ATTACHMENT D

CONE PENETROMETER TEST RESULTS

CONSISTS OF:

Table D-1 Final As-Drilled Locations

Gregg Report dated October 10, 2006

Volume 1 of 1

TABLE D-1 : FINAL AS-DRILLED LOCATIONS (From Attachment A)

Boring No.	Point No.	Coordinates (Feet) - South Carolina State Plane (NAD 83) AS-DRILLED		Ground Surface Elev. (Feet)	Location/Remarks
		North	East		
C-201	849	892773.0	1903149.7	423.4	Power Block
C-202(S)	886	892888.5	1903062.6	422.5	Power Block/Seismic Cone
C-203	888	892915.3	1902940.3	422.8	Power Block
C-204	865	892848.9	1903329.6	428.3	Power Block
C-205	873	892713.8	1903499.0	423.1	Power Block
C-206	890	893044.5	1902877.5	420.5	Outside Power Block
C-207(S)	1122	892903.1	1903451.5	413.0	Outside Power Block/Seismic Cone
C-208	907	892800.9	1902817.8	423.4	Outside Power Block
C-209(S)	812	892471.8	1902958.6	427.0	Outside Power Block/Seismic Cone
C-210	1139	893241.2	1903128.5	367.7	Outside Power Block
C-301	926	891941.9	1902811.3	421.0	Power Block
C-302(S)	929	892052.1	1902726.6	421.3	Power Block/Seismic Cone
C-303	935	892040.7	1902622.5	415.9	Power Block
C-304	841	892013.7	1902992.9	418.1	Power Block
C-305	953	891841.4	1903149.5	413.0	Power Block
C-306	940	892210.3	1902541.3	417.4	Outside Power Block
C-307(S)	923	892076.1	1903116.6	418.7	Outside Power Block/Seismic Cone
C-308	946	891967.1	1902484.2	398.9	Outside Power Block
C-309(S)	1183	891638.6	1902622.3	397.2	Outside Power Block/Seismic Cone
C-310	911	892406.1	1902791.8	427.6	Outside Power Block
C-401	989	890975.6	1904482.2	407.9	Cooling Tower
C-402(S)	1184	890576.8	1903321.4	399.7	Cooling Tower/Seismic Cone
C-403	987	889805.7	1903955.5	401.0	Cooling Tower
C-407	1176	891688.6	1903553.1	374.0	Cooling Tower
C-409	968	891306.3	1903124.9	390.5	Cooling Tower
C-501	807.0	897785.5	1903807.9	427.9	Makeup Water Structure
C-601	1119	892737.0	1902205.3	433.6	Switchyard
C-602	906	892669.2	1902376.0	433.5	Switchyard
C-603	1161	892262.8	1902038.0	422.2	Switchyard
C-604	1144	892193.1	1902215.5	424.2	Switchyard
C-605	1117	893092.5	1904069.5	415.3	Relocated Access Road
C-606	955	893211.6	1904476.0	412.0	Relocated Access Road
C-607	956	892575.2	1904318.2	407.2	Relocated Access Road
C-608	1108	892406.2	1904230.0	405.8	Relocated Access Road
C-609	1175	891462.6	1903410.2	397.2	Relocated Access Road
C-610	1186	890608.9	1902714.0	393.4	Relocated Access Road

October 10, 2006

Mactec
Attn: Clay Sams
2801 Yorkmount Road, Suite 100
Charlotte, NC 28208

Subject: CPT Site Investigation
SCE&G COL Project, VC Summer Nuclear Station
Jenkinsville, South Carolina
GREGG Project Number: 06-064SC

Dear Mr. Sams:

The following report presents the results of GREGG Drilling & Testing's Cone Penetration Test investigation for the above referenced site. The following testing services were performed:

1	Cone Penetration Tests	(CPTU)	☒
2	Pore Pressure Dissipation Tests	(PPD)	☒
3	Seismic Cone Penetration Tests	(SCPTU)	☒
4	Resistivity Cone Penetration Tests	(RCPTU)	☐
5	UVIF Cone Penetration Tests	(UVIFCPTU)	☐
6	Groundwater Sampling	(GWS)	☐
7	Soil Sampling	(SS)	☐
8	Vapor Sampling	(VS)	☐
9	Vane Shear Testing	(VST)	☐
10	SPT Energy Calibration	(SPTE)	☐

A list of reference papers providing additional background on the specific tests conducted is provided in the bibliography following the text of the report. If you would like a copy of any of these publications or should you have any questions or comments regarding the contents of this report, please do not hesitate to contact our office at (925) 313-5800.

Sincerely,
GREGG Drilling & Testing, Inc.

Peter Robertson
Technical Operations

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Cone Penetration Test Sounding Summary

-Table 1-

CPT Sounding Identification	Date	Termination Depth (Feet)	Depth of Groundwater Samples (Feet)	Depth of Soil Samples (Feet)	Depth of Pore Pressure Dissipation Tests (Feet)
C-201	6/19/06	33.8	-	-	-
C-202-seis	6/20/06	48.6	-	-	-
C-203	6/20/06	39.5	-	-	39.5
C-204	6/20/06	50.7	-	-	-
C-205	6/19/06	37.9	-	-	-
C-206	6/20/06	76.1	-	-	69.4
C-207-seis	6/21/06	50.5	-	-	50.5
C-208	6/20/06	30.0	-	-	-
C-209-seis	6/22/06	36.4	-	-	-
C-210	6/21/06	20.2	-	-	20.2
C-301	6/22/06	54.8	-	-	-
C-302c-seis	6/22/06	47.2	-	-	-
C-302-seis	6/22/06	27.4	-	-	-
C-303	6/21/06	42.7	-	-	51.0
C-304	6/22/06	51.3	-	-	-
C-305	6/24/06	47.2	-	-	-
C-306	6/21/06	29.7	-	-	-
C-307-seis	6/23/06	45.1	-	-	45.1
C-308b	6/23/06	37.6	-	-	-
C-308	6/23/06	30.7	-	-	-
C-309-seis	6/23/06	47.6	-	-	-
C-310	6/21/06	31.8	-	-	-
C-401	6/28/06	66.1	-	-	-

C-402-seis	6/26/06	58.2	-	-	-
C-403	6/27/06	58.6	-	-	-
C-407	6/27/06	24.1	-	-	-
C-409	6/27/06	37.6	-	-	-
C-501	6/28/06	64.1	-	-	-
C-601	6/25/06	60.5	-	-	-
C-602B-seis	6/24/06	59.1	-	-	-
C-603	6/25/06	69.1	-	-	-
C-604	6/26/06	60.0	-	-	-
C-605	6/26/06	40.0	-	-	-
C-606	6/27/06	40.0	-	-	-
C-607	6/26/06	40.0	-	-	-
C-608	6/27/06	40.2	-	-	-
C-609	6/26/06	40.0	-	-	-
C-610	6/27/06	40.2	-	-	-

Please note: For soundings C-302 and C-302c as well as C-308 and C-308b, during the original test, computer problems were encountered forcing the operator to abandon the test. The test was then re-done 3 feet from the original location. Due to site variability, the data from the second CPT sounding does not *exactly* match the original sounding although based on our experience we feel that the data from both soundings are valid and accurately represent the sub-surface conditions in these locations.

Cone Penetration Testing Procedure (CPT)

Gregg Drilling & Testing, Inc. carries out all Cone Penetration Tests (CPT) using an integrated electronic cone system, *Figure CPT*. The soundings were conducted using a 20 ton capacity cone with a tip area of 15 cm^2 and a friction sleeve area of 225 cm^2. The cone is designed with an equal end area friction sleeve and a tip end area ratio of 0.85.

The cone takes measurements of cone bearing (q_c), sleeve friction (f_s) and penetration pore water pressure (u_2) at 5-cm intervals during penetration to provide a nearly continuous hydrogeologic log. CPT data reduction and interpretation is performed in real time facilitating on-site decision making. The above mentioned parameters are stored on disk for further analysis and reference. All CPT soundings are performed in accordance with revised (2002) ASTM standards (D 5778-95).

The cone also contains a porous filter element located directly behind the cone tip (u_2), *Figure CPT.* It consists of porous plastic and is 5.0mm thick. The filter element is used to obtain penetration pore pressure as the cone is advanced as well as Pore Pressure Dissipation Tests (PPDT's) during appropriate pauses in penetration. It should be noted that prior to penetration, the element is fully saturated with silicon oil under vacuum pressure to ensure accurate and fast dissipation.

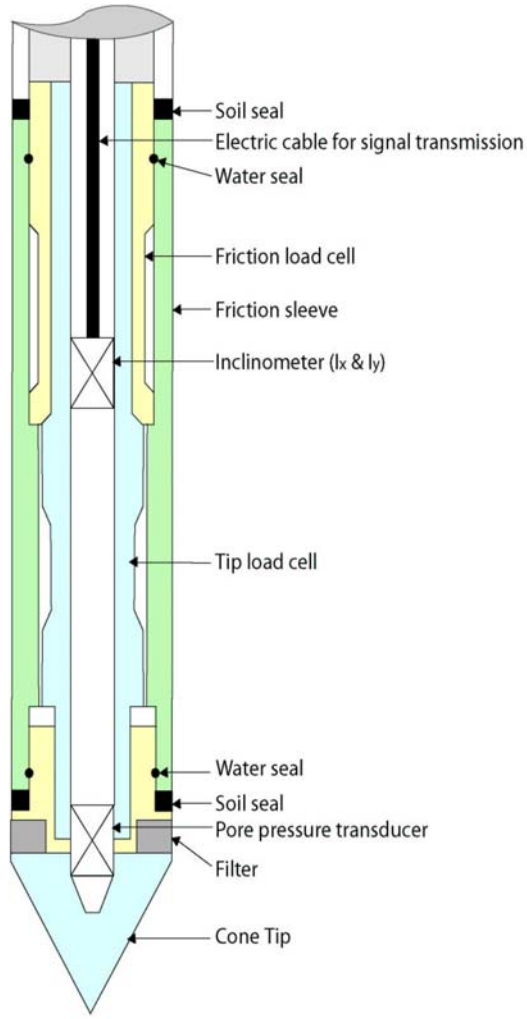


Figure CPT

When the soundings are complete, the test holes are grouted using a Gregg In Situ support rig. The grouting procedures generally consist of pushing a hollow CPT rod with a "knock out" plug to the termination depth of the test hole. Grout is then pumped under pressure as the tremie pipe is pulled from the hole. Disruption or further contamination to the site is therefore minimized.

Cone Penetration Test Data & Interpretation

Soil behavior type and stratigraphic interpretation is based on relationships between cone bearing (q_c), sleeve friction (f_s), and pore water pressure (u_2). The friction ratio (R_f) is a calculated parameter defined by $100 f_s/q_c$ and is used to infer soil behavior type. Generally:

Cohesive soils (clays)

- High friction ratio (R_f) due to small cone bearing (q_c)
- Generate large excess pore water pressures (u_2)

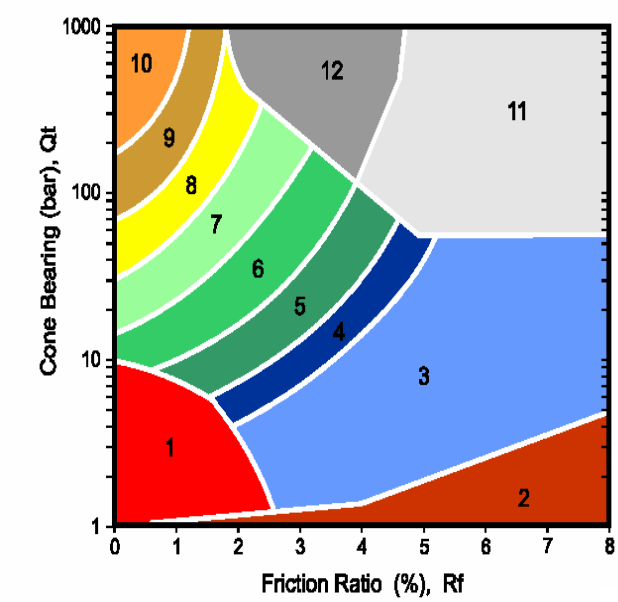
Cohesionless soils (sands)

- Low friction ratio (R_f) due to large cone bearing (q_c)
- Generate very little excess pore water pressures (u_2)

A complete set of baseline readings are taken prior to and at the completion of each sounding to determine temperature shifts and any zero load offsets. Corrections for temperature shifts and zero load offsets can be extremely important, especially when the recorded loads are relatively small. In sandy soils, however, these corrections are generally negligible.

The cone penetration test data collected from your site is presented in graphical form in Appendix CPT. The data includes CPT logs of measured soil parameters, computer calculations of interpreted soil behavior types (SBT), and additional geotechnical parameters. A summary of locations and depths is available in Table 1. Note that all penetration depths referenced in the data are with respect to the existing ground surface.

Soil interpretation for this project was conducted using recent correlations developed by Robertson et al, 1990, *Figure SBT*. Note that it is not always possible to clearly identify a soil type based solely on q_c, f_s, and u_2. In these situations, experience, judgment, and an assessment of the pore pressure dissipation data should be used to infer the soil behavior type.



ZONE	Qt/N	SBT
1	2	Sensitive, fine grained
2	1	Organic materials
3	1	Clay
4	1.5	Silty clay to clay
5	2	Clayey silt to silty clay
6	2.5	Sandy silt to clayey silt
7	3	Silty sand to sandy silt
8	4	Sand to silty sand
9	5	Sand
10	6	Gravely sand to sand
11	1	Very stiff fine grained*
12	2	Sand to clayey sand*

*over consolidated or cemented

Figure SBT

Pore Pressure Dissipation Tests (PPDT)

Pore Pressure Dissipation Tests (PPDT's) conducted at various intervals measured hydrostatic water pressures and determined the approximate depth of the ground water table. A PPDT is conducted when the cone is halted at specific intervals determined by the field representative. The variation of the penetration pore pressure (u) with time is measured behind the tip of the cone and recorded by a computer system.

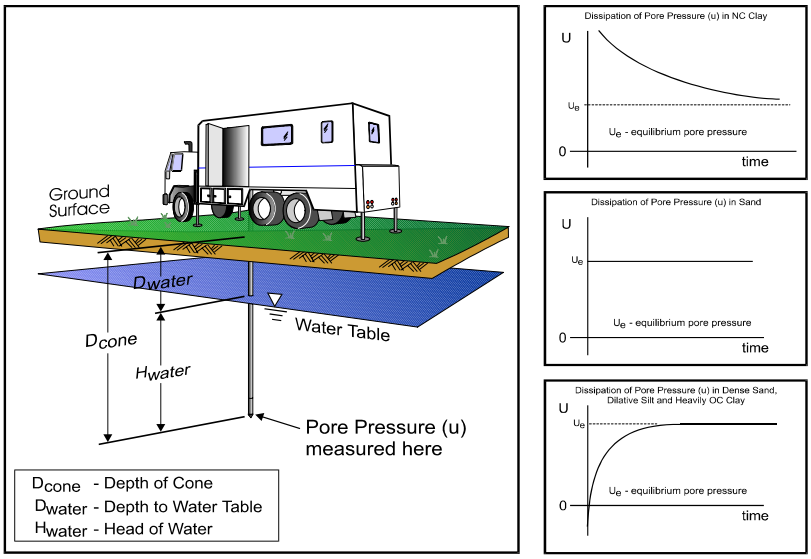
Pore pressure dissipation data can be interpreted to provide estimates of:

- Equilibrium piezometric pressure
- Phreatic Surface
- In situ horizontal coefficient of consolidation (c_h)
- In situ horizontal coefficient of permeability (k_h)

In order to correctly interpret the equilibrium piezometric pressure and/or the phreatic surface, the pore pressure must be monitored until such time as there is no variation in pore pressure with time, *Figure PPDT*. This time is commonly referred to as t_{100}, the point at which 100% of the excess pore pressure has dissipated.

A complete reference on pore pressure dissipation tests is presented by Robertson et al. 1992.

A summary of the pore pressure dissipation tests is summarized in Table 1. Pore pressure dissipation data is presented in graphical form in Appendix PPDT.



Water Table Calculation

$$D_{water} = D_{cone} - H_{water}$$

where $H_{water} = U_e$ (depth units)

Useful Conversion Factors: 1psi = 0.704m = 2.31 feet (water)
1tsf = 0.958 bar = 13.9 psi
1m = 3.28 feet

Figure PPDT

Seismic Cone Penetrometer Testing
(SCPTu)

Gregg Drilling & Testing, Inc. uses a modified CPT cone that contains a built in seismometer to measure compression and shear wave velocities in addition to the standard piezocone parameters (q_c, f_s, and u_2). Therefore, four independent readings are compiled with depth in a single sounding. The standard CPT parameters are recorded continuously while the seismic test is usually performed at 5-foot intervals.

Gregg generates shear waves by striking a seismic beam coupled to the ground surface by a hydraulic cylinder under the CPT rig, *Figure SCPTu*. Compression waves are generated by striking an auger in the ground. The sledgehammer that strikes the beam/auger acts as a trigger, initiating the recording of the seismic wave trace. Before measurements are taken, the rods are decoupled from the CPT rig to prevent energy transmission down the rods.

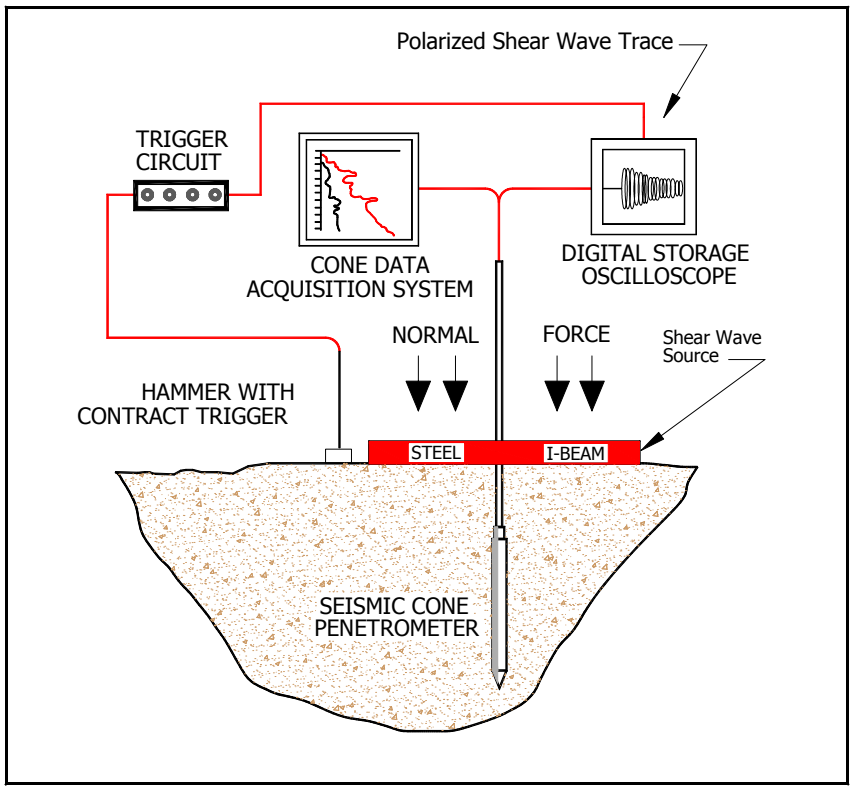


Figure SCPTu

Geophones in the body of the piezocone recognize the arriving waves generated at the ground surface, *Figure Seismic*. Any waves received by the geophones on the cone penetrometer are sent back up to the truck to be displayed on an oscilloscope. On site software then plots the wave amplitude versus time to calculate wave velocities.

At least two waves are recorded for each test depth so the operator can check consistency of the waveforms. Shear wave data is sampled at a frequency of 20 kHz (20,000 samples per second) and compression wave data is sampled at 50 kHz (50,000 samples per second). To maintain a desired signal resolution, the input sensitivity (gain) is increased with depth.

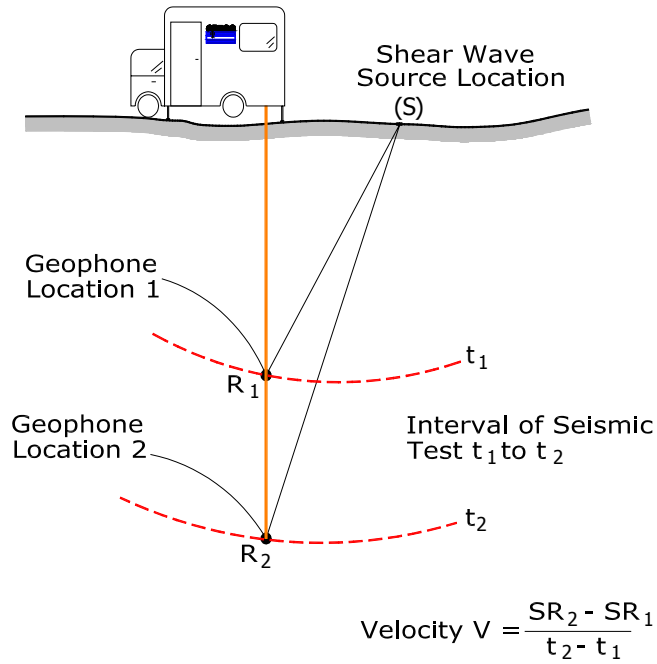


Figure Seismic

Offset distances of the beam from the cone and the location of the geophone are all taken into account in calculations.

The shear wave velocity (V_s) provides information about small-strain stiffness while the penetration data provides information about large-strain strength. From interval shear wave velocity (V_s) and the mass density (ρ) of a soil layer, the dynamic shear modulus (G_o) of the soil can be calculated in a specific depth interval. The dynamic shear modulus (G_0) is a key parameter for the analysis of soil behavior in response to dynamic loading from earthquakes, vibrating machine foundations, waves and wind.

A summary of the data collected including the depth and location identification is displayed in Table 1 and graphical formats and can be found with the corresponding CPT plot.

For a detailed reference on seismic CPT, refer to Robertson et. al., 1986.

Bibliography

Lunne, T., Robertson, P.K. and Powell, J.J.M., "Cone Penetration Testing in Geotechnical Practice" E & FN Spon. ISBN 0 419 23750, 1997

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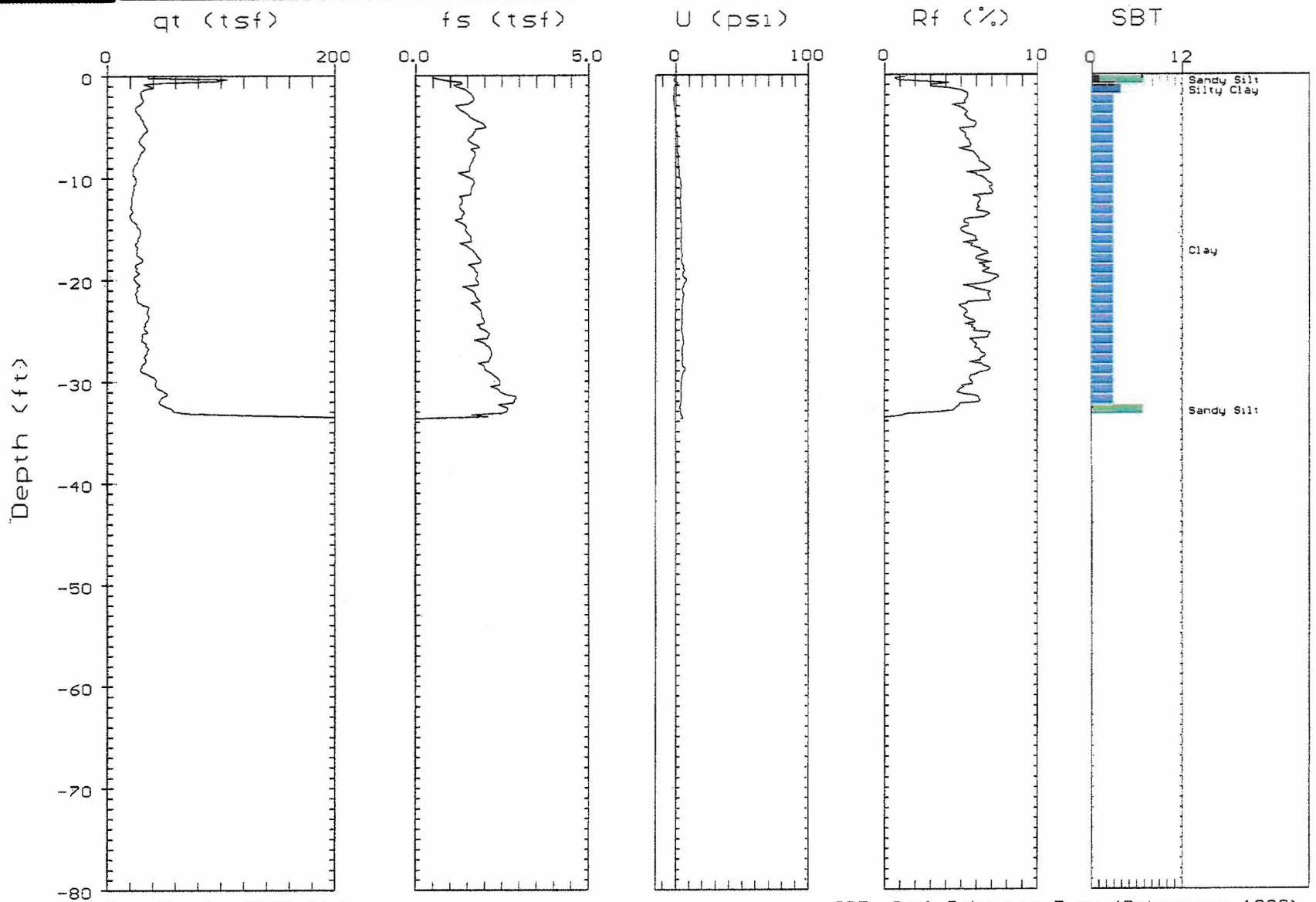
Zemo, D.A., T.A. Delfino, J.D. Gallinatti, V.A. Baker and L.R. Hilpert, "Field Comparison of Analytical Results from Discrete-Depth Groundwater Samplers" BAT EnviroProbe and QED HydroPunch, Sixth national Outdoor Action Conference, Las Vegas, Nevada Proceedings, 1992, pp 299-312.

Copies of ASTM Standards are available through www.astm.org

GREGG

MACTEC

Location: N=892773.0 E=1903149.7 Engineer: C.SAMS
Sounding: C-201 Elev=423.4 Date: 06/19/06 14:16



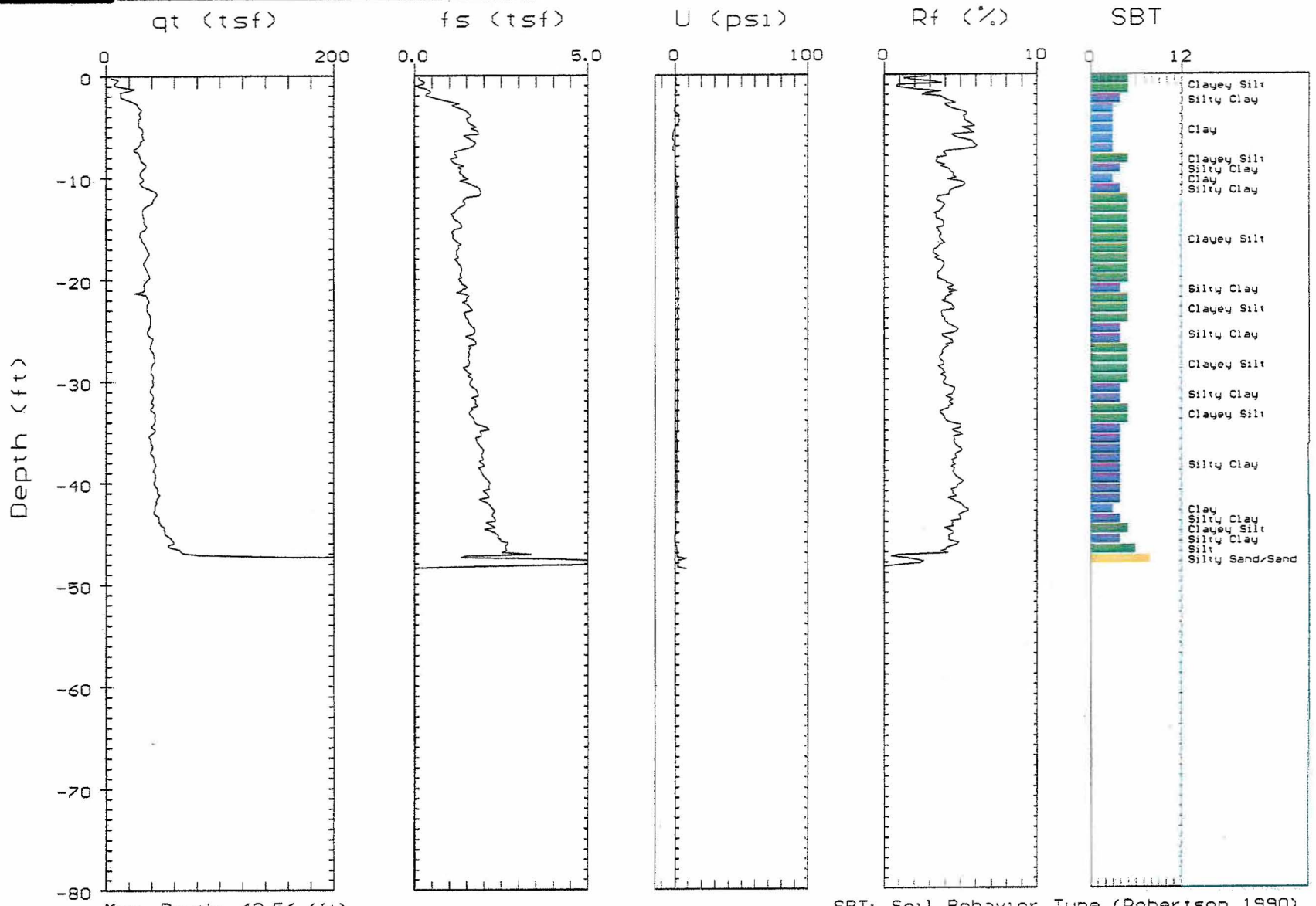
Max. Depth: 33.79 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892888.5 E=1903062.6 Engineer: C.SAMS
Sounding: C-202 ELEV=422.5 Date: 06/20/06 05:42



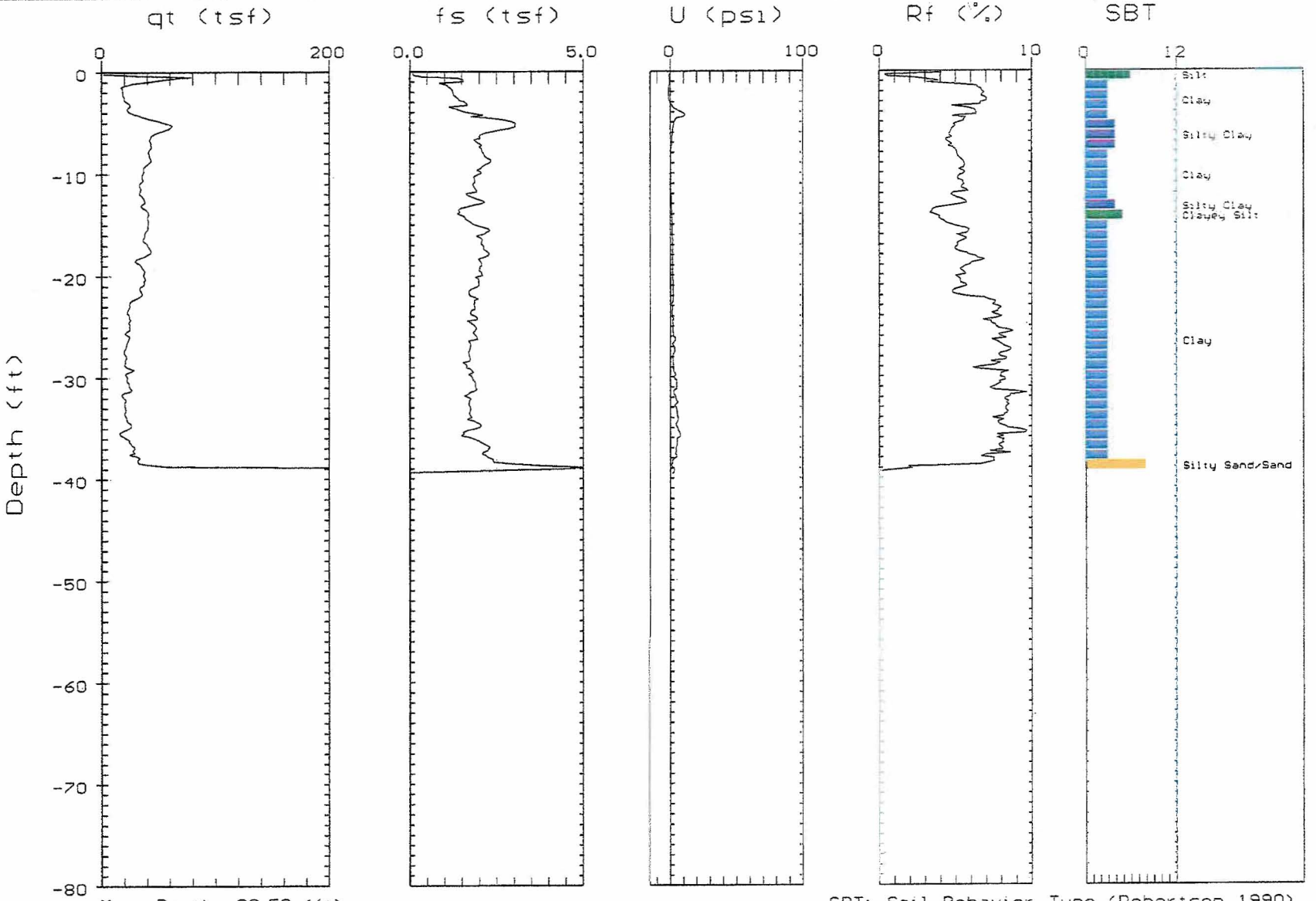
Max. Depth: 48.56 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892915.3 E=1902940.3 Engineer: C. SAMS
Sounding: C-203 ELEV=422.8 Date: 06/20/06 07:10



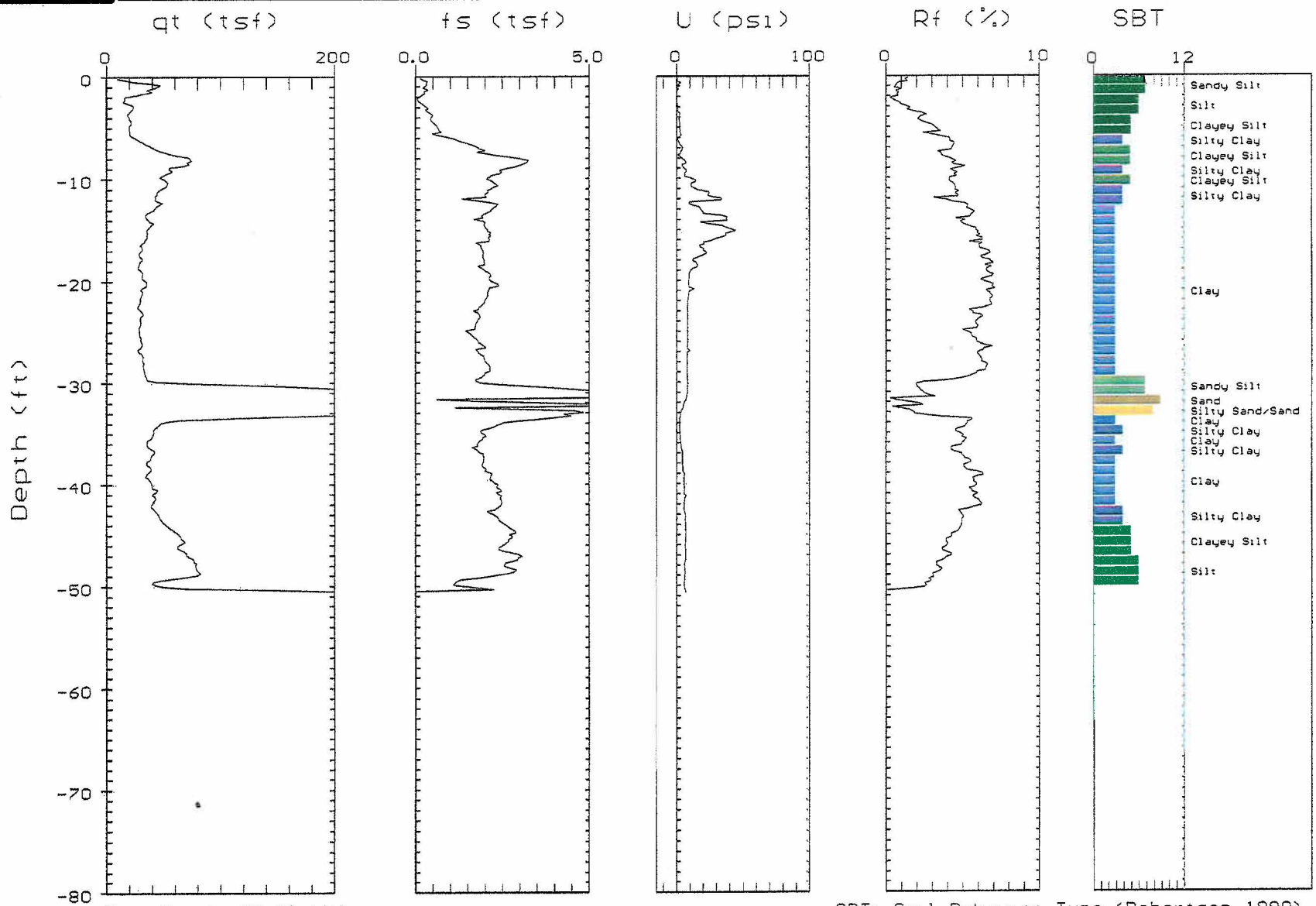
Max. Depth: 39.53 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892848.9 E=1903329.6 Engineer: C.SAMS
Sounding: C-204 ELEV=428.3 Date: 06/20/06 12:42



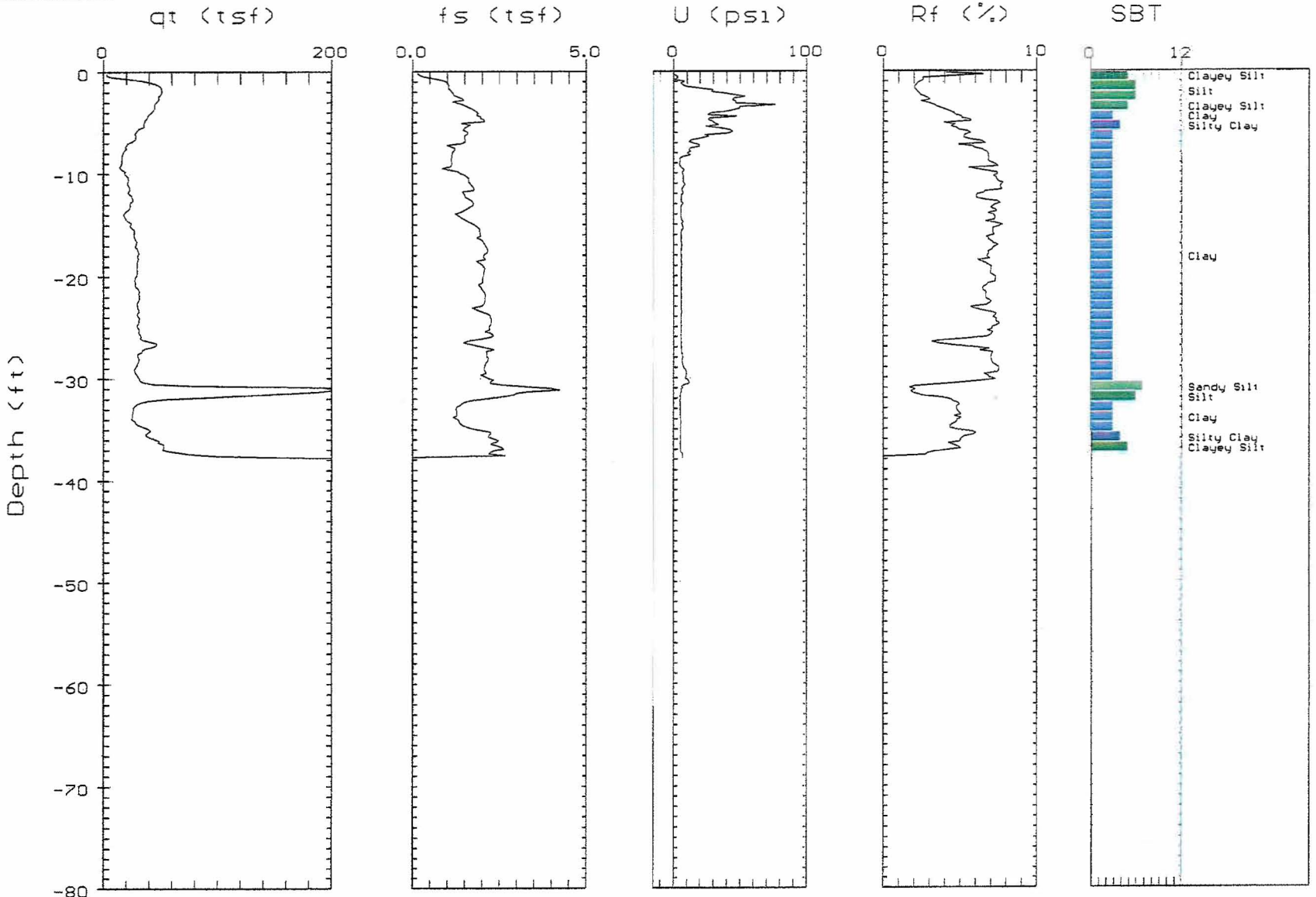
Max. Depth: 50.69 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892713.8 E=1903499.0 Engineer: C.SAMS
Sounding: C-205 ELEV=423.1 Date: 06/19/06 12:45



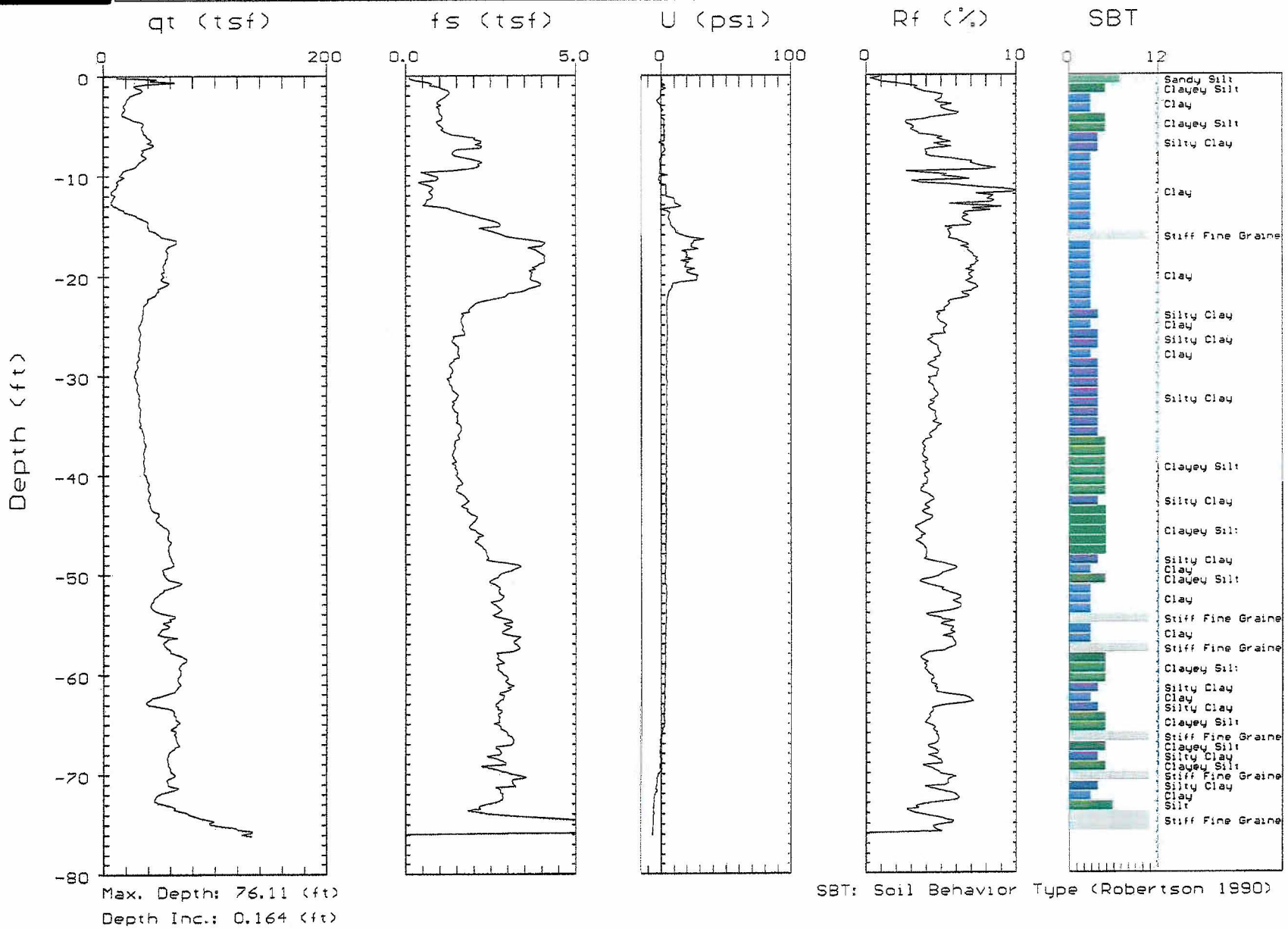
Max. Depth: 37.89 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=893044.5 E=1902877.5 Engineer: C.SAMS
Sounding: C-206 ELEV=420.5 Date: 06/20/06 08:16



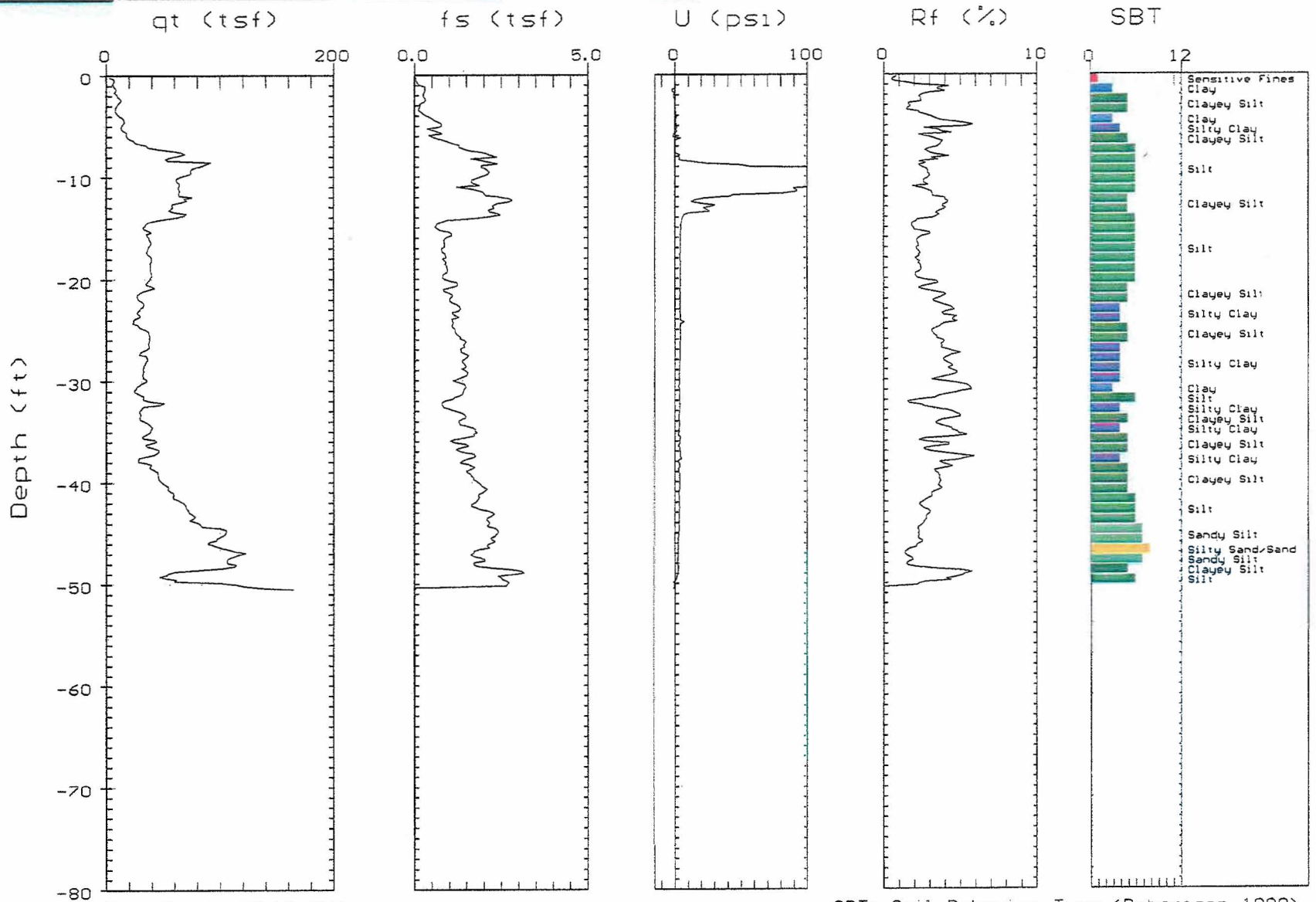
Max. Depth: 76.11 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892903.1 E=1903451.5 Engineer: C. SAMS
Sounding: C-207 ELEV=413.0 Date: 06/21/06 05:50



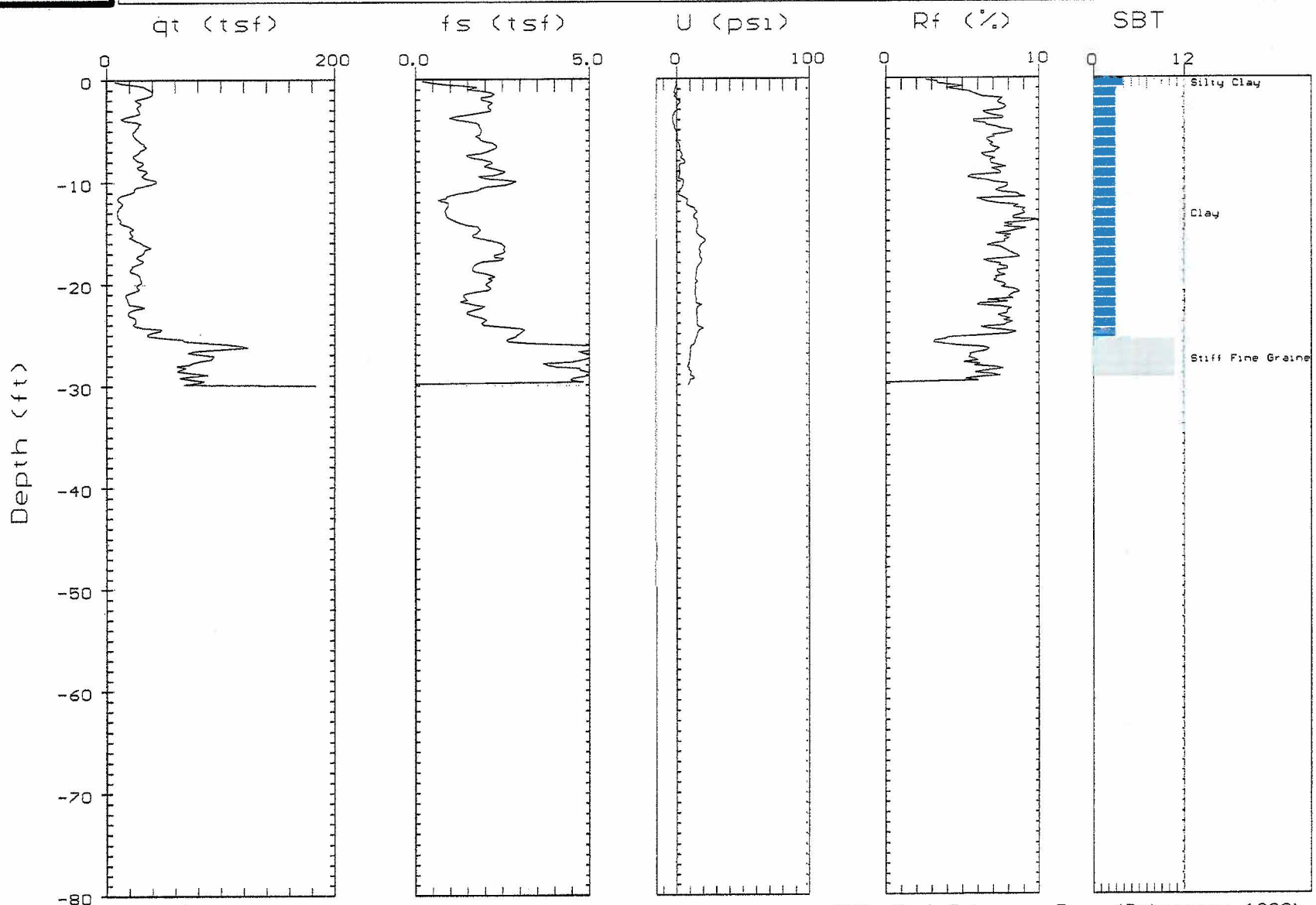
Max. Depth: 50.52 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892800.9 E=1902817.8 Engineer: C. SAMS
Sounding: C-208 ELEV=423.4 Date: 06/20/06 11:44



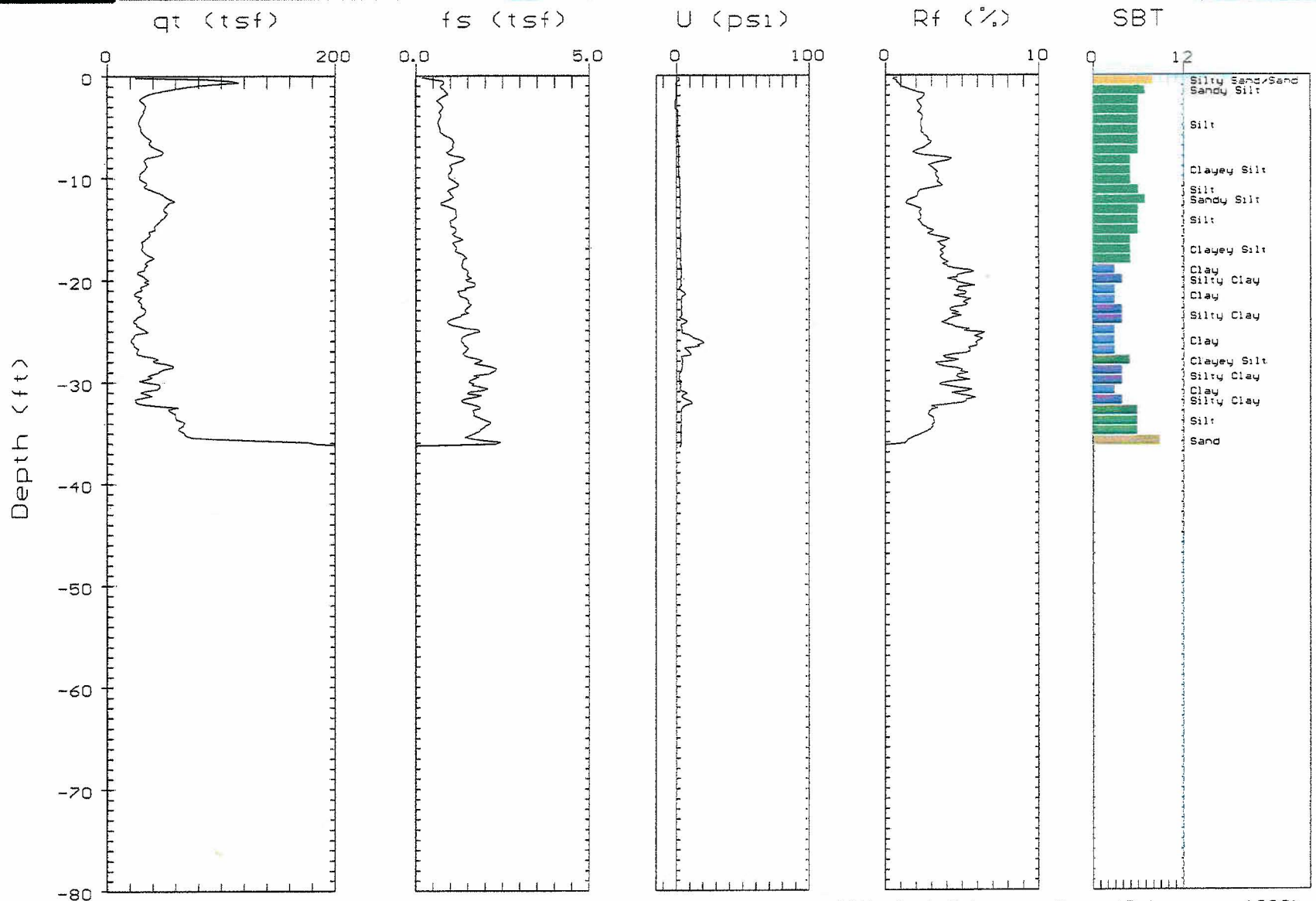
Max. Depth: 30.02 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892471.8 E=1902958.6 Engineer: C.SAMS
Sounding: C-209 ELEV=427.0 Date: 06/22/06 07:36



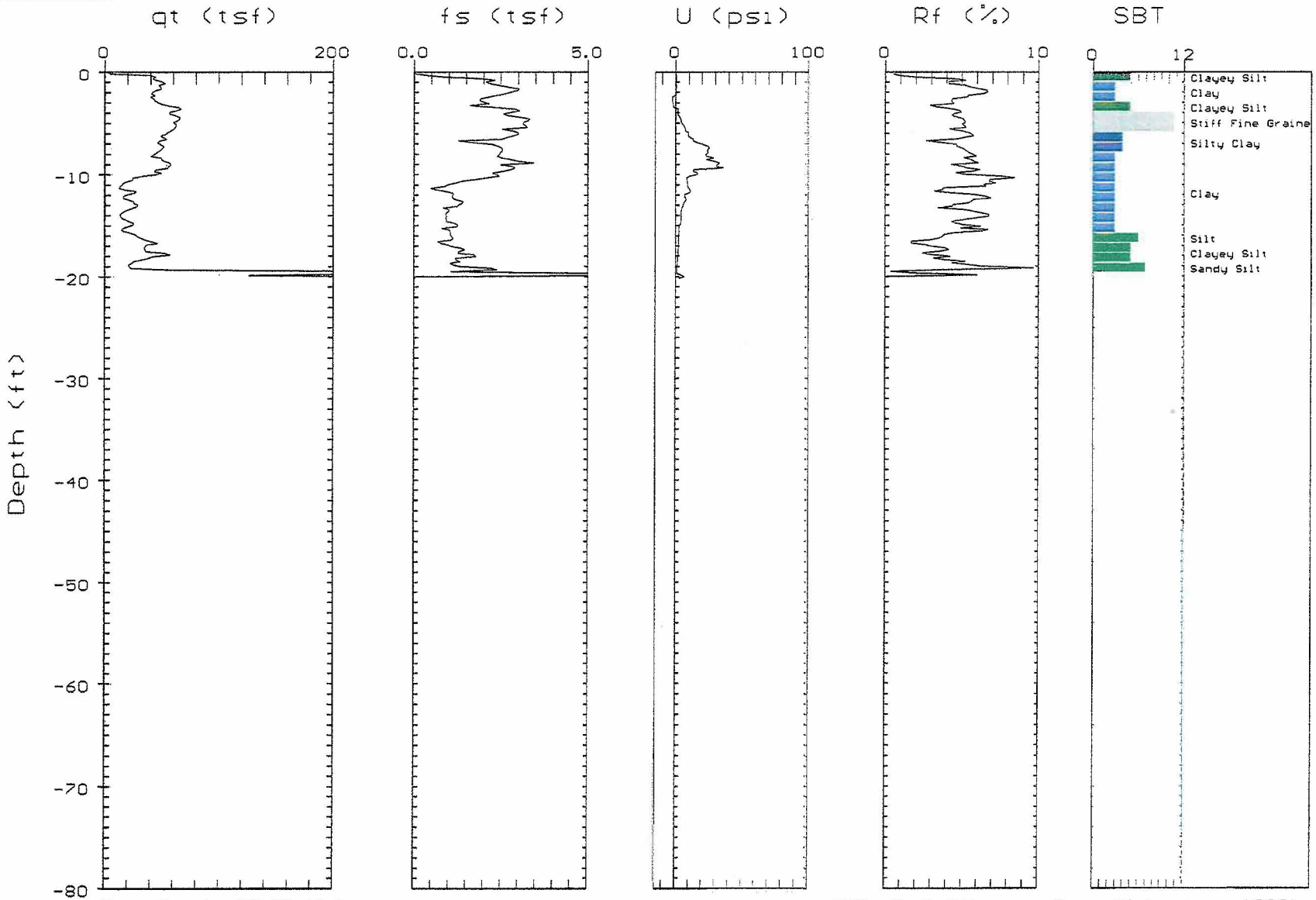
Max. Depth: 36.42 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=893241.2 E=1903128.5 Engineer: C.SAMS
Sounding: C-210 ELEV=367.7 Date: 06/21/06 07:39



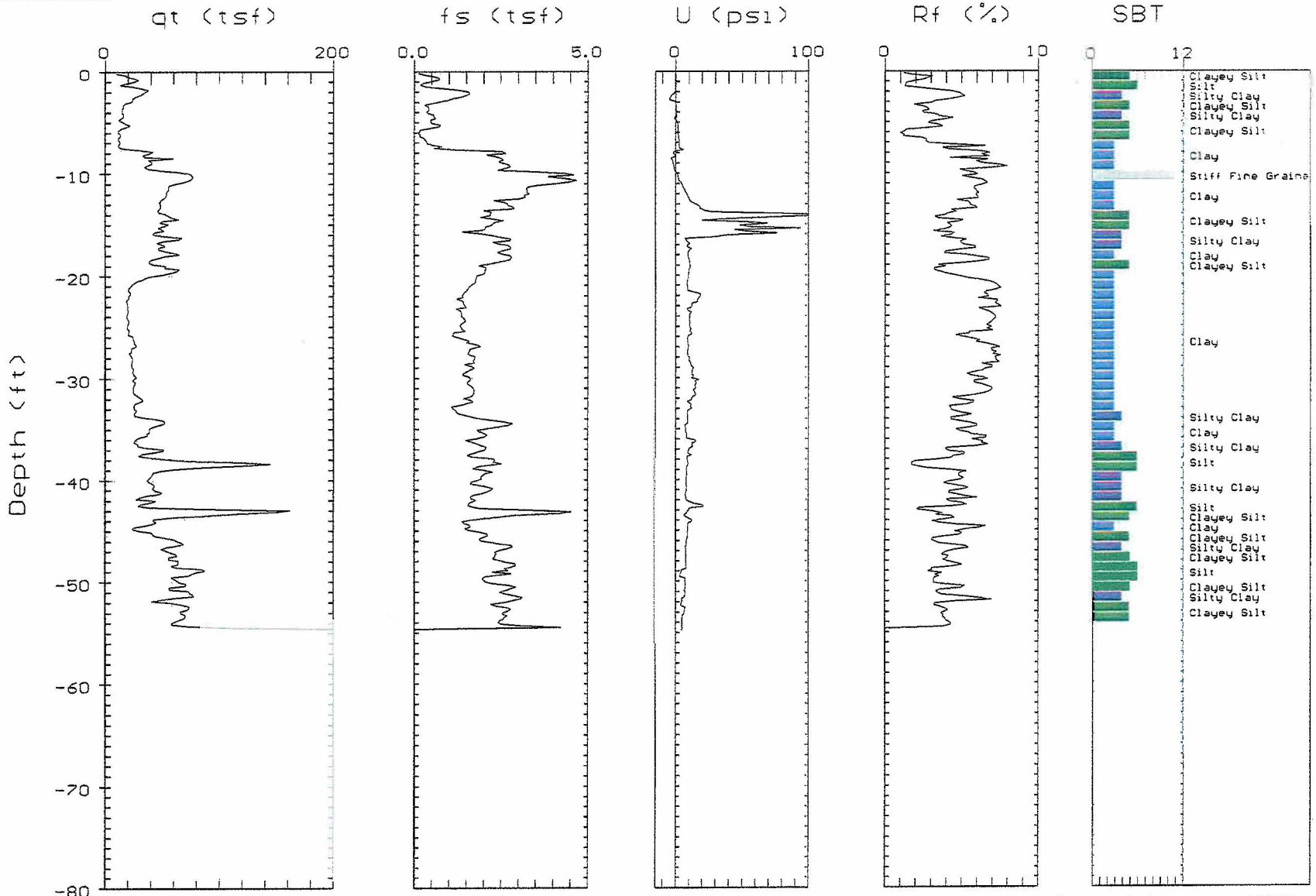
Max. Depth: 20.18 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891941.9 E=1902811.3 Engineer: C. SAMS
Sounding: C-301 ELEV=421.0 Date: 06/22/06 11:53



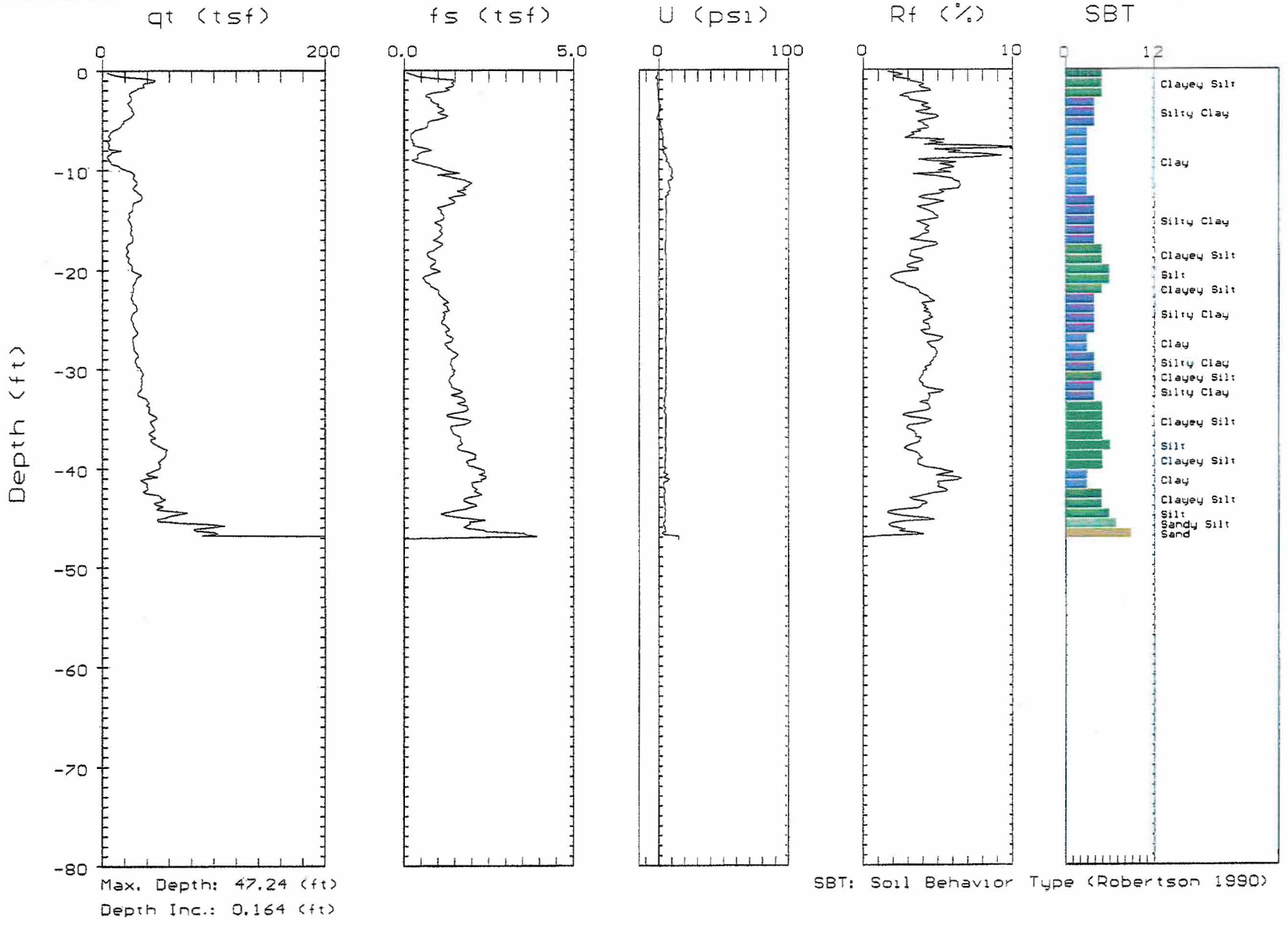
Max. Depth: 54.79 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892052.1 E=1902726.6 Engineer: C.SAMS
Sounding: C-302cELEV=421.3 Date: 06/22/06 09:04



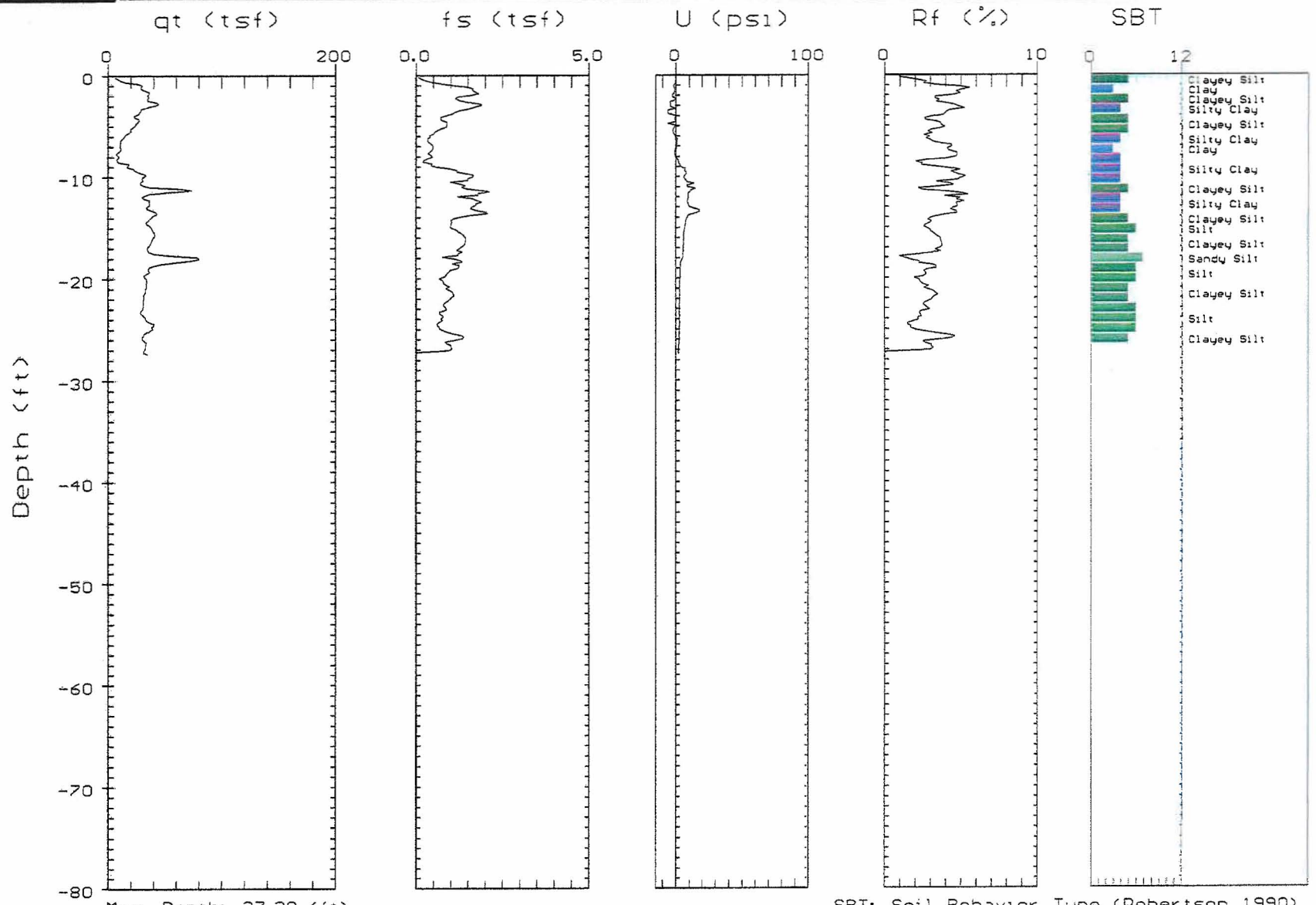
Max. Depth: 47.24 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892052.1 E=1902726.6 Engineer: C. SAMS
Sounding: C-302 ELEV=421.3 Date: 06/22/06 05:12



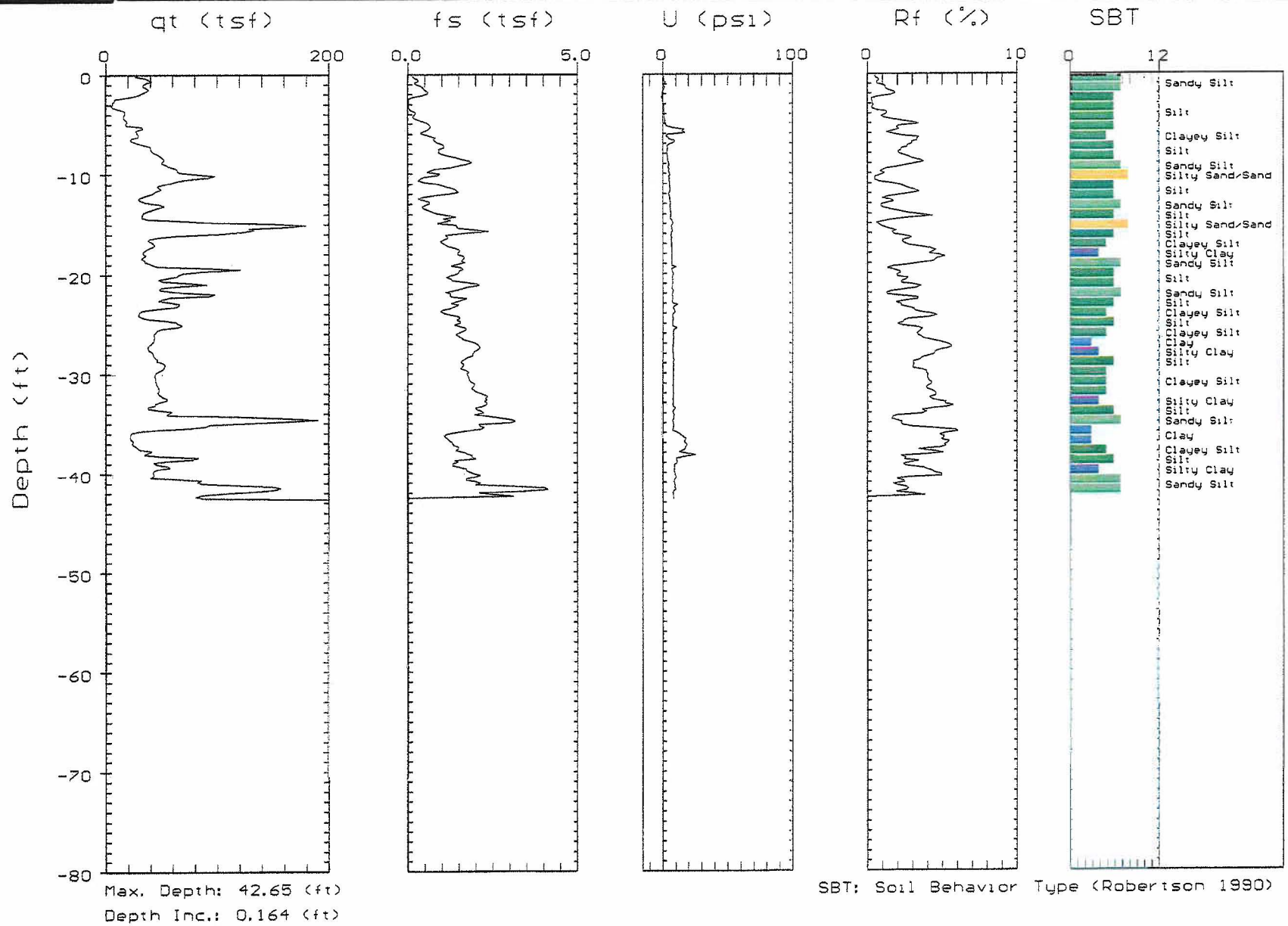
Max. Depth: 27.39 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892040.7 E=1902622.5 Engineer: C.SAMS
Sounding: C-303 ELEV=415.9 Date: 06/21/06 12:33



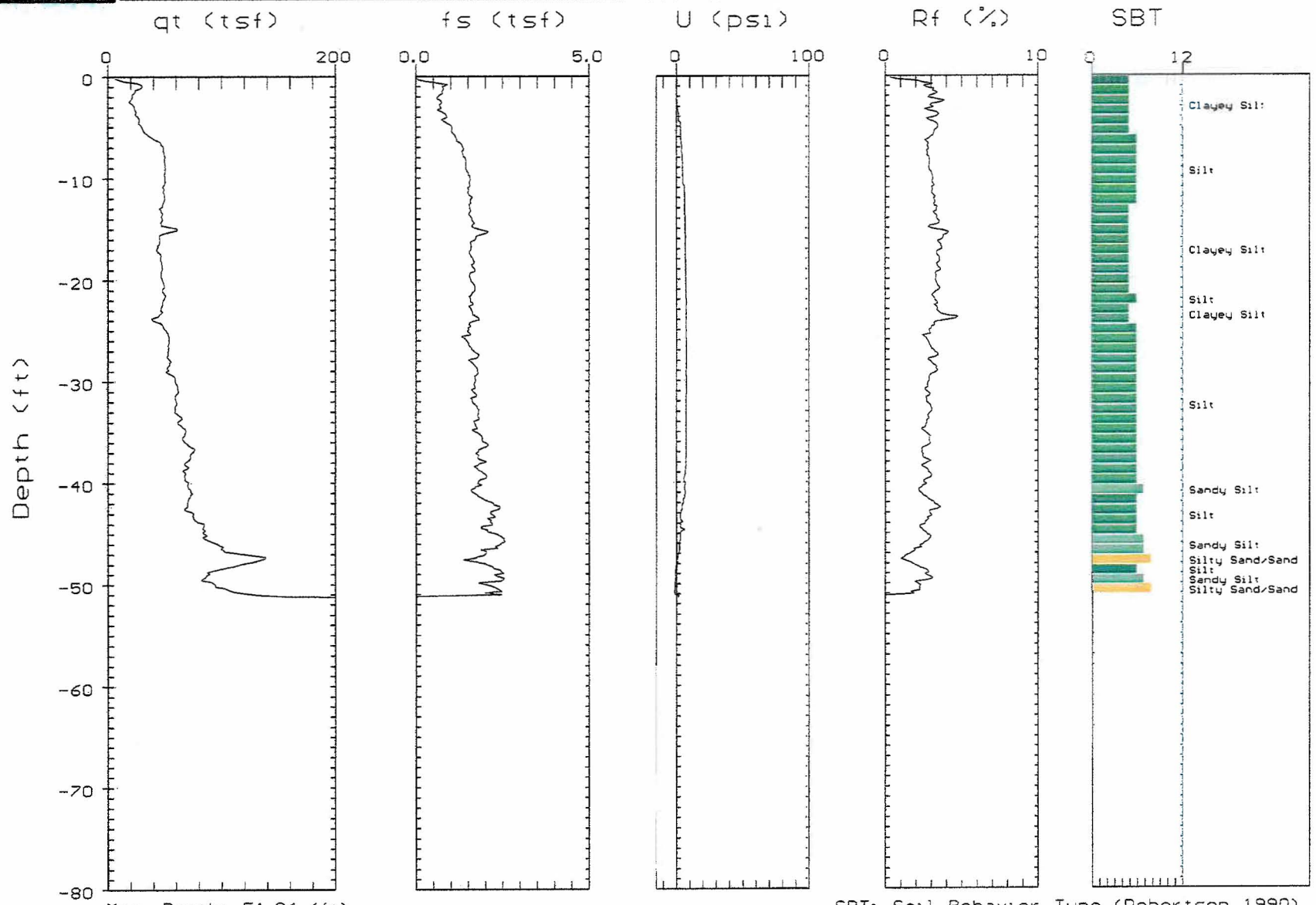
Max. Depth: 42.65 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892013.7 E=1902992.9 Engineer: C.SAMS
Sounding: C-304 ELEV=418.1 Date: 06/22/06 13:02



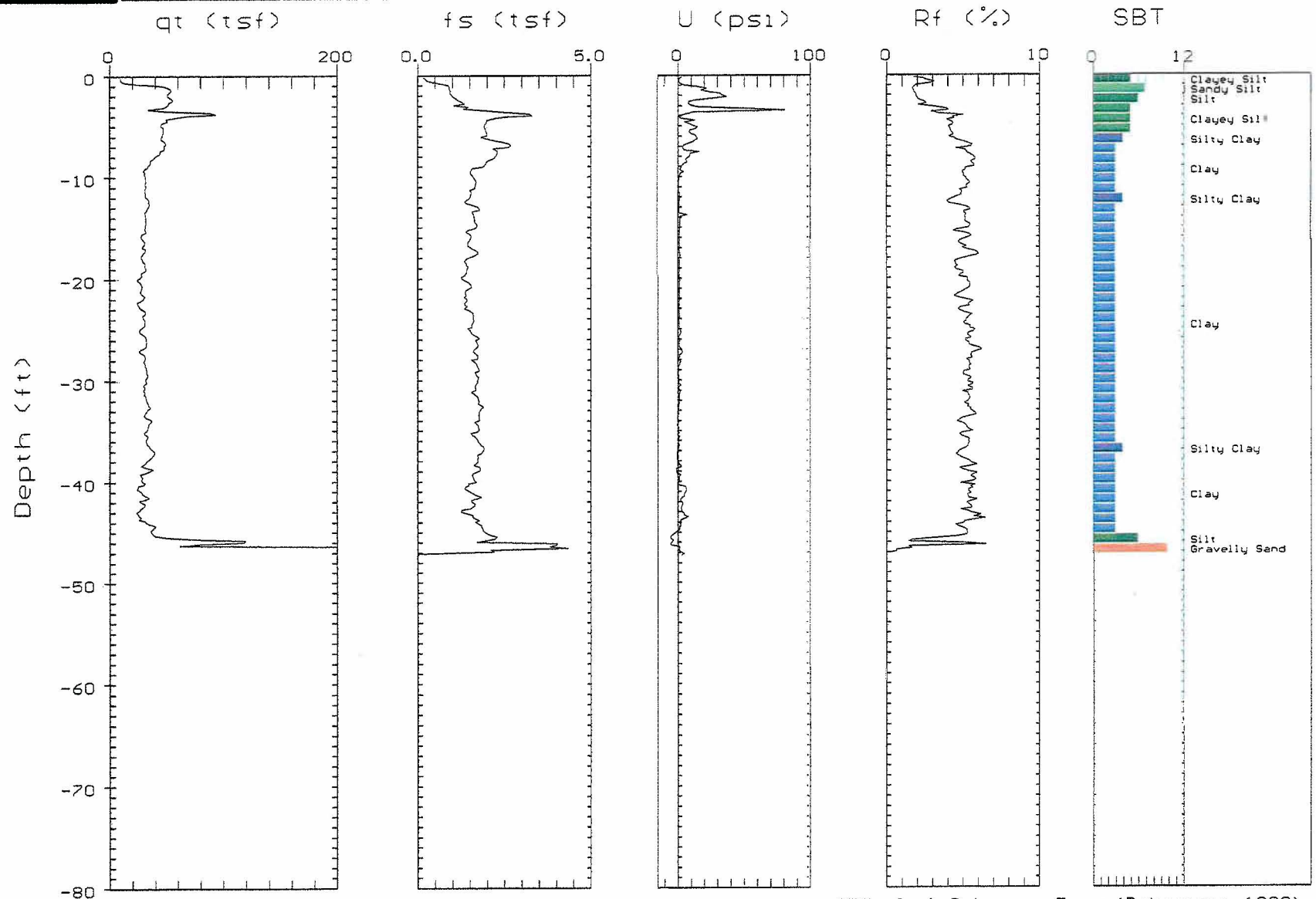
Max. Depth: 51.34 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891841.4 E=1903149.5 Engineer: C. SAMS
Sounding: C-305 ELEV=413.0 Date: 06/24/06 07:02



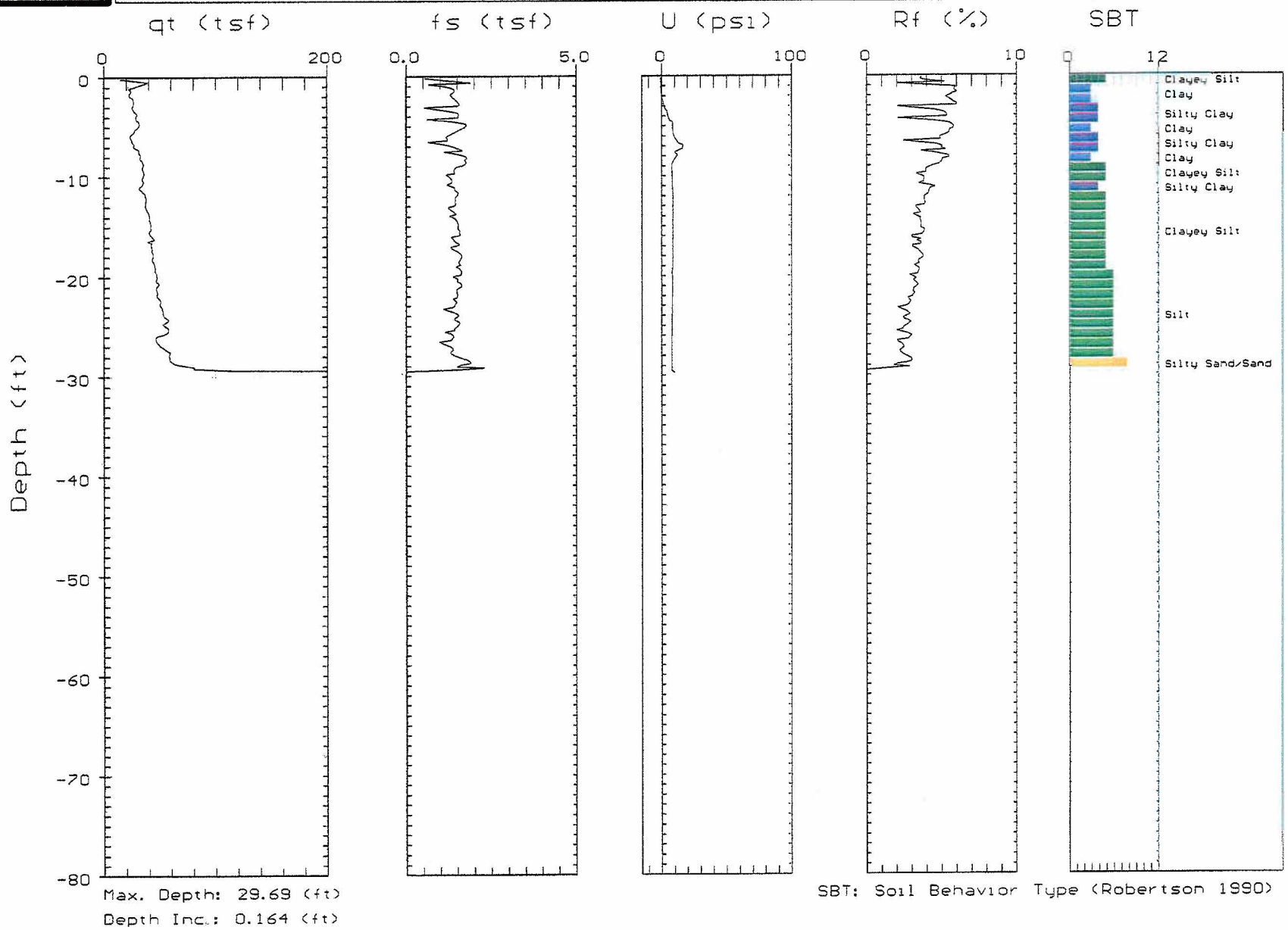
Max. Depth: 47.24 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892210.3 E=1902541.3 Engineer: C.SAMS
Sounding: C-306 ELEV=417.4 Date: 06/21/06 11:10



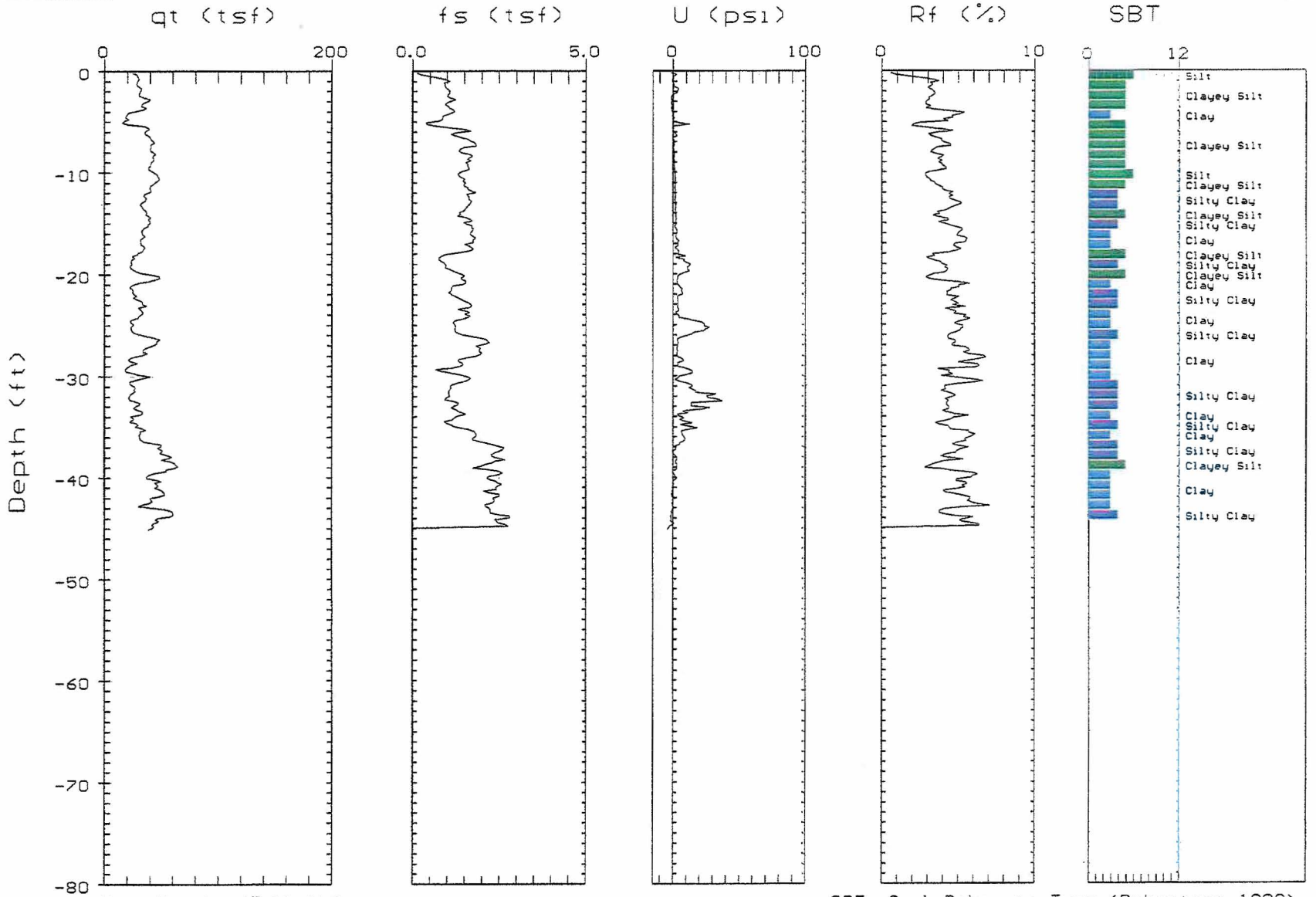
Max. Depth: 29.69 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892076.1 E=1903116.6 Engineer: C.SAMS
Sounding: C-307 ELEV-418.7 Date: 06/23/06 05:23



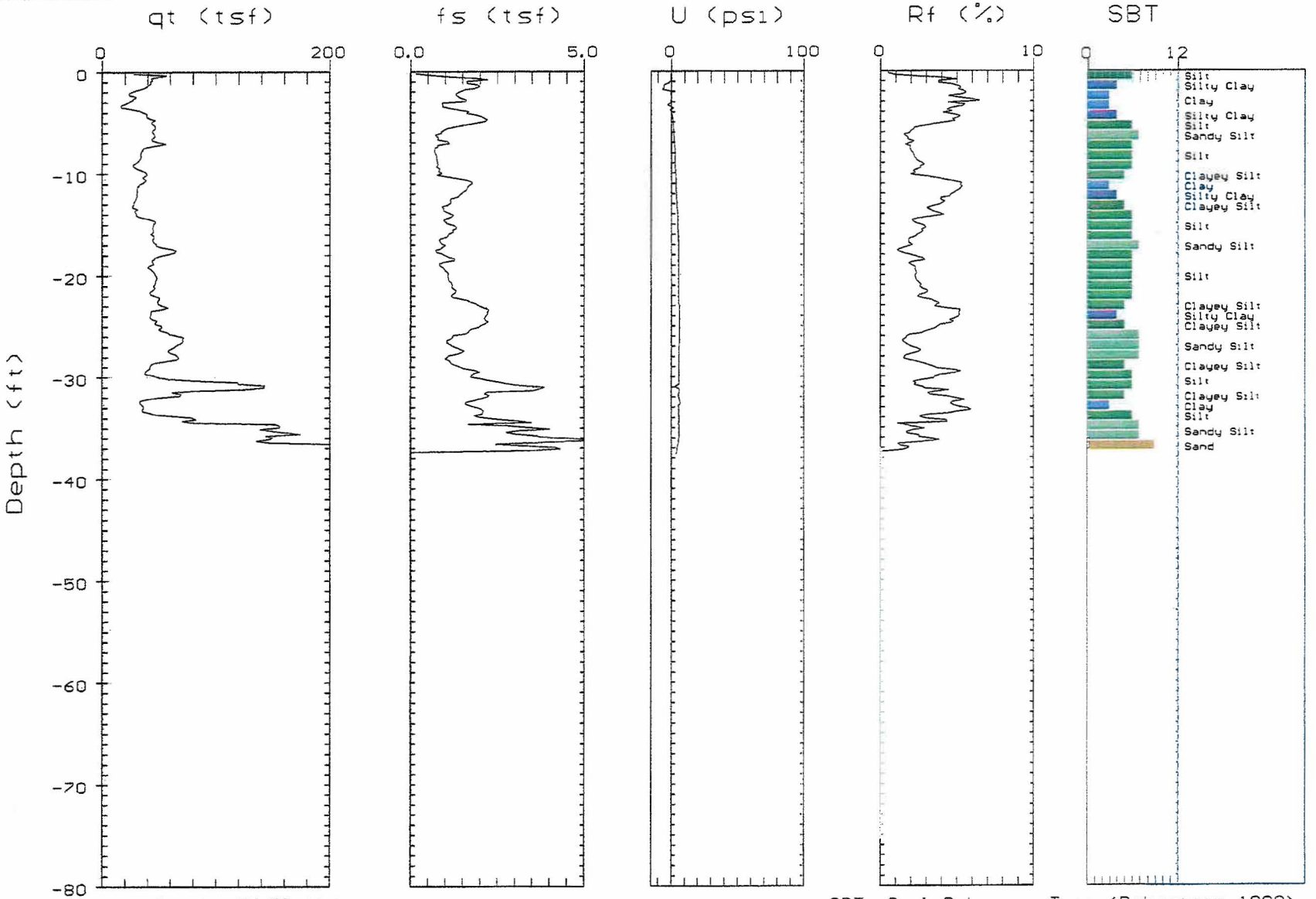
Max. Depth: 45.11 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891967.1 E=1902484.2 Engineer: C. SAMS
Sounding: C-308b ELEV=398.9 Date: 06/23/06 11:02



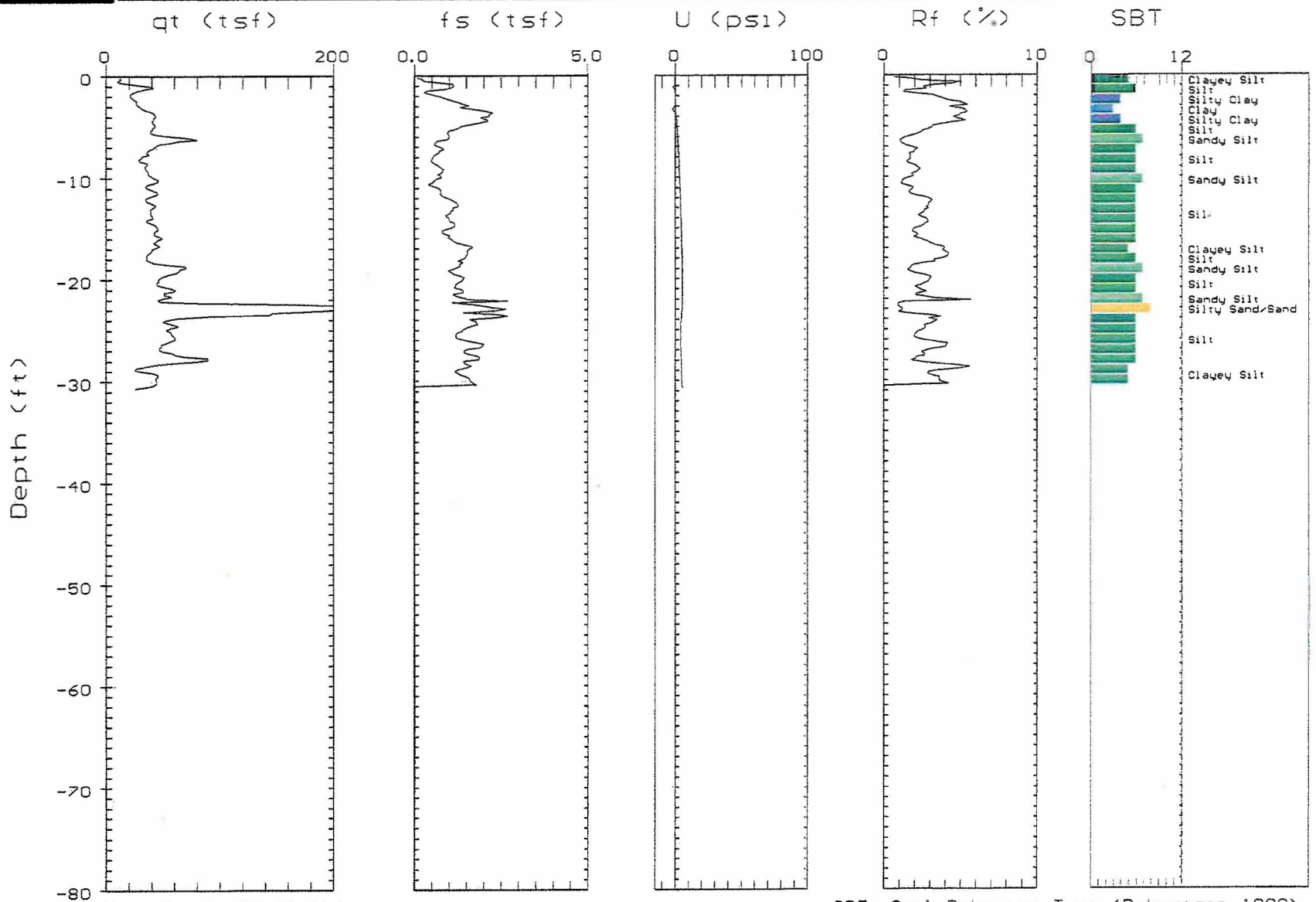
Max. Depth: 37.57 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891967.1 E=1902484.2 Engineer: C.SAMS
Sounding: C-308 ELEV=398.9 Date: 06/23/06 09:20



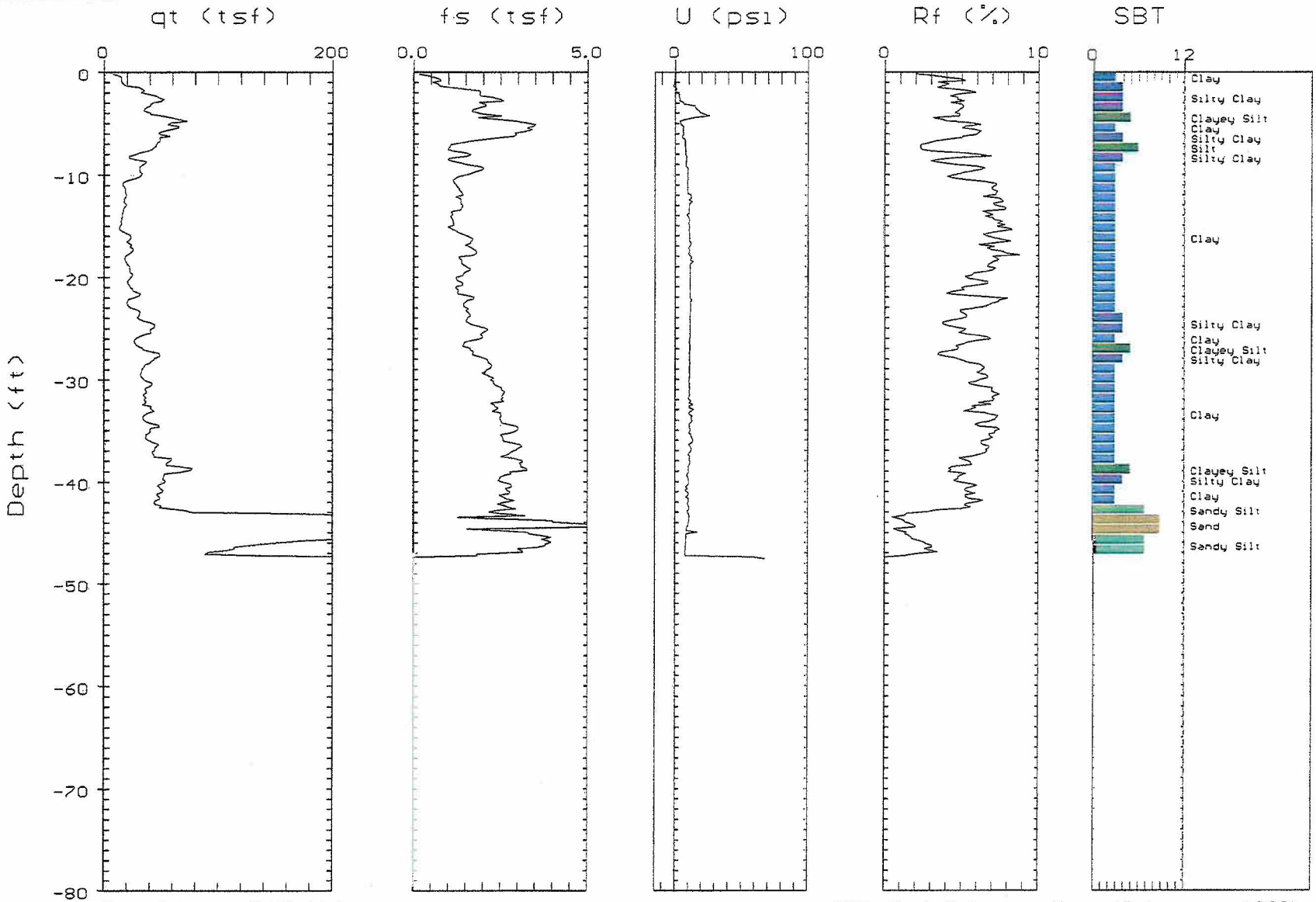
Max. Depth: 30.68 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891638.6 E=1902622.3 Engineer: C. SAMS
Sounding: C-309 ELEV=397.2 Date: 06/23/06 12:36



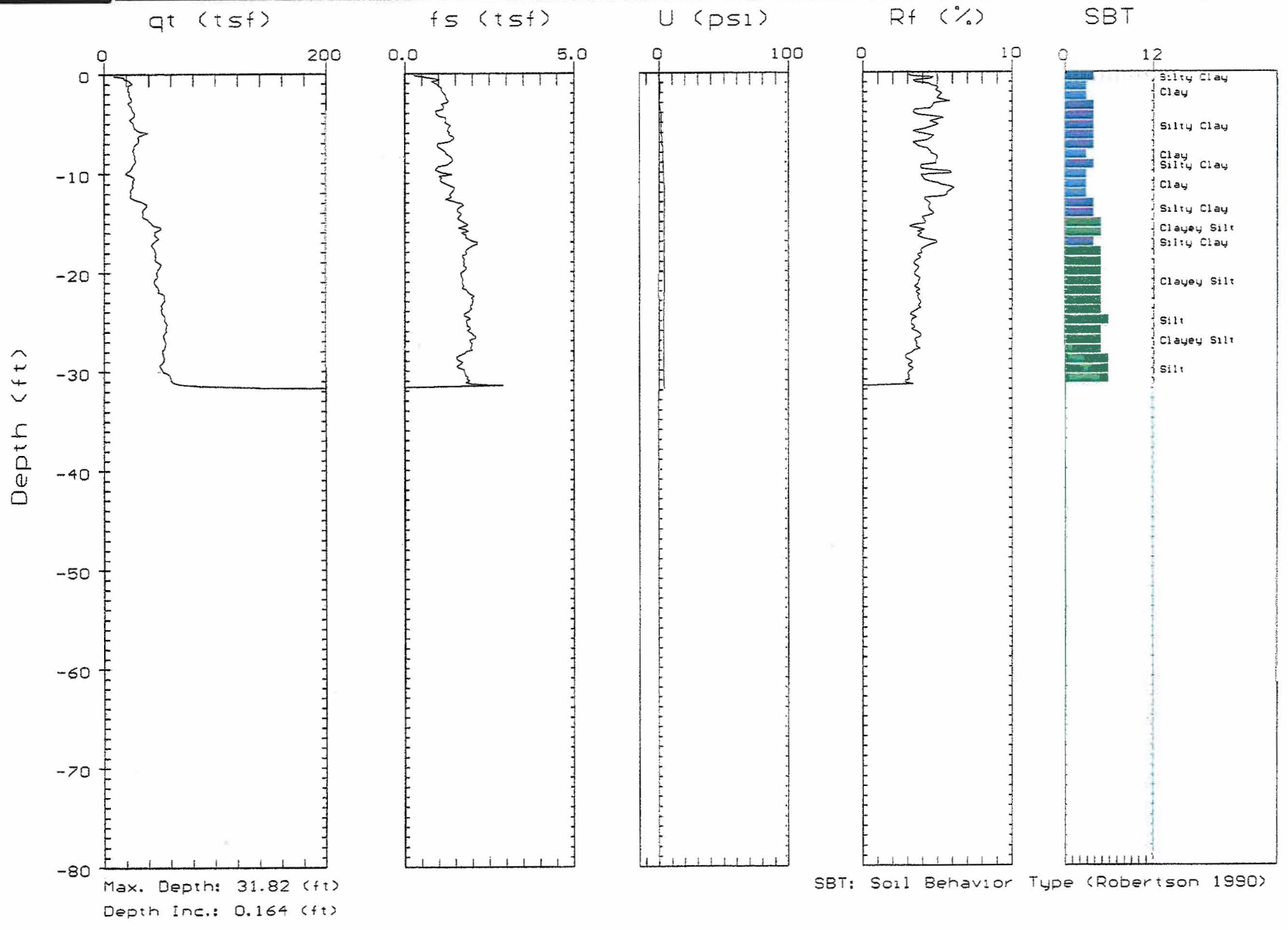
Max. Depth: 47.57 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892406.1 E=1902791.8 Engineer: C.SAMS
Sounding: C-310 ELEV=427.6 Date: 06/21/06 08:37



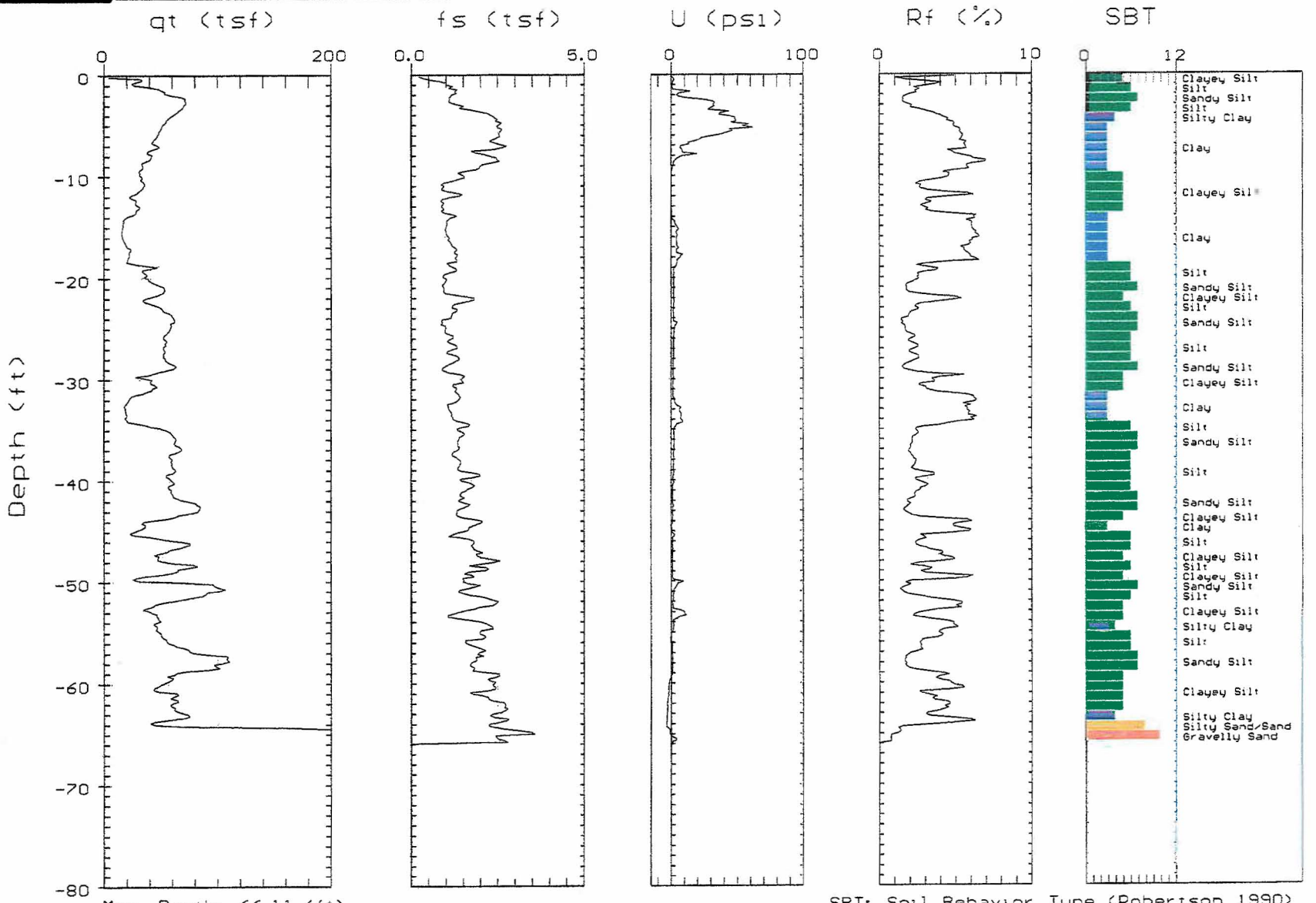
Max. Depth: 31.82 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=890975.6 E=1904482.2 Engineer: C.SAMS
Sounding: C-401 ELEV=407.9 Date: 06/28/06 06:23



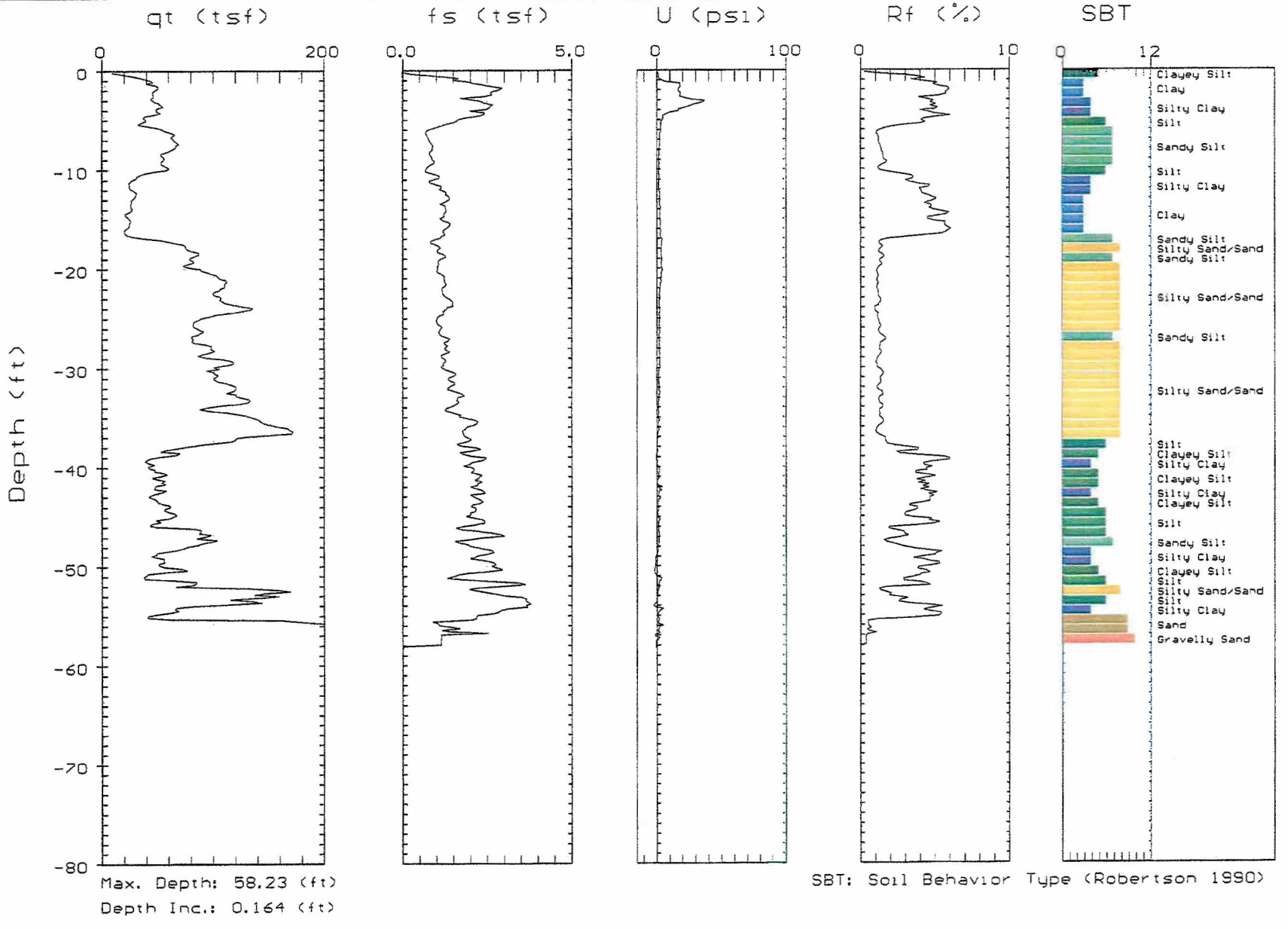
Max. Depth: 66.11 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=890576.8 E=1903321.4 Engineer: C. SAMS
Sounding: C-402 ELEV=399.7 Date: 06/26/06 13:07



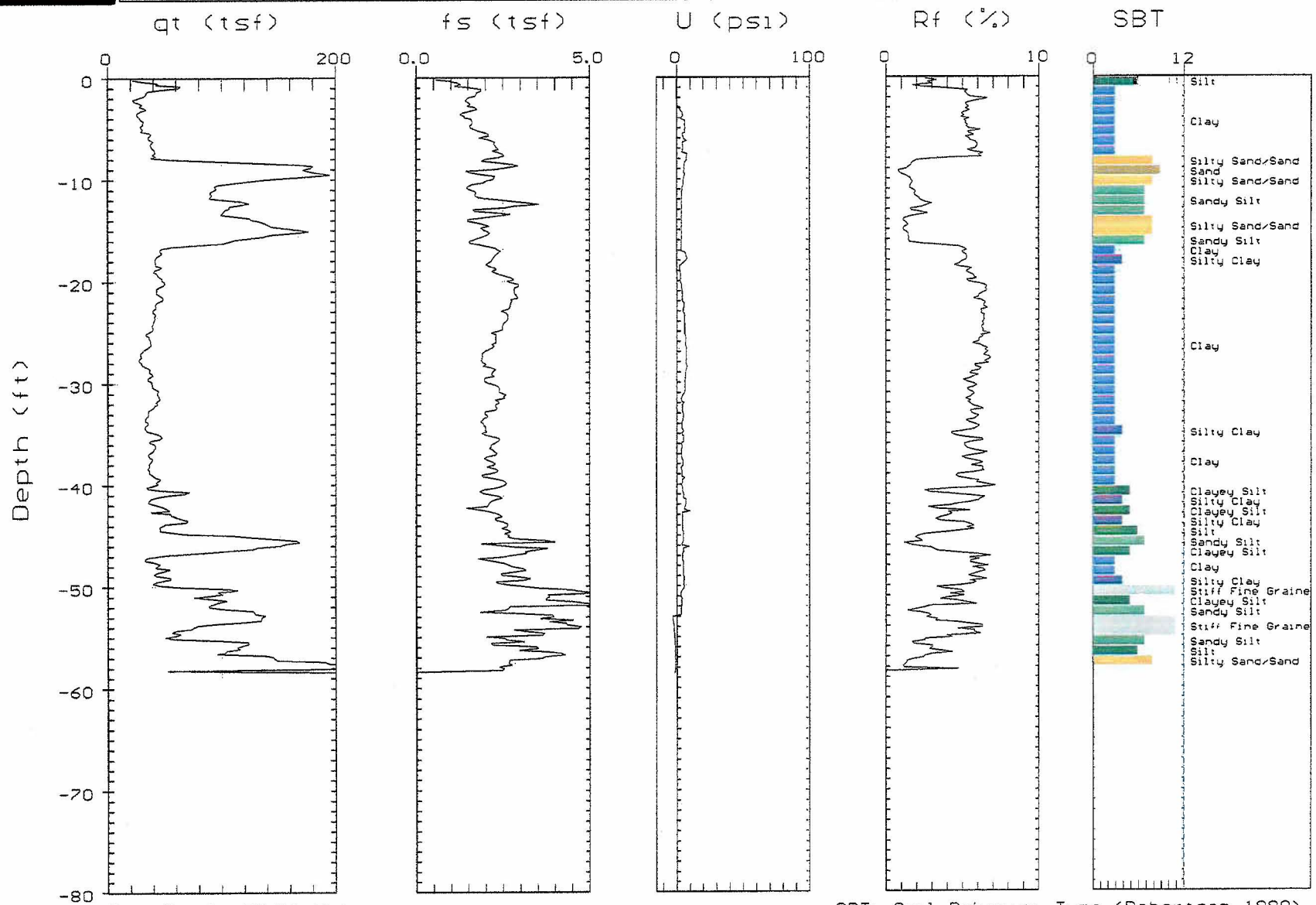
Max. Depth: 58.23 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=889805.7 E=1903955.5 Engineer: C.SAMS
Sounding: C-403 ELEV=401.0 Date: 06/27/06 13:08



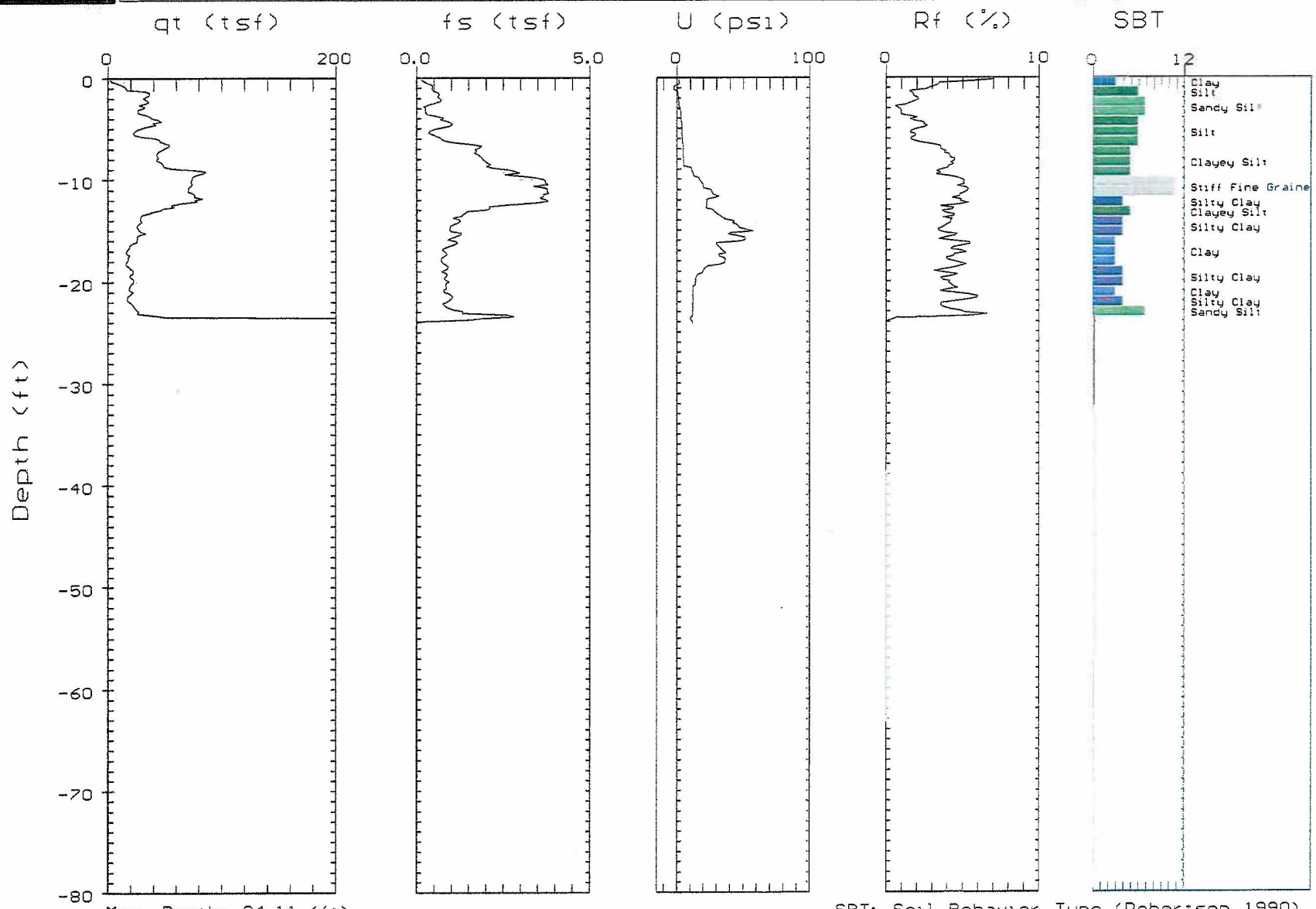
Max. Depth: 58.56 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891688.6 E=1903553.1 Engineer: C.SAMS
Sounding: C-407 ELEV=374.0 Date: 06/27/06 11:02



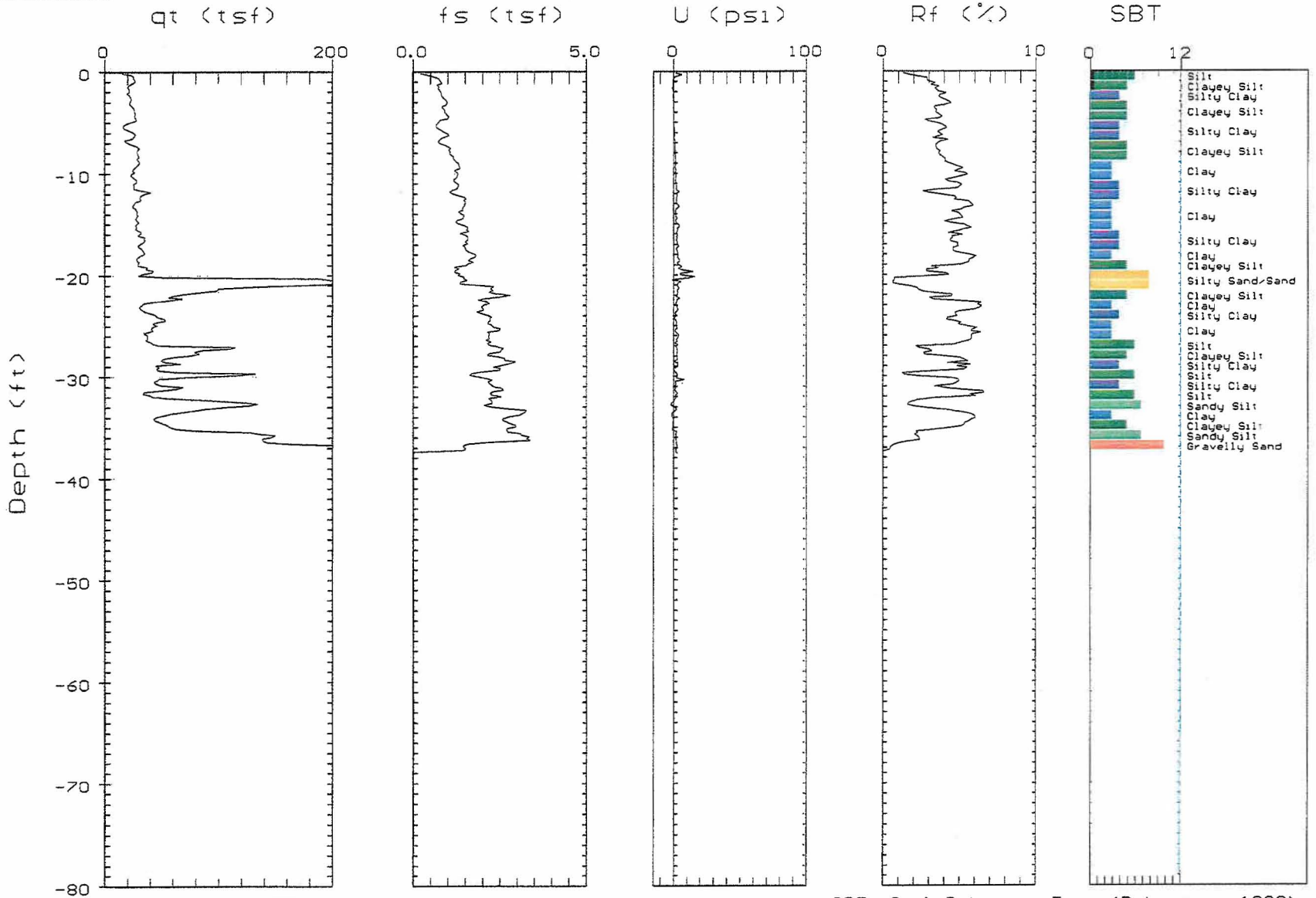
Max. Depth: 24.11 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891306.3 E=1903124.9 Engineer: C.SAMS
Sounding: C-409 ELEV=390.5 Date: 06/27/06 06:26



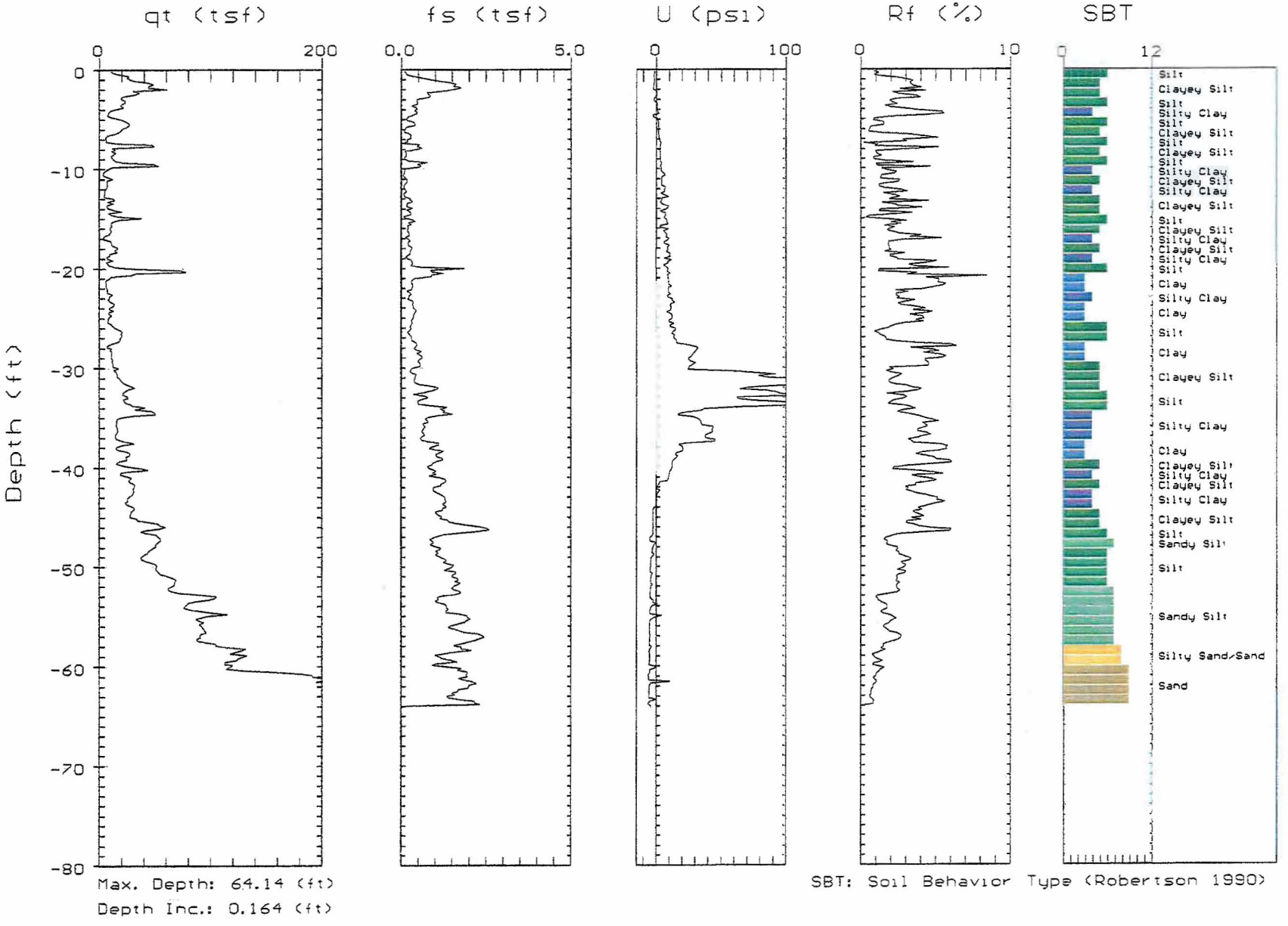
Max. Depth: 37.57 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=897785.5 E=1903807.9 Engineer: C.SAMS
Sounding: C-501 ELEV=427.9 Date: 06/28/06 08:28



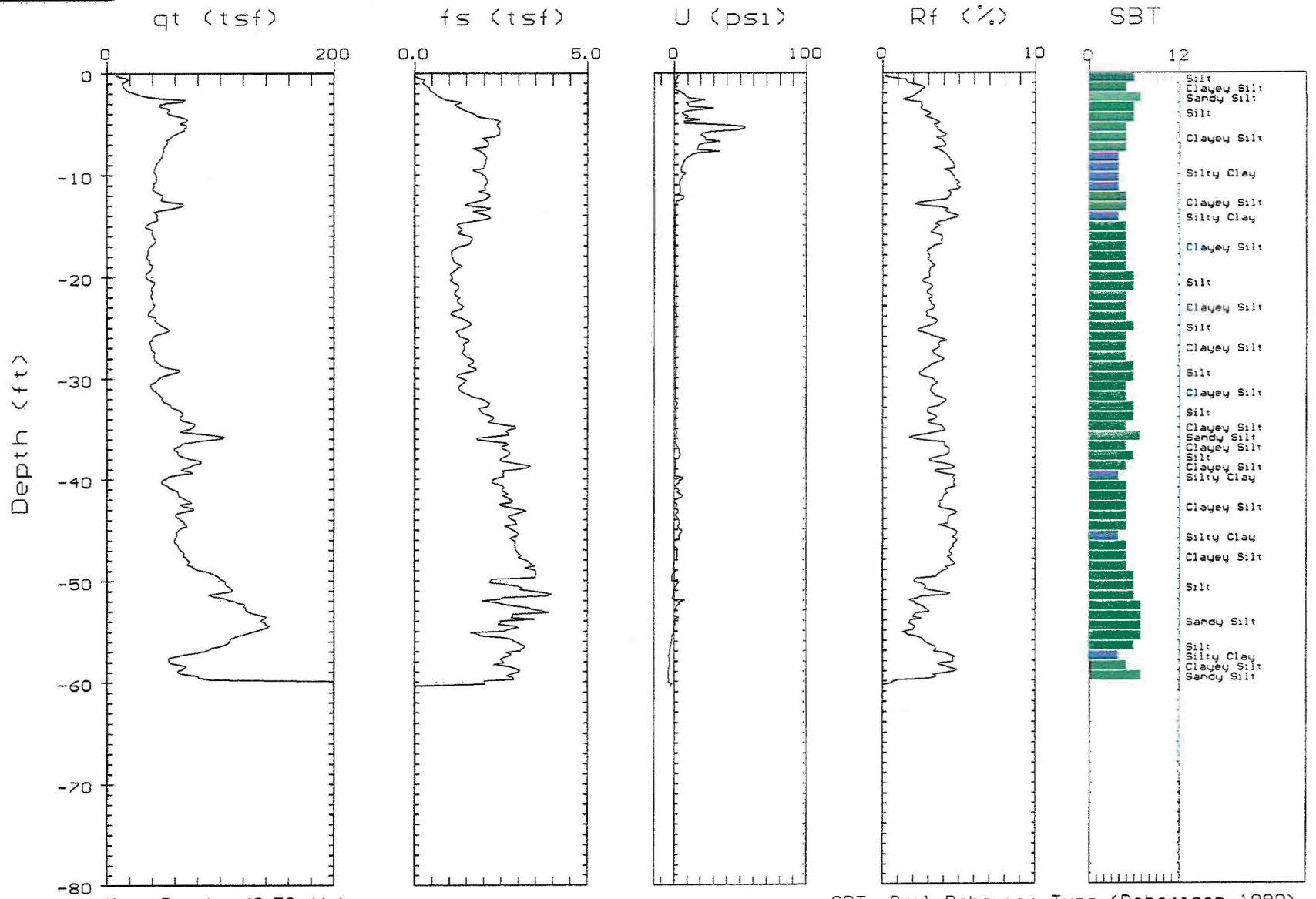
Max. Depth: 64.14 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892737.0 E=1902205.3 Engineer: C.SAMS
Sounding: C-601 ELEV=433.6 Date: 06/25/06 05:25



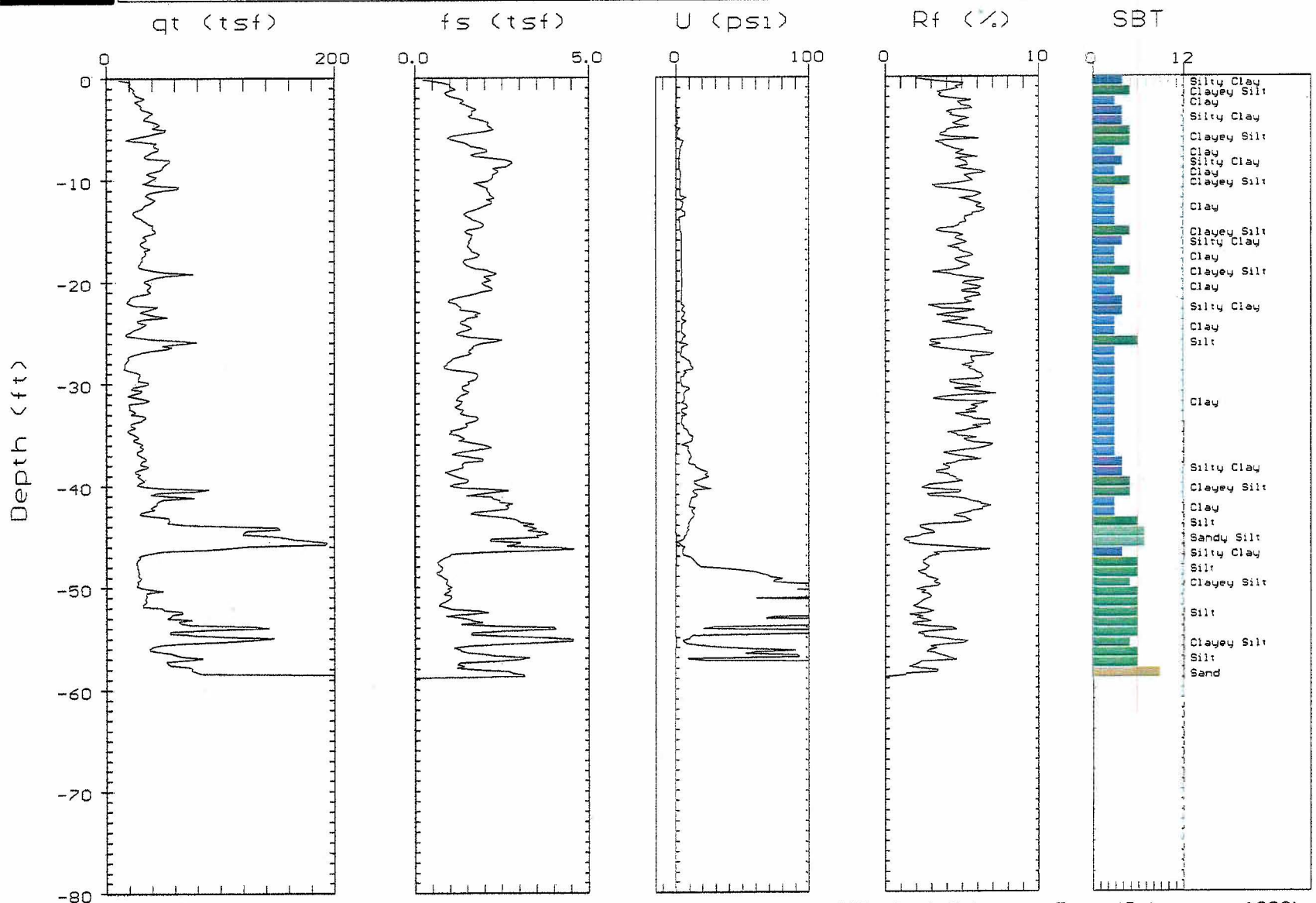
Max. Depth: 60.53 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892669.2 E-1902376.0 Engineer: C.SAMS
Sounding: C-602bELEV=433.5 Date: 06/24/06 08:57



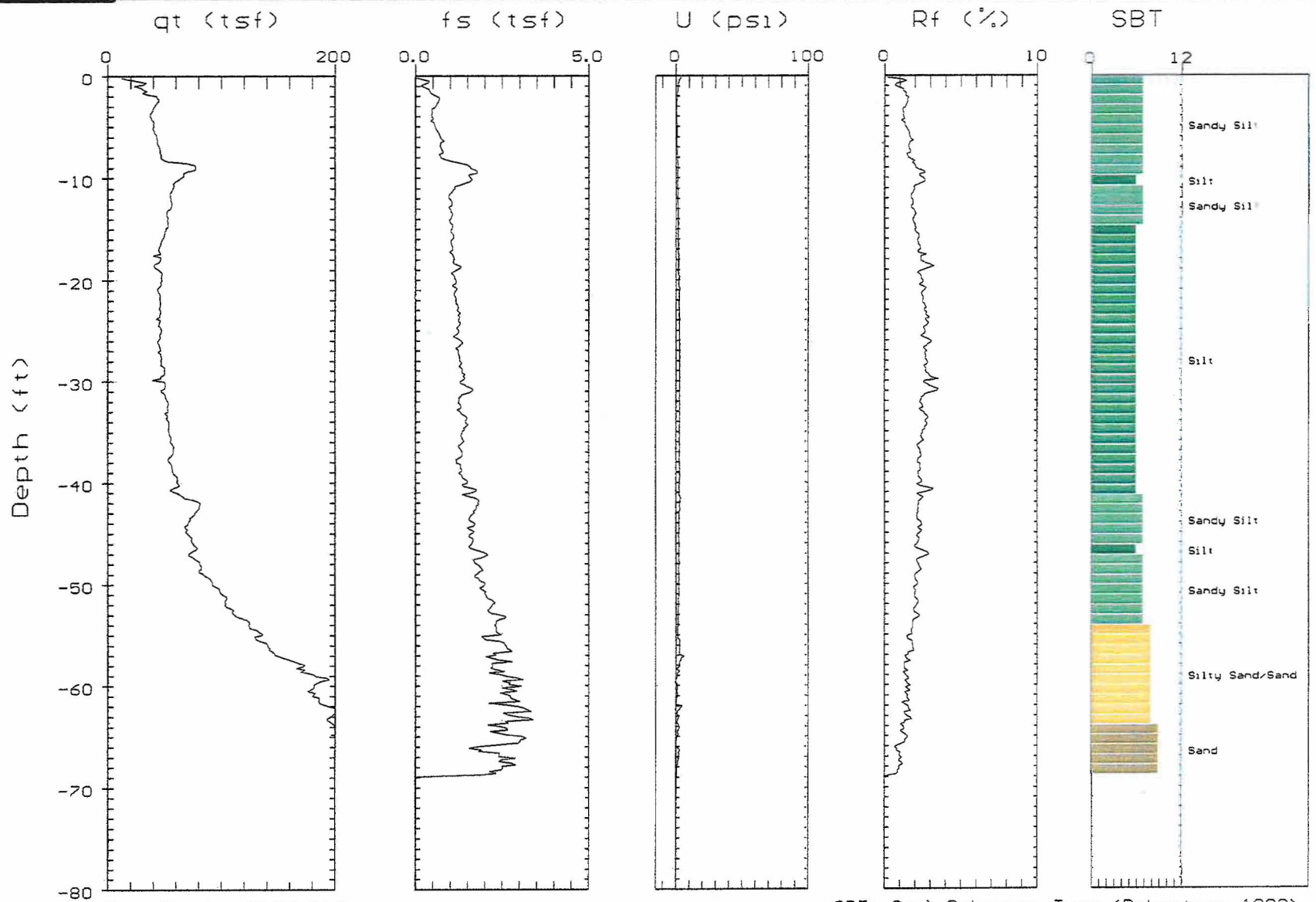
Max. Depth: 59.05 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892262.8 E=1902038.0 Engineer: C.SAMS
Sounding: C-603 ELEV=422.2 Date: 06/25/06 06:59



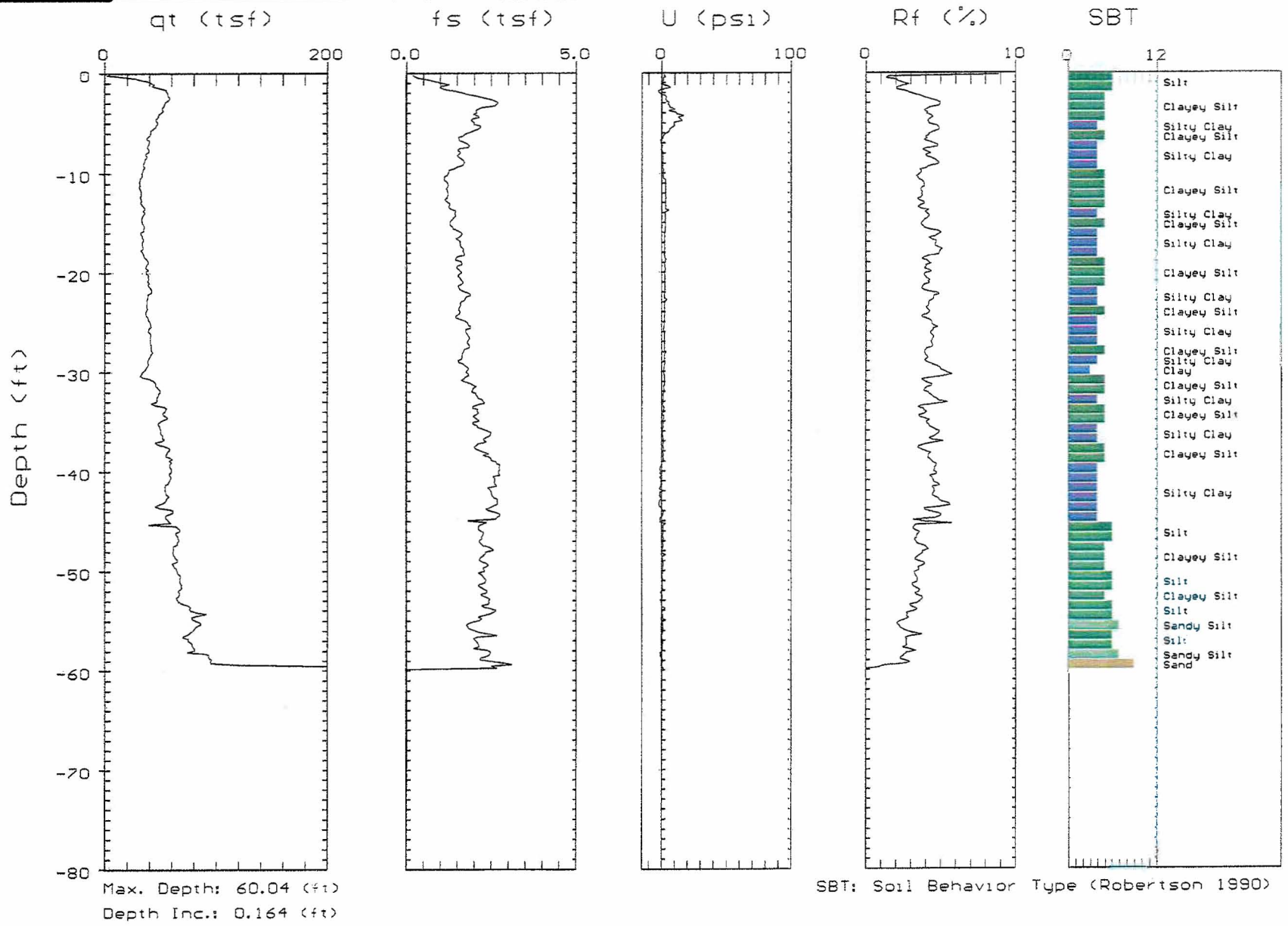
Max. Depth: 69.06 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892193.1 E=1902215.5 Engineer: C.SAMS
Sounding: C-604 ELEV=424.2 Date: 06/26/06 05:49



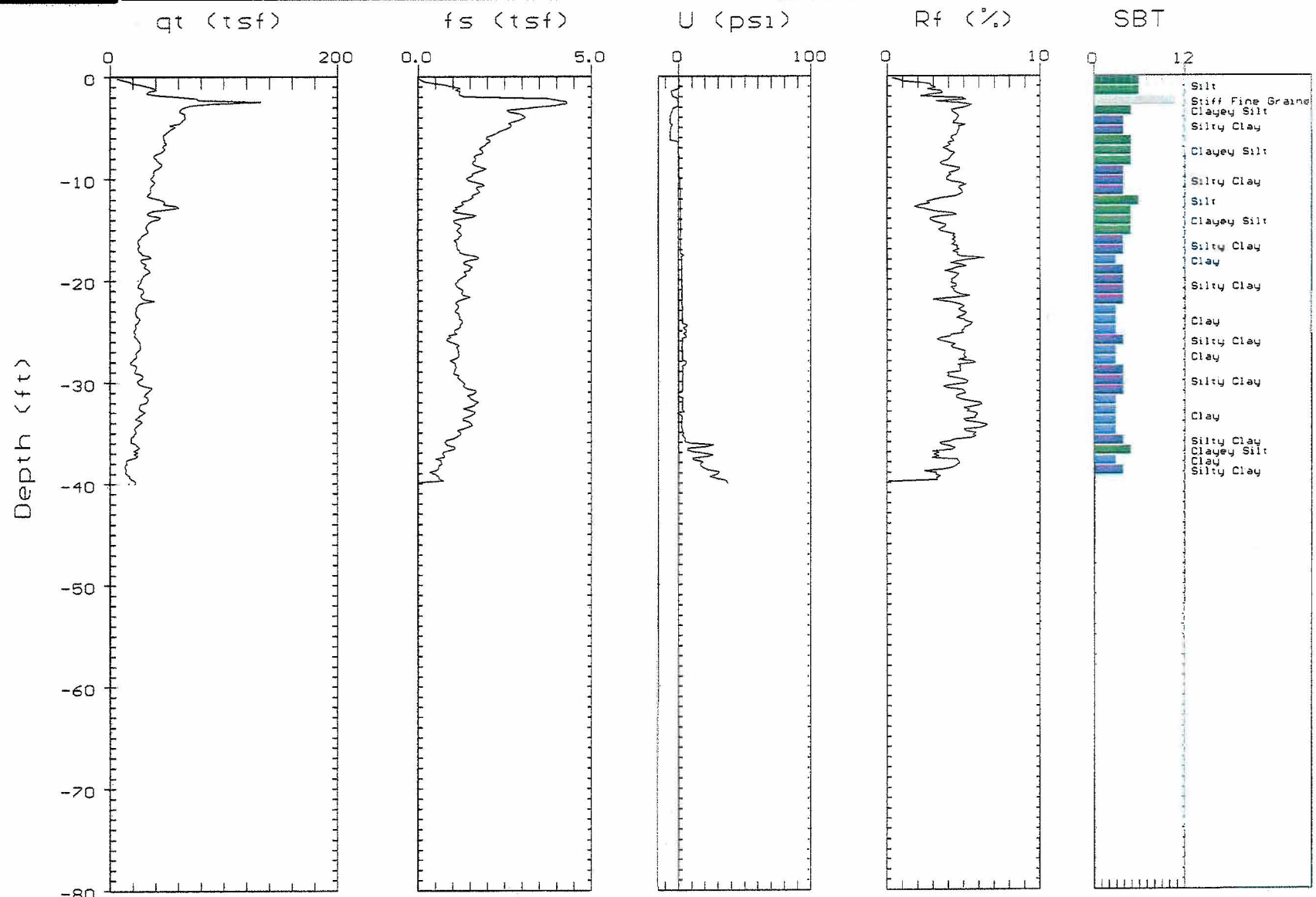
Max. Depth: 60.04 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=893092.5 E=1904069.5 Engineer: C. SAMS
Sounding: C-605 ELEV=415.3 Date: 06/26/06 07:19



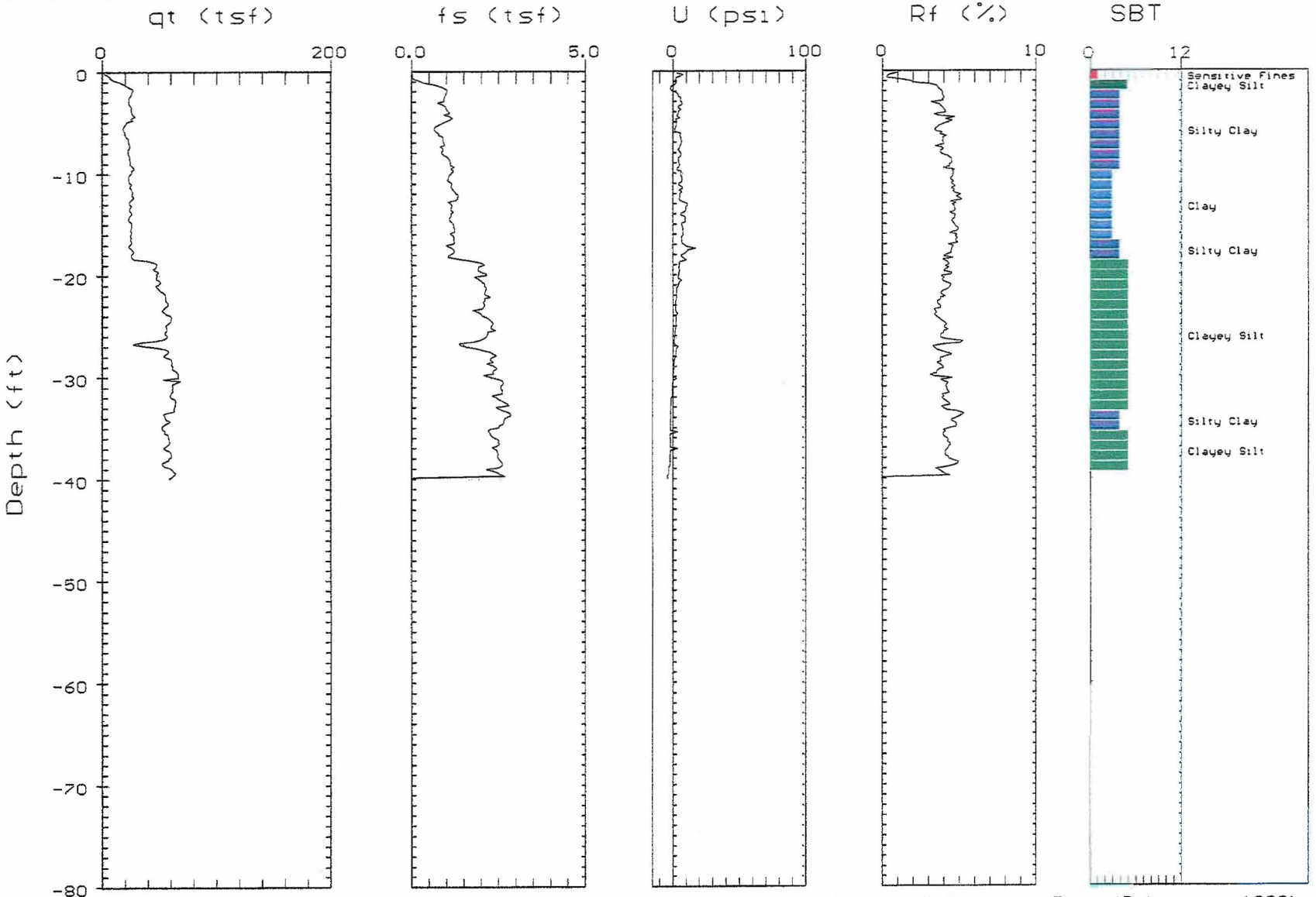
Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=893211.6 E=1904476.0 Engineer: C. SAMS
Sounding: C-606 ELEV=412.0 Date: 06/27/06 07:51



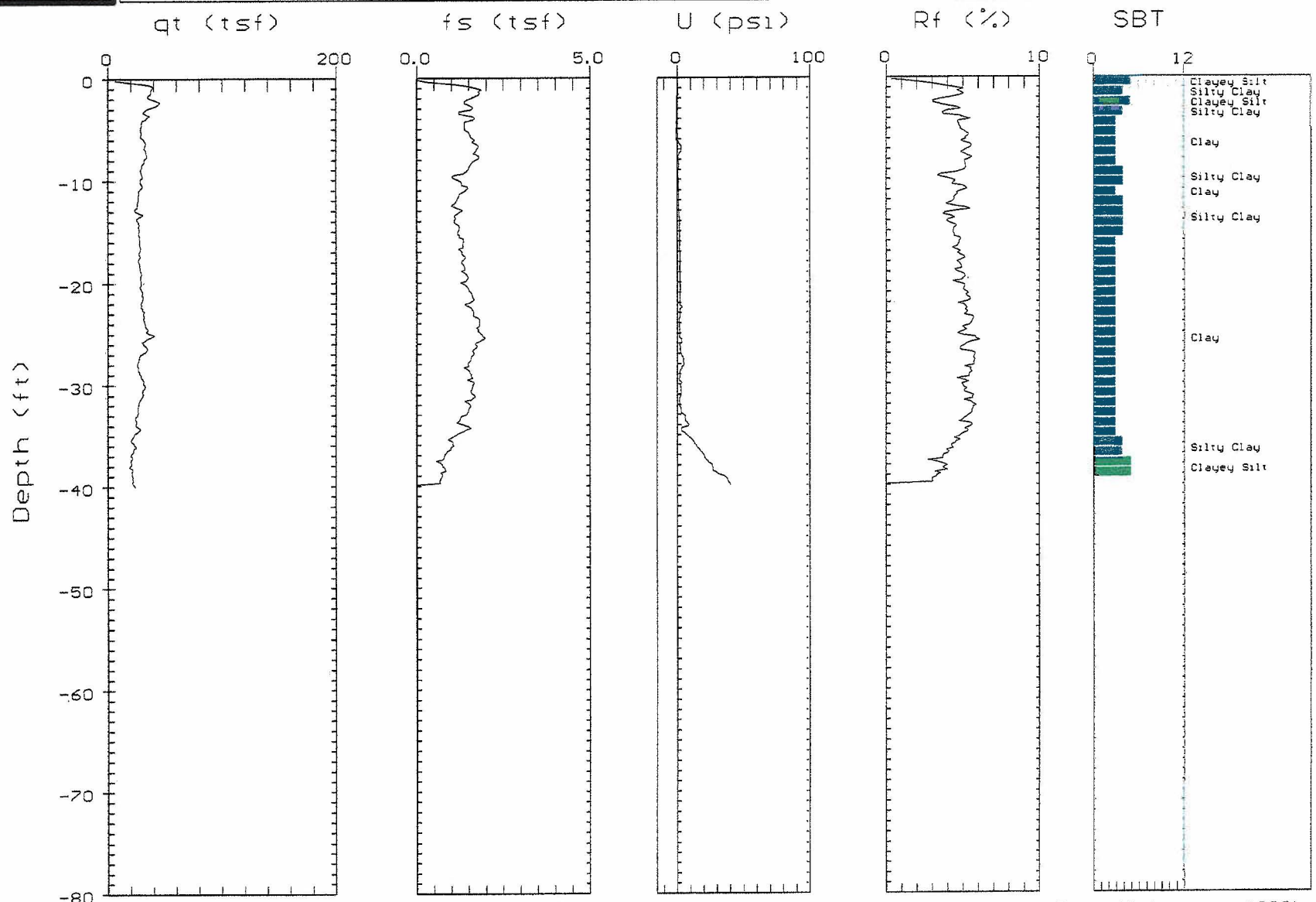
Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892575.2 E-1904318.2 Engineer: C.SAMS
Sounding: C-607 ELEV=407.2 Date: 06/26/06 08:12



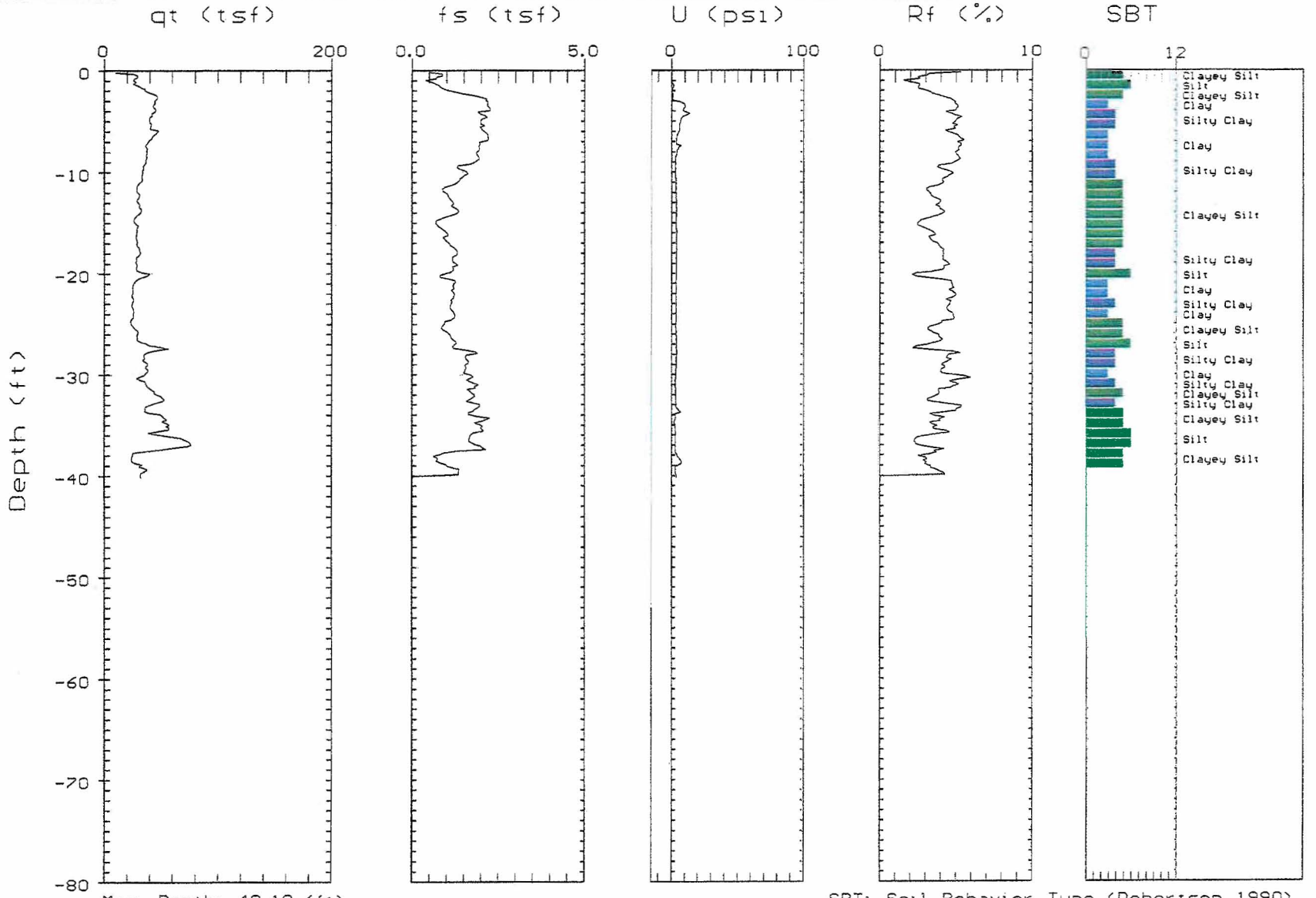
Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892406.2 E=1904230.0 Engineer: C. SAMS
Sounding: C-608 ELEV=405.8 Date: 06/27/06 08:40



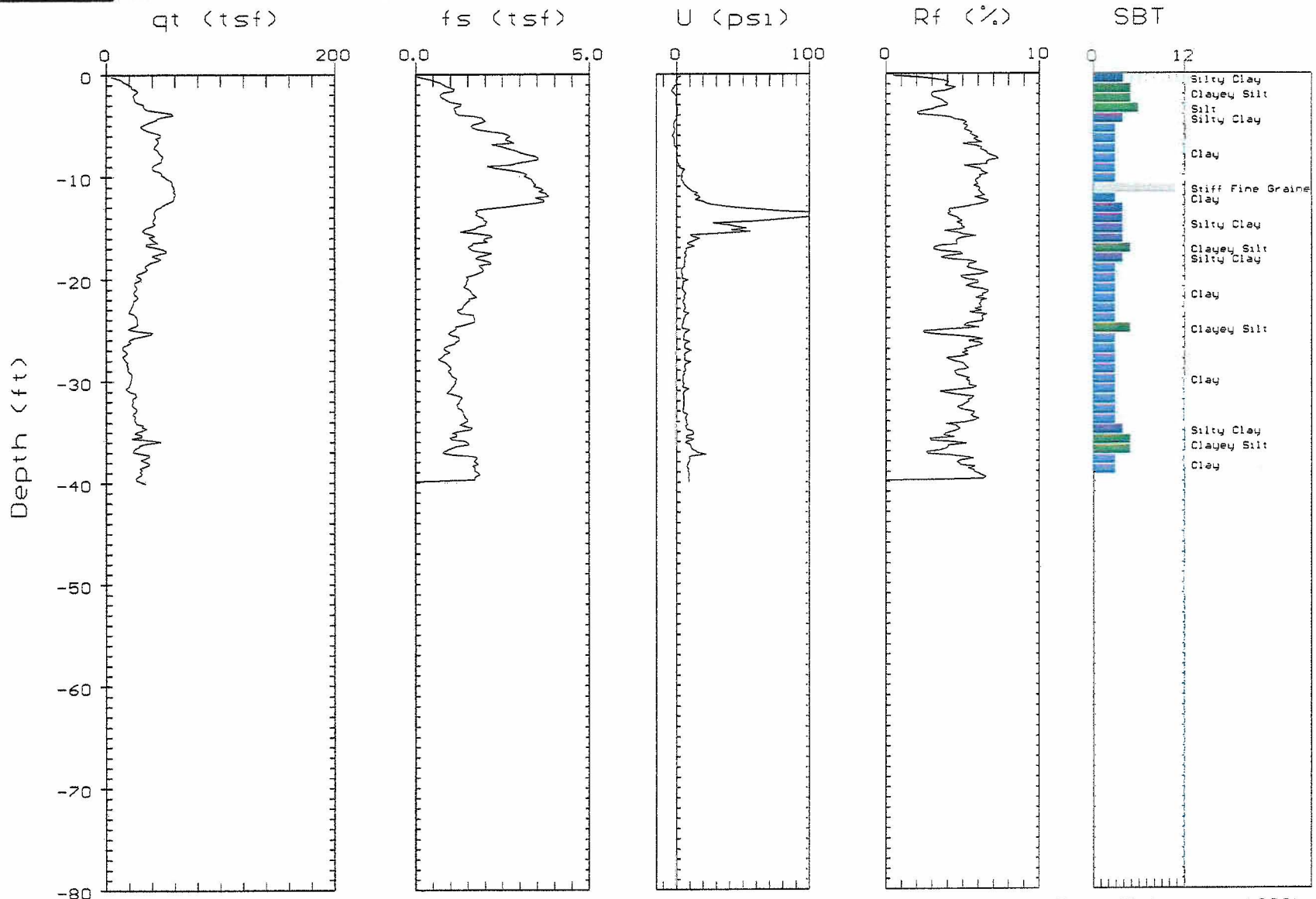
Max. Depth: 40.19 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891462.6 E=1903410.2 Engineer: C.SAMS
Sounding: C-609 ELEV=397.2 Date: 06/26/06 10:12



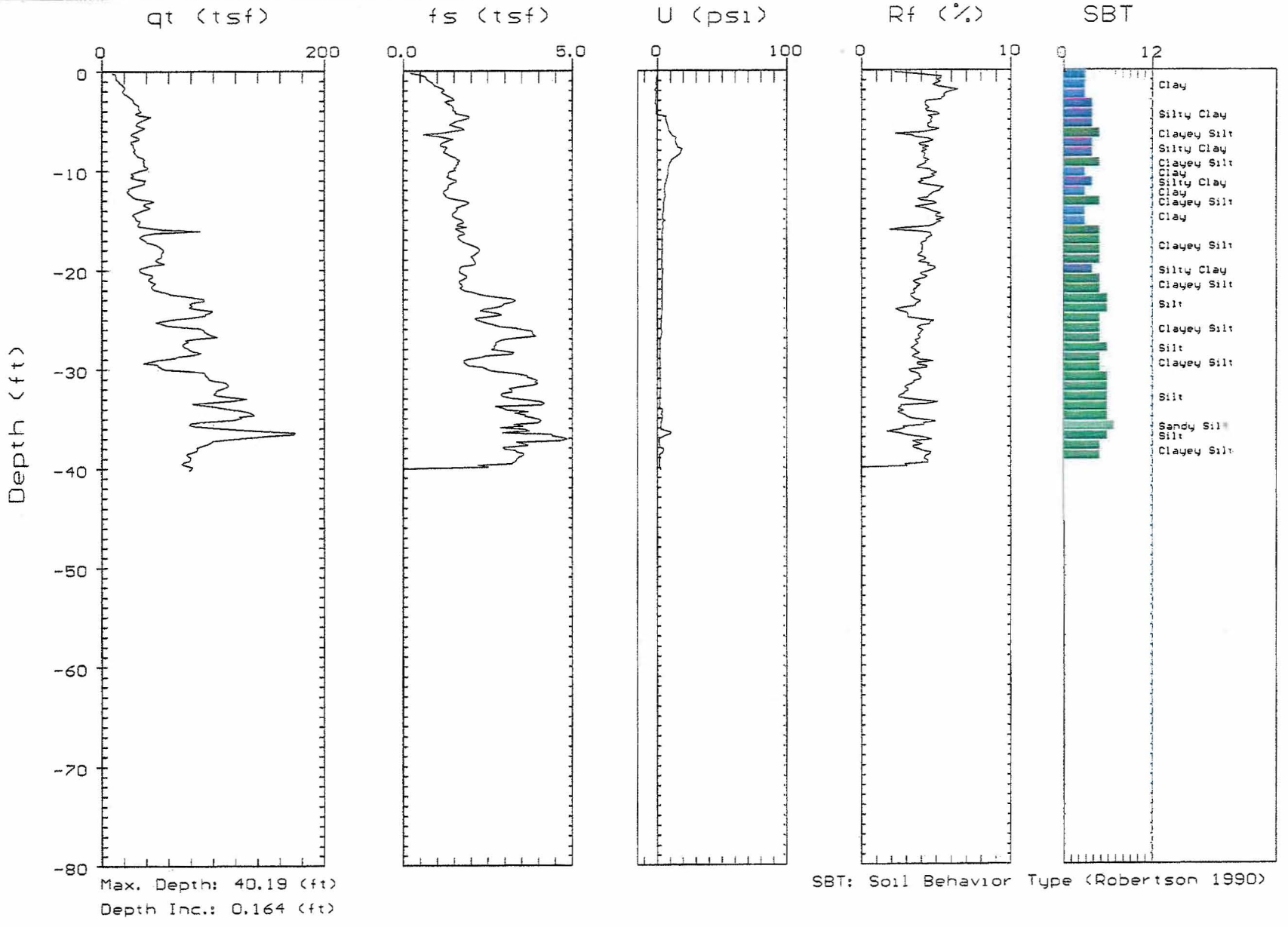
Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=890608.9 E=1902714.0 Engineer: C SAMS
Sounding: C-610 ELEV=393.4 Date: 06/27/06 11:49



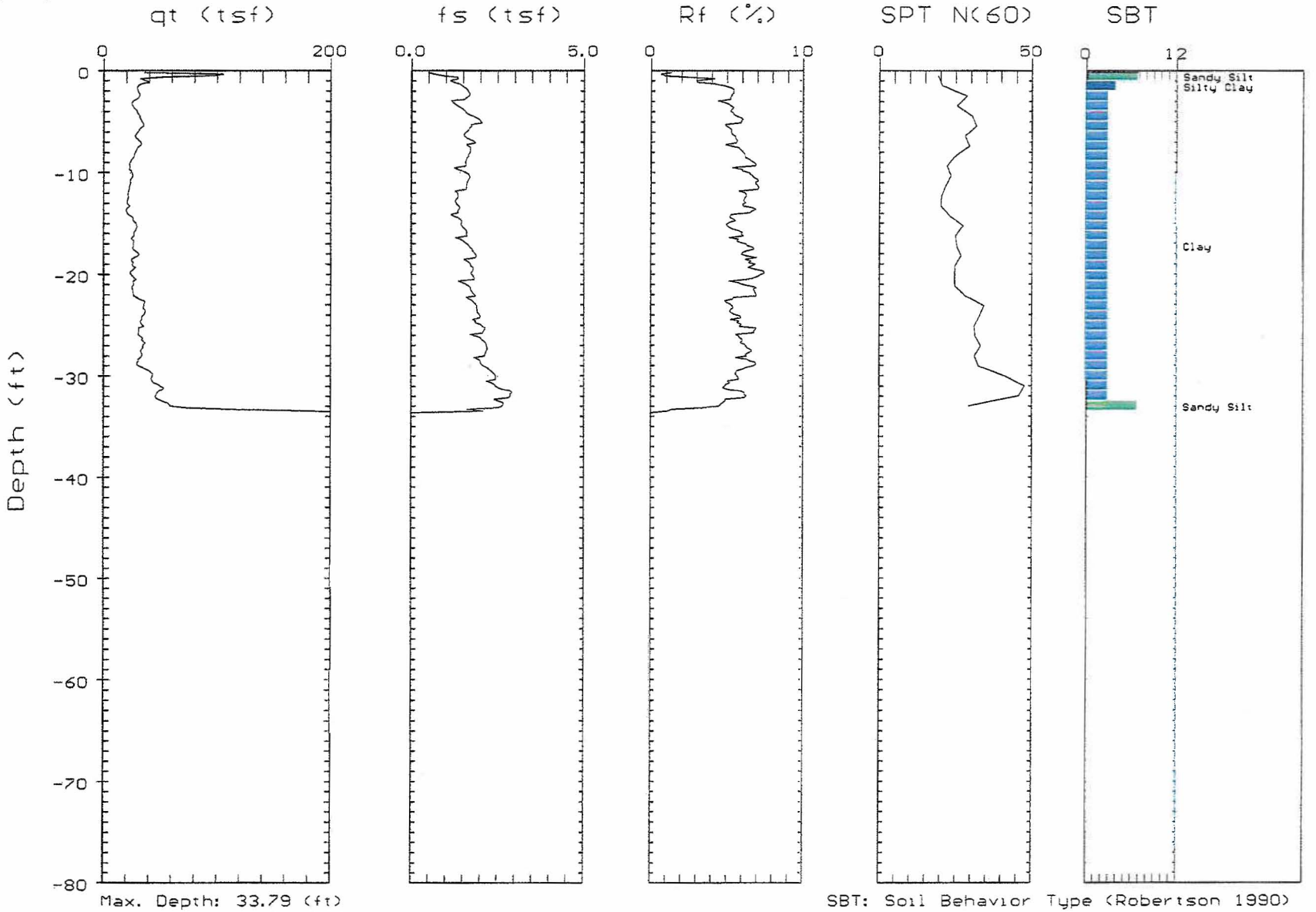
Max. Depth: 40.19 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892773.0 E=1903149.7 Engineer: C.SAMS
Sounding: C-201 Elev=423.4 Date: 06/19/06 14:16



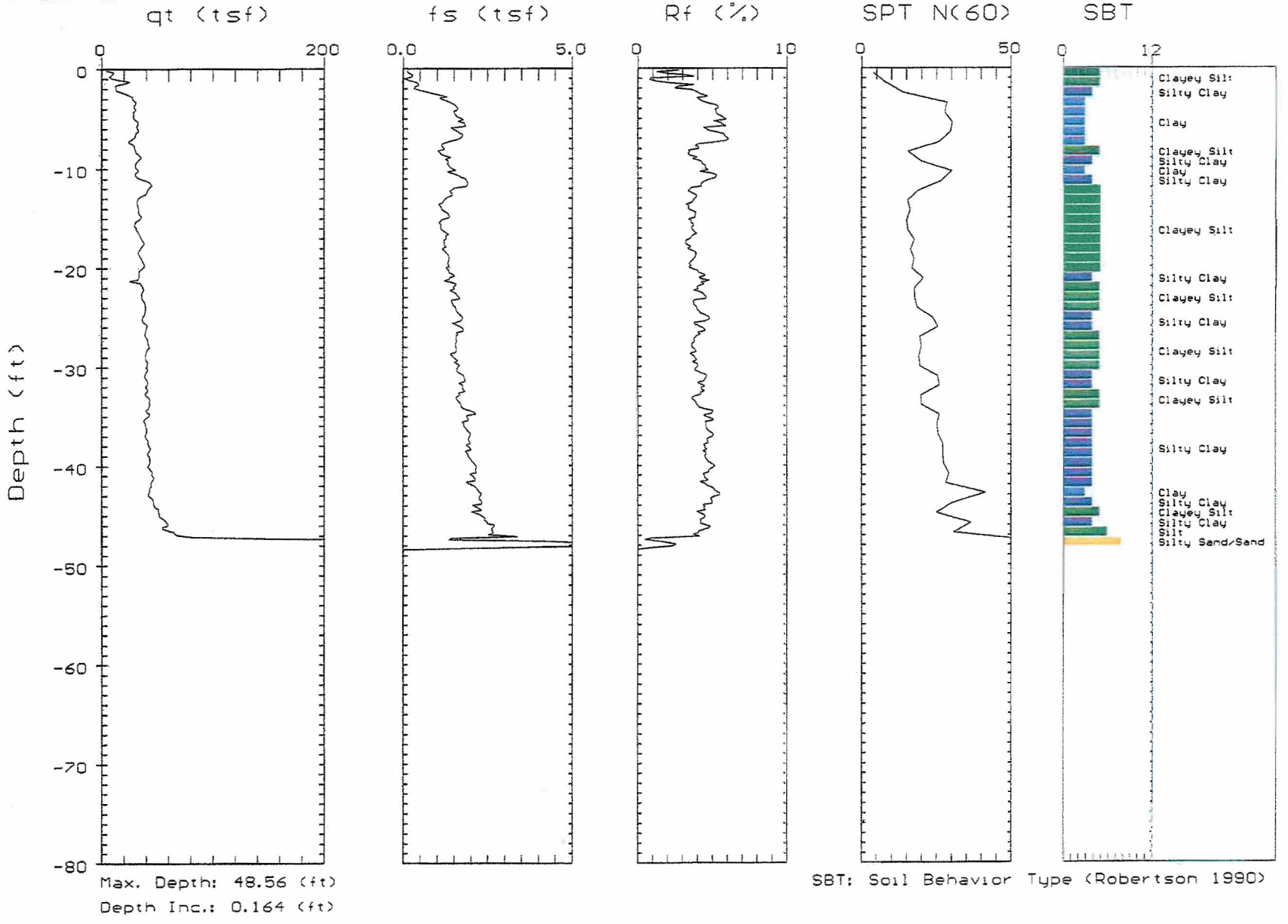
Max. Depth: 33.79 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892888.5 E=1903062.6 Engineer: C.SAMS
Sounding: C-202 ELEV=422.5 Date: 06/20/06 05:42



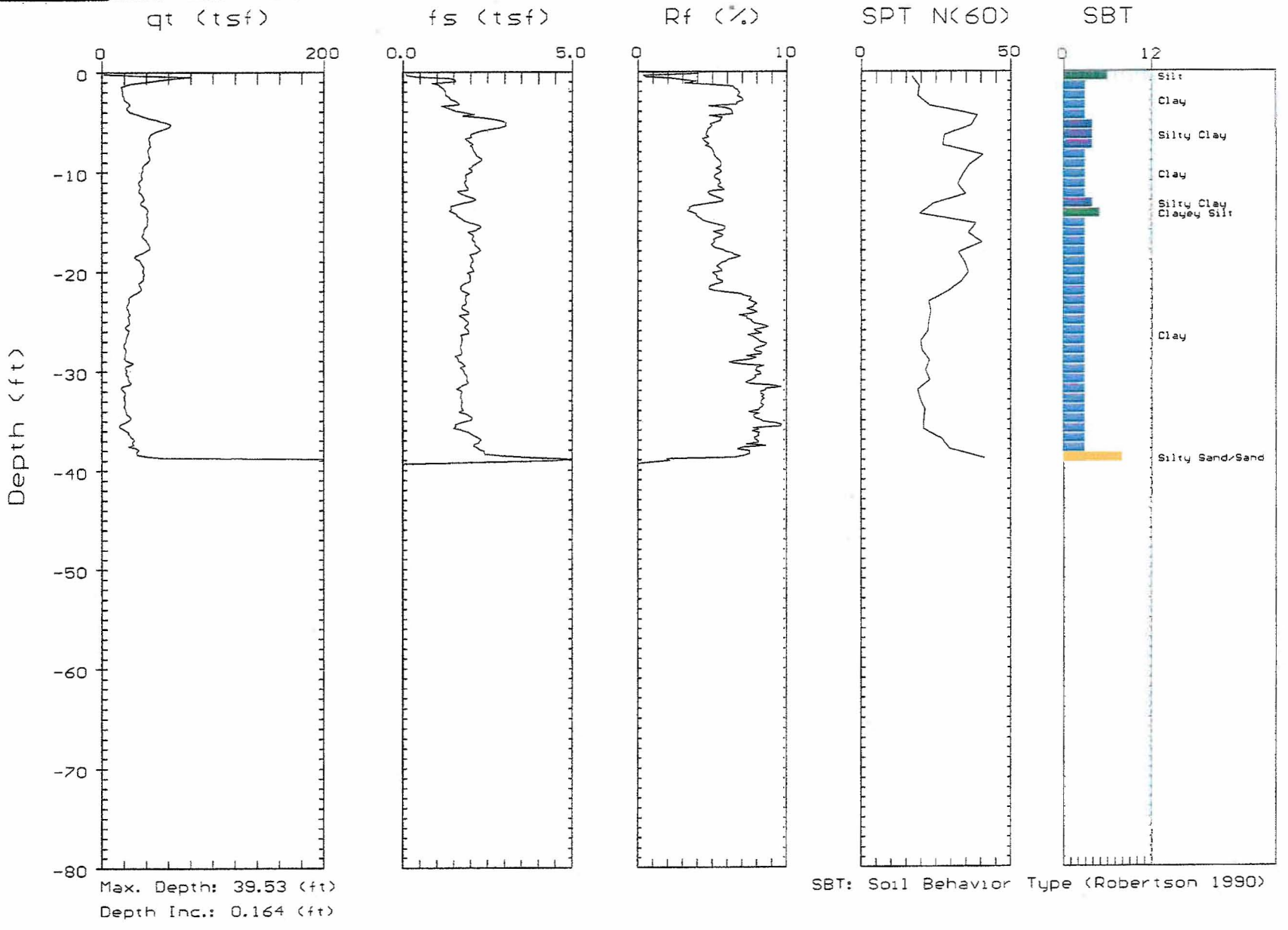
Max. Depth: 48.56 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

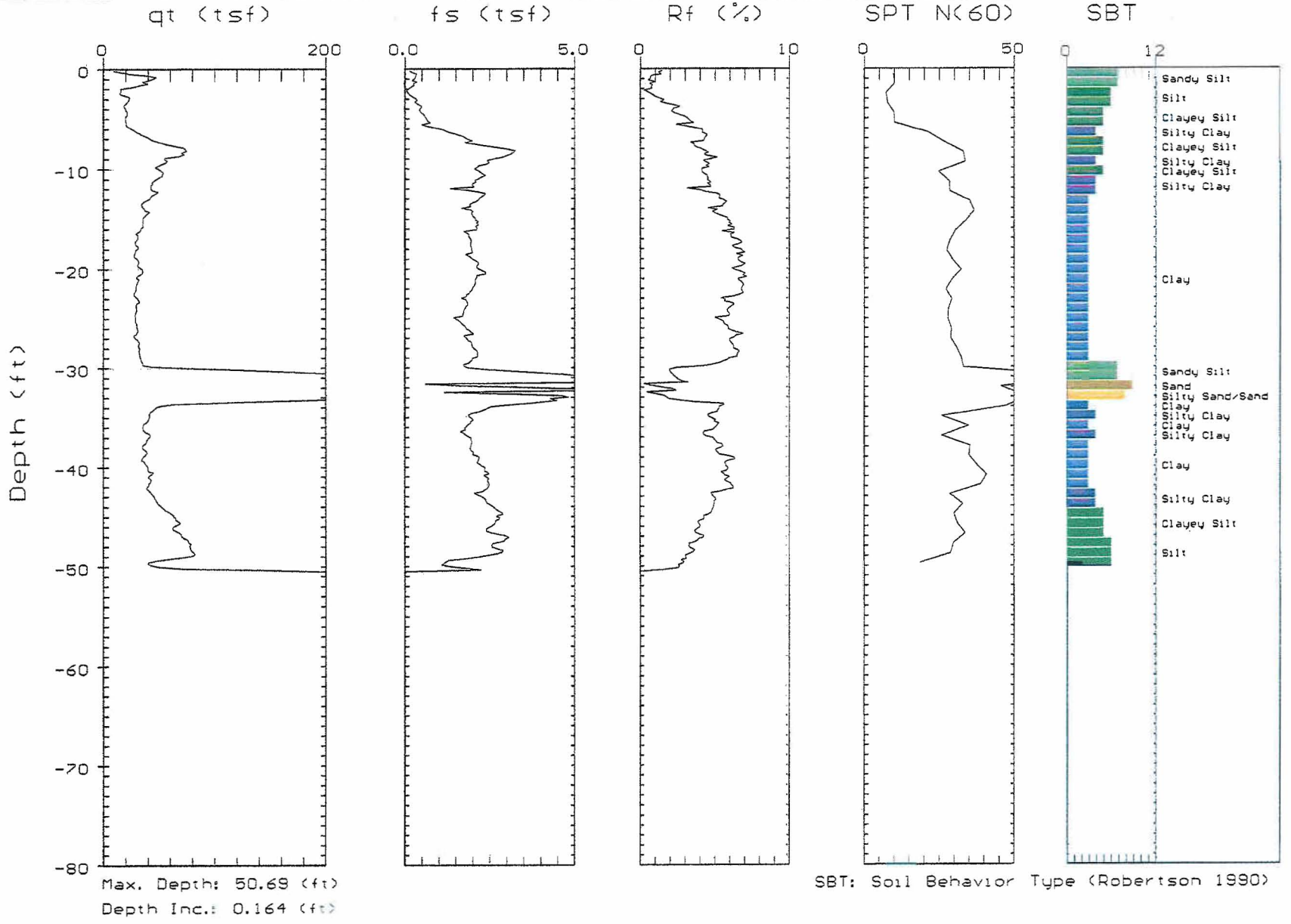
Location: N=892915.3 E=1902940.3 Engineer: C.SAMS
Sounding: C-203 ELEV=422.8 Date: 06/20/06 07:10



GREGG

MACTEC

Location: N=892848.9 E=1903329.6 Engineer: C. SAMS
Sounding: C-204 ELEV=428.3 Date: 06/20/06 12:42



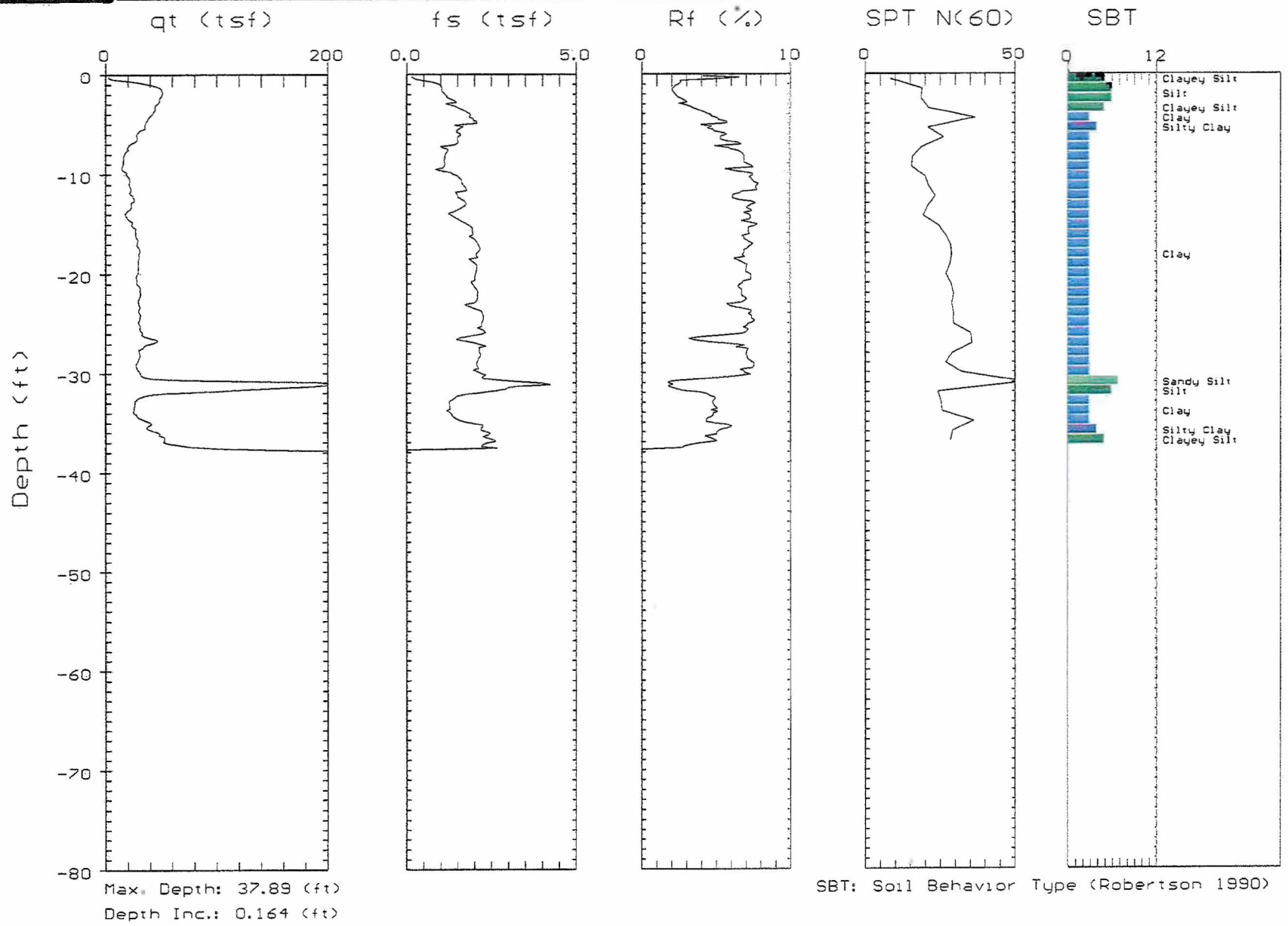
Max. Depth: 50.69 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892713.8 E=1903499.0 Engineer: C.SAMS
Sounding: C-205 ELEV=423.1 Date: 06/19/06 12:45



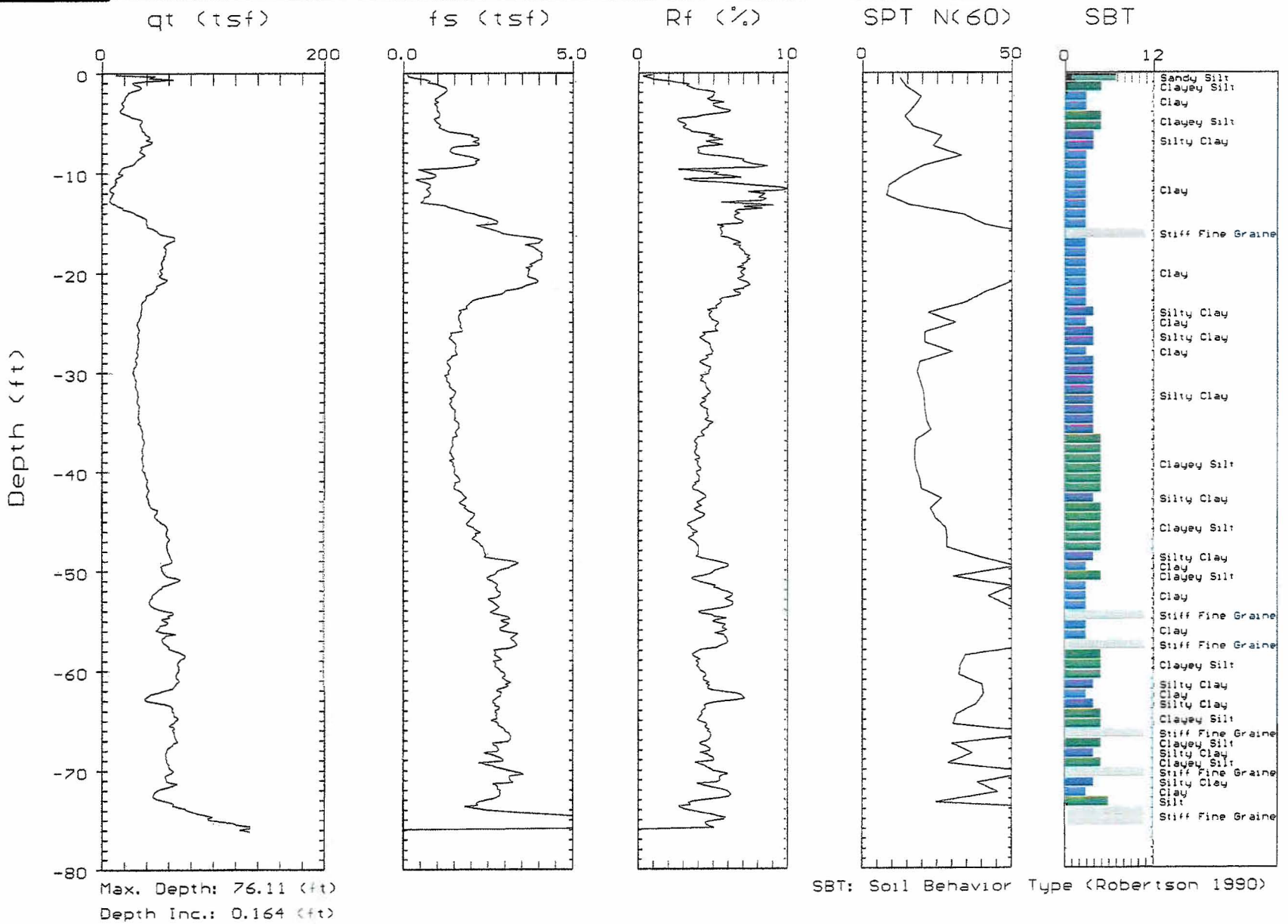
Max. Depth: 37.89 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=893044.5 E=1902877.5 Engineer: C.SAMS
Sounding: C-206 ELEV=420.5 Date: 06/20/06 08:16



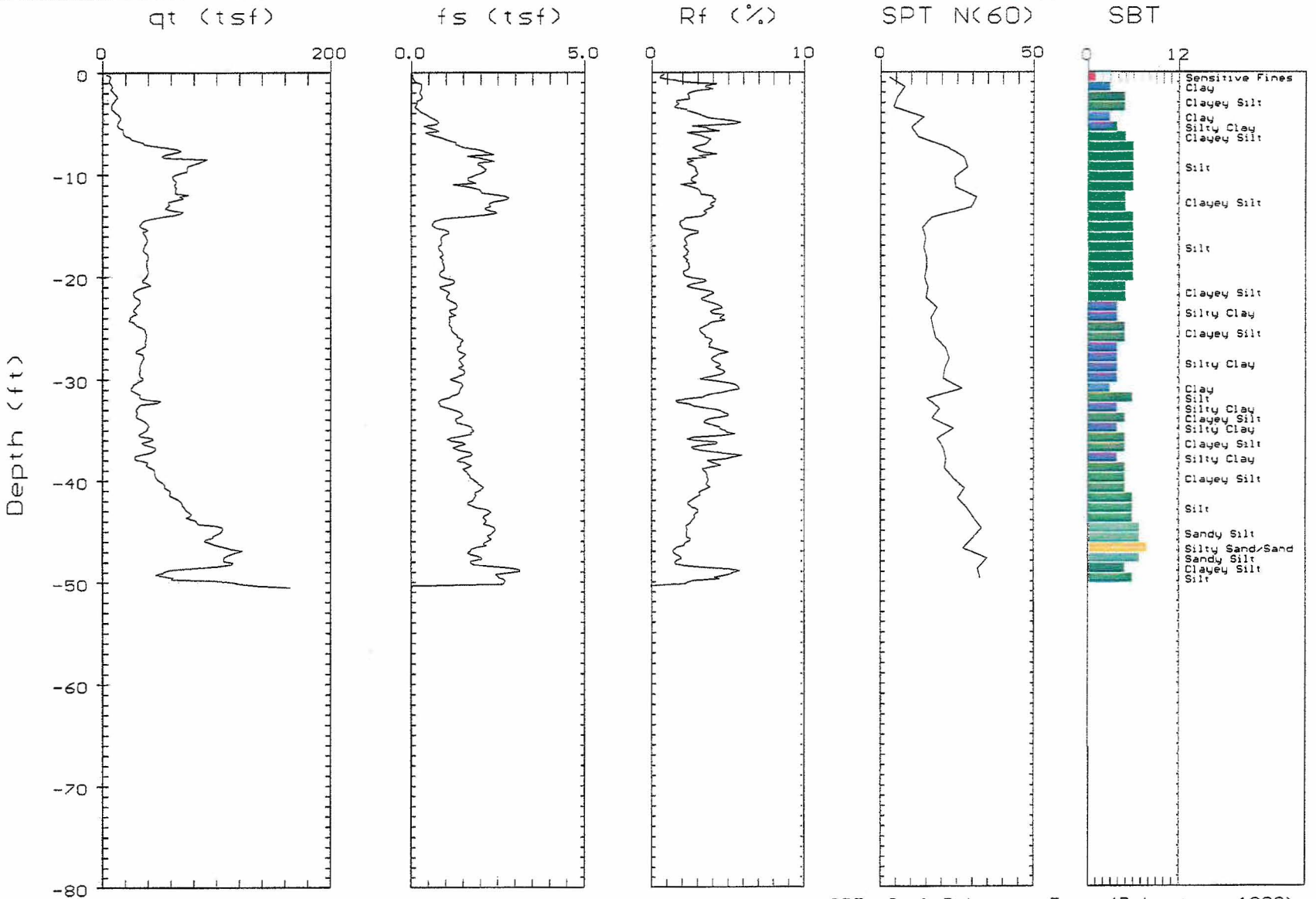
Max. Depth: 76.11 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892903.1 E=1903451.5 Engineer: C.SAMS
Sounding: C-207 ELEV=413.0 Date: 06/21/06 05:50



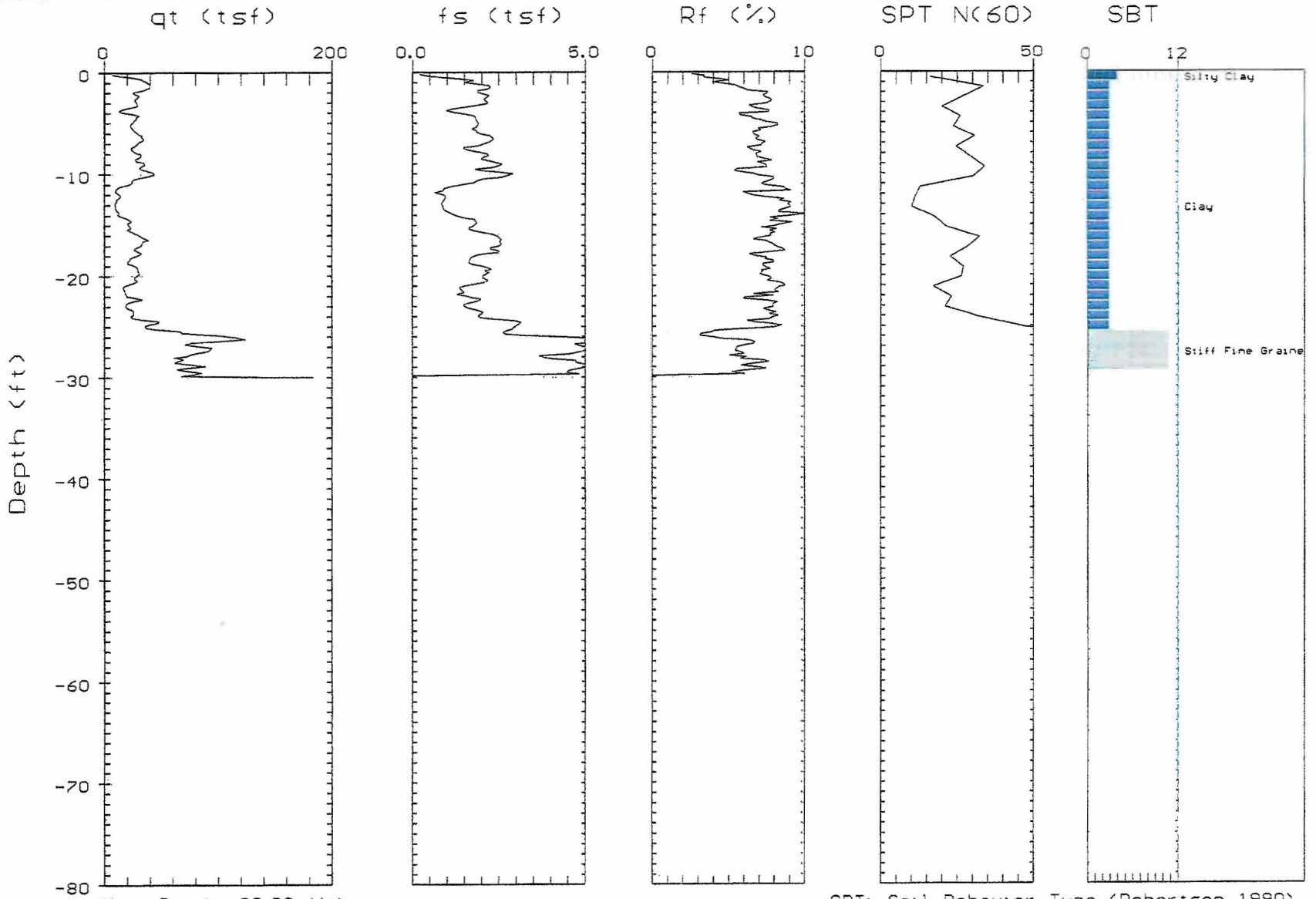
Max. Depth: 50.52 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892800.9 E=1902817.8 Engineer: C. SAMS
Sounding: C-208 ELEV=423.4 Date: 06/20/06 11:44



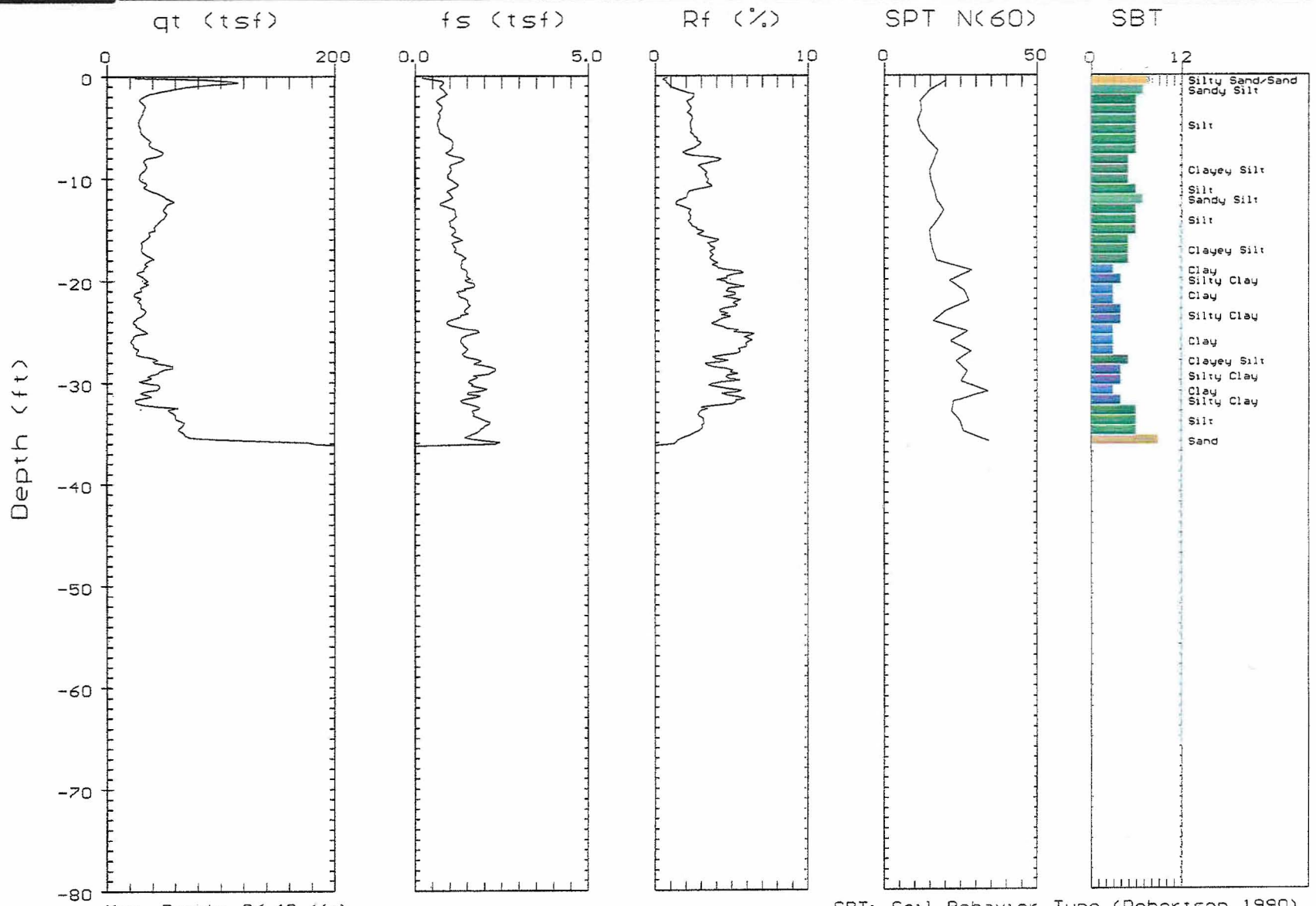
Max. Depth: 30.02 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892471.8 E=1902958.6 Engineer: C.SAMS
Sounding: C-209 ELEV=427.0 Date: 06/22/06 07:36



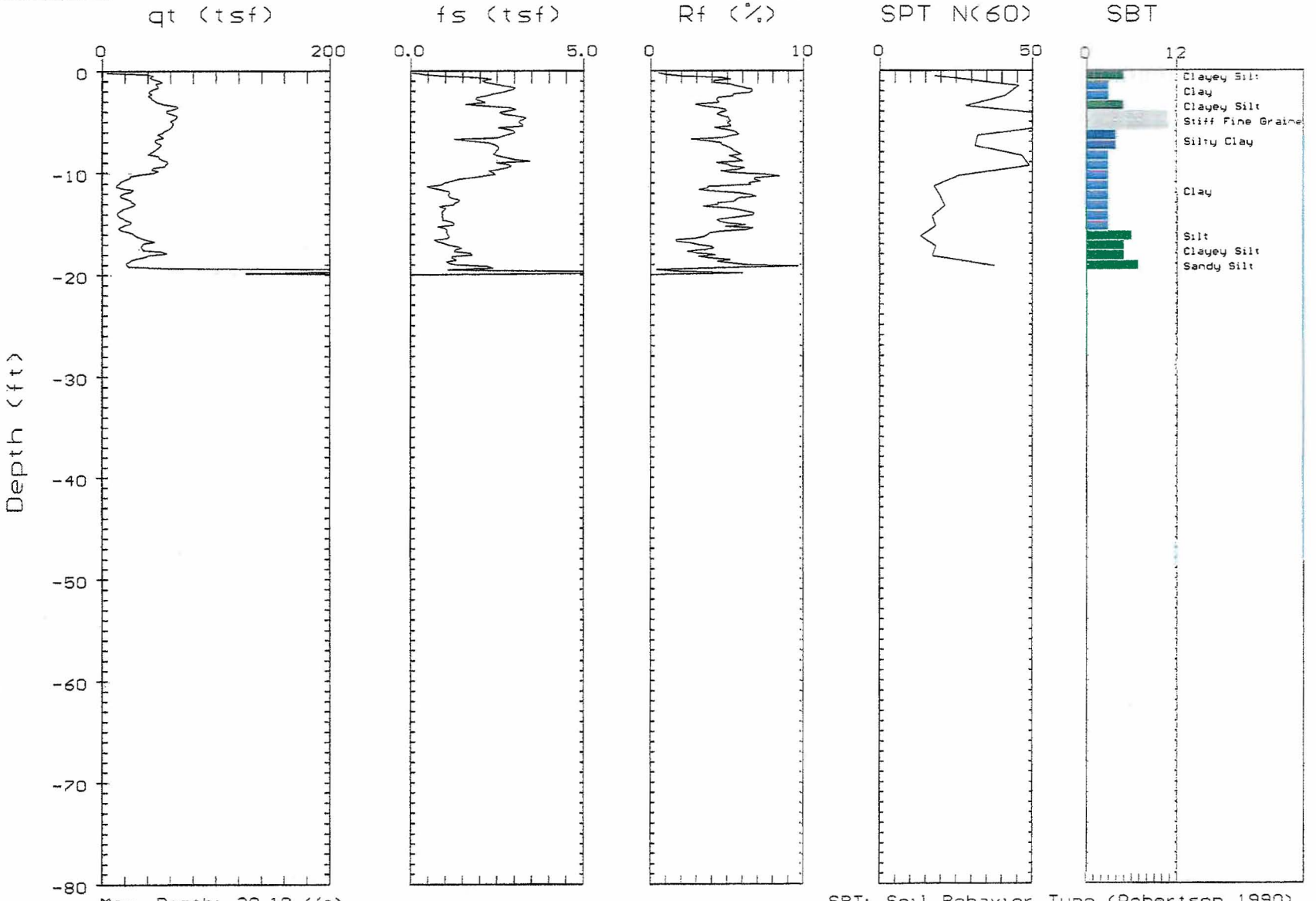
Max. Depth: 36.42 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=893241.2 E=1903128.5 Engineer: C. SAMS
Sounding: C-210 ELEV=367.7 Date: 06/21/06 07:39



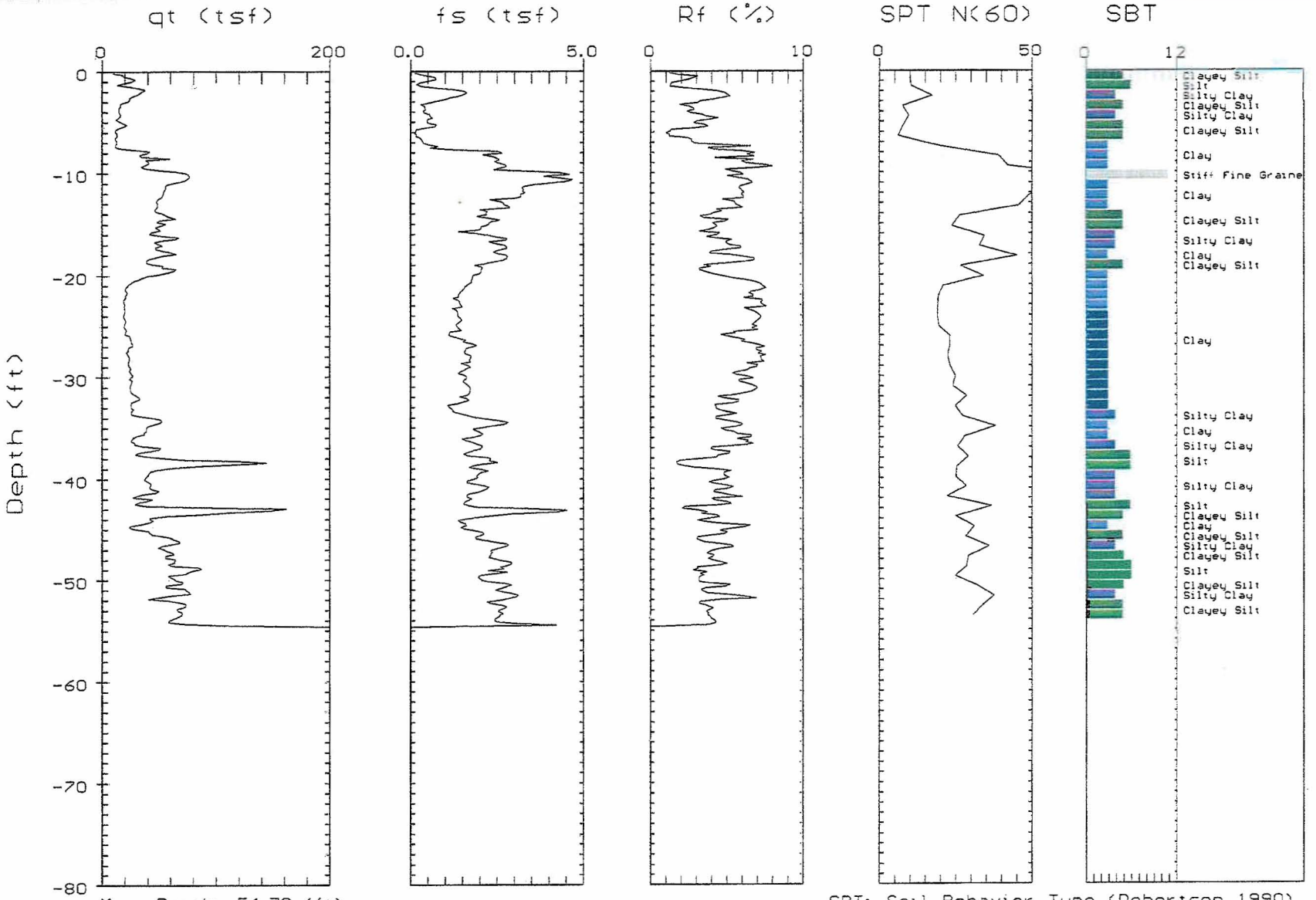
Max. Depth: 20.18 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891941.9 E=1902811.3 Engineer: C.SAMS
Sounding: C-301 ELEV=421.0 Date: 06/22/06 11:53



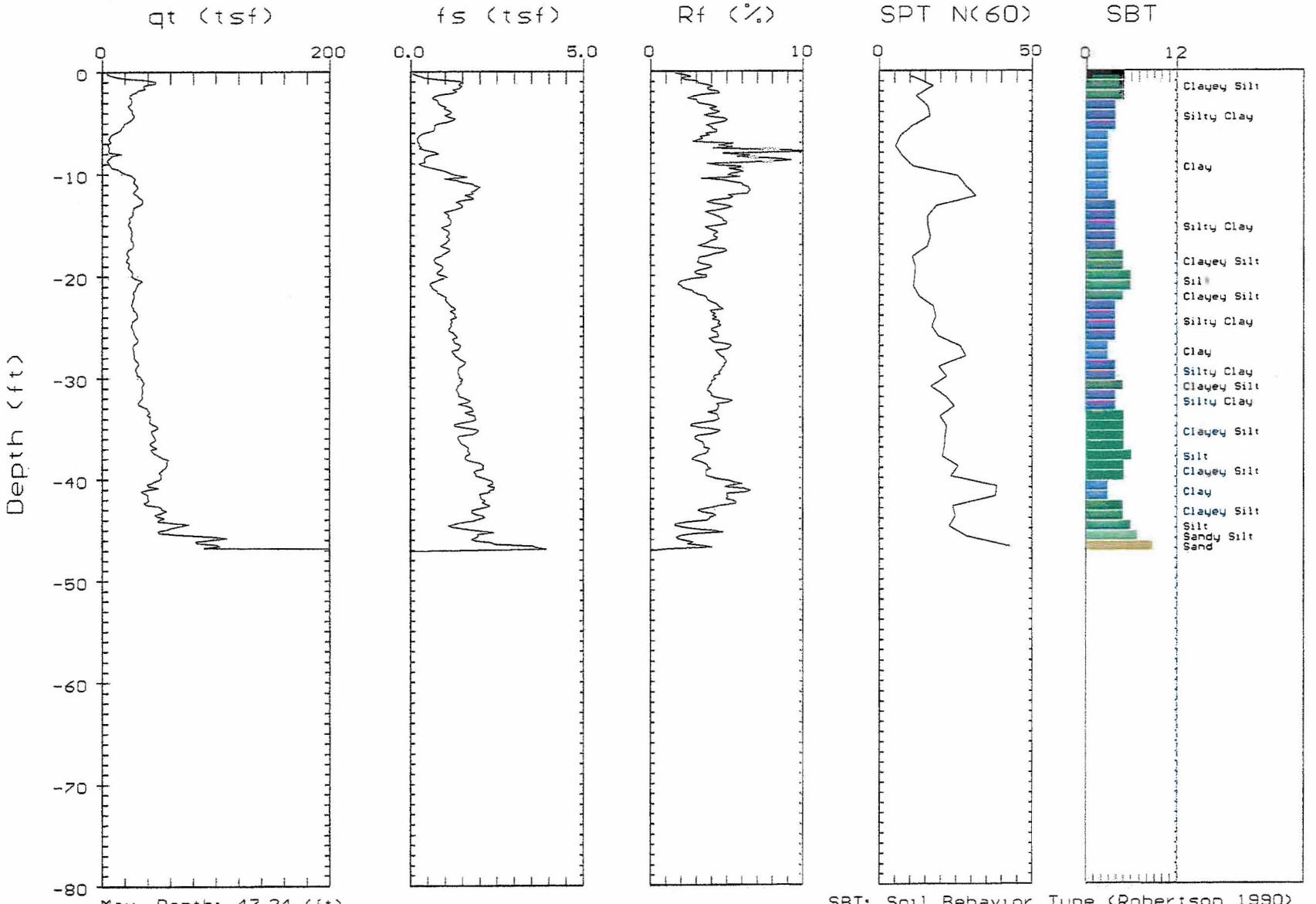
Max. Depth: 54.79 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892052.1 E=1902726.6 Engineer: C.SAMS
Sounding: C-302cELEV=421.3 Date: 06/22/06 09:04



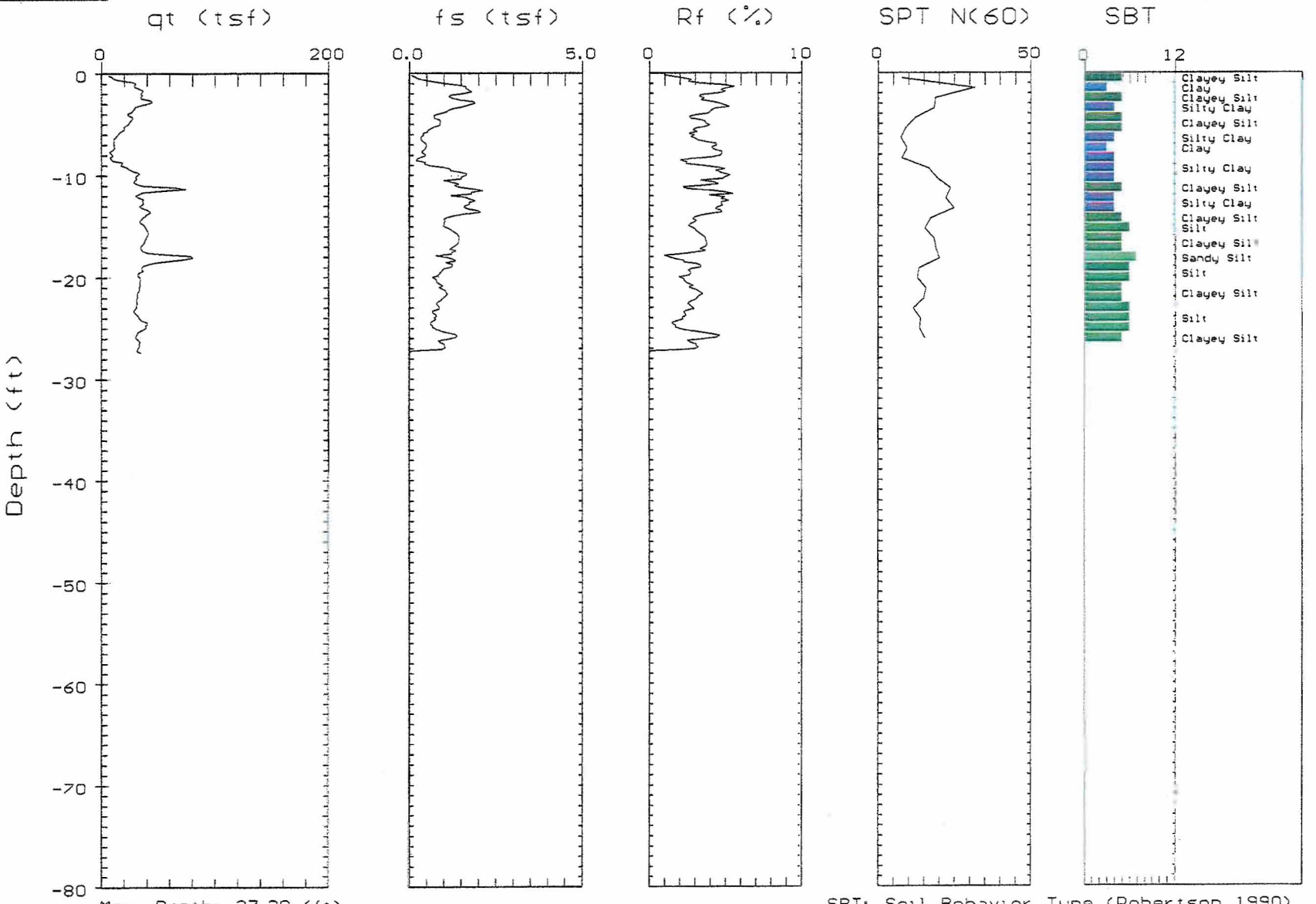
Max. Depth: 47.24 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892052.1 E=1902726.6 Engineer: C.SAMS
Sounding: C-302 ELEV=421.3 Date: 06/22/06 05:12



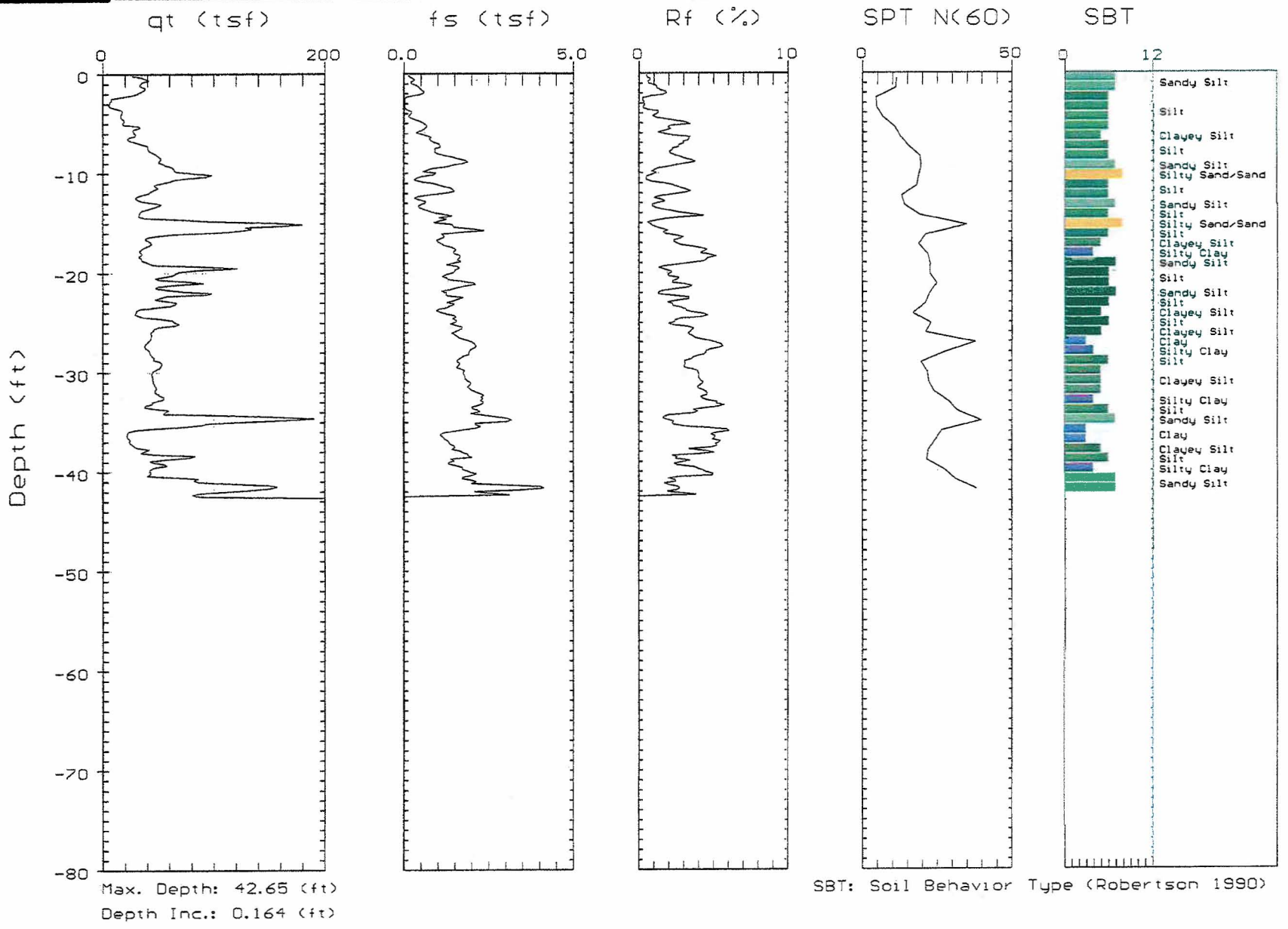
Max. Depth: 27.39 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892040.7 E=1902622.5 Engineer: C.SAMS
Sounding: C-303 ELEV=415.9 Date: 06/21/06 12:33



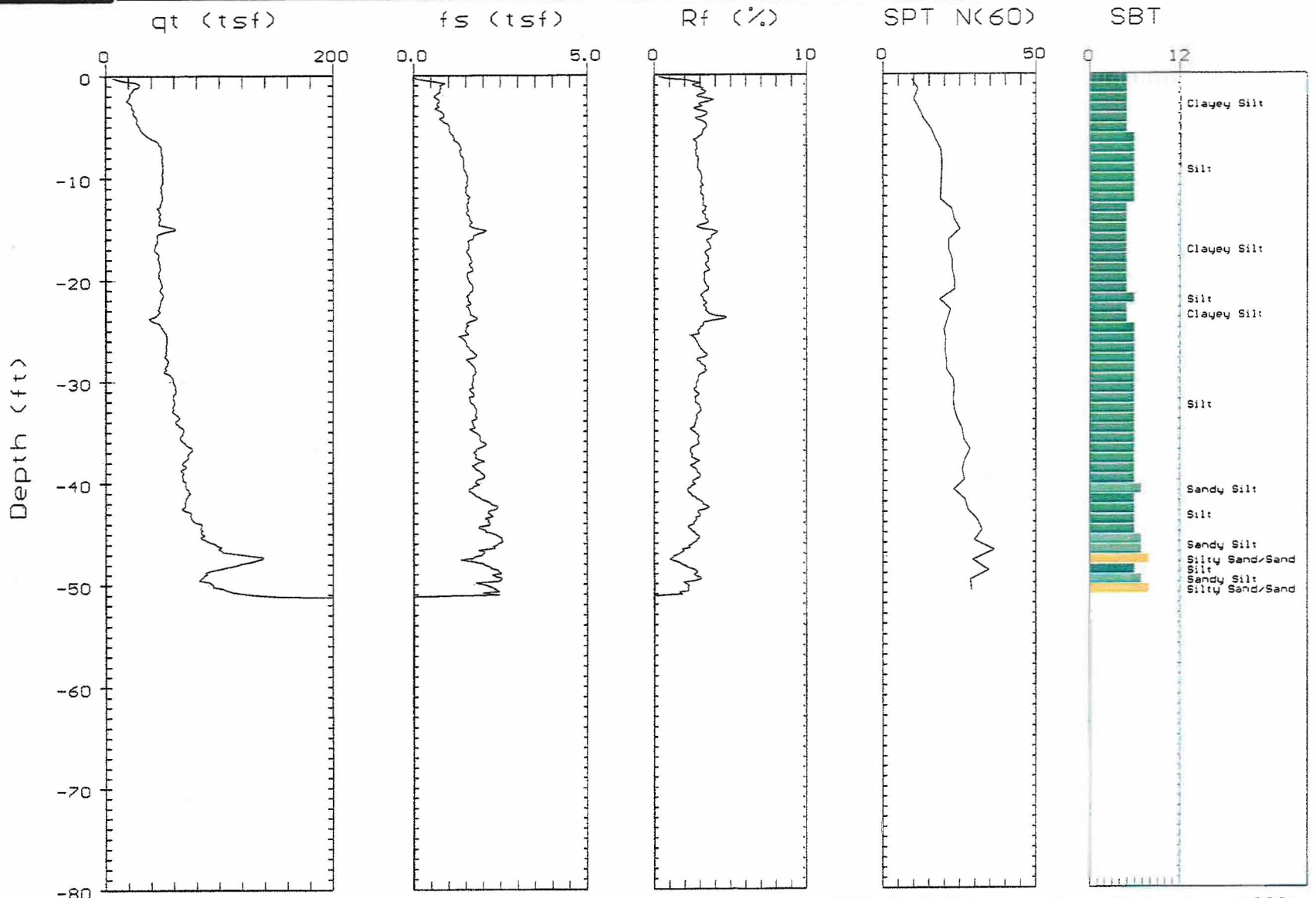
Max. Depth: 42.65 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892013.7 E=1902992.9 Engineer: C.SAMS
Sounding: C-304 ELEV=418.1 Date: 06/22/06 13:02



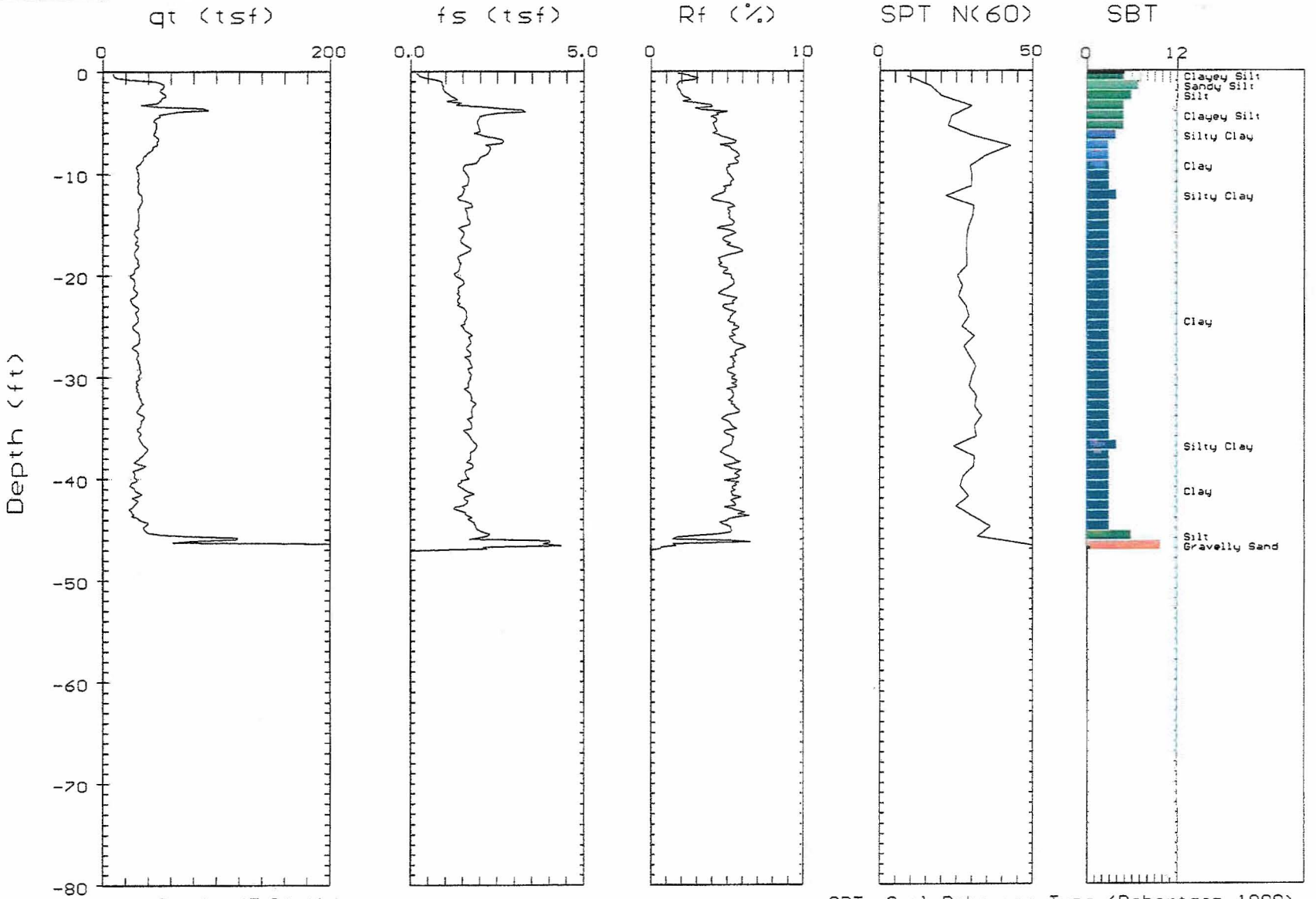
Max. Depth: 51.34 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891841.4 E=1903149.5 Engineer: C.SAMS
Sounding: C-305 ELEV=413.0 Date: 06/24/06 07:02



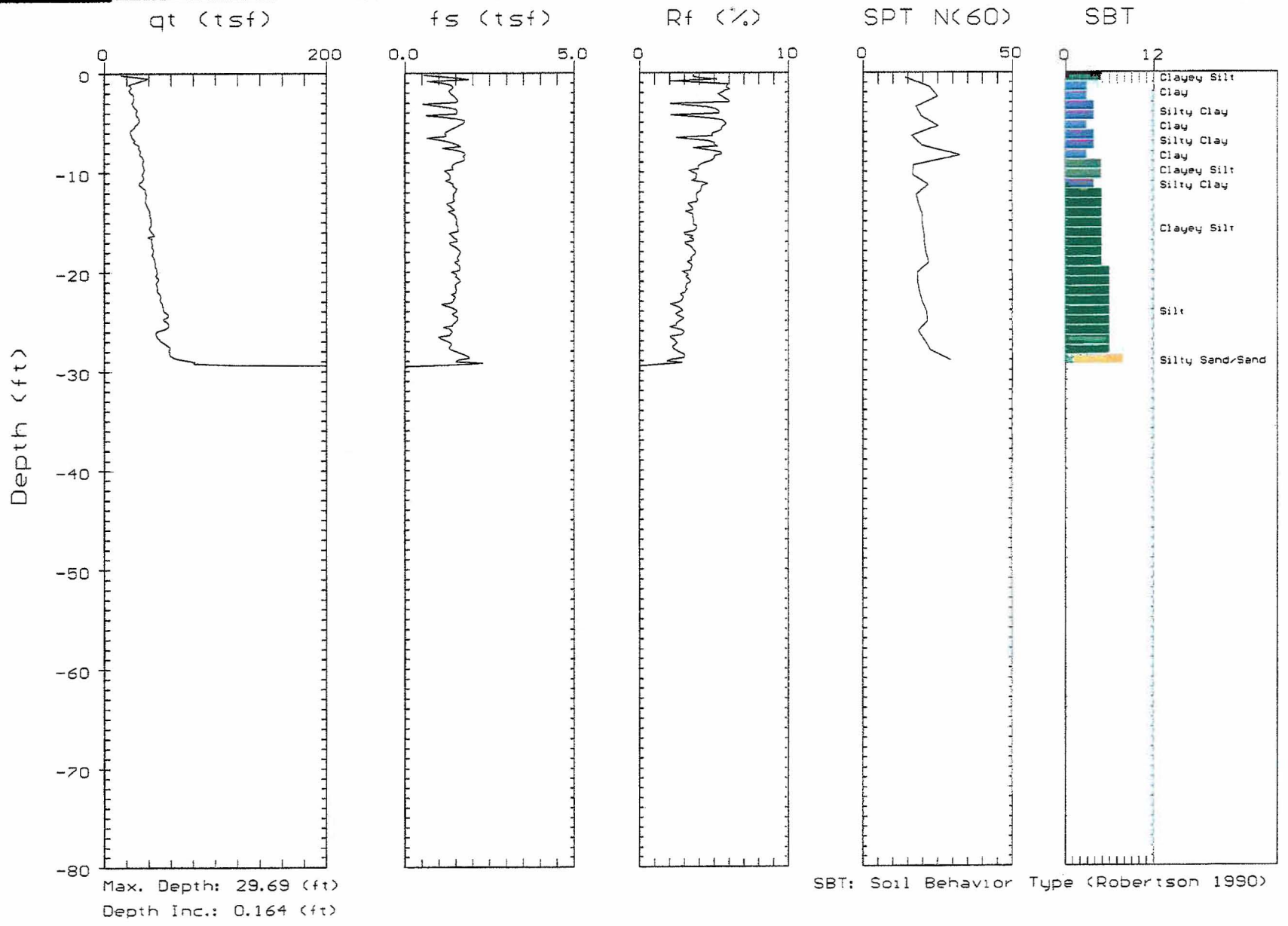
Max. Depth: 47.24 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

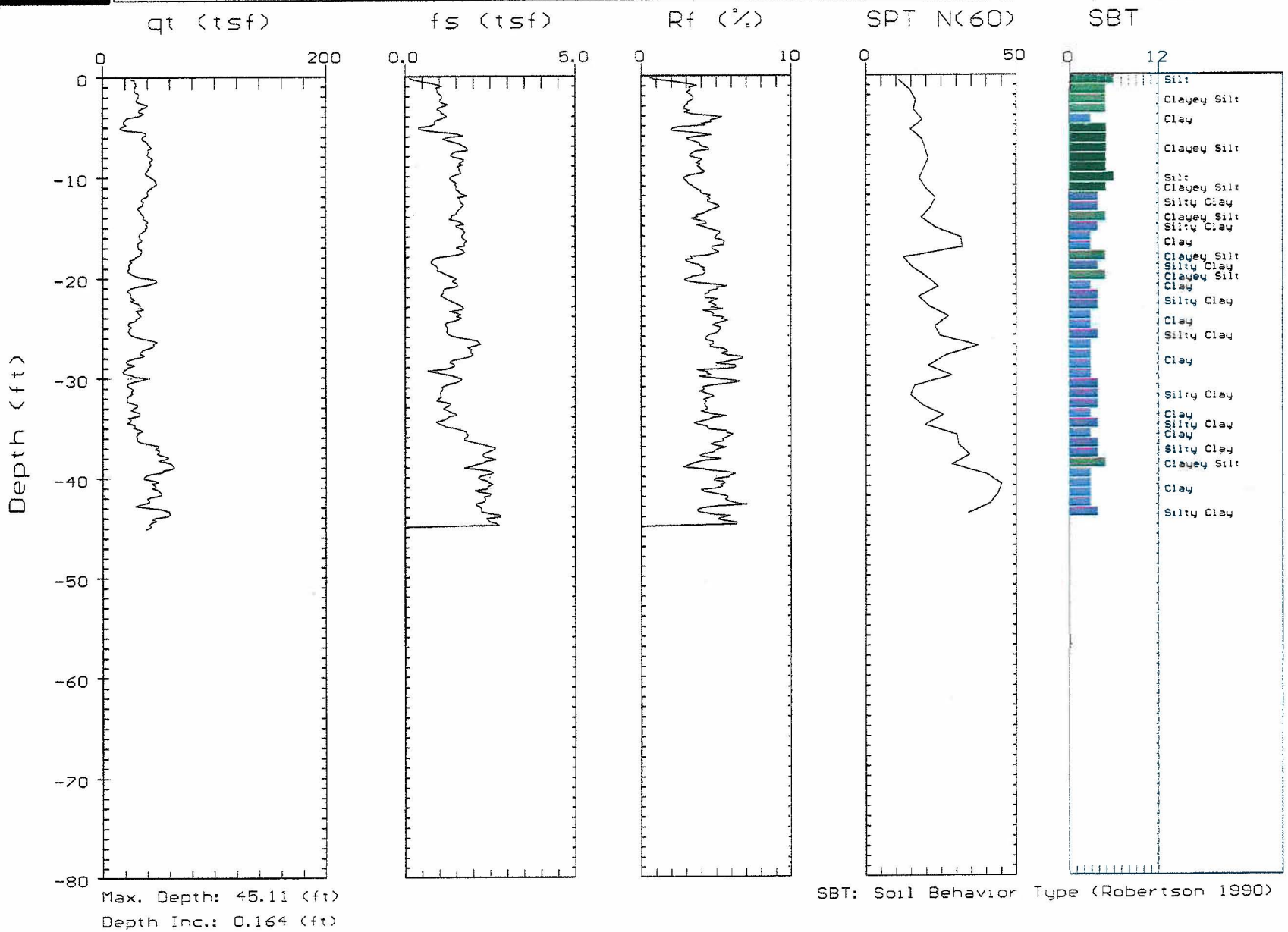
Location: N=892210.3 E=1902541.3 Engineer: C.SAMS
Sounding: C-306 ELEV=417.4 Date: 06/21/06 11:10



GREGG

MACTEC

Location: N=892076.1 E=1903116.6 Engineer: C.SAMS
Sounding: C-307 ELEV-418.7 Date: 06/23/06 05:23



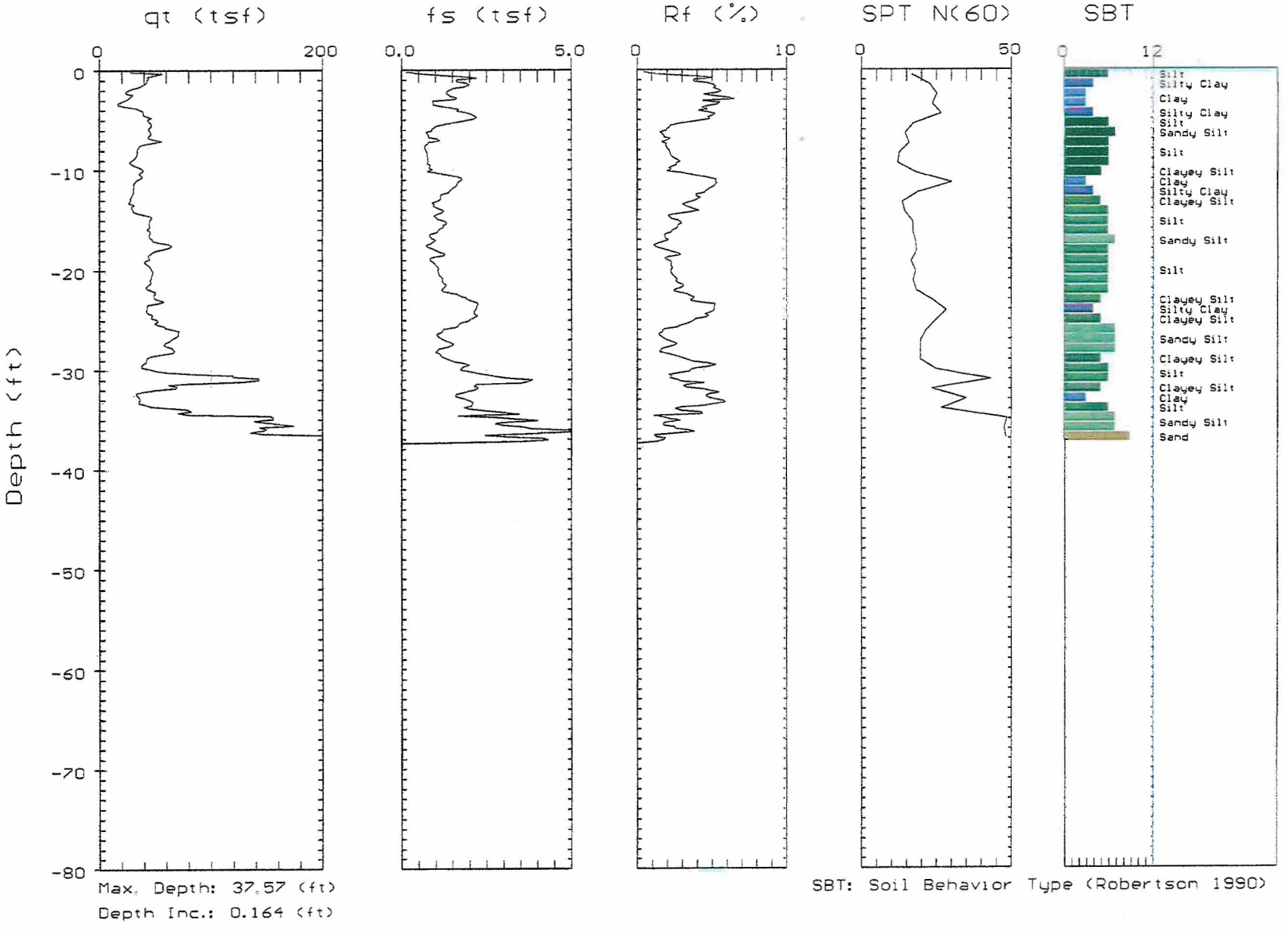
Max. Depth: 45.11 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891967.1 E=1902484.2 Engineer: C.SAMS
Sounding: C-308b ELEV=398.9 Date: 06/23/06 11:02



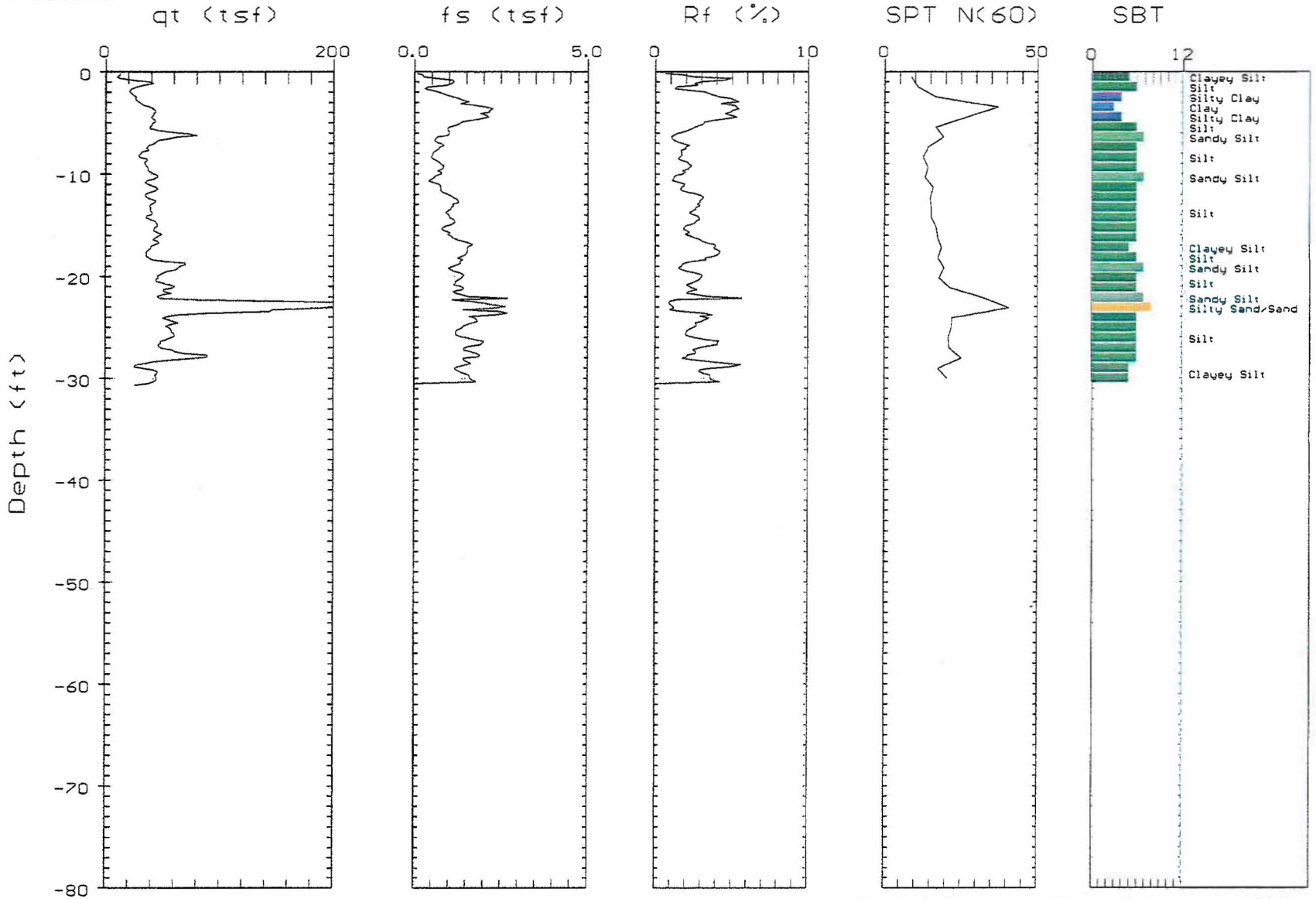
Max. Depth: 37.57 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891967.1 E=1902484.2 Engineer: C.SAMS
Sounding: C-308 ELEV=398.9 Date: 06/23/06 09:20



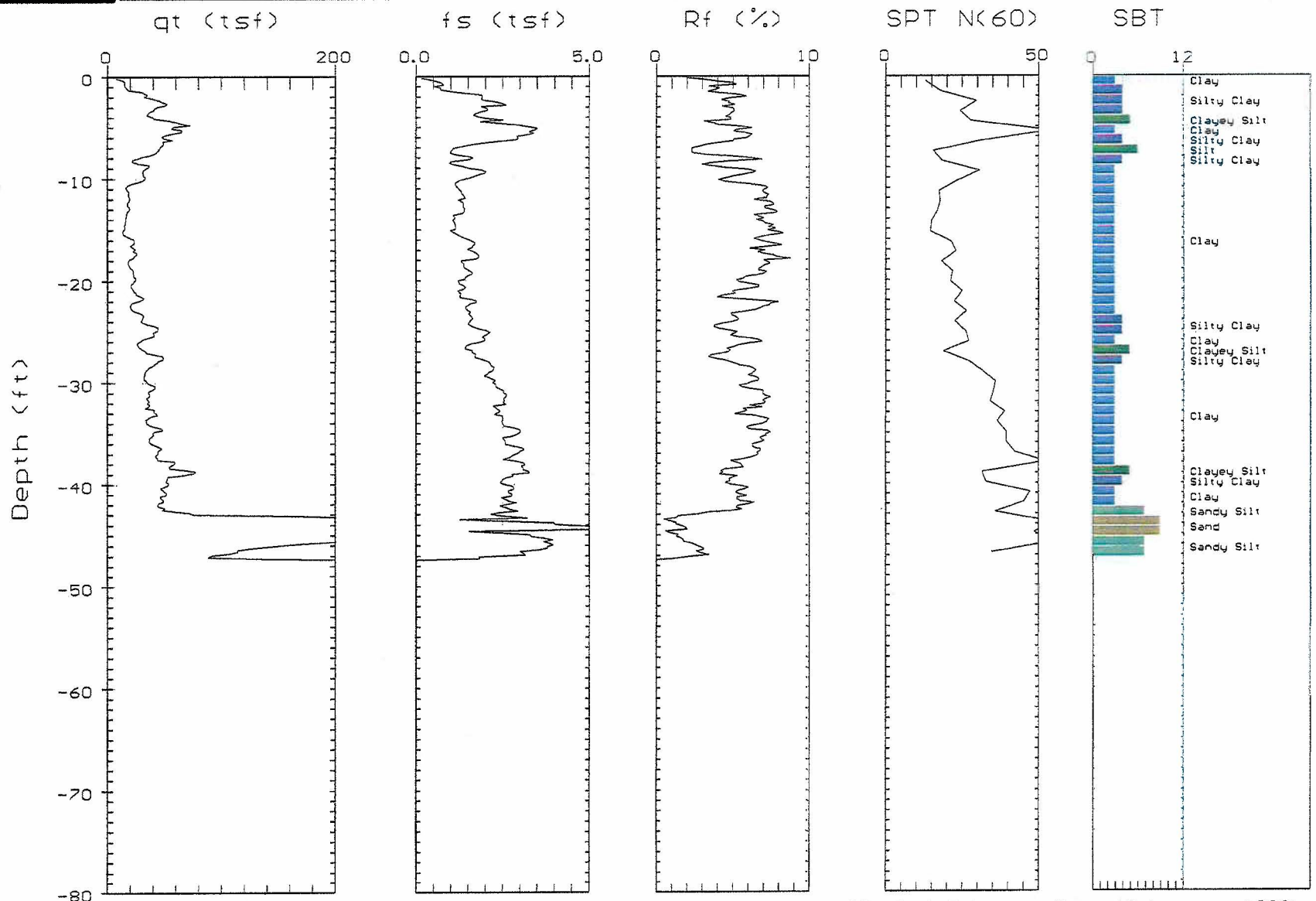
Max. Depth: 30.68 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891638.6 E=1902622.3 Engineer: C.SAMS
Sounding: C-309 ELEV=397.2 Date: 06/23/06 12:36



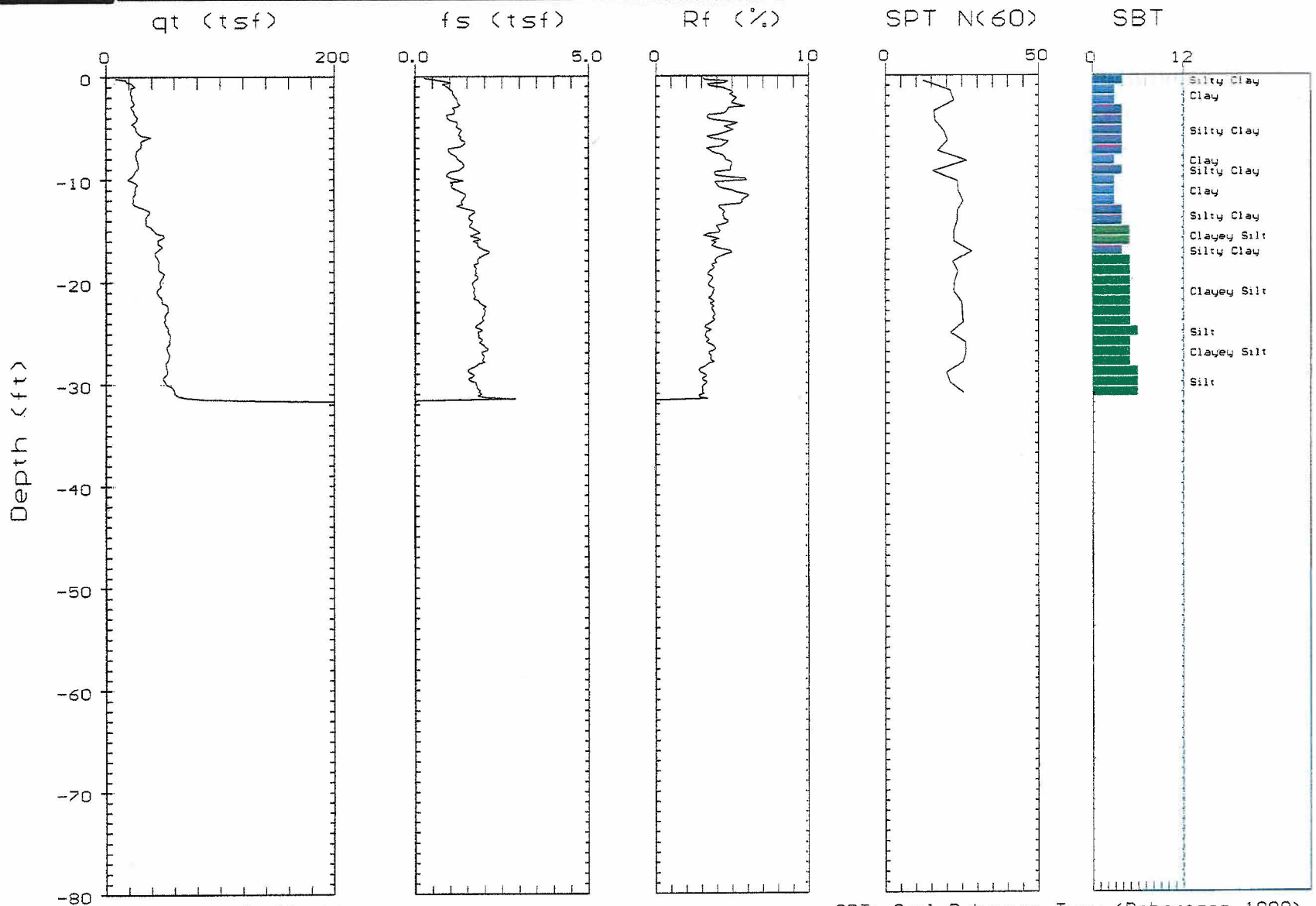
Max. Depth: 47.57 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892406.1 E=1902791.8 Engineer: C. SAMS
Sounding: C-310 ELEV=427.6 Date: 06/21/06 08:37



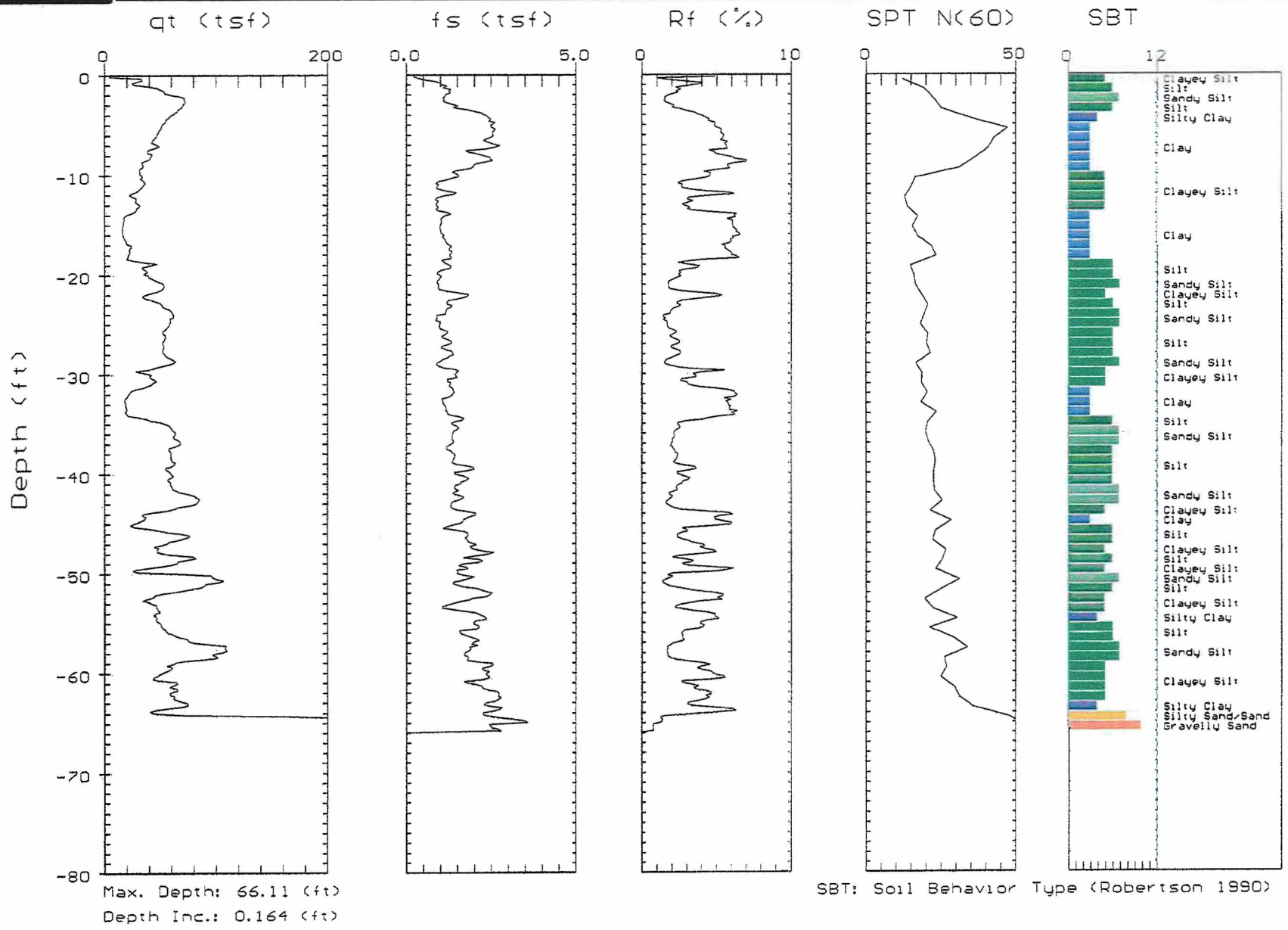
Max. Depth: 31.82 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=890975.6 E=1904482.2 Engineer: C.SAMS
Sounding: C-401 ELEV=407.9 Date: 06/28/06 06:23



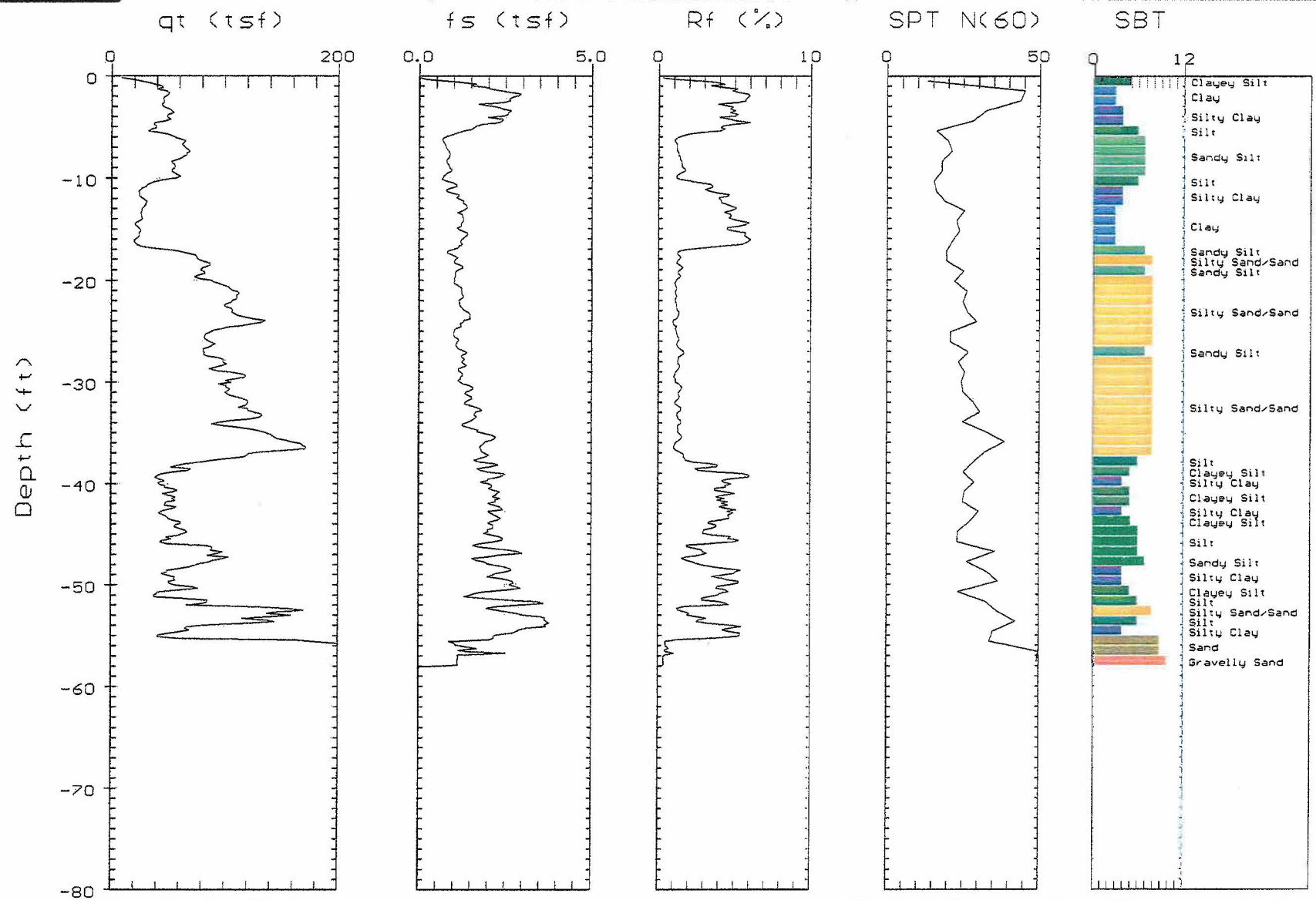
Max. Depth: 66.11 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=890576.8 E=1903321.4 Engineer: C.SAMS
Sounding: C-402 ELEV=399.7 Date: 06/26/06 13:07



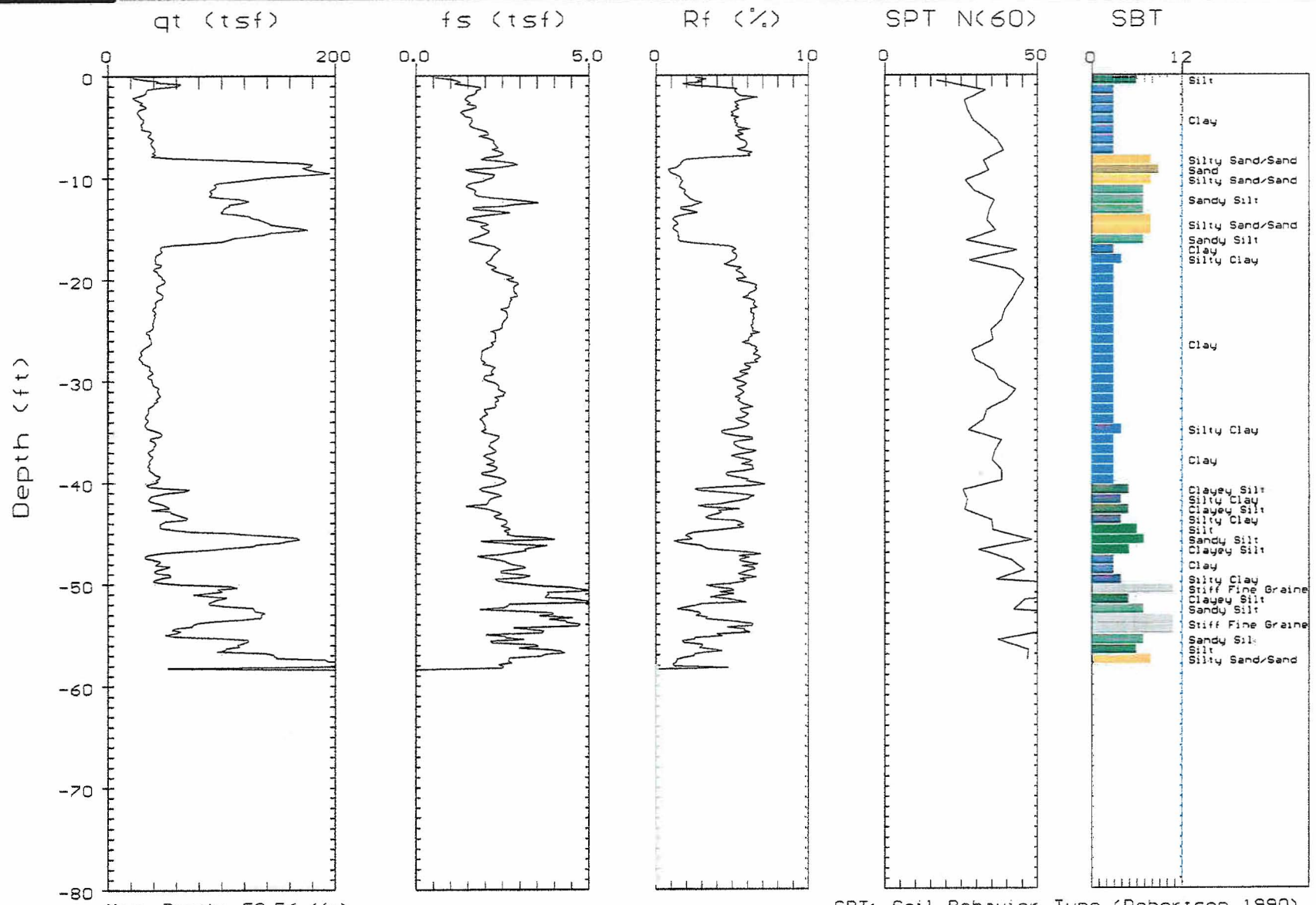
Max. Depth: 58.23 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=889805.7 E=1903955.5 Engineer: C.SAMS
Sounding: C-403 ELEV=401.0 Date: 06/27/06 13:08



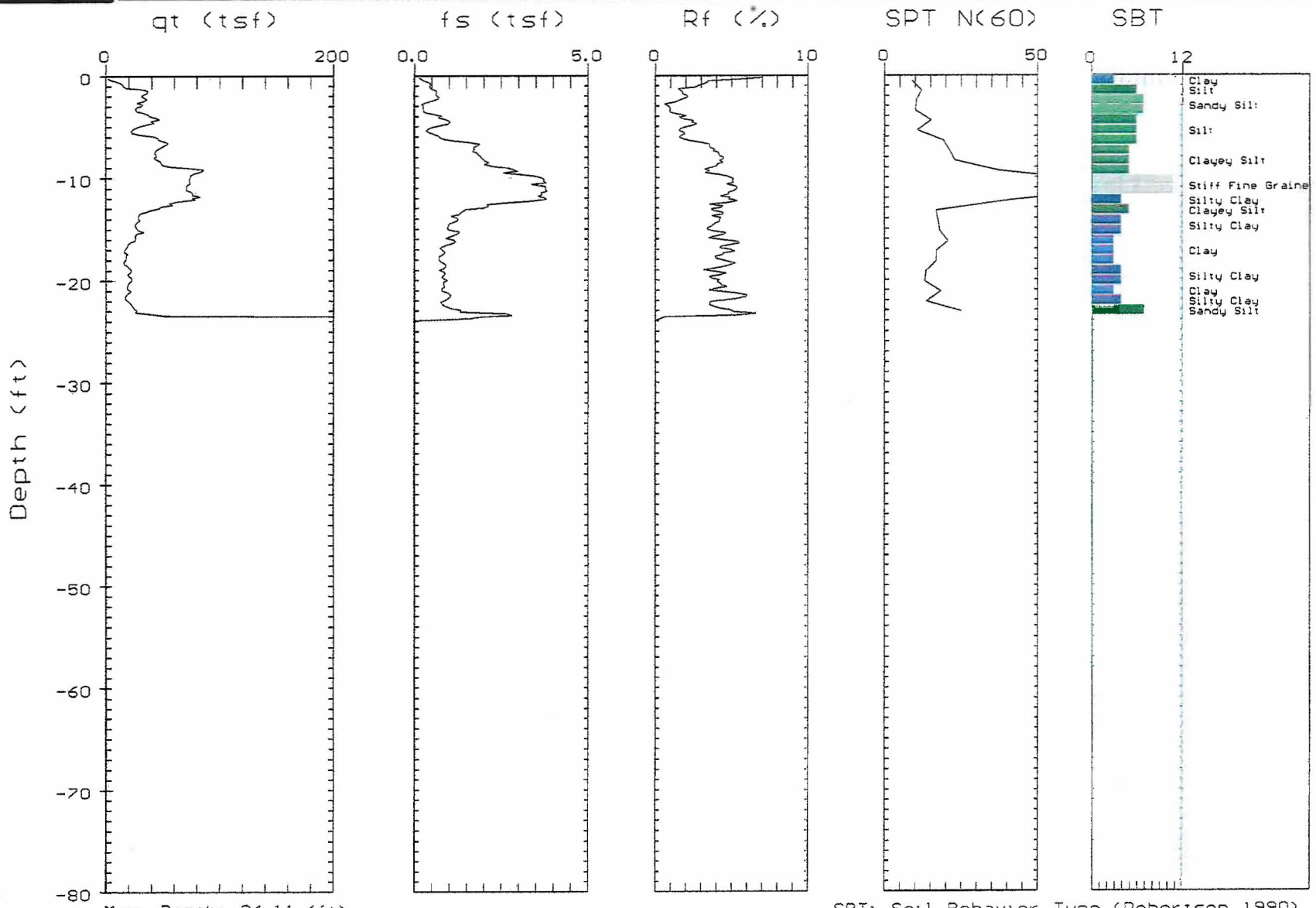
Max. Depth: 58.56 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891688.6 E=1903553.1 Engineer: C.SAMS
Sounding: C-407 ELEV=374.0 Date: 06/27/06 11:02



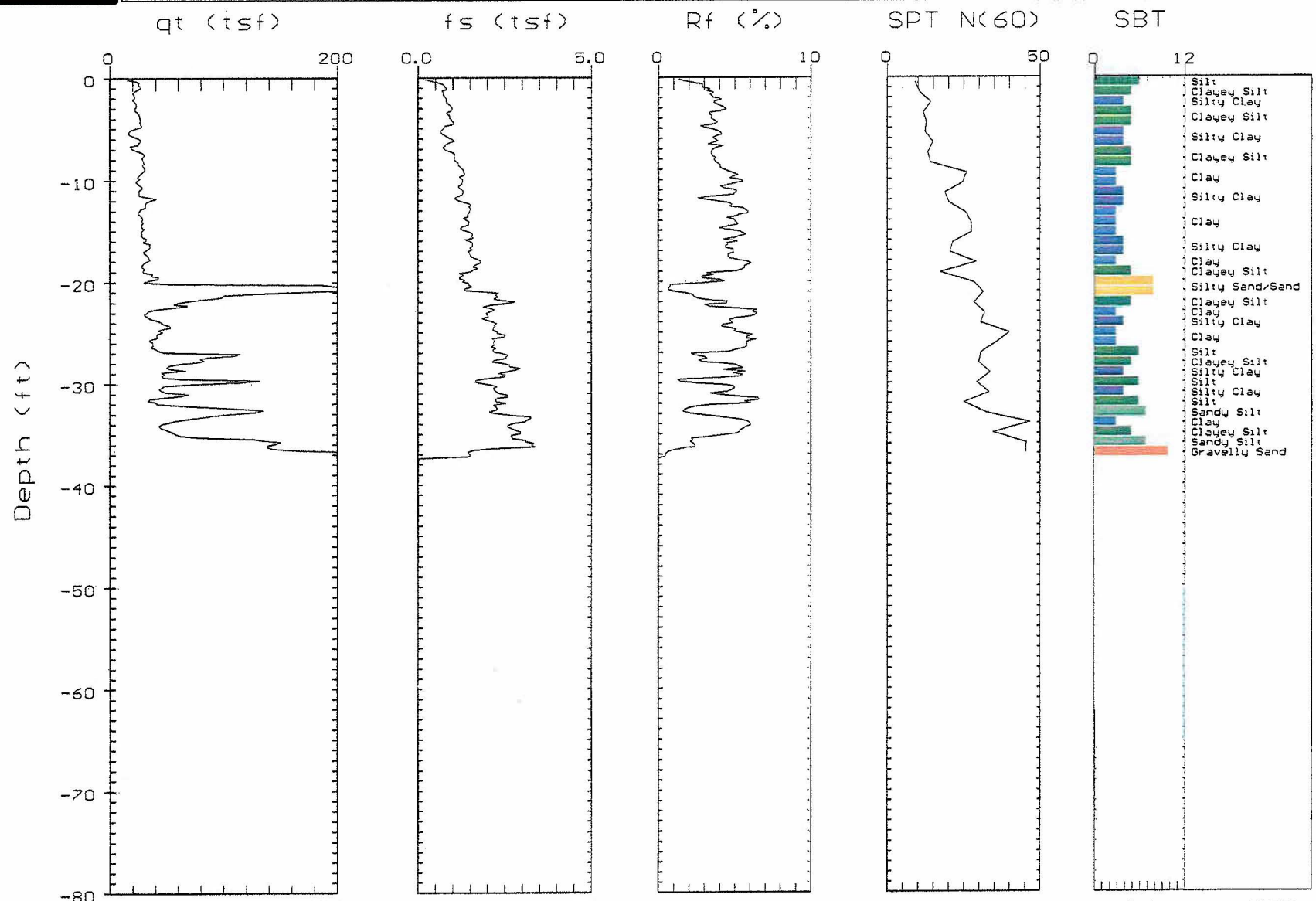
Max. Depth: 24.11 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891306.3 E=1903124.9 Engineer: C.SAMS
Sounding: C-409 ELEV=390.5 Date: 06/27/06 06:26



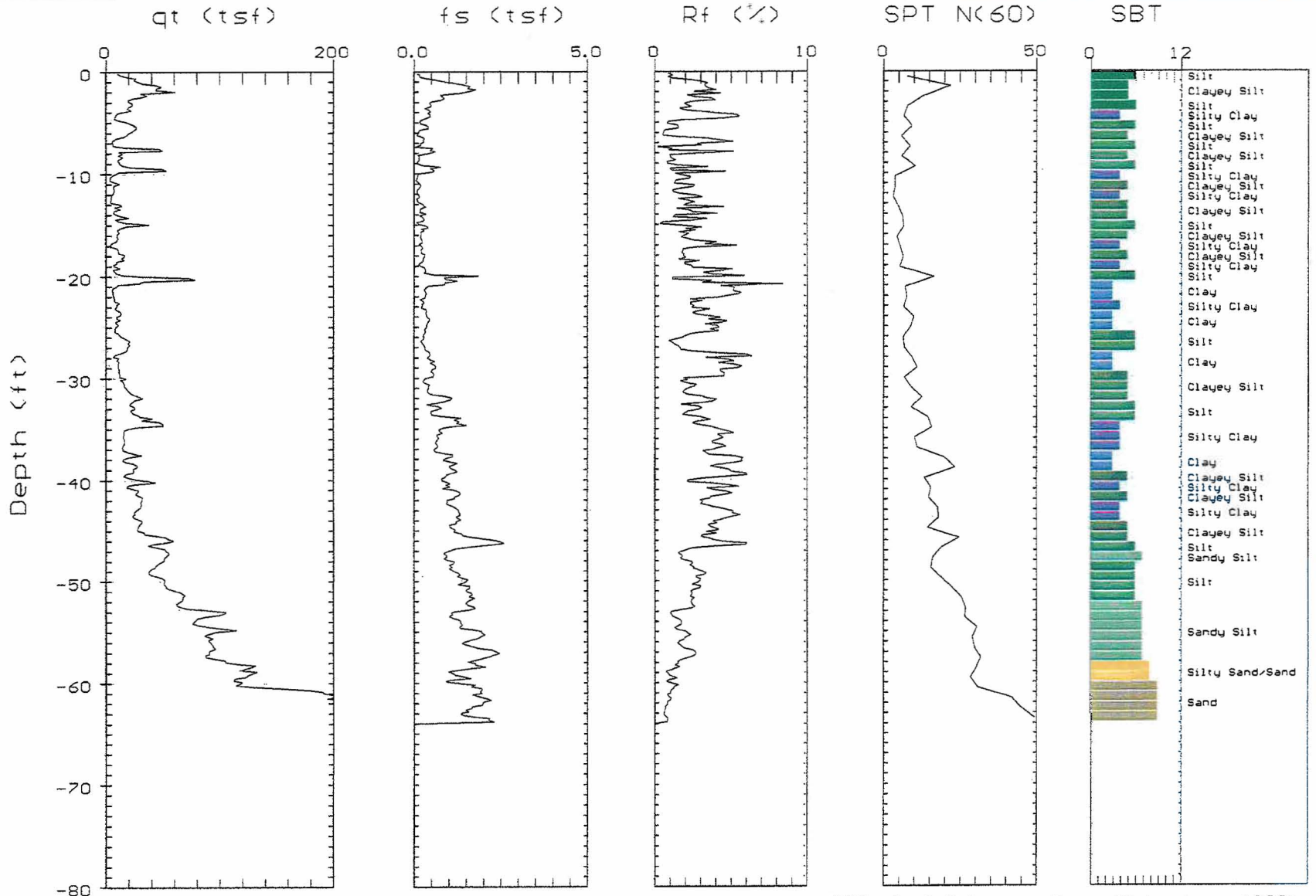
Max. Depth: 37.57 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=897785.5 E=1903807.9 Engineer: C.SAMS
Sounding: C-501 ELEV=427.9 Date: 06/28/06 08:28



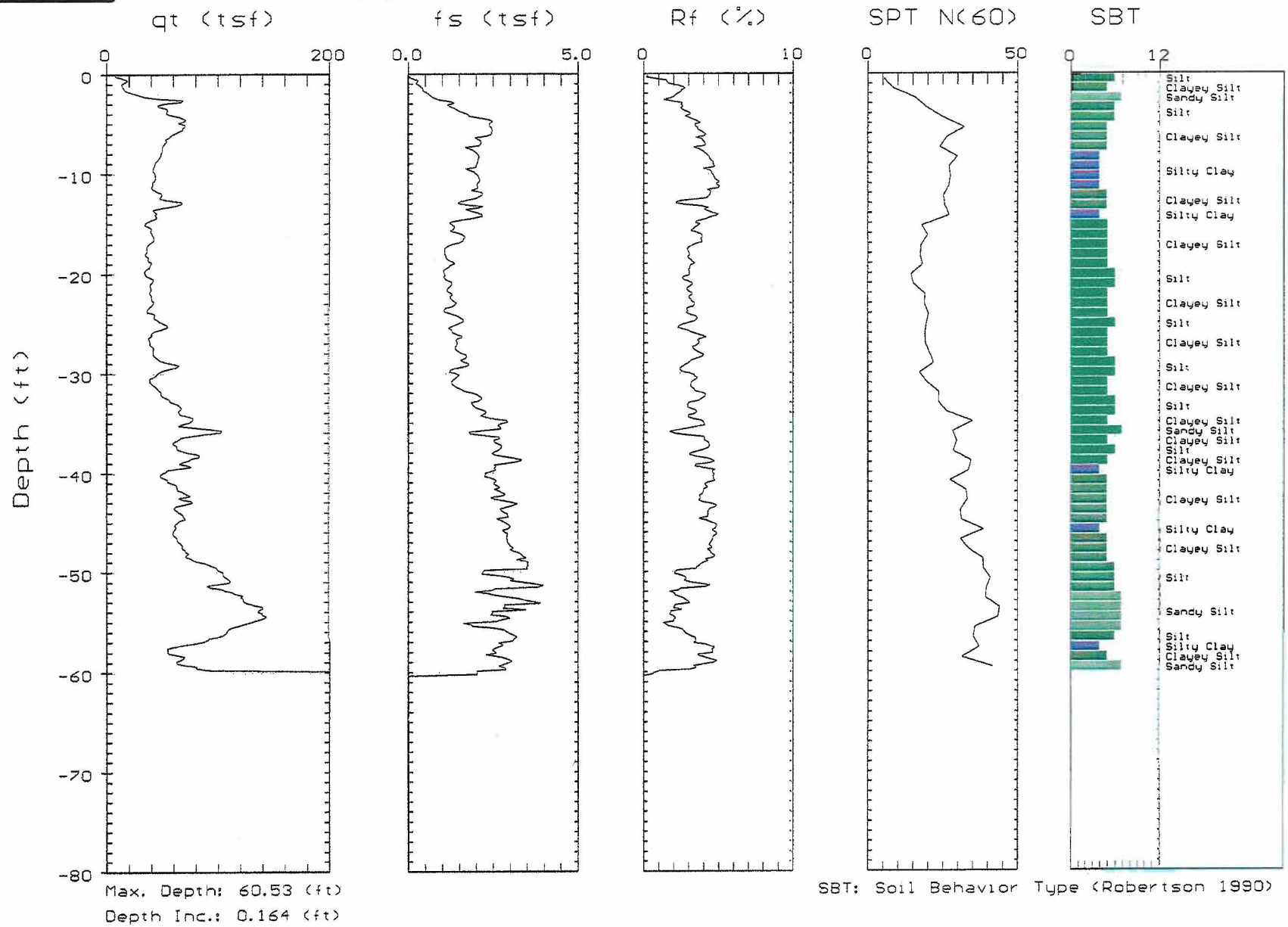
Max. Depth: 64.14 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892737.0 E=1902205.3 Engineer: C.SAMS
Sounding: C-601 ELEV=433.6 Date: 06/25/06 05:25



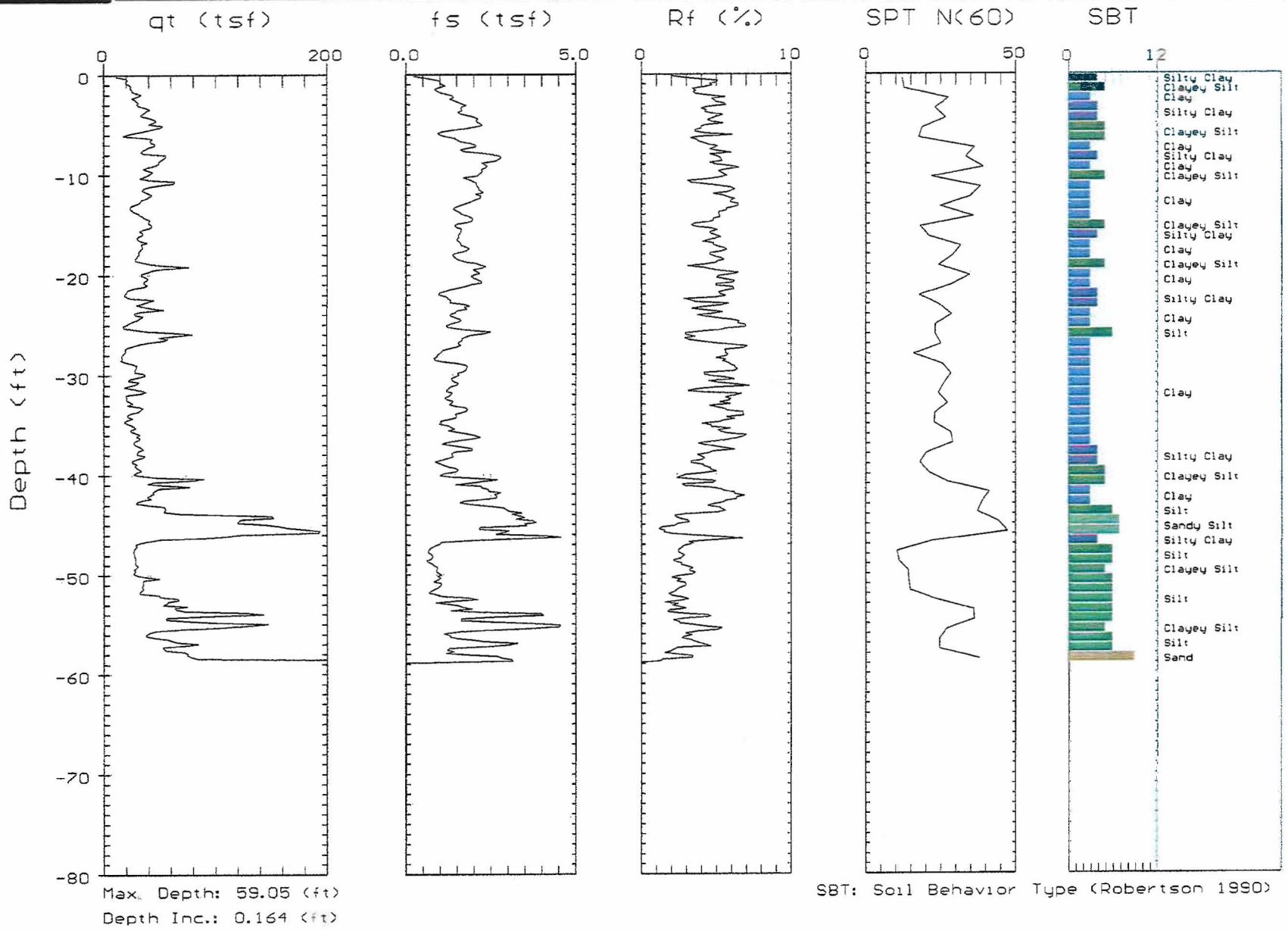
Max. Depth: 60.53 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892669.2 E-1902376.0 Engineer: C.SAMS
Sounding: C-602bELEV=433.5 Date: 06/24/06 08:57



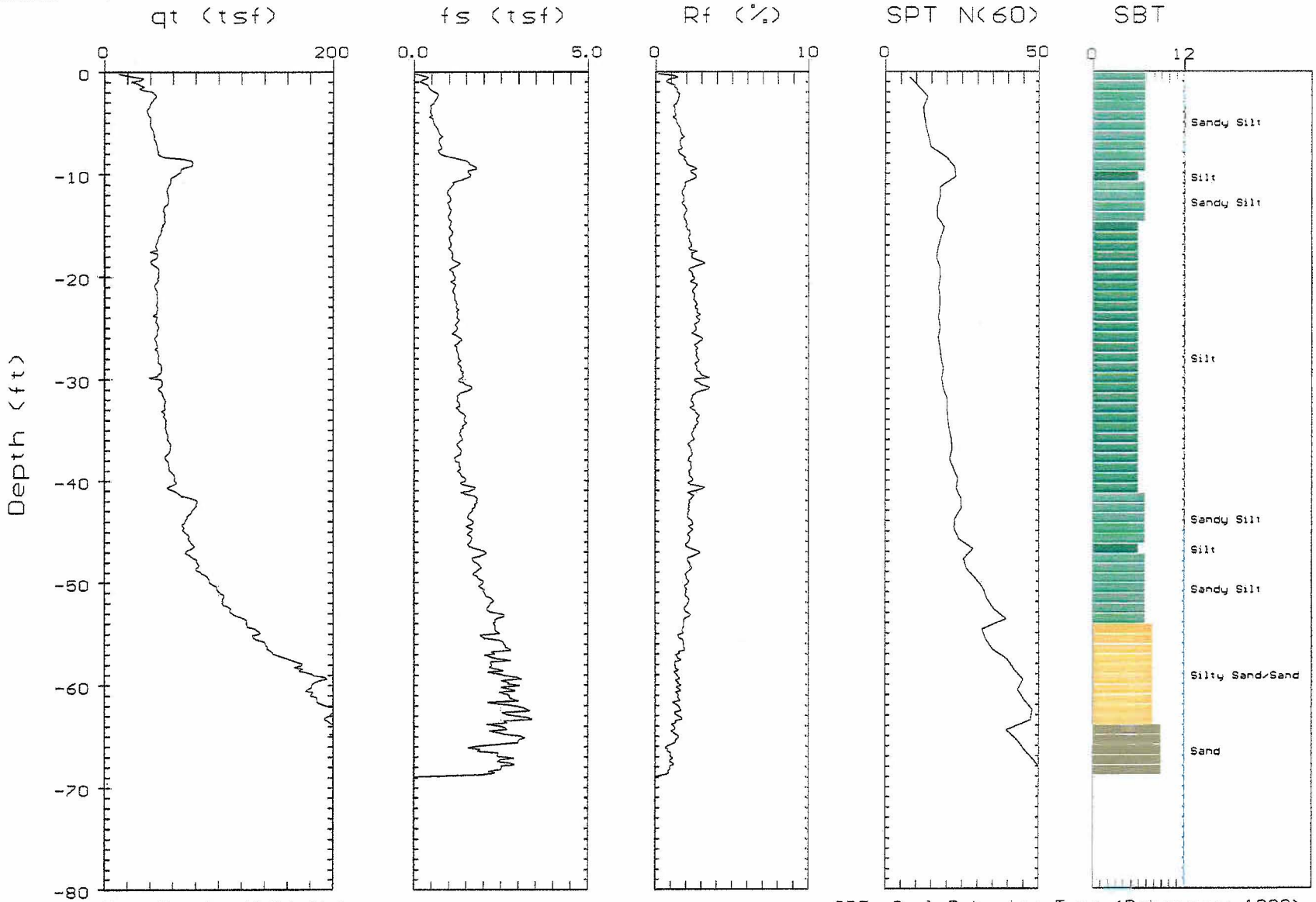
Max. Depth: 59.05 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892262.8 E=1902038.0 Engineer: C. SAMS
Sounding: C-603 ELEV=422.2 Date: 06/25/06 06:59



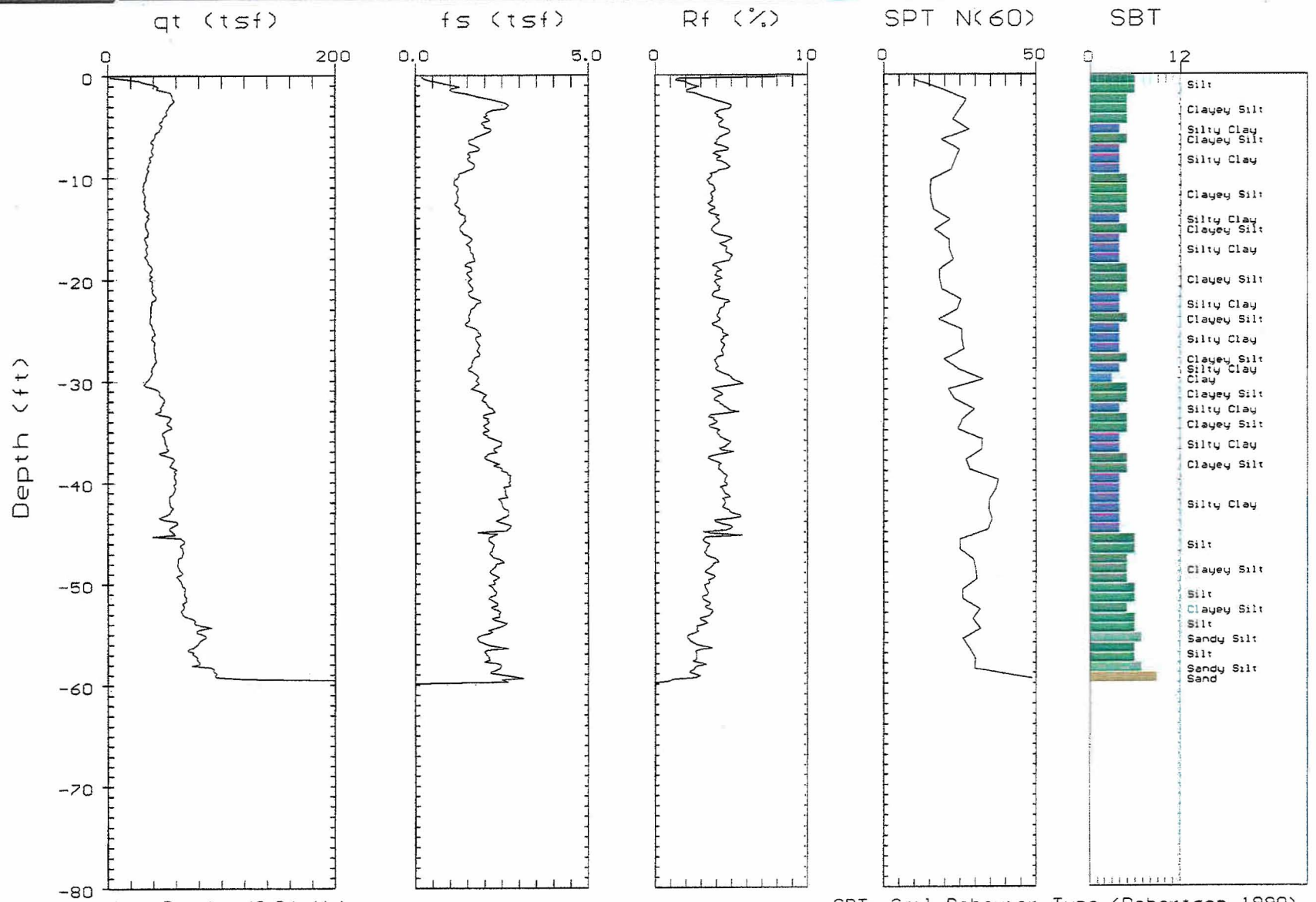
Max. Depth: 69.06 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892193.1 E=1902215.5 Engineer: C. SAMS
Sounding: C-604 ELEV=424.2 Date: 06/26/06 05:49



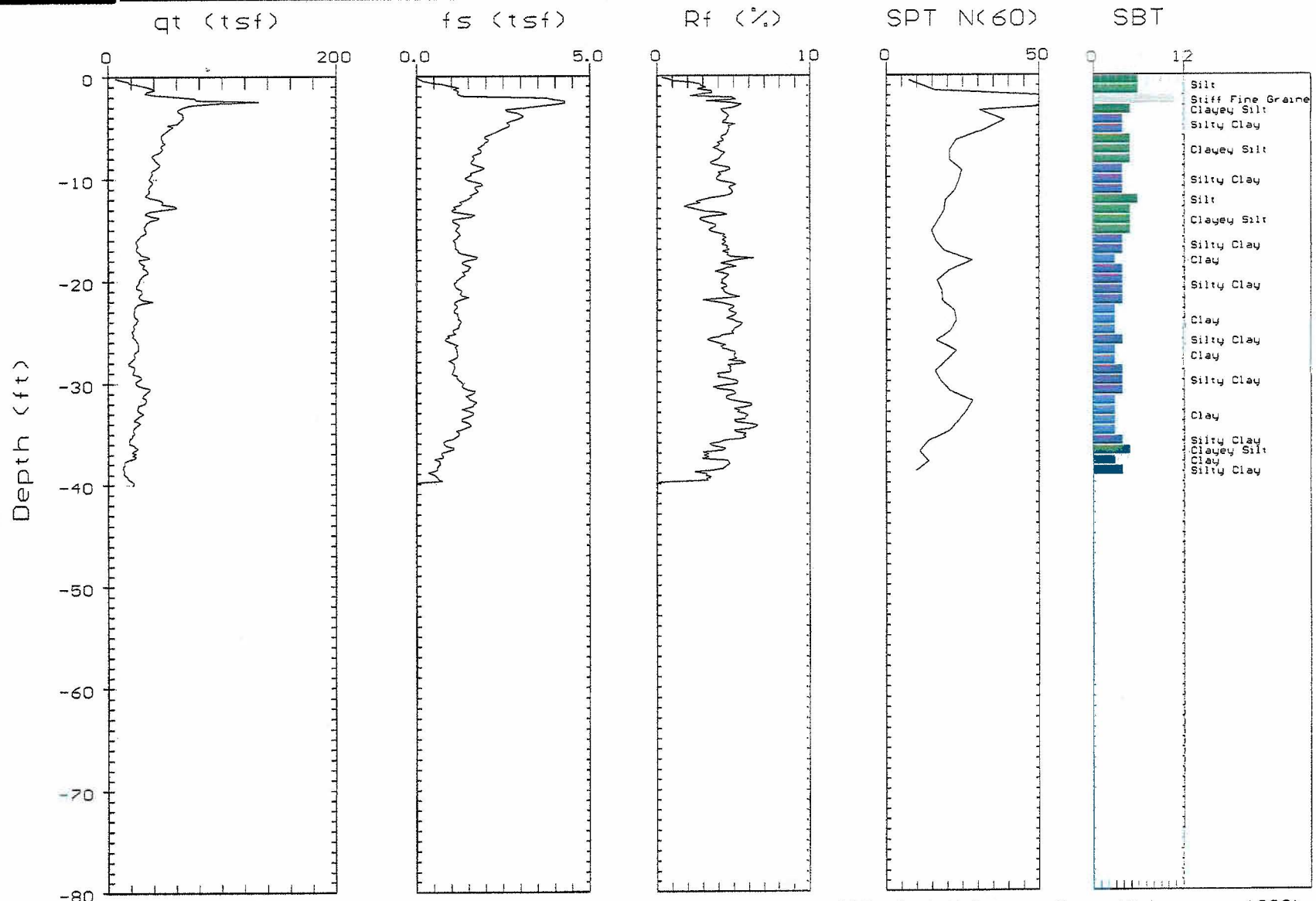
Max. Depth: 60.04 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=893092.5 E=1904069.5 Engineer: C.SAMS
Sounding: C-605 ELEV=415.3 Date: 06/26/06 07:19



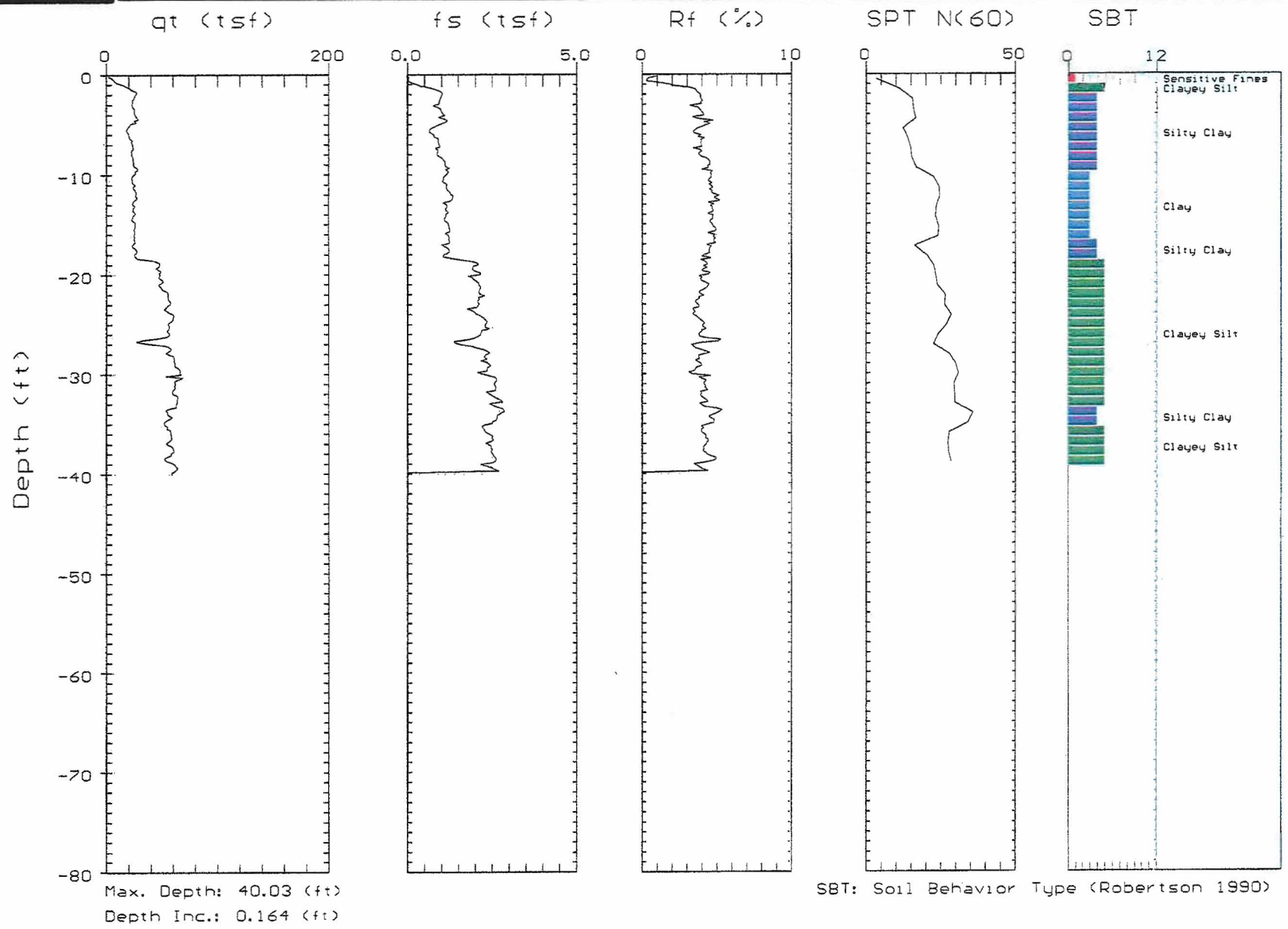
Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=893211.6 E=1904476.0 Engineer: C.SAMS
Sounding: C-606 ELEV=412.0 Date: 06/27/06 07:51



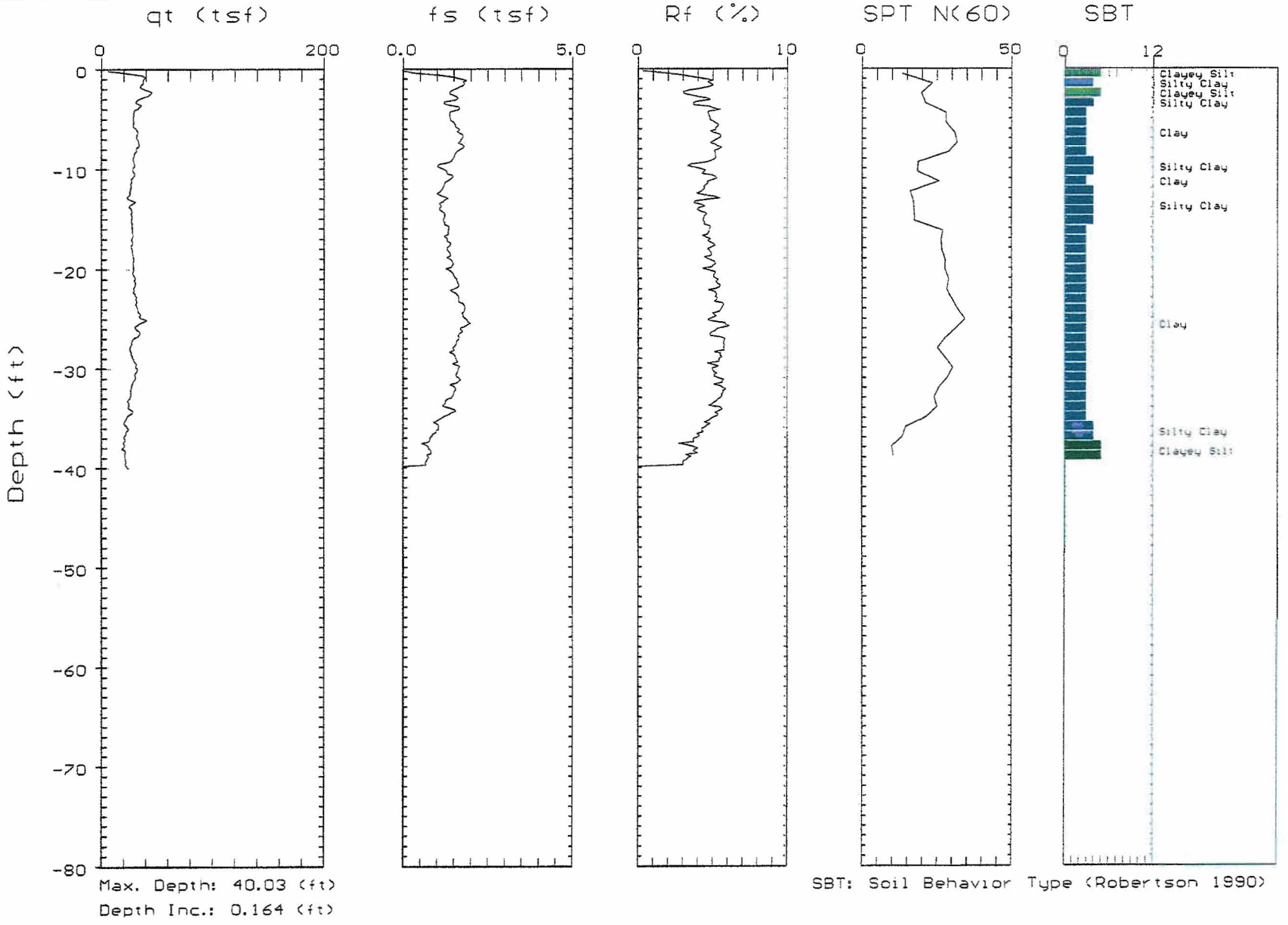
Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892575.2 E-1904318.2 Engineer: C.SAMS
Sounding: C-607 ELEV=407.2 Date: 06/26/06 08:12



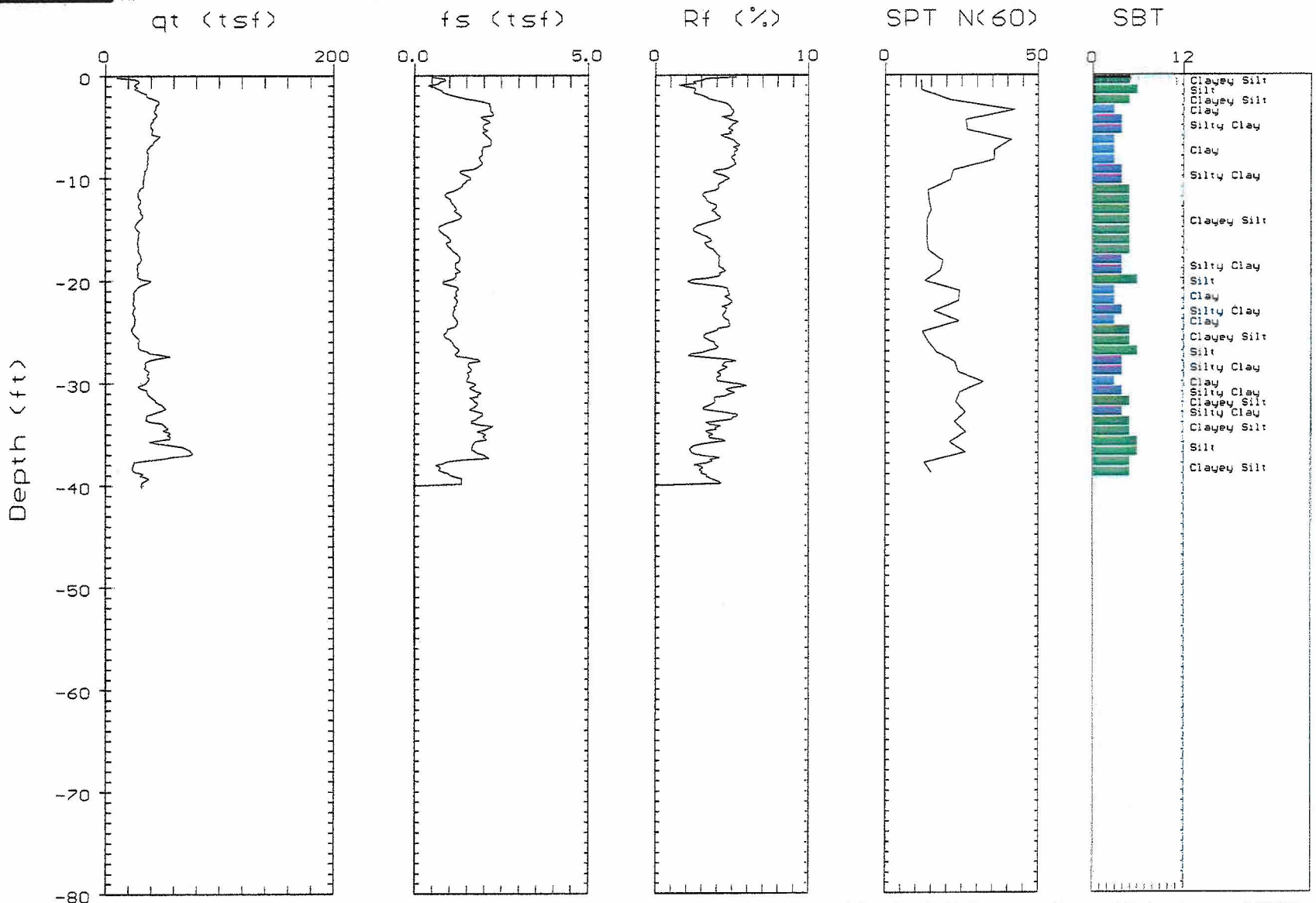
Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892406.2 E=1904230.0 Engineer: C.SAMS
Sounding: C-608 ELEV=405.8 Date: 06/27/06 08:40



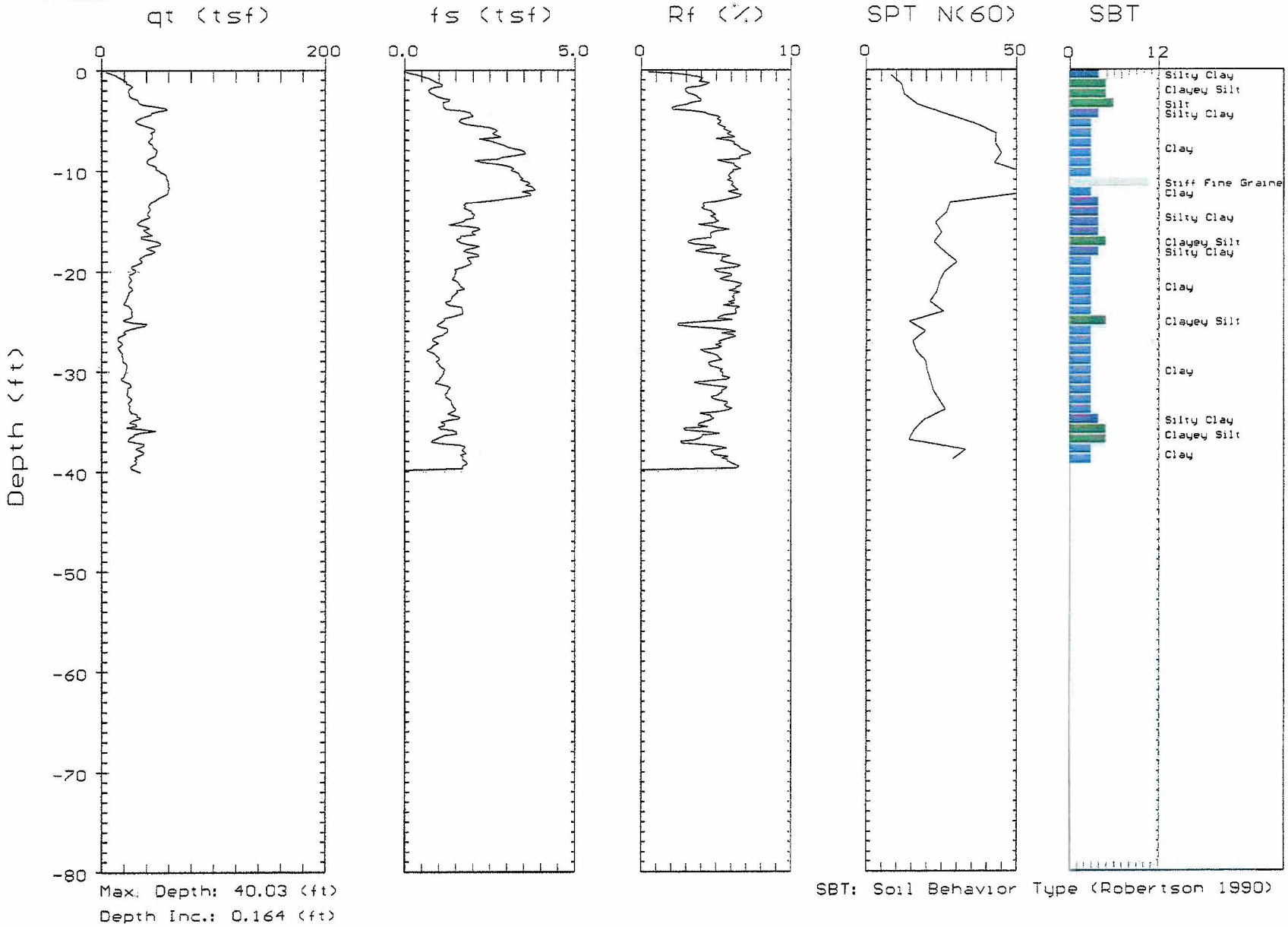
Max. Depth: 40.19 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891462.6 E=1903410.2 Engineer: C.SAMS
Sounding: C-609 ELEV=397.2 Date: 06/26/06 10:12



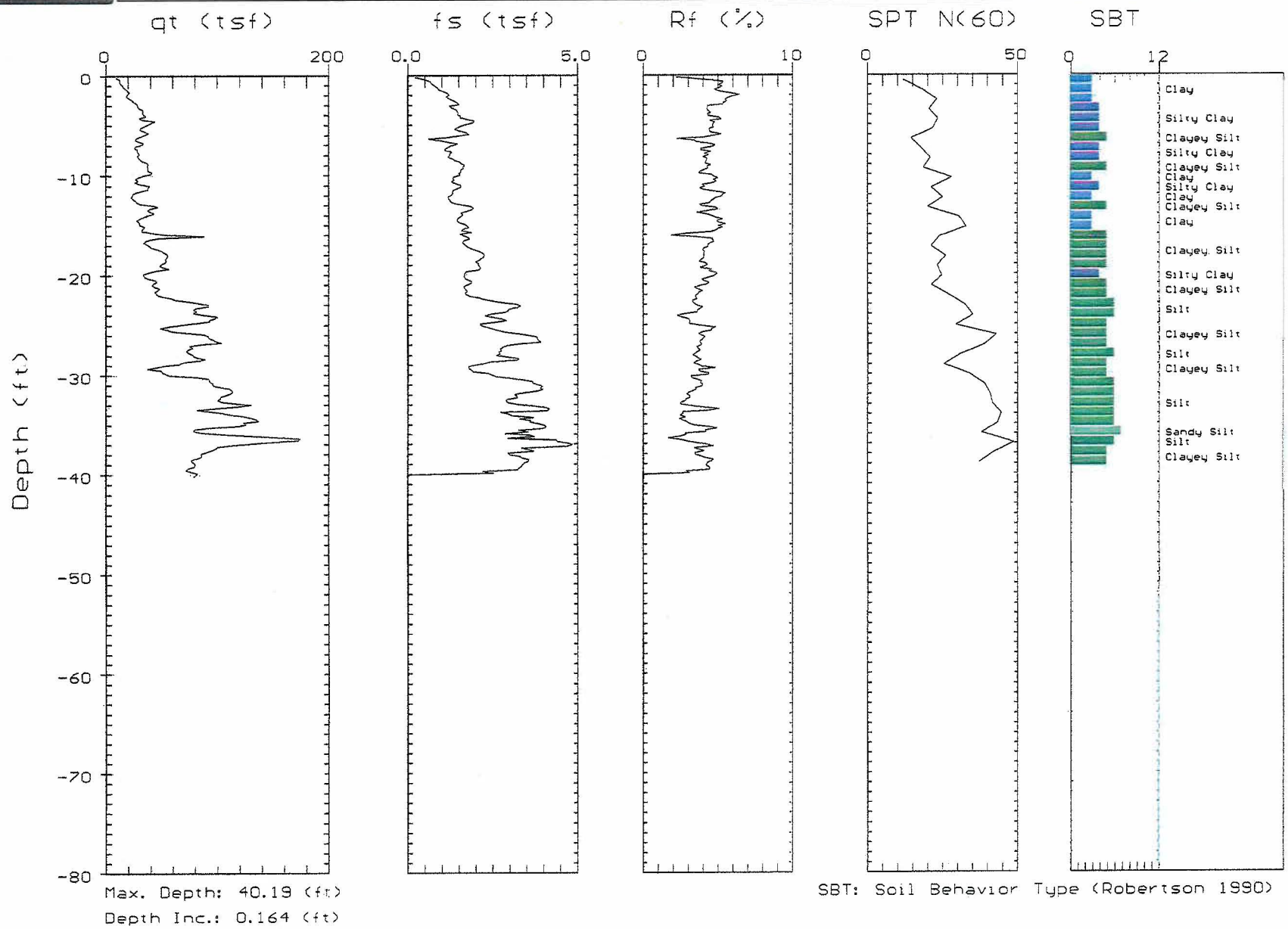
Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=890608.9 E=1902714.0 Engineer: C.SAMS
Sounding: C-610 ELEV=393.4 Date: 06/27/06 11:49



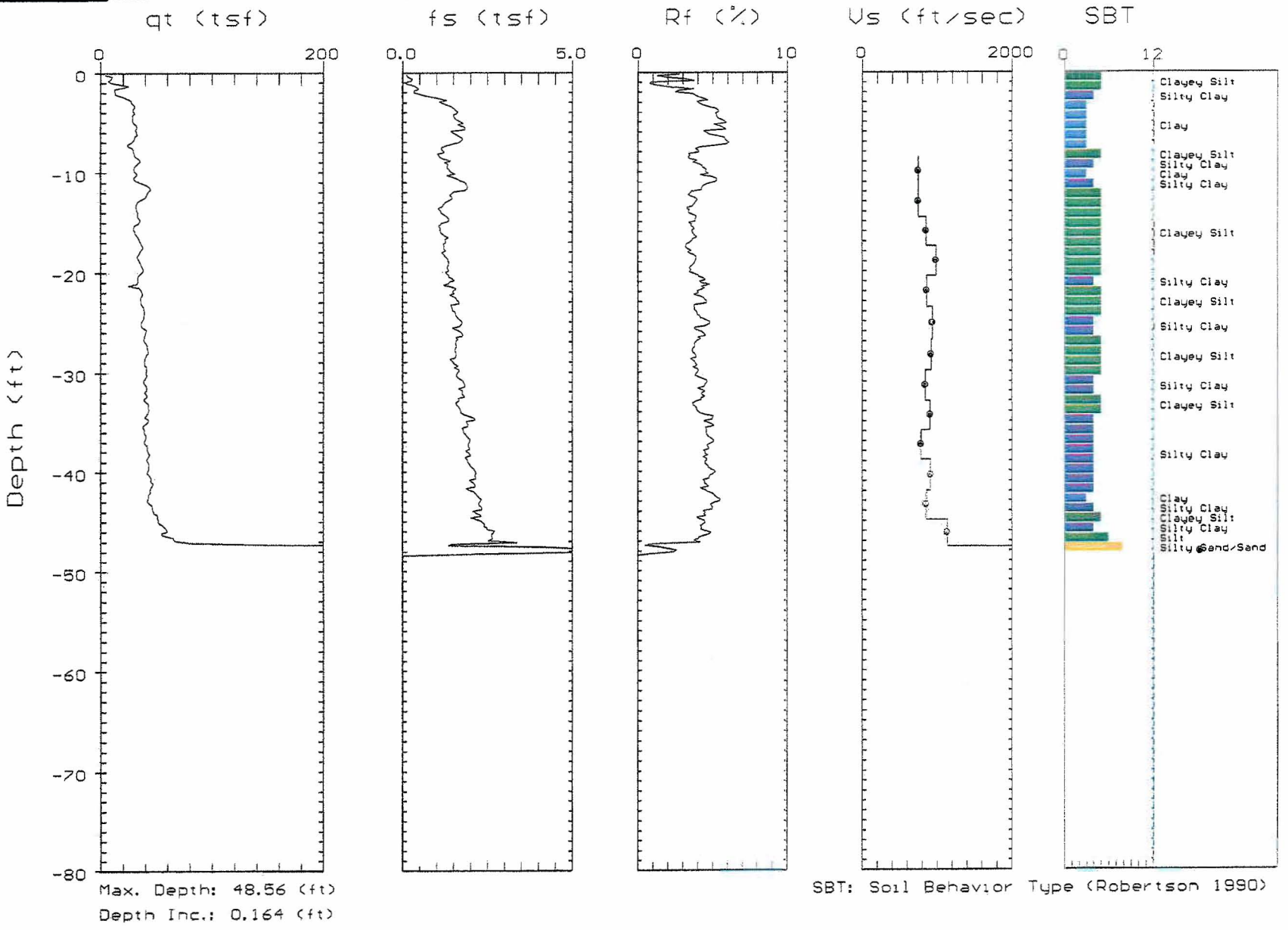
Max. Depth: 40.19 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892888.5 E=1903062.6 Engineer: C.SAMS
Sounding: C-202 ELEV=422.5 Date: 06/20/06 05:42



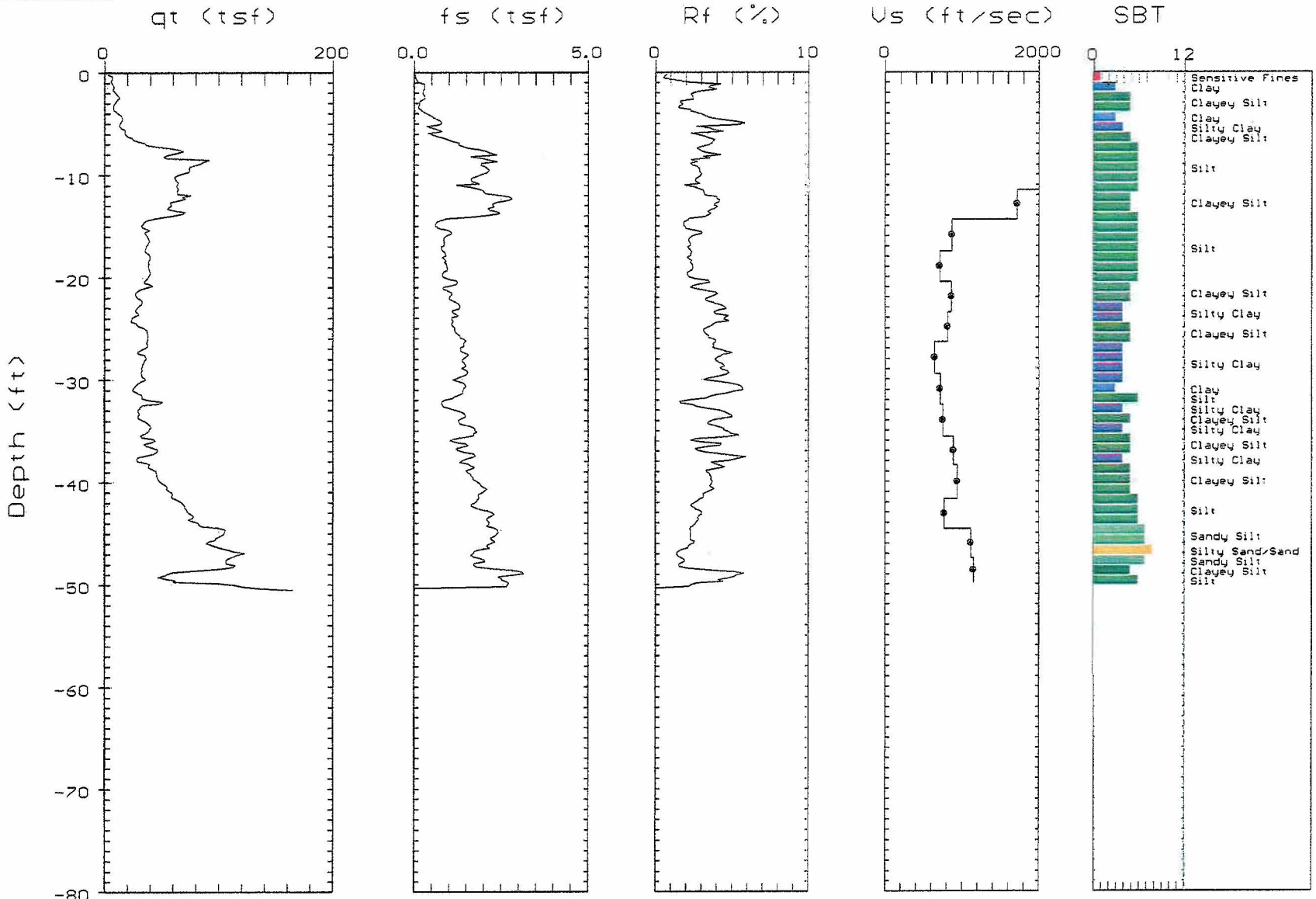
Max. Depth: 48.56 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892903.1 E=1903451.5 Engineer: C.SAMS
Sounding: C-207 ELEV=413.0 Date: 06/21/06 05:50



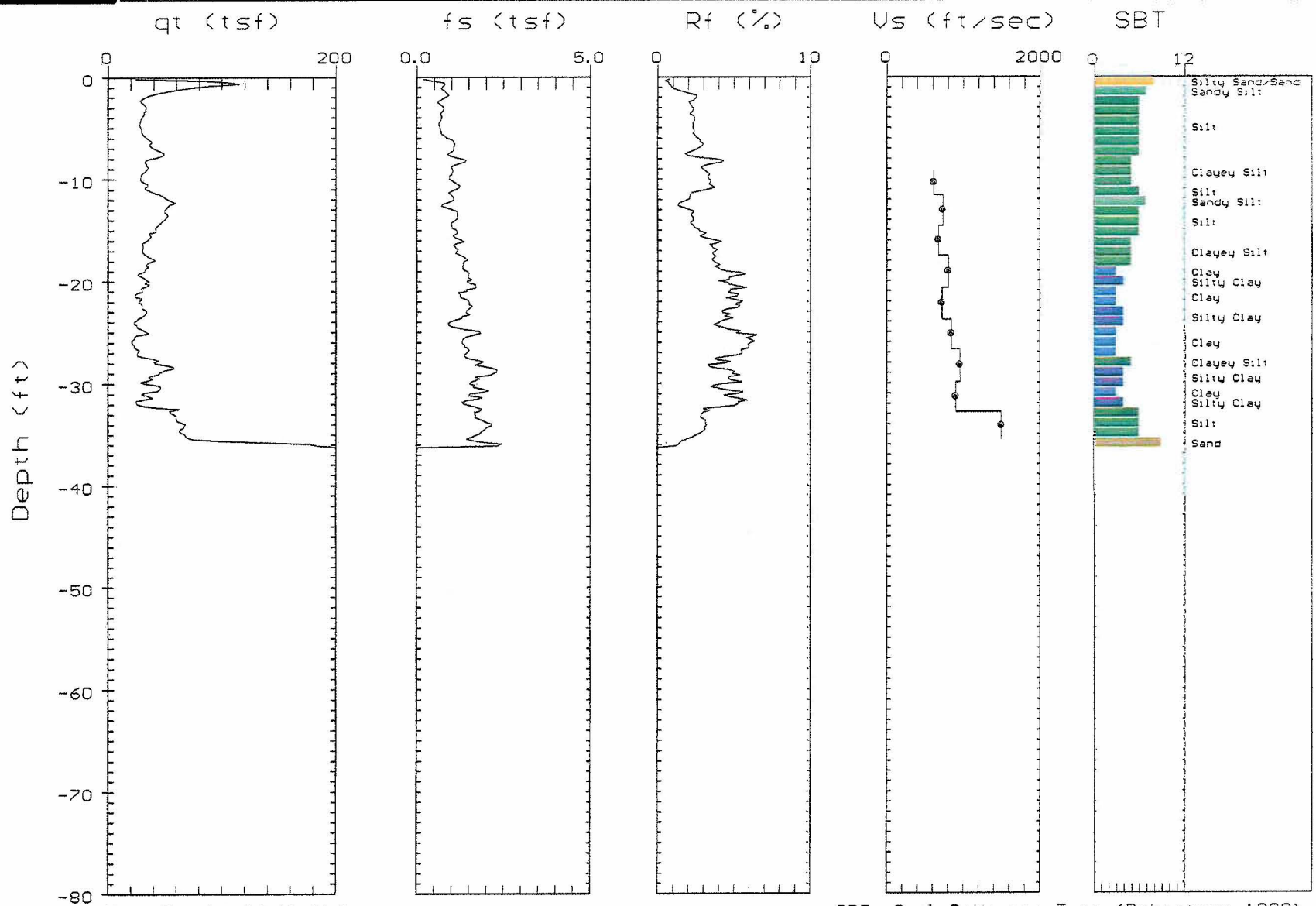
Max. Depth: 50.52 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892471.8 E=1902958.6 Engineer: C. SAMS
Sounding: C-209 ELEV=427.0 Date: 06/22/06 07:36



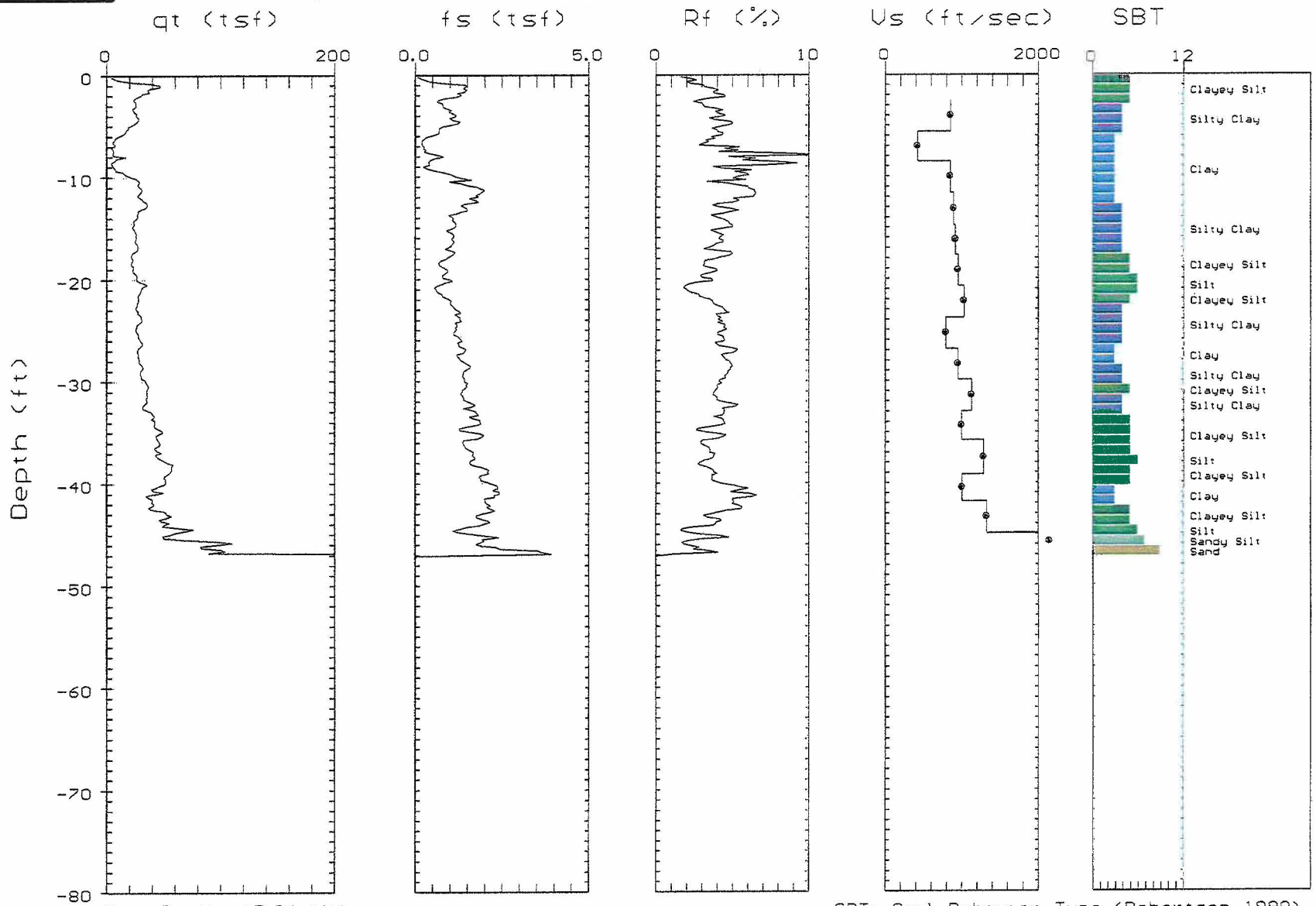
Max. Depth: 36.42 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892052.1 E=1902726.6 Engineer: C.SAMS
Sounding: C-302c ELEV=421.3 Date: 06/22/06 09:04



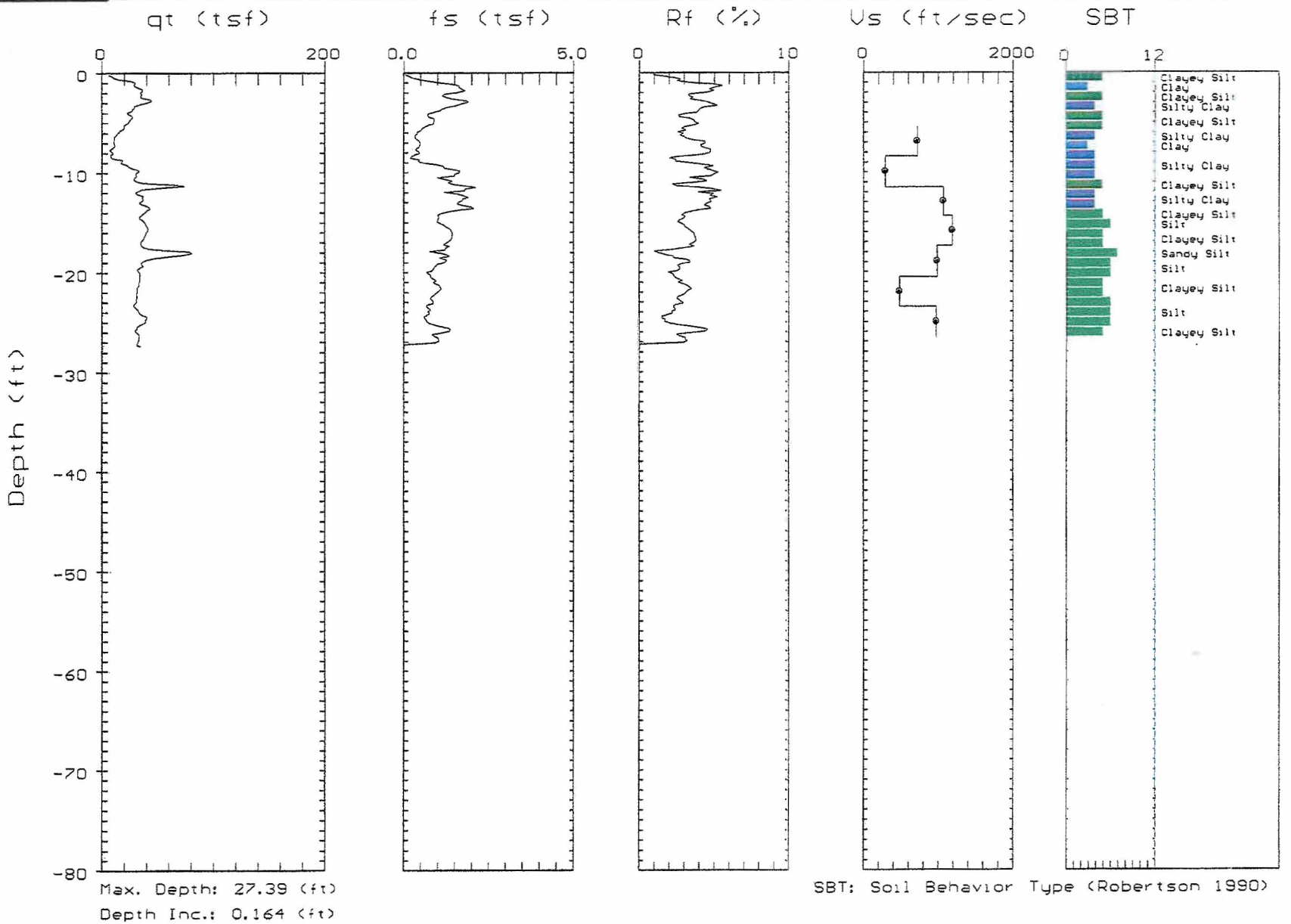
Max. Depth: 47.24 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892052.1 E=1902726.6 Engineer: C. SAMS
Sounding: C-302 ELEV=421.3 Date: 06/22/06 05:12



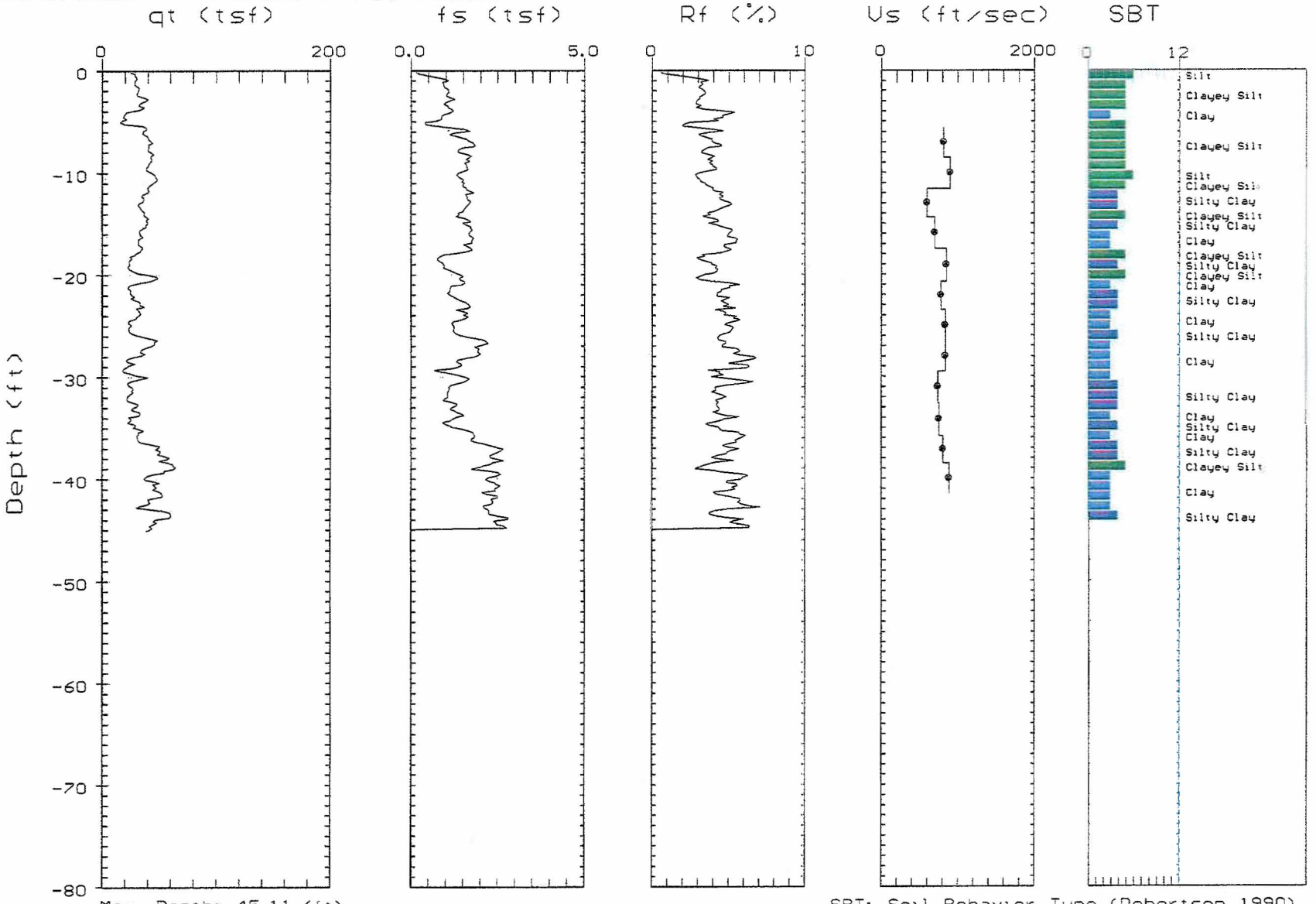
Max. Depth: 27.39 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892076.1 E=1903116.6 Engineer: C.SAMS
Sounding: C-307 ELEV-418.7 Date: 06/23/06 05:23



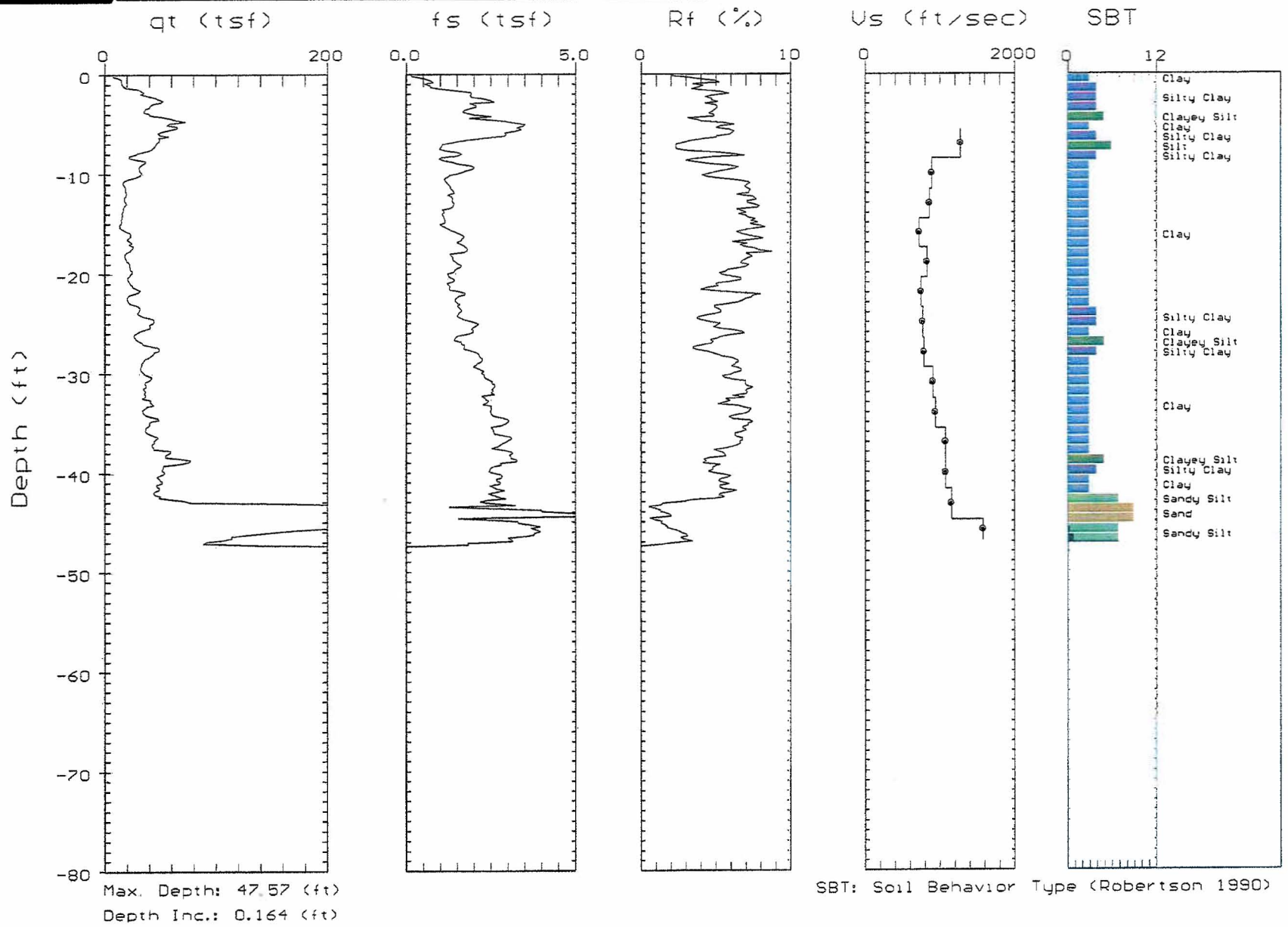
Max. Depth: 45.11 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=891638.6 E=1902622.3 Engineer: C.SAMS
Sounding: C-309 ELEV=397.2 Date: 06/23/06 12:36



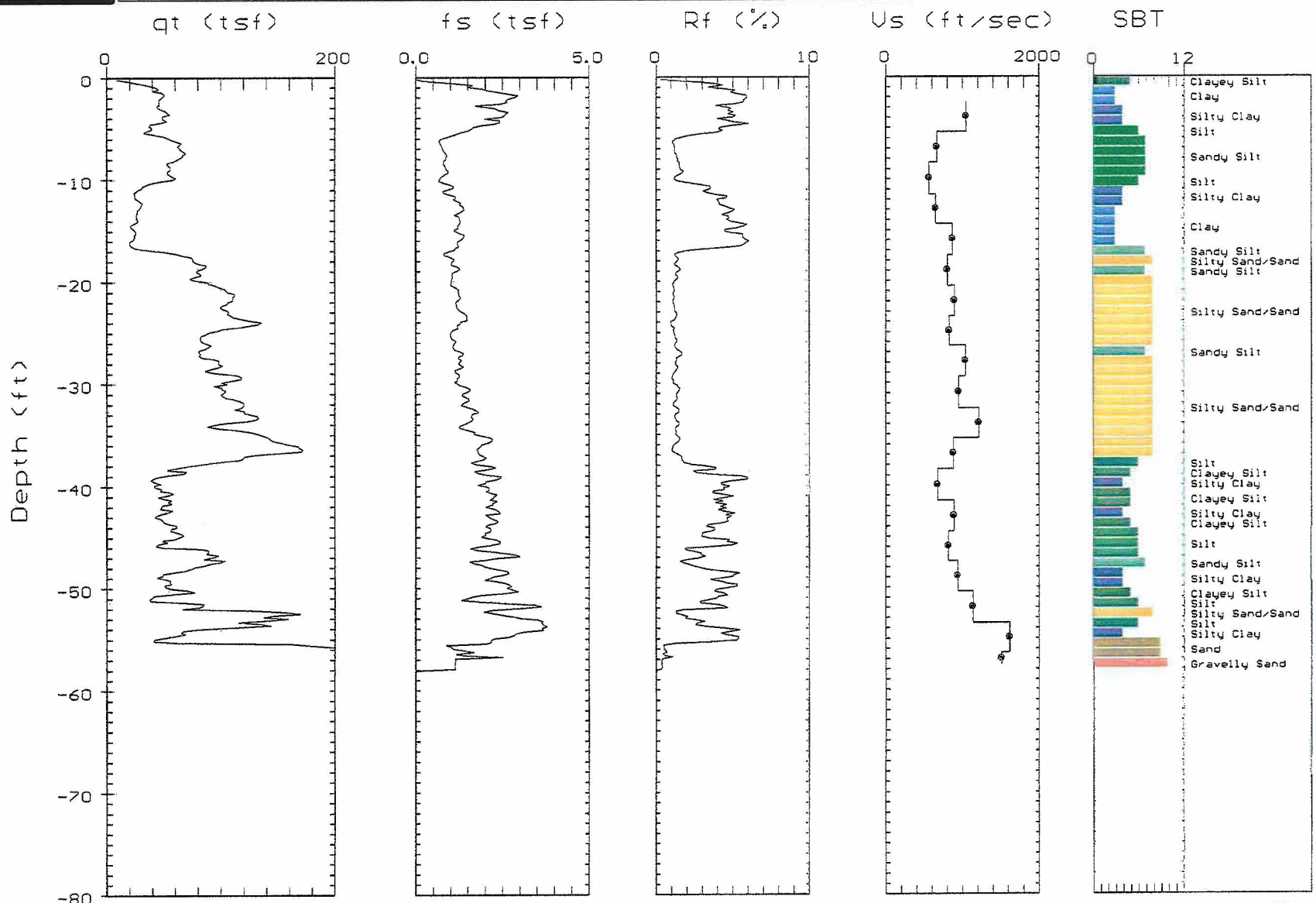
Max. Depth: 47.57 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=890576.8 E=1903321.4 Engineer: C.SAMS
Sounding: C-402 ELEV=399.7 Date: 06/26/06 13:07



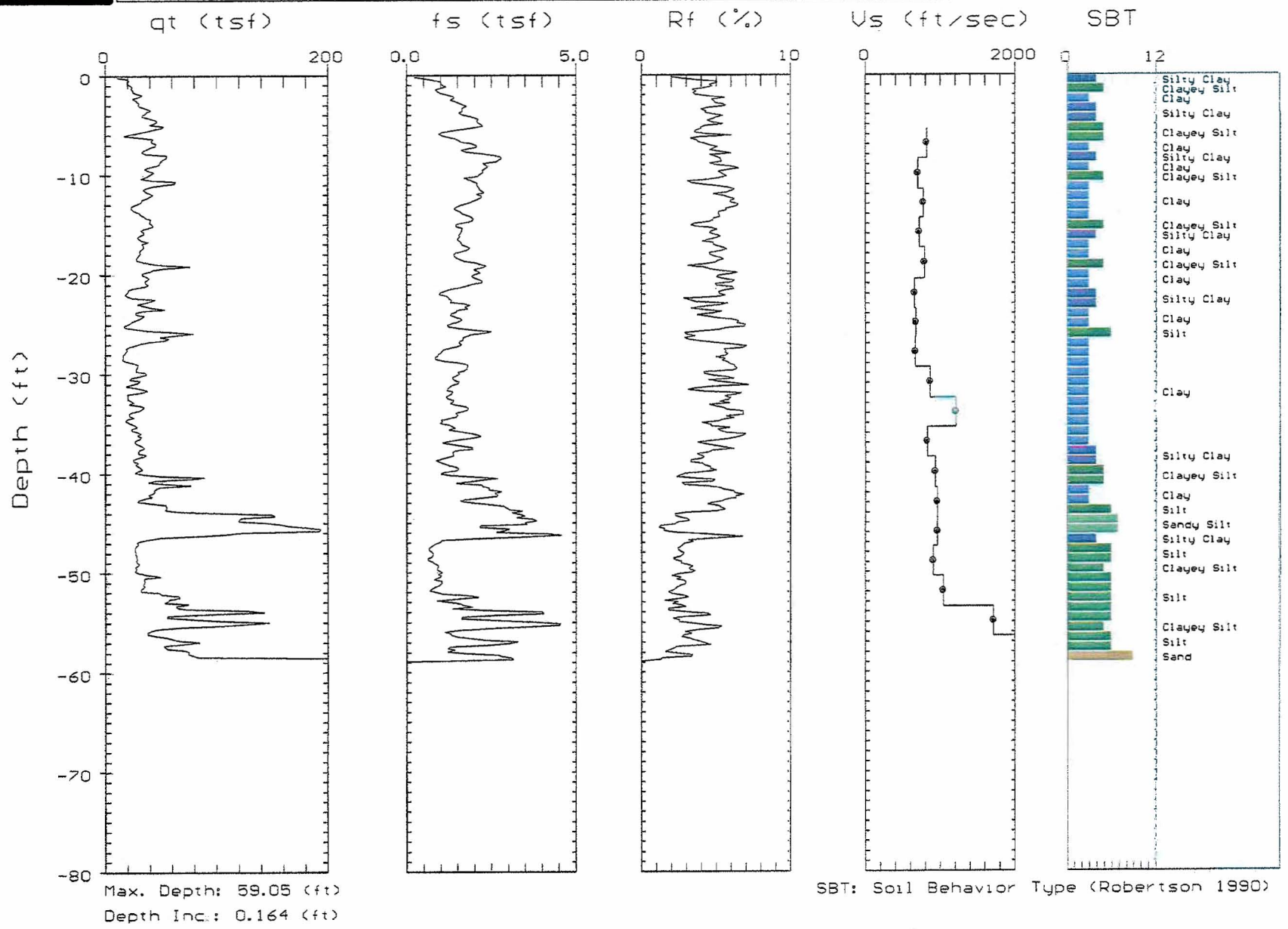
Max. Depth: 58.23 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

MACTEC

Location: N=892669.2 E-1902376.0 Engineer: C.SAMS
Sounding: C-602bELEV=433.5 Date: 06/24/06 08:57



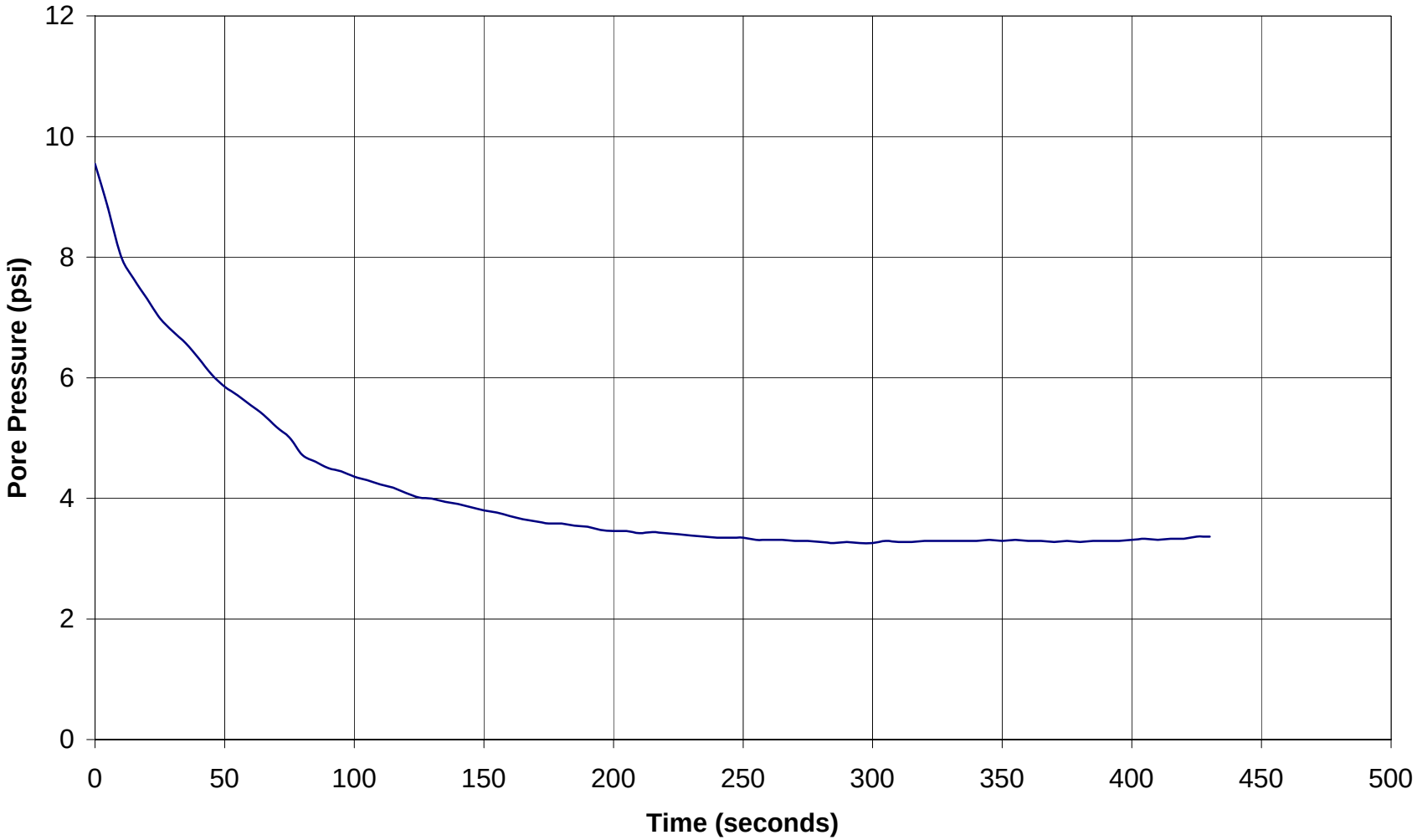
Max. Depth: 59.05 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG DRILLING & TESTING

Pore Pressure Dissipation Test

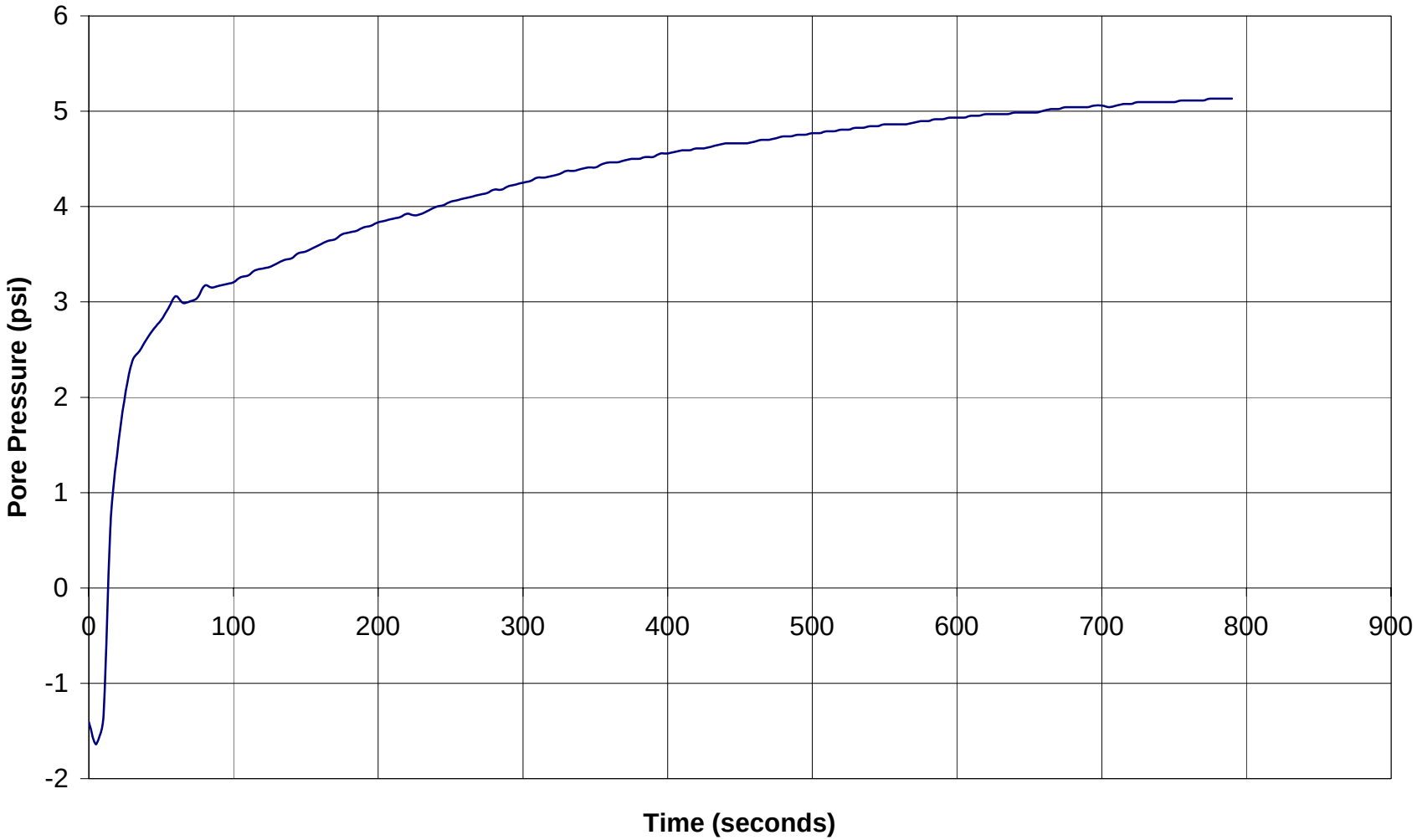
Sounding: C-207
Depth: 50.525
Site: VC SUMMER
Engineer: C.SAMS



GREGG DRILLING & TESTING

Pore Pressure Dissipation Test

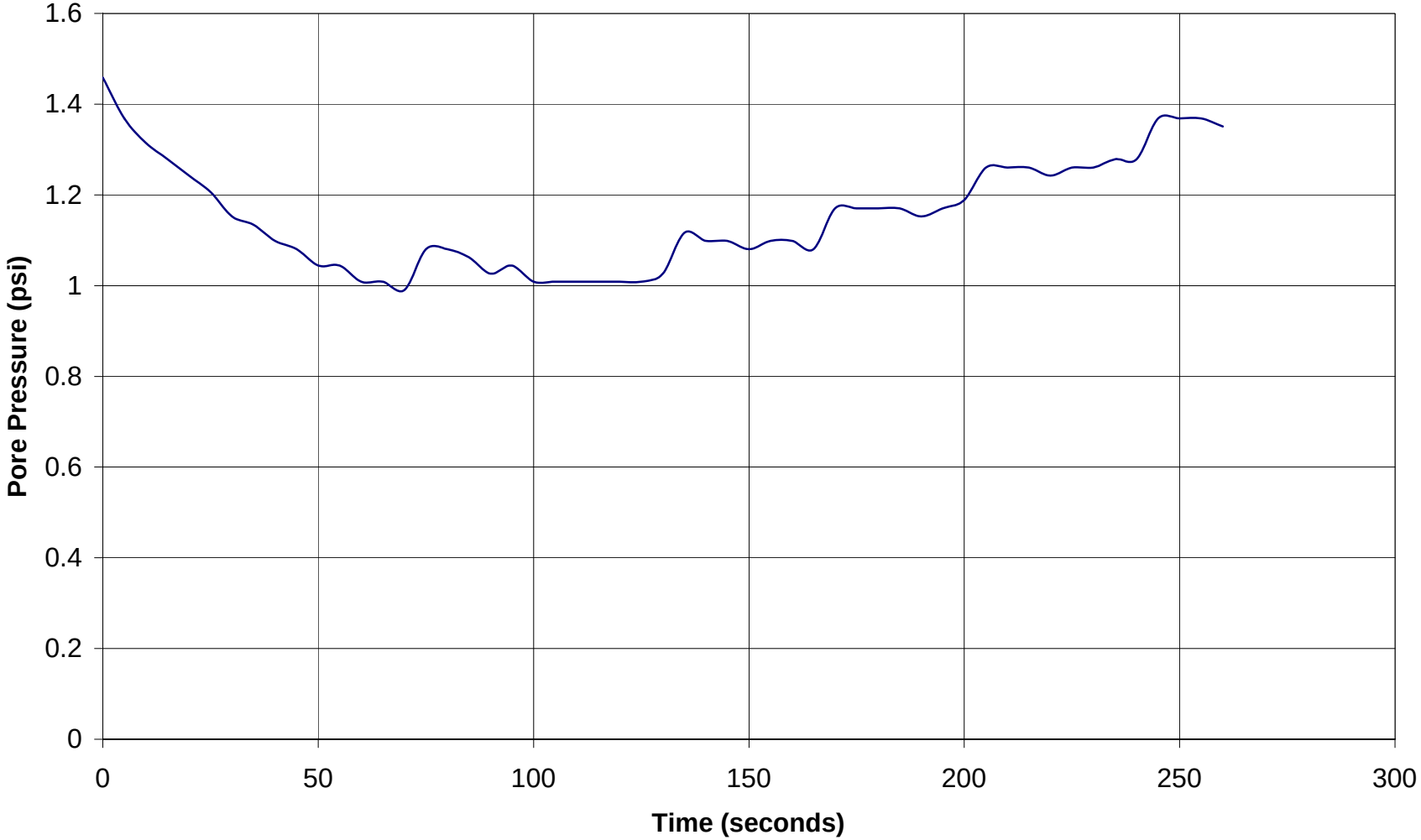
Sounding: C-206
Depth: 69.39
Site: VC SUMMER
Engineer: C.SAMS



GREGG DRILLING & TESTING

Pore Pressure Dissipation Test

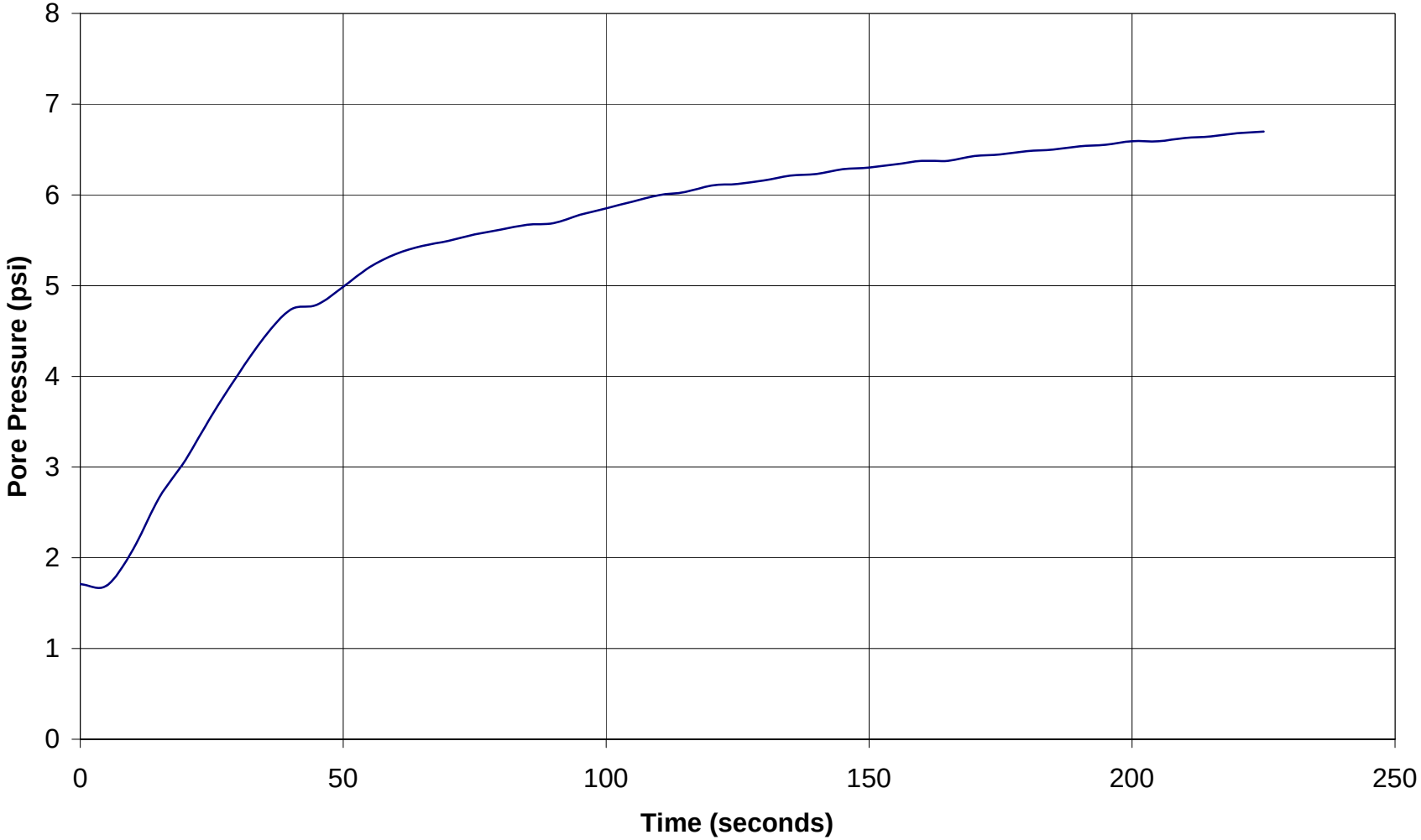
Sounding: C-203
Depth: 39.534
Site: VC SUMMER
Engineer: C.SAMS



GREGG DRILLING & TESTING

Pore Pressure Dissipation Test

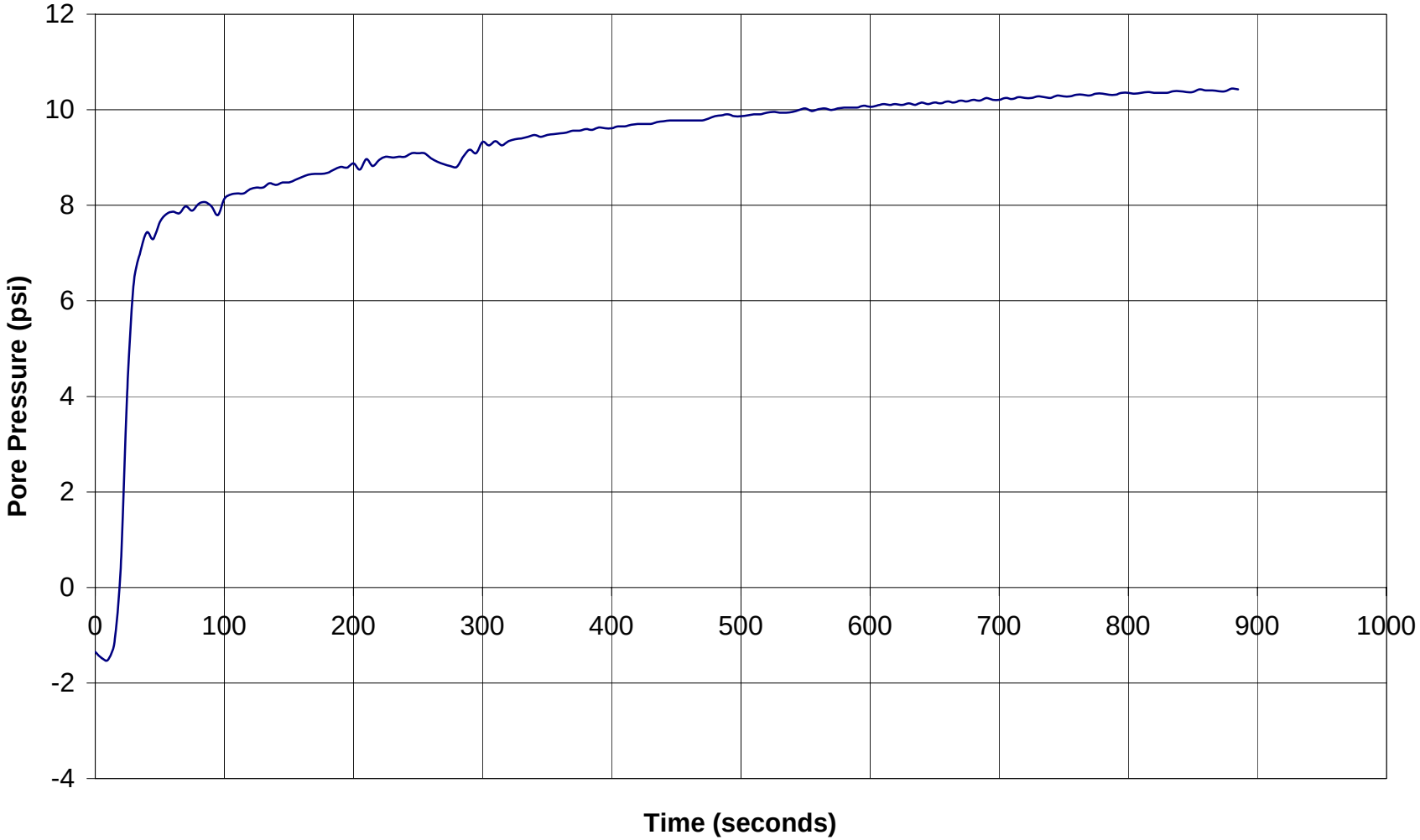
Sounding: C-210
Depth: 20.177
Site: VC SUMMER
Engineer: C.SAMS



GREGG DRILLING & TESTING

Pore Pressure Dissipation Test

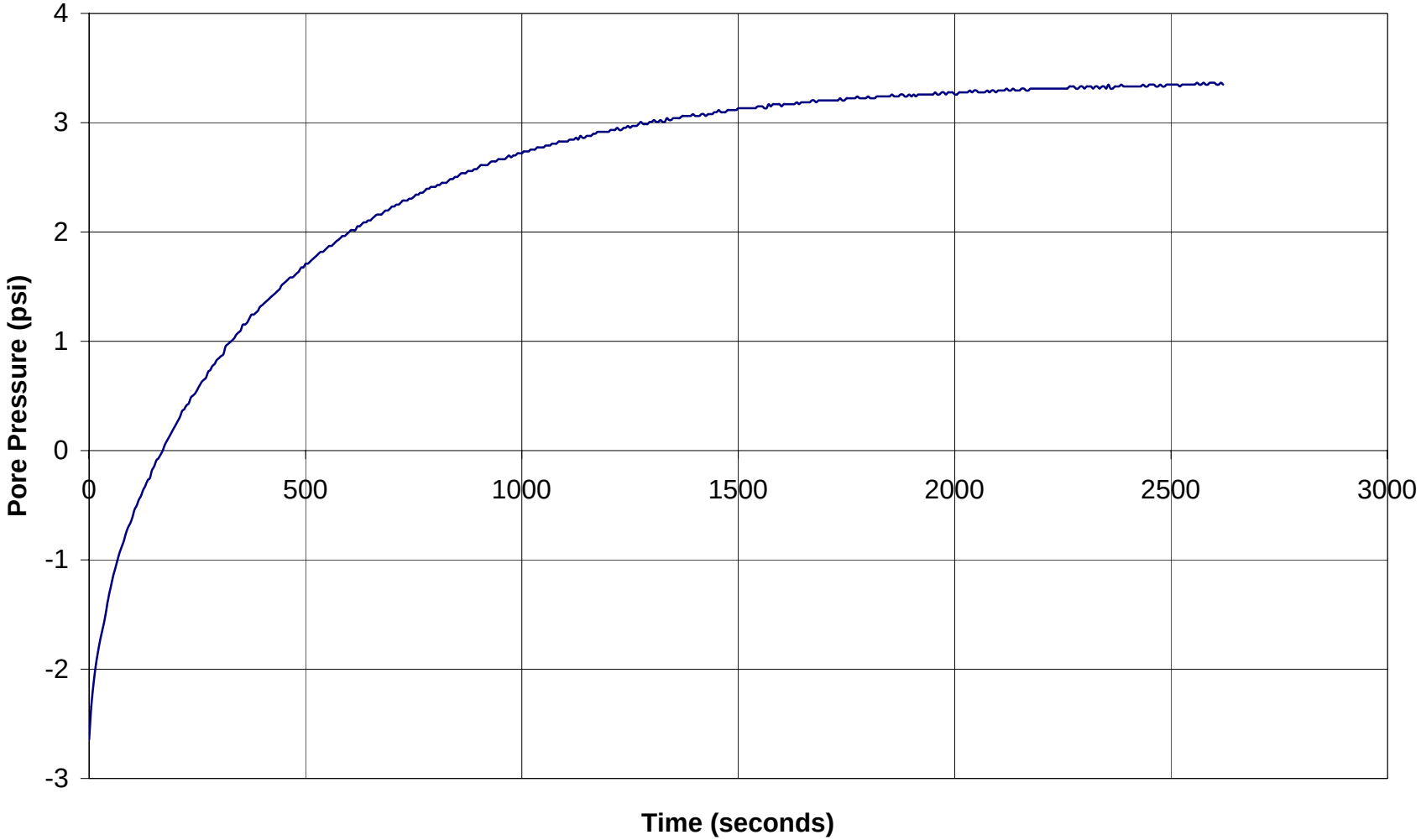
Sounding: C-304
Depth: 51.017
Site: VC SUMMER
Engineer: C.SAMS



GREGG DRILLING & TESTING

Pore Pressure Dissipation Test

Sounding: C-307
Depth: 45.111
Site: VC SUMMER
Engineer: C.SAMS



Shear Wave Velocity Calculations

VC Summer
Jenkinsville, SC

Geophone Offset: 0.66 Feet
Source Offset: 9.17 Feet

06-064sc
C-202

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
9.19	8.53	12.52		25.0500			
12.14	11.48	14.69	2.17	27.9500	2.9000	748.5	10.00
15.26	14.60	17.24	2.55	31.3500	3.4000	748.6	13.04
18.21	17.55	19.80	2.56	34.3500	3.0000	854.2	16.07
21.16	20.50	22.46	2.66	37.0500	2.7000	984.7	19.02
24.28	23.62	25.34	2.88	40.4000	3.3500	858.8	22.06
27.56	26.90	28.42	3.08	43.7000	3.3000	934.3	25.26
30.51	29.85	31.23	2.81	46.7500	3.0500	921.1	28.38
33.63	32.97	34.22	2.99	50.3000	3.5500	842.7	31.41
36.58	35.92	37.07	2.85	53.4500	3.1500	905.8	34.44
39.53	38.87	39.94	2.87	57.1000	3.6500	785.7	37.40
42.65	41.99	42.98	3.04	60.4000	3.3000	921.1	40.43
45.60	44.94	45.87	2.89	63.7500	3.3500	862.4	43.47
48.23	47.57	48.44	2.57	66.0000	2.2500	1144.2	46.26
49.38	48.72	49.57	1.13	66.2500	0.2500	4512.0	48.14

Shear Wave Velocity Calculations

VC Summer
Jenkinsville, SC

Geophone Offset: 0.66 Feet
Source Offset: 9.17 Feet

06-064sc
C-207

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
9.02	8.36	12.41		16.5500			
12.14	11.48	14.69	2.28	17.3500	0.8000	2852.2	9.92
15.09	14.43	17.10	2.41	18.7500	1.4000	1719.0	12.96
18.21	17.55	19.80	2.70	21.8500	3.1000	871.4	15.99
21.16	20.50	22.46	2.66	25.6000	3.7500	709.0	19.02
24.11	23.45	25.18	2.72	28.7500	3.1500	864.9	21.98
27.07	26.41	27.95	2.77	32.1500	3.4000	814.9	24.93
30.18	29.52	30.91	2.96	36.7500	4.6000	643.7	27.97
33.14	32.48	33.75	2.83	40.7000	3.9500	716.8	31.00
36.25	35.59	36.76	3.01	44.7000	4.0000	752.3	34.03
39.04	38.38	39.46	2.71	47.7500	3.0500	887.4	36.99
42.32	41.66	42.66	3.20	51.1500	3.4000	940.5	40.02
45.28	44.62	45.55	2.89	54.9000	3.7500	770.2	43.14
48.06	47.40	48.28	2.73	57.3500	2.4500	1116.3	46.01
50.52	49.86	50.70	2.42	59.4500	2.1000	1151.4	48.63

Shear Wave Velocity Calculations

VC Summer
Jenkinsville, SC

Geophone Offset: 0.66 Feet
Source Offset: 9.17 Feet

06-064sc
C-209

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
9.84	9.18	12.98		21.5000			
12.30	11.64	14.82	1.84	24.5000	3.0000	614.5	10.41
15.26	14.60	17.24	2.42	27.8000	3.3000	732.4	13.12
18.21	17.55	19.80	2.56	31.6000	3.8000	674.4	16.07
21.33	20.67	22.61	2.81	35.1000	3.5000	802.4	19.11
24.44	23.78	25.49	2.88	39.1000	4.0000	720.1	22.22
27.39	26.73	28.26	2.78	42.4000	3.3000	840.9	25.26
30.51	29.85	31.23	2.96	45.5000	3.1000	956.3	28.29
33.46	32.80	34.06	2.83	48.6500	3.1500	899.6	31.33
36.25	35.59	36.76	2.69	50.4500	1.8000	1496.3	34.20

Shear Wave Velocity Calculations

VC Summer
Jenkinsville, SC

Geophone Offset: 0.66 Feet
Source Offset: 9.17 Feet

06-064sc
C-302

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
6.07	5.41	10.65		17.0000			
9.02	8.36	12.41	1.76	19.4500	2.4500	719.9	6.89
12.14	11.48	14.69	2.28	27.3500	7.9000	288.8	9.92
15.09	14.43	17.10	2.41	29.6000	2.2500	1069.6	12.96
18.04	17.38	19.65	2.56	31.7500	2.1500	1188.9	15.91
21.16	20.50	22.46	2.80	34.6000	2.8500	983.8	18.94
24.11	23.45	25.18	2.72	40.2500	5.6500	482.2	21.98
27.23	26.57	28.11	2.93	43.2500	3.0000	975.2	25.01

Shear Wave Velocity Calculations

VC Summer
Jenkinsville, SC

Geophone Offset: 0.66 Feet
Source Offset: 9.17 Feet

06-064sc
C-302c

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
3.12	2.46	9.49	9.49	16.9000			
6.23	5.57	10.73	1.24	18.3500	1.4500	853.5	4.02
9.19	8.53	12.52	1.79	22.6000	4.2500	421.3	7.05
12.30	11.64	14.82	2.30	25.3000	2.7000	851.5	10.08
15.42	14.76	17.38	2.56	28.1500	2.8500	896.8	13.20
18.37	17.71	19.95	2.57	30.9500	2.8000	917.5	16.24
21.33	20.67	22.61	2.66	33.7500	2.8000	951.1	19.19
24.44	23.78	25.49	2.88	36.5500	2.8000	1028.7	22.22
27.56	26.90	28.42	2.93	40.2500	3.7000	792.0	25.34
30.51	29.85	31.23	2.81	43.2000	2.9500	952.3	28.38
33.63	32.97	34.22	2.99	45.8500	2.6500	1128.9	31.41
36.42	35.76	36.91	2.69	48.5500	2.7000	997.9	34.36
39.86	39.20	40.26	3.35	51.1500	2.6000	1286.9	37.48
42.49	41.83	42.82	2.56	53.7000	2.5500	1003.9	40.51
45.60	44.94	45.87	3.05	56.0000	2.3000	1325.8	43.39
47.24	46.58	47.48	1.61	56.7500	0.7500	2144.6	45.76

Shear Wave Velocity Calculations

VC Summer
Jenkinsville, SC

Geophone Offset: 0.66 Feet
Source Offset: 9.17 Feet

06-064sc
C-307

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
6.23	5.57	10.73		17.7500			
9.19	8.53	12.52	1.79	19.9500	2.2000	813.9	7.05
12.30	11.64	14.82	2.30	22.5000	2.5500	901.6	10.08
15.09	14.43	17.10	2.28	26.3000	3.8000	599.5	13.04
18.21	17.55	19.80	2.70	30.1500	3.8500	701.6	15.99
21.33	20.67	22.61	2.81	33.4500	3.3000	851.1	19.11
24.11	23.45	25.18	2.57	36.7500	3.3000	780.1	22.06
27.23	26.57	28.11	2.93	40.2500	3.5000	835.9	25.01
30.18	29.52	30.91	2.81	43.6000	3.3500	837.7	28.05
33.30	32.64	33.90	2.99	47.6500	4.0500	738.1	31.08
36.42	35.76	36.91	3.01	51.6500	4.0000	752.6	34.20
39.21	38.55	39.62	2.71	55.0000	3.3500	808.2	37.15
42.16	41.50	42.50	2.88	58.2500	3.2500	885.6	40.02

Shear Wave Velocity Calculations

VC Summer
Jenkinsville, SC

Geophone Offset: 0.66 Feet
Source Offset: 9.17 Feet

06-064sc
C-309

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
6.23	5.57	10.73		17.6500			
9.19	8.53	12.52	1.79	19.9000	2.2500	795.8	7.05
12.30	11.64	14.82	2.30	23.3500	3.4500	666.4	10.08
15.26	14.60	17.24	2.42	26.7500	3.4000	710.8	13.12
18.21	17.55	19.80	2.56	30.8000	4.0500	632.8	16.07
21.16	20.50	22.46	2.66	34.3500	3.5500	748.9	19.02
24.11	23.45	25.18	2.72	38.3000	3.9500	689.7	21.98
27.23	26.57	28.11	2.93	42.3500	4.0500	722.4	25.01
30.18	29.52	30.91	2.81	46.1000	3.7500	748.3	28.05
33.30	32.64	33.90	2.99	49.5500	3.4500	866.4	31.08
36.25	35.59	36.76	2.85	52.7000	3.1500	905.2	34.12
39.21	38.55	39.62	2.87	55.4500	2.7500	1042.3	37.07
42.32	41.66	42.66	3.04	58.3500	2.9000	1047.7	40.10
45.44	44.78	45.71	3.05	61.0500	2.7000	1129.2	43.22
47.57	46.91	47.80	2.09	62.4000	1.3500	1549.0	45.85

Shear Wave Velocity Calculations

VC Summer
Jenkinsville, SC

Geophone Offset: 0.66 Feet
Source Offset: 9.17 Feet

06-064sc
C-402

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
3.12	2.46	9.49	9.49	13.2000			
6.07	5.41	10.65	1.15	14.3000	1.1000	1048.4	3.93
9.02	8.36	12.41	1.76	16.9500	2.6500	665.5	6.89
12.14	11.48	14.69	2.28	21.0000	4.0500	563.4	9.92
15.09	14.43	17.10	2.41	24.7000	3.7000	650.4	12.96
18.21	17.55	19.80	2.70	27.8000	3.1000	871.4	15.99
21.16	20.50	22.46	2.66	31.1000	3.3000	805.7	19.02
24.11	23.45	25.18	2.72	34.1500	3.0500	893.2	21.98
27.07	26.41	27.95	2.77	37.5000	3.3500	827.1	24.93
30.02	29.36	30.76	2.80	40.2000	2.7000	1038.7	27.88
33.14	32.48	33.75	2.99	43.3500	3.1500	948.5	30.92
36.09	35.43	36.60	2.85	45.7000	2.3500	1213.0	33.95
39.04	38.38	39.46	2.87	48.9500	3.2500	881.7	36.91
42.16	41.50	42.50	3.04	53.4500	4.5000	675.0	39.94
45.11	44.45	45.39	2.89	56.7000	3.2500	888.5	42.98
48.06	47.40	48.28	2.90	60.2500	3.5500	815.6	45.93
51.02	50.36	51.19	2.90	63.3500	3.1000	936.2	48.88
54.13	53.47	54.25	3.07	66.0500	2.7000	1136.8	51.92
57.09	56.43	57.17	2.91	67.8500	1.8000	1618.0	54.95
58.23	57.57	58.30	1.13	68.6000	0.7500	1511.6	57.00

Shear Wave Velocity Calculations

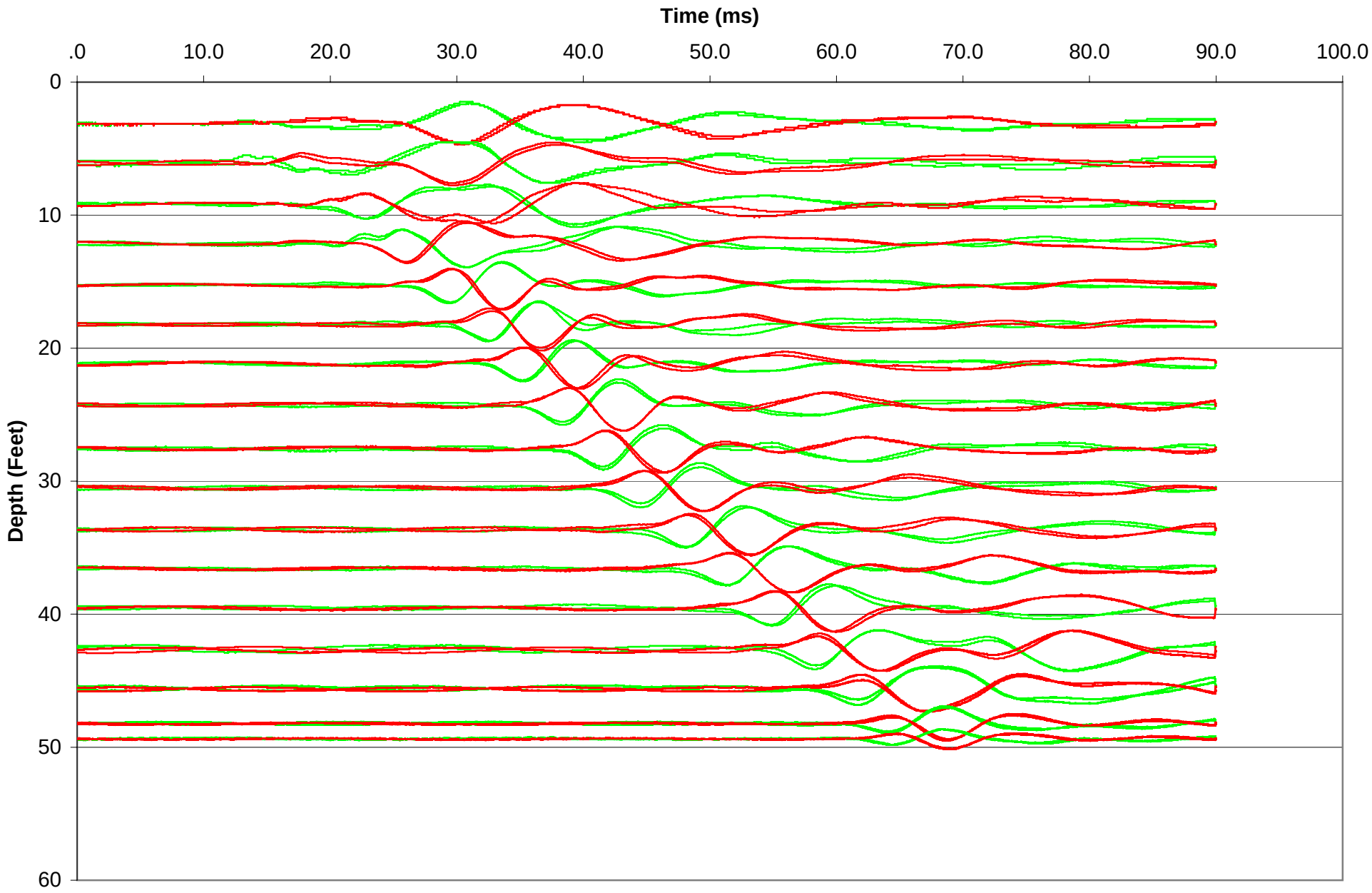
VC Summer
Jenkinsville, SC

Geophone Offset: 0.66 Feet
Source Offset: 9.17 Feet

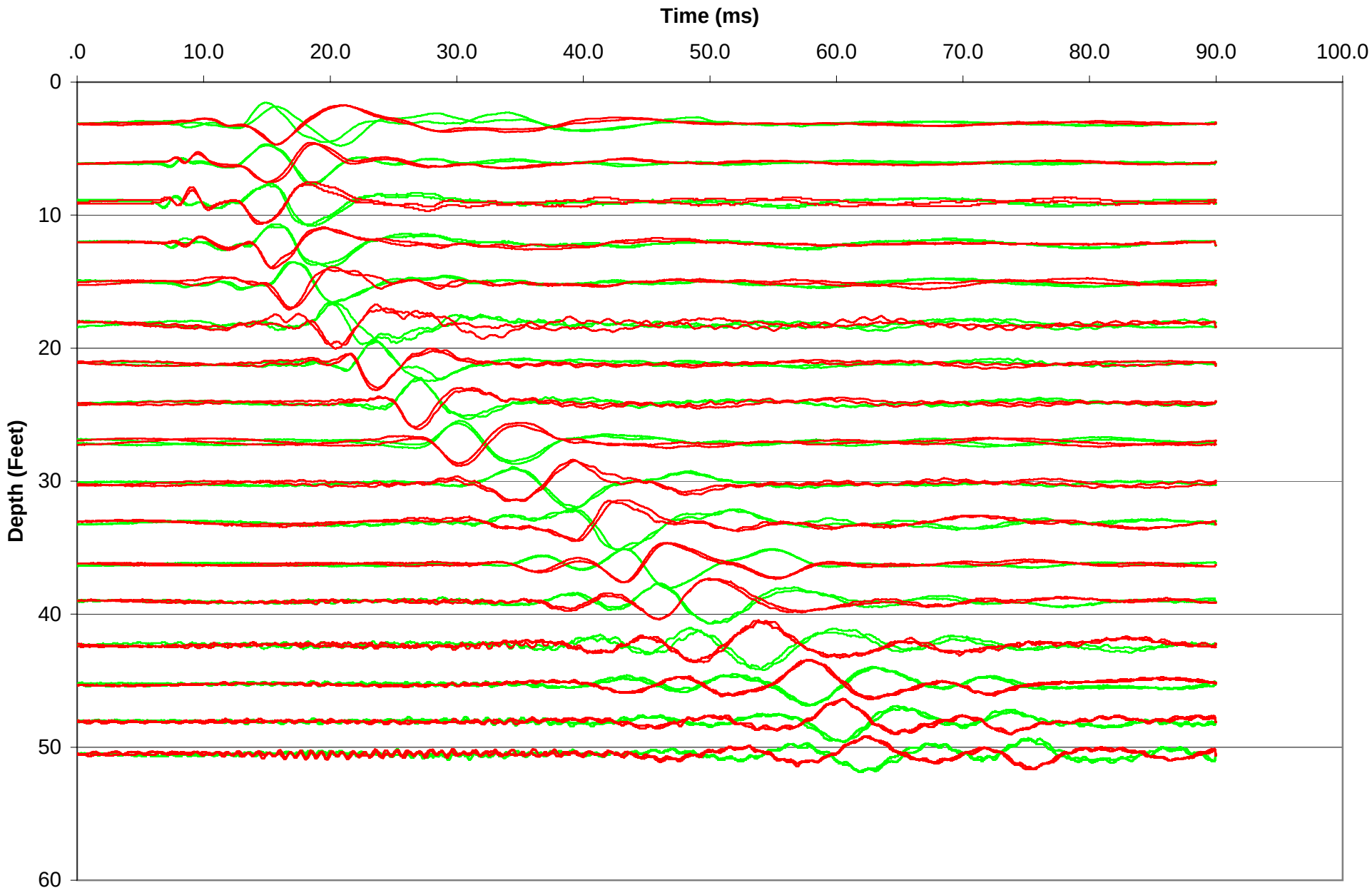
06-064sc
C-602b

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
3.12	2.46	9.49	9.49				
6.07	5.41	10.65	1.15	15.7000			3.93
9.02	8.36	12.41	1.76	17.8500	2.1500	820.3	6.89
12.14	11.48	14.69	2.28	21.1000	3.2500	702.1	9.92
15.09	14.43	17.10	2.41	24.2000	3.1000	776.3	12.96
18.04	17.38	19.65	2.56	27.7500	3.5500	720.0	15.91
21.16	20.50	22.46	2.80	31.3000	3.5500	789.8	18.94
24.11	23.45	25.18	2.72	35.4500	4.1500	656.5	21.98
27.07	26.41	27.95	2.77	39.5500	4.1000	675.8	24.93
30.02	29.36	30.76	2.80	43.7500	4.2000	667.8	27.88
33.14	32.48	33.75	2.99	47.2000	3.4500	866.0	30.92
36.09	35.43	36.60	2.85	49.5500	2.3500	1213.0	33.95
39.04	38.38	39.46	2.87	53.0000	3.4500	830.6	36.91
42.16	41.50	42.50	3.04	56.2500	3.2500	934.7	39.94
45.11	44.45	45.39	2.89	59.2500	3.0000	962.6	42.98
48.06	47.40	48.28	2.90	62.2500	3.0000	965.2	45.93
51.02	50.36	51.19	2.90	65.4500	3.2000	906.9	48.88
54.13	53.47	54.25	3.07	68.4000	2.9500	1040.4	51.92
57.09	56.43	57.17	2.91	70.1000	1.7000	1713.2	54.95
59.05	58.39	59.11	1.94	70.8500	0.7500	2591.8	57.41

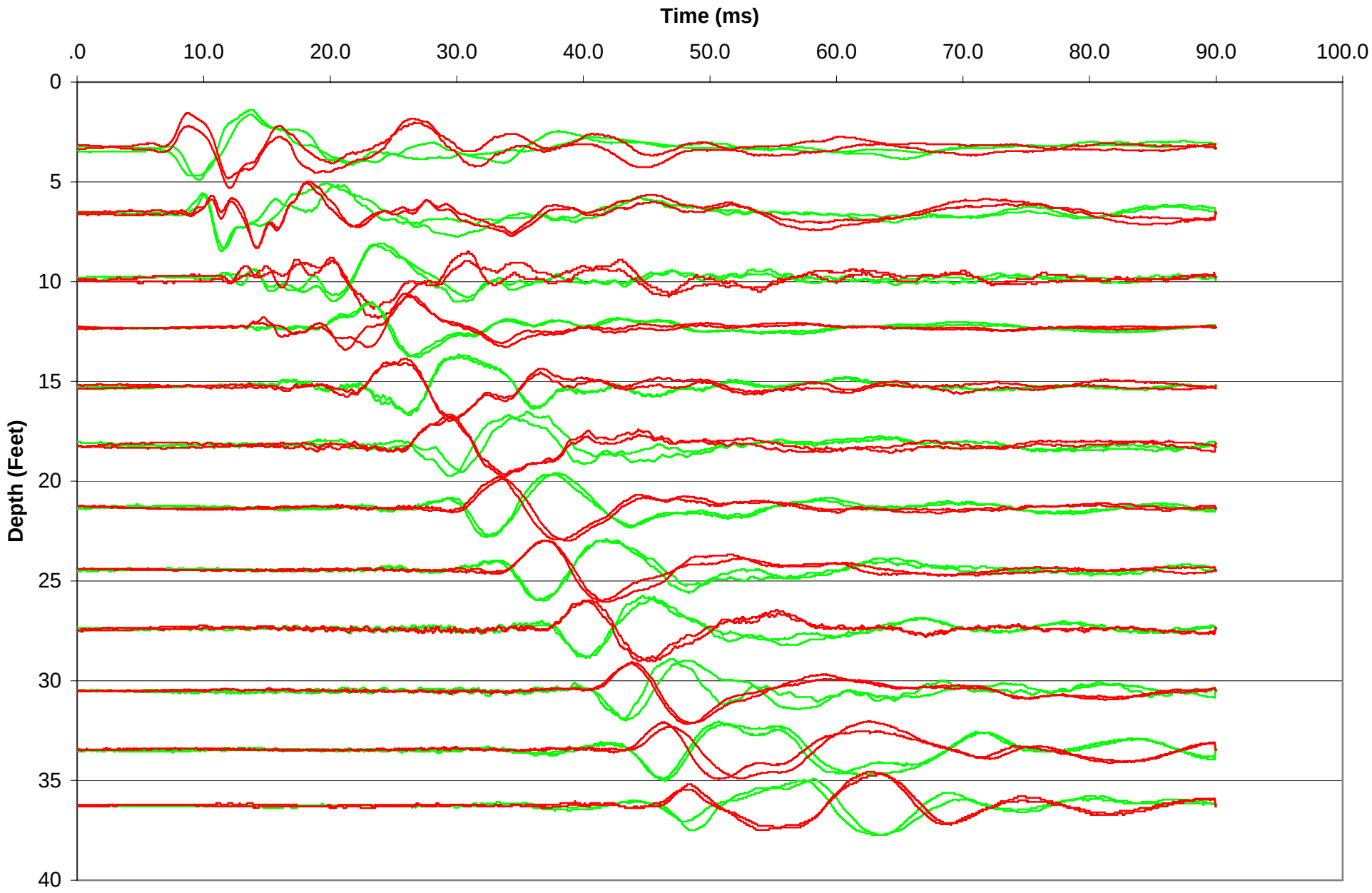
Waveforms for sounding C-202



Waveforms for sounding C-207

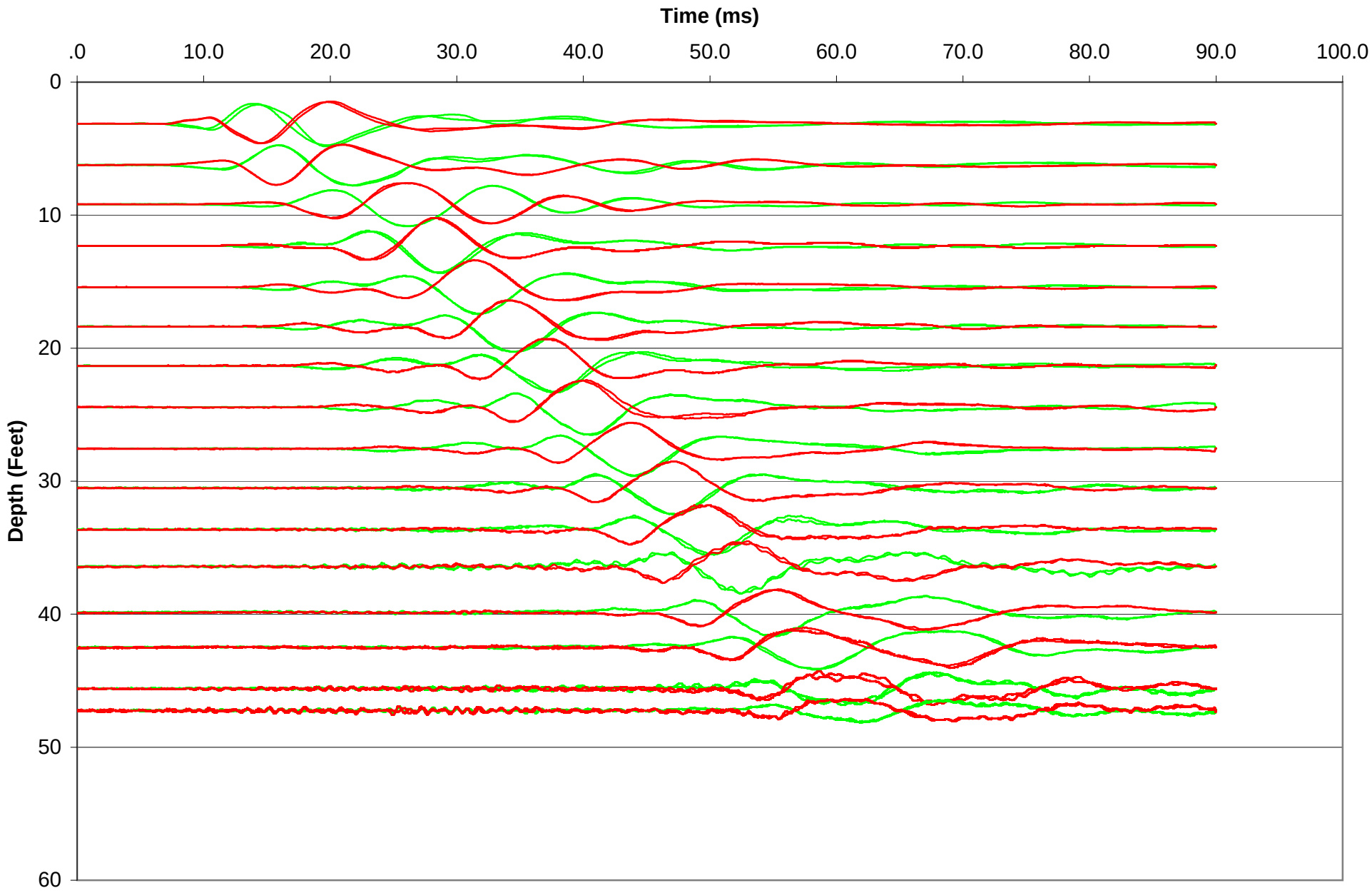


Waveforms for sounding C-209

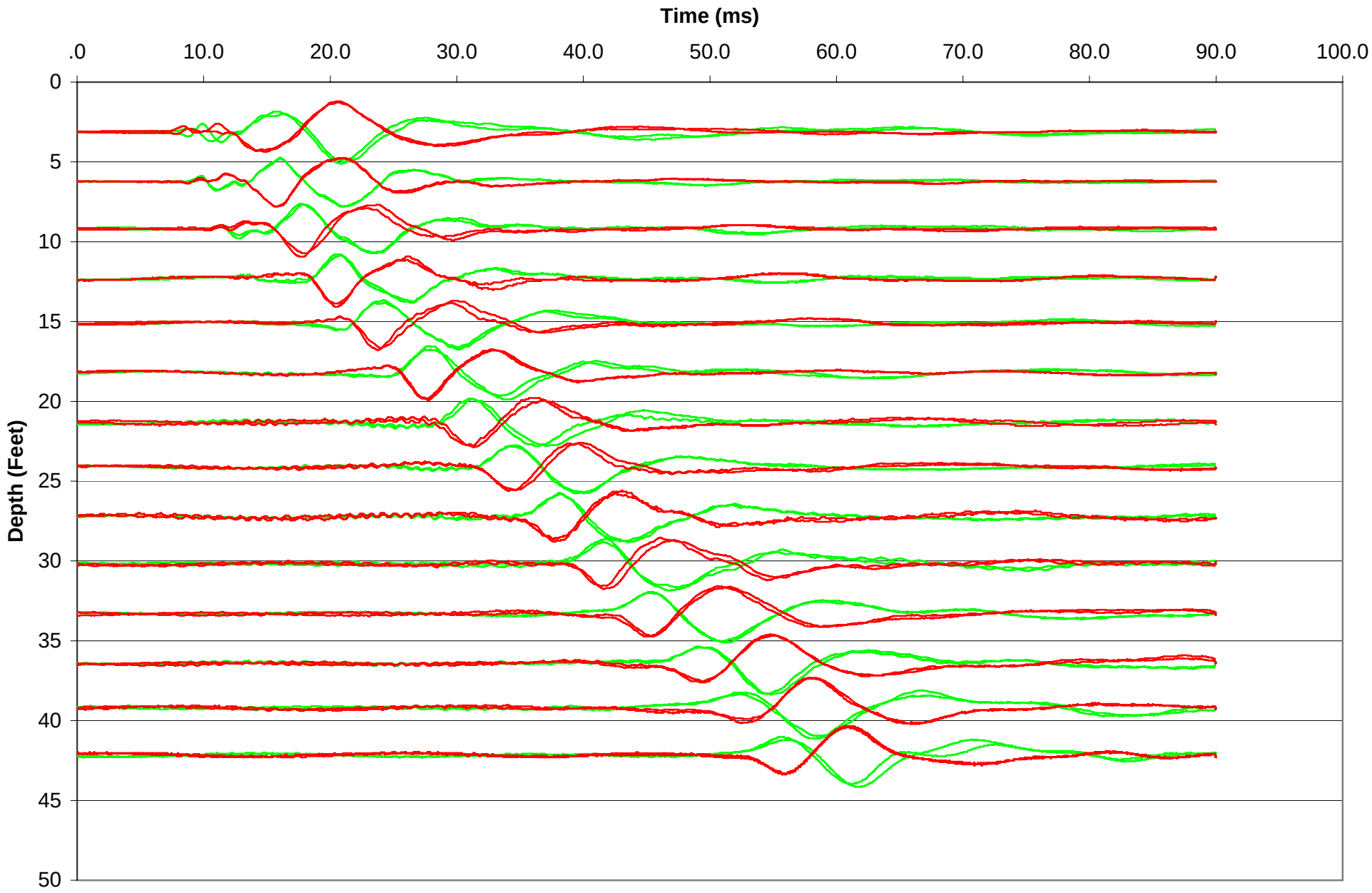


Waveforms for sounding C-302

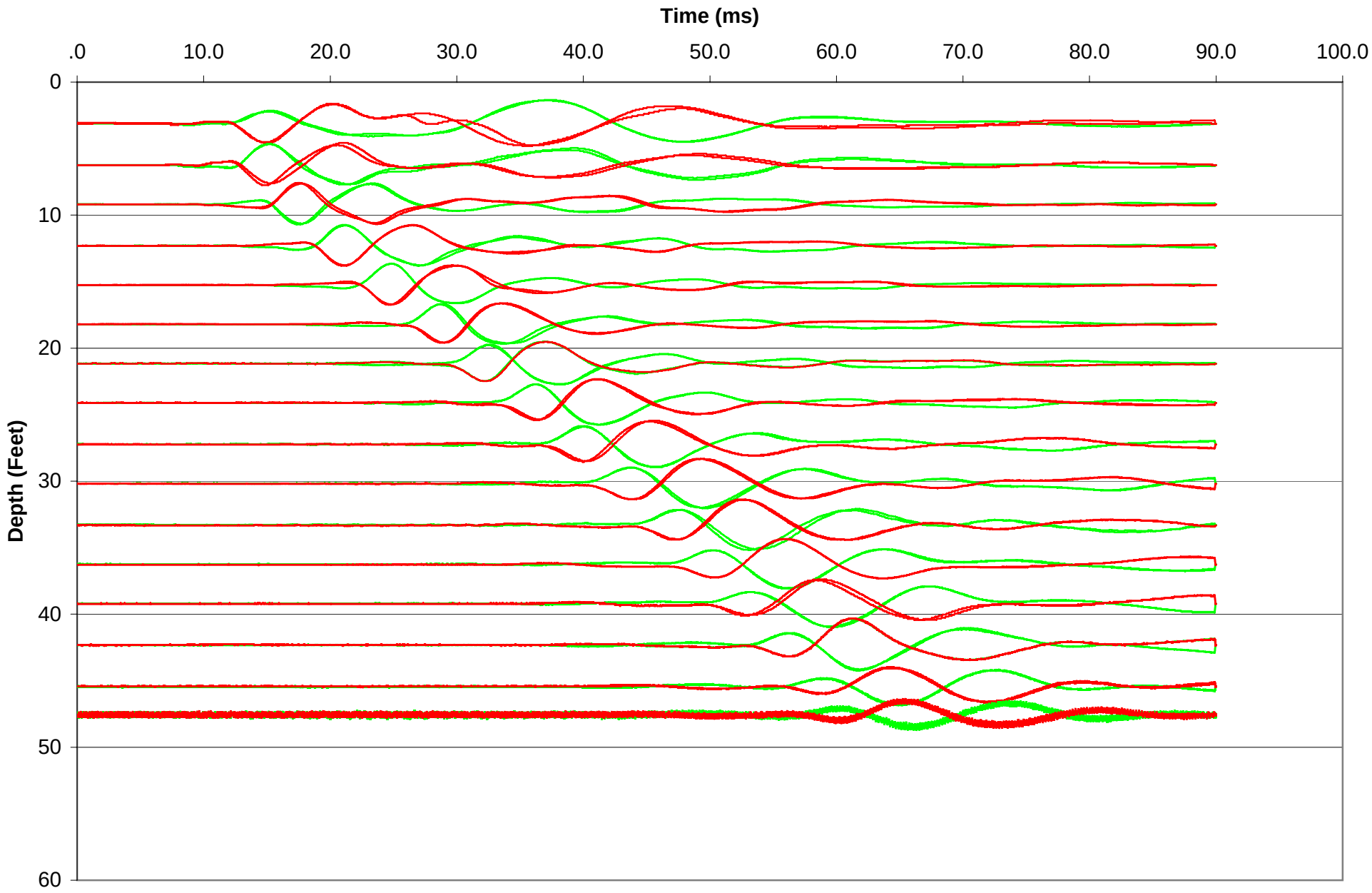
Waveforms for sounding C-302c



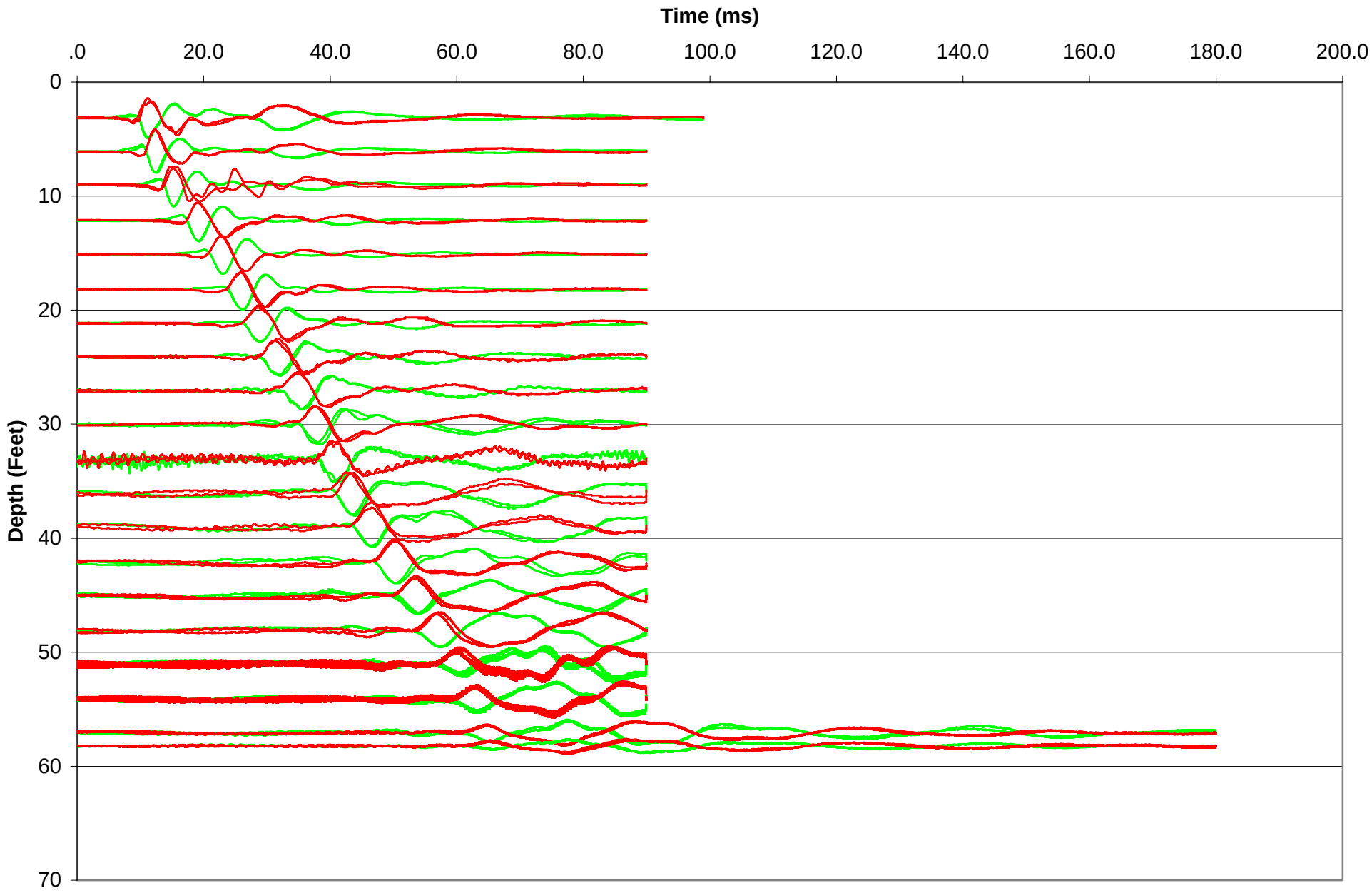
Waveforms for sounding C-307



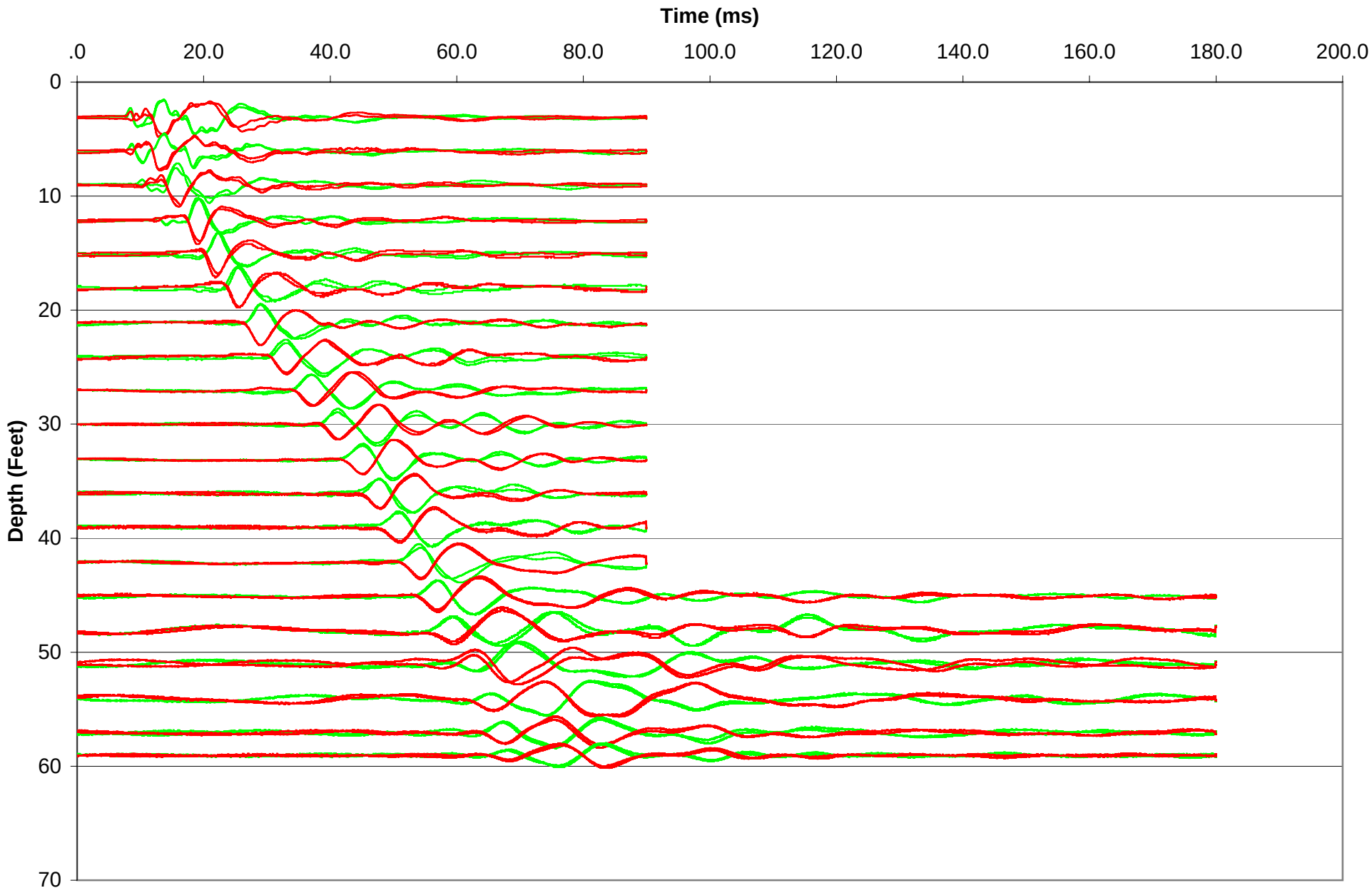
Waveforms for sounding C-309



Waveforms for sounding c-402



Waveforms for sounding C-602b



GREGG IN SITU
Digital File Formats

CPT Data Files

Unless otherwise requested by the client, Gregg CPT data files are named such that the first 3 characters contain Gregg In-Situ, Inc. job number, the next character is typically C for CPT (S if shear waves were collected, R if Resistivity was used, U for UVIF or M for 'Mini-Cone') followed by two or three characters indicating the sounding number. The last character position is reserved for the letters a, b, c, d etc to uniquely identify multiple soundings at the same location. The CPT sounding file has the extension COR and pore pressure dissipation files have the extension PPD. As an example, for job number 05-127 (Job Number 127 in the year 2005) the first sounding will have file names 127C01.COR and 127C01.PPC.

The CPT (COR) file consists of the following components:
1. Two lines of header information
2. Data records
3. End of data marker
4. Units information

Header Lines
Line 1: Columns 1-6 are blank (future use)
Columns 7-21 contain the sounding Date and Time
Columns 22-36 contain the sounding Operator
Line 2: Columns 1-16 contain the sounding ID
Columns 17-31 Field representative
Columns 32-47 contain the project name

Data Records
The data records contain 4 or more columns of data in floating point format. A comma (and spaces) separates each data item:
Column 1: Sounding Depth (m)
Column 2: Tip (q_c) data uncorrected for pore pressure effects. Recorded in units selected by the CPT operator.
Column 3: Sleeve (f_s) data. Recorded in units selected by the operator
Column 4: Dynamic pore pressure readings (u_2). Recorded in units selected by the operator
Column 5: Exists only if specialty modules (Resistivity and/or UVIF) have been used
End of Data Marker
After the last line of data a line containing ASCII 26 (CTL-Z) and a new line (carriage return/ line feed) character. This is used to mark the end of data.
Units Information
The last section of the file contains information about the units that were selected for the sounding. A separator bar makes up the first line. The second line contains the type of units used for depth, q_c, f_s and u_2. The third line contains the conversion values required for Gregg's software to convert the recorded data to an internal set of base units (bar for q_c, bar for f_s and meters for u_2).

CPT Dissipation Files

CPT Dissipation files have the same naming convention as the CPT sounding files and have the extension PPC. PPC files consist of the following components:

1. Two lines of header information
2. Data records

Header Lines (same as COR file):
Line 1: Columns 1-6 are blank (future use)
Columns 7-21 contain the sounding Date and Time
Columns 22-36 contain the sounding Operator
Line 2: Columns 1-16 Sounding or Location ID
Columns 17-31 Field Representative
Columns 32-47 Project Name

Data Records
The data records immediately follow the header lines. Each data record can occupy several lines in the file and is a complete record of a dissipation test at a particular depth. Each data record starts with a line containing two values separated by spaces; the first value being an index number and the second being the dissipation test depth in meters. Following this line are the dissipation pore pressure values stored at 5 second intervals with a maximum of 12 entries per line. The last line of the dissipation record may not contain a full 12 entries. The data record is terminated with an ASCII 30 character (appears as a triangle in some editors). This sequence is repeated for every dissipation test in the sounding. No marker is used to indicate end of file. Unit information is not stored in this file. Users would have to check the CPT file for the units that were used.