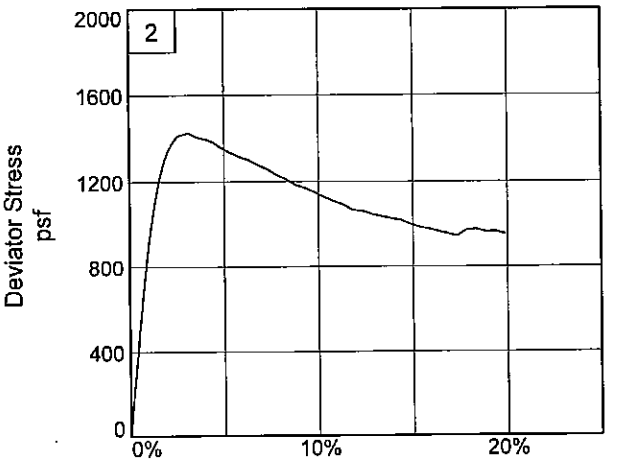
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 28.8
Sample Number: 9B
Proj. No.: 0022-0002 **Date Sampled:** 5/12/07

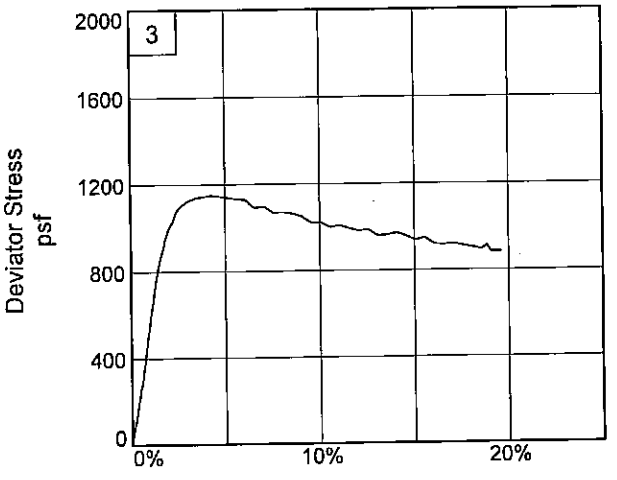
TRIAXIAL SHEAR TEST REPORT

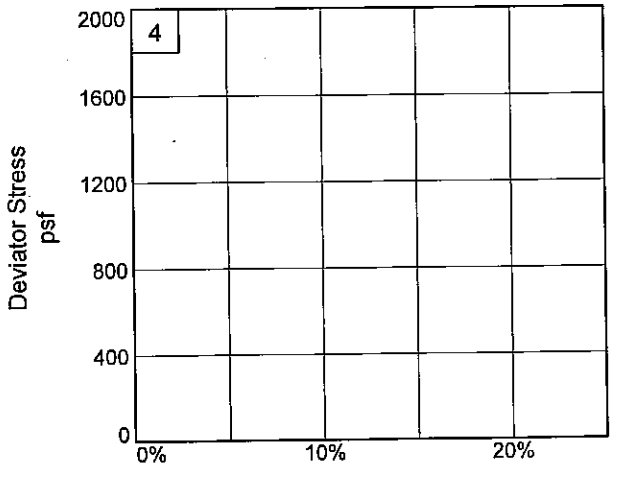
FFEBJV, LLC

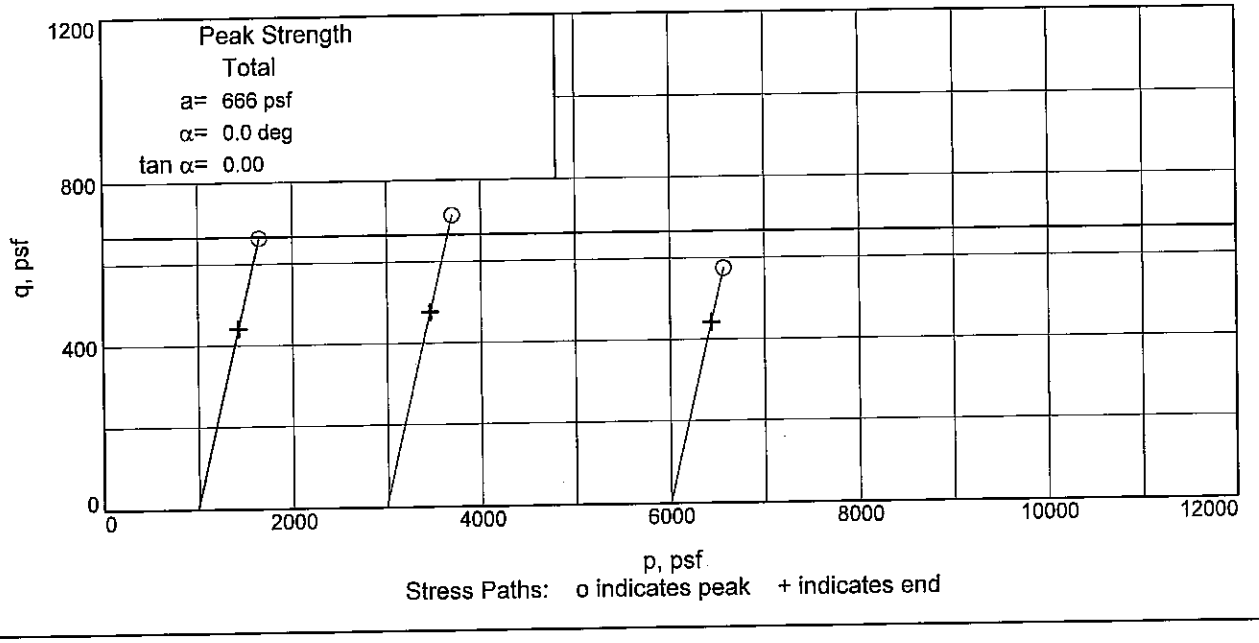
Tested By: DW/JP









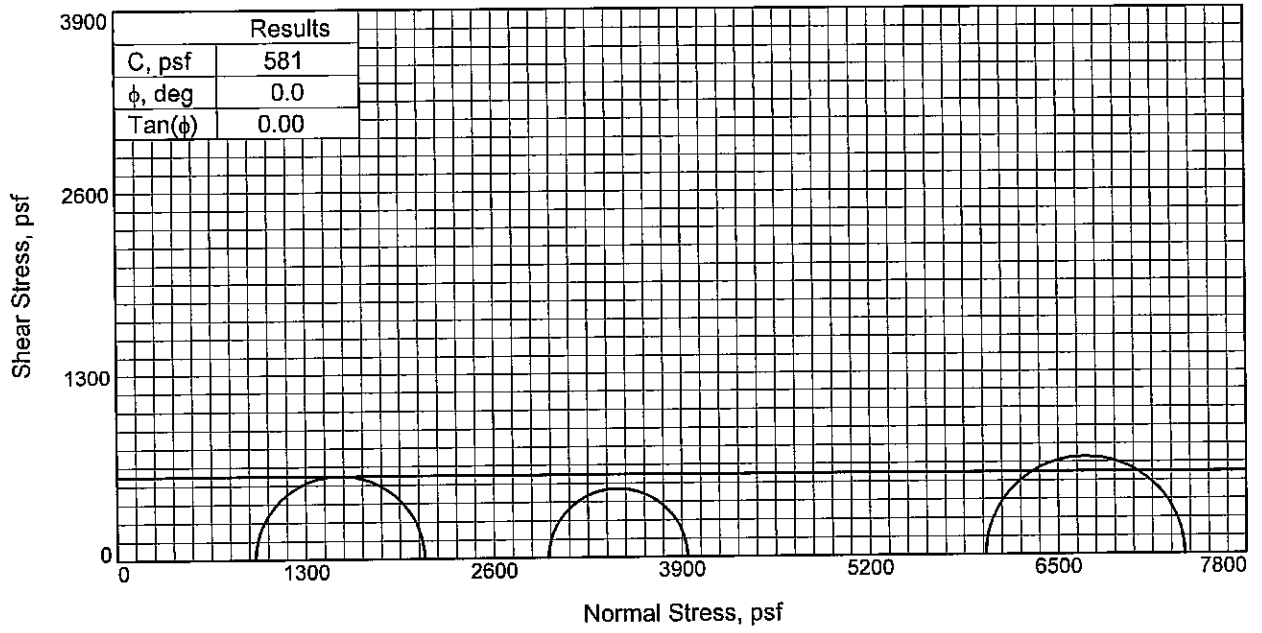


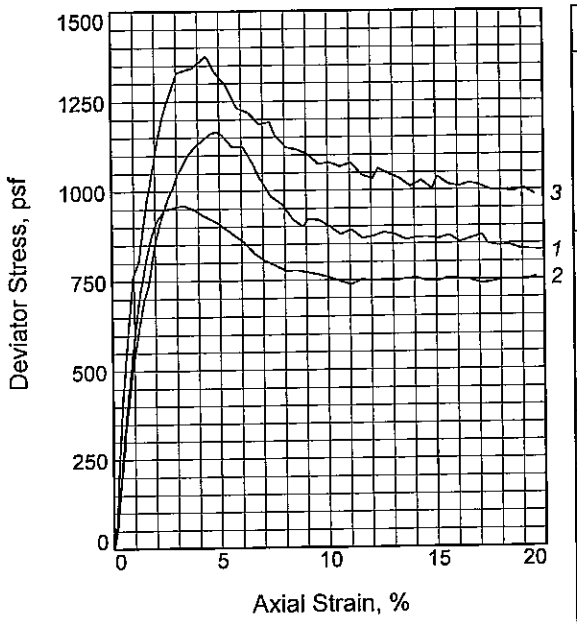
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UCL **Depth:** 28.8 **Sample Number:** 9B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/JP





Sample No.		1	2	3
Initial	Water Content, %	74.5	68.3	70.2
	Dry Density, pcf	54.5	59.2	58.2
	Saturation, %	95.9	99.4	99.5
	Void Ratio	2.1134	1.8699	1.9192
	Diameter, in.	1.421	1.425	1.462
	Height, in.	3.182	3.173	3.131
At Test	Water Content, %	74.5	68.3	70.2
	Dry Density, pcf	54.5	59.2	58.2
	Saturation, %	95.9	99.4	99.5
	Void Ratio	2.1134	1.8699	1.9192
	Diameter, in.	1.421	1.425	1.462
	Height, in.	3.182	3.173	3.131
Strain rate, in./min.		0.032	0.032	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.63	20.68	41.67
Fail. Stress, psf		1165	960	1374
Strain, %		4.9	3.3	4.4
Ult. Stress, psf		864	737	1003
Strain, %				
σ_1 Failure, psf		2120	3938	7374
σ_3 Failure, psf		954	2978	6000

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M DGR CH4 W/ ARS ML, RT, SIF

LL= 80 **PL=** 25 **PI=** 55
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

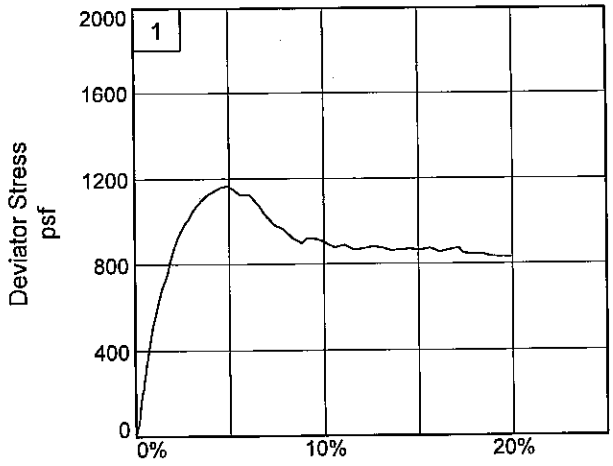
Client: U.S. Army Corps of Engineers

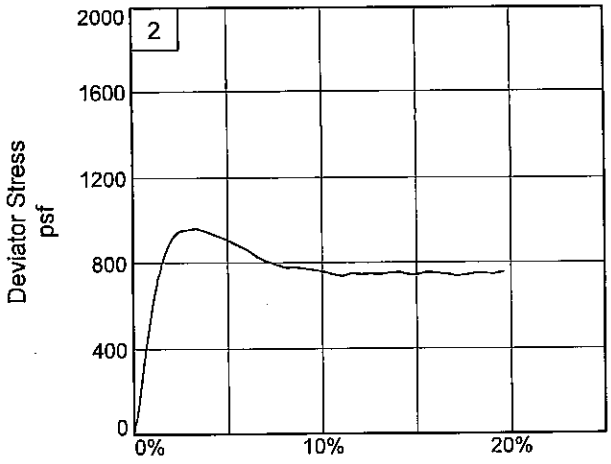
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 33.7
Sample Number: 10C
Proj. No.: 0022-0002 **Date Sampled:** 5/12/07

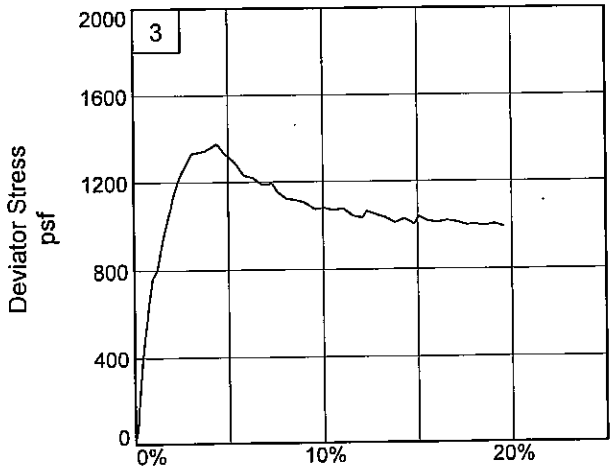
TRIAXIAL SHEAR TEST REPORT

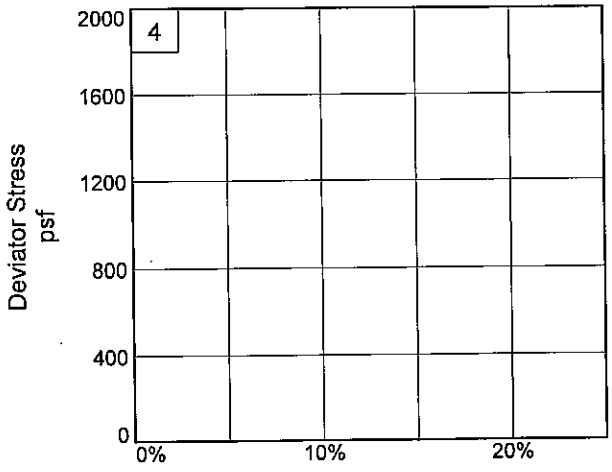
FFEBJV, LLC

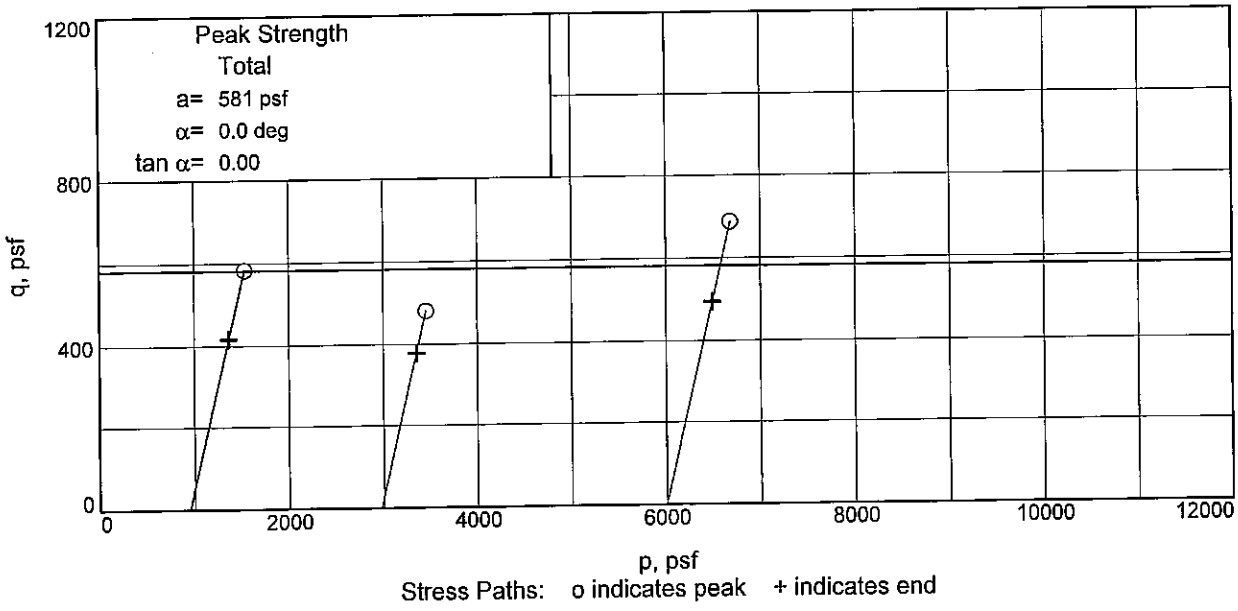
Tested By: JMB









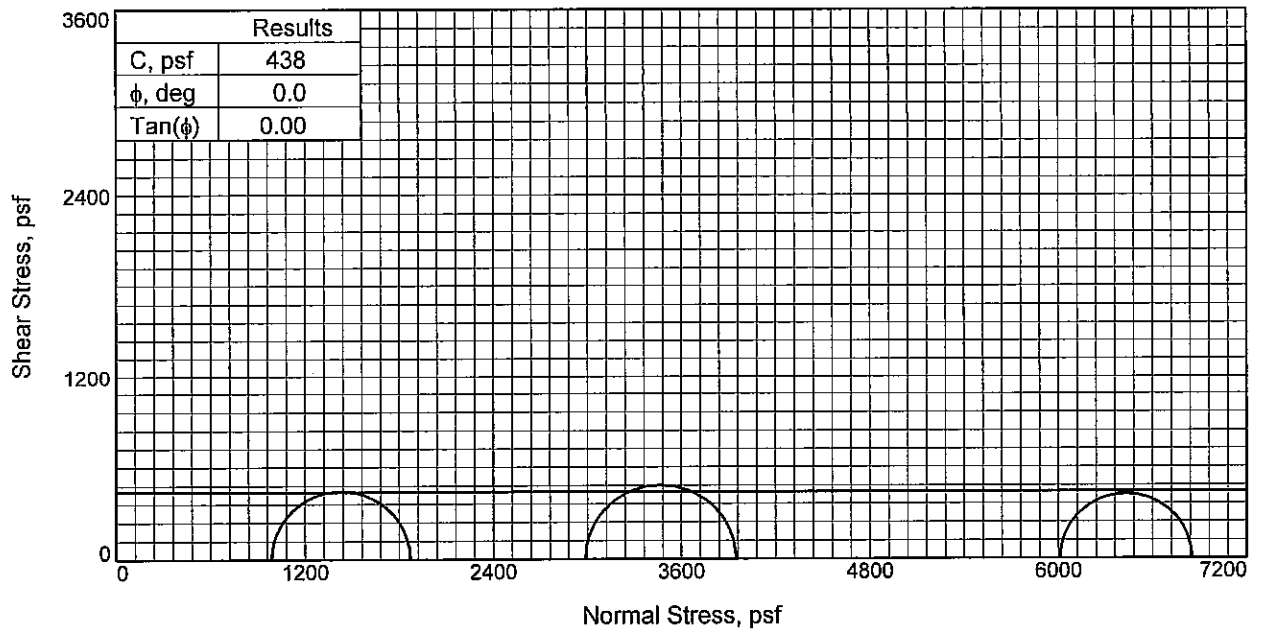


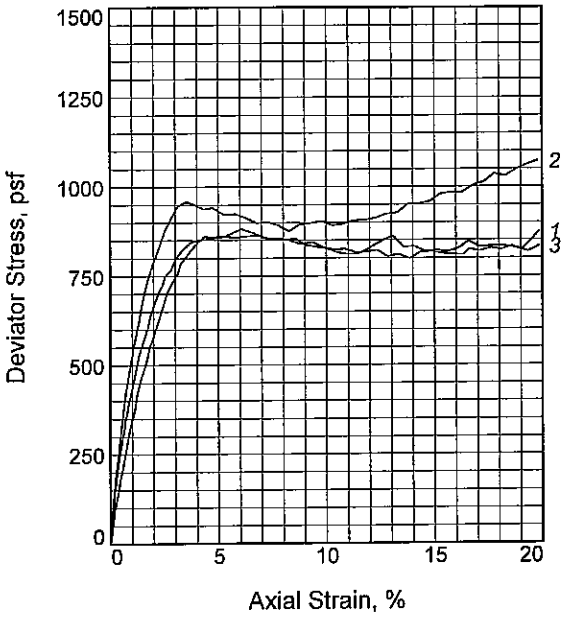
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UCL **Depth:** 33.7 **Sample Number:** 10C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: JMB





Sample No.		1	2	3
Initial	Water Content, %	42.1	40.4	43.2
	Dry Density, pcf	80.2	82.1	79.1
	Saturation, %	103.4	103.8	103.4
	Void Ratio	1.0945	1.0459	1.1228
	Diameter, in.	1.368	1.379	1.381
	Height, in.	3.129	3.139	3.124
At Test	Water Content, %	42.1	40.4	43.2
	Dry Density, pcf	80.2	82.1	79.1
	Saturation, %	103.4	103.8	103.4
	Void Ratio	1.0945	1.0459	1.1228
	Diameter, in.	1.368	1.379	1.381
	Height, in.	3.129	3.139	3.124
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.75	41.75
Fail. Stress, psf		882	959	838
Strain, %		6.1	3.5	4.0
Ult. Stress, psf		810	876	798
Strain, %				
σ_1 Failure, psf		1870	3946	6850
σ_3 Failure, psf		988	2988	6012

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CL4 W/ LNS ML & SM

LL= 43 **PL=** 24 **PI=** 19
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

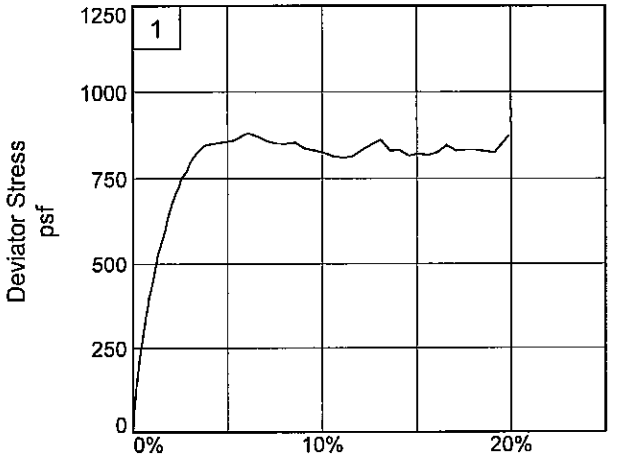
Client: U.S. Army Corps of Engineers

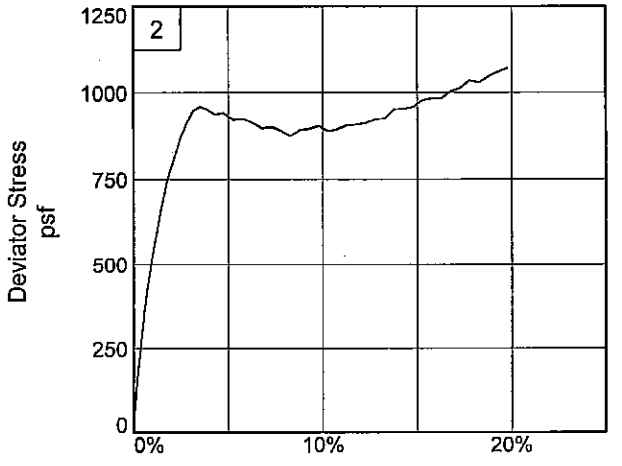
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 37.7
Sample Number: 11C
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

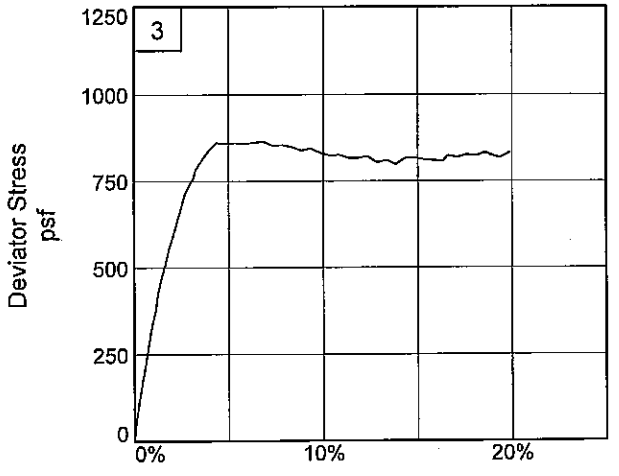
TRIAXIAL SHEAR TEST REPORT

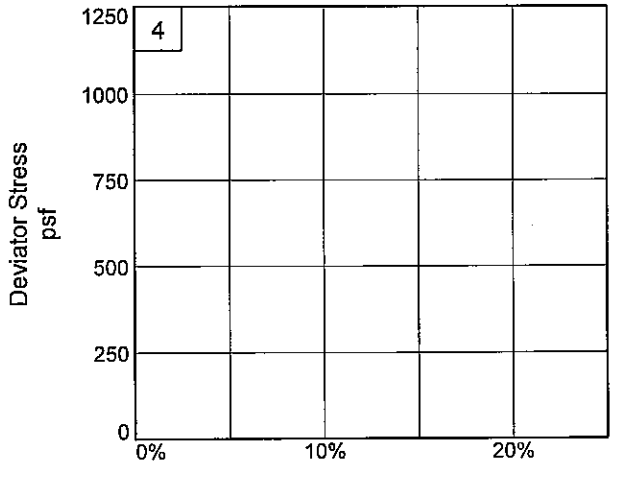
FFEBJV, LLC

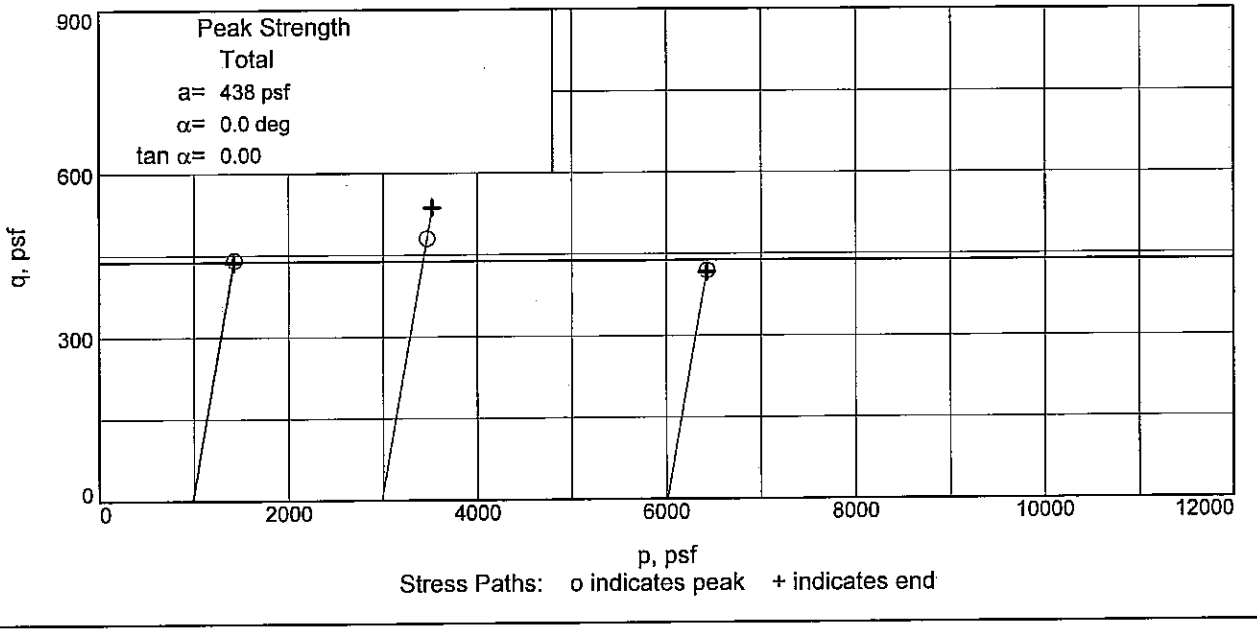
Tested By: DW/DD









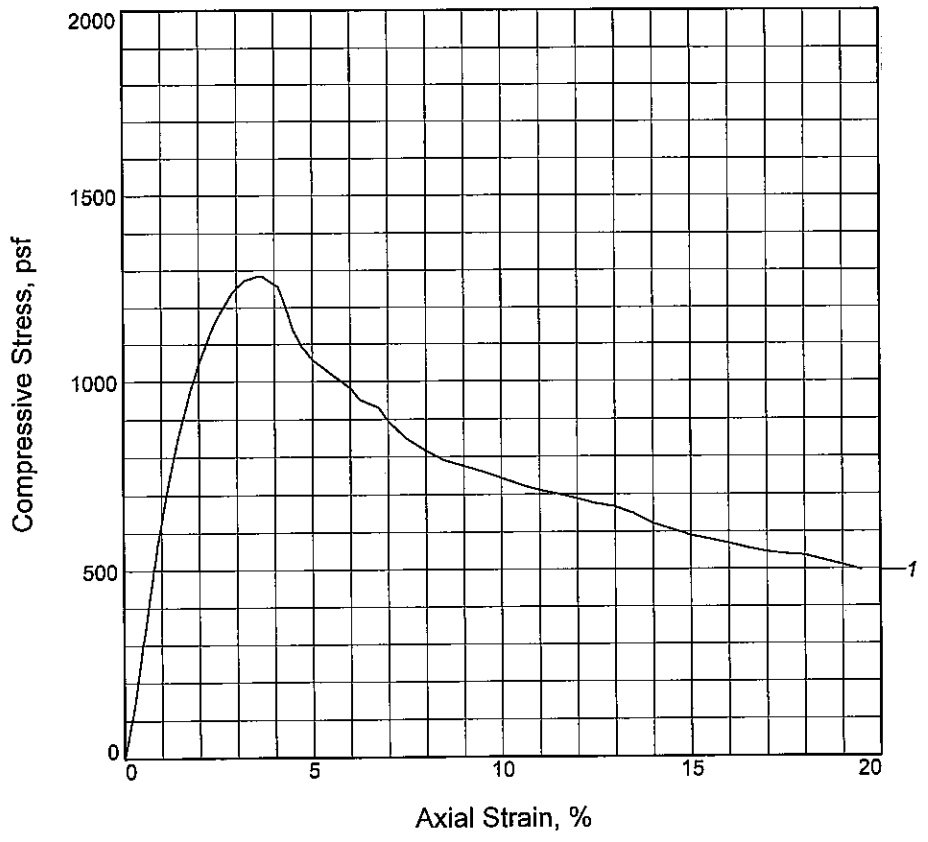


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UCL **Depth:** 37.7 **Sample Number:** 11C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1283			
Undrained shear strength, psf	641			
Failure strain, %	3.7			
Strain rate, in./min.	0.030			
Water content, %	62.2			
Wet density, pcf	102.8			
Dry density, pcf	63.4			
Saturation, %	100.3			
Void ratio	1.6984			
Specimen diameter, in.	1.405			
Specimen height, in.	3.039			
Height/diameter ratio	2.16			

Description: M GR CH4 W/ SL

LL = 85	**PL** = 25	**PI** = 60	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/14/07
Remarks:

Figure _____

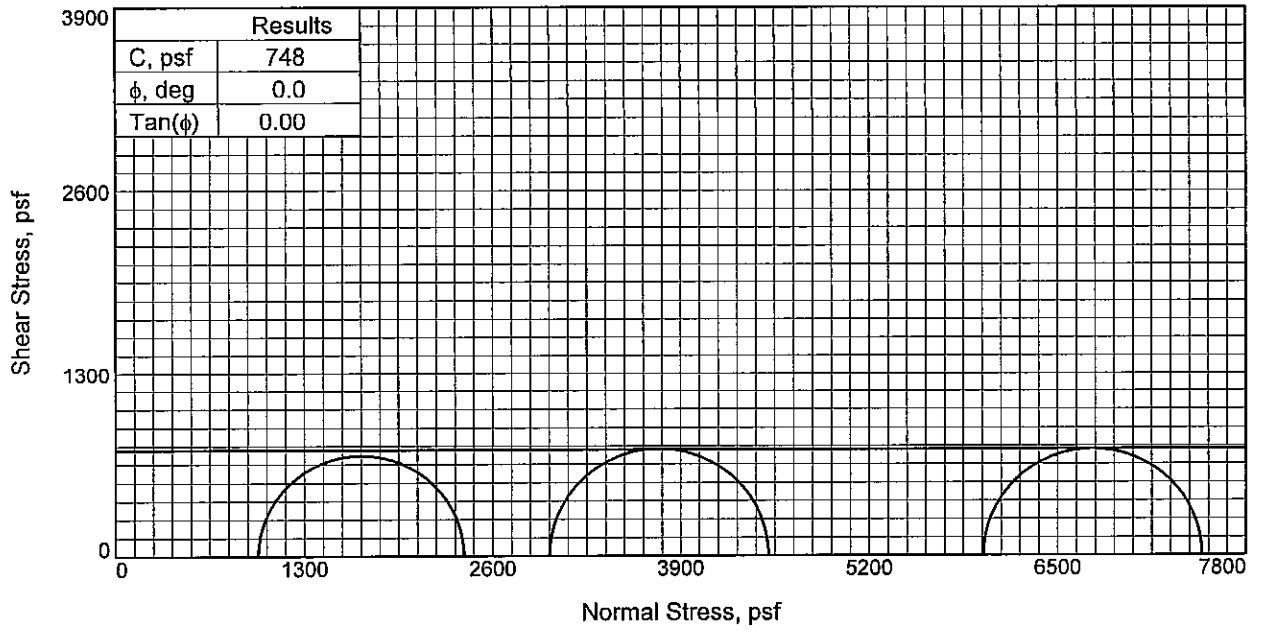
Client: U.S. Army Corps of Engineers

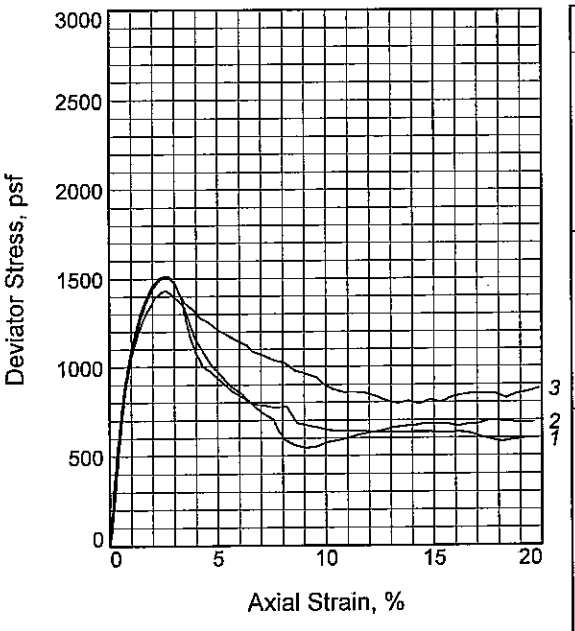
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 41.7
Sample Number: 12C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: BB





Sample No.		1	2	3
Initial	Water Content, %	68.4	68.0	67.2
	Dry Density, pcf	59.5	61.1	60.8
	Saturation, %	100.4	104.1	102.1
	Void Ratio	1.8535	1.7783	1.7910
	Diameter, in.	1.399	1.386	1.388
	Height, in.	3.135	3.137	3.139
At Test	Water Content, %	55.4	68.0	67.2
	Dry Density, pcf	59.5	61.1	60.8
	Saturation, %	81.3	104.1	102.1
	Void Ratio	1.8535	1.7783	1.7910
	Diameter, in.	1.399	1.386	1.388
	Height, in.	3.135	3.137	3.139
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.83	20.78	41.59
Fail. Stress, psf		1419	1516	1509
Strain, %		2.4	2.6	2.6
Ult. Stress, psf		629	546	794
Strain, %				
σ_1 Failure, psf		2402	4508	7498
σ_3 Failure, psf		983	2992	5988

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M DGR CH4 W/ ARS ML, SL

LL= 90 **PL=** 35 **PI=** 55
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

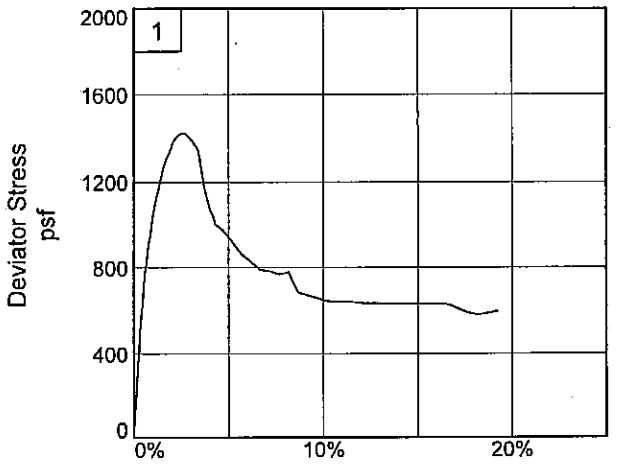
Client: U.S. Army Corps of Engineers

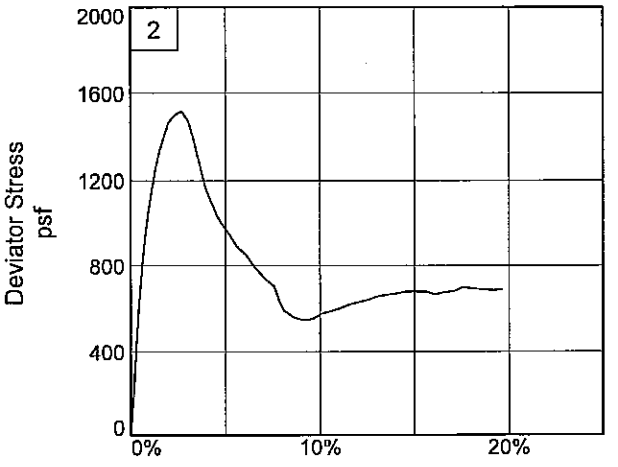
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 44.8
Sample Number: 13B
Proj. No.: 0022-0002 **Date Sampled:** 5/14/07

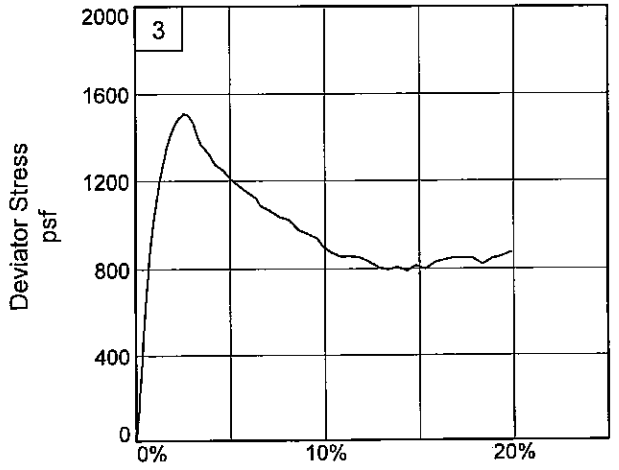
TRIAXIAL SHEAR TEST REPORT

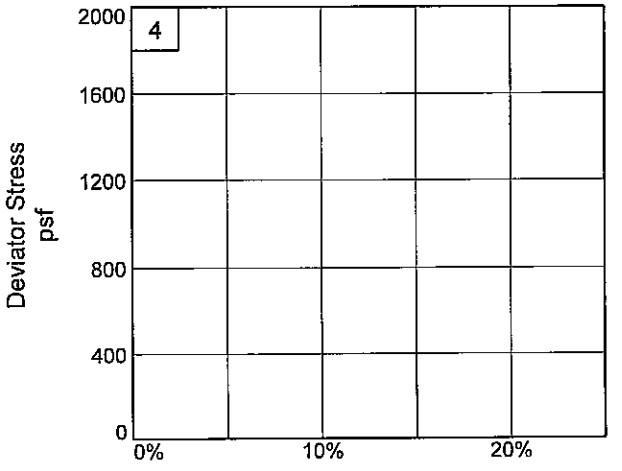
FFEBJV, LLC

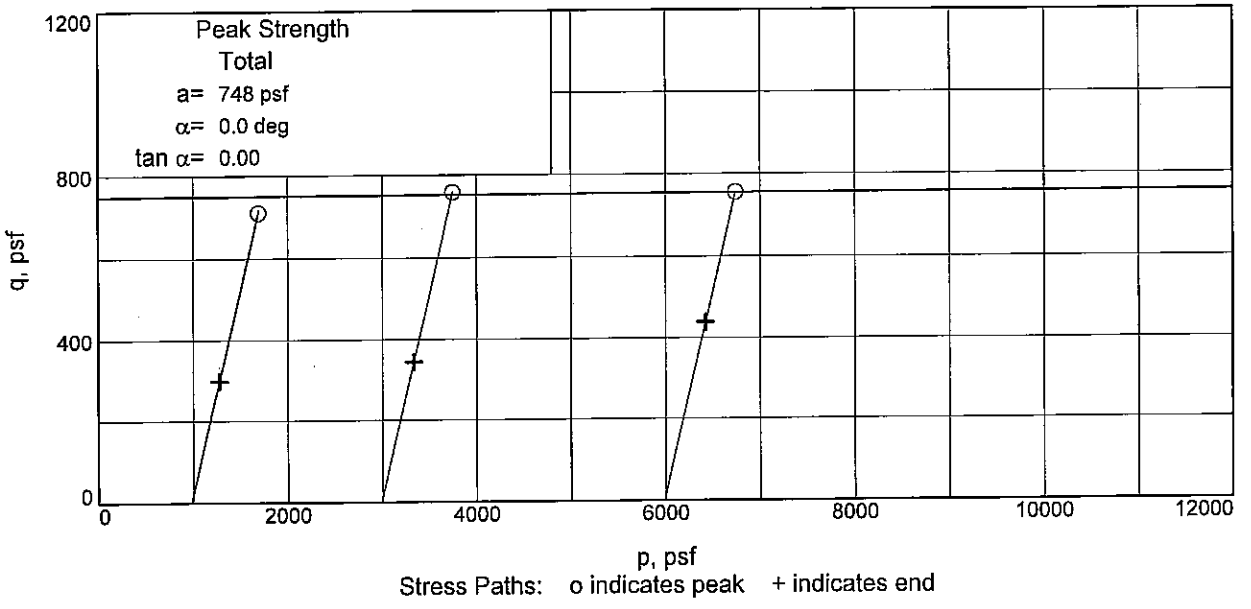
Tested By: DW/DD









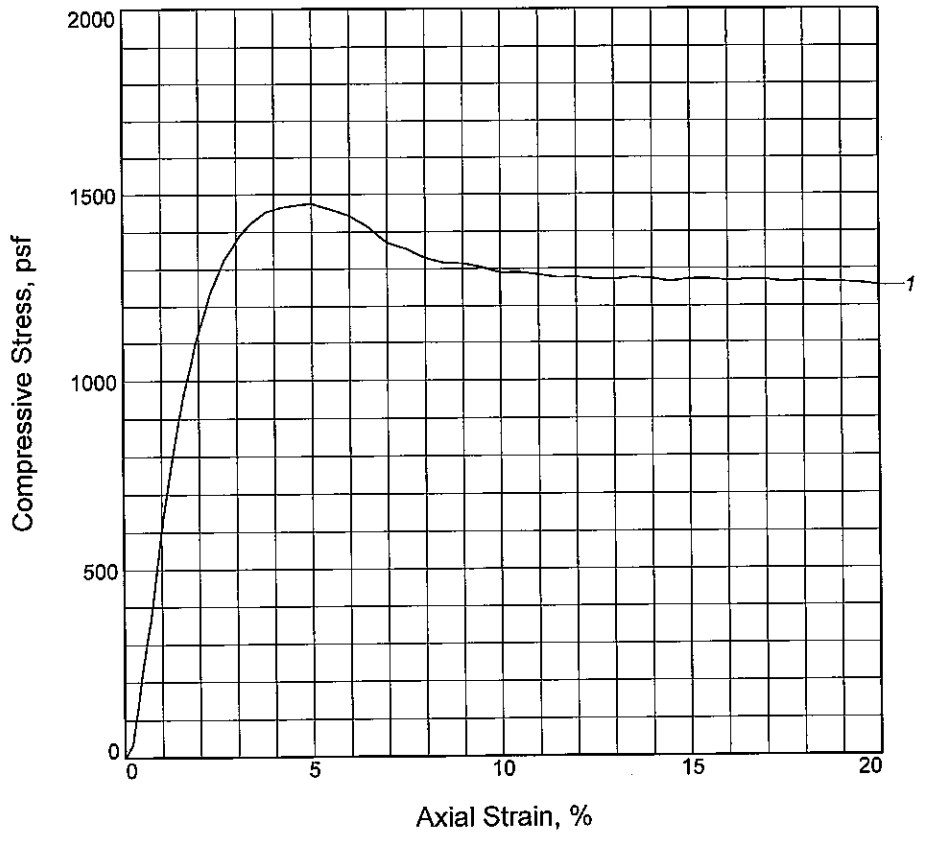


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UCL **Depth:** 44.8 **Sample Number:** 13B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DW/DD

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1475			
Undrained shear strength, psf	738			
Failure strain, %	5.0			
Strain rate, in./min.	0.030			
Water content, %	47.1			
Wet density, pcf	109.9			
Dry density, pcf	74.7			
Saturation, %	100.2			
Void ratio	1.2891			
Specimen diameter, in.	1.408			
Specimen height, in.	3.026			
Height/diameter ratio	2.15			

Description: M GR CH3 W/ SL

LL = 66	**PL =** 29	**PI =** 37	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/14/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

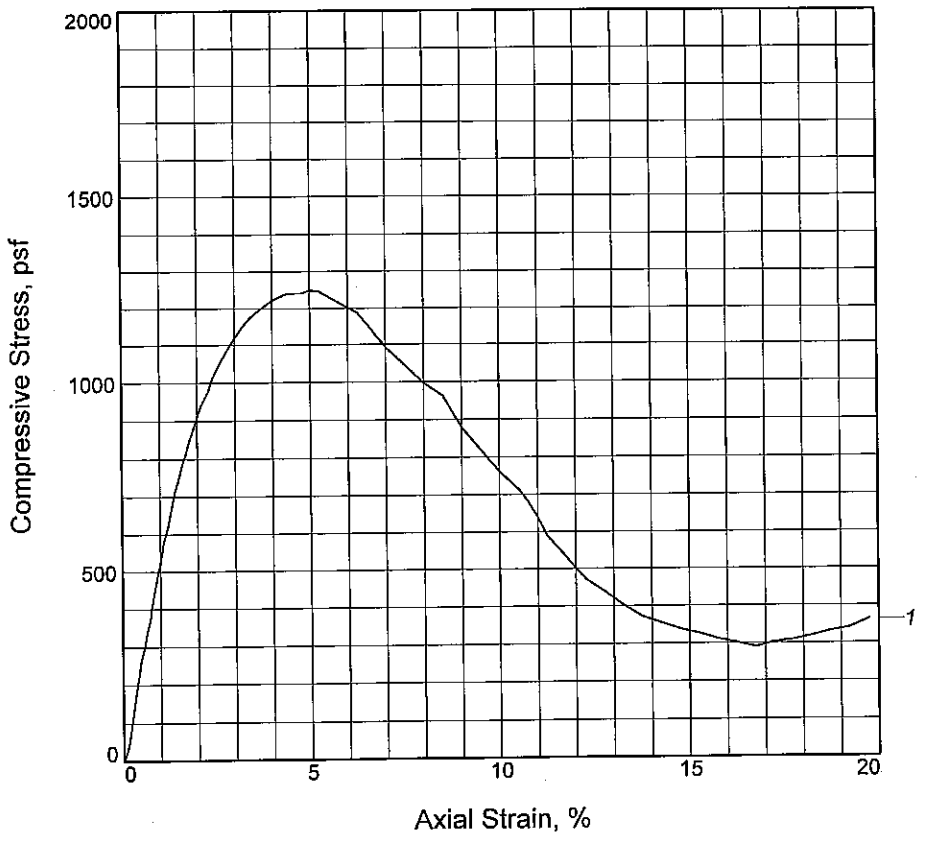
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 49.7
Sample Number: 14C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: BB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1248			
Undrained shear strength, psf	624			
Failure strain, %	5.0			
Strain rate, in./min.	0.030			
Water content, %	54.1			
Wet density, pcf	104.7			
Dry density, pcf	68.0			
Saturation, %	97.7			
Void ratio	1.5169			
Specimen diameter, in.	1.409			
Specimen height, in.	3.023			
Height/diameter ratio	2.15			

Description: M GR CH3

LL = 78	**PL** = 34	**PI** = 44	**Assumed GS**= 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/14/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

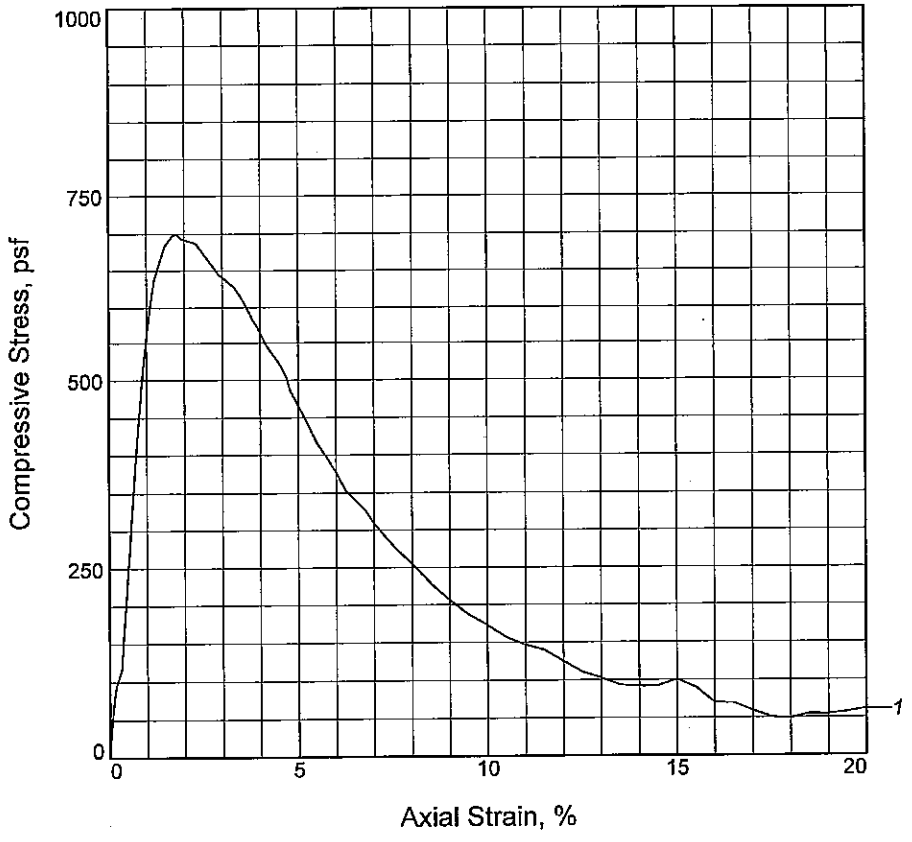
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 53.7
Sample Number: 15C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: BB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	699			
Undrained shear strength, psf	349			
Failure strain, %	1.8			
Strain rate, in./min.	0.030			
Water content, %	54.6			
Wet density, pcf	104.4			
Dry density, pcf	67.5			
Saturation, %	97.6			
Void ratio	1.5336			
Specimen diameter, in.	1.406			
Specimen height, in.	3.035			
Height/diameter ratio	2.16			

Description: SO GR CH3 W/ SL

LL = 78	**PL** = 34	**PI** = 44	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/14/07
Remarks:

Figure _____

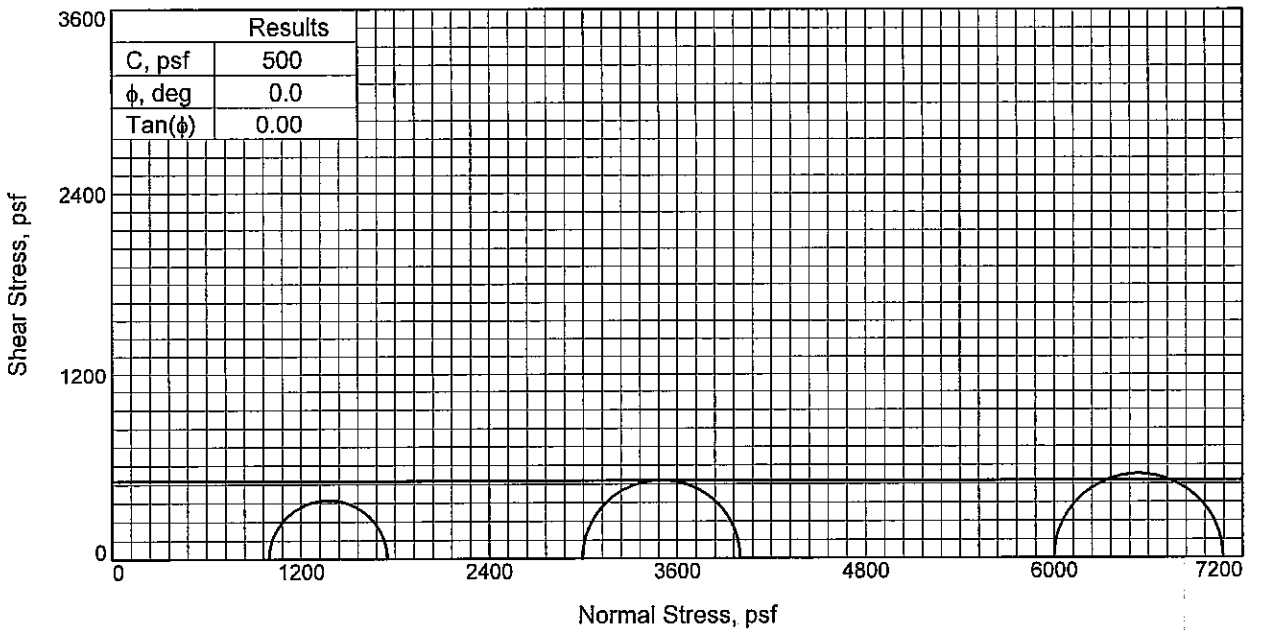
Client: U.S. Army Corps of Engineers

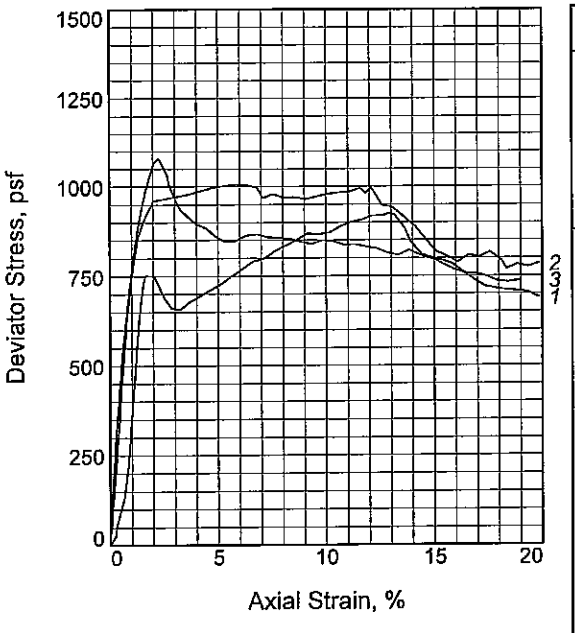
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 57.7
Sample Number: 16C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: BB





Sample No.		1	2	3
Initial	Water Content, %	59.0	58.2	57.7
	Dry Density, pcf	66.3	66.2	65.5
	Saturation, %	102.2	100.5	98.1
	Void Ratio	1.5815	1.5852	1.6124
	Diameter, in.	1.442	1.446	1.448
	Height, in.	3.121	3.135	3.147
At Test	Water Content, %	59.0	58.2	58.9
	Dry Density, pcf	66.3	66.2	65.5
	Saturation, %	102.2	100.5	100.0
	Void Ratio	1.5815	1.5852	1.6124
	Diameter, in.	1.442	1.446	1.448
	Height, in.	3.121	3.135	3.147
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		41.66	20.80	6.93
Fail. Stress, psf		1078	1006	752
Strain, %		2.2	5.8	1.6
Ult. Stress, psf		846	817	656
Strain, %				
σ_1 Failure, psf		7077	4001	1749
σ_3 Failure, psf		5999	2996	997

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO DGR CH3 W/ SL

LL= 80 **PL=** 42 **PI=** 38
Assumed Specific Gravity= 2.74
Remarks:

Figure _____

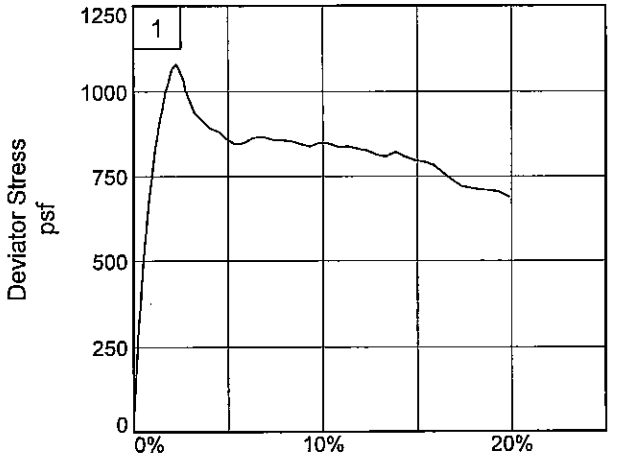
Client: U.S. Army Corps of Engineers

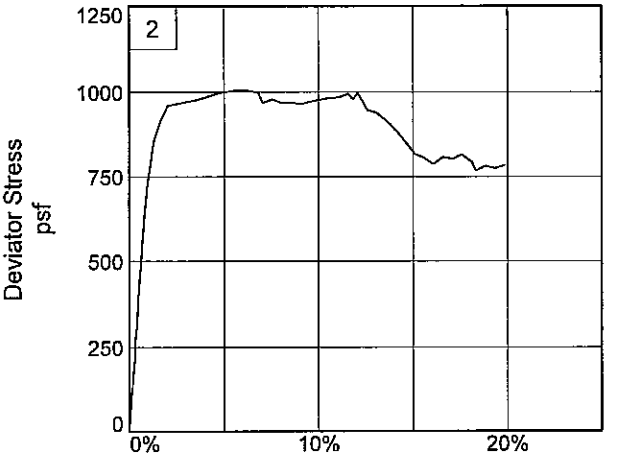
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 61.7
Sample Number: 17C
Proj. No.: 0022-0002 **Date Sampled:** 5/12/07

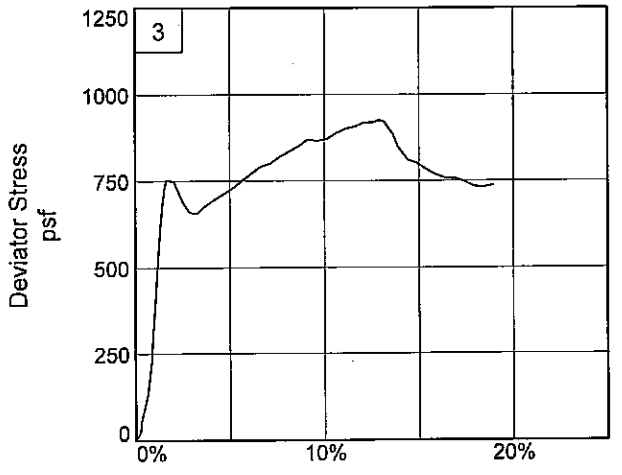
TRIAXIAL SHEAR TEST REPORT

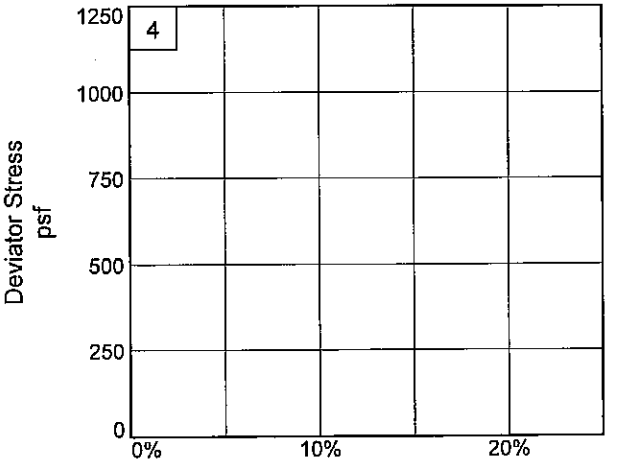
FFEBJV, LLC

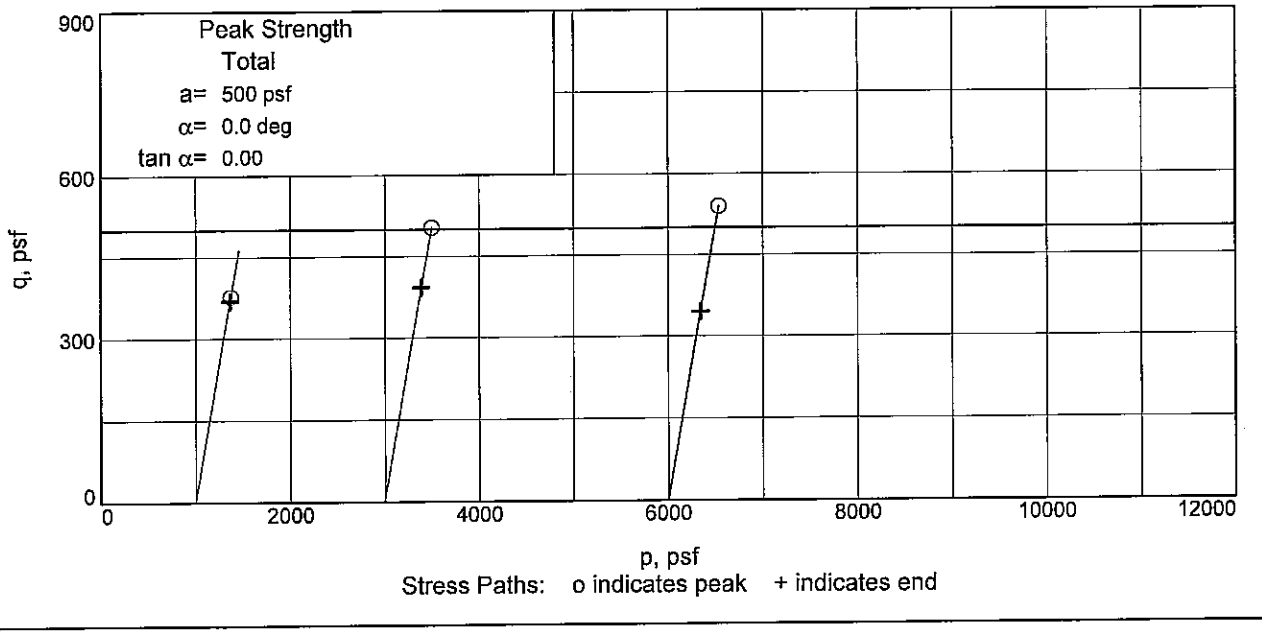
Tested By: JMB









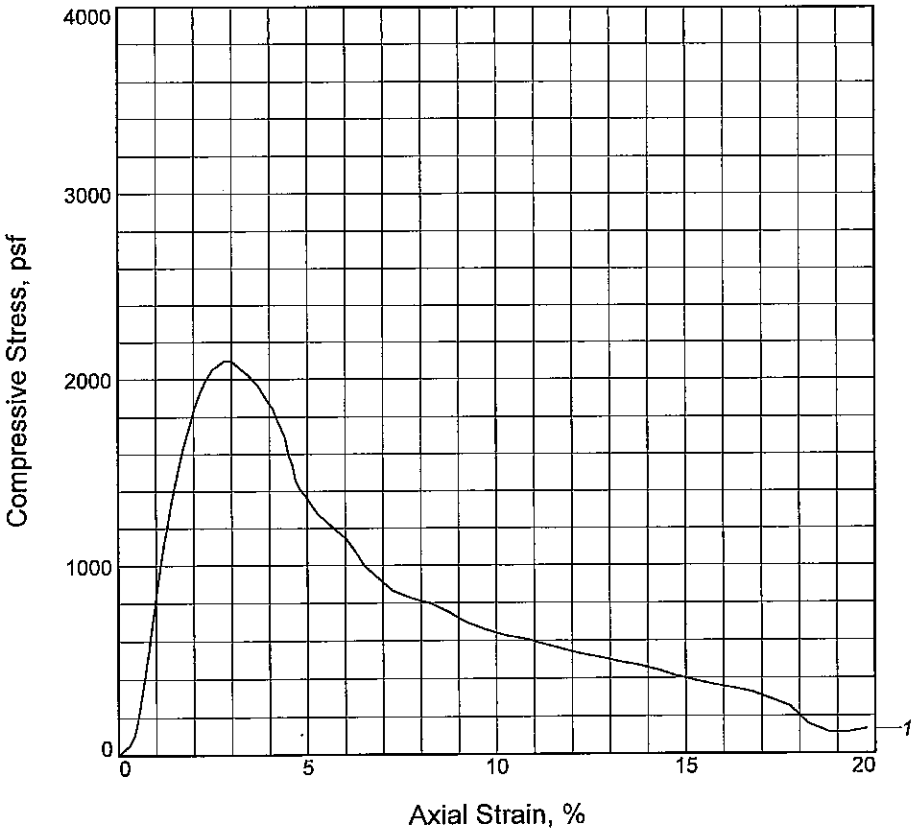


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UCL **Depth:** 61.7 **Sample Number:** 17C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2098			
Undrained shear strength, psf	1049			
Failure strain, %	2.9			
Strain rate, in./min.	0.030			
Water content, %	60.4			
Wet density, pcf	102.4			
Dry density, pcf	63.9			
Saturation, %	98.5			
Void ratio	1.6787			
Specimen diameter, in.	1.431			
Specimen height, in.	3.032			
Height/diameter ratio	2.12			

Description: ST GR CH4 W/ SIF, SL

LL = 80	**PL** = 37	**PI** = 43	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/14/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UCL **Depth:** 69.7
Sample Number: 19C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: BB

BOR. WWHC-55UCL
STA. LAT N29^48'34.06" LONG W90^07'02.50"

11-12 APRIL 2007

GROUND EL. 12.9

0.0	0.8	17		ML		T	CS				
0.8	2.0	21		ML		T	CS				
2.0	2.8	22		ML		T	CS				
2.8	4.0	21		ML		T	CS				
4.0	4.8	28		ML		T	CS				
4.8	5.7	27		ML		T	CS				
5.7	8.0	26	8.0	ML		T	CS				
8.0	8.8	34	8.8	CH	SI	SST	GR	BR			
8.8	9.7	33		CH		ST	GR		SL	WD	SIF
9.7	12.0	35	12.0	CH		ST	GR				
12.0	12.8	52		CH	SI	S	M	GR			
12.8	13.7	53		CH	SI	S	M	DGR		CC	
13.7	16.0	37		CH	SI	S	M	GR			
16.0	16.8	41		CH	SI	S	M	GR			
16.8	17.7	40	17.7	CH	SI	S	M	GR			
17.7	20.0	46		CL		M	BR	GR			
20.0	20.8	35		CL		M	GR	BR			
20.8	21.7	35		CL		M	GR	BR	CS		
21.7	22.6	33		CL		SO	BR	GR	487119	49	20
22.6	24.0	35		CL		SO	GR	BR	CS		
24.0	24.8	39		CL		SO	GR		CS		
24.8	25.7	39		CL		M	GR		CS		
25.7	26.6	34		CL		M	GR		CC		
26.6	28.0	39	28.0	CL		M	GR		CS		
28.0	28.8	58		CH		M	GR				
28.8	29.7	66	29.7	CH		M	DGR		SL		
29.7	30.6	56	30.6	CH	SI	S	M	GR			
30.6	32.0	61	32.0	CH		M	GR				
32.0	32.8	70	32.8	CH	SI	S	M	GR			
32.8	33.7	71	33.7	CH		M	GR				
33.7	34.6	67	34.6	CH	SI	S	M	DGR		RT	SIF
34.6	36.0	46	36.0	CL	SI	SSO	GR				
36.0	36.8	40		CL		SO	GR		CS		
36.8	37.7	35	37.7	CL		SO	GR		CS		
37.7	38.6	40	38.6	CL	SI	SSO	GR		SS		
38.6	40.0	44		CL		SO	GR		CS		

40.0 40.8 42 40.8CL M GR CS
40.8 41.7 51 41.7CH SIS M GR
41.7 44.0 58 44.0CH M GR SL 641103 85 25 62 420
44.0 44.8 48 CH SIS M GR
44.8 45.7 64 45.7CH SIS M DGR SL
45.7 46.6 58 46.6CH M GR
46.6 48.0 47 48.0CH SIS M GR
48.0 48.8 62 CH M GR
48.8 49.7 48 CH M GR
49.7 50.6 56 CH M GR SL 738110 66 29 42 500
50.6 52.0 56 CH M GR
52.0 52.8 58 CH M GR
52.8 53.7 55 CH M GR
53.7 54.6 56 CH M GR 624105 78 34 54 540
54.6 56.0 57 CH SO GR
56.0 56.8 55 CH SO GR
56.8 57.7 55 CH SO GR
57.7 60.0 56 CH SO GR SL 349104 78 34 55 580
60.0 60.8 61 CH SO GR
60.8 61.7 59 CH SO GR
61.7 64.0 56 CH SO DGR SL
64.0 64.8 56 CH SO GR
64.8 65.7 54 CH SO GR
65.7 66.6 54 CH SO GR
66.6 68.0 55 68.0CH SO GR
68.0 68.8 61 CH SS M GR
68.8 69.7 59 69.7CH SS M GR
69.7 70.6 60 70.6CH ST GR SIFSL 1049102 80 37 60 700
70.6 72.0 65 72.0CH SS M GR SIF
999.9
****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 9.10/ 3.80 Water Con: 32.00
LL,PL,PI : 54, 17, 37 Dry Dens : 90.00
Cohesion : 0.525 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 13.10/-0.20 Water Con: 39.00

LL,PL,PI : 72, 30, 42 Dry Dens : 81.00
Cohesion : 0.408 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 18.00/-5.10 Water Con: 34.00
LL,PL,PI : 49, 21, 28 Dry Dens : 88.00
Cohesion : 0.298 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 26.00/-13.1 Water Con: 35.00
LL,PL,PI : 36, 21, 14 Dry Dens : 86.00
Cohesion : 0.266 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 29.10/-16.2 Water Con: 70.00
LL,PL,PI : 103, 41, 62 Dry Dens : 58.00
Cohesion : 0.333 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 34.00/-21.1 Water Con: 71.00
LL,PL,PI : 80, 25, 55 Dry Dens : 57.00
Cohesion : 0.291 Saturat : 98.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES

Test Type:(Q) Classif : CL
Depth/Ele: 38.00/-25.1 Water Con: 42.00
LL,PL,PI : 43, 24, 19 Dry Dens : 80.00
Cohesion : 0.219 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 45.10/-32.2 Water Con: 68.00
LL,PL,PI : 90, 35, 55 Dry Dens : 60.00
Cohesion : 0.374 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 62.00/-49.1 Water Con: 58.00
LL,PL,PI : 80, 42, 38 Dry Dens : 66.00
Cohesion : 0.250 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

Project Number: 0022-0002
Boring: WWHC-55UPT

Current Date: 7/5/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1A1	0.0	ST T CH3 W/ ARS ML, CC, RT	CH3		20												
1A2	0.8	M GR & BR CH3 W/ ARS ML, WD, RT	CH3		54												
1B1	2.0	M T CH3 W/ ARS ML, CC, RT	CH3		33	87	117	96	UU	0	634		64	20	44	0.55	
1B2	2.8	M GR & T CH3 W/ ARS ML, RT	CH3		38												
2A	4.0	SO GR & BR CH3 W/ ARS ML, WD, RT	CH3		45												
2B	4.8	ST GR & T CH3 W/ ARS ML	CH3		32	90	119	99	UU	0	1015		59	18	41	0.66	
2C	5.7	ST GR & T CH3 W/ ARS ML	CH3		33												
3A	8.0	M GR & T CL4 W/ RT	CL4		30												
3B	8.8	M GR & T CL4	CL4	9	29	94	122	100	UC	--	639	1277	37	17	20	0.27	
NS	9.7	NO SAMPLE	NS														
4A	12.0	SO GR & T CL6	CL6		34												
4B	12.8	SO GR & T CL6 W/ CC	CL6		37												
4C	13.7	SO GR CL6 W/ CC	CL6		38	84	116	100	UU	0	463		41	17	24	0.31	
4D	14.6	M GR CL6	CL6		32												
5A	16.0	M GR CL6 W/ LYS ML, WD	CL6		40												
5B	16.8	M GR CL6	CL6		34												
5C	17.7	SO GR CL6	CL6		39	82	114	100	UU	0	552		48	20	28	0.35	
5D	18.6	SO GR CH4 W/ WD	CH4		56												
6A	20.0	SO GR CH4 W/ WD, ARS ML	CH4		59												
6B	20.8	SO GR CH4 W/ WD, ARS ML	CH4		58												
6C	21.7	SO GR CH4 W/ WD, ARS ML	CH4		66	61	101	100	UU	0	333		97	27	70	0.42	
7A	24.0	SO GR CH4 W/ ARS ML	CH4		73												
7B	24.8	SO GR CH4 W/ ARS ML	CH4		70												
7C	25.7	SO GR CH4 W/ ARS ML	CH4		70								*	*			GS, CON
8A	28.0	SO GR CL4	CL4		40												
8B	28.8	SO GR CL4 W/ LNS CH	CL4		38												
8C	29.7	SO GR CL4 W/ LNS ML	CL4	6	40	83	116	100	UC	--	394	788	37	16	21	0.23	
9A	32.0	M GR CH3 W/ LNS ML	CH3		46												
9B	32.8	M GR CH3 W/ LNS & LYS ML	CH3		48												
9C	33.7	SO GR CH3 W/ LNS & ARS ML	CH3		59	65	104	100	UU	0	321		70	23	47	0.28	
9D	34.6	M GR CH3 W/ LNS & ARS ML	CH3		50												
10A	36.0	SO GR CH3 W/ ARS ML	CH3		63												
10B	36.8	SO GR CH3 W/ ARS ML	CH3		65												
10C	37.7	M GR CH3 W/ LNS & ARS ML	CH3		58	66	105	100	UU	0	568		73	24	49	0.34	
10D	38.6	M GR CH3 W/ LNS & ARS ML	CH3		46												
11A	40.0	M GR CH3 W/ LYS ML	CH3		64												
11B	40.8	M GR CH3 W/ ARS ML	CH3		52												

Remarks: _____
FFEBJV, LLC.

Checked by: RWS
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: Westbank 100-yr Boring Program Assigned By: _____

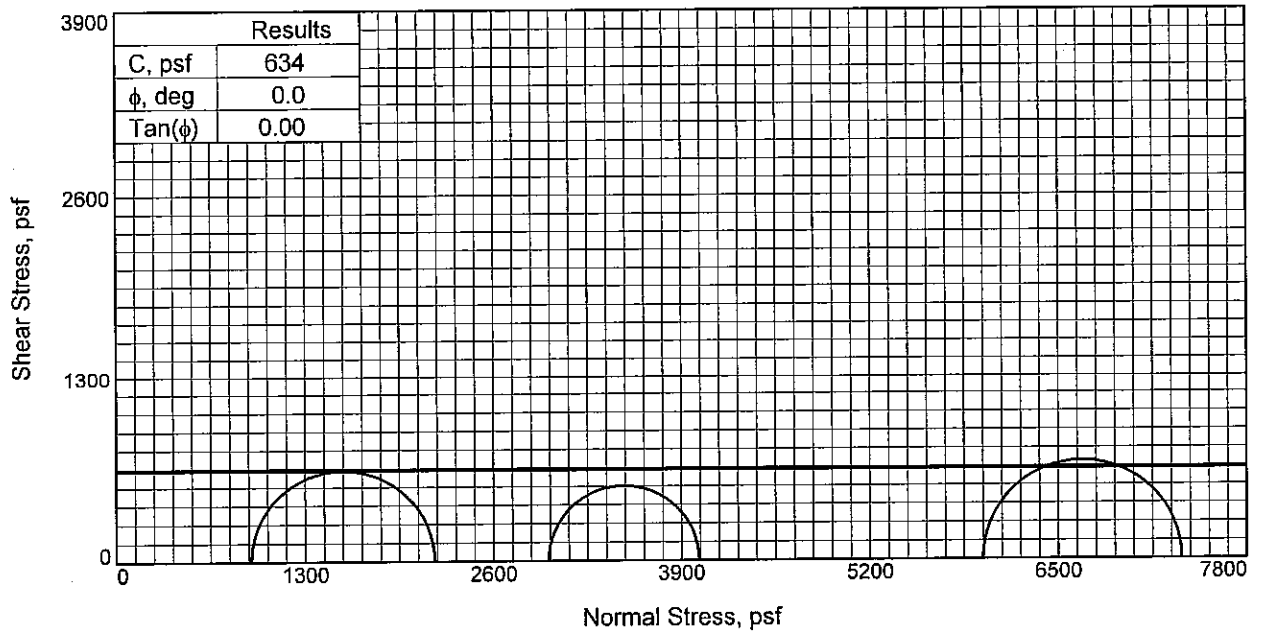
Project Number: 0022-0002
Boring: WWHC-55UPT

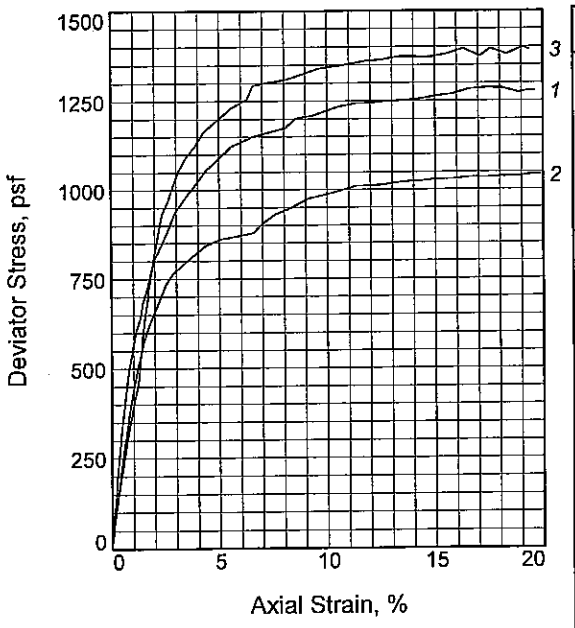
Current Date: 7/5/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
11C	41.7	M GR CH3 W/ SL	CH3	3	52	70	106	98	UC	--	768	1537	70	23	47	0.28	
11D	42.6	SO GR CH3	CH3		58												
12A	44.0	SO GR CH3	CH3		57												
12B	44.8	SO GR CH3	CH3		57								*	*			GS, CON
12C	45.7	SO GR CH4	CH4		58	66	105	100	UU	0	438		77	26	51	0.38	
12D	46.6	SO GR CH4	CH4		57												
13A	48.0	M GR CH4	CH4		56												
13B	48.8	M GR CH4	CH4		57												
13C	49.7	M GR CH4 W/ ARS ML, SL	CH4	3	62	63	102	99	UC	--	973	1946	88	29	59	0.37	
13D	50.6	M GR CH4 W/ ARS ML, SL	CH4		61												
14A	52.0	M GR CH4 W/ ARS ML, SL	CH4		68												
14B	52.8	M GR CH4 W/ ARS ML, SL	CH4		61												
14C	53.7	M GR CH4 W/ SL	CH4		70	59	100	100	UU	0	588		90	26	64	0.4	
15A	56.0	M GR CH4 W/ SL	CH4		59												
15B	56.8	M GR CH4 W/ SL	CH4		55												
15C	57.7	M GR CH4 W/ SL	CH4	2	50	71	107	98	UC	--	864	1728	72	24	48	0.34	
16A	60.0	M GR CH4 W/ LNS & ARS ML, SL	CH4		56												
16B	60.8	ST GR CH4 W/ LNS & ARS ML, SL	CH4		58												
16C	61.7	ST GR CH4 W/ LNS & ARS ML, SL	CH4	2	56	67	105	99	UC	--	1094	2187	70	23	47	0.40	
16D	62.6	M GR CH4 W/ LNS & LYS SM, SIF	CH4		42												
17A	64.0	NO SAMPLE	NS														
17B	66.0	SO GR CH4 W/ ARS SM, SIF	CH4		69												
18A	68.0	M GR CH2-S W/ SIF	CH2-S		38												
18B	68.8	M GR CH2-S W/ SIF	CH2-S		37												
18C	69.7	M GR CH2 W/ ARS SM, SIF	CH2	6	41	79	112	99	UC	--	810	1619	50	18	32	0.35	
18D	70.6	M GR CH2 W/ LNS ML	CH2		44												

Remarks: _____
FFEBJV, LLC.

Checked by: RNG
File Name: TO 2





Sample No.		1	2	3
Initial	Water Content, %	32.2	34.0	34.1
	Dry Density, pcf	87.1	86.8	88.2
	Saturation, %	92.3	96.5	100.3
	Void Ratio	0.9486	0.9574	0.9249
	Diameter, in.	1.496	1.453	1.457
	Height, in.	3.128	3.137	3.129
At Test	Water Content, %	32.2	34.0	34.1
	Dry Density, pcf	87.1	86.8	88.2
	Saturation, %	92.3	96.5	100.3
	Void Ratio	0.9486	0.9574	0.9249
	Diameter, in.	1.496	1.453	1.457
	Height, in.	3.128	3.137	3.129
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.45	20.70	41.52
Fail. Stress, psf		1264	1041	1372
Strain, %		15.1	19.9	14.8
Ult. Stress, psf		1264	1041	1372
Strain, %				
σ_1 Failure, psf		2193	4021	7351
σ_3 Failure, psf		929	2981	5979

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M T CH3 W/ ARS ML, CC, RT

LL= 64 **PL=** 20 **PI=** 44
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

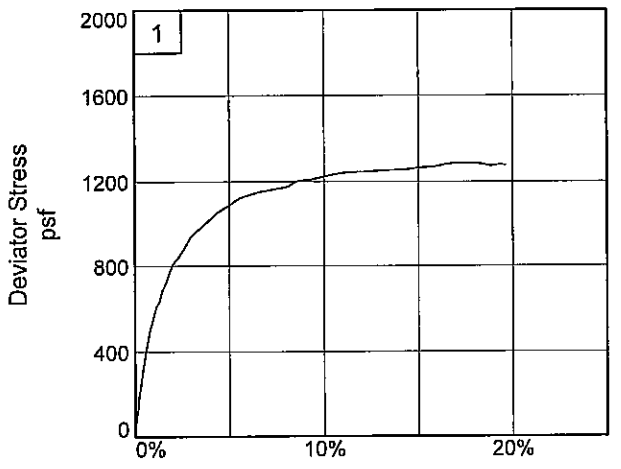
Client: U.S. Army Corps of Engineers

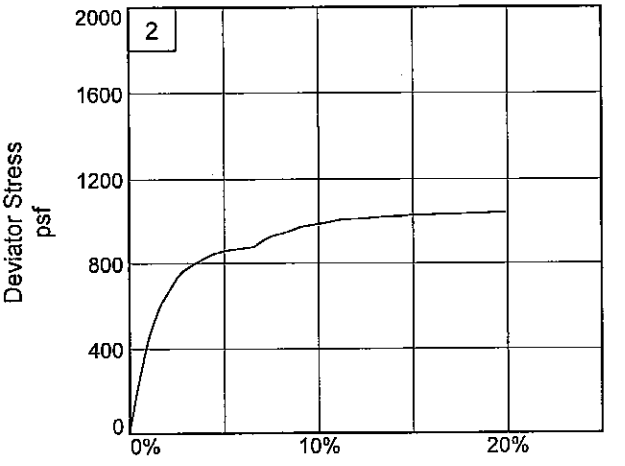
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 2.0
Sample Number: 1B1
Proj. No.: 0022-0002 **Date Sampled:** 6/02/07

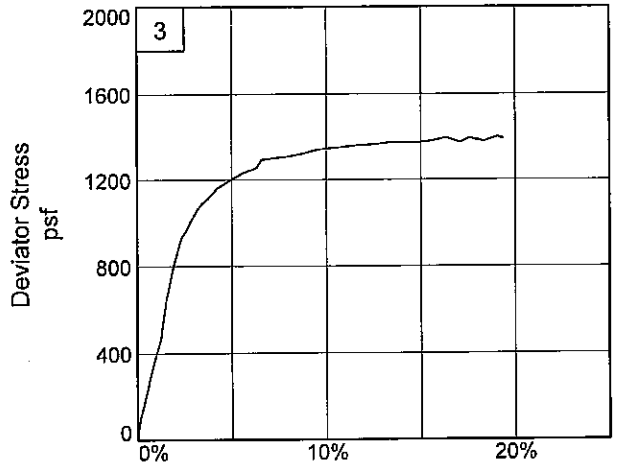
TRIAXIAL SHEAR TEST REPORT

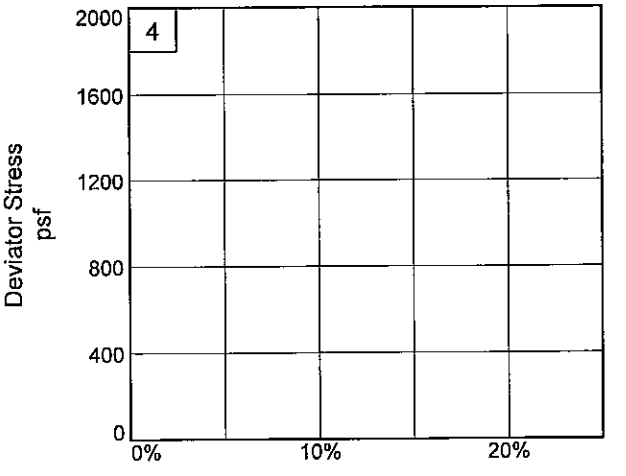
FFEBJV, LLC

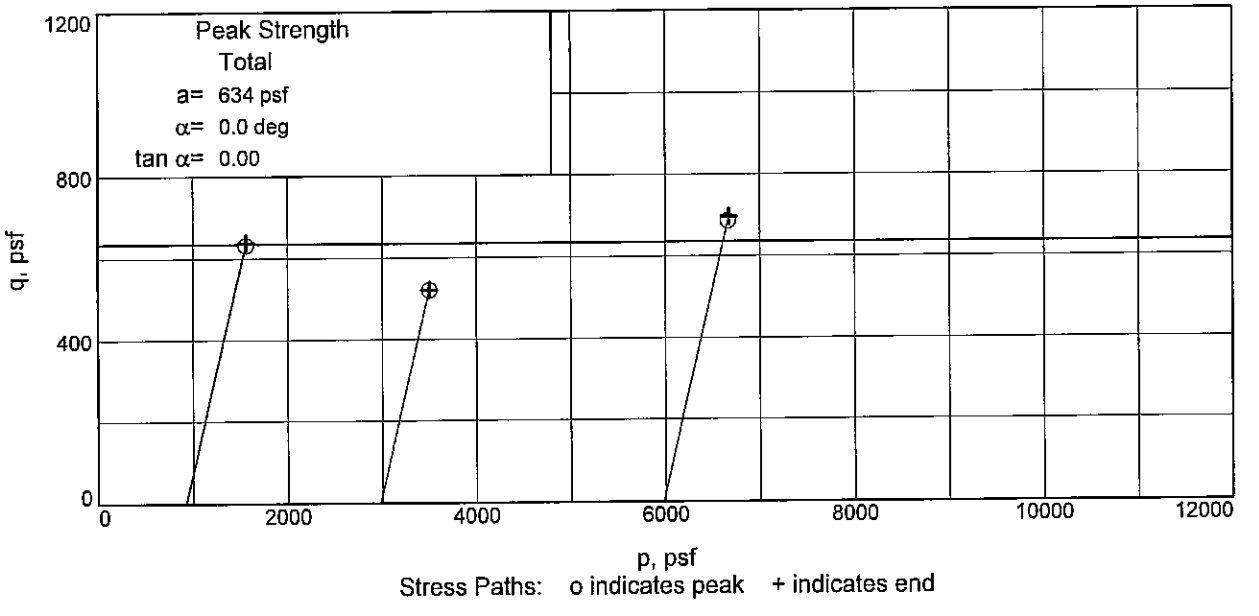
Tested By: DD/JMB







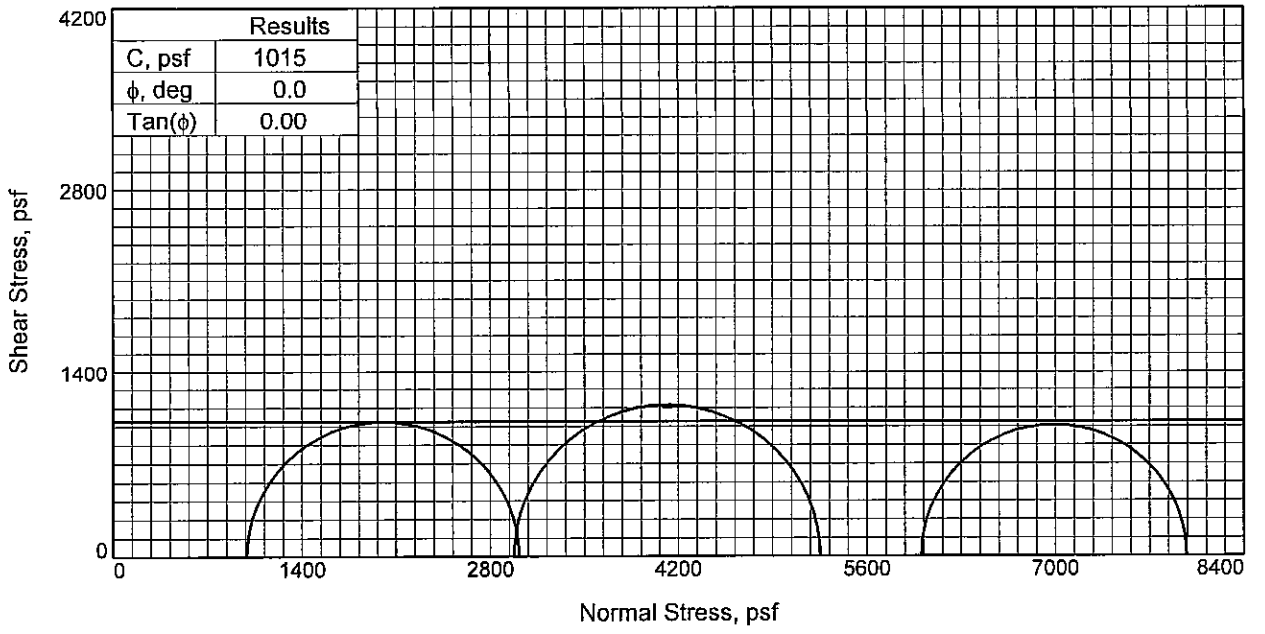


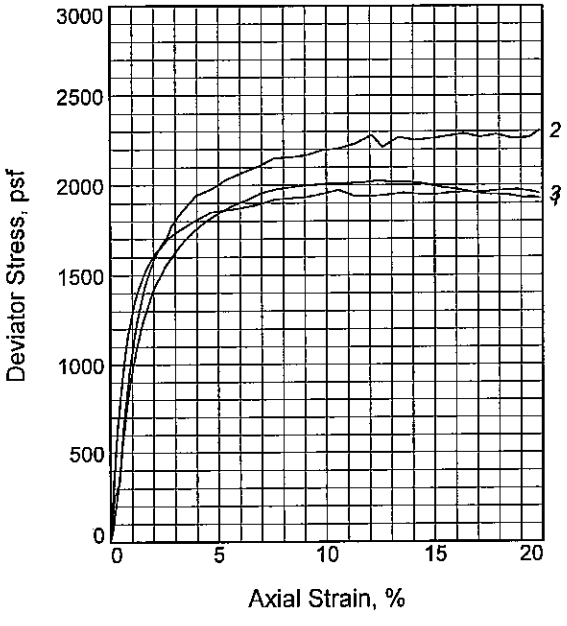


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UPT **Depth:** 2.0 **Sample Number:** 1B1
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB





Sample No.		1	2	3
Initial	Water Content, %	31.7	31.5	33.0
	Dry Density, pcf	91.1	91.4	88.9
	Saturation, %	99.8	99.8	98.6
	Void Ratio	0.8641	0.8580	0.9094
	Diameter, in.	1.454	1.415	1.418
	Height, in.	3.136	3.135	3.135
At Test	Water Content, %	31.7	31.5	33.0
	Dry Density, pcf	91.1	91.4	88.9
	Saturation, %	99.8	99.8	98.6
	Void Ratio	0.8641	0.8580	0.9094
	Diameter, in.	1.454	1.415	1.418
	Height, in.	3.136	3.135	3.135
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.67	41.69
Fail. Stress, psf		2024	2278	1973
Strain, %		12.3	12.1	10.6
Ult. Stress, psf		2006	2210	1938
Strain, %				
σ_1 Failure, psf		3015	5254	7976
σ_3 Failure, psf		991	2977	6004

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST GR & T CH3 W/ ARS ML

LL= 59 **PL=** 18 **PI=** 41
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

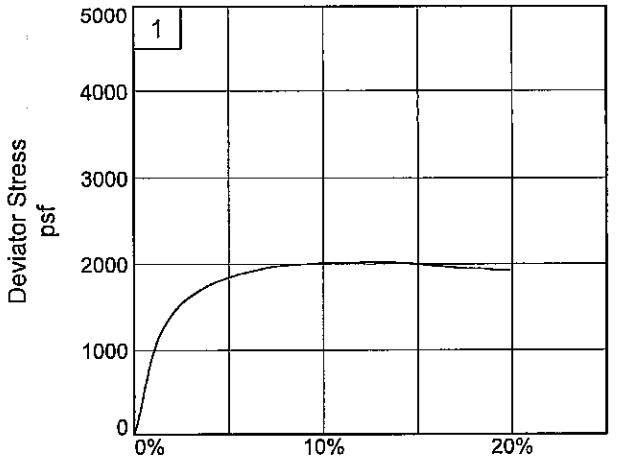
Client: U.S. Army Corps of Engineers

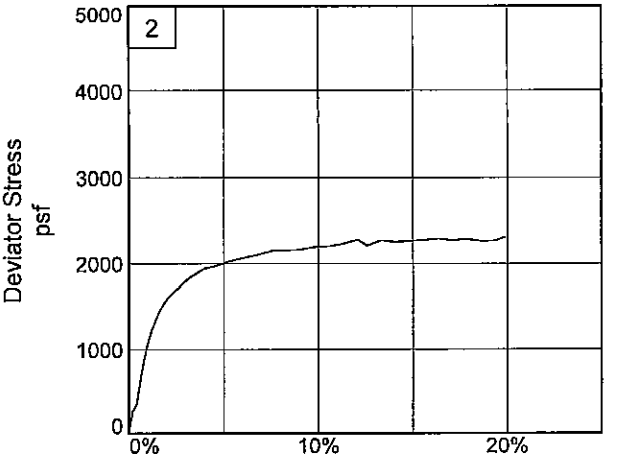
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 4.8
Sample Number: 2B
Proj. No.: 0022-0002 **Date Sampled:** 6/02/07

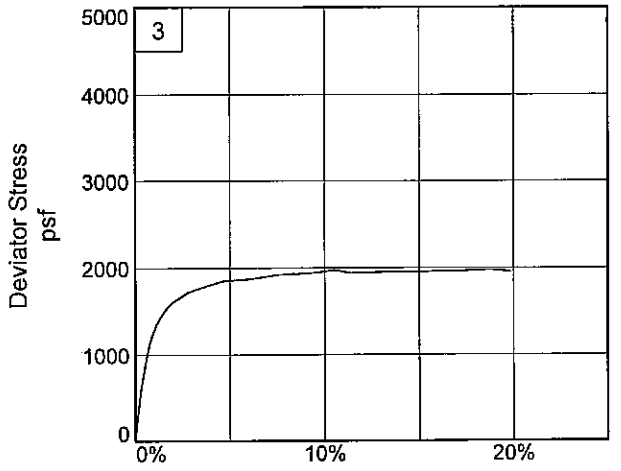
TRIAXIAL SHEAR TEST REPORT

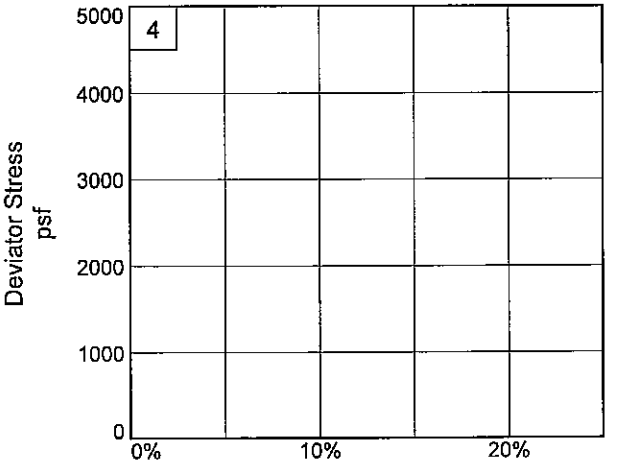
FFEBJV, LLC

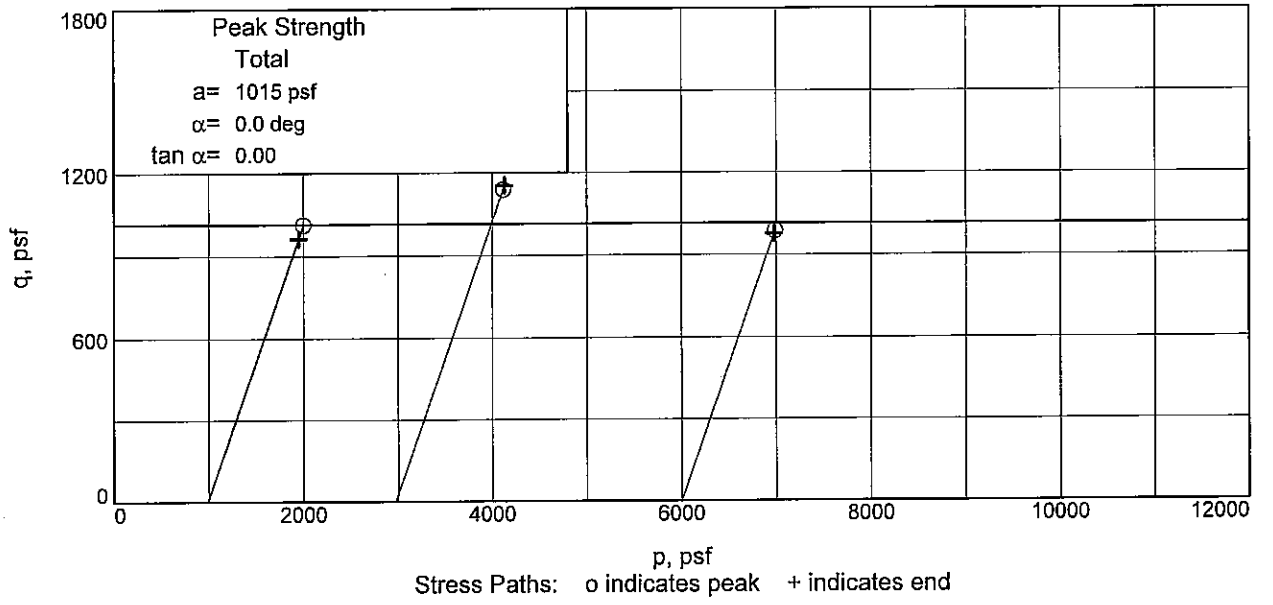
Tested By: DD/JMB











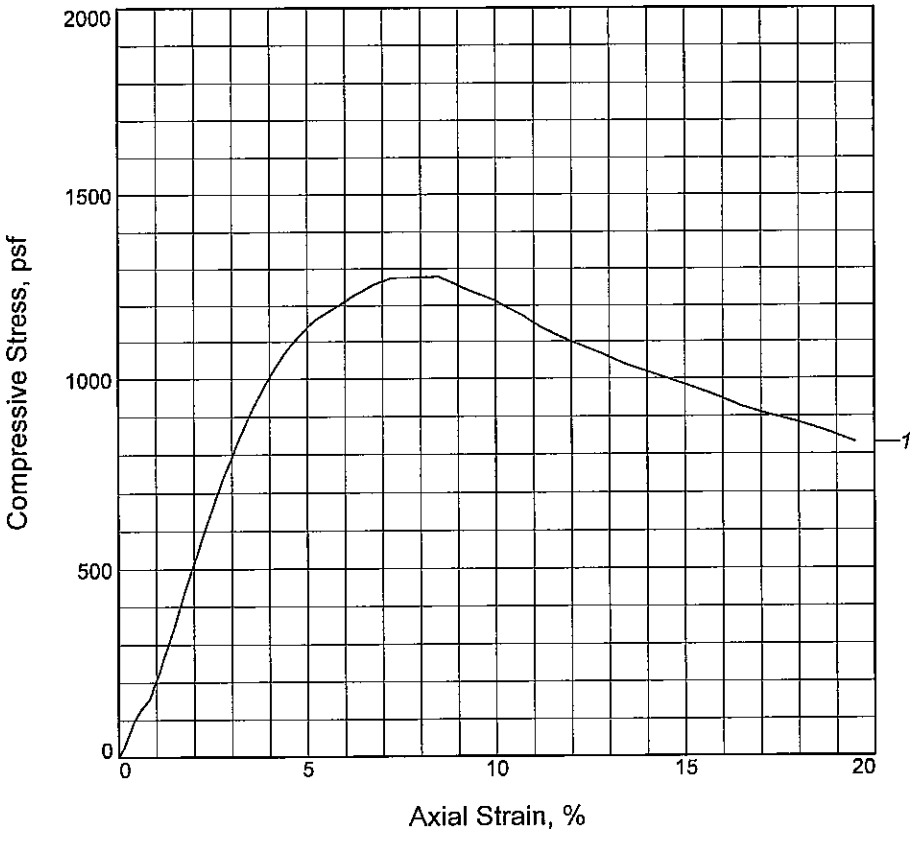
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UPT **Depth:** 4.8 **Sample Number:** 2B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1277			
Undrained shear strength, psf	638			
Failure strain, %	8.0			
Strain rate, in./min.	0.030			
Water content, %	29.0			
Wet density, pcf	121.5			
Dry density, pcf	94.2			
Saturation, %	100.2			
Void ratio	0.7760			
Specimen diameter, in.	1.349			
Specimen height, in.	3.010			
Height/diameter ratio	2.23			

Description: M GR & T CL*A*

LL = 37	PL = 17	PI = 20	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/01/07
Remarks:

Figure _____

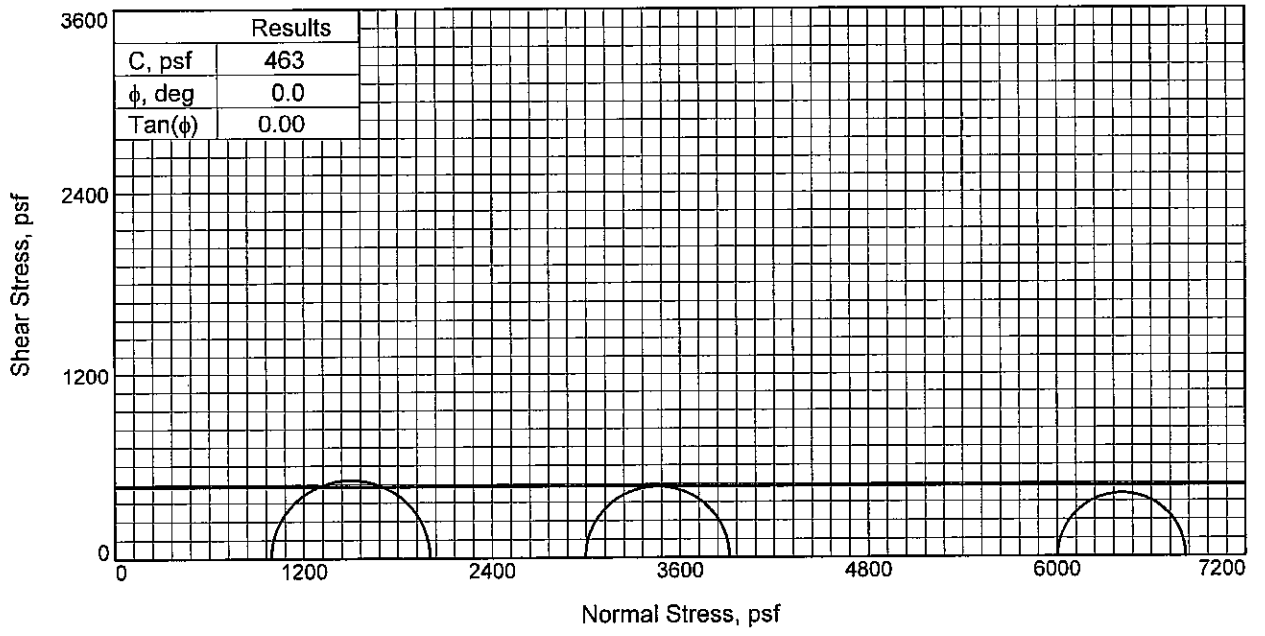
Client: U.S. Army Corps of Engineers

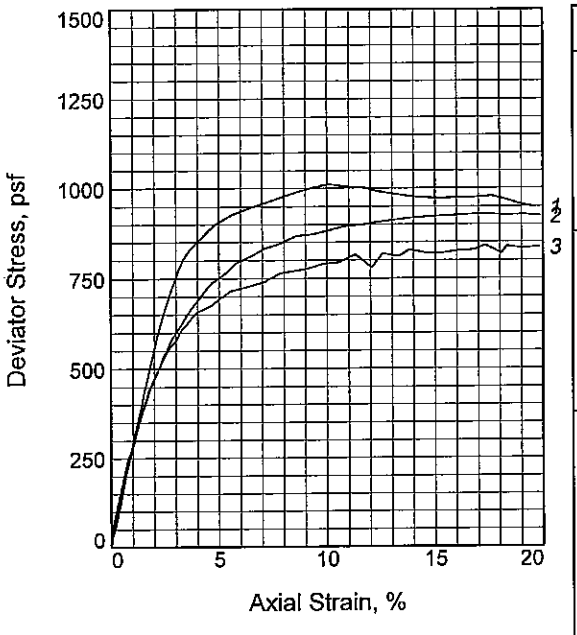
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 8.8
Sample Number: 3B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB





Sample No.		1	2	3
Initial	Water Content, %	37.6	38.6	39.1
	Dry Density, pcf	85.5	83.7	82.1
	Saturation, %	105.0	103.1	100.6
	Void Ratio	0.9636	1.0061	1.0460
	Diameter, in.	1.429	1.428	1.461
	Height, in.	3.117	3.127	3.127
At Test	Water Content, %	37.6	38.6	39.1
	Dry Density, pcf	85.5	83.7	82.1
	Saturation, %	105.0	103.1	100.6
	Void Ratio	0.9636	1.0061	1.0460
	Diameter, in.	1.429	1.428	1.461
	Height, in.	3.117	3.127	3.127
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.80	41.70
Fail. Stress, psf		1011	920	815
Strain, %		10.1	14.6	11.3
Ult. Stress, psf		973	920	779
Strain, %				
σ_1 Failure, psf		2005	3916	6820
σ_3 Failure, psf		994	2995	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CL6 W/ CC

LL= 41 **PL=** 17 **PI=** 24
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

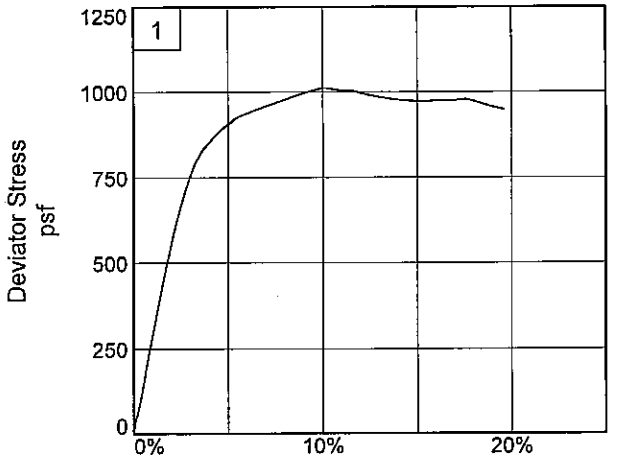
Client: U.S. Army Corps of Engineers

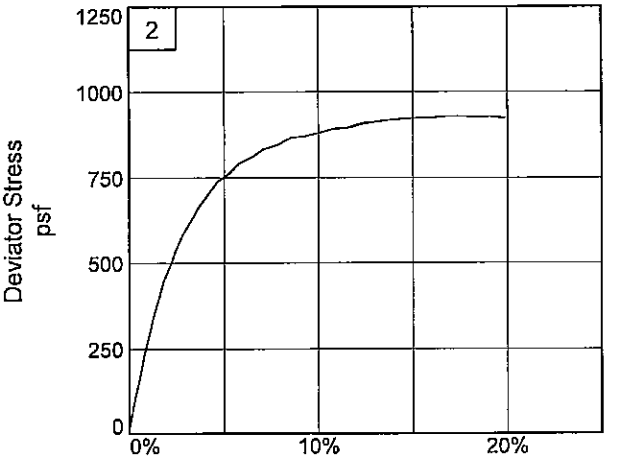
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 13.7
Sample Number: 4C
Proj. No.: 0022-0002 **Date Sampled:** 6/02/07

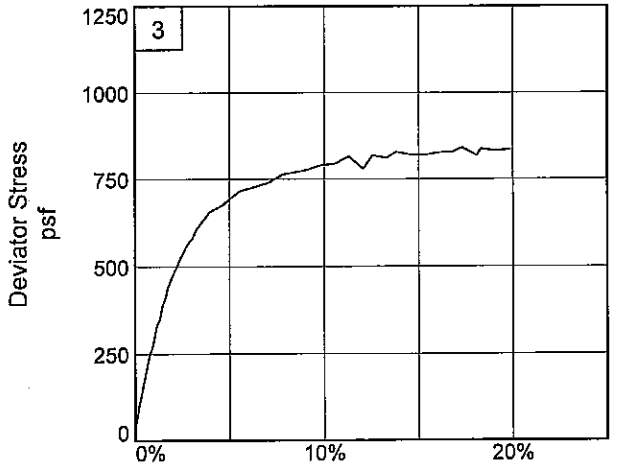
TRIAXIAL SHEAR TEST REPORT

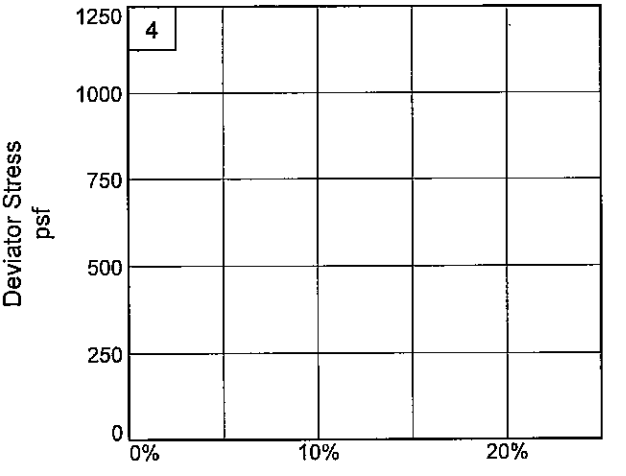
FFEBJV, LLC

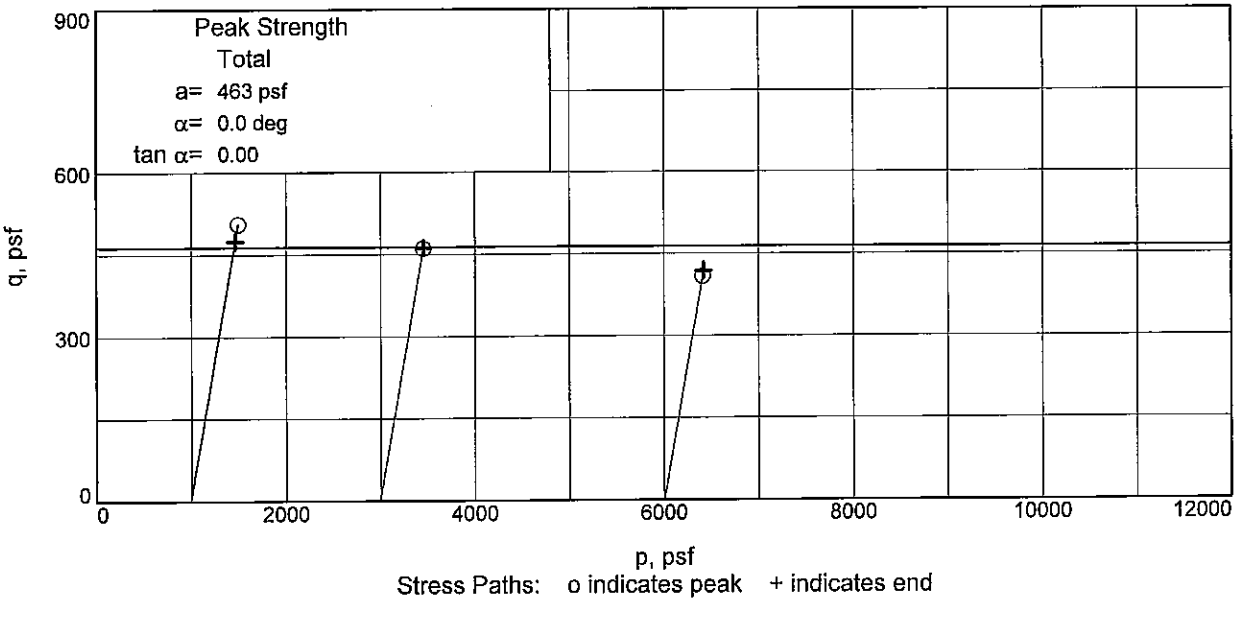
Tested By: DD/JMB







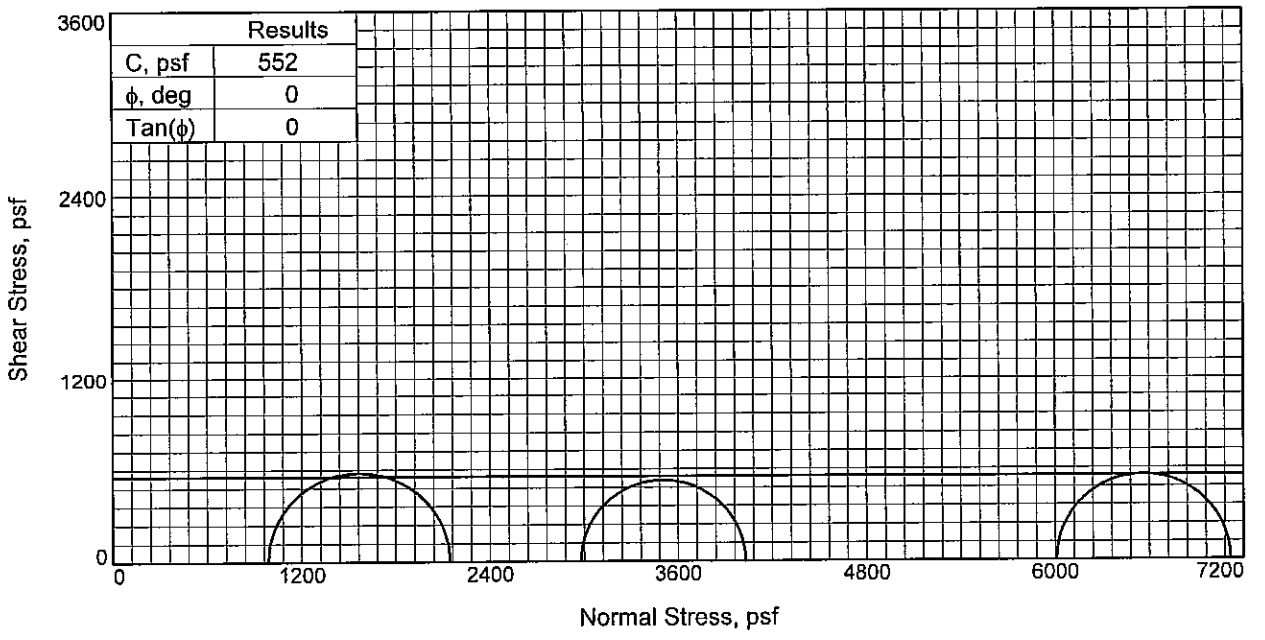


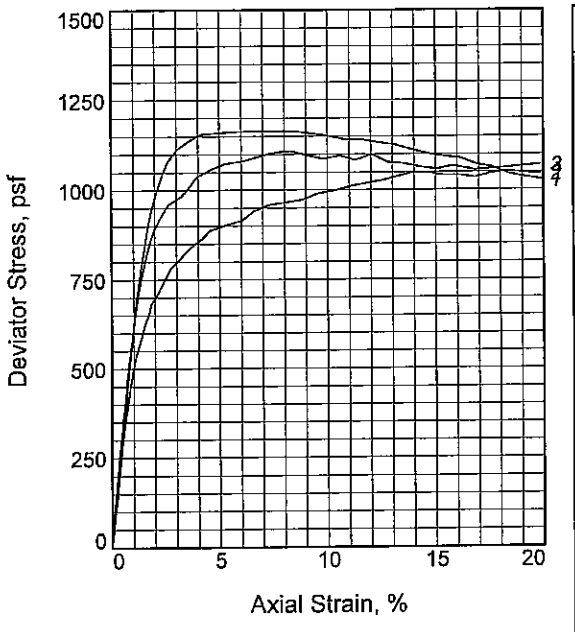


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UPT **Depth:** 13.7 **Sample Number:** 4C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB





Sample No.		1	2	3
Initial	Water Content, %	39.7	38.7	39.0
	Dry Density, pcf	81.4	80.9	82.7
	Saturation, %	100.4	96.7	101.8
	Void Ratio	1.0632	1.0769	1.0311
	Diameter, in.	1.445	1.453	1.436
	Height, in.	3.150	3.147	3.131
At Test	Water Content, %	39.7	38.7	39.0
	Dry Density, pcf	81.4	80.9	82.7
	Saturation, %	100.4	96.7	101.8
	Void Ratio	1.0632	1.0769	1.0311
	Diameter, in.	1.445	1.453	1.436
	Height, in.	3.150	3.147	3.131
Strain rate, in./min.		0.032	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	20.69	41.73
Fail. Stress, psf		1156	1048	1109
Strain, %		4.2	14.6	8.3
Ult. Stress, psf		1098	1048	1058
Strain, %				
σ_1 Failure, psf		2144	4028	7118
σ_3 Failure, psf		988	2980	6009

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL6

LL= 48 **PL=** 20 **PI=** 28
Assumed Specific Gravity= 2.69
Remarks:

Figure _____

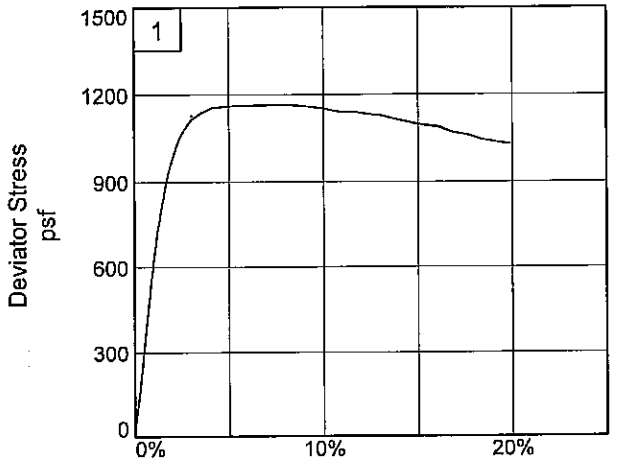
Client: U.S. Army Corps of Engineers

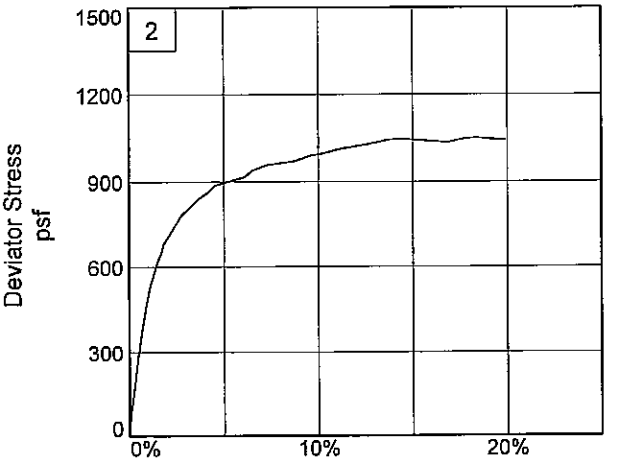
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 17.7
Sample Number: 5C
Proj. No.: 0022-0002 **Date Sampled:** 6/02/07

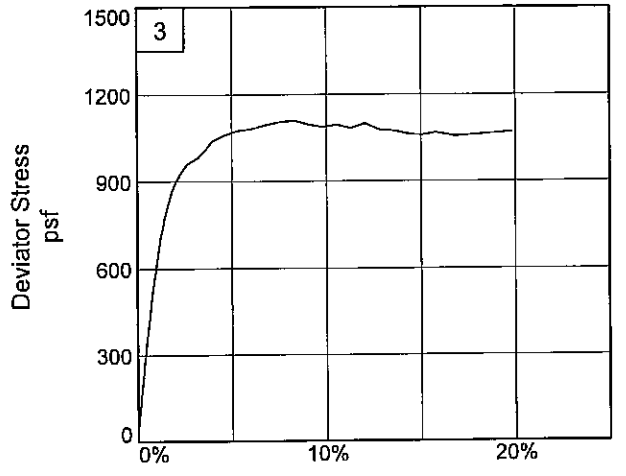
TRIAXIAL SHEAR TEST REPORT

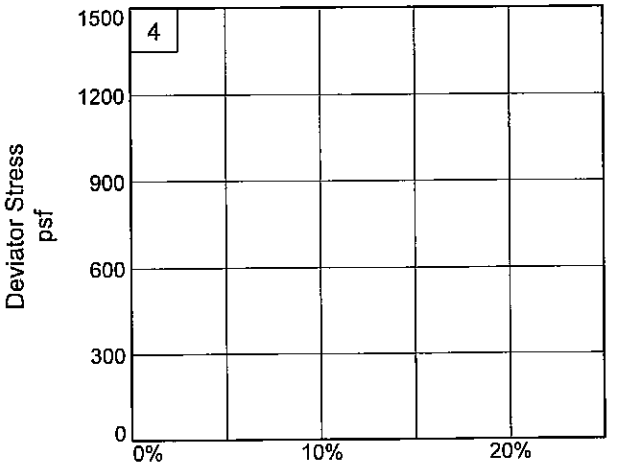
FFEBJV, LLC

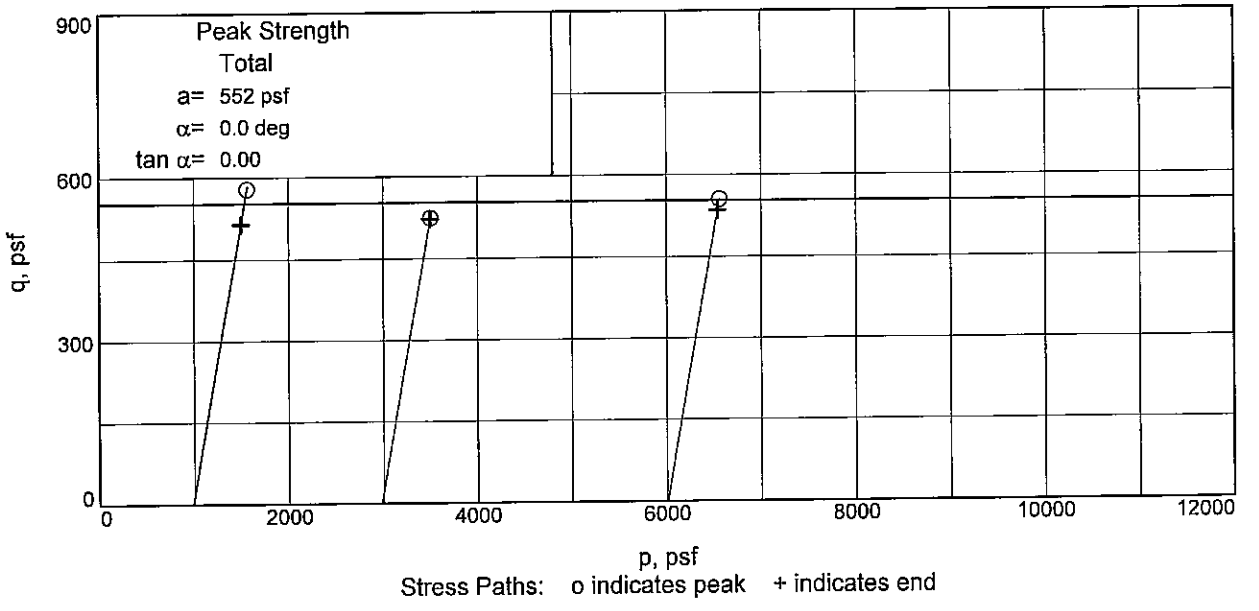
Tested By: DD/JMB







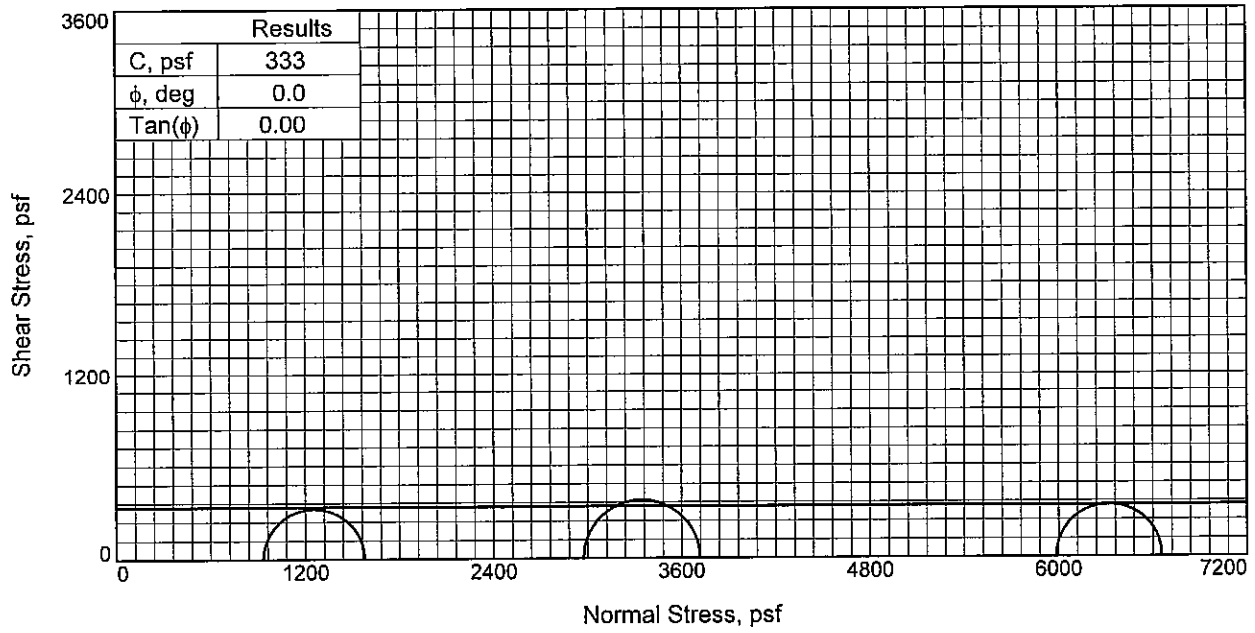


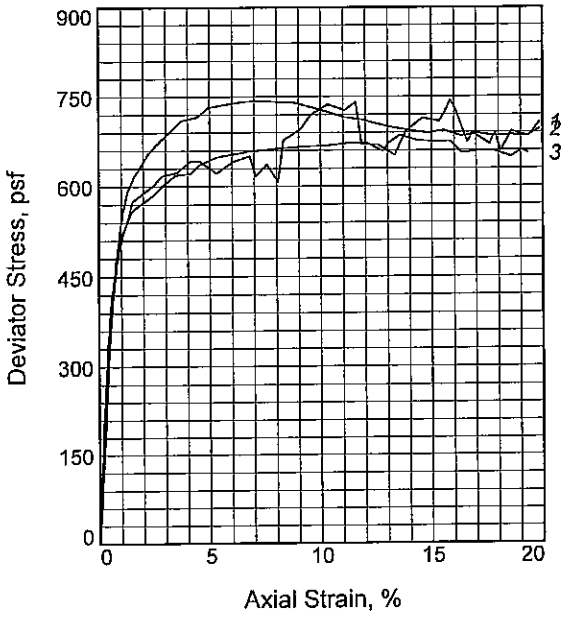


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UPT **Depth:** 17.7 **Sample Number:** 5C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB





Sample No.		1	2	3
Initial	Water Content, %	65.2	63.4	70.4
	Dry Density, pcf	60.8	62.5	59.2
	Saturation, %	98.9	100.6	102.5
	Void Ratio	1.7927	1.7153	1.8695
	Diameter, in.	1.442	1.437	1.431
	Height, in.	3.133	3.131	3.132
At Test	Water Content, %	65.2	63.4	70.4
	Dry Density, pcf	60.8	62.5	59.2
	Saturation, %	98.9	100.6	102.5
	Void Ratio	1.7927	1.7153	1.8695
	Diameter, in.	1.442	1.437	1.431
	Height, in.	3.133	3.131	3.132
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.48	20.65	41.56
Fail. Stress, psf		642	743	673
Strain, %		4.1	7.3	11.3
Ult. Stress, psf		622	689	659
Strain, %				
σ_1 Failure, psf		1576	3717	6658
σ_3 Failure, psf		934	2974	5985

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: SO GR CH4 W/ WD, ARS ML

LL= 97 **PL=** 27 **PI=** 70
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 21.7
Sample Number: 6C
Proj. No.: 0022-0002 **Date Sampled:** 6-2-07

TRIAXIAL SHEAR TEST REPORT

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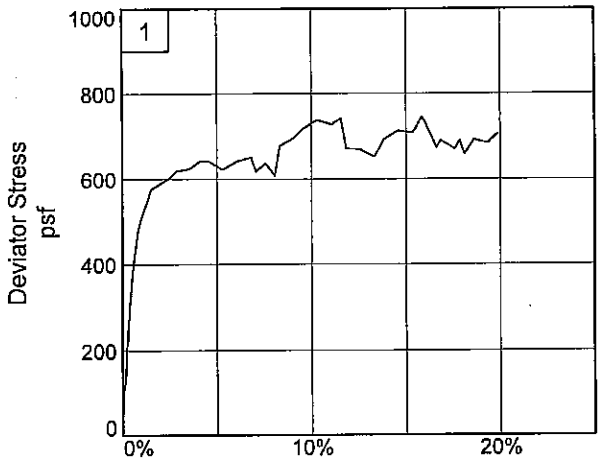
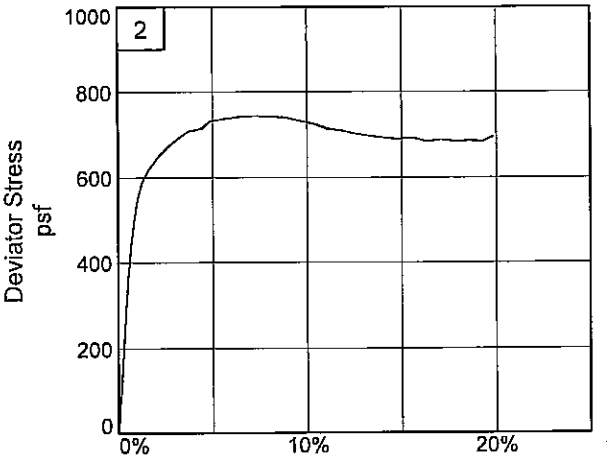
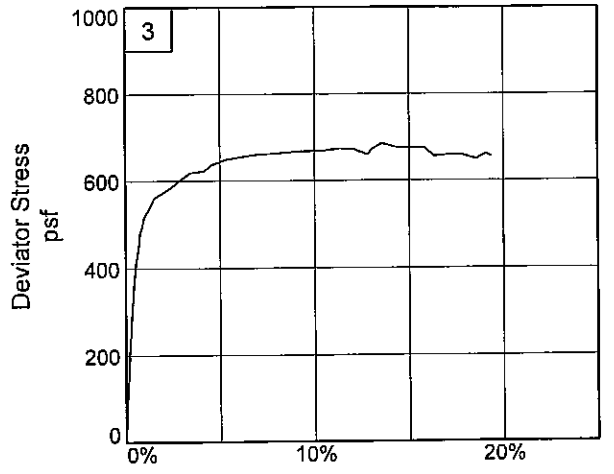
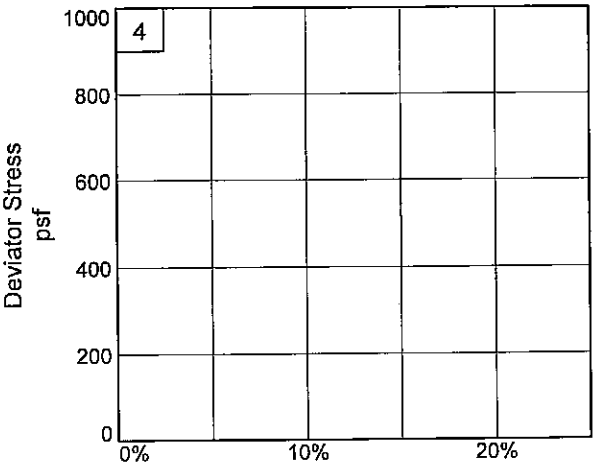
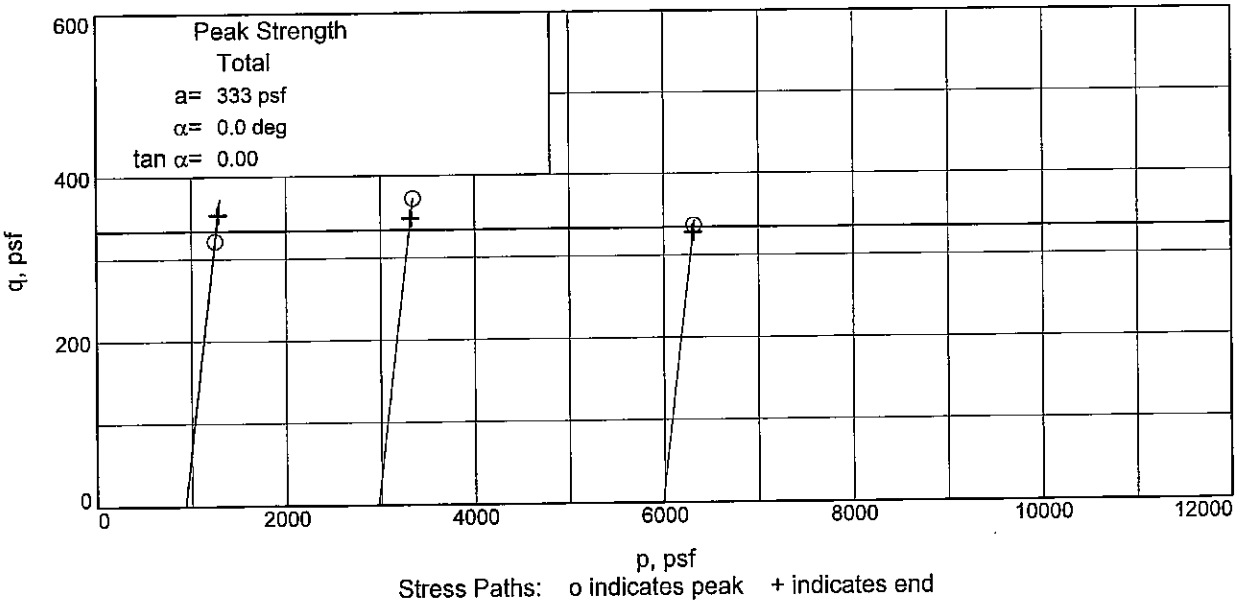
Tested By: DD/JMB











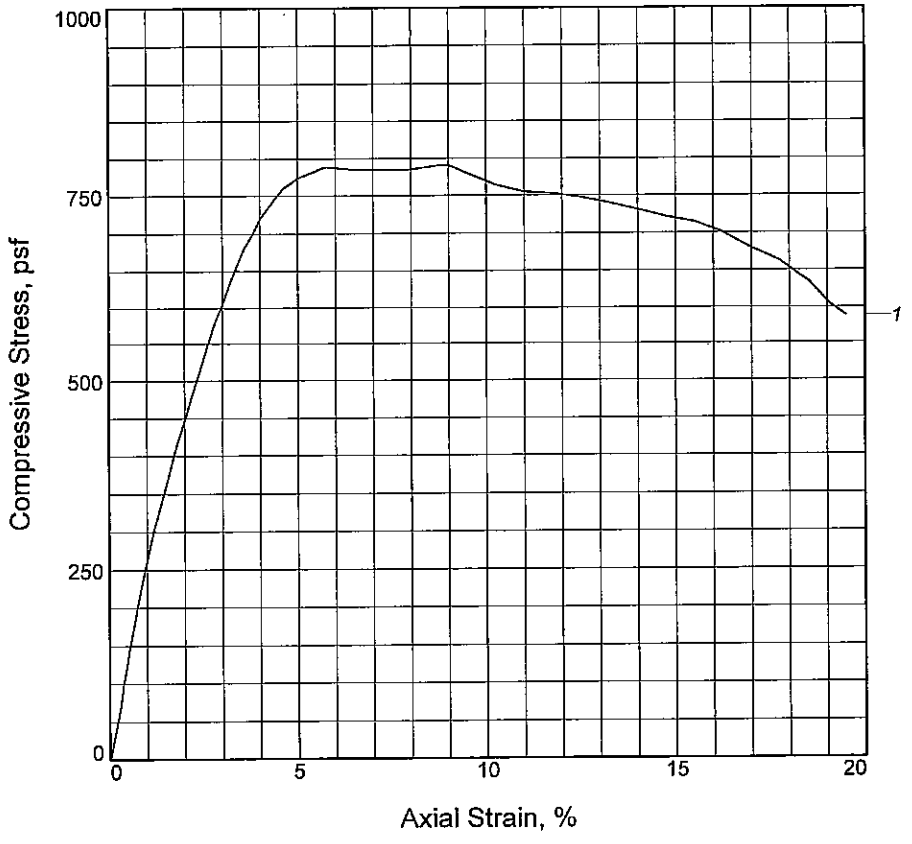
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UPT **Depth:** 21.7 **Sample Number:** 6C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	788			
Undrained shear strength, psf	394			
Failure strain, %	5.7			
Strain rate, in./min.	0.030			
Water content, %	39.8			
Wet density, pcf	115.6			
Dry density, pcf	82.7			
Saturation, %	104.3			
Void ratio	1.0240			
Specimen diameter, in.	1.351			
Specimen height, in.	3.009			
Height/diameter ratio	2.23			

Description: SO GR CL4 W/ LNS ML

LL = 37	**PL** = 16	**PI** = 21	**Assumed GS=** 2.68	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/01/07
Remarks:

Figure _____

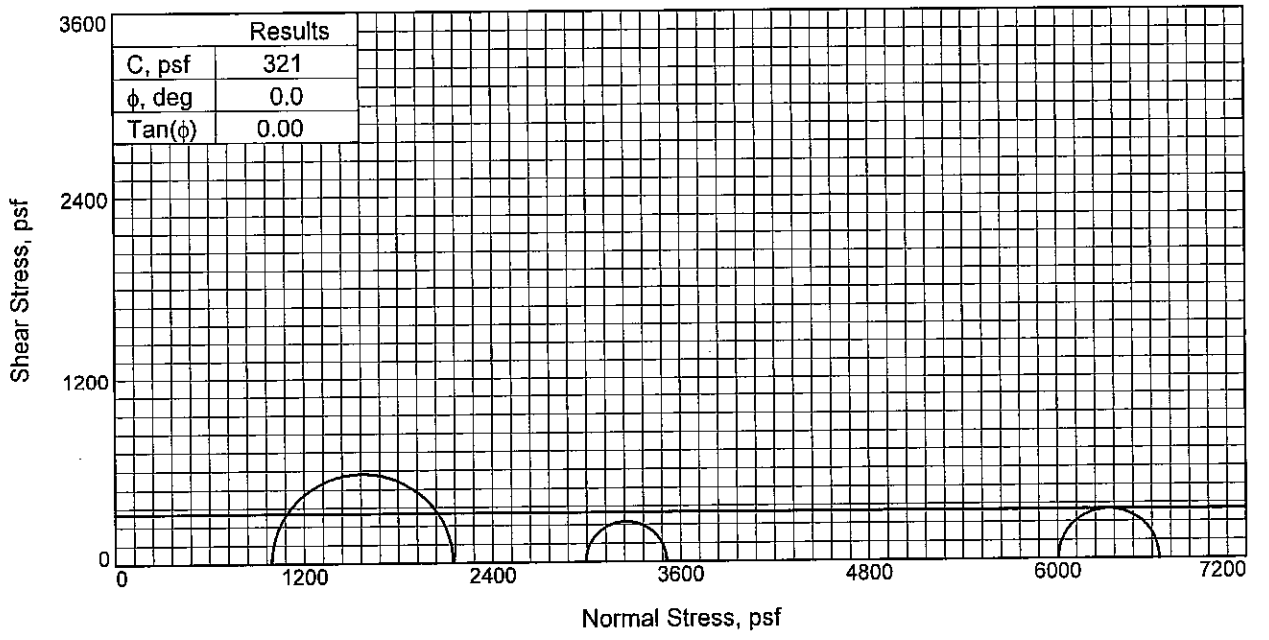
Client: U.S. Army Corps of Engineers

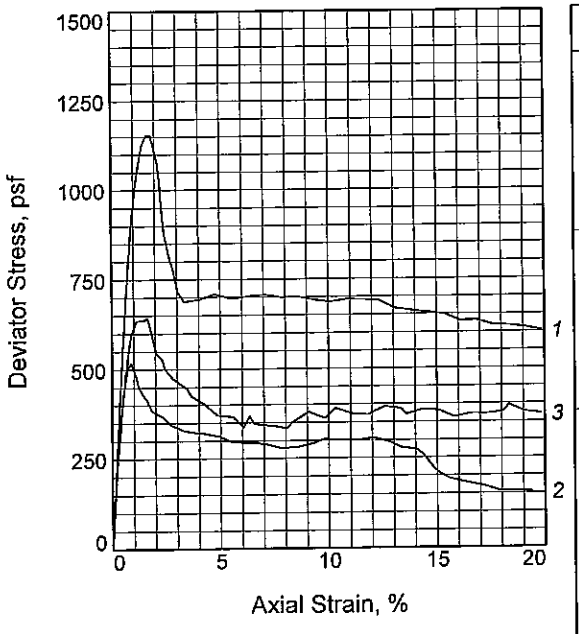
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 29.7
Sample Number: 8C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB





Sample No.		1	2	3
Initial	Water Content, %	58.3	56.7	61.9
	Dry Density, pcf	66.4	66.3	63.6
	Saturation, %	101.8	98.8	100.9
	Void Ratio	1.5572	1.5613	1.6690
	Diameter, in.	1.435	1.445	1.440
	Height, in.	3.141	3.144	3.135
At Test	Water Content, %	58.3	56.7	61.9
	Dry Density, pcf	66.4	66.3	63.6
	Saturation, %	101.8	98.8	100.9
	Void Ratio	1.5572	1.5613	1.6690
	Diameter, in.	1.435	1.445	1.440
	Height, in.	3.141	3.144	3.135
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.80	41.70
Fail. Stress, psf		1154	516	643
Strain, %		1.6	0.9	1.6
Ult. Stress, psf		687	278	335
Strain, %				
σ_1 Failure, psf		2148	3511	6648
σ_3 Failure, psf		994	2995	6005

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: SO GR CH3 W/ LNS & ARS ML

LL= 70 **PL=** 23 **PI=** 47

Assumed Specific Gravity= 2.72

Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.

Source of Sample: WWHC-55UPT **Depth:** 33.7

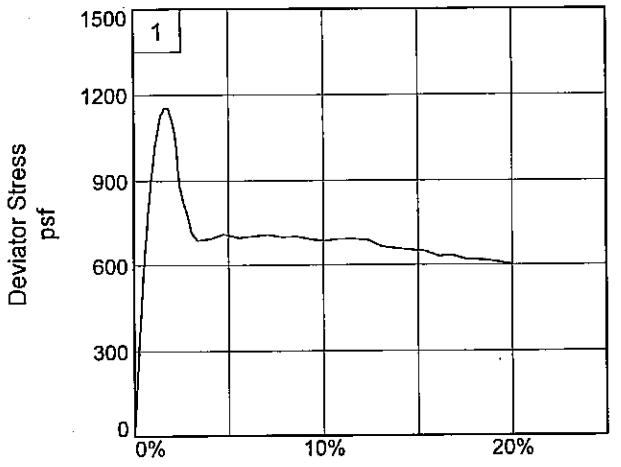
Sample Number: 9C

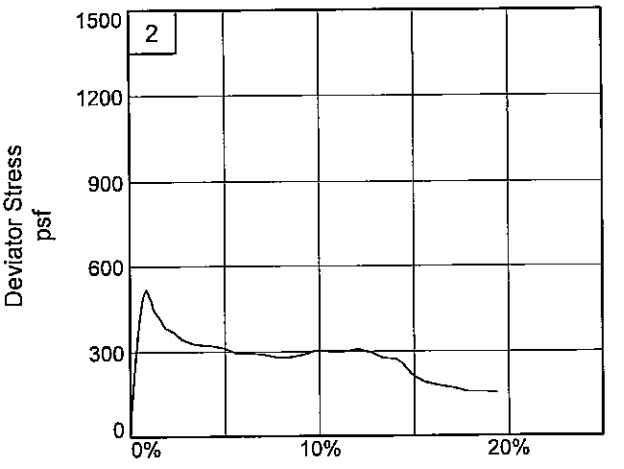
Proj. No.: 0022-0002 **Date Sampled:** 6/02/07

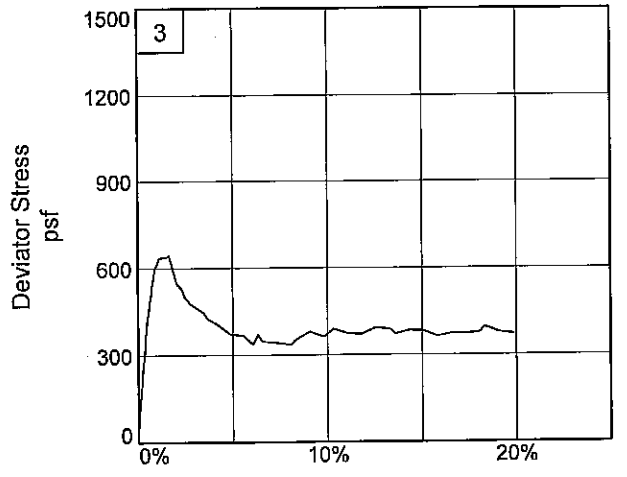
TRIAXIAL SHEAR TEST REPORT

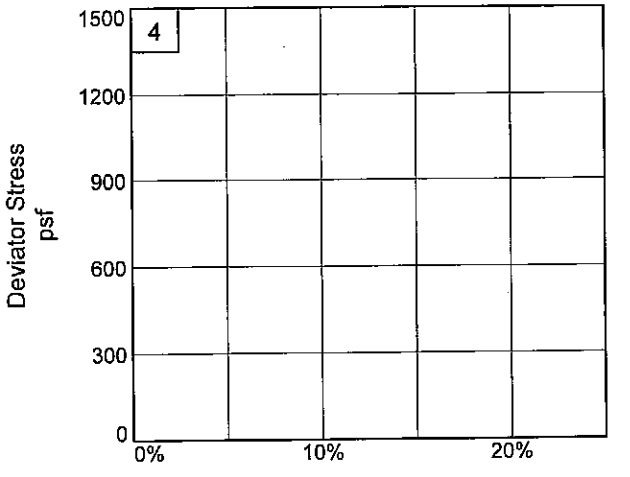
FFEBJV, LLC

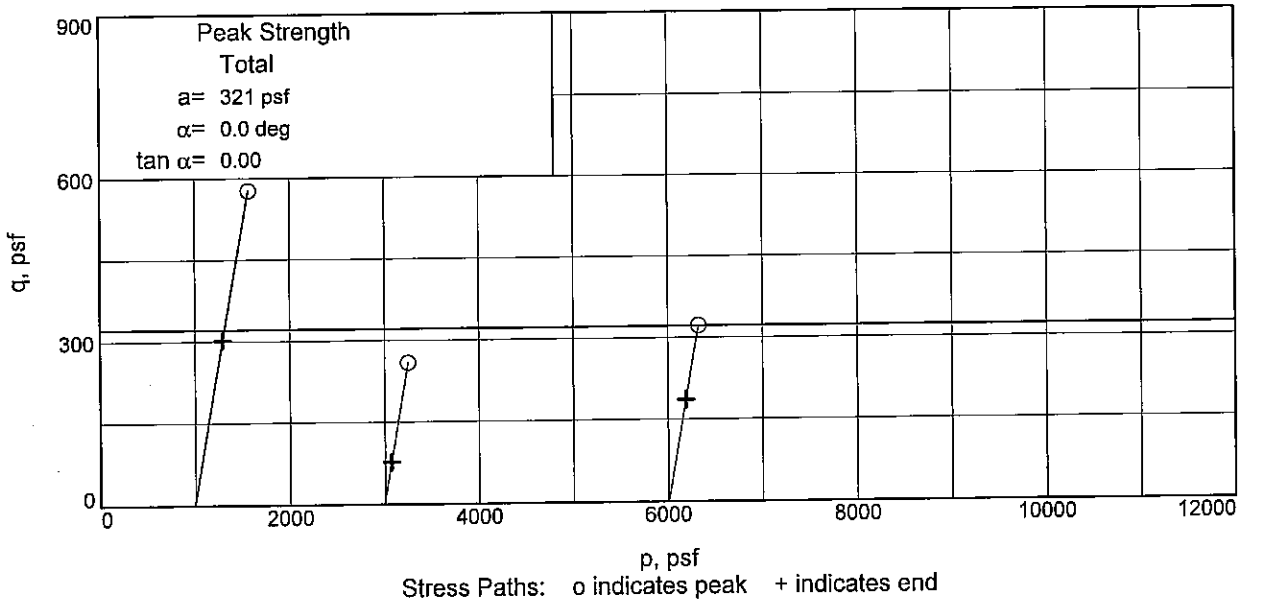
Tested By: DD/JMB







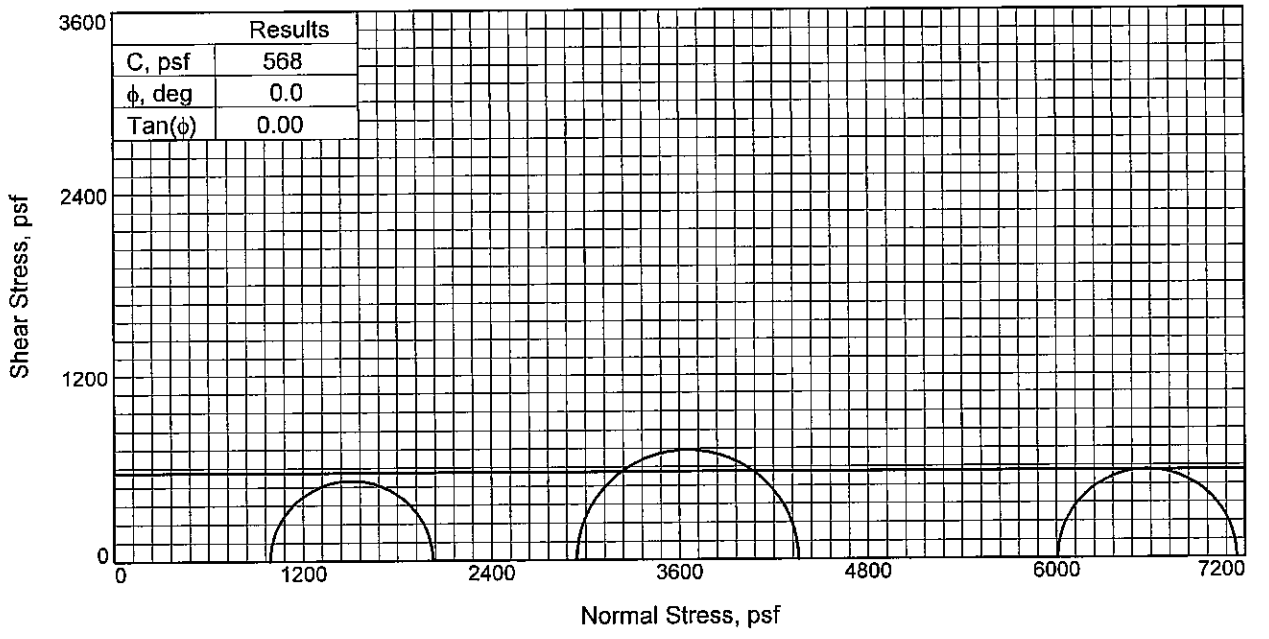


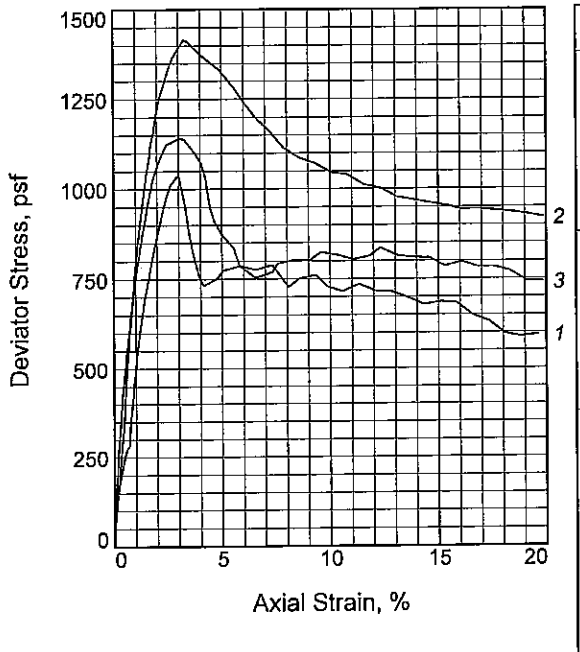


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UPT **Depth:** 33.7 **Sample Number:** 9C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB





Sample No.		1	2	3
Initial	Water Content, %	58.6	58.2	57.9
	Dry Density, pcf	66.0	66.0	66.5
	Saturation, %	101.4	100.8	101.6
	Void Ratio	1.5714	1.5714	1.5519
	Diameter, in.	1.415	1.427	1.435
	Height, in.	3.134	3.135	3.132
At Test	Water Content, %	58.6	58.2	57.9
	Dry Density, pcf	66.0	66.0	66.5
	Saturation, %	101.4	100.8	101.6
	Void Ratio	1.5714	1.5714	1.5519
	Diameter, in.	1.415	1.427	1.435
	Height, in.	3.134	3.135	3.132
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	20.44	41.72
Fail. Stress, psf		1034	1415	1140
Strain, %		2.9	3.3	3.0
Ult. Stress, psf		731	961	753
Strain, %				
σ_1 Failure, psf		2025	4358	7148
σ_3 Failure, psf		990	2944	6008

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ LNS & ARS ML

LL= 73 **PL=** 24 **PI=** 49
Assumed Specific Gravity= 2.72
Remarks:

Figure _____

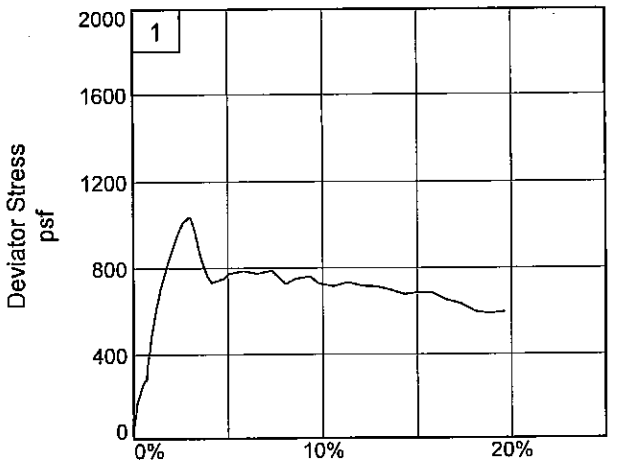
Client: U.S. Army Corps of Engineers

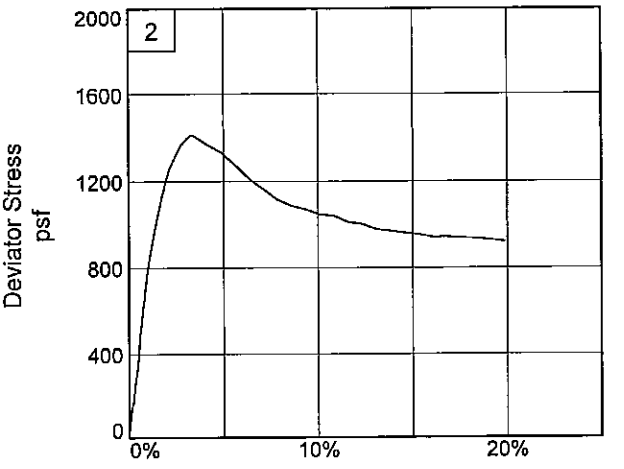
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 37.7
Sample Number: 10C
Proj. No.: 0022-0002 **Date Sampled:** 6/02/07

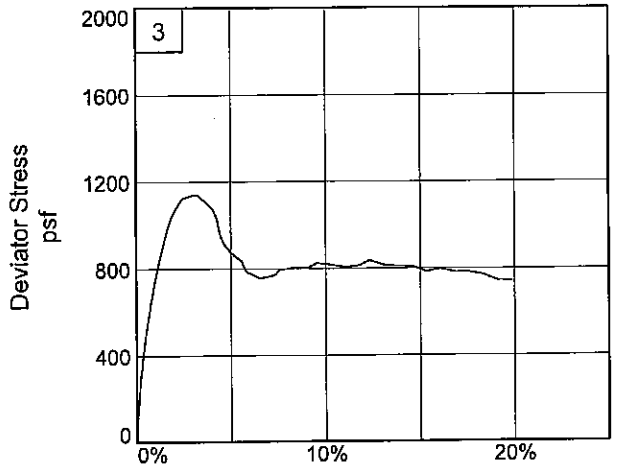
TRIAXIAL SHEAR TEST REPORT

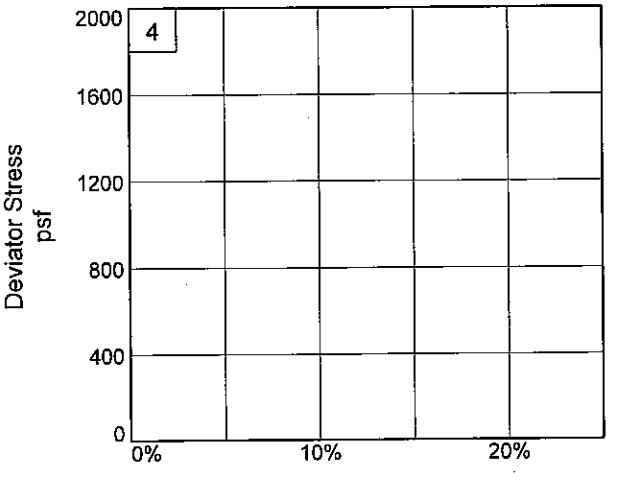
FFEBJV, LLC

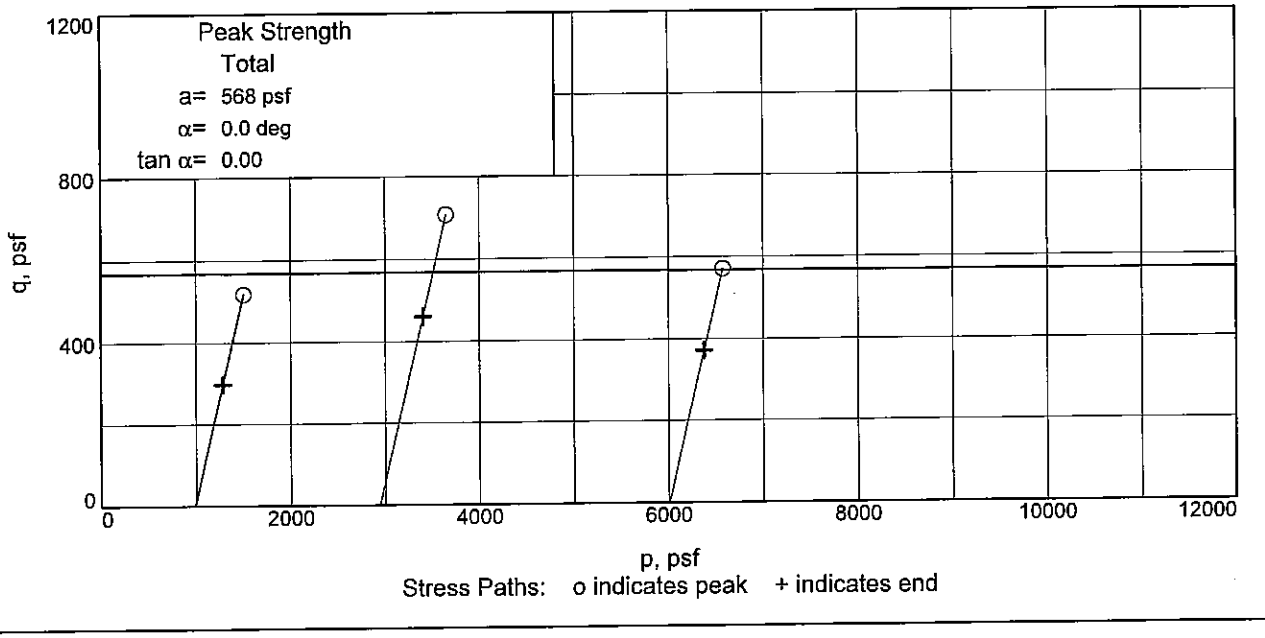
Tested By: DD/JMB











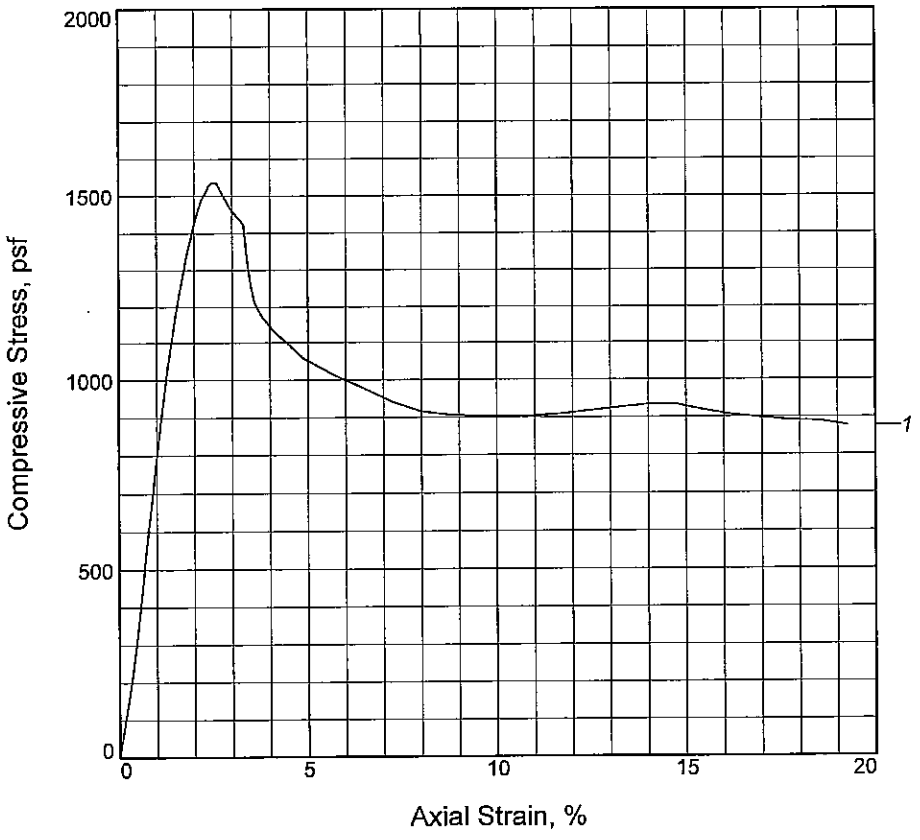
Stress Paths: o indicates peak + indicates end

Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UPT **Depth:** 37.7 **Sample Number:** 10C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1537			
Undrained shear strength, psf	768			
Failure strain, %	2.5			
Strain rate, in./min.	0.030			
Water content, %	51.7			
Wet density, pcf	106.3			
Dry density, pcf	70.1			
Saturation, %	98.3			
Void ratio	1.4402			
Specimen diameter, in.	1.361			
Specimen height, in.	3.027			
Height/diameter ratio	2.22			

Description: M GR CH4 W/ SL

LL = 70	**PL** = 23	**PI** = 47	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 06/01/07
Remarks:

Client: U.S. Army Corps of Engineers

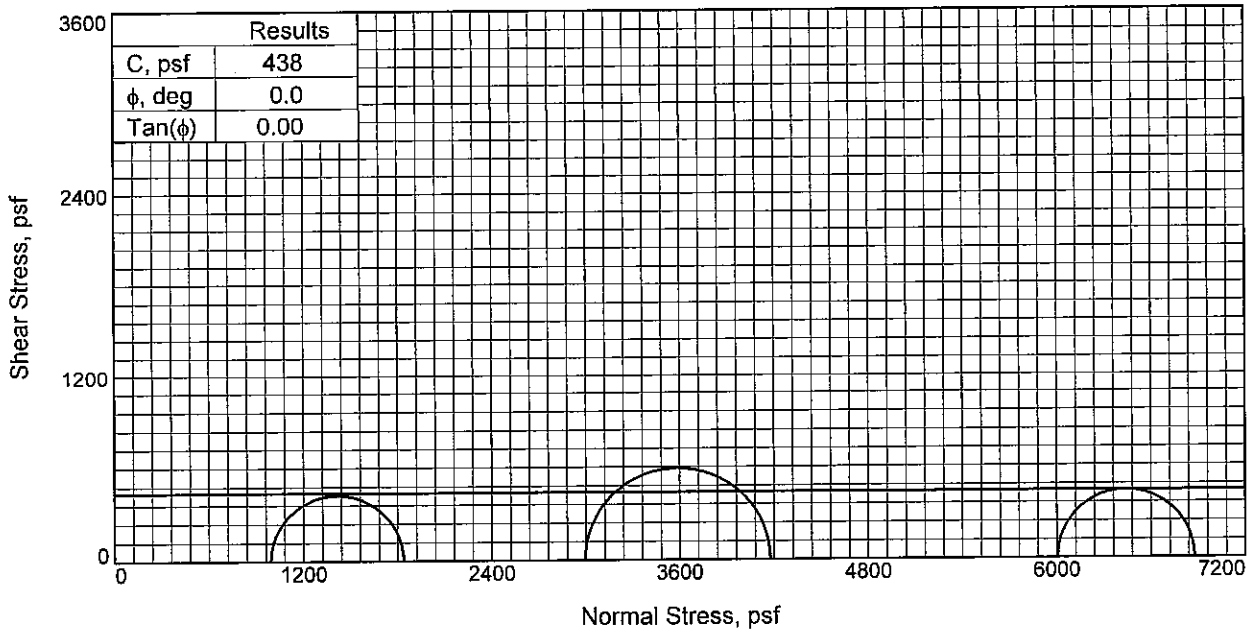
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 41.7
Sample Number: 11C

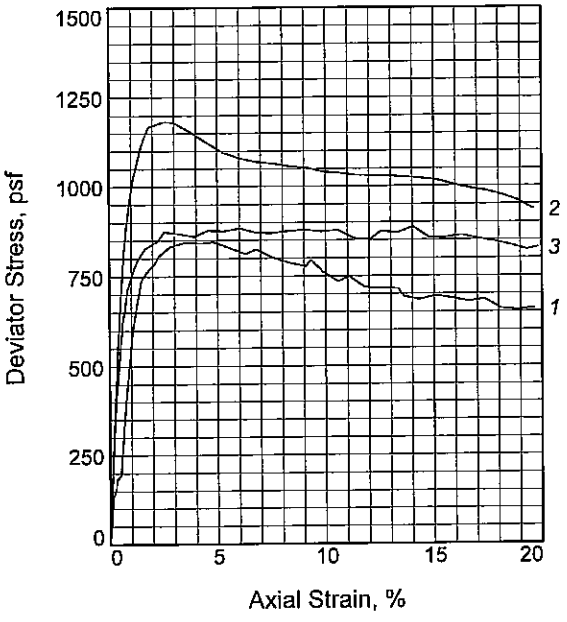
UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: TB





Sample No.		1	2	3
Initial	Water Content, %	57.9	57.8	56.9
	Dry Density, pcf	66.3	66.2	66.6
	Saturation, %	100.4	99.9	99.6
	Void Ratio	1.5795	1.5848	1.5666
	Diameter, in.	1.445	1.440	1.444
	Height, in.	3.144	3.140	3.135
At Test	Water Content, %	57.9	57.8	56.9
	Dry Density, pcf	66.3	66.2	66.6
	Saturation, %	100.4	99.9	99.6
	Void Ratio	1.5795	1.5848	1.5666
	Diameter, in.	1.445	1.440	1.444
	Height, in.	3.144	3.140	3.135
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.80	41.70
Fail. Stress, psf		843	1182	874
Strain, %		3.5	2.5	2.5
Ult. Stress, psf		684	1017	860
Strain, %				
σ_1 Failure, psf		1837	4177	6878
σ_3 Failure, psf		994	2995	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH4

LL= 77 **PL=** 26 **PI=** 51
Assumed Specific Gravity= 2.74
Remarks:

Figure _____

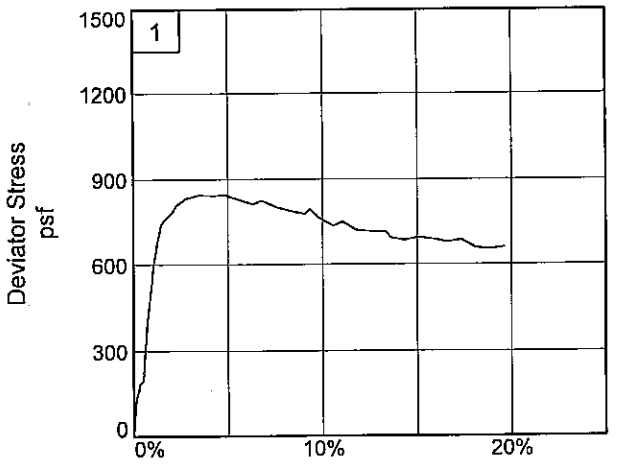
Client: U.S. Army Corps of Engineers

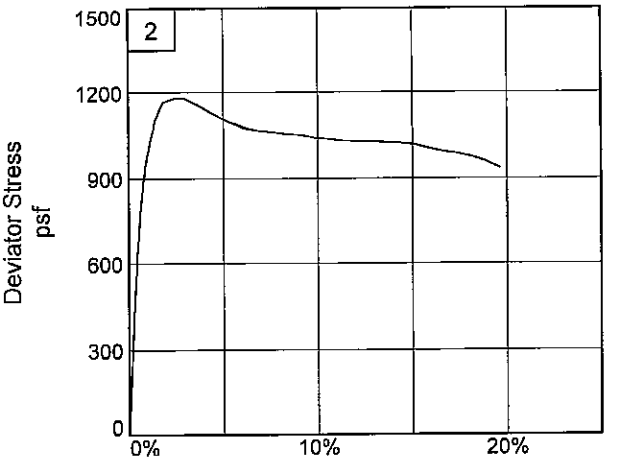
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 45.7
Sample Number: 12C
Proj. No.: 0022-0002 **Date Sampled:** 6/02/07

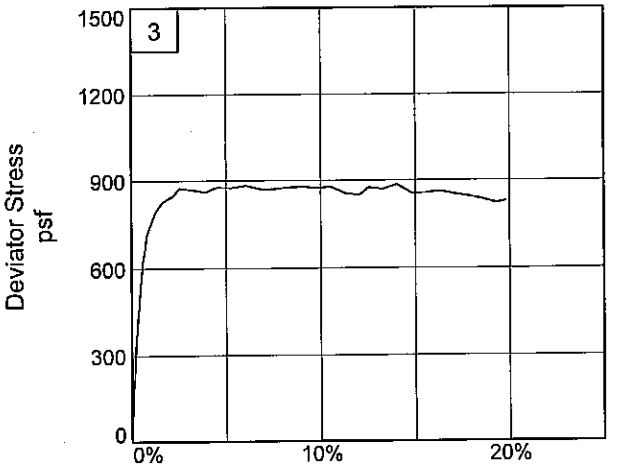
TRIAXIAL SHEAR TEST REPORT

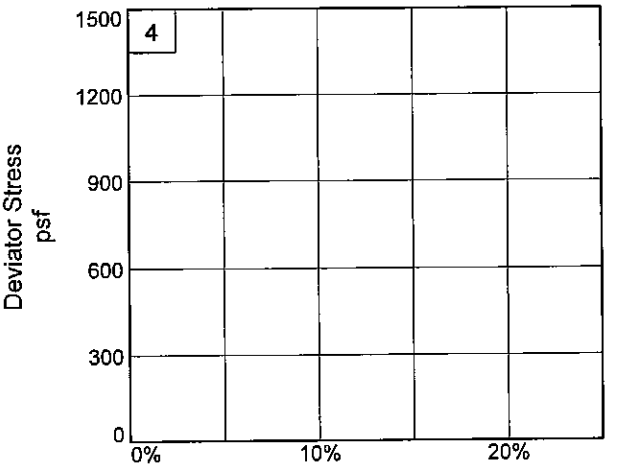
FFEBJV, LLC

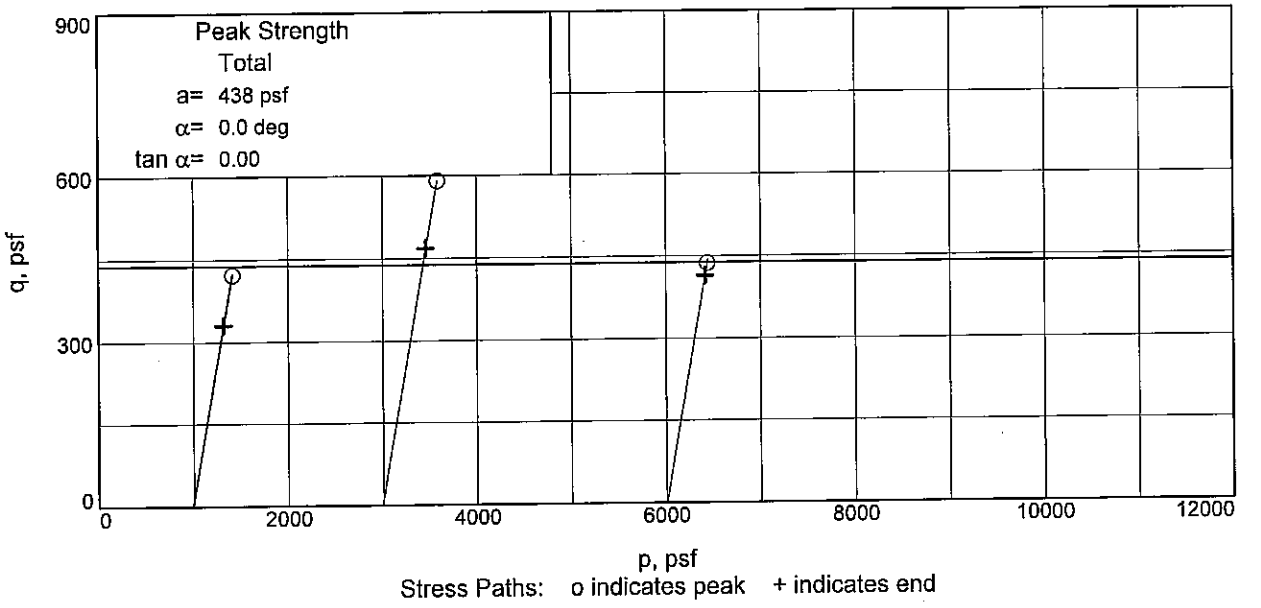
Tested By: DD/JMB









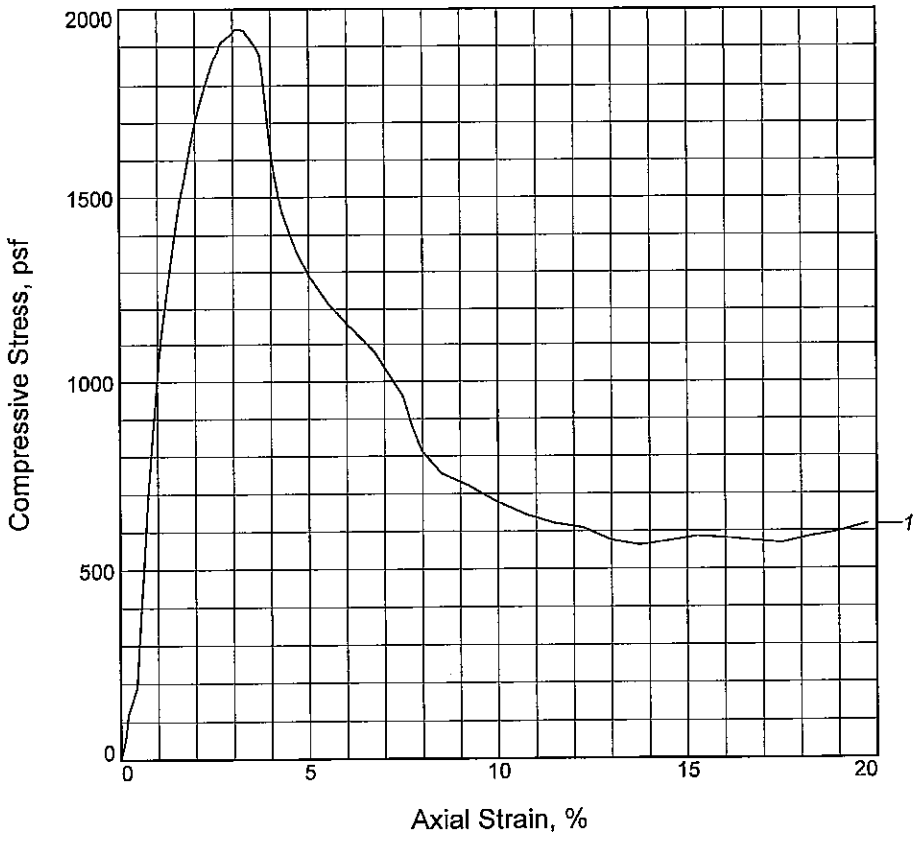


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UPT **Depth:** 45.7 **Sample Number:** 12C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1946			
Undrained shear strength, psf	973			
Failure strain, %	3.1			
Strain rate, in./min.	0.030			
Water content, %	61.9			
Wet density, pcf	101.5			
Dry density, pcf	62.7			
Saturation, %	98.6			
Void ratio	1.7075			
Specimen diameter, in.	1.361			
Specimen height, in.	3.028			
Height/diameter ratio	2.22			

Description: M GR CH4 W/ ARS ML, SL

LL = 88	**PL** = 29	**PI** = 59	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/01/07
Remarks:

Figure _____

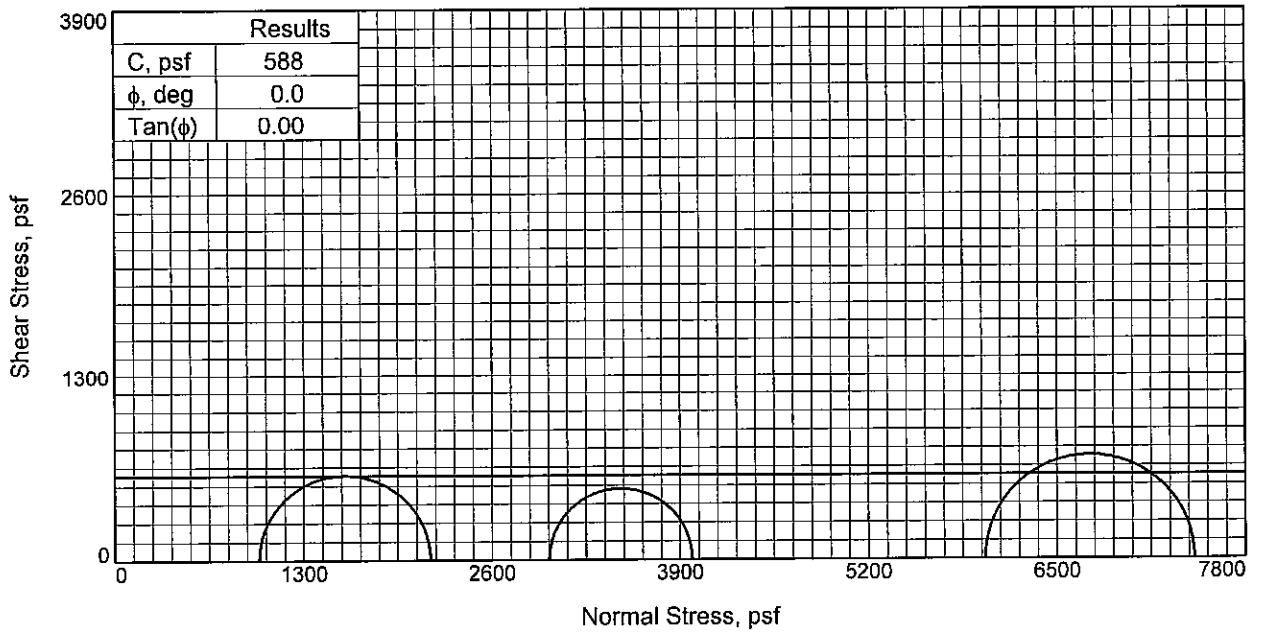
Client: U.S. Army Corps of Engineers

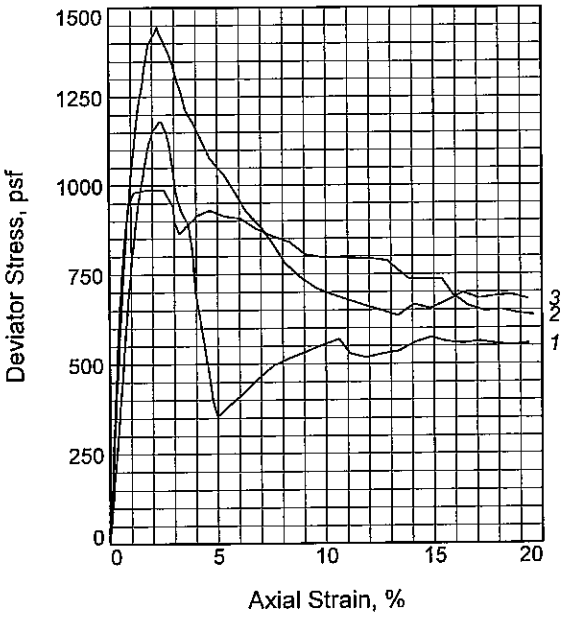
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 49.7
Sample Number: 13C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB





Sample No.		1	2	3
Initial	Water Content, %	67.5	72.7	70.7
	Dry Density, pcf	60.9	57.7	57.4
	Saturation, %	102.2	101.4	97.8
	Void Ratio	1.8102	1.9654	1.9815
	Diameter, in.	1.445	1.435	1.435
	Height, in.	3.129	3.144	3.135
At Test	Water Content, %	67.5	72.7	70.7
	Dry Density, pcf	60.9	57.7	57.4
	Saturation, %	102.2	101.4	97.8
	Void Ratio	1.8102	1.9654	1.9815
	Diameter, in.	1.445	1.435	1.435
	Height, in.	3.129	3.144	3.135
Strain rate, in./min.		0.031	0.031	0.031
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.80	41.70
Fail. Stress, psf		1180	988	1445
Strain, %		2.3	2.4	2.2
Ult. Stress, psf		354	864	634
Strain, %				
σ_1 Failure, psf		2174	3983	7450
σ_3 Failure, psf		994	2995	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ SL

LL= 90 **PL=** 26 **PI=** 64
Assumed Specific Gravity= 2.74
Remarks:

Client: U.S. Army Corps of Engineers

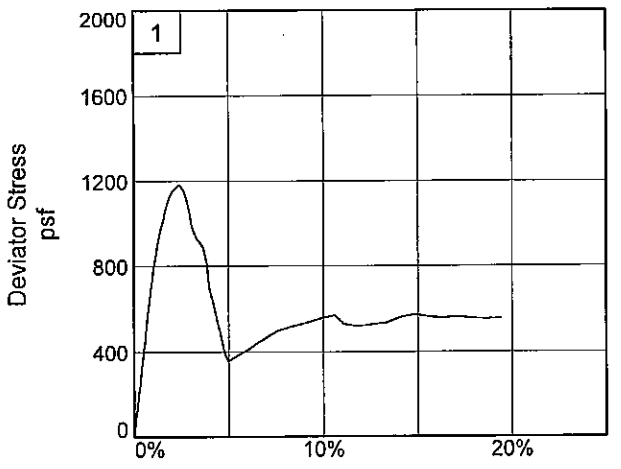
Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 53.7
Sample Number: 14C
Proj. No.: 0022-0002 **Date Sampled:** 6/02/07

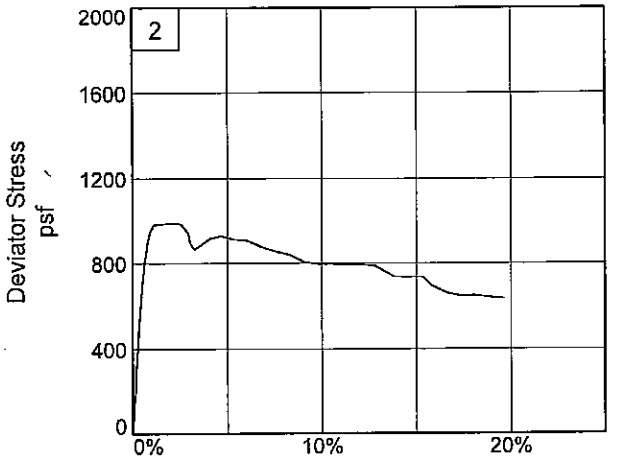
TRIAXIAL SHEAR TEST REPORT

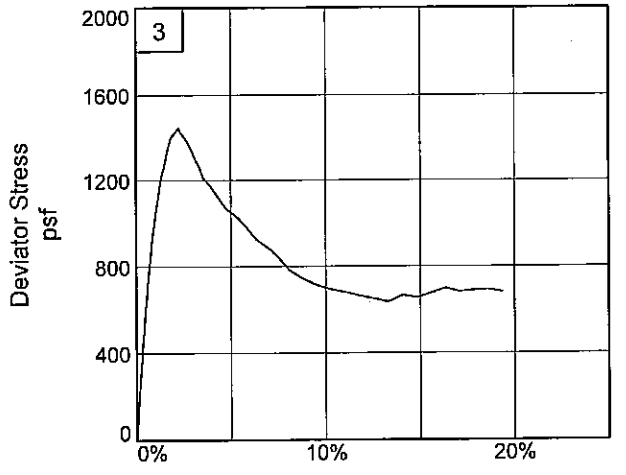
FFEBJV, LLC

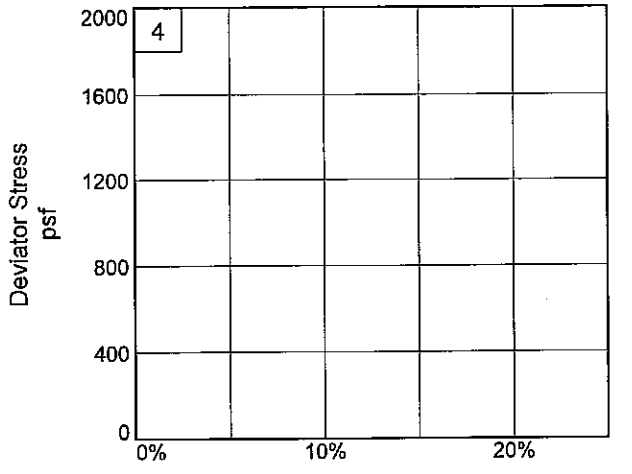
Figure _____

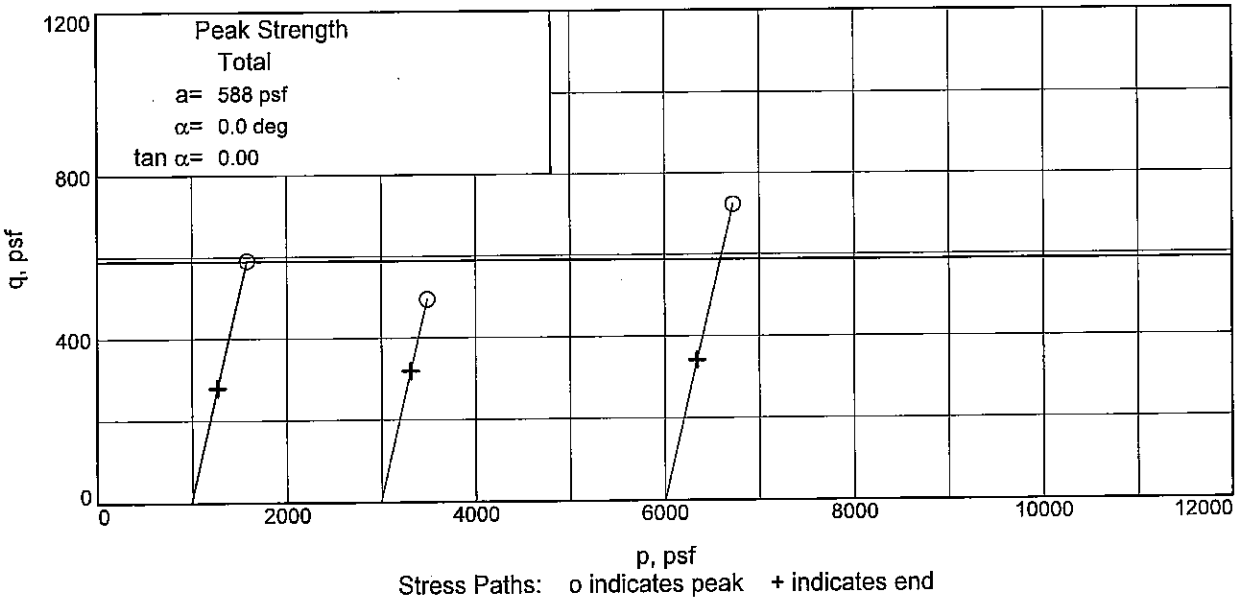
Tested By: DD/JMB









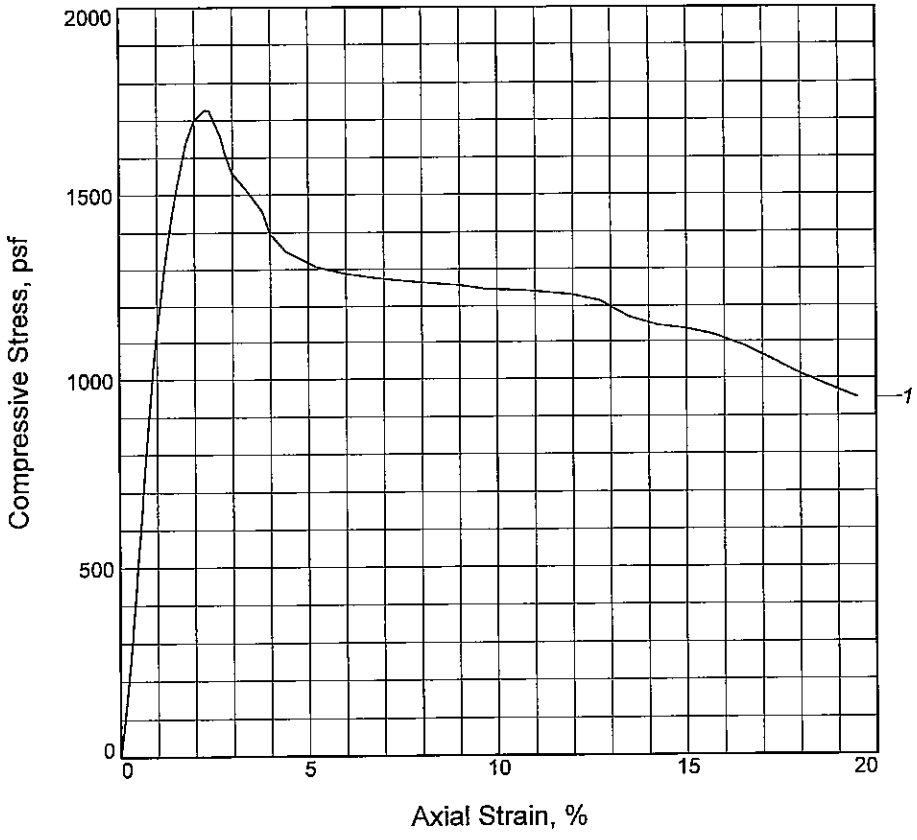


Client: U.S. Army Corps of Engineers
Project: Westbank 100-yr Boring Program
Source of Sample: WWHC-55UPT **Depth:** 53.7 **Sample Number:** 14C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC

Tested By: DD/JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1728			
Undrained shear strength, psf	864			
Failure strain, %	2.3			
Strain rate, in./min.	0.030			
Water content, %	49.9			
Wet density, pcf	106.9			
Dry density, pcf	71.3			
Saturation, %	97.9			
Void ratio	1.3982			
Specimen diameter, in.	1.357			
Specimen height, in.	3.029			
Height/diameter ratio	2.23			

Description: M GR CH4 W/ SL

LL = 72	**PL** = 24	**PI** = 48	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/01/07
Remarks:

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 57.7
Sample Number: 15C

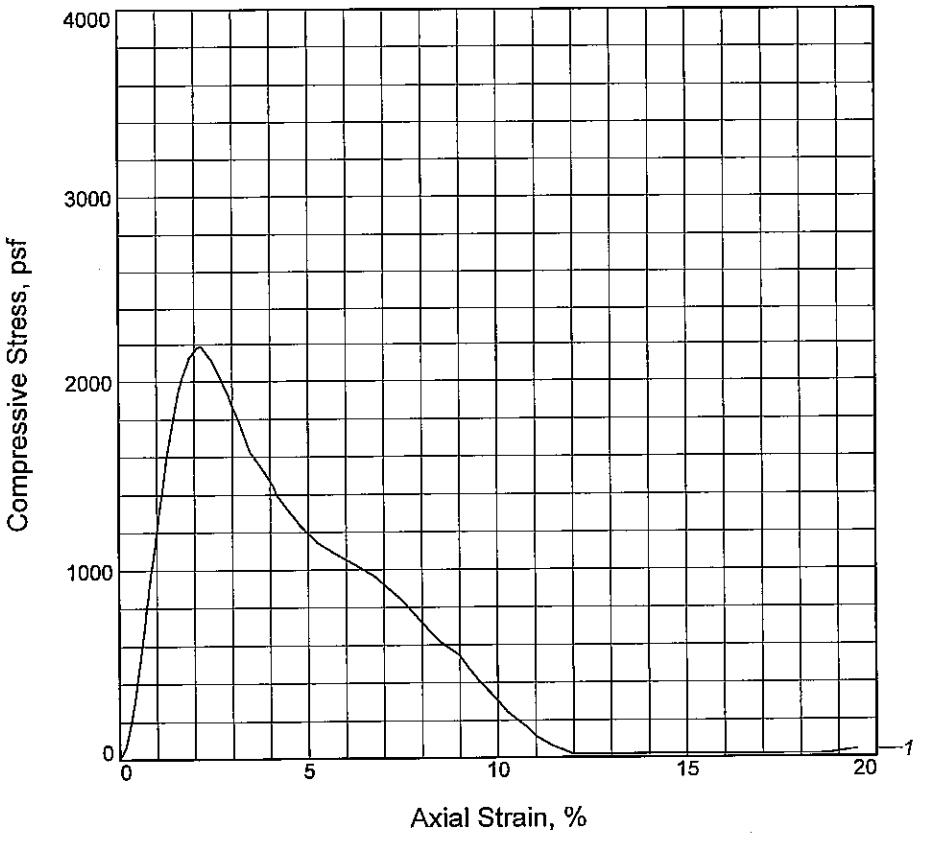
UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2187			
Undrained shear strength, psf	1094			
Failure strain, %	2.2			
Strain rate, in./min.	0.030			
Water content, %	55.7			
Wet density, pcf	104.5			
Dry density, pcf	67.1			
Saturation, %	99.0			
Void ratio	1.5304			
Specimen diameter, in.	1.358			
Specimen height, in.	3.021			
Height/diameter ratio	2.22			

Description: ST GR CH4 W/ LNS & ARS ML, SL

LL = 70	**PL** = 23	**PI** = 47	**Assumed GS**= 2.72	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/01/07
Remarks:

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 61.7
Sample Number: 16C

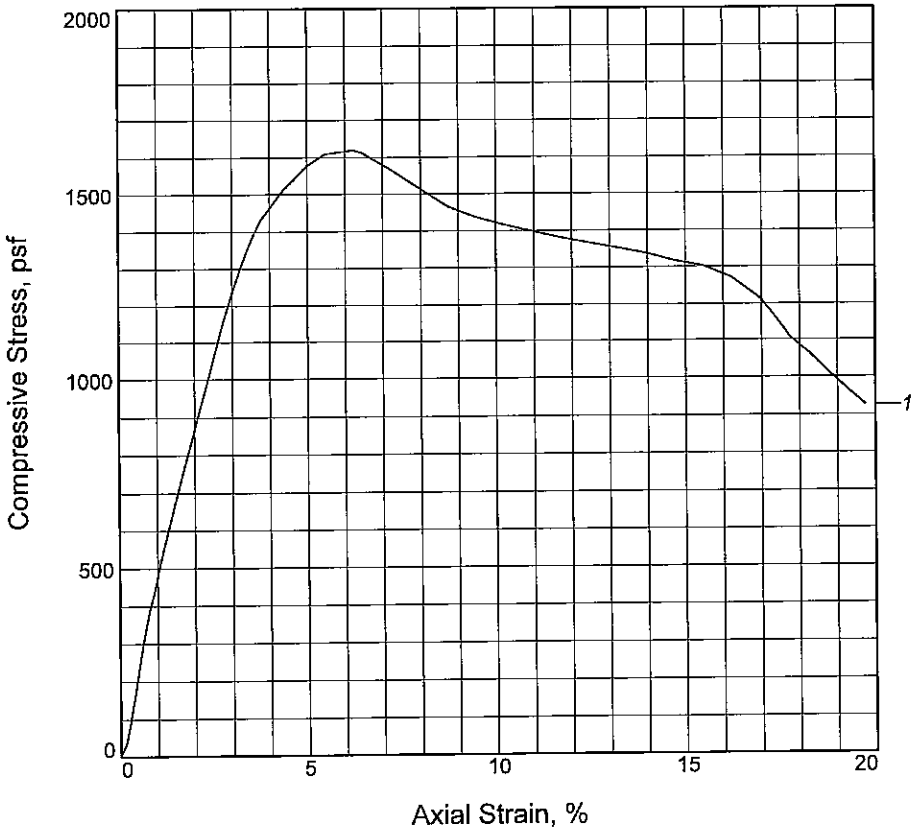
UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Figure _____

Tested By: JMB

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1619			
Undrained shear strength, psf	809			
Failure strain, %	6.2			
Strain rate, in./min.	0.030			
Water content, %	41.3			
Wet density, pcf	112.2			
Dry density, pcf	79.4			
Saturation, %	99.3			
Void ratio	1.1228			
Specimen diameter, in.	1.355			
Specimen height, in.	3.006			
Height/diameter ratio	2.22			

Description: M GR CH2 W/ ARS SM, SIF

LL = 50	**PL** = 18	**PI** = 32	**Assumed GS**= 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 6/01/07
Remarks:

Figure _____

Client: U.S. Army Corps of Engineers

Project: Westbank 100-yr Boring Program
Jefferson Parish, La.
Source of Sample: WWHC-55UPT **Depth:** 69.7
Sample Number: 18C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC

Tested By: JMB

BOR. WWHC-55UPT
STA. LAT N29^48'33.61" LONG W90^07'01.96"
OFFSET 60' FROM C/L
10-11 APRIL 2007

GROUND EL. 2.60

0.0	0.8	20		CH	SISST	T		CC	RT			
0.8	2.0	54		CH	SIS M GR BR			WD	RT			
2.0	2.8	39		CH	SIS M	T		CC	RT			
2.8	4.0	38		CH	SIS M GR	T		RT				
4.0	4.8	45		CH	SISSO GR BR			WD	RT			
4.8	5.7	33		CH	SISST GR	T						
5.7	8.0	33	8.0CH	SISST GR	T							
8.0	8.8	30		CL	M GR	T		RT				
8.8	9.7	31	9.7CL	M GR	T		639122	37	17	29	91	
9.7	12.0		12.0NS									
12.0	12.8	34		CL	SO GR	T						
12.8	13.7	37		CL	SO GR	T		CC				
13.7	14.6	35		CL	SO GR			CC				
14.6	16.0	32	16.0CL	M GR								
16.0	16.8	40	16.8CL	SISSO GR				WD				
16.8	17.7	34		CL	M GR							
17.7	18.6	36	18.6CL	SO GR								
18.6	20.0	56	20.0CH	SO GR				WD				
20.0	20.8	59		CH	SIS M GR			WD				
20.8	21.7	58		CH	SIS M GR			WD				
21.7	24.0	57		CH	SISSO GR			WD				
24.0	24.8	73		CH	SISSO GR							
24.8	25.7	70		CH	SISSO GR							
25.7	28.0	70	28.0CH	SISSO GR								
28.0	28.8	73		CL	SO GR							
28.8	29.7	38	29.7CL	SO GR				CS				
29.7	32.0	39	32.0CL	SISSO GR			394116	37	16	40	300	
32.0	32.8	46		CH	SIS M GR							
32.8	33.7	48		CH	SIS M GR							
33.7	34.6	55		CH	SISSO GR							
34.6	36.0	50		CH	SIS M GR							
36.0	36.8	63	36.8CH	SISSO GR								
36.8	37.7	65	37.7CH	SO GR								
37.7	38.6	46		CH	SIS M GR							
38.6	40.0	46		CH	SIS M GR							
40.0	40.8	64		CH	SIS M GR							

40.8 41.7 52 41.7CH SIS M GR
41.7 42.6 53 CH M GR SL 769106 70 23 70 420
42.6 44.0 58 CH SO GR
44.0 44.8 57 CH SO GR
44.8 45.7 57 CH SO GR
45.7 46.6 56 CH SO GR
46.6 48.0 57 CH SO GR
48.0 48.8 56 CH M GR
48.8 49.7 57 49.7CH M GR
49.7 50.6 59 CH SIS M GR SL 973102 88 29 62 500
50.6 52.0 61 CH SIS M GR SL
52.0 52.8 68 CH SIS M GR SL
52.8 53.7 61 53.7CH SIS M GR SL
53.7 56.0 62 CH M GR SL
56.0 56.8 59 CH M GR SL
56.8 57.7 55 CH M GR SL
57.7 60.0 51 60.0CH M GR SL 864107 72 24 50 580
60.0 60.8 56 CH SIS M GR SL
60.8 61.7 58 CH SISST GR SL
61.7 62.6 59 62.6CH SISST GR SL 1094105 70 23 56 620
62.6 64.0 42 64.0CH SS M GR SIF
64.0 66.0 66.0NS
66.0 68.0 69 CH SO GR S SIF 7
68.0 68.8 38 CH M GR SIF
68.8 69.7 37 CH M GR SIF
69.7 70.6 41 70.6CH M GR S SIF 810112 50 18 41 700
70.6 72.0 44 72.0CH SIS M GR
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 2.30/-0.30 Water Con: 33.00
LL,PL,PI : 64, 20, 44 Dry Dens : 87.00
Cohesion : 0.317 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 5.10/-2.50 Water Con: 32.00
LL,PL,PI : 59, 18, 41 Dry Dens : 90.00
Cohesion : 0.508 Saturat : 99.00

Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 14.00/-11.4 Water Con: 38.00
LL,PL,PI : 41, 17, 24 Dry Dens : 84.00
Cohesion : 0.232 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 18.00/-15.4 Water Con: 39.00
LL,PL,PI : 48, 20, 28 Dry Dens : 82.00
Cohesion : 0.276 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 22.00/-19.4 Water Con: 66.00
LL,PL,PI : 97, 27, 70 Dry Dens : 61.00
Cohesion : 0.167 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 34.00/-31.4 Water Con: 59.00
LL,PL,PI : 70, 23, 47 Dry Dens : 65.00
Cohesion : 0.161 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-35.4 Water Con: 58.00

LL,PL,PI : 73, 24, 49 Dry Dens : 66.00
Cohesion : 0.284 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 46.00/-43.4 Water Con: 58.00
LL,PL,PI : 77, 26, 51 Dry Dens : 66.00
Cohesion : 0.219 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 54.00/-51.4 Water Con: 70.00
LL,PL,PI : 90, 26, 64 Dry Dens : 59.00
Cohesion : 0.294 Saturat :100.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ **Assigned By:** _____

Project Number: TASK ORDER 0002
Boring: WWHC-56UCL

Current Date: 7/10/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1A	0.0	VST BR & T CL6 W/ LYS ML, RT	CL6		17												
1B	0.8	VST BR & T CL6 W/ LYS ML, RT	CL6		23												
2A	2.0	ST GR & T CL6 W/ RT	CL6		28												
3A	4.0	M GR & T CL6 W/ WD	CL6		35												
3B	4.8	M GR & T CH3 W/ TR- O	CH3	9	32	88	116	91	UC	-	551	1102	60	23	37		
NS	5.7	No Sample	NS														
4A	8.0	M GR & T CH3	CH3		31												
4B	8.8	M GR & T CH2 W/ CC	CH2		43												
4C	9.7	M GR & T CL4 W/ SIF, TR- O	CL4		33	89	118	99	UU	0	987		43	24	19		
5A	12.0	M GR CH2 W/ RT	CH2		39												
5B	12.8	VST GR CH3 W/ ARS ML, TR- O	CH3		29												
5C	13.7	ST GR & T CH4 W/ ARS ML, RT	CH4		35	84	113	92	UU	0	1518		75	23	52		
6A	16.0	ST GR & T CH3 W/ ARS ML	CH3		33												
6B	16.8	ST GR & T CH2 W/ TR- O	CH2		30												
6C	17.7	ST GR & T CL6 W/ LYS ML, TR- O	CL6	15	30	93	121	99	UC	-	1133	2265	47	26	21		
7A	20.0	M GR & T CL6	CL6		35												
7B	20.8	M GR & T CH2 W/ LNS ML, TR- O	CH2		33												
7C	21.7	M GR & T CL4 W/ TR- O	CL4		35	81	109	86	UU	0	624		39	24	15		
7D	22.6	T ML2 W/ LYS CH, CC	ML2		31												
8A	24.0	M GR CH3 W/ ARS ML	CH3		42												
8B	24.8	GR ML2 W/ LYS CH	ML2		46								NP	NP			DIST
8C	25.7	GR ML2 W/ LNS CH	ML2		32												
8D	26.6	M GR CH2 W/ LNS ML	CH2		36												
9A	28.0	GR ML2	ML2		33												
9B	28.8	GR ML2 W/ ARS CH	ML2		33												
9C	29.7	M GR CL6-S W/ LYS ML	CL6-S		38	76	105	100	UU	0	617		48	34	14		
9D	30.6	M GR CH2 W/ LNS ML	CH2		43												
10A	32.0	M GR CH2 W/ LNS ML, LYS ML	CH2		37												
10B	32.8	M GR CH3 W/ LNS ML	CH3		50	72	108	99	UU	0	748		63	25	38		
10C	33.7	GR ML2 W/ LNS CH	ML2		36												
10D	34.6	GR ML2	ML2		34												
11A	36.0	M GR CH3 W/ LNS ML	CH3		44												
11B	36.8	M GR CH3 W/ LYS ML	CH3		38												
11C	37.7	M GR CH3 W/ ARS ML	CH3		45	75	109	99	UU	0	767		58	24	34		
11D	38.6	M GR CH3 W/ LNS ML	CH3		38												
12A	40.0	GR ML2	ML2		31												
12B	40.8	GR ML2 W/ ARS CH	ML2		34												

Remarks: _____
FFEB JV, LLC

Checked By: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

Project Number: TASK ORDER 0002
Boring: WWHC-56UCL

Current Date: 7/10/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
12C	41.7	M GR CL4-S W/ LNS ML	CL4-S	4	37	84	115	99	UC	-	555	1111	36	33	3		
13A	44.0	M GR CL6 W/ LNS ML	CL6		38												
13B	44.8	M GR CL4-S W/ LYS CH	CL4-S		35												
13C	45.7	M GR CL4-S	CL4-S	11	33	89	118	100	UC	-	627	1254	30	22	8		
13D	46.6	M GR CL6	CL6		35												
14A	48.0	M GR CH4 W/ LNS ML	CH4		49												
14B	48.8	M GR CH4 W/ LNS ML	CH4		48												
14C	49.7	M GR CH4 W/ LNS & ARS ML	CH4		75	56	98	99	UU	0	774		88	24	64		
14D	50.6	M GR CH3 W/ LNS ML	CH3		38												
15A	52.0	M GR CH3 W/ LNS ML	CH3		49												
15B	52.8	M GR CH3 W/ LNS ML	CH3		43												
15C	53.7	M GR CH3 W/ LNS ML	CH3	2	49	73	109	100	UC	-	752	1504	71	24	47		
15D	54.6	M GR CH3 W/ LNS ML	CH3		45												
16A	56.0	M GR CH3 W/ LNS ML	CH3		47												
16B	56.8	M GR CH3 W/ LNS SM	CH3		40												
16C	57.7	M GR CH3 W/ ARS & LYS ML	CH3	3	46	71	104	89	UC	-	587	1174	64	28	36		
16D	58.6	M GR CH2 W/ LNS ML	CH2		33												
17A	60.0	GR ML2 W/ ARS CH	ML2		34												
17B	60.8	SO GR CH2 W/ LNS ML, LYS ML	CH2		38												
17C	61.7	SO GR CH3 W/ LNS ML, LYS ML	CH3	2	44	78	112	100	UC	-	386	771	63	27	36		
18A	64.0	SO GR CH3 W/ LNS ML	CH3		41												
18B	64.8	GR ML2 W/ ARS CH	ML2		35												
18C	65.7	M GR CL4 W/ ARS CH	CL4		43	72	103	86	UU	0	611		42	29	13		
18D	66.6	SO GR CL4 W/ ARS CH	CL4		29												
19A	68.0	SO GR CL4	CL4		28												
19B	68.8	SO GR CL4 W/ LYS CH	CL4		29												
19C	69.7	SO GR & T CL4-S W/ LNS & LYS ML	CL4-S	3	28	96	123	99	UC	-	417	834	30	25	5		
19D	70.6	GR ML2	ML2		29												
20A	72.0	GR ML2 W/ ARS CH	ML2		28												
20B	72.8	GR ML2 W/ ARS CH	ML2	4	27	92	117	88	UC	-	665	1331	NP	NP			
20C	73.7	GR ML2 W/ ARS CH	ML2		21												
21A	76.0	M GR CL4-S W/ LNS ML	CL4-S		30												
21B	76.8	M GR CL4-S W/ LNS SM	CL4-S		32												
21C	77.7	M GR CL4-S W/ LNS ML	CL4-S	4	33	89	118	99	UC	-	785	1570	40	32	8		
21D	78.6	VST GR CH4 W/ LNS ML	CH4		40												
22A	80.0	M GR CH2 W/ LNS SM	CH2		37												
22B	80.8	GR SM1 W/ ARS CH	SM1		31	85	111	85	UU	0	754		28	23	5		

Remarks: _____
FFEB JV, LLC

Checked By: _____
File Name: TO 2

SUMMARY OF LABORATORY TEST RESULTS

Project: _____ Assigned By: _____

Project Number: TASK ORDER 0002
Boring: WWHC-56UCL

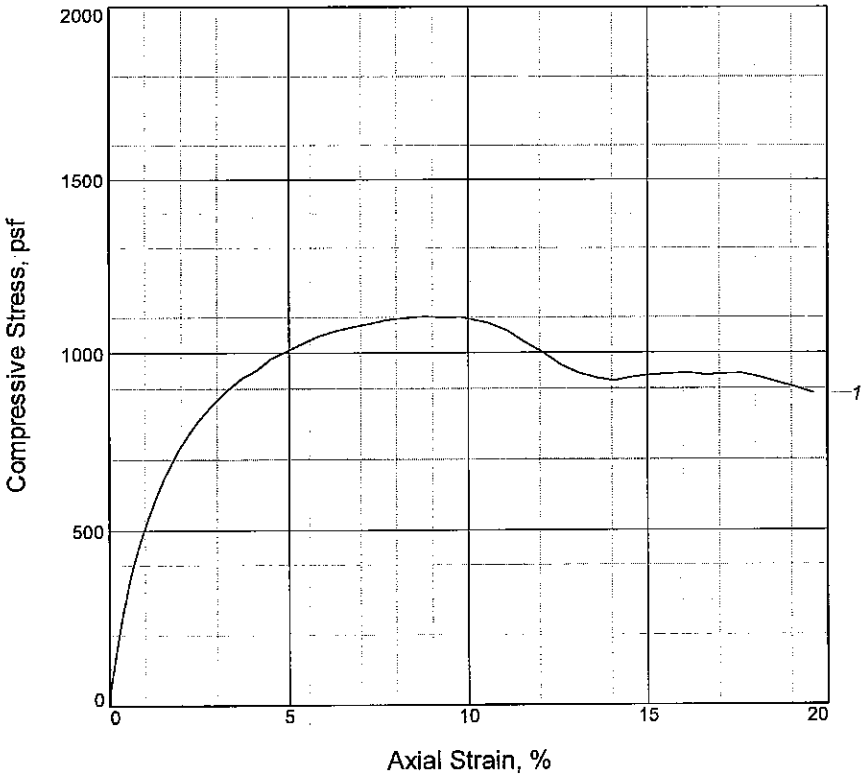
Current Date: 7/10/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
22C	81.7	GR SP W/ ARS CH	SP		26												
23A	84.0	ST GR CH3 W/ ARS SP, LYS SP	CH3		33												
23B	84.8	M GR CH2-S	CH2-S		29												
23C	85.7	M GR CH2-S	CH2-S		30								NP	NP			DIST
24A	88.0	GR SM1 W/ LYS CH	SM1		32												
24B	88.8	M GR CL4-S W/ LNS ML	CL4-S		33												
24C	89.7	M GR CL4-S W/ LYS & LNS SM	CL4-S		33	82	109	87	UU	0	924		32	22	10		
24D	90.6	ST GR CH3 W/ ARS SM, SIF	CH3		38												

Remarks: _____
FFEB JV, LLC

Checked By: _____
File Name: TO 2

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1102			
Undrained shear strength, psf	551			
Failure strain, %	8.8			
Strain rate, %/min.	1.00			
Water content, %	31.6			
Wet density, pcf	115.6			
Dry density, pcf	87.9			
Saturation, %	91.4			
Void ratio	0.9467			
Specimen diameter, in.	1.32			
Specimen height, in.	3.00			
Height/diameter ratio	2.28			

Description: M GR & T CH3 W/ TR- O

LL = 60	PL = 23	PI = 37	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/29/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

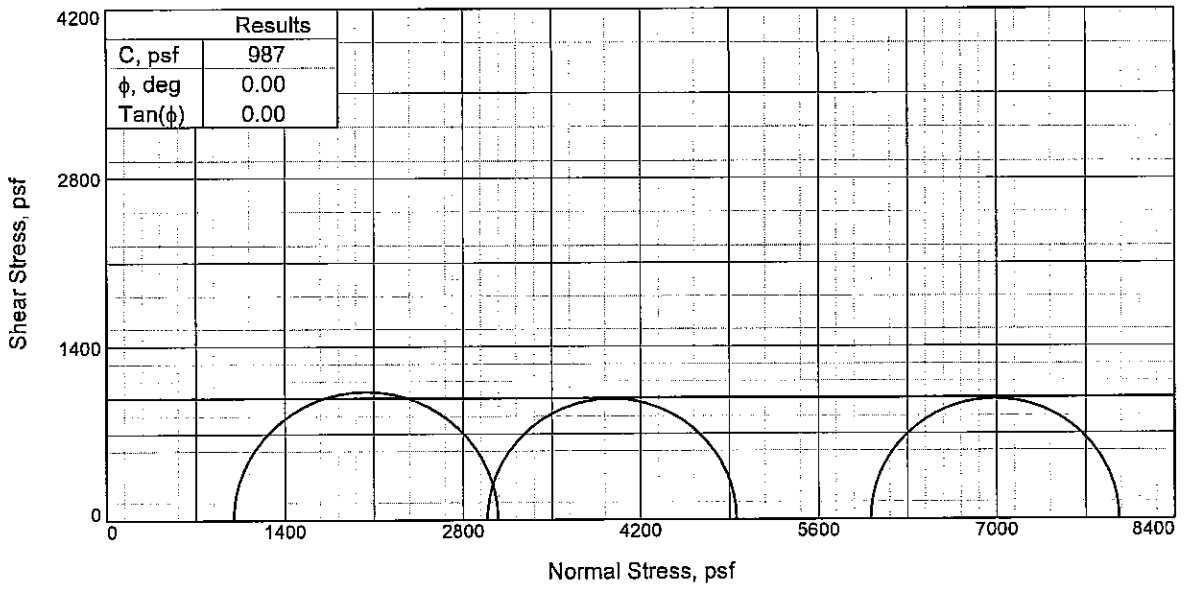
Client: U.S. ARMY CORPS OF ENGINEERS

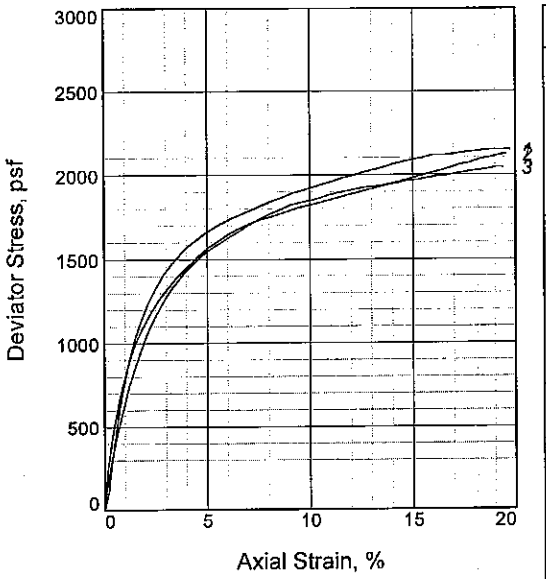
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 4.80'
Sample Number: 3B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** AMV





Sample No.		1	2	3
Initial	Water Content, %	31.1	30.6	36.7
	Dry Density, pcf	91.3	91.8	84.3
	Saturation, %	99.6	99.3	99.4
	Void Ratio	0.8389	0.8302	0.9921
	Diameter, in.	1.37	1.37	1.37
	Height, in.	3.07	3.09	3.12
At Test	Water Content, %	30.8	30.7	36.3
	Dry Density, pcf	91.3	91.8	84.3
	Saturation, %	98.9	99.6	98.3
	Void Ratio	0.8389	0.8302	0.9921
	Diameter, in.	1.37	1.37	1.37
	Height, in.	3.07	3.09	3.12
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	20.78	41.74
Fail. Stress, psf		2078	1961	1951
Strain, %		14.5	14.4	14.3
Ult. Stress, psf		2078	1961	1951
Strain, %				
σ_1 Failure, psf		3076	4954	7962
σ_3 Failure, psf		998	2993	6011

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR & T CL4 W/ SIF & TR-O

LL= 43 **PL=** 24 **PI=** 19

Assumed Specific Gravity= 2.69

Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-56UCL **Depth:** 9.70'

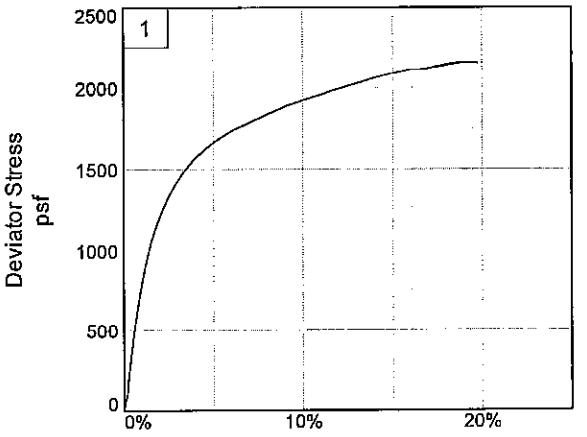
Sample Number: 4C

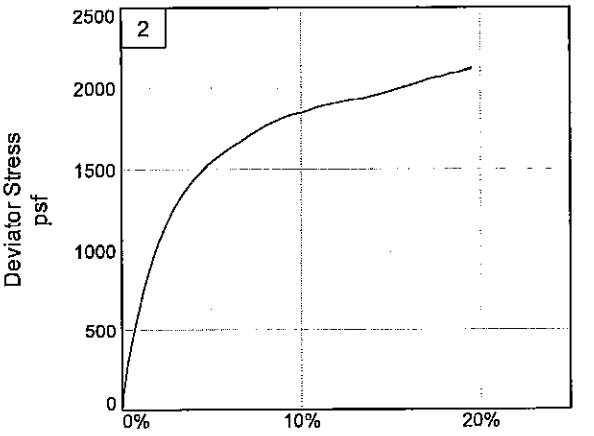
Proj. No.: 0022-0002 **Date Sampled:** 5-29-07

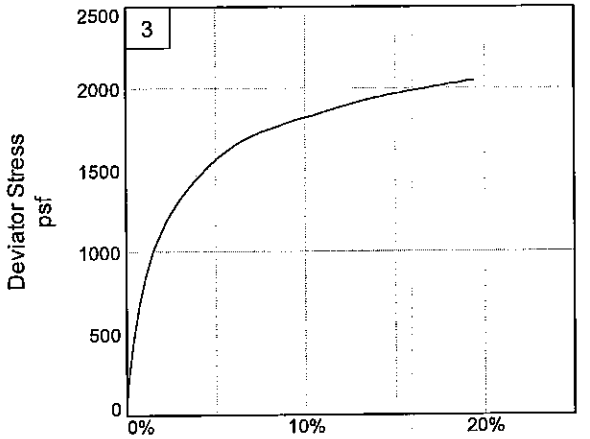
TRIAXIAL SHEAR TEST REPORT

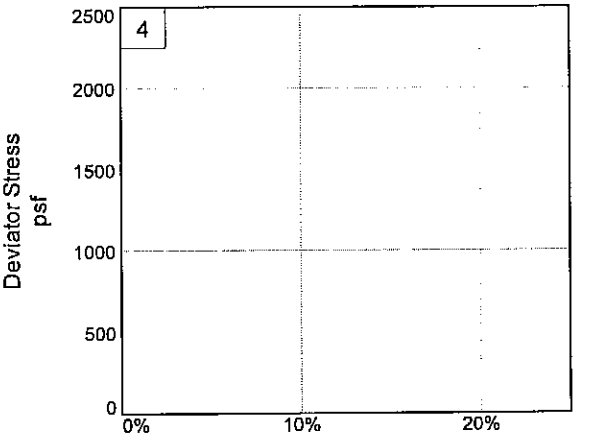
FFEBJV, LLC.

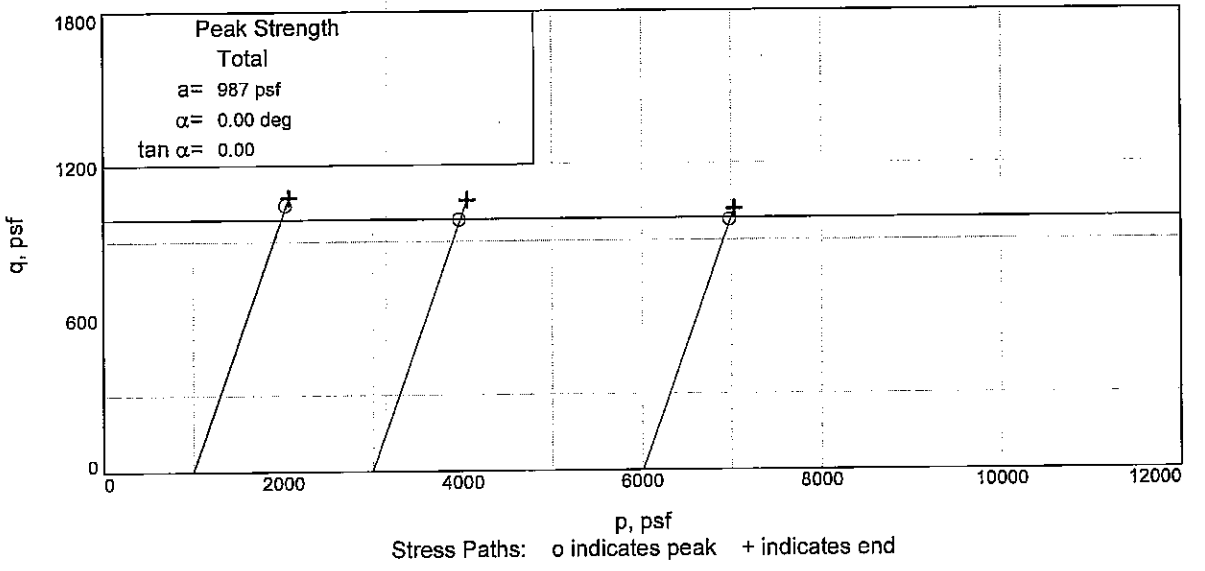
Tested By: AH **Checked By:** AMV







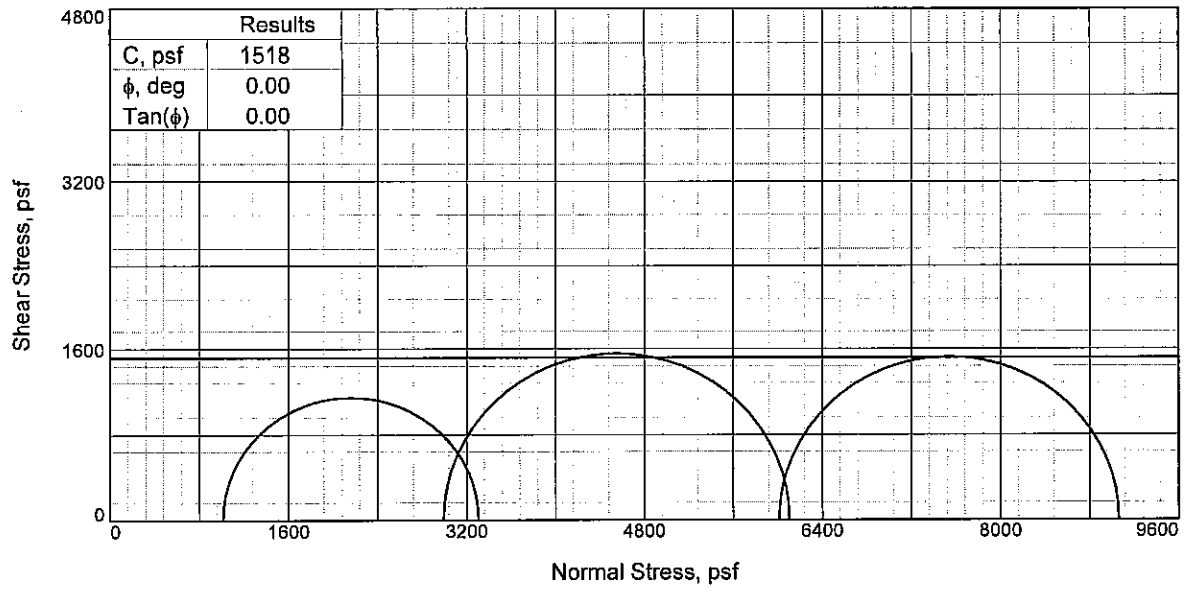


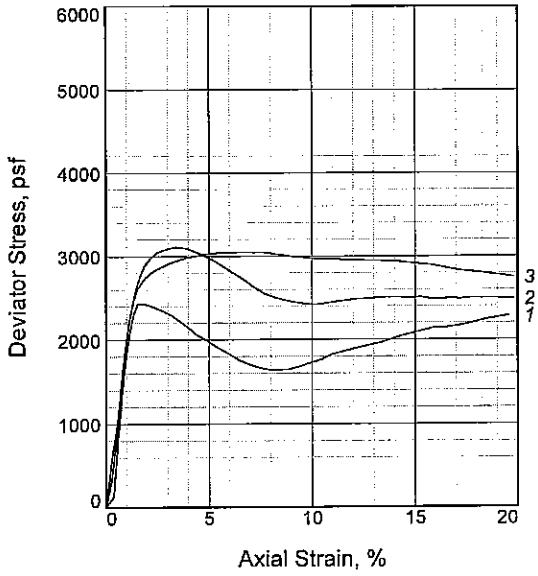


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-56UCL **Depth:** 9.70' **Sample Number:** 4C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: AH **Checked By:** AMV





Sample No.		1	2	3
Initial	Water Content, %	34.5	34.2	35.0
	Dry Density, pcf	85.0	82.8	84.6
	Saturation, %	93.5	88.0	93.8
	Void Ratio	1.0121	1.0648	1.0227
	Diameter, in.	1.34	1.35	1.33
	Height, in.	3.00	3.00	3.00
At Test	Water Content, %	34.3	34.6	35.0
	Dry Density, pcf	85.0	82.8	84.6
	Saturation, %	92.8	89.0	93.8
	Void Ratio	1.0121	1.0648	1.0227
	Diameter, in.	1.34	1.35	1.33
	Height, in.	3.00	3.00	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		7.04	20.79	41.75
Fail. Stress, psf		2293	3111	3051
Strain, %		3.2	3.4	6.6
Ult. Stress, psf		1911	2499	2918
Strain, %				
σ_1 Failure, psf		3307	6104	9063
σ_3 Failure, psf		1014	2993	6012

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST GR & T CH4 W/ ARS ML & RT

LL= 75 **PL=** 23 **PI=** 52
Assumed Specific Gravity= 2.74
Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

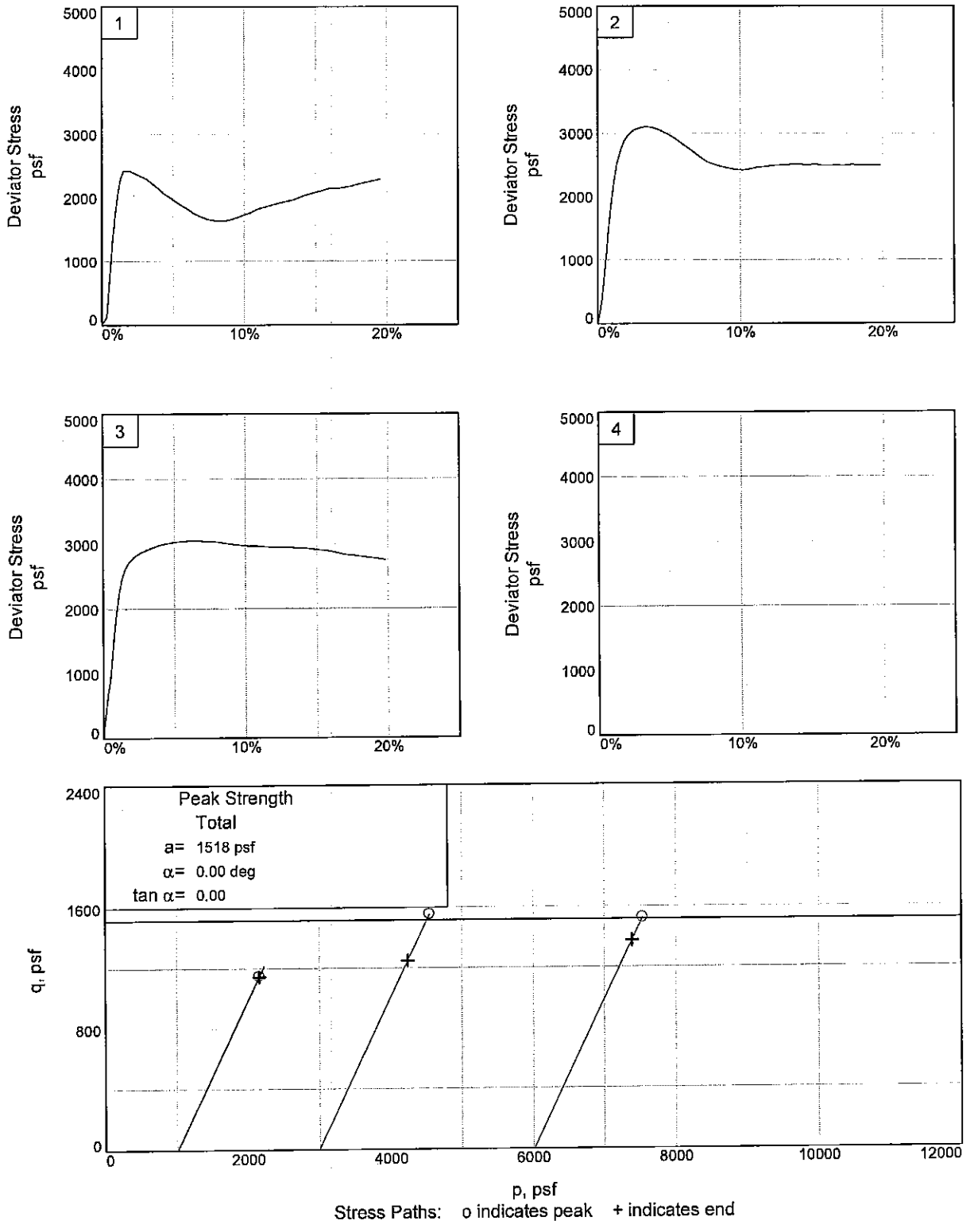
Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 13.70'
Sample Number: 5C
Proj. No.: 0022-0002 **Date Sampled:** 5/59/07

TRIAXIAL SHEAR TEST REPORT

FFEBJV, LLC.

Tested By: AH _____ **Checked By:** RT _____

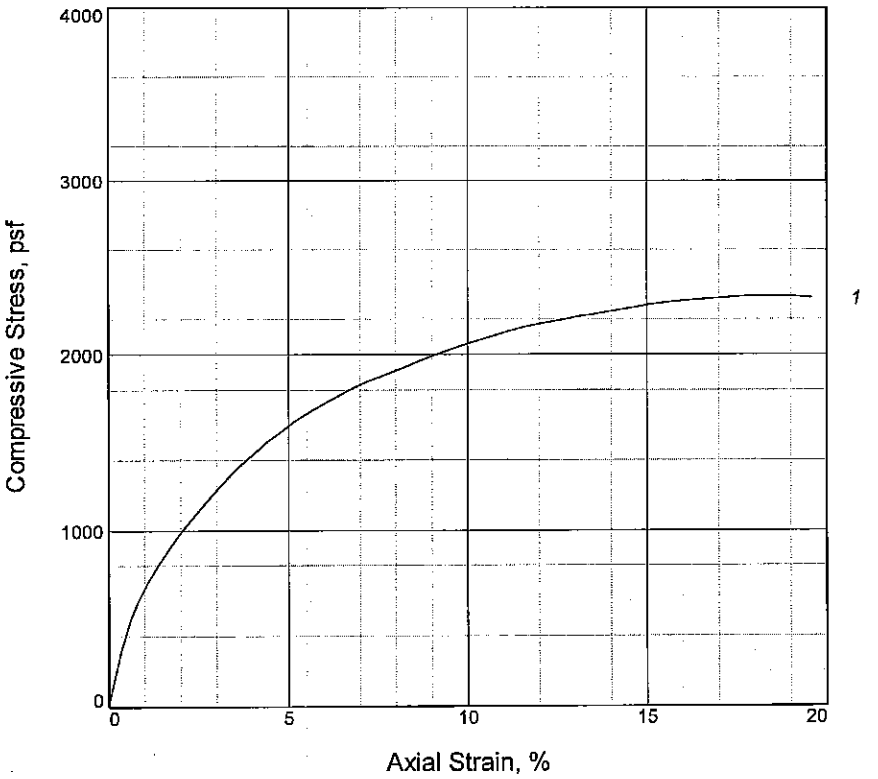


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-56UCL **Depth:** 13.70' **Sample Number:** 5C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: AH **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2265			
Undrained shear strength, psf	1133			
Failure strain, %	14.6			
Strain rate, %/min.	1.00			
Water content, %	29.6			
Wet density, pcf	121.0			
Dry density, pcf	93.4			
Saturation, %	99.3			
Void ratio	0.8043			
Specimen diameter, in.	1.38			
Specimen height, in.	3.03			
Height/diameter ratio	2.20			

Description: ST GR & T CL6 W/ LYS ML & TR-O

LL = 47	PL = 26	PI = 21	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5/30/07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

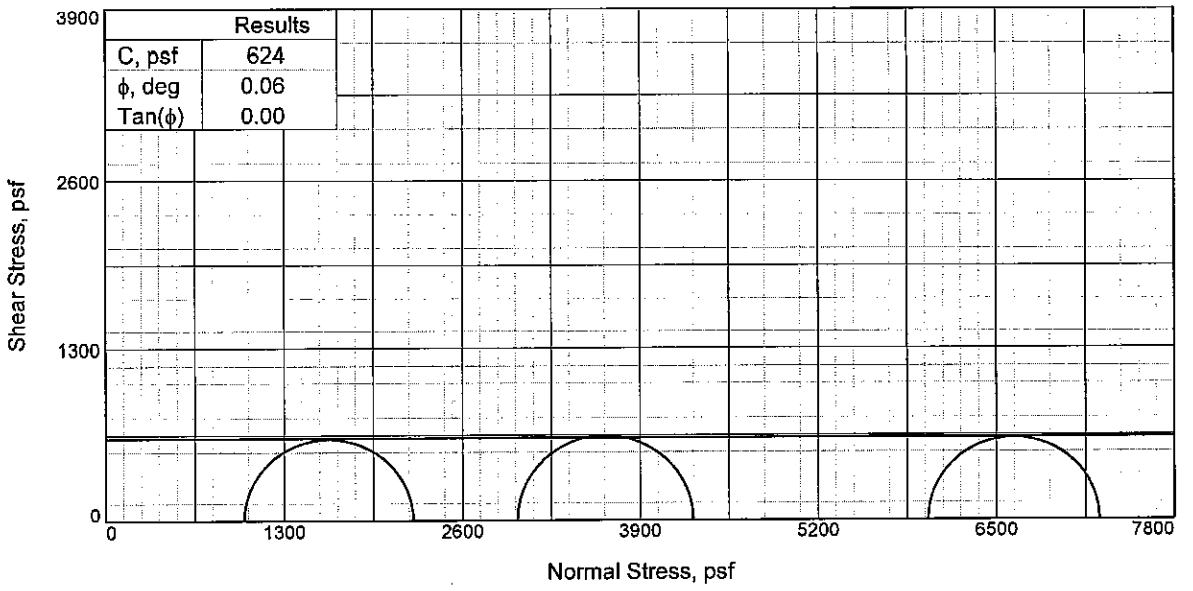
Client: U.S. ARMY CORPS OF ENGINEERS

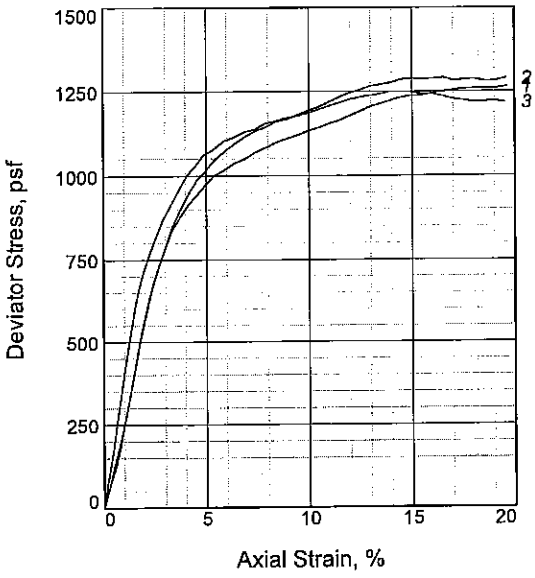
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 17.70'
Sample Number: 6C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** AMV





Sample No.		1	2	3
Initial	Water Content, %	34.7	35.0	34.4
	Dry Density, pcf	85.3	80.1	78.1
	Saturation, %	96.2	85.9	80.3
	Void Ratio	0.9697	1.0953	1.1513
	Diameter, in.	1.32	1.35	1.37
	Height, in.	3.00	3.00	3.00
At Test	Water Content, %	34.3	33.9	34.0
	Dry Density, pcf	85.3	80.1	78.1
	Saturation, %	95.1	83.3	79.4
	Void Ratio	0.9697	1.0953	1.1513
	Diameter, in.	1.32	1.35	1.37
	Height, in.	3.00	3.00	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		7.00	20.85	41.69
Fail. Stress, psf		1233	1286	1249
Strain, %		14.5	14.5	14.4
Ult. Stress, psf		1233	1286	1249
Strain, %				
σ_1 Failure, psf		2241	4288	7252
σ_3 Failure, psf		1009	3002	6003

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR & T CL4 W/ TR-O

LL= 39 **PL=** 24 **PI=** 15
Assumed Specific Gravity= 2.69
Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

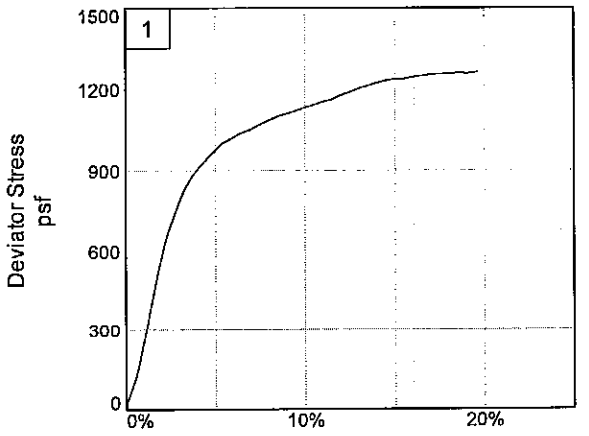
Client: U.S. ARMY CORPS OF ENGINEERS

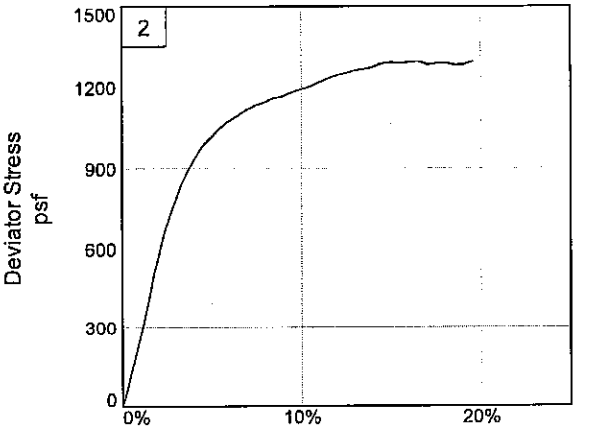
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 21.70'
Sample Number: 7C
Proj. No.: 0022-0002 **Date Sampled:** 5/30/07

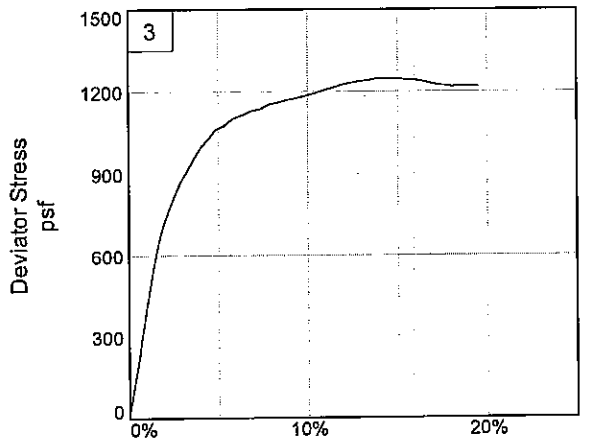
TRIAXIAL SHEAR TEST REPORT

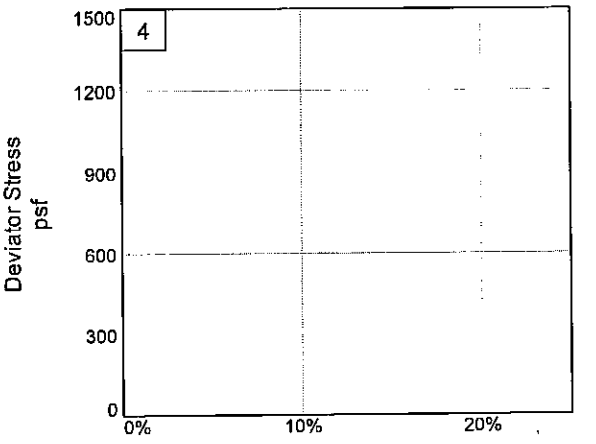
FFEBJV, LLC.

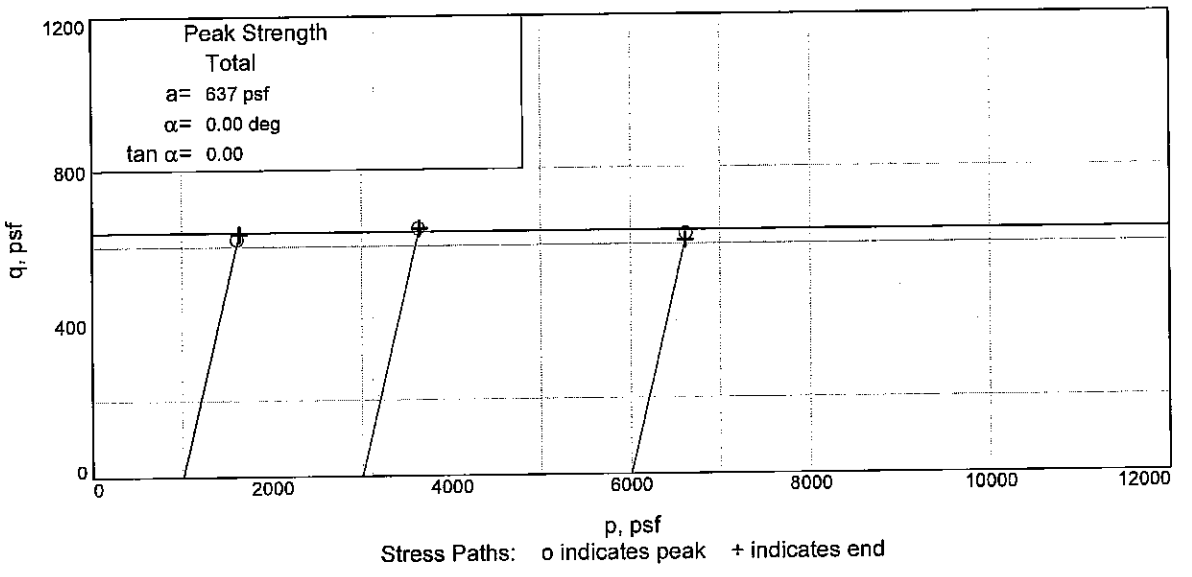
Tested By: AH **Checked By:** RT







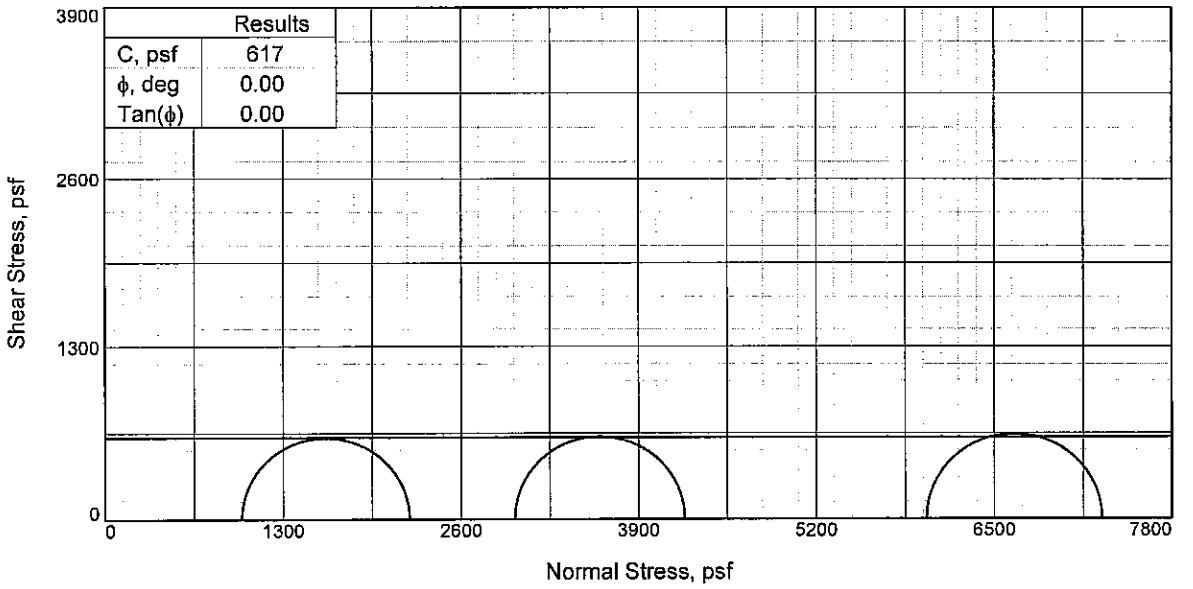


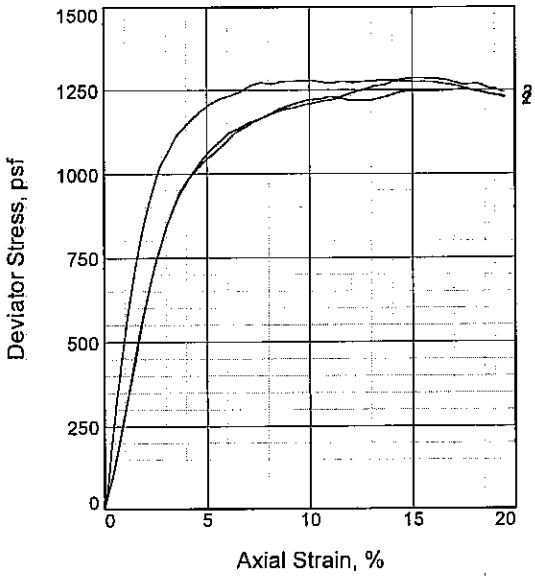


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-56UCL **Depth:** 21.70' **Sample Number:** 7C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: AH **Checked By:** RT





Sample No.		1	2	3
Initial	Water Content, %	44.5	43.4	45.7
	Dry Density, pcf	76.4	77.3	75.2
	Saturation, %	99.8	99.5	99.8
	Void Ratio	1.1986	1.1720	1.2317
	Diameter, in.	1.39	1.38	1.39
	Height, in.	3.09	3.08	3.07
At Test	Water Content, %	43.3	42.1	45.1
	Dry Density, pcf	76.4	77.3	75.2
	Saturation, %	97.2	96.6	98.4
	Void Ratio	1.1986	1.1720	1.2317
	Diameter, in.	1.39	1.38	1.39
	Height, in.	3.09	3.08	3.07
Strain rate, %/min.		1.00	20.18	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.94	20.79	41.70
Fail. Stress, psf		1225	1244	1283
Strain, %		13.4	12.2	14.6
Ult. Stress, psf		1225	1244	1283
Strain, %				
σ_1 Failure, psf		2224	4238	7288
σ_3 Failure, psf		999	2994	6005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL6-S W/ LYS ML

LL= 48 **PL=** 34 **PI=** 14
Specific Gravity= 2.69
Remarks: Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

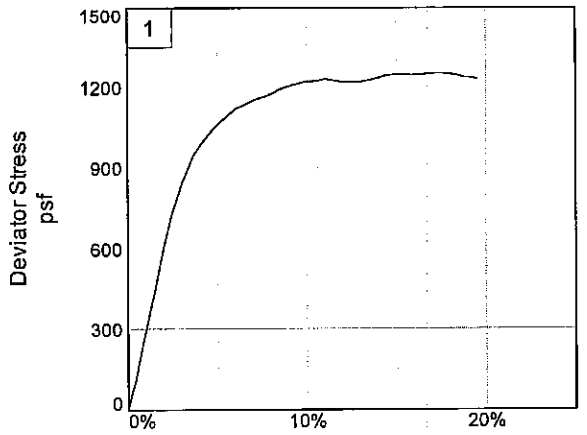
Client: U.S. ARMY CORPS OF ENGINEERS

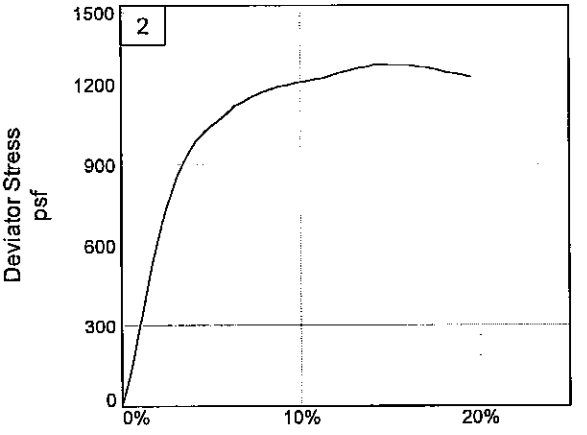
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 29.70'
Sample Number: 9C
Proj. No.: 0022-0002 **Date Sampled:** 5/20/07

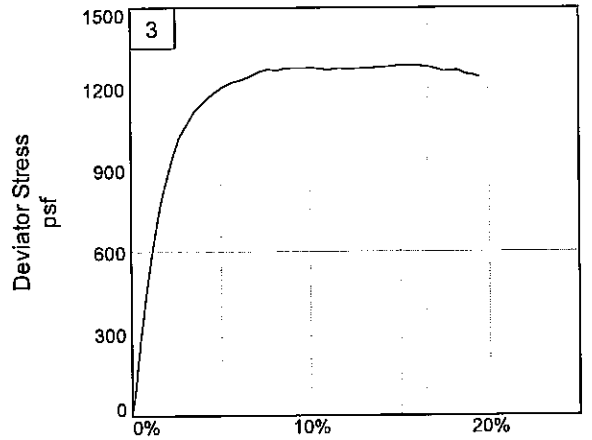
TRIAXIAL SHEAR TEST REPORT

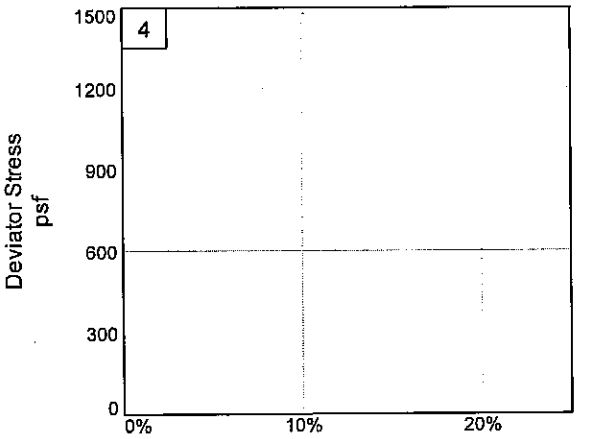
FFEBJV, LLC.

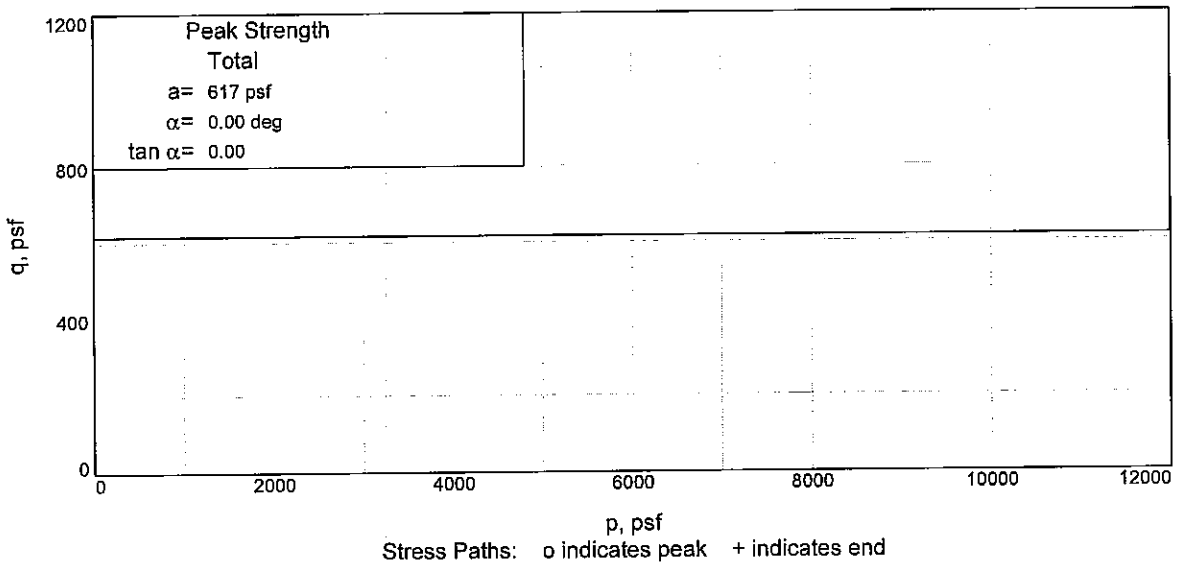
Tested By: AH **Checked By:** GMU







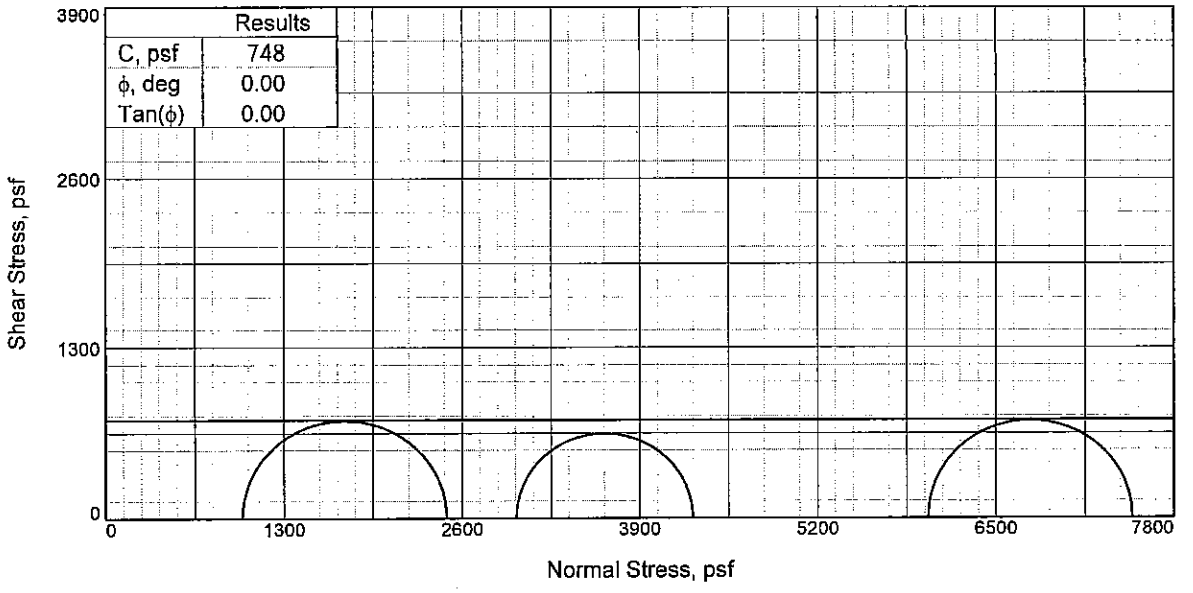


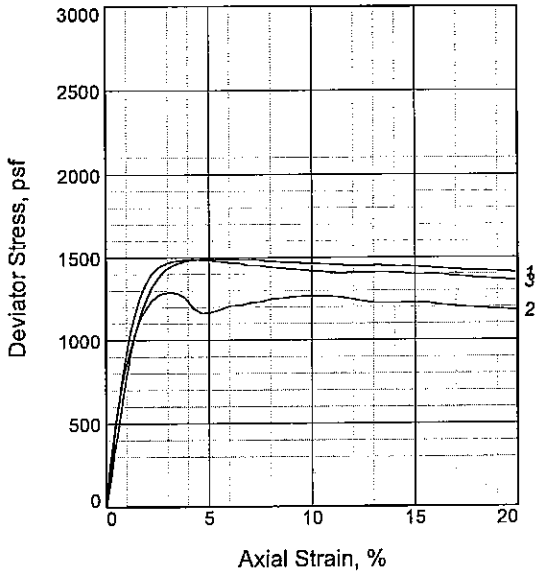


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-56UCL **Depth:** 29.70' **Sample Number:** 9C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: AH **Checked By:** GMU





Sample No.		1	2	3
Initial	Water Content, %	49.5	48.7	50.4
	Dry Density, pcf	71.9	72.9	71.3
	Saturation, %	98.3	99.2	98.9
	Void Ratio	1.3783	1.3448	1.3979
	Diameter, in.	1.39	1.39	1.39
	Height, in.	3.05	3.00	3.05
At Test	Water Content, %	48.6	48.0	49.6
	Dry Density, pcf	71.9	72.9	71.3
	Saturation, %	96.7	97.8	97.2
	Void Ratio	1.3783	1.3448	1.3979
	Diameter, in.	1.39	1.39	1.39
	Height, in.	3.05	3.00	3.05
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	20.81	41.70
Fail. Stress, psf		1489	1290	1490
Strain, %		4.5	3.0	4.2
Ult. Stress, psf		1447	1210	1398
Strain, %				
σ_1 Failure, psf		2487	4287	7496
σ_3 Failure, psf		998	2997	6005

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH3 W/ LNS ML

LL= 63 **PL=** 25 **PI=** 38

Assumed Specific Gravity= 2.74

Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-56UCL **Depth:** 32.80'

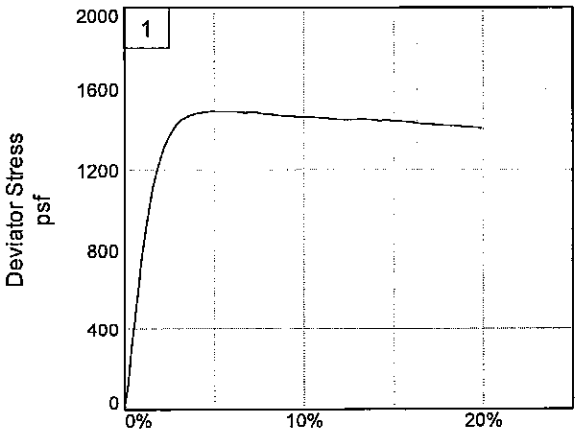
Sample Number: 10B

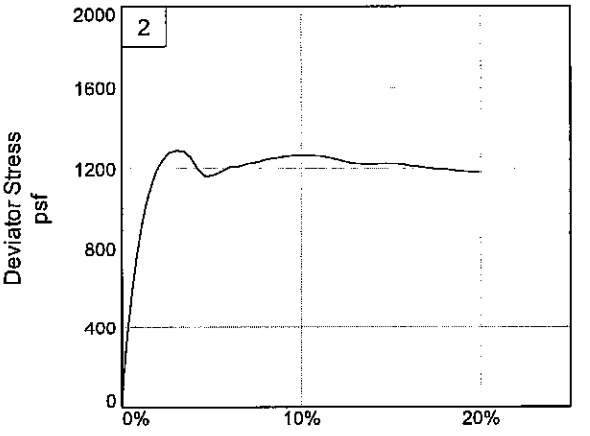
Proj. No.: 0022-0002 **Date Sampled:** 5/30/07

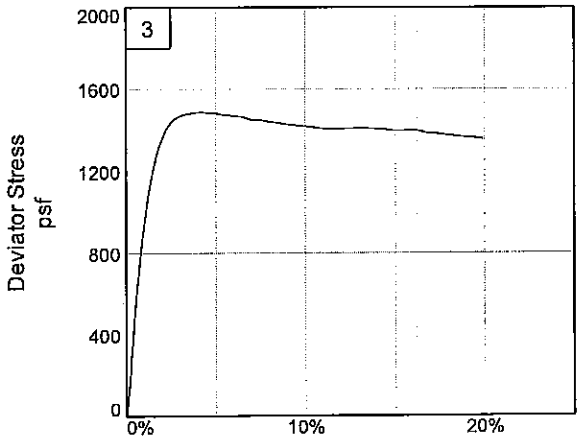
TRIAXIAL SHEAR TEST REPORT

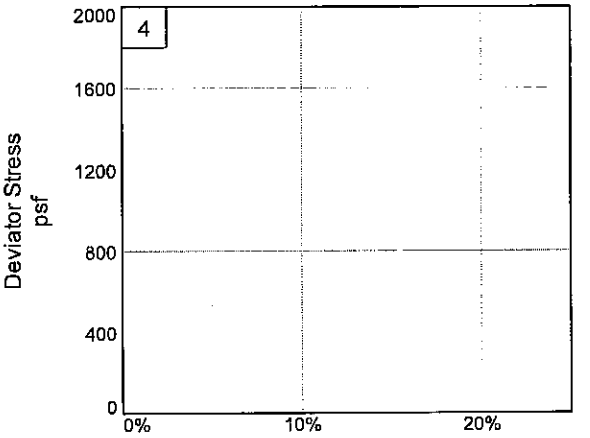
FFEBJV, LLC.

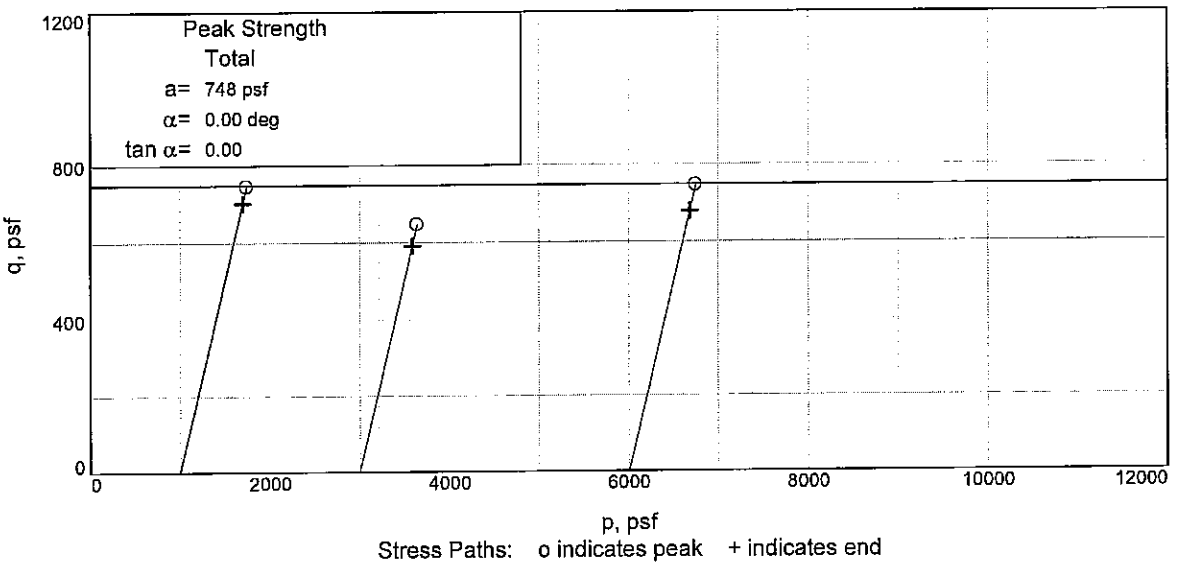
Tested By: AH **Checked By:** RT









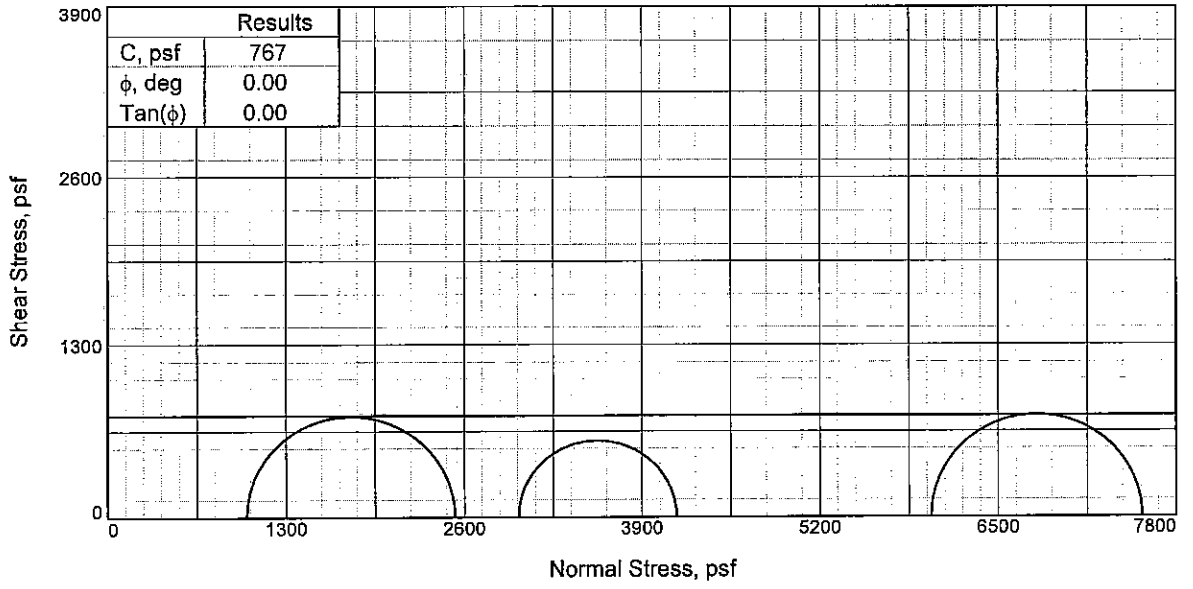


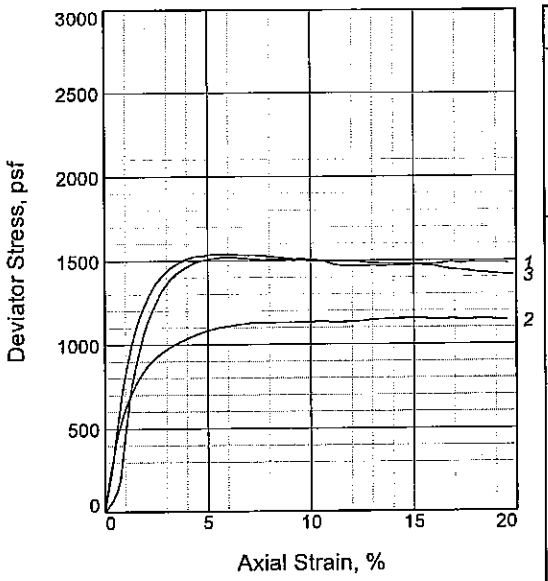
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-56UCL **Depth:** 32.80' **Sample Number:** 10B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: AH **Checked By:** RT





Sample No.		1	2	3
Initial	Water Content, %	44.2	44.5	45.9
	Dry Density, pcf	75.8	76.1	74.8
	Saturation, %	97.6	98.9	99.0
	Void Ratio	1.2238	1.2148	1.2528
	Diameter, in.	1.39	1.38	1.39
	Height, in.	3.10	3.10	3.05
At Test	Water Content, %	43.0	43.9	45.4
	Dry Density, pcf	75.8	76.1	74.8
	Saturation, %	94.9	97.5	97.8
	Void Ratio	1.2238	1.2148	1.2528
	Diameter, in.	1.39	1.38	1.39
	Height, in.	3.10	3.10	3.05
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		7.04	20.82	41.75
Fail. Stress, psf		1520	1154	1540
Strain, %		6.1	14.9	5.8
Ult. Stress, psf		1473	1154	1477
Strain, %				
σ_1 Failure, psf		2533	4152	7552
σ_3 Failure, psf		1013	2998	6012

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH3 W/ ARS ML

LL= 58 **PL=** 24 **PI=** 34

Assumed Specific Gravity= 2.70

Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2

Source of Sample: WWHC-56UCL **Depth:** 37.70'

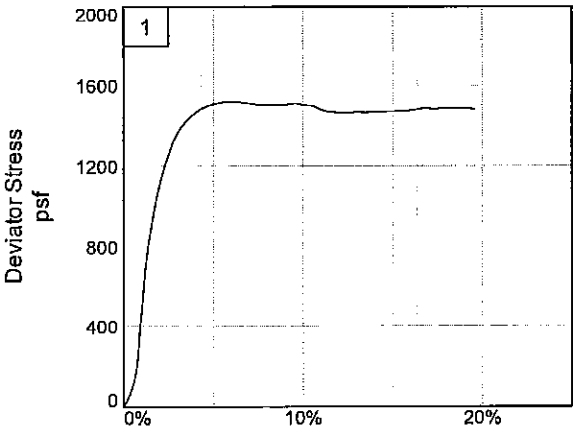
Sample Number: 11C

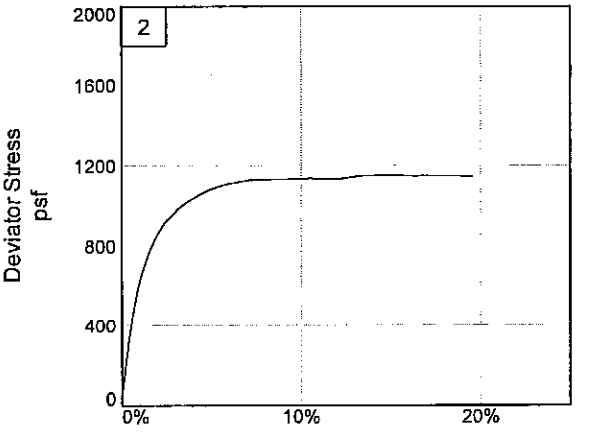
Proj. No.: 0022-0002 **Date Sampled:** 5/31/07

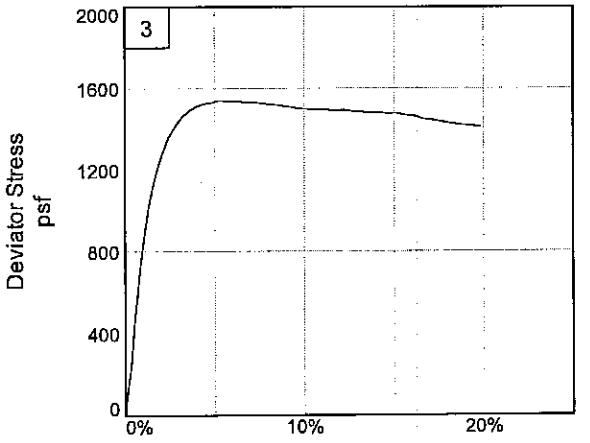
TRIAXIAL SHEAR TEST REPORT

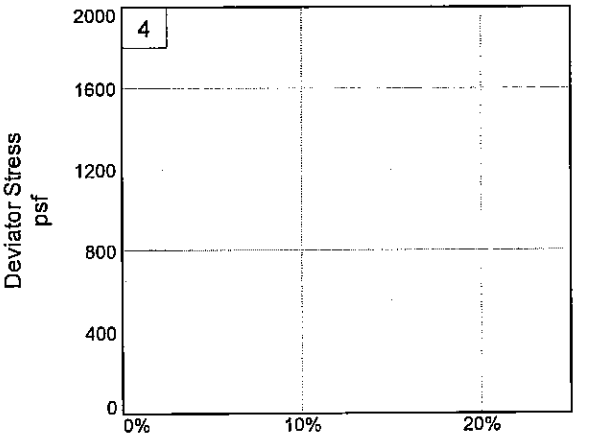
FFEBJV, LLC.

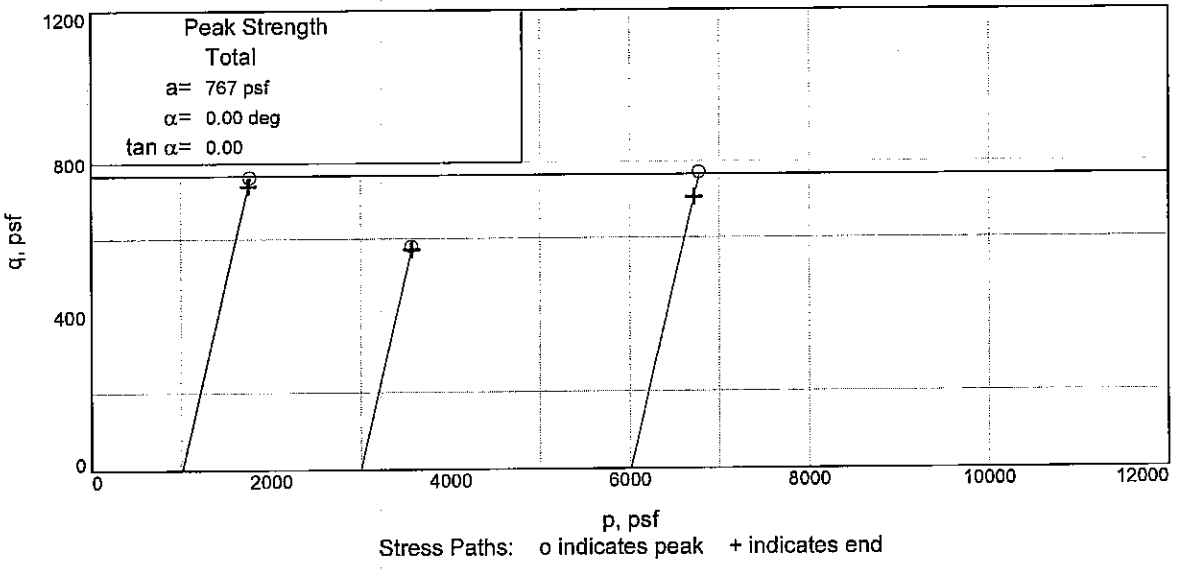
Tested By: AH **Checked By:** RT











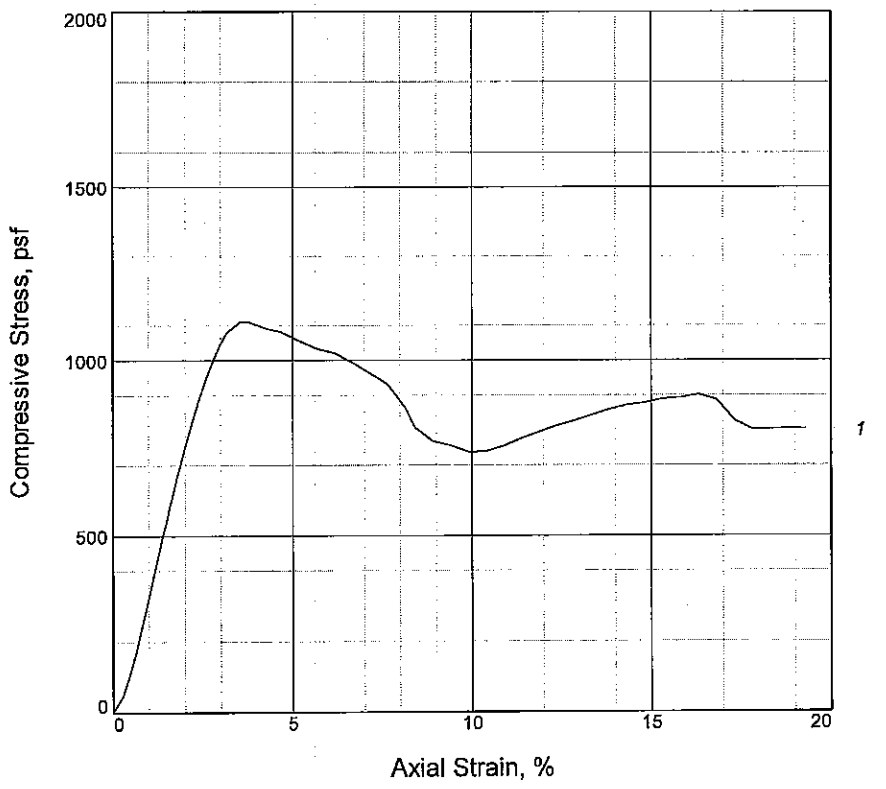
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-56UCL **Depth:** 37.70' **Sample Number:** 11C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: AH **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1111			
Undrained shear strength, psf	555			
Failure strain, %	3.8			
Strain rate, %/min.	1.00			
Water content, %	36.6			
Wet density, pcf	115.3			
Dry density, pcf	84.4			
Saturation, %	99.4			
Void ratio	0.9896			
Specimen diameter, in.	1.38			
Specimen height, in.	3.02			
Height/diameter ratio	2.19			

Description: M GR CL4-S W/ LNS ML

LL = 36	PL = 33	PI = 3	Assumed GS= 2.69	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5-30-07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

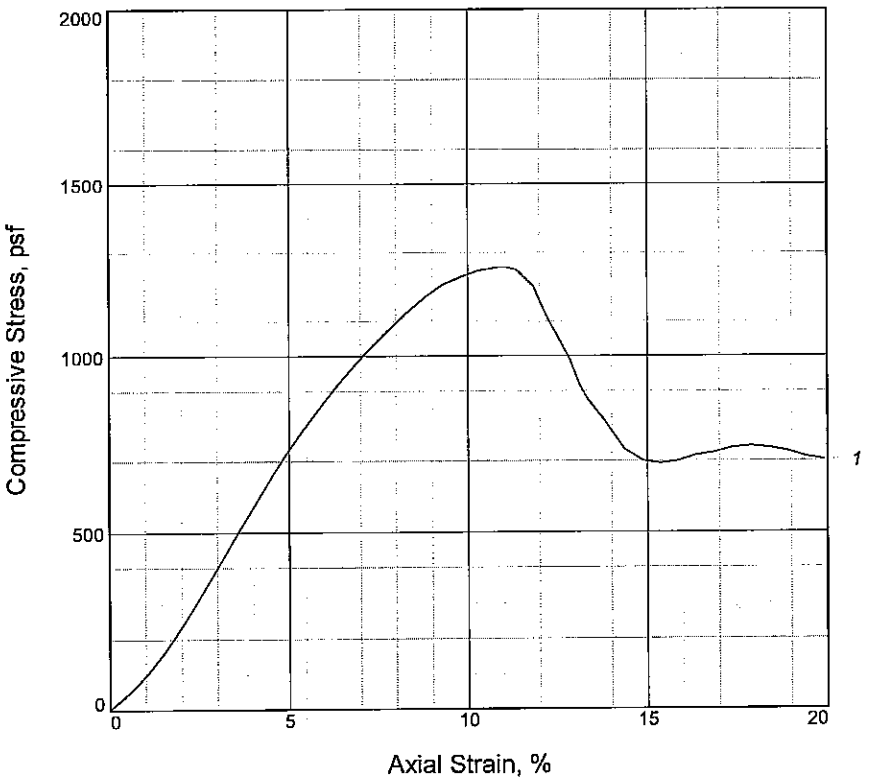
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 41.70'
Sample Number: 12C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** AMV

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1254			
Undrained shear strength, psf	627			
Failure strain, %	10.8			
Strain rate, %/min.	1.00			
Water content, %	32.7			
Wet density, pcf	118.4			
Dry density, pcf	89.2			
Saturation, %	99.7			
Void ratio	0.8822			
Specimen diameter, in.	1.37			
Specimen height, in.	3.01			
Height/diameter ratio	2.19			

Description: M GR CL4-S

LL = 30	**PL** = 22	**PI** = 8	**Assumed GS=** 2.69	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5-30-07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

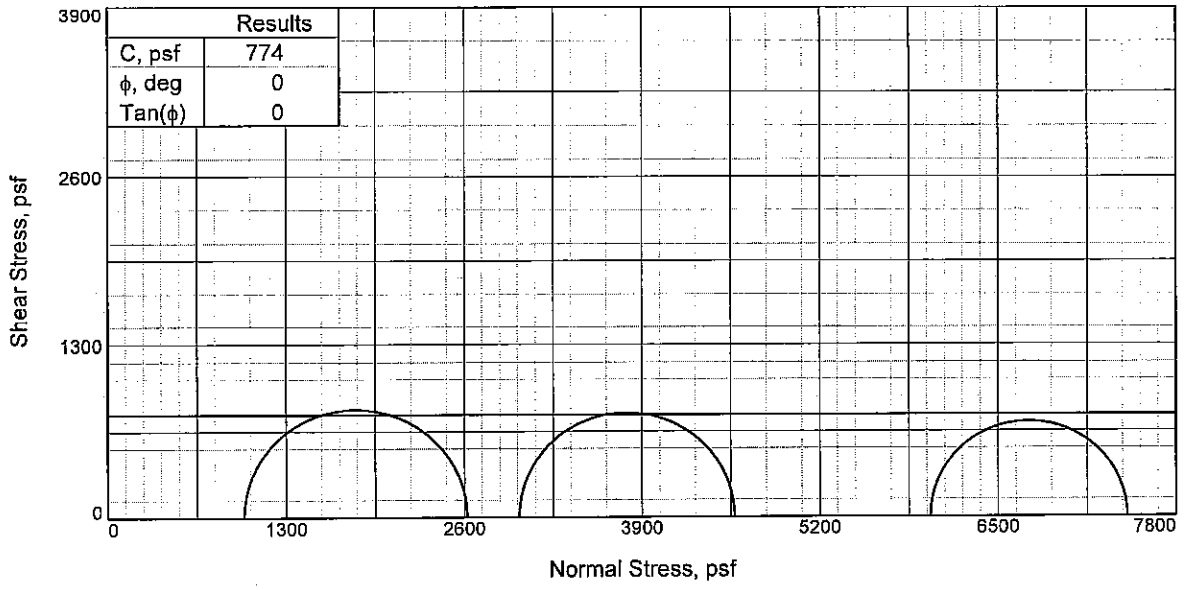
Client: U.S. ARMY CORPS OF ENGINEERS

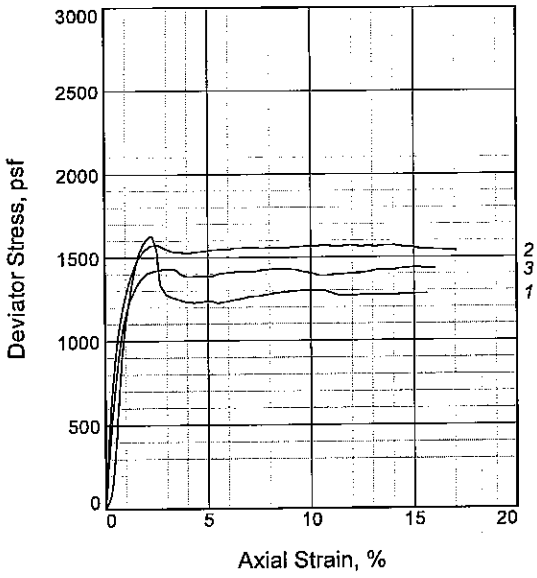
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 45.70'
Sample Number: 13C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** AMV





Sample No.		1	2	3
Initial	Water Content, %	85.5	63.7	76.6
	Dry Density, pcf	50.8	62.1	54.6
	Saturation, %	99.0	99.6	98.4
	Void Ratio	2.3674	1.7535	2.1326
	Diameter, in.	1.37	1.38	1.37
	Height, in.	3.80	3.50	3.75
At Test	Water Content, %	62.1	48.1	58.2
	Dry Density, pcf	50.8	62.1	54.6
	Saturation, %	71.9	75.1	74.8
	Void Ratio	2.3674	1.7535	2.1326
	Diameter, in.	1.37	1.38	1.37
	Height, in.	3.80	3.50	3.75
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	20.84	41.71
Fail. Stress, psf		1628	1576	1437
Strain, %		2.2	2.6	15.2
Ult. Stress, psf		1281	1535	1426
Strain, %				
σ_1 Failure, psf		2622	4578	7443
σ_3 Failure, psf		994	3001	6006

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ LNS & ARS ML

LL= 88 **PL=** 24 **PI=** 64
Assumed Specific Gravity= 2.74
Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

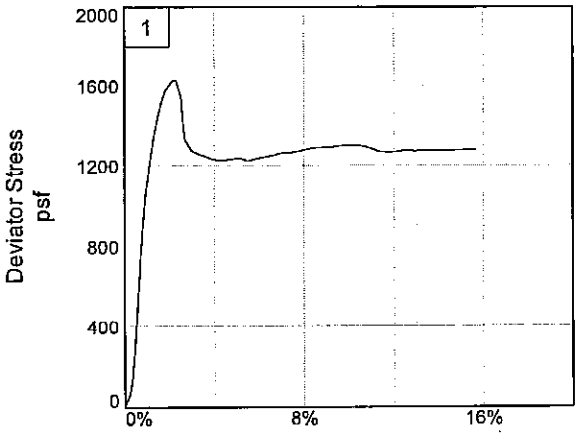
Client: U.S. ARMY CORPS OF ENGINEERS

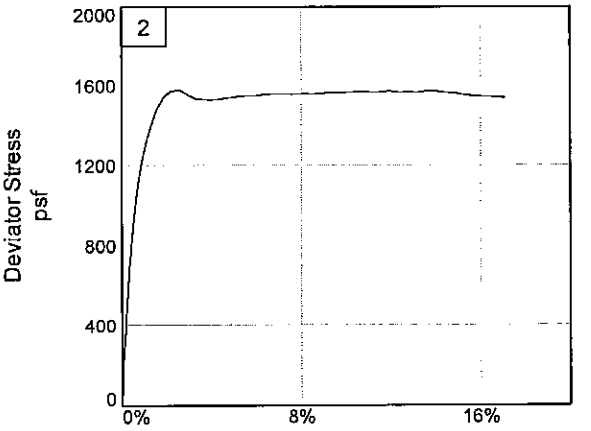
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 49.70'
Sample Number: 14C
Proj. No.: 0022-0002 **Date Sampled:** 5/31/07

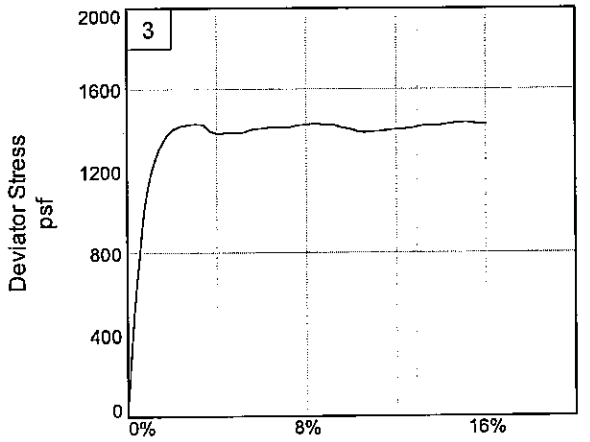
TRIAXIAL SHEAR TEST REPORT

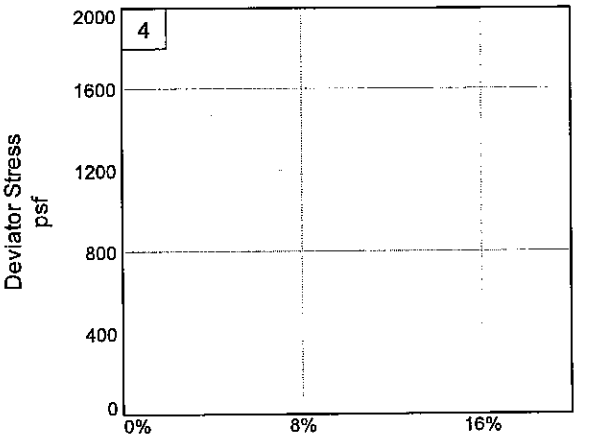
FFEBJV, LLC.

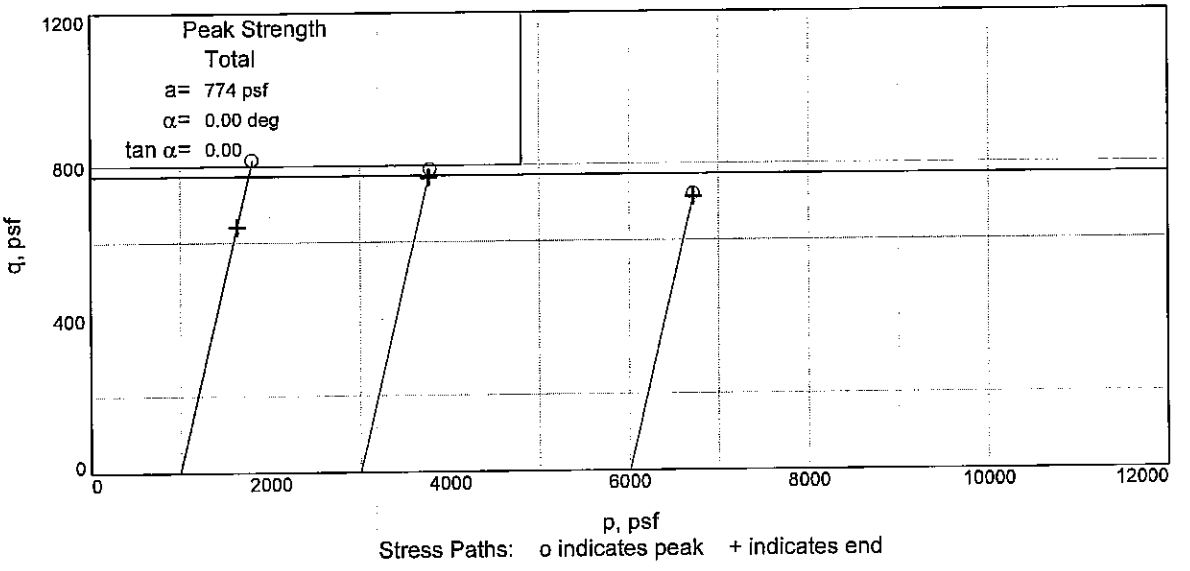
Tested By: AH **Checked By:** RT









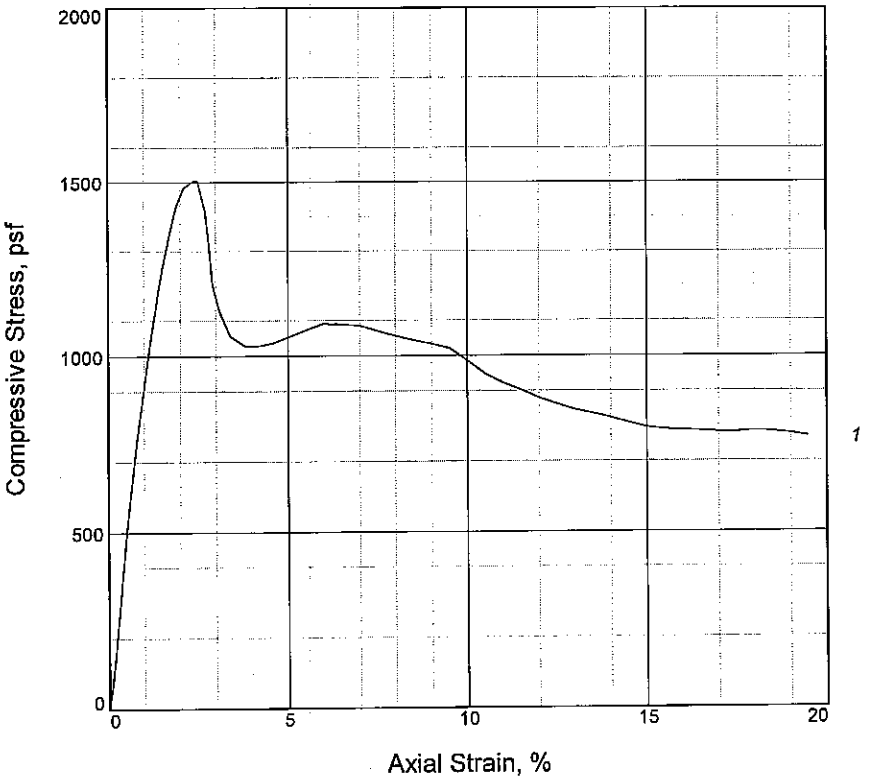


Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-56UCL **Depth:** 49.70' **Sample Number:** 14C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: AH **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1504			
Undrained shear strength, psf	752			
Failure strain, %	2.4			
Strain rate, %/min.	1.00			
Water content, %	49.4			
Wet density, pcf	108.5			
Dry density, pcf	72.7			
Saturation, %	99.8			
Void ratio	1.3544			
Specimen diameter, in.	1.40			
Specimen height, in.	3.01			
Height/diameter ratio	2.15			

Description: M GR CH3 W/ LNS ML

LL = 71	**PL** = 24	**PI** = 47	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5-30-07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

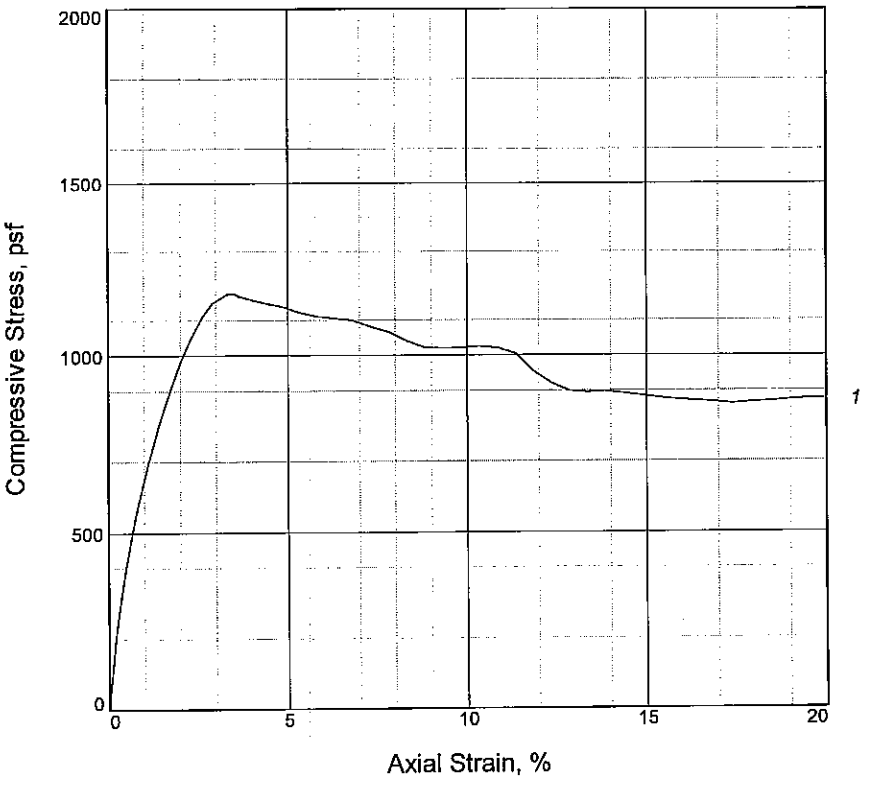
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 53.70'
Sample Number: 15C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** AMV

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1174			
Undrained shear strength, psf	587			
Failure strain, %	3.3			
Strain rate, %/min.	1.00			
Water content, %	45.6			
Wet density, pcf	103.7			
Dry density, pcf	71.3			
Saturation, %	89.2			
Void ratio	1.4007			
Specimen diameter, in.	1.34			
Specimen height, in.	3.00			
Height/diameter ratio	2.23			

Description: M GR CH3 W/ LYS & ARS ML

LL = 64	PL = 28	PI = 36	Assumed GS= 2.74	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5-30-07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

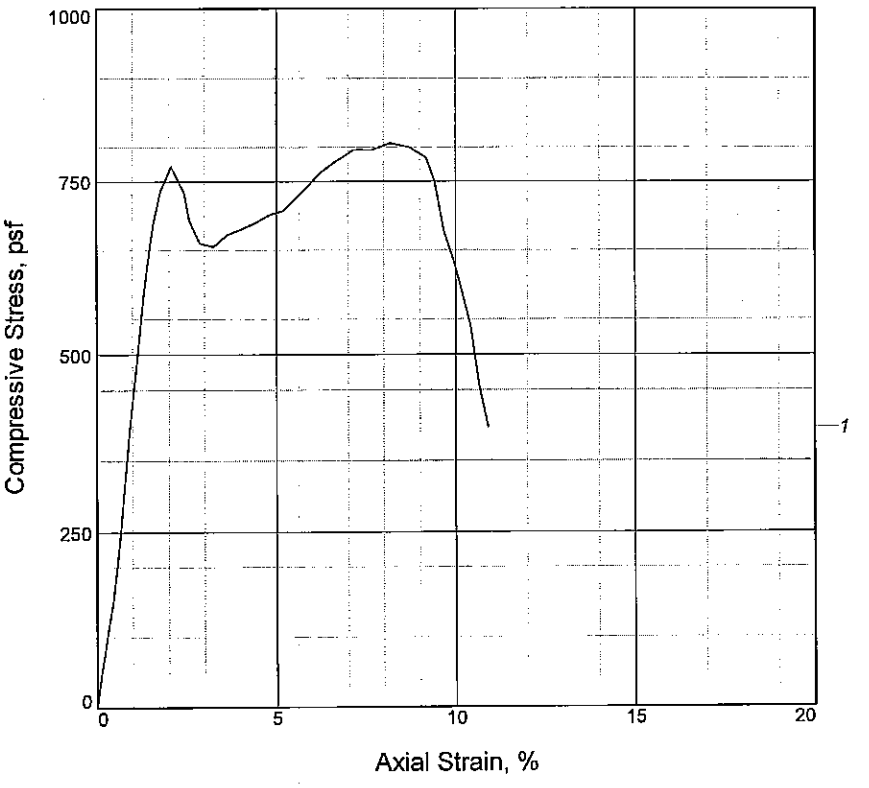
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 57.70'
Sample Number: 16C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** AMV

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	771			
Undrained shear strength, psf	386			
Failure strain, %	2.1			
Strain rate, %/min.	1.00			
Water content, %	43.6			
Wet density, pcf	111.8			
Dry density, pcf	77.8			
Saturation, %	99.7			
Void ratio	1.1980			
Specimen diameter, in.	1.39			
Specimen height, in.	3.02			
Height/diameter ratio	2.18			

Description: SO GR & T CH3 W/ LNS & LYS ML

LL = 63	PL = 27	PI = 36	Assumed GS= 2.74	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5-30-07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

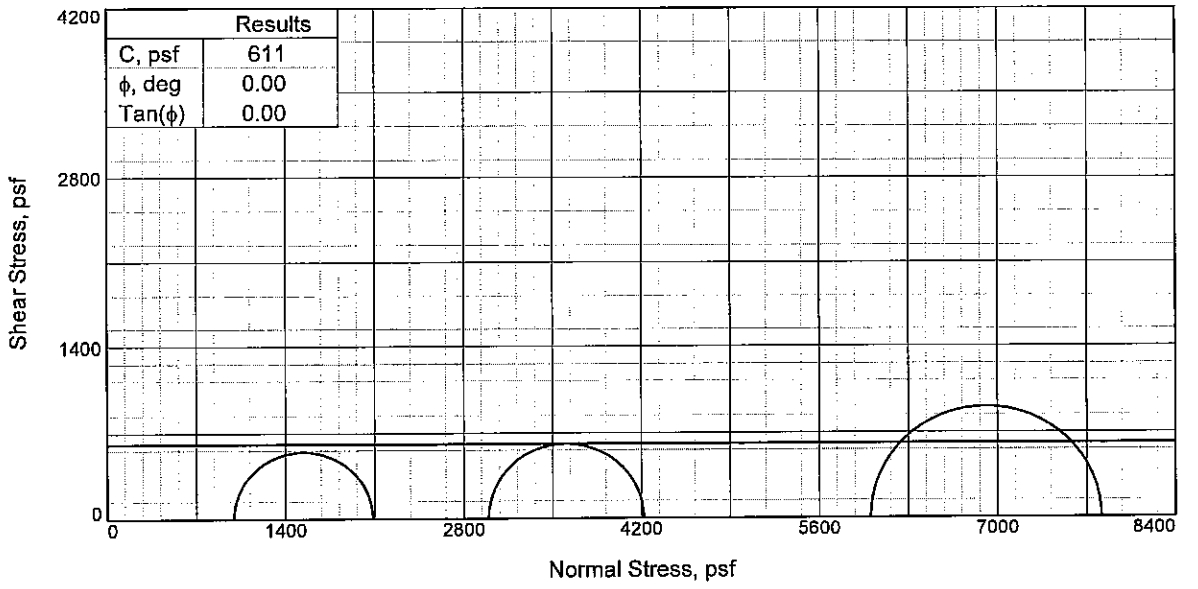
Client: U.S. ARMY CORPS OF ENGINEERS

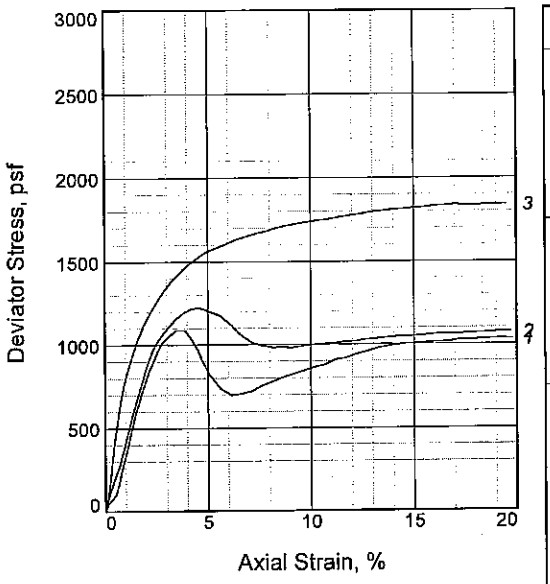
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 61.70'
Sample Number: 17C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** AMV





Sample No.		1	2	3
Initial	Water Content, %	46.0	46.3	37.6
	Dry Density, pcf	68.3	70.1	76.1
	Saturation, %	84.9	89.2	83.7
	Void Ratio	1.4587	1.3971	1.2069
	Diameter, in.	1.37	1.34	1.36
	Height, in.	3.00	3.00	3.00
At Test	Water Content, %	45.3	45.3	37.2
	Dry Density, pcf	68.3	70.1	76.1
	Saturation, %	83.6	87.3	82.9
	Void Ratio	1.4587	1.3971	1.2069
	Diameter, in.	1.37	1.34	1.36
	Height, in.	3.00	3.00	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	20.81	41.69
Fail. Stress, psf		1089	1221	1813
Strain, %		3.5	4.3	14.5
Ult. Stress, psf		1033	1076	1813
Strain, %				
σ_1 Failure, psf		2085	4217	7816
σ_3 Failure, psf		996	2996	6003

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL4 W/ ARS CH

LL= 42 **PL=** 29 **PI=** 13
Assumed Specific Gravity= 2.69
Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

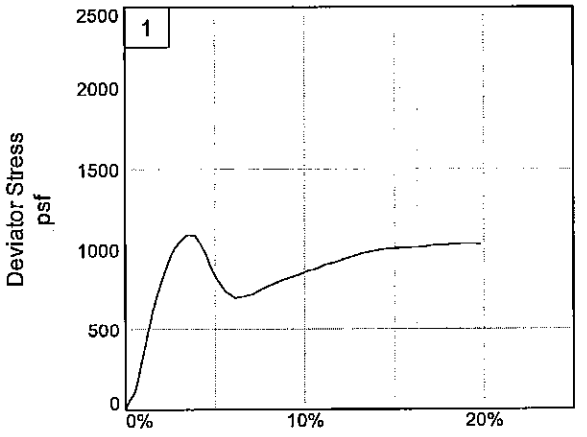
Client: U.S. ARMY CORPS OF ENGINEERS

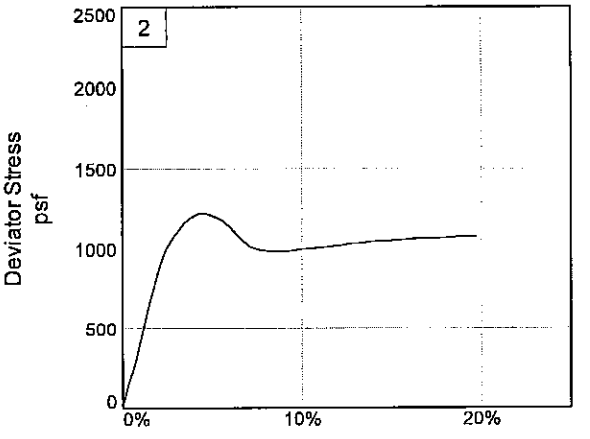
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 65.70'
Sample Number: 18C
Proj. No.: 0022-0002 **Date Sampled:** 5/31/07

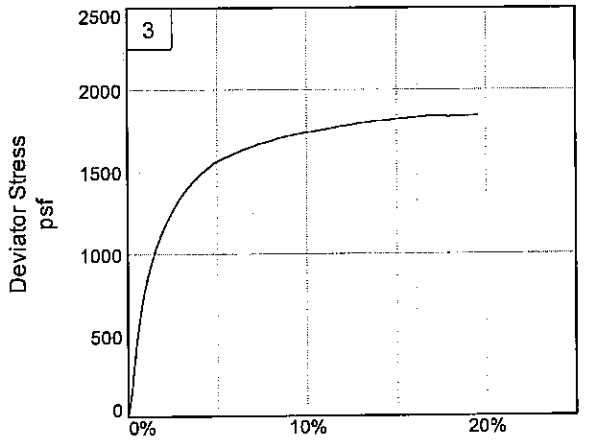
TRIAXIAL SHEAR TEST REPORT

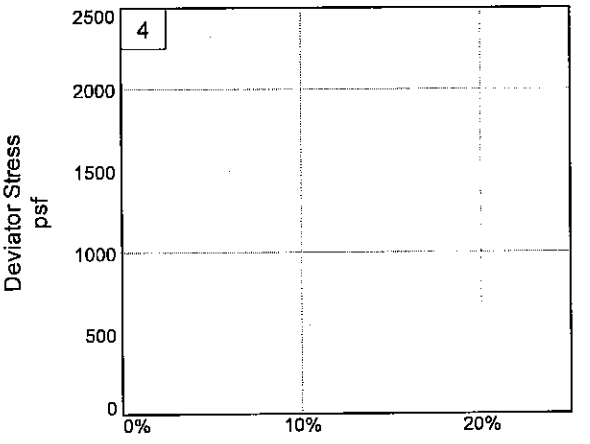
FFEBJV, LLC.

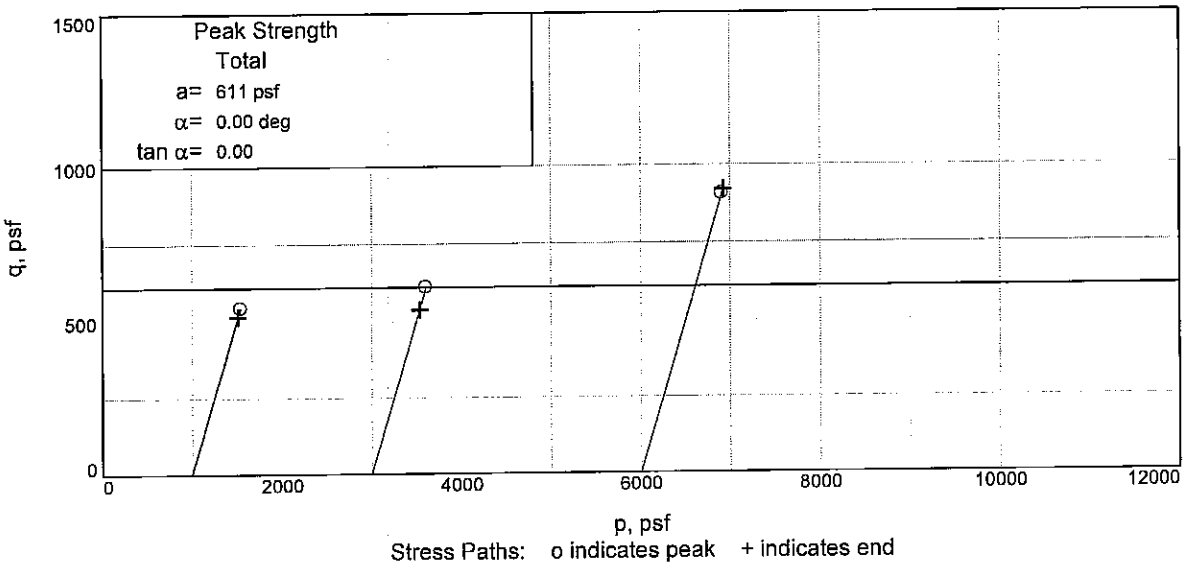
Tested By: AH **Checked By:** RT











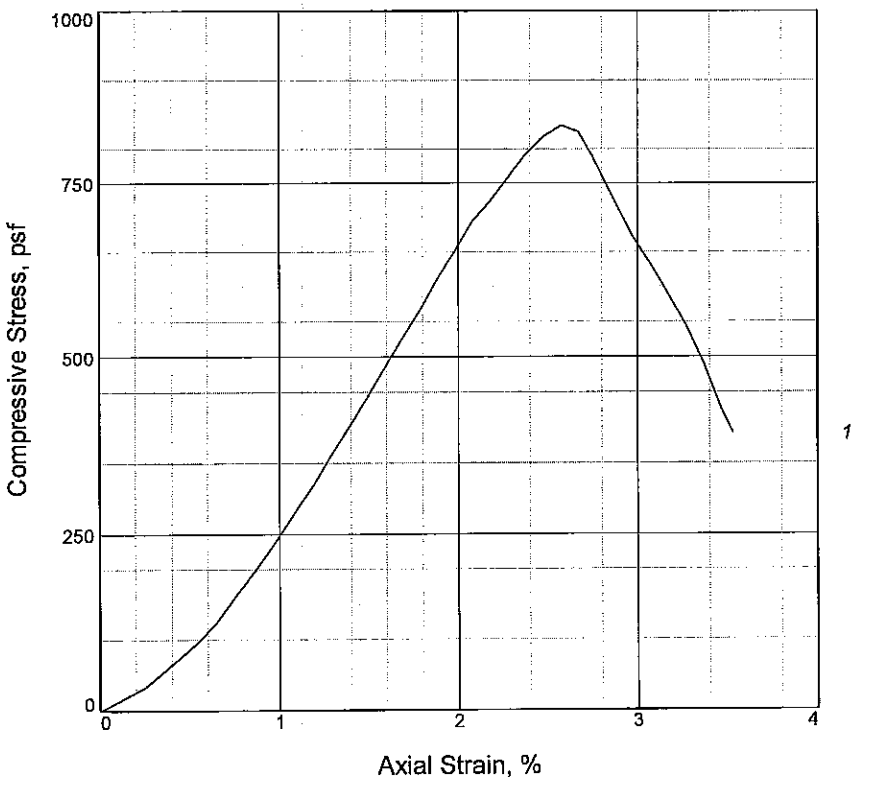
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-56UCL **Depth:** 65.70' **Sample Number:** 18C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: AH **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	834			
Undrained shear strength, psf	417			
Failure strain, %	2.6			
Strain rate, %/min.	1.00			
Water content, %	27.8			
Wet density, pcf	122.5			
Dry density, pcf	95.8			
Saturation, %	99.4			
Void ratio	0.7525			
Specimen diameter, in.	1.37			
Specimen height, in.	3.02			
Height/diameter ratio	2.20			

Description: SO GR & T CL4-S W/ LNS & LYS ML

LL = 30	PL = 25	PI = 5	Assumed GS= 2.69	Type: UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5-30-07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

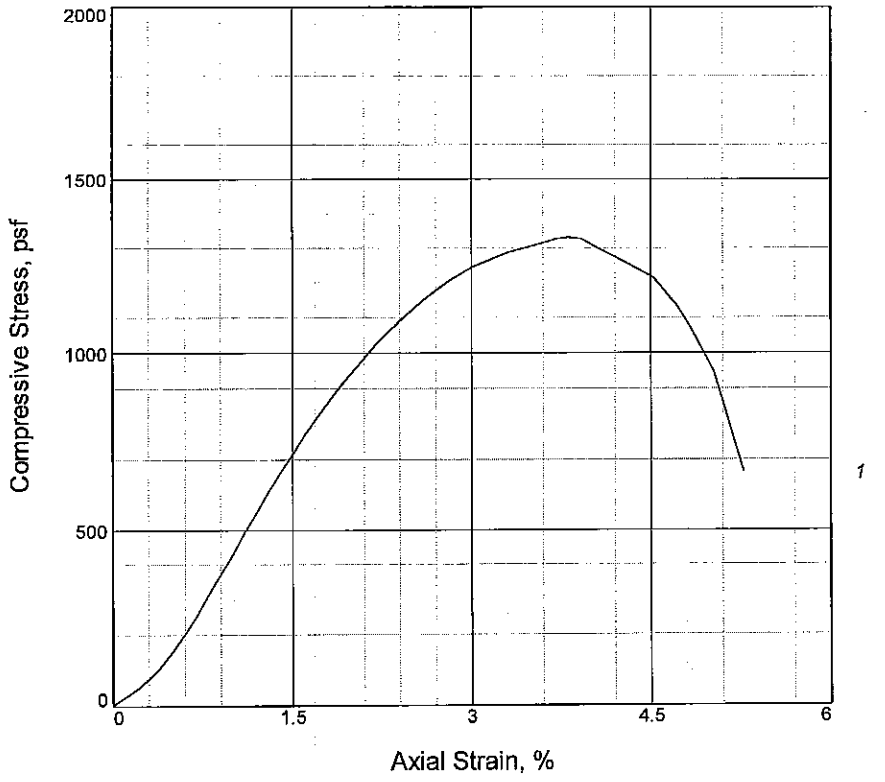
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 69.70'
Sample Number: 19C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** AMV

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1331			
Undrained shear strength, psf	665			
Failure strain, %	3.8			
Strain rate, %/min.	1.00			
Water content, %	27.3			
Wet density, pcf	116.6			
Dry density, pcf	91.6			
Saturation, %	88.3			
Void ratio	0.8335			
Specimen diameter, in.	1.32			
Specimen height, in.	3.00			
Height/diameter ratio	2.28			

Description: GR ML2 W/ ARS CH

LL = NP	**PL =**	**PI =** NP	**Assumed GS=** 2.69	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5-30-07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

Client: U.S. ARMY CORPS OF ENGINEERS

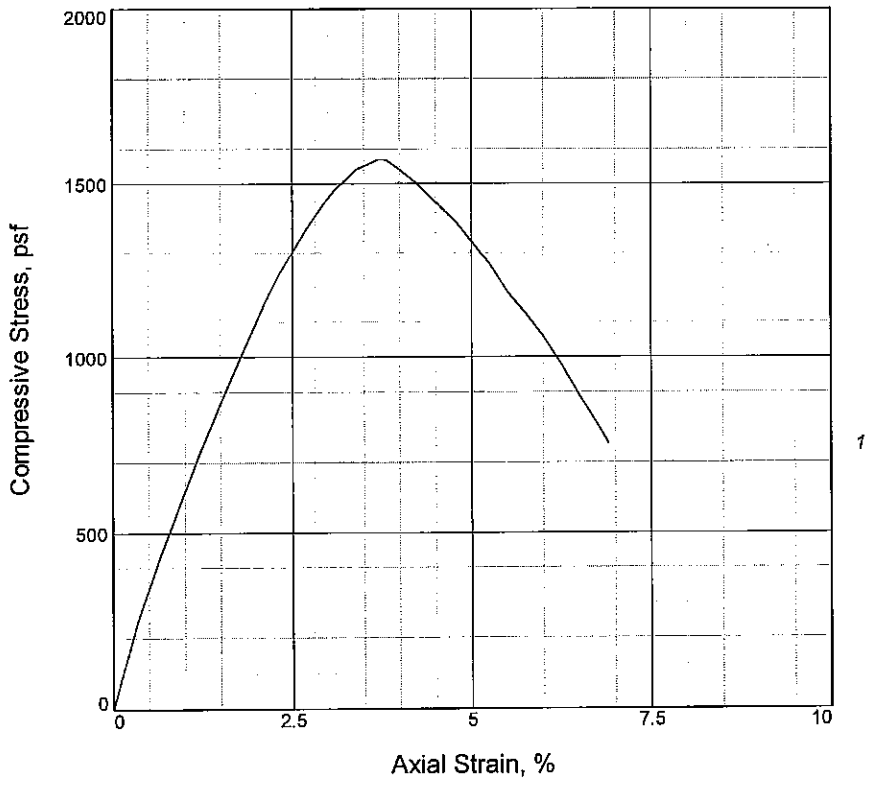
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 72.80'
Sample Number: 20B

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** RT

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1570			
Undrained shear strength, psf	785			
Failure strain, %	3.7			
Strain rate, %/min.	1.00			
Water content, %	32.8			
Wet density, pcf	117.7			
Dry density, pcf	88.7			
Saturation, %	98.7			
Void ratio	0.8941			
Specimen diameter, in.	1.37			
Specimen height, in.	3.00			
Height/diameter ratio	2.18			

Description: M GR CL4-S W/ LNS ML

LL = 40	**PL** = 32	**PI** = 8	**Assumed GS=** 2.69	**Type:** UNDISTURBED

Project No.: 0022-0002
Date Sampled: 5-30-07

Remarks:
Other tests were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318.

Figure _____

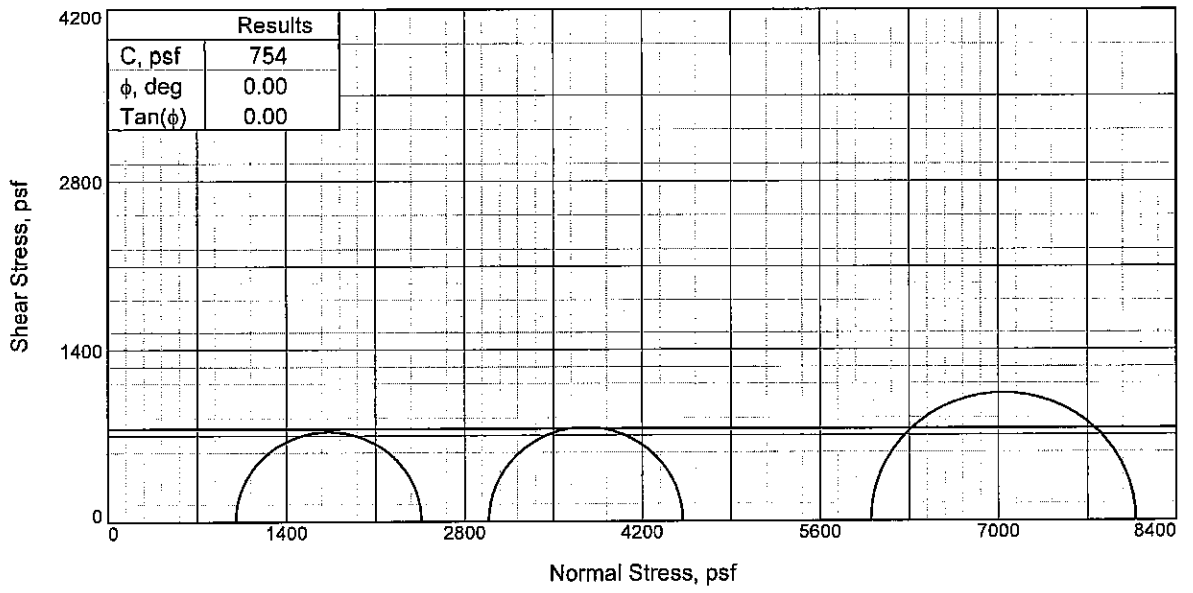
Client: U.S. ARMY CORPS OF ENGINEERS

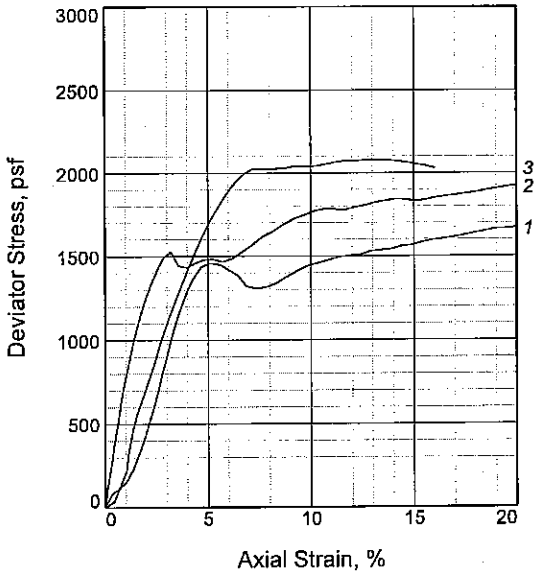
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 77.70'
Sample Number: 21C

UNCONFINED COMPRESSION TEST

FFEBJV, LLC.

Tested By: AH **Checked By:** AMV





Sample No.		1	2	3
Initial	Water Content, %	26.3	35.8	30.7
	Dry Density, pcf	84.4	84.3	85.6
	Saturation, %	71.3	97.1	85.9
	Void Ratio	0.9908	0.9930	0.9611
	Diameter, in.	1.32	1.31	1.32
	Height, in.	3.00	3.05	3.00
At Test	Water Content, %	32.8	35.4	31.7
	Dry Density, pcf	84.4	84.3	85.6
	Saturation, %	89.2	95.8	88.9
	Void Ratio	0.9908	0.9930	0.9611
	Diameter, in.	1.32	1.31	1.32
	Height, in.	3.00	3.05	3.00
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.97	20.78	41.66
Fail. Stress, psf		1458	1528	2081
Strain, %		5.1	3.2	12.7
Ult. Stress, psf		1412	1432	2081
Strain, %				
σ_1 Failure, psf		2462	4519	8080
σ_3 Failure, psf		1004	2992	5999

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: GR SM1 W/ ARS CH

LL= 28 **PL=** 23 **PI=** 5
Assumed Specific Gravity= 2.69
Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318".

Figure _____

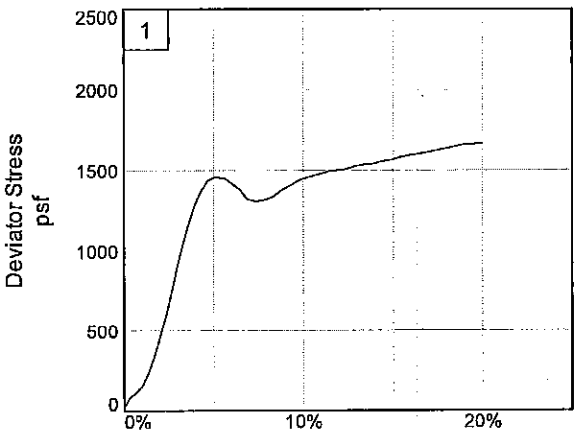
Client: U.S. ARMY CORPS OF ENGINEERS

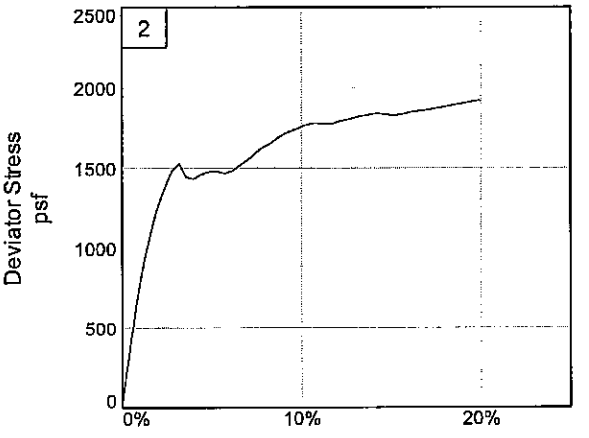
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 80.80'
Sample Number: 22B
Proj. No.: 0022-0002 **Date Sampled:** 5/31/07

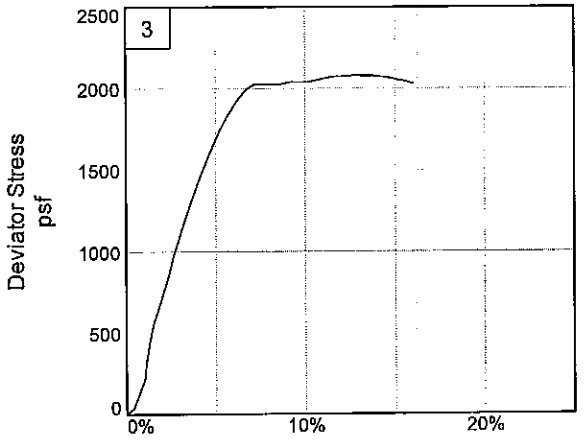
TRIAXIAL SHEAR TEST REPORT

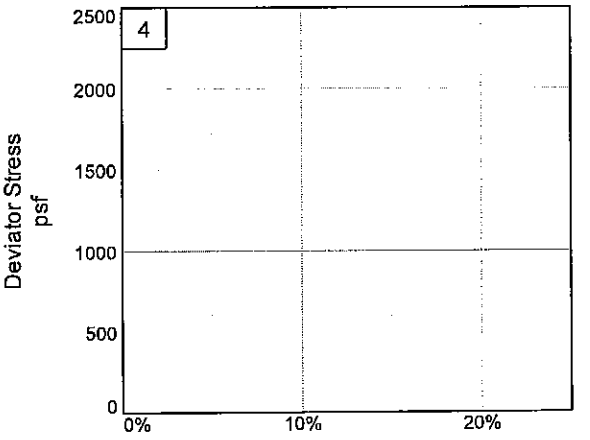
FFEBJV, LLC.

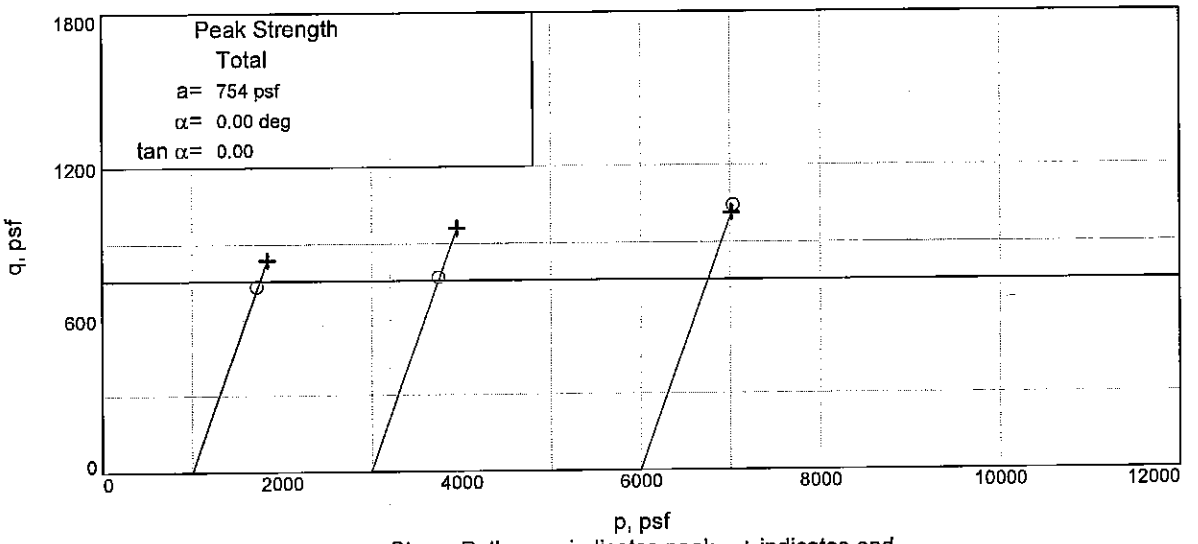
Tested By: AH **Checked By:** RT









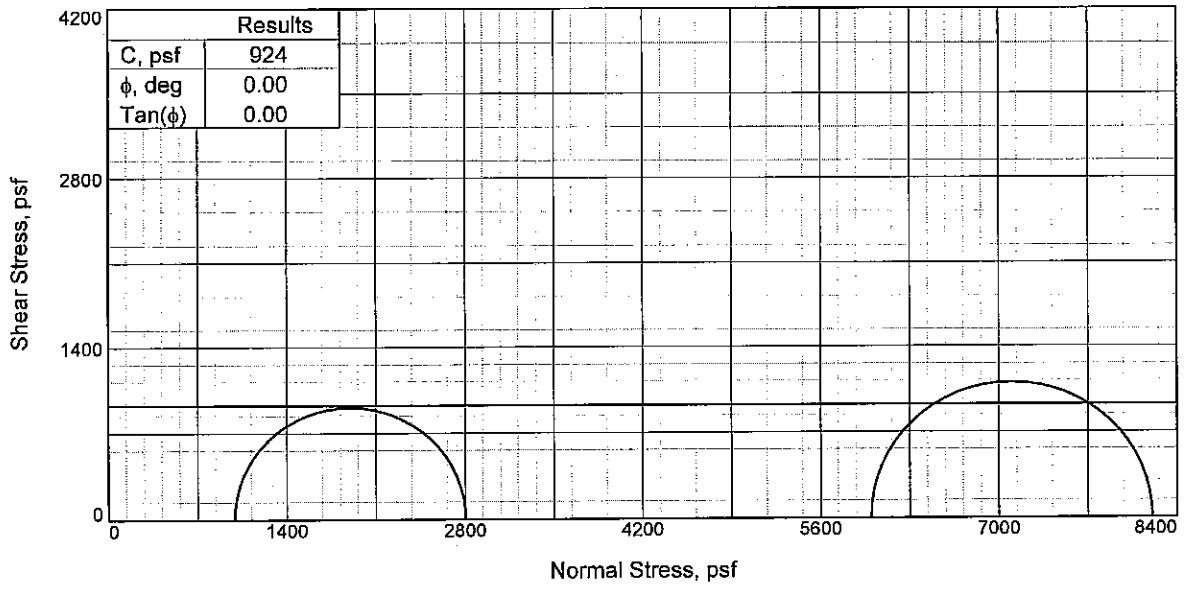


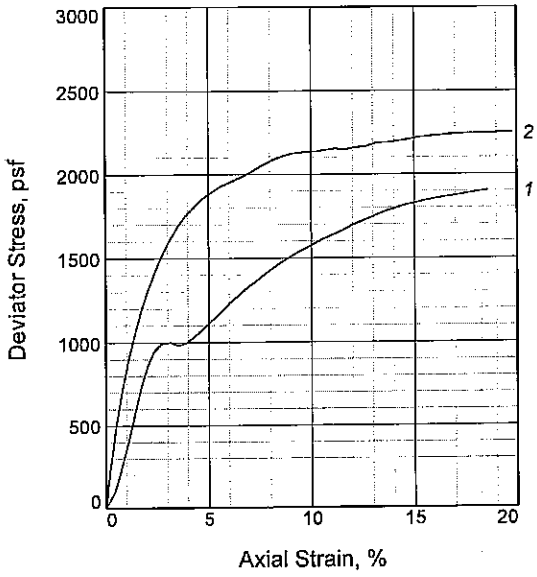
Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-56UCL **Depth:** 80.80' **Sample Number:** 22B
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: AH **Checked By:** RT





Sample No.		1	2
Initial	Water Content, %	32.8	34.1
	Dry Density, pcf	86.0	78.4
	Saturation, %	92.8	80.4
	Void Ratio	0.9520	1.1415
	Diameter, in.	1.32	1.36
	Height, in.	3.00	3.00
At Test	Water Content, %	32.1	33.6
	Dry Density, pcf	86.0	78.4
	Saturation, %	90.7	79.2
	Void Ratio	0.9520	1.1415
	Diameter, in.	1.32	1.36
	Height, in.	3.00	3.00
Strain rate, %/min.		1.00	1.00
Back Pressure, psi		0.00	0.00
Cell Pressure, psi		6.89	41.64
Fail. Stress, psf		1813	2209
Strain, %		14.5	14.7
Ult. Stress, psf		1813	2209
Strain, %			
σ_1 Failure, psf		2805	8206
σ_3 Failure, psf		992	5997

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL4-S W/ LYS & LNS SM

LL= 32 **PL=** 22 **PI=** 10
Assumed Specific Gravity= 2.69
Remarks: Other test were conducted in general accordance with ASTMs D422, D854, D2216, D2487, and D4318". Sample too sandy to trim third point.
Figure _____

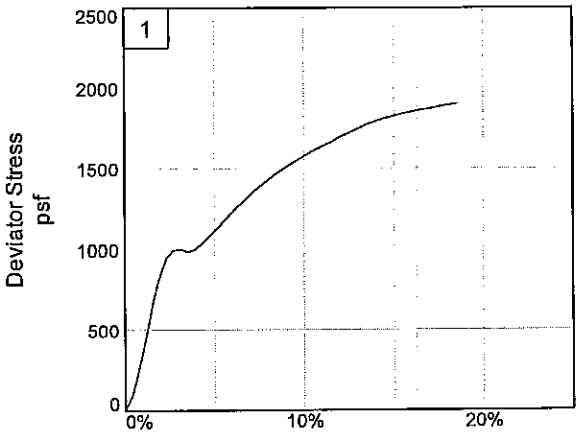
Client: U.S. ARMY CORPS OF ENGINEERS

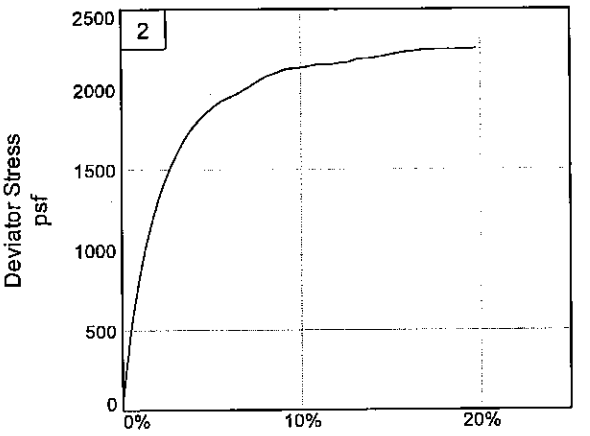
Project: WESTBANK 100 YEAR BORING PROGRAM
USACE TASK ORDER NO. 2
Source of Sample: WWHC-56UCL **Depth:** 89.70'
Sample Number: 24C
Proj. No.: 0022-0002 **Date Sampled:** 5/31/07

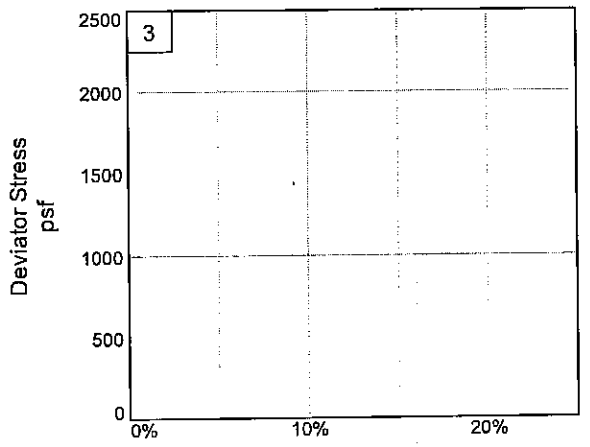
TRIAXIAL SHEAR TEST REPORT

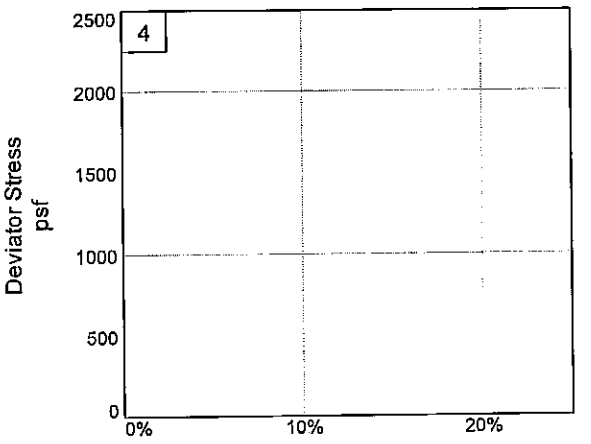
FFEBJV, LLC.

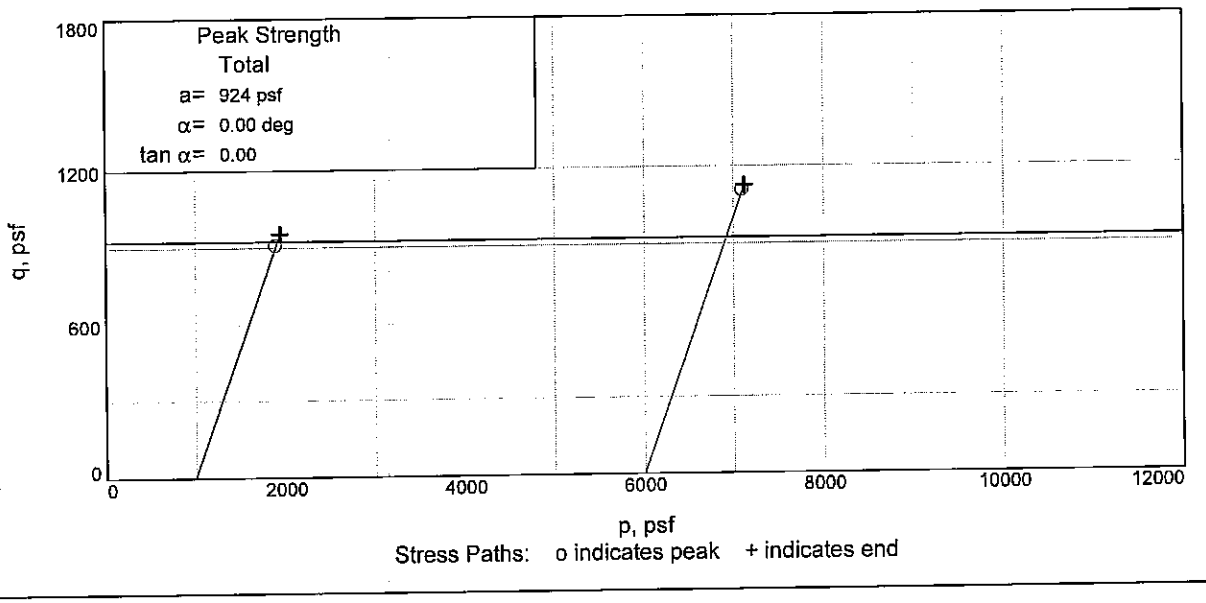
Tested By: AH **Checked By:** RT











Stress Paths: o indicates peak + indicates end

Client: U.S. ARMY CORPS OF ENGINEERS
Project: WESTBANK 100 YEAR BORING PROGRAM
Source of Sample: WWHC-56UCL **Depth:** 89.70' **Sample Number:** 24C
Project No.: 0022-0002 **Figure** _____

FFEBJV, LLC.

Tested By: AH **Checked By:** RT

Bor. WWHC-56UCL
STA. N 29^48'29.65" W 090^07'0.12"

31 March - 3 April 2007

GROUND EL. 15

0.0	0.8	17		CL	SISVSTBR	T	RT							
0.8	2.0	23	2.0	CL	SISVSTBR	T	RT							
2.0	4.0	28		CL	ST GR	T	RT							
4.0	4.8	35	4.8	CL	M GR	T	WD							
4.8	5.7	31	5.7	CH	M GR	T	TR- O	551116	60	23	32	51		
5.7	8.0		8.0	NS										
8.0	8.8	31		CH	M GR	T								
8.8	9.7	43	9.7	CH	M GR	T	CC							
9.7	12.0	36	12.0	CL	M GR	T	SIFTR- O							
12.0	12.8	39	12.8	CH	M GR		RT							
12.8	13.7	29		CH	SISVSTGR		TR- O							
13.7	16.0	33		CH	SISST GR	T	RT							
16.0	16.8	33	16.8	CH	SISST GR	T								
16.8	17.7	30	17.7	CH	ST GR	T	TR- O							
17.7	20.0	31	20.0	CL	SISST GR	T	TR- O	1133121	47	26	30	180		
20.0	20.8	35	20.8	CL	M GR	T								
20.8	21.7	33	21.7	CH	SIS M GR	T	TR- O							
21.7	22.6	32	22.6	CL	M GR	T	TR- O							
22.6	24.0	31	24.0	ML	T		CS CC							
24.0	24.8	42	24.8	CH	SIS M GR									
24.8	25.7	46		ML	GR		CS							
25.7	26.6	32	26.6	ML	GR		CS							
26.6	28.0	36	28.0	CH	SIS M GR									
28.0	28.8	33		ML	GR									
28.8	29.7	33	29.7	ML	GR		CS							
29.7	30.6	38	30.6	CL	SIS M GR									
30.6	32.0	43		CH	SIS M GR									
32.0	32.8	37		CH	SIS M GR									
32.8	33.7	46	33.7	CH	SIS M GR									
33.7	34.6	36		ML	GR		CS							
34.6	36.0	34	36.0	ML	GR									
36.0	36.8	44		CH	SIS M GR									
36.8	37.7	38		CH	SIS M GR									
37.7	38.6	48		CH	SIS M GR									
38.6	40.0	38	40.0	CH	SIS M GR									
40.0	40.8	31		ML	GR									

40.8 41.7 34 41.7ML GR CS
41.7 44.0 37 CL SIS M GR 555115 36 33 37 420
44.0 44.8 38 44.8CL SIS M GR
44.8 45.7 35 CL M GR CS S
45.7 46.6 33 CL M GR S 627118 30 22 33 458
46.6 48.0 35 48.0CL M GR
48.0 48.8 49 CH SIS M GR
48.8 49.7 48 CH SIS M GR
49.7 50.6 49 CH SIS M GR
50.6 52.0 38 CH SIS M GR
52.0 52.8 49 CH SIS M GR
52.8 53.7 43 CH SIS M GR
53.7 54.6 40 CH SIS M GR 752109 71 24 49 540
54.6 56.0 45 CH SIS M GR
56.0 56.8 47 56.8CH SIS M GR
56.8 57.7 40 57.7CH SS M GR
57.7 58.6 40 CH SIS M GR 587104 64 28 46 580
58.6 60.0 33 60.0CH SIS M GR
60.0 60.8 34 60.8ML GR CS
60.8 61.7 38 CH SISSO GR
61.7 64.0 35 CH SISSO GR 386112 63 27 44 620
64.0 64.8 41 64.8CH SISSO GR
64.8 65.7 35 65.7ML GR CS
65.7 66.6 35 CL M GR CS
66.6 68.0 29 CL SO GR CS
68.0 68.8 28 CL SO GR
68.8 69.7 29 69.7CL SO GR CS
69.7 70.6 28 70.6CL SISSO GR T S 417123 30 25 28 700
70.6 72.0 29 ML GR
72.0 72.8 28 ML GR CS
72.8 73.7 28 ML GR CS 665117 27 731
73.7 76.0 21 76.0ML GR CS
76.0 76.8 30 76.8CL SIS M GR
76.8 77.7 32 77.7CL SS M GR
77.7 78.6 33 78.6CL SIS M GR S 785118 40 32 33 780
78.6 80.0 40 80.0CH SISVSTGR
80.0 80.8 37 80.8CH SS M GR
80.8 81.7 36 81.7SM GR CS
81.7 84.0 26 84.0SP GR CS
84.0 84.8 33 84.8CH SS ST GR
84.8 85.7 29 CH M GR S
85.7 88.0 30 88.0CH M GR S
88.0 88.8 32 88.8SM GR CS

88.8 89.7 33 89.7CL SIS M GR S
89.7 90.6 33 90.6CL SS M GR
90.6 92.0 38 92.0CH ST GR S SIF
999.9

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 10.00/5.00 Water Con: 33.00
LL,PL,PI : 43, 24, 19 Dry Dens : 89.00
Cohesion : 0.494 Saturat : 99.40
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 14.00/1.00 Water Con: 35.00
LL,PL,PI : 75, 23, 52 Dry Dens : 84.00
Cohesion : 0.759 Saturat : 92.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 22.00/-7.00 Water Con: 35.00
LL,PL,PI : 39, 24, 15 Dry Dens : 81.00
Cohesion : 0.312 Saturat : 86.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 30.00/-15.00 Water Con: 38.00
LL,PL,PI : 48, 34, 14 Dry Dens : 76.30
Cohesion : 0.309 Saturat : 99.70
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH

Depth/Ele: 33.10/-18.10 Water Con: 50.00
LL,PL,PI : 63, 25, 38 Dry Dens : 72.00
Cohesion : 0.374 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 38.00/-23.00 Water Con: 45.00
LL,PL,PI : 58, 24, 34 Dry Dens : 75.00
Cohesion : 0.384 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CH
Depth/Ele: 50.00/-35.00 Water Con: 75.00
LL,PL,PI : 88, 24, 64 Dry Dens : 56.00
Cohesion : 0.387 Saturat : 99.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 66.00/-51.00 Water Con: 43.00
LL,PL,PI : 42, 29, 13 Dry Dens : 72.00
Cohesion : 0.306 Saturat : 86.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : SM
Depth/Ele: 81.10/-66.10 Water Con: 31.00
LL,PL,PI : 28, 23, 5 Dry Dens : 85.00
Cohesion : 0.377 Saturat : 85.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif : CL
Depth/Ele: 90.00/-75.00 Water Con: 33.00
LL,PL,PI : 32, 22, 10 Dry Dens : 82.00
Cohesion : 0.462 Saturat : 87.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SUMMARY OF LABORATORY TEST RESULTS

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2 **Assigned By:** _____

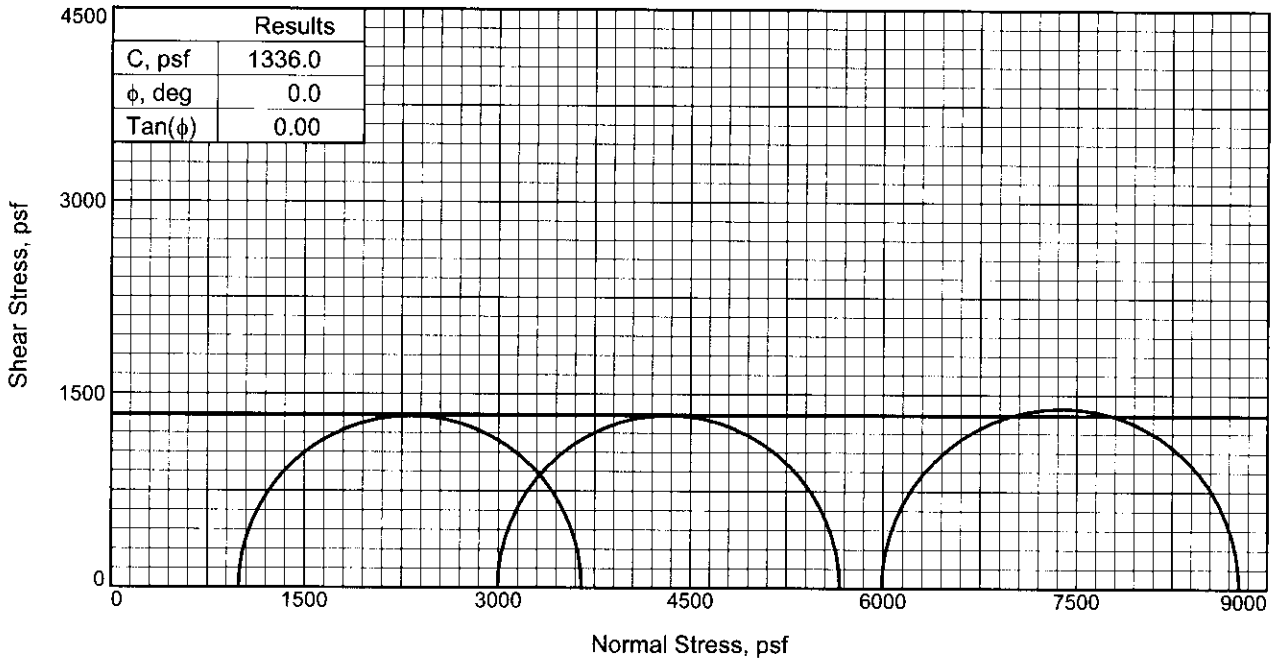
Project Number: 19667
Boring: WWHC-56UFT

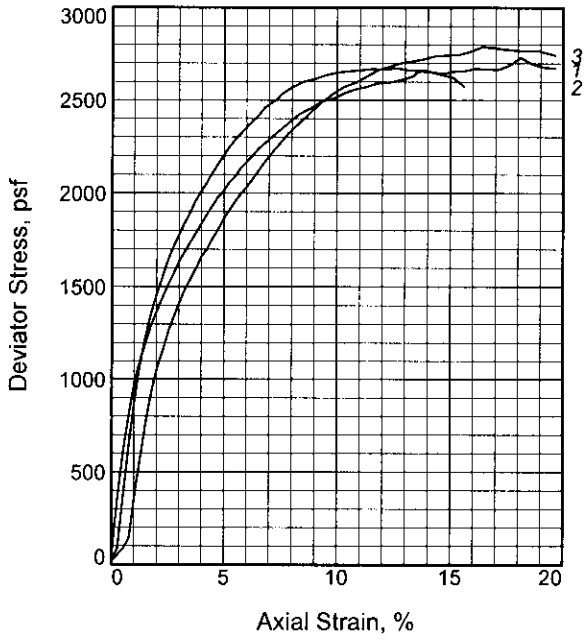
Current Date: 5/28/2007

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	TORVANE (tsf)	Other Tests
1BA	2.8	ST LGR, T, & GR CH2 W/ RT	CH2		29	92	119	95	UU	0	1336		57	19	38	0.775	
2C	5.7	M LGR & T CL6-S W/ RT	CL6-S		32	88	117	96	UU	0	833		48	20	28	0.350	
3B	8.8	M T & LGR CH2 W/ RT	CH2		39	79	110	94	UU	0	749		53	24	29	0.500	
4B	12.8	M GR CL6-S W/ LYS CH, RT	CL6-S		37	82	113	96	UU	0	554		46	23	23	0.300	
5C	17.7	SO GR CL4 W/ LYS CH	CL4	19	38	81	112	96	UC	--	381	762	37	20	17	0.220	
6C	21.7	SO GR CL4	CL4		36	83	113	96	UU	0	485		37	22	15	0.210	
7C	25.7	M GR CH2 W/ LNS SM, SL	CH2		43	77	110	97	UU	0	766		55	21	34	0.320	
8C	29.7	SO GR CL4	CL4	8	31	88	115	93	UC	--	446	892	31	21	10	0.130	
9C	33.7	M GR CH3 W/ ARS & LNS SM	CH3		50	70	106	96	UU	0	767		71	23	48	0.300	
10B	36.8	M GR CL4	CL4		36	82	112	94	UU	0	646		40	25	15	0.300	
11C	41.7	M GR CL6	CL6	6	38	82	113	96	UC	--	704	1408	42	24	18	0.300	
12C	45.7	M GR CL4-S	CL4-S	6	30	90	117	92	UC	--	558	1115	32	20	12	0.230	
13C	49.7	SO GR & T CL4-S	CL4-S	3	33	86	115	94	UC	--	424	849	34	24	10	0.320	
14C	53.7	M GR CH3 W/ ARS & LYS SM	CH3		40	79	110	94	UU	0	584		60	27	33	0.340	
15B	56.8	M GR CH2	CH2	3	37	83	114	97	UC	--	881	1761	58	25	33	0.300	
16C	61.7	M GR CL4-S	CL4-S	6	29	91	117	92	UC	--	683	1365	30	20	10	0.150	
17C	65.7	M GR CL4-S	CL4-S	4	27	93	119	93	UC	--	541	1081	29	19	10	0.160	
18C	69.7	M GR CH4 W/ ARS & LNS SM, SL	CH4	2	46	74	108	97	UC	--	524	1047	85	33	52	0.460	

Remarks: _____
FFEB JV

Checked by: _____
File Name: 19667





Specimen No.		1	2	3
Initial	Water Content, %	29.0	30.2	28.3
	Dry Density, pcf	92.2	90.9	92.8
	Saturation, %	95.2	95.9	94.2
	Void Ratio	0.8205	0.8484	0.8091
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	29.0	30.2	28.3
	Dry Density, pcf	92.2	90.9	92.8
	Saturation, %	95.2	95.9	94.2
	Void Ratio	0.8205	0.8484	0.8091
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.029	0.029
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		2655.4	2668.9	2788.4
Strain, %		13.6	11.6	16.4
Ult. Stress, psf		2673.7	2574.5	2743.7
Strain, %				
σ_1 Failure, psf		3649.0	5664.1	8778.8
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST LGR, T, & GR CH2 W/ RT

LL= 57 **PL=** 19 **PI=** 38
Assumed Specific Gravity= 2.69
Remarks: TORVANE = 0.775 TSF

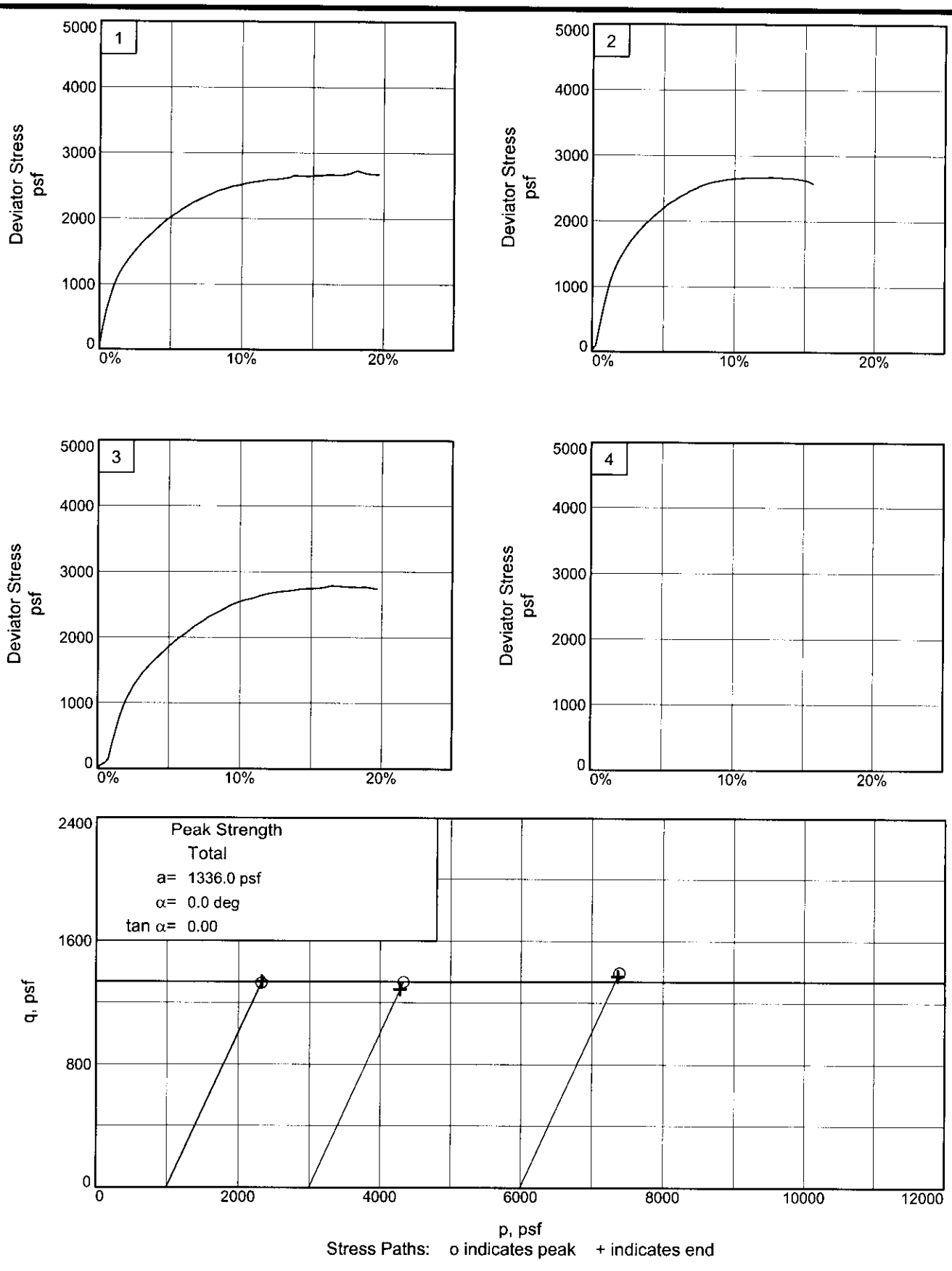
Figure 1

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-56UFT **Depth:** 2.8
Sample Number: 1BA
Proj. No.: 19667 **Date Sampled:** 5/16/07

TRIAXIAL SHEAR TEST REPORT

FFEB JV



Client: U.S.A.C.E - NEW ORLEANS DISTRICT

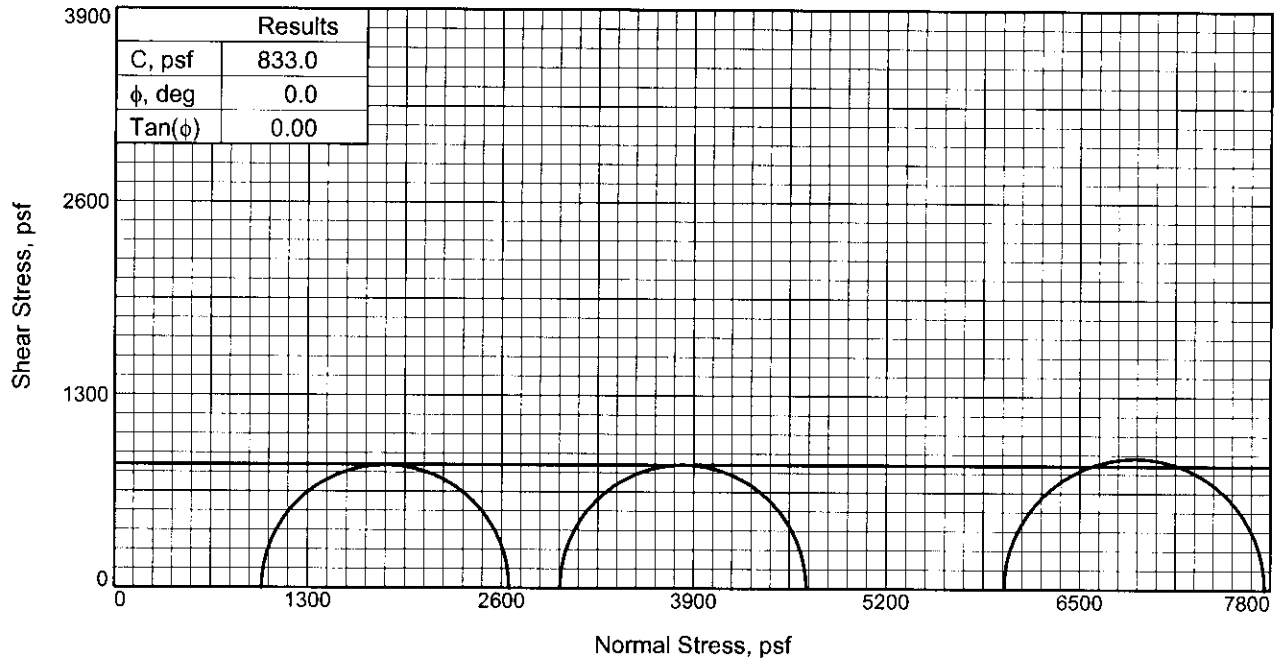
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

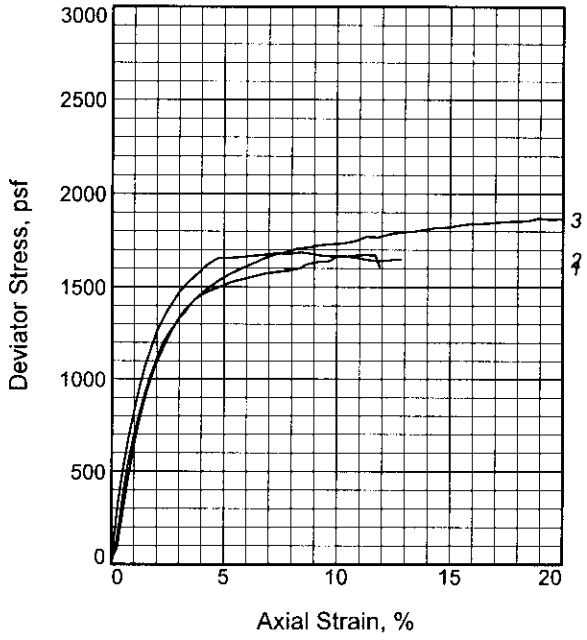
Source of Sample: WWHC-56UFT **Depth:** 2.8 **Sample Number:** 1BA

Project No.: 19667

Figure 2

FFEB JV





Specimen No.		1	2	3
Initial	Water Content, %	32.6	32.0	32.4
	Dry Density, pcf	87.7	88.5	87.9
	Saturation, %	95.9	95.9	95.8
	Void Ratio	0.9145	0.8981	0.9102
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	32.6	32.0	32.4
	Dry Density, pcf	87.7	88.5	87.9
	Saturation, %	95.9	95.9	95.8
	Void Ratio	0.9145	0.8981	0.9102
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.030	0.029
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		1657.0	1667.1	1770.5
Strain, %		4.8	10.3	11.3
Ult. Stress, psf		1607.1	1648.9	1864.5
Strain, %				
σ_1 Failure, psf		2650.6	4662.3	7760.9
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M LGR & T CL6-S W/ RT

LL= 48 **PL=** 20 **PI=** 28

Assumed Specific Gravity= 2.69

Remarks: TORVANE = 0.350 TSF

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

Source of Sample: WWHC-56UFT **Depth:** 5.7

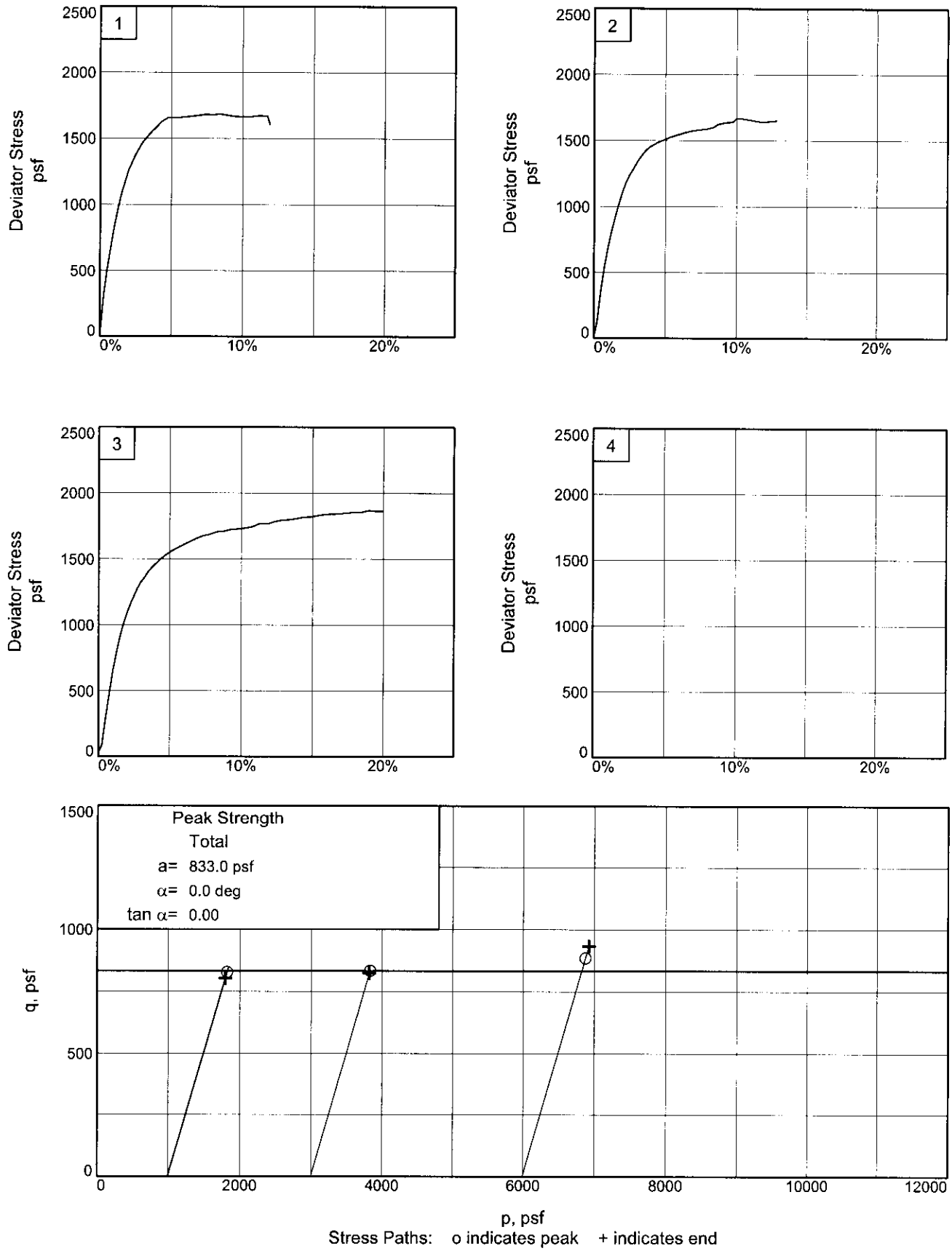
Sample Number: 2C

Proj. No.: 19667 **Date Sampled:** 5/16/07

TRIAXIAL SHEAR TEST REPORT

FFEB JV

Figure 1



Client: U.S.A.C.E - NEW ORLEANS DISTRICT

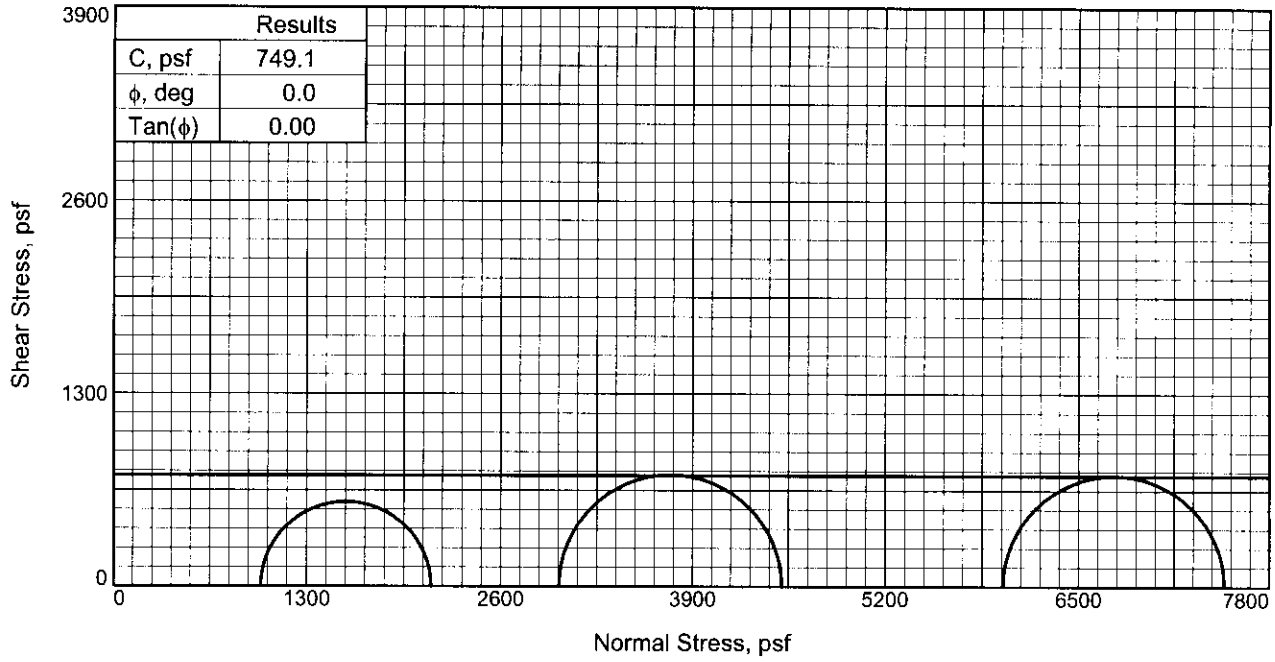
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

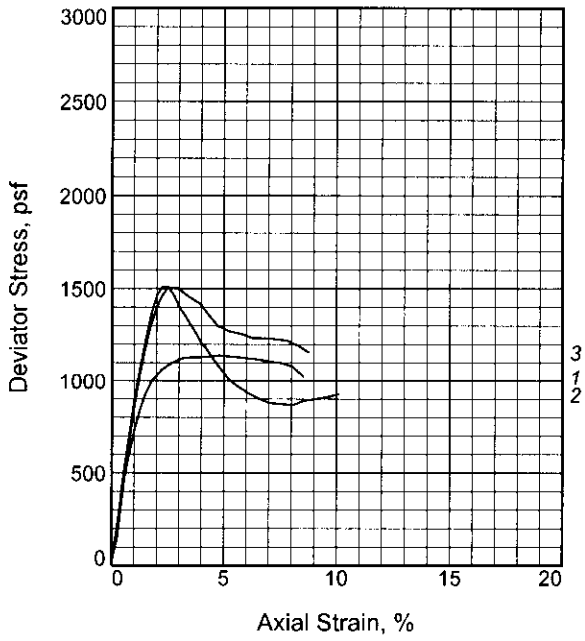
Source of Sample: WWHC-56UFT **Depth:** 5.7 **Sample Number:** 2C

Project No.: 19667

Figure 2

FFEB JV





Specimen No.		1	2	3
Initial	Water Content, %	39.0	39.3	39.3
	Dry Density, pcf	78.8	79.5	78.9
	Saturation, %	92.7	95.1	93.7
	Void Ratio	1.1316	1.1125	1.1276
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	39.0	39.3	39.3
	Dry Density, pcf	78.8	79.5	78.9
	Saturation, %	92.7	95.1	93.7
	Void Ratio	1.1316	1.1125	1.1276
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.029	0.029
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		1139.1	1509.7	1502.9
Strain, %		4.8	2.3	2.7
Ult. Stress, psf		1021.6	926.0	1156.5
Strain, %				
σ_1 Failure, psf		2132.7	4504.9	7493.3
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M T & LGR CH2 W/ RT

LL= 53 **PL=** 24 **PI=** 29

Assumed Specific Gravity= 2.69

Remarks: TORVANE = 0.500 TSF

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

Source of Sample: WWHC-56UFT **Depth:** 8.8

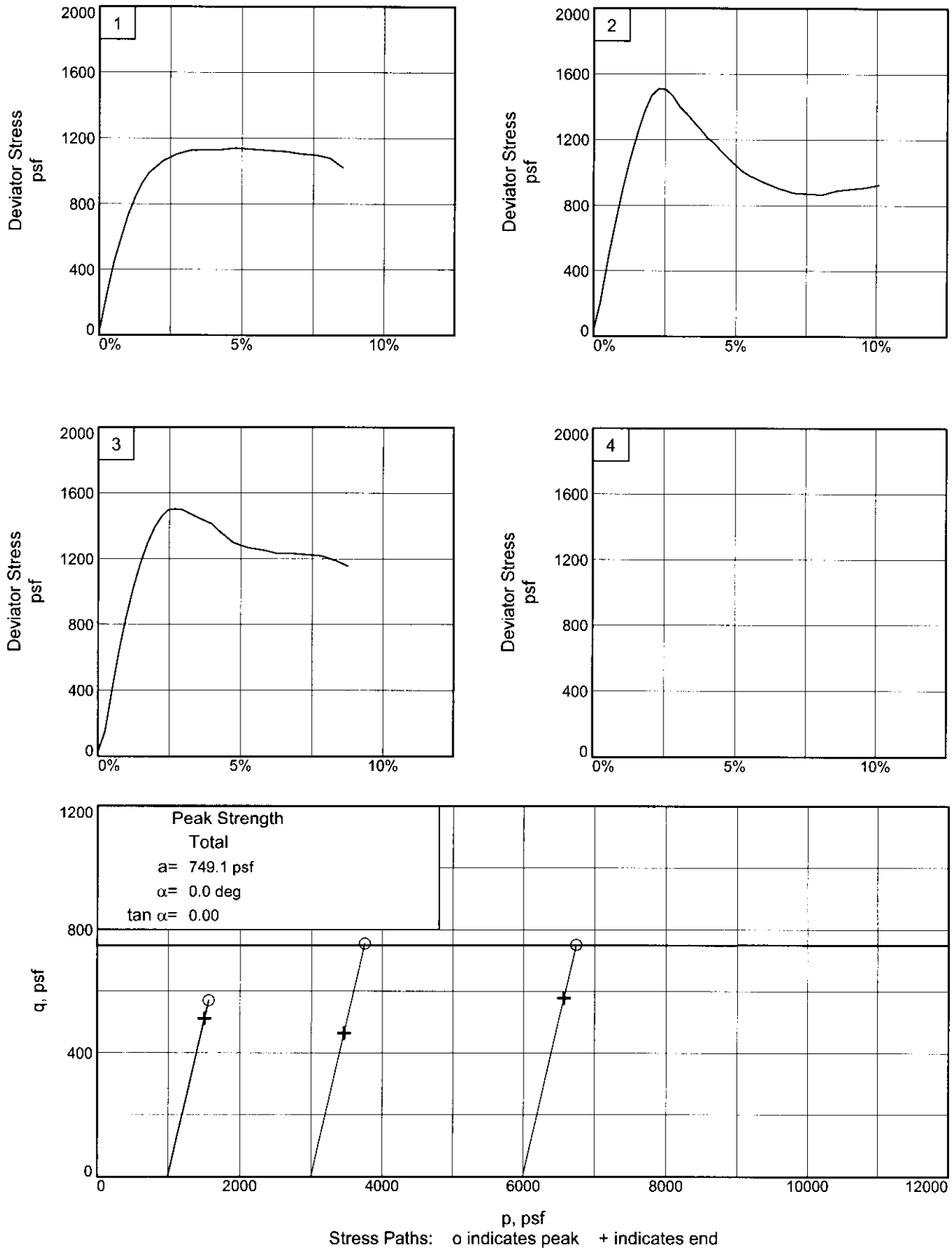
Sample Number: 3B

Proj. No.: 19667 **Date Sampled:** 5/16/07

TRIAXIAL SHEAR TEST REPORT

FFEB JV

Figure 1



Client: U.S.A.C.E - NEW ORLEANS DISTRICT

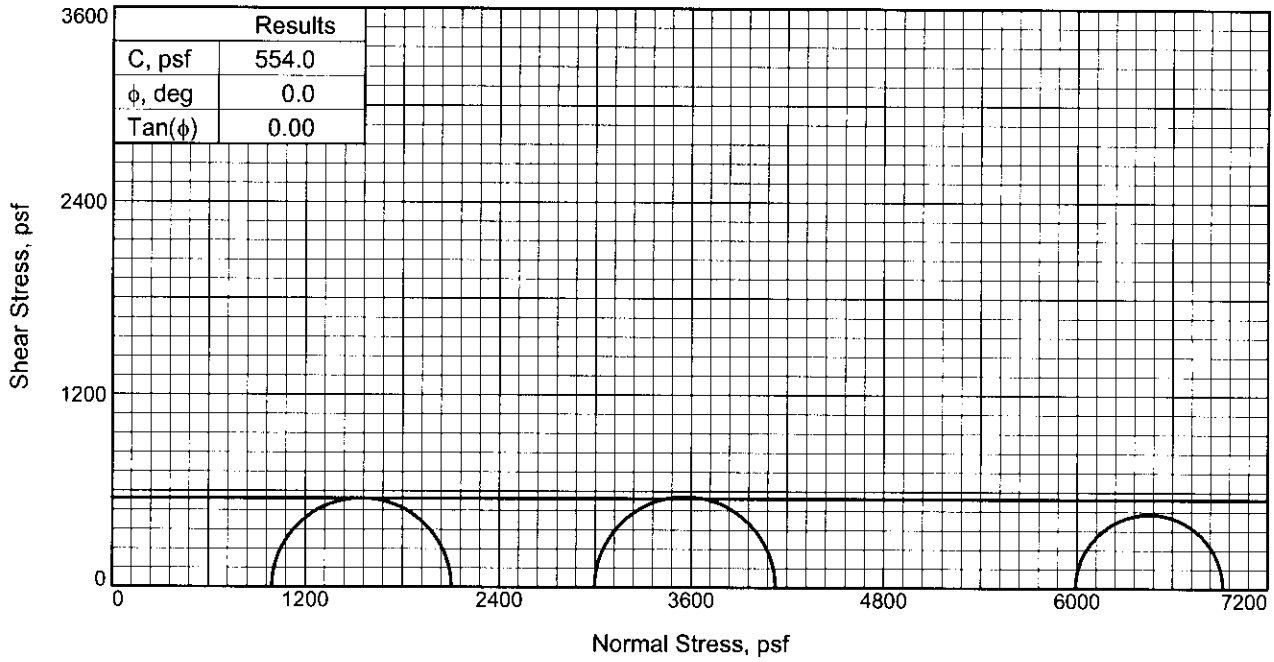
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

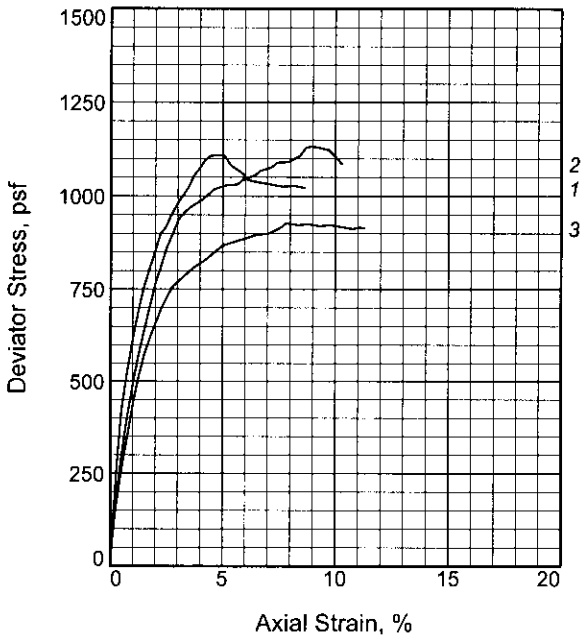
Source of Sample: WWHC-56UFT **Depth:** 8.8 **Sample Number:** 3B

Project No.: 19667

Figure 2

FFEB JV





Specimen No.		1	2	3
Initial	Water Content, %	36.9	36.9	37.5
	Dry Density, pcf	82.7	82.6	81.8
	Saturation, %	96.3	96.1	95.7
	Void Ratio	1.0310	1.0319	1.0539
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	36.9	36.9	37.5
	Dry Density, pcf	82.7	82.6	81.8
	Saturation, %	96.3	96.1	95.7
	Void Ratio	1.0310	1.0319	1.0539
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.030	0.029
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		1109.2	1132.8	927.4
Strain, %		5.1	8.9	7.8
Ult. Stress, psf		1021.2	1085.9	913.6
Strain, %				
σ_1 Failure, psf		2102.8	4128.0	6917.8
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL6-S W/ LYS CH, RT

LL= 46 **PL=** 23 **PI=** 23
Assumed Specific Gravity= 2.69
Remarks: TORVANE = 0.300 TSF

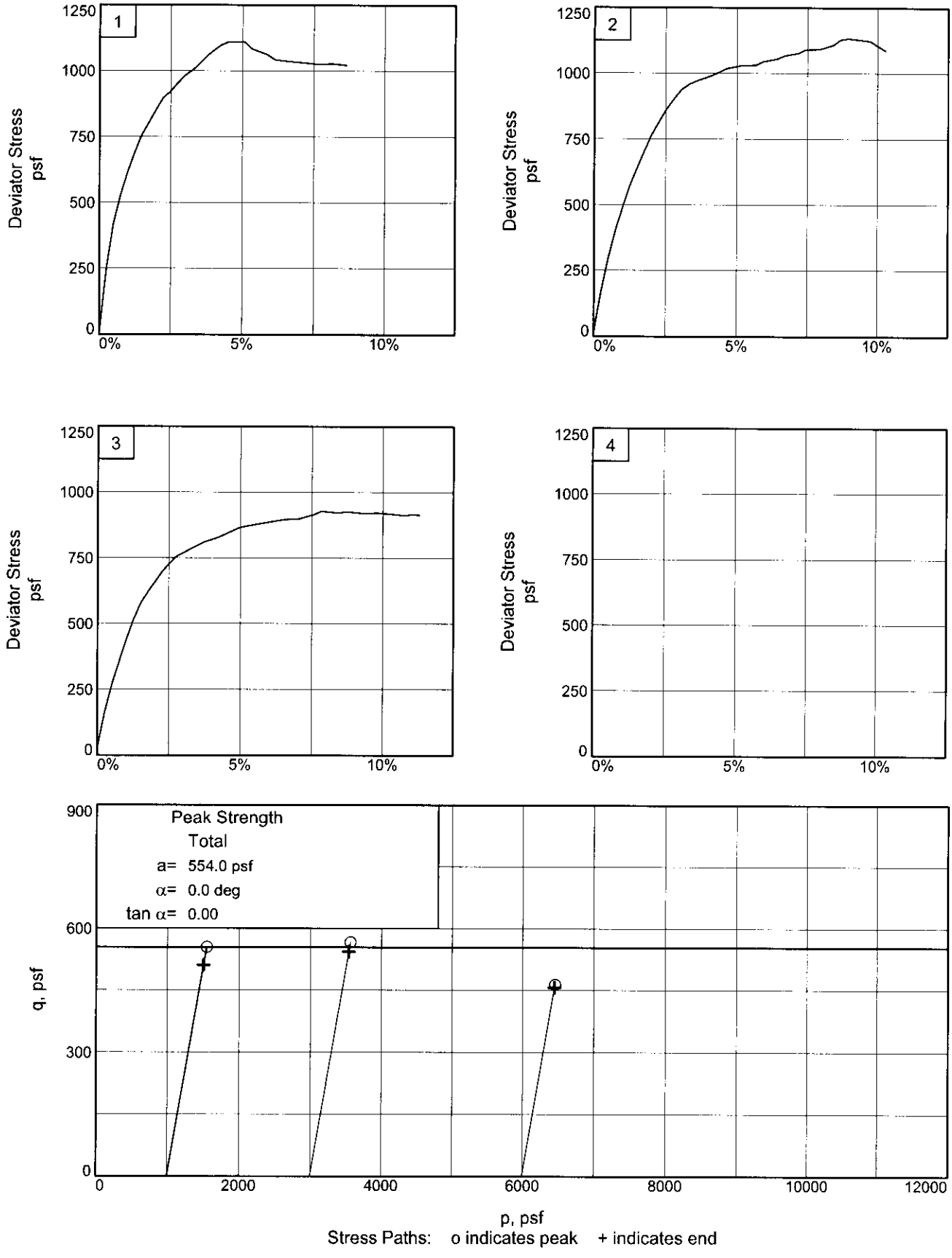
Figure 1

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-56UFT **Depth:** 12.8
Sample Number: 4B
Proj. No.: 19667 **Date Sampled:** 5/16/07

TRIAXIAL SHEAR TEST REPORT

FFEB JV



Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

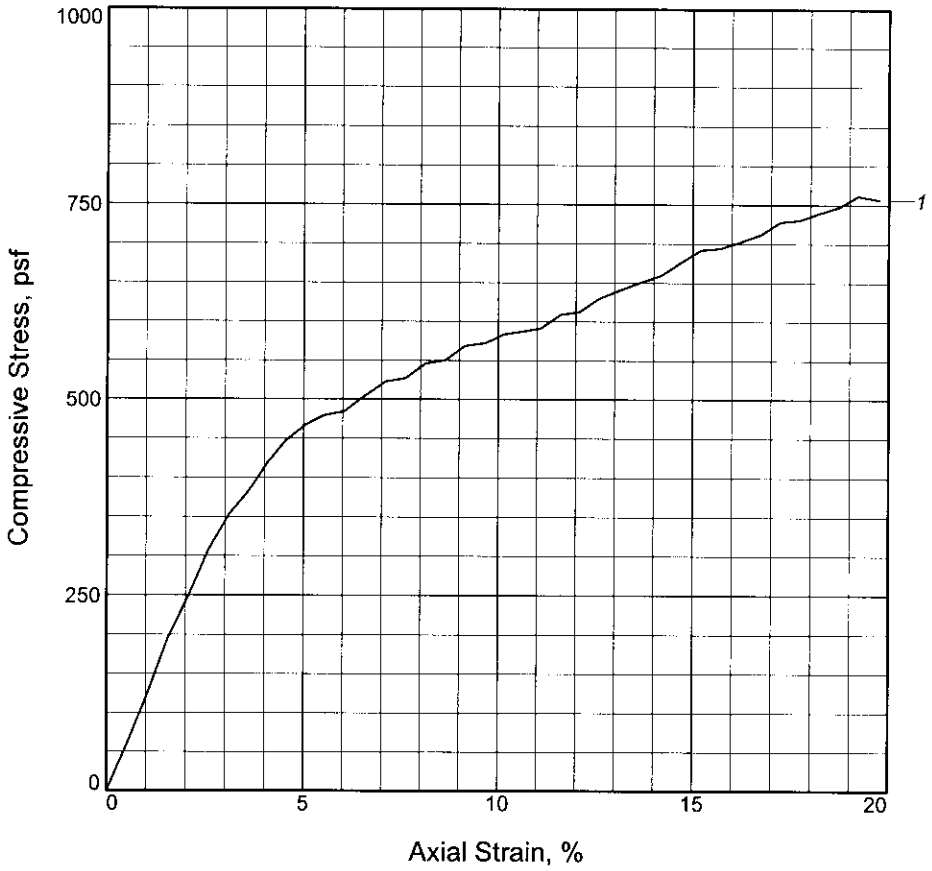
Source of Sample: WWHC-56UFT **Depth:** 12.8 **Sample Number:** 4B

Project No.: 19667

Figure 2

FFEB JV

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	761.5			
Undrained shear strength, psf	380.8			
Failure strain, %	19.2			
Strain rate, in./min.	0.000			
Water content, %	38.1			
Wet density, pcf	111.5			
Dry density, pcf	80.7			
Saturation, %	95.5			
Void ratio	1.0651			
Specimen diameter, in.	1.391			
Specimen height, in.	2.929			
Height/diameter ratio	2.11			

Description: SO GR CL4 W/ LYS CH

LL = 37	**PL** = 20	**PI** = 17	**Assumed GS=** 2.67	**Type:** UNDISTURBED

Project No.: 19667

Date Sampled: 5/16/07

Remarks:
TORVANE = 0.220 TSF

Figure 1

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

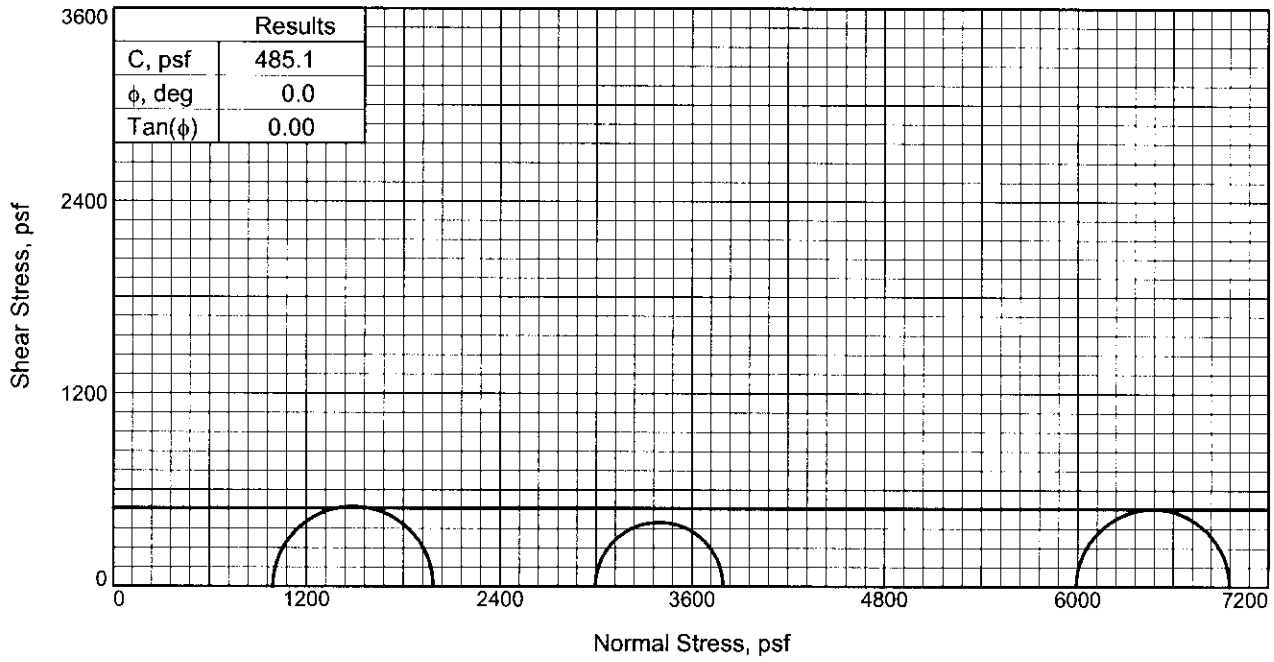
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

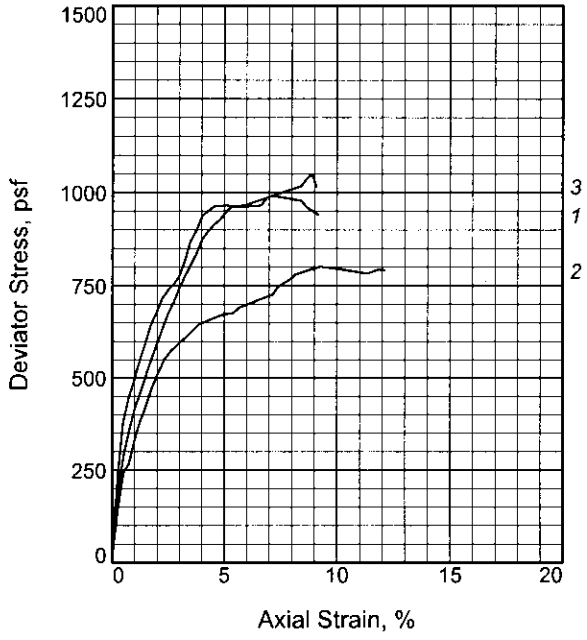
Source of Sample: WWHC-56UFT **Depth:** 17.7

Sample Number: 5C

UNCONFINED COMPRESSION TEST

FFEB JV





Specimen No.		1	2	3
Initial	Water Content, %	35.1	37.7	35.1
	Dry Density, pcf	84.2	81.5	84.4
	Saturation, %	95.6	96.5	96.2
	Void Ratio	0.9799	1.0444	0.9751
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	35.1	37.7	35.1
	Dry Density, pcf	84.2	81.5	84.4
	Saturation, %	95.6	96.5	96.2
	Void Ratio	0.9799	1.0444	0.9751
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.030	0.029
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		991.1	800.7	965.1
Strain, %		7.2	9.3	5.1
Ult. Stress, psf		939.0	790.6	1016.4
Strain, %				
σ_1 Failure, psf		1984.7	3795.9	6955.5
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: SO GR CL4

LL= 37 **PL=** 22 **PI=** 15

Assumed Specific Gravity= 2.67

Remarks: TORVANE = 0.210 TSF

Figure 1

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

Source of Sample: WWHC-56UFT **Depth:** 21.7

Sample Number: 6C

Proj. No.: 19667 **Date Sampled:** 5/16/07

TRIAXIAL SHEAR TEST REPORT

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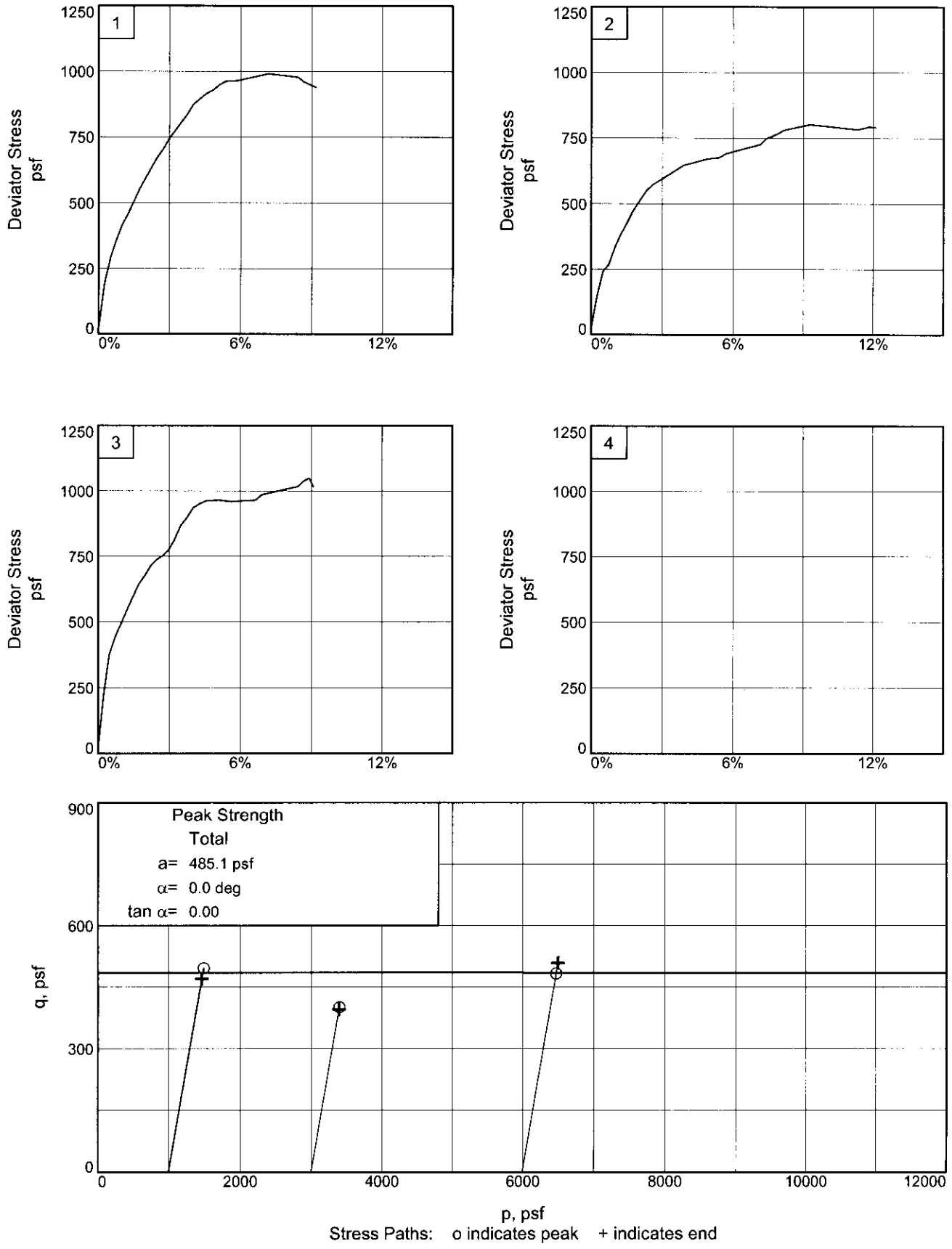


Client: U.S.A.C.E - NEW ORLEANS DISTRICT

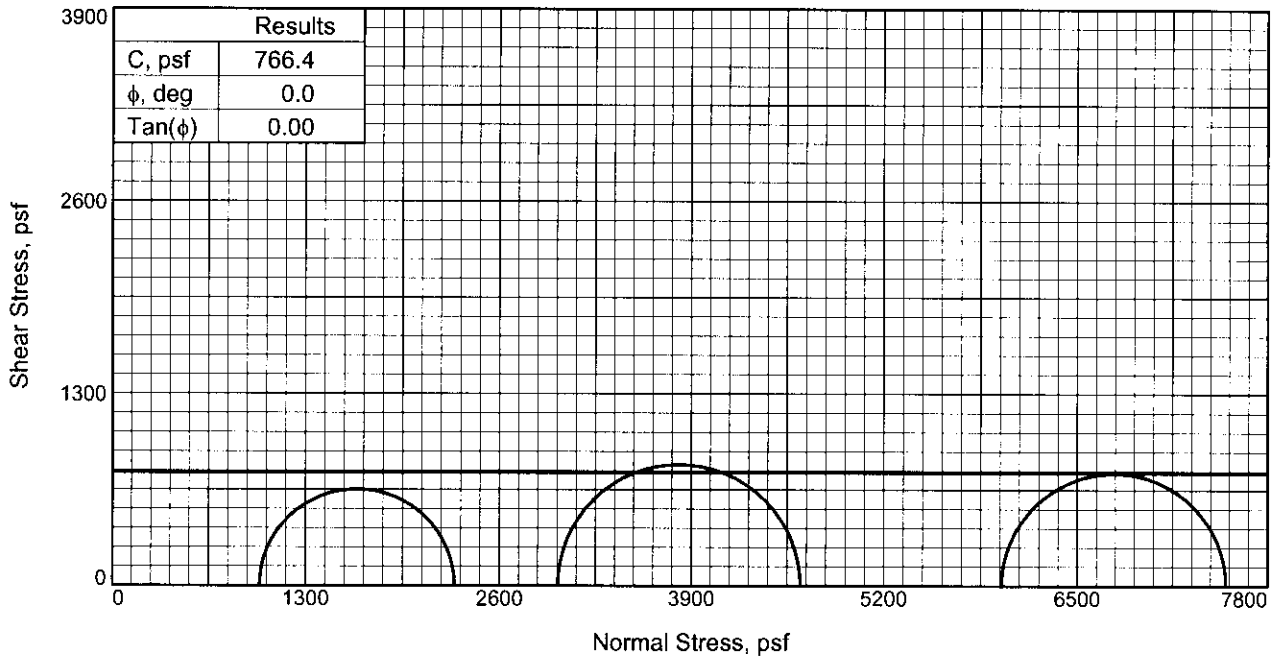
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

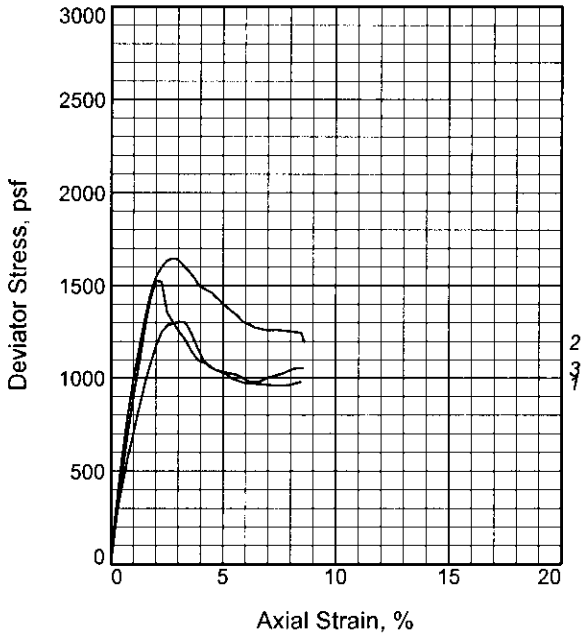
Source of Sample: WWHC-56UFT **Depth:** 21.7 **Sample Number:** 6C

Project No.: 19667

Figure 2

FFEB JV





Specimen No.		1	2	3
Initial	Water Content, %	43.4	43.1	42.7
	Dry Density, pcf	76.3	76.7	77.1
	Saturation, %	96.8	97.1	97.3
	Void Ratio	1.2100	1.1981	1.1857
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	43.4	43.1	42.7
	Dry Density, pcf	76.3	76.7	77.1
	Saturation, %	96.8	97.1	97.3
	Void Ratio	1.2100	1.1981	1.1857
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.029	0.029
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		1303.8	1643.5	1523.9
Strain, %		3.0	2.7	2.0
Ult. Stress, psf		977.3	1198.2	1053.1
Strain, %				
σ_1 Failure, psf		2297.4	4638.7	7514.3
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH2 W/ LNS SM, SL

LL= 55 **PL=** 21 **PI=** 34
Assumed Specific Gravity= 2.70
Remarks: TORVANE = 0.320 TSF

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-56UFT **Depth:** 25.7
Sample Number: 7C
Proj. No.: 19667 **Date Sampled:** 5/16/07

TRIAXIAL SHEAR TEST REPORT

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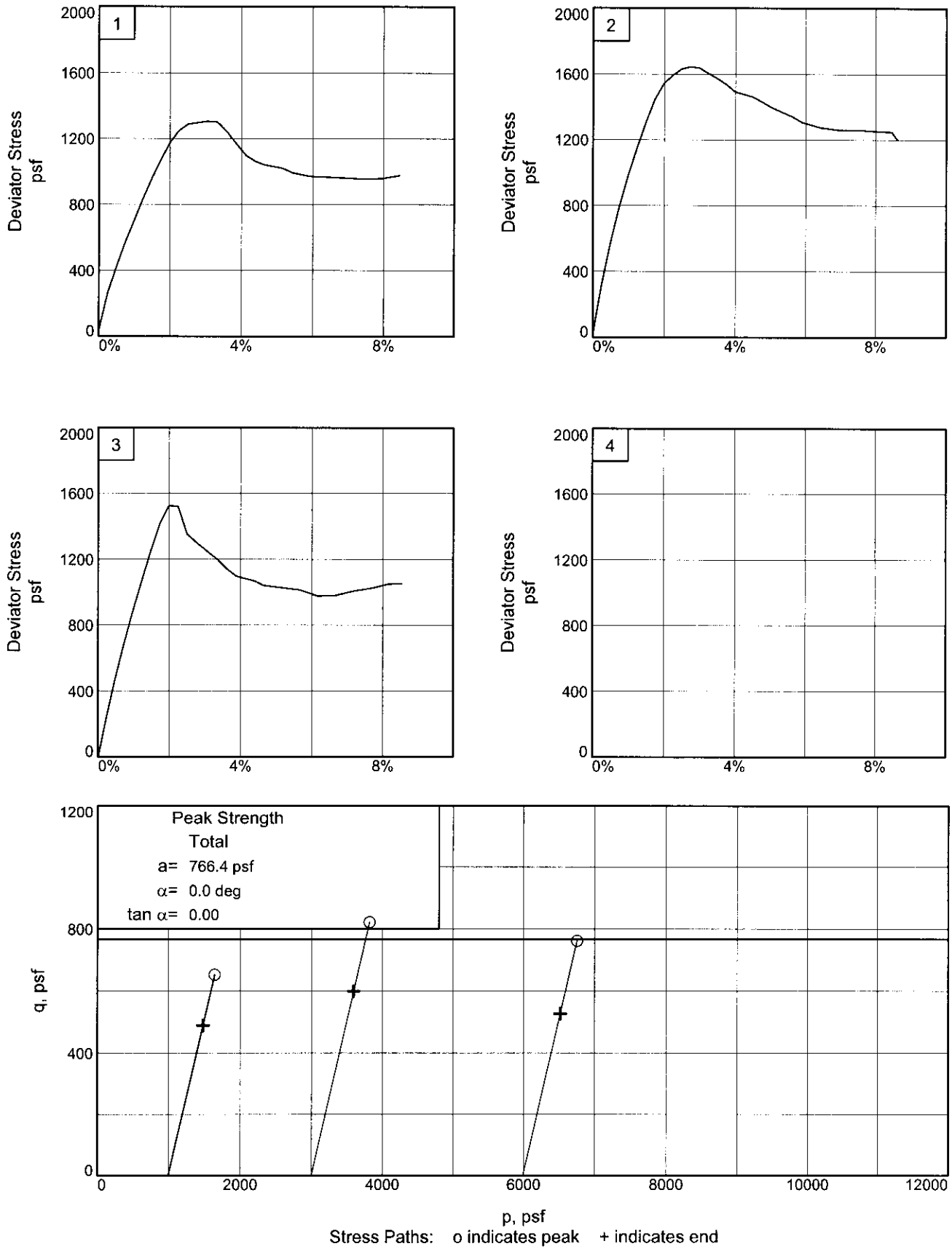
Figure 1



Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

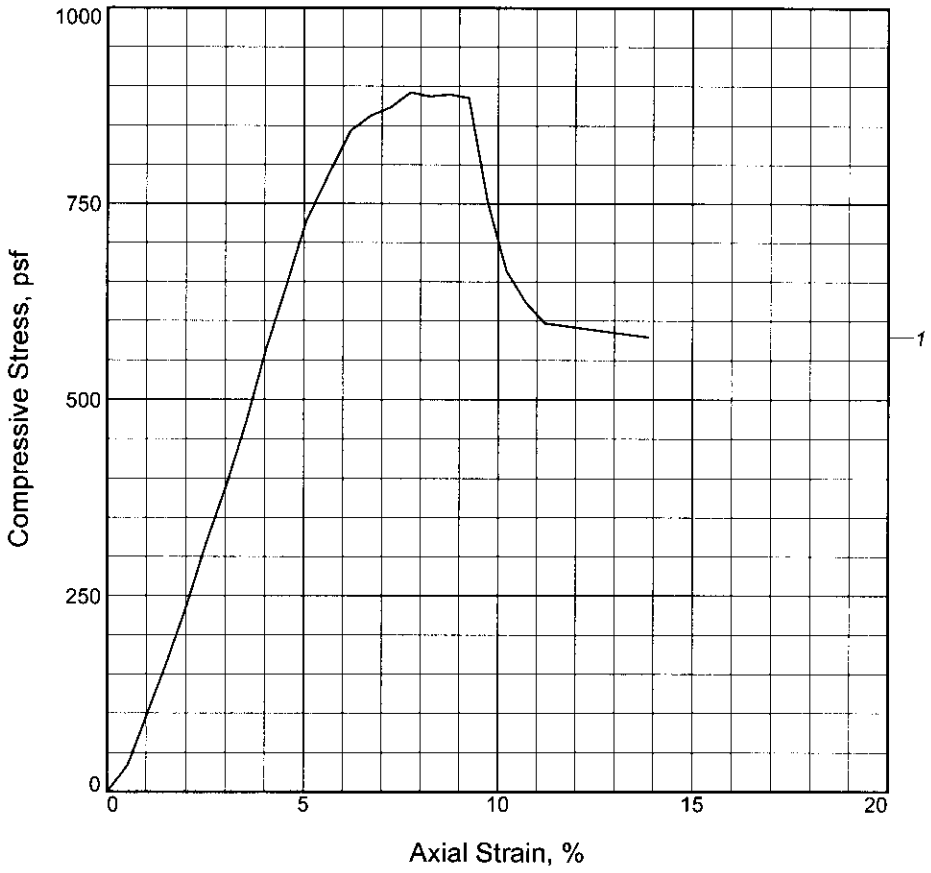
Source of Sample: WWHC-56UFT **Depth:** 25.7 **Sample Number:** 7C

Project No.: 19667

Figure 2

FFEB JV

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	891.8			
Undrained shear strength, psf	445.9			
Failure strain, %	7.7			
Strain rate, in./min.	0.058			
Water content, %	31.0			
Wet density, pcf	115.3			
Dry density, pcf	88.0			
Saturation, %	92.6			
Void ratio	0.8944			
Specimen diameter, in.	1.391			
Specimen height, in.	2.929			
Height/diameter ratio	2.11			

Description: SO GR CL4

LL = 31	**PL =** 21	**PI =** 10	**Assumed GS=** 2.67	**Type:** UNDISTURBED

Project No.: 19667
Date Sampled: 5/16/07
Remarks:
TORVANE = 0.130 TSF

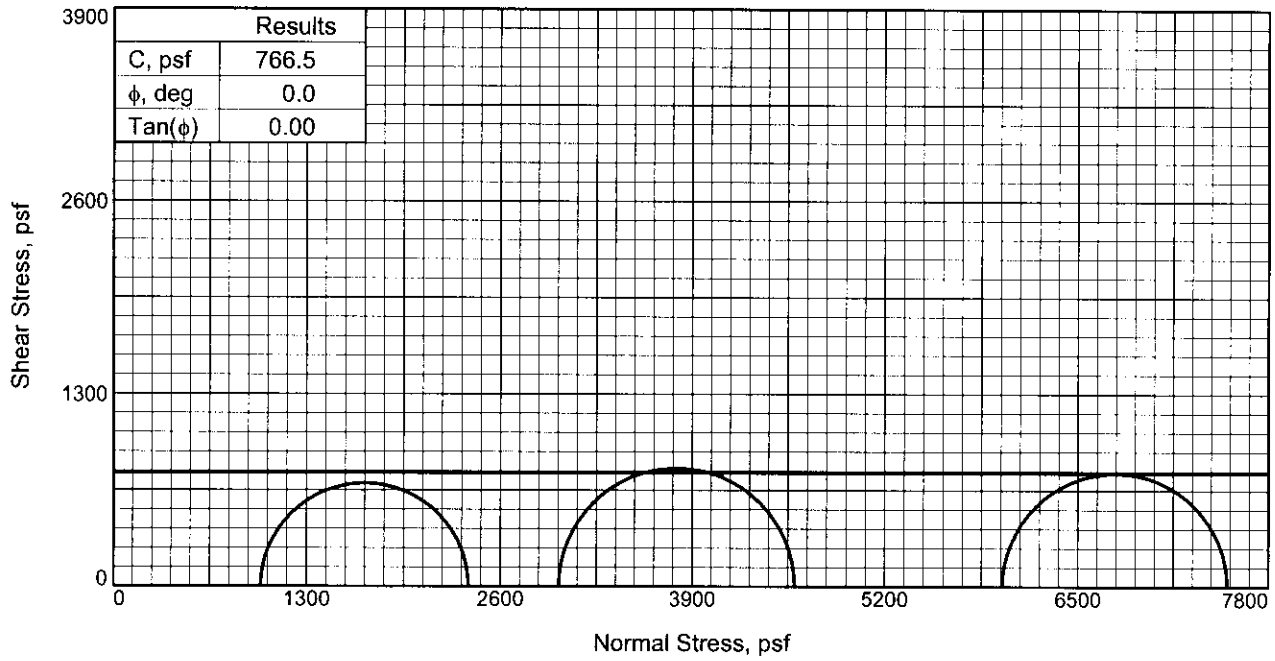
Figure 1

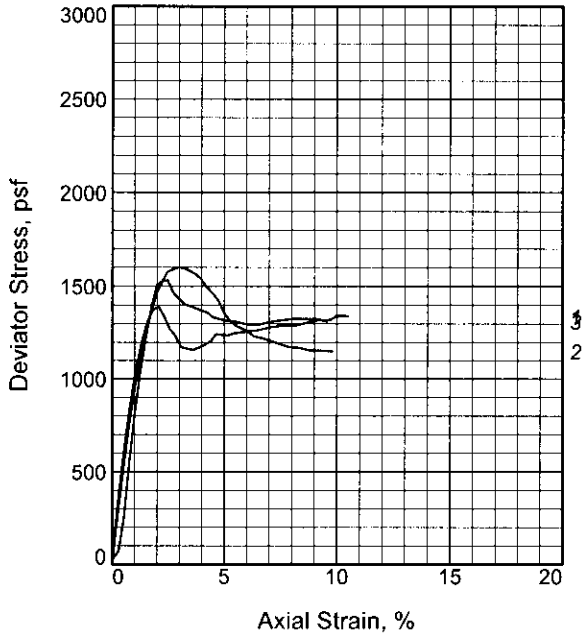
Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-56UFT **Depth:** 29.7
Sample Number: 8C

UNCONFINED COMPRESSION TEST

FFEB JV





Specimen No.		1	2	3
Initial	Water Content, %	49.7	51.5	49.5
	Dry Density, pcf	70.4	69.6	70.7
	Saturation, %	95.9	97.2	96.0
	Void Ratio	1.4105	1.4391	1.4030
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	49.7	51.5	49.5
	Dry Density, pcf	70.4	69.6	70.7
	Saturation, %	95.9	97.2	96.0
	Void Ratio	1.4105	1.4391	1.4030
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.030	0.029	0.029
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		1391.2	1598.9	1529.6
Strain, %		2.1	3.0	2.5
Ult. Stress, psf		1339.0	1150.5	1311.2
Strain, %				
σ_1 Failure, psf		2384.8	4594.1	7520.0
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH3 W/ ARS & LNS SM

LL= 71 **PL=** 23 **PI=** 48

Assumed Specific Gravity= 2.72

Remarks: TORVANE = 0.300 TSF

Figure 1

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

Source of Sample: WWHC-56UFT **Depth:** 33.7

Sample Number: 9C

Proj. No.: 19667 **Date Sampled:** 5/16/07

TRIAXIAL SHEAR TEST REPORT

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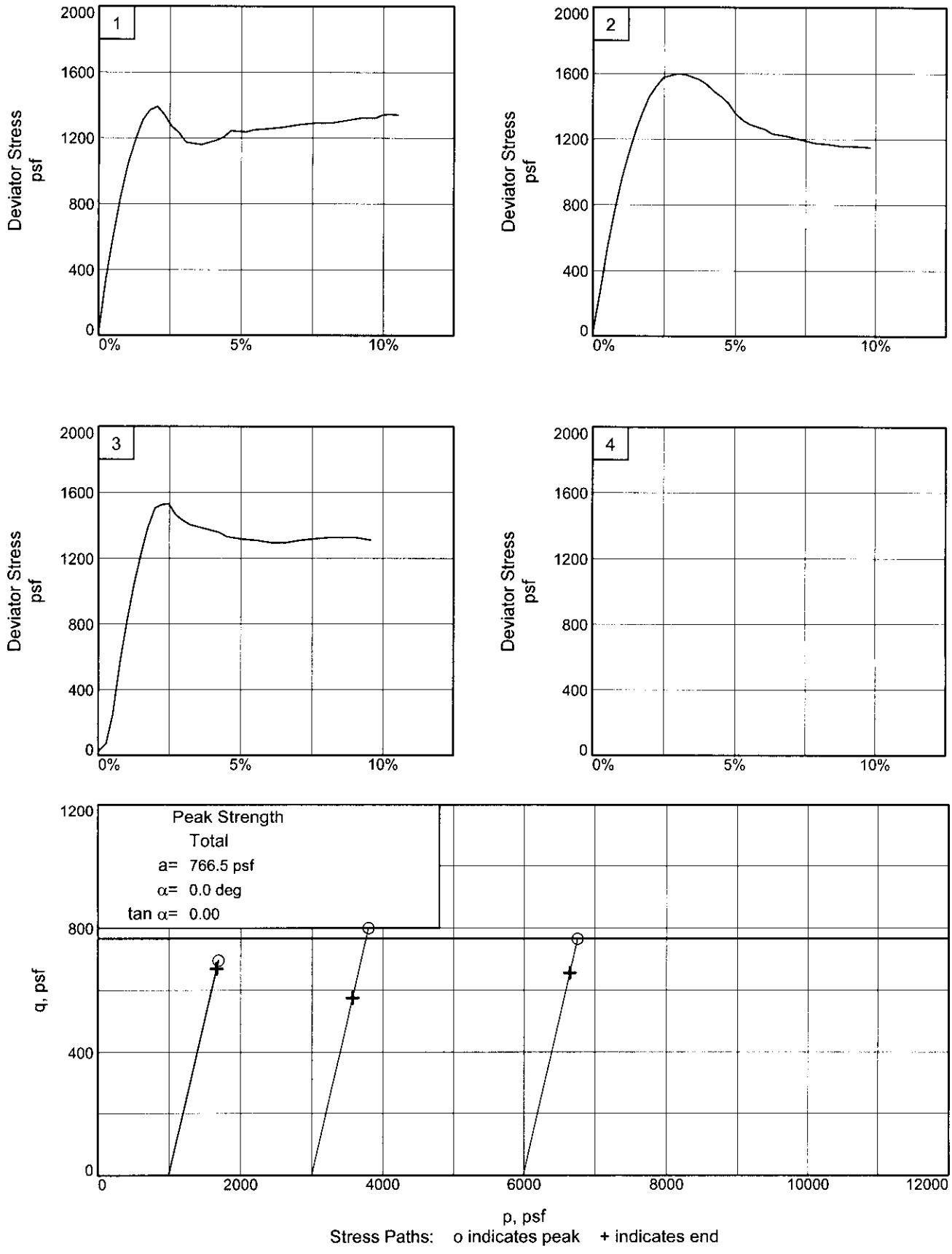


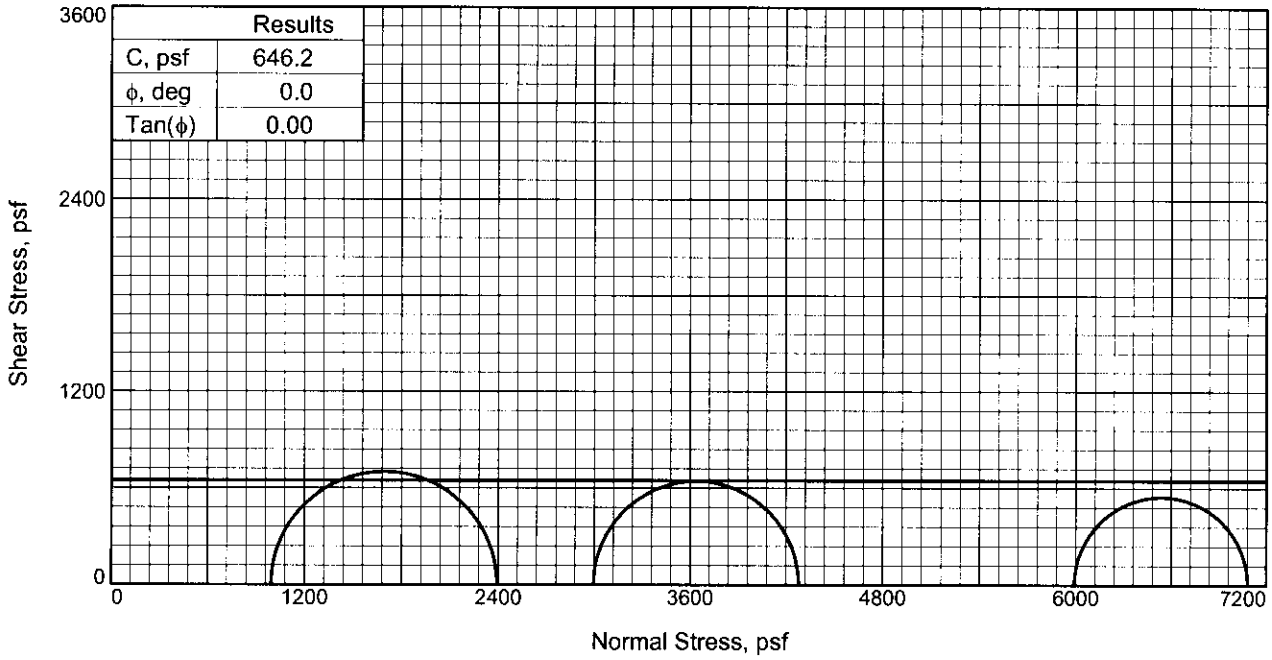
Client: U.S.A.C.E - NEW ORLEANS DISTRICT

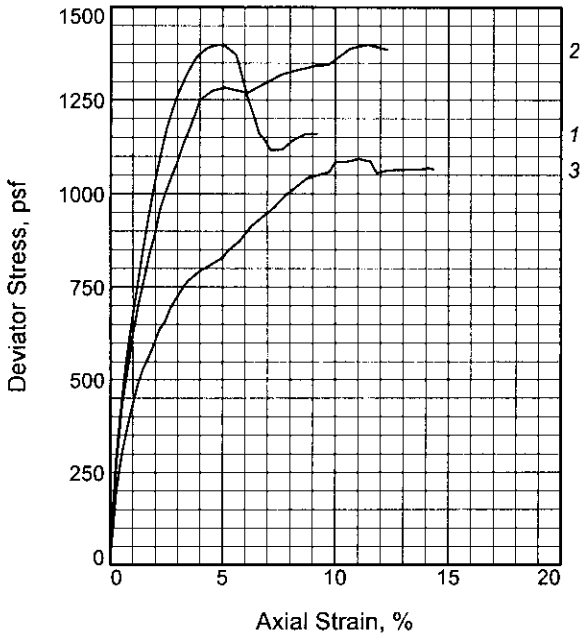
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

Source of Sample: WWHC-56UFT **Depth:** 33.7 **Sample Number:** 9C

Project No.: 19667 **Figure** 2

FFEB JV





Specimen No.		1	2	3
Initial	Water Content, %	37.3	37.5	33.5
	Dry Density, pcf	81.0	81.4	84.6
	Saturation, %	94.1	95.6	92.2
	Void Ratio	1.0579	1.0485	0.9714
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	37.3	37.5	33.5
	Dry Density, pcf	81.0	81.4	84.6
	Saturation, %	94.1	95.6	92.2
	Void Ratio	1.0579	1.0485	0.9714
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.030	0.029
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		1399.5	1284.5	1092.3
Strain, %		4.9	5.1	11.0
Ult. Stress, psf		1160.3	1386.0	1065.3
Strain, %				
σ_1 Failure, psf		2393.1	4279.7	7082.7
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CL4

LL= 40 **PL=** 25 **PI=** 15

Assumed Specific Gravity= 2.67

Remarks: TORVANE = 0.300 TSF

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

Source of Sample: WWHC-56UFT **Depth:** 36.8

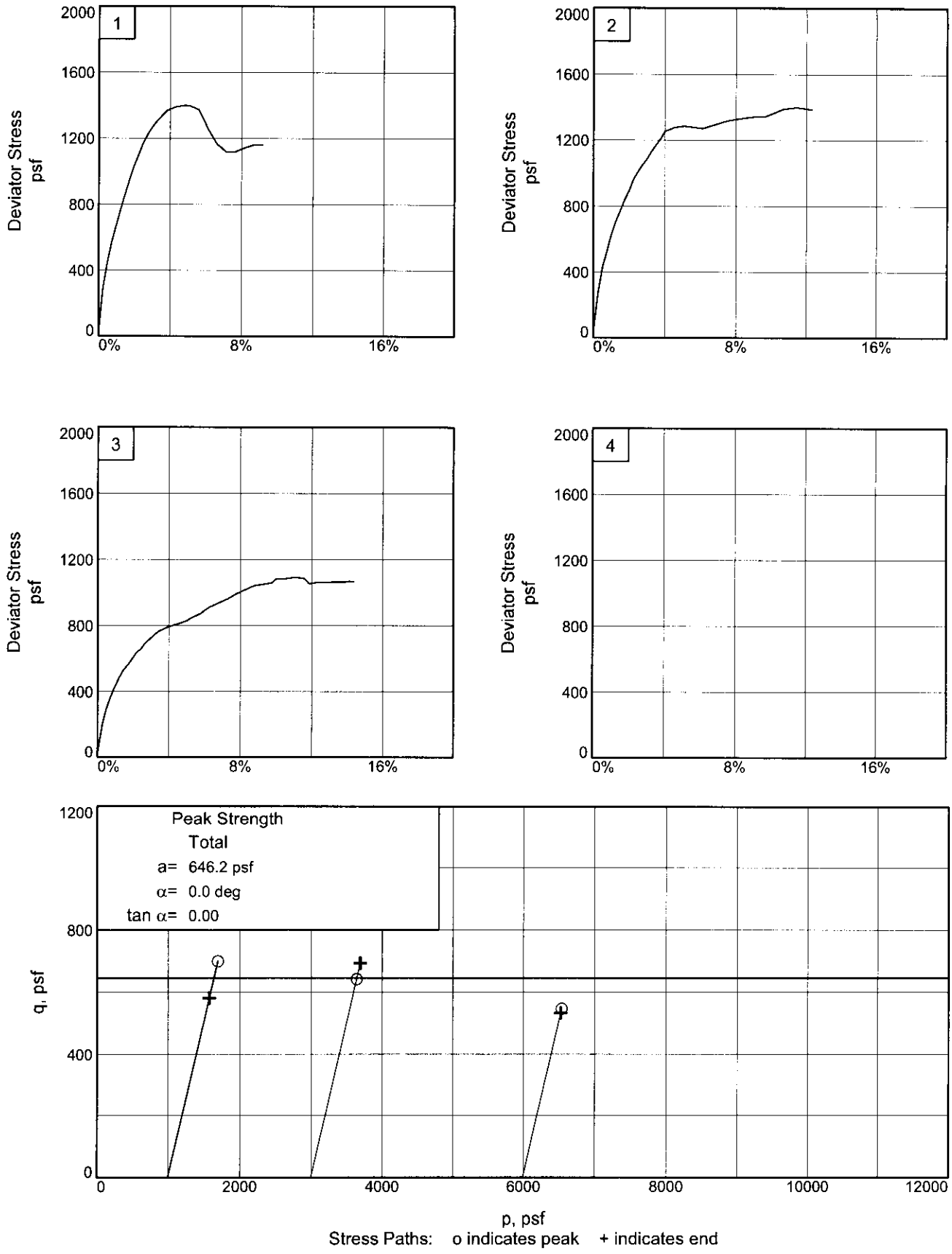
Sample Number: 10B

Proj. No.: 19667 **Date Sampled:** 5/16/07

TRIAXIAL SHEAR TEST REPORT

FFEB JV

Figure 1



Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

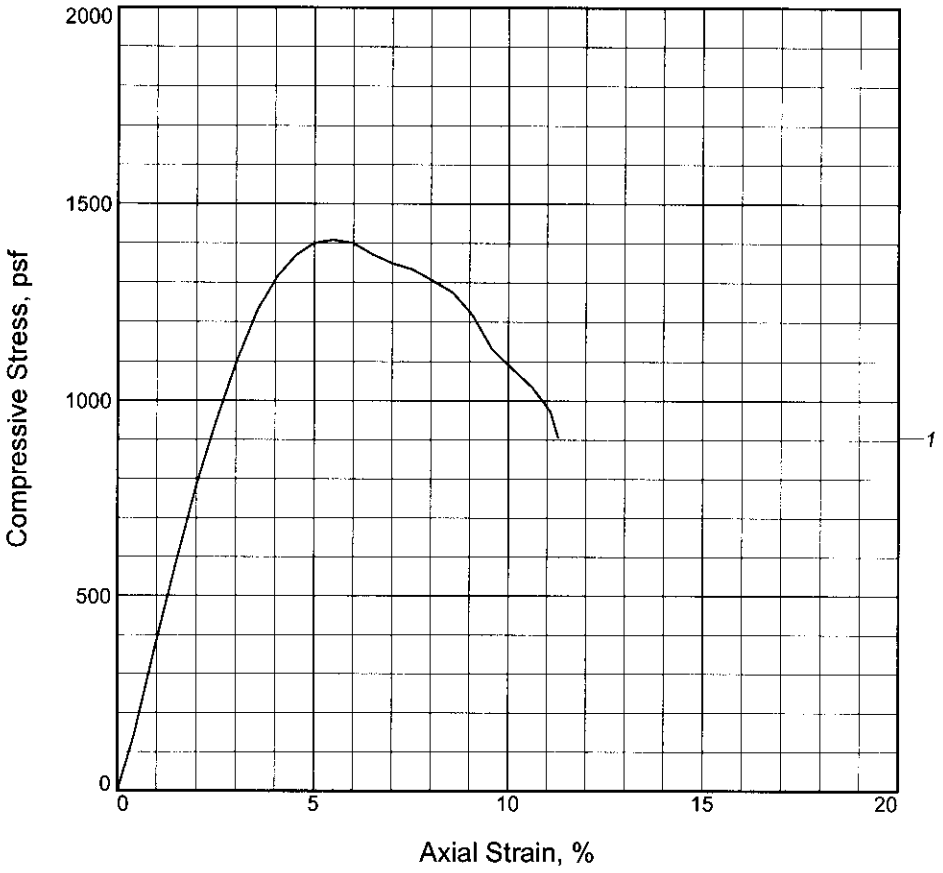
Source of Sample: WWHC-56UFT **Depth:** 36.8 **Sample Number:** 10B

Project No.: 19667

Figure 2

FFEB JV

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1407.9			
Undrained shear strength, psf	703.9			
Failure strain, %	5.5			
Strain rate, in./min.	0.058			
Water content, %	37.6			
Wet density, pcf	112.8			
Dry density, pcf	82.0			
Saturation, %	96.2			
Void ratio	1.0548			
Specimen diameter, in.	1.391			
Specimen height, in.	2.929			
Height/diameter ratio	2.11			

Description: M GR CL6

LL = 42	**PL =** 24	**PI =** 18	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 19667
Date Sampled: 5/16/07
Remarks:
TORVANE = 0.300 TSF

Figure 1

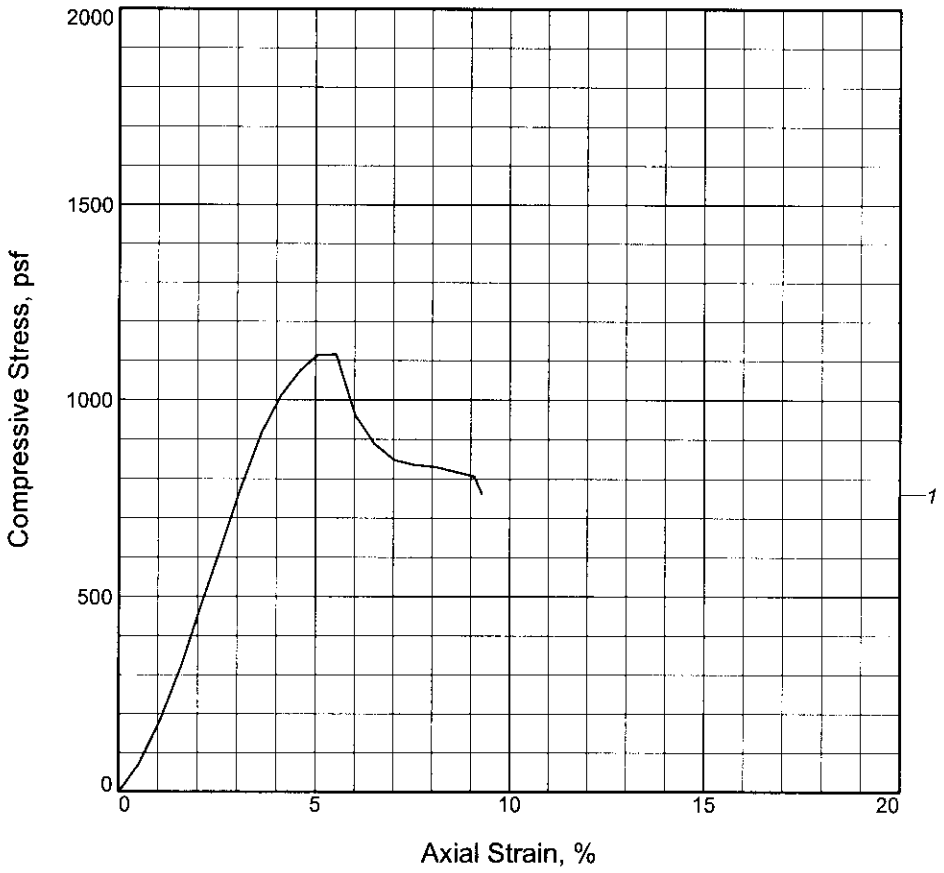
Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-56UFT **Depth:** 41.7
Sample Number: 11C

UNCONFINED COMPRESSION TEST

FFEB JV

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1115.2			
Undrained shear strength, psf	557.6			
Failure strain, %	5.5			
Strain rate, in./min.	0.057			
Water content, %	29.7			
Wet density, pcf	116.8			
Dry density, pcf	90.1			
Saturation, %	92.0			
Void ratio	0.8718			
Specimen diameter, in.	1.391			
Specimen height, in.	2.929			
Height/diameter ratio	2.11			

Description: M GR CL4-S

LL = 32	**PL =** 20	**PI =** 12	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 19667

Date Sampled: 5/16/07

Remarks:
TORVANE = 0.230 TSF

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

Source of Sample: WWHC-56UFT **Depth:** 45.7

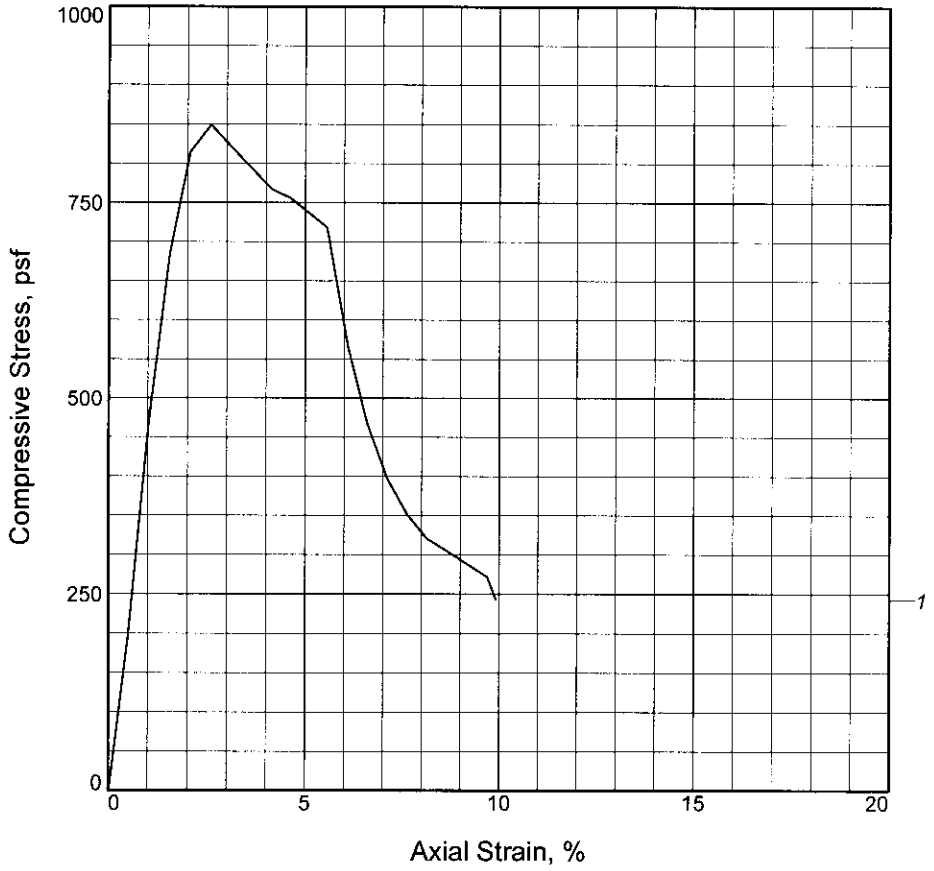
Sample Number: 12C

UNCONFINED COMPRESSION TEST

FFEB JV

Figure 1

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	848.8			
Undrained shear strength, psf	424.4			
Failure strain, %	2.6			
Strain rate, in./min.	0.058			
Water content, %	32.5			
Wet density, pcf	114.6			
Dry density, pcf	86.4			
Saturation, %	93.5			
Void ratio	0.9281			
Specimen diameter, in.	1.391			
Specimen height, in.	2.929			
Height/diameter ratio	2.11			

Description: SO GR & T CL4-S

LL = 34	**PL** = 20	**PI** = 14	**Assumed GS=** 2.67	**Type:** UNDISTURBED

Project No.: 19667

Date Sampled: 5/16/07

Remarks:
TORVANE = 0.320 TSF

Figure 1

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

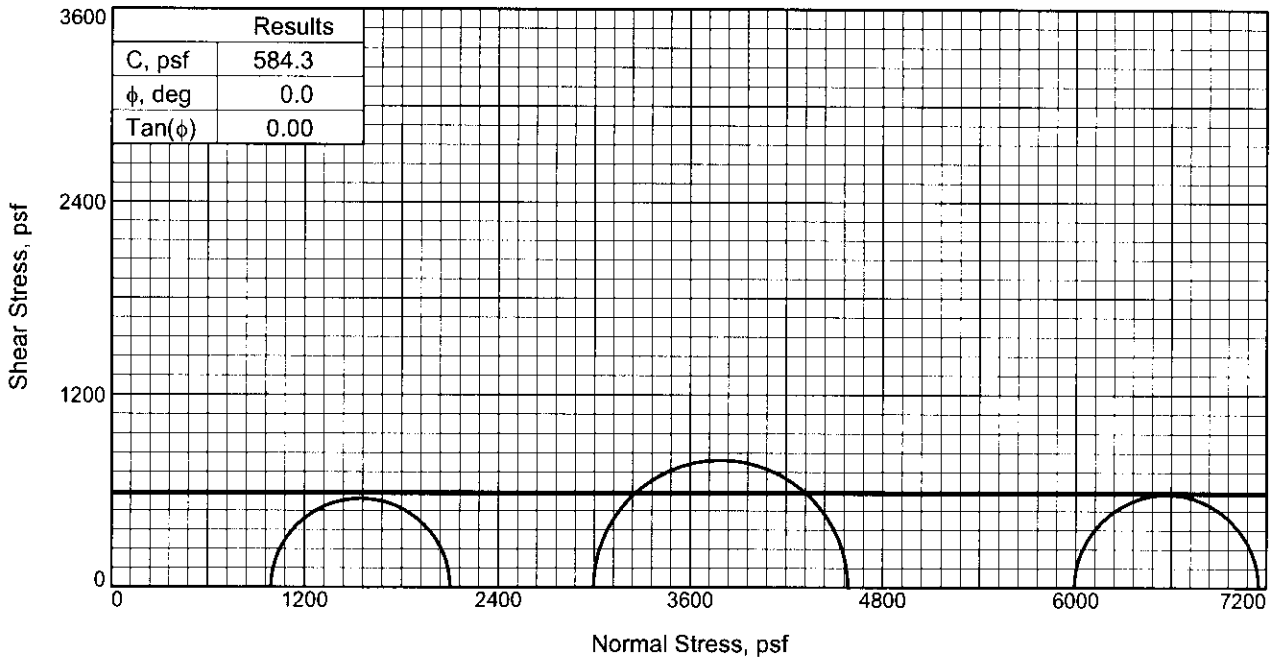
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

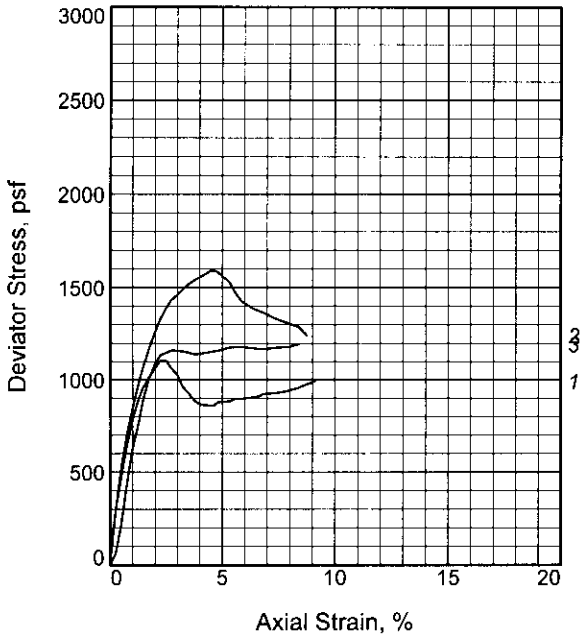
Source of Sample: WWHC-56UFT **Depth:** 49.7

Sample Number: 13C

UNCONFINED COMPRESSION TEST

FFEB JV





Specimen No.		1	2	3
Initial	Water Content, %	40.4	38.0	41.7
	Dry Density, pcf	78.7	80.5	77.1
	Saturation, %	95.1	93.1	94.4
	Void Ratio	1.1566	1.1106	1.2011
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
At Test	Water Content, %	40.4	38.0	41.7
	Dry Density, pcf	78.7	80.5	77.1
	Saturation, %	95.1	93.1	94.4
	Void Ratio	1.1566	1.1106	1.2011
	Diameter, in.	1.391	1.391	1.391
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.029	0.029
Back Pressure, psi		0.000	0.000	0.000
Cell Pressure, psi		6.900	20.800	41.600
Fail. Stress, psf		1106.7	1589.5	1160.8
Strain, %		2.5	4.5	2.7
Ult. Stress, psf		993.1	1242.6	1193.5
Strain, %				
σ_1 Failure, psf		2100.3	4584.7	7151.2
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GR CH3 W/ ARS & LYS SM

LL= 60 **PL=** 27 **PI=** 33

Assumed Specific Gravity= 2.72

Remarks: TORVANE = 0.340 TSF

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

Source of Sample: WWHC-56UFT **Depth:** 53.7

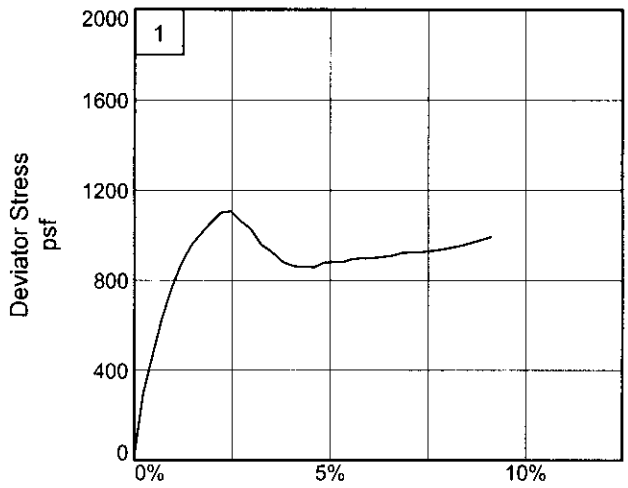
Sample Number: 14C

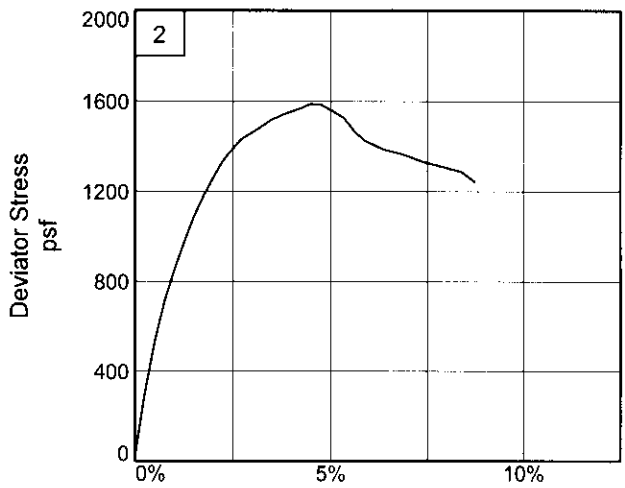
Proj. No.: 19667 **Date Sampled:** 5/16/07

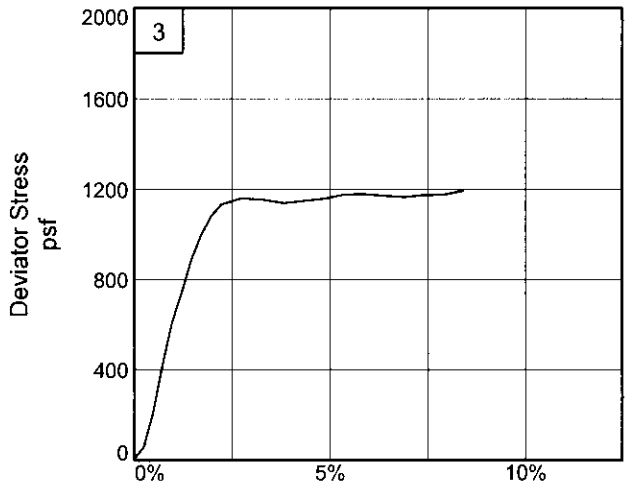
TRIAXIAL SHEAR TEST REPORT

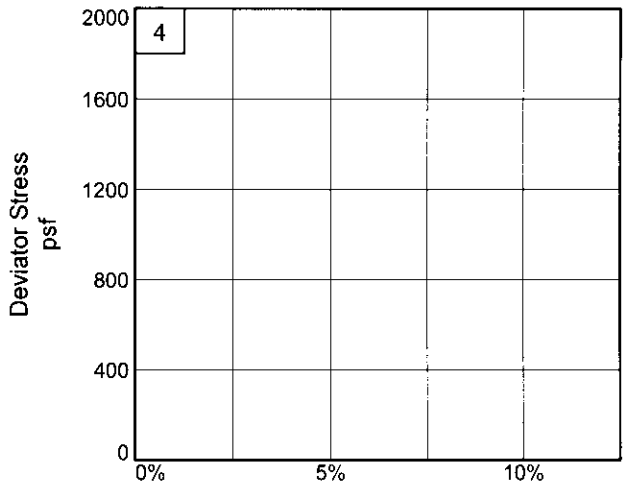
FFEB JV

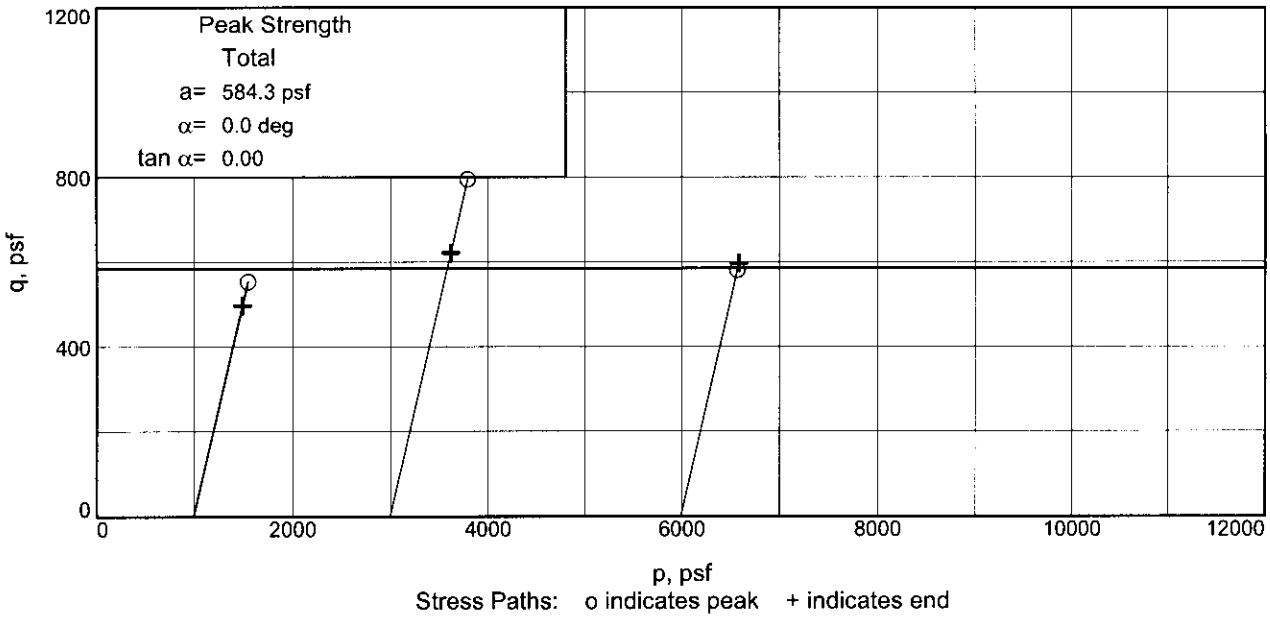
Figure 1











Stress Paths: o indicates peak + indicates end

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

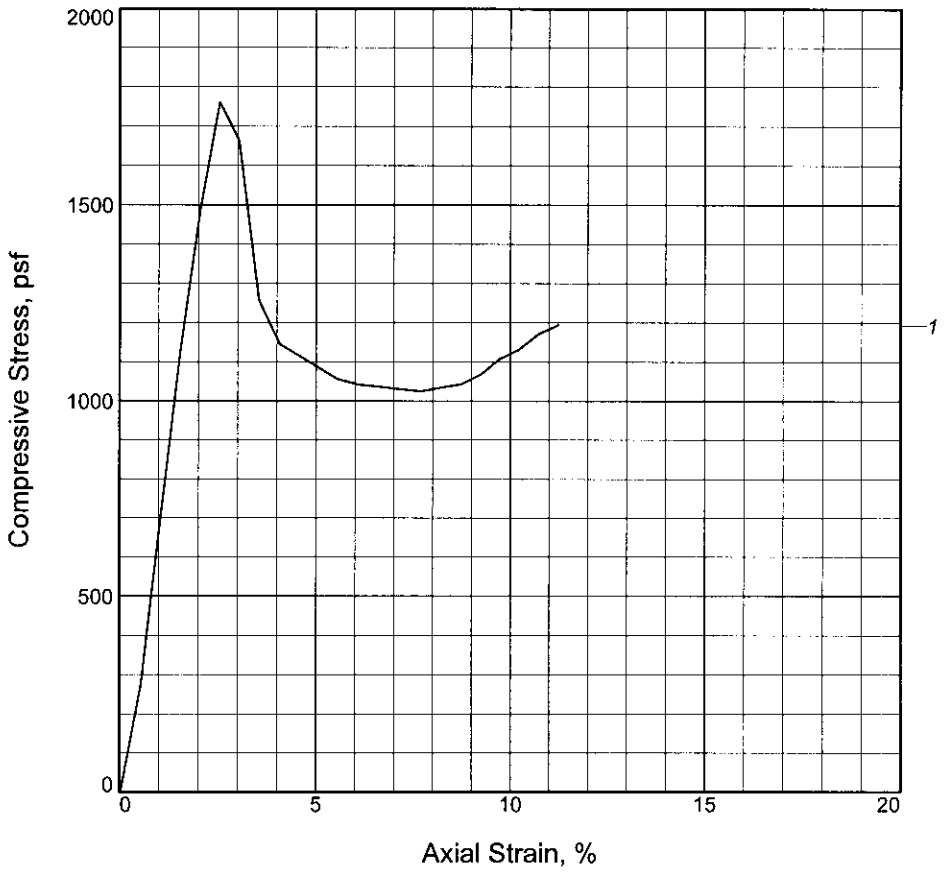
Source of Sample: WWHC-56UFT **Depth:** 53.7 **Sample Number:** 14C

Project No.: 19667

Figure 2

FFEB JV

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1761.1			
Undrained shear strength, psf	880.6			
Failure strain, %	2.5			
Strain rate, in./min.	0.059			
Water content, %	36.8			
Wet density, pcf	113.6			
Dry density, pcf	83.0			
Saturation, %	96.6			
Void ratio	1.0297			
Specimen diameter, in.	1.391			
Specimen height, in.	2.929			
Height/diameter ratio	2.11			

Description: M GR CH2

LL = 58	**PL =** 25	**PI =** 33	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 19667
Date Sampled: 5/16/07
Remarks:
TORVANE = 0.300 TSF

Figure 1

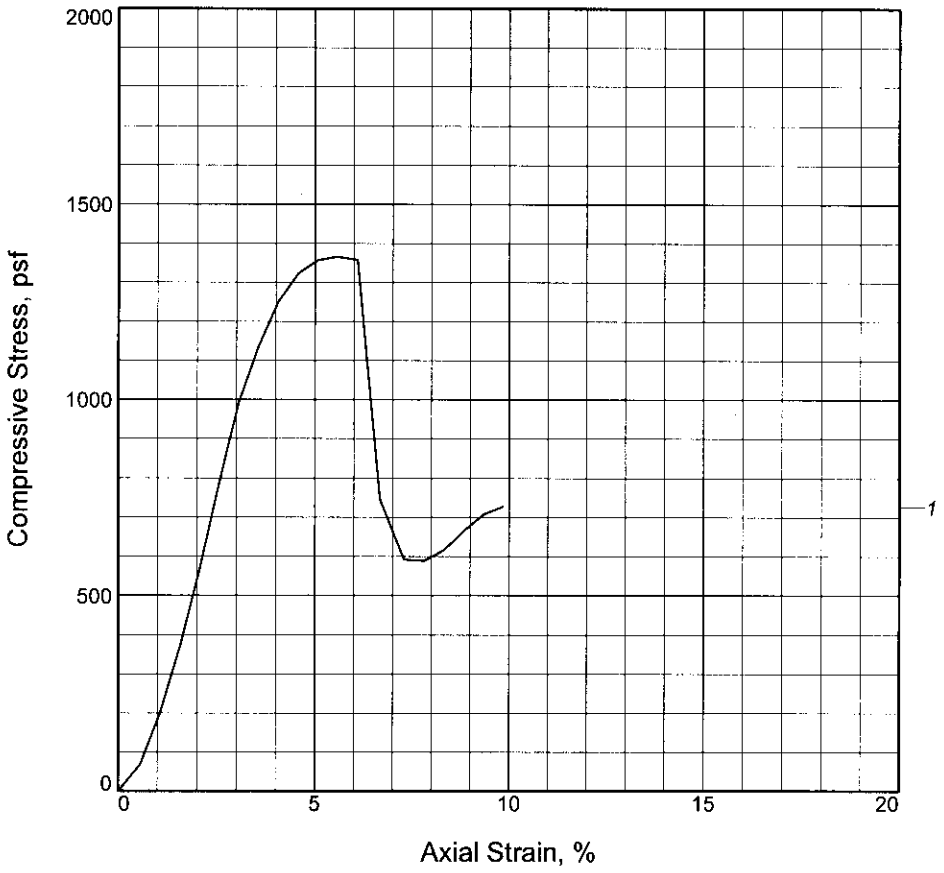
Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-56UFT **Depth:** 56.8
Sample Number: 15B

UNCONFINED COMPRESSION TEST

FFEB JV

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1365.3			
Undrained shear strength, psf	682.6			
Failure strain, %	5.6			
Strain rate, in./min.	0.059			
Water content, %	29.0			
Wet density, pcf	116.9			
Dry density, pcf	90.6			
Saturation, %	92.2			
Void ratio	0.8393			
Specimen diameter, in.	1.391			
Specimen height, in.	2.929			
Height/diameter ratio	2.11			

Description: M GR CL4-S

LL = 30	**PL =** 20	**PI =** 10	**Assumed GS=** 2.67	**Type:** UNDISTURBED

Project No.: 19667
Date Sampled: 5/16/07

Remarks:
TORVANE = 0.150 TSF

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

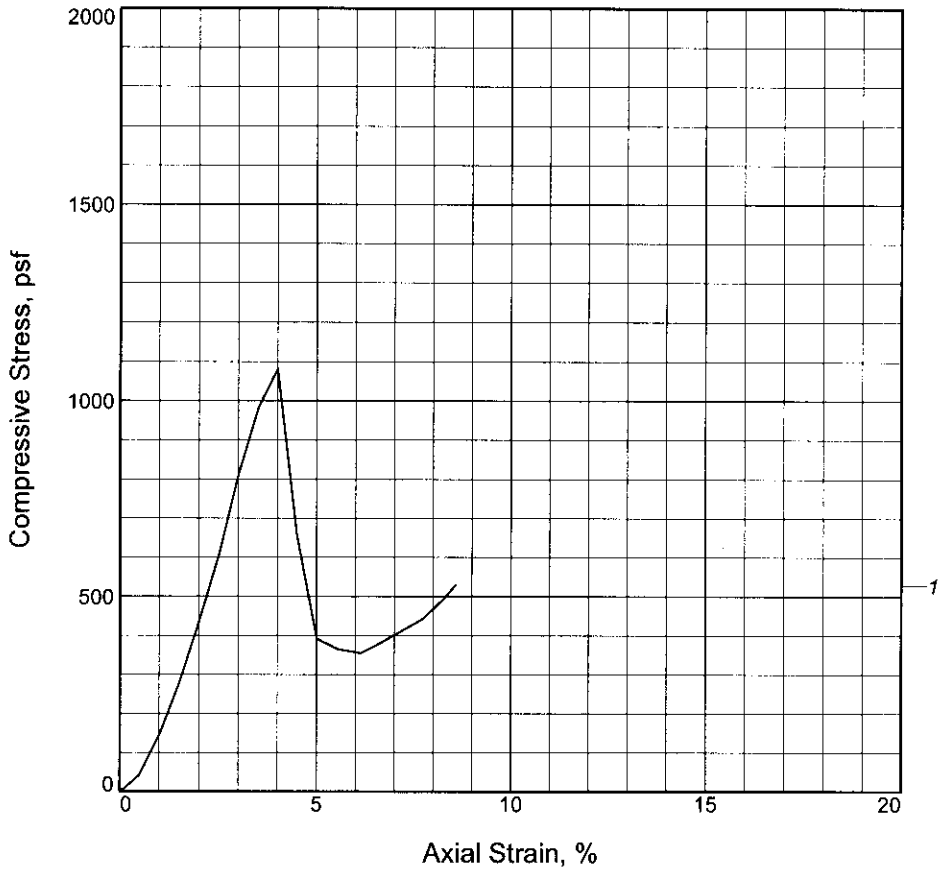
Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2
Source of Sample: WWHC-56UFT **Depth:** 61.7
Sample Number: 16C

UNCONFINED COMPRESSION TEST

FFEB JV

Figure 1

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1081.2			
Undrained shear strength, psf	540.6			
Failure strain, %	4.0			
Strain rate, in./min.	0.058			
Water content, %	27.4			
Wet density, pcf	118.7			
Dry density, pcf	93.2			
Saturation, %	92.8			
Void ratio	0.7892			
Specimen diameter, in.	1.391			
Specimen height, in.	2.929			
Height/diameter ratio	2.11			

Description: M GR CL4-S

LL = 29	**PL** = 19	**PI** = 10	**Assumed GS=** 2.67	**Type:** UNDISTURBED

Project No.: 19667

Date Sampled: 5/16/07

Remarks:
TORVANE = 0.160 TSF

Figure 1

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

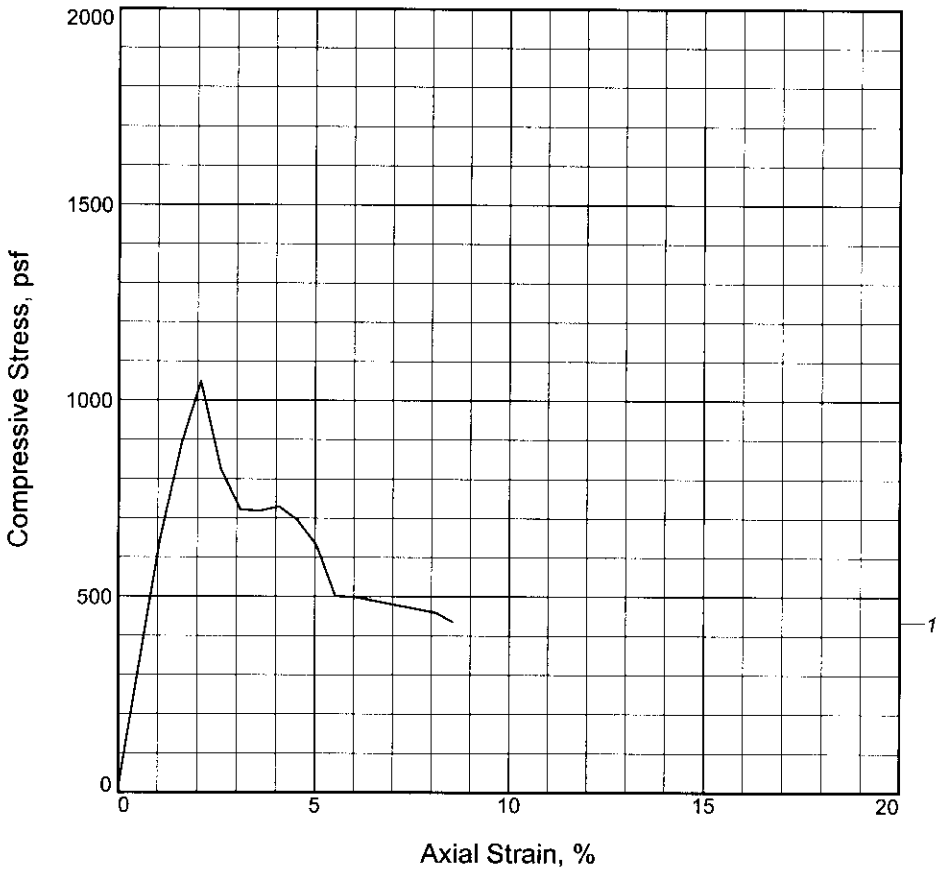
Source of Sample: WWHC-56UFT **Depth:** 65.7

Sample Number: 17C

UNCONFINED COMPRESSION TEST

FFEB JV

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1047.2			
Undrained shear strength, psf	523.6			
Failure strain, %	2.1			
Strain rate, in./min.	0.057			
Water content, %	46.3			
Wet density, pcf	107.8			
Dry density, pcf	73.7			
Saturation, %	96.5			
Void ratio	1.3040			
Specimen diameter, in.	1.391			
Specimen height, in.	2.929			
Height/diameter ratio	2.11			

Description: M GR CH4 W/ ARS & LNS SM, SL

LL = 85	**PL =** 33	**PI =** 52	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 19667

Date Sampled: 5/16/07

Remarks:
TORVANE = 0.460 TSF

Figure 1

Client: U.S.A.C.E - NEW ORLEANS DISTRICT

Project: U.S.A.C.E. - WEST BANK 100 YEAR BORING PROGRAM.TASK ORDER NO.2

Source of Sample: WWHC-56UFT **Depth:** 69.7

Sample Number: 18C

UNCONFINED COMPRESSION TEST

FFEB JV

BOR. WWHC-56UFT
STA. LAT N29^48'29.77" LONG W90^07'00.07"

12-13 APRIL 2007

GROUND EL. 3.10

0.0	0.8	32		CH	ST BR GR	O RT		
0.8	2.0	29		CH	ST BR GR	RT		
2.0	2.8	30		CH	ST GR T	TR O CC		
2.8	4.0	36		CH	ST LGR T			
4.0	4.8	35	4.8CH		M GR DGR	TR O CC		
4.8	5.7	30		CL	M GR T			
5.7	8.0	33	8.0CL		M LGR T	RT		
8.0	8.8	35	8.8ML		GR T	CS CC		
8.8	9.7	38	9.7CH		M GR T	RT		
9.7	12.0	33	12.0ML		GR T	CC		
12.0	12.8	35	12.8CL	SIS M GR				
12.8	13.7	39	13.7CL		M GR	CS RT		
13.7	14.6	34	14.6ML		GR	CS		
14.6	16.0	38		CL	M GR			
16.0	16.8	38		CL	SO GR	CS		
16.8	17.7	37		CL	SO GR	CS	381112 37 20	38 173
17.7	18.6	34	18.6CL		SO GR	CS		
18.6	20.0	32	20.0ML		GR			
20.0	20.8	46	20.8CH	SIS M GR				
20.8	21.7	39		CL	SO GR	CS		
21.7	22.6	34	22.6CL		SO GR			
22.6	24.0	34	24.0ML		GR			
24.0	24.8	41		CH	SIS M GR			
24.8	25.7	39	25.7CH	SIS M GR				
25.7	26.6	41	26.6CH	SS M GR		SL		
26.6	28.0	33		CL	SO GR	CS		
28.0	28.8	36		CL	SO GR	CS		
28.8	29.7	37		CL	SO GR	CS	446115 31 21	31 293
29.7	30.6	33	30.6CL		SO GR			
30.6	32.0	35	32.0ML		GR			
32.0	32.8	47		CH	SIS M GR			
32.8	33.7	43	33.7CH	SIS M GR				
33.7	34.6	51	34.6CH	SS M GR				
34.6	36.0	51		CH	SIS M GR			
36.0	36.8	43	36.8CH	SIS M GR				
36.8	37.7	40	37.7CL		M GR			

37.7 40.0 34 40.0ML GR CS
40.0 40.8 43 40.8CH SIS M GR
40.8 41.7 32 CL M GR CS 704113 42 24 38 413
41.7 42.6 35 42.6CL M GR
42.6 44.0 38 44.0CH SIS M GR
44.0 44.8 33 CL M GR
44.8 45.7 30 CL M GR 558117 32 20 30 453
45.7 46.6 33 46.6CL M GR CS
46.6 48.0 35 48.0CL SIS M GR
48.0 48.8 38 48.8CH SIS M GR
48.8 49.7 35 CL SO GR CS 424115 34 24 33 493
49.7 50.6 34 50.6CL SO GR T
50.6 52.0 36 52.0CH SIS M GR
52.0 52.8 33 ML GR CS
52.8 53.7 36 53.7ML GR CS
53.7 54.6 39 54.6CH SS M GR
54.6 56.0 29 ML GR
56.0 56.8 29 56.8ML GR CS 881114 58 25 37 563
56.8 57.7 34 57.7CH M GR
57.7 58.6 29 CL M GR
58.6 60.0 28 CL M GR
60.0 60.8 30 CL M GR
60.8 61.7 29 CL M GR CS 683117 30 20 29 613
61.7 62.6 28 CL M GR
62.6 64.0 31 CL M GR
64.0 64.8 27 CL M GR CS
64.8 65.7 29 CL M GR 541119 29 19 27 653
65.7 68.0 30 CL M GR
68.0 68.8 28 CL M GR CS
68.8 69.7 30 69.7CL M GR CS 524108 85 33 46 693
69.7 70.6 36 70.6CH SS M GR SL
70.6 72.0 40 72.0CH SIS M GR SIF
999.9
****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 2.80/ 0.30 Water Con: 29.00
LL,PL,PI : 57, 19, 38 Dry Dens : 92.00
Cohesion : 0.668 Saturat : 95.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CL
Depth/Ele: 5.70/ -2.60 Water Con: 32.00
LL,PL,PI : 48, 20, 28 Dry Dens : 88.00
Cohesion : 0.427 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 8.80/ -5.70 Water Con: 39.00
LL,PL,PI : 53, 24, 29 Dry Dens : 79.00
Cohesion : 0.375 Saturat : 94.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CL
Depth/Ele: 12.80/ -9.70 Water Con: 37.00
LL,PL,PI : 46, 23, 23 Dry Dens : 82.00
Cohesion : 0.277 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CL
Depth/Ele: 21.70/ -18.6 Water Con: 36.00
LL,PL,PI : 37, 22, 15 Dry Dens : 83.00
Cohesion : 0.243 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 25.70/ -22.6 Water Con: 43.00
LL,PL,PI : 55, 21, 34 Dry Dens : 77.00
Cohesion : 0.383 Saturat : 97.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 33.70/ -30.6 Water Con: 50.00
LL,PL,PI : 71, 23, 48 Dry Dens : 70.00
Cohesion : 0.384 Saturat : 96.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CL
Depth/Ele: 36.80/ -33.7 Water Con: 36.00
LL,PL,PI : 40, 25, 15 Dry Dens : 82.00
Cohesion : 0.323 Saturat : 94.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

****

SHEAR STRENGTH DESIGN VALUES
Test Type:(Q) Classif :CH
Depth/Ele: 53.70/ -50.6 Water Con: 40.00
LL,PL,PI : 60, 27, 33 Dry Dens : 79.00
Cohesion : 0.292 Saturat : 94.00
Shear Str: Frict Ang: 00.00
Toggles :( )( )( )( )

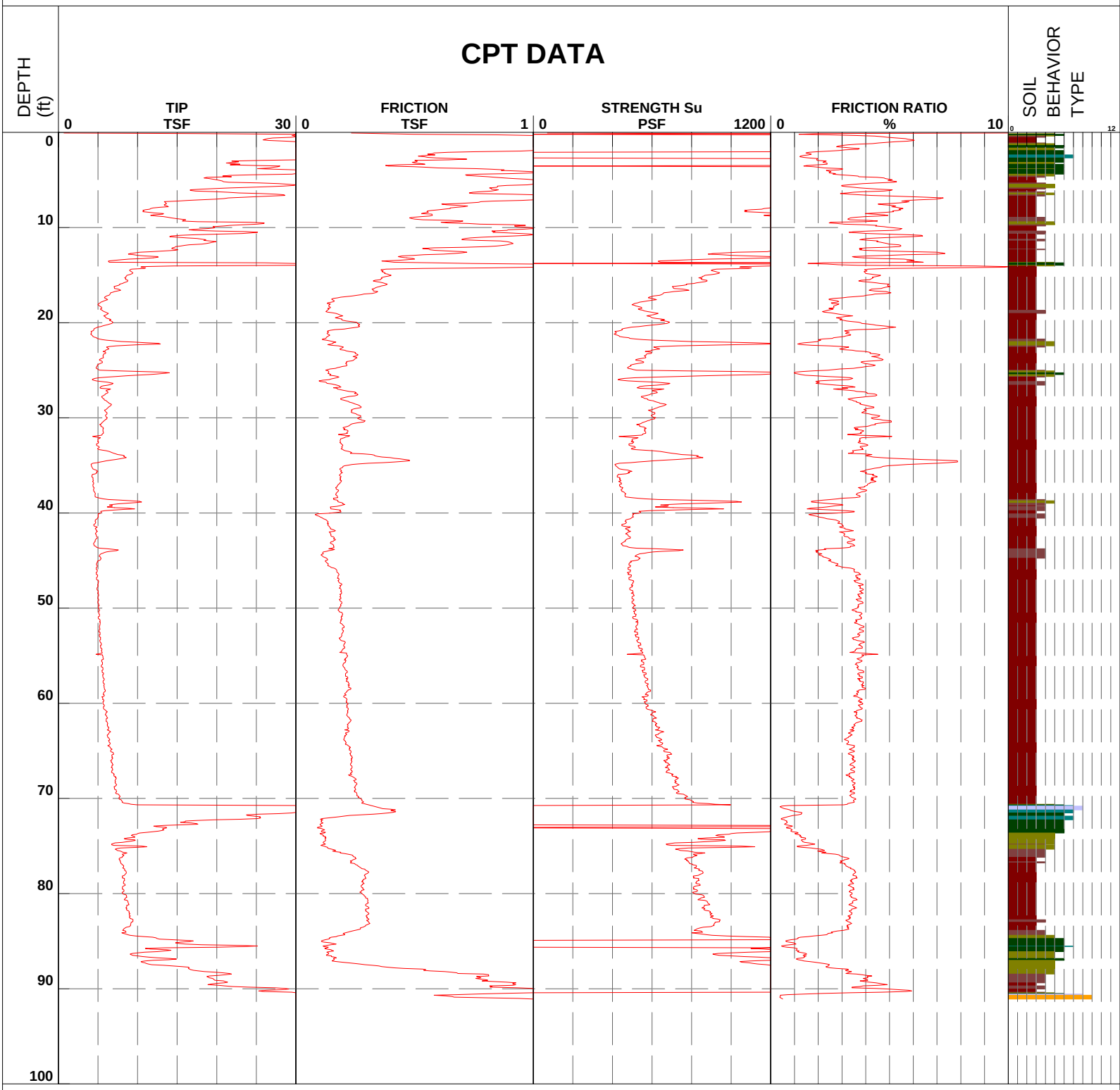
****

Cone Penetrometer Data

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-38CL	Coordinates	29 50' 33.41"N 90 07' 20.73"W
Operator	Albert Fonseca	Date and Time	04-Mar-2007 14:59:26	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	12.2 ft	Water Table	

CPT DATA



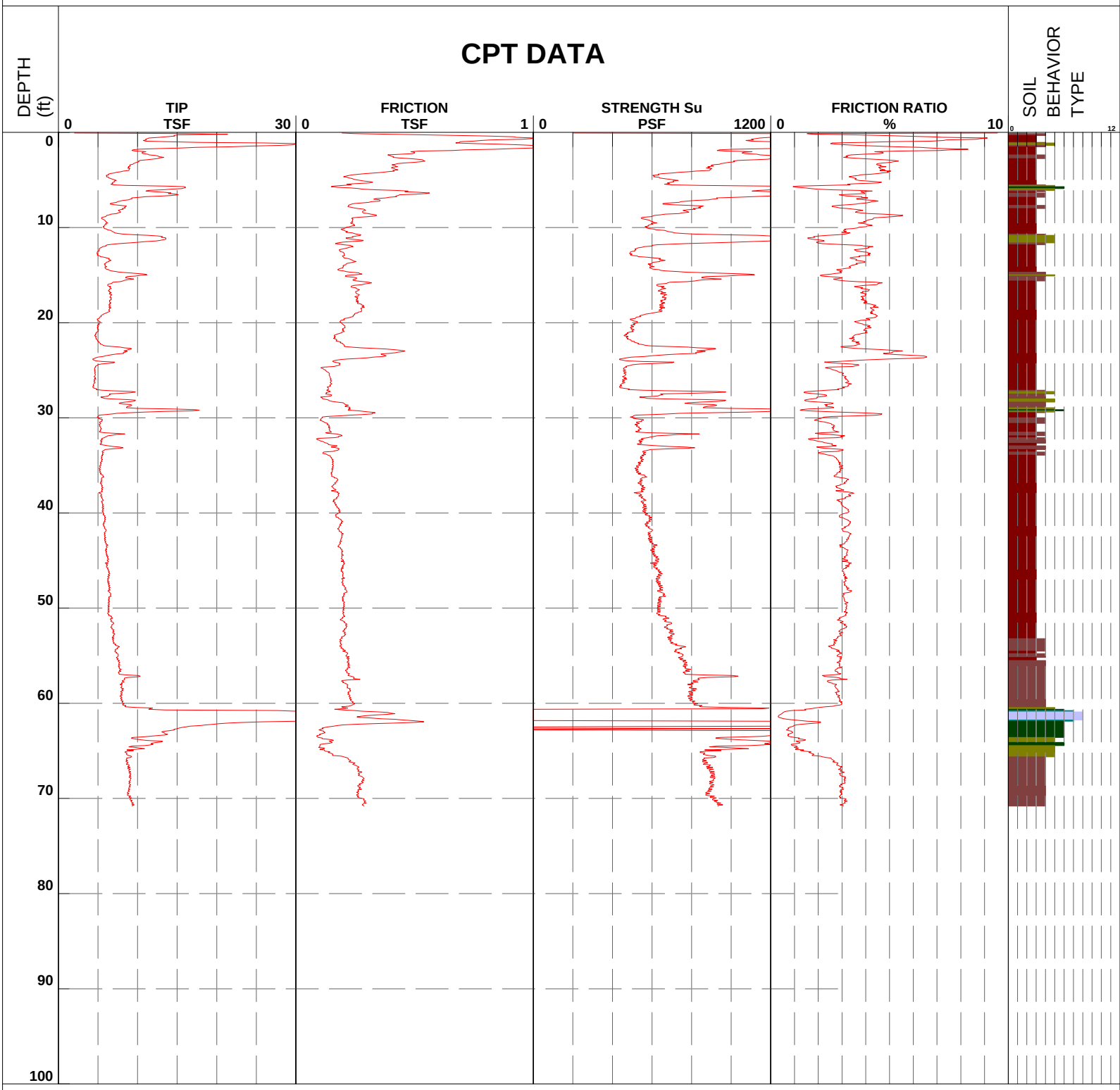
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-38PT	Coordinates	29 50' 33.63"N 90 07' 19.89"W
Operator	Albert Fonseca	Date and Time	05-Mar-2007 08:15:37	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	2.5 ft	Water Table	

CPT DATA



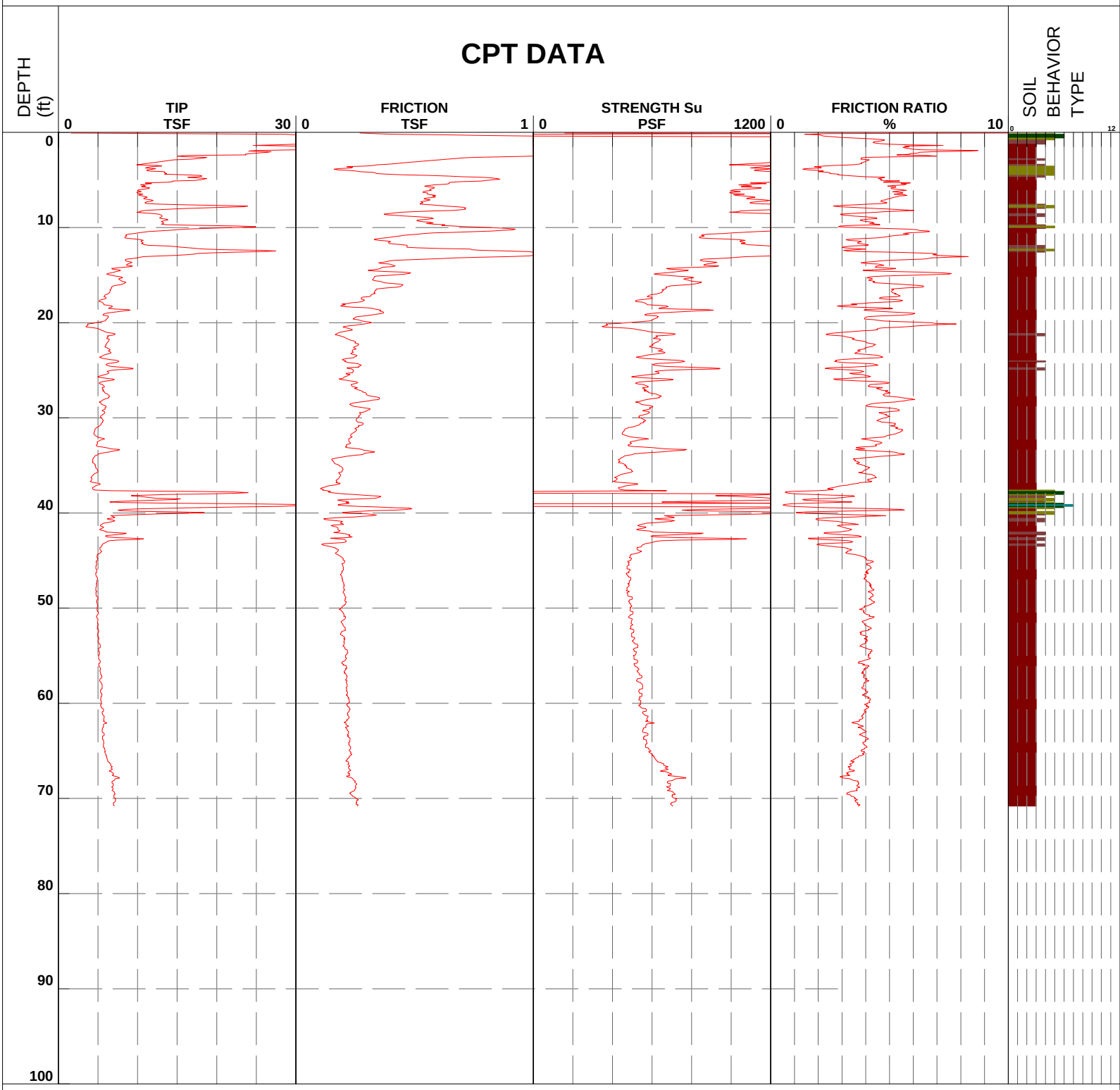
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-39CL	Coordinates	29 50' 24.27"N 90 07' 16.28"W
Operator	Albert Fonseca	Date and Time	05-Mar-2007 10:32:27	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	12.5 ft	Water Table	

CPT DATA



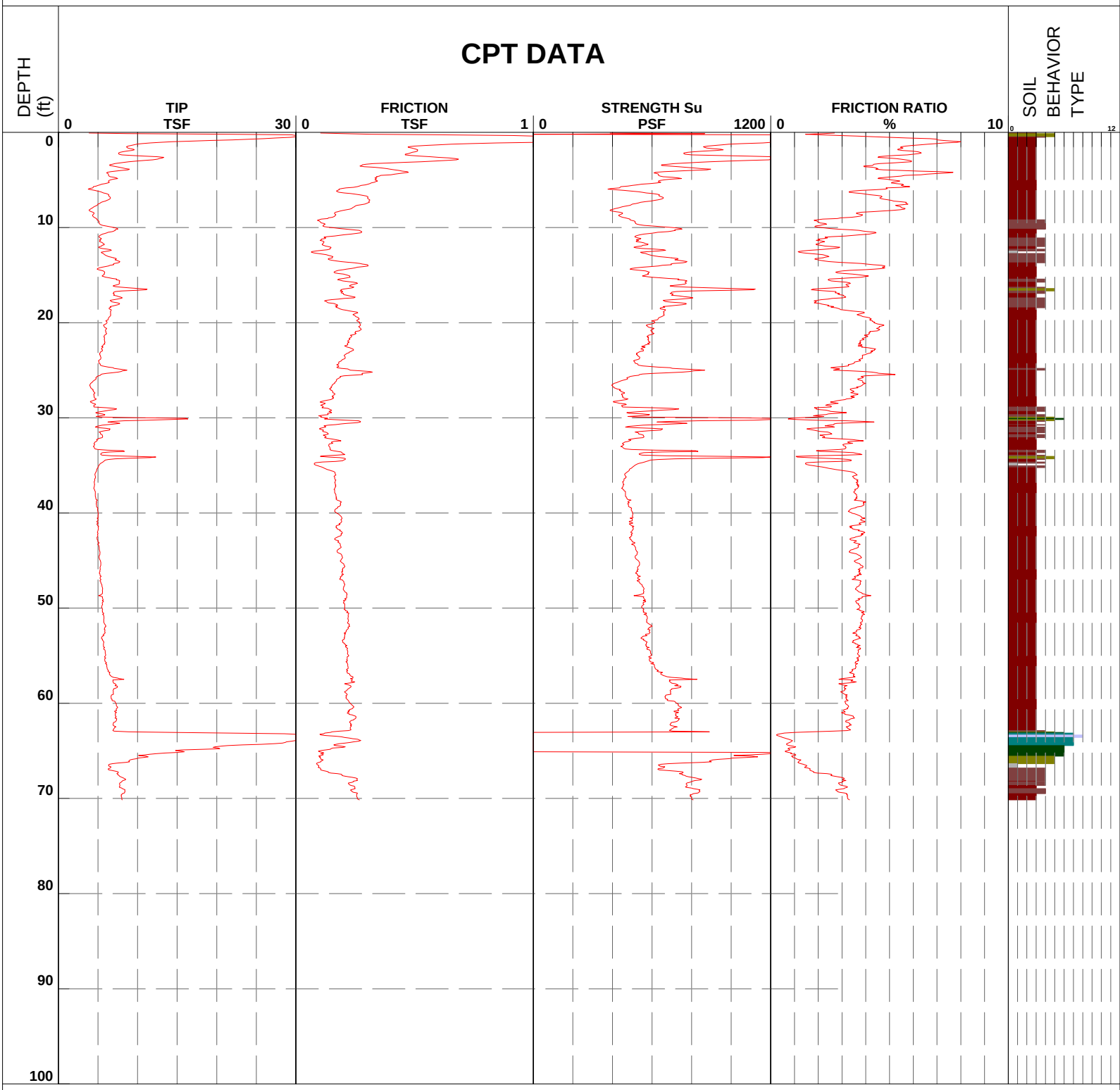
1 - sensitive fine grained	4 - silty clay to clay	7 - silty sand to sandy silt	10 - gravelly sand to sand
2 - organic material	5 - clayey silt to silty clay	8 - sand to silty sand	11 - very stiff fine grained (*)
3 - clay	6 - sandy silt to clayey silt	9 - sand	12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-39FT	Coordinates	29 50' 24.07"N 90 07' 16.74"W
Operator	HERBERT JACKSON	Date and Time	12-Mar-2007 13:16:37	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	5.4 ft	Water Table	

CPT DATA



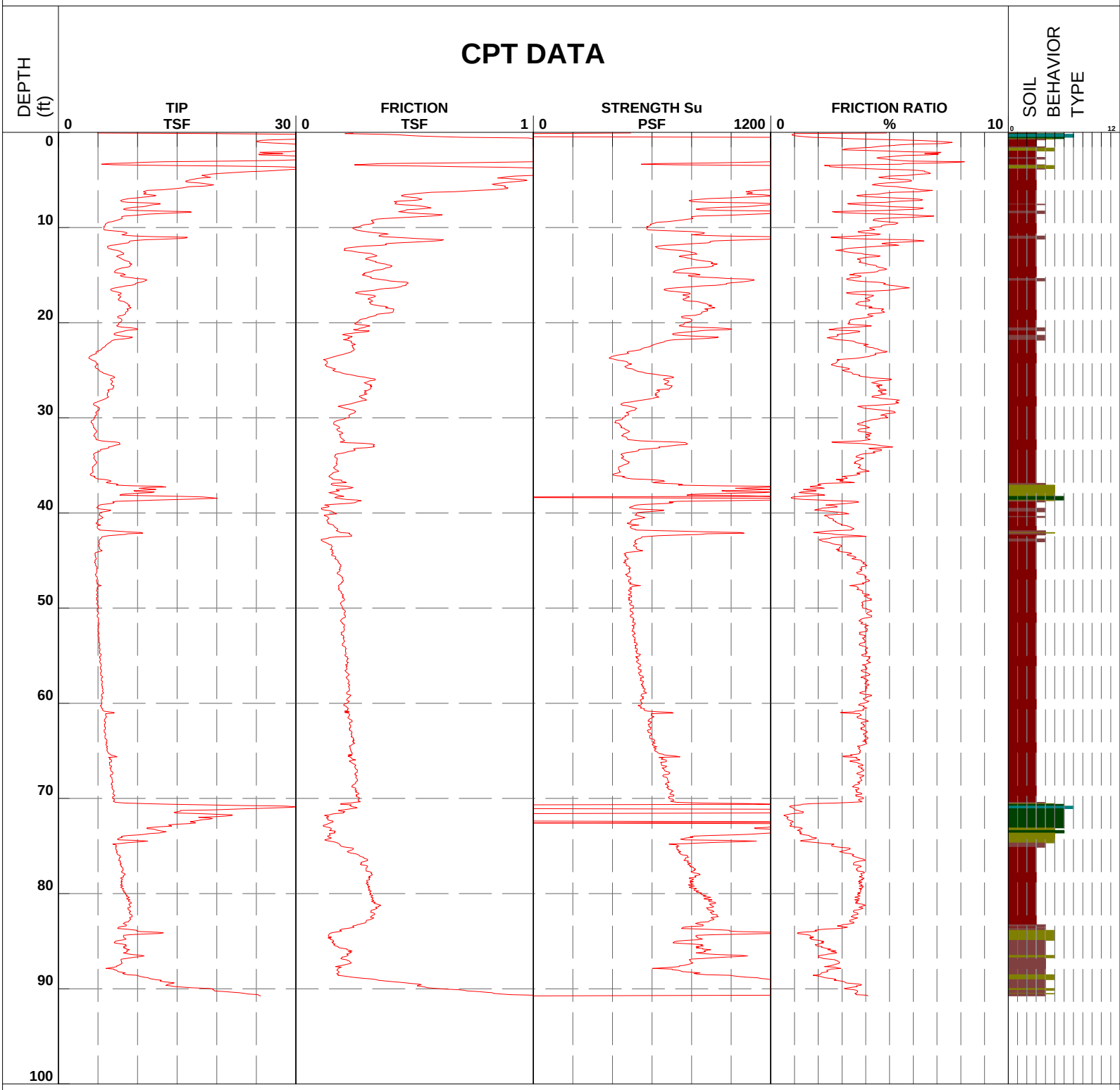
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-40CL	Coordinates	29 50' 15.81"N 90 07' 10.84"W
Operator	Albert Fonseca	Date and Time	05-Mar-2007 13:10:33	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	12.6 ft	Water Table	

CPT DATA



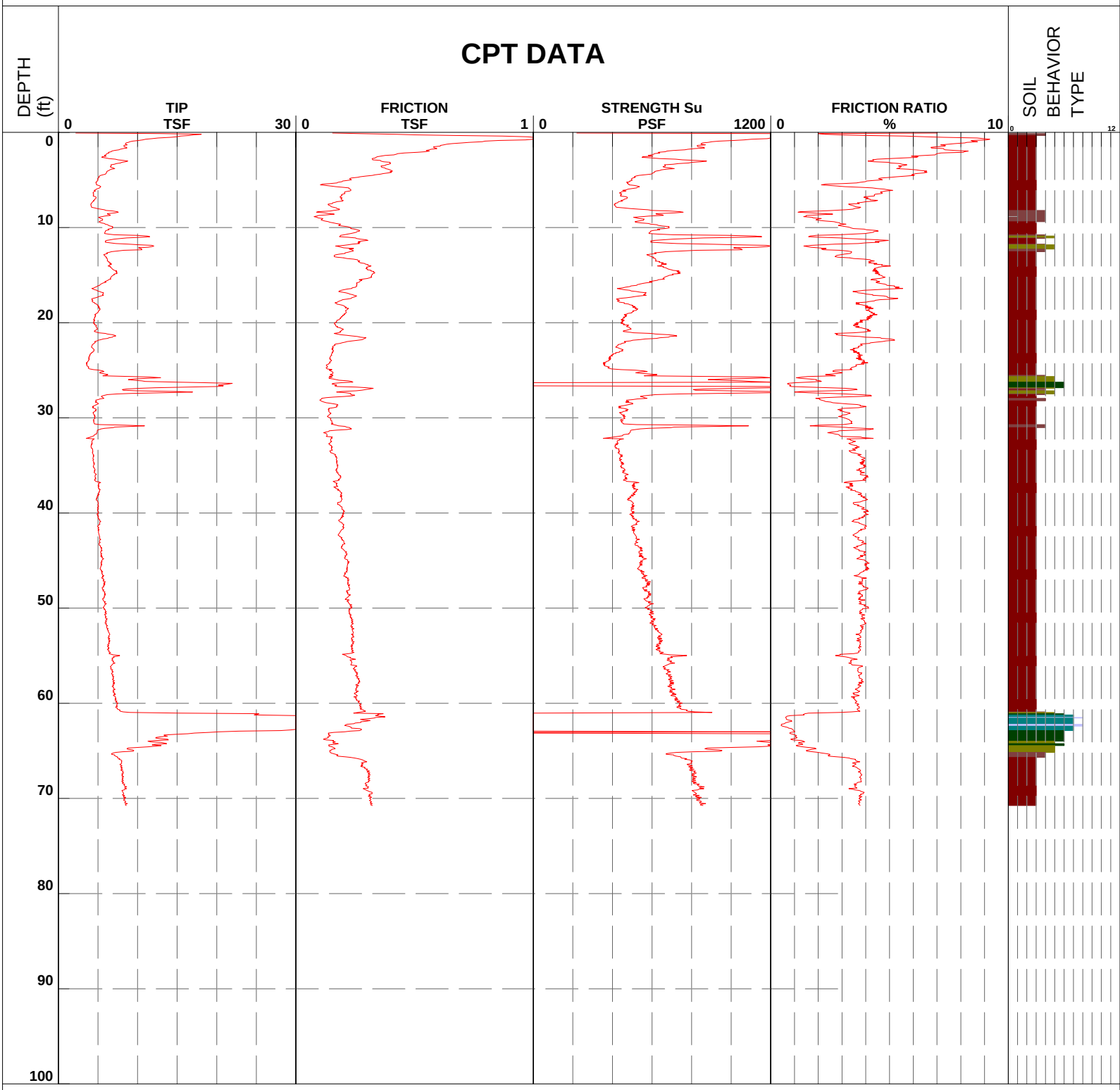
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-40PT	Coordinates	29 50' 16.01"N 90 07' 10.35"W
Operator	Jim Bandle	Date and Time	07-Mar-2007 08:50:50	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	3.4 ft	Water Table	

CPT DATA



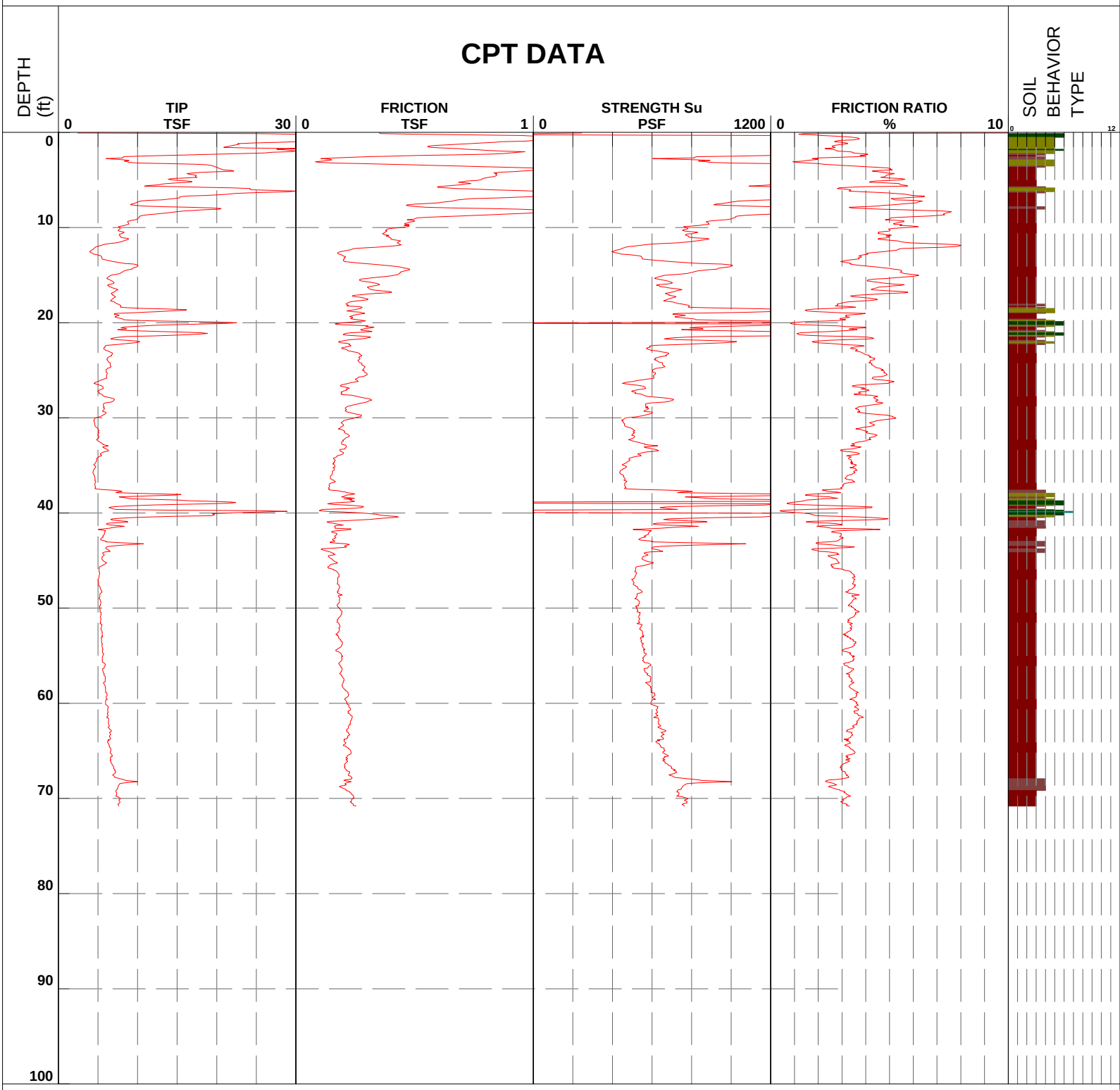
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-41CL	Coordinates	29 50' 07.11"N 90 07' 05.21"W
Operator	Albert Fonseca	Date and Time	05-Mar-2007 14:19:28	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	11.9 ft	Water Table	

CPT DATA



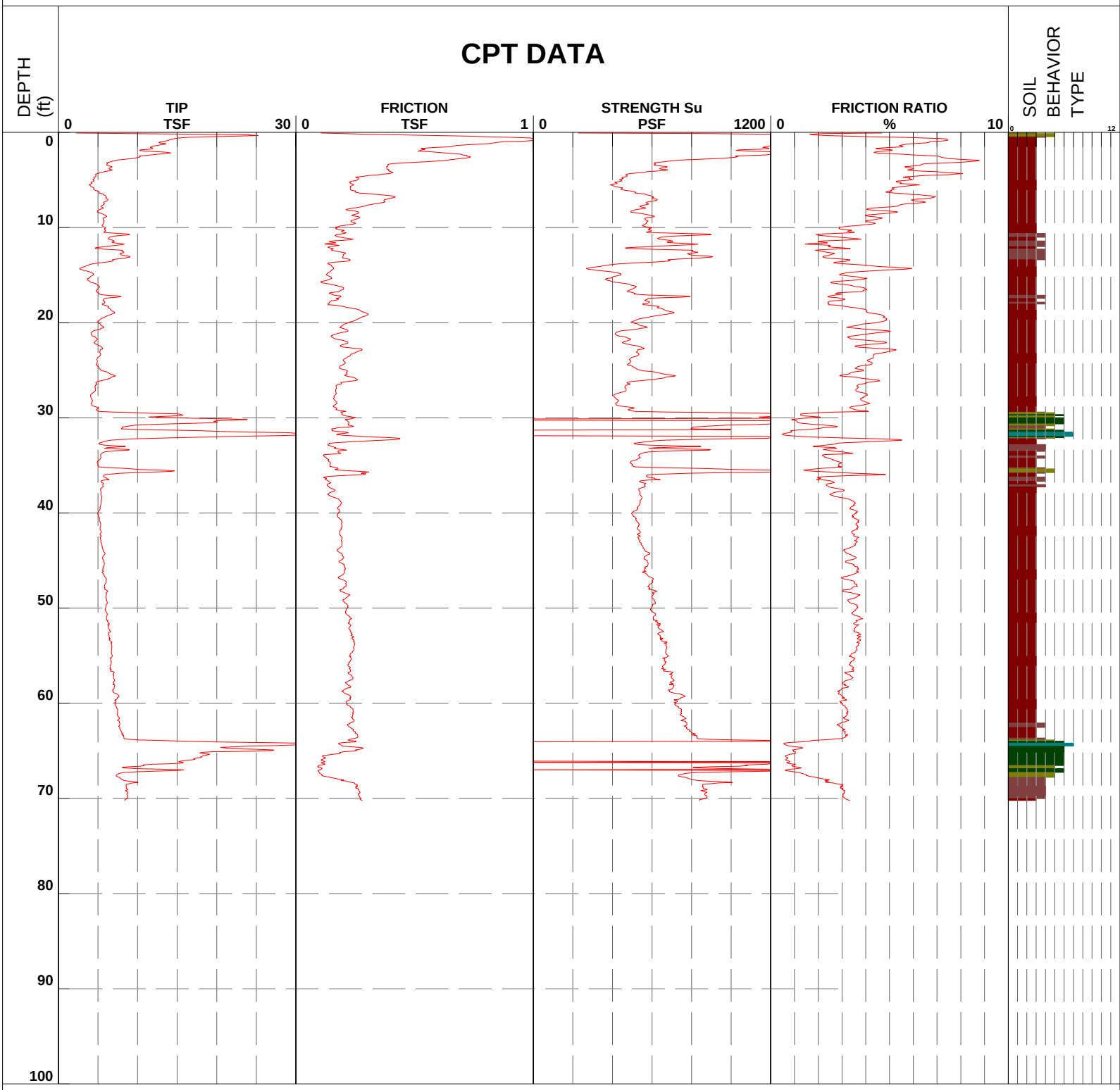
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-41FT	Coordinates	29 50' 06.87N 90 07' 05.66"W
Operator	HERBERT JACKSON	Date and Time	12-Mar-2007 15:59:16	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	5.1 ft	Water Table	

CPT DATA



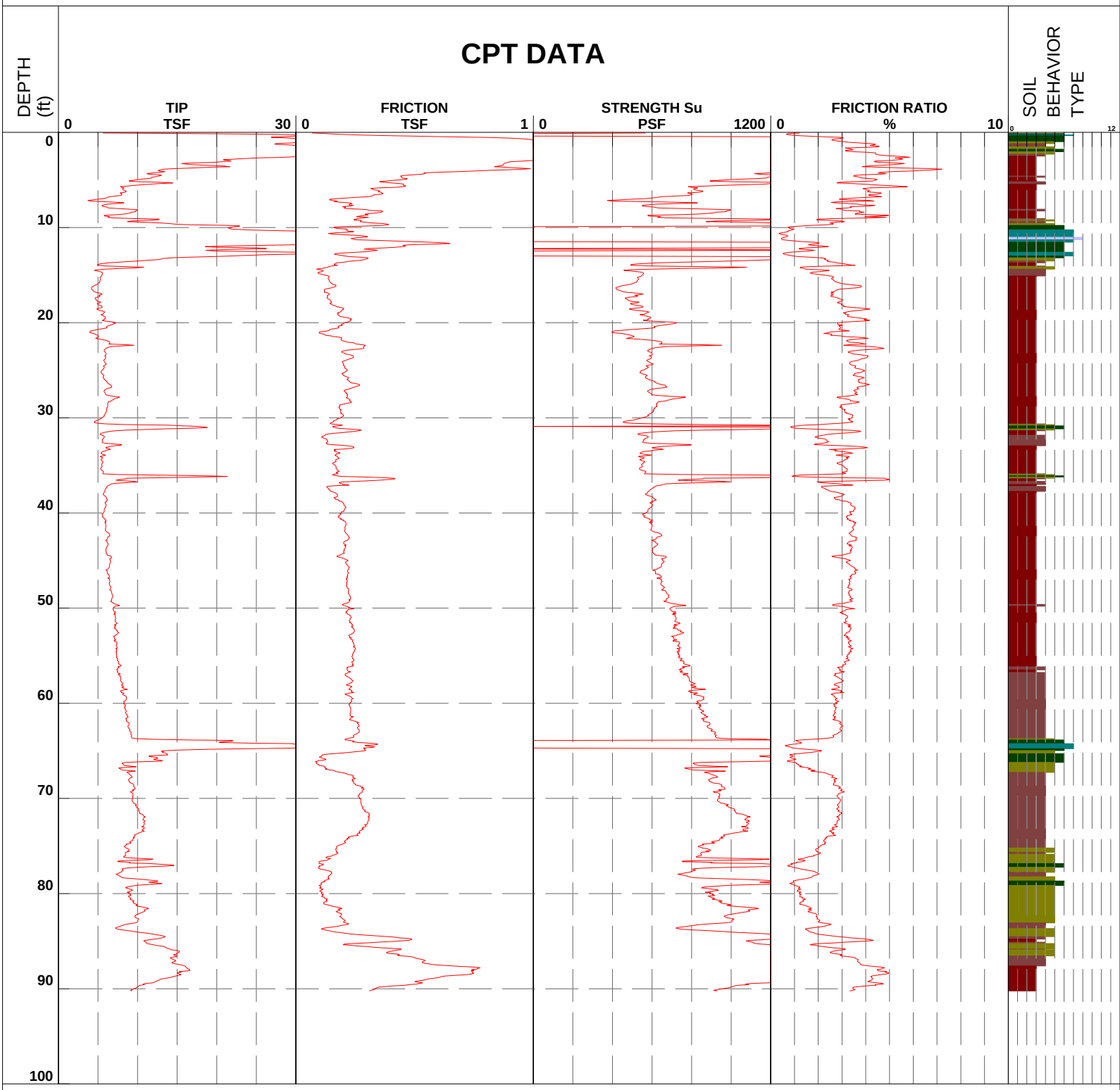
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-42CL	Coordinates	29 49' 57.93"N 90 06' 59.47"W
Operator	HERBERT JACKSON	Date and Time	13-Mar-2007 08:51:48	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	4.2 ft	Water Table	

CPT DATA



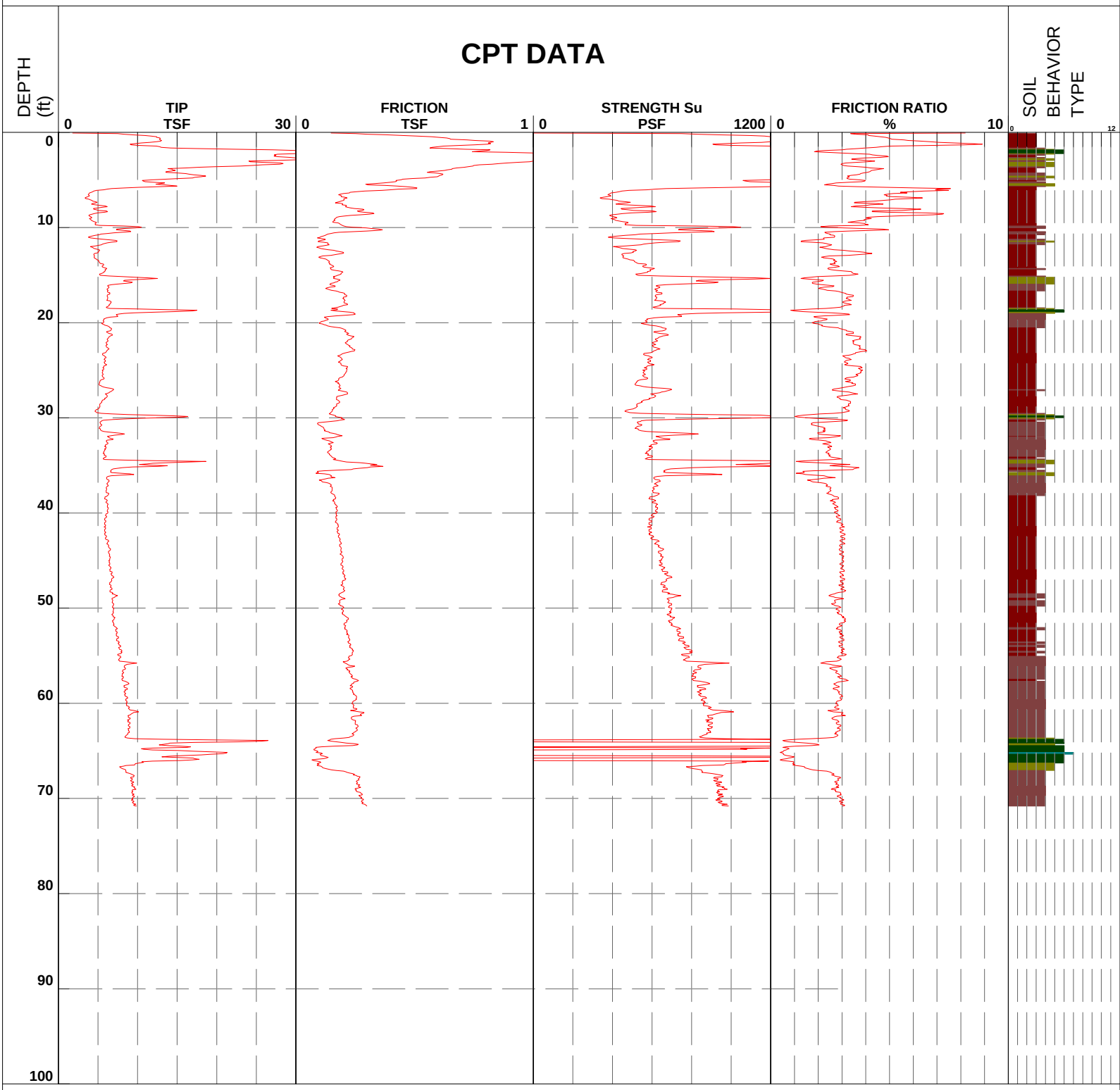
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-42PT	Coordinates	29 49' 58.70"N 90 6' 59.07"W
Operator	Jim Bandle	Date and Time	07-Mar-2007 10:45:37	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	3.2 ft	Water Table	

CPT DATA



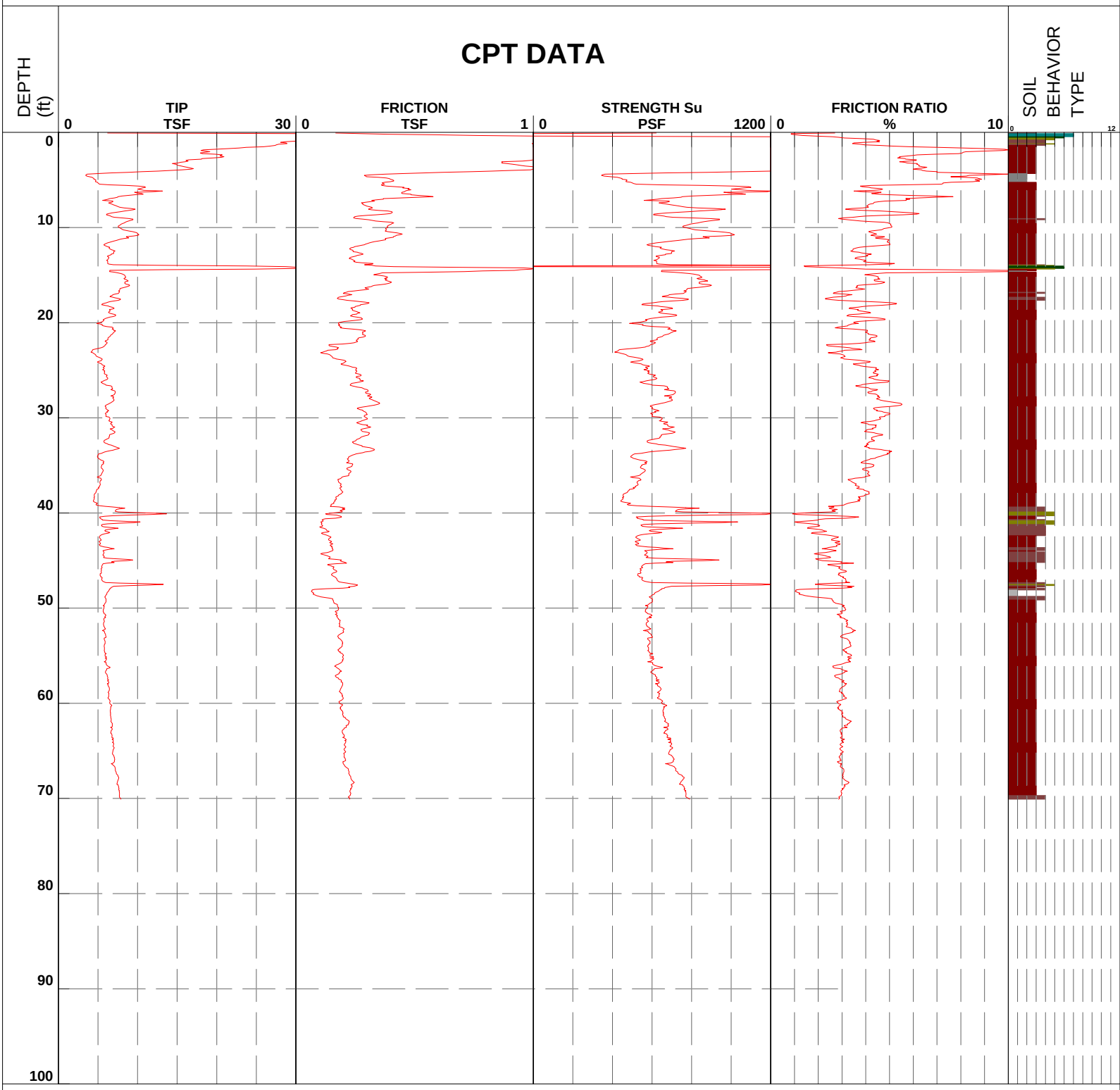
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-43CL	Coordinates	29 49' 49.40"N 90 06' 54.50"W
Operator	HERBERT JACKSON	Date and Time	13-Mar-2007 10:29:06	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	13.1 ft	Water Table	

CPT DATA



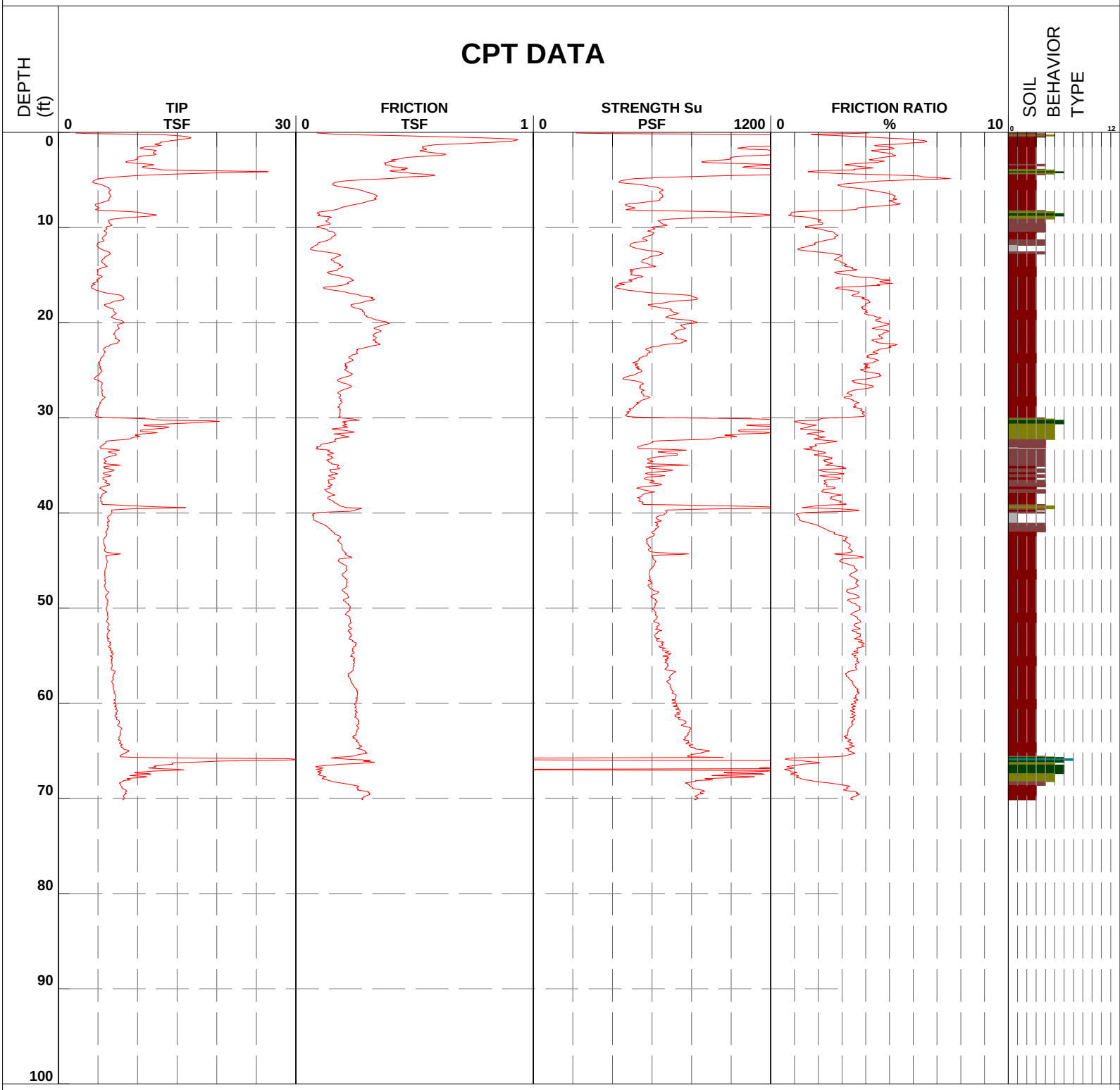
1 - sensitive fine grained	4 - silty clay to clay	7 - silty sand to sandy silt	10 - gravelly sand to sand
2 - organic material	5 - clayey silt to silty clay	8 - sand to silty sand	11 - very stiff fine grained (*)
3 - clay	6 - sandy silt to clayey silt	9 - sand	12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-43FT	Coordinates	29 49' 49.24"N 90 06' 54.91"W
Operator	HERBERT JACKSON	Date and Time	16-Mar-2007 12:00:07	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	5.0 ft	Water Table	

CPT DATA



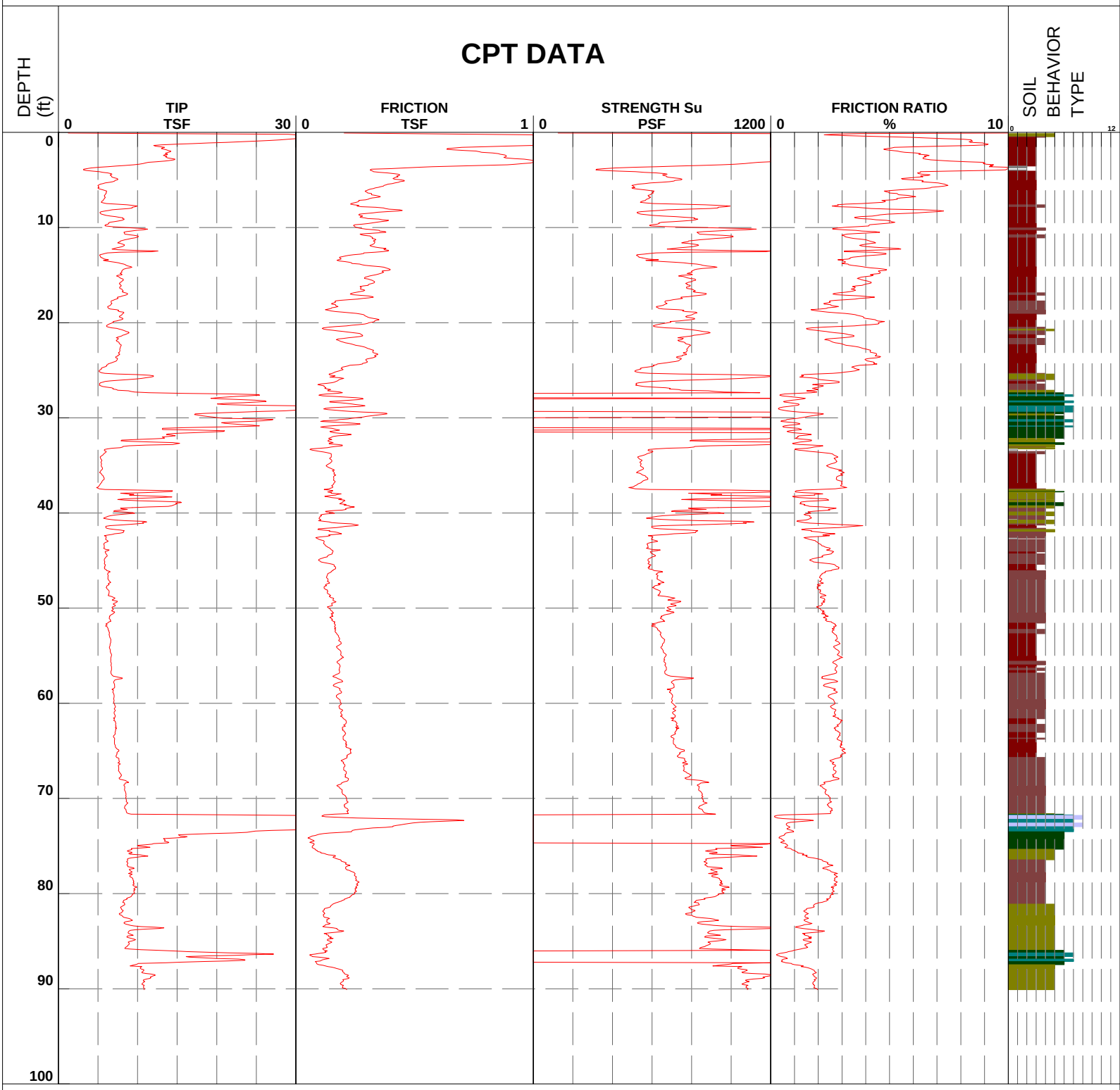
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-44CL	Coordinates	29 49' 40.86"N 90 06' 49.24"W
Operator	HERBERT JACKSON	Date and Time	13-Mar-2007 11:56:36	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	12.4 ft	Water Table	

CPT DATA



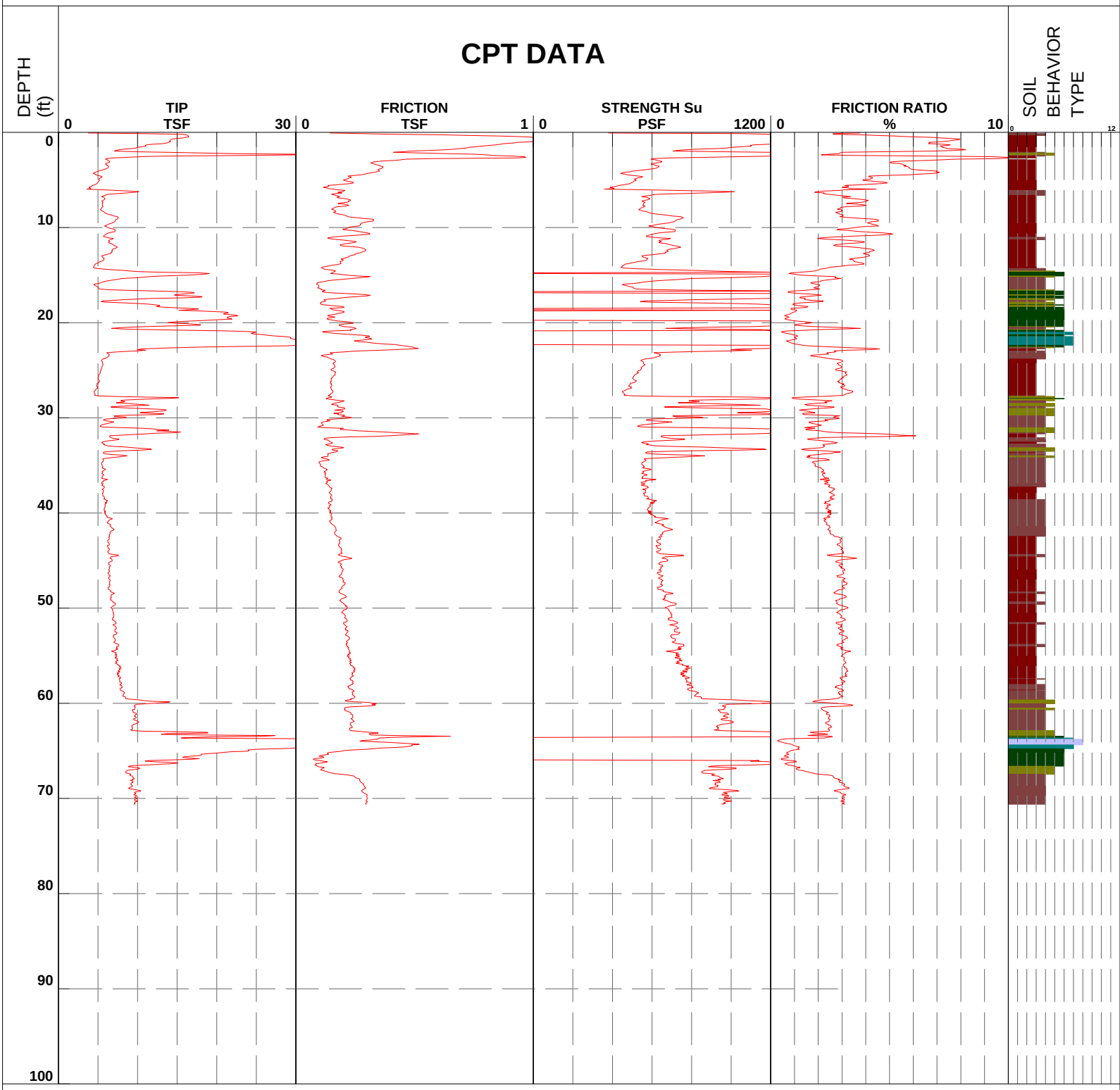
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-44PT	Coordinates	29 49' 41.27"N 90 06' 48.52"W
Operator	Jim Bandle	Date and Time	07-Mar-2007 11:45:16	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	2.9 ft	Water Table	

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-45CL	Coordinates	29 49' 31.61"N 90 06' 43.74"W
Operator	HERBERT JACKSON	Date and Time	13-Mar-2007 14:31:14	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	12.3 ft	Water Table	

CPT DATA

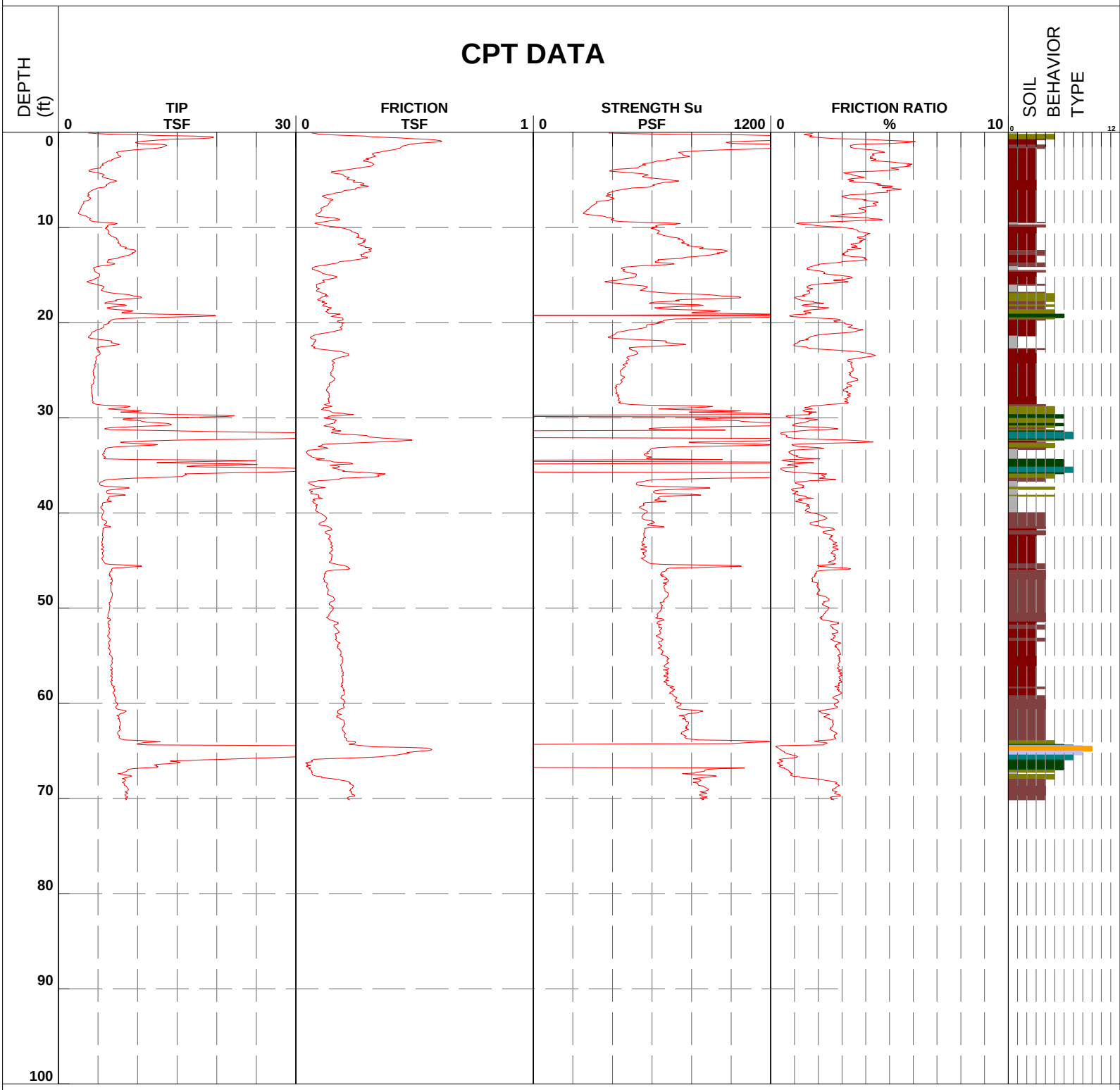
1 - sensitive fine grained	4 - silty clay to clay	7 - silty sand to sandy silt	10 - gravelly sand to sand
2 - organic material	5 - clayey silt to silty clay	8 - sand to silty sand	11 - very stiff fine grained (*)
3 - clay	6 - sandy silt to clayey silt	9 - sand	12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-45FT	Coordinates	29 49' 31.42"N 90 06' 44.26"W
Operator	HERBERT JACKSON	Date and Time	16-Mar-2007 10:42:10	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	5.0 ft	Water Table	

CPT DATA



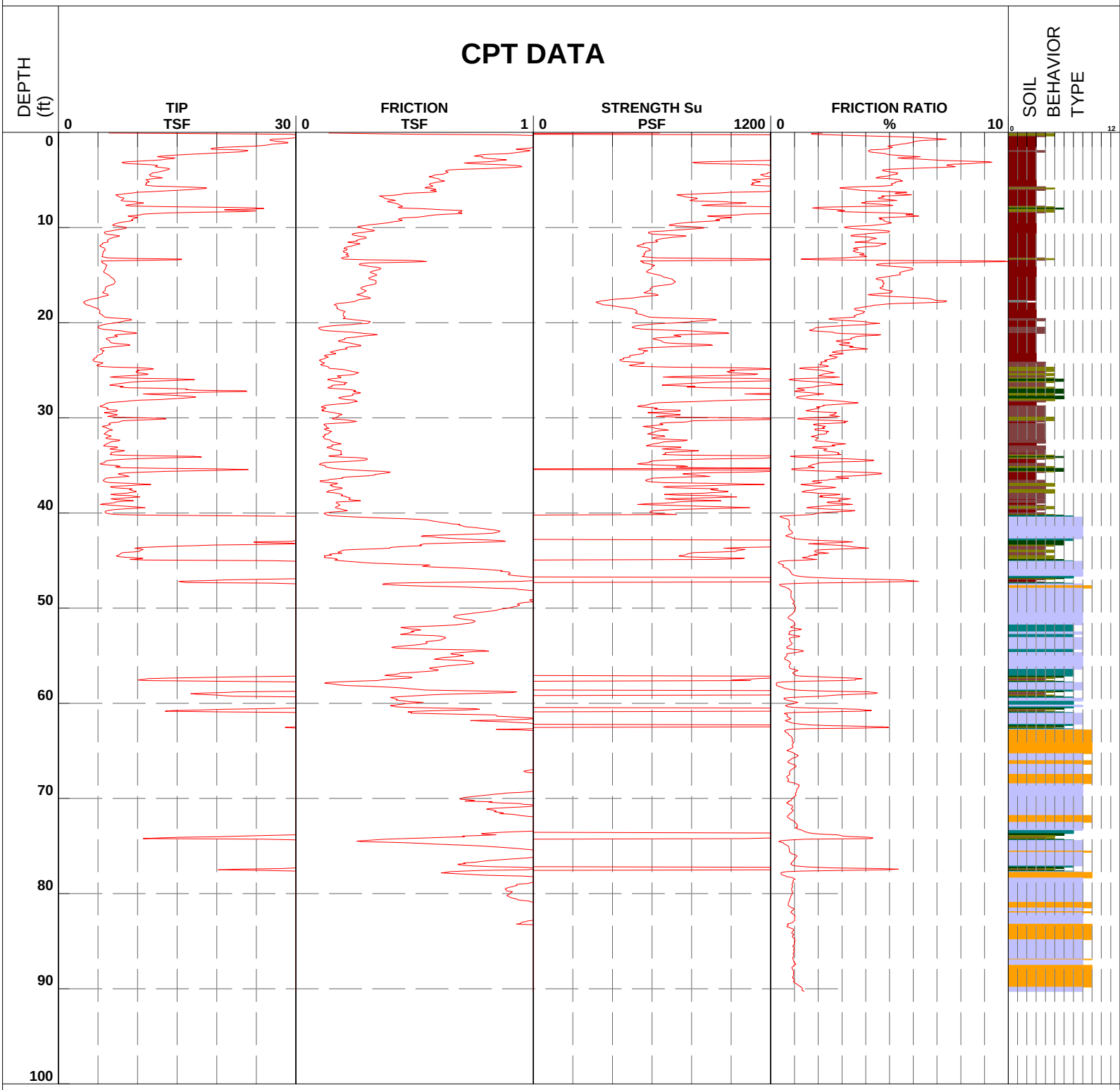
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-46CL	Coordinates	29 49' 22.01"N 90 06' 40.19"W
Operator	HERBERT JACKSON	Date and Time	13-Mar-2007 15:29:00	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	14.0 ft	Water Table	

CPT DATA



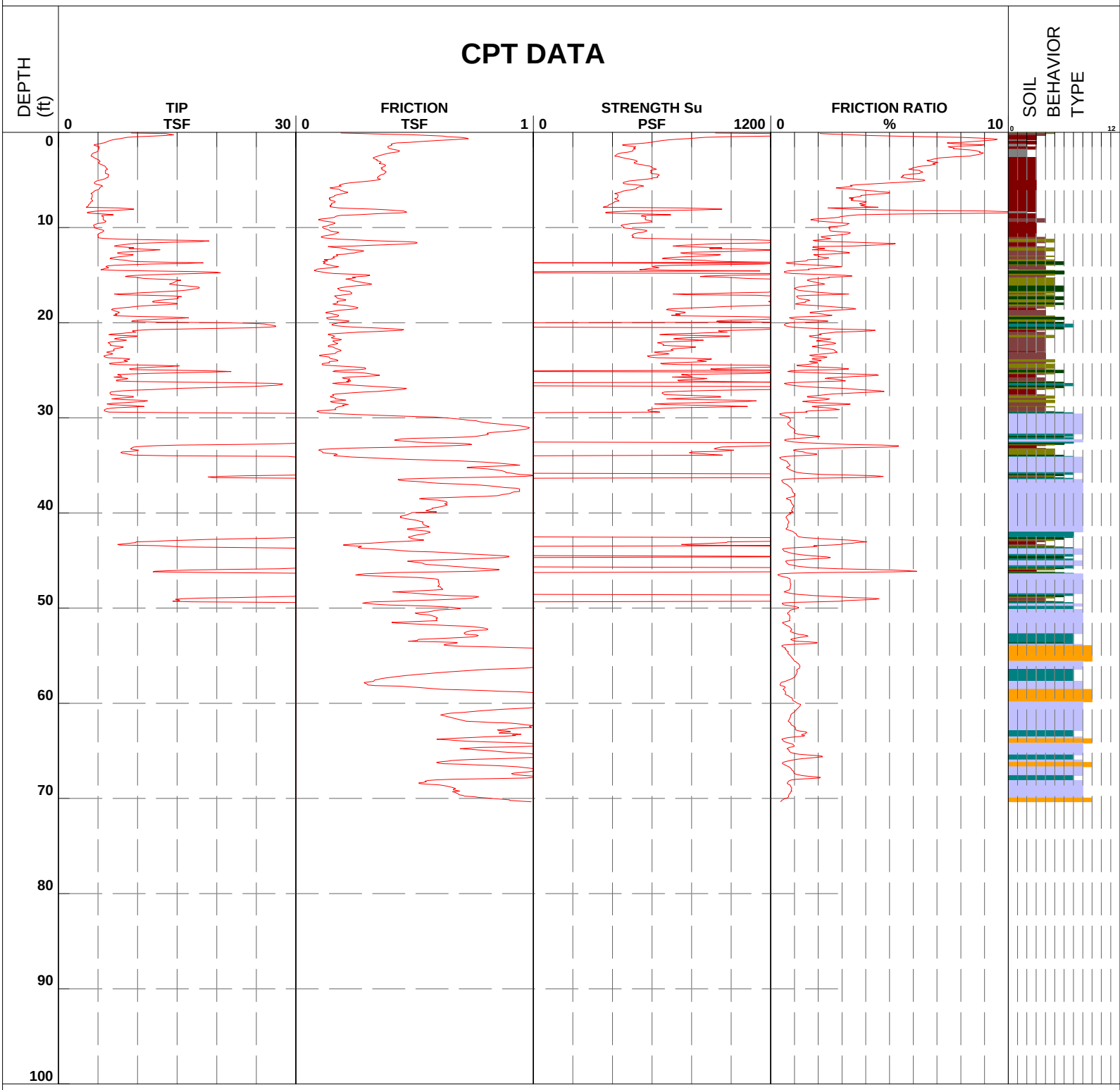
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-46PT	Coordinates	29 49' 22.36"N 90 06' 39.41"W
Operator	Jim Bandle	Date and Time	07-Mar-2007 12:52:07	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	2.1 ft	Water Table	

CPT DATA



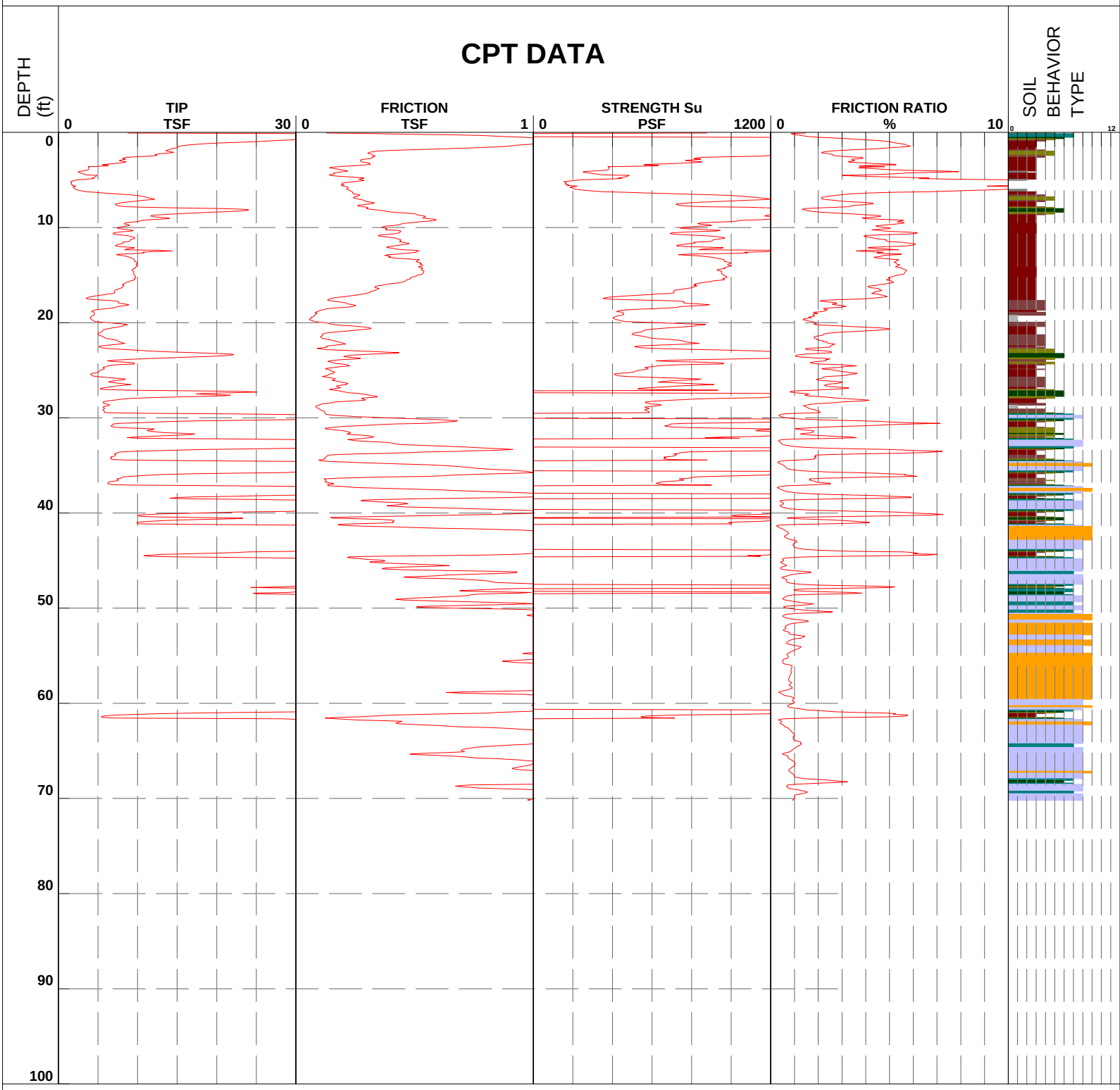
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-47CL	Coordinates	29 49' 13.19"N 90 06' 39.09"W
Operator	HERBERT JACKSON	Date and Time	14-Mar-2007 08:53:51	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	4.7 ft	Water Table	

CPT DATA



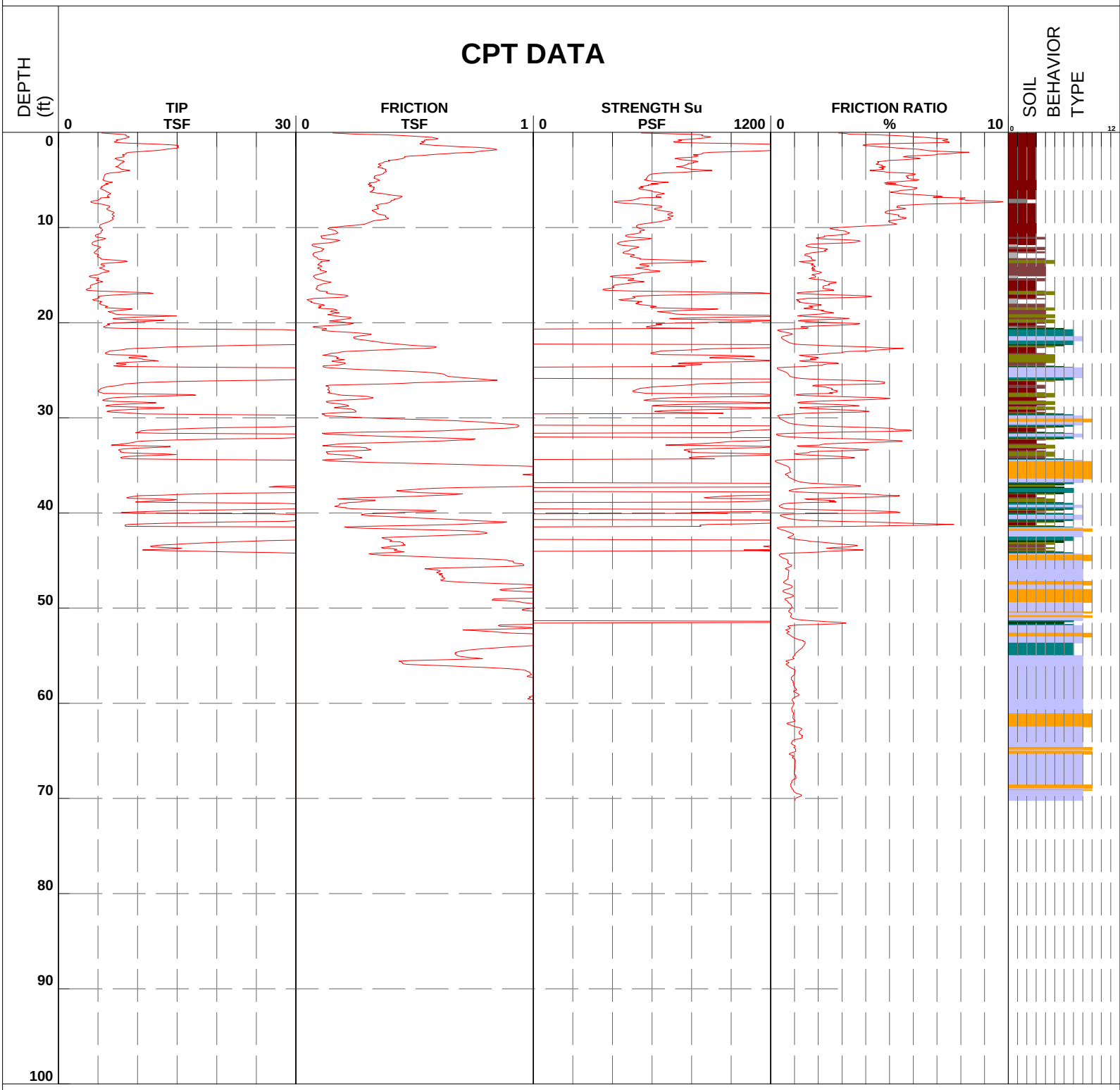
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-47FT	Coordinates	29 49' 13.24"N 90 06' 39.73"W
Operator	HERBERT JACKSON	Date and Time	16-Mar-2007 09:22:57	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	2.2 ft	Water Table	

CPT DATA



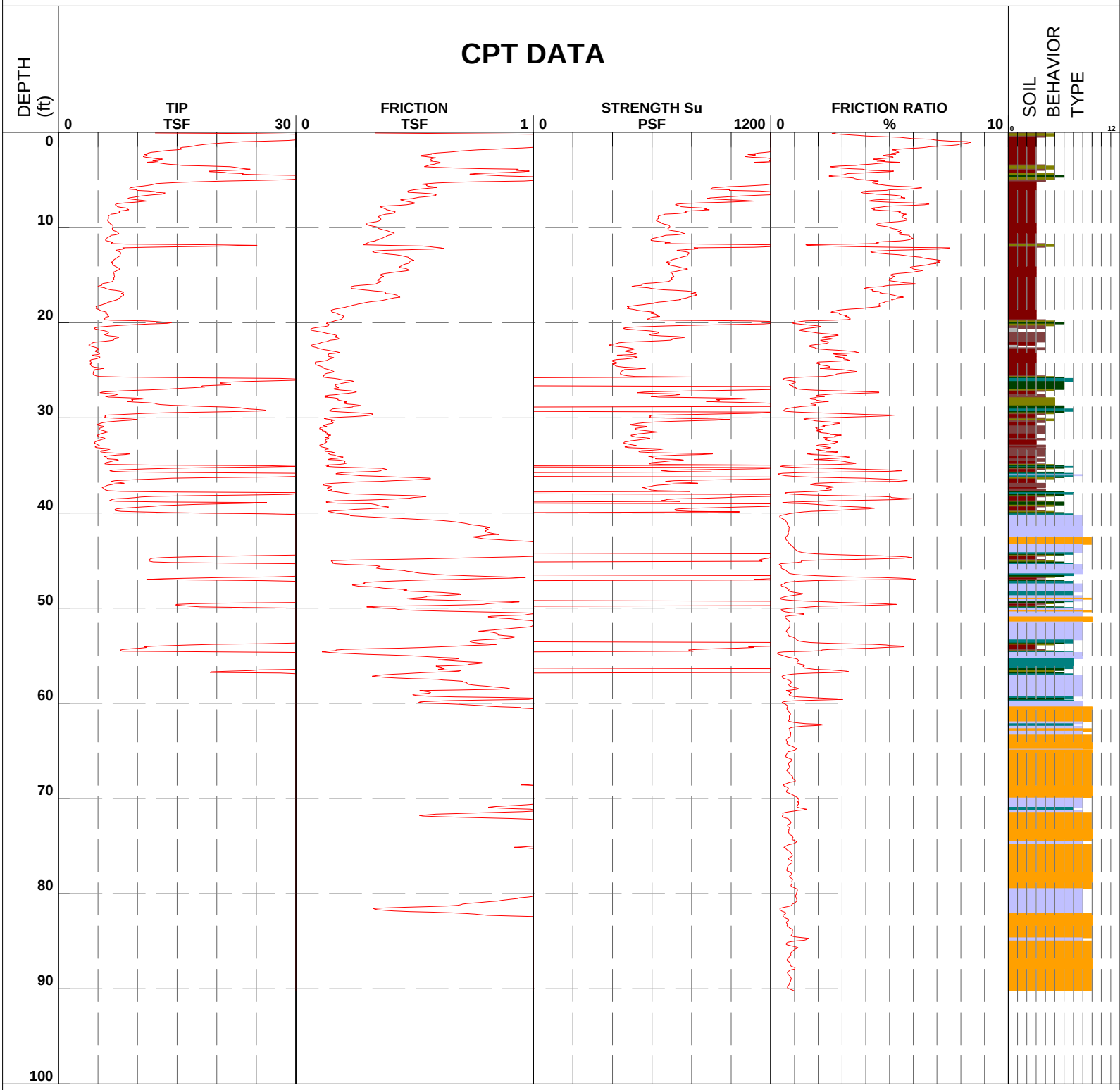
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-48CL	Coordinates	29 49' 03.43"N 90 06' 42.24"W
Operator	HERBERT JACKSON	Date and Time	14-Mar-2007 12:02:08	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	13.4 ft	Water Table	

CPT DATA



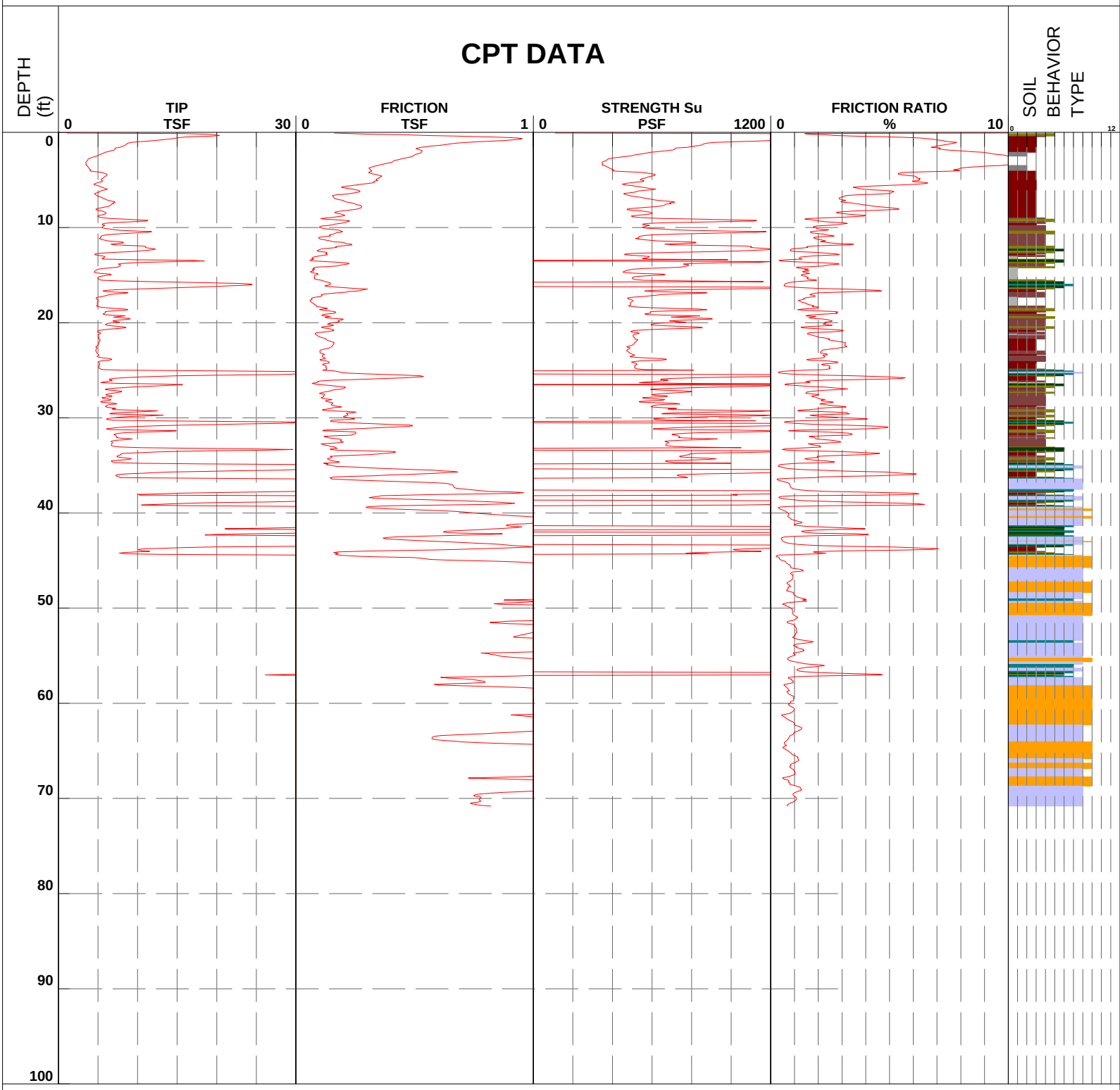
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-48PT	Coordinates	29 49' 03.24"N 90 06' 41.59"W
Operator	Jim Bandle	Date and Time	07-Mar-2007 14:51:10	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	2.4 ft	Water Table	

CPT DATA



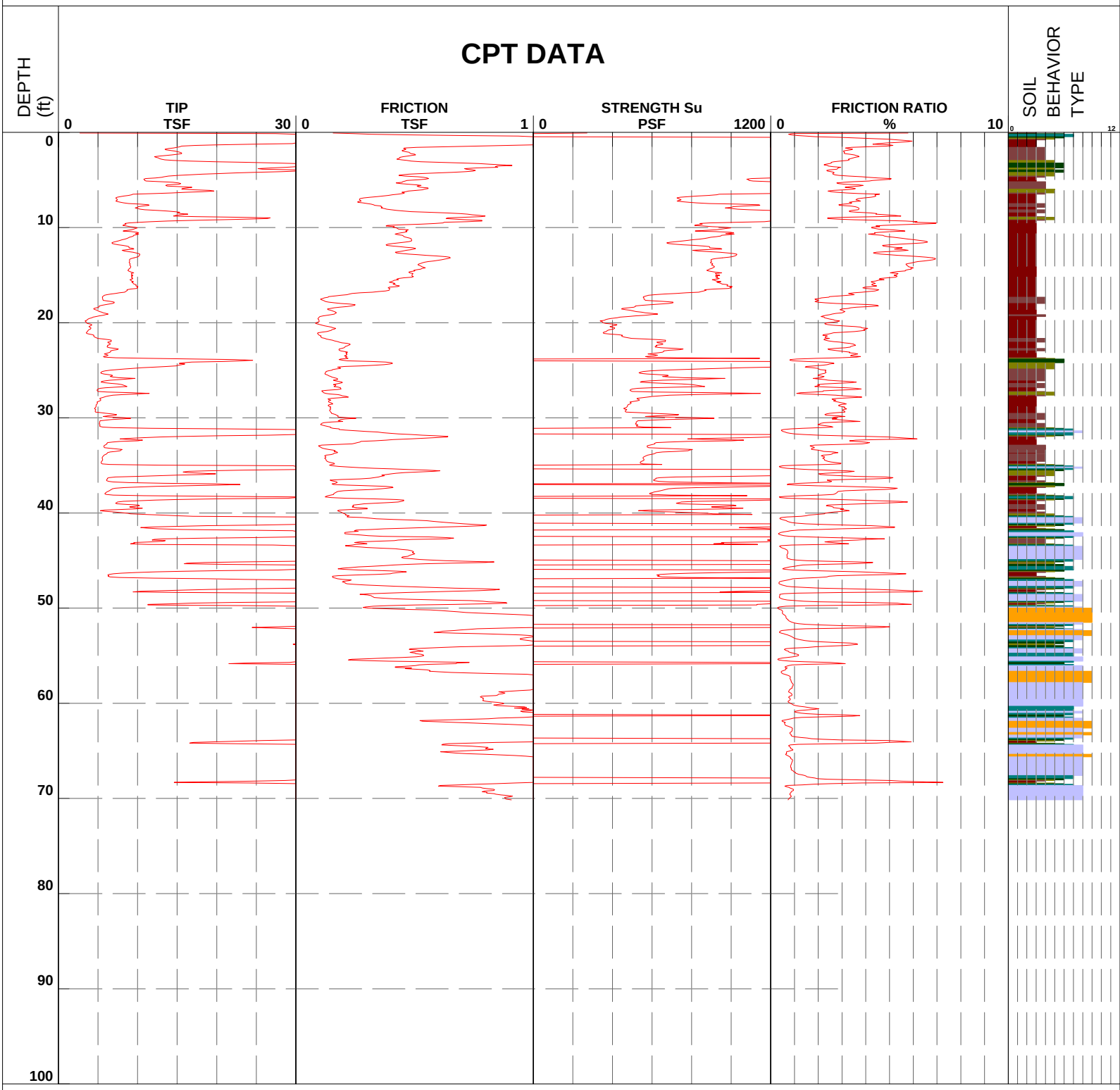
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-49CL	Coordinates	29 48' 54.26"N 90 06' 45.21"W
Operator	HERBERT JACKSON	Date and Time	14-Mar-2007 13:41:08	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	13.4 ft	Water Table	

CPT DATA



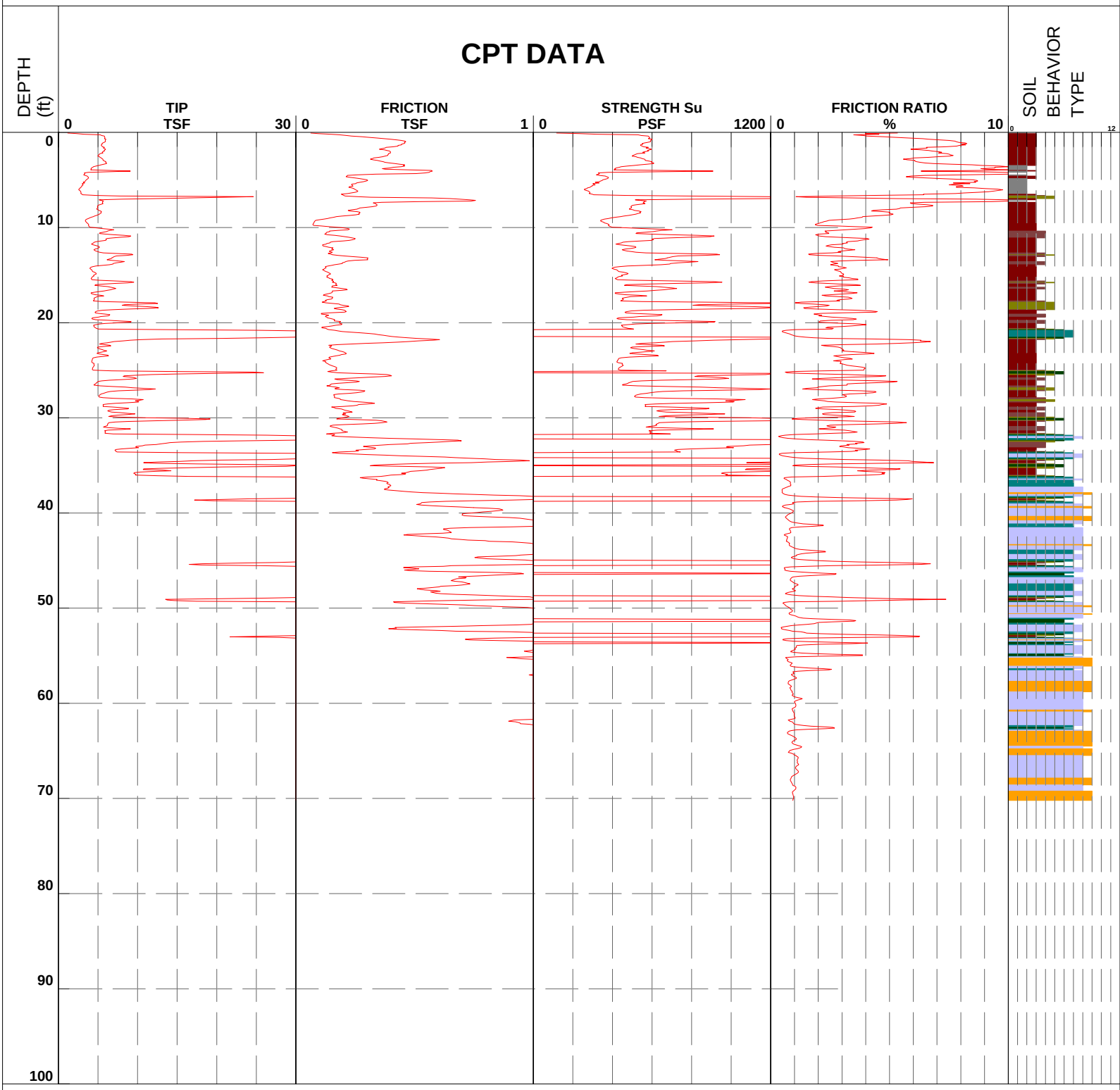
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-49FT	Coordinates	29 48' 54.42"N 90 06' 45.73"W
Operator	HERBERT JACKSON	Date and Time	16-Mar-2007 07:41:08	Cone Number	A15F2.5CKE3S1788
Client	USACE	Elevation	5.0 ft	Water Table	

CPT DATA



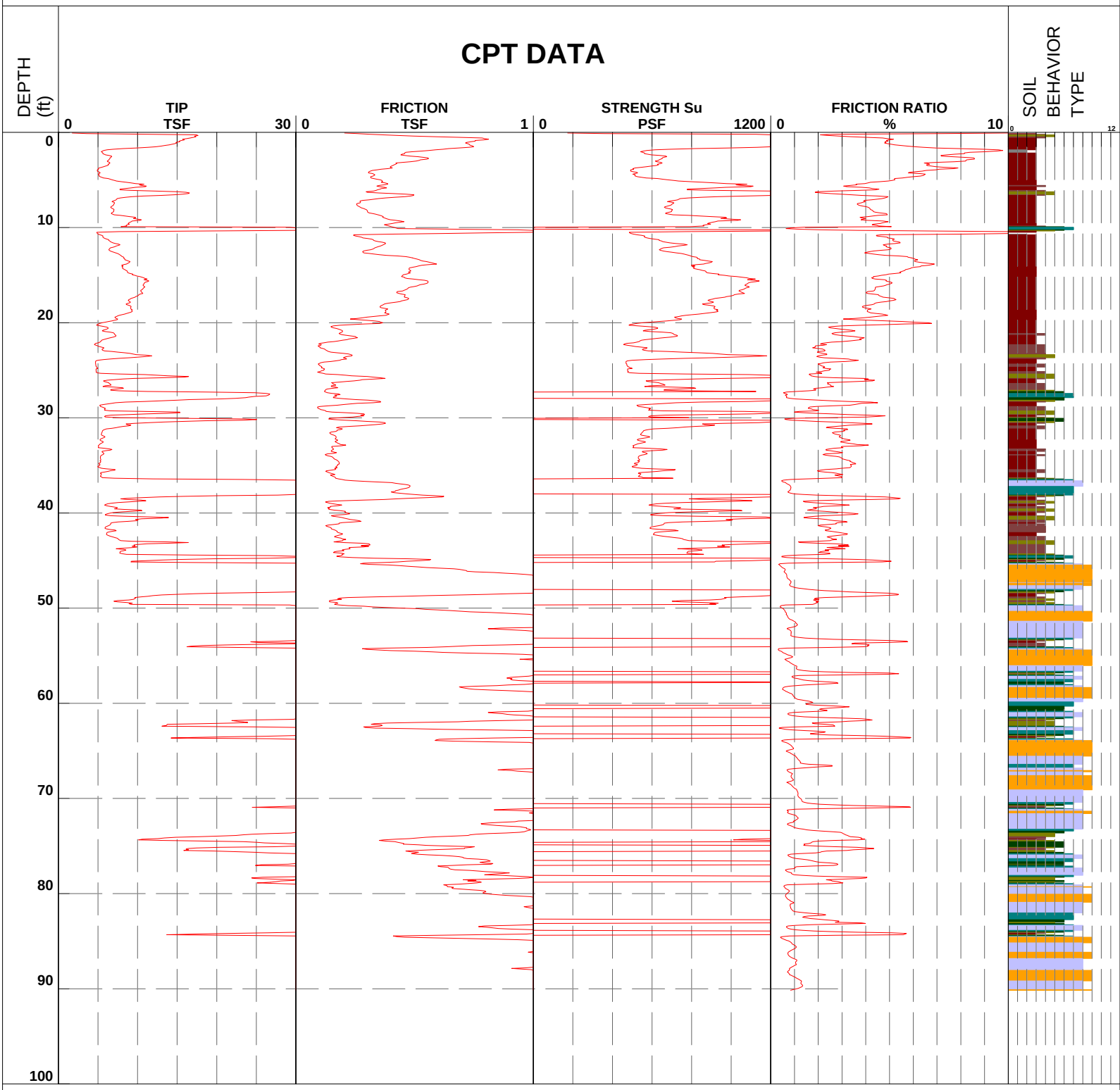
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-50CL	Coordinates	29 48' 46.22"N 90 06' 51.28"W
Operator	HERBERT JACKSON	Date and Time	14-Mar-2007 15:04:41	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	13.5 ft	Water Table	

CPT DATA



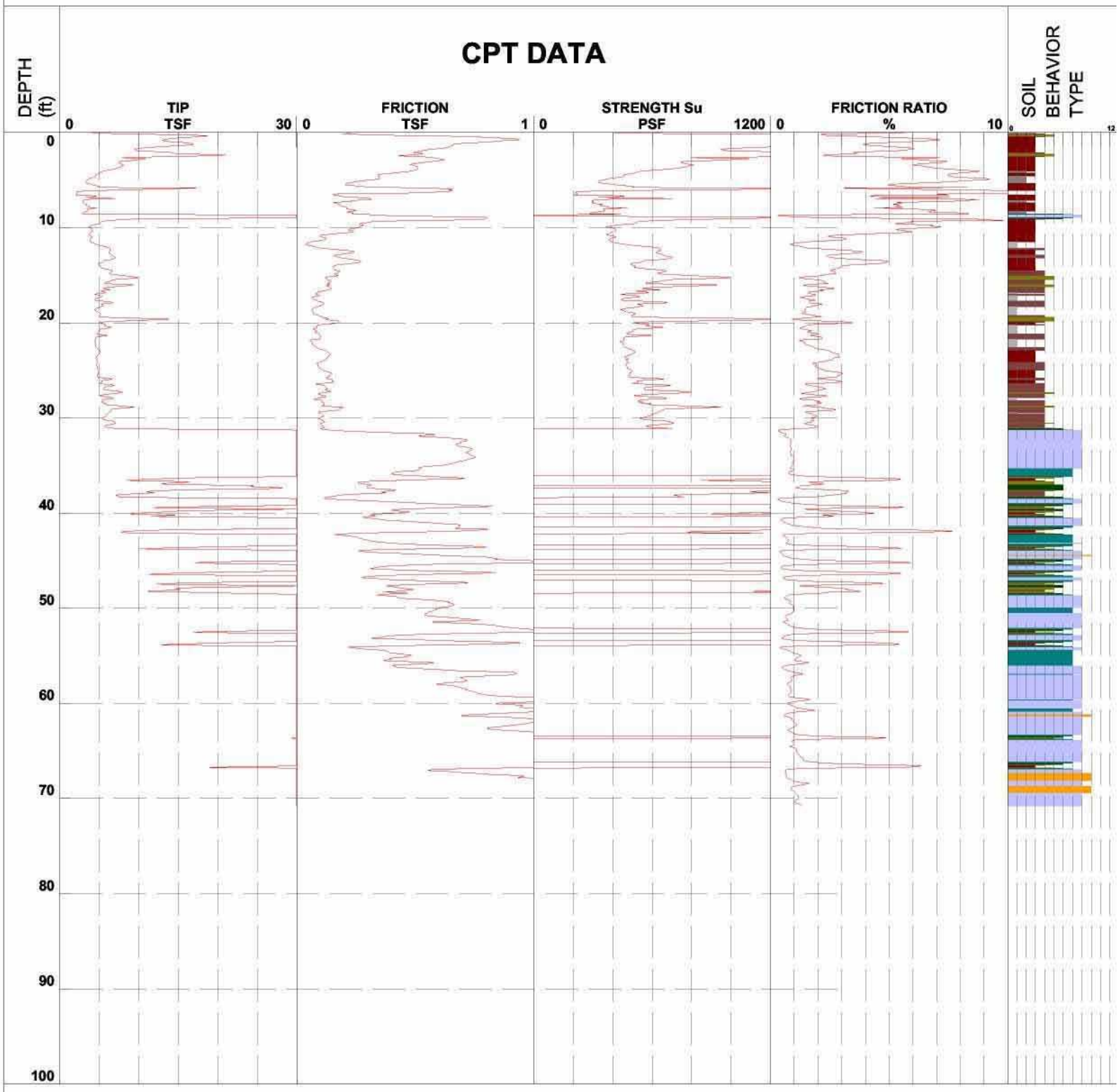
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-50PT	Coordinates	29 48' 45.62N 90 06' 50.72"W
Operator	Jim Bandle	Date and Time	07-Mar-2007 15:54:32	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	4.1 ft	Water Table	

CPT DATA



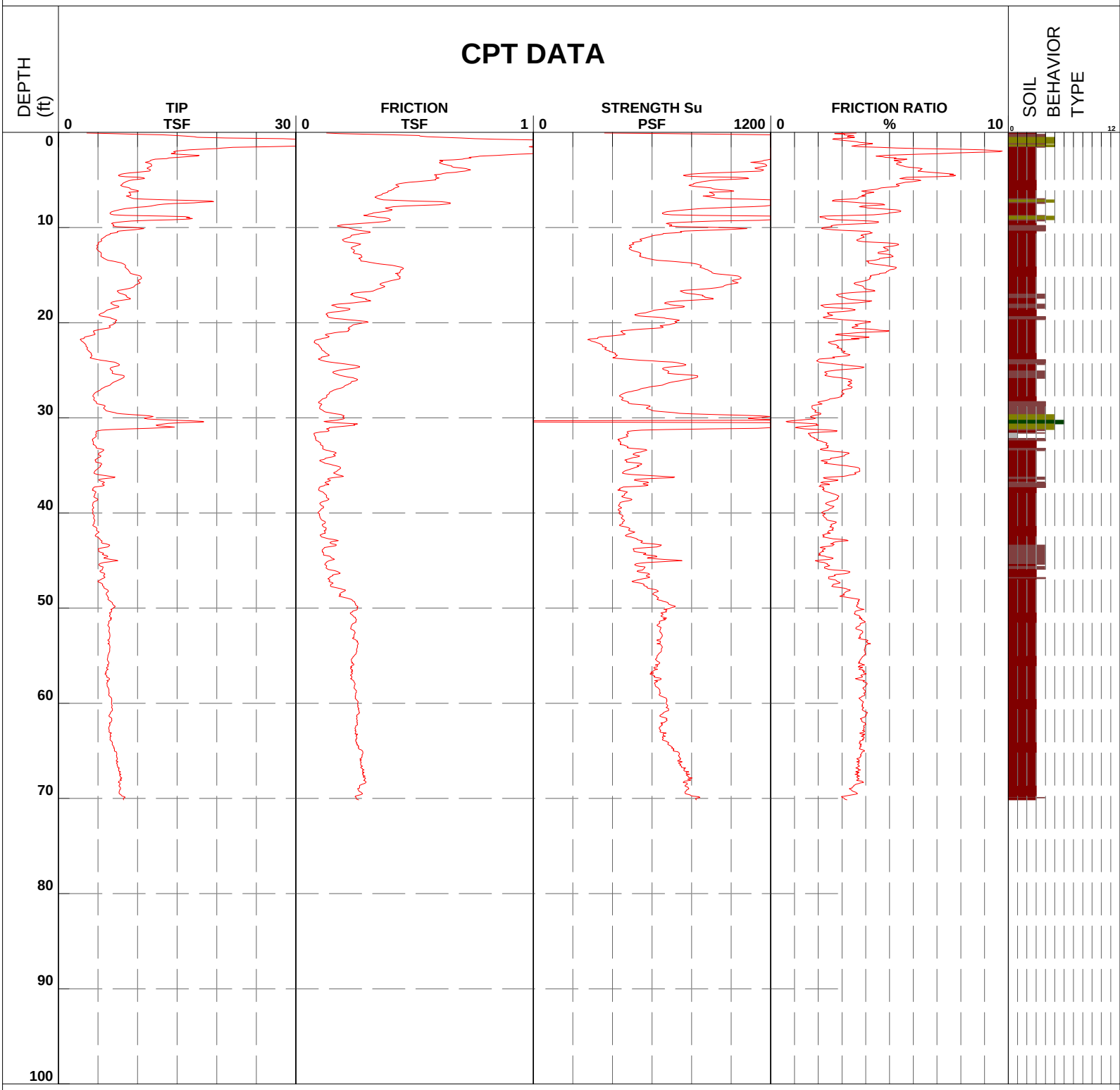
- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-51CL	Coordinates	29 48' 38.34"N 90 06' 58.72"W
Operator	HERBERT JACKSON	Date and Time	15-Mar-2007 11:46:45	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	13.5 ft	Water Table	

CPT DATA



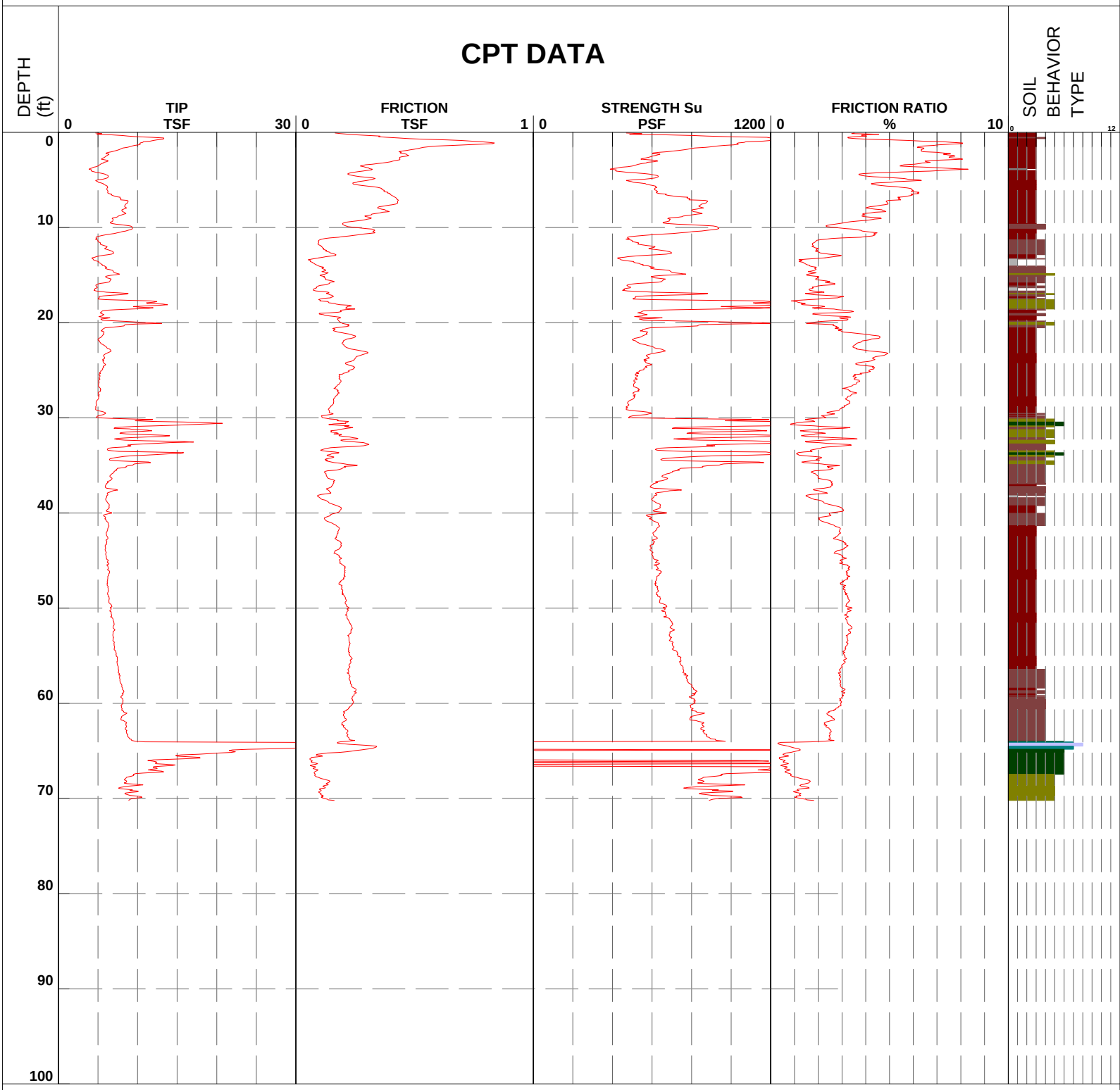
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-51FT	Coordinates	29 48' 38.65"N 90 06' 59.14"W
Operator	HERBERT JACKSON	Date and Time	15-Mar-2007 15:16:44	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	5.9 ft	Water Table	

CPT DATA



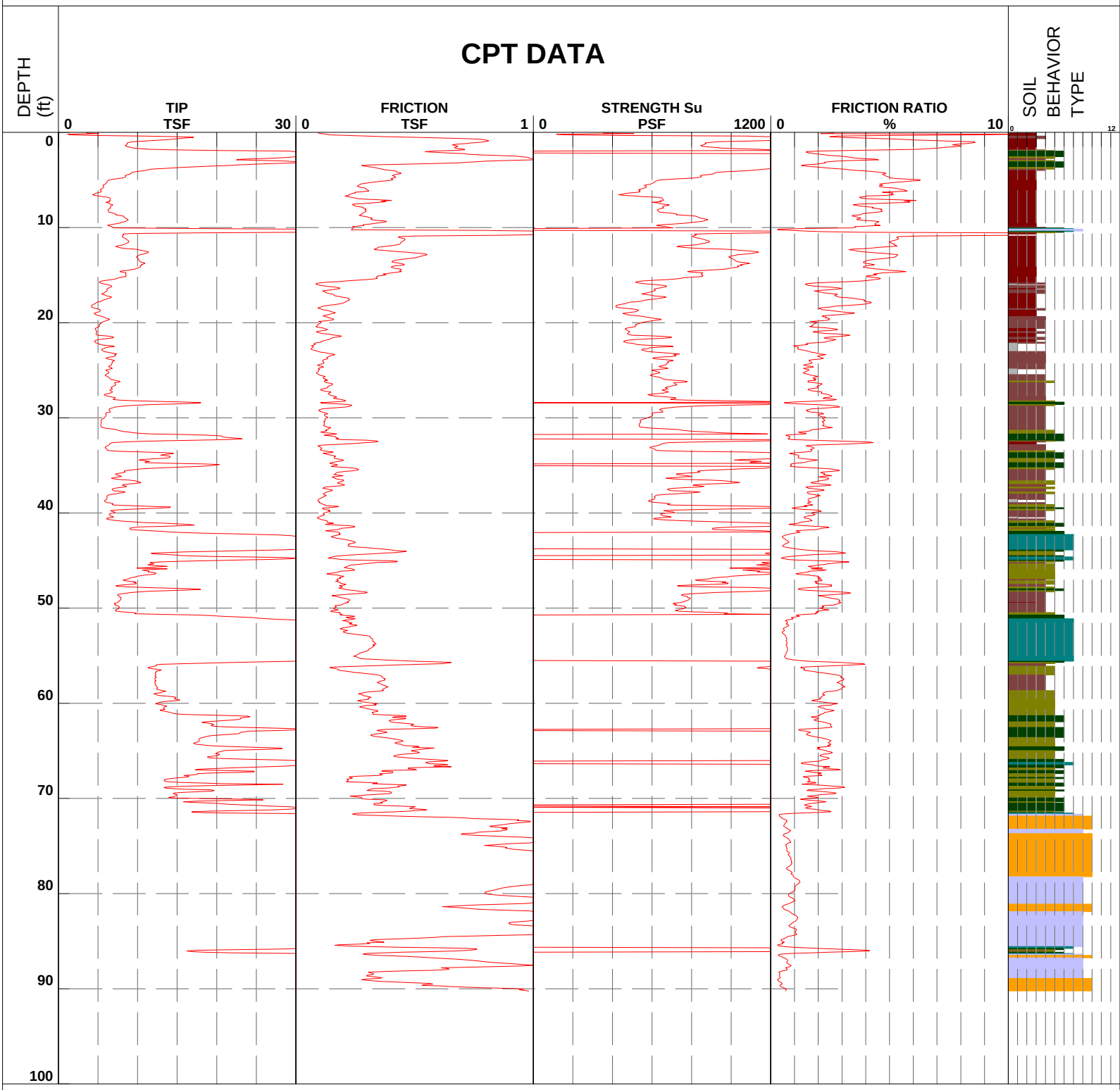
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-52CL	Coordinates	29 48' 26.13"N 90 06' 55.79"W
Operator	HERBERT JACKSON	Date and Time	15-Mar-2007 13:10:30	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	13.3 ft	Water Table	

CPT DATA



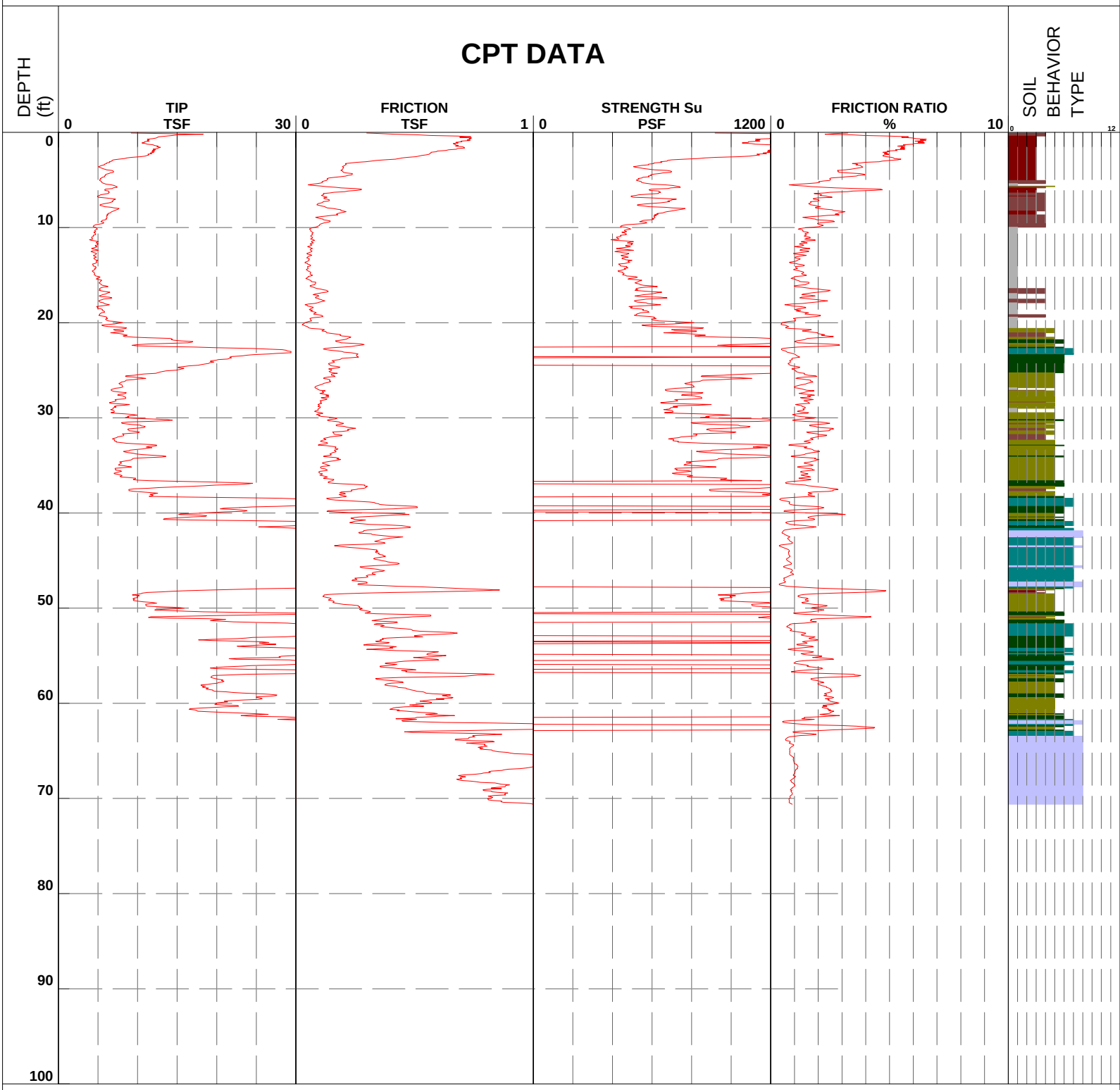
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-52PT	Coordinates	29 48' 26.75"N 90 06' 55.31"W
Operator	Jim Bandle	Date and Time	08-Mar-2007 07:22:12	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	4.1 ft	Water Table	

CPT DATA



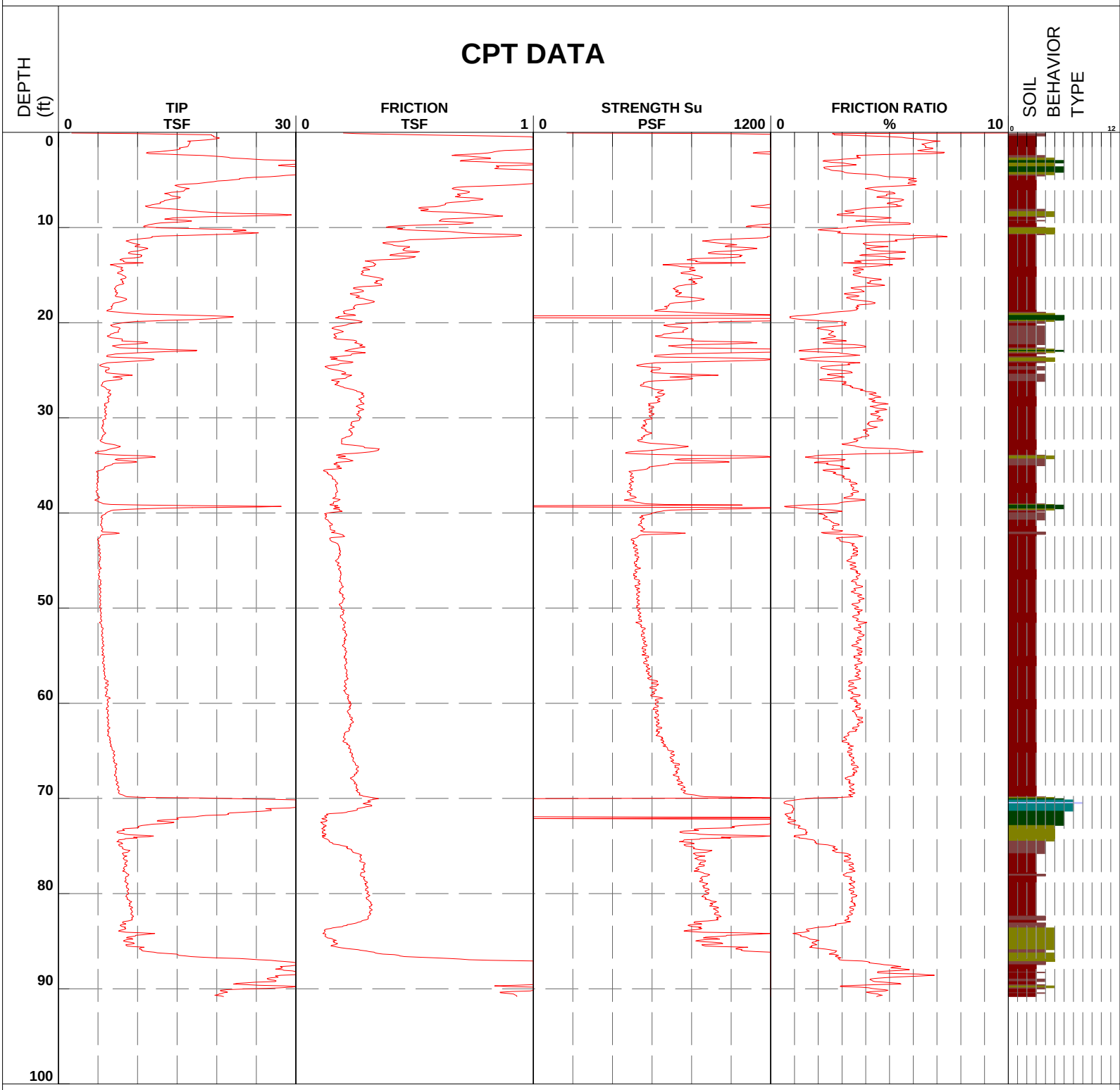
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-107CL	Coordinates	29 50' 28.82"N 90 07' 19.04"W
Operator	Albert Fonseca	Date and Time	05-Mar-2007 09:25:11	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	12.0	Water Table	

CPT DATA



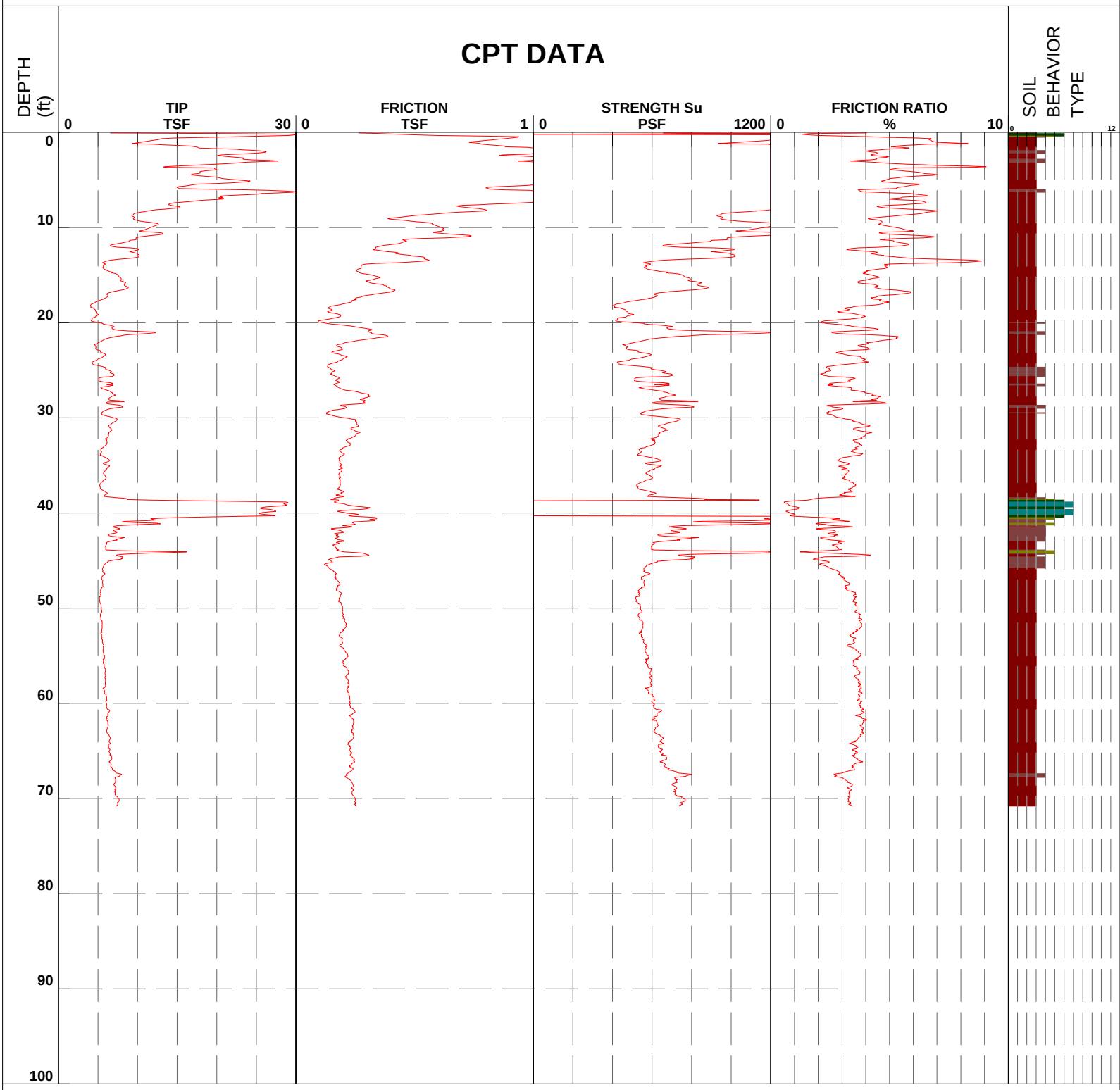
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-108CL	Coordinates	29 50' 02.81"N 90 07' 02.53"W
Operator	Albert Fonseca	Date and Time	05-Mar-2007 15:21:58	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	12.6 ft	Water Table	

CPT DATA



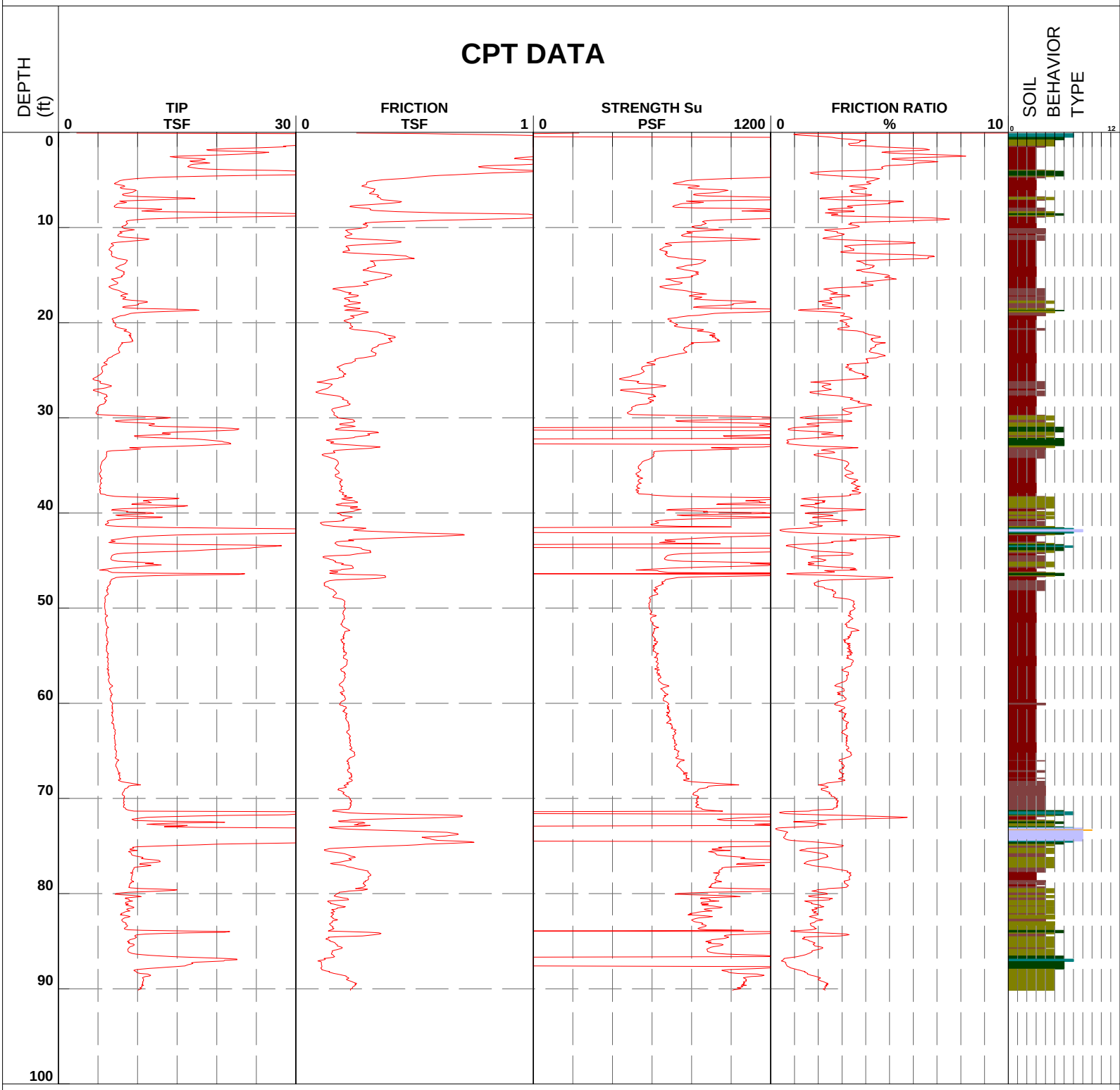
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-109CL	Coordinates	29 49' 36.76"N 90 06' 46.78"W
Operator	HERBERT JACKSON	Date and Time	13-Mar-2007 13:16:40	Cone Number	F2.5CKE3S 1788
Client	USACE	Elevation	12.1 ft	Water Table	

CPT DATA



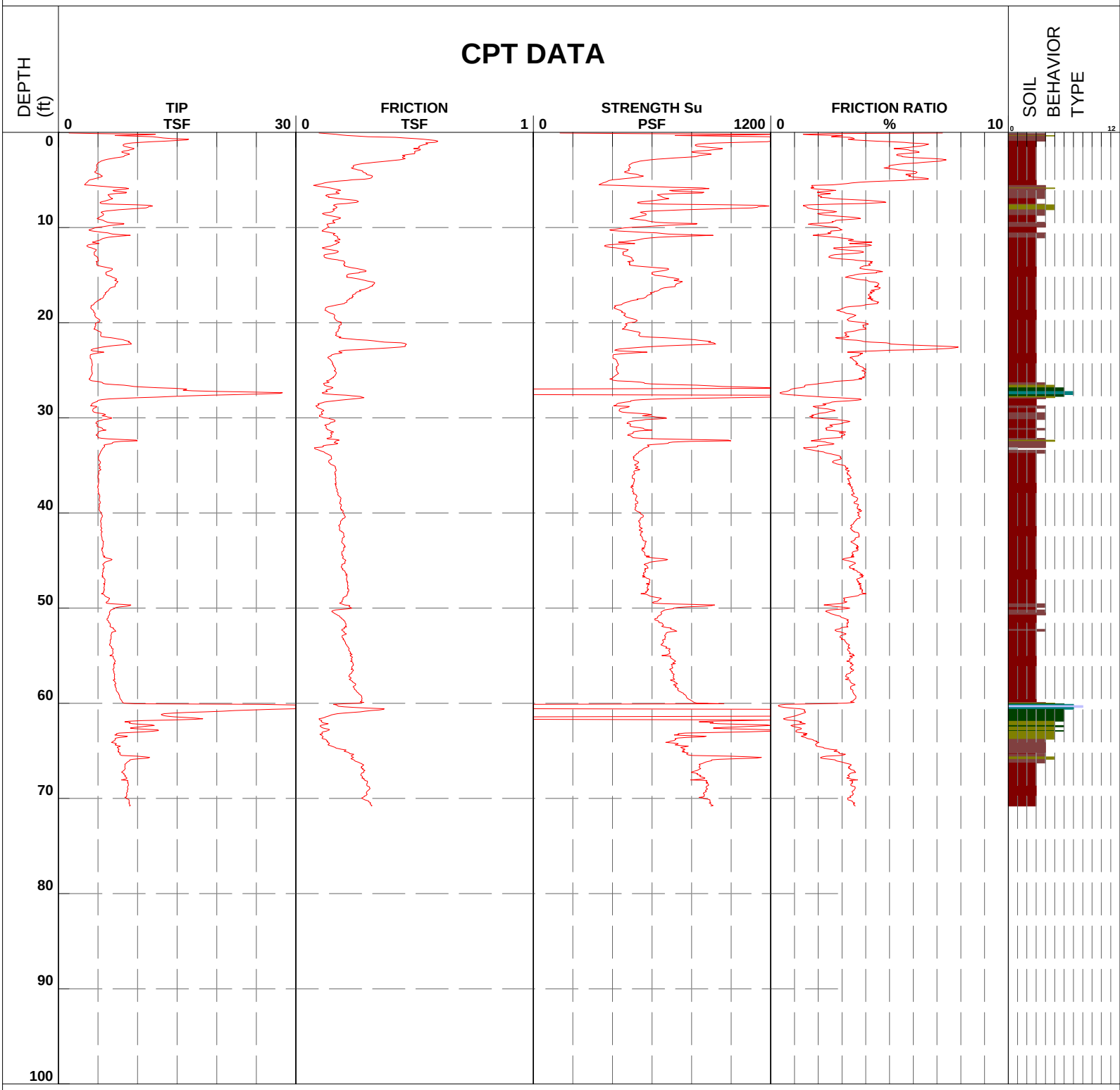
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

Westwego Harvey Canal

Job Number	0022-0002	CPT Number	WWHCCPT-133PT	Coordinates	29 50' 38.66"N 90 07' 23.23"W
Operator	Albert Fonseca	Date and Time	02-Mar-2007 15:14:01	Cone Number	F2.5CKEW2 1636
Client	USACE	Elevation	3.7 ft	Water Table	

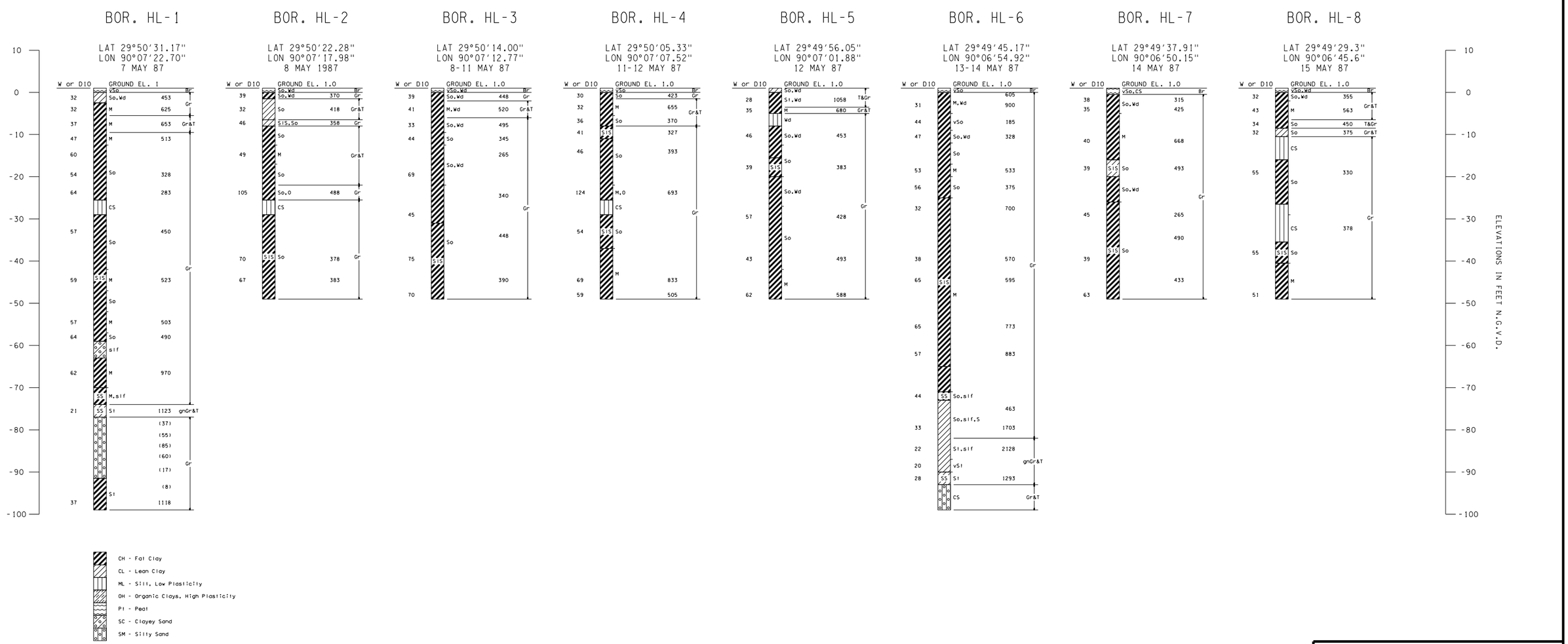
CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

LEGACY BORINGS
(Prior to First Lift)



WESTBANK IN THE VICINITY OF NEW ORLEANS, LA
WESTWEGO TO HARVEY CANAL, LA

100 YEAR LEVEE ENLARGEMENT

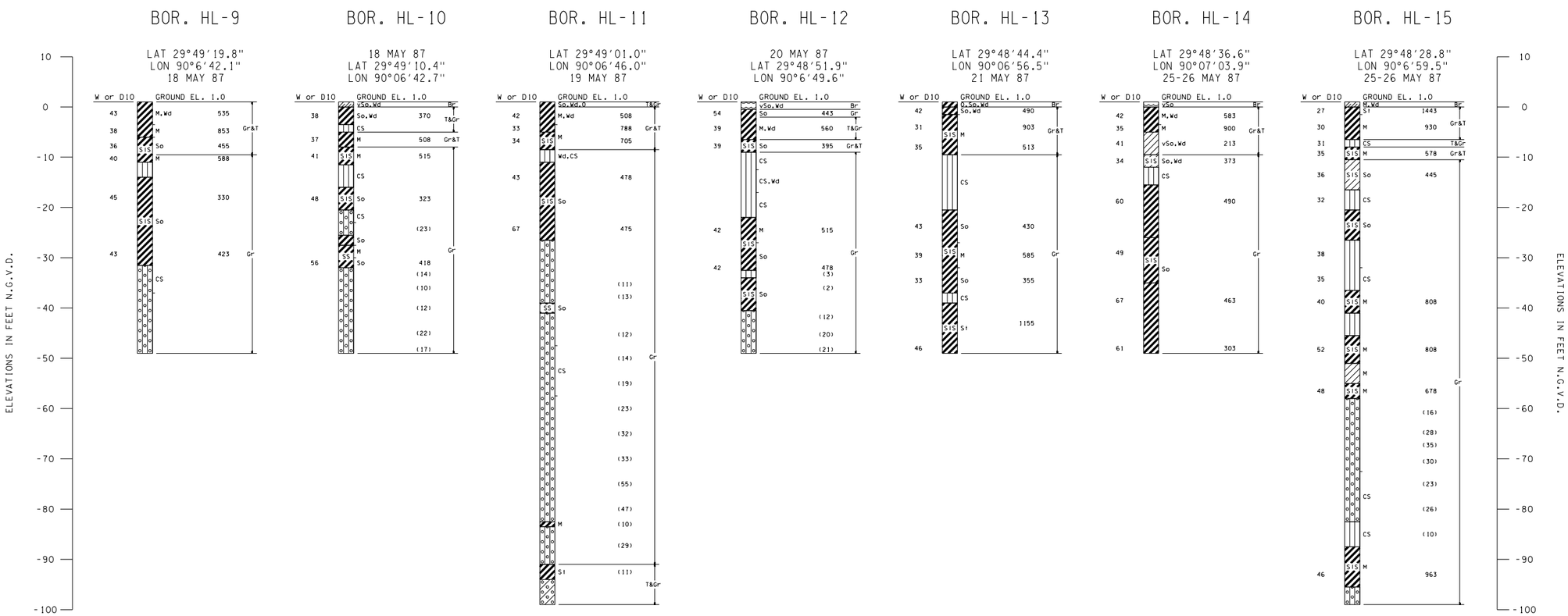
HWY 45 LEVEE

HISTORICAL BORING LOGS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	K.J.T	PLOT SCALE:	PLOT DATE:	CADD FILE:	HL-BOR
DRAWN BY:	K.J.T.	10	JAN 08	FILE NO.	H-4-XXXXX
CHECKED BY:	K.J.T.	DATE:	JAN 08		

PLATE X



WESTBANK IN THE VICINITY OF NEW ORLEANS, LA
WESTWEGO TO HARVEY CANAL, LA

100 YEAR LEVEE ENLARGEMENT

HWY 45 LEVEE

HISTORICAL BORING LOGS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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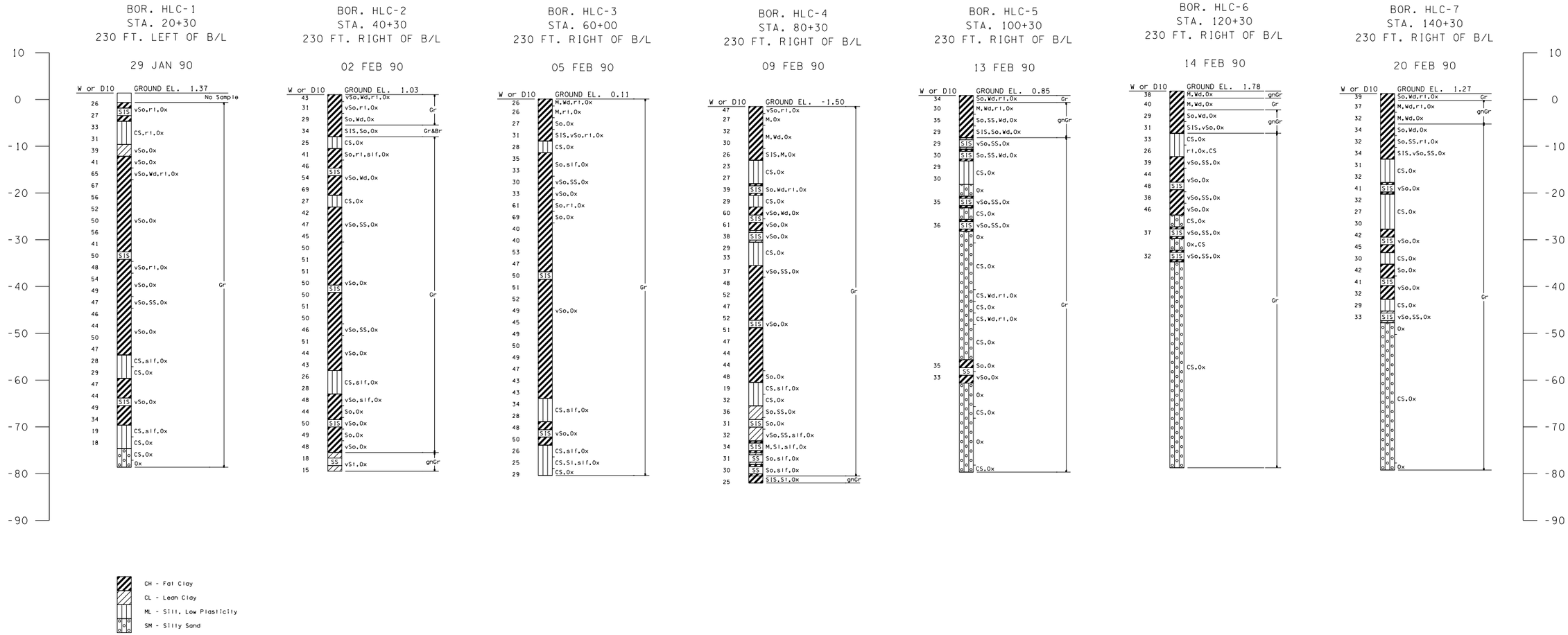
DESIGNED BY:	K.J.T	PLOT SCALE:	PLOT DATE:	CADD FILE:	HL-BOR
DRAWN BY:	K.J.T.	10	JAN 08	FILE NO.	H-4-XXXXX
CHECKED BY:	K.J.T.	DATE:	JAN 08		

PLATE X

HLCBOR.DGN



NOTES

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE

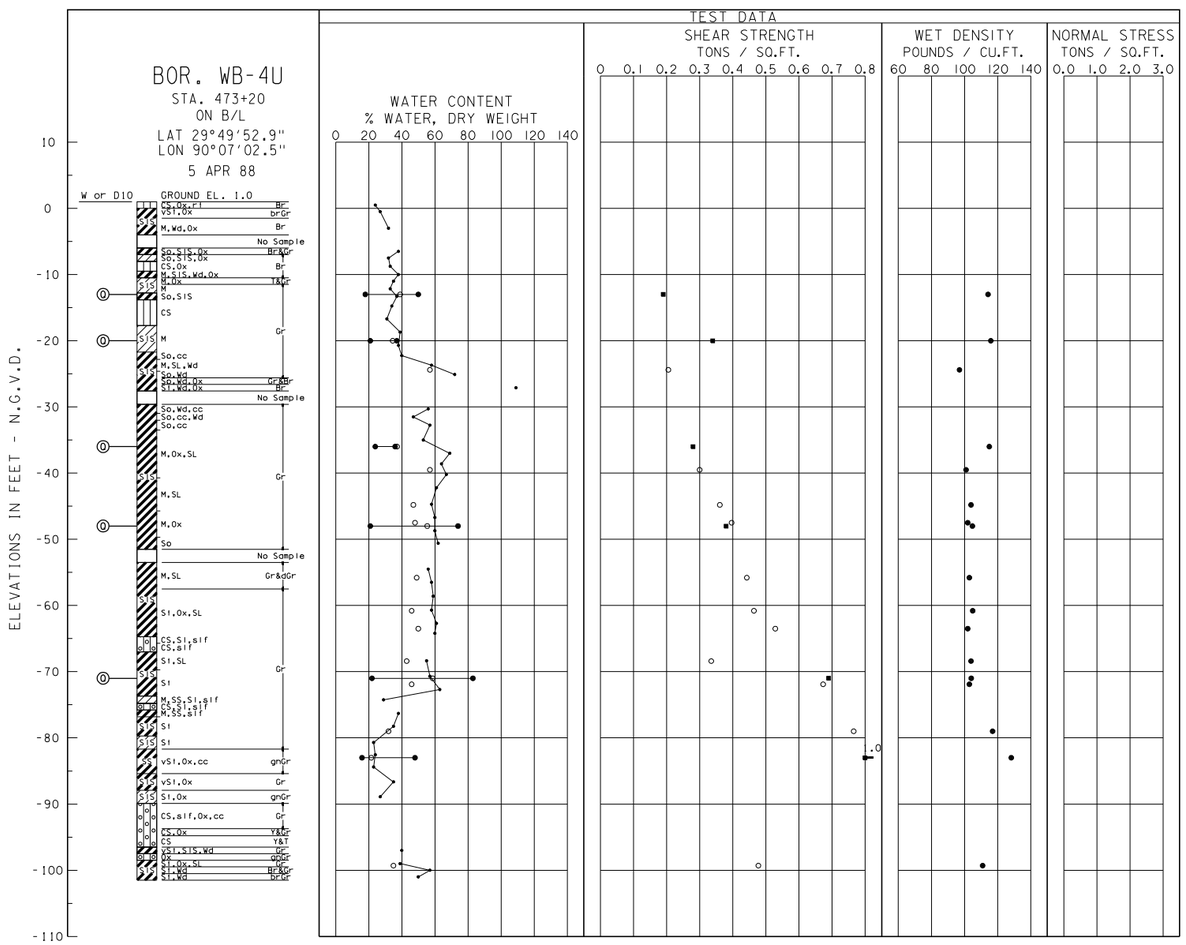
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	PLOT SCALE:	PLOT DATE:	CADD FILE:
DRAWN BY:			FILE NO.
CHECKED BY:	DATE:		

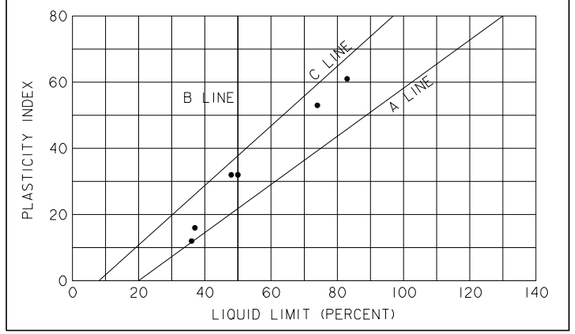
PLATE

BOR. WB-4U

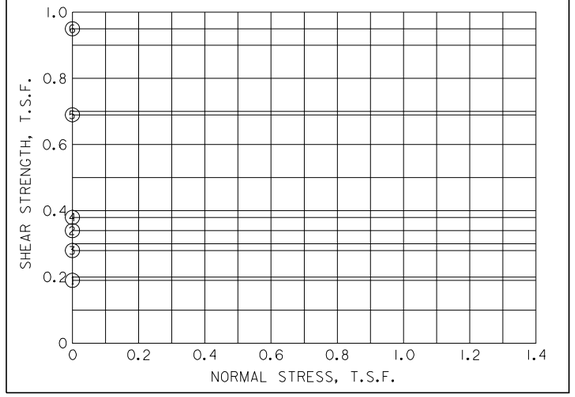
STA. 473+20
ON B/L
LAT 29°49'52.9"
LON 90°07'02.5"
5 APR 88



PLASTICITY CHART



SHEAR STRENGTH DATA



TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-13.00	Q	0.0	0.190	CH
2	-20.00	Q	0.0	0.340	CL
3	-36.00	Q	0.0	0.280	CL
4	-48.00	Q	0.0	0.380	CH
5	-71.00	Q	0.0	0.690	CH
6	-83.00	Q	0.0	0.950	CH

NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

WESTWEGO TO HARVEY CANAL
HWY 45 LEVEE

UNDISTURBED BOR. WB-4U

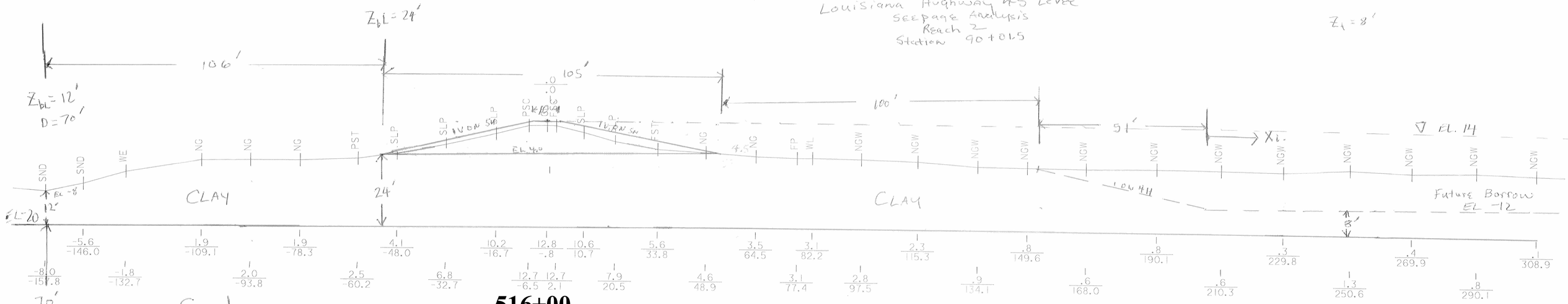
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	PLOT SCALE:	PLOT DATE:	CADD FILE:
DRAWN BY:			FILE NO.
CHECKED BY:	DATE:		

PLATE

SEEPAGE ANALYSIS

WEST BANK Hurricane Protection LEVEE
Louisiana Highway 45 LEVEE
Seepage Analysis
Reach 2
Station 90+015



516+00

CUT AREA = .00 FILL AREA = .00

* Note
1) Boring WWHC-50CLA utilized to determine Z_{bL}

West Bank HPL
LA. Highway 45 Levee
Seepage analysis
Reach 2
Station 90+01.5

1) Case 1 - Seepage at toe of Levee & No Borrow area

$K_f = \frac{d_a K_a + d_b K_b + d_c K_c}{d_a + d_b + d_c} \Rightarrow K_f$ From Plate 2

Average grain size $d_{10} = \frac{.0911 + .0833 + .0983 + .0569 + .2081}{5} = 0.10754$

From Plate 2 $K_f = 280 \times 10^{-4} \frac{cm}{sec} = .0284 \frac{cm}{sec}$

* Boring WW HC-50LU utilized and station 90+0.1.5 were utilized for stratification to determine Z_{bL} & Z_t Boring HL-11 was utilized to determine aquifer thickness D., and all available grain sizes d_{10} in all borings were averaged to determine permiability of the aquifer K_f. water surfaces on the protected side were assumed at ground surface for conservatism.

TABLE 1

$d = 70'$ $S = X_1 + L_2$ $X_1 = 4{,}000$ Ft

$K_f = .0280$ cm/sec $S = 4000 + 105 \Rightarrow S = 4105$ Ft

$H = 14 - 4 = 10'$

$Z_{bL} = 24'$

$K_{bL} = 0.52 \times 10^{-4}$ cm/sec Table 4

a) $X_3 = \sqrt{\frac{K_f Z_{bL} d}{K_{bL}}} \Rightarrow X_3 = \sqrt{\frac{(.0280 \frac{cm}{sec})(24)(70)}{.000052 \text{ cm/sec}}} \Rightarrow X_3 = 958$ ft

b) $h_o = \frac{H X_3}{S + X_3} = \frac{10 \times 958}{4105 + 958} \Rightarrow h_o = 1.89$ ft.

c) $i_o = h_o / Z_t \Rightarrow i_o = 1.89 / 24' \Rightarrow i_o = 0.08 < .8$

Seepage okay

$F_s = \frac{i_{cr}}{i_o} \Rightarrow 0.8 / .08 \Rightarrow F_s = 10.0$

Case 2 Seepage at L.S. Toe with Borrow Riverside

$S = L_2 + \text{Distance to Borrow pit} + X_1$

$S = 105' + 100' + 1300'$

$S = 1505'$

$z_{BR} = 8'$ excavation to -12

$X_1 = 1300'$ table 1

a) $X_3 = \sqrt{\frac{K_F (z_{bL})(d)}{K_{bL}}} = \underline{958 \text{ ft}}$

b) $h_o = H X_3 / S + X_3 \Rightarrow \frac{10(958)}{1300+958} \Rightarrow h_o = 4.24$

c) $i_o = h_o / z_t \Rightarrow \frac{4.24}{24} = 0.177 < 0.8$ okay

D) $F_S = i_{cr} / i_o \Rightarrow .8/0.18 \Rightarrow F_S = 4.44$

Case 3 - Seepage at lowest Point Ds Levee toe 105' From toe

*Lowest point is -8 Feet approximately 106' from Ds Toe therefore $z_{bL} = 12'$, and L_2 = Distance to low point + ~~width~~ of Levee

$z_{bL} = 12'$

$K_{BL} = 2.08 \times 10^{-4} \text{cm/sec}$

$H = 14 - (-8) = 22'$ assuming water at toe

$L_2 = 105 + 106 = 211 \text{ ft}$

$X_1 = 1300$ table 1 * with Borrow Pit

$S = (L_2 = 211) 106 + 105 + 100 + 1300' \Rightarrow S = 1611$

a) $X_3 = \sqrt{\frac{K_F (z_{bL})(d)}{K_{bL}}} \Rightarrow \sqrt{\frac{.0280(12)(70)}{.000208}} \Rightarrow X_3 = \underline{339'}$

b) $h_o = \frac{H X_3}{S + X_3} \Rightarrow h_o = \frac{22(339')}{1611+339} \Rightarrow h_o = 3.82$

c) $i_o = h_o / z_t \Rightarrow 3.82/12 \Rightarrow 0.32 < 0.8$ okay

D) $F_S = i_{cr} / i_o = \frac{0.80}{0.32} = 2.5$ okay

Survey Cross Sections

22+00,00
20
0
-20
20+00,00
20
0
-20
18+00,00
20
0
-20
-40
16+00,00
20
0
-20
14+00,00
20
0
-20
-40
12+00,00
20
0
-20
10+00,00
20
0
-20
8+00,00
20
0
-20
6+00,00
20
0
-20
4+00,00
20
0
-20
2+00,00
20
0
-20
0+00,00
20
0
-20
-380
-280
-180
-80
20
120
220
320
420
460

46+00,00
20
0
-20
44+00,00
20
0
-20
42+00,00
20
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0
-20
24+00,00
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0
-20
-40
-320
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-120
-20
80
180
280
380
460

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100
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300
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89+00,00
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84+00,00
81+00,00
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76+00,00
74+00,00
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70+00,00
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114+00,00
112+00,00
110+00,00
108+00,00
106+00,00
104+00,00
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100+00,00
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96+00,00
94+00,00
92+00,00
90+00,00
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480
540

140+00,00
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136+00,00
134+00,00
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400
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100