DRAFT REPORT

IN-DELTA STORAGE PROGRAM BORROW AREA GEOTECHNICAL REPORT

Prepared for
Department of Water Resources
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26814170

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1.1 BACKGROUND AND PURPOSE OF STUDY

The Department of Water Resources (DWR) is conducting feasibility-level engineering and environmental studies under the Integrated Storage Investigations Programs. As part of the project evaluations, DWR is evaluating the technical feasibility and conducting engineering investigation for the In-Delta Storage Program. Engineering investigation will aim at developing solutions to enhance project reliability through improved embankment design and consolidation of inlet and outlet structures.

As part of this feasibility study, the Department requested that URS Corporation (URS) undertake a study to identify and delineate feasible borrow areas within Webb Tract and Bacon Islands, and assess the adequacy of available borrow materials for earthwork related to the planned project. The work was conducted in accordance with all applicable standards and guidelines contained in Standard Agreement No. 4600001747 and in coordination with Department staff.

The work included identifying feasible borrow sites within Webb Tract and Bacon Island, assessing the suitability of the soils as borrow materials for earthwork, estimating the volume of borrow materials available from each identified location, and comparing the total quantity of suitable borrow material available at each island with the earthwork planned at the island. For the purpose of this study a "feasible borrow site" is defined as a site where the top surface of a geotechnically-acceptable borrow soil deposits occur within a depth of 15 feet below existing ground surface and where dewatering requirements related to borrow operation are expected to be low.

1.2 SCOPE OF WORK

The scope of work was described in Task Order No. IDS-1102-1747-006 by DWR dated November 15, 2002. The scope of work is summarized below:

- Collect and review existing information.
- Perform a field investigation consisting of 20 borings extending to depths of 15 to 20 feet on Webb Tract and Bacon Island to supplement the existing Cone Penetrometer Test (CPT) and soil boring data.
- Log the soil conditions and depth to borrow materials and groundwater encountered in the borings. Present the results on Logs of Borings (Appendix A).
- Perform laboratory testing consisting of sieve analysis, moisture content determination, and Atterberg limits (Appendix B).
- Estimate the locations of borrow sites within each island.
- Estimate the volume of borrow soils available at each island and compare to planned earthwork volume.

2.1 SITE LOCATIONS AND ACCESSBILITY

Webb Tract and Bacon Islands are located in the Sacramento – San Joaquin River Delta, near Stockton, California. A site vicinity map is shown in Figure 1. Webb Tract is located at the northeast corner of the Contra Costa County limit near Oakley, California. The island is accessible by ferry. The ferry station is located on the northeast corner of Jersey Island on the False River side. The ferry station is accessible to vehicles by taking the Jersey Island Road from the Cypress Road off California Highway 4 in Oakley. The ferry operates once every hour starting at 8:00 A.M. until 5:00 P.M. with no service at 12:00 P.M. Bacon Island is located within the San Joaquin County near Stockton, California. The island is accessible to vehicles by taking the Bacon Island Road off California Highway 4. A reinforced concrete bridge links the island to the Bacon Island Road at the southeast corner of the island on the Middle River side.

2.2 SURFACE CONDITIONS

The Sacramento-San Joaquin River Delta was developed for agricultural purposes from a tidal marsh in 1800s. As part of the development, levees were constructed on the underlying peat and soft clay to form islands. The existing channels were improved, and new channels were dredged.

Webb Tract and Bacon Island encompass about 5,500 acres and 5,600 acres, respectively. The ground elevation of both Webb Tract and Bacon Island, initially, was near sea level. Land subsidence has steadily decreased the surface elevation primarily as a result of the loss of organic material and peat. The loss is caused by exposure of peat to oxygen (oxidation), wind erosion, burning as well as some other factors. The ground surface elevation on most part of Webb Tract and Bacon Island at present ranges from about –10 feet to lower than –15 feet.

Farming is a primary land use on both islands. The interiors of both islands were divided and linked by unpaved embankment roads to agricultural area and irrigation ponds. Ditches were excavated throughout the islands as part of the irrigation and drainage systems. The sites are mostly covered with plowed soil for future crop growing or dried crops left from the previous harvest. Areas with no agricultural use are covered with grass and shrubs. Many parts of the islands are marshy, especially on Webb Tract.

As part of this study, the following documents were reviewed:

- Borrow Sites, Staged Filling and Slough-side Slope Stability, Delta Wetlands Reservoirs, Contra Costa County and San Joaquin County, California, dated July 25, 2002, prepared by Hultgren-Tillis Engineers.
- Bureau of Reclamation Cone Penetrometer Test data for the In-Delta Storage Program conducted during August to September 2002.
- Preliminary Geotechnical Investigation, Delta Wetlands Project, Sacramento-San Joaquin River Delta, Volume 1 of 2, dated February 15, 1989, prepared by Harding Lawson Associates (HLA).

The July 2002 Hultgren-Tillis report presents a preliminary evaluation of the potential borrow areas and volume of borrow materials from Webb Tract, Bacon Island and two other islands. The report also discusses construction aspects involving material handling, levee filling, and slope stability.

The Bureau of Reclamation conducted CPT soundings within the interiors of both islands during August and September 2002. The locations of the CPT soundings are shown on Figure 2 (Webb Tract) and Figure 3 (Bacon Island). The CPT data were used to supplement the data gathered as a part of this study. The CPT logs from the Bureau of Reclamation are presented in Appendix C.

The February 1989 HLA report presents subsurface soil data for both Webb Tract and Bacon Island that includes boring logs, Cone Penetrometer Test (CPT) sounding logs and laboratory test results. HLA conducted seven rotary-wash borings on Webb Tract and eight rotary-wash borings on Bacon Island. The locations of these borings are shown on Figure 2 (Webb Tract) and Figure 3 (Bacon Island). The depth of these borings ranges from 41.5 to 101.5 feet below the existing ground surface. The logs of the HLA borings are presented in Appendix D. CPT soundings conducted as part of the HLA 1989 report were on the perimeter of the islands and, therefore, were not considered in this study.

The subsurface soil data presented in the previous studies indicates that a layer of peat and fat clay of variable thickness was encountered in the upper part of the soil stratigraphy within the islands. The thickness of this layer ranges from a few feet to about 40 feet. This peat and clay layer is underlain by a layer of gray silty fine sand and sandy silt, which would be the borrow materials. In some areas on the west side of Webb Tract, sand is exposed at the ground surface.

4.1 FIELD EXPLORATION

The field exploration program for this study included a field reconnaissance and geotechnical exploratory borings and sampling. Ten exploratory borings were drilled on each island as shown on Figure 2 (Webb Tract) and Figure 3 (Bacon Island). URS prepared a geotechnical exploration work plan including exploration site maps.

A URS engineer and a DWR environmental scientist conducted a geotechnical and environmental field reconnaissance on Webb Tract and Bacon Island during December 5 and 6, 2002. The objectives of the field reconnaissance were to locate the borehole locations and to examine a 50-foot radius circle around each drilling site for potential burrows or surface cracks. The drilling locations were adjusted to maintain a minimum of 50-foot radius clear of burrows or surface cracks. Drilling sites were located on disturbed areas, either on or adjacent to farm roads or on active agricultural fields.

DWR informed URS regarding the environmental and archeological restrictions related to the proposed field exploration, and issued an environmental clearance memorandum dated December 10, 2002. Permission to enter Webb Tract and Bacon Island for the proposed field exploration was issued by DWR letter dated December 9, 2002. Prior to performing the field explorations, Underground Service Alert (USA) was notified of the boring locations, and underground utilities were cleared by USA.

Ten exploratory soil borings totaling 165 linear feet were drilled on each island for this geotechnical study during December 11 and 12, 2002. These borings are designated W-1 to W-10 for Webb Tract and B-1 to B-10 for Bacon Island. The locations of the borings are shown on Figure 2 (Webb Tract) and Figure 3 (Bacon Island). The borings ranged in depth from 15 to 19 feet below the existing ground surface (BGS). The borings were drilled using a truck-mounted CME-45 drilling rig owned and operated by Taber Consultants Engineers and Geologists of West Sacramento, California. The borings were advanced using a 4-inch diameter solid stem auger.

A URS engineer logged the soil cuttings and samples in the field and visually classified the soils, as the drilling proceeded. Samples of the subsurface materials were obtained at selected depths in the borings using a Standard Penetration Test (SPT) split-spoon sampler with an outside diameter of 2 inches and inside diameter of 1.5 inches as shown in the Key to Log of Boring (Figure A-1 in Appendix A). The sampler was advanced with a 140-pound hammer lifted manually by a cathead-rope system with a 30-inch drop. Soil samples were collected of the potential borrow materials that were visually classified as sand, silty sand, clayey sand, sandy clay, or sandy silt. The sampling intervals were 2.5 feet or 5 feet within the potential borrow materials.

The recovered samples were taken to the URS geotechnical laboratory in Pleasant Hill for further visual examination and testing. Logs of Borings were prepared based on the field logs, the visual examination in the laboratory, and the laboratory testing results, and are presented in Figures A-2 through A-21 in Appendix A. Descriptions of the procedures used to drill the borings, and to obtain soil samples are in Appendix A (URS Corporation 2002 Geotechnical Drilling and Sampling Program).

4.2 LABORATORY TESTING

Selected soil samples obtained from the exploratory borings were tested in our Pleasant Hill geotechnical laboratory to evaluate their engineering properties for use in the borrow material evaluations. The following laboratory tests were performed on selected soil samples:

- Grain size analyses (ASTM D422)
- Water content determination (ASTM D2216)
- Atterberg limits determination (ASTM D4318).

The results of the geotechnical laboratory testing are summarized in the logs of borings at the corresponding sample depths. Geotechnical laboratory test results are presented in Appendix B (URS Corporation 2002 Geotechnical Laboratory Test Results).

5.1 WEBB TRACT

5.1.1 Subsurface Soil Conditions

The subsurface conditions encountered in the exploratory borings drilled for this study are generally consistent with those encountered in the previous borings and CPT data in Webb Tract. The subsurface conditions generally consist of a layer of very soft, high plasticity, dark brown to black highly organic soil of variable thickness with interbedded peat. The near surface soil appears to be lighter in color due to higher degree of oxidation. The thickness of this highly organic soil and peat layer ranges from a few feet to more than 15 feet. Based on the conditions encountered in the exploratory borings for this study and the existing borings and CPT data, the thickness of peat appears to be thinner on the west side of Webb Tract.

The dark brown to black highly organic soil and peat layer is underlain by a gray, silty sand (SM and SP-SM) layer that extends to the depth explored. This material varied in consistency from loose to medium dense and contained interbedded thin layers of gray sandy silt. The results of laboratory testing in this material indicate that the silty sand is poorly graded consisting of fine-grained sand, with low plasticity interbedded sandy silt. There are large areas on the west side of the island where brown silty sand is exposed at the ground surface as encountered in Boring W-8.

The laboratory testing data (Appendix B) of the soil materials indicate that the silty sand is poorly graded with 5% to 38% fines (materials passing the No. 200 U.S. Standard Sieve). The water contents of the silty sandy soils ranged from 18% to 23%.

The depths to potential sandy borrow materials at the boring and CPT locations in Webb Tract are presented in Table 5-1.

5.1.2 Groundwater Conditions

The level of groundwater encountered at the time of drilling in the borings in Webb Tract varied from about 2 feet to 9 feet below the ground surface. Groundwater levels in most parts of the island were encountered around 2 feet to 5 feet below the ground surface. The groundwater was not encountered in Boring W-8 due to higher elevation of the ground surface. The groundwater levels are largely affected by the irrigation and drainage system within the island. The ground surface elevation within most of the island is lower than sea level, and the water level outside the perimeter of the island is higher than the ground surface of the island. Static groundwater levels were not recorded due to the immediate backfill of the borings with soil cuttings.

5.2 BACON ISLAND

5.2.1 Subsurface Soil Conditions

The subsurface conditions encountered in the exploratory borings drilled for this study are consistent with those encountered in the previous borings and CPT data in Bacon Island. The subsurface conditions at the site generally consist of a layer of very soft, high plasticity, dark brown to black highly organic soil of variable thickness with interbedded peat. The near surface

soil appears to be lighter in color due to higher degree of oxidation. The thickness of this highly organic soil and peat layer ranges from a few feet to about 15 feet in the borings drilled for this study. The thickness of this layer varies throughout the interior of the island with some thinner areas on the north and south parts of the island.

The dark brown to black highly organic soil and peat layer is underlain by a gray, silty sand (SM) layer that extends to the depth explored. This material varied in consistency from loose to medium dense and contained interbedded thin layers of gray silty clay. The results of laboratory testing indicate the silty sand is poorly graded consisting of fine-grained sand, with the interbedded silty clay of medium to high plasticity.

The laboratory testing data (Appendix B) of the soil materials indicate that they contain 18% to 74% fines (materials passing the No. 200 U.S. Standard Sieve). The water contents of the materials ranged from 20% to 40%. The silt and clay contents and the water contents in the materials encountered in Bacon Island are higher than for the materials encountered in Webb Tract.

The depths to potential sandy borrow materials at the boring and CPT locations in Bacon Island are presented in Table 5-2.

5.2.2 Groundwater Conditions

The level of the groundwater encountered at the time of drilling in the borings in Bacon Island varied from about 3 feet to 13 feet below the ground surface. Based on the water levels measured at the time of drilling, the groundwater levels in Bacon Island are deeper than in Webb Tract. The groundwater levels are largely affected by the irrigation and drainage system within the island. Static groundwater levels were not recorded due to the immediate backfill of the borings with soil cuttings.

Table 5-1. Webb Tract - Depth to Potential Borrow Materials

HLA Boreholes (2002)		Bureau of Reclamation (2002) CPT		URS Boreholes (2002)	
Boring No.	Depth (ft BGS)	CPT No.	Depth (ft BGS)	Boring No.	Depth (ft BGS)
WE 1	0	WSC-1	10	W-1	>15
WE 2	30	WSC-2	7	W-2	11
WE 3	19	WSC-3	5	W-3	12.5
WE 4	11.5	WSC-4	11	W-4	>15
WE 5	13.5	WSC-5	2	W-5	6
WE 6	36.5	WSC-6	10	W-6	9
WE 6A	37	WSC-7	11	W-7	13
WE 7	18	WSC-8	14	W-8	0
		WSC-9	17	W-9	14
		WSC-10	17	W-10	10
		WSC-11	42		
		WSC-13	39		
		WSC-15	41		
		WSC-16	16		
		WSC-17	23		
		WSC-18	19		
		WSC-19	7		

Note: No CPT at WSC-12 and WSC-14

Table 5-2. Bacon Island - Depth to Potential Borrow Materials

HLA Boreholes (2002)		Bureau of Reclamation (2002) CPT		URS Boreholes (2002)	
Boring No.	Depth (ft BGS)	CPT No.	Depth (ft BGS)	Boring No.	Depth (ft BGS)
BA 1	28	BSC-1	22	B-1	9 to 13
BA 2	19	BSC-2	16	B-2	12
BA 3	11	BSC-6	9	B-3	5.5
BA 4	9	BSC-7	18	B-4	12.5
BA 5	35	BSC-8	20	B-5	7.5
BA 6	17	BSC-9	11	B-6	7.5
BA 7	16	BSC-10	19	B-7	15
BA 8	8	BSC-12	7	B-8	15
		BSC-13	24	B-9	11.5
		BSC-15	21	B-10	15
		BSC-16	9		
		BSC-17	12		
		BSC-18	17		

Note: No CPT at BSC-3, BSC-4, BSC-5, BSC-11, and BSC-14

6.1 ESTIMATED AVAILABLE BORROW VOLUMES

The potential borrow areas in Webb Tract and Bacon Island were delineated based on maintaining a distance of at least 1500 feet between the borrow areas and the crests of the existing island levees, and encompassing areas that have no more than 15 feet to the top of potential sandy borrow materials. The borrow area delineations are shown on Figures 4 and 5 for Webb Tract and Bacon Island, respectively. These figures also show the depths to the top of sandy borrow materials adjacent to the borings and CPT's.

The borrow area limits were set to maximize the potential materials available within each island and do not necessarily mean that the entire areas within the borrow areas would be utilized. Borrow area utilization would depend on the contractor's operation plans and excavation conditions encountered during construction.

Several cross sections were drawn through each borrow area and the volumes of potential borrow materials within each island were estimated using average end area methods. Table 6-1 summarizes the areas of the potential borrow areas, estimated volume to remove peat and other unacceptable overburden soils, estimated borrow material volumes available within 15 feet of the ground surface, and ratios of overburden volume to borrow volume.

Table 6-1. Summary of Available Borrow Volume Estimates

Estimated Area/Volume	Webb Tract	Bacon Island
Delineated Area (acres)	2330	2620
Volume of Overburden Excavation (CY)	36.9 million	49.6 million
Volume of Potential Borrow Materials within 15 feet of the Ground Surface (CY)	19.5 million	13.8 million
Ratio of Overburden Volume to Borrow Volume	1.9:1	3.6:1

The estimated available volumes will be compared to the required volumes in a separate report on construction and cost estimates.

6.2 BORROW DEVELOPMENT CONSIDERATONS

As mentioned in Section 6.1, the borrow area limits shown on Figures 4 and 5 are the maximum potential areas within each island. Specific areas within each island to be utilized would depend on the contractor's operation plans and excavation conditions encountered during construction to make use of the most readily available materials. A trade-off would need to be made between haul distance and excavation of overburden materials.

It is expected that the contractor would develop sections within each borrow area to minimize haul distances and to make use of the materials with the least amount of overburden stripping. The ratios of overburden volume to borrow volume shown in Table 6-1 indicate that there would

be a significant amount of stripping required to obtain the borrow materials. Stripped materials would be stockpiled for subsequent placement in the depleted sections of the borrow areas.

It is anticipated that the sandy borrow materials would be mined by excavators, mostly below groundwater level, and stockpiled to drain. Groundwater may be as shallow as 2 feet or 3 feet below the ground surface. Moisture conditioning of the soils may require disking and aerating. After the soils are moisture conditioned for compaction, they would be hauled to the embankment locations along the perimeters of the islands.

The scope of work for this study included identifying feasible borrow sites within Webb Tract and Bacon Island, assessing the suitability of the soils as borrow materials for earthwork, estimating the volume of borrow materials available from each identified location. The estimated available borrow volumes will be compared to the required volumes in a separate report on construction and cost estimates.

The field exploration program for this study included drilling ten exploratory borings on each island that ranged in depth from about 15 feet to 20 feet. The soil samples from the borings were tested to obtain data on grain size, water contents and Atterberg limits. Boring logs were prepared of each boring and are included in this report, along with the laboratory testing data. In addition, boring logs and CPT logs prepared by others are included in this report.

On both islands, there is a highly organic soil and peat layer that ranges from a few feet to more than 15 feet thick. On Webb Tract, this layer is underlain by gray, silty sand (SM and SP-SM) that extends to the depth explored. This material varied in consistency from loose to medium dense and contained interbedded thin layers of gray sandy silt. On Bacon Island, the organic soil and peat layer is underlain by a gray, silty sand (SM) layer that extends to the depth explored. This material varied in consistency from loose to medium dense and contained interbedded thin layers of gray silty clay. The silt and clay contents and the water contents in the materials encountered in Bacon Island are higher than for the materials encountered in Webb Tract.

The level of groundwater encountered at the time of drilling in the borings in Webb Tract varied from about 2 feet to 9 feet below the ground surface with most levels around 2 feet to 5 feet below the ground surface. The level of the groundwater encountered at the time of drilling in the borings in Bacon Island varied from about 3 feet to 13 feet below the ground surface. Based on the water levels measured at the time of drilling, the groundwater levels in Bacon Island are deeper than in Webb Tract. The groundwater levels are largely affected by the irrigation and drainage system within the islands. Static groundwater levels were not recorded due to the immediate backfill of the borings with soil cuttings. Accordingly, the static water levels are expected to be shallower than those measured at the time of drilling.

The borrow area limits were set to maximize the potential materials available within each island. Borrow area utilization would depend on the contractor's operation plans and excavation conditions encountered during construction. It is anticipated that the sandy borrow materials would be mined by excavators, mostly below the groundwater level, and stockpiled to drain.

The potentially available borrow materials within 15 feet of the ground surface in Webb Tract are estimated to total about 19.5 million cubic yards and for Bacon Island, the potentially available borrow materials are estimated to total about 13.8 million cubic yards. The exploration data indicate that there would be a significant amount of stripping required to obtain the borrow materials. Borrow excavation and embankment construction are covered in the URS Earthwork Construction Cost Estimate report (April 2003).

For further development of the In-Delta Storage embankments, supplemental drilling, laboratory testing, and CPT soundings should be performed in the potential borrow areas. Standpipe piezometers should be installed in selected borings to measure groundwater levels.

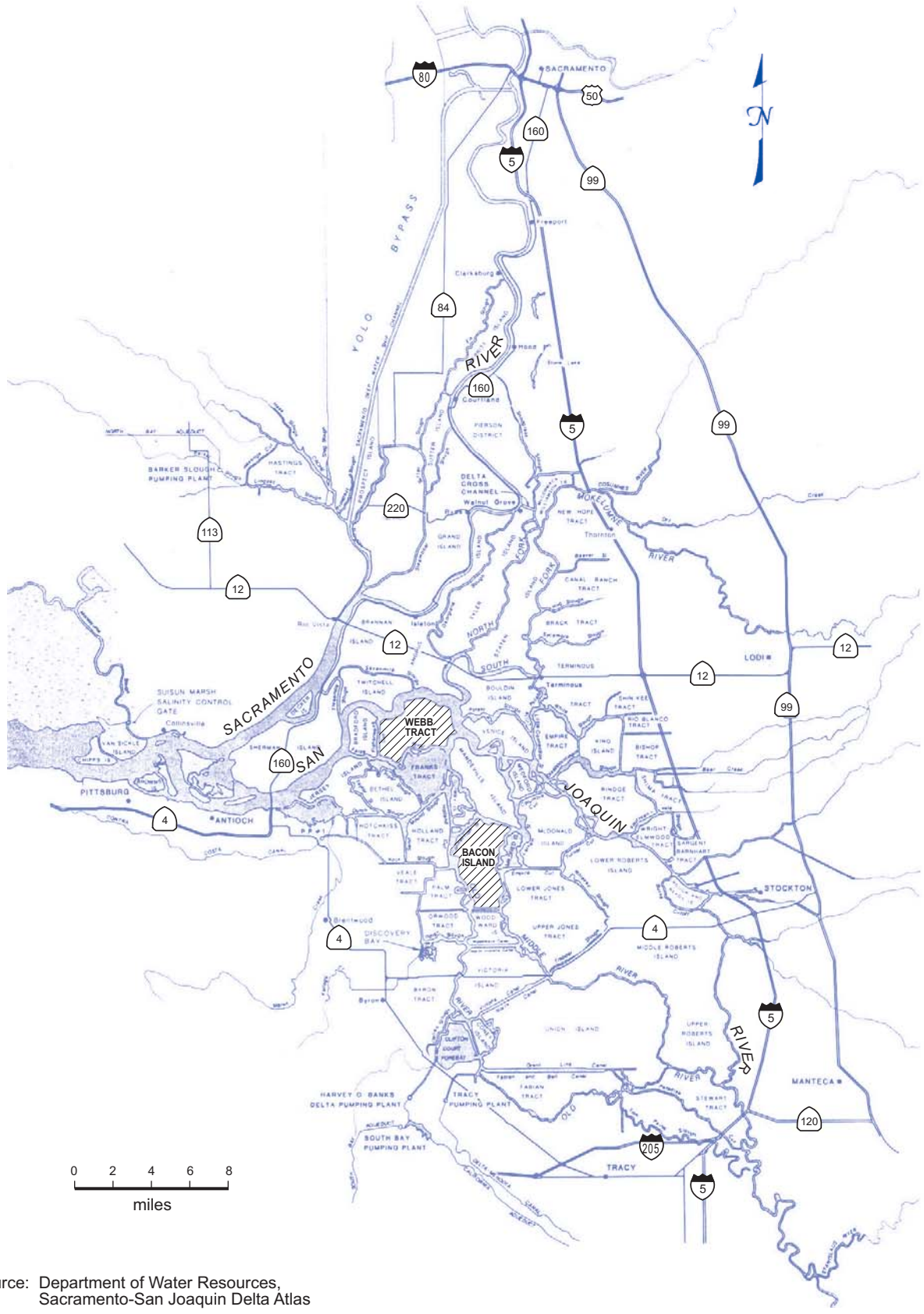
This geotechnical study has been conducted in accordance with the standard of care commonly used as state-of-practice in the profession. No other warranties are either expressed or implied. The recommendations presented in this report are developed exclusively for the proposed potential borrow areas described in this report and are not valid for other locations and construction in the project vicinity. The recommendations made in this report are based on the assumption that the subsurface soil and groundwater conditions do not deviate appreciably from those disclosed in the exploratory borings. If any variations or undesirable conditions are encountered during construction, URS should be notified so that additional recommendations can be made.

Bureau of Reclamation (2002). Logs of CPT Soundings, August and September.

California Department of Water Resources (1998). "Sacramento San Joaquin Delta Atlas", Department of Water Resources, California, July 1995.

Harding Lawson Associates (1989). "Preliminary Geotechnical Investigation, Delta Wetlands Project, Sacramento-San Joaquin River Delta", Concord California, prepared for Delta Wetlands, February 15, 1989.

Hultgren-Tillis Engineers (2002). "Borrow Sites, Staged Filling and Slough-side Slope Stability, Delta Wetlands Reservoirs, Contra Costa County and San Joaquin County, California", Volume 1 of 2, Concord, California, prepared for Delta Wetlands, July 25, 2002.



Source: Department of Water Resources, Sacramento-San Joaquin Delta Atlas

URS	Project No. 26814170 STATE OF CALIFORNIA DEPARTMENT OF WATER RESOURCES	SITE VICINITY	FIGURE **1**

26814170.01200/012103/gos

N

San Joaquin River

Old River

False River

Franks Tract

Fishermans Cut

R-1
R-2
R-3
R-4
R-5
R-6
R-7
R-8
R-9
R-10

WSC-1
WSC-2
WSC-3
WSC-4
WSC-5
WSC-6
WSC-7
WSC-8
WSC-9
WSC-10
WSC-11
WSC-13
WSC-15
WSC-16
WSC-17
WSC-18
WSC-19

W-1
W-2
W-3
W-4
W-5
W-6
W-7

WE1
WE2
WE3
WE4
WE5
WE6
WE7
WE8

0 2000 4000 FEET
SCALE

LEGEND:

- WE1 — HARDING LAWSON ASSOCIATES BOREHOLES (1989)
- WSC-1 — BUREAU OF RECLAMATION CPT (2002) (NO CPT'S: WSC12 AND WSC14)
- W-1 — URS BOREHOLES (2002) APPROX. LOCATION
- R-1 — ACCESS ROAD NUMBER AND LOCATION

URS

PROJECT NO. 26814170

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

WEBB TRACT EXPLORATION PLAN

FIGURE 2

LEGEND:

BA1	HARDING LAWSON ASSOCIATES BOREHOLES (1989)
BSC-1	BUREAU OF RECLAMATION CPT (2002) (NO CPT'S: BSC-3, BSC-4, BSC-5, BSC-11, AND BSC-14)
B-1	URS BOREHOLES (2002) APPROX. LOCATION
R-1	ACCESS ROAD NUMBER AND LOCATION

SCALE
0 2000 4000 FEET

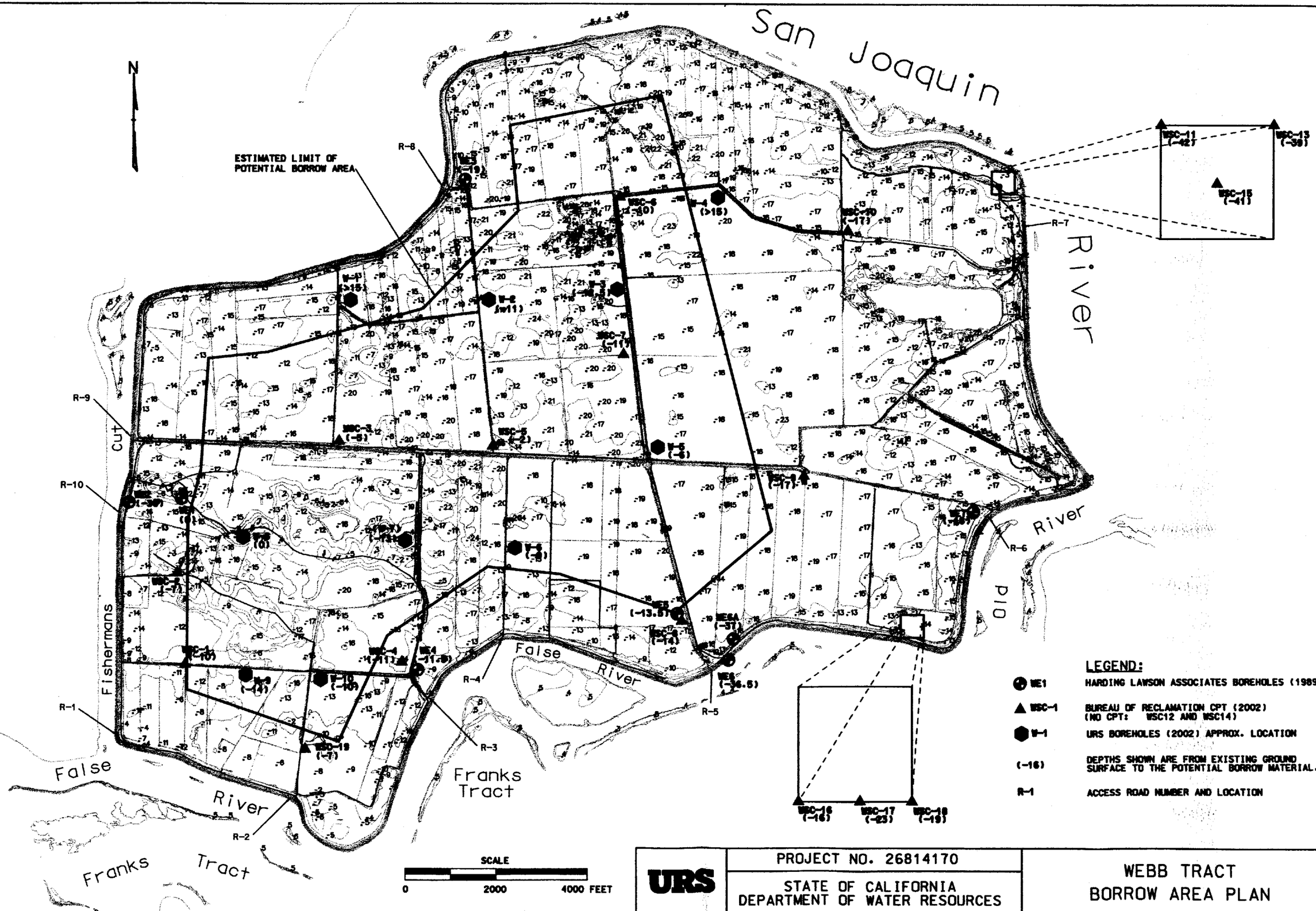
URS

PROJECT NO. 26814170

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

BACON ISLAND
EXPLORATION PLAN

FIGURE
3



URS	PROJECT NO. 26814170 STATE OF CALIFORNIA DEPARTMENT OF WATER RESOURCES	WEBB TRACT BORROW AREA PLAN	FIGURE 4

LEGEND:

BA1	HARDING LAWSON ASSOCIATES BOREHOLES (1989)
BSC-1	BUREAU OF RECLAMATION CPT (2002) (NO CPT'S: BSC-3, BSC-4, BSC-5, BSC-11, AND BSC-14)
B-1	URS BOREHOLES (2002) APPROX. LOCATION
(-16)	DEPTH SHOWN ARE FROM EXISTING GROUND SURFACE TO THE POTENTIAL BORROW MATERIAL.

SCALE
0 2000 4000 FEET

URS

PROJECT NO. 26814170

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

BACON ISLAND
BORROW AREA PLAN

FIGURE
5

Appendix A

URS Corporation 2002 Geotechnical Drilling And Sampling Program

A.1 FIELD EXPLORATION

Twenty exploratory borings were drilled for this study to depths of 15 to 19 feet to locate and collect samples of the borrow materials at the project sites. The borings were drilled from December 11 to 12, 2002 under the observation of Mr. Asi Ooraikul of our firm. The borings were drilled using a truck-mounted CME-45 drilling rig owned and operated by Taber Consultants Engineers and Geologists of West Sacramento, California.

A.2 SOIL SAMPLING

Sampling Method

Soil samples were obtained at selected depths in the borings by advancing the sampler into the soils at the bottom of the borehole. The Standard Penetration Test (SPT) split-spoon sampler with 2-inch outside diameter and 1.5-inch inside diameter with no liner was used.

The sampler was threaded to fit a cutting shoe on one end and a check-valve connection at the other end. The borehole was advanced using a 4-inch diameter solid stem auger without sampling performed until the potential borrow material was encountered from the cuttings. After the borehole was drilled to the specified depth, the auger was removed, and the sampler was lowered down through the auger-drilled hole to the bottom, seated, and then driven into the soil with a 140-pound hammer falling 30 inches for each blow. The hammer was controlled by a manual cathead-rope system. The number of hammer blows required to advance the sampler each of the three successive 6-inch increments was counted in the field. The number of blows required to advance the sampler the last 12 inches was recorded as the penetration resistance (blows per foot). Depth to groundwater level was measured with measuring tape prior to backfilling the borehole.

After drilling and sampling, the boreholes were backfilled with cuttings. Excess drill cuttings were spread on the surface within the approved 50-foot radius around the borehole.

Sample Handling

Soil recovered from the SPT split-spoon sampler was placed in sealed “Ziploc” bags that were labeled with the sample number, depth, and date of sampling.

A.3 LOGS OF BORINGS

The soil samples and cuttings were examined and classified in the field as the drilling proceeded. The samples were later taken to our geotechnical laboratory in Pleasant Hill, California, for further examination and testing. Preliminary visual soil classifications were made in accordance with the Unified Soil Classification System and confirmed by examination of the samples in the laboratory and by testing. Logs of borings were prepared from the field logs and laboratory test data.

The logs of borings show the soil classifications (according to the Unified Soil Classification System) of materials encountered, locations where soil samples were obtained, type of sampler used, sampling resistance, and the results of the laboratory tests.

Project: DWR Borrow Area Exploration
Project Location: Bacon Island and Webb Tract, California
Project Number: 26814170.01200

Key to Log of Boring

Elevation feet	Depth, feet	SAMPLES: Type	SAMPLES: Number	Sampling Resistance	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
1	2	3	4	5	6	7	8	9	10	11	12

COLUMN DESCRIPTIONS

1 **Elevation:** Elevation in feet referenced to mean sea level (MSL) or site datum.

2 **Depth:** Depth in feet below the ground surface.

3 **Sample Type:** Type of soil sample collected at depth interval shown; sampler symbols are explained below.

4 **Sample Number:** Sample identification number.

5 **Sampling Resistance:** Number of blows required to advance driven sampler 12 inches beyond first 6-inch interval, or distance noted, using a 140-lb hammer with a 30-inch drop.

6 **Recovery:** Percentage of driven or pushed sample length recovered; "NA" indicates data not recorded.

7 **Graphic Log:** Graphic depiction of subsurface material encountered; typical symbols are explained below.

8 **Material Description:** Description of material encountered; may include density/consistency, moisture, color, and grain size.

9 **Water Content:** Water content of soil sample measured in laboratory, expressed as percentage of dry weight of specimen.

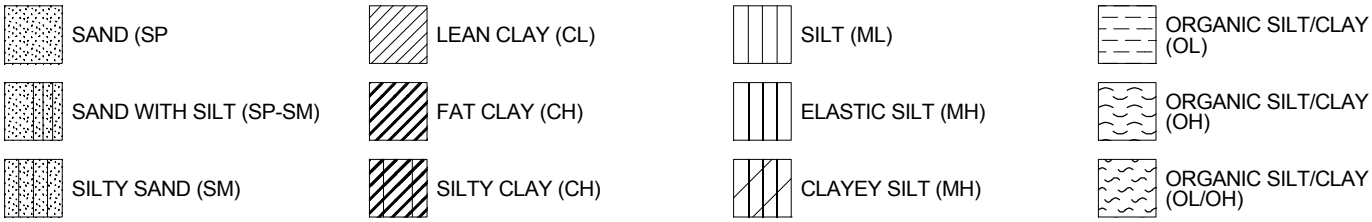
10 **Dry Unit Weight:** Dry weight per unit volume of soil measured in laboratory, expressed in pounds per cubic feet (pcf).

11 **Unconfined Compressive Strength:** Unconfined compressive strength of soil sample measured in laboratory, expressed in psf.

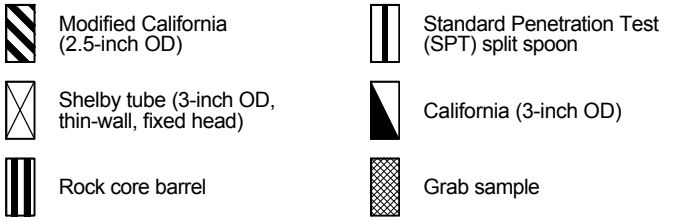
12 **Remarks and Other Tests:** Comments and observations regarding drilling or sampling made by driller or field personnel. Other field and laboratory test results, using the following abbreviations:

LL	Liquid limit (Atterberg Limits test)
PI	Plasticity index (Atterberg Limits test)
SA	Sieve analysis, % < #200 sieve

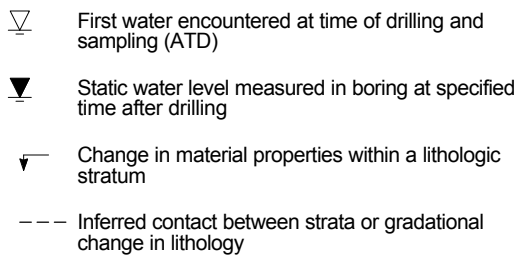
TYPICAL MATERIAL GRAPHIC SYMBOLS



TYPICAL SAMPLER GRAPHIC SYMBOLS



OTHER GRAPHIC SYMBOLS



GENERAL NOTES

1. Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive; actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2. Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

Report: GEO_10B1_OAK_KEY; File: DWRBACON.GPJ; 1/3/2003 urskey

URS

Figure A-1

Project: DWR Borrow Area Exploration
Project Location: Bacon Island, California
Project Number: 26814170.01200

Log of Boring B-1

Sheet 1 of 1

Date(s) Drilled	**12/11/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**13 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OH) Soft, moist, dark brown, high plasticity, with interbedded peat, trace fine-grained sand				Start at 10:53.
	5										
	10		1-1	4	0		SILTY SAND (SM) Very loose, moist, brown, fine-grained sand				Cuttings from 10 ft retained in bag.
							Increasing clay content				
			1-2	4	89		SANDY SILTY CLAY (CL) Soft to medium stiff, wet, gray, medium plasticity fines, fine-grained sand	40.0			SA: 60%<#200 sieve
	15						Becomes stiff; decreasing sand content				
			1-3	13	89			29.9			LL: 37, PI=22 SA: 74%<#200 sieve
							Bottom of boring at 16.5 feet				End drilling at 11:30.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 B-01

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Figure A-2

Project: DWR Borrow Area Exploration
Project Location: Bacon Island, California
Project Number: 26814170.01200

Log of Boring B-2

Sheet 1 of 1

Date(s) Drilled	**12/11/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**10.5 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OL/OH) Very soft, moist, dark brown, medium to high plasticity, with interbedded peat				Start at 10:35.
	5		2-1	7	44		SILTY SAND (SM) Loose, moist, light brown with orange mottling				
							CLAYEY SILT (MH) Medium stiff, moist, dark gray with orange mottling, high plasticity, trace fine-grained sand Becomes dark brown				
	10						Becomes gray ▽				
							SILTY SAND (SM) Medium dense, wet, gray, fine-grained sand with trace medium grains				
	15		2-2	17	72			23.4			SA: 30%<#200 sieve
							Bottom of boring at 16.5 feet				End drilling at 12:10.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 B-02

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Figure A-3

Project: DWR Borrow Area Exploration
Project Location: Bacon Island, California
Project Number: 26814170.01200

Log of Boring B-3

Sheet 1 of 1

Date(s) Drilled	**12/11/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**9.5 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation feet / Depth, feet	SAMPLES Type / Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
0					HIGHLY ORGANIC SOIL (OH) Very soft, moist, dark brown, high plasticity, with interbedded peat, trace fine-grained sand				Start at 13:15.
5	3-1	8	83		SANDY SILT (ML) Loose, moist, brown, low plasticity fines, fine-grained sand	26.8			SA: 61%<#200 sieve
					SILTY SAND (SM) Very loose, wet, dark gray, fine-grained sand ▽				
10	3-2	3	67			37.7			SA: 47%<#200 sieve
15	3-3	13	67		SAND WITH SILT (SP-SM) Medium dense, wet, gray, fine- to medium-grained sand				
					Bottom of boring at 16.5 feet				End drilling at 13:45.
20									
25									
30									

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 B-03

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Figure A-4

Project: DWR Borrow Area Exploration
Project Location: Bacon Island, California
Project Number: 26814170.01200

Log of Boring B-4

Sheet 1 of 1

Date(s) Drilled	**12/11/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**9 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OL/OH) Very soft, moist, black, medium to high plasticity, with interbedded peat				Start at 14:12.
	5										
	10						Becomes dark gray Trace fine-grained sand				
	15		4-1	16	78		SILTY SAND (SM) Medium dense, wet, gray, fine-grained sand with few medium grains	24.1			SA: 30%<#200 sieve
							Bottom of boring at 16.5 feet				End drilling at 14:40.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 B-04

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Figure A-5

Project: DWR Borrow Area Exploration
Project Location: Bacon Island, California
Project Number: 26814170.01200

Log of Boring B-5

Sheet 1 of 1

Date(s) Drilled	**12/11/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**3.5 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OH) Very soft, wet, black, high plasticity, with interbedded peat				Start at 15:05.
	5						CLAYEY SILT (MH) Very soft, wet, brown, high plasticity, trace fine-grained sand				
							SILTY SAND (SM) Medium dense, wet, brown, fine-grained sand				
	10		5-1	26	44		Becomes dark gray				
			5-2	24	100		Becomes gray	19.9			SA: 35%<#200 sieve
	15		5-3	16	56						
							Bottom of boring at 16.5 feet				End drilling at 15:38.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 B-05

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Figure A-6

Project: DWR Borrow Area Exploration
Project Location: Bacon Island, California
Project Number: 26814170.01200

Log of Boring B-6

Sheet 1 of 1

Date(s) Drilled	**12/11/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**3.5 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OH) Very soft, wet, dark brown, high plasticity, with interbedded peat				Start at 15:50.
	5										
	10		6-1	5	67		SILTY SAND (SM) Loose, wet, gray, fine- to medium-grained sand	22.8			SA: 18%<#200 sieve
	15		6-2	10	67						
							Bottom of boring at 16.5 feet				End drilling at 16:22.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 B-06

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Figure A-7

Project: DWR Borrow Area Exploration
Project Location: Bacon Island, California
Project Number: 26814170.01200

Log of Boring B-7

Sheet 1 of 1

Date(s) Drilled	**12/11/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**3 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OH) Very soft, moist, black, high plasticity, with interbedded peat				
	5										
	10						SILTY CLAY (CH) Medium stiff, wet, gray, high plasticity				
	15		7-1	23	67		SILTY SAND (SM) Medium dense, wet, gray, fine-grained sand				
							Bottom of boring at 16.5 feet				
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 B-07

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Figure A-8

Project: DWR Borrow Area Exploration
Project Location: Bacon Island, California
Project Number: 26814170.01200

Log of Boring B-8

Sheet 1 of 1

Date(s) Drilled	**12/11/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**11 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OH) Soft, moist, dark brown, high plasticity, with interbedded peat, trace fine-grained sand				Start at 08:18.
	5						ELASTIC SILT (MH) Very soft, moist, gray, high plasticity, trace fine-grained sand				
	10						▽				
	15		8-1	7	67		SILTY SAND (SM) Loose, wet, gray, fine-grained sand				
							Bottom of boring at 16.5 feet				End drilling at 08:44.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 B-08

URS

Figure A-9

Project: DWR Borrow Area Exploration
Project Location: Bacon Island, California
Project Number: 26814170.01200

Log of Boring B-9

Sheet 1 of 1

Date(s) Drilled	**12/11/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**6 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OH) Very soft, moist, dark brown, high plasticity, with interbedded peat				Start at 09:52.
	5						CLAYEY SILT (MH) Soft, wet, gray, high plasticity, trace fine-grained sand ▽				
	10						SANDY SILTY CLAY (CH) Medium stiff, wet, gray, high plasticity fines, fine-grained sand				
			9-1	8	100			38.8			LL=51, PI=29 SA: 54%<#200 sieve
							SILTY SAND (SM) Medium dense, wet, gray, fine-grained sand				
			9-2	13	44			27.7			SA: 30%<#200 sieve
	15		9-3	17	67		←Increase in silt content				
							Bottom of boring at 16.5 feet				End drilling at 10:30. At that time, PG&E notified Asi there is a high pressure gas pipeline in the vicinity of B-8 and B-10, which had already been drilled. Driller had not hit the pipe at either location.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 B-09

URS

Figure A-10

Project: DWR Borrow Area Exploration
Project Location: Bacon Island, California
Project Number: 26814170.01200

Log of Boring B-10

Sheet 1 of 1

Date(s) Drilled	**12/11/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**9 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OH) Very soft, moist, dark brown, high plasticity, with interbedded peat, trace fine-grained sand				Start at 09:00.
	5						SILTY CLAY (CH) Very soft, moist, gray, high plasticity				
	10						Becomes medium stiff ▽				
	15		10-1	16	67		SILTY SAND (SM) Medium dense, wet, gray, fine-grained sand				
							Bottom of boring at 16.5 feet				End drilling at 09:22.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 B-10

URS

Figure A-11

Project: DWR Borrow Area Exploration
Project Location: Webb Tract, California
Project Number: 26814170.01200

Log of Boring W-1

Sheet 1 of 1

Date(s) Drilled	**12/12/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**15.0 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**2.5 feet bgs ATD**	Sampling Method(s)	**No sampling performed**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OH) Very soft, moist, dark brown, high plasticity, with interbedded peat, trace fine-grained sand				Start at 14:18.
	5										
	10										
	15						Bottom of boring at 15.0 feet				End drilling at 14:35.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 W-01

URS

Figure A-12

Project: DWR Borrow Area Exploration
Project Location: Webb Tract, California
Project Number: 26814170.01200

Log of Boring W-2

Sheet 1 of 1

Date(s) Drilled	**12/12/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**2 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OH) Very soft, wet, black, high plasticity, with interbedded peat, trace fine-grained sand				Start at 13:50.
	5										
	10						SILTY SAND (SM) Medium dense, wet, gray, fine-grained sand with few medium grains				
	15		2-1	19	89			22.4			SA: 34%<#200 sieve
							Bottom of boring at 16.5 feet				End drilling at 14:08.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 W-02

URS

Figure A-13

Project: DWR Borrow Area Exploration
Project Location: Webb Tract, California
Project Number: 26814170.01200

Log of Boring W-3

Sheet 1 of 1

Date(s) Drilled	**12/12/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**19.0 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**2 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OH) Very soft, moist, black, high plasticity, with interbedded peat				Start at 12:35.
	5										
	10						Becomes sandy				
							SILTY SAND (SM) Medium dense, wet, gray, fine-grained sand, low plasticity fines				
	15		3-1	21	67			21.1			LL=22, PI=2 SA: 38%<#200 sieve
			3-2	13	67		SAND WITH SILT (SP-SM) Medium dense, wet, gray, fine- to medium-grained sand	20.1			SA: 11%<#200 sieve
	20						Bottom of boring at 19.0 feet				End drilling at 13:10.
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 W-03

URS

Figure A-14

Project: DWR Borrow Area Exploration
Project Location: Webb Tract, California
Project Number: 26814170.01200

Log of Boring W-4

Sheet 1 of 1

Date(s) Drilled	**12/12/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**15.0 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**5 feet bgs ATD**	Sampling Method(s)	**No sampling performed**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OH) Very soft, moist, dark brown, high plasticity, with interbedded peat, some sand				Start at 13:18.
	5						Becomes wet ▽				
	10										
	15						Bottom of boring at 15.0 feet				End drilling at 13:40.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 W-04

URS

Figure A-15

Project: DWR Borrow Area Exploration
Project Location: Webb Tract, California
Project Number: 26814170.01200

Log of Boring W-5

Sheet 1 of 1

Date(s) Drilled	**12/12/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**9 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OL/OH) Very soft, moist, black, medium to high plasticity, with interbedded peat, trace fine-grained sand				Start at 12:00.
							Becomes sandy				
	5						SILTY SAND (SM) Medium dense, wet, gray, fine- to medium-grained sand				
	10		5-1	12	50			20.6			SA: 12%<#200 sieve
			5-2	10	89						
	15		5-3	5	44		Becomes loose				
							Bottom of boring at 16.5 feet				End drilling at 12:27.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 W-05

URS

Figure A-16

Project: DWR Borrow Area Exploration
Project Location: Webb Tract, California
Project Number: 26814170.01200

Log of Boring W-6

Sheet 1 of 1

Date(s) Drilled	**12/12/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**7 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OH) Very soft, moist, dark brown, high plasticity, with interbedded peat				Start at 11:17.
	5						Becomes sandy ▽				
	10						SILTY SAND (SM) Loose, wet, gray, fine-grained sand with few medium grains				
			6-1	8	89						
			6-2	5	78			23.1			SA: 32%<#200 sieve
	15		6-3	0	50		Becomes very loose				
							Bottom of boring at 16.5 feet				End drilling at 11:47.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 W-06

URS

Figure A-17

Project: DWR Borrow Area Exploration
Project Location: Webb Tract, California
Project Number: 26814170.01200

Log of Boring W-7

Sheet 1 of 1

Date(s) Drilled	**12/12/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**4 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						HIGHLY ORGANIC SOIL (OH) Very soft, moist, black, high plasticity, with interbedded peat, trace fine-grained sand				Start at 09:57.
	5										
	10						Becomes sandy				
	15						SAND WITH SILT (SP-SM) Medium dense, wet, gray, fine- to medium-grained sand				
			7-1	17	89			18.3			SA: 9%<#200 sieve
							Bottom of boring at 16.5 feet				End drilling at 10:20.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 W-07

URS

Figure A-18

Project: DWR Borrow Area Exploration
Project Location: Webb Tract, California
Project Number: 26814170.01200

Log of Boring W-8

Sheet 1 of 1

Date(s) Drilled	**12/12/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**Not encountered**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation feet / Depth, feet	SAMPLES Type / Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
0					SAND WITH SILT (SP-SM) Medium dense, moist, brown, fine-grained sand				Start at 10:37.
5	8-1	18	78			3.0			SA: 7%<#200 sieve
					SAND (SP) Dense, moist, brown, fine-grained with few medium grains, trace silt				
10	8-2	34	89			4.1			SA: 5%<#200 sieve
15	8-3	50	89						
					Bottom of boring at 16.5 feet				End drilling at 11:03.
20									
25									
30									

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 W-08

URS

Figure A-19

Project: DWR Borrow Area Exploration
Project Location: Webb Tract, California
Project Number: 26814170.01200

Log of Boring W-9

Sheet 1 of 1

Date(s) Drilled	**12/12/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**5.5 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation feet	Depth, feet	SAMPLES Type	SAMPLES Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
	0						CLAYEY SILT (ML/MH) Soft, moist, brown, medium to high plasticity, trace fine-grained sand				Start at 08:40.
	5						▽				
	10						SANDY HIGHLY ORGANIC SOIL (OH) Very soft, wet, dark brown, high plasticity, with interbedded peat Increasing sand content				
	15		9-1	16	67		SILTY SAND (SM) Medium dense, wet, gray, fine-grained sand				
							Bottom of boring at 16.5 feet				End drilling at 09:05.
	20										
	25										
	30										

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 W-09

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Figure A-20

Project: DWR Borrow Area Exploration
Project Location: Webb Tract, California
Project Number: 26814170.01200

Log of Boring W-10

Sheet 1 of 1

Date(s) Drilled	**12/12/02**	Logged By	**A. Ooraikul**	Checked By	**M. Forrest**
Drilling Method	**Solid-Stem Auger**	Drill Bit Size/Type	**4-inch-OD auger bit**	Total Depth of Borehole	**16.5 feet**
Drill Rig Type	**CME 45**	Drilling Contractor	**Taber Consultants**	Surface Elevation	**Not available**
Groundwater Level(s)	**2 feet bgs ATD**	Sampling Method(s)	**SPT split spoon**	Hammer Data	**Safety with rope/cathead; 140 lbs, 30-inch drop**
Borehole Backfill	**Drill cuttings**	Location	**Refer to site plan**		

Elevation feet / Depth, feet	SAMPLES: Type / Number	Sampling Resistance, blows / foot	Recovery, %	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Unconfined Compressive Strength, psf	REMARKS AND OTHER TESTS
0					HIGHLY ORGANIC SOIL (OL/OH) Very soft, moist, dark brown, medium to high plasticity, with interbedded peat, trace fine-grained sand				Start at 09:13.
10	10-1	12	78		SILTY SAND (SM) Medium dense, wet, gray, fine-grained sand with few medium grains				
	10-2	9	78		Becomes loose	20.9			SA: 20%<#200 sieve
15	10-3	16	67		Becomes medium dense				
					Bottom of boring at 16.5 feet				End drilling at 09:45.
20									
25									
30									

Report: GEO_10B1_OAK; File: DWRBACON.GPJ; 1/3/2003 W-10

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Figure A-21

Appendix B

URS Corporation 2002 Geotechnical Laboratory Test Results

Selected soil samples obtained from the exploratory borings were tested in URS' Pleasant Hill geotechnical laboratory to evaluate their engineering properties. The following laboratory tests were performed on the soil samples:

- Grain size analyses (ASTM D422)
- Water content determination (ASTM D2216)
- Atterberg limits determination (ASTM D4318)

The results of the geotechnical laboratory testing are summarized ion Table B-1. The Plasticity Chart is shown in Figure B-1 and Particle Size Distribution Curves are presented in Figures B-2 and B-3 for Bacon Island and in Figures B-4 and B-5 for Webb Tract.

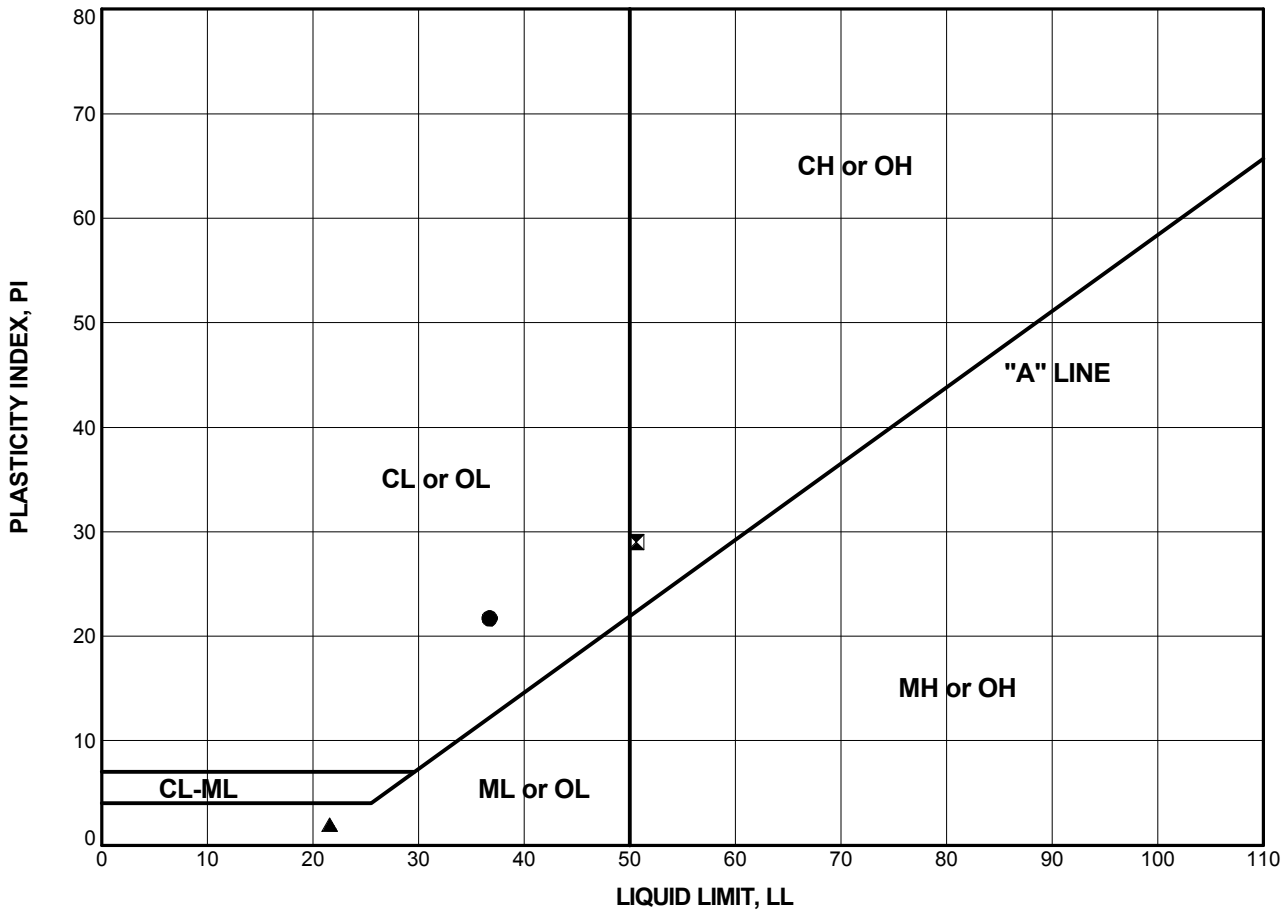
TABLE B-1
SUMMARY OF SOIL LABORATORY DATA

Sample Information				USCS Group Symbol	In Situ Water Content, %	Sieve			Atterberg Limits		
Boring Number	Sample Number	Depth, feet	Elevation, feet MSL			Gravel, %	Sand, %	<#200, %	LL	PL	PI
B-1	1-2	12.5-14	NA	CL	40.0	0	40	60			
B-1	1-3	15-16.5	NA	CL	29.9	0	26	74	37	15	22
B-2	2-2	15-16.5	NA	SM	23.4	0	70	30			
B-3	3-1	5-6.5	NA	ML	26.8	0	39	61			
B-3	3-2	10-11.5	NA	SM	37.7	0	53	47			
B-4	4-1	15-16.5	NA	SM	24.1	0	70	30			
B-5	5-2	12.5-14	NA	SM	19.9	0	65	35			
B-6	6-1	10-11.5	NA	SM	22.8	0	82	18			
B-9	9-1	10-11.5	NA	CH	38.8	0	46	54	51	22	29
B-9	9-2	12.5-14	NA	SM	27.7	0	70	30			
W-2	2-1	15-16.5	NA	SM	22.4	0	66	34			
W-3	3-1	15-16.5	NA	SM	21.1	0	62	38	22	20	2
W-3	3-2	17.5-19	NA	SP-SM	20.1	0	89	11			
W-5	5-1	10-11.5	NA	SM	20.6	0	88	12			
W-6	6-2	12.5-14	NA	SM	23.1	0	68	32			
W-7	7-1	15-16.5	NA	SP-SM	18.3	0	91	9			
W-8	8-1	5-6.5	NA	SP-SM	3.0	0	93	7			
W-8	8-2	10-11.5	NA	SP	4.1	0	95	5			
W-10	10-2	12.5-14	NA	SM	20.9	0	80	20			

NOTE: The laboratory tests were performed in general accordance with the following ASTM standards:

Water Content - ASTM Test Method D2216
Particle Size Distribution Analysis by Mechanical Sieving - ASTM Test Method D422
Atterberg Limits - ASTM Test Method D4318

Report SOIL_1_PORTRAIT_NO_2MIC_NO_DD; DWRBACON.GPJ; 01/03/2003



Boring Number	Sample Number	Depth (feet)	Test Symbol	Water Content (%)	LL	PL	PI	Classification
B-1	1-3	15-16.5	●	30	37	15	22	Silty Clay with Sand (CL)
B-9	9-1	10-11.5	⊠	39	51	22	29	Sandy Silty Clay (CH)
W-3	3-1	15-16.5	▲	21	22	20	2	Silty Sand (SM)

Report: ATTERBERG_PLOT_12.PTS; File: DWRBACON.GPJ; 1/3/2003 W-03

DWR Borrow Area Exploration
Bacon Island and Webb Tract, California
26814170.01200

PLASTICITY CHART

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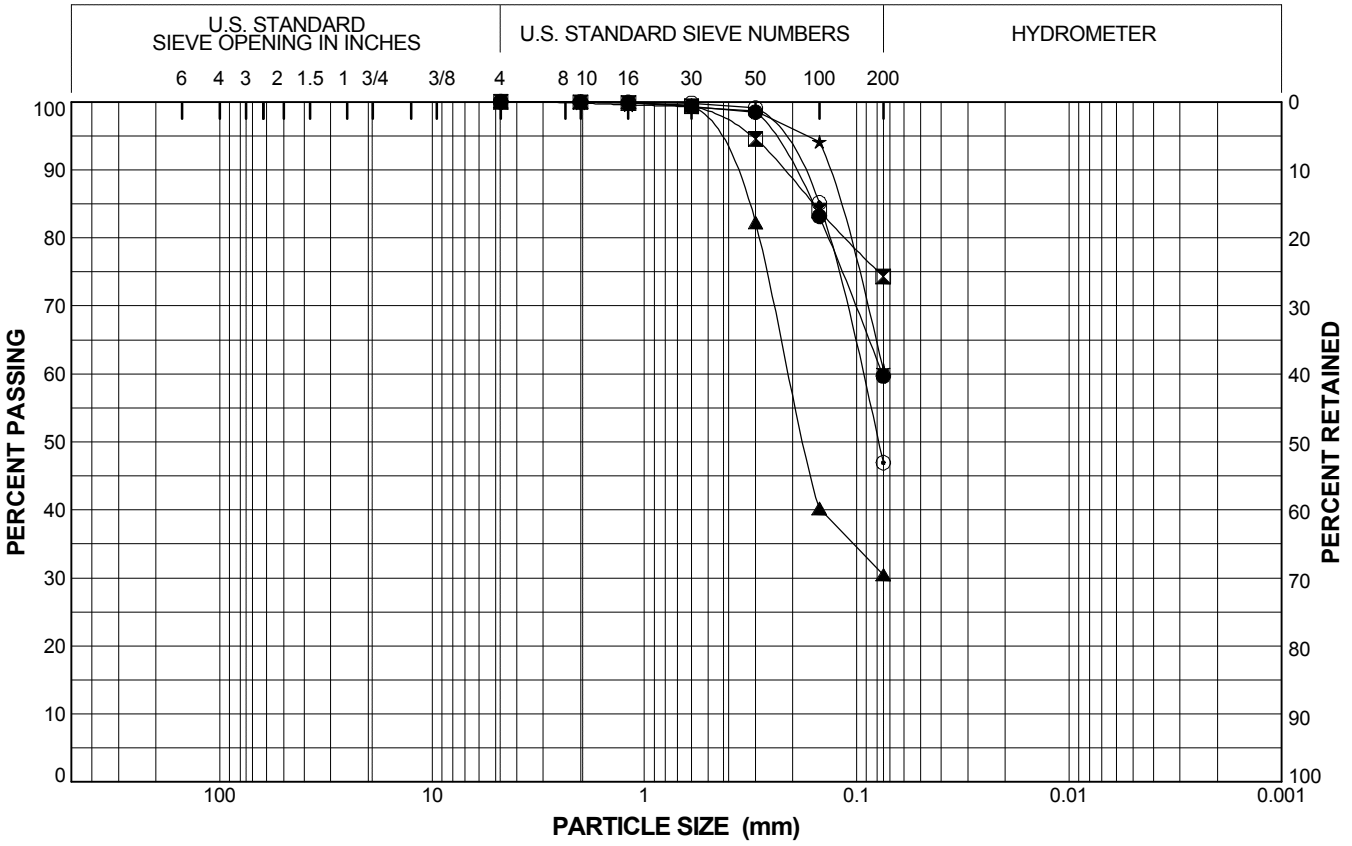
Figure B-1

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	



Boring Number	Sample Number	Depth (feet)	Symbol	LL	PI	Classification
B-1	1-2	12.5-14	●			Sandy Silty Clay (CL)
B-1	1-3	15-16.5	⧓	37	22	Silty Clay with Sand (CL)
B-2	2-2	15-16.5	▲			Silty Sand (SM)
B-3	3-1	5-6.5	★			Sandy Silt (ML)
B-3	3-2	10-11.5	⊙			Silty Sand (SM)

Report: SIEVE_5_CURVES_OAK; File: DWRBACON.GPJ; 1/3/2003 B-03

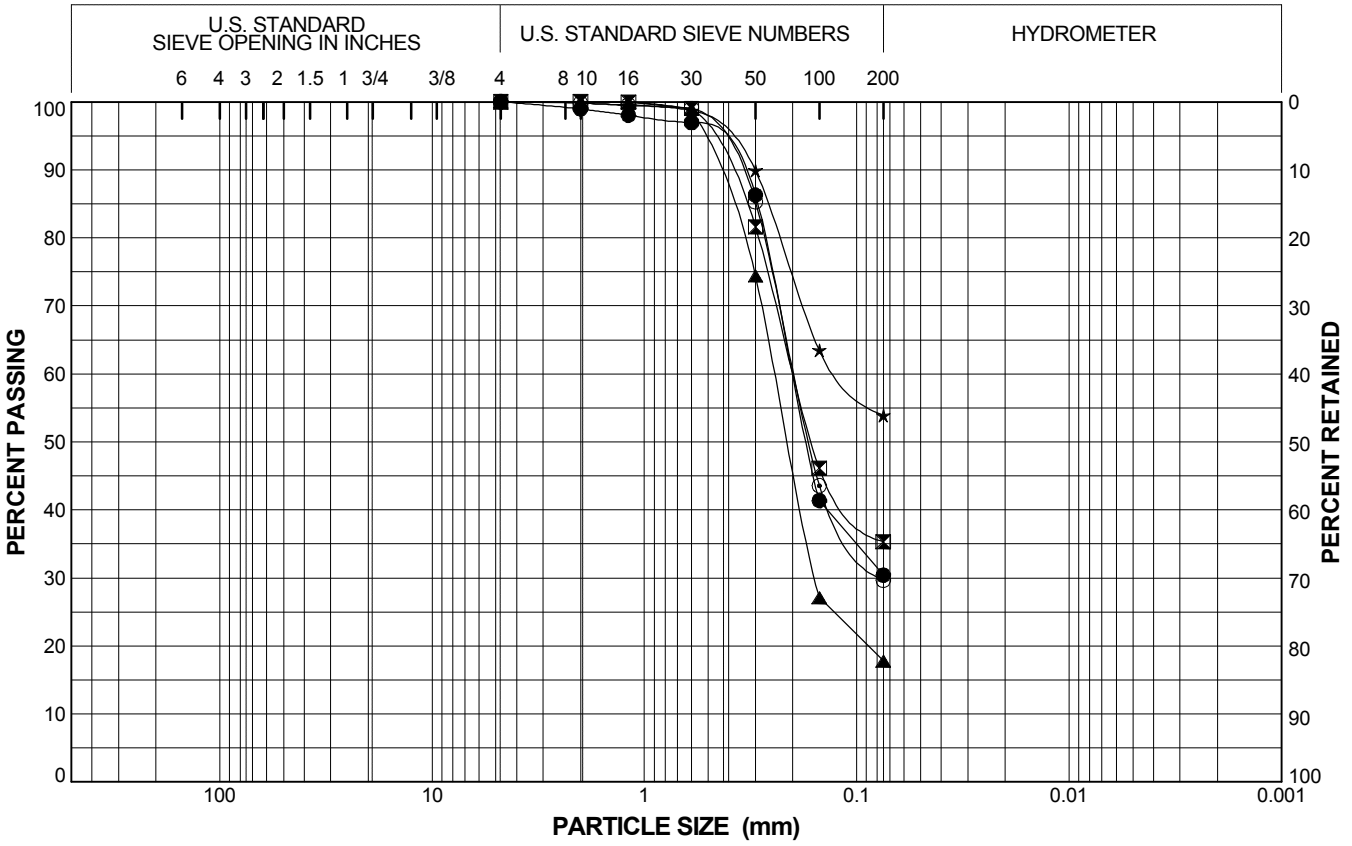
DWR Borrow Area Exploration
Bacon Island and Webb Tract, California
26814170.01200

PARTICLE SIZE DISTRIBUTION CURVES

Figure B-2

URS

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	



Boring Number	Sample Number	Depth (feet)	Symbol	LL	PI	Classification
B-4	4-1	15-16.5	●			Silty Sand (SM)
B-5	5-2	12.5-14	⧓			Silty Sand (SM)
B-6	6-1	10-11.5	▲			Silty Sand (SM)
B-9	9-1	10-11.5	★	51	29	Sandy Silty Clay (CH)
B-9	9-2	12.5-14	⊙			Silty Sand (SM)

Report: SIEVE_5_CURVES_OAK; File: DWRBACON.GPJ; 1/3/2003 B-09

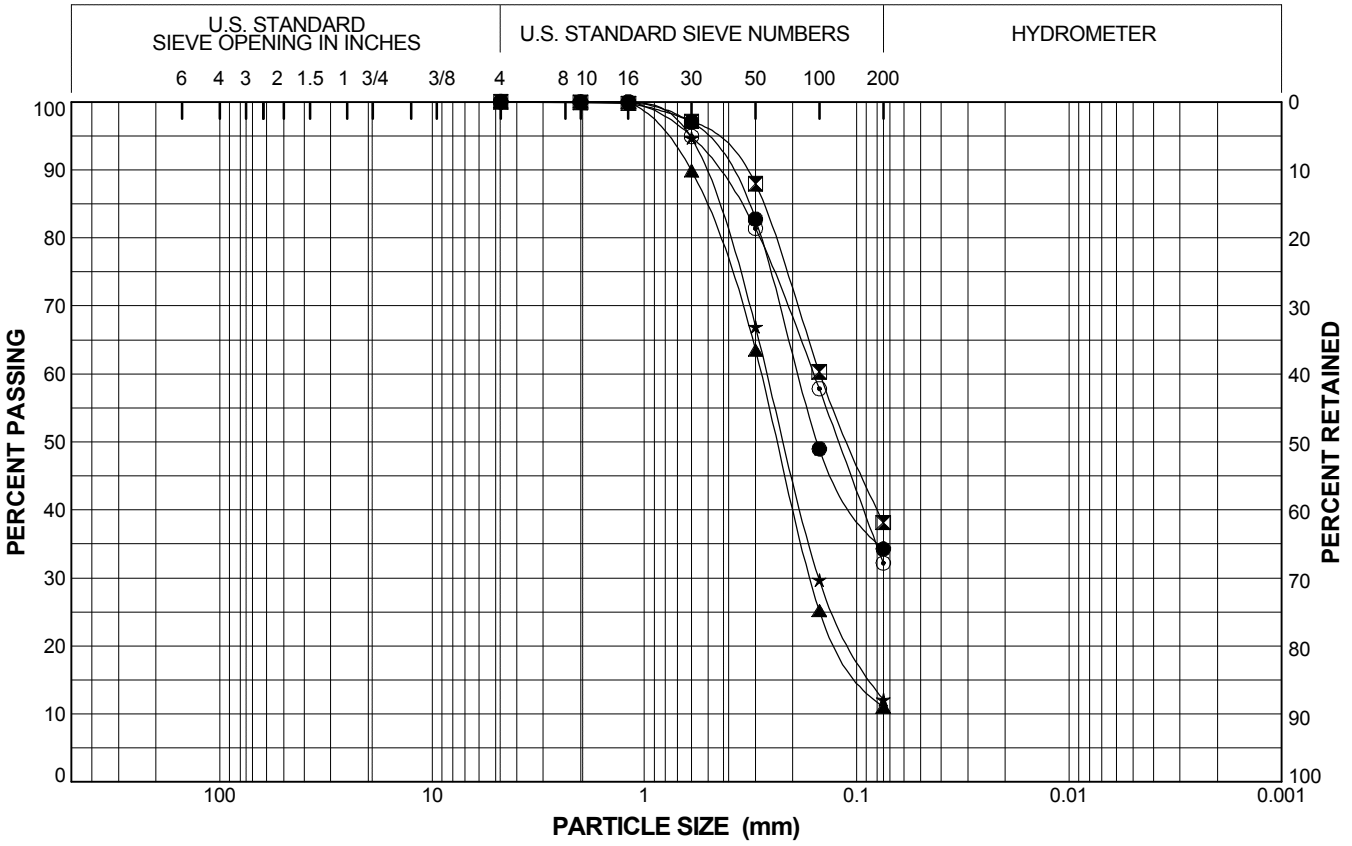
DWR Borrow Area Exploration
Bacon Island and Webb Tract, California
26814170.01200

PARTICLE SIZE DISTRIBUTION CURVES

Figure B-3

URS

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	



Boring Number	Sample Number	Depth (feet)	Symbol	LL	PI	Classification
W-2	2-1	15-16.5	●			Silty Sand (SM)
W-3	3-1	15-16.5	⧓	22	2	Silty Sand (SM)
W-3	3-2	17.5-19	▲			Poorly Graded Sand with Silt (SP-SM)
W-5	5-1	10-11.5	★			Silty Sand (SM)
W-6	6-2	12.5-14	⊙			Silty Sand (SM)

Report: SIEVE_5_CURVES_OAK; File: DWRBACON.GPJ; 1/3/2003 W-06

DWR Borrow Area Exploration
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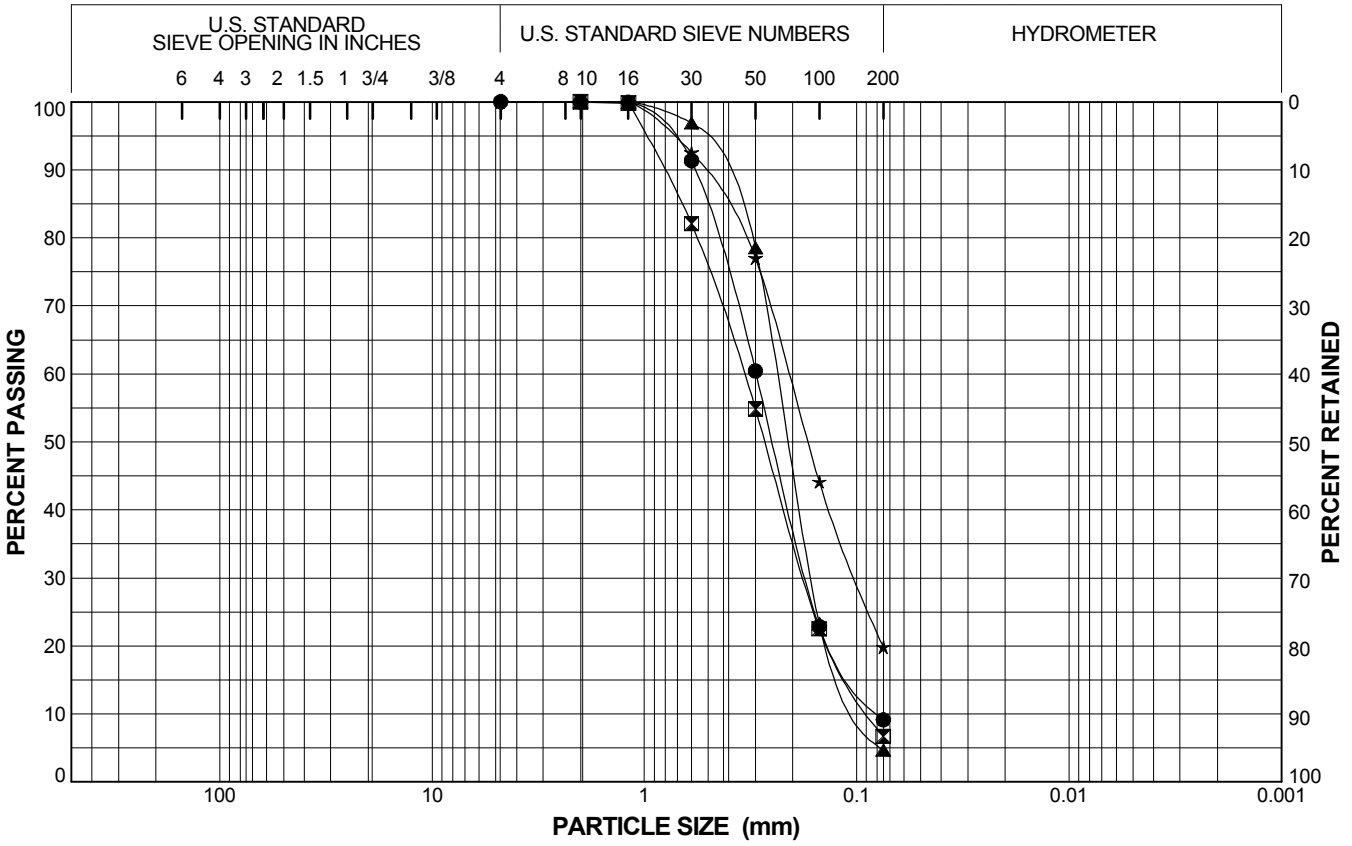
26814170.01200

PARTICLE SIZE DISTRIBUTION CURVES

Figure B-4

URS

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	



Boring Number	Sample Number	Depth (feet)	Symbol	LL	PI	Classification
W-7	7-1	15-16.5	●			Poorly Graded Sand with Silt (SP-SM)
W-8	8-1	5-6.5	⧓			Poorly Graded Sand with Silt (SP-SM)
W-8	8-2	10-11.5	▲			Poorly Graded Sand (SP)
W-10	10-2	12.5-14	★			Silty Sand (SM)

Report: SIEVE_5_CURVES_OAK; File: DWRBACON.GPJ; 1/3/2003 W-10

DWR Borrow Area Exploration
Bacon Island and Webb Tract, California
26814170.01200

PARTICLE SIZE DISTRIBUTION CURVES

Figure B-5

URS

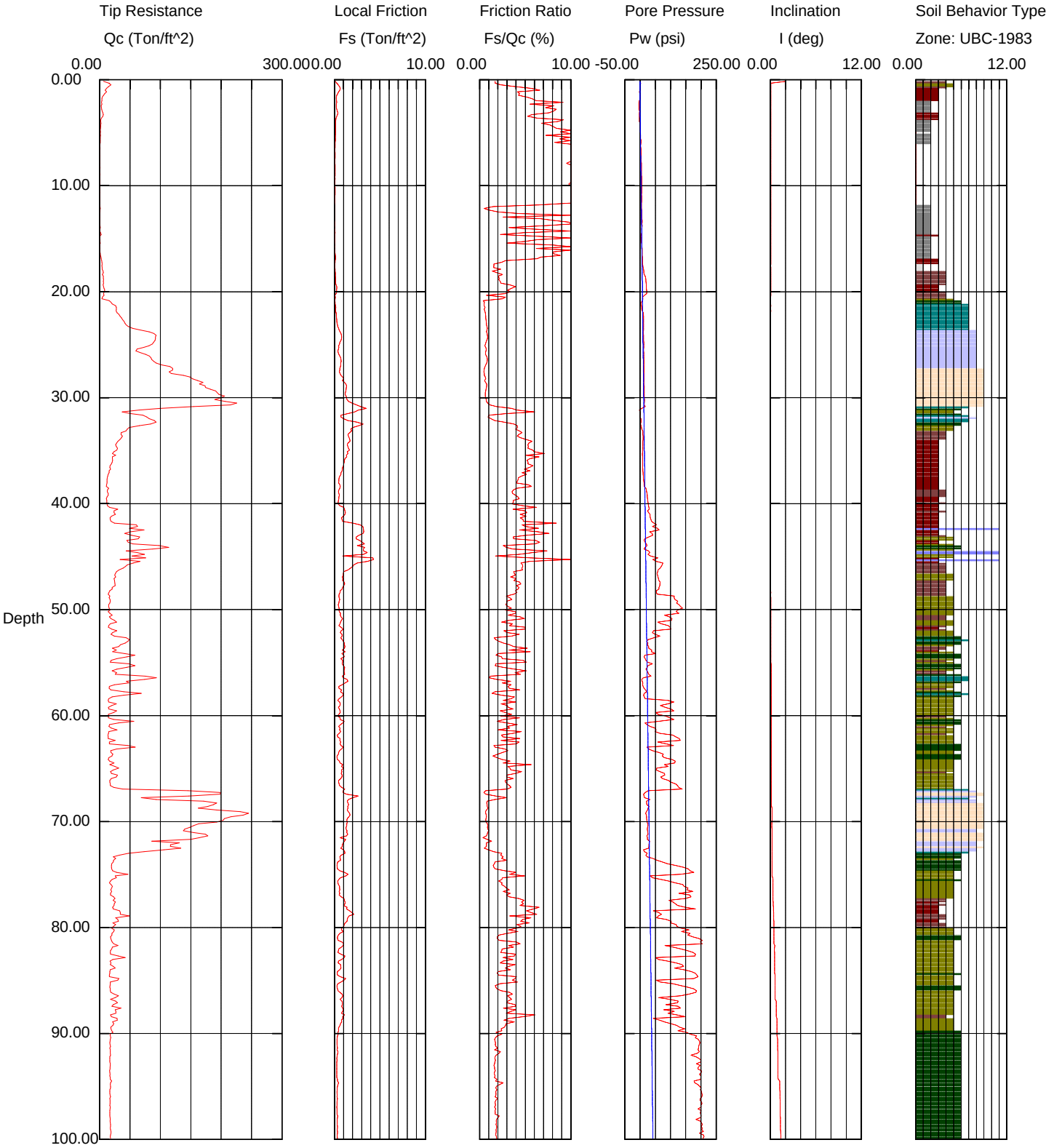
Appendix C
Bureau of Reclamation 2002 CPT Data

Bacon Island CPT Logs and Data

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: BSC001
Cone Used: 739

CPT Date/Time: 08-28-02 07:06
Location: BACON IS. PUMP
Job Number: IN-DELTA STORAGE



Maximum Depth = 101.05 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN CPT Date :08-28-02 07:06
On Site Loc:BACON IS. PUMP Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	12.67	0.44	3.49	0.03	silty clay to clay	UNDFND	UNDFD	8	1.05
0.60	2	6.44	0.30	4.70	0.08	clay	UNDFND	UNDFD	6	.52
0.95	3	3.61	0.28	7.66	0.15	organic material	UNDFND	UNDFD	3	.28
1.25	4	3.36	0.21	6.37	0.20	clay	UNDFND	UNDFD	3	.26
1.55	5	1.51	0.14	9.36	0.22	undefined	UNDFND	UNDFD	UDF	UNDEFINED
1.85	6	1.22	0.11	9.34	0.25	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.15	7	0.41	0.08	20.27	0.27	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.45	8	0.42	0.07	16.99	0.30	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.75	9	0.43	0.09	20.01	0.33	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.05	10	0.26	0.07	27.86	0.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.35	11	0.30	0.09	28.84	0.38	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.65	12	0.24	0.05	20.43	0.40	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.95	13	0.62	0.01	2.01	0.43	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.25	14	0.50	0.03	6.89	0.46	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.55	15	1.05	0.05	5.21	0.48	organic material	UNDFND	UNDFD	1	1.80
4.85	16	0.67	0.04	5.50	0.51	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.15	17	1.32	0.10	7.51	0.53	organic material	UNDFND	UNDFD	1	3.16
5.45	18	3.95	0.08	2.02	0.56	clay	UNDFND	UNDFD	4	.24
5.75	19	5.78	0.12	2.00	0.59	silty clay to clay	UNDFND	UNDFD	4	.39
6.05	20	6.71	0.21	3.08	0.61	clay	UNDFND	UNDFD	6	.46
6.40	21	9.21	0.12	1.35	0.64	clayey silt to silty clay	UNDFND	UNDFD	4	.66
6.70	22	26.30	0.15	0.55	0.67	silty sand to sandy silt	<40	36-38	8	UNDEFINED
7.00	23	36.77	0.26	0.70	0.69	silty sand to sandy silt	40-50	36-38	12	UNDEFINED
7.35	24	67.90	0.55	0.81	0.72	sand to silty sand	60-70	40-42	16	UNDEFINED
7.65	25	88.53	0.66	0.75	0.75	sand to silty sand	60-70	40-42	21	UNDEFINED
7.95	26	69.53	0.48	0.69	0.77	sand to silty sand	50-60	40-42	17	UNDEFINED
8.25	27	94.87	0.71	0.75	0.80	sand to silty sand	60-70	40-42	23	UNDEFINED
8.55	28	126.54	0.67	0.53	0.83	sand	70-80	42-44	24	UNDEFINED
8.85	29	165.92	1.16	0.70	0.85	sand	80-90	42-44	32	UNDEFINED
9.15	30	194.52	1.27	0.65	0.88	sand	80-90	44-46	37	UNDEFINED
9.45	31	181.78	2.29	1.26	0.90	sand to silty sand	80-90	44-46	44	UNDEFINED
9.75	32	63.75	1.47	2.31	0.93	sandy silt to clayey silt	UNDFND	UNDFD	24	5.16
10.05	33	71.10	2.27	3.19	0.96	sandy silt to clayey silt	UNDFND	UNDFD	27	5.77
10.35	34	36.79	1.66	4.50	0.98	silty clay to clay	UNDFND	UNDFD	23	2.90
10.65	35	28.35	1.56	5.49	1.01	clay	UNDFND	UNDFD	27	2.19
10.95	36	22.34	1.31	5.86	1.03	clay	UNDFND	UNDFD	21	1.69
11.25	37	17.90	0.96	5.39	1.06	clay	UNDFND	UNDFD	17	1.31
11.55	38	13.24	0.60	4.52	1.09	clay	UNDFND	UNDFD	13	.92

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E W1 Bureau of Reclamation
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Operator :TONY SHANAHAN On Site Loc:BACON IS. PUMP Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	12.56	0.55	4.35	1.11	clay	UNDFND	UNDFD	12	.86
12.15	40	12.53	0.49	3.90	1.14	clay	UNDFND	UNDFD	12	.85
12.45	41	19.82	0.93	4.69	1.16	clay	UNDFND	UNDFD	19	1.45
12.80	42	26.25	1.36	5.18	1.19	clay	UNDFND	UNDFD	25	1.98
13.10	43	54.80	3.09	5.64	1.22	clay	UNDFND	UNDFD	>50	4.36
13.40	44	62.19	2.74	4.41	1.24	clayey silt to silty clay	UNDFND	UNDFD	30	4.97
13.75	45	72.70	3.10	4.26	1.27	clayey silt to silty clay	UNDFND	UNDFD	35	5.84
14.05	46	46.99	2.73	5.80	1.30	clay	UNDFND	UNDFD	45	3.69
14.35	47	26.66	1.06	3.96	1.33	silty clay to clay	UNDFND	UNDFD	17	1.99
14.65	48	23.53	0.99	4.20	1.35	silty clay to clay	UNDFND	UNDFD	15	1.73
14.95	49	16.02	0.57	3.58	1.38	silty clay to clay	UNDFND	UNDFD	10	1.10
15.25	50	16.12	0.49	3.04	1.40	clayey silt to silty clay	UNDFND	UNDFD	8	1.10
15.55	51	18.42	0.71	3.88	1.43	silty clay to clay	UNDFND	UNDFD	12	1.29
15.85	52	20.44	0.71	3.47	1.46	clayey silt to silty clay	UNDFND	UNDFD	10	1.45
16.15	53	33.92	0.81	2.39	1.48	sandy silt to clayey silt	UNDFND	UNDFD	13	2.57
16.45	54	29.63	1.10	3.70	1.51	clayey silt to silty clay	UNDFND	UNDFD	14	2.21
16.75	55	34.92	0.91	2.61	1.53	sandy silt to clayey silt	UNDFND	UNDFD	13	2.64
17.05	56	37.99	1.04	2.74	1.56	sandy silt to clayey silt	UNDFND	UNDFD	15	2.90
17.35	57	60.12	1.18	1.97	1.59	silty sand to sandy silt	40-50	36-38	19	UNDEFINED
17.65	58	30.43	0.71	2.33	1.61	sandy silt to clayey silt	UNDFND	UNDFD	12	2.26
17.95	59	21.88	0.64	2.94	1.64	clayey silt to silty clay	UNDFND	UNDFD	10	1.54
18.25	60	19.25	0.57	2.95	1.66	clayey silt to silty clay	UNDFND	UNDFD	9	1.31
18.55	61	25.97	0.71	2.75	1.69	clayey silt to silty clay	UNDFND	UNDFD	12	1.87
18.85	62	17.80	0.54	3.01	1.71	clayey silt to silty clay	UNDFND	UNDFD	9	1.18
19.20	63	27.31	0.67	2.44	1.74	sandy silt to clayey silt	UNDFND	UNDFD	10	1.97
19.50	64	20.45	0.47	2.32	1.77	clayey silt to silty clay	UNDFND	UNDFD	10	1.39
19.80	65	21.30	0.71	3.35	1.80	clayey silt to silty clay	UNDFND	UNDFD	10	1.46
20.15	66	21.82	0.75	3.43	1.82	clayey silt to silty clay	UNDFND	UNDFD	10	1.50
20.45	67	43.08	0.76	1.75	1.85	silty sand to sandy silt	<40	32-34	14	UNDEFINED
20.75	68	146.15	1.65	1.13	1.88	sand to silty sand	60-70	38-40	35	UNDEFINED
21.05	69	190.55	1.49	0.78	1.90	sand	70-80	40-42	37	UNDEFINED
21.35	70	216.30	1.54	0.71	1.93	sand	70-80	40-42	41	UNDEFINED
21.65	71	149.84	1.35	0.90	1.96	sand	60-70	38-40	29	UNDEFINED
21.95	72	147.21	1.13	0.77	1.98	sand	60-70	38-40	28	UNDEFINED
22.25	73	98.86	0.96	0.97	2.01	sand to silty sand	50-60	36-38	24	UNDEFINED
22.55	74	24.48	0.56	2.29	2.03	sandy silt to clayey silt	UNDFND	UNDFD	9	1.68
22.85	75	25.84	0.70	2.70	2.06	clayey silt to silty clay	UNDFND	UNDFD	12	1.79
23.15	76	21.11	0.62	2.91	2.09	clayey silt to silty clay	UNDFND	UNDFD	10	1.39
23.45	77	19.16	0.57	2.95	2.11	clayey silt to silty clay	UNDFND	UNDFD	9	1.23
23.75	78	24.00	1.05	4.38	2.14	silty clay to clay	UNDFND	UNDFD	15	1.62
24.05	79	32.31	1.68	5.19	2.16	clay	UNDFND	UNDFD	31	2.31
24.35	80	26.35	1.27	4.80	2.19	clay	UNDFND	UNDFD	25	1.81

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

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E W1 Bureau of Reclamation
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Operator :TONY SHANAHAN On Site Loc:BACON IS. PUMP Page No. 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
24.65	81	20.91	0.66	3.15	2.21	clayey silt to silty clay	UNDFND	UNDFD	10	1.35
24.95	82	22.21	0.73	3.29	2.24	clayey silt to silty clay	UNDFND	UNDFD	11	1.46
25.25	83	24.39	0.71	2.93	2.27	clayey silt to silty clay	UNDFND	UNDFD	12	1.63
25.60	84	20.22	0.63	3.10	2.29	clayey silt to silty clay	UNDFND	UNDFD	10	1.28
25.90	85	21.22	0.66	3.10	2.32	clayey silt to silty clay	UNDFND	UNDFD	10	1.36
26.20	86	17.37	0.41	2.36	2.35	clayey silt to silty clay	UNDFND	UNDFD	8	1.03
26.55	87	24.68	0.80	3.23	2.38	clayey silt to silty clay	UNDFND	UNDFD	12	1.64
26.85	88	26.17	0.88	3.38	2.40	clayey silt to silty clay	UNDFND	UNDFD	13	1.76
27.15	89	23.35	0.87	3.72	2.43	silty clay to clay	UNDFND	UNDFD	15	1.52
27.45	90	19.63	0.48	2.43	2.46	clayey silt to silty clay	UNDFND	UNDFD	9	1.20
27.75	91	17.48	0.31	1.75	2.48	sandy silt to clayey silt	UNDFND	UNDFD	7	1.02
28.05	92	17.57	0.34	1.94	2.51	clayey silt to silty clay	UNDFND	UNDFD	8	1.02
28.35	93	17.08	0.29	1.67	2.53	sandy silt to clayey silt	UNDFND	UNDFD	7	.97
28.65	94	16.98	0.28	1.66	2.56	sandy silt to clayey silt	UNDFND	UNDFD	7	.96
28.95	95	18.05	0.36	1.98	2.58	clayey silt to silty clay	UNDFND	UNDFD	9	1.05
29.25	96	17.40	0.31	1.79	2.61	sandy silt to clayey silt	UNDFND	UNDFD	7	.99
29.55	97	17.17	0.30	1.76	2.64	sandy silt to clayey silt	UNDFND	UNDFD	7	.96
29.85	98	17.00	0.31	1.85	2.66	clayey silt to silty clay	UNDFND	UNDFD	8	.94
30.15	99	17.69	0.33	1.85	2.69	clayey silt to silty clay	UNDFND	UNDFD	8	1.00
30.45	100	18.10	0.33	1.82	2.71	sandy silt to clayey silt	UNDFND	UNDFD	7	1.03
30.75	101	18.94	-5460.99	-28830.55	2.74	undefined	UNDFND	UNDFD	UDF	UNDEFINED

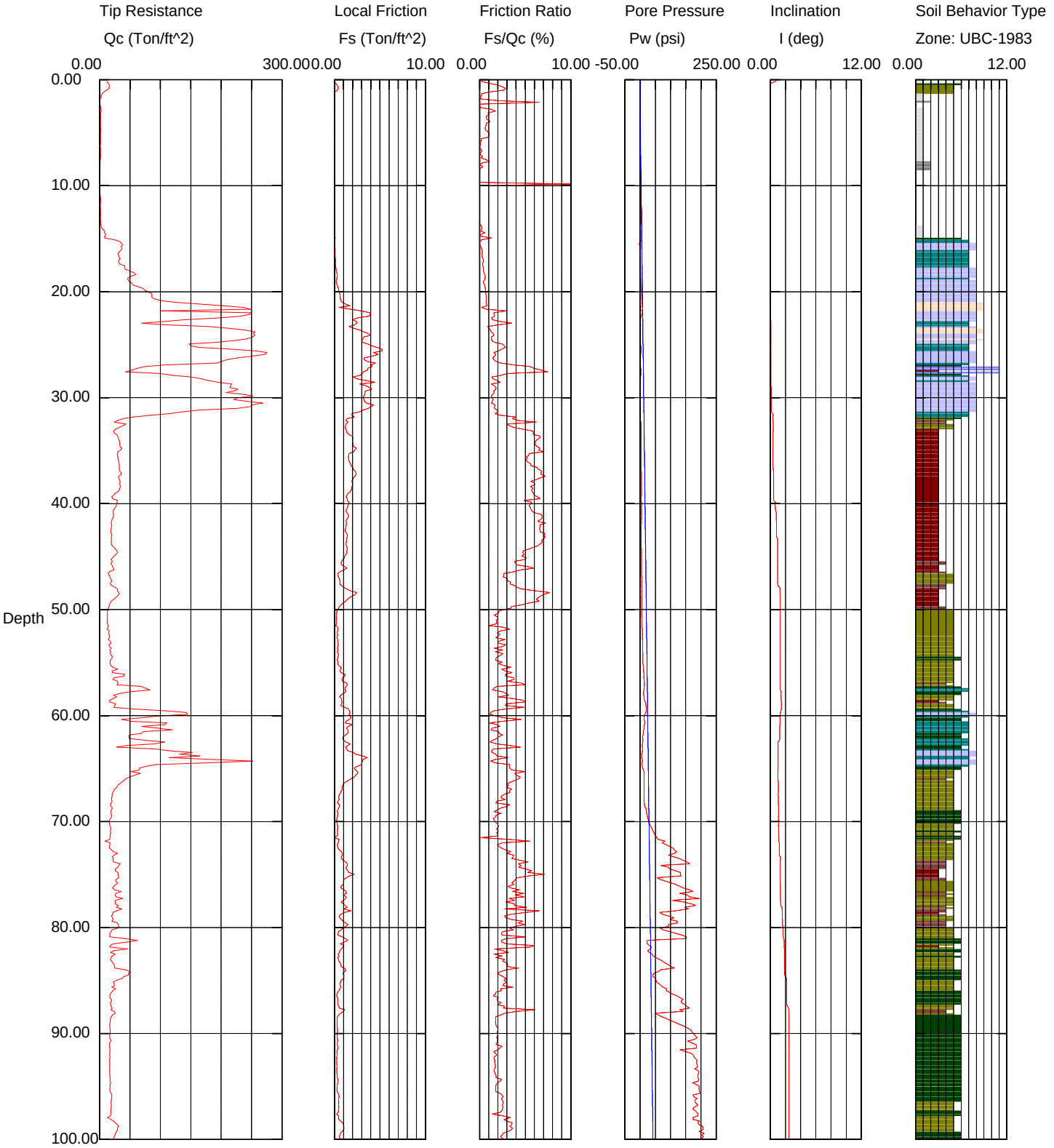
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: BSC002
Cone Used: 739

CPT Date/Time: 08-28-02 09:02
Location: BACON IS. PUMP
Job Number: IN-DELTA STORAGE



Maximum Depth = 101.05 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN CPT Date :08-28-02 09:02
On Site Loc:BACON IS. PUMP Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	14.09	0.27	1.90	0.03	clayey silt to silty clay	UNDFND	UNDFD	7	1.17
0.60	2	3.01	0.02	0.62	0.08	sensitive fine grained	UNDFND	UNDFD	1	.24
0.95	3	1.41	0.01	0.77	0.15	sensitive fine grained	UNDFND	UNDFD	1	.10
1.25	4	1.52	0.01	0.87	0.20	sensitive fine grained	UNDFND	UNDFD	1	.10
1.55	5	1.61	0.01	0.75	0.22	sensitive fine grained	UNDFND	UNDFD	1	.11
1.85	6	1.45	0.01	0.42	0.25	sensitive fine grained	UNDFND	UNDFD	1	9.39
2.15	7	1.44	0.00	0.09	0.27	sensitive fine grained	UNDFND	UNDFD	1	8.84
2.45	8	1.16	0.00	0.40	0.30	sensitive fine grained	UNDFND	UNDFD	1	6.02
2.75	9	0.57	-0.01	-0.91	0.33	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.05	10	0.40	-0.01	-3.53	0.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.35	11	0.64	-0.01	-1.99	0.38	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.65	12	1.48	-0.01	-0.71	0.40	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.95	13	1.54	-0.01	-0.83	0.43	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.25	14	2.01	-0.01	-0.27	0.46	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.55	15	8.06	0.03	0.41	0.48	sensitive fine grained	UNDFND	UNDFD	4	.60
4.85	16	33.70	0.03	0.10	0.51	sand to silty sand	40-50	38-40	8	UNDEFINED
5.15	17	32.32	0.10	0.30	0.53	silty sand to sandy silt	40-50	38-40	10	UNDEFINED
5.45	18	36.85	0.14	0.38	0.56	silty sand to sandy silt	40-50	38-40	12	UNDEFINED
5.75	19	51.78	0.28	0.54	0.59	sand to silty sand	50-60	40-42	12	UNDEFINED
6.05	20	60.71	0.34	0.55	0.61	sand to silty sand	50-60	40-42	15	UNDEFINED
6.40	21	93.14	0.66	0.71	0.64	sand to silty sand	70-80	42-44	22	UNDEFINED
6.70	22	199.80	2.02	1.01	0.67	sand	>90	44-46	38	UNDEFINED
7.00	23	165.75	2.86	1.73	0.69	sand to silty sand	80-90	44-46	40	UNDEFINED
7.35	24	214.70	2.80	1.31	0.72	sand	>90	44-46	41	UNDEFINED
7.65	25	201.22	3.37	1.68	0.75	sand to silty sand	>90	44-46	48	UNDEFINED
7.95	26	238.95	4.75	1.99	0.77	sand to silty sand	>90	44-46	>50	UNDEFINED
8.25	27	169.39	3.81	2.25	0.80	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
8.55	28	88.07	3.06	3.48	0.83	sandy silt to clayey silt	UNDFND	UNDFD	34	7.20
8.85	29	198.25	3.43	1.73	0.85	sand to silty sand	80-90	44-46	47	UNDEFINED
9.15	30	228.79	3.43	1.50	0.88	sand to silty sand	>90	44-46	>50	UNDEFINED
9.45	31	243.03	3.70	1.52	0.90	sand to silty sand	>90	44-46	>50	UNDEFINED
9.75	32	99.21	2.22	2.24	0.93	silty sand to sandy silt	60-70	40-42	32	UNDEFINED
10.05	33	32.34	1.30	4.02	0.96	silty clay to clay	UNDFND	UNDFD	21	2.53
10.35	34	27.64	1.72	6.23	0.98	clay	UNDFND	UNDFD	26	2.14
10.65	35	33.95	2.14	6.29	1.01	clay	UNDFND	UNDFD	33	2.66
10.95	36	30.14	1.67	5.54	1.03	clay	UNDFND	UNDFD	29	2.34
11.25	37	32.27	1.94	6.01	1.06	clay	UNDFND	UNDFD	31	2.51
11.55	38	33.42	2.18	6.54	1.09	clay	UNDFND	UNDFD	32	2.60

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

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E W1 Bureau of Reclamation
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Operator :TONY SHANAHAN On Site Loc:BACON IS. PUMP Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	32.73	1.91	5.82	1.11	clay	UNDFND	UNDFD	31	2.54
12.15	40	24.58	1.44	5.84	1.14	clay	UNDFND	UNDFD	24	1.85
12.45	41	24.94	1.41	5.64	1.16	clay	UNDFND	UNDFD	24	1.88
12.80	42	20.80	1.41	6.76	1.19	clay	UNDFND	UNDFD	20	1.53
13.10	43	19.07	1.29	6.78	1.22	clay	UNDFND	UNDFD	18	1.38
13.40	44	19.52	1.33	6.81	1.24	clay	UNDFND	UNDFD	19	1.41
13.75	45	25.64	1.29	5.05	1.27	clay	UNDFND	UNDFD	25	1.92
14.05	46	20.40	0.96	4.69	1.30	clay	UNDFND	UNDFD	20	1.48
14.35	47	17.43	0.57	3.29	1.33	clayey silt to silty clay	UNDFND	UNDFD	8	1.22
14.65	48	21.85	0.83	3.82	1.35	silty clay to clay	UNDFND	UNDFD	14	1.59
14.95	49	28.57	1.93	6.74	1.38	clay	UNDFND	UNDFD	27	2.14
15.25	50	16.06	0.72	4.49	1.40	clay	UNDFND	UNDFD	15	1.10
15.55	51	12.79	0.24	1.91	1.43	clayey silt to silty clay	UNDFND	UNDFD	6	.82
15.85	52	13.62	0.29	2.15	1.46	clayey silt to silty clay	UNDFND	UNDFD	7	.88
16.15	53	15.80	0.34	2.13	1.48	clayey silt to silty clay	UNDFND	UNDFD	8	1.06
16.45	54	17.47	0.38	2.17	1.51	clayey silt to silty clay	UNDFND	UNDFD	8	1.19
16.75	55	18.63	0.40	2.13	1.53	clayey silt to silty clay	UNDFND	UNDFD	9	1.29
17.05	56	21.65	0.61	2.83	1.56	clayey silt to silty clay	UNDFND	UNDFD	10	1.53
17.35	57	30.96	1.04	3.36	1.59	clayey silt to silty clay	UNDFND	UNDFD	15	2.31
17.65	58	56.63	1.22	2.16	1.61	sandy silt to clayey silt	UNDFND	UNDFD	22	4.44
17.95	59	22.05	0.75	3.42	1.64	clayey silt to silty clay	UNDFND	UNDFD	11	1.55
18.25	60	83.08	1.41	1.70	1.66	silty sand to sandy silt	50-60	36-38	27	UNDEFINED
18.55	61	78.51	1.62	2.06	1.69	silty sand to sandy silt	50-60	36-38	25	UNDEFINED
18.85	62	78.77	1.43	1.81	1.71	silty sand to sandy silt	50-60	36-38	25	UNDEFINED
19.20	63	63.42	1.24	1.95	1.74	silty sand to sandy silt	40-50	36-38	20	UNDEFINED
19.50	64	128.05	2.33	1.82	1.77	silty sand to sandy silt	60-70	38-40	41	UNDEFINED
19.80	65	140.31	2.82	2.01	1.80	silty sand to sandy silt	60-70	38-40	45	UNDEFINED
20.15	66	53.65	2.21	4.11	1.82	clayey silt to silty clay	UNDFND	UNDFD	26	4.15
20.45	67	29.16	0.94	3.22	1.85	clayey silt to silty clay	UNDFND	UNDFD	14	2.11
20.75	68	20.50	0.53	2.59	1.88	clayey silt to silty clay	UNDFND	UNDFD	10	1.38
21.05	69	19.05	0.44	2.30	1.90	clayey silt to silty clay	UNDFND	UNDFD	9	1.25
21.35	70	17.98	0.32	1.80	1.93	sandy silt to clayey silt	UNDFND	UNDFD	7	1.16
21.65	71	17.55	0.34	1.97	1.96	clayey silt to silty clay	UNDFND	UNDFD	8	1.12
21.95	72	15.85	0.36	2.28	1.98	clayey silt to silty clay	UNDFND	UNDFD	8	.97
22.25	73	20.08	0.54	2.69	2.01	clayey silt to silty clay	UNDFND	UNDFD	10	1.32
22.55	74	24.26	1.01	4.17	2.03	silty clay to clay	UNDFND	UNDFD	15	1.66
22.85	75	29.03	1.54	5.32	2.06	clay	UNDFND	UNDFD	28	2.06
23.15	76	28.75	1.18	4.12	2.09	silty clay to clay	UNDFND	UNDFD	18	2.03
23.45	77	26.20	1.02	3.89	2.11	silty clay to clay	UNDFND	UNDFD	17	1.81
23.75	78	28.94	1.08	3.72	2.14	clayey silt to silty clay	UNDFND	UNDFD	14	2.04
24.05	79	25.78	1.10	4.28	2.16	silty clay to clay	UNDFND	UNDFD	16	1.77
24.35	80	25.98	1.06	4.07	2.19	silty clay to clay	UNDFND	UNDFD	17	1.78

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

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E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:BACON IS. PUMP Page No. 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
24.65	81	19.99	0.65	3.25	2.21	clayey silt to silty clay	UNDFND	UNDFD	10	1.28
24.95	82	34.41	1.08	3.13	2.24	clayey silt to silty clay	UNDFND	UNDFD	16	2.47
25.25	83	25.61	0.53	2.07	2.27	sandy silt to clayey silt	UNDFND	UNDFD	10	1.73
25.60	84	24.76	0.77	3.10	2.29	clayey silt to silty clay	UNDFND	UNDFD	12	1.66
25.90	85	41.62	1.00	2.41	2.32	sandy silt to clayey silt	UNDFND	UNDFD	16	3.06
26.20	86	23.17	0.63	2.72	2.35	clayey silt to silty clay	UNDFND	UNDFD	11	1.52
26.55	87	18.17	0.35	1.90	2.38	clayey silt to silty clay	UNDFND	UNDFD	9	1.09
26.85	88	21.13	0.71	3.35	2.40	clayey silt to silty clay	UNDFND	UNDFD	10	1.34
27.15	89	18.28	0.34	1.88	2.43	clayey silt to silty clay	UNDFND	UNDFD	9	1.09
27.45	90	17.12	0.33	1.93	2.46	clayey silt to silty clay	UNDFND	UNDFD	8	.99
27.75	91	17.07	0.33	1.91	2.48	clayey silt to silty clay	UNDFND	UNDFD	8	.98
28.05	92	16.88	0.33	1.98	2.51	clayey silt to silty clay	UNDFND	UNDFD	8	.96
28.35	93	16.69	0.28	1.66	2.53	sandy silt to clayey silt	UNDFND	UNDFD	6	.94
28.65	94	16.77	0.28	1.69	2.56	sandy silt to clayey silt	UNDFND	UNDFD	6	.94
28.95	95	17.42	0.35	2.01	2.58	clayey silt to silty clay	UNDFND	UNDFD	8	.99
29.25	96	18.40	0.39	2.12	2.61	clayey silt to silty clay	UNDFND	UNDFD	9	1.07
29.55	97	19.24	0.48	2.52	2.64	clayey silt to silty clay	UNDFND	UNDFD	9	1.14
29.85	98	17.60	0.42	2.37	2.66	clayey silt to silty clay	UNDFND	UNDFD	8	.99
30.15	99	26.11	0.87	3.31	2.69	clayey silt to silty clay	UNDFND	UNDFD	13	1.70
30.45	100	26.00	0.72	2.78	2.71	clayey silt to silty clay	UNDFND	UNDFD	12	1.69
30.75	101	20.86	-5460.99	-26175.05	2.74	undefined	UNDFND	UNDFD	UDF	UNDEFINED

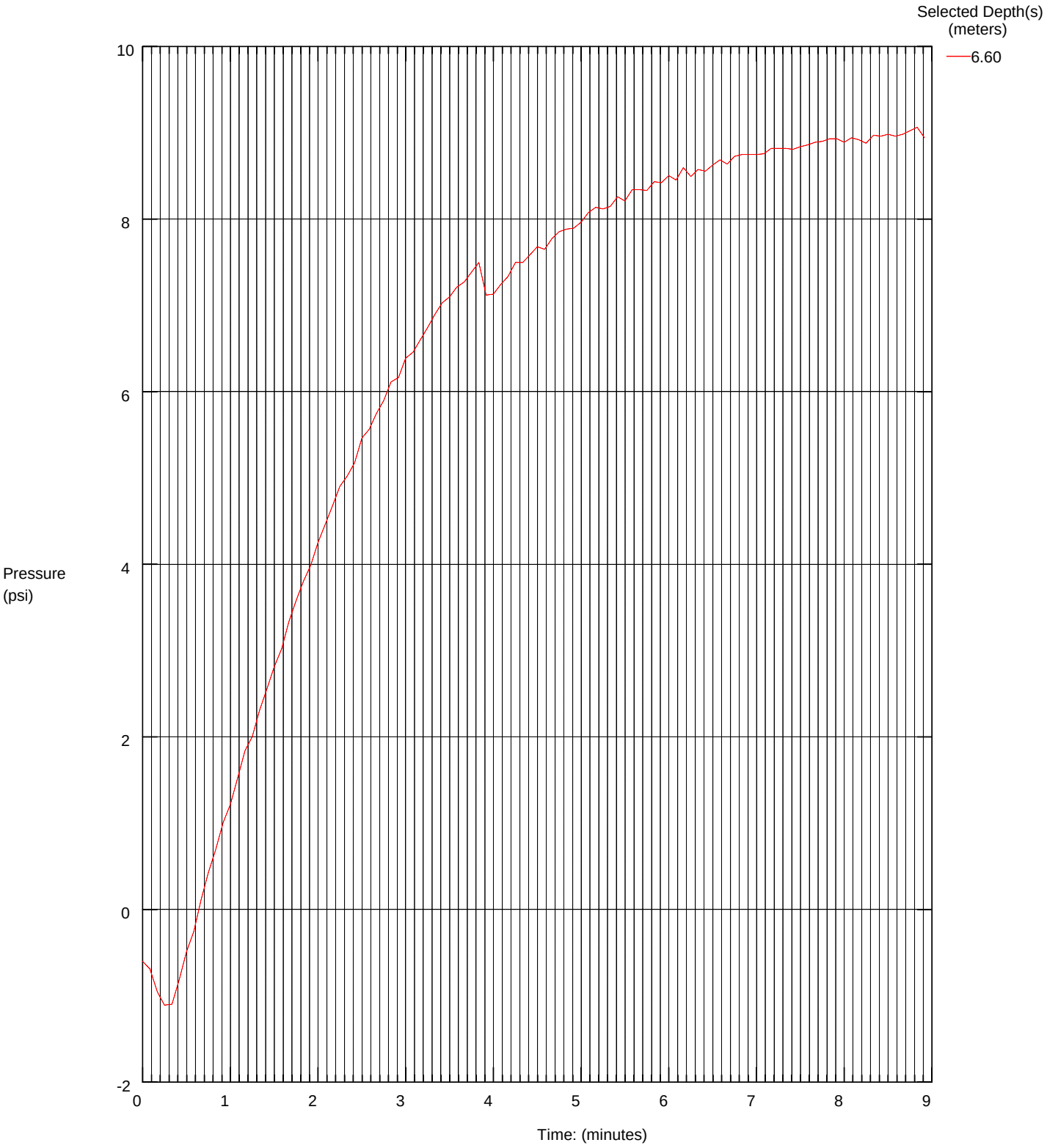
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: BSC002
Cone Used: 739

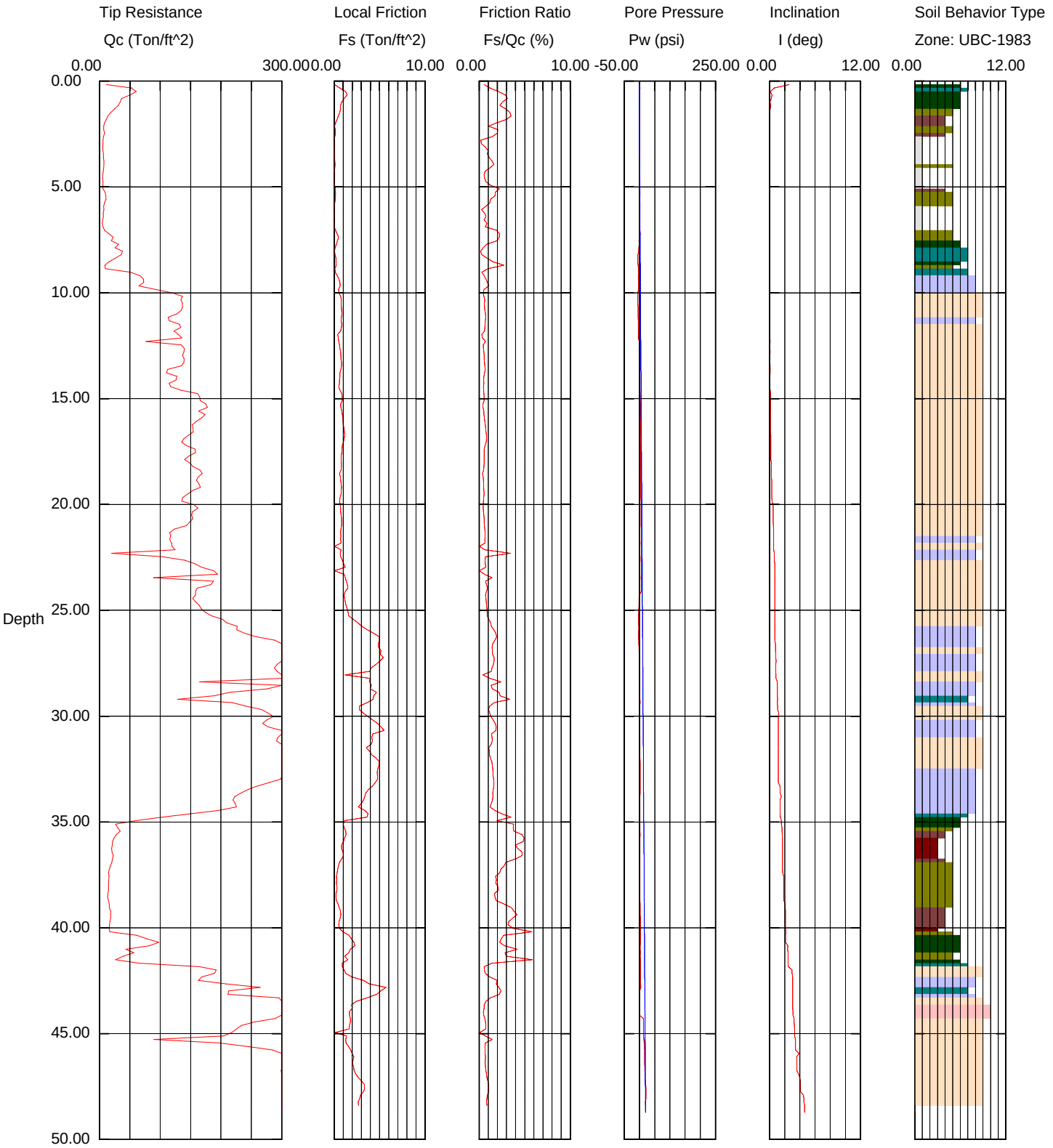
CPT Date/Time: 08-28-02 09:02
Location: BACON IS. PUMP
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: BSC006
Cone Used: 739

CPT Date/Time: 08-27-02 12:27
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE



Maximum Depth = 48.72 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN CPT Date :08-27-02 12:27
On Site Loc:BACON IS. BORROW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	40.75	0.90	2.21	0.03	sandy silt to clayey silt	UNDFND	UNDFD	16	3.39
0.60	2	17.95	0.51	2.81	0.08	clayey silt to silty clay	UNDFND	UNDFD	9	1.48
0.95	3	6.53	0.08	1.18	0.15	sensitive fine grained	UNDFND	UNDFD	3	.53
1.25	4	6.63	0.08	1.21	0.20	sensitive fine grained	UNDFND	UNDFD	3	.53
1.55	5	5.64	0.06	1.02	0.22	sensitive fine grained	UNDFND	UNDFD	3	.44
1.85	6	8.81	0.11	1.23	0.25	clayey silt to silty clay	UNDFND	UNDFD	4	.70
2.15	7	6.09	0.06	0.97	0.27	sensitive fine grained	UNDFND	UNDFD	3	.47
2.45	8	25.41	0.28	1.09	0.30	sandy silt to clayey silt	UNDFND	UNDFD	10	2.08
2.75	9	24.33	0.17	0.71	0.33	silty sand to sandy silt	40-50	38-40	8	UNDEFINED
3.05	10	81.30	0.55	0.67	0.35	sand to silty sand	70-80	44-46	19	UNDEFINED
3.35	11	134.24	0.80	0.60	0.38	sand	80-90	46-48	26	UNDEFINED
3.65	12	124.25	0.73	0.59	0.40	sand	80-90	44-46	24	UNDEFINED
3.95	13	127.06	0.62	0.49	0.43	sand	80-90	44-46	24	UNDEFINED
4.25	14	127.12	0.75	0.59	0.46	sand	80-90	44-46	24	UNDEFINED
4.55	15	136.54	0.70	0.51	0.48	sand	80-90	44-46	26	UNDEFINED
4.85	16	170.54	0.85	0.50	0.51	sand	>90	46-48	33	UNDEFINED
5.15	17	150.73	1.09	0.73	0.53	sand	80-90	44-46	29	UNDEFINED
5.45	18	146.82	0.88	0.60	0.56	sand	80-90	44-46	28	UNDEFINED
5.75	19	159.91	0.74	0.47	0.59	sand	80-90	44-46	31	UNDEFINED
6.05	20	149.78	0.75	0.50	0.61	sand	80-90	44-46	29	UNDEFINED
6.40	21	152.43	0.77	0.51	0.64	sand	80-90	44-46	29	UNDEFINED
6.70	22	118.22	0.63	0.53	0.67	sand	70-80	42-44	23	UNDEFINED
7.00	23	118.91	0.89	0.75	0.69	sand to silty sand	70-80	42-44	28	UNDEFINED
7.35	24	165.84	1.14	0.69	0.72	sand	80-90	44-46	32	UNDEFINED
7.65	25	162.57	1.30	0.80	0.75	sand	80-90	44-46	31	UNDEFINED
7.95	26	214.53	2.90	1.35	0.77	sand to silty sand	>90	44-46	>50	UNDEFINED
8.25	27	319.49	5.00	1.56	0.80	sand to silty sand	>90	46-48	>50	UNDEFINED
8.55	28	302.06	4.05	1.34	0.83	sand	>90	46-48	>50	UNDEFINED
8.85	29	248.99	4.16	1.67	0.85	sand to silty sand	>90	44-46	>50	UNDEFINED
9.15	30	236.30	3.40	1.44	0.88	sand to silty sand	>90	44-46	>50	UNDEFINED
9.45	31	287.76	4.68	1.63	0.90	sand to silty sand	>90	44-46	>50	UNDEFINED
9.75	32	337.72	4.08	1.21	0.93	sand	>90	46-48	>50	UNDEFINED
10.05	33	324.32	4.83	1.49	0.96	sand to silty sand	>90	46-48	>50	UNDEFINED
10.35	34	243.32	3.77	1.55	0.98	sand to silty sand	>90	44-46	>50	UNDEFINED
10.65	35	159.86	2.93	1.83	1.01	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
10.95	36	27.30	1.16	4.24	1.03	silty clay to clay	UNDFND	UNDFD	17	2.10
11.25	37	20.90	0.86	4.11	1.06	silty clay to clay	UNDFND	UNDFD	13	1.56
11.55	38	15.93	0.34	2.17	1.09	clayey silt to silty clay	UNDFND	UNDFD	8	1.14

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:BACON IS. BORROW Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	14.60	0.30	2.06	1.11	clayey silt to silty clay	UNDFND	UNDFD	7	1.03
12.15	40	17.39	0.63	3.61	1.14	silty clay to clay	UNDFND	UNDFD	11	1.26
12.45	41	58.61	1.60	2.73	1.16	sandy silt to clayey silt	UNDFND	UNDFD	22	4.69
12.80	42	83.84	1.29	1.54	1.19	silty sand to sandy silt	50-60	38-40	27	UNDEFINED
13.10	43	200.96	3.54	1.76	1.22	sand to silty sand	80-90	42-44	48	UNDEFINED
13.40	44	322.23	2.74	0.85	1.24	sand	>90	44-46	>50	UNDEFINED
13.75	45	252.78	1.45	0.57	1.27	sand	80-90	44-46	48	UNDEFINED
14.05	46	238.07	1.70	0.71	1.30	sand	80-90	42-44	46	UNDEFINED
14.35	47	308.22	2.27	0.74	1.33	sand	>90	44-46	>50	UNDEFINED
14.65	48	321.75	3.12	0.97	1.35	sand	>90	44-46	>50	UNDEFINED

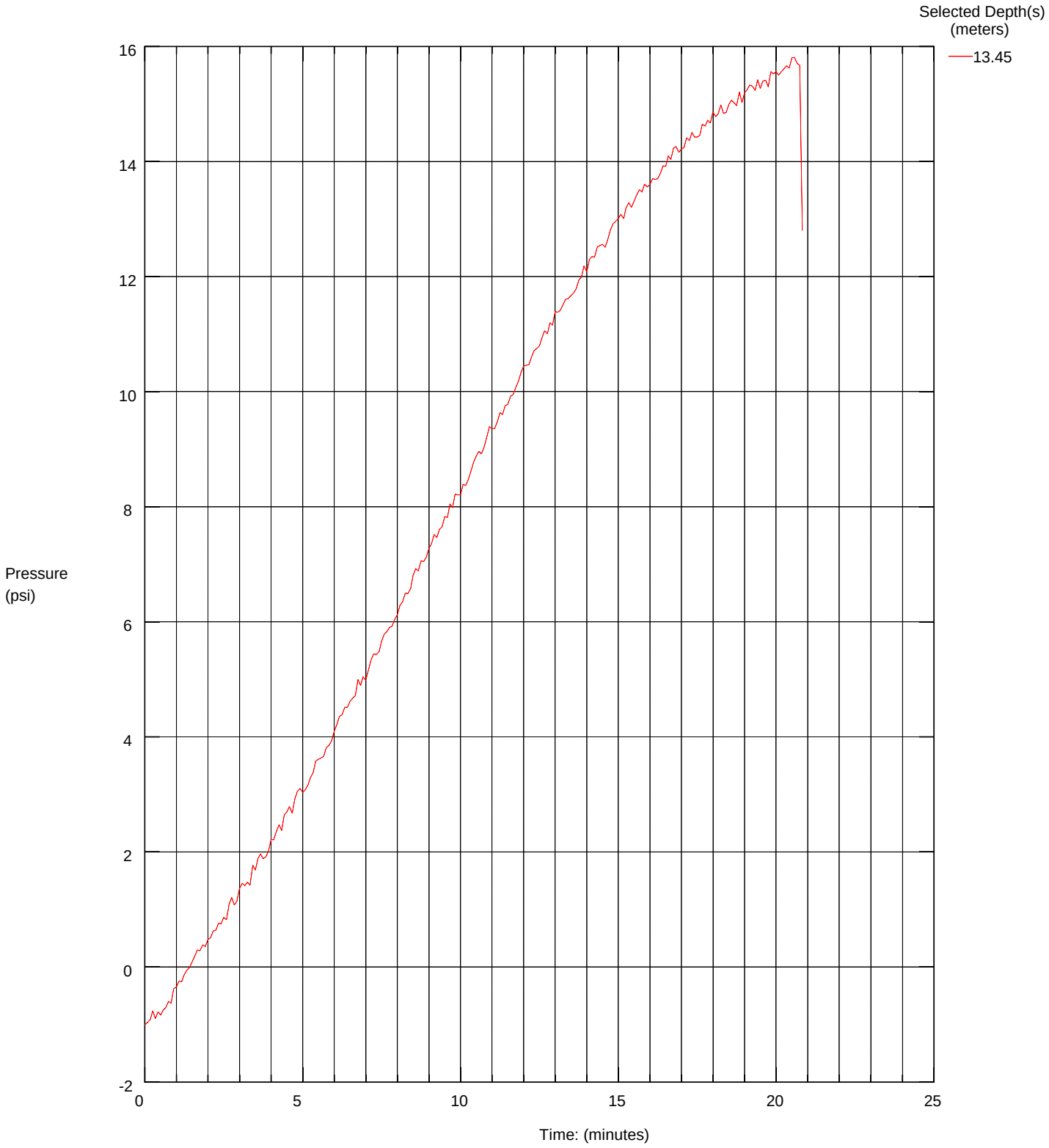
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: BSC006
Cone Used: 739

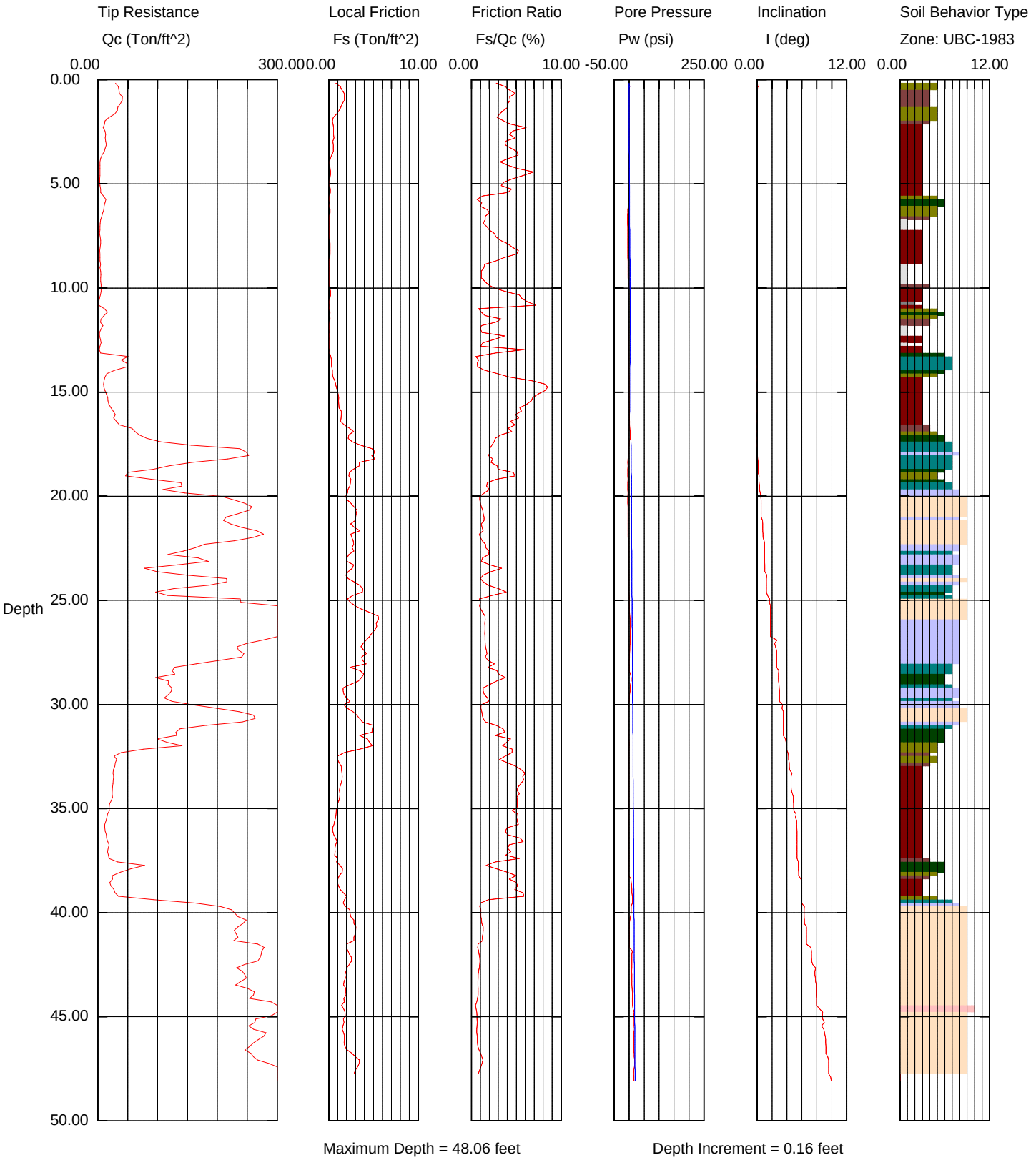
CPT Date/Time: 08-27-02 12:27
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: BSC007
Cone Used: 739

CPT Date/Time: 08-27-02 11:09
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE



Maximum Depth = 48.06 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN
On Site Loc:BACON IS. BORROW
Job No. :IN-DELTA STORAGE
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :08-27-02 11:09
Cone Used :739
Water table (feet) : 3.28084

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	35.94	1.47	4.10	0.03	silty clay to clay	UNDFND	UNDFD	23	2.99
0.60	2	26.92	0.98	3.63	0.08	clayey silt to silty clay	UNDFND	UNDFD	13	2.23
0.95	3	12.00	0.54	4.46	0.15	clay	UNDFND	UNDFD	11	.98
1.25	4	6.77	0.31	4.56	0.20	clay	UNDFND	UNDFD	6	.54
1.55	5	3.29	0.16	4.91	0.22	clay	UNDFND	UNDFD	3	.25
1.85	6	8.94	0.14	1.54	0.25	clayey silt to silty clay	UNDFND	UNDFD	4	.71
2.15	7	5.99	0.10	1.70	0.27	silty clay to clay	UNDFND	UNDFD	4	.46
2.45	8	3.80	0.12	3.28	0.30	clay	UNDFND	UNDFD	4	.28
2.75	9	3.60	0.11	3.11	0.33	clay	UNDFND	UNDFD	3	.25
3.05	10	4.82	0.08	1.59	0.35	sensitive fine grained	UNDFND	UNDFD	2	.35
3.35	11	4.36	0.15	3.33	0.38	clay	UNDFND	UNDFD	4	.31
3.65	12	8.24	0.13	1.56	0.40	clayey silt to silty clay	UNDFND	UNDFD	4	.63
3.95	13	3.32	0.08	2.33	0.43	clay	UNDFND	UNDFD	3	.21
4.25	14	36.60	0.29	0.80	0.46	silty sand to sandy silt	40-50	40-42	12	UNDEFINED
4.55	15	11.37	0.70	6.18	0.48	clay	UNDFND	UNDFD	11	.87
4.85	16	18.93	1.18	6.22	0.51	clay	UNDFND	UNDFD	18	1.50
5.15	17	40.25	1.84	4.58	0.53	silty clay to clay	UNDFND	UNDFD	26	3.27
5.45	18	149.55	3.45	2.31	0.56	silty sand to sandy silt	80-90	44-46	48	UNDEFINED
5.75	19	148.26	3.66	2.47	0.59	silty sand to sandy silt	80-90	44-46	47	UNDEFINED
6.05	20	111.61	2.30	2.06	0.61	silty sand to sandy silt	70-80	42-44	36	UNDEFINED
6.40	21	234.32	2.66	1.13	0.64	sand	>90	46-48	45	UNDEFINED
6.70	22	245.66	2.81	1.14	0.67	sand	>90	46-48	47	UNDEFINED
7.00	23	166.28	2.55	1.53	0.69	sand to silty sand	80-90	44-46	40	UNDEFINED
7.35	24	153.50	2.37	1.55	0.72	sand to silty sand	80-90	44-46	37	UNDEFINED
7.65	25	167.38	3.05	1.82	0.75	sand to silty sand	80-90	44-46	40	UNDEFINED
7.95	26	352.47	4.62	1.31	0.77	sand	>90	46-48	>50	UNDEFINED
8.25	27	307.38	4.66	1.52	0.80	sand to silty sand	>90	46-48	>50	UNDEFINED
8.55	28	220.09	3.91	1.78	0.83	sand to silty sand	>90	44-46	>50	UNDEFINED
8.85	29	118.82	3.22	2.71	0.85	sandy silt to clayey silt	UNDFND	UNDFD	46	9.76
9.15	30	126.38	1.84	1.46	0.88	sand to silty sand	70-80	42-44	30	UNDEFINED
9.45	31	229.85	3.36	1.46	0.90	sand to silty sand	>90	44-46	>50	UNDEFINED
9.75	32	125.71	4.49	3.57	0.93	sandy silt to clayey silt	UNDFND	UNDFD	48	10.32
10.05	33	38.53	1.64	4.25	0.96	silty clay to clay	UNDFND	UNDFD	25	3.05
10.35	34	25.48	1.44	5.65	0.98	clay	UNDFND	UNDFD	24	1.96
10.65	35	22.12	1.14	5.14	1.01	clay	UNDFND	UNDFD	21	1.67
10.95	36	14.39	0.70	4.88	1.03	clay	UNDFND	UNDFD	14	1.02
11.25	37	15.58	0.71	4.57	1.06	clay	UNDFND	UNDFD	15	1.12
11.55	38	36.51	1.02	2.78	1.09	sandy silt to clayey silt	UNDFND	UNDFD	14	2.86

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****
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E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:BACON IS. BORROW Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	25.75	1.19	4.63	1.11	clay	UNDFND	UNDFD	25	1.96
12.15	40	124.81	1.89	1.51	1.14	sand to silty sand	70-80	40-42	30	UNDEFINED
12.45	41	236.07	2.76	1.17	1.16	sand	80-90	44-46	45	UNDEFINED
12.80	42	255.01	2.44	0.96	1.19	sand	>90	44-46	49	UNDEFINED
13.10	43	250.64	2.21	0.88	1.22	sand	>90	44-46	48	UNDEFINED
13.40	44	248.25	1.84	0.74	1.24	sand	80-90	44-46	48	UNDEFINED
13.75	45	290.99	1.71	0.59	1.27	sand	>90	44-46	>50	UNDEFINED
14.05	46	267.02	1.67	0.63	1.30	sand	>90	44-46	>50	UNDEFINED
14.35	47	257.05	2.45	0.95	1.33	sand	80-90	42-44	49	UNDEFINED
14.65	48	329.62	-10920.59	-3313.13	1.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED

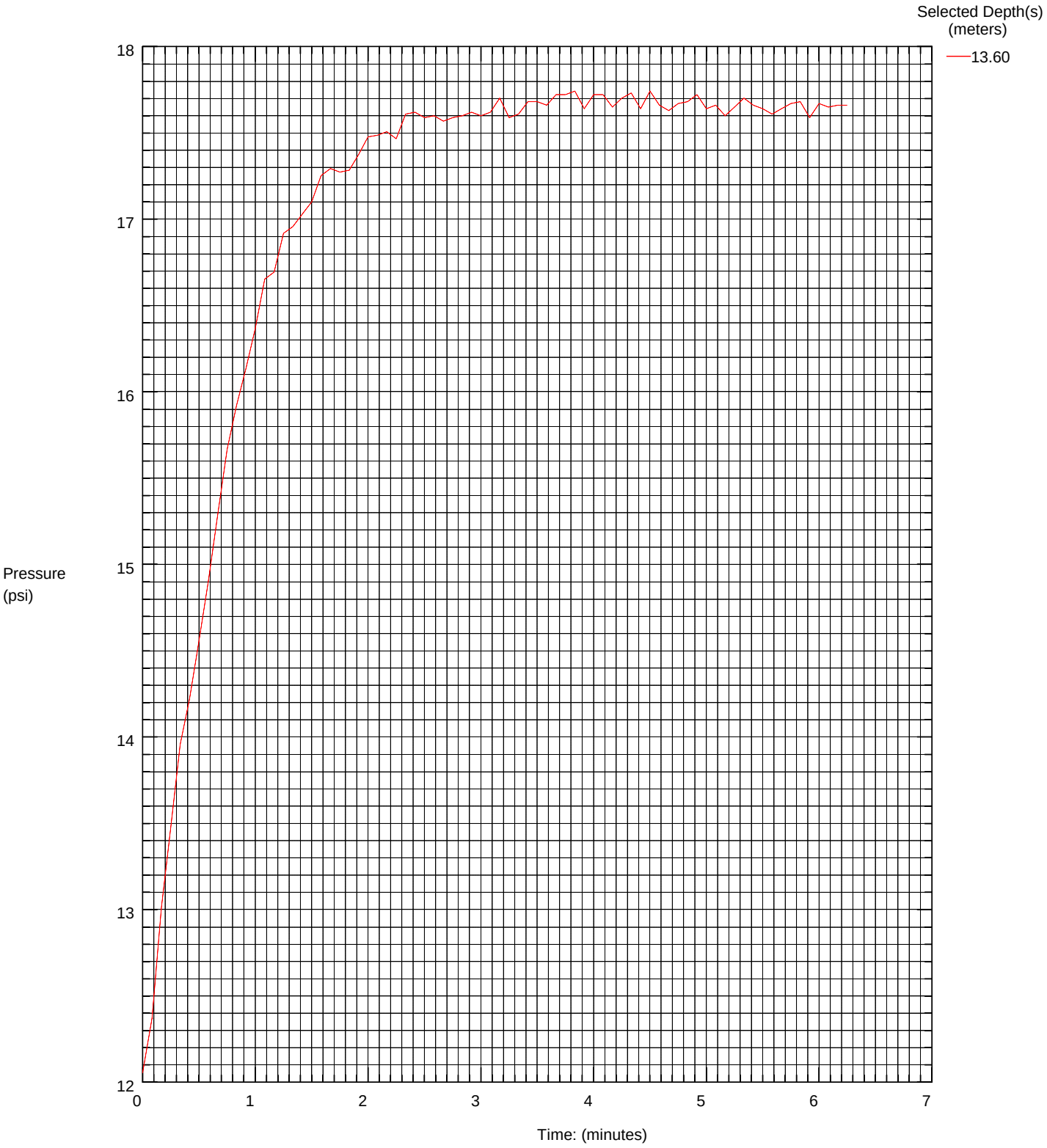
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: BSC007
Cone Used: 739

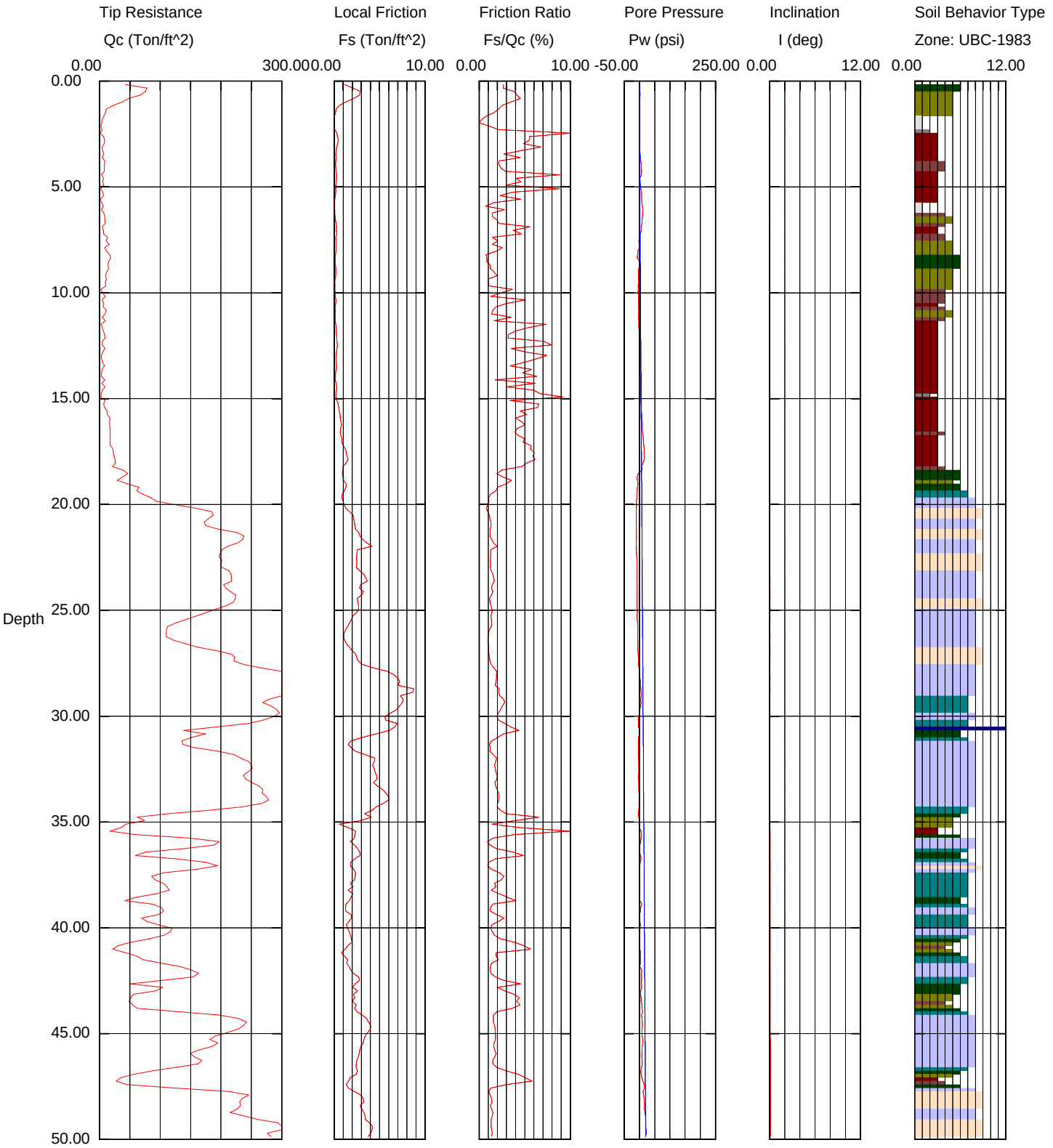
CPT Date/Time: 08-27-02 11:09
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: BSC008
Cone Used: 739

CPT Date/Time: 08-29-02 06:24
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE



Maximum Depth = 51.84 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN
On Site Loc:BACON IS. BORROW
Job No. :IN-DELTA STORAGE
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :08-29-02 06:24
Cone Used :739
Water table (feet) : 3.28084

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	57.96	2.06	3.55	0.03	clayey silt to silty clay	UNDFND	UNDFD	28	4.82
0.60	2	9.83	0.17	1.72	0.08	clayey silt to silty clay	UNDFND	UNDFD	5	.81
0.95	3	4.99	0.28	5.59	0.15	clay	UNDFND	UNDFD	5	.40
1.25	4	6.92	0.20	2.88	0.20	clay	UNDFND	UNDFD	7	.55
1.55	5	5.31	0.23	4.42	0.22	clay	UNDFND	UNDFD	5	.42
1.85	6	4.40	0.10	2.28	0.25	clay	UNDFND	UNDFD	4	.33
2.15	7	7.46	0.18	2.46	0.27	silty clay to clay	UNDFND	UNDFD	5	.59
2.45	8	11.23	0.23	2.08	0.30	clayey silt to silty clay	UNDFND	UNDFD	5	.89
2.75	9	15.14	0.16	1.06	0.33	sandy silt to clayey silt	UNDFND	UNDFD	6	1.22
3.05	10	8.22	0.12	1.49	0.35	clayey silt to silty clay	UNDFND	UNDFD	4	.63
3.35	11	7.79	0.16	2.03	0.38	silty clay to clay	UNDFND	UNDFD	5	.59
3.65	12	5.97	0.21	3.53	0.40	clay	UNDFND	UNDFD	6	.44
3.95	13	6.00	0.30	5.00	0.43	clay	UNDFND	UNDFD	6	.44
4.25	14	4.52	0.22	4.89	0.46	clay	UNDFND	UNDFD	4	.31
4.55	15	5.32	0.23	4.30	0.48	clay	UNDFND	UNDFD	5	.37
4.85	16	11.16	0.54	4.79	0.51	clay	UNDFND	UNDFD	11	.85
5.15	17	17.10	0.77	4.50	0.53	clay	UNDFND	UNDFD	16	1.34
5.45	18	21.59	1.24	5.75	0.56	clay	UNDFND	UNDFD	21	1.71
5.75	19	33.13	1.03	3.12	0.59	clayey silt to silty clay	UNDFND	UNDFD	16	2.67
6.05	20	70.06	1.10	1.56	0.61	silty sand to sandy silt	60-70	40-42	22	UNDEFINED
6.40	21	168.60	1.84	1.09	0.64	sand to silty sand	80-90	44-46	40	UNDEFINED
6.70	22	222.22	3.15	1.42	0.67	sand to silty sand	>90	46-48	>50	UNDEFINED
7.00	23	199.78	2.50	1.25	0.69	sand	>90	44-46	38	UNDEFINED
7.35	24	213.15	3.17	1.49	0.72	sand to silty sand	>90	44-46	>50	UNDEFINED
7.65	25	208.03	2.69	1.29	0.75	sand	>90	44-46	40	UNDEFINED
7.95	26	126.98	1.60	1.26	0.77	sand to silty sand	70-80	42-44	30	UNDEFINED
8.25	27	157.46	1.62	1.03	0.80	sand to silty sand	80-90	42-44	38	UNDEFINED
8.55	28	265.91	4.16	1.56	0.83	sand to silty sand	>90	44-46	>50	UNDEFINED
8.85	29	380.60	7.66	2.01	0.85	sand to silty sand	>90	46-48	>50	UNDEFINED
9.15	30	284.16	6.83	2.40	0.88	silty sand to sandy silt	>90	46-48	>50	UNDEFINED
9.45	31	195.45	5.50	2.82	0.90	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
9.75	32	179.58	2.59	1.44	0.93	sand to silty sand	80-90	42-44	43	UNDEFINED
10.05	33	244.74	4.50	1.84	0.96	sand to silty sand	>90	44-46	>50	UNDEFINED
10.35	34	267.07	5.34	2.00	0.98	sand to silty sand	>90	44-46	>50	UNDEFINED
10.65	35	154.62	4.08	2.64	1.01	silty sand to sandy silt	70-80	42-44	49	UNDEFINED
10.95	36	83.65	1.81	2.17	1.03	silty sand to sandy silt	60-70	40-42	27	UNDEFINED
11.25	37	127.12	2.45	1.92	1.06	silty sand to sandy silt	70-80	40-42	41	UNDEFINED
11.55	38	123.73	2.12	1.71	1.09	silty sand to sandy silt	70-80	40-42	40	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:BACON IS. BORROW Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	85.08	1.75	2.06	1.11	silty sand to sandy silt	60-70	38-40	27	UNDEFINED
12.15	40	91.59	1.55	1.69	1.14	silty sand to sandy silt	60-70	40-42	29	UNDEFINED
12.45	41	84.23	1.72	2.04	1.16	silty sand to sandy silt	50-60	38-40	27	UNDEFINED
12.80	42	83.52	1.37	1.64	1.19	silty sand to sandy silt	50-60	38-40	27	UNDEFINED
13.10	43	111.41	2.43	2.18	1.22	silty sand to sandy silt	60-70	40-42	36	UNDEFINED
13.40	44	66.34	2.27	3.43	1.24	clayey silt to silty clay	UNDFND	UNDFD	32	5.32
13.75	45	218.95	3.66	1.67	1.27	sand to silty sand	80-90	42-44	>50	UNDEFINED
14.05	46	171.90	2.95	1.72	1.30	sand to silty sand	70-80	42-44	41	UNDEFINED
14.35	47	106.08	2.36	2.22	1.33	silty sand to sandy silt	60-70	40-42	34	UNDEFINED
14.65	48	148.26	2.15	1.45	1.35	sand to silty sand	70-80	40-42	36	UNDEFINED
14.95	49	233.88	3.22	1.38	1.38	sand to silty sand	80-90	42-44	>50	UNDEFINED
15.25	50	299.04	4.02	1.34	1.40	sand	>90	44-46	>50	UNDEFINED
15.55	51	351.70	5.01	1.43	1.43	sand	>90	44-46	>50	UNDEFINED

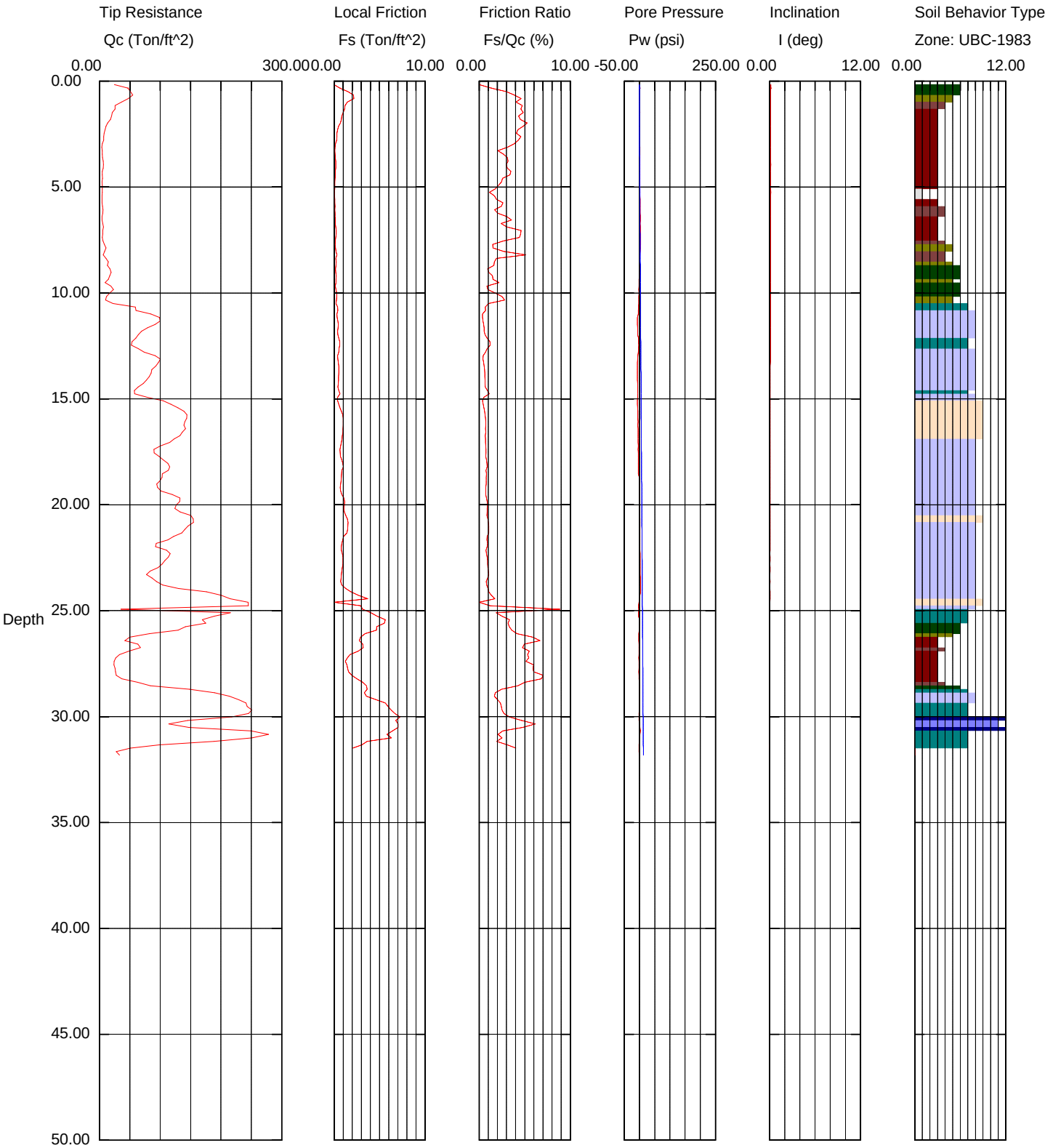
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: BSC009
Cone Used: 739

CPT Date/Time: 08-29-02 13:31
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE



Maximum Depth = 31.82 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
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Operator :TONY SHANAHAN CPT Date :08-29-02 13:31
On Site Loc:BACON IS. BORROW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	43.44	1.31	3.03	0.03	sandy silt to clayey silt	UNDFND	UNDFD	17	3.61
0.60	2	20.56	0.96	4.68	0.08	clay	UNDFND	UNDFD	20	1.70
0.95	3	7.04	0.30	4.28	0.15	clay	UNDFND	UNDFD	7	.57
1.25	4	5.40	0.16	2.88	0.20	clay	UNDFND	UNDFD	5	.43
1.55	5	4.52	0.12	2.62	0.22	clay	UNDFND	UNDFD	4	.35
1.85	6	4.53	0.09	1.89	0.25	silty clay to clay	UNDFND	UNDFD	3	.35
2.15	7	5.15	0.16	3.09	0.27	clay	UNDFND	UNDFD	5	.39
2.45	8	7.13	0.18	2.59	0.30	silty clay to clay	UNDFND	UNDFD	5	.55
2.75	9	13.45	0.22	1.65	0.33	clayey silt to silty clay	UNDFND	UNDFD	6	1.07
3.05	10	16.45	0.22	1.36	0.35	sandy silt to clayey silt	UNDFND	UNDFD	6	1.32
3.35	11	41.22	0.32	0.78	0.38	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
3.65	12	83.70	0.42	0.50	0.40	sand to silty sand	70-80	44-46	20	UNDEFINED
3.95	13	65.79	0.55	0.83	0.43	sand to silty sand	60-70	42-44	16	UNDEFINED
4.25	14	90.38	0.49	0.55	0.46	sand to silty sand	70-80	44-46	22	UNDEFINED
4.55	15	67.81	0.49	0.73	0.48	sand to silty sand	60-70	42-44	16	UNDEFINED
4.85	16	129.57	0.73	0.56	0.51	sand	80-90	44-46	25	UNDEFINED
5.15	17	135.41	0.96	0.71	0.53	sand	80-90	44-46	26	UNDEFINED
5.45	18	99.73	0.74	0.74	0.56	sand to silty sand	70-80	42-44	24	UNDEFINED
5.75	19	107.84	0.88	0.81	0.59	sand to silty sand	70-80	42-44	26	UNDEFINED
6.05	20	112.57	0.88	0.78	0.61	sand to silty sand	70-80	42-44	27	UNDEFINED
6.40	21	141.22	1.31	0.93	0.64	sand to silty sand	80-90	44-46	34	UNDEFINED
6.70	22	115.95	1.10	0.95	0.67	sand to silty sand	70-80	42-44	28	UNDEFINED
7.00	23	107.86	0.93	0.87	0.69	sand to silty sand	70-80	42-44	26	UNDEFINED
7.35	24	107.27	1.03	0.96	0.72	sand to silty sand	70-80	42-44	26	UNDEFINED
7.65	25	192.56	2.75	1.43	0.75	sand to silty sand	80-90	44-46	46	UNDEFINED
7.95	26	147.69	4.78	3.23	0.77	sandy silt to clayey silt	UNDFND	UNDFD	>50	12.18
8.25	27	50.55	2.74	5.43	0.80	clay	UNDFND	UNDFD	48	4.08
8.55	28	25.72	1.52	5.93	0.83	clay	UNDFND	UNDFD	25	2.01
8.85	29	122.45	3.29	2.69	0.85	silty sand to sandy silt	70-80	42-44	39	UNDEFINED
9.15	30	237.78	6.07	2.55	0.88	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
9.45	31	197.44	6.56	3.32	0.90	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

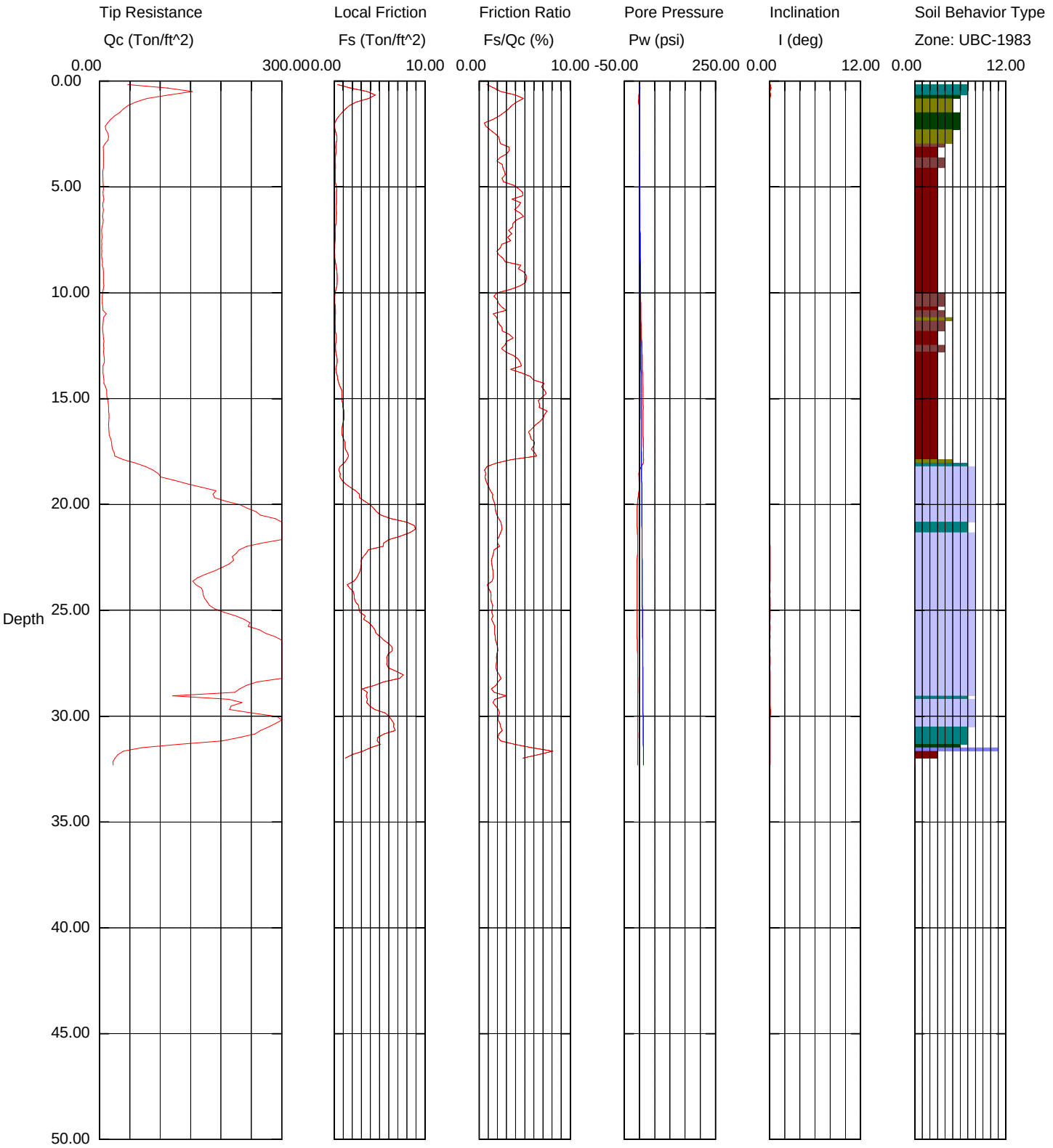
(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: BSC010
Cone Used: 739

CPT Date/Time: 08-29-02 12:40
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE



Maximum Depth = 32.32 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
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Operator :TONY SHANAHAN CPT Date :08-29-02 12:40
On Site Loc:BACON IS. BORROW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	93.69	2.77	2.96	0.03	sandy silt to clayey silt	UNDFND	UNDFD	36	7.80
0.60	2	29.46	0.80	2.71	0.08	sandy silt to clayey silt	UNDFND	UNDFD	11	2.44
0.95	3	11.11	0.21	1.88	0.15	clayey silt to silty clay	UNDFND	UNDFD	5	.91
1.25	4	6.39	0.17	2.62	0.20	silty clay to clay	UNDFND	UNDFD	4	.51
1.55	5	5.90	0.19	3.19	0.22	clay	UNDFND	UNDFD	6	.47
1.85	6	6.07	0.26	4.30	0.25	clay	UNDFND	UNDFD	6	.47
2.15	7	5.01	0.20	4.07	0.27	clay	UNDFND	UNDFD	5	.38
2.45	8	3.82	0.11	2.83	0.30	clay	UNDFND	UNDFD	4	.28
2.75	9	4.92	0.18	3.75	0.33	clay	UNDFND	UNDFD	5	.36
3.05	10	6.40	0.28	4.30	0.35	clay	UNDFND	UNDFD	6	.48
3.35	11	6.05	0.12	2.05	0.38	silty clay to clay	UNDFND	UNDFD	4	.45
3.65	12	5.89	0.14	2.41	0.40	silty clay to clay	UNDFND	UNDFD	4	.43
3.95	13	6.89	0.21	3.10	0.43	clay	UNDFND	UNDFD	7	.51
4.25	14	6.58	0.30	4.52	0.46	clay	UNDFND	UNDFD	6	.48
4.55	15	10.11	0.70	6.95	0.48	clay	UNDFND	UNDFD	10	.77
4.85	16	14.90	1.03	6.91	0.51	clay	UNDFND	UNDFD	14	1.16
5.15	17	15.96	0.94	5.89	0.53	clay	UNDFND	UNDFD	15	1.25
5.45	18	25.07	1.35	5.40	0.56	clay	UNDFND	UNDFD	24	2.00
5.75	19	90.57	0.75	0.83	0.59	sand to silty sand	70-80	42-44	22	UNDEFINED
6.05	20	181.25	2.38	1.32	0.61	sand to silty sand	>90	44-46	43	UNDEFINED
6.40	21	282.58	5.89	2.08	0.64	sand to silty sand	>90	46-48	>50	UNDEFINED
6.70	22	309.50	6.91	2.23	0.67	sand to silty sand	>90	46-48	>50	UNDEFINED
7.00	23	218.49	3.24	1.48	0.69	sand to silty sand	>90	44-46	>50	UNDEFINED
7.35	24	168.06	2.22	1.32	0.72	sand to silty sand	80-90	44-46	40	UNDEFINED
7.65	25	182.73	2.52	1.38	0.75	sand to silty sand	80-90	44-46	44	UNDEFINED
7.95	26	248.43	3.97	1.60	0.77	sand to silty sand	>90	44-46	>50	UNDEFINED
8.25	27	307.08	5.89	1.92	0.80	sand to silty sand	>90	46-48	>50	UNDEFINED
8.55	28	322.60	6.31	1.96	0.83	sand to silty sand	>90	46-48	>50	UNDEFINED
8.85	29	229.38	4.57	1.99	0.85	sand to silty sand	>90	44-46	>50	UNDEFINED
9.15	30	236.90	4.56	1.92	0.88	sand to silty sand	>90	44-46	>50	UNDEFINED
9.45	31	270.28	6.08	2.25	0.90	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
9.75	32	82.71	3.37	4.08	0.93	clayey silt to silty clay	UNDFND	UNDFD	40	6.74

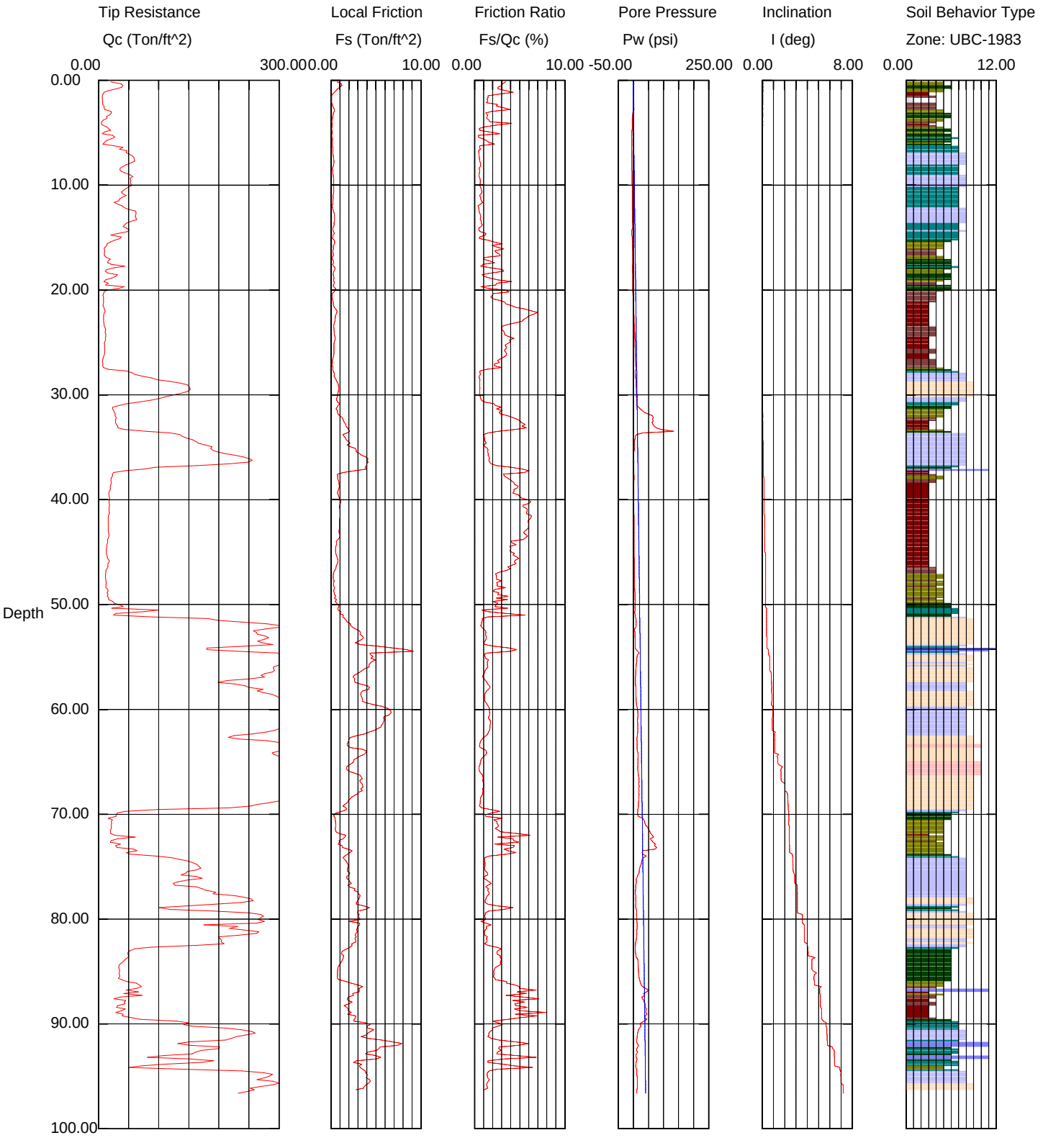
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: BSC012
Cone Used: 739

CPT Date/Time: 08-29-02 11:10
Location: BACON IS. PUMP 2
Job Number: IN-DELTA STORAGE



Maximum Depth = 96.62 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN CPT Date :08-29-02 11:10
On Site Loc:BACON IS. PUMP 2 Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	30.38	0.90	2.96	0.03	clayey silt to silty clay	UNDFND	UNDFD	15	2.52
0.60	2	6.96	0.16	2.30	0.08	silty clay to clay	UNDFND	UNDFD	4	.57
0.95	3	12.02	0.26	2.18	0.15	clayey silt to silty clay	UNDFND	UNDFD	6	.98
1.25	4	10.53	0.17	1.61	0.20	clayey silt to silty clay	UNDFND	UNDFD	5	.86
1.55	5	12.08	0.14	1.17	0.22	clayey silt to silty clay	UNDFND	UNDFD	6	.98
1.85	6	17.00	0.15	0.89	0.25	sandy silt to clayey silt	UNDFND	UNDFD	7	1.38
2.15	7	40.69	0.21	0.52	0.27	silty sand to sandy silt	50-60	42-44	13	UNDEFINED
2.45	8	55.84	0.32	0.57	0.30	sand to silty sand	60-70	42-44	13	UNDEFINED
2.75	9	41.31	0.22	0.54	0.33	silty sand to sandy silt	50-60	42-44	13	UNDEFINED
3.05	10	54.12	0.32	0.59	0.35	sand to silty sand	60-70	42-44	13	UNDEFINED
3.35	11	43.49	0.30	0.70	0.38	silty sand to sandy silt	50-60	40-42	14	UNDEFINED
3.65	12	34.18	0.22	0.65	0.40	silty sand to sandy silt	40-50	40-42	11	UNDEFINED
3.95	13	56.47	0.31	0.55	0.43	sand to silty sand	60-70	42-44	14	UNDEFINED
4.25	14	51.81	0.37	0.71	0.46	silty sand to sandy silt	50-60	40-42	17	UNDEFINED
4.55	15	39.24	0.27	0.69	0.48	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
4.85	16	20.00	0.33	1.66	0.51	sandy silt to clayey silt	UNDFND	UNDFD	8	1.59
5.15	17	10.34	0.24	2.33	0.53	silty clay to clay	UNDFND	UNDFD	7	.78
5.45	18	23.50	0.29	1.24	0.56	sandy silt to clayey silt	UNDFND	UNDFD	9	1.87
5.75	19	20.33	0.34	1.65	0.59	sandy silt to clayey silt	UNDFND	UNDFD	8	1.60
6.05	20	20.72	0.36	1.72	0.61	sandy silt to clayey silt	UNDFND	UNDFD	8	1.63
6.40	21	9.08	0.24	2.67	0.64	silty clay to clay	UNDFND	UNDFD	6	.65
6.70	22	8.89	0.42	4.68	0.67	clay	UNDFND	UNDFD	9	.63
7.00	23	8.74	0.53	6.03	0.69	clay	UNDFND	UNDFD	8	.62
7.35	24	10.37	0.35	3.37	0.72	silty clay to clay	UNDFND	UNDFD	7	.75
7.65	25	11.16	0.43	3.83	0.75	clay	UNDFND	UNDFD	11	.81
7.95	26	10.16	0.35	3.44	0.77	clay	UNDFND	UNDFD	10	.72
8.25	27	7.49	0.22	2.89	0.80	silty clay to clay	UNDFND	UNDFD	5	.49
8.55	28	32.08	0.27	0.83	0.83	silty sand to sandy silt	<40	36-38	10	UNDEFINED
8.85	29	110.05	0.61	0.55	0.85	sand	70-80	42-44	21	UNDEFINED
9.15	30	143.44	0.83	0.58	0.88	sand	70-80	42-44	27	UNDEFINED
9.45	31	74.60	0.76	1.02	0.90	sand to silty sand	50-60	40-42	18	UNDEFINED
9.75	32	25.40	0.75	2.96	0.93	clayey silt to silty clay	UNDFND	UNDFD	12	1.96
10.05	33	29.32	1.47	5.00	0.96	clay	UNDFND	UNDFD	28	2.28
10.35	34	91.34	1.74	1.91	0.98	silty sand to sandy silt	60-70	40-42	29	UNDEFINED
10.65	35	165.94	1.89	1.14	1.01	sand to silty sand	80-90	42-44	40	UNDEFINED
10.95	36	208.08	3.13	1.50	1.03	sand to silty sand	80-90	44-46	50	UNDEFINED
11.25	37	204.85	4.01	1.96	1.06	sand to silty sand	80-90	42-44	49	UNDEFINED
11.55	38	35.52	1.72	4.84	1.09	clay	UNDFND	UNDFD	34	2.78

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:BACON IS. PUMP 2 Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	20.36	0.89	4.38	1.11	clay	UNDFND	UNDFD	19	1.51
12.15	40	17.92	0.84	4.68	1.14	clay	UNDFND	UNDFD	17	1.30
12.45	41	17.72	1.03	5.79	1.16	clay	UNDFND	UNDFD	17	1.28
12.80	42	16.80	1.01	5.99	1.19	clay	UNDFND	UNDFD	16	1.20
13.10	43	16.11	0.95	5.88	1.22	clay	UNDFND	UNDFD	15	1.13
13.40	44	16.28	0.87	5.35	1.24	clay	UNDFND	UNDFD	16	1.14
13.75	45	13.49	0.56	4.15	1.27	clay	UNDFND	UNDFD	13	.91
14.05	46	15.63	0.71	4.54	1.30	clay	UNDFND	UNDFD	15	1.08
14.35	47	13.43	0.46	3.45	1.33	silty clay to clay	UNDFND	UNDFD	9	.89
14.65	48	11.94	0.30	2.54	1.35	clayey silt to silty clay	UNDFND	UNDFD	6	.76
14.95	49	14.21	0.36	2.54	1.38	clayey silt to silty clay	UNDFND	UNDFD	7	.95
15.25	50	22.22	0.59	2.65	1.40	clayey silt to silty clay	UNDFND	UNDFD	11	1.61
15.55	51	48.49	1.00	2.06	1.43	sandy silt to clayey silt	UNDFND	UNDFD	19	3.79
15.85	52	218.05	1.80	0.82	1.46	sand	80-90	42-44	42	UNDEFINED
16.15	53	273.59	3.04	1.11	1.48	sand	80-90	42-44	>50	UNDEFINED
16.45	54	271.04	3.56	1.31	1.51	sand	80-90	42-44	>50	UNDEFINED
16.75	55	291.01	6.32	2.17	1.53	sand to silty sand	>90	42-44	>50	UNDEFINED
17.05	56	317.35	4.45	1.40	1.56	sand	>90	44-46	>50	UNDEFINED
17.35	57	282.30	3.08	1.09	1.59	sand	80-90	42-44	>50	UNDEFINED
17.65	58	230.25	3.25	1.41	1.61	sand to silty sand	80-90	42-44	>50	UNDEFINED
17.95	59	283.39	3.53	1.24	1.64	sand	80-90	42-44	>50	UNDEFINED
18.25	60	337.57	4.60	1.36	1.66	sand	>90	44-46	>50	UNDEFINED
18.55	61	391.88	6.34	1.62	1.69	sand to silty sand	>90	44-46	>50	UNDEFINED
18.85	62	326.66	5.64	1.73	1.71	sand to silty sand	>90	42-44	>50	UNDEFINED
19.20	63	254.01	3.12	1.23	1.74	sand	80-90	42-44	49	UNDEFINED
19.50	64	322.62	2.54	0.79	1.77	sand	>90	42-44	>50	UNDEFINED
19.80	65	327.02	3.12	0.96	1.80	sand	>90	42-44	>50	UNDEFINED
20.15	66	362.76	2.09	0.58	1.82	gravelly sand to sand	>90	44-46	>50	UNDEFINED
20.45	67	357.69	3.34	0.93	1.85	sand	>90	42-44	>50	UNDEFINED
20.75	68	354.07	3.30	0.93	1.88	sand	>90	42-44	>50	UNDEFINED
21.05	69	306.32	2.03	0.66	1.90	sand	80-90	42-44	>50	UNDEFINED
21.35	70	112.45	1.16	1.03	1.93	sand to silty sand	60-70	38-40	27	UNDEFINED
21.65	71	21.99	0.49	2.24	1.96	clayey silt to silty clay	UNDFND	UNDFD	11	1.49
21.95	72	21.59	0.80	3.70	1.98	silty clay to clay	UNDFND	UNDFD	14	1.45
22.25	73	33.05	1.14	3.45	2.01	clayey silt to silty clay	UNDFND	UNDFD	16	2.40
22.55	74	57.65	1.85	3.21	2.03	sandy silt to clayey silt	UNDFND	UNDFD	22	4.45
22.85	75	148.77	1.70	1.14	2.06	sand to silty sand	60-70	38-40	36	UNDEFINED
23.15	76	154.38	1.90	1.23	2.09	sand to silty sand	60-70	38-40	37	UNDEFINED
23.45	77	144.45	2.01	1.39	2.11	sand to silty sand	60-70	38-40	35	UNDEFINED
23.75	78	200.48	2.96	1.48	2.14	sand to silty sand	70-80	40-42	48	UNDEFINED
24.05	79	197.84	3.29	1.66	2.16	sand to silty sand	70-80	40-42	47	UNDEFINED
24.35	80	229.02	3.19	1.39	2.19	sand to silty sand	70-80	40-42	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:BACON IS. PUMP 2 Page No. 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
24.65	81	238.26	2.91	1.22	2.21	sand	80-90	40-42	46	UNDEFINED
24.95	82	233.89	2.79	1.19	2.24	sand	70-80	40-42	45	UNDEFINED
25.25	83	154.10	2.35	1.52	2.27	sand to silty sand	60-70	38-40	37	UNDEFINED
25.60	84	47.93	1.31	2.73	2.29	sandy silt to clayey silt	UNDFND	UNDFD	18	3.59
25.90	85	35.17	0.88	2.50	2.32	sandy silt to clayey silt	UNDFND	UNDFD	13	2.52
26.20	86	37.14	0.92	2.48	2.35	sandy silt to clayey silt	UNDFND	UNDFD	14	2.68
26.55	87	59.76	2.94	4.92	2.38	silty clay to clay	UNDFND	UNDFD	38	4.56
26.85	88	44.37	2.08	4.69	2.40	silty clay to clay	UNDFND	UNDFD	28	3.27
27.15	89	35.74	1.87	5.23	2.43	clay	UNDFND	UNDFD	34	2.55
27.45	90	97.16	3.14	3.23	2.46	sandy silt to clayey silt	UNDFND	UNDFD	37	7.66
27.75	91	227.21	4.21	1.85	2.48	sand to silty sand	70-80	40-42	>50	UNDEFINED
28.05	92	182.88	5.88	3.21	2.51	sandy silt to clayey silt	UNDFND	UNDFD	>50	14.80
28.35	93	166.77	4.80	2.88	2.53	silty sand to sandy silt	60-70	38-40	>50	UNDEFINED
28.65	94	129.29	3.76	2.91	2.56	sandy silt to clayey silt	UNDFND	UNDFD	50	10.32
28.95	95	213.15	3.75	1.76	2.58	sand to silty sand	70-80	40-42	>50	UNDEFINED
29.25	96	281.98	4.07	1.44	2.61	sand to silty sand	80-90	40-42	>50	UNDEFINED

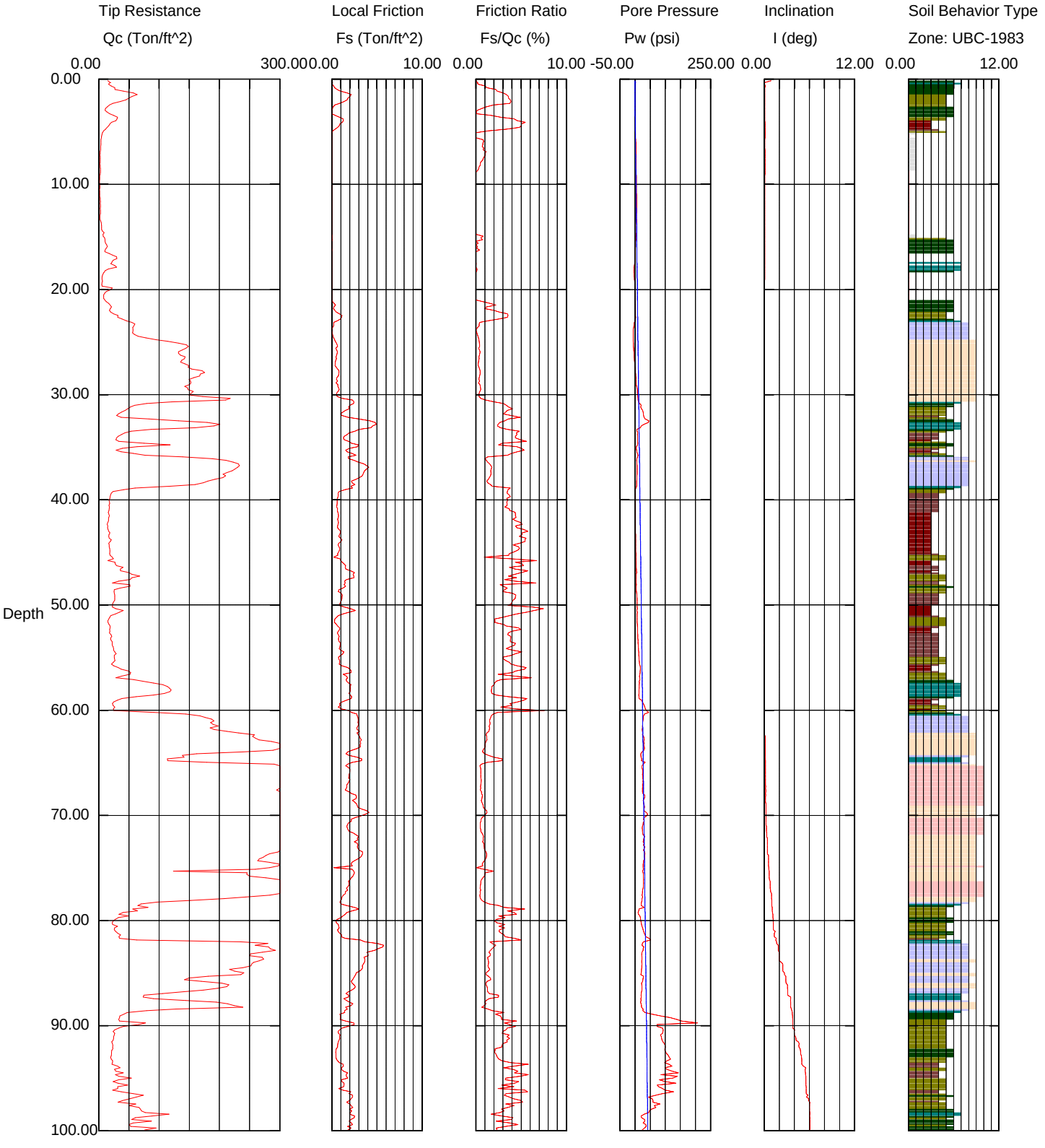
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: BSC013
Cone Used: 739

CPT Date/Time: 08-29-02 08:20
Location: BACON IS. PUMP 2
Job Number: IN-DELTA STORAGE



Maximum Depth = 101.54 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN CPT Date :08-29-02 08:20
On Site Loc:BACON IS. PUMP 2 Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	20.64	0.20	0.97	0.03	sandy silt to clayey silt	UNDFND	UNDFD	8	1.71
0.60	2	51.90	1.73	3.33	0.08	clayey silt to silty clay	UNDFND	UNDFD	25	4.31
0.95	3	17.89	0.41	2.28	0.15	clayey silt to silty clay	UNDFND	UNDFD	9	1.47
1.25	4	25.50	0.83	3.26	0.20	clayey silt to silty clay	UNDFND	UNDFD	12	2.10
1.55	5	12.36	0.48	3.91	0.22	clay	UNDFND	UNDFD	12	1.00
1.85	6	4.05	0.01	0.22	0.25	sensitive fine grained	UNDFND	UNDFD	2	.31
2.15	7	2.73	0.02	0.86	0.27	sensitive fine grained	UNDFND	UNDFD	1	.19
2.45	8	2.15	0.02	0.76	0.30	sensitive fine grained	UNDFND	UNDFD	1	.14
2.75	9	2.36	-0.00	-0.05	0.33	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.05	10	1.45	-0.02	-1.40	0.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.35	11	1.58	-0.02	-1.07	0.38	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.65	12	2.22	-0.03	-1.13	0.40	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.95	13	2.46	-0.03	-1.03	0.43	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.25	14	3.18	-0.02	-0.58	0.46	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.55	15	6.28	-0.00	-0.05	0.48	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.85	16	11.44	0.03	0.24	0.51	sandy silt to clayey silt	UNDFND	UNDFD	4	.88
5.15	17	17.01	0.01	0.04	0.53	silty sand to sandy silt	<40	34-36	5	UNDEFINED
5.45	18	25.07	-0.00	-0.01	0.56	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.75	19	8.76	0.00	0.00	0.59	sensitive fine grained	UNDFND	UNDFD	4	.64
6.05	20	8.28	-0.01	-0.14	0.61	undefined	UNDFND	UNDFD	UDF	UNDEFINED
6.40	21	10.97	-0.01	-0.08	0.64	undefined	UNDFND	UNDFD	UDF	UNDEFINED
6.70	22	17.53	0.26	1.47	0.67	sandy silt to clayey silt	UNDFND	UNDFD	7	1.35
7.00	23	31.84	0.87	2.72	0.69	sandy silt to clayey silt	UNDFND	UNDFD	12	2.54
7.35	24	56.83	0.12	0.22	0.72	sand to silty sand	50-60	38-40	14	UNDEFINED
7.65	25	90.72	0.29	0.32	0.75	sand	60-70	40-42	17	UNDEFINED
7.95	26	140.09	0.58	0.41	0.77	sand	70-80	42-44	27	UNDEFINED
8.25	27	139.39	0.46	0.33	0.80	sand	70-80	42-44	27	UNDEFINED
8.55	28	160.95	0.65	0.41	0.83	sand	80-90	42-44	31	UNDEFINED
8.85	29	154.95	0.60	0.39	0.85	sand	80-90	42-44	30	UNDEFINED
9.15	30	149.47	0.68	0.45	0.88	sand	80-90	42-44	29	UNDEFINED
9.45	31	143.28	1.83	1.28	0.90	sand to silty sand	70-80	42-44	34	UNDEFINED
9.75	32	40.61	1.46	3.58	0.93	clayey silt to silty clay	UNDFND	UNDFD	19	3.23
10.05	33	137.31	3.88	2.83	0.96	sandy silt to clayey silt	UNDFND	UNDFD	>50	11.28
10.35	34	68.85	2.50	3.63	0.98	clayey silt to silty clay	UNDFND	UNDFD	33	5.57
10.65	35	57.93	2.10	3.62	1.01	clayey silt to silty clay	UNDFND	UNDFD	28	4.66
10.95	36	62.88	1.99	3.17	1.03	sandy silt to clayey silt	UNDFND	UNDFD	24	5.07
11.25	37	219.34	3.13	1.43	1.06	sand to silty sand	80-90	44-46	>50	UNDEFINED
11.55	38	213.42	3.48	1.63	1.09	sand to silty sand	80-90	42-44	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:BACON IS. PUMP 2 Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	147.56	2.36	1.60	1.11	sand to silty sand	70-80	42-44	35	UNDEFINED
12.15	40	23.68	0.84	3.57	1.14	clayey silt to silty clay	UNDFND	UNDFD	11	1.78
12.45	41	17.36	0.60	3.46	1.16	silty clay to clay	UNDFND	UNDFD	11	1.25
12.80	42	16.34	0.70	4.26	1.19	clay	UNDFND	UNDFD	16	1.16
13.10	43	15.03	0.75	5.01	1.22	clay	UNDFND	UNDFD	14	1.04
13.40	44	18.24	0.96	5.25	1.24	clay	UNDFND	UNDFD	17	1.31
13.75	45	17.66	0.78	4.43	1.27	clay	UNDFND	UNDFD	17	1.25
14.05	46	22.27	0.89	4.02	1.30	silty clay to clay	UNDFND	UNDFD	14	1.63
14.35	47	40.88	1.92	4.71	1.33	silty clay to clay	UNDFND	UNDFD	26	3.18
14.65	48	46.79	1.81	3.87	1.35	clayey silt to silty clay	UNDFND	UNDFD	22	3.67
14.95	49	31.57	1.09	3.44	1.38	clayey silt to silty clay	UNDFND	UNDFD	15	2.39
15.25	50	24.76	1.01	4.07	1.40	silty clay to clay	UNDFND	UNDFD	16	1.82
15.55	51	28.81	1.67	5.81	1.43	clay	UNDFND	UNDFD	28	2.15
15.85	52	16.73	0.44	2.64	1.46	clayey silt to silty clay	UNDFND	UNDFD	8	1.14
16.15	53	18.98	0.78	4.09	1.48	silty clay to clay	UNDFND	UNDFD	12	1.33
16.45	54	21.57	0.86	4.00	1.51	silty clay to clay	UNDFND	UNDFD	14	1.54
16.75	55	25.79	1.03	3.99	1.53	silty clay to clay	UNDFND	UNDFD	16	1.88
17.05	56	25.76	1.05	4.07	1.56	silty clay to clay	UNDFND	UNDFD	16	1.88
17.35	57	42.82	1.82	4.25	1.59	silty clay to clay	UNDFND	UNDFD	27	3.29
17.65	58	92.83	1.89	2.04	1.61	silty sand to sandy silt	50-60	38-40	30	UNDEFINED
17.95	59	89.55	2.07	2.32	1.64	silty sand to sandy silt	50-60	38-40	29	UNDEFINED
18.25	60	25.42	1.06	4.18	1.66	silty clay to clay	UNDFND	UNDFD	16	1.83
18.55	61	131.82	2.58	1.96	1.69	silty sand to sandy silt	60-70	38-40	42	UNDEFINED
18.85	62	189.85	2.88	1.52	1.71	sand to silty sand	70-80	40-42	45	UNDEFINED
19.20	63	252.64	3.07	1.21	1.74	sand	80-90	42-44	48	UNDEFINED
19.50	64	292.68	2.72	0.93	1.77	sand	80-90	42-44	>50	UNDEFINED
19.80	65	141.41	2.53	1.79	1.80	silty sand to sandy silt	60-70	38-40	45	UNDEFINED
20.15	66	346.91	1.87	0.54	1.82	gravelly sand to sand	>90	42-44	>50	UNDEFINED
20.45	67	333.04	1.87	0.56	1.85	gravelly sand to sand	>90	42-44	>50	UNDEFINED
20.75	68	323.12	1.92	0.59	1.88	gravelly sand to sand	>90	42-44	>50	UNDEFINED
21.05	69	382.04	2.64	0.69	1.90	gravelly sand to sand	>90	44-46	>50	UNDEFINED
21.35	70	338.66	3.52	1.04	1.93	sand	>90	42-44	>50	UNDEFINED
21.65	71	367.73	2.04	0.55	1.96	gravelly sand to sand	>90	42-44	>50	UNDEFINED
21.95	72	349.08	2.26	0.65	1.98	gravelly sand to sand	>90	42-44	>50	UNDEFINED
22.25	73	331.23	2.79	0.84	2.01	sand	>90	42-44	>50	UNDEFINED
22.55	74	291.78	3.21	1.10	2.03	sand	80-90	42-44	>50	UNDEFINED
22.85	75	282.66	2.05	0.73	2.06	sand	80-90	42-44	>50	UNDEFINED
23.15	76	233.56	2.35	1.01	2.09	sand	80-90	40-42	45	UNDEFINED
23.45	77	349.50	1.86	0.53	2.11	gravelly sand to sand	>90	42-44	>50	UNDEFINED
23.75	78	283.39	1.39	0.49	2.14	gravelly sand to sand	80-90	42-44	45	UNDEFINED
24.05	79	86.96	1.69	1.95	2.16	silty sand to sandy silt	50-60	36-38	28	UNDEFINED
24.35	80	41.07	1.39	3.39	2.19	clayey silt to silty clay	UNDFND	UNDFD	20	3.04

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

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E W1 Bureau of Reclamation

W0
Operator :TONY SHANAHAN On Site Loc:BACON IS. PUMP 2 Page No. 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
24.65	81	25.28	0.67	2.66	2.21	clayey silt to silty clay	UNDFND	UNDFD	12	1.72
24.95	82	37.65	1.41	3.73	2.24	clayey silt to silty clay	UNDFND	UNDFD	18	2.74
25.25	83	272.05	4.99	1.83	2.27	sand to silty sand	80-90	40-42	>50	UNDEFINED
25.60	84	262.68	3.77	1.44	2.29	sand to silty sand	80-90	40-42	>50	UNDEFINED
25.90	85	237.70	3.23	1.36	2.32	sand to silty sand	70-80	40-42	>50	UNDEFINED
26.20	86	180.12	2.39	1.33	2.35	sand to silty sand	70-80	38-40	43	UNDEFINED
26.55	87	159.77	2.16	1.35	2.38	sand to silty sand	60-70	38-40	38	UNDEFINED
26.85	88	156.65	1.88	1.20	2.40	sand to silty sand	60-70	38-40	38	UNDEFINED
27.15	89	94.81	1.33	1.40	2.43	sand to silty sand	50-60	36-38	23	UNDEFINED
27.45	90	47.79	1.70	3.56	2.46	clayey silt to silty clay	UNDFND	UNDFD	23	3.55
27.75	91	26.63	0.88	3.32	2.48	clayey silt to silty clay	UNDFND	UNDFD	13	1.78
28.05	92	23.07	0.74	3.22	2.51	clayey silt to silty clay	UNDFND	UNDFD	11	1.48
28.35	93	21.14	0.47	2.21	2.53	clayey silt to silty clay	UNDFND	UNDFD	10	1.31
28.65	94	25.66	0.95	3.71	2.56	silty clay to clay	UNDFND	UNDFD	16	1.69
28.95	95	34.90	1.52	4.35	2.58	silty clay to clay	UNDFND	UNDFD	22	2.45
29.25	96	33.12	1.17	3.53	2.61	clayey silt to silty clay	UNDFND	UNDFD	16	2.30
29.55	97	50.62	2.00	3.95	2.64	clayey silt to silty clay	UNDFND	UNDFD	24	3.75
29.85	98	52.99	2.01	3.79	2.66	clayey silt to silty clay	UNDFND	UNDFD	25	3.94
30.15	99	77.89	2.24	2.87	2.69	sandy silt to clayey silt	UNDFND	UNDFD	30	6.01
30.45	100	69.74	2.02	2.89	2.71	sandy silt to clayey silt	UNDFND	UNDFD	27	5.33
30.75	101	112.47	2.14	1.90	2.74	silty sand to sandy silt	50-60	36-38	36	UNDEFINED

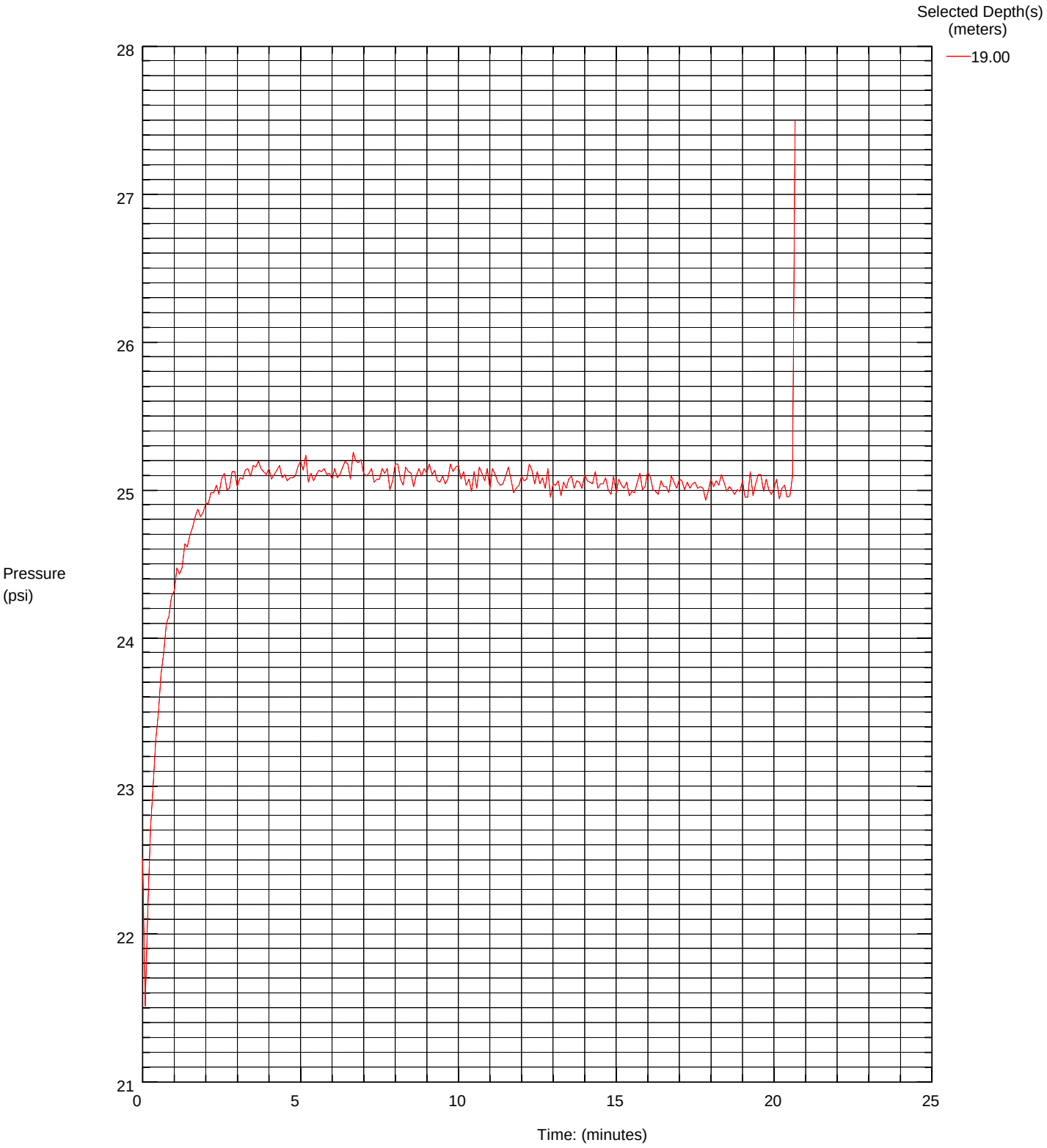
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: BSC013
Cone Used: 739

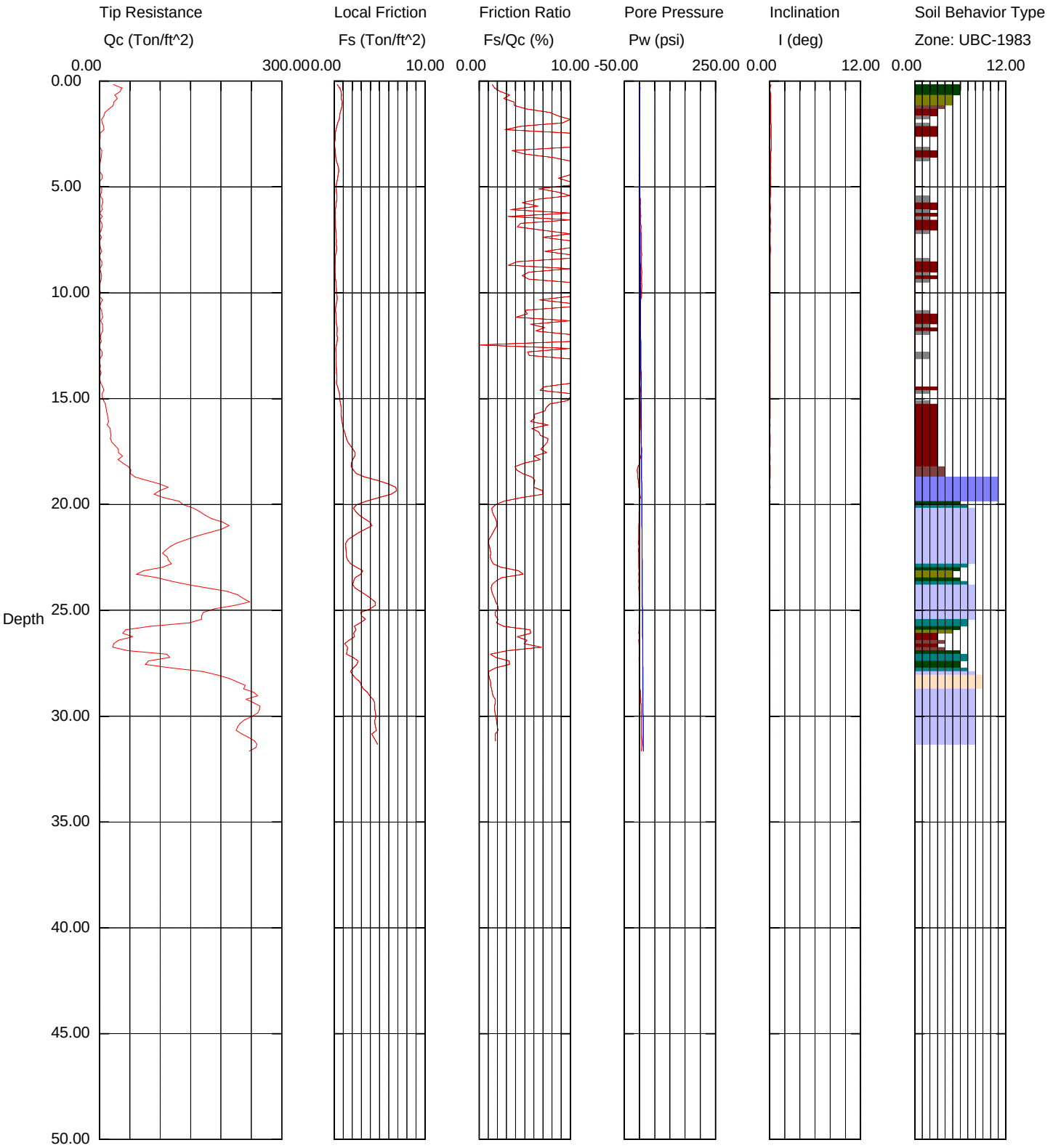
CPT Date/Time: 08-29-02 08:20
Location: BACON IS. PUMP 2
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: BSC015
Cone Used: 739

CPT Date/Time: 08-30-02 06:11
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE



Maximum Depth = 31.66 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN CPT Date :08-30-02 06:11
On Site Loc:BACON IS. BORROW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	28.62	0.71	2.49	0.03	sandy silt to clayey silt	UNDFND	UNDFD	11	2.38
0.60	2	10.36	0.66	6.38	0.08	clay	UNDFND	UNDFD	10	.85
0.95	3	2.56	0.15	5.93	0.15	organic material	UNDFND	UNDFD	2	.20
1.25	4	2.02	0.28	13.82	0.20	undefined	UNDFND	UNDFD	UDF	UNDEFINED
1.55	5	2.20	0.36	16.57	0.22	undefined	UNDFND	UNDFD	UDF	UNDEFINED
1.85	6	3.71	0.26	6.92	0.25	clay	UNDFND	UNDFD	4	.28
2.15	7	2.72	0.17	6.29	0.27	organic material	UNDFND	UNDFD	3	.19
2.45	8	1.69	0.25	15.07	0.30	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.75	9	1.89	0.14	7.59	0.33	organic material	UNDFND	UNDFD	2	.11
3.05	10	1.77	0.22	12.31	0.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.35	11	2.51	0.25	10.06	0.38	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.65	12	4.14	0.29	7.09	0.40	clay	UNDFND	UNDFD	4	.28
3.95	13	2.30	0.27	11.86	0.43	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.25	14	1.13	0.26	23.08	0.46	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.55	15	4.07	0.45	11.01	0.48	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.85	16	10.87	0.77	7.10	0.51	clay	UNDFND	UNDFD	10	.83
5.15	17	16.67	1.11	6.63	0.53	clay	UNDFND	UNDFD	16	1.31
5.45	18	29.35	2.01	6.85	0.56	clay	UNDFND	UNDFD	28	2.36
5.75	19	54.02	2.74	5.08	0.59	silty clay to clay	UNDFND	UNDFD	34	4.41
6.05	20	106.06	5.71	5.39	0.61	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
6.40	21	175.96	3.02	1.72	0.64	sand to silty sand	80-90	44-46	42	UNDEFINED
6.70	22	155.01	2.08	1.34	0.67	sand to silty sand	80-90	44-46	37	UNDEFINED
7.00	23	110.05	1.64	1.49	0.69	sand to silty sand	70-80	42-44	26	UNDEFINED
7.35	24	126.05	2.55	2.03	0.72	silty sand to sandy silt	70-80	42-44	40	UNDEFINED
7.65	25	215.71	3.91	1.81	0.75	sand to silty sand	>90	44-46	>50	UNDEFINED
7.95	26	108.21	2.70	2.49	0.77	silty sand to sandy silt	70-80	42-44	35	UNDEFINED
8.25	27	48.17	1.56	3.24	0.80	clayey silt to silty clay	UNDFND	UNDFD	23	3.88
8.55	28	125.11	2.21	1.76	0.83	silty sand to sandy silt	70-80	42-44	40	UNDEFINED
8.85	29	238.52	3.18	1.33	0.85	sand	>90	44-46	46	UNDEFINED
9.15	30	255.37	4.47	1.75	0.88	sand to silty sand	>90	44-46	>50	UNDEFINED
9.45	31	233.59	4.45	1.90	0.90	sand to silty sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

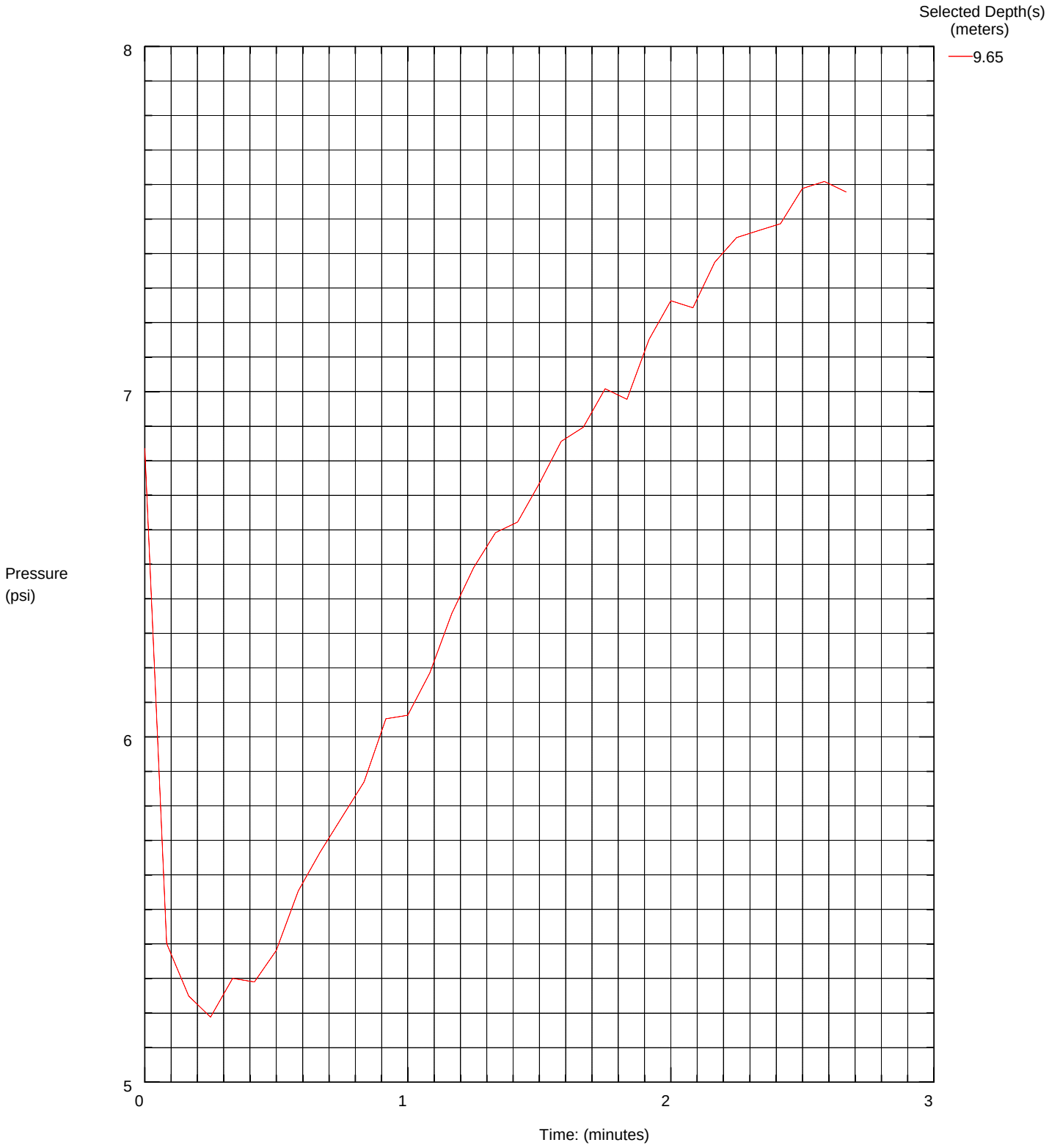
(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: BSC015
Cone Used: 739

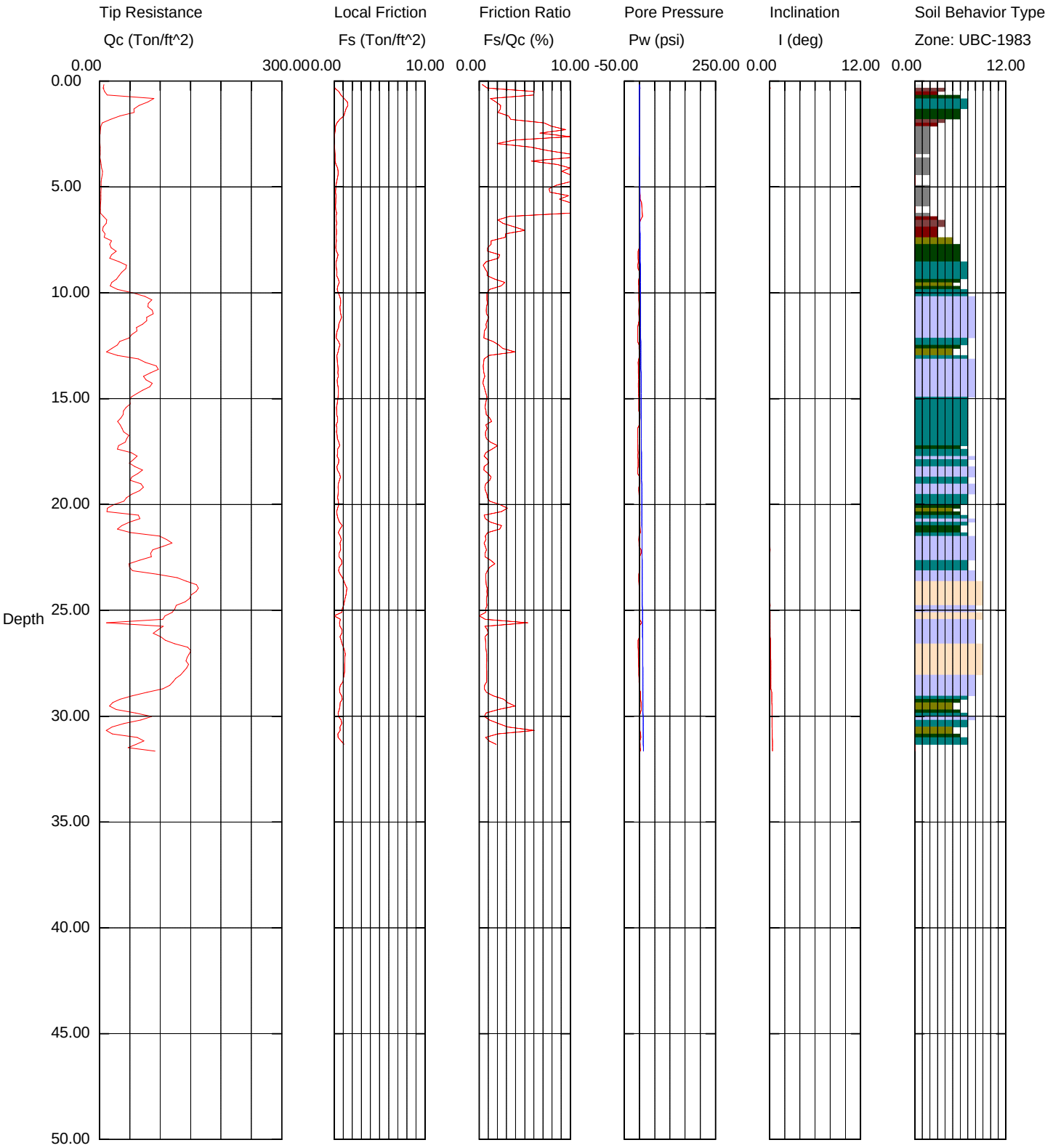
CPT Date/Time: 08-30-02 06:11
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: BSC016
Cone Used: 739

CPT Date/Time: 08-27-02 08:41
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE



Maximum Depth = 31.66 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN CPT Date :08-27-02 08:41
On Site Loc:BACON IS. BORROW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	33.98	0.65	1.92	0.03	sandy silt to clayey silt	UNDFND	UNDFD	13	2.82
0.60	2	39.10	1.01	2.59	0.08	sandy silt to clayey silt	UNDFND	UNDFD	15	3.25
0.95	3	1.03	0.08	7.37	0.15	undefined	UNDFND	UNDFD	UDF	UNDEFINED
1.25	4	1.81	0.17	9.60	0.20	undefined	UNDFND	UNDFD	UDF	UNDEFINED
1.55	5	3.44	0.33	9.65	0.22	undefined	UNDFND	UNDFD	UDF	UNDEFINED
1.85	6	1.94	0.19	9.87	0.25	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.15	7	7.06	0.26	3.65	0.27	clay	UNDFND	UNDFD	7	.55
2.45	8	16.75	0.24	1.41	0.30	sandy silt to clayey silt	UNDFND	UNDFD	6	1.35
2.75	9	32.29	0.31	0.96	0.33	silty sand to sandy silt	50-60	40-42	10	UNDEFINED
3.05	10	30.29	0.43	1.41	0.35	sandy silt to clayey silt	UNDFND	UNDFD	12	2.47
3.35	11	82.64	0.69	0.83	0.38	sand to silty sand	70-80	44-46	20	UNDEFINED
3.65	12	66.93	0.53	0.79	0.40	sand to silty sand	60-70	42-44	16	UNDEFINED
3.95	13	28.71	0.45	1.56	0.43	sandy silt to clayey silt	UNDFND	UNDFD	11	2.33
4.25	14	80.92	0.41	0.51	0.46	sand to silty sand	70-80	42-44	19	UNDEFINED
4.55	15	71.71	0.42	0.59	0.48	sand to silty sand	60-70	42-44	17	UNDEFINED
4.85	16	42.86	0.34	0.79	0.51	silty sand to sandy silt	50-60	40-42	14	UNDEFINED
5.15	17	38.99	0.33	0.84	0.53	silty sand to sandy silt	40-50	38-40	12	UNDEFINED
5.45	18	45.50	0.47	1.03	0.56	silty sand to sandy silt	50-60	40-42	15	UNDEFINED
5.75	19	57.41	0.52	0.90	0.59	silty sand to sandy silt	50-60	40-42	18	UNDEFINED
6.05	20	57.30	0.45	0.79	0.61	sand to silty sand	50-60	40-42	14	UNDEFINED
6.40	21	37.90	0.51	1.34	0.64	silty sand to sandy silt	40-50	38-40	12	UNDEFINED
6.70	22	85.75	0.67	0.78	0.67	sand to silty sand	60-70	42-44	21	UNDEFINED
7.00	23	70.11	0.68	0.97	0.69	sand to silty sand	60-70	40-42	17	UNDEFINED
7.35	24	128.73	1.03	0.80	0.72	sand to silty sand	70-80	42-44	31	UNDEFINED
7.65	25	135.00	1.08	0.80	0.75	sand	70-80	42-44	26	UNDEFINED
7.95	26	85.46	0.62	0.73	0.77	sand to silty sand	60-70	40-42	20	UNDEFINED
8.25	27	129.23	0.96	0.74	0.80	sand	70-80	42-44	25	UNDEFINED
8.55	28	141.49	1.16	0.82	0.83	sand	70-80	42-44	27	UNDEFINED
8.85	29	99.58	0.80	0.80	0.85	sand to silty sand	60-70	40-42	24	UNDEFINED
9.15	30	40.78	0.63	1.53	0.88	silty sand to sandy silt	40-50	36-38	13	UNDEFINED
9.45	31	37.23	0.64	1.71	0.90	sandy silt to clayey silt	UNDFND	UNDFD	14	2.95

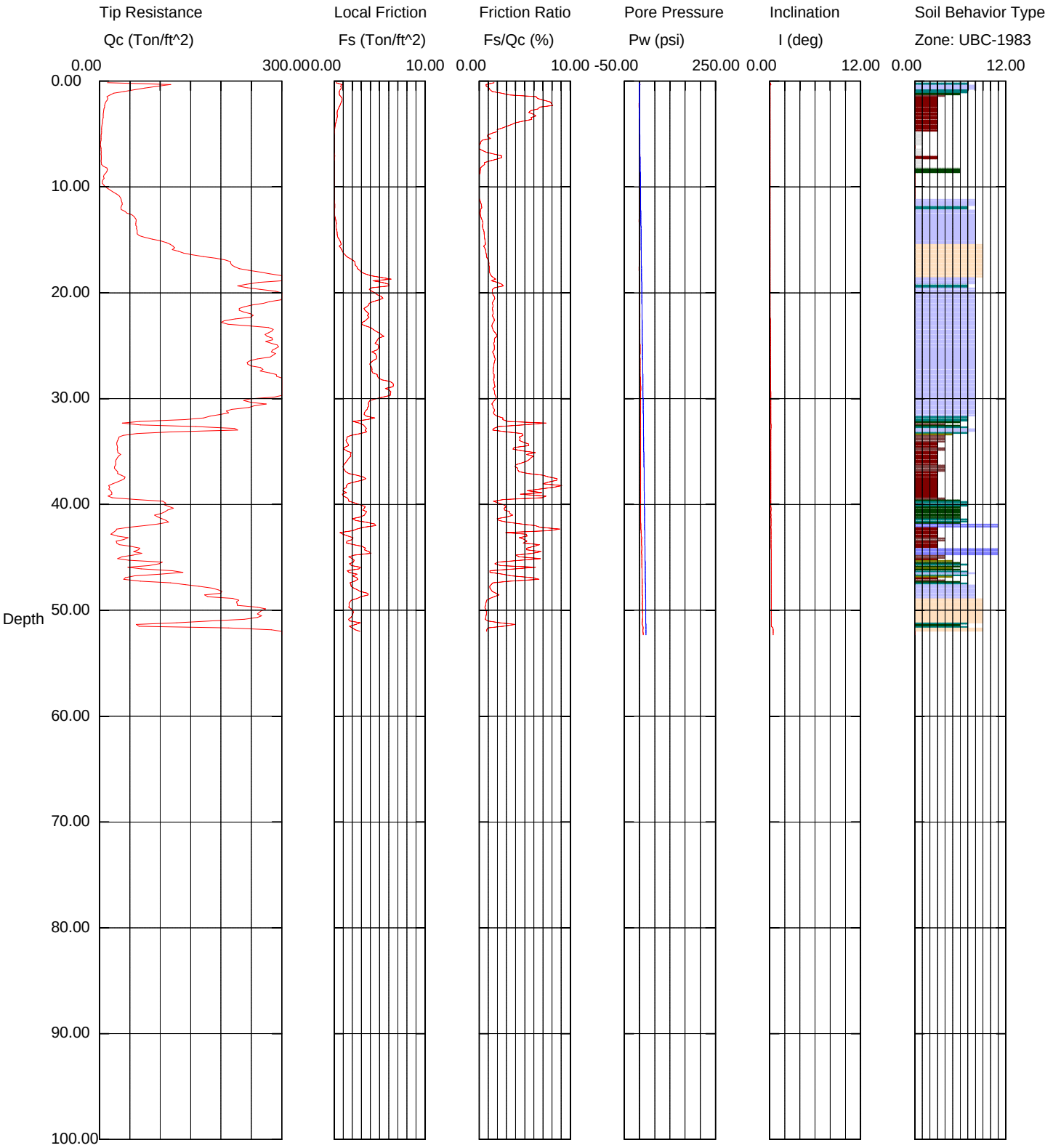
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: BSC017
Cone Used: 739

CPT Date/Time: 08-28-02 12:16
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE



Maximum Depth = 52.33 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN
On Site Loc:BACON IS. BORROW
Job No. :IN-DELTA STORAGE
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :08-28-02 12:16
Cone Used :739
Water table (feet) : 3.28084

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	66.65	0.65	0.98	0.03	sand to silty sand	>90	>48	16	UNDEFINED
0.60	2	14.93	0.75	5.01	0.08	clay	UNDFND	UNDFD	14	1.23
0.95	3	7.49	0.50	6.72	0.15	clay	UNDFND	UNDFD	7	.61
1.25	4	5.22	0.27	5.13	0.20	clay	UNDFND	UNDFD	5	.41
1.55	5	3.36	0.07	2.05	0.22	clay	UNDFND	UNDFD	3	.25
1.85	6	2.19	0.01	0.52	0.25	sensitive fine grained	UNDFND	UNDFD	1	.15
2.15	7	2.75	0.02	0.91	0.27	sensitive fine grained	UNDFND	UNDFD	1	.19
2.45	8	3.50	0.04	1.04	0.30	sensitive fine grained	UNDFND	UNDFD	2	.25
2.75	9	10.27	0.00	0.01	0.33	sensitive fine grained	UNDFND	UNDFD	5	.81
3.05	10	6.63	-0.02	-0.37	0.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.35	11	24.85	-0.03	-0.10	0.38	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.65	12	36.24	0.07	0.18	0.40	sand to silty sand	50-60	40-42	9	UNDEFINED
3.95	13	48.58	0.08	0.16	0.43	sand to silty sand	50-60	40-42	12	UNDEFINED
4.25	14	60.31	0.23	0.38	0.46	sand to silty sand	60-70	42-44	14	UNDEFINED
4.55	15	68.64	0.39	0.57	0.48	sand to silty sand	60-70	42-44	16	UNDEFINED
4.85	16	115.24	0.73	0.63	0.51	sand to silty sand	80-90	44-46	28	UNDEFINED
5.15	17	164.91	1.39	0.84	0.53	sand	>90	44-46	32	UNDEFINED
5.45	18	224.84	2.48	1.10	0.56	sand	>90	46-48	43	UNDEFINED
5.75	19	308.14	4.34	1.41	0.59	sand	>90	46-48	>50	UNDEFINED
6.05	20	254.80	4.92	1.93	0.61	sand to silty sand	>90	46-48	>50	UNDEFINED
6.40	21	299.06	4.69	1.57	0.64	sand to silty sand	>90	46-48	>50	UNDEFINED
6.70	22	239.26	3.59	1.50	0.67	sand to silty sand	>90	46-48	>50	UNDEFINED
7.00	23	223.67	3.45	1.54	0.69	sand to silty sand	>90	44-46	>50	UNDEFINED
7.35	24	274.35	4.55	1.66	0.72	sand to silty sand	>90	46-48	>50	UNDEFINED
7.65	25	285.33	4.77	1.67	0.75	sand to silty sand	>90	46-48	>50	UNDEFINED
7.95	26	285.60	4.59	1.61	0.77	sand to silty sand	>90	46-48	>50	UNDEFINED
8.25	27	251.52	4.18	1.66	0.80	sand to silty sand	>90	44-46	>50	UNDEFINED
8.55	28	282.56	4.49	1.59	0.83	sand to silty sand	>90	46-48	>50	UNDEFINED
8.85	29	370.75	6.08	1.64	0.85	sand to silty sand	>90	46-48	>50	UNDEFINED
9.15	30	331.99	5.77	1.74	0.88	sand to silty sand	>90	46-48	>50	UNDEFINED
9.45	31	246.44	3.78	1.53	0.90	sand to silty sand	>90	44-46	>50	UNDEFINED
9.75	32	185.79	3.63	1.95	0.93	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
10.05	33	129.95	3.07	2.36	0.96	silty sand to sandy silt	70-80	42-44	41	UNDEFINED
10.35	34	51.88	2.08	4.02	0.98	clayey silt to silty clay	UNDFND	UNDFD	25	4.16
10.65	35	29.16	1.36	4.67	1.01	clay	UNDFND	UNDFD	28	2.26
10.95	36	29.99	1.69	5.62	1.03	clay	UNDFND	UNDFD	29	2.32
11.25	37	26.66	1.13	4.25	1.06	silty clay to clay	UNDFND	UNDFD	17	2.04
11.55	38	35.48	2.67	7.53	1.09	clay	UNDFND	UNDFD	34	2.77

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

W0
Operator :TONY SHANAHAN On Site Loc:BACON IS. BORROW Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	17.94	1.27	7.10	1.11	clay	UNDFND	UNDFD	17	1.31
12.15	40	54.89	1.49	2.72	1.14	sandy silt to clayey silt	UNDFND	UNDFD	21	4.38
12.45	41	110.63	3.29	2.98	1.16	sandy silt to clayey silt	UNDFND	UNDFD	42	9.02
12.80	42	97.69	3.32	3.39	1.19	sandy silt to clayey silt	UNDFND	UNDFD	37	7.94
13.10	43	28.98	1.82	6.28	1.22	clay	UNDFND	UNDFD	28	2.21
13.40	44	37.62	2.02	5.36	1.24	clay	UNDFND	UNDFD	36	2.92
13.75	45	54.06	2.93	5.43	1.27	clay	UNDFND	UNDFD	>50	4.29
14.05	46	74.43	2.27	3.05	1.30	sandy silt to clayey silt	UNDFND	UNDFD	29	5.98
14.35	47	82.73	2.13	2.57	1.33	sandy silt to clayey silt	UNDFND	UNDFD	32	6.67
14.65	48	145.05	2.09	1.44	1.35	sand to silty sand	70-80	40-42	35	UNDEFINED
14.95	49	200.08	2.95	1.48	1.38	sand to silty sand	80-90	42-44	48	UNDEFINED
15.25	50	246.53	1.78	0.72	1.40	sand	80-90	42-44	47	UNDEFINED
15.55	51	245.15	1.89	0.77	1.43	sand	80-90	42-44	47	UNDEFINED
15.85	52	181.23	2.37	1.31	1.46	sand to silty sand	70-80	40-42	43	UNDEFINED

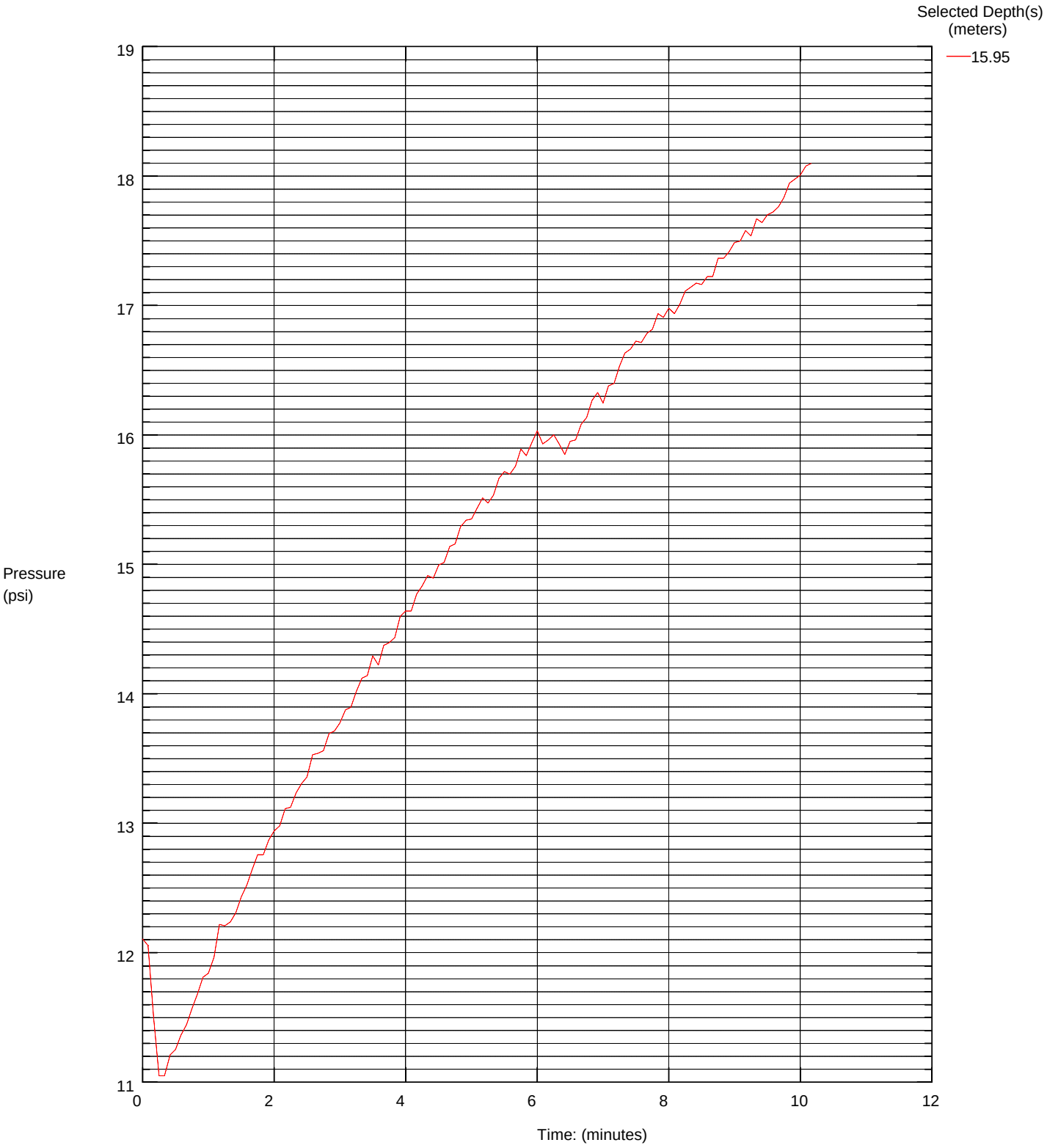
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: BSC017
Cone Used: 739

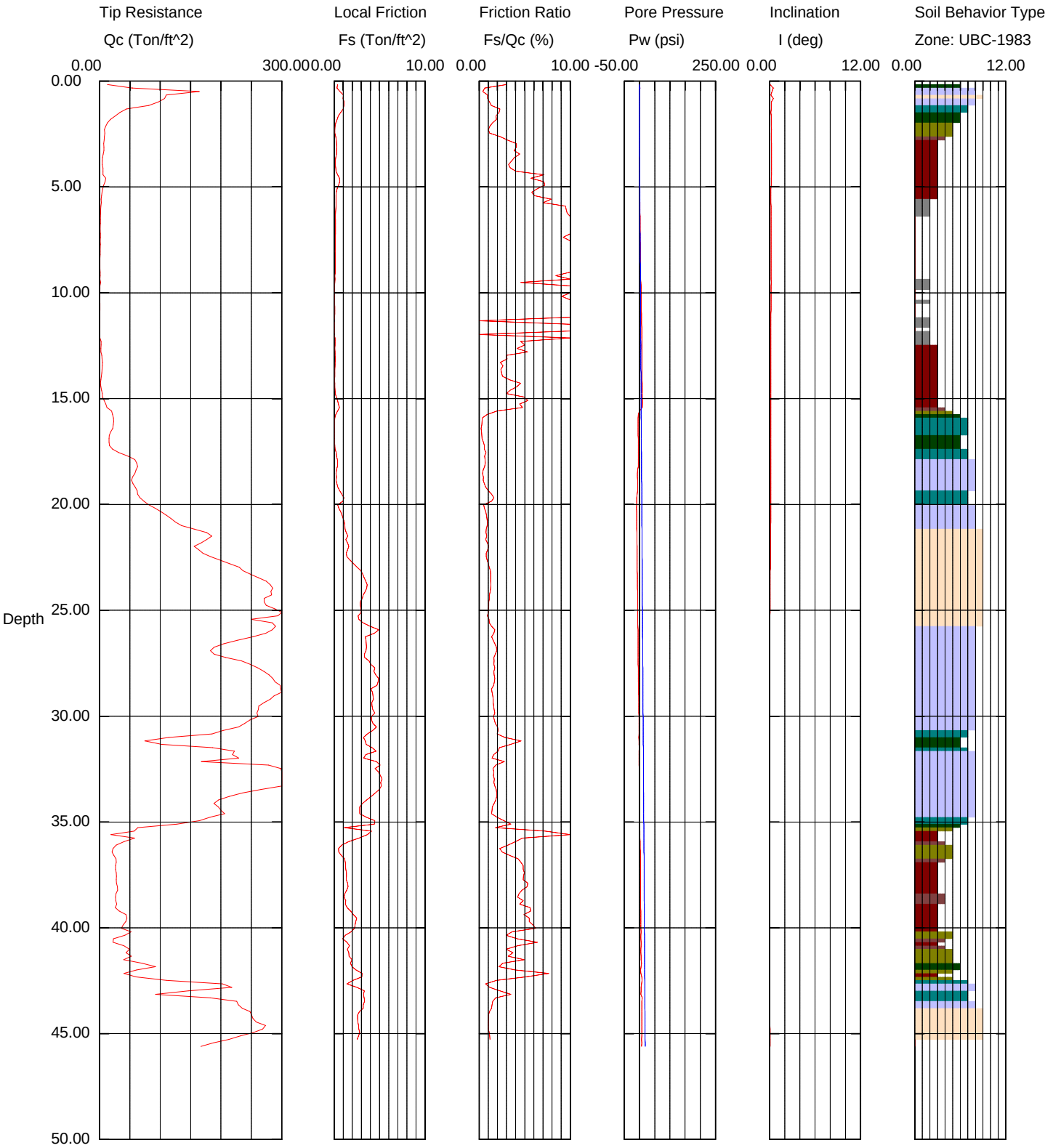
CPT Date/Time: 08-28-02 12:16
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: BSC018
Cone Used: 739

CPT Date/Time: 08-27-02 14:19
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE



Maximum Depth = 45.60 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN CPT Date :08-27-02 14:19
On Site Loc:BACON IS. BORROW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	90.70	0.75	0.82	0.03	sand to silty sand	>90	>48	22	UNDEFINED
0.60	2	35.96	0.64	1.78	0.08	sandy silt to clayey silt	UNDFND	UNDFD	14	2.98
0.95	3	8.10	0.19	2.30	0.15	silty clay to clay	UNDFND	UNDFD	5	.66
1.25	4	5.49	0.21	3.75	0.20	clay	UNDFND	UNDFD	5	.43
1.55	5	7.17	0.45	6.28	0.22	clay	UNDFND	UNDFD	7	.57
1.85	6	2.99	0.22	7.27	0.25	organic material	UNDFND	UNDFD	3	.22
2.15	7	1.46	0.17	11.41	0.27	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.45	8	1.30	0.14	10.89	0.30	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.75	9	0.91	0.14	15.25	0.33	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.05	10	0.84	0.08	9.21	0.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.35	11	0.53	0.08	14.61	0.38	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.65	12	0.34	0.02	7.17	0.40	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.95	13	2.30	0.11	4.88	0.43	clay	UNDFND	UNDFD	2	.13
4.25	14	4.06	0.10	2.57	0.46	clay	UNDFND	UNDFD	4	.27
4.55	15	3.24	0.13	3.88	0.48	clay	UNDFND	UNDFD	3	.20
4.85	16	15.77	0.36	2.25	0.51	clayey silt to silty clay	UNDFND	UNDFD	8	1.24
5.15	17	19.60	0.06	0.28	0.53	silty sand to sandy silt	<40	36-38	6	UNDEFINED
5.45	18	31.63	0.20	0.62	0.56	silty sand to sandy silt	40-50	38-40	10	UNDEFINED
5.75	19	58.24	0.29	0.50	0.59	sand to silty sand	50-60	40-42	14	UNDEFINED
6.05	20	63.11	0.71	1.13	0.61	silty sand to sandy silt	60-70	40-42	20	UNDEFINED
6.40	21	108.78	0.83	0.77	0.64	sand to silty sand	70-80	42-44	26	UNDEFINED
6.70	22	169.35	1.41	0.83	0.67	sand	80-90	44-46	32	UNDEFINED
7.00	23	193.45	1.79	0.92	0.69	sand	>90	44-46	37	UNDEFINED
7.35	24	266.94	3.37	1.26	0.72	sand	>90	46-48	>50	UNDEFINED
7.65	25	281.72	3.01	1.07	0.75	sand	>90	46-48	>50	UNDEFINED
7.95	26	279.16	3.64	1.30	0.77	sand	>90	46-48	>50	UNDEFINED
8.25	27	207.43	3.47	1.68	0.80	sand to silty sand	>90	44-46	50	UNDEFINED
8.55	28	249.90	4.12	1.65	0.83	sand to silty sand	>90	44-46	>50	UNDEFINED
8.85	29	292.80	4.50	1.54	0.85	sand to silty sand	>90	46-48	>50	UNDEFINED
9.15	30	265.95	4.25	1.60	0.88	sand to silty sand	>90	44-46	>50	UNDEFINED
9.45	31	203.11	4.03	1.99	0.90	sand to silty sand	80-90	44-46	49	UNDEFINED
9.75	32	172.14	3.75	2.18	0.93	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
10.05	33	281.01	4.92	1.75	0.96	sand to silty sand	>90	44-46	>50	UNDEFINED
10.35	34	254.27	4.57	1.80	0.98	sand to silty sand	>90	44-46	>50	UNDEFINED
10.65	35	189.50	3.27	1.73	1.01	sand to silty sand	80-90	42-44	45	UNDEFINED
10.95	36	60.72	2.96	4.87	1.03	silty clay to clay	UNDFND	UNDFD	39	4.89
11.25	37	24.72	0.85	3.44	1.06	clayey silt to silty clay	UNDFND	UNDFD	12	1.88
11.55	38	27.32	1.35	4.95	1.09	clay	UNDFND	UNDFD	26	2.09

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E W1 Bureau of Reclamation
W0

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	27.96	1.30	4.65	1.11	clay	UNDFND	UNDFD	27	2.14
12.15	40	38.27	2.10	5.48	1.14	clay	UNDFND	UNDFD	37	3.00
12.45	41	35.82	1.57	4.39	1.16	silty clay to clay	UNDFND	UNDFD	23	2.79
12.80	42	58.33	1.84	3.16	1.19	sandy silt to clayey silt	UNDFND	UNDFD	22	4.66
13.10	43	129.56	2.58	1.99	1.22	silty sand to sandy silt	70-80	40-42	41	UNDEFINED
13.40	44	201.86	3.18	1.58	1.24	sand to silty sand	80-90	42-44	48	UNDEFINED
13.75	45	255.41	2.68	1.05	1.27	sand	>90	44-46	49	UNDEFINED

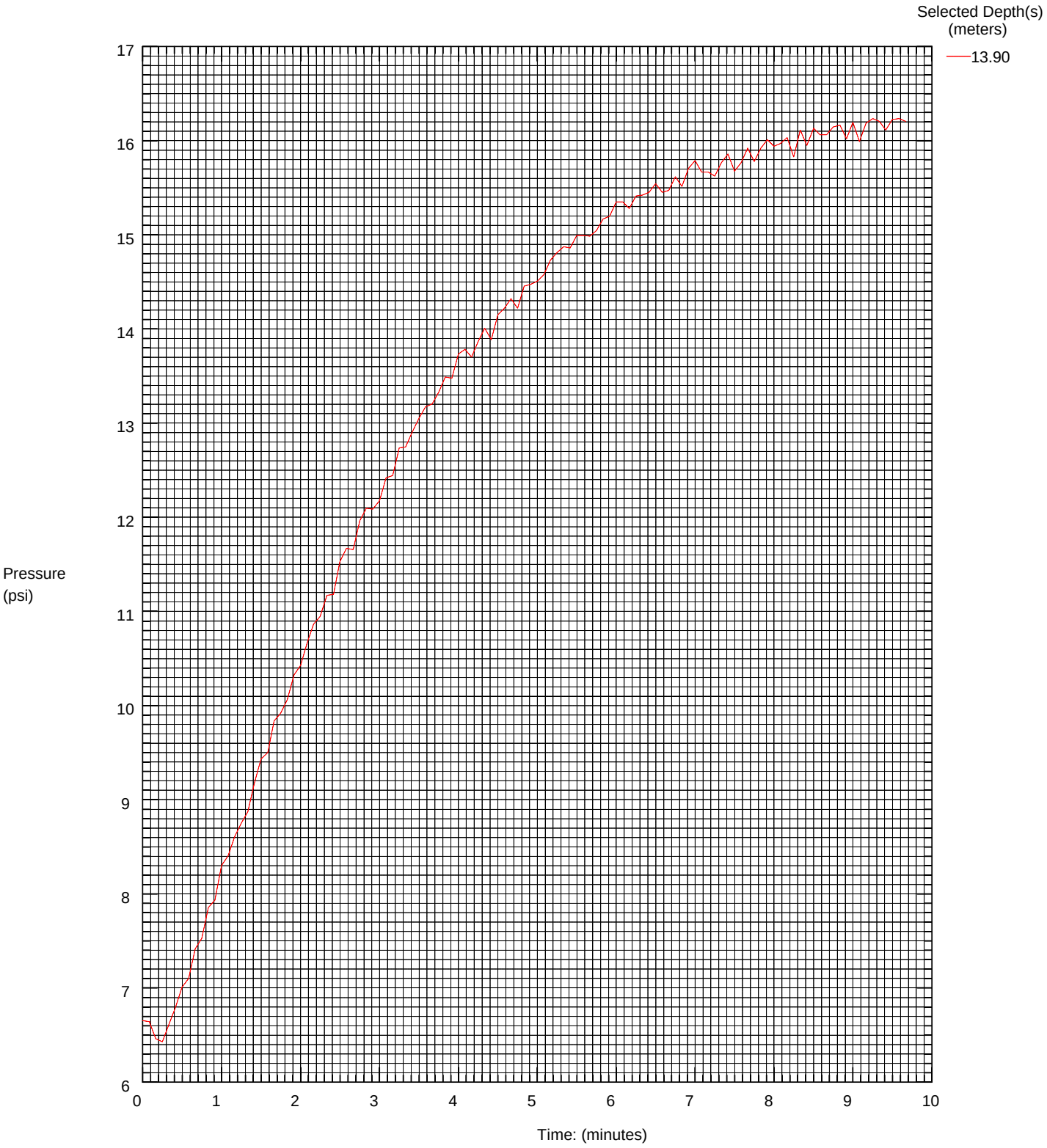
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: BSC018
Cone Used: 739

CPT Date/Time: 08-27-02 14:19
Location: BACON IS. BORROW
Job Number: IN-DELTA STORAGE

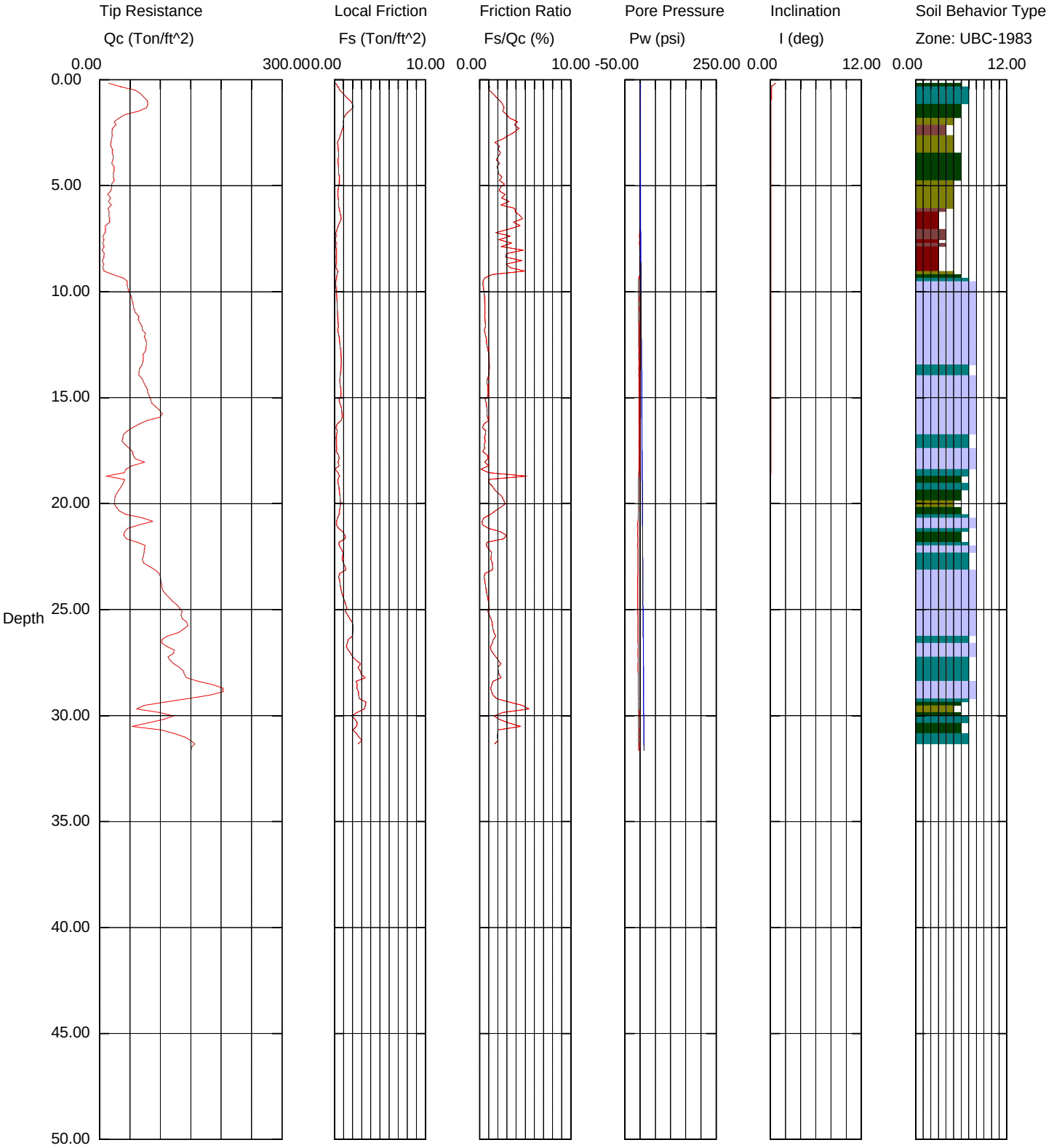


Webb Tract CPT Logs and Data

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC01
Cone Used: 739

CPT Date/Time: 08-31-02 08:12
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Maximum Depth = 31.66 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN CPT Date :08-31-02 08:12
On Site Loc:WEBB TRACT BORRW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	54.38	0.86	1.59	0.03	silty sand to sandy silt	>90	>48	17	UNDEFINED
0.60	2	53.06	1.49	2.82	0.08	sandy silt to clayey silt	UNDFND	UNDFD	20	4.41
0.95	3	20.76	0.65	3.15	0.15	clayey silt to silty clay	UNDFND	UNDFD	10	1.71
1.25	4	21.53	0.44	2.04	0.20	sandy silt to clayey silt	UNDFND	UNDFD	8	1.77
1.55	5	22.12	0.50	2.27	0.22	clayey silt to silty clay	UNDFND	UNDFD	11	1.82
1.85	6	16.05	0.44	2.73	0.25	clayey silt to silty clay	UNDFND	UNDFD	8	1.31
2.15	7	13.75	0.56	4.09	0.27	clay	UNDFND	UNDFD	13	1.11
2.45	8	6.36	0.17	2.75	0.30	clay	UNDFND	UNDFD	6	.49
2.75	9	6.35	0.23	3.55	0.33	clay	UNDFND	UNDFD	6	.48
3.05	10	41.06	0.21	0.52	0.35	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
3.35	11	54.97	0.31	0.56	0.38	sand to silty sand	60-70	42-44	13	UNDEFINED
3.65	12	68.30	0.40	0.58	0.40	sand to silty sand	60-70	42-44	16	UNDEFINED
3.95	13	75.02	0.63	0.84	0.43	sand to silty sand	70-80	42-44	18	UNDEFINED
4.25	14	68.04	0.72	1.05	0.46	silty sand to sandy silt	60-70	42-44	22	UNDEFINED
4.55	15	76.07	0.66	0.87	0.48	sand to silty sand	60-70	42-44	18	UNDEFINED
4.85	16	93.79	0.72	0.77	0.51	sand to silty sand	70-80	42-44	22	UNDEFINED
5.15	17	53.34	0.33	0.63	0.53	sand to silty sand	50-60	40-42	13	UNDEFINED
5.45	18	49.13	0.32	0.64	0.56	silty sand to sandy silt	50-60	40-42	16	UNDEFINED
5.75	19	43.77	0.40	0.90	0.59	silty sand to sandy silt	50-60	38-40	14	UNDEFINED
6.05	20	30.76	0.55	1.79	0.61	sandy silt to clayey silt	UNDFND	UNDFD	12	2.47
6.40	21	49.84	0.45	0.90	0.64	silty sand to sandy silt	50-60	38-40	16	UNDEFINED
6.70	22	51.37	0.79	1.54	0.67	silty sand to sandy silt	50-60	38-40	16	UNDEFINED
7.00	23	73.70	0.94	1.28	0.69	silty sand to sandy silt	60-70	40-42	24	UNDEFINED
7.35	24	99.73	0.71	0.71	0.72	sand to silty sand	70-80	42-44	24	UNDEFINED
7.65	25	122.88	1.14	0.93	0.75	sand to silty sand	70-80	42-44	29	UNDEFINED
7.95	26	137.53	1.87	1.36	0.77	sand to silty sand	70-80	42-44	33	UNDEFINED
8.25	27	111.73	1.59	1.42	0.80	sand to silty sand	70-80	42-44	27	UNDEFINED
8.55	28	126.26	2.60	2.06	0.83	silty sand to sandy silt	70-80	42-44	40	UNDEFINED
8.85	29	179.57	2.68	1.49	0.85	sand to silty sand	80-90	44-46	43	UNDEFINED
9.15	30	100.71	2.88	2.86	0.88	sandy silt to clayey silt	UNDFND	UNDFD	39	8.25
9.45	31	99.97	2.39	2.39	0.90	silty sand to sandy silt	60-70	40-42	32	UNDEFINED

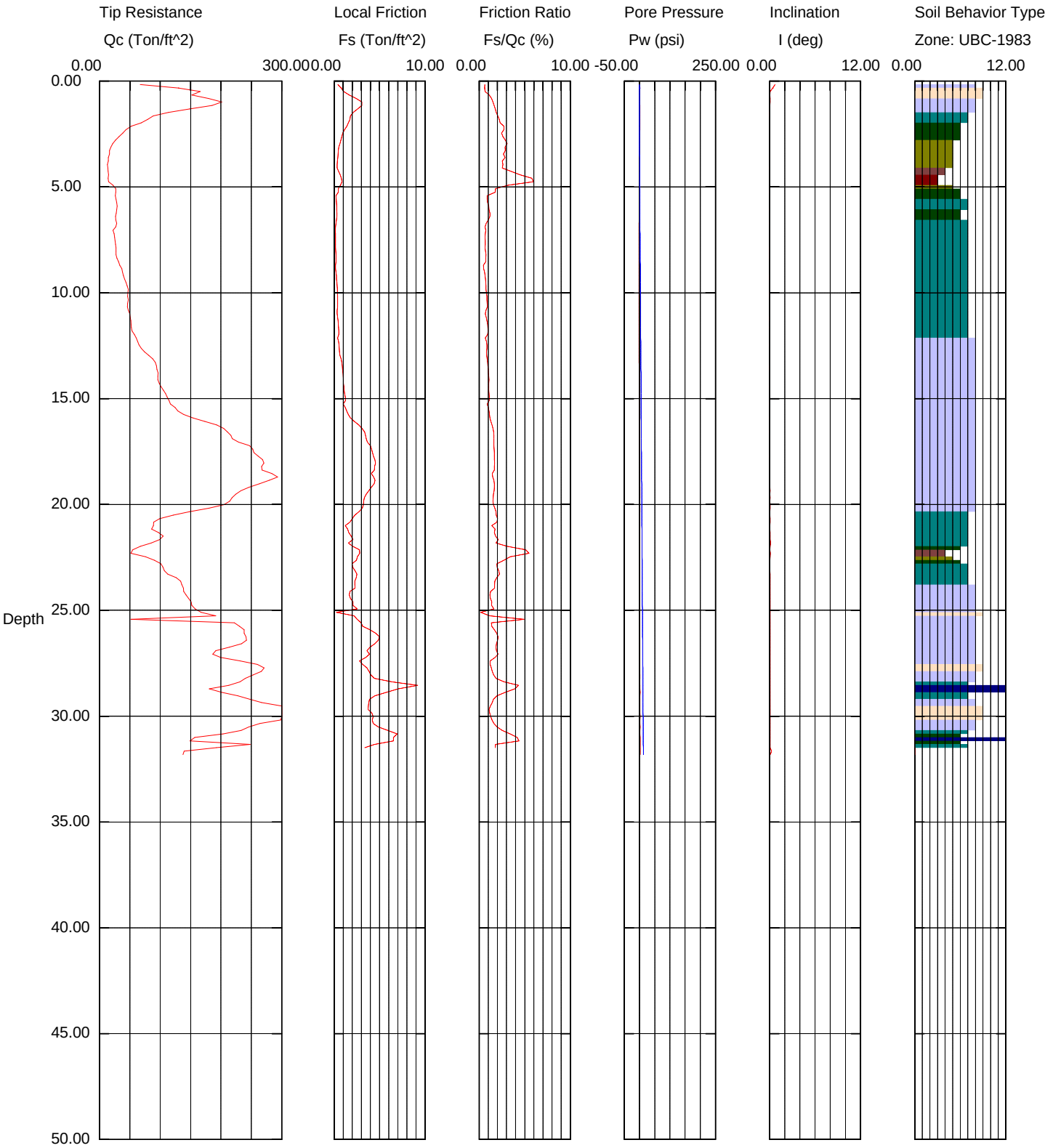
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC02
Cone Used: 739

CPT Date/Time: 08-31-02 11:19
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Maximum Depth = 31.82 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN CPT Date :08-31-02 11:19
On Site Loc:WEBB TRACT BORRW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	149.15	1.57	1.05	0.03	sand to silty sand	>90	>48	36	UNDEFINED
0.60	2	113.77	2.15	1.89	0.08	silty sand to sandy silt	>90	>48	36	UNDEFINED
0.95	3	33.33	0.91	2.72	0.15	sandy silt to clayey silt	UNDFND	UNDFD	13	2.76
1.25	4	14.76	0.40	2.69	0.20	clayey silt to silty clay	UNDFND	UNDFD	7	1.21
1.55	5	17.78	0.67	3.78	0.22	silty clay to clay	UNDFND	UNDFD	11	1.46
1.85	6	27.52	0.30	1.10	0.25	sandy silt to clayey silt	UNDFND	UNDFD	11	2.26
2.15	7	26.40	0.24	0.92	0.27	silty sand to sandy silt	40-50	40-42	8	UNDEFINED
2.45	8	25.90	0.17	0.67	0.30	silty sand to sandy silt	40-50	40-42	8	UNDEFINED
2.75	9	32.42	0.20	0.62	0.33	silty sand to sandy silt	50-60	40-42	10	UNDEFINED
3.05	10	44.01	0.32	0.74	0.35	silty sand to sandy silt	50-60	40-42	14	UNDEFINED
3.35	11	47.13	0.38	0.81	0.38	silty sand to sandy silt	50-60	40-42	15	UNDEFINED
3.65	12	52.91	0.48	0.90	0.40	silty sand to sandy silt	60-70	42-44	17	UNDEFINED
3.95	13	68.76	0.55	0.80	0.43	sand to silty sand	60-70	42-44	16	UNDEFINED
4.25	14	93.36	0.91	0.97	0.46	sand to silty sand	70-80	44-46	22	UNDEFINED
4.55	15	103.55	1.12	1.08	0.48	sand to silty sand	70-80	44-46	25	UNDEFINED
4.85	16	129.48	1.38	1.07	0.51	sand to silty sand	80-90	44-46	31	UNDEFINED
5.15	17	202.67	3.07	1.51	0.53	sand to silty sand	>90	46-48	49	UNDEFINED
5.45	18	251.88	4.14	1.64	0.56	sand to silty sand	>90	46-48	>50	UNDEFINED
5.75	19	276.74	4.40	1.59	0.59	sand to silty sand	>90	46-48	>50	UNDEFINED
6.05	20	233.18	3.74	1.60	0.61	sand to silty sand	>90	46-48	>50	UNDEFINED
6.40	21	133.15	2.34	1.76	0.64	silty sand to sandy silt	80-90	44-46	43	UNDEFINED
6.70	22	89.81	1.79	1.99	0.67	silty sand to sandy silt	60-70	42-44	29	UNDEFINED
7.00	23	79.66	2.45	3.08	0.69	sandy silt to clayey silt	UNDFND	UNDFD	31	6.53
7.35	24	127.31	2.27	1.78	0.72	silty sand to sandy silt	70-80	42-44	41	UNDEFINED
7.65	25	152.78	1.74	1.14	0.75	sand to silty sand	80-90	44-46	37	UNDEFINED
7.95	26	195.28	3.23	1.66	0.77	sand to silty sand	80-90	44-46	47	UNDEFINED
8.25	27	218.00	4.30	1.97	0.80	sand to silty sand	>90	44-46	>50	UNDEFINED
8.55	28	246.92	3.50	1.42	0.83	sand to silty sand	>90	44-46	>50	UNDEFINED
8.85	29	215.55	6.21	2.88	0.85	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
9.15	30	309.43	3.95	1.28	0.88	sand	>90	46-48	>50	UNDEFINED
9.45	31	233.54	5.45	2.34	0.90	silty sand to sandy silt	>90	44-46	>50	UNDEFINED

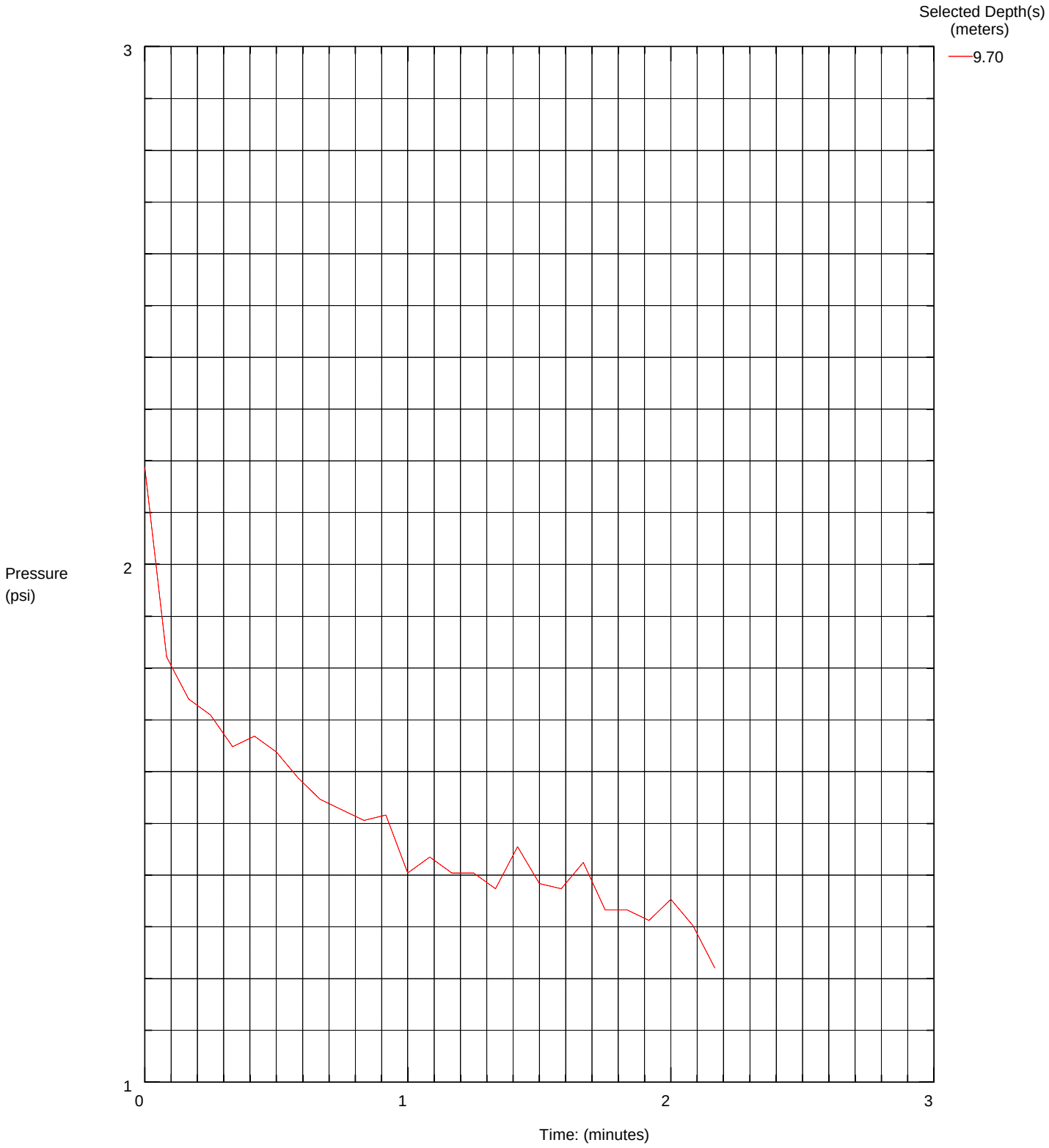
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: WTSC02
Cone Used: 739

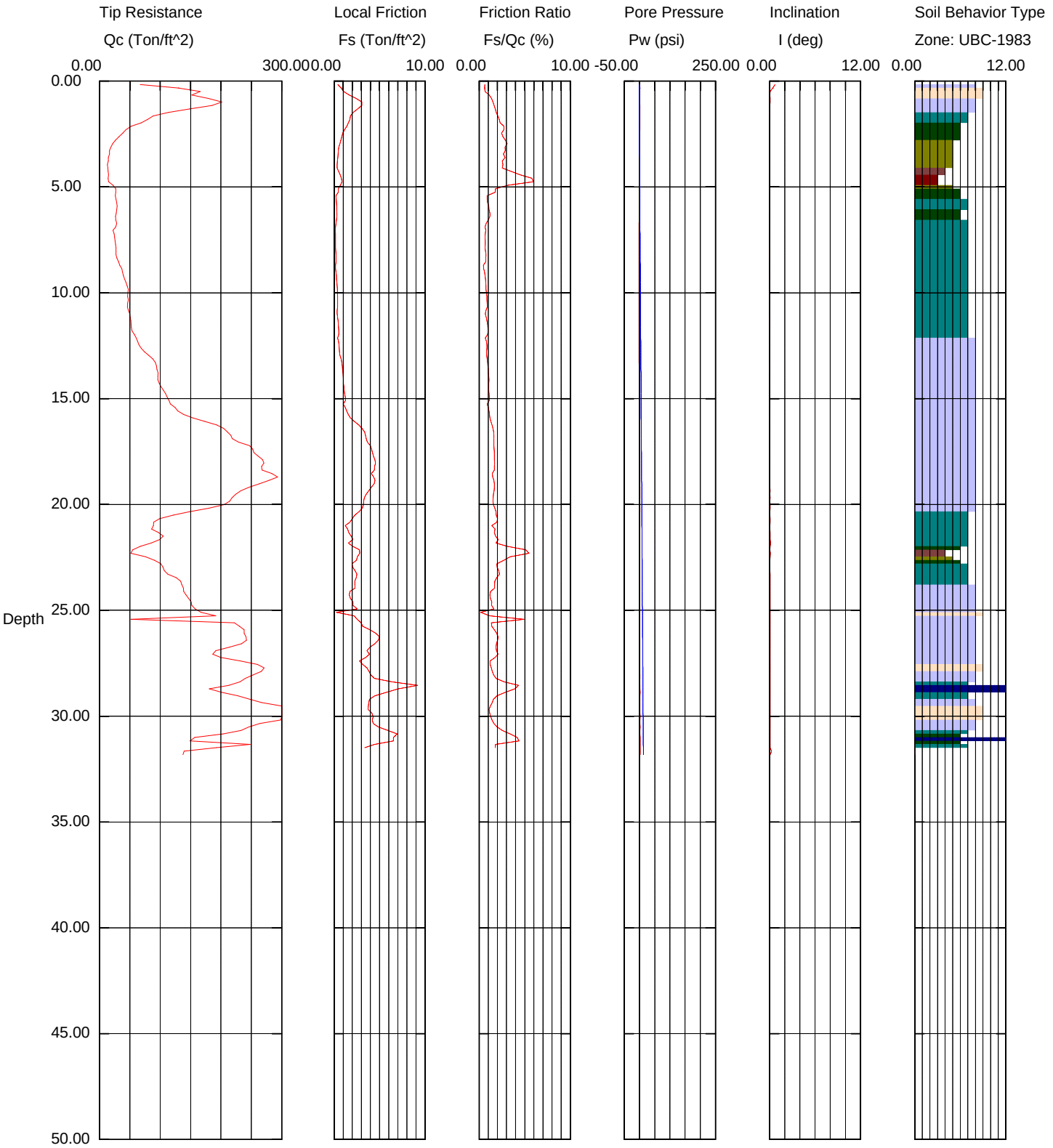
CPT Date/Time: 08-31-02 11:19
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC02
Cone Used: 739

CPT Date/Time: 08-31-02 11:19
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Maximum Depth = 31.82 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN CPT Date :08-31-02 11:19
On Site Loc:WEBB TRACT BORRW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	149.15	1.57	1.05	0.03	sand to silty sand	>90	>48	36	UNDEFINED
0.60	2	113.77	2.15	1.89	0.08	silty sand to sandy silt	>90	>48	36	UNDEFINED
0.95	3	33.33	0.91	2.72	0.15	sandy silt to clayey silt	UNDFND	UNDFD	13	2.76
1.25	4	14.76	0.40	2.69	0.20	clayey silt to silty clay	UNDFND	UNDFD	7	1.21
1.55	5	17.78	0.67	3.78	0.22	silty clay to clay	UNDFND	UNDFD	11	1.46
1.85	6	27.52	0.30	1.10	0.25	sandy silt to clayey silt	UNDFND	UNDFD	11	2.26
2.15	7	26.40	0.24	0.92	0.27	silty sand to sandy silt	40-50	40-42	8	UNDEFINED
2.45	8	25.90	0.17	0.67	0.30	silty sand to sandy silt	40-50	40-42	8	UNDEFINED
2.75	9	32.42	0.20	0.62	0.33	silty sand to sandy silt	50-60	40-42	10	UNDEFINED
3.05	10	44.01	0.32	0.74	0.35	silty sand to sandy silt	50-60	40-42	14	UNDEFINED
3.35	11	47.13	0.38	0.81	0.38	silty sand to sandy silt	50-60	40-42	15	UNDEFINED
3.65	12	52.91	0.48	0.90	0.40	silty sand to sandy silt	60-70	42-44	17	UNDEFINED
3.95	13	68.76	0.55	0.80	0.43	sand to silty sand	60-70	42-44	16	UNDEFINED
4.25	14	93.36	0.91	0.97	0.46	sand to silty sand	70-80	44-46	22	UNDEFINED
4.55	15	103.55	1.12	1.08	0.48	sand to silty sand	70-80	44-46	25	UNDEFINED
4.85	16	129.48	1.38	1.07	0.51	sand to silty sand	80-90	44-46	31	UNDEFINED
5.15	17	202.67	3.07	1.51	0.53	sand to silty sand	>90	46-48	49	UNDEFINED
5.45	18	251.88	4.14	1.64	0.56	sand to silty sand	>90	46-48	>50	UNDEFINED
5.75	19	276.74	4.40	1.59	0.59	sand to silty sand	>90	46-48	>50	UNDEFINED
6.05	20	233.18	3.74	1.60	0.61	sand to silty sand	>90	46-48	>50	UNDEFINED
6.40	21	133.15	2.34	1.76	0.64	silty sand to sandy silt	80-90	44-46	43	UNDEFINED
6.70	22	89.81	1.79	1.99	0.67	silty sand to sandy silt	60-70	42-44	29	UNDEFINED
7.00	23	79.66	2.45	3.08	0.69	sandy silt to clayey silt	UNDFND	UNDFD	31	6.53
7.35	24	127.31	2.27	1.78	0.72	silty sand to sandy silt	70-80	42-44	41	UNDEFINED
7.65	25	152.78	1.74	1.14	0.75	sand to silty sand	80-90	44-46	37	UNDEFINED
7.95	26	195.28	3.23	1.66	0.77	sand to silty sand	80-90	44-46	47	UNDEFINED
8.25	27	218.00	4.30	1.97	0.80	sand to silty sand	>90	44-46	>50	UNDEFINED
8.55	28	246.92	3.50	1.42	0.83	sand to silty sand	>90	44-46	>50	UNDEFINED
8.85	29	215.55	6.21	2.88	0.85	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
9.15	30	309.43	3.95	1.28	0.88	sand	>90	46-48	>50	UNDEFINED
9.45	31	233.54	5.45	2.34	0.90	silty sand to sandy silt	>90	44-46	>50	UNDEFINED

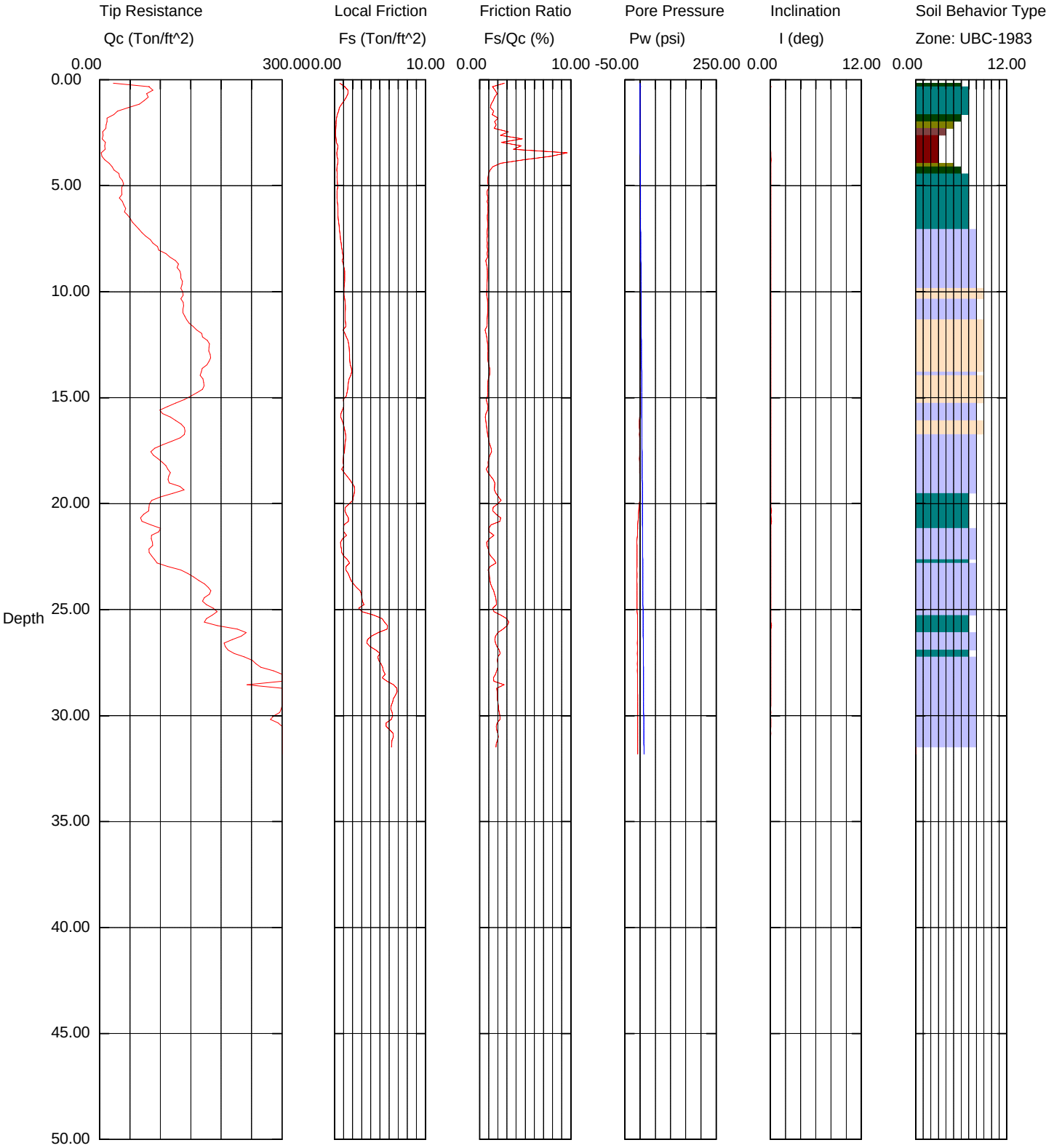
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC03
Cone Used: 739

CPT Date/Time: 09-01-02 08:33
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Maximum Depth = 31.82 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN CPT Date :09-01-02 08:33
On Site Loc:WEBB TRACT BORRW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	70.21	1.19	1.69	0.03	silty sand to sandy silt	>90	>48	22	UNDEFINED
0.60	2	31.64	0.43	1.37	0.08	sandy silt to clayey silt	UNDFND	UNDFD	12	2.63
0.95	3	7.59	0.20	2.70	0.15	silty clay to clay	UNDFND	UNDFD	5	.62
1.25	4	10.02	0.33	3.26	0.20	silty clay to clay	UNDFND	UNDFD	6	.81
1.55	5	33.63	0.33	0.97	0.22	silty sand to sandy silt	50-60	42-44	11	UNDEFINED
1.85	6	37.64	0.33	0.88	0.25	silty sand to sandy silt	50-60	42-44	12	UNDEFINED
2.15	7	52.55	0.46	0.88	0.27	silty sand to sandy silt	60-70	42-44	17	UNDEFINED
2.45	8	84.89	0.72	0.85	0.30	sand to silty sand	70-80	44-46	20	UNDEFINED
2.75	9	123.04	0.99	0.80	0.33	sand to silty sand	80-90	46-48	29	UNDEFINED
3.05	10	134.80	1.11	0.82	0.35	sand to silty sand	>90	46-48	32	UNDEFINED
3.35	11	136.70	1.17	0.86	0.38	sand to silty sand	80-90	46-48	33	UNDEFINED
3.65	12	151.97	1.17	0.77	0.40	sand	>90	46-48	29	UNDEFINED
3.95	13	178.08	1.55	0.87	0.43	sand	>90	46-48	34	UNDEFINED
4.25	14	173.36	1.78	1.03	0.46	sand	>90	46-48	33	UNDEFINED
4.55	15	165.36	1.48	0.89	0.48	sand	>90	46-48	32	UNDEFINED
4.85	16	115.82	0.90	0.78	0.51	sand to silty sand	80-90	44-46	28	UNDEFINED
5.15	17	135.17	1.10	0.81	0.53	sand to silty sand	80-90	44-46	32	UNDEFINED
5.45	18	96.95	1.10	1.13	0.56	sand to silty sand	70-80	42-44	23	UNDEFINED
5.75	19	111.08	1.16	1.04	0.59	sand to silty sand	70-80	42-44	27	UNDEFINED
6.05	20	115.25	2.10	1.82	0.61	silty sand to sandy silt	70-80	42-44	37	UNDEFINED
6.40	21	76.79	1.35	1.76	0.64	silty sand to sandy silt	60-70	40-42	25	UNDEFINED
6.70	22	90.30	0.95	1.05	0.67	sand to silty sand	60-70	42-44	22	UNDEFINED
7.00	23	90.91	1.17	1.29	0.69	sand to silty sand	60-70	42-44	22	UNDEFINED
7.35	24	161.55	1.95	1.21	0.72	sand to silty sand	80-90	44-46	39	UNDEFINED
7.65	25	179.63	3.00	1.67	0.75	sand to silty sand	80-90	44-46	43	UNDEFINED
7.95	26	199.01	5.25	2.64	0.77	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
8.25	27	216.01	4.13	1.91	0.80	sand to silty sand	>90	44-46	>50	UNDEFINED
8.55	28	269.51	5.17	1.92	0.83	sand to silty sand	>90	46-48	>50	UNDEFINED
8.85	29	337.52	6.33	1.87	0.85	sand to silty sand	>90	46-48	>50	UNDEFINED
9.15	30	307.01	6.34	2.06	0.88	sand to silty sand	>90	46-48	>50	UNDEFINED
9.45	31	307.20	6.10	1.99	0.90	sand to silty sand	>90	46-48	>50	UNDEFINED

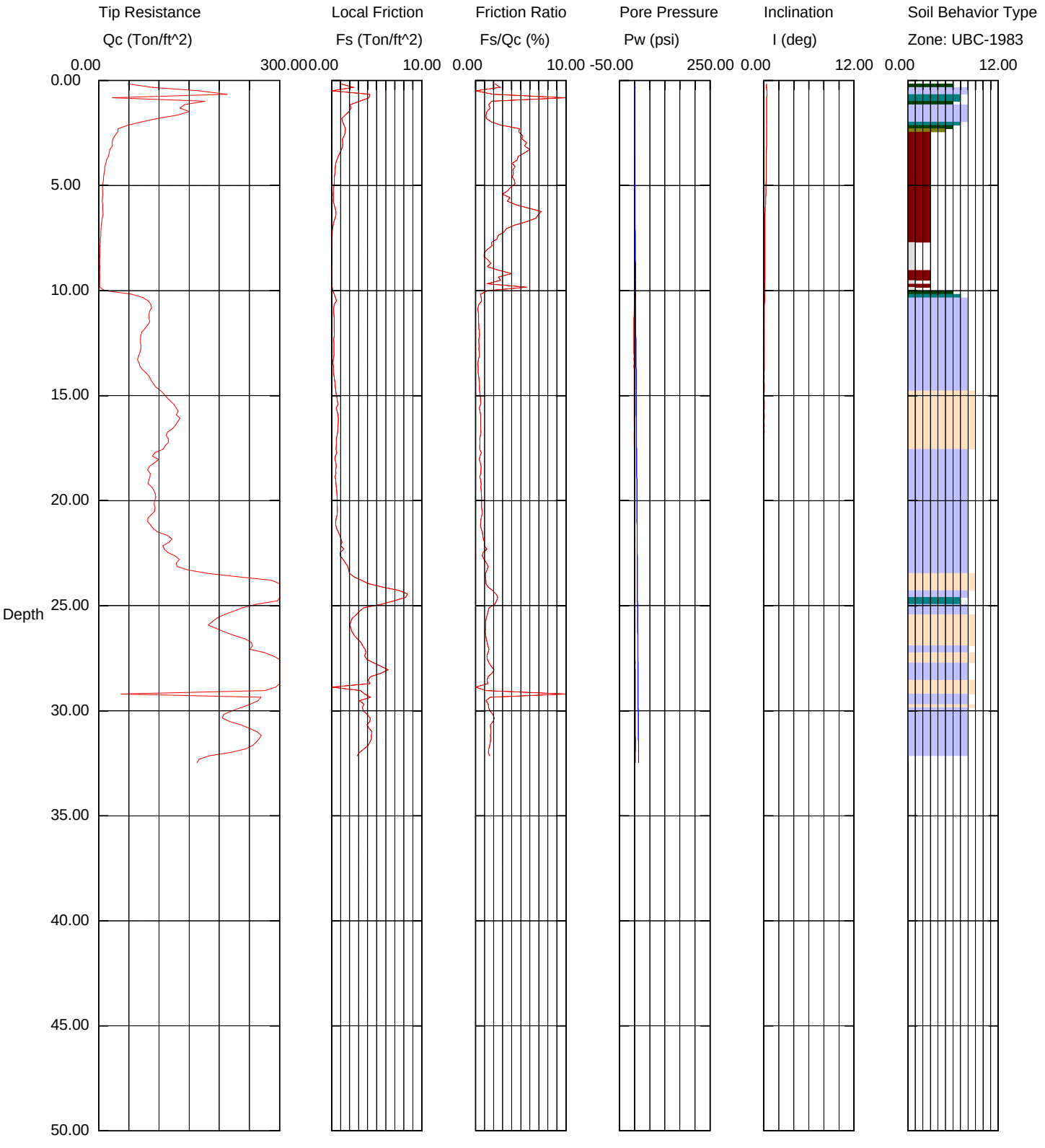
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC04
Cone Used: 739

CPT Date/Time: 08-31-02 10:18
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Maximum Depth = 32.48 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN CPT Date :08-31-02 10:18
On Site Loc:WEBB TRACT BORRW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	119.23	2.50	2.09	0.03	silty sand to sandy silt	>90	>48	38	UNDEFINED
0.60	2	120.77	1.68	1.39	0.08	sand to silty sand	>90	>48	29	UNDEFINED
0.95	3	29.64	1.37	4.61	0.15	clay	UNDFND	UNDFD	28	2.45
1.25	4	14.40	0.72	4.98	0.20	clay	UNDFND	UNDFD	14	1.18
1.55	5	7.93	0.33	4.16	0.22	clay	UNDFND	UNDFD	8	.63
1.85	6	6.38	0.26	4.02	0.25	clay	UNDFND	UNDFD	6	.50
2.15	7	5.42	0.33	6.04	0.27	clay	UNDFND	UNDFD	5	.42
2.45	8	2.74	0.06	2.23	0.30	clay	UNDFND	UNDFD	3	.19
2.75	9	1.78	0.03	1.43	0.33	sensitive fine grained	UNDFND	UNDFD	1	.10
3.05	10	3.06	0.06	2.11	0.35	clay	UNDFND	UNDFD	3	.20
3.35	11	78.07	0.35	0.45	0.38	sand to silty sand	70-80	44-46	19	UNDEFINED
3.65	12	80.21	0.29	0.36	0.40	sand to silty sand	70-80	44-46	19	UNDEFINED
3.95	13	69.29	0.27	0.40	0.43	sand to silty sand	60-70	42-44	17	UNDEFINED
4.25	14	69.66	0.22	0.31	0.46	sand to silty sand	60-70	42-44	17	UNDEFINED
4.55	15	94.60	0.41	0.43	0.48	sand to silty sand	70-80	42-44	23	UNDEFINED
4.85	16	124.23	0.65	0.52	0.51	sand	80-90	44-46	24	UNDEFINED
5.15	17	123.44	0.71	0.58	0.53	sand	80-90	44-46	24	UNDEFINED
5.45	18	104.98	0.53	0.50	0.56	sand	70-80	42-44	20	UNDEFINED
5.75	19	87.78	0.47	0.54	0.59	sand to silty sand	70-80	42-44	21	UNDEFINED
6.05	20	88.73	0.55	0.62	0.61	sand to silty sand	70-80	42-44	21	UNDEFINED
6.40	21	88.58	0.59	0.67	0.64	sand to silty sand	60-70	42-44	21	UNDEFINED
6.70	22	104.33	0.82	0.79	0.67	sand to silty sand	70-80	42-44	25	UNDEFINED
7.00	23	119.94	1.20	1.00	0.69	sand to silty sand	70-80	42-44	29	UNDEFINED
7.35	24	247.18	3.02	1.22	0.72	sand	>90	46-48	47	UNDEFINED
7.65	25	316.72	6.69	2.11	0.75	sand to silty sand	>90	46-48	>50	UNDEFINED
7.95	26	198.81	2.42	1.21	0.77	sand	>90	44-46	38	UNDEFINED
8.25	27	239.03	3.02	1.26	0.80	sand	>90	44-46	46	UNDEFINED
8.55	28	298.94	4.63	1.55	0.83	sand to silty sand	>90	46-48	>50	UNDEFINED
8.85	29	301.33	3.55	1.18	0.85	sand	>90	46-48	>50	UNDEFINED
9.15	30	212.81	3.60	1.69	0.88	sand to silty sand	>90	44-46	>50	UNDEFINED
9.45	31	229.62	4.18	1.82	0.90	sand to silty sand	>90	44-46	>50	UNDEFINED
9.75	32	252.44	3.97	1.57	0.93	sand to silty sand	>90	44-46	>50	UNDEFINED

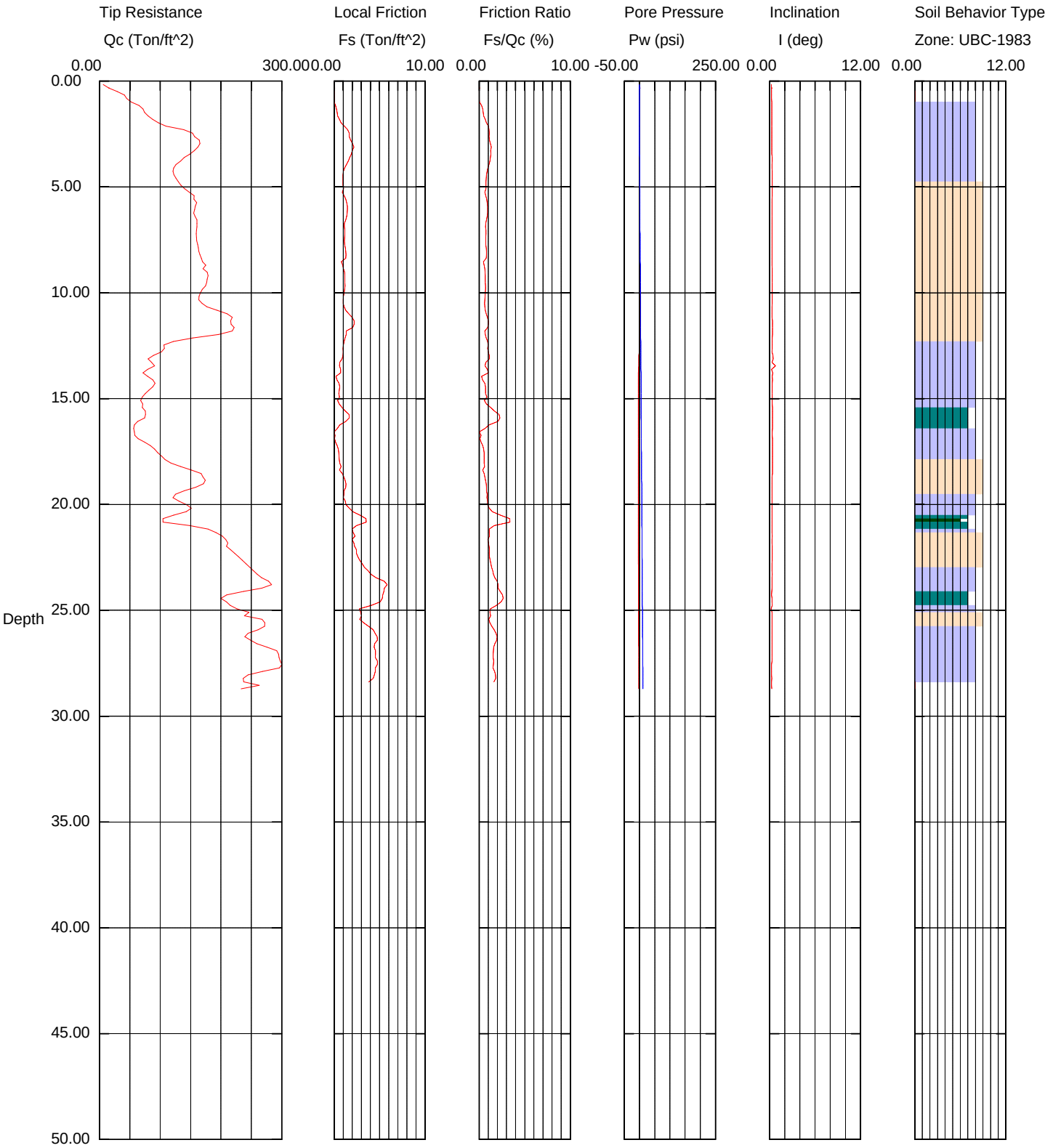
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC05
Cone Used: 739

CPT Date/Time: 09-01-02 09:19
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Maximum Depth = 28.71 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN CPT Date :09-01-02 09:19
On Site Loc:WEBB TRACT BORRW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	31.31	-0.01	-0.04	0.03	undefined	UNDFND	UNDFD	UDF	UNDEFINED
0.60	2	79.28	0.43	0.54	0.08	sand to silty sand	>90	>48	19	UNDEFINED
0.95	3	149.84	1.72	1.15	0.15	sand to silty sand	>90	>48	36	UNDEFINED
1.25	4	137.69	1.62	1.18	0.20	sand to silty sand	>90	>48	33	UNDEFINED
1.55	5	128.82	1.01	0.78	0.22	sand to silty sand	>90	>48	31	UNDEFINED
1.85	6	155.42	1.27	0.82	0.25	sand	>90	>48	30	UNDEFINED
2.15	7	158.84	1.27	0.80	0.27	sand	>90	>48	30	UNDEFINED
2.45	8	160.97	1.20	0.75	0.30	sand	>90	46-48	31	UNDEFINED
2.75	9	170.79	1.10	0.64	0.33	sand	>90	46-48	33	UNDEFINED
3.05	10	173.66	1.19	0.68	0.35	sand	>90	46-48	33	UNDEFINED
3.35	11	179.47	1.18	0.66	0.38	sand	>90	46-48	34	UNDEFINED
3.65	12	214.51	1.85	0.86	0.40	sand	>90	46-48	41	UNDEFINED
3.95	13	113.04	1.06	0.94	0.43	sand to silty sand	80-90	44-46	27	UNDEFINED
4.25	14	81.09	0.63	0.77	0.46	sand to silty sand	70-80	42-44	19	UNDEFINED
4.55	15	82.20	0.53	0.65	0.48	sand to silty sand	70-80	42-44	20	UNDEFINED
4.85	16	72.45	1.07	1.48	0.51	silty sand to sandy silt	60-70	42-44	23	UNDEFINED
5.15	17	59.31	0.41	0.69	0.53	sand to silty sand	60-70	40-42	14	UNDEFINED
5.45	18	92.51	0.43	0.47	0.56	sand to silty sand	70-80	42-44	22	UNDEFINED
5.75	19	152.41	0.87	0.57	0.59	sand	80-90	44-46	29	UNDEFINED
6.05	20	141.03	1.18	0.84	0.61	sand	80-90	44-46	27	UNDEFINED
6.40	21	131.01	2.48	1.89	0.64	silty sand to sandy silt	80-90	44-46	42	UNDEFINED
6.70	22	200.10	2.14	1.07	0.67	sand	>90	44-46	38	UNDEFINED
7.00	23	231.71	2.80	1.21	0.69	sand	>90	46-48	44	UNDEFINED
7.35	24	263.64	4.97	1.88	0.72	sand to silty sand	>90	46-48	>50	UNDEFINED
7.65	25	217.53	4.25	1.95	0.75	sand to silty sand	>90	44-46	>50	UNDEFINED
7.95	26	259.26	3.62	1.39	0.77	sand to silty sand	>90	46-48	>50	UNDEFINED
8.25	27	268.19	4.57	1.71	0.80	sand to silty sand	>90	46-48	>50	UNDEFINED
8.55	28	284.03	4.59	1.62	0.83	sand to silty sand	>90	46-48	>50	UNDEFINED

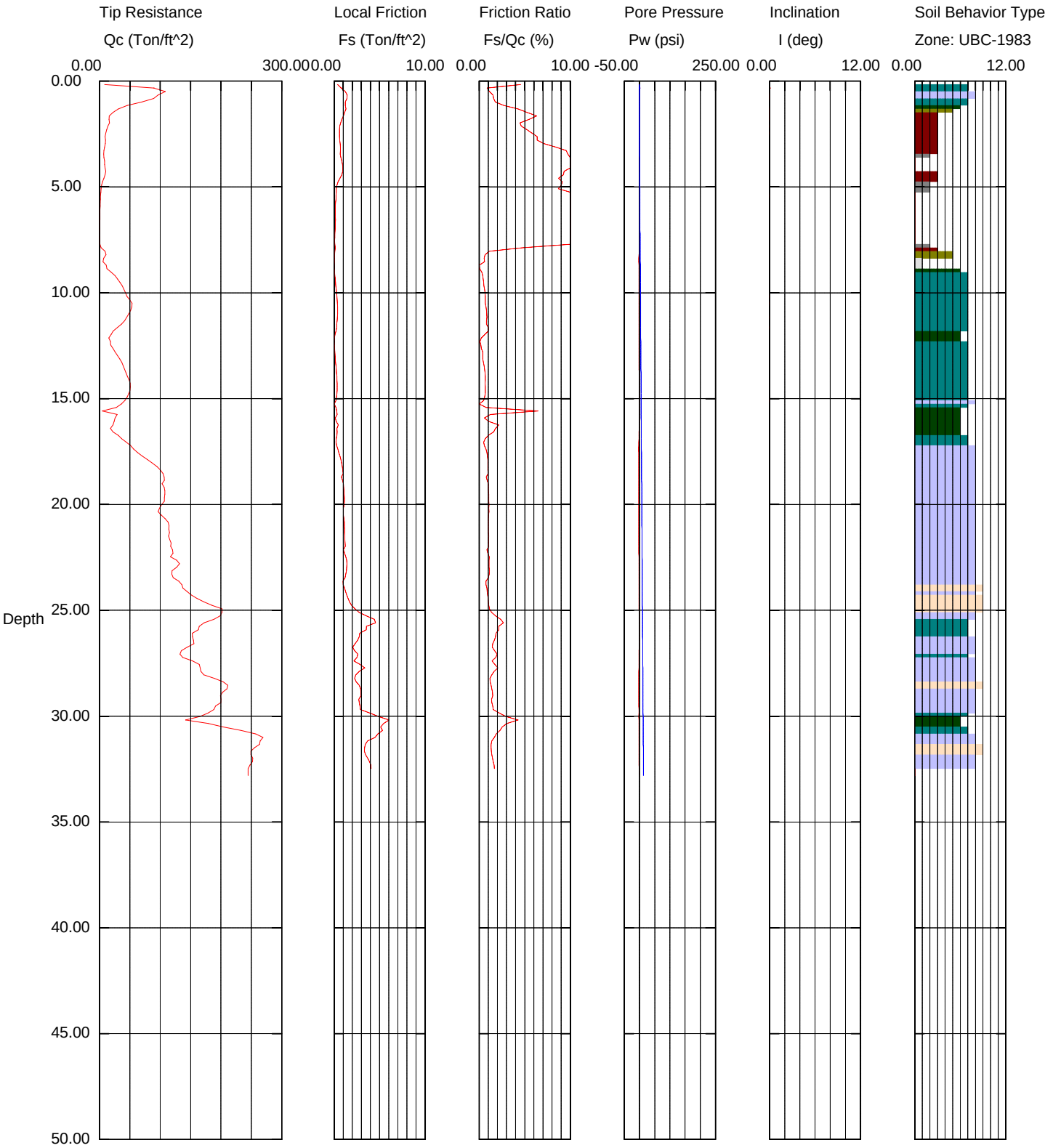
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC06
Cone Used: 739

CPT Date/Time: 09-01-02 12:08
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Maximum Depth = 32.81 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN CPT Date :09-01-02 12:08
On Site Loc:WEBB TRACT BORRW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	76.87	1.09	1.42	0.03	silty sand to sandy silt	>90	>48	25	UNDEFINED
0.60	2	24.49	1.06	4.32	0.08	silty clay to clay	UNDFND	UNDFD	16	2.03
0.95	3	10.39	0.63	6.11	0.15	clay	UNDFND	UNDFD	10	.85
1.25	4	7.86	0.81	10.35	0.20	undefined	UNDFND	UNDFD	UDF	UNDEFINED
1.55	5	6.42	0.58	9.09	0.22	undefined	UNDFND	UNDFD	UDF	UNDEFINED
1.85	6	1.38	0.19	13.87	0.25	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.15	7	0.43	0.14	33.23	0.27	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.45	8	2.15	0.10	4.67	0.30	clay	UNDFND	UNDFD	2	.14
2.75	9	10.95	0.03	0.29	0.33	sandy silt to clayey silt	UNDFND	UNDFD	4	.87
3.05	10	34.84	0.18	0.53	0.35	silty sand to sandy silt	50-60	40-42	11	UNDEFINED
3.35	11	50.24	0.37	0.74	0.38	silty sand to sandy silt	60-70	42-44	16	UNDEFINED
3.65	12	32.25	0.27	0.85	0.40	silty sand to sandy silt	40-50	40-42	10	UNDEFINED
3.95	13	21.56	0.06	0.28	0.43	silty sand to sandy silt	<40	36-38	7	UNDEFINED
4.25	14	39.93	0.23	0.57	0.46	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
4.55	15	48.92	0.32	0.66	0.48	silty sand to sandy silt	50-60	40-42	16	UNDEFINED
4.85	16	27.42	0.20	0.73	0.51	silty sand to sandy silt	<40	38-40	9	UNDEFINED
5.15	17	25.66	0.33	1.27	0.53	sandy silt to clayey silt	UNDFND	UNDFD	10	2.06
5.45	18	60.56	0.48	0.79	0.56	sand to silty sand	60-70	40-42	15	UNDEFINED
5.75	19	99.85	0.91	0.91	0.59	sand to silty sand	70-80	42-44	24	UNDEFINED
6.05	20	106.28	1.10	1.03	0.61	sand to silty sand	70-80	42-44	25	UNDEFINED
6.40	21	104.89	1.09	1.04	0.64	sand to silty sand	70-80	42-44	25	UNDEFINED
6.70	22	115.62	1.19	1.03	0.67	sand to silty sand	70-80	42-44	28	UNDEFINED
7.00	23	123.88	1.28	1.03	0.69	sand to silty sand	70-80	42-44	30	UNDEFINED
7.35	24	129.52	1.18	0.91	0.72	sand to silty sand	70-80	42-44	31	UNDEFINED
7.65	25	178.58	1.95	1.09	0.75	sand	80-90	44-46	34	UNDEFINED
7.95	26	173.08	3.74	2.16	0.77	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
8.25	27	145.65	2.43	1.67	0.80	sand to silty sand	80-90	42-44	35	UNDEFINED
8.55	28	159.80	2.68	1.68	0.83	sand to silty sand	80-90	42-44	38	UNDEFINED
8.85	29	202.48	2.72	1.34	0.85	sand to silty sand	80-90	44-46	48	UNDEFINED
9.15	30	187.26	3.34	1.79	0.88	sand to silty sand	80-90	44-46	45	UNDEFINED
9.45	31	213.97	5.21	2.44	0.90	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
9.75	32	255.60	3.49	1.37	0.93	sand	>90	44-46	49	UNDEFINED

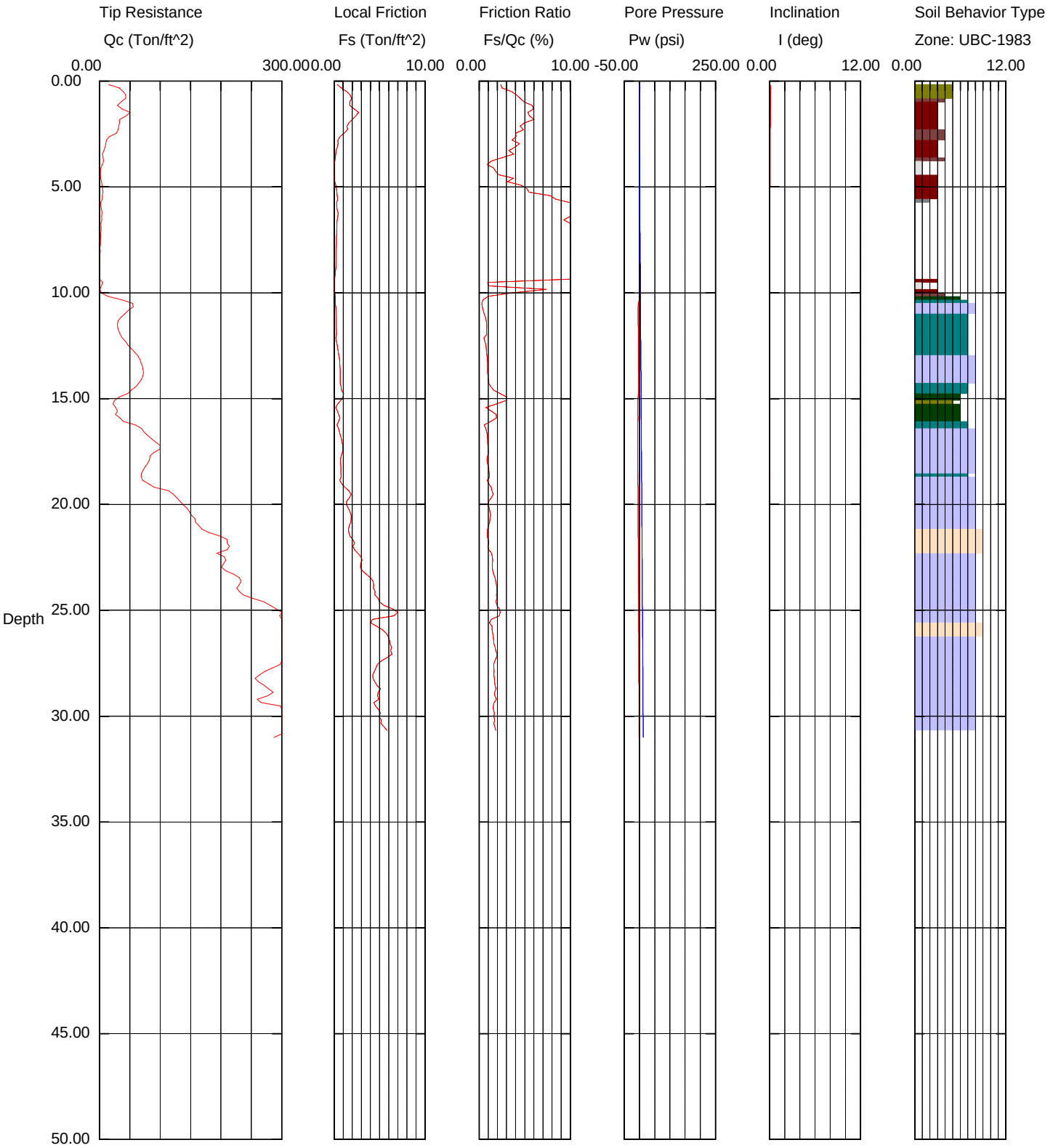
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC07
Cone Used: 739

CPT Date/Time: 09-01-02 11:07
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Maximum Depth = 31.00 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN CPT Date :09-01-02 11:07
On Site Loc:WEBB TRACT BORRW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	34.56	1.33	3.85	0.03	clayey silt to silty clay	UNDFND	UNDFD	17	2.87
0.60	2	37.83	2.11	5.58	0.08	clay	UNDFND	UNDFD	36	3.14
0.95	3	19.67	0.85	4.31	0.15	clay	UNDFND	UNDFD	19	1.62
1.25	4	5.22	0.12	2.33	0.20	undefined	UNDFND	UNDFD	UDF	UNDEFINED
1.55	5	2.90	0.11	3.92	0.22	clay	UNDFND	UNDFD	3	.21
1.85	6	3.68	0.33	9.03	0.25	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.15	7	3.23	0.36	11.22	0.27	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.45	8	1.51	0.26	17.36	0.30	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.75	9	0.54	0.19	35.77	0.33	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.05	10	2.07	0.07	3.35	0.35	clay	UNDFND	UNDFD	2	.12
3.35	11	41.63	0.18	0.43	0.38	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
3.65	12	31.72	0.25	0.79	0.40	silty sand to sandy silt	40-50	38-40	10	UNDEFINED
3.95	13	49.84	0.37	0.74	0.43	silty sand to sandy silt	50-60	40-42	16	UNDEFINED
4.25	14	69.95	0.65	0.93	0.46	sand to silty sand	60-70	42-44	17	UNDEFINED
4.55	15	53.84	0.83	1.55	0.48	silty sand to sandy silt	50-60	40-42	17	UNDEFINED
4.85	16	27.16	0.47	1.75	0.51	sandy silt to clayey silt	UNDFND	UNDFD	10	2.18
5.15	17	67.50	0.57	0.85	0.53	sand to silty sand	60-70	42-44	16	UNDEFINED
5.45	18	91.09	0.86	0.95	0.56	sand to silty sand	70-80	42-44	22	UNDEFINED
5.75	19	72.60	0.73	1.01	0.59	sand to silty sand	60-70	40-42	17	UNDEFINED
6.05	20	110.77	1.44	1.30	0.61	sand to silty sand	70-80	42-44	27	UNDEFINED
6.40	21	151.25	1.71	1.13	0.64	sand to silty sand	80-90	44-46	36	UNDEFINED
6.70	22	196.90	1.89	0.96	0.67	sand	>90	44-46	38	UNDEFINED
7.00	23	203.44	2.79	1.37	0.69	sand to silty sand	>90	44-46	49	UNDEFINED
7.35	24	225.20	4.01	1.78	0.72	sand to silty sand	>90	44-46	>50	UNDEFINED
7.65	25	272.57	5.53	2.03	0.75	sand to silty sand	>90	46-48	>50	UNDEFINED
7.95	26	342.78	5.10	1.49	0.77	sand to silty sand	>90	46-48	>50	UNDEFINED
8.25	27	362.32	6.18	1.71	0.80	sand to silty sand	>90	46-48	>50	UNDEFINED
8.55	28	288.23	4.85	1.68	0.83	sand to silty sand	>90	46-48	>50	UNDEFINED
8.85	29	271.61	4.70	1.73	0.85	sand to silty sand	>90	44-46	>50	UNDEFINED
9.15	30	290.98	4.79	1.65	0.88	sand to silty sand	>90	46-48	>50	UNDEFINED
9.45	31	309.69	-10919.06	-3525.79	0.90	undefined	UNDFND	UNDFD	UDF	UNDEFINED

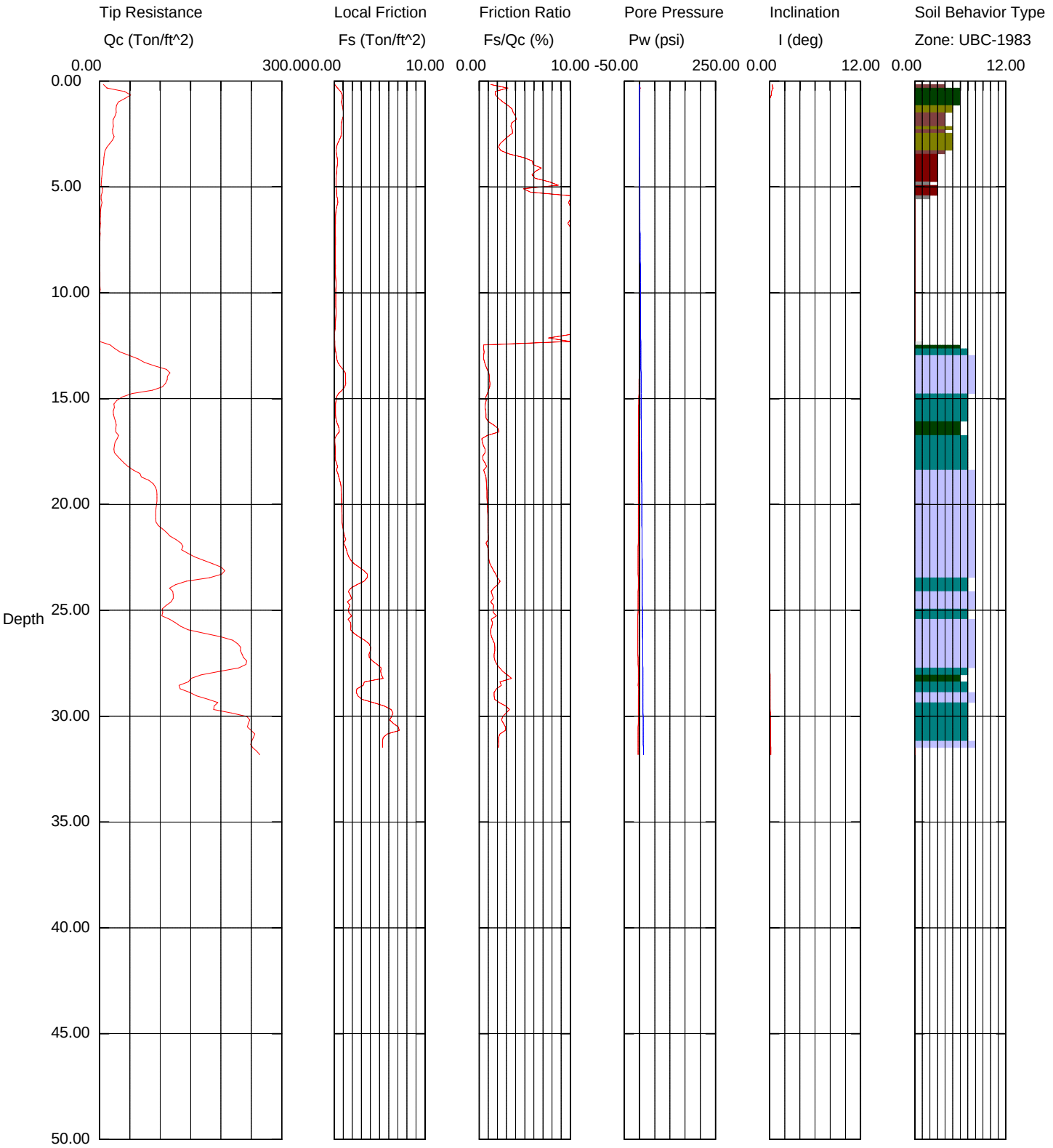
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC08
Cone Used: 739

CPT Date/Time: 09-02-02 13:19
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Maximum Depth = 31.82 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN CPT Date :09-02-02 13:19
On Site Loc:WEBB TRACT BORRW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	30.66	0.64	2.07	0.03	sandy silt to clayey silt	UNDFND	UNDFD	12	2.55
0.60	2	25.52	0.94	3.68	0.08	clayey silt to silty clay	UNDFND	UNDFD	12	2.11
0.95	3	20.08	0.62	3.10	0.15	clayey silt to silty clay	UNDFND	UNDFD	10	1.66
1.25	4	7.09	0.32	4.58	0.20	clay	UNDFND	UNDFD	7	.57
1.55	5	3.78	0.24	6.27	0.22	clay	UNDFND	UNDFD	4	.29
1.85	6	3.20	0.33	10.22	0.25	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.15	7	1.32	0.17	12.66	0.27	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.45	8	0.54	0.16	29.81	0.30	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.75	9	0.34	0.16	46.90	0.33	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.05	10	0.81	0.19	23.85	0.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.35	11	0.32	0.20	61.98	0.38	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.65	12	0.25	0.13	52.41	0.40	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.95	13	21.00	0.13	0.62	0.43	sandy silt to clayey silt	UNDFND	UNDFD	8	1.69
4.25	14	94.31	0.81	0.86	0.46	sand to silty sand	70-80	44-46	23	UNDEFINED
4.55	15	83.65	0.90	1.07	0.48	sand to silty sand	70-80	42-44	20	UNDEFINED
4.85	16	24.45	0.18	0.72	0.51	silty sand to sandy silt	<40	36-38	8	UNDEFINED
5.15	17	27.91	0.37	1.32	0.53	sandy silt to clayey silt	UNDFND	UNDFD	11	2.24
5.45	18	26.98	0.13	0.48	0.56	silty sand to sandy silt	<40	36-38	9	UNDEFINED
5.75	19	59.93	0.42	0.69	0.59	sand to silty sand	50-60	40-42	14	UNDEFINED
6.05	20	93.14	0.79	0.85	0.61	sand to silty sand	70-80	42-44	22	UNDEFINED
6.40	21	93.43	0.88	0.94	0.64	sand to silty sand	70-80	42-44	22	UNDEFINED
6.70	22	121.34	1.13	0.93	0.67	sand to silty sand	70-80	42-44	29	UNDEFINED
7.00	23	165.74	1.88	1.14	0.69	sand to silty sand	80-90	44-46	40	UNDEFINED
7.35	24	156.12	2.84	1.82	0.72	silty sand to sandy silt	80-90	44-46	50	UNDEFINED
7.65	25	113.01	1.68	1.49	0.75	sand to silty sand	70-80	42-44	27	UNDEFINED
7.95	26	132.40	1.86	1.41	0.77	sand to silty sand	70-80	42-44	32	UNDEFINED
8.25	27	224.15	3.63	1.62	0.80	sand to silty sand	>90	44-46	>50	UNDEFINED
8.55	28	219.11	4.72	2.16	0.83	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
8.85	29	144.74	3.25	2.25	0.85	silty sand to sandy silt	70-80	42-44	46	UNDEFINED
9.15	30	201.71	5.32	2.64	0.88	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
9.45	31	249.06	6.35	2.55	0.90	silty sand to sandy silt	>90	44-46	>50	UNDEFINED

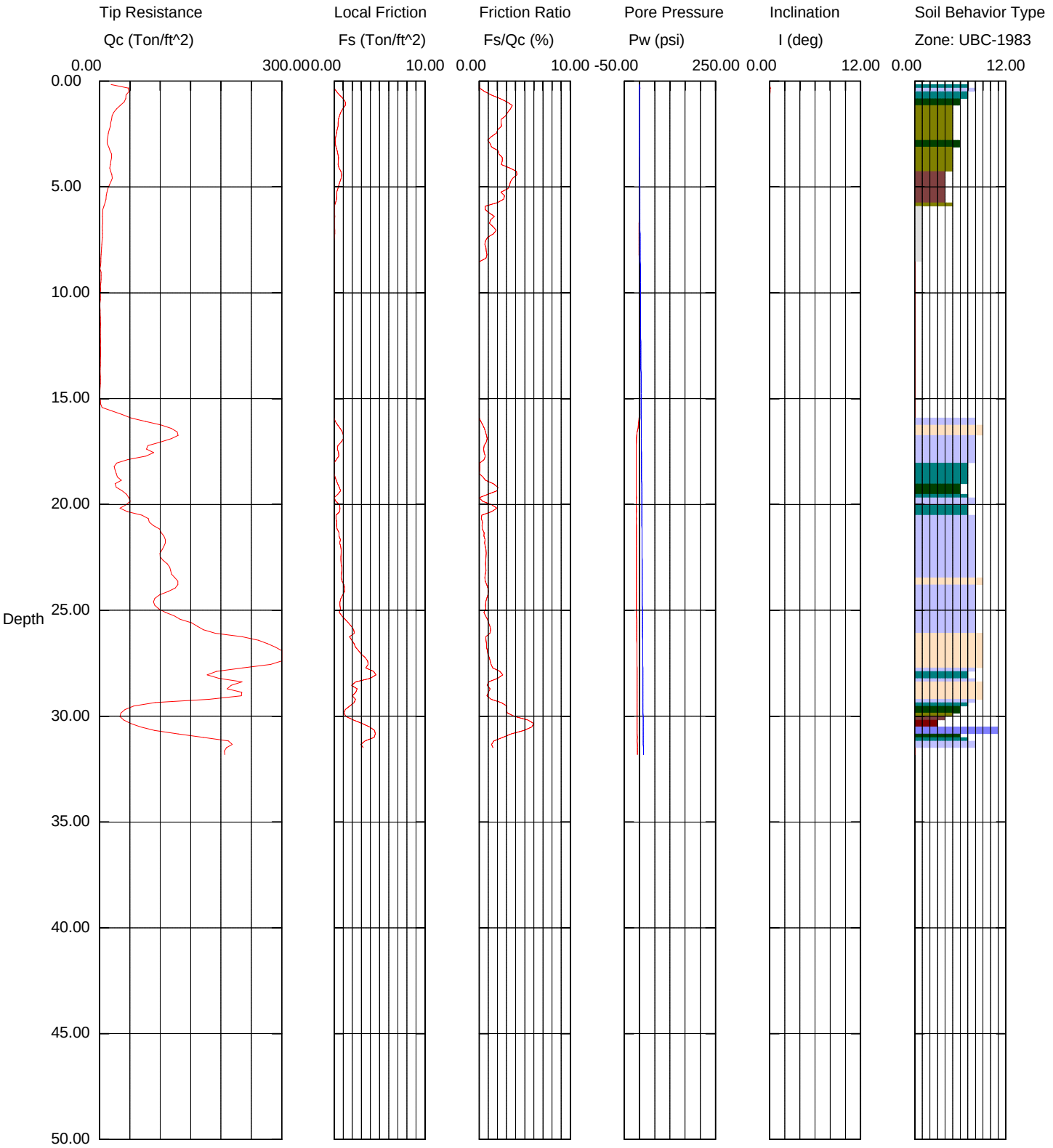
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC09
Cone Used: 739

CPT Date/Time: 09-01-02 10:04
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Maximum Depth = 31.82 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN CPT Date :09-01-02 10:04
On Site Loc:WEBB TRACT BORRW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	40.34	0.52	1.29	0.03	silty sand to sandy silt	>90	>48	13	UNDEFINED
0.60	2	24.06	0.74	3.08	0.08	clayey silt to silty clay	UNDFND	UNDFD	12	1.99
0.95	3	14.73	0.25	1.67	0.15	clayey silt to silty clay	UNDFND	UNDFD	7	1.21
1.25	4	18.42	0.46	2.51	0.20	clayey silt to silty clay	UNDFND	UNDFD	9	1.51
1.55	5	17.98	0.66	3.68	0.22	silty clay to clay	UNDFND	UNDFD	11	1.47
1.85	6	9.28	0.19	2.07	0.25	clayey silt to silty clay	UNDFND	UNDFD	4	.74
2.15	7	5.06	0.07	1.42	0.27	sensitive fine grained	UNDFND	UNDFD	2	.39
2.45	8	4.04	0.04	0.93	0.30	sensitive fine grained	UNDFND	UNDFD	2	.30
2.75	9	1.98	-0.00	-0.22	0.33	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.05	10	2.03	-0.02	-0.81	0.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.35	11	1.17	-0.02	-1.86	0.38	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.65	12	1.56	-0.03	-1.64	0.40	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.95	13	1.72	-0.02	-1.14	0.43	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.25	14	1.41	-0.02	-1.08	0.46	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.55	15	0.91	-0.01	-1.42	0.48	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.85	16	19.52	-0.01	-0.07	0.51	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.15	17	111.73	0.69	0.62	0.53	sand to silty sand	70-80	44-46	27	UNDEFINED
5.45	18	78.19	0.47	0.61	0.56	sand to silty sand	60-70	42-44	19	UNDEFINED
5.75	19	28.47	0.07	0.25	0.59	silty sand to sandy silt	<40	36-38	9	UNDEFINED
6.05	20	38.90	0.39	1.00	0.61	silty sand to sandy silt	40-50	38-40	12	UNDEFINED
6.40	21	63.44	0.41	0.64	0.64	sand to silty sand	60-70	40-42	15	UNDEFINED
6.70	22	104.88	0.58	0.56	0.67	sand to silty sand	70-80	42-44	25	UNDEFINED
7.00	23	105.63	0.78	0.74	0.69	sand to silty sand	70-80	42-44	25	UNDEFINED
7.35	24	122.13	0.96	0.79	0.72	sand to silty sand	70-80	42-44	29	UNDEFINED
7.65	25	95.98	0.71	0.74	0.75	sand to silty sand	60-70	42-44	23	UNDEFINED
7.95	26	154.99	1.66	1.07	0.77	sand to silty sand	80-90	44-46	37	UNDEFINED
8.25	27	279.48	2.32	0.83	0.80	sand	>90	46-48	>50	UNDEFINED
8.55	28	250.04	3.88	1.55	0.83	sand to silty sand	>90	44-46	>50	UNDEFINED
8.85	29	220.96	2.54	1.15	0.85	sand	>90	44-46	42	UNDEFINED
9.15	30	73.14	1.66	2.27	0.88	sandy silt to clayey silt	UNDFND	UNDFD	28	5.95
9.45	31	91.63	3.75	4.09	0.90	clayey silt to silty clay	UNDFND	UNDFD	44	7.49

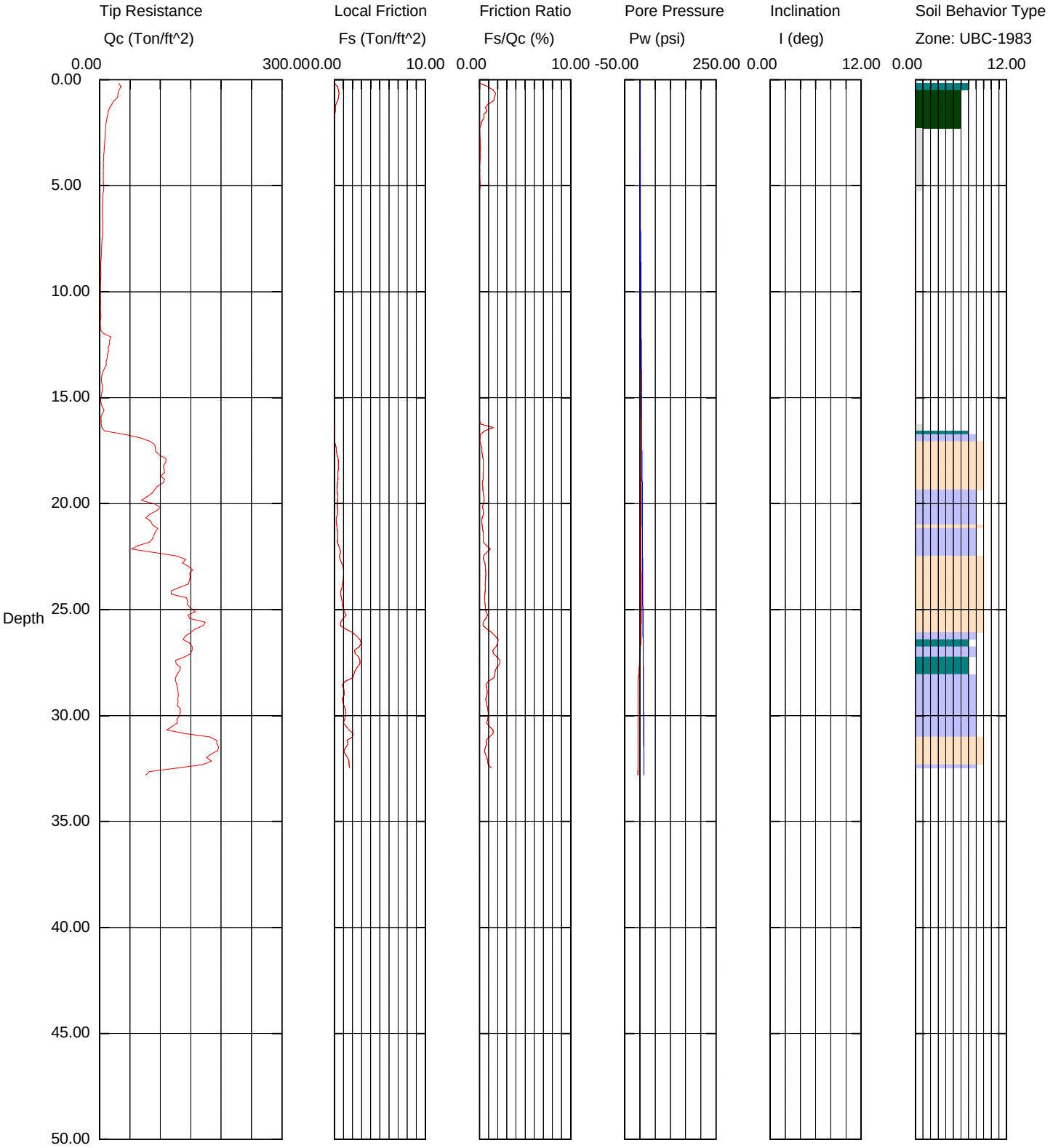
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC10
Cone Used: 739

CPT Date/Time: 09-01-02 12:44
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Maximum Depth = 32.81 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN CPT Date :09-01-02 12:44
On Site Loc:WEBB TRACT BORRW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	30.38	0.37	1.22	0.03	sandy silt to clayey silt	UNDFND	UNDFD	12	2.52
0.60	2	14.75	0.10	0.65	0.08	sandy silt to clayey silt	UNDFND	UNDFD	6	1.22
0.95	3	9.20	0.01	0.07	0.15	sensitive fine grained	UNDFND	UNDFD	4	.75
1.25	4	6.74	0.00	0.07	0.20	sensitive fine grained	UNDFND	UNDFD	3	.54
1.55	5	6.29	0.00	0.05	0.22	sensitive fine grained	UNDFND	UNDFD	3	.50
1.85	6	5.33	-0.02	-0.31	0.25	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.15	7	4.86	-0.02	-0.43	0.27	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.45	8	3.93	-0.03	-0.75	0.30	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.75	9	2.25	-0.03	-1.49	0.33	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.05	10	1.79	-0.01	-0.78	0.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.35	11	1.70	-0.01	-0.68	0.38	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.65	12	2.34	-0.02	-0.73	0.40	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.95	13	15.63	-0.02	-0.13	0.43	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.25	14	8.59	-0.01	-0.15	0.46	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.55	15	3.74	-0.01	-0.30	0.48	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.85	16	3.78	-0.01	-0.22	0.51	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.15	17	20.95	0.03	0.15	0.53	silty sand to sandy silt	<40	36-38	7	UNDEFINED
5.45	18	94.39	0.23	0.24	0.56	sand	70-80	42-44	18	UNDEFINED
5.75	19	105.75	0.43	0.41	0.59	sand	70-80	42-44	20	UNDEFINED
6.05	20	87.01	0.35	0.40	0.61	sand to silty sand	60-70	42-44	21	UNDEFINED
6.40	21	87.62	0.31	0.35	0.64	sand to silty sand	60-70	42-44	21	UNDEFINED
6.70	22	84.98	0.38	0.44	0.67	sand to silty sand	60-70	42-44	20	UNDEFINED
7.00	23	115.59	0.72	0.62	0.69	sand to silty sand	70-80	42-44	28	UNDEFINED
7.35	24	142.07	0.94	0.66	0.72	sand	80-90	44-46	27	UNDEFINED
7.65	25	142.94	0.88	0.62	0.75	sand	80-90	42-44	27	UNDEFINED
7.95	26	157.54	1.17	0.74	0.77	sand	80-90	44-46	30	UNDEFINED
8.25	27	146.70	2.59	1.77	0.80	sand to silty sand	80-90	42-44	35	UNDEFINED
8.55	28	130.73	2.54	1.94	0.83	silty sand to sandy silt	70-80	42-44	42	UNDEFINED
8.85	29	127.26	1.22	0.96	0.85	sand to silty sand	70-80	42-44	30	UNDEFINED
9.15	30	130.40	1.10	0.85	0.88	sand to silty sand	70-80	42-44	31	UNDEFINED
9.45	31	134.08	1.53	1.14	0.90	sand to silty sand	70-80	42-44	32	UNDEFINED
9.75	32	189.13	1.32	0.70	0.93	sand	80-90	44-46	36	UNDEFINED

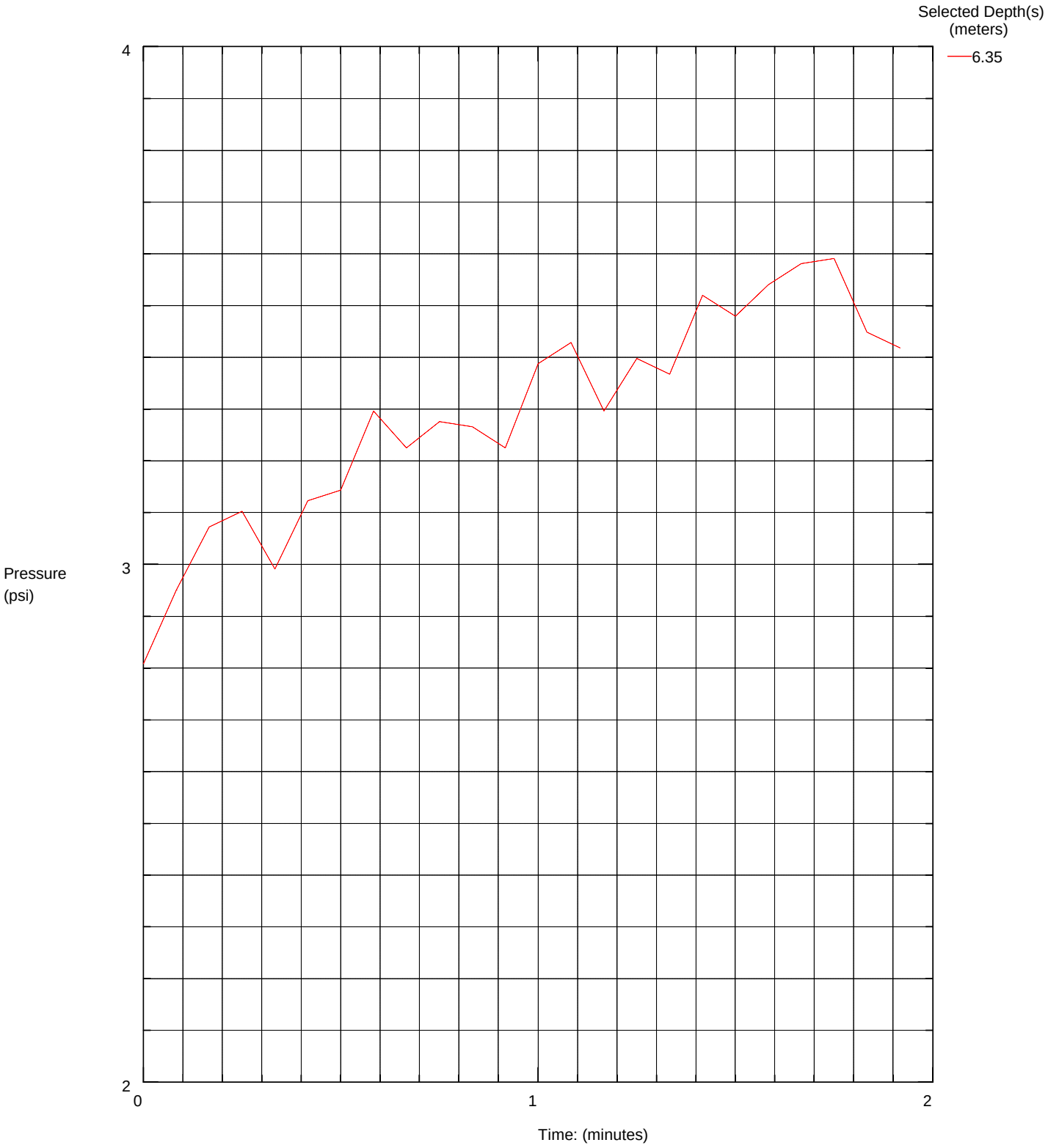
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: WTSC10
Cone Used: 739

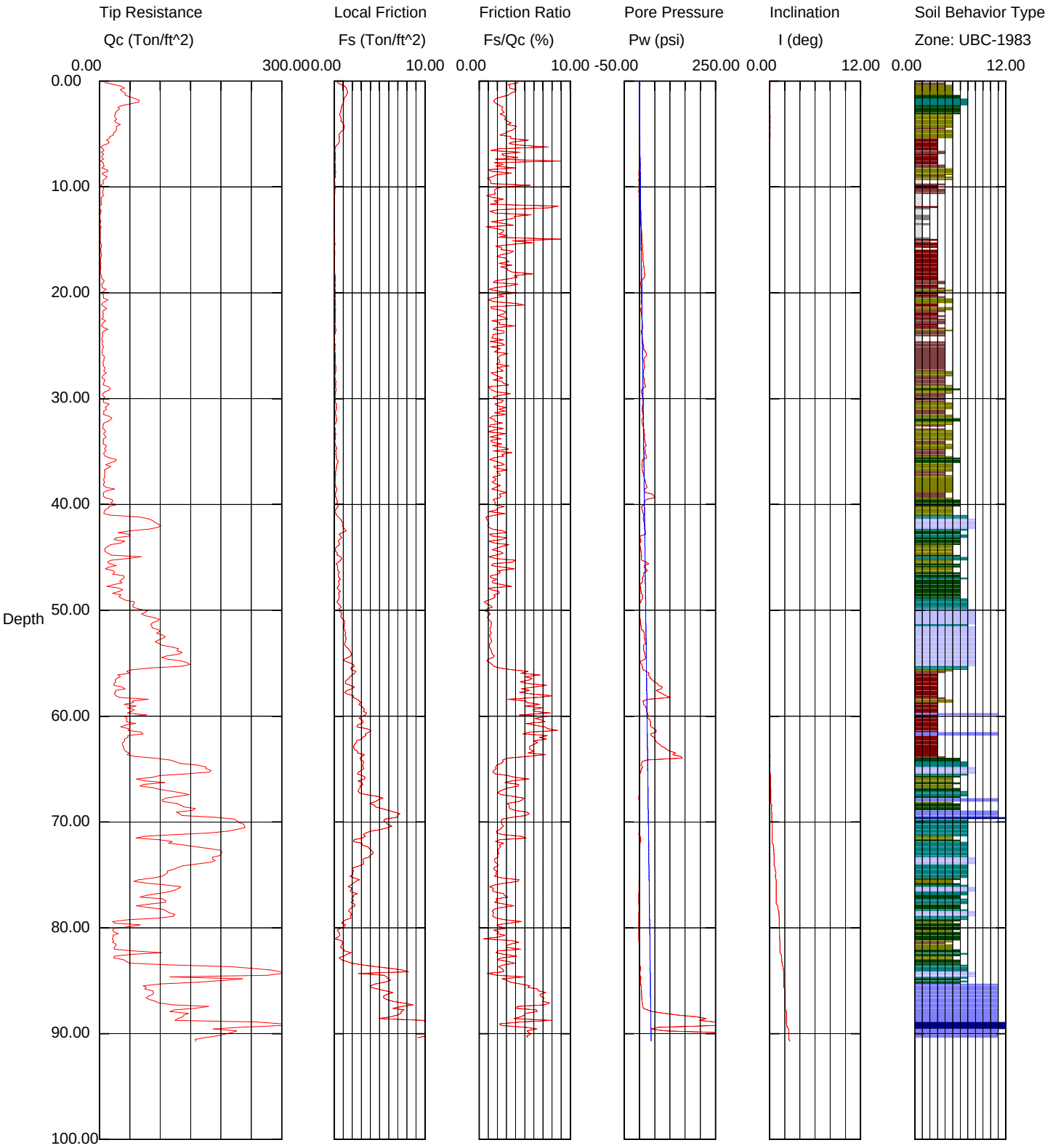
CPT Date/Time: 09-01-02 12:44
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC11
Cone Used: 739

CPT Date/Time: 09-02-02 08:26
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Maximum Depth = 90.72 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN CPT Date :09-02-02 08:26
On Site Loc:WEBB TRACT BORRW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	30.17	1.10	3.63	0.03	clayey silt to silty clay	UNDFND	UNDFD	14	2.51
0.60	2	53.44	1.21	2.27	0.08	sandy silt to clayey silt	UNDFND	UNDFD	20	4.44
0.95	3	33.79	0.79	2.34	0.15	sandy silt to clayey silt	UNDFND	UNDFD	13	2.80
1.25	4	27.63	0.84	3.03	0.20	clayey silt to silty clay	UNDFND	UNDFD	13	2.28
1.55	5	25.98	0.88	3.40	0.22	clayey silt to silty clay	UNDFND	UNDFD	12	2.14
1.85	6	13.49	0.52	3.85	0.25	silty clay to clay	UNDFND	UNDFD	9	1.09
2.15	7	4.75	0.13	2.70	0.27	clay	UNDFND	UNDFD	5	.36
2.45	8	5.30	0.14	2.55	0.30	clay	UNDFND	UNDFD	5	.40
2.75	9	8.85	0.15	1.74	0.33	clayey silt to silty clay	UNDFND	UNDFD	4	.69
3.05	10	6.02	0.09	1.55	0.35	sensitive fine grained	UNDFND	UNDFD	3	.45
3.35	11	5.48	0.08	1.55	0.38	sensitive fine grained	UNDFND	UNDFD	3	.40
3.65	12	2.00	0.05	2.28	0.40	sensitive fine grained	UNDFND	UNDFD	1	.11
3.95	13	1.38	0.03	2.18	0.43	sensitive fine grained	UNDFND	UNDFD	1	5.52
4.25	14	1.49	0.02	1.67	0.46	sensitive fine grained	UNDFND	UNDFD	1	6.00
4.55	15	1.33	0.04	3.26	0.48	organic material	UNDFND	UNDFD	1	4.12
4.85	16	2.35	0.07	3.09	0.51	clay	UNDFND	UNDFD	2	.12
5.15	17	2.51	0.07	2.79	0.53	clay	UNDFND	UNDFD	2	.13
5.45	18	1.95	0.06	2.87	0.56	clay	UNDFND	UNDFD	2	7.96
5.75	19	3.73	0.12	3.14	0.59	clay	UNDFND	UNDFD	4	.22
6.05	20	6.01	0.12	2.00	0.61	silty clay to clay	UNDFND	UNDFD	4	.40
6.40	21	7.08	0.14	2.01	0.64	silty clay to clay	UNDFND	UNDFD	5	.49
6.70	22	6.88	0.15	2.21	0.67	silty clay to clay	UNDFND	UNDFD	4	.47
7.00	23	6.02	0.13	2.14	0.69	silty clay to clay	UNDFND	UNDFD	4	.39
7.35	24	6.54	0.14	2.07	0.72	silty clay to clay	UNDFND	UNDFD	4	.43
7.65	25	4.83	0.09	1.85	0.75	silty clay to clay	UNDFND	UNDFD	3	.28
7.95	26	5.53	0.12	2.25	0.77	silty clay to clay	UNDFND	UNDFD	4	.33
8.25	27	6.93	0.16	2.24	0.80	silty clay to clay	UNDFND	UNDFD	4	.45
8.55	28	7.19	0.15	2.03	0.83	silty clay to clay	UNDFND	UNDFD	5	.46
8.85	29	10.38	0.18	1.73	0.85	clayey silt to silty clay	UNDFND	UNDFD	5	.72
9.15	30	8.11	0.15	1.89	0.88	silty clay to clay	UNDFND	UNDFD	5	.53
9.45	31	10.32	0.23	2.23	0.90	clayey silt to silty clay	UNDFND	UNDFD	5	.71
9.75	32	12.44	0.21	1.71	0.93	clayey silt to silty clay	UNDFND	UNDFD	6	.88
10.05	33	7.79	0.14	1.81	0.96	silty clay to clay	UNDFND	UNDFD	5	.49
10.35	34	8.17	0.14	1.68	0.98	clayey silt to silty clay	UNDFND	UNDFD	4	.52
10.65	35	8.82	0.19	2.10	1.01	silty clay to clay	UNDFND	UNDFD	6	.57
10.95	36	15.47	0.29	1.87	1.03	clayey silt to silty clay	UNDFND	UNDFD	7	1.11
11.25	37	12.64	0.28	2.18	1.06	clayey silt to silty clay	UNDFND	UNDFD	6	.87
11.55	38	7.99	0.15	1.83	1.09	silty clay to clay	UNDFND	UNDFD	5	.48

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E W1 Bureau of Reclamation
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Operator :TONY SHANAHAN On Site Loc:WEBB TRACT BORRW Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	11.23	0.21	1.90	1.11	clayey silt to silty clay	UNDFND	UNDFD	5	.75
12.15	40	13.88	0.25	1.83	1.14	clayey silt to silty clay	UNDFND	UNDFD	7	.96
12.45	41	13.69	0.27	2.01	1.16	clayey silt to silty clay	UNDFND	UNDFD	7	.94
12.80	42	76.64	0.73	0.95	1.19	sand to silty sand	50-60	38-40	18	UNDEFINED
13.10	43	60.13	0.95	1.59	1.22	silty sand to sandy silt	40-50	36-38	19	UNDEFINED
13.40	44	26.74	0.57	2.13	1.24	sandy silt to clayey silt	UNDFND	UNDFD	10	2.02
13.75	45	24.96	0.40	1.62	1.27	sandy silt to clayey silt	UNDFND	UNDFD	10	1.86
14.05	46	16.93	0.44	2.62	1.30	clayey silt to silty clay	UNDFND	UNDFD	8	1.19
14.35	47	31.10	0.54	1.73	1.33	sandy silt to clayey silt	UNDFND	UNDFD	12	2.36
14.65	48	29.26	0.48	1.64	1.35	sandy silt to clayey silt	UNDFND	UNDFD	11	2.21
14.95	49	33.48	0.55	1.65	1.38	sandy silt to clayey silt	UNDFND	UNDFD	13	2.55
15.25	50	61.27	0.55	0.91	1.40	silty sand to sandy silt	40-50	36-38	20	UNDEFINED
15.55	51	83.81	0.89	1.06	1.43	sand to silty sand	50-60	38-40	20	UNDEFINED
15.85	52	90.26	1.15	1.27	1.46	sand to silty sand	50-60	38-40	22	UNDEFINED
16.15	53	99.55	1.27	1.28	1.48	sand to silty sand	60-70	38-40	24	UNDEFINED
16.45	54	119.46	1.48	1.24	1.51	sand to silty sand	60-70	40-42	29	UNDEFINED
16.75	55	122.79	1.54	1.25	1.53	sand to silty sand	60-70	40-42	29	UNDEFINED
17.05	56	86.03	2.13	2.47	1.56	sandy silt to clayey silt	UNDFND	UNDFD	33	6.90
17.35	57	28.35	1.56	5.49	1.59	clay	UNDFND	UNDFD	27	2.09
17.65	58	29.87	1.66	5.56	1.61	clay	UNDFND	UNDFD	29	2.21
17.95	59	48.45	2.53	5.23	1.64	clay	UNDFND	UNDFD	46	3.75
18.25	60	56.56	3.30	5.83	1.66	clay	UNDFND	UNDFD	>50	4.42
18.55	61	46.30	2.96	6.39	1.69	clay	UNDFND	UNDFD	44	3.56
18.85	62	52.81	3.49	6.61	1.71	clay	UNDFND	UNDFD	>50	4.10
19.20	63	40.55	2.53	6.23	1.74	clay	UNDFND	UNDFD	39	3.08
19.50	64	54.38	2.78	5.12	1.77	silty clay to clay	UNDFND	UNDFD	35	4.22
19.80	65	147.39	3.17	2.15	1.80	silty sand to sandy silt	60-70	40-42	47	UNDEFINED
20.15	66	118.18	2.97	2.51	1.82	silty sand to sandy silt	60-70	38-40	38	UNDEFINED
20.45	67	92.29	2.88	3.12	1.85	sandy silt to clayey silt	UNDFND	UNDFD	35	7.37
20.75	68	121.41	4.32	3.56	1.88	sandy silt to clayey silt	UNDFND	UNDFD	47	9.79
21.05	69	139.36	5.12	3.68	1.90	sandy silt to clayey silt	UNDFND	UNDFD	>50	11.28
21.35	70	188.69	6.32	3.35	1.93	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
21.65	71	222.15	5.13	2.31	1.96	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
21.95	72	98.59	2.86	2.90	1.98	sandy silt to clayey silt	UNDFND	UNDFD	38	7.87
22.25	73	179.72	3.89	2.16	2.01	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
22.55	74	183.70	3.44	1.87	2.03	sand to silty sand	70-80	40-42	44	UNDEFINED
22.85	75	119.91	2.20	1.83	2.06	silty sand to sandy silt	60-70	38-40	38	UNDEFINED
23.15	76	82.60	2.20	2.66	2.09	sandy silt to clayey silt	UNDFND	UNDFD	32	6.52
23.45	77	112.56	1.99	1.77	2.11	silty sand to sandy silt	50-60	36-38	36	UNDEFINED
23.75	78	88.33	2.10	2.38	2.14	silty sand to sandy silt	50-60	36-38	28	UNDEFINED
24.05	79	109.63	1.80	1.64	2.16	silty sand to sandy silt	50-60	36-38	35	UNDEFINED
24.35	80	51.39	1.23	2.40	2.19	sandy silt to clayey silt	UNDFND	UNDFD	20	3.90

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

(*) overconsolidated or cemented

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E W1 Bureau of Reclamation
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Operator :TONY SHANAHAN On Site Loc:WEBB TRACT BORRW Page No. 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
24.65	81	24.01	0.54	2.27	2.21	sandy silt to clayey silt	UNDFND	UNDFD	9	1.61
24.95	82	23.97	0.72	3.00	2.24	clayey silt to silty clay	UNDFND	UNDFD	11	1.60
25.25	83	46.86	1.19	2.54	2.27	sandy silt to clayey silt	UNDFND	UNDFD	18	3.51
25.60	84	141.53	3.61	2.55	2.29	silty sand to sandy silt	60-70	38-40	45	UNDEFINED
25.90	85	240.19	5.71	2.38	2.32	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
26.20	86	95.73	4.78	4.99	2.35	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
26.55	87	86.63	6.15	7.09	2.38	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
26.85	88	140.40	7.51	5.35	2.40	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
27.15	89	221.32	8.60	3.88	2.43	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
27.45	90	257.93	11.79	4.57	2.46	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

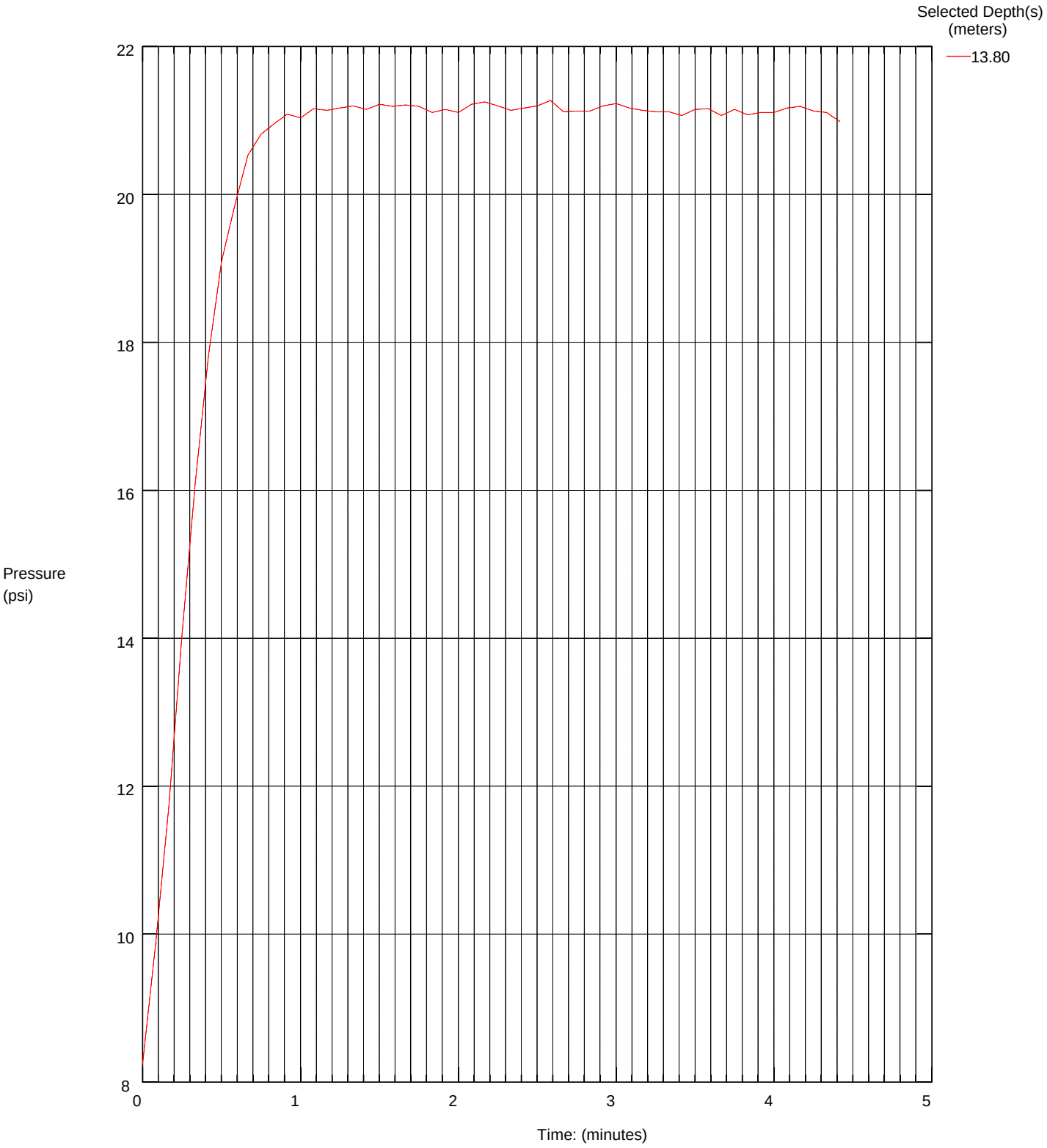
(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: WTSC11
Cone Used: 739

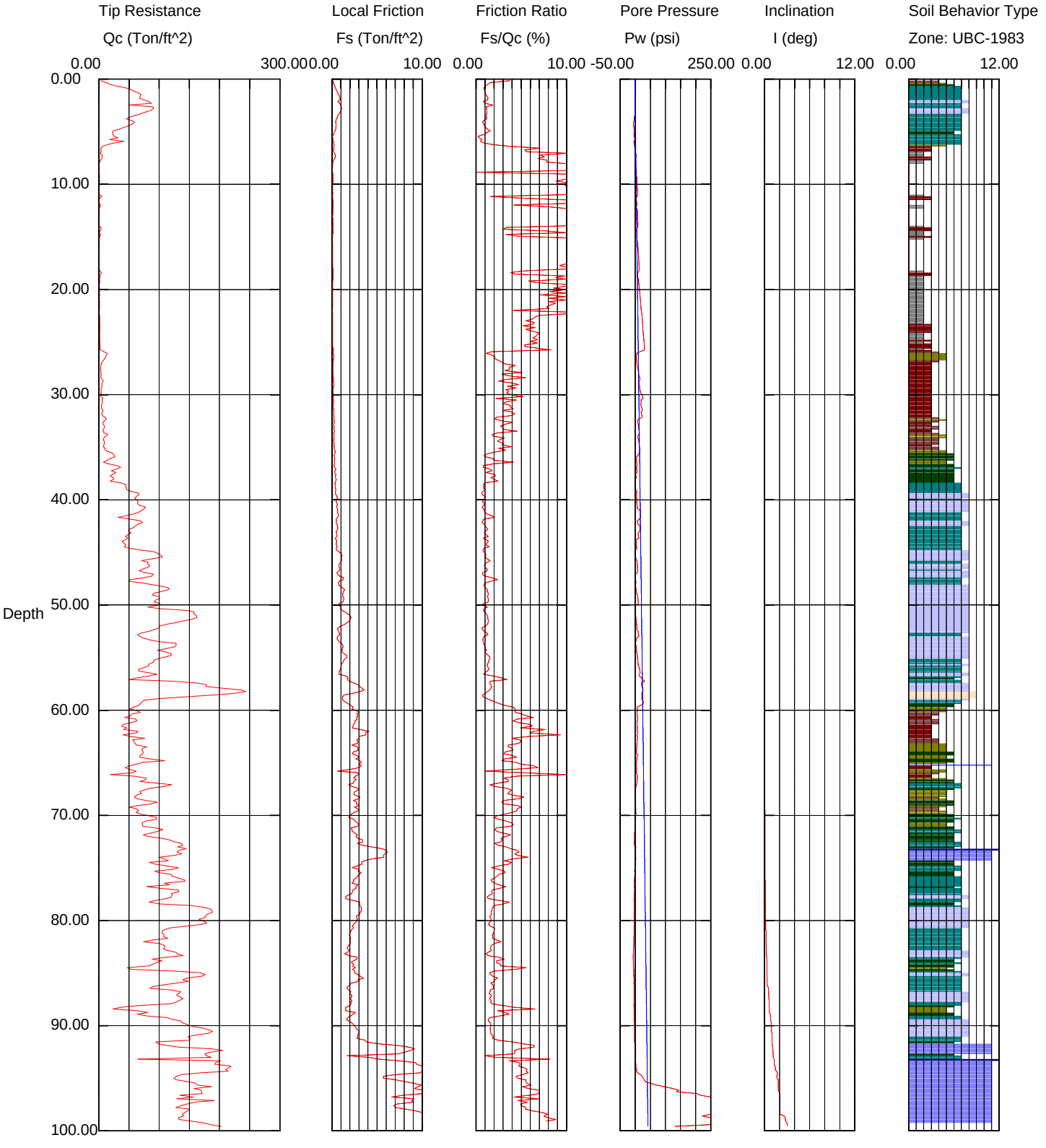
CPT Date/Time: 09-02-02 08:26
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC13
Cone Used: 739

CPT Date/Time: 09-02-02 11:27
Location: WEBB FACILITY NE
Job Number: IN-DELTA STORAGE



Maximum Depth = 99.57 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN CPT Date :09-02-02 11:27
On Site Loc:WEBB FACILITY NE Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	26.44	0.28	1.08	0.03	sandy silt to clayey silt	UNDFND	UNDFD	10	2.20
0.60	2	67.28	0.78	1.16	0.08	silty sand to sandy silt	>90	>48	21	UNDEFINED
0.95	3	80.78	0.94	1.17	0.15	sand to silty sand	80-90	>48	19	UNDEFINED
1.25	4	56.71	0.59	1.03	0.20	silty sand to sandy silt	70-80	44-46	18	UNDEFINED
1.55	5	37.77	0.41	1.08	0.22	silty sand to sandy silt	60-70	42-44	12	UNDEFINED
1.85	6	27.25	0.16	0.58	0.25	silty sand to sandy silt	40-50	40-42	9	UNDEFINED
2.15	7	5.40	0.24	4.38	0.27	clay	UNDFND	UNDFD	5	.41
2.45	8	3.29	0.25	7.64	0.30	organic material	UNDFND	UNDFD	3	.23
2.75	9	0.35	0.09	25.06	0.33	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.05	10	0.97	0.12	11.90	0.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.35	11	0.23	0.10	44.21	0.38	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.65	12	1.81	0.12	6.37	0.40	organic material	UNDFND	UNDFD	2	9.61
3.95	13	0.85	0.13	14.74	0.43	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.25	14	0.43	0.12	28.21	0.46	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.55	15	2.54	0.12	4.71	0.48	clay	UNDFND	UNDFD	2	.14
4.85	16	0.45	0.09	19.35	0.51	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.15	17	0.21	0.08	37.77	0.53	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.45	18	0.36	0.09	24.40	0.56	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.75	19	2.10	0.13	6.41	0.59	organic material	UNDFND	UNDFD	2	8.69
6.05	20	1.07	0.09	8.70	0.61	undefined	UNDFND	UNDFD	UDF	UNDEFINED
6.40	21	0.94	0.09	9.73	0.64	undefined	UNDFND	UNDFD	UDF	UNDEFINED
6.70	22	1.15	0.09	7.54	0.67	organic material	UNDFND	UNDFD	1	-7.39
7.00	23	1.22	0.10	7.99	0.69	organic material	UNDFND	UNDFD	1	-5.72
7.35	24	1.65	0.10	6.10	0.72	organic material	UNDFND	UNDFD	2	2.49
7.65	25	1.58	0.10	6.53	0.75	organic material	UNDFND	UNDFD	2	1.39
7.95	26	5.09	0.14	2.78	0.77	clay	UNDFND	UNDFD	5	.30
8.25	27	8.54	0.19	2.23	0.80	silty clay to clay	UNDFND	UNDFD	5	.58
8.55	28	3.31	0.12	3.76	0.83	clay	UNDFND	UNDFD	3	.14
8.85	29	4.99	0.19	3.75	0.85	clay	UNDFND	UNDFD	5	.27
9.15	30	4.10	0.15	3.69	0.88	clay	UNDFND	UNDFD	4	.20
9.45	31	5.26	0.18	3.49	0.90	clay	UNDFND	UNDFD	5	.29
9.75	32	5.30	0.20	3.79	0.93	clay	UNDFND	UNDFD	5	.29
10.05	33	9.22	0.25	2.74	0.96	silty clay to clay	UNDFND	UNDFD	6	.61
10.35	34	9.62	0.25	2.57	0.98	silty clay to clay	UNDFND	UNDFD	6	.64
10.65	35	8.24	0.24	2.97	1.01	silty clay to clay	UNDFND	UNDFD	5	.52
10.95	36	18.68	0.30	1.61	1.03	sandy silt to clayey silt	UNDFND	UNDFD	7	1.38
11.25	37	20.26	0.30	1.47	1.06	sandy silt to clayey silt	UNDFND	UNDFD	8	1.51
11.55	38	24.14	0.40	1.66	1.09	sandy silt to clayey silt	UNDFND	UNDFD	9	1.83

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

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E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:WEBB FACILITY NE Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	35.51	0.41	1.14	1.11	silty sand to sandy silt	<40	34-36	11	UNDEFINED
12.15	40	58.95	0.50	0.84	1.14	sand to silty sand	40-50	36-38	14	UNDEFINED
12.45	41	68.73	0.56	0.81	1.16	sand to silty sand	50-60	38-40	16	UNDEFINED
12.80	42	56.12	0.63	1.13	1.19	silty sand to sandy silt	40-50	36-38	18	UNDEFINED
13.10	43	58.85	0.59	1.00	1.22	silty sand to sandy silt	40-50	36-38	19	UNDEFINED
13.40	44	45.96	0.51	1.11	1.24	silty sand to sandy silt	40-50	36-38	15	UNDEFINED
13.75	45	63.13	0.64	1.01	1.27	silty sand to sandy silt	50-60	36-38	20	UNDEFINED
14.05	46	88.33	1.04	1.18	1.30	sand to silty sand	50-60	38-40	21	UNDEFINED
14.35	47	78.60	0.76	0.96	1.33	sand to silty sand	50-60	38-40	19	UNDEFINED
14.65	48	70.67	0.96	1.35	1.35	silty sand to sandy silt	50-60	36-38	23	UNDEFINED
14.95	49	103.23	1.22	1.18	1.38	sand to silty sand	60-70	38-40	25	UNDEFINED
15.25	50	97.44	1.13	1.16	1.40	sand to silty sand	60-70	38-40	23	UNDEFINED
15.55	51	134.51	1.41	1.05	1.43	sand to silty sand	70-80	40-42	32	UNDEFINED
15.85	52	133.22	1.72	1.29	1.46	sand to silty sand	60-70	40-42	32	UNDEFINED
16.15	53	79.65	0.73	0.92	1.48	sand to silty sand	50-60	36-38	19	UNDEFINED
16.45	54	106.72	0.93	0.87	1.51	sand to silty sand	60-70	38-40	26	UNDEFINED
16.75	55	111.20	1.34	1.21	1.53	sand to silty sand	60-70	38-40	27	UNDEFINED
17.05	56	86.54	1.19	1.38	1.56	silty sand to sandy silt	50-60	38-40	28	UNDEFINED
17.35	57	76.17	1.14	1.49	1.59	silty sand to sandy silt	50-60	36-38	24	UNDEFINED
17.65	58	149.30	2.57	1.72	1.61	sand to silty sand	70-80	40-42	36	UNDEFINED
17.95	59	190.17	2.11	1.11	1.64	sand	70-80	40-42	36	UNDEFINED
18.25	60	64.95	1.86	2.87	1.66	sandy silt to clayey silt	UNDFND	UNDFD	25	5.12
18.55	61	57.10	2.81	4.93	1.69	silty clay to clay	UNDFND	UNDFD	36	4.47
18.85	62	47.02	2.55	5.42	1.71	clay	UNDFND	UNDFD	45	3.62
19.20	63	58.49	3.32	5.68	1.74	clay	UNDFND	UNDFD	>50	4.57
19.50	64	69.76	2.68	3.84	1.77	clayey silt to silty clay	UNDFND	UNDFD	33	5.50
19.80	65	79.15	2.85	3.60	1.80	clayey silt to silty clay	UNDFND	UNDFD	38	6.28
20.15	66	49.18	2.56	5.21	1.82	clay	UNDFND	UNDFD	47	3.78
20.45	67	83.07	2.41	2.90	1.85	sandy silt to clayey silt	UNDFND	UNDFD	32	6.60
20.75	68	78.04	2.59	3.32	1.88	sandy silt to clayey silt	UNDFND	UNDFD	30	6.18
21.05	69	74.67	2.83	3.79	1.90	clayey silt to silty clay	UNDFND	UNDFD	36	5.89
21.35	70	65.72	2.49	3.80	1.93	clayey silt to silty clay	UNDFND	UNDFD	31	5.14
21.65	71	81.08	2.59	3.19	1.96	sandy silt to clayey silt	UNDFND	UNDFD	31	6.41
21.95	72	89.90	2.45	2.72	1.98	sandy silt to clayey silt	UNDFND	UNDFD	34	7.14
22.25	73	125.37	3.39	2.70	2.01	silty sand to sandy silt	60-70	38-40	40	UNDEFINED
22.55	74	128.21	5.85	4.56	2.03	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
22.85	75	107.34	3.29	3.07	2.06	sandy silt to clayey silt	UNDFND	UNDFD	41	8.58
23.15	76	114.69	2.96	2.58	2.09	silty sand to sandy silt	60-70	38-40	37	UNDEFINED
23.45	77	115.02	2.55	2.22	2.11	silty sand to sandy silt	50-60	38-40	37	UNDEFINED
23.75	78	122.91	1.94	1.58	2.14	sand to silty sand	60-70	38-40	29	UNDEFINED
24.05	79	131.61	3.02	2.29	2.16	silty sand to sandy silt	60-70	38-40	42	UNDEFINED
24.35	80	178.82	2.97	1.66	2.19	sand to silty sand	70-80	40-42	43	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

(*) overconsolidated or cemented

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E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:WEBB FACILITY NE Page No. 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
24.65	81	148.06	2.44	1.65	2.21	sand to silty sand	60-70	38-40	35	UNDEFINED
24.95	82	105.01	2.03	1.93	2.24	silty sand to sandy silt	50-60	36-38	34	UNDEFINED
25.25	83	101.98	1.90	1.86	2.27	silty sand to sandy silt	50-60	36-38	33	UNDEFINED
25.60	84	113.99	2.17	1.91	2.29	silty sand to sandy silt	50-60	36-38	36	UNDEFINED
25.90	85	94.59	2.45	2.59	2.32	sandy silt to clayey silt	UNDFND	UNDFD	36	7.47
26.20	86	151.16	2.92	1.93	2.35	silty sand to sandy silt	60-70	38-40	48	UNDEFINED
26.55	87	114.08	1.94	1.70	2.38	silty sand to sandy silt	50-60	36-38	36	UNDEFINED
26.85	88	120.14	2.11	1.76	2.40	silty sand to sandy silt	50-60	36-38	38	UNDEFINED
27.15	89	58.22	1.94	3.34	2.43	clayey silt to silty clay	UNDFND	UNDFD	28	4.42
27.45	90	135.41	2.07	1.53	2.46	sand to silty sand	60-70	38-40	32	UNDEFINED
27.75	91	172.12	2.88	1.67	2.48	sand to silty sand	60-70	38-40	41	UNDEFINED
28.05	92	123.10	5.18	4.20	2.51	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
28.35	93	186.09	6.49	3.49	2.53	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
28.65	94	180.99	8.86	4.90	2.56	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
28.95	95	163.77	8.64	5.28	2.58	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
29.25	96	156.98	8.78	5.60	2.61	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
29.55	97	155.20	9.87	6.36	2.64	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
29.85	98	151.58	7.85	5.18	2.66	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
30.15	99	138.82	10.58	7.62	2.69	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

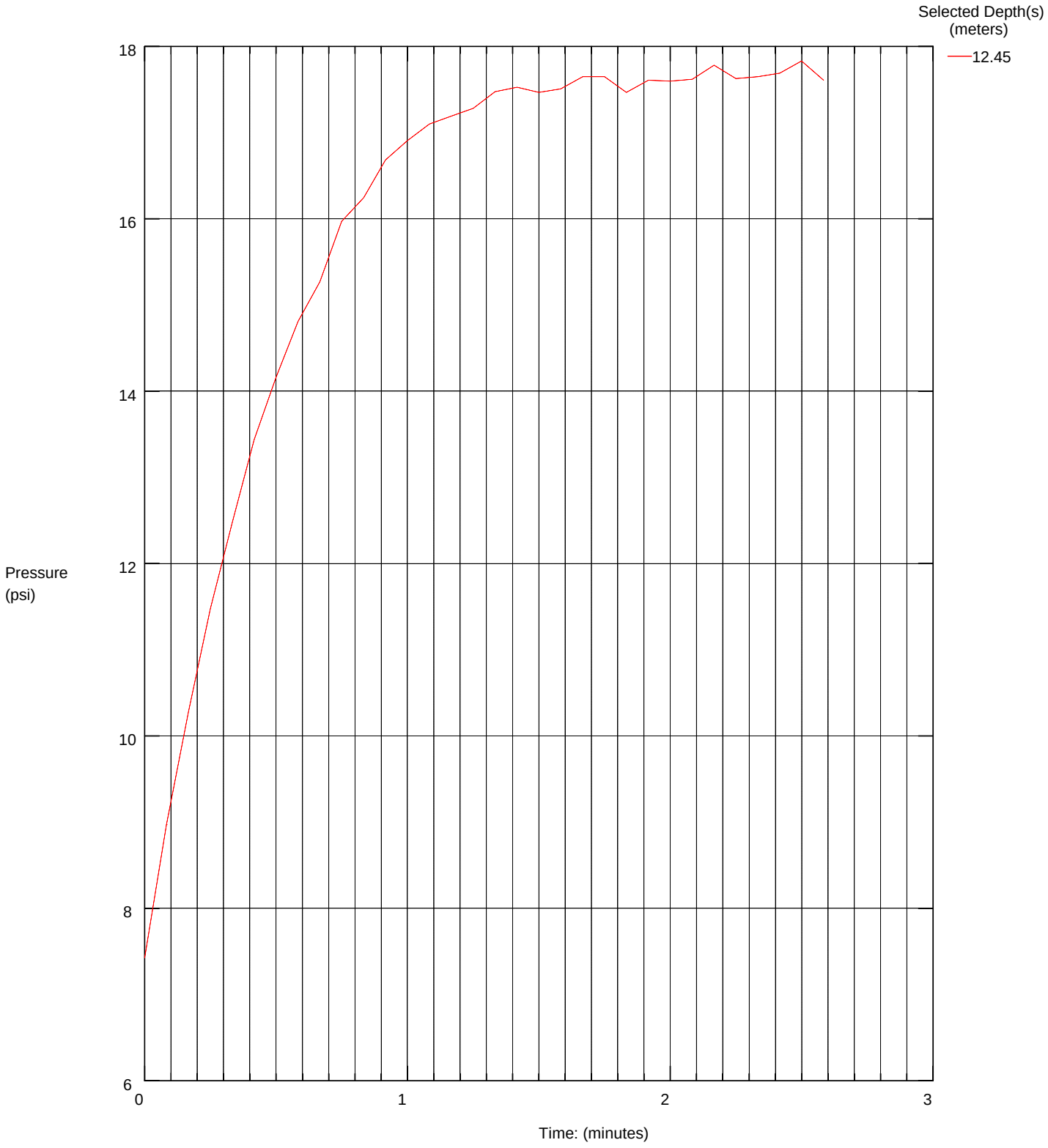
(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: WTSC13
Cone Used: 739

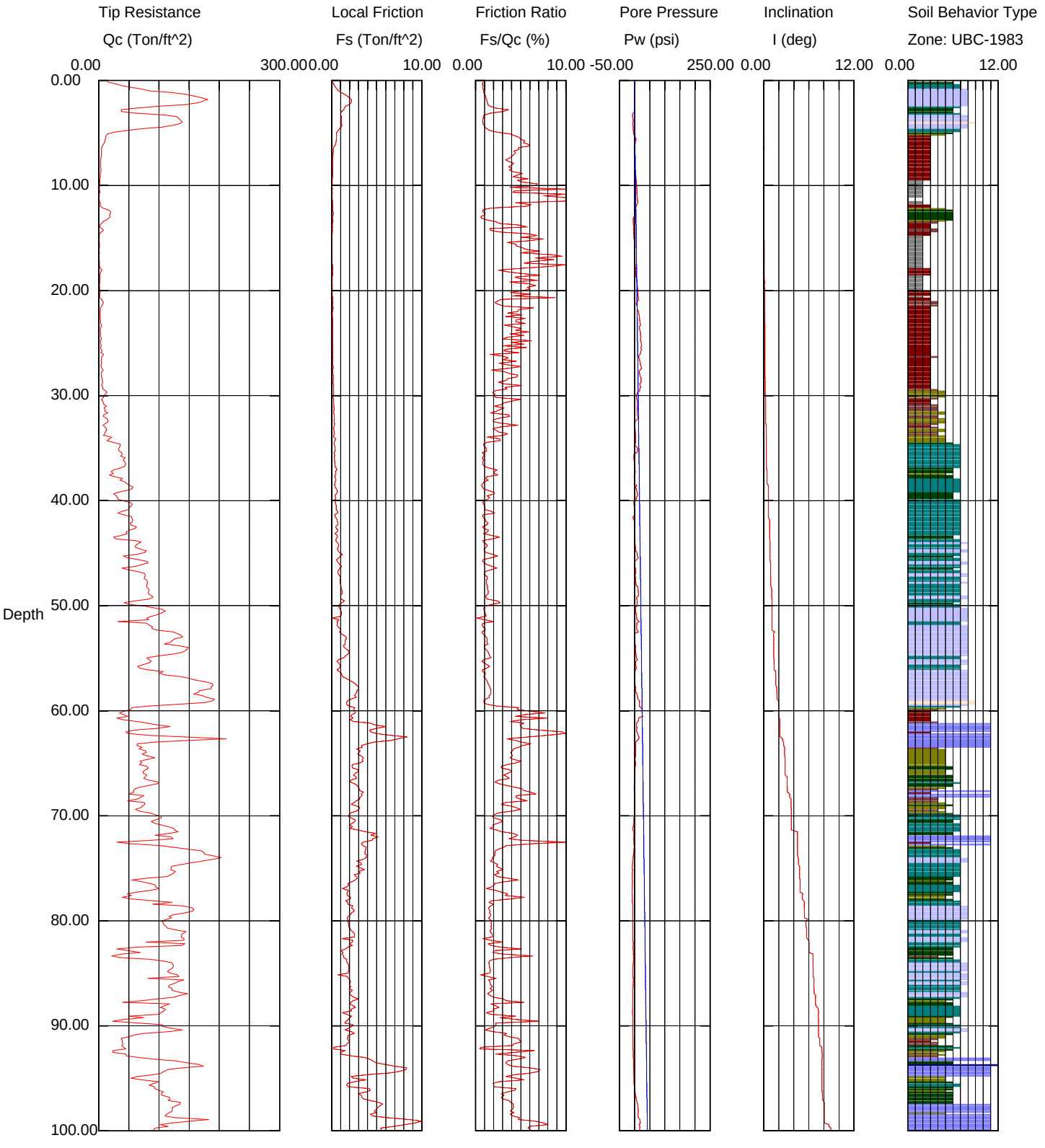
CPT Date/Time: 09-02-02 11:27
Location: WEBB FACILITY NE
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC15
Cone Used: 739

CPT Date/Time: 09-02-02 09:53
Location: WEBB FACILITY NE
Job Number: IN-DELTA STORAGE



Maximum Depth = 100.72 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN CPT Date :09-02-02 09:53
On Site Loc:WEBB FACILITY NE Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	47.95	0.41	0.85	0.03	silty sand to sandy silt	>90	>48	15	UNDEFINED
0.60	2	157.19	1.77	1.12	0.08	sand to silty sand	>90	>48	38	UNDEFINED
0.95	3	86.39	1.51	1.75	0.15	silty sand to sandy silt	>90	>48	28	UNDEFINED
1.25	4	130.28	1.10	0.84	0.20	sand to silty sand	>90	>48	31	UNDEFINED
1.55	5	64.72	0.84	1.30	0.22	silty sand to sandy silt	70-80	44-46	21	UNDEFINED
1.85	6	10.37	0.52	5.05	0.25	clay	UNDFND	UNDFD	10	.83
2.15	7	4.60	0.22	4.82	0.27	clay	UNDFND	UNDFD	4	.35
2.45	8	3.33	0.13	3.85	0.30	clay	UNDFND	UNDFD	3	.24
2.75	9	3.28	0.14	4.17	0.33	clay	UNDFND	UNDFD	3	.23
3.05	10	1.82	0.10	5.33	0.35	organic material	UNDFND	UNDFD	2	.10
3.35	11	1.31	0.08	6.14	0.38	organic material	UNDFND	UNDFD	1	5.88
3.65	12	1.68	0.12	7.15	0.40	organic material	UNDFND	UNDFD	2	8.51
3.95	13	16.18	0.15	0.92	0.43	sandy silt to clayey silt	UNDFND	UNDFD	6	1.28
4.25	14	7.48	0.13	1.70	0.46	silty clay to clay	UNDFND	UNDFD	5	.55
4.55	15	3.36	0.09	2.58	0.48	clay	UNDFND	UNDFD	3	.21
4.85	16	0.97	0.05	4.95	0.51	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.15	17	0.78	0.05	6.71	0.53	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.45	18	1.38	0.10	6.96	0.56	organic material	UNDFND	UNDFD	1	3.12
5.75	19	2.83	0.11	4.06	0.59	clay	UNDFND	UNDFD	3	.14
6.05	20	1.52	0.09	5.68	0.61	organic material	UNDFND	UNDFD	1	3.42
6.40	21	2.87	0.11	3.85	0.64	clay	UNDFND	UNDFD	3	.14
6.70	22	4.48	0.15	3.40	0.67	clay	UNDFND	UNDFD	4	.27
7.00	23	2.71	0.12	4.39	0.69	clay	UNDFND	UNDFD	3	.11
7.35	24	3.18	0.14	4.45	0.72	clay	UNDFND	UNDFD	3	.15
7.65	25	3.31	0.14	4.33	0.75	clay	UNDFND	UNDFD	3	.15
7.95	26	4.61	0.15	3.19	0.77	clay	UNDFND	UNDFD	4	.26
8.25	27	4.58	0.15	3.31	0.80	clay	UNDFND	UNDFD	4	.25
8.55	28	4.90	0.17	3.47	0.83	clay	UNDFND	UNDFD	5	.27
8.85	29	5.45	0.20	3.60	0.85	clay	UNDFND	UNDFD	5	.31
9.15	30	9.64	0.23	2.37	0.88	silty clay to clay	UNDFND	UNDFD	6	.66
9.45	31	7.84	0.23	2.99	0.90	undefined	UNDFND	UNDFD	UDF	UNDEFINED
9.75	32	10.17	0.27	2.70	0.93	silty clay to clay	UNDFND	UNDFD	6	.69
10.05	33	12.00	0.32	2.63	0.96	silty clay to clay	UNDFND	UNDFD	8	.84
10.35	34	12.66	0.28	2.22	0.98	clayey silt to silty clay	UNDFND	UNDFD	6	.89
10.65	35	26.45	0.36	1.37	1.01	sandy silt to clayey silt	UNDFND	UNDFD	10	2.03
10.95	36	37.23	0.35	0.94	1.03	silty sand to sandy silt	<40	36-38	12	UNDEFINED
11.25	37	41.49	0.40	0.96	1.06	silty sand to sandy silt	40-50	36-38	13	UNDEFINED
11.55	38	25.51	0.46	1.79	1.09	sandy silt to clayey silt	UNDFND	UNDFD	10	1.94

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:WEBB FACILITY NE Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	47.96	0.43	0.89	1.11	silty sand to sandy silt	40-50	36-38	15	UNDEFINED
12.15	40	32.45	0.52	1.60	1.14	sandy silt to clayey silt	UNDFND	UNDFD	12	2.51
12.45	41	50.44	0.48	0.95	1.16	silty sand to sandy silt	40-50	36-38	16	UNDEFINED
12.80	42	47.66	0.56	1.18	1.19	silty sand to sandy silt	40-50	36-38	15	UNDEFINED
13.10	43	54.13	0.62	1.15	1.22	silty sand to sandy silt	40-50	36-38	17	UNDEFINED
13.40	44	44.54	0.56	1.25	1.24	silty sand to sandy silt	40-50	34-36	14	UNDEFINED
13.75	45	67.70	0.83	1.23	1.27	silty sand to sandy silt	50-60	36-38	22	UNDEFINED
14.05	46	64.46	0.79	1.22	1.30	silty sand to sandy silt	50-60	36-38	21	UNDEFINED
14.35	47	60.94	0.85	1.40	1.33	silty sand to sandy silt	40-50	36-38	19	UNDEFINED
14.65	48	78.66	0.99	1.26	1.35	silty sand to sandy silt	50-60	38-40	25	UNDEFINED
14.95	49	82.89	1.10	1.33	1.38	silty sand to sandy silt	50-60	38-40	26	UNDEFINED
15.25	50	66.72	1.07	1.60	1.40	silty sand to sandy silt	50-60	36-38	21	UNDEFINED
15.55	51	99.28	1.02	1.03	1.43	sand to silty sand	60-70	38-40	24	UNDEFINED
15.85	52	74.30	0.59	0.80	1.46	sand to silty sand	50-60	36-38	18	UNDEFINED
16.15	53	119.07	1.15	0.97	1.48	sand to silty sand	60-70	40-42	29	UNDEFINED
16.45	54	126.27	1.49	1.18	1.51	sand to silty sand	60-70	40-42	30	UNDEFINED
16.75	55	121.01	1.71	1.41	1.53	sand to silty sand	60-70	38-40	29	UNDEFINED
17.05	56	76.39	0.83	1.09	1.56	sand to silty sand	50-60	36-38	18	UNDEFINED
17.35	57	114.15	1.10	0.96	1.59	sand to silty sand	60-70	38-40	27	UNDEFINED
17.65	58	181.34	2.62	1.44	1.61	sand to silty sand	70-80	40-42	43	UNDEFINED
17.95	59	172.03	2.63	1.53	1.64	sand to silty sand	70-80	40-42	41	UNDEFINED
18.25	60	115.30	2.01	1.74	1.66	silty sand to sandy silt	60-70	38-40	37	UNDEFINED
18.55	61	39.33	2.34	5.94	1.69	clay	UNDFND	UNDFD	38	2.98
18.85	62	85.80	4.45	5.19	1.71	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
19.20	63	110.73	6.12	5.53	1.74	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
19.50	64	70.26	3.27	4.66	1.77	silty clay to clay	UNDFND	UNDFD	45	5.55
19.80	65	77.82	3.31	4.25	1.80	clayey silt to silty clay	UNDFND	UNDFD	37	6.17
20.15	66	76.20	2.57	3.37	1.82	sandy silt to clayey silt	UNDFND	UNDFD	29	6.03
20.45	67	86.01	2.50	2.91	1.85	sandy silt to clayey silt	UNDFND	UNDFD	33	6.84
20.75	68	61.80	3.22	5.22	1.88	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
21.05	69	67.59	2.74	4.06	1.90	clayey silt to silty clay	UNDFND	UNDFD	32	5.30
21.35	70	79.57	2.49	3.13	1.93	sandy silt to clayey silt	UNDFND	UNDFD	30	6.29
21.65	71	99.39	2.33	2.35	1.96	silty sand to sandy silt	50-60	36-38	32	UNDEFINED
21.95	72	118.44	3.84	3.24	1.98	sandy silt to clayey silt	UNDFND	UNDFD	45	9.52
22.25	73	86.64	3.87	4.47	2.01	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
22.55	74	176.41	3.79	2.15	2.03	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
22.85	75	148.96	3.15	2.12	2.06	silty sand to sandy silt	60-70	38-40	48	UNDEFINED
23.15	76	114.11	2.99	2.62	2.09	silty sand to sandy silt	50-60	38-40	36	UNDEFINED
23.45	77	83.24	1.93	2.31	2.11	silty sand to sandy silt	50-60	36-38	27	UNDEFINED
23.75	78	57.40	1.89	3.29	2.14	clayey silt to silty clay	UNDFND	UNDFD	27	4.41
24.05	79	125.55	2.03	1.61	2.16	sand to silty sand	60-70	38-40	30	UNDEFINED
24.35	80	128.66	2.04	1.59	2.19	sand to silty sand	60-70	38-40	31	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:WEBB FACILITY NE Page No. 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
24.65	81	112.66	1.96	1.74	2.21	silty sand to sandy silt	50-60	36-38	36	UNDEFINED
24.95	82	140.12	2.25	1.60	2.24	sand to silty sand	60-70	38-40	34	UNDEFINED
25.25	83	83.44	1.83	2.20	2.27	silty sand to sandy silt	40-50	36-38	27	UNDEFINED
25.60	84	68.12	1.47	2.16	2.29	silty sand to sandy silt	40-50	34-36	22	UNDEFINED
25.90	85	120.02	1.90	1.58	2.32	sand to silty sand	50-60	36-38	29	UNDEFINED
26.20	86	123.78	1.75	1.42	2.35	sand to silty sand	60-70	36-38	30	UNDEFINED
26.55	87	126.95	2.09	1.65	2.38	sand to silty sand	60-70	36-38	30	UNDEFINED
26.85	88	93.60	2.41	2.58	2.40	sandy silt to clayey silt	UNDFND	UNDFD	36	7.38
27.15	89	95.75	2.02	2.11	2.43	silty sand to sandy silt	50-60	36-38	31	UNDEFINED
27.45	90	69.01	1.93	2.79	2.46	sandy silt to clayey silt	UNDFND	UNDFD	26	5.32
27.75	91	92.59	1.97	2.13	2.48	silty sand to sandy silt	50-60	36-38	30	UNDEFINED
28.05	92	39.14	1.53	3.91	2.51	clayey silt to silty clay	UNDFND	UNDFD	19	2.82
28.35	93	41.37	1.59	3.84	2.53	clayey silt to silty clay	UNDFND	UNDFD	20	3.00
28.65	94	140.83	5.82	4.13	2.56	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
28.95	95	89.70	5.13	5.71	2.58	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
29.25	96	88.54	2.66	3.00	2.61	sandy silt to clayey silt	UNDFND	UNDFD	34	6.92
29.55	97	108.26	3.54	3.27	2.64	sandy silt to clayey silt	UNDFND	UNDFD	41	8.56
29.85	98	126.25	5.11	4.05	2.66	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
30.15	99	128.47	5.57	4.33	2.69	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
30.45	100	112.57	7.54	6.70	2.71	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

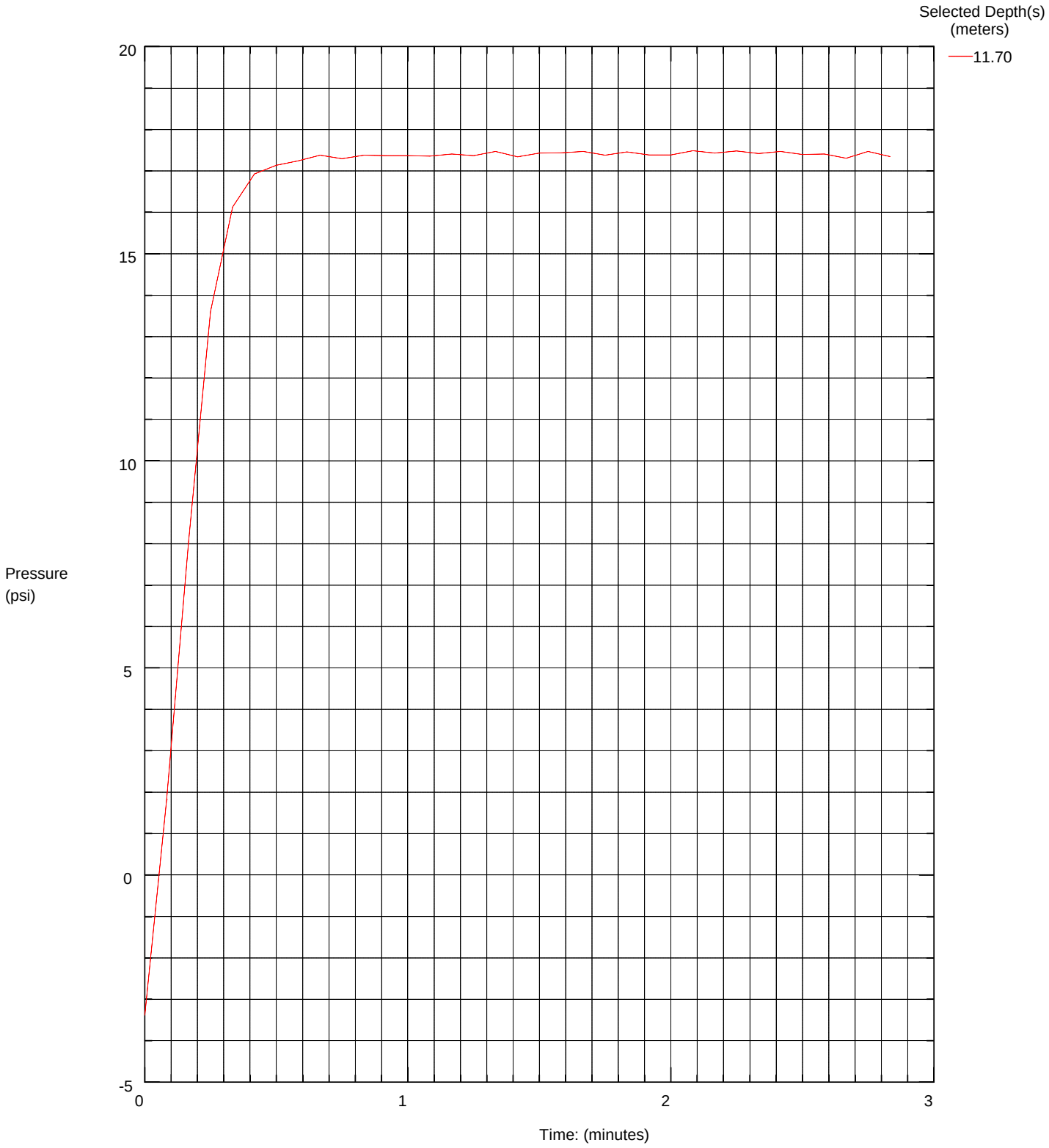
(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: WTSC15
Cone Used: 739

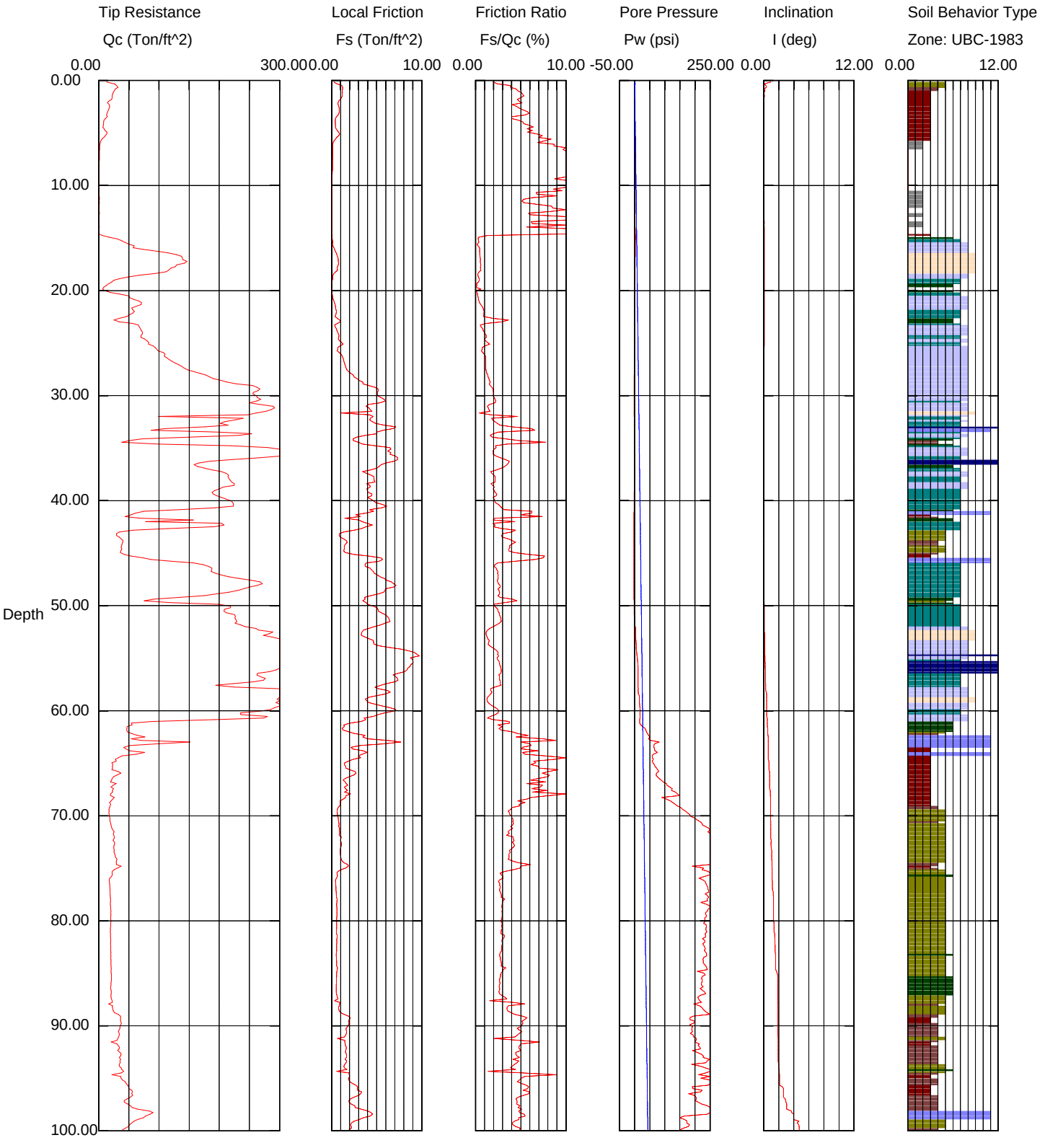
CPT Date/Time: 09-02-02 09:53
Location: WEBB FACILITY NE
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC16
Cone Used: 739

CPT Date/Time: 09-03-02 10:34
Location: WEBB PUMP STA.SE
Job Number: IN-DELTA STORAGE



Maximum Depth = 100.56 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN CPT Date :09-03-02 10:34
On Site Loc:WEBB PUMP STA.SE Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	25.57	0.95	3.72	0.03	silty clay to clay	UNDFND	UNDFD	16	2.12
0.60	2	21.51	1.08	5.02	0.08	clay	UNDFND	UNDFD	21	1.78
0.95	3	15.99	0.80	5.02	0.15	clay	UNDFND	UNDFD	15	1.32
1.25	4	10.45	0.49	4.73	0.20	clay	UNDFND	UNDFD	10	.85
1.55	5	10.07	0.62	6.16	0.22	clay	UNDFND	UNDFD	10	.81
1.85	6	5.47	0.41	7.49	0.25	clay	UNDFND	UNDFD	5	.42
2.15	7	1.28	0.13	10.53	0.27	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.45	8	0.89	0.13	14.13	0.30	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.75	9	0.30	0.10	32.64	0.33	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.05	10	0.42	0.06	13.86	0.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.35	11	0.71	0.06	8.87	0.38	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.65	12	0.92	0.06	6.23	0.40	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.95	13	0.55	0.06	10.27	0.43	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.25	14	0.53	0.05	10.11	0.46	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.55	15	4.13	0.05	1.28	0.48	sensitive fine grained	UNDFND	UNDFD	2	.27
4.85	16	46.60	0.15	0.32	0.51	sand to silty sand	50-60	40-42	11	UNDEFINED
5.15	17	114.92	0.55	0.47	0.53	sand	70-80	44-46	22	UNDEFINED
5.45	18	133.82	0.73	0.55	0.56	sand	80-90	44-46	26	UNDEFINED
5.75	19	78.43	0.31	0.40	0.59	sand to silty sand	60-70	42-44	19	UNDEFINED
6.05	20	14.92	0.04	0.27	0.61	sandy silt to clayey silt	UNDFND	UNDFD	6	1.15
6.40	21	41.47	0.12	0.29	0.64	sand to silty sand	40-50	38-40	10	UNDEFINED
6.70	22	62.43	0.45	0.72	0.67	sand to silty sand	50-60	40-42	15	UNDEFINED
7.00	23	41.17	0.66	1.61	0.69	silty sand to sandy silt	40-50	38-40	13	UNDEFINED
7.35	24	67.55	0.57	0.84	0.72	sand to silty sand	60-70	40-42	16	UNDEFINED
7.65	25	76.86	0.95	1.23	0.75	silty sand to sandy silt	60-70	40-42	25	UNDEFINED
7.95	26	99.23	0.83	0.84	0.77	sand to silty sand	70-80	42-44	24	UNDEFINED
8.25	27	119.99	1.35	1.13	0.80	sand to silty sand	70-80	42-44	29	UNDEFINED
8.55	28	155.50	1.90	1.22	0.83	sand to silty sand	80-90	42-44	37	UNDEFINED
8.85	29	212.07	3.25	1.53	0.85	sand to silty sand	>90	44-46	>50	UNDEFINED
9.15	30	261.29	5.07	1.94	0.88	sand to silty sand	>90	44-46	>50	UNDEFINED
9.45	31	266.64	5.09	1.91	0.90	sand to silty sand	>90	44-46	>50	UNDEFINED
9.75	32	243.53	3.80	1.56	0.93	sand to silty sand	>90	44-46	>50	UNDEFINED
10.05	33	211.24	5.15	2.44	0.96	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
10.35	34	171.73	4.84	2.82	0.98	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
10.65	35	126.80	3.75	2.96	1.01	sandy silt to clayey silt	UNDFND	UNDFD	49	10.40
10.95	36	313.98	6.71	2.14	1.03	sand to silty sand	>90	44-46	>50	UNDEFINED
11.25	37	178.33	6.01	3.37	1.06	sandy silt to clayey silt	UNDFND	UNDFD	>50	14.68
11.55	38	208.04	4.23	2.04	1.09	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

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Operator :TONY SHANAHAN On Site Loc:WEBB PUMP STA.SE Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	215.66	4.31	2.00	1.11	sand to silty sand	80-90	42-44	>50	UNDEFINED
12.15	40	196.89	4.22	2.14	1.14	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
12.45	41	202.56	5.18	2.56	1.16	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
12.80	42	76.50	3.18	4.16	1.19	clayey silt to silty clay	UNDFND	UNDFD	37	6.17
13.10	43	134.68	3.24	2.41	1.22	silty sand to sandy silt	70-80	40-42	43	UNDEFINED
13.40	44	34.97	1.25	3.57	1.24	clayey silt to silty clay	UNDFND	UNDFD	17	2.70
13.75	45	38.06	1.60	4.19	1.27	silty clay to clay	UNDFND	UNDFD	24	2.95
14.05	46	111.06	4.67	4.21	1.30	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.35	47	190.17	4.48	2.36	1.33	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
14.65	48	250.61	6.32	2.52	1.35	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
14.95	49	217.68	5.67	2.61	1.38	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
15.25	50	139.47	3.87	2.78	1.40	silty sand to sandy silt	70-80	40-42	45	UNDEFINED
15.55	51	216.39	5.50	2.54	1.43	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
15.85	52	231.19	5.88	2.54	1.46	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
16.15	53	276.57	3.56	1.29	1.48	sand	>90	42-44	>50	UNDEFINED
16.45	54	326.04	4.97	1.52	1.51	sand to silty sand	>90	44-46	>50	UNDEFINED
16.75	55	369.91	8.90	2.41	1.53	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
17.05	56	333.09	8.82	2.65	1.56	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
17.35	57	274.78	7.51	2.73	1.59	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
17.65	58	247.25	5.99	2.42	1.61	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
17.95	59	335.16	5.26	1.57	1.64	sand to silty sand	>90	44-46	>50	UNDEFINED
18.25	60	295.79	5.33	1.80	1.66	sand to silty sand	>90	42-44	>50	UNDEFINED
18.55	61	247.25	4.99	2.02	1.69	sand to silty sand	80-90	42-44	>50	UNDEFINED
18.85	62	56.38	1.77	3.13	1.71	sandy silt to clayey silt	UNDFND	UNDFD	22	4.40
19.20	63	73.97	4.21	5.70	1.74	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
19.50	64	60.34	3.49	5.78	1.77	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
19.80	65	35.20	2.55	7.25	1.80	clay	UNDFND	UNDFD	34	2.62
20.15	66	27.17	2.06	7.57	1.82	clay	UNDFND	UNDFD	26	1.95
20.45	67	23.45	1.63	6.94	1.85	clay	UNDFND	UNDFD	22	1.63
20.75	68	21.54	1.65	7.66	1.88	clay	UNDFND	UNDFD	21	1.47
21.05	69	21.03	1.12	5.33	1.90	clay	UNDFND	UNDFD	20	1.42
21.35	70	17.31	0.67	3.85	1.93	silty clay to clay	UNDFND	UNDFD	11	1.10
21.65	71	19.48	0.80	4.09	1.96	silty clay to clay	UNDFND	UNDFD	12	1.28
21.95	72	24.29	0.92	3.80	1.98	silty clay to clay	UNDFND	UNDFD	16	1.68
22.25	73	25.22	1.06	4.21	2.01	silty clay to clay	UNDFND	UNDFD	16	1.75
22.55	74	26.36	0.99	3.77	2.03	silty clay to clay	UNDFND	UNDFD	17	1.84
22.85	75	31.09	1.48	4.77	2.06	clay	UNDFND	UNDFD	30	2.23
23.15	76	21.92	0.70	3.21	2.09	clayey silt to silty clay	UNDFND	UNDFD	10	1.46
23.45	77	17.99	0.48	2.66	2.11	clayey silt to silty clay	UNDFND	UNDFD	9	1.13
23.75	78	19.03	0.54	2.86	2.14	clayey silt to silty clay	UNDFND	UNDFD	9	1.21
24.05	79	19.68	0.58	2.96	2.16	clayey silt to silty clay	UNDFND	UNDFD	9	1.26
24.35	80	19.99	0.58	2.93	2.19	clayey silt to silty clay	UNDFND	UNDFD	10	1.28

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

(*) overconsolidated or cemented

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Operator :TONY SHANAHAN On Site Loc:WEBB PUMP STA.SE Page No. 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
24.65	81	19.69	0.57	2.89	2.21	clayey silt to silty clay	UNDFND	UNDFD	9	1.25
24.95	82	19.55	0.59	3.00	2.24	clayey silt to silty clay	UNDFND	UNDFD	9	1.23
25.25	83	19.80	0.58	2.92	2.27	clayey silt to silty clay	UNDFND	UNDFD	9	1.25
25.60	84	20.09	0.55	2.75	2.29	clayey silt to silty clay	UNDFND	UNDFD	10	1.27
25.90	85	20.47	0.61	2.99	2.32	clayey silt to silty clay	UNDFND	UNDFD	10	1.30
26.20	86	20.83	0.57	2.71	2.35	clayey silt to silty clay	UNDFND	UNDFD	10	1.32
26.55	87	20.28	0.54	2.68	2.38	clayey silt to silty clay	UNDFND	UNDFD	10	1.27
26.85	88	20.92	0.73	3.49	2.40	clayey silt to silty clay	UNDFND	UNDFD	10	1.32
27.15	89	27.31	1.12	4.11	2.43	silty clay to clay	UNDFND	UNDFD	17	1.85
27.45	90	36.37	1.92	5.29	2.46	clay	UNDFND	UNDFD	35	2.60
27.75	91	33.77	1.60	4.73	2.48	clay	UNDFND	UNDFD	32	2.38
28.05	92	29.85	1.39	4.66	2.51	clay	UNDFND	UNDFD	29	2.04
28.35	93	34.63	1.62	4.69	2.53	silty clay to clay	UNDFND	UNDFD	22	2.44
28.65	94	35.36	1.52	4.29	2.56	silty clay to clay	UNDFND	UNDFD	23	2.49
28.95	95	35.45	1.68	4.74	2.58	silty clay to clay	UNDFND	UNDFD	23	2.50
29.25	96	45.88	2.44	5.33	2.61	clay	UNDFND	UNDFD	44	3.36
29.55	97	53.56	2.85	5.31	2.64	clay	UNDFND	UNDFD	>50	4.00
29.85	98	50.76	2.42	4.77	2.66	silty clay to clay	UNDFND	UNDFD	32	3.76
30.15	99	79.15	3.98	5.02	2.69	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
30.45	100	49.63	2.20	4.42	2.71	silty clay to clay	UNDFND	UNDFD	32	3.66

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

(*) overconsolidated or cemented

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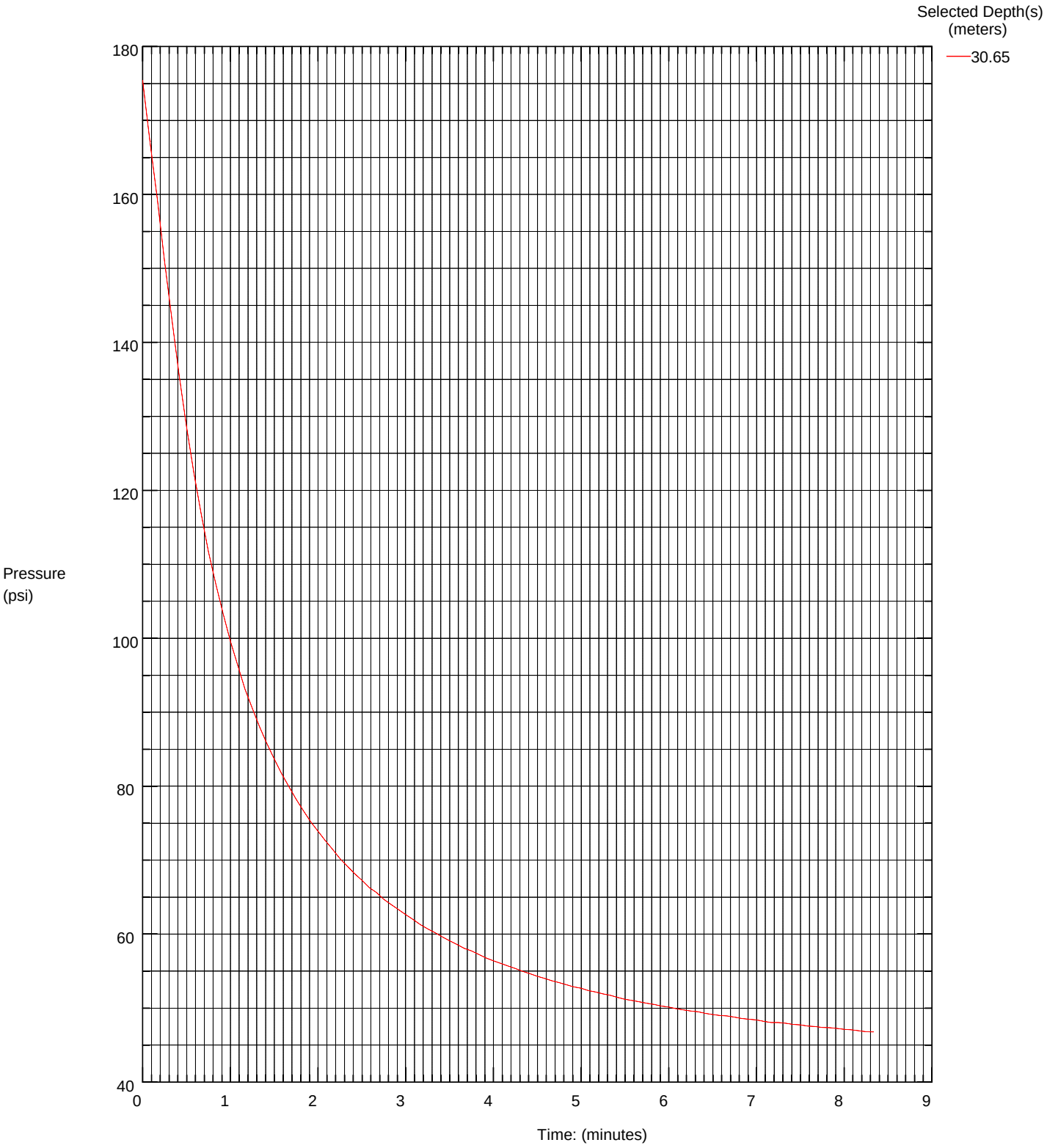
Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: WTSC16
Cone Used: 739

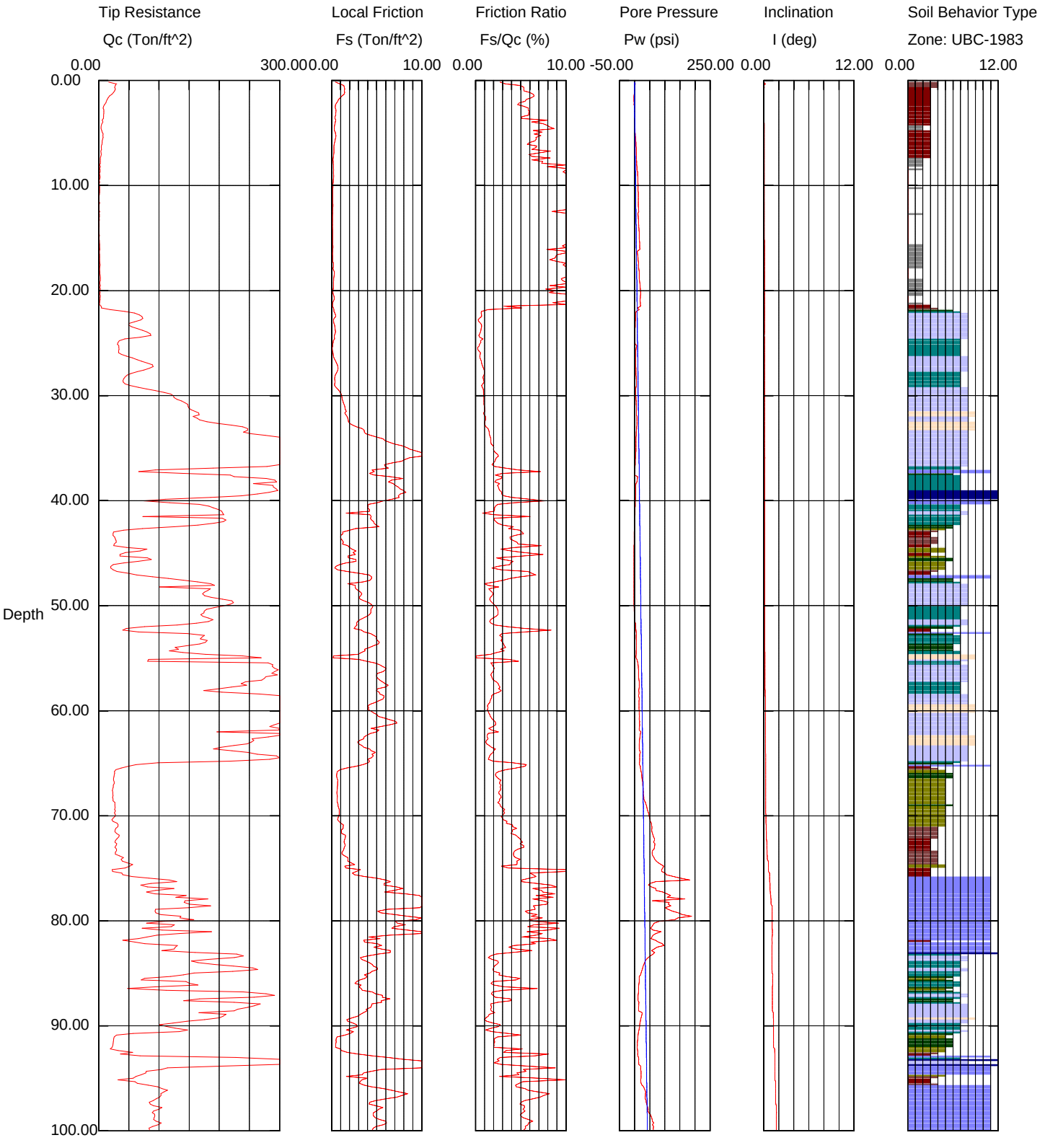
CPT Date/Time: 09-03-02 10:34
Location: WEBB PUMP STA.SE
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC17
Cone Used: 739

CPT Date/Time: 09-03-02 08:46
Location: WEBB PUMP STA.SE
Job Number: IN-DELTA STORAGE



Maximum Depth = 101.54 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN CPT Date :09-03-02 08:46
On Site Loc:WEBB PUMP STA.SE Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	25.49	1.18	4.61	0.03	clay	UNDFND	UNDFD	24	2.12
0.60	2	17.81	1.08	6.08	0.08	clay	UNDFND	UNDFD	17	1.47
0.95	3	8.84	0.48	5.42	0.15	clay	UNDFND	UNDFD	8	.72
1.25	4	6.88	0.42	6.15	0.20	clay	UNDFND	UNDFD	7	.55
1.55	5	4.96	0.36	7.35	0.22	clay	UNDFND	UNDFD	5	.39
1.85	6	6.20	0.40	6.52	0.25	clay	UNDFND	UNDFD	6	.49
2.15	7	4.08	0.28	6.76	0.27	clay	UNDFND	UNDFD	4	.30
2.45	8	2.58	0.20	7.72	0.30	organic material	UNDFND	UNDFD	2	.17
2.75	9	2.00	0.23	11.62	0.33	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.05	10	1.45	0.20	13.62	0.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.35	11	1.25	0.16	12.60	0.38	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.65	12	0.62	0.16	25.05	0.40	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.95	13	0.94	0.13	13.68	0.43	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.25	14	0.67	0.12	18.14	0.46	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.55	15	0.57	0.13	23.38	0.48	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.85	16	1.26	0.15	12.11	0.51	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.15	17	1.47	0.13	9.19	0.53	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.45	18	1.79	0.18	10.11	0.56	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.75	19	2.09	0.27	13.09	0.59	undefined	UNDFND	UNDFD	UDF	UNDEFINED
6.05	20	2.15	0.21	9.87	0.61	undefined	UNDFND	UNDFD	UDF	UNDEFINED
6.40	21	2.09	0.23	11.21	0.64	undefined	UNDFND	UNDFD	UDF	UNDEFINED
6.70	22	12.15	0.19	1.56	0.67	clayey silt to silty clay	UNDFND	UNDFD	6	.90
7.00	23	66.70	0.34	0.51	0.69	sand to silty sand	60-70	40-42	16	UNDEFINED
7.35	24	65.21	0.38	0.58	0.72	sand to silty sand	50-60	40-42	16	UNDEFINED
7.65	25	49.21	0.26	0.52	0.75	sand to silty sand	50-60	38-40	12	UNDEFINED
7.95	26	33.84	0.13	0.39	0.77	silty sand to sandy silt	<40	36-38	11	UNDEFINED
8.25	27	67.59	0.42	0.62	0.80	sand to silty sand	50-60	40-42	16	UNDEFINED
8.55	28	68.96	0.62	0.90	0.83	sand to silty sand	50-60	40-42	17	UNDEFINED
8.85	29	43.54	0.36	0.83	0.85	silty sand to sandy silt	40-50	36-38	14	UNDEFINED
9.15	30	98.45	0.86	0.88	0.88	sand to silty sand	60-70	40-42	24	UNDEFINED
9.45	31	138.54	1.30	0.94	0.90	sand to silty sand	70-80	42-44	33	UNDEFINED
9.75	32	158.39	1.58	1.00	0.93	sand to silty sand	80-90	42-44	38	UNDEFINED
10.05	33	194.37	2.11	1.09	0.96	sand	80-90	44-46	37	UNDEFINED
10.35	34	261.36	3.98	1.52	0.98	sand to silty sand	>90	44-46	>50	UNDEFINED
10.65	35	378.65	6.86	1.81	1.01	sand to silty sand	>90	46-48	>50	UNDEFINED
10.95	36	428.55	9.63	2.25	1.03	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
11.25	37	309.34	6.77	2.19	1.06	sand to silty sand	>90	44-46	>50	UNDEFINED
11.55	38	170.27	5.42	3.18	1.09	sandy silt to clayey silt	UNDFND	UNDFD	>50	14.01

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E W1 Bureau of Reclamation
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Operator :TONY SHANAHAN On Site Loc:WEBB PUMP STA.SE Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	286.04	6.96	2.43	1.11	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
12.15	40	229.29	7.57	3.30	1.14	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
12.45	41	155.11	4.52	2.91	1.16	silty sand to sandy silt	70-80	42-44	50	UNDEFINED
12.80	42	187.48	3.98	2.12	1.19	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
13.10	43	103.20	3.48	3.37	1.22	sandy silt to clayey silt	UNDFND	UNDFD	40	8.39
13.40	44	26.49	1.15	4.33	1.24	silty clay to clay	UNDFND	UNDFD	17	1.99
13.75	45	46.47	2.14	4.61	1.27	silty clay to clay	UNDFND	UNDFD	30	3.66
14.05	46	55.66	1.94	3.48	1.30	clayey silt to silty clay	UNDFND	UNDFD	27	4.42
14.35	47	34.41	1.76	5.12	1.33	clay	UNDFND	UNDFD	33	2.64
14.65	48	147.90	3.52	2.38	1.35	silty sand to sandy silt	70-80	40-42	47	UNDEFINED
14.95	49	165.10	3.01	1.82	1.38	sand to silty sand	70-80	40-42	40	UNDEFINED
15.25	50	209.68	3.82	1.82	1.40	sand to silty sand	80-90	42-44	>50	UNDEFINED
15.55	51	176.75	4.28	2.42	1.43	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
15.85	52	153.62	2.96	1.93	1.46	silty sand to sandy silt	70-80	40-42	49	UNDEFINED
16.15	53	107.51	3.91	3.63	1.48	sandy silt to clayey silt	UNDFND	UNDFD	41	8.70
16.45	54	160.74	4.90	3.05	1.51	sandy silt to clayey silt	UNDFND	UNDFD	>50	13.14
16.75	55	179.04	2.34	1.31	1.53	sand to silty sand	70-80	40-42	43	UNDEFINED
17.05	56	218.73	4.77	2.18	1.56	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
17.35	57	287.42	5.32	1.85	1.59	sand to silty sand	>90	42-44	>50	UNDEFINED
17.65	58	235.65	5.71	2.42	1.61	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
17.95	59	270.51	5.47	2.02	1.64	sand to silty sand	80-90	42-44	>50	UNDEFINED
18.25	60	309.14	4.42	1.43	1.66	sand to silty sand	>90	42-44	>50	UNDEFINED
18.55	61	322.16	5.25	1.63	1.69	sand to silty sand	>90	42-44	>50	UNDEFINED
18.85	62	304.21	5.96	1.96	1.71	sand to silty sand	>90	42-44	>50	UNDEFINED
19.20	63	265.06	3.77	1.42	1.74	sand to silty sand	80-90	42-44	>50	UNDEFINED
19.50	64	221.93	3.91	1.76	1.77	sand to silty sand	80-90	40-42	>50	UNDEFINED
19.80	65	242.71	4.31	1.78	1.80	sand to silty sand	80-90	42-44	>50	UNDEFINED
20.15	66	36.34	1.52	4.17	1.82	silty clay to clay	UNDFND	UNDFD	23	2.71
20.45	67	24.98	0.66	2.63	1.85	clayey silt to silty clay	UNDFND	UNDFD	12	1.76
20.75	68	23.38	0.63	2.71	1.88	clayey silt to silty clay	UNDFND	UNDFD	11	1.62
21.05	69	25.09	0.67	2.68	1.90	clayey silt to silty clay	UNDFND	UNDFD	12	1.76
21.35	70	26.96	0.83	3.07	1.93	clayey silt to silty clay	UNDFND	UNDFD	13	1.91
21.65	71	27.34	0.98	3.59	1.96	clayey silt to silty clay	UNDFND	UNDFD	13	1.94
21.95	72	29.85	1.29	4.31	1.98	silty clay to clay	UNDFND	UNDFD	19	2.14
22.25	73	28.41	1.45	5.12	2.01	clay	UNDFND	UNDFD	27	2.02
22.55	74	31.39	1.37	4.36	2.03	silty clay to clay	UNDFND	UNDFD	20	2.26
22.85	75	45.62	1.90	4.17	2.06	clayey silt to silty clay	UNDFND	UNDFD	22	3.44
23.15	76	43.67	3.25	7.43	2.09	clay	UNDFND	UNDFD	42	3.27
23.45	77	101.33	6.55	6.46	2.11	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
23.75	78	120.17	8.86	7.37	2.14	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
24.05	79	144.03	10.28	7.14	2.16	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
24.35	80	119.89	7.54	6.29	2.19	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

(*) overconsolidated or cemented

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E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:WEBB PUMP STA.SE Page No. 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
24.65	81	102.00	7.43	7.28	2.21	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
24.95	82	100.60	6.68	6.64	2.24	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
25.25	83	104.00	5.17	4.97	2.27	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
25.60	84	193.30	4.30	2.23	2.29	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
25.90	85	219.21	4.67	2.13	2.32	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
26.20	86	116.89	3.32	2.84	2.35	sandy silt to clayey silt	UNDFND	UNDFD	45	9.33
26.55	87	175.19	4.00	2.29	2.38	silty sand to sandy silt	70-80	38-40	>50	UNDEFINED
26.85	88	219.41	5.34	2.43	2.40	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
27.15	89	214.31	3.63	1.69	2.43	sand to silty sand	70-80	40-42	>50	UNDEFINED
27.45	90	143.24	2.31	1.61	2.46	sand to silty sand	60-70	38-40	34	UNDEFINED
27.75	91	86.66	1.74	2.01	2.48	silty sand to sandy silt	40-50	34-36	28	UNDEFINED
28.05	92	23.82	0.49	2.06	2.51	sandy silt to clayey silt	UNDFND	UNDFD	9	1.54
28.35	93	73.21	2.91	3.98	2.53	clayey silt to silty clay	UNDFND	UNDFD	35	5.65
28.65	94	345.25	10.81	3.13	2.56	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
28.95	95	75.05	3.75	5.00	2.58	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
29.25	96	73.37	3.90	5.31	2.61	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
29.55	97	104.19	7.27	6.98	2.64	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
29.85	98	92.43	4.85	5.25	2.66	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
30.15	99	91.33	4.84	5.30	2.69	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
30.45	100	92.54	5.32	5.75	2.71	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
30.75	101	85.48	4.65	5.45	2.74	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

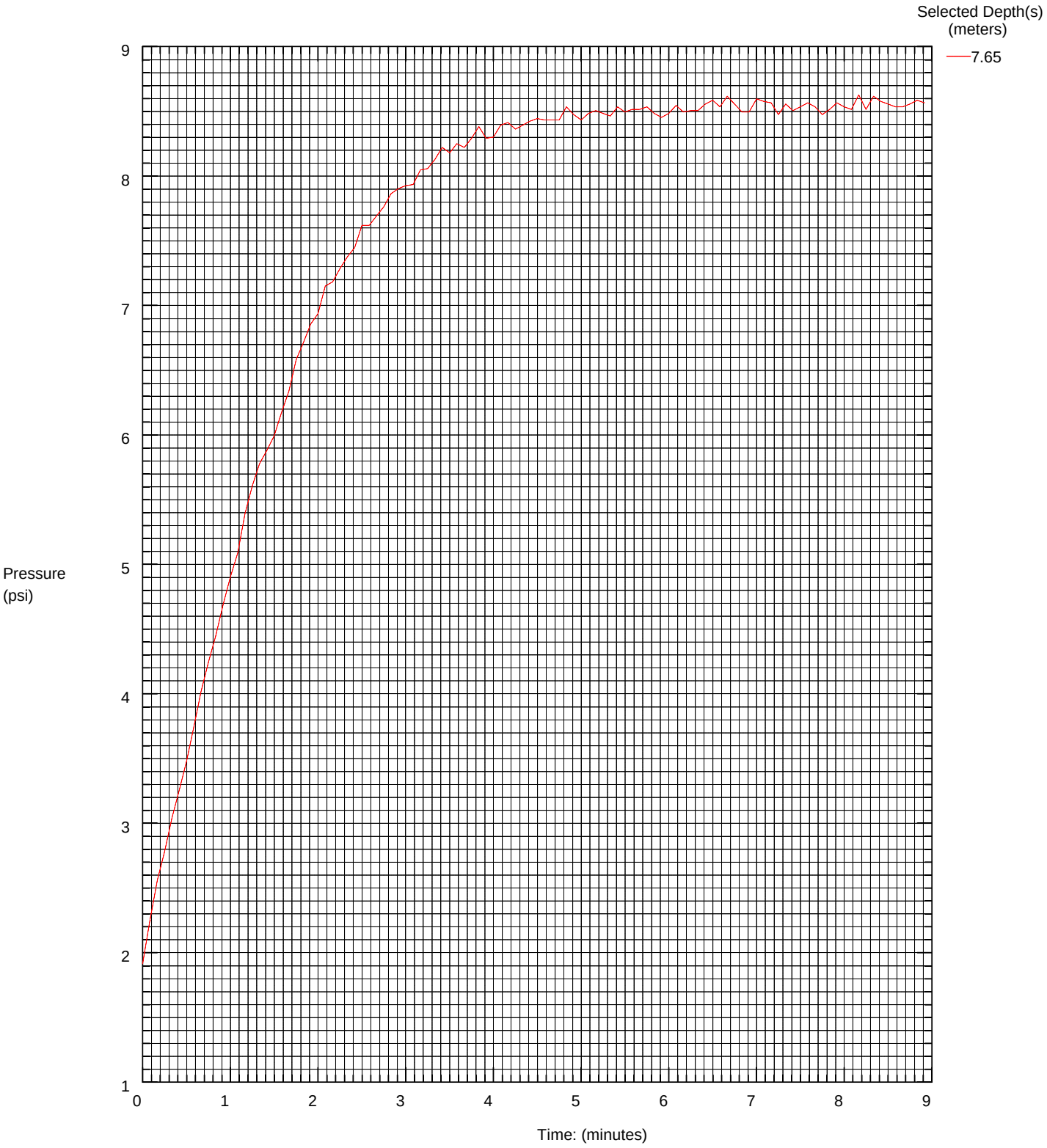
(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: WTSC17
Cone Used: 739

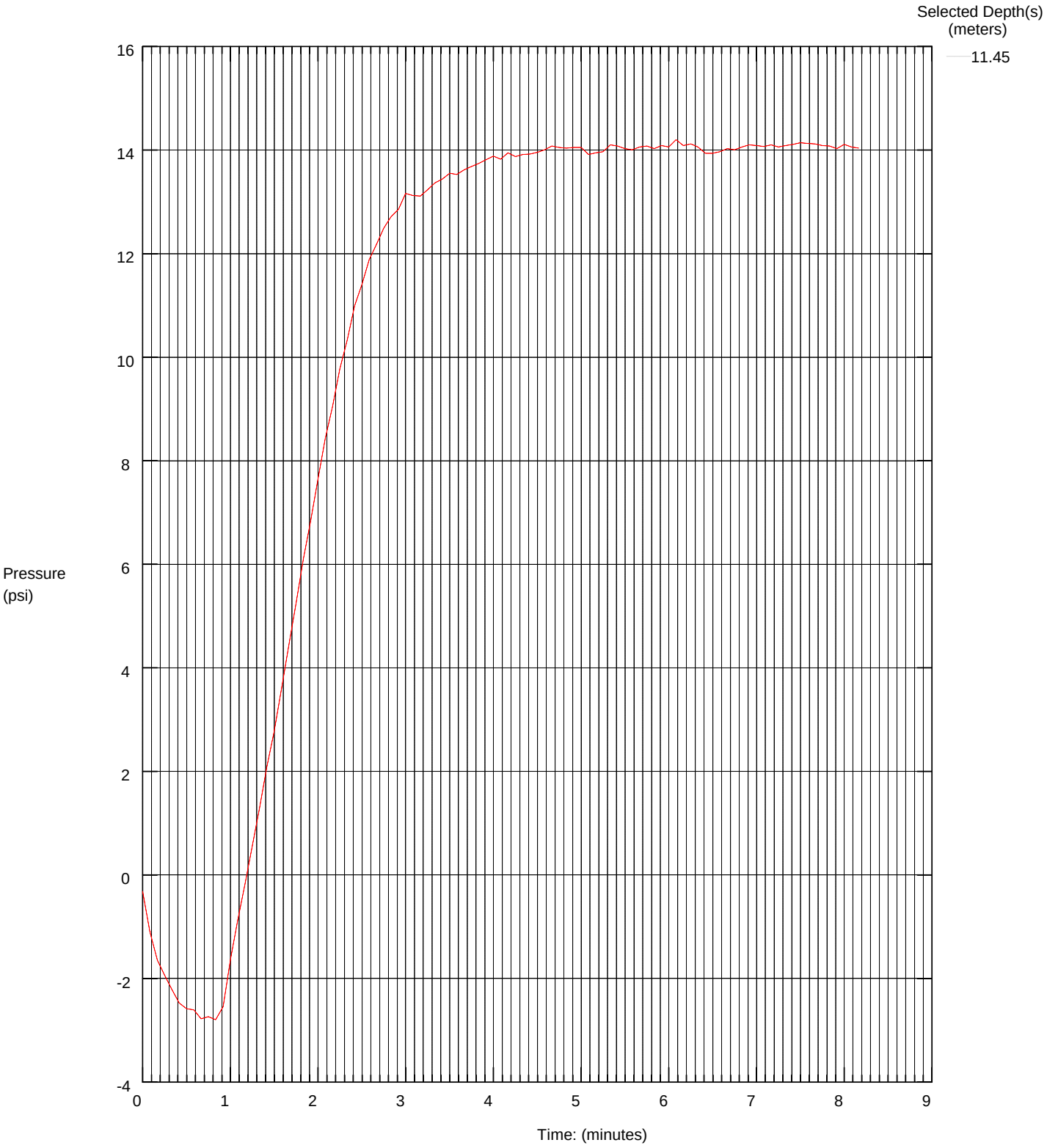
CPT Date/Time: 09-03-02 08:46
Location: WEBB PUMP STA.SE
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: WTSC17
Cone Used: 739

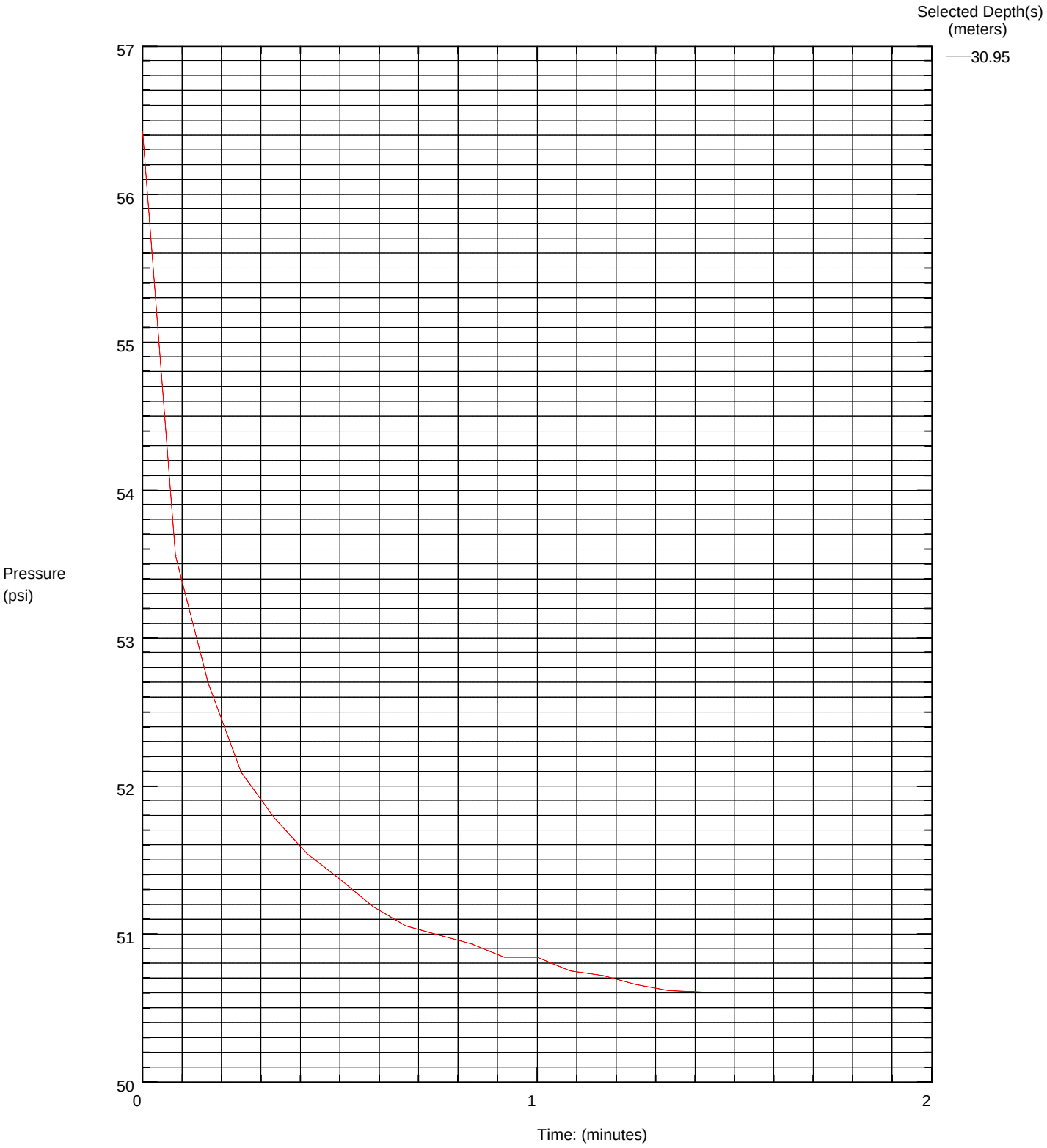
CPT Date/Time: 09-03-02 08:46
Location: WEBB PUMP STA.SE
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: WTSC17
Cone Used: 739

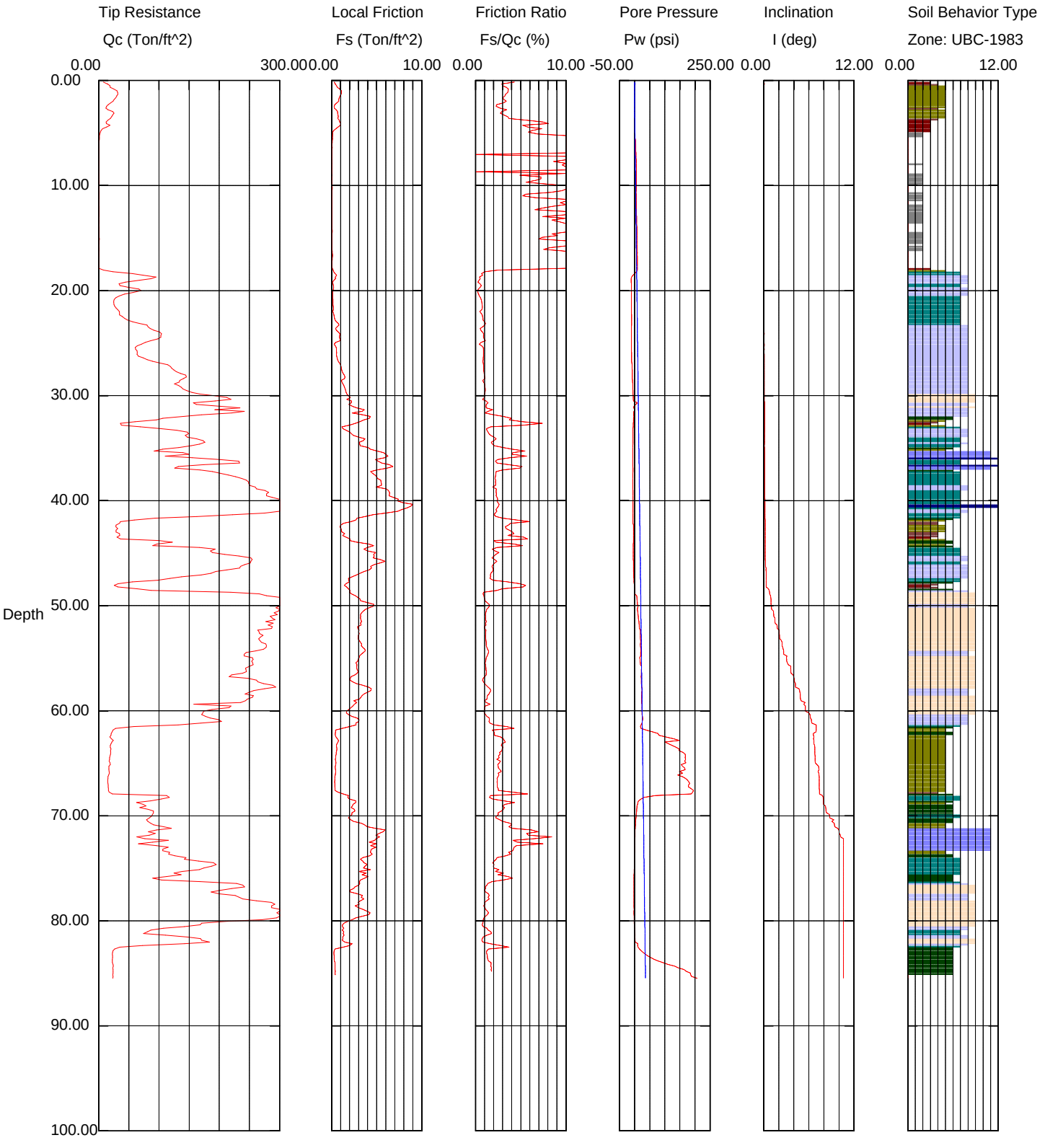
CPT Date/Time: 09-03-02 08:46
Location: WEBB PUMP STA.SE
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC18
Cone Used: 739

CPT Date/Time: 09-03-02 12:09
Location: WEBB PUMP STA.SE
Job Number: IN-DELTA STORAGE



Maximum Depth = 85.47 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0

Operator :TONY SHANAHAN
On Site Loc:WEBB PUMP STA.SE
Job No. :IN-DELTA STORAGE
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :09-03-02 12:09
Cone Used :739
Water table (feet) : 3.28084

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	19.10	0.66	3.44	0.03	silty clay to clay	UNDFND	UNDFD	12	1.58
0.60	2	28.35	0.93	3.28	0.08	clayey silt to silty clay	UNDFND	UNDFD	14	2.35
0.95	3	17.75	0.50	2.82	0.15	clayey silt to silty clay	UNDFND	UNDFD	9	1.46
1.25	4	17.30	0.83	4.81	0.20	clay	UNDFND	UNDFD	17	1.42
1.55	5	7.79	0.46	5.86	0.22	clay	UNDFND	UNDFD	7	.62
1.85	6	0.72	0.10	13.71	0.25	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.15	7	0.23	0.06	27.94	0.27	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.45	8	0.30	0.04	14.74	0.30	undefined	UNDFND	UNDFD	UDF	UNDEFINED
2.75	9	0.21	0.04	19.31	0.33	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.05	10	0.50	0.04	8.11	0.35	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.35	11	0.54	0.06	10.36	0.38	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.65	12	0.62	0.06	10.33	0.40	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.95	13	0.70	0.06	8.61	0.43	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.25	14	0.57	0.07	11.54	0.46	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.55	15	0.67	0.07	10.05	0.48	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.85	16	0.64	0.06	9.85	0.51	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.15	17	0.42	0.09	22.17	0.53	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.45	18	0.26	0.07	26.45	0.56	undefined	UNDFND	UNDFD	UDF	UNDEFINED
5.75	19	57.12	0.38	0.66	0.59	sand to silty sand	50-60	40-42	14	UNDEFINED
6.05	20	49.20	0.21	0.42	0.61	sand to silty sand	50-60	40-42	12	UNDEFINED
6.40	21	40.36	0.16	0.38	0.64	silty sand to sandy silt	40-50	38-40	13	UNDEFINED
6.70	22	28.36	0.19	0.67	0.67	silty sand to sandy silt	<40	36-38	9	UNDEFINED
7.00	23	42.30	0.34	0.81	0.69	silty sand to sandy silt	40-50	38-40	14	UNDEFINED
7.35	24	87.34	0.70	0.80	0.72	sand to silty sand	60-70	40-42	21	UNDEFINED
7.65	25	89.68	0.75	0.84	0.75	sand to silty sand	60-70	40-42	21	UNDEFINED
7.95	26	62.73	0.53	0.85	0.77	sand to silty sand	50-60	40-42	15	UNDEFINED
8.25	27	87.55	0.75	0.86	0.80	sand to silty sand	60-70	40-42	21	UNDEFINED
8.55	28	128.76	1.20	0.93	0.83	sand to silty sand	70-80	42-44	31	UNDEFINED
8.85	29	135.26	1.30	0.96	0.85	sand to silty sand	70-80	42-44	32	UNDEFINED
9.15	30	156.52	1.62	1.04	0.88	sand to silty sand	80-90	42-44	37	UNDEFINED
9.45	31	190.78	2.07	1.09	0.90	sand	80-90	44-46	37	UNDEFINED
9.75	32	199.89	3.31	1.66	0.93	sand to silty sand	80-90	44-46	48	UNDEFINED
10.05	33	67.46	2.78	4.13	0.96	clayey silt to silty clay	UNDFND	UNDFD	32	5.46
10.35	34	136.45	2.09	1.53	0.98	sand to silty sand	70-80	42-44	33	UNDEFINED
10.65	35	160.77	3.44	2.14	1.01	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
10.95	36	125.43	5.54	4.42	1.03	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
11.25	37	183.23	5.83	3.18	1.06	sandy silt to clayey silt	UNDFND	UNDFD	>50	15.09
11.55	38	206.39	4.80	2.33	1.09	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:WEBB PUMP STA.SE Page No. 2

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
11.85	39	252.24	5.50	2.18	1.11	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
12.15	40	283.86	6.63	2.34	1.14	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
12.45	41	335.31	8.19	2.44	1.16	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
12.80	42	165.65	4.18	2.52	1.19	silty sand to sandy silt	70-80	42-44	>50	UNDEFINED
13.10	43	30.04	1.10	3.68	1.22	clayey silt to silty clay	UNDFND	UNDFD	14	2.29
13.40	44	59.55	1.87	3.13	1.24	sandy silt to clayey silt	UNDFND	UNDFD	23	4.75
13.75	45	161.32	4.27	2.65	1.27	silty sand to sandy silt	70-80	42-44	>50	UNDEFINED
14.05	46	247.58	5.13	2.07	1.30	sand to silty sand	80-90	42-44	>50	UNDEFINED
14.35	47	205.24	3.75	1.83	1.33	sand to silty sand	80-90	42-44	49	UNDEFINED
14.65	48	77.81	1.84	2.37	1.35	sandy silt to clayey silt	UNDFND	UNDFD	30	6.25
14.95	49	157.58	2.08	1.32	1.38	sand to silty sand	70-80	40-42	38	UNDEFINED
15.25	50	306.58	3.77	1.23	1.40	sand	>90	44-46	>50	UNDEFINED
15.55	51	294.45	3.53	1.20	1.43	sand	>90	44-46	>50	UNDEFINED
15.85	52	285.90	3.20	1.12	1.46	sand	>90	42-44	>50	UNDEFINED
16.15	53	270.70	3.00	1.11	1.48	sand	80-90	42-44	>50	UNDEFINED
16.45	54	272.46	3.22	1.18	1.51	sand	80-90	42-44	>50	UNDEFINED
16.75	55	252.62	3.40	1.35	1.53	sand	80-90	42-44	48	UNDEFINED
17.05	56	252.36	2.83	1.12	1.56	sand	80-90	42-44	48	UNDEFINED
17.35	57	235.29	2.58	1.10	1.59	sand	80-90	42-44	45	UNDEFINED
17.65	58	276.00	3.19	1.16	1.61	sand	80-90	42-44	>50	UNDEFINED
17.95	59	251.31	3.62	1.44	1.64	sand to silty sand	80-90	42-44	>50	UNDEFINED
18.25	60	209.95	2.37	1.13	1.66	sand	80-90	42-44	40	UNDEFINED
18.55	61	179.66	2.22	1.24	1.69	sand to silty sand	70-80	40-42	43	UNDEFINED
18.85	62	102.45	2.01	1.96	1.71	silty sand to sandy silt	50-60	38-40	33	UNDEFINED
19.20	63	21.21	0.57	2.66	1.74	clayey silt to silty clay	UNDFND	UNDFD	10	1.46
19.50	64	19.63	0.57	2.89	1.77	clayey silt to silty clay	UNDFND	UNDFD	9	1.33
19.80	65	18.31	0.48	2.61	1.80	clayey silt to silty clay	UNDFND	UNDFD	9	1.21
20.15	66	17.17	0.45	2.60	1.82	clayey silt to silty clay	UNDFND	UNDFD	8	1.11
20.45	67	15.27	0.37	2.41	1.85	clayey silt to silty clay	UNDFND	UNDFD	7	.95
20.75	68	33.32	0.84	2.53	1.88	sandy silt to clayey silt	UNDFND	UNDFD	13	2.45
21.05	69	86.93	2.32	2.67	1.90	sandy silt to clayey silt	UNDFND	UNDFD	33	6.91
21.35	70	84.77	2.30	2.72	1.93	sandy silt to clayey silt	UNDFND	UNDFD	32	6.73
21.65	71	88.11	2.89	3.28	1.96	sandy silt to clayey silt	UNDFND	UNDFD	34	7.00
21.95	72	89.91	5.34	5.94	1.98	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
22.25	73	93.09	4.68	5.03	2.01	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
22.55	74	119.43	4.22	3.53	2.03	sandy silt to clayey silt	UNDFND	UNDFD	46	9.60
22.85	75	175.77	3.58	2.04	2.06	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
23.15	76	128.00	3.71	2.90	2.09	sandy silt to clayey silt	UNDFND	UNDFD	49	10.30
23.45	77	200.37	2.91	1.45	2.11	sand to silty sand	70-80	40-42	48	UNDEFINED
23.75	78	214.29	2.89	1.35	2.14	sand to silty sand	70-80	40-42	>50	UNDEFINED
24.05	79	288.04	3.06	1.06	2.16	sand	80-90	42-44	>50	UNDEFINED
24.35	80	296.55	3.45	1.16	2.19	sand	80-90	42-44	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN On Site Loc:WEBB PUMP STA.SE Page No. 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
24.65	81	148.07	1.36	0.92	2.21	sand to silty sand	60-70	38-40	35	UNDEFINED
24.95	82	125.34	1.30	1.03	2.24	sand to silty sand	60-70	38-40	30	UNDEFINED
25.25	83	80.68	1.29	1.60	2.27	silty sand to sandy silt	40-50	34-36	26	UNDEFINED
25.60	84	22.72	0.31	1.37	2.29	sandy silt to clayey silt	UNDFND	UNDFD	9	1.49
25.90	85	23.58	0.41	1.73	2.32	sandy silt to clayey silt	UNDFND	UNDFD	9	1.56

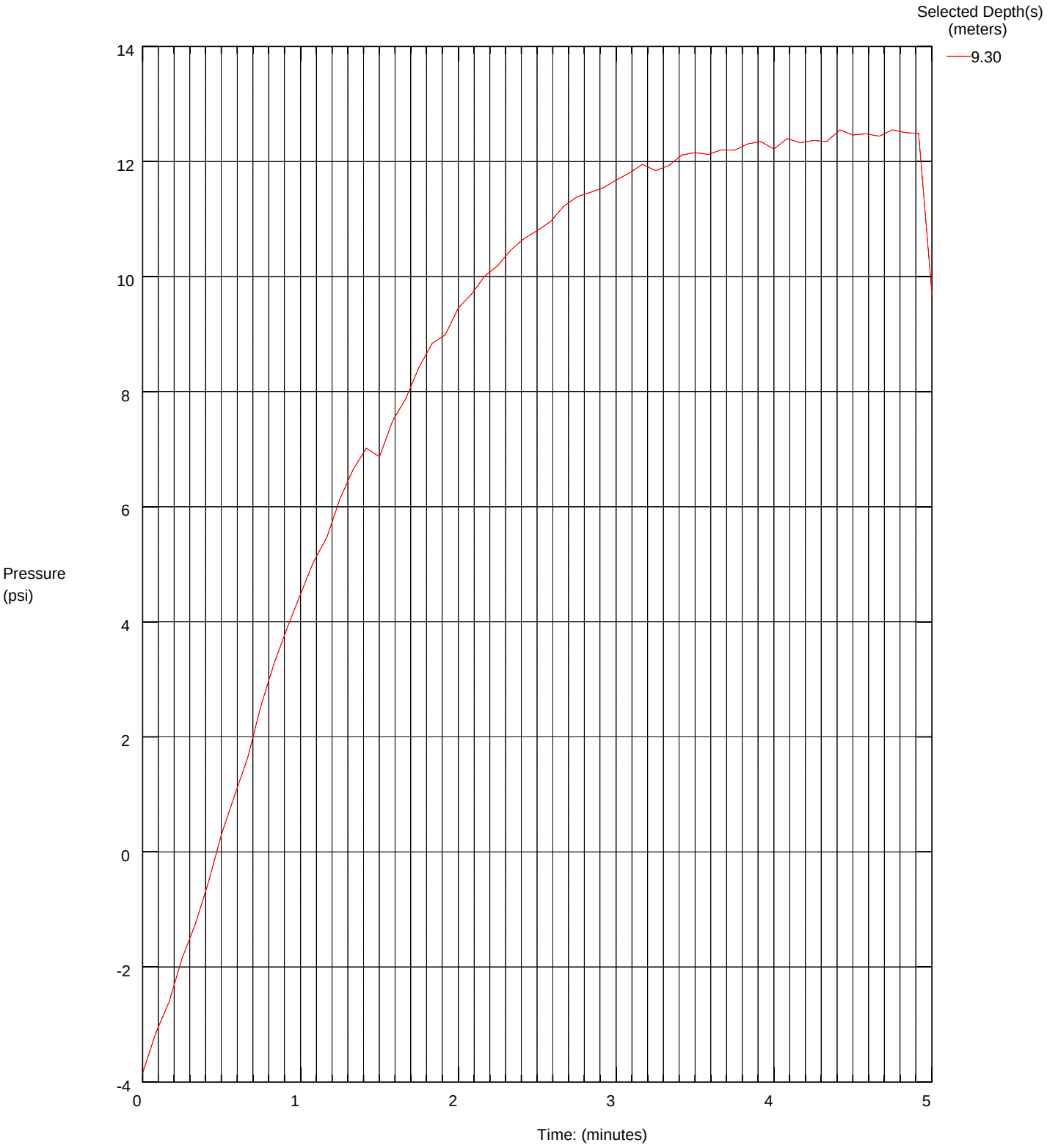
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: WTSC18
Cone Used: 739

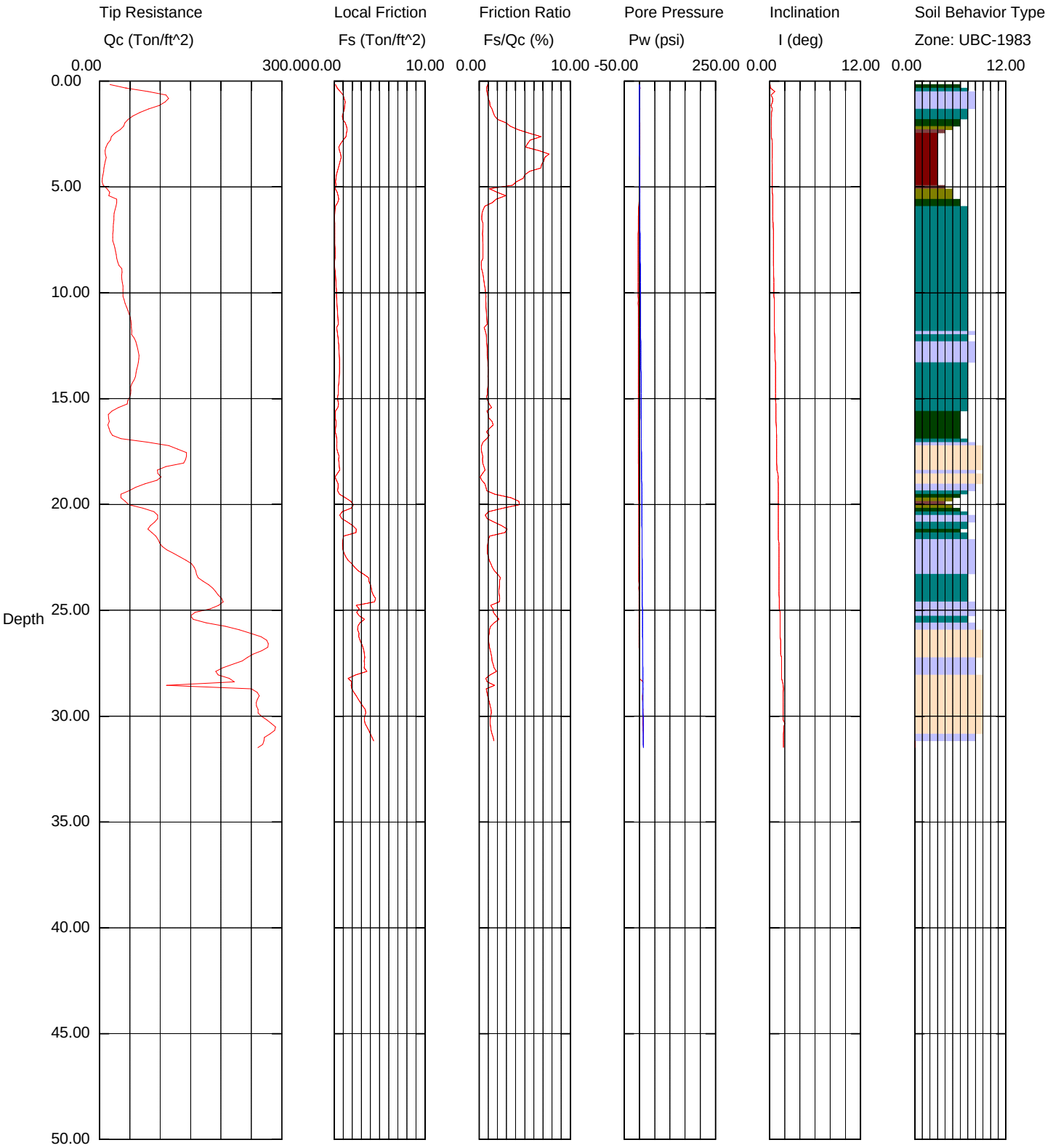
CPT Date/Time: 09-03-02 12:09
Location: WEBB PUMP STA.SE
Job Number: IN-DELTA STORAGE



Bureau of Reclamation

Operator: TONY SHANAHAN
Sounding: WTSC19
Cone Used: 739

CPT Date/Time: 08-31-02 09:14
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Maximum Depth = 31.50 feet

Depth Increment = 0.16 feet

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 (*)

E W1 Bureau of Reclamation
W0
Operator :TONY SHANAHAN CPT Date :08-31-02 09:14
On Site Loc:WEBB TRACT BORRW Cone Used :739
Job No. :IN-DELTA STORAGE Water table (feet) : 3.28084
Tot. Unit Wt. (avg) : 115 pcf

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.30	1	78.49	0.76	0.96	0.03	sand to silty sand	>90	>48	19	UNDEFINED
0.60	2	64.88	1.08	1.66	0.08	silty sand to sandy silt	80-90	>48	21	UNDEFINED
0.95	3	22.97	1.11	4.84	0.15	clay	UNDFND	UNDFD	22	1.90
1.25	4	9.17	0.65	7.04	0.20	clay	UNDFND	UNDFD	9	.74
1.55	5	6.55	0.23	3.56	0.22	clay	UNDFND	UNDFD	6	.52
1.85	6	23.62	0.33	1.41	0.25	sandy silt to clayey silt	UNDFND	UNDFD	9	1.94
2.15	7	23.18	0.08	0.35	0.27	silty sand to sandy silt	40-50	40-42	7	UNDEFINED
2.45	8	23.50	0.09	0.40	0.30	silty sand to sandy silt	40-50	38-40	8	UNDEFINED
2.75	9	31.85	0.10	0.32	0.33	silty sand to sandy silt	40-50	40-42	10	UNDEFINED
3.05	10	37.76	0.22	0.58	0.35	silty sand to sandy silt	50-60	40-42	12	UNDEFINED
3.35	11	43.47	0.33	0.76	0.38	silty sand to sandy silt	50-60	40-42	14	UNDEFINED
3.65	12	52.15	0.40	0.76	0.40	silty sand to sandy silt	60-70	42-44	17	UNDEFINED
3.95	13	61.53	0.52	0.85	0.43	sand to silty sand	60-70	42-44	15	UNDEFINED
4.25	14	62.01	0.59	0.95	0.46	silty sand to sandy silt	60-70	42-44	20	UNDEFINED
4.55	15	52.46	0.48	0.92	0.48	silty sand to sandy silt	50-60	40-42	17	UNDEFINED
4.85	16	28.98	0.31	1.06	0.51	silty sand to sandy silt	40-50	38-40	9	UNDEFINED
5.15	17	19.91	0.21	1.07	0.53	sandy silt to clayey silt	UNDFND	UNDFD	8	1.58
5.45	18	124.90	0.41	0.33	0.56	sand	80-90	44-46	24	UNDEFINED
5.75	19	105.85	0.42	0.39	0.59	sand	70-80	42-44	20	UNDEFINED
6.05	20	49.28	0.83	1.68	0.61	silty sand to sandy silt	50-60	40-42	16	UNDEFINED
6.40	21	82.10	1.42	1.73	0.64	silty sand to sandy silt	60-70	42-44	26	UNDEFINED
6.70	22	92.78	1.46	1.58	0.67	silty sand to sandy silt	70-80	42-44	30	UNDEFINED
7.00	23	135.58	1.53	1.13	0.69	sand to silty sand	80-90	42-44	32	UNDEFINED
7.35	24	172.44	3.67	2.13	0.72	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
7.65	25	189.20	3.50	1.85	0.75	sand to silty sand	80-90	44-46	45	UNDEFINED
7.95	26	194.09	2.82	1.45	0.77	sand to silty sand	80-90	44-46	46	UNDEFINED
8.25	27	269.32	3.06	1.14	0.80	sand	>90	46-48	>50	UNDEFINED
8.55	28	214.37	3.22	1.50	0.83	sand to silty sand	>90	44-46	>50	UNDEFINED
8.85	29	219.70	2.00	0.91	0.85	sand	>90	44-46	42	UNDEFINED
9.15	30	260.92	3.17	1.21	0.88	sand	>90	44-46	50	UNDEFINED
9.45	31	281.33	3.72	1.32	0.90	sand	>90	44-46	>50	UNDEFINED

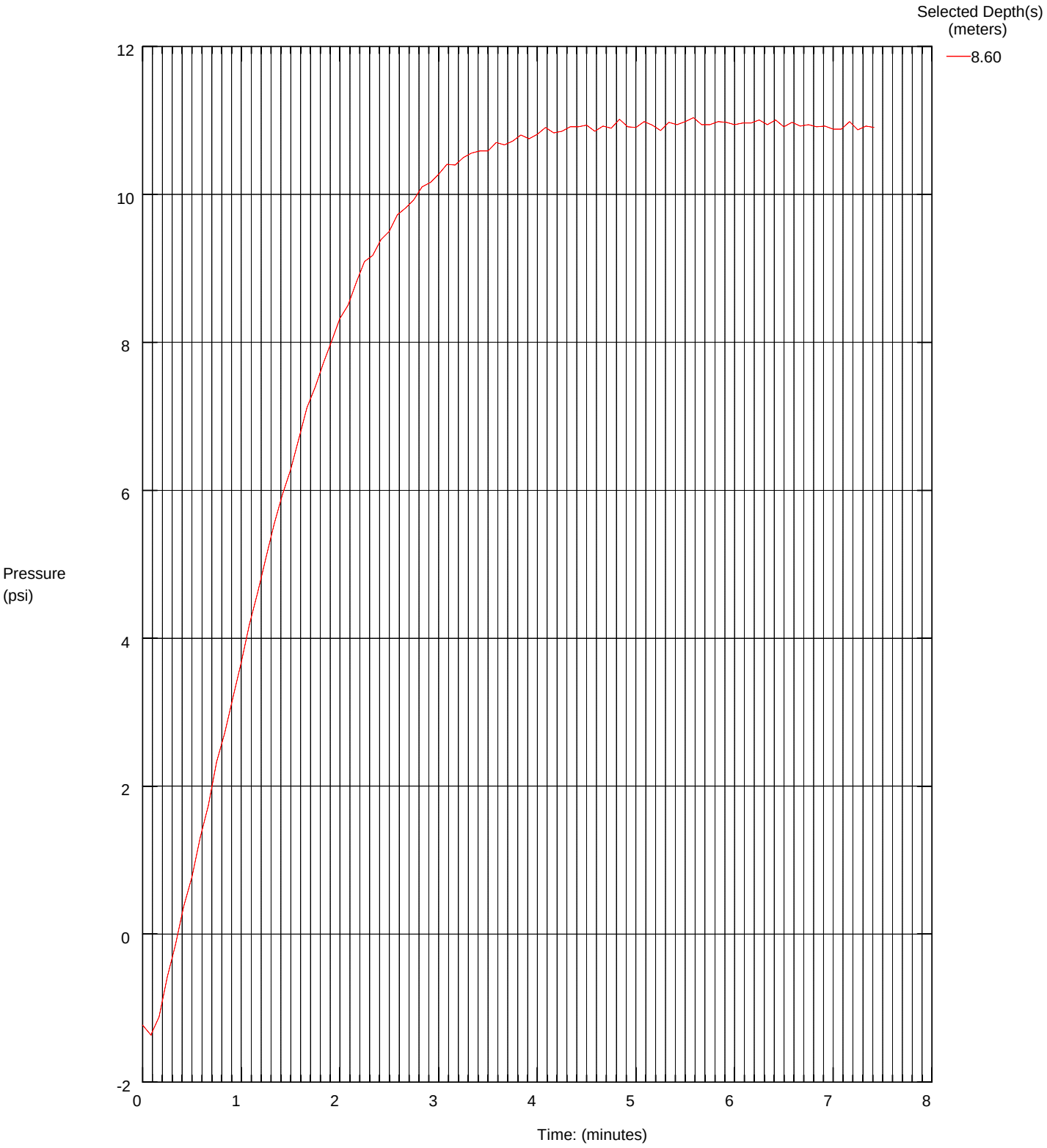
Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 12

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Bureau of Reclamation

Operator TONY SHANAHAN
Sounding: WTSC19
Cone Used: 739

CPT Date/Time: 08-31-02 09:14
Location: WEBB TRACT BORRW
Job Number: IN-DELTA STORAGE



Appendix D

Harding Lawson Associates 1989 Boring Logs

Available Upon Request