Appendix D:
Geology and Soils Supporting Information

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GEOTECHNICAL ENGINEERING REPORT
PROPOSED WAREHOUSE
2334 LUNDY PLACE
SAN JOSE, CALIFORNIA

September 3, 2024

Prepared for

Overton Moore Properties
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Prepared by

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September 3, 2024 File No.: 306774-001

Overton Moore Properties
Attn: Mr. Matthew Kukta
19700 S Vermont, Suite 101
Torrance, CA 90502

PROJECT: PROPOSED WAREHOUSE
2334 LUNDY PLACE
SAN JOSE, CALIFORNIA

SUBJECT: Geotechnical Engineering Report

REF.: Revised Proposal for Geotechnical Engineering Report, Liquefaction Analysis and Infiltration Rate Testing, Proposed Warehouse, 2334 Lundy Place, San Jose, California, Earth Systems Pacific, revised July 10, 2024.

Dear Mr. Kukta:

In accordance with your authorization of the above referenced proposal, Earth Systems Pacific has prepared this geotechnical engineering study for use in the development of plans and specifications for the proposed warehouse development to be located at the captioned site in San Jose, California. The conclusions and recommendations presented herein are based on our understanding of the proposed development, a review of the subsurface conditions revealed by cone penetration test soundings and the exploratory borings advanced as a part of this investigation, and our engineering analysis.

We appreciate the opportunity to assist you on this project. Should you have any questions regarding the contents of this report, please contact the undersigned.

Sincerely,

Earth Systems Pacific

Javad Shahmoradi
Staff Engineer

Ajay Singh, GE 3057
Principal Engineer



Doc. No.: 2409-001.SER/mg

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1.0 INTRODUCTION

This report presents the results of the geotechnical engineering study performed by Earth Systems Pacific (Earth System) for the proposed warehouse to be constructed at the captioned site in San Jose, California. The attached Site Location Map (Figure 1) shows the general location of the site, and Figure 2 shows the existing site conditions. Figure 3 shows the proposed site development plans as we understand. The approximate locations of the subsurface exploration points (exploratory borings and CPT soundings) performed as a part of this investigation are shown on Figures 2 and 3.

Site Setting

The property is located off Lundy Place in San Jose, California. The middle portion of the site area has a latitude of 37.4038° N and a longitude of 121.8893° W (see Figure 1). The entire site is relatively flat and is currently occupied by an existing three-story office building, associated parking lot, and landscaping. A review of available historical aerial imagery shows that the building was constructed between 1982 and 1987. At the time of our site investigation the site was inactive and access to the site was limited. The subject 6.6-acre property is bordered to the west by Lundy Place, to the south by Trade Zone Boulevard, to the north by a developed commercial parcel, and to the east by BART tracks.

Project Description

Based on a review of the conceptual site plan provided by HPA Architects, Inc. (December 11, 2023), the proposed developments will include removal of the existing building and parking lot, and construction of a new 122,750 square feet (SF) warehouse including 5000 SF office area and 117,750 SF warehouse. The parking area will have 95 stall parking stalls and 25 trailer stalls.

Scope of Services

The scope of work for the geotechnical engineering study included 1) a general site reconnaissance, 2) exploration of subsurface soil and groundwater conditions from a geotechnical engineering standpoint, 3) engineering evaluation of the collected data, and 4) preparation of this report. The analysis and engineering recommendations presented in the following sections of this report are based on our understanding of the proposed development at the subject site and our experience with projects of a similar nature.

The report and recommendations are intended to comply with the considerations of Section 1803 of the California Building Code (CBC), 2022 Edition, and common geotechnical engineering practice in this area at this time under similar conditions.

Preliminary geotechnical recommendations for site preparation and grading, foundations, slabs-on-grade, exterior flatwork, flexible pavement sections, rigid pavement sections, utility trench backfill, site drainage management, and geotechnical observation and testing are presented to guide the development of project plans and specifications. It is our intent that this report be used by the client to form the geotechnical basis of the design of the project as described herein, and in the preparation of plans and specifications.

Detailed evaluation of the site geology and potential geologic hazards, and analyses of the soil for mold or other microbial content, asbestos, radioisotopes, hydrocarbons, or other chemical properties are beyond the scope of this report. This report also does not address issues in the domain of contractors such as, but not limited to, site safety, loss of volume due to stripping of the site, shrinkage of soils during compaction, excavatability, shoring, temporary slope angles, and construction means and methods. Ancillary features such as temporary access roads, fences, light poles, and non-structural fills are not within our scope and are also not addressed.

To verify that pertinent issues have been addressed and to aid in conformance with the intent of this report, it is requested that final grading and foundation plans be submitted to this office for review. In the event that there are any changes in the nature, design, or locations of improvements, or if any assumptions used in the preparation of this report prove to be incorrect, the conclusions and recommendations contained herein should not be considered valid unless the changes are reviewed, and the conclusions of this report are verified or modified in writing by the geotechnical engineer. The criteria presented in this report are considered preliminary until such time as they are verified or modified in writing by the geotechnical engineer in the field during construction.

2.0 GEOLOGIC AND SEISMIC SETTING

A review of the published geologic maps indicates that the site area is underlain by Holocene-age alluvial fan deposits (Qhaf) described as brown or tan, medium dense to dense gravelly sand or sandy gravel that grades upward to sandy or silty clay (Helley, E.J., and Wesling, J.R.; 1989). The historic high groundwater level for the site area is reported to be 5 feet below the ground surface (bgs) by Santa Clara Water Valley District.

The site is located within a seismically active area but is outside an Alquist-Priolo Earthquake Fault Rupture Zone as delineated by the State of California. The subject site is located within a liquefaction required investigation zone by the State of California. Therefore, an evaluation of the liquefaction potential as outlined in the California Division of Mines and Geology's Special Publication 117A is included in this report.

The entire San Francisco Bay Area is considered to be an active seismic region due to the presence of several active faults. Three northwest-trending major earthquake faults that are responsible for the majority of the movement on San Andreas fault system extend through the Bay Area. These faults are San Andreas fault, the Hayward fault and the Calaveras fault, which are located approximately 15.1 miles to the southwest, 3.0 miles to the northeast, and 5.3 miles to the northeast respectively. Additionally, the site is near the Silver Creek Fault, an active fault located approximately 1.9 miles to the southwest.

Using information from recent earthquakes, improved mapping of active faults, and a new model for estimating earthquake probabilities, the 2014 Working Group on California Earthquake Probabilities updated the 30 years earthquake forecast for California. A summary of the significant faults in the near vicinity of the site and their respective distances and their probability of exceeding a 6.7 moment magnitude in the next 30 years are listed below.

Major Active Faults

Fault	Distance from Site (miles)	Probability of $M_w \geq 6.7$ within 30 Years[1]
Silver Creek fault	1.9 (SW)	< 1%
Hayward	3.0 (NE)	17.3%
Calaveras	5.3 (NE)	9.9%
San Andreas	15.1 (SW)	6.9%

[1] Working Group on California Earthquake Probabilities, 2014

3.0 FIELD INVESTIGATION

Subsurface Exploration

On July 18, 2024, four exploratory borings were drilled at the site using a truck-mounted B-53 drill rig equipped with an 8-inch outside diameter hollow-stem auger. The approximate location of the borings are shown on the Existing Site Condition (Figure 2) and Site Development Plan (Figure 3). The borings were drilled to depths of approximately 6.5 to 20 feet bgs. The drilling process consisted of augering to the desired depth and upon reaching that depth, a standard sampler connected to steel rods was lowered into the hole. The standard samplers were driven into undisturbed ground with a 140-pound, safety hammer falling about 30 inches per drop. The samplers were driven up to 18 inches and the hammer blows required to drive every six inches of the samplers were recorded and are presented on the boring logs. This information was used to interpret soil consistency/density.

Our staff engineer supervised the drilling program, described the soil conditions revealed by the boring to create a continuous log, and collected representative samples for laboratory testing. The borings were backfilled with lean cement grout. The boring logs show soil description including: color, major and minor components, USCS classification, changes in soil conditions with depth, moisture content, consistency/density, plasticity, sampler type, and sampling depths and laboratory test results. Copies of the boring logs advanced for this investigation are presented in Appendix A. In reviewing the boring logs and legend, the reader should recognize that the legend is intended as a guideline only and there are a number of conditions that may influence the soil characteristics as observed during drilling. These include, but are not limited to, the presence of cobbles, cementation, variations in soil moisture, presence of groundwater, and other factors.

In addition, five cone penetration tests (CPTs) were advanced at the approximate locations shown on the attached Existing Site Condition (Figure 2) and Site Development Plan (Figure 3). Details of subsurface soil conditions revealed by the CPTs are included in Appendix A. The CPTs were advanced to approximate depths of 20 to 100 feet bgs.

A CPT involves pushing a standardized size instrument of a conical shape into the ground at a specified constant rate. The integrated electronic cone system used for this project had a cone base area of 15 cm^2 and a friction sleeve area of 225 cm^2. The cone was pushed into the ground at a constant rate of 20-mm per second. The cone was fitted with two load cells and a 5 mm thick, porous filter element and a pore pressure transducer behind the cone, which recorded the total force acting on the cone (Qc), sleeve friction (Fs), and pore pressure (u) readings continuously. When the sounding was completed, the test hole was backfilled with cement grout.

The data collected from the CPT was used to interpret soil behavior type and various geotechnical parameters using current published empirical correlations based on comprehensive review by Lunne, Robertson, and Powell (1997). Pore pressure distribution tests (PPDT's) conducted at various intervals were used to measure equilibrium water pressure at the time of the CPT. Assuming the conditions are hydrostatic, the equilibrium water pressure was used to determine the approximate depth of the ground water table.

Subsurface Profile

The borings drilled at the site generally showed the presence of stiff to very stiff lean clay with sand from the surface to 20 feet bgs, which coincides with the soil encountered in the CPT soundings. The CPTs encountered silty clay to clay down to the maximum explored depth of 100 feet bgs, with interbedded thin layers up to approximately 2 feet thick, of silty sand to sandy silt.

Groundwater was encountered in exploratory borings B-2, B-3 and B-4 from 8.0 to 10 feet bgs. Additionally, the CPT soundings indicate the presence of groundwater at 8.8 to 10 feet bgs. The historic high depth to groundwater level is reported as 5 to 10 feet bgs according to the Santa Clara Valley Water District. However, it should be noted, that fluctuations in subsurface water levels can occur due to variations in rainfall, temperature, and recharge. Therefore, groundwater levels should not be considered constant.

Laboratory Testing

Eight liner samples were tested to measure moisture content and dry density (ASTM D 2216-17 and D 2937-17), three surficial sample were tested to determine their Atterberg Limits (ASTM D 4318-17) and one bulk sample was tested for R-Value (ASTM D 2844M-13). Copies of the laboratory test results are included in Appendix B.

4.0 DATA ANALYSIS

Subsurface Soil Classification

Based on the review of penetration resistance data from the CPTs advanced at the site, the site is assigned to Site Class D ("stiff soil") as defined by Table 20.3-1 of the ASCE 7-16.

Seismic Design Parameters

The seismic design parameters for the site per Chapter 16 of the California Building Code (2022 Edition) are as follows. The parameters were determined using the OSHPD/U.S. Seismic Design Maps web site.

Summary of Seismic Parameters - CBC 2022

(Site Coordinates 37.4038° N, 121.8893° W)

Parameter	Design Value
Site Class	D
Mapped Short Term Spectral Response Parameter, (S_s)	1.87g
Mapped 1-second Spectral Response Parameter, (S_1)	0.71g
Site Coefficient, (F_a)	1
Site Coefficient, (F_v)	1.7[1,2]
Site Modified Short Term Response Parameter, (S_{Ms})	1.87g
Site Modified 1-second Response Parameter, (S_{M1})	1.21g[1]
Design Short Term Response Parameter, (S_{Ds})	1.24g
Design 1-second Response Parameter, (S_{D1})	0.81g[1]
Site modified peak ground acceleration (PGAm)	0.86g

[1] The 2022 parameter are based on the assumption that the buildings will conform to ASCE 7- 16 11.4.8 - Exception No. 2.

[2] The 2022 CBC Fv parameter shall only be used for calculation of Ts. (ASCE Table 11.4-2, Supplement 1, Note a)

Liquefaction and Dry Sand Settlement

Soil liquefaction is a phenomenon where saturated granular soils undergo a substantial loss of strength due to increased pore water pressure resulting from cyclic stress applications induced by earthquakes or other vibrations. In this process, the soil acquires mobility sufficient to permit both vertical and horizontal movements, which may result in significant deformations. Soils most susceptible to liquefaction are loose, uniformly graded, fine-grained sands. In addition, recent literature indicates that fine grained soils may also be susceptible to liquefaction or cyclic strain softening. Examples of highly susceptible fine-grained soil include "non-plastic silts and clayey silts of low plasticity (PI<12) at high water content to liquid limit ratios (w_c/LL>0.85)." Examples of soils moderately susceptible to liquefaction include "clayey silts and silty clays of moderate plasticity (12<PI<18) at natural water content and Liquid Limits ratios (w_c/LL) greater than 0.80" (Bray and Sancio, 2006). It is generally acknowledged that liquefaction will not affect surface improvements if these deposits are located at a depth greater than 50 feet below the ground surface. In the deeper deposits, the greater overburden pressure is sufficient to prevent liquefaction effects from occurring.

Analysis

In order to evaluate liquefaction potential and estimate seismic settlement at the site, Earth Systems Pacific performed engineering analyses using the subsurface data collected from the CPTs advanced at the site. The CPT data was analyzed with the aid of computer programs CPeT-IT V3.9.3.14 and CLiq V.3.5.2.22 by using various methods including Boulanger and Idriss, 2014; Moss et al, 2006, Idriss and Boulanger, 2008, Robertson, 2009, and Robertson (NCEER) 2001. The analyses used the following input parameters; depth to historical groundwater at 5.0 feet, subsurface data from the CPT-1, CPT-2, and CPT-4 the mapped site modified peak ground acceleration (PGAm) of 0.86 times gravity (g) calculated in accordance with CBC 18.03A.5.12 (general procedure); and moment magnitude 7.96 earthquake, consistent with the mean characteristic moment magnitude for the San Andreas (Peninsula).

Analysis Results

The calculated liquefaction related settlement with the Roberston (2009) method was calculated to be less than 1- inch. The liquefaction analysis results are included in Appendix C. The differential settlement was estimated to be approximately ¼ to ½-inch.

Discussion

The results of our subsurface exploration indicate that the majority of the soils within the liquefiable zone are fine grain soil which has low risk of liquefaction. In addition, the result of liquefaction analysis shows the total seismic settlement is estimated to be less than 1 -inch. Therefore, the proposed warehouse will be at low risk of liquefaction settlement. The results of the liquefaction analysis are shown in Appendix C.

Lateral Spreading

The nearest embankment is a west-facing slope on the east bank of the Coyote Creek drainage, located approximately 1.5 miles west of the site. These slopes are located sufficiently far from the project site that the potential for lateral displacement at the site is considered low.

Surface Manifestation

As noted above, soils encountered in the borings and CPT soundings mostly included lean clay with sand and clay. Based on this finding, and the relatively low seismically induced settlement estimated for the site (less than 1-inch), we judge that surface manifestation of liquefaction, such as sand boils, is unlikely at the site.

5.0 CONCLUSIONS

General

The subject site is suitable for the proposed development from a geotechnical engineering standpoint, provided the recommendations included in this report are incorporated into the design and implemented during site grading and foundation construction. The primary geotechnical concerns are 1) presence of moderate expansive soil at the site and 2) anticipated severe ground shaking during the potential lifetime of the proposed structure.

Site Preparation and Grading

Plans showing the future grading activities were not provided for our review, but based on the site topography, the site grading should be minimal. The demolition of the existing building, associated footings, pavements, and flatwork is anticipated to result in some ground disturbance. A program of over-excavation and placement of new fill will be required. Grading operations are discussed in detail in the *Recommendations* section of this report.

Soil Expansion Potential

The results of the Atterberg Limits test performed on three sample representatives of the near surface soil indicated a liquid limit (LL) of 39, 36, and 42 and a plasticity index (PI) of 20, 15, and 21 respectively. These values indicate that the samples tested have moderate shrinkage/swelling potential. Soils with moderate shrinkage-swelling potential may undergo volume changes with moisture content fluctuations and when constrained they could exert uplift forces on the overlying structures. Copies of the Atterberg laboratory test results are included in Appendix B.

Foundations

Due to the relatively light loads of the proposed structure, the anticipated warehouse loads can be adequately supported on a conventional spread/strip footings with a structural slab-on-grade floor.

Groundwater

Groundwater was encountered in our exploratory borings and CPTs depth ranging from 8.0 to 10 feet bgs. The historic high depth to groundwater level according to the Santa Clara Valley Water District ranges from 5 to 10 feet bgs. Variations in rainfall, temperature, and other factors may affect water levels, and therefore groundwater levels should not be considered constant.

Corrosion Potential Screening Results

The results of tests performed on the soil sample submitted to Cerco Analytical Laboratory indicate a pH value of 8.59, redox potential of 210-mV, resistivity of 1,300 ohms-cm, sulfate ion concentration of 57 mg/kg, and chloride ion of 40 mg/kg. Based on the test results, the buried concrete does not warrant the use of sulfate resistant concrete; however, the corrosion potential for buried metallic structures such as metal pipes is considered to be corrosive. We recommend all buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion. Copies of the corrosion test results are included in Appendix B. We recommend that a corrosion engineering specialist be retained for corrosion potential recommendations.

Settlements

The estimated static settlements for the conventional shallow foundations are approximately 1-inch with approximately ½-inch of differential settlement. More refined static settlement estimates may be provided once the actual loads are available. The seismic settlement is anticipated to be approximately 1 inch.

Seismicity

The San Francisco Bay area is recognized by geologists and seismologists as one of the most seismically active regions in the United States. The significant earthquakes in this area are generally associated with crustal movement along well-defined, active fault zones which regionally trend in a northwesterly direction. Although research on earthquake prediction has greatly increased in recent years, seismologists cannot predict when and where an earthquake will occur. Nevertheless, on the basis of current technology, it is reasonable to assume that the proposed development will be subjected to at least one moderate to severe earthquake during its lifetime. During such an earthquake, the danger from fault offset on the site is low, but strong shaking of the site is likely to occur and, therefore, the project should be designed in accordance with the seismic design provisions of the latest California Building Code. It should be understood that the California Building Code seismic design parameters are not intended to prevent structural damage during an earthquake, but to reduce damage and minimize loss of life.

6.0 RECOMMENDATIONS

Site Preparation and Grading

General Site Preparation

1. Site clearing, placement of fill, and grading operations at the site should be conducted in accordance with the recommendations provided in this report. Compaction recommendations for site grading can be found later in this section.

2. Existing utility lines that will not be serving the proposed project should be either removed or abandoned. The appropriate method of utility abandonment will depend upon the type and depth of the utility. Recommendations for abandonment can be made as necessary.

3. Due to the proposed demolition activities, a program of over-excavation and backfilling will be required. Loose, disturbed soil within the building areas should be cleaned out (excavated) to competent, undisturbed soil. Over-excavation of the upper 1 to 3 feet of existing ground may be needed. The exposed soil should be inspected by the geotechnical engineer to determine the need for additional excavation work.

4. Ruts or depressions resulting from the removal of the existing foundation, utilities, undocumented fill, tree root systems, buried debris, and abandoned and/or buried structures should be removed and properly cleaned out down to undisturbed native soil. The bottoms of the resulting depressions should be scarified and cross-scarified at least 8 inches in depth, moisture conditioned and recompacted. The depressions should then be backfilled with approved, compacted, moisture conditioned structural fill, as recommended in other sections of this report.

5. Any "organic" soil or soil contaminated with debris will not be suitable for use as structural fill and should be removed from the site or stockpiles for use in landscape areas.

6. Site clearing and backfilling operations should be conducted under the field observation of the geotechnical engineer. The geotechnical engineer should be notified at least 48 hours prior to commencement of grading operations.

7. The Geotechnical Engineer should be notified at least 48 hours prior to commencement of grading operations.

<u>Compaction Recommendations</u>

1. Prior to receiving new fill, the underlying soil in the areas proposed to receive new building or pavement should be scarified to a minimum depth of 8 inches, moisture conditioned and compacted to the recommended relative compaction presented below, unless noted otherwise.

2. Scarified and moisture conditioned native soils and fill soils in the building areas, should be compacted to a minimum relative compaction of 90 percent of maximum dry density at a moisture content that is slightly wet of optimum. Aggregate baserock in the at-grade parking areas and access road should be compacted to a minimum of 95 percent relative compaction. The top 8 inches of soil in the areas proposed to receive pavements should be compacted to a minimum of 92 percent relative compaction.

Fill Recommendations

1. Structural fill is defined herein as a native or import fill material which, when properly compacted, will support foundations, building slabs, pavements, and other fills.

2. If fill is to be imported for general use at the site as non-expansive imported material, the soil should meet the following criteria:

   a. Be coarse grained and have a plasticity index of less than 15 and/or an expansion index less than 20;

   b. Be free of organics, debris or other deleterious material;

   c. Have a maximum rock size of 3 inches; and

   d. Contain sufficient clay binder to allow for stable foundation and utility trench excavations.

3. A sample of the proposed imported soils should be submitted at least three days before being transported to the site for evaluation by the geotechnical engineer. During importation to the site the material should be further reviewed on an intermittent basis.

Foundations

1. The proposed improvements can be supported by conventional strip/spread footings bearing on the stiff native or engineered fill material. The footings should have minimum depths of 18 inches below the lowest adjacent grade. The footing excavations should be observed by the geotechnical engineer prior to placement of formwork or reinforcement.

2. The footings should be designed using a maximum allowable bearing capacity of 2,000 psf dead plus live load. This value may be increased by one-third when transient loads such as wind or seismicity are included.

3. Resistance to lateral loads should be calculated based on a passive equivalent fluid pressure of 200 pcf and a friction factor of 0.25. Passive and frictional resistance can be combined in the calculations without reductions.

Concrete Slab-on-Grade Construction

1. Slabs-on-grade should have a minimum thickness of 4 full inches and be reinforced as directed by the architect/engineer. The warehouse slabs should preferably have a minimum thickness of 5 inches and should be reinforced per the recommendations of the Structural Engineer.

2. In areas where moisture transmitted from the subgrade would be undesirable, or where moisture sensitive materials will be stored directly on the slab, a capillary break system that consists of a 4-inch-thick, clean crushed rock layer should be placed above the pad subgrade. The purpose of the capillary break layer is to minimize migration of water through the soil.

3. A vapor retarder should be provided above the capillary break in slab-on-grade areas. The vapor retarder should comply with ASTM Standard Specification E 1745-17 and the latest recommendations of ACI Committee 302. The vapor retarder should be installed in accordance with ASTM Standard Practice E 1643-18a. Care should be taken to properly lap and seal the vapor retarder, particularly around utilities, and to protect it from damage during construction. The purpose of the vapor retarder is to minimize migration of water though the floor slab in the vapor form.

4. A sand layer over the vapor retarder is optional. If sand, gravel or other permeable material is to be placed over the vapor retarder, the material over the vapor retarder should be only lightly moistened and not saturated prior to casting the slab. Excess water above the vapor retarder would increase the potential for moisture damage to floor

coverings. Recent studies, including those by ACI Committee 302, have concluded that excess water above the vapor retarder would increase the potential for moisture damage to floor coverings and could increase the potential for mold growth or other microbial contamination. These studies also concluded that it is preferable to eliminate the sand layer and place the slab in direct contact with the vapor retarder, particularly during wet weather construction. However, placing the concrete directly on the vapor retarder would require special attention to using the proper vapor retarder, concrete mix design, and finishing and curing techniques.

5. When concrete slabs are in direct contact with vapor retarders, the concrete water to cement (w/c) ratio must be correctly specified to control bleed water and plastic shrinkage and cracking. The concrete w/c ratio for this type of application is typically in the range of 0.45 to 0.50. The concrete should be properly cured to reduce slab curling and plastic shrinkage cracking. Concrete materials, placement, and curing methods should be specified by the architect/engineer.

Exterior Flatwork

1. Exterior concrete flatwork, not used for supporting traffic loads, should have a minimum thickness of 4 full inches and should be reinforced as directed by the architect/engineer. The exterior flatwork should be underlain by a 4-inch thick layer of compacted Class 2 aggregate base conforming with Section 26-1.02B of the Caltrans Standard Specifications. Prior to placement of the aggregate base, the subgrade soil should be moistened as necessary to maintain the soil moisture content at or above optimum, and no desiccations cracks should be present. It may be necessary to over-excavate the pad to accommodate this import section.

2. Exterior flatwork adjacent to the structure should be designed to be independent of the foundation. The flatwork should not be doweled to foundations, and a separator should be placed between the two.

3. To reduce shrinkage cracks in concrete, the concrete aggregates should be of appropriate size and proportion, the water/cement ratio should be low, the concrete should be properly placed and finished, contraction joints should be installed, and the concrete should be properly cured. Concrete materials, placement and curing specifications should be at the direction of the architect/engineer; ACI 302.1R-04 and ACI 302.2R-04 are suggested as resources for the architect/engineer in preparing such specifications.

Flexible Pavement Sections

1. The asphalt pavement design sections were developed using the State of California Highway Design Manual, Chapter 630-Flexible Pavement. The laboratory R-Value test resulted in an R-Value of 17. To account for variation in the subgrade soils an R-value of 15 was assumed for design purposes. Determination of the appropriate Traffic Index (TI) for each area to be paved is the province of the design engineer. The calculated Asphalt Concrete (AC) and aggregate base (AB) thicknesses are for compacted subgrade material. Normal Caltrans construction tolerances should apply. The aggregate base should conform to Caltrans Class 2.

Summary of Pavement Sections

Soil Subgrade R-Value of 15

Traffic Index	AC (inches)	AB (inches)
4.0	2½	6
4.5	2½	7½
5.0	3	8
5.5	3	10
6.0	3½	10½
6.5	3½	12
7.0	4	13
7.5	4½	14
8.0	5	14½
8.5	5	16½
9.0	5½	17½
9.5	6	18
10.0	6½	19

2. The upper 8 inches of subgrade soil should be compacted to a minimum 92 percent of maximum dry density at a moisture content at least 2 percentage points over optimum. The aggregate base courses should be compacted to a minimum 95 percent of maximum dry density at a moisture content that is slightly over optimum. The subgrade and base should be firm and unyielding when proof-rolled with heavy, rubber-tired equipment prior to paving. The pavement subgrade soils should be periodically moistened as necessary prior to placement of the aggregate base to maintain the soil moisture content near optimum.

3. Pavement longevity will be enhanced if the surface grade drains away from the edges of the pavement. Finished AC surfaces should slope toward drainage facilities at 2 percent where practicable, but in no case, should water be allowed to pond.

4. Cutoff walls below curbs and around landscape islands may be used to extend the life of the pavement by reducing irrigation water and runoff that seeps into the aggregate base. Where utilized, cutoff walls should extend through the aggregate base to penetrate a minimum of 3 inches into the subgrade soils.

5. To reduce migration of surface drainage into the subgrade, maintenance of the paved areas is critical. Any cracks that develop in the AC should be promptly sealed.

Rigid Pavement Sections

1. Rigid Pavements in the medium traffic load area should have a minimum thickness of 6 full inches with a minimum compressive strength of 3,400 psi and should be reinforced as directed by the architect/engineer. Rigid pavements should be cast on a minimum 8-inch layer of compacted Class 2 aggregate base conforming with Section 26-1.02B of the Caltrans Standard Specifications. Rigid pavements in the heavy traffic areas should have a minimum thickness of 8 inches and should be underlain by 10 inches of compacted aggregate baserock. The concrete slabs should be reinforced per the recommendations of the project Structural Engineer.

2. The upper 8 inches of subgrade soil should be compacted to a minimum 92 percent of maximum dry density at a moisture content at least 2 percentage points over optimum. The aggregate base courses should be compacted to a minimum 95 percent of maximum dry density at a moisture content that is slightly over optimum. The subgrade and base should be firm and unyielding when proof-rolled with heavy, rubber-tired equipment prior to paving. The pavement subgrade soils should be periodically moistened as necessary prior to placement of the aggregate base to maintain the soil moisture content near optimum.

3. If the rigid pavements are to be subjected to traffic, such as where the rigid pavement is adjacent to flexible pavement, it is recommended that the thickness of the edges be increased by 20 percent and tapered back to normal slab thickness over a distance of 10 times the slab thickness.

Utility Trench Backfills

1. A select, noncorrosive, granular, easily compacted material should be used as bedding and shading immediately around utility pipes. The site soils may be used for trench backfill above the select material.

2. Trench backfill in the upper 8 inches of subgrade beneath pavement areas should be compacted to a minimum of 92 percent of maximum dry density. Trench backfill in other areas should be compacted to a minimum of 90 percent. Jetting of utility trench backfill should not be allowed.

3. Where utility trenches extend under perimeter foundations, the trenches should be backfilled entirely with approved fill soil compacted to a minimum of 90 percent of maximum dry density. The zone of approved fill soil should extend a minimum distance of 2 feet on both sides of the foundation. If utility pipes pass through sleeves cast into the perimeter foundations, the annulus between the pipes and sleeves should be completely sealed.

4. Parallel trenches excavated in the area under foundations defined by a plane radiating at a 45-degree angle downward from the bottom edge of the footing should be avoided, if possible. Trench backfill within this zone, if necessary, should consist of Controlled Density Fill (Flowable Fill).

Post-Construction Site Drainage Management

1. Unpaved ground surfaces should be finish graded to direct surface runoff away from site improvements at a minimum 5 percent grade for a minimum distance of 10 feet. If this is not practical due to the terrain or other site features, swales with improved surfaces should be provided to divert drainage away from improvements. The landscaping should be planned and installed to maintain proper surface drainage conditions.

2. Runoff from driveways, roof gutters, downspouts, planter drains and other improvements should discharge in a non-erosive manner away from foundations, pavements, and other improvements. The downspouts may discharge onto splash blocks that direct the flow away from the foundation.

3. Stabilization of surface soils, particularly those disturbed during construction, by vegetation or other means during and following construction is essential to protect the site from erosion damage. Care should be taken to establish and maintain vegetation.

4. Raised planter beds adjacent to foundations should be provided with sealed sides and bottoms so that irrigation water is not allowed to penetrate the subsurface beneath foundations. Outlets should be provided in the planters to direct accumulated irrigation water away from foundations.

5. Open areas adjacent to exterior flatwork should be irrigated or otherwise maintained so that constant moisture conditions are created throughout the year. Irrigation systems should be controlled to the minimum levels that will sustain the vegetation without saturating the soil.

Required Geotechnical Observation and Testing

1. It must be recognized that the recommendations contained in this report are based on a limited number of borings and rely on continuity of the subsurface conditions encountered.

2. It is assumed that the geotechnical engineer will be retained to provide consultation during the design phase, to interpret this report during construction, and to provide construction monitoring in the form of testing and observation.

3. Unless otherwise stated, the terms "compacted" and "recompacted" refer to soils placed in level lifts not exceeding 8 inches in loose thickness and compacted to between 88 to 92 percent of maximum dry density. The standard tests used to define maximum dry density and field density should be ASTM D 1557-12 and ASTM D 6938-17, respectively, or other methods acceptable to the geotechnical engineer and jurisdiction.

4. “Moisture conditioning” refers to adjusting the soil moisture to at least 2 percentage points above optimum moisture content prior to application of compactive effort. If the soils are overly moist so that they become unstable, or if the recommended compaction cannot be readily achieved, drying the soil to optimum moisture content or just above may be necessary. Placement of gravel layers or geotextiles may also be necessary to help stabilize unstable soils. The geotechnical engineer should be contacted for recommendations for mitigating unstable soils.

5. At a minimum, the following should be provided by the geotechnical engineer:
    - Review of final grading and foundation plans,
    - Professional observation during site preparation, grading, and foundation excavation,
    - Oversight of soil compaction testing during grading,
    - Oversight of soil special inspection during grading.

6. Special inspection of grading should be provided as per Section 1705.6 and Table 1705.6 and of the CBC; the soils special inspector should be under the direction of the geotechnical engineer. In our opinion, the following operations should be subject to *continuous* soils special inspection:

   - Scarification and recompaction,
   - Fill placement and compaction,
   - Over-excavation to the recommended depth.

7. In our opinion, the following operations may be subject to *periodic* soils special inspection, subject to approval by the Building Official:

   - Site preparation,
   - Compaction of utility trench backfill,
   - Compaction of subgrade and aggregate base,
   - Observation of foundation excavations,
   - Building pad moisture conditioning.

8. It will be necessary to develop a program of quality control prior to beginning grading. It is the responsibility of the owner, contractor, or project manager to determine any additional inspection items required by the architect/engineer or the governing jurisdiction.

9. The locations and frequencies of compaction tests should be as per the recommendations of the geotechnical engineer at the time of construction. The recommended test locations and frequencies may be subject to modification by the geotechnical engineer based upon soil and moisture conditions encountered, the size and type of equipment used by the contractor, the general trend of the compaction test results, and other factors.
10. A preconstruction conference among a representative of the owner, the geotechnical engineer, soils special inspector, the architect/engineer, and contractors is recommended to discuss planned construction procedures and quality control requirements. Earth Systems should be notified at least 48 hours prior to beginning grading operations.

7.0 INFILTRATION TESTING

On July 18, 2024, our staff engineer was on-site to conduct infiltration tests. However, after encountering groundwater at 8 feet bgs, this finding was communicated to the civil engineer on the same day. The civil engineer immediately put a hold on the infiltration test and later decided to terminate it due to the shallow groundwater. As a result, the infiltration tests were not conducted for the proposed warehouse

8.0 CLOSURE

This report is valid for conditions as they exist at this time for the type of project described herein. Our intent was to perform the investigation in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the locality of this project at this time under similar conditions. No representation, warranty, or guarantee is either expressed or implied. This report is intended for the exclusive use by the client as discussed in the Scope of Services section. Application beyond the stated intent is strictly at the user's risk.

If changes with respect to the project type or location become necessary, if items not addressed in this report are incorporated into plans, or if any of the assumptions stated in this report are not correct, Earth Systems should be notified for modifications to this report. Any items not specifically addressed in this report should comply with the California Building Code and the requirements of the governing jurisdiction.

The preliminary recommendations of this report are based upon the geotechnical conditions encountered during the investigation and may be augmented by additional requirements of the architect/engineer, or by additional recommendations provided by this firm based on conditions exposed at the time of construction.

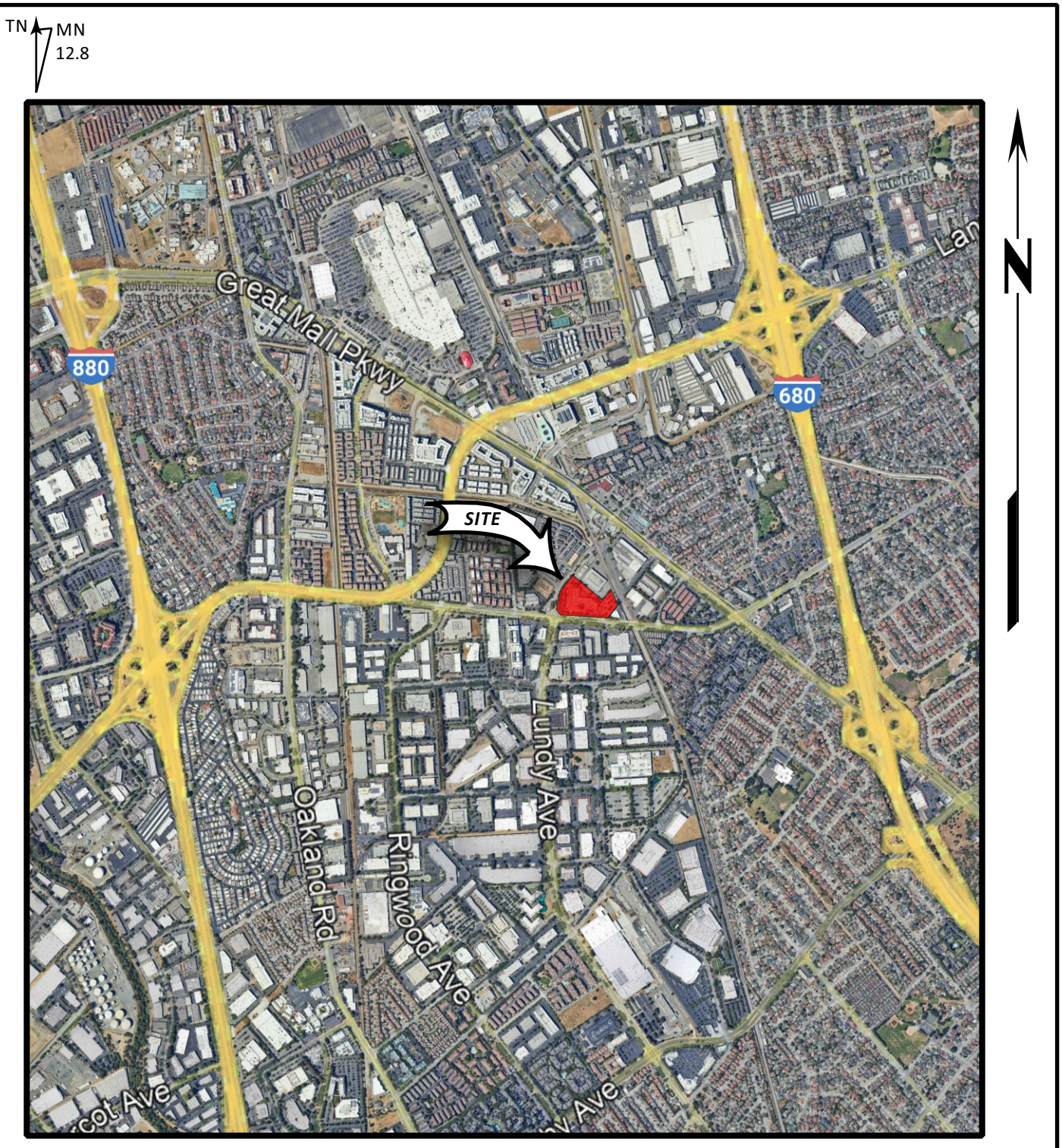
If Earth Systems is not retained to provide construction observation and testing services, it will not be responsible for the interpretation of the information by others or any consequences arising there from.

This document, the data, conclusions, and recommendations contained herein are the property of Earth Systems. This report should be used in its entirety, with no individual sections reproduced or used out of context. Copies may be made only by Earth Systems, the client, and his authorized agents for use exclusively on the subject project. Any other use is subject to federal copyright laws and the written approval of Earth Systems.

FIGURES

Figure 1 - Site Location Map
Figure 2 – Existing Site Condition
Figure 3 –Site Development Plan

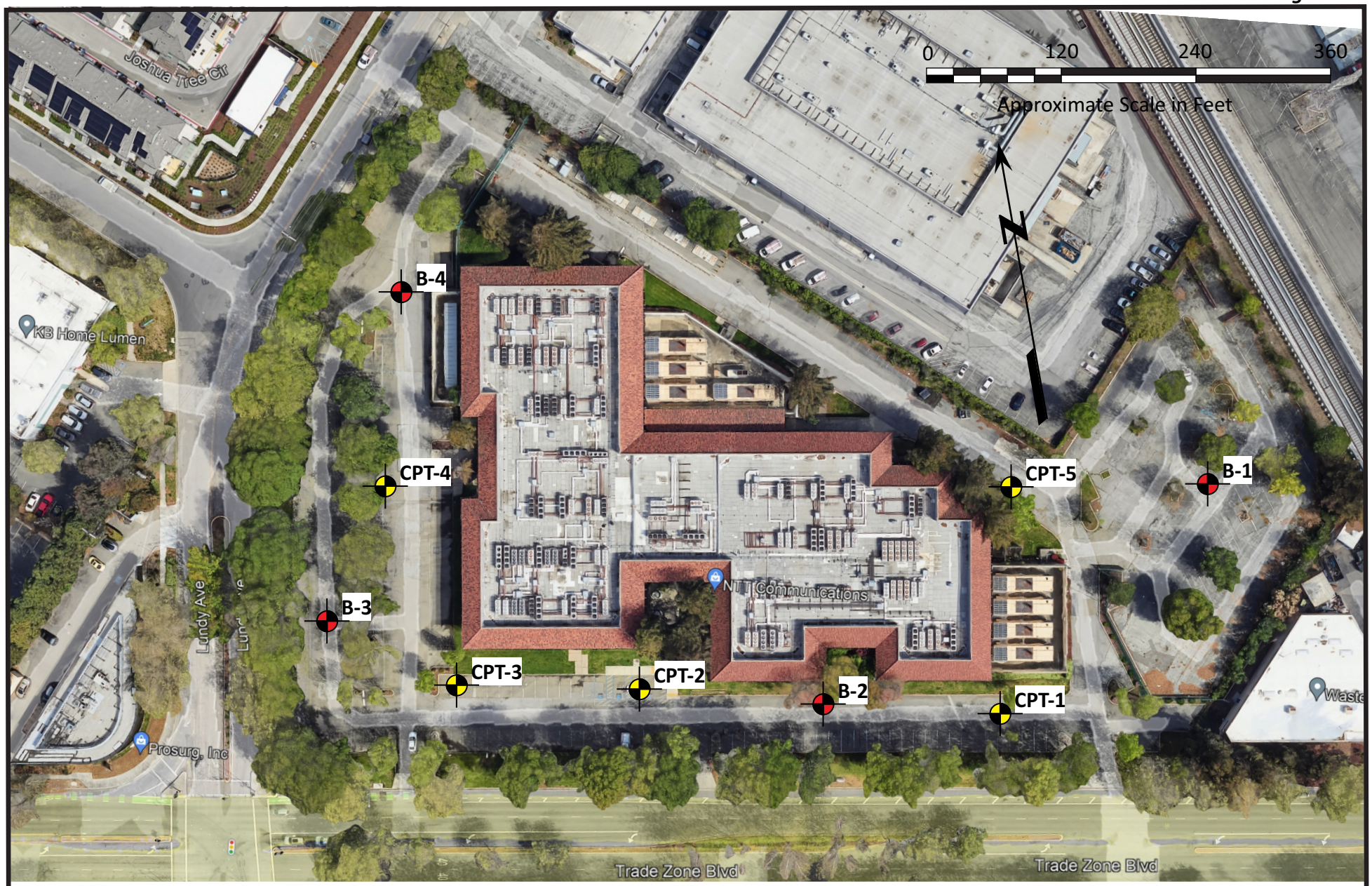
Figure 1



Base: Google Earth (2024)

Earth Systems Pacific	Proposed Warehouse 2334 Lundy Place San Jose, California	Site Location Map 306774-001

Figure 2



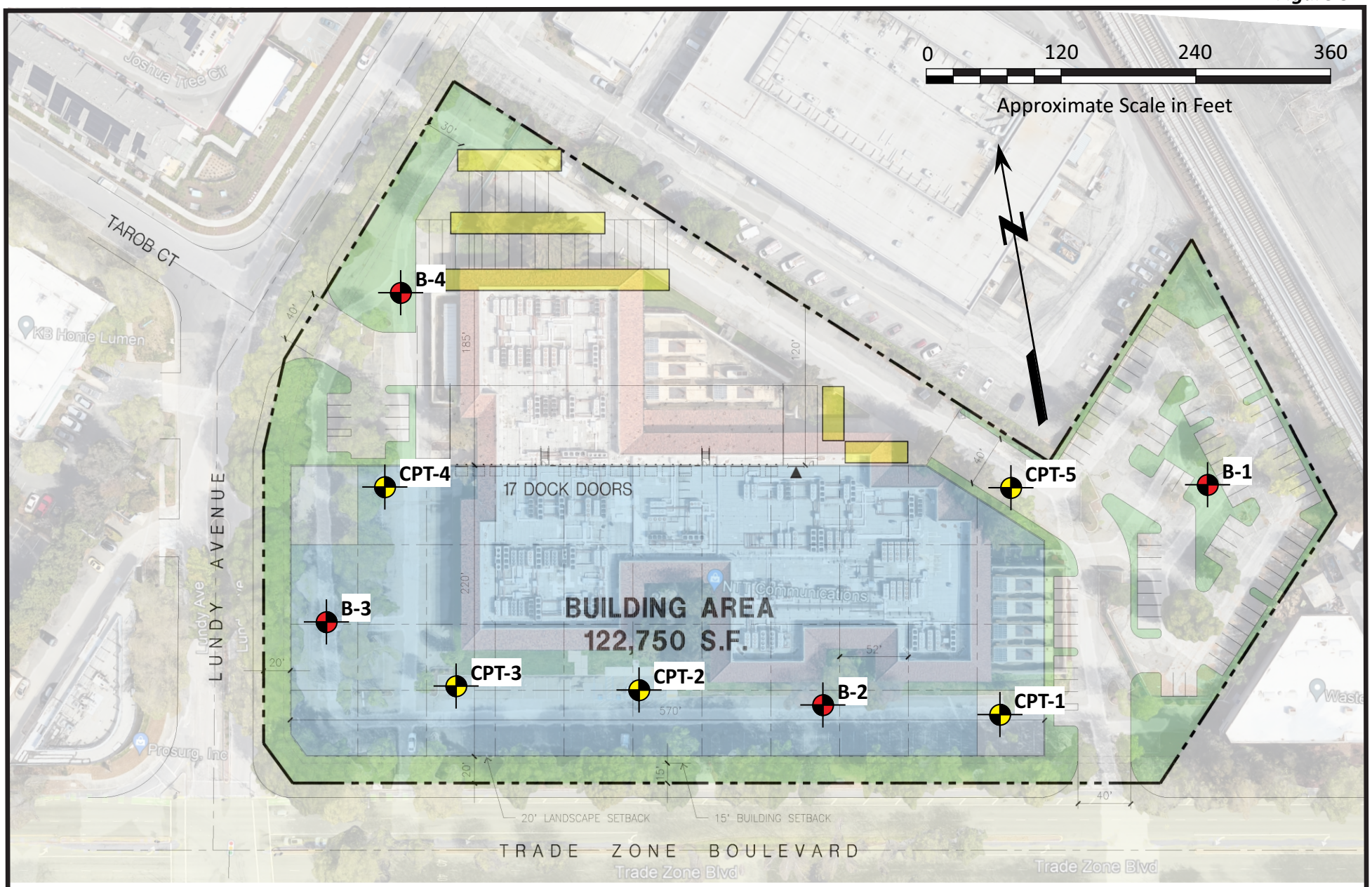
B-4 Approximate Boring Location

CPT-5 Approximate CPT Location

Base: HPA Architects (2023)

Earth Systems Pacific	**Proposed Warehouse** **2334 Lundy Place** **San Jose, California**	**Existing Site Condition** **File No.: 306774-001**

Figure 3



Base: HPA Architects (2023)

Earth Systems Pacific	**Proposed Warehouse** **2334 Lundy Place** **San Jose, California**	**Site Development Plan** **File No.: 306774-001**

APPENDIX A

Boring Log Legend
Borings Logs (4)
CPT Soundings (5)

Earth Systems Pacific

BORING LOG LEGEND

SAMPLE / SUBSURFACE WATER SYMBOLS	GRAPH. SYMBOL
CALIFORNIA MODIFIED	
STANDARD PENETRATION TEST (SPT)	
SHELBY TUBE	
BULK	
SUBSURFACE WATER DURING DRILLING	
SUBSURFACE WATER AFTER DRILLING	

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)

MAJOR DIVISIONS	GROUP SYMBOL	TYPICAL DESCRIPTIONS	GRAPH. SYMBOL
COARSE GRAINED SOILS (MORE THAN HALF OF MATERIAL IS LARGER THAN #200 SIEVE SIZE)	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
	GP	POORLY GRADED GRAVELS, OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES, NON-PLASTIC FINES	
	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES, PLASTIC FINES	
	SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	
	SP	POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES	
	SM	SILTY SANDS, SAND-SILT MIXTURES, NON-PLASTIC FINES	
	SC	CLAYEY SANDS, SAND-CLAY MIXTURES, PLASTIC FINES	
FINE GRAINED SOILS (HALF OR MORE OF MATERIAL IS SMALLER THAN #200 SIEVE SIZE)	ML	INORGANIC SILTS AND VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	
	CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
	OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS	
	CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
	OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
	PT	PEAT AND OTHER HIGHLY ORGANIC SOILS	

OBSERVED MOISTURE CONDITION

DRY	SLIGHTLY MOIST	MOIST	VERY MOIST	WET (SATURATED)

CONSISTENCY

COARSE GRAINED SOILS			FINE GRAINED SOILS		
BLOWS/FOOT		DESCRIPTIVE TERM	BLOWS/FOOT		DESCRIPTIVE TERM
SPT	CA SAMPLER		SPT	CA SAMPLER	
0-10	0-16	LOOSE	0-2	0-3	VERY SOFT
11-30	17-50	MEDIUM DENSE	3-4	4-7	SOFT
31-50	51-83	DENSE	5-8	8-13	MEDIUM STIFF
OVER 50	OVER 83	VERY DENSE	9-15	14-25	STIFF
			16-30	26-50	VERY STIFF
			OVER 30	OVER 50	HARD

GRAIN SIZES

U.S. STANDARD SERIES SIEVE				CLEAR SQUARE SIEVE OPENING		
# 200	# 40	# 10	# 4	3/4"	3"	12"

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

TYPICAL BEDROCK HARDNESS

MAJOR DIVISIONS	TYPICAL DESCRIPTIONS
EXTREMELY HARD	CORE, FRAGMENT, OR EXPOSURE CANNOT BE SCRATCHED WITH KNIFE OR SHARP PICK; CAN ONLY BE CHIPPED WITH REPEATED HEAVY HAMMER BLOWS
VERY HARD	CANNOT BE SCRATCHED WITH KNIFE OR SHARP PICK; CORE OR FRAGMENT BREAKS WITH REPEATED HEAVY HAMMER BLOWS
HARD	CAN BE SCRATCHED WITH KNIFE OR SHARP PICK WITH DIFFICULTY (HEAVY PRESSURE); HEAVY HAMMER BLOW REQUIRED TO BREAK SPECIMEN
MODERATELY HARD	CAN BE GROOVED 1/16 INCH DEEP BY KNIFE OR SHARP PICK WITH MODERATE OR HEAVY PRESSURE; CORE OR FRAGMENT BREAKS WITH LIGHT HAMMER BLOW OR HEAVY MANUAL PRESSURE
SOFT	CAN BE GROOVED OR GOUGED EASILY BY KNIFE OR SHARP PICK WITH LIGHT PRESSURE, CAN BE SCRATCHED WITH FINGERNAIL; BREAKS WITH LIGHT TO MODERATE MANUAL PRESSURE
VERY SOFT	CAN BE READILY INDENTED, GROOVED OR GOUGED WITH FINGERNAIL, OR CARVED WITH KNIFE; BREAKS WITH LIGHT MANUAL PRESSURE

TYPICAL BEDROCK WEATHERING

MAJOR DIVISIONS	TYPICAL DESCRIPTIONS
FRESH	NO DISCOLORATION, NOT OXIDIZED
SLIGHTLY WEATHERED	DISCOLORATION OR OXIDATION IS LIMITED TO SURFACE OF, OR SHORT DISTANCE FROM, FRACTURES: SOME FELDSPAR CRYSTALS ARE DULL
MODERATELY WEATHERED	DISCOLORATION OR OXIDATION EXTENDS FROM FRACTURES, USUALLY THROUGHOUT; Fe-Mg MINERALS ARE "RUSTY", FELDSPAR CRYSTALS ARE "CLOUDY"
INTENSELY WEATHERED	DISCOLORATION OR OXIDATION THROUGHOUT; FELDSPAR AND Fe-Mg MINERALS ARE ALTERED TO CLAY TO SOME EXTENT, OR CHEMICAL ALTERATION PRODUCES IN SITU DISAGGREGATION
DECOMPOSED	DISCOLORATION OR OXIDATION THROUGHOUT, BUT RESISTANT MINERALS SUCH AS QUARTZ MAY BE UNALTERED; FELDSPAR AND Fe-Mg MINERALS ARE COMPLETELY ALTERED TO CLAY

drafting/masters/Boring Log Legend121714.dwg

Earth Systems Pacific

Boring B-1
PAGE 1 OF 1

LOGGED BY: J. Shahmoradi
RIG TYPE: B-53
AUGER TYPE: 8" Hollow Stem

FILE NO.: 306774-001
DATE: 07/18/2024

Proposed Warehouse
2334 Lundy Place
San Jose, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE NUMBER	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN.	POCKET PEN (t.s.f)
0	CL		2 inch AC 7 inch AB LEAN CLAY with SAND; dark brown, moist, very stiff						7 8	
2				1.0 - 2.5	1-1	■			18	4.5
3				1.0 - 2.5	1-Bulk	◯				
5									6 9	
6				5.0 - 6.5	1-2	■			13	4.5
7			Boring terminated at 6.5 feet. Groundwater was not encountered to the maximum depth of exploration							

LEGEND: ■ 2.5" Mod Cal Sample ▭ Shelby ● SPT ◯ Bulk Sample ▽ Groundwater

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems Pacific

Boring B-2
PAGE 1 OF 1

LOGGED BY: J. Shahmoradi
RIG TYPE: B-53
AUGER TYPE: 8" Hollow Stem

FILE NO.: 306774-001
DATE: 07/18/2024

Proposed Warehouse
2334 Lundy Place
San Jose, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE NUMBER	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN.	POCKET PEN (t.s.f)
0	CL		4 inch AC 6 inch AB LEAN CLAY with SAND; dark brown with white mottling, moist, very stiff, trace roots						5 9	
2			[LL=39; PI= 20]	1.0 - 2.5	2-1	■			13	4.5
3			- yellowish orange spots						6 9	
4			[LL=36; PI= 15]	3.0 - 4.5	2-2	■			14	> 4.5
5									6 8	
6				5.0 - 6.5	2-3	■			11	4.5
9			- gray mottling with yellowish orange spots, very moist, stiff, no roots						4 5	
10			- wet ▼	8.5 - 10.0	2-4	■			7	1.25
14									3 6	
15				13.5 - 15.0	2-5	■			7	1.75
19									3 5	
20				18.5 - 20.0	2-6	■			8	1.75
21			Boring terminated at 20.0 feet. Groundwater was encountered at 10.0 feet below ground surface							

LEGEND: ■ 2.5" Mod Cal Sample ▭ Shelby ● SPT ○ Bulk Sample ▼ Groundwater

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems Pacific

Boring B-3
PAGE 1 OF 1

LOGGED BY: J. Shahmoradi
RIG TYPE: B-53
AUGER TYPE: 8" Hollow Stem

FILE NO.: 306774-001
DATE: 07/18/2024

Proposed Warehouse
2334 Lundy Place
San Jose, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE NUMBER	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN.	POCKET PEN (t.s.f)
0	CL		3 inch AC 5 inch AB LEAN CLAY with SAND; dark brown with white mottling, slightly moist, hard, fine sand, trace rootless [LL=42; PI=21]	1.0 - 2.5	3-1	■	104.0	15.4	14 15 22	> 4.5
3			- very stiff, moist						11 12	
4				3.0 - 4.5	3-2	■	99.1	11.7	12	4.5
5			- brown						8 9	
6				5.0 - 6.5	3-3	■	102.4	21.0	13	4.0
9			- olive brown with gray and orangish yellow mottling, wet, stiff, trace roots						4 6	
10				8.5 - 10.0	3-4	■	100.1	26.1	5	2.0
14									3 5	
15				13.5 - 15.0	3-5	■	91.9	30.9	7	1.5
19			- gray brown, trace organics						5 6	
20				18.5 - 20.0	3-6	■	100.9	25.7	6	1.0
			Boring terminated at 20.0 feet. Groundwater was encountered at 9.0 feet below ground surface							

LEGEND: ■ 2.5" Mod Cal Sample ▭ Shelby ● SPT ○ Bulk Sample ▼ Groundwater

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems Pacific

Boring B-4
PAGE 1 OF 1

LOGGED BY: J. Shahmoradi
RIG TYPE: B-53
AUGER TYPE: 8" Hollow Stem

FILE NO.: 306774-001
DATE: 07/18/2024

Proposed Warehouse
2334 Lundy Place
San Jose, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE NUMBER	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN.	POCKET PEN (t.s.f)
0	CL		2 inch AC 3 inch AB LEAN CLAY with SAND; dark brown, moist, very stiff, fine to coarse sand						5 9	
2				1.0 - 2.5	4-1	■	105.3	21.3	12	3.0
3			- brown, white mottling with black spots, stiff						5 7	
4				3.0 - 4.5	4-2	■	107.2	20.4	11	3.0
5									5 7	
6				5.0 - 6.5	4-3	■			10	2.5
7										
8										
9			- gray brown with black mottling, wet						4 6	
10				8.5 - 10.0	4-4	■			8	1.5
11										
12										
13										
14			- orangish yellow mottling						5 7	
15				13.5 - 15.0	4-5	■			9	2.0
16										
17										
18										
19									4 7	
20				18.5 - 20.0	4-6	■			7	1.5
21			Boring terminated at 20.0 feet. Groundwater was encountered at 8.0 feet below ground surface							
22										
23										
24										
25										
26										

LEGEND: ■ 2.5" Mod Cal Sample ▭ Shelby ● SPT ⊖ Bulk Sample ▽ Groundwater

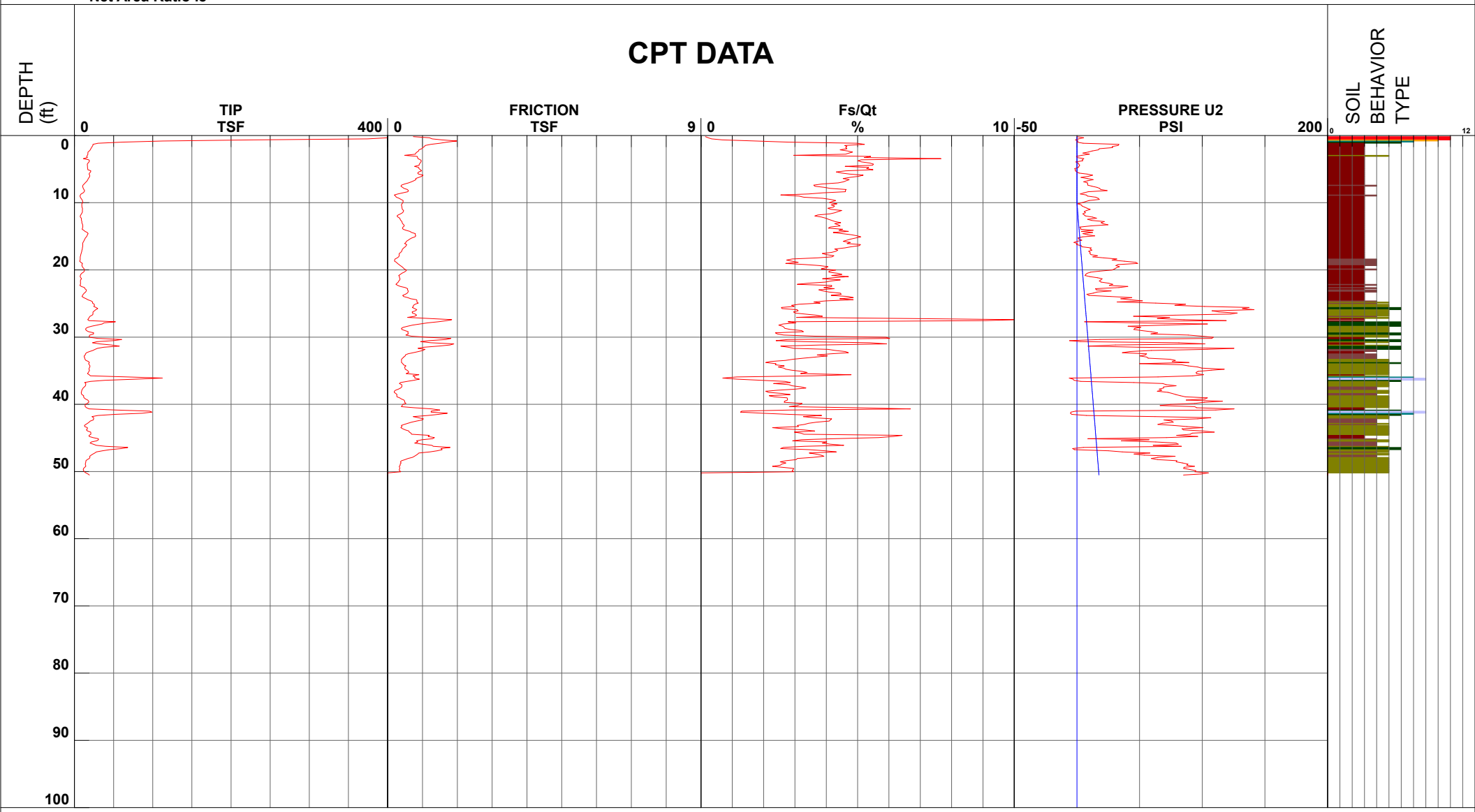
NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems

Project	Proposed Warehouse	Operator	AJ-ER	Filename	SDF(421).cpt
Job Number	306774-001	Cone Number	DDG1587	GPS	
Hole Number	CPT-01	Date and Time	8/1/2024 10:49:09 AM	Maximum Depth	50.52 ft
EST GW Depth During Test		10.00 ft			

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 15cmÂ²

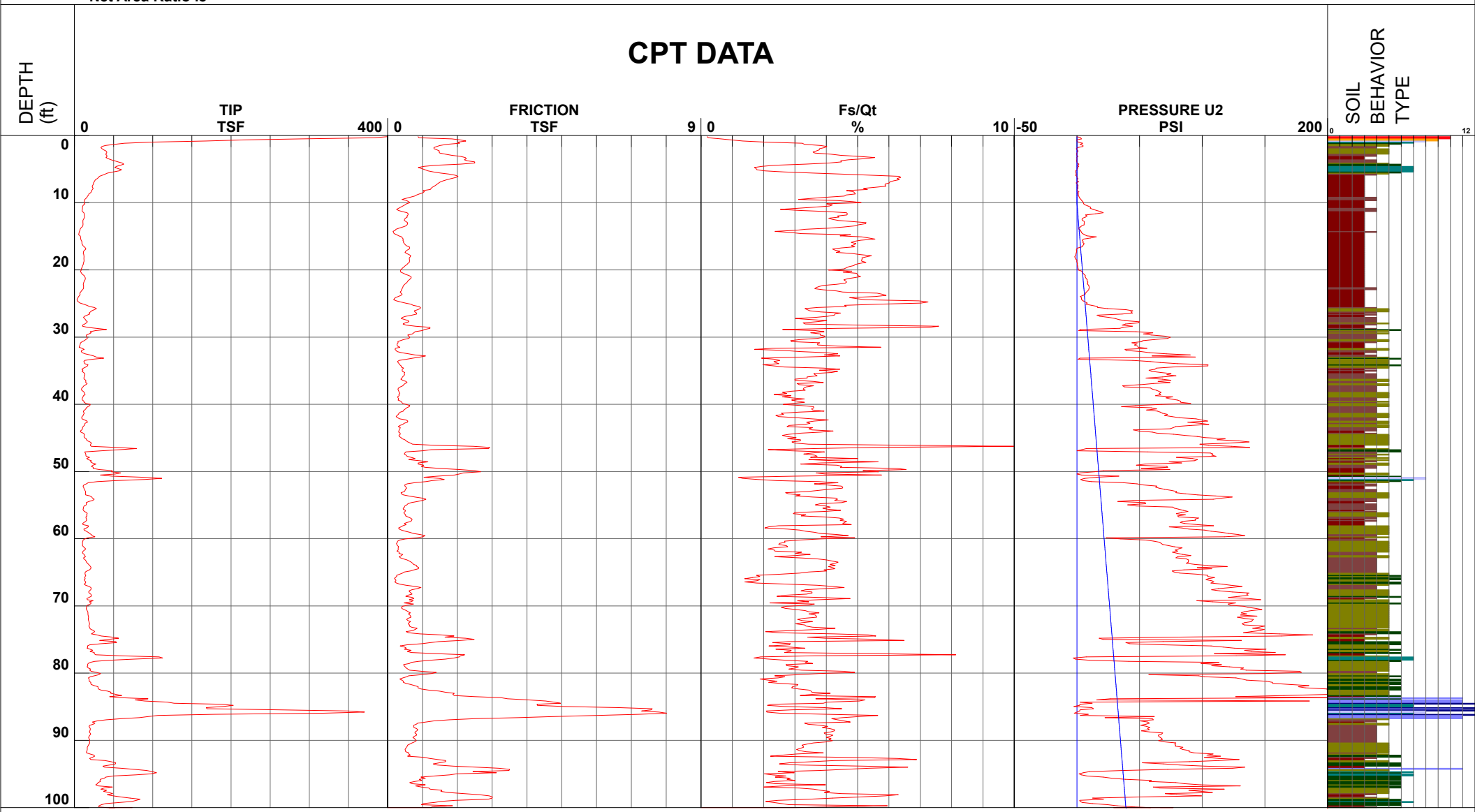
S*Soil behavior type and SPT based on data from UBC-1983

Earth Systems

Project	Proposed Warehouse	Operator	AJ-ER	Filename	SDF(423).cpt
Job Number	306774-001	Cone Number	DDG1587	GPS	
Hole Number	CPT-02	Date and Time	8/1/2024 1:02:09 PM	Maximum Depth	100.56 ft
EST GW Depth During Test		10.00 ft			

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 15cmÂ²

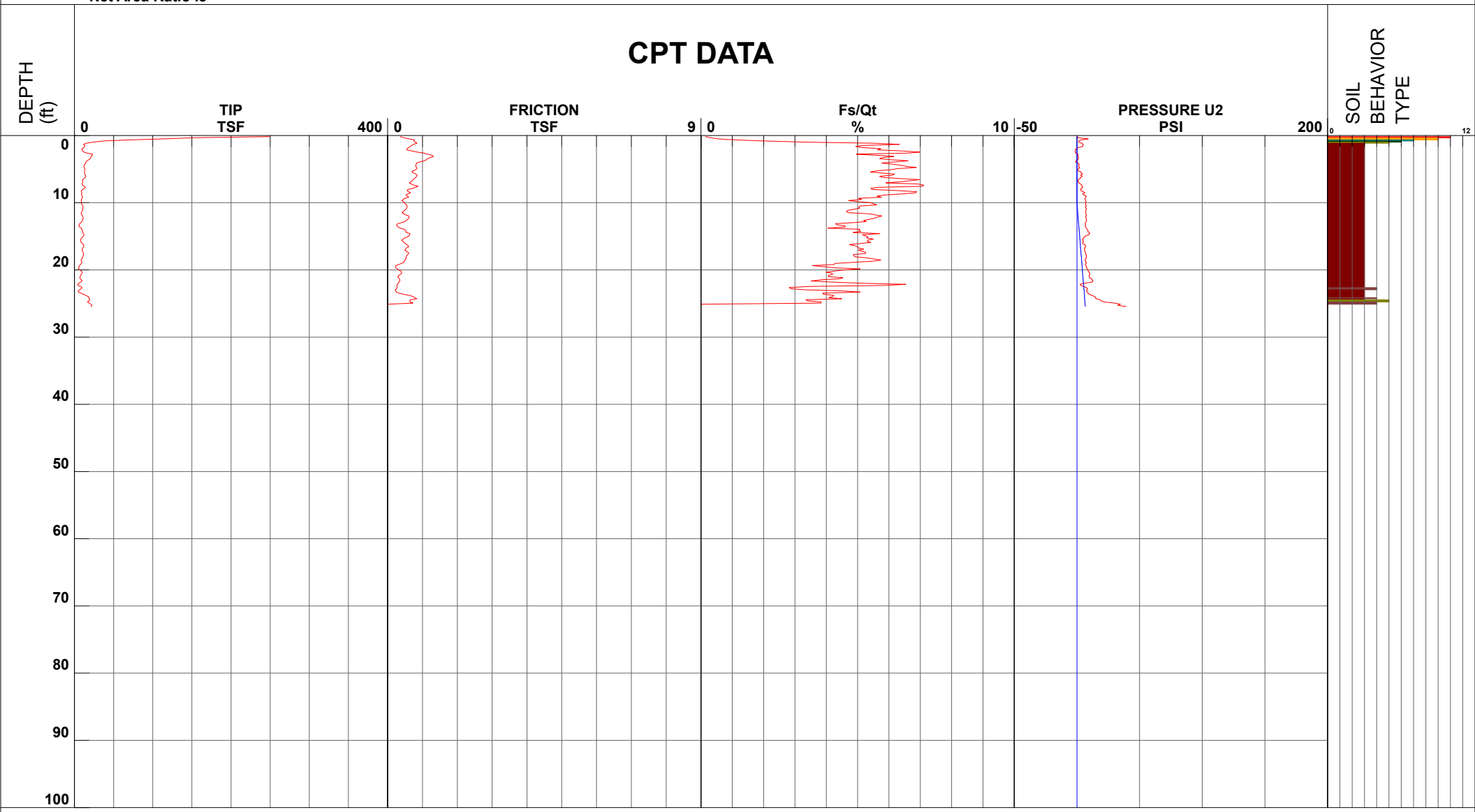
S*Soil behavior type and SPT based on data from UBC-1983

Earth Systems

Project	Proposed Warehouse	Operator	AJ-ER	Filename	SDF(424).cpt
Job Number	306774-001	Cone Number	DDG1587	GPS	
Hole Number	CPT-03	Date and Time	8/1/2024 2:26:29 PM	Maximum Depth	25.43 ft
EST GW Depth During Test		10.00 ft			

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 15cmÂ²

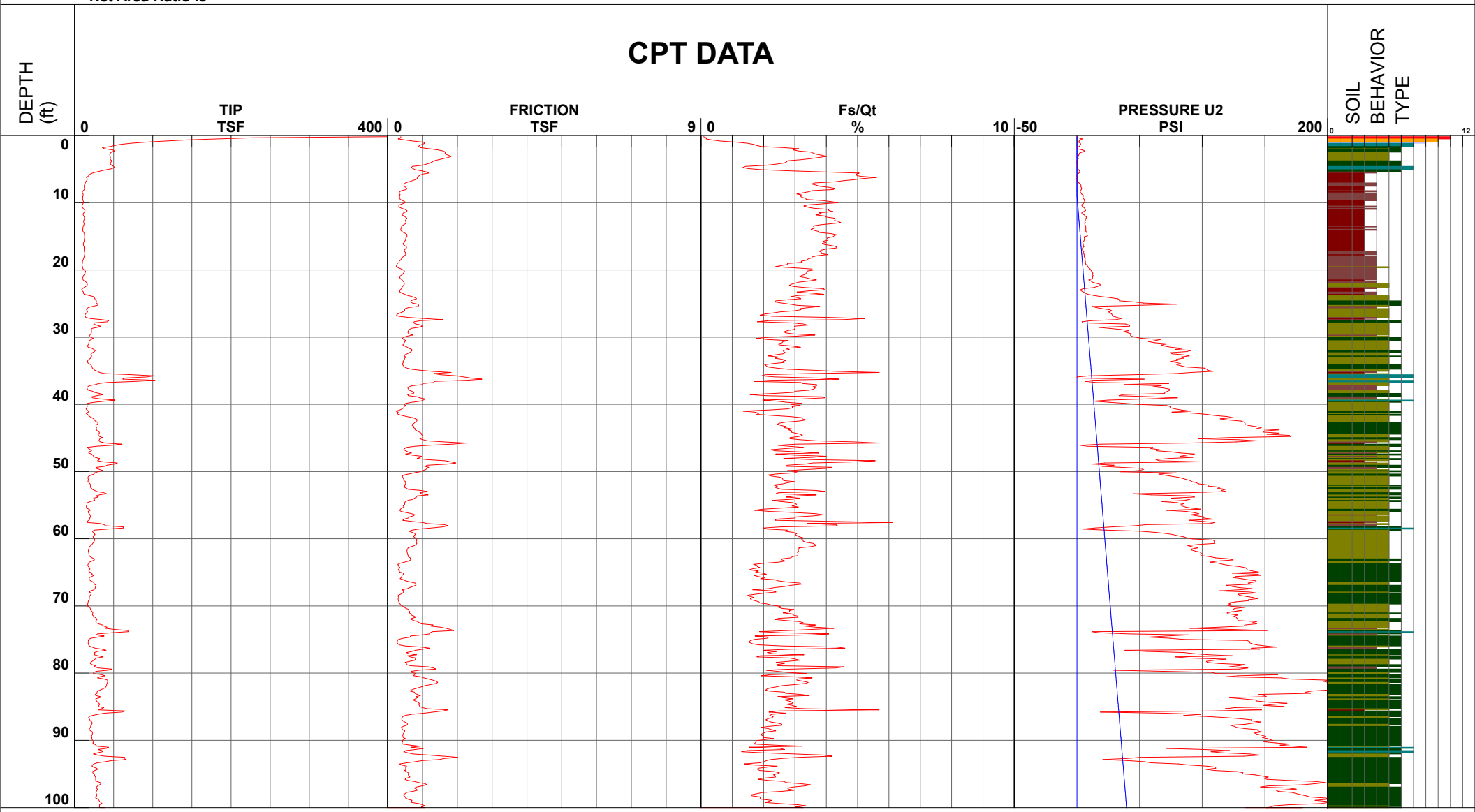
S*Soil behavior type and SPT based on data from UBC-1983

Earth Systems

Project	Proposed Warehouse	Operator	AJ-ER	Filename	SDF(420).cpt
Job Number	306774-001	Cone Number	DDG1587	GPS	
Hole Number	CPT-04	Date and Time	8/1/2024 8:18:19 AM	Maximum Depth	100.56 ft
EST GW Depth During Test		8.80 ft			

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 15cmÂ²

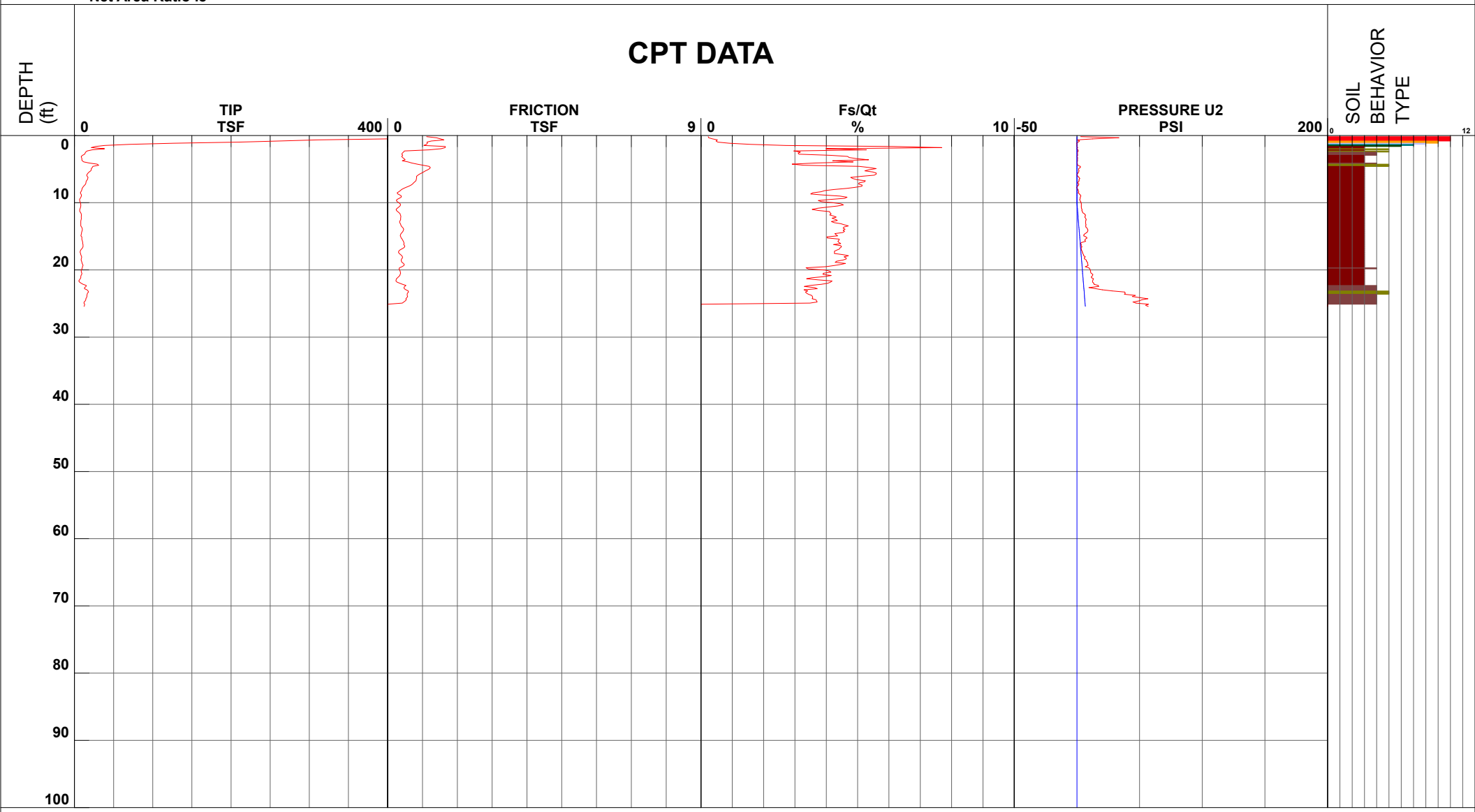
S*Soil behavior type and SPT based on data from UBC-1983

Earth Systems

Project	Proposed Warehouse	Operator	AJ-ER	Filename	SDF(422).cpt
Job Number	306774-001	Cone Number	DDG1587	GPS	
Hole Number	CPT-05	Date and Time	8/1/2024 12:30:26 PM	Maximum Depth	25.43 ft
EST GW Depth During Test		10.00 ft			

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 15cmÂ²

S*Soil behavior type and SPT based on data from UBC-1983

APPENDIX B

Laboratory Test Results

Warehouse GER, 2334 Lundy Place, San Jose 306774-001

BULK DENSITY TEST RESULTS

ASTM D 2937-17 (modified for ring liners)

August 7, 2024

BORING NO.	DEPTH feet	MOISTURE CONTENT, %	WET DENSITY, pcf	DRY DENSITY, pcf
B3-1	2.0 - 2.5	15.4	120.1	104.0
B3-2	4.0 - 4.5	11.7	110.7	99.1
B3-3	6.0 - 6.5	21.0	123.8	102.4
B3-4	9.5 - 10.0	26.1	126.3	100.1
B3-5	14.5 - 15.0	30.9	120.4	91.9
B3-6	19.5 - 20.0	25.7	126.9	100.9
B4-1	2.0 - 2.5	21.3	127.7	105.3
B4-2	4.0 - 4.5	20.4	129.1	107.2

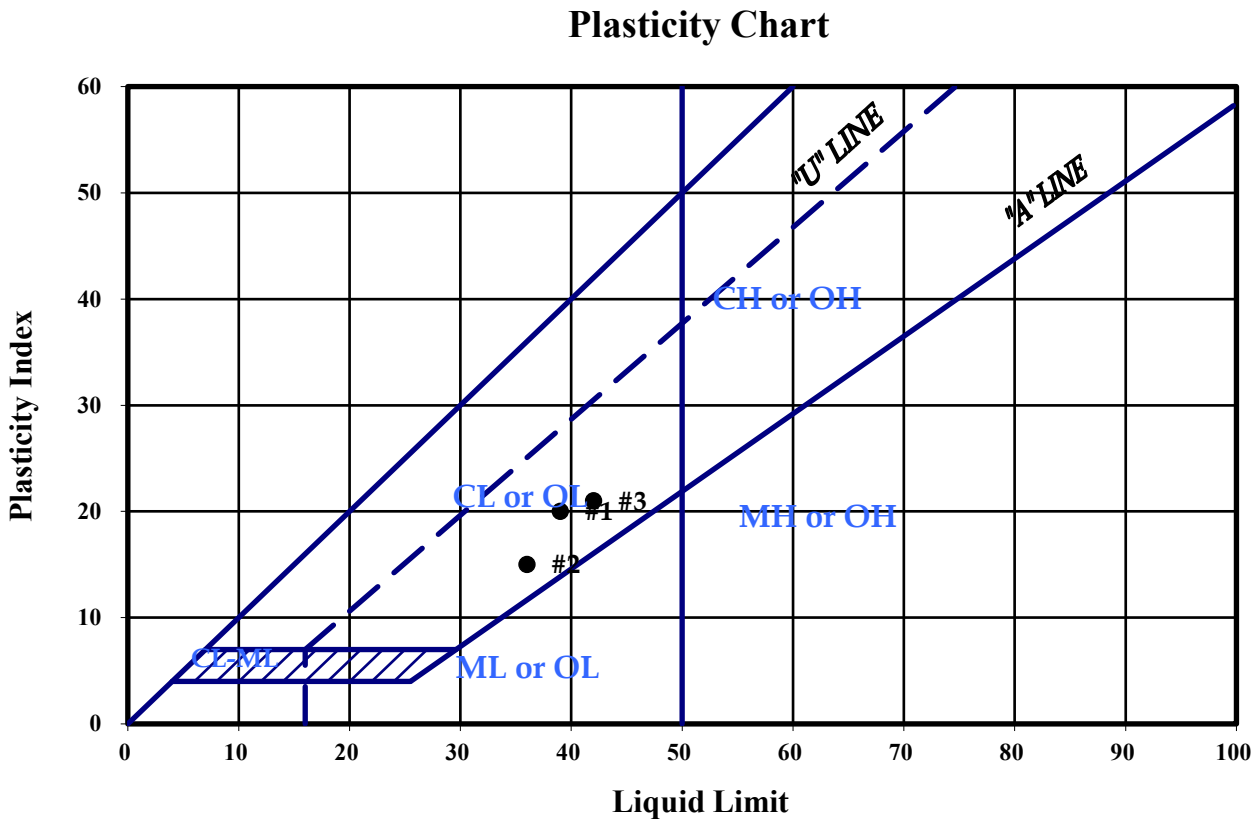
Warehouse GER, 2334 Lundy Place, San Jose 306774-001

PLASTICITY INDEX

ASTM D 4318-17

August 7, 2024

Test No.:	1	2	3	4	5
Boring No.:	B2-1	B2-2	B3-1		
Sample Depth:	2.0 - 2.5'	4.0 - 4.5'	2.0 - 2.5'		
Liquid Limit:	39	36	42		
Plastic Limit:	19	21	21		
Plasticity Index:	20	15	21		



Warehouse GER
2334 Lundy Place, San Jose

306774-001

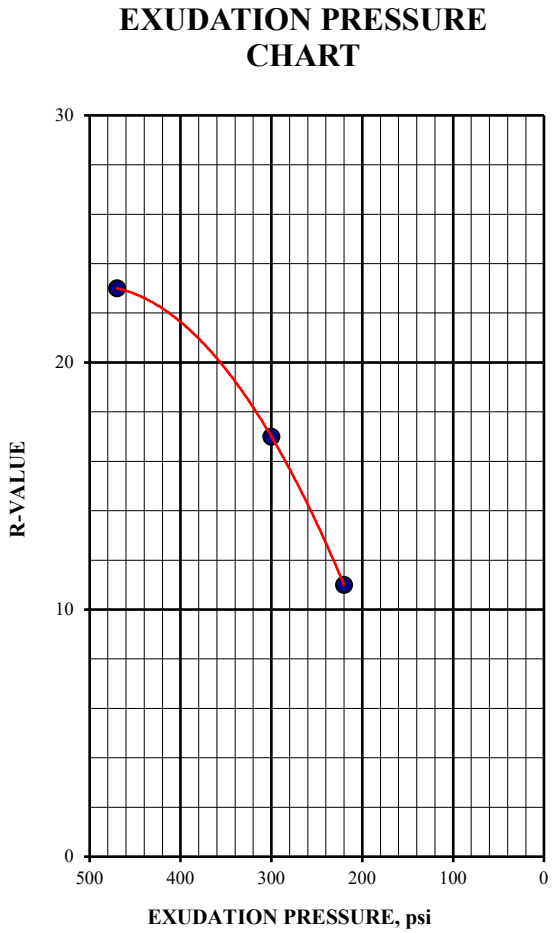
RESISTANCE '*R*' VALUE AND EXPANSION PRESSURE

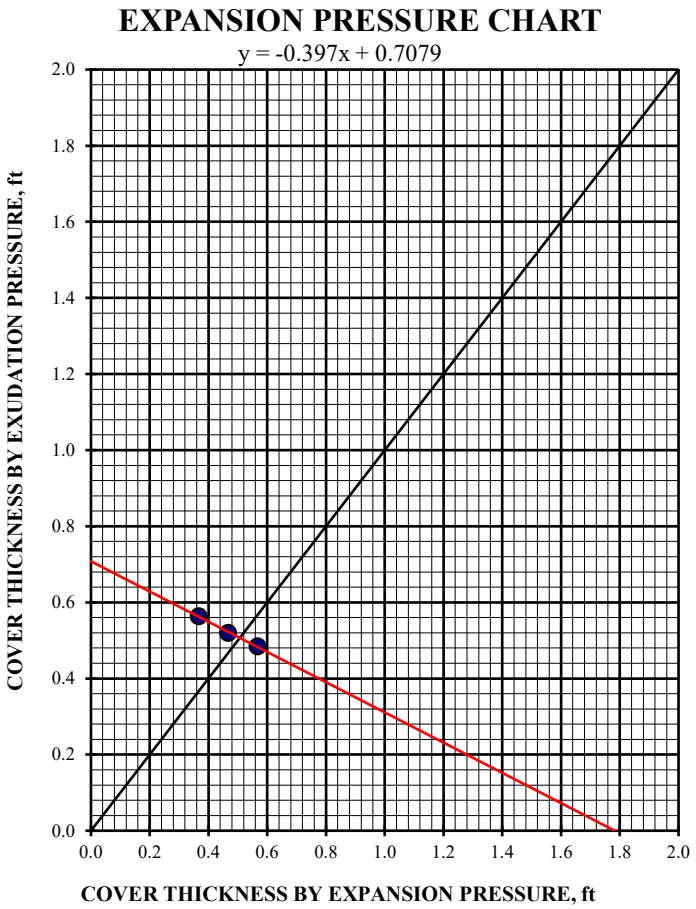
ASTM D 2844/D2844M-21

August 20, 2024

Boring #5 @ 1.0 - 5.0'
Brown Sandy Lean Clay (CL)
Specified Traffic Index: 5.0

Dry Density @ 300 psi Exudation Pressure: 120.6-pcf
% Moisture @ 300 psi Exudation Pressure: 19.5%
R-Value - Exudation Pressure: 17
R-Value - Expansion Pressure: 20
R-Value @ Equilibrium: 17





CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

26 July, 2024

Job No. 2407053
Cust. No. 12899

Ms. Michelle Garcia
Earth Systems Pacific, Inc.
48511 Warm Springs Blvd., Suite 210
Fremont, CA 94539

Subject: Project No.: 306774-001
Project Name: 2334 Lundy Pl, San Jose, CA; B2-1 (2.0-2.5 ft bgs)
Corrosivity Analysis – ASTM Test Methods

Dear Ms. Garcia:

Pursuant to your request, CERCO Analytical has analyzed the soil sample submitted on July 22, 2024. Based on the analytical results, a brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurement, the sample is classified as "corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentration is 40 mg/kg and is determined to be insufficient to attack steel embedded in a concrete mortar coating.

The sulfate ion concentration is 57 mg/kg and is determined to be insufficient to damage reinforced concrete structures and cement mortar-coated steel at this location.

The pH of the soil is 8.59, which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potential is 210-mV and is indicative of potentially "slightly corrosive" soils resulting from anaerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call *JDH Corrosion Consultants, Inc. at (925) 927-6630.*

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.

J. Darby Howard, Jr., P.E.
President

JDH/jdl
Enclosure

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

Client: Earth Systems Pacific, Inc.
Client's Project No.: 306774-001
Client's Project Name: 2334 Lundy Pl, San Jose, CA; B2-1 (2.0-2.5 ft bgs)
Date Sampled: 18-Jul-24
Date Received: 22-Jul-24
Matrix: Soil
Authorization: Chain of Custody

Date of Report: 26-Jul-2024

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Conductivity (umhos/cm)*	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
2407053-001	B2-1	210	8.59	-	1,300	-	40	57

Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Reporting Limit:	-	-	10	-	50	15	15
Date Analyzed:	23-Jul-2024	23-Jul-2024	-	23-Jul-2024	-	23-Jul-2024	23-Jul-2024

Julia Clauson
Chemist

* Results Reported on "As Received" Basis
N.D. - None Detected

Quality Control Summary - All laboratory quality control parameters were found to be within established limits

APPENDIX C

Liquefaction Analysis

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GeoLogismiki
Geotechnical Engineers
Merarhias 56
http://www.geologismiki.gr

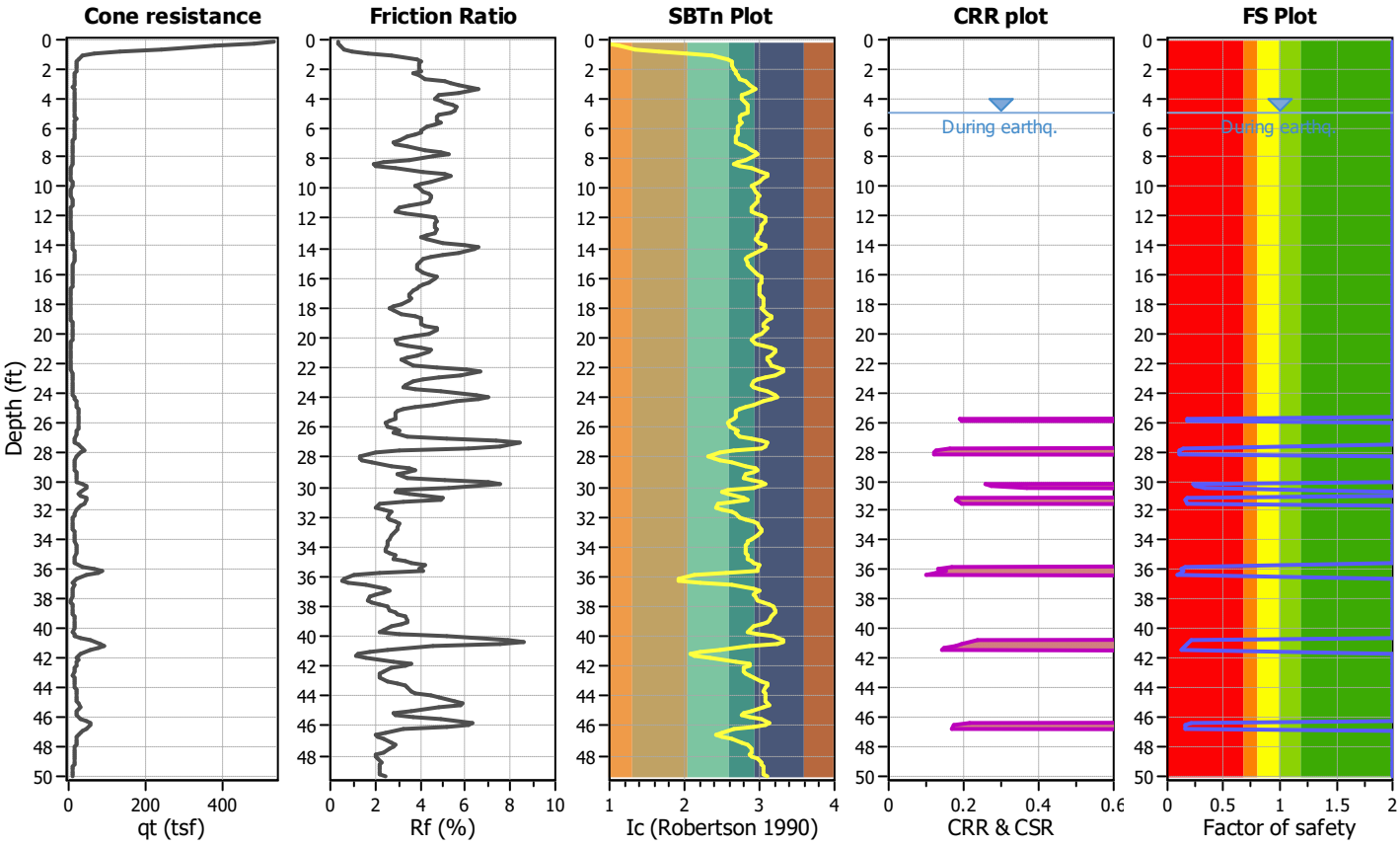
LIQUEFACTION ANALYSIS REPORT

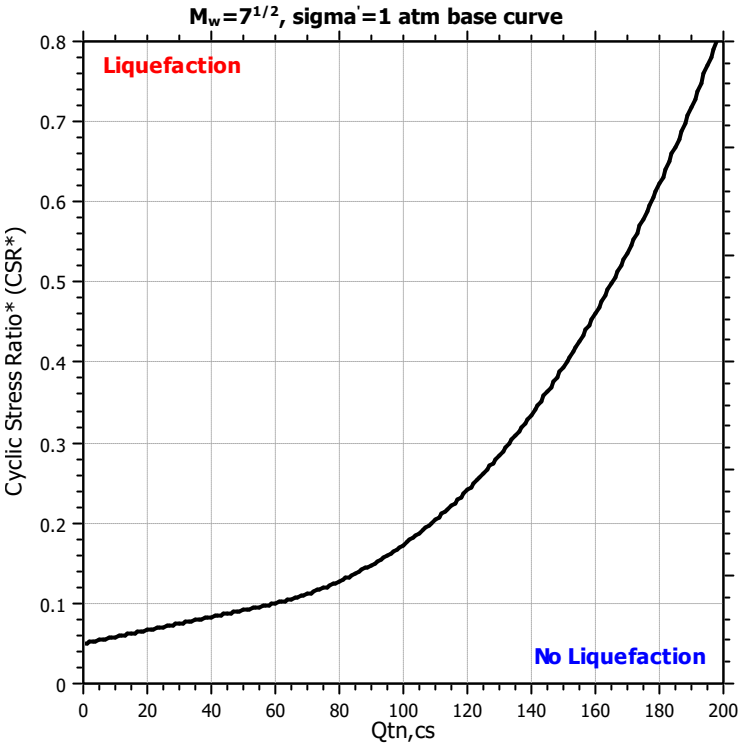
Project title : 306774-001 – 2334 Lundy Place Warehouse **Location : 2334 Lundy Place, San Jose**

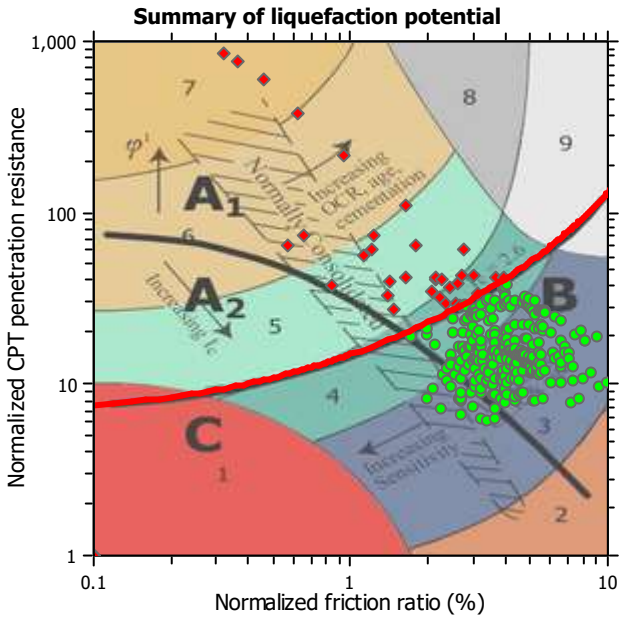
CPT file : CPT-01

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	10.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	60.00 ft
Earthquake magnitude M_w:	7.96	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.86	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

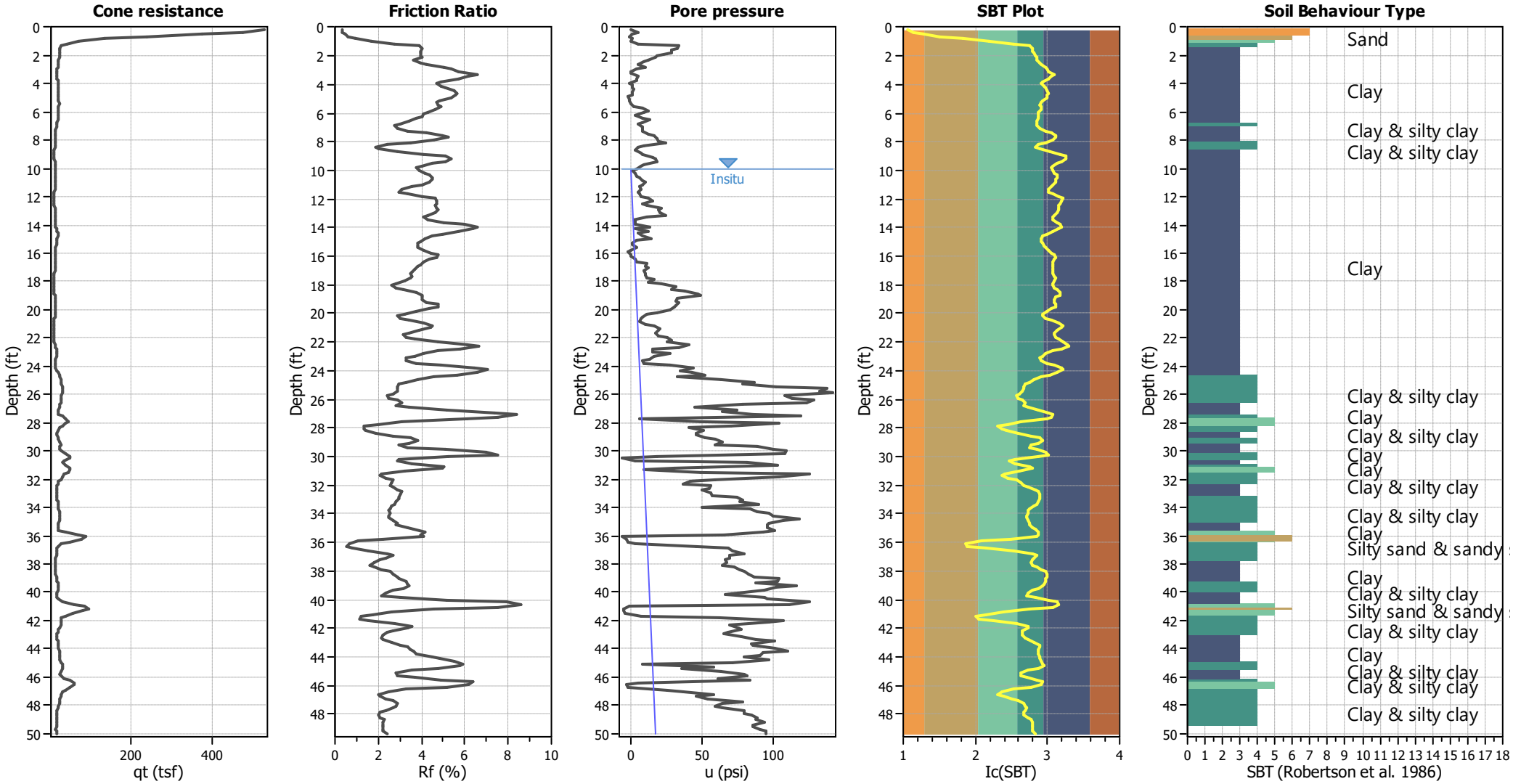






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



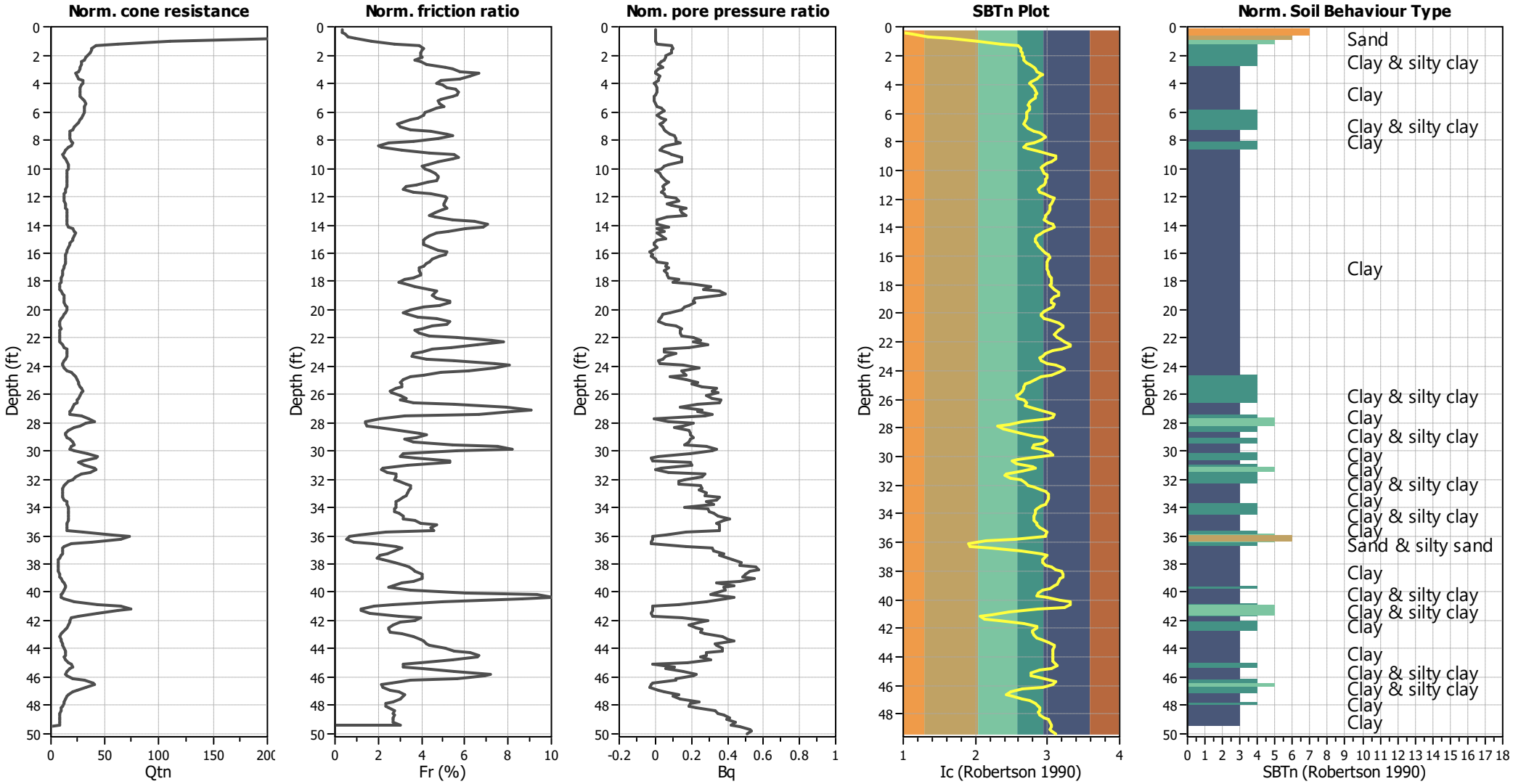
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

CPT basic interpretation plots (normalized)



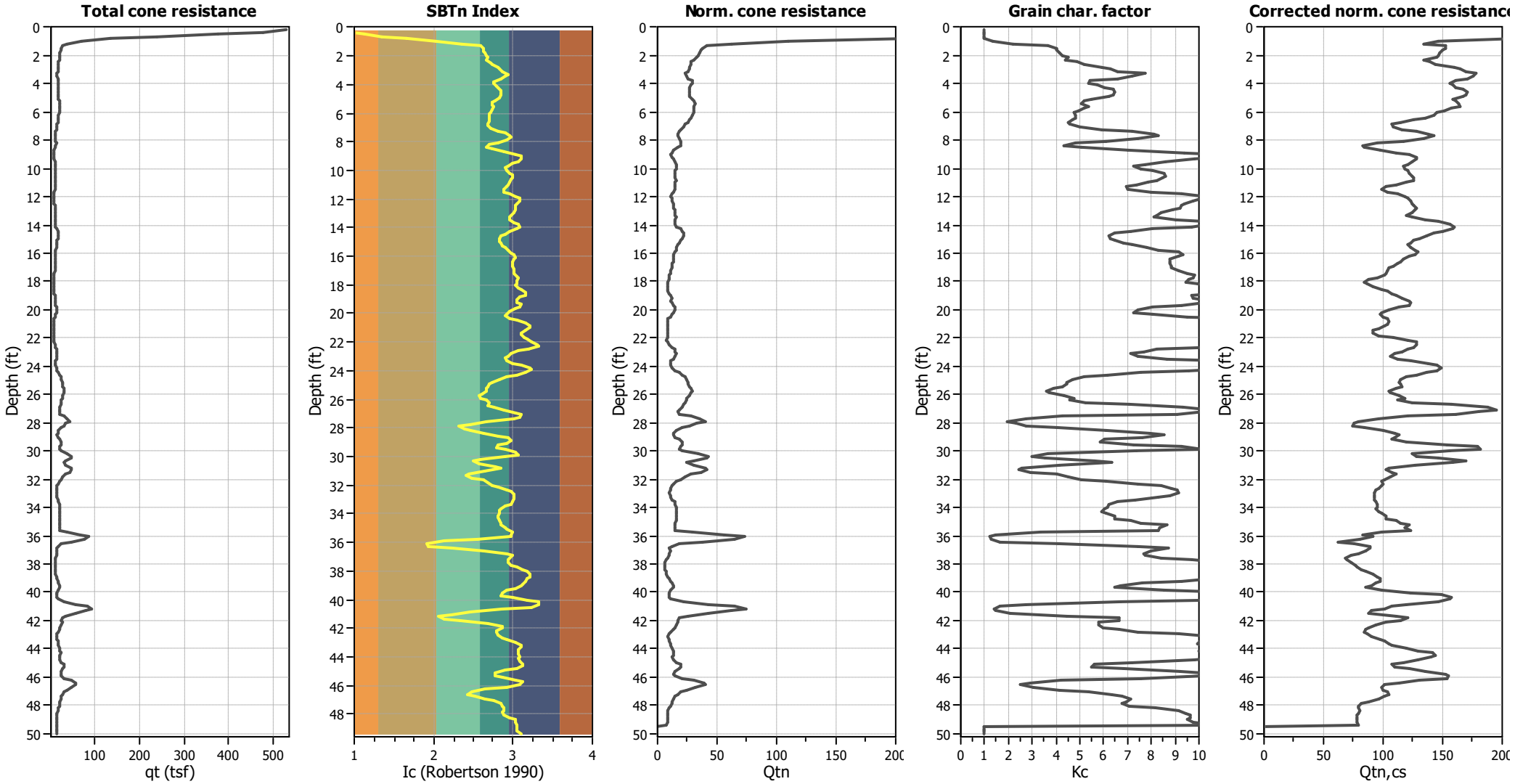
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

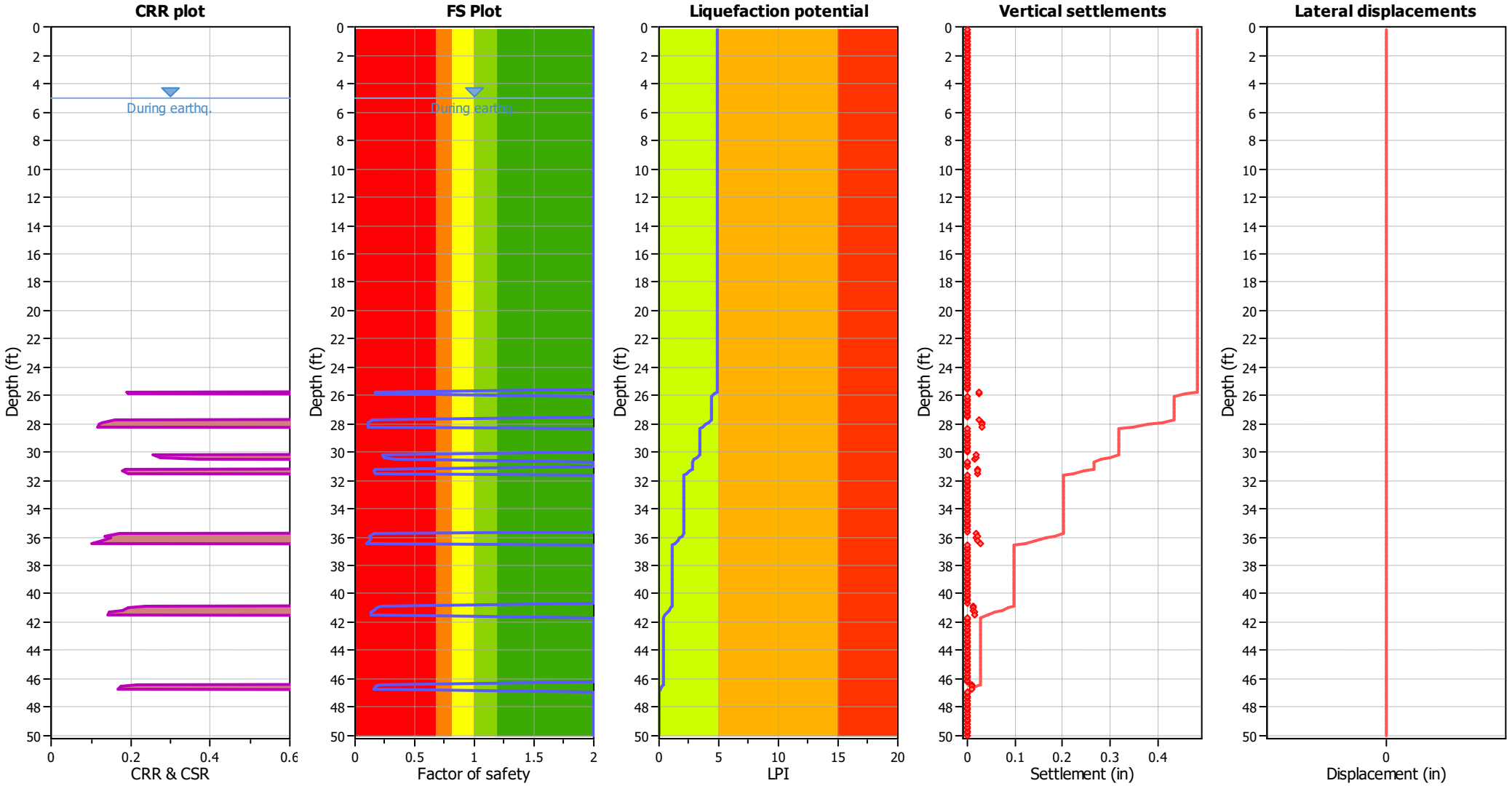
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

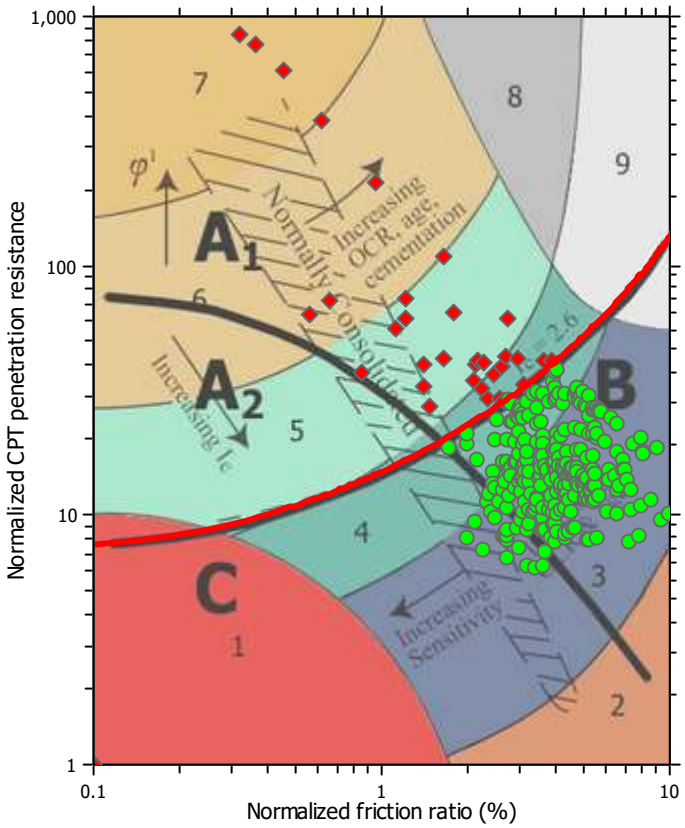
F.S. color scheme

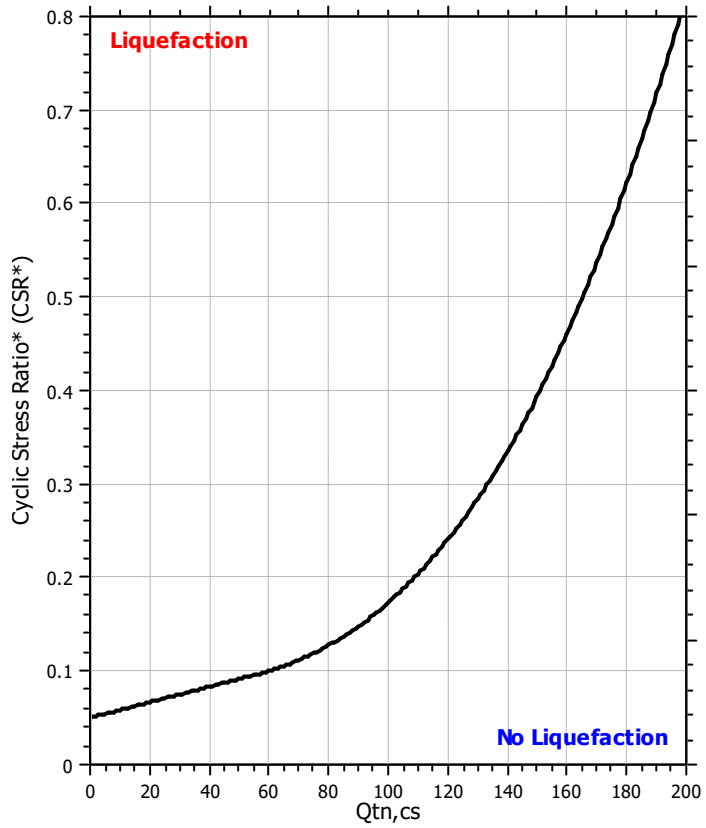
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

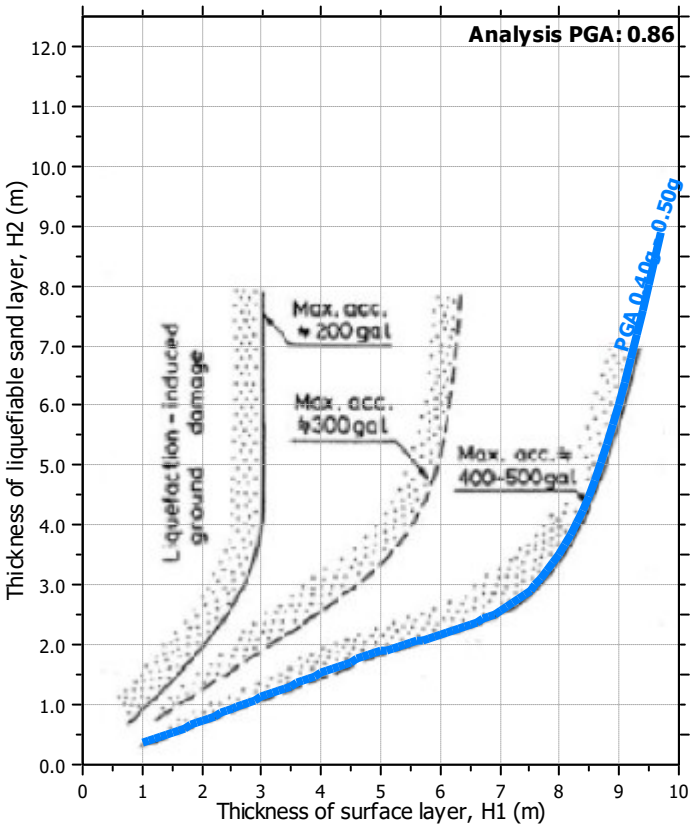
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



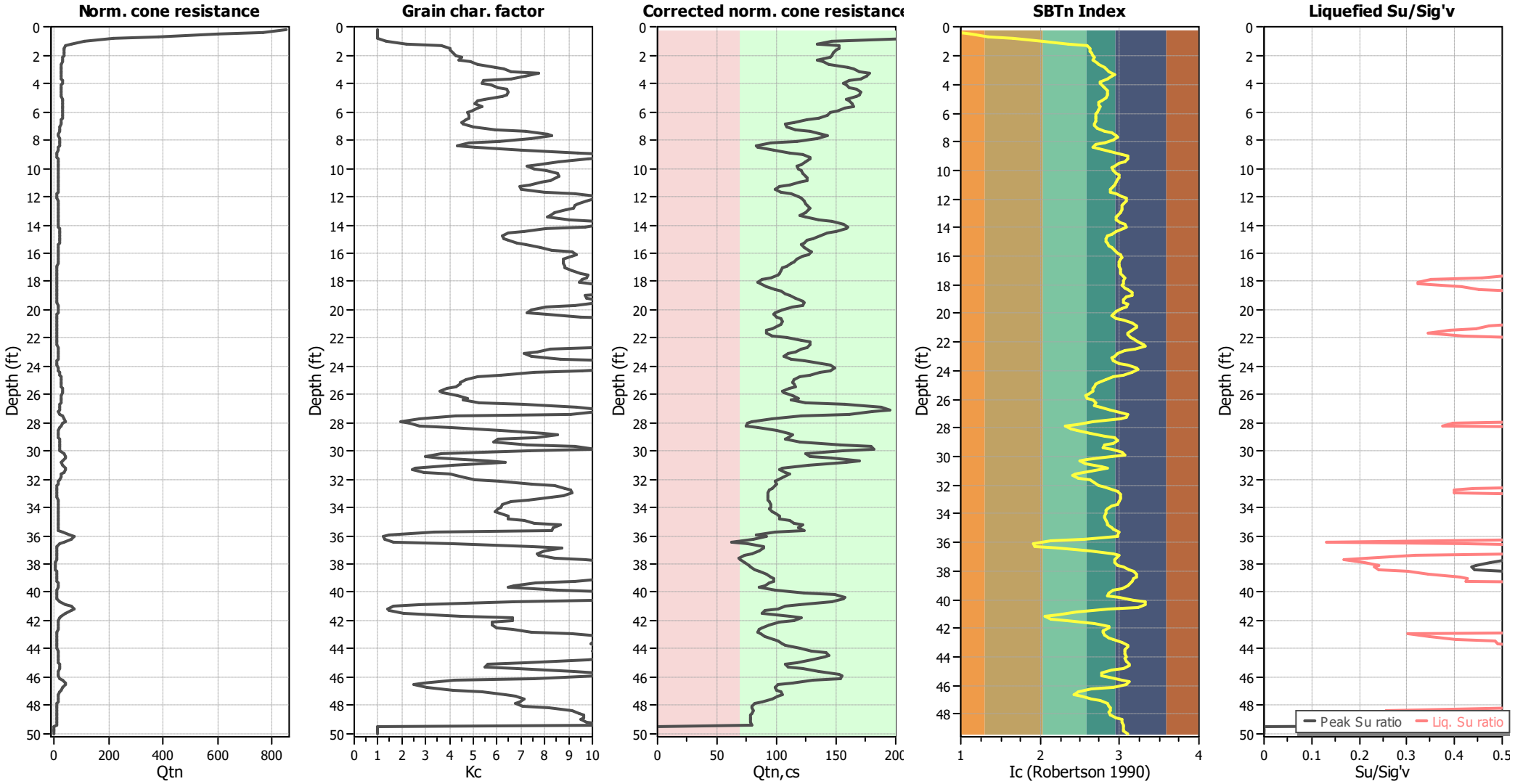




Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

:: Field input data ::

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
1	0.16	532.90	1.56	0.12	0.00	129.46
2	0.33	524.66	1.98	5.40	0.00	129.41
3	0.49	374.13	1.71	1.32	0.00	128.74
4	0.66	228.40	1.50	-1.14	0.90	126.50
5	0.82	113.04	1.24	0.79	5.21	123.98
6	0.98	61.34	1.08	0.03	13.73	121.43
7	1.15	30.10	1.06	4.88	24.73	119.54
8	1.31	23.71	1.01	33.49	34.80	118.35
9	1.48	23.50	0.98	32.83	36.84	117.73
10	1.64	22.76	0.90	28.20	37.02	117.34
11	1.80	21.90	0.89	28.47	37.49	116.88
12	1.97	21.04	0.84	17.83	38.26	116.52
13	2.13	20.23	0.81	17.13	39.32	116.13
14	2.30	19.00	0.80	12.28	38.95	114.82
15	2.46	17.45	0.49	9.08	41.24	114.82
16	2.62	17.08	0.85	4.72	42.85	114.96
17	2.79	17.25	0.86	9.92	46.28	116.08
18	2.95	16.47	0.87	3.90	47.92	116.26
19	3.12	15.71	0.94	-0.46	49.35	116.50
20	3.28	16.48	0.97	0.26	54.19	116.45
21	3.44	11.37	0.96	5.51	51.86	116.59
22	3.61	18.30	0.93	4.28	49.18	116.58
23	3.77	19.30	0.91	4.58	43.95	116.77
24	3.94	18.65	0.91	-0.83	43.60	116.29
25	4.10	17.32	0.77	1.00	45.43	116.12
26	4.27	16.45	0.89	1.47	46.86	116.00
27	4.43	16.52	0.90	2.12	48.37	116.44
28	4.59	16.81	0.94	1.56	48.71	116.65
29	4.76	16.69	0.97	1.12	48.38	116.66
30	4.92	17.00	0.89	-1.75	47.71	116.47
31	5.09	17.13	0.86	-1.21	44.28	116.44
32	5.25	21.00	0.89	-1.17	42.79	116.94
33	5.41	20.69	1.02	-0.11	42.27	117.33
34	5.58	19.23	0.98	1.71	43.58	117.25
35	5.74	18.67	0.89	8.15	42.83	116.66
36	5.91	19.65	0.80	12.47	41.55	116.19
37	6.07	19.51	0.81	9.11	40.64	115.77
38	6.23	18.78	0.75	3.24	41.00	115.32
39	6.40	17.73	0.69	8.39	40.88	114.49
40	6.56	17.14	0.60	12.93	40.28	113.34
41	6.73	16.25	0.48	8.56	39.46	111.91
42	6.89	15.07	0.40	5.43	39.65	110.56
43	7.05	13.68	0.38	8.36	41.91	110.03
44	7.22	12.53	0.43	8.44	46.29	110.19
45	7.38	11.09	0.47	8.66	51.91	110.96
46	7.55	10.44	0.56	12.02	55.77	111.64
47	7.71	10.87	0.60	16.14	56.56	112.16
48	7.87	11.35	0.58	18.04	53.01	111.73

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
49	8.04	12.15	0.44	19.05	47.16	110.36
50	8.20	12.96	0.29	24.17	40.92	107.88
51	8.37	12.57	0.19	9.04	38.48	105.91
52	8.53	11.22	0.23	5.59	42.10	105.08
53	8.69	8.58	0.25	2.67	51.04	106.03
54	8.86	7.57	0.33	7.35	60.84	106.99
55	9.02	7.18	0.39	8.46	66.15	108.25
56	9.19	7.55	0.44	15.03	65.96	109.04
57	9.35	8.46	0.44	16.88	62.49	109.56
58	9.51	9.34	0.44	17.90	57.65	109.61
59	9.68	10.33	0.41	9.61	54.19	109.48
60	9.84	10.56	0.39	6.78	52.27	109.37
61	10.01	10.67	0.41	4.34	53.59	109.28
62	10.17	9.45	0.41	0.74	55.54	109.31
63	10.33	9.44	0.41	3.45	57.57	109.31
64	10.50	9.50	0.42	4.12	57.86	109.62
65	10.66	9.67	0.46	6.09	57.25	109.90
66	10.83	10.17	0.45	8.20	56.22	109.98
67	10.99	10.17	0.42	10.58	54.86	109.54
68	11.15	10.16	0.37	7.71	52.75	108.60
69	11.32	10.31	0.30	5.77	50.91	107.47
70	11.48	9.92	0.27	6.81	51.17	106.72
71	11.65	9.04	0.29	4.67	55.39	106.94
72	11.81	8.03	0.35	5.96	60.28	107.40
73	11.98	7.44	0.36	6.82	64.44	107.86
74	12.14	7.61	0.38	12.39	63.83	108.33
75	12.30	8.77	0.41	15.62	62.32	108.84
76	12.47	8.83	0.42	8.53	60.78	109.27
77	12.63	9.06	0.43	11.71	60.38	109.66
78	12.80	9.54	0.46	21.89	60.25	110.04
79	12.96	9.38	0.48	19.33	58.89	110.19
80	13.12	10.03	0.44	20.76	56.90	110.05
81	13.29	10.59	0.42	24.80	56.15	109.98
82	13.45	10.71	0.45	11.14	55.79	110.47
83	13.62	10.67	0.52	2.47	59.36	111.47
84	13.78	10.37	0.64	2.86	63.76	112.44
85	13.94	9.86	0.69	3.20	64.71	113.54
86	14.11	11.89	0.80	12.99	62.02	114.28
87	14.27	13.50	0.79	3.46	55.62	115.07
88	14.44	16.36	0.81	12.51	51.63	115.33
89	14.60	17.61	0.78	4.78	48.72	115.17
90	14.76	16.47	0.69	8.67	47.66	114.59
91	14.93	16.18	0.64	14.20	47.94	113.77
92	15.09	15.31	0.59	4.44	48.70	113.02
93	15.26	14.04	0.54	0.91	50.35	112.36
94	15.42	13.30	0.52	1.53	51.93	111.74
95	15.58	12.64	0.49	3.84	54.42	111.65
96	15.75	11.86	0.55	0.33	56.59	111.54

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
97	15.91	10.92	0.53	-2.36	59.90	111.46
98	16.08	10.44	0.50	0.39	60.58	110.97
99	16.24	10.75	0.46	-0.44	59.84	110.43
100	16.40	10.53	0.43	3.43	58.56	109.95
101	16.57	10.53	0.41	4.05	58.56	109.58
102	16.73	10.10	0.40	11.39	58.45	109.22
103	16.90	10.05	0.37	10.56	58.71	108.62
104	17.06	9.49	0.33	11.97	58.78	108.05
105	17.22	9.37	0.33	9.37	59.89	107.65
106	17.39	8.98	0.33	10.53	61.30	107.43
107	17.55	8.57	0.31	10.42	62.49	106.92
108	17.72	8.20	0.28	11.20	62.24	105.81
109	17.88	7.81	0.21	16.31	61.66	104.56
110	18.04	7.51	0.20	12.73	61.05	103.61
111	18.21	7.42	0.20	21.37	62.92	104.07
112	18.37	7.31	0.26	31.83	65.38	104.94
113	18.54	7.22	0.28	28.00	69.40	106.08
114	18.70	6.82	0.33	37.89	69.29	107.05
115	18.86	8.22	0.36	46.95	64.95	108.29
116	19.03	10.38	0.41	48.44	62.12	109.28
117	19.19	9.80	0.44	32.85	62.25	110.03
118	19.36	9.56	0.47	31.05	65.10	110.70
119	19.52	10.07	0.54	33.90	64.13	111.17
120	19.69	11.19	0.52	31.54	60.28	111.37
121	19.85	12.39	0.47	30.07	55.64	110.86
122	20.01	12.65	0.41	27.97	53.01	110.09
123	20.18	12.70	0.37	18.01	52.19	109.07
124	20.34	11.58	0.32	10.93	55.45	108.35
125	20.51	9.35	0.34	8.14	61.30	107.80
126	20.67	8.14	0.34	7.08	69.48	107.71
127	20.83	7.66	0.36	6.50	74.65	107.58
128	21.00	7.20	0.35	10.42	74.30	107.46
129	21.16	8.08	0.32	16.55	69.51	107.26
130	21.33	9.20	0.30	20.15	66.30	106.69
131	21.49	7.89	0.27	19.10	65.30	105.94
132	21.65	7.74	0.24	17.82	68.32	105.67
133	21.82	7.70	0.29	19.29	70.65	106.51
134	21.98	7.82	0.36	25.30	75.67	108.43
135	22.15	7.78	0.51	28.57	82.21	109.96
136	22.31	6.97	0.57	25.81	82.60	111.05
137	22.47	8.74	0.57	40.54	73.03	111.87
138	22.64	12.88	0.59	33.50	63.47	112.39
139	22.80	13.47	0.58	14.80	56.38	112.73
140	22.97	15.16	0.56	15.53	53.93	112.49
141	23.13	15.14	0.51	27.35	51.64	111.82
142	23.29	14.31	0.43	16.02	53.02	111.16
143	23.46	12.59	0.46	12.93	57.94	111.28
144	23.62	11.33	0.58	7.89	66.07	112.09

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
145	23.79	10.41	0.66	9.56	74.61	113.35
146	23.95	9.73	0.83	26.98	75.70	114.31
147	24.11	11.88	0.84	43.87	70.01	115.17
148	24.28	14.98	0.84	35.00	61.60	115.76
149	24.44	17.09	0.88	42.72	53.39	116.05
150	24.61	21.12	0.79	52.34	47.29	116.10
151	24.77	23.25	0.74	32.06	42.92	115.89
152	24.93	23.14	0.74	62.90	40.29	115.79
153	25.10	25.16	0.71	86.74	39.22	115.99
154	25.26	25.63	0.77	78.15	38.99	116.37
155	25.43	24.78	0.84	101.85	38.27	116.73
156	25.59	27.62	0.79	137.33	36.05	116.67
157	25.75	29.88	0.70	132.08	34.32	116.34
158	25.92	27.27	0.71	141.29	35.23	116.27
159	26.08	25.58	0.79	107.70	38.47	116.51
160	26.25	23.80	0.83	113.21	40.57	116.58
161	26.41	23.58	0.78	127.83	39.89	115.83
162	26.57	23.91	0.57	122.58	43.06	116.93
163	26.74	22.68	1.21	78.27	51.51	119.33
164	26.90	19.99	1.84	45.16	60.53	121.10
165	27.07	18.73	1.70	73.97	65.30	121.29
166	27.23	18.21	1.46	64.15	64.15	120.10
167	27.40	17.00	1.15	85.39	59.66	118.68
168	27.56	18.72	0.93	119.17	38.17	118.07
169	27.72	52.36	0.71	6.08	29.18	116.88
170	27.89	37.86	0.57	48.48	23.06	115.42
171	28.05	35.58	0.45	104.19	25.88	113.45
172	28.22	28.76	0.39	69.76	28.98	112.13
173	28.38	22.03	0.41	40.78	36.82	111.82
174	28.54	16.86	0.50	50.99	47.04	112.29
175	28.71	14.71	0.59	46.19	55.05	112.73
176	28.87	14.29	0.58	45.41	57.42	113.08
177	29.04	15.46	0.59	51.75	53.64	112.97
178	29.20	18.06	0.52	59.16	46.91	113.85
179	29.36	24.50	0.68	64.42	45.90	116.16
180	29.53	24.41	1.15	59.06	52.30	119.44
181	29.69	19.75	1.82	88.80	60.37	121.02
182	29.86	18.80	1.68	99.61	63.75	120.93
183	30.02	19.48	1.19	108.77	52.72	119.81
184	30.18	30.11	0.95	107.56	34.92	120.01
185	30.35	60.41	1.24	18.29	30.83	121.95
186	30.51	49.81	1.90	-5.93	34.04	123.28
187	30.68	28.91	1.79	2.89	44.97	122.85
188	30.84	23.05	1.46	81.39	48.35	121.10
189	31.00	32.09	1.05	102.17	37.67	119.81
190	31.17	46.80	0.87	30.70	27.90	119.59
191	31.33	57.34	1.07	8.85	26.89	119.57
192	31.50	37.62	1.01	48.87	30.23	119.30

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
193	31.66	29.40	0.88	125.26	36.75	117.77
194	31.82	26.42	0.73	104.02	39.52	116.10
195	31.99	23.49	0.58	59.44	42.17	114.40
196	32.15	19.12	0.51	42.08	47.04	112.98
197	32.32	15.56	0.50	36.27	52.94	111.99
198	32.48	14.11	0.46	55.56	57.04	111.33
199	32.64	13.80	0.43	54.53	58.81	110.58
200	32.81	12.47	0.40	50.21	59.62	110.10
201	32.97	12.68	0.40	55.78	59.89	109.85
202	33.14	13.19	0.40	56.87	58.43	109.94
203	33.30	13.51	0.40	74.44	56.52	110.30
204	33.46	14.72	0.43	78.55	52.35	110.89
205	33.63	17.94	0.45	75.97	49.22	111.88
206	33.79	19.18	0.53	89.34	47.71	112.27
207	33.96	18.15	0.49	49.98	47.42	112.55
208	34.12	19.07	0.50	83.67	46.81	112.46
209	34.28	19.85	0.50	88.68	46.19	112.89
210	34.45	19.69	0.56	96.37	47.21	113.34
211	34.61	18.83	0.60	99.65	48.79	113.75
212	34.78	18.58	0.61	117.57	48.81	113.63
213	34.94	19.28	0.53	107.16	51.74	114.79
214	35.10	18.54	0.90	96.69	53.54	115.17
215	35.27	17.88	0.73	95.08	57.91	115.85
216	35.43	16.77	0.78	95.38	56.87	115.48
217	35.60	18.73	0.78	101.05	56.41	116.15
218	35.76	20.48	0.91	92.43	33.05	117.55
219	35.93	67.97	0.75	64.63	16.98	118.32
220	36.09	112.17	0.55	-6.06	10.74	116.88
221	36.25	78.25	0.37	-3.03	11.03	114.52
222	36.42	39.08	0.34	-2.34	19.59	112.36
223	36.58	20.62	0.40	3.18	37.17	111.06
224	36.75	13.07	0.41	45.51	53.01	110.54
225	36.91	14.56	0.41	68.48	58.16	110.08
226	37.07	14.40	0.37	71.17	55.28	109.51
227	37.24	14.11	0.31	79.11	54.01	108.12
228	37.40	12.73	0.23	69.13	54.31	106.32
229	37.57	11.12	0.19	69.11	56.96	104.71
230	37.73	10.27	0.19	65.66	61.94	104.52
231	37.89	9.34	0.23	67.61	67.10	105.27
232	38.06	9.32	0.27	64.11	71.82	105.89
233	38.22	8.63	0.26	72.61	73.38	106.22
234	38.39	8.95	0.27	76.05	74.25	106.88
235	38.55	9.53	0.34	79.07	70.86	108.17
236	38.71	11.86	0.39	82.48	69.89	109.68
237	38.88	11.59	0.47	86.45	67.50	110.73
238	39.04	12.43	0.49	104.07	65.51	111.38
239	39.21	14.19	0.49	102.20	60.31	111.96
240	39.37	16.98	0.53	87.17	53.74	111.99

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
241	39.53	18.30	0.43	116.15	49.84	111.81
242	39.70	18.31	0.42	101.59	48.76	111.05
243	39.86	16.34	0.39	93.93	57.49	112.60
244	40.03	13.75	0.78	74.82	70.98	115.47
245	40.19	13.61	1.26	66.35	82.53	118.08
246	40.35	13.97	1.50	93.96	82.89	119.11
247	40.52	15.58	1.25	95.60	75.69	119.37
248	40.68	18.91	1.25	125.37	49.92	121.09
249	40.85	52.49	1.71	110.84	29.29	122.96
250	41.01	96.04	1.46	-0.96	19.62	123.73
251	41.17	98.93	1.16	-4.74	14.80	122.15
252	41.34	86.64	0.73	-5.10	16.59	120.36
253	41.50	51.67	0.88	-4.18	23.84	119.17
254	41.67	30.09	1.03	7.56	39.12	118.71
255	41.83	22.40	0.99	62.31	49.50	117.90
256	41.99	24.60	0.83	106.82	49.67	116.84
257	42.16	24.65	0.69	96.45	45.85	115.58
258	42.32	24.09	0.58	69.41	45.62	114.08
259	42.49	20.29	0.48	75.66	46.52	112.51
260	42.65	18.70	0.39	76.86	49.54	111.31
261	42.81	16.88	0.41	68.16	53.05	110.45
262	42.98	14.48	0.38	64.57	59.94	110.41
263	43.14	12.79	0.43	76.92	65.19	110.77
264	43.31	13.15	0.50	87.78	65.32	112.11
265	43.47	16.50	0.61	100.57	63.40	113.14
266	43.64	16.55	0.62	83.89	63.03	113.90
267	43.80	15.36	0.67	84.98	63.56	114.21
268	43.96	16.83	0.69	100.97	64.30	116.30
269	44.13	20.85	1.20	109.57	63.11	117.82
270	44.29	20.98	1.16	92.05	64.08	119.39
271	44.46	20.95	1.34	90.34	66.64	119.46
272	44.62	18.69	1.29	79.60	67.41	119.05
273	44.78	18.90	0.99	96.45	62.47	118.03
274	44.95	23.71	0.83	71.48	52.02	117.34
275	45.11	30.52	0.87	8.67	44.92	117.08
276	45.28	30.82	0.78	57.58	44.14	117.67
277	45.44	28.46	1.00	35.34	50.34	118.47
278	45.60	21.60	1.27	62.85	60.23	119.34
279	45.77	20.03	1.31	79.15	66.94	120.68
280	45.93	24.14	1.79	80.92	63.97	121.32
281	46.10	27.83	1.53	60.82	53.57	122.27
282	46.26	39.79	1.56	83.43	37.74	122.61
283	46.42	68.23	1.42	5.10	30.22	122.57
284	46.59	60.25	1.21	-3.43	27.38	121.36
285	46.75	45.22	0.89	-1.95	31.19	119.60
286	46.92	35.96	0.86	25.22	37.54	117.96
287	47.08	28.05	0.82	36.24	43.59	117.15
288	47.24	25.87	0.77	58.21	48.28	116.34

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
289	47.41	23.68	0.71	45.63	50.09	115.34
290	47.57	21.45	0.58	53.72	51.58	114.10
291	47.74	19.61	0.50	78.35	50.95	112.57
292	47.90	19.89	0.40	64.56	50.22	111.32
293	48.06	19.01	0.37	59.37	51.42	110.51
294	48.23	16.43	0.39	64.38	56.01	110.03
295	48.39	14.76	0.36	79.68	59.98	109.79
296	48.56	14.51	0.36	79.21	61.12	109.32
297	48.72	14.32	0.33	84.15	61.75	109.17
298	48.88	13.90	0.34	88.58	61.76	109.06
299	49.05	14.27	0.35	87.61	61.44	109.07
300	49.21	14.54	0.33	93.85	62.32	109.01
301	49.38	13.20	0.34	85.45	65.96	109.09
302	49.54	11.73	0.38	85.18	N/A	87.36
303	49.70	11.27	-269759.35	90.26	N/A	87.36
304	49.87	11.67	-269759.35	94.80	N/A	87.36
305	50.03	12.73	-269759.35	94.15	N/A	87.36

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_c: Measured cone resistance (tsf)
f_s: Sleeve friction resistance (tsf)
u: Pore pressure (tsf)
Fines content: Percentage of fines in soil (%)
Unit weight: Bulk soil unit weight (pcf)

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.16	2.00	0.00	0.00	0.16	0.00	0.33	2.00	0.00	0.00	0.16	0.00
0.49	2.00	0.00	0.00	0.16	0.00	0.66	2.00	0.00	0.00	0.16	0.00
0.82	2.00	0.00	0.00	0.16	0.00	0.98	2.00	0.00	0.00	0.16	0.00
1.15	2.00	0.00	0.00	0.16	0.00	1.31	2.00	0.00	0.00	0.16	0.00
1.48	2.00	0.00	0.00	0.16	0.00	1.64	2.00	0.00	0.00	0.16	0.00
1.80	2.00	0.00	0.00	0.16	0.00	1.97	2.00	0.00	0.00	0.16	0.00
2.13	2.00	0.00	0.00	0.16	0.00	2.30	2.00	0.00	0.00	0.16	0.00
2.46	2.00	0.00	0.00	0.16	0.00	2.62	2.00	0.00	0.00	0.16	0.00
2.79	2.00	0.00	0.00	0.16	0.00	2.95	2.00	0.00	0.00	0.16	0.00
3.12	2.00	0.00	0.00	0.16	0.00	3.28	2.00	0.00	0.00	0.16	0.00
3.44	2.00	0.00	0.00	0.16	0.00	3.61	2.00	0.00	0.00	0.16	0.00
3.77	2.00	0.00	0.00	0.16	0.00	3.94	2.00	0.00	0.00	0.16	0.00
4.10	2.00	0.00	0.00	0.16	0.00	4.27	2.00	0.00	0.00	0.16	0.00
4.43	2.00	0.00	0.00	0.16	0.00	4.59	2.00	0.00	0.00	0.16	0.00
4.76	2.00	0.00	0.00	0.16	0.00	4.92	2.00	0.00	0.00	0.16	0.00
5.09	2.00	0.00	0.00	0.16	0.00	5.25	2.00	0.00	0.00	0.16	0.00
5.41	2.00	0.00	0.00	0.16	0.00	5.58	2.00	0.00	0.00	0.16	0.00
5.74	2.00	0.00	0.00	0.16	0.00	5.91	2.00	0.00	0.00	0.16	0.00
6.07	2.00	0.00	0.00	0.16	0.00	6.23	2.00	0.00	0.00	0.16	0.00
6.40	2.00	0.00	0.00	0.16	0.00	6.56	2.00	0.00	0.00	0.16	0.00
6.73	2.00	0.00	0.00	0.16	0.00	6.89	2.00	0.00	0.00	0.16	0.00
7.05	2.00	0.00	0.00	0.16	0.00	7.22	2.00	0.00	0.00	0.16	0.00
7.38	2.00	0.00	0.00	0.16	0.00	7.55	2.00	0.00	0.00	0.16	0.00
7.71	2.00	0.00	0.00	0.16	0.00	7.87	2.00	0.00	0.00	0.16	0.00
8.04	2.00	0.00	0.00	0.16	0.00	8.20	2.00	0.00	0.00	0.16	0.00
8.37	2.00	0.00	0.00	0.16	0.00	8.53	2.00	0.00	0.00	0.16	0.00
8.69	2.00	0.00	0.00	0.16	0.00	8.86	2.00	0.00	0.00	0.16	0.00
9.02	2.00	0.00	0.00	0.16	0.00	9.19	2.00	0.00	0.00	0.16	0.00
9.35	2.00	0.00	0.00	0.16	0.00	9.51	2.00	0.00	0.00	0.16	0.00
9.68	2.00	0.00	0.00	0.16	0.00	9.84	2.00	0.00	0.00	0.16	0.00
10.01	2.00	0.00	0.00	0.16	0.00	10.17	2.00	0.00	0.00	0.16	0.00
10.33	2.00	0.00	0.00	0.16	0.00	10.50	2.00	0.00	0.00	0.16	0.00
10.66	2.00	0.00	0.00	0.16	0.00	10.83	2.00	0.00	0.00	0.16	0.00
10.99	2.00	0.00	0.00	0.16	0.00	11.15	2.00	0.00	0.00	0.16	0.00
11.32	2.00	0.00	0.00	0.16	0.00	11.48	2.00	0.00	0.00	0.16	0.00
11.65	2.00	0.00	0.00	0.16	0.00	11.81	2.00	0.00	0.00	0.16	0.00
11.98	2.00	0.00	0.00	0.16	0.00	12.14	2.00	0.00	0.00	0.16	0.00
12.30	2.00	0.00	0.00	0.16	0.00	12.47	2.00	0.00	0.00	0.16	0.00
12.63	2.00	0.00	0.00	0.16	0.00	12.80	2.00	0.00	0.00	0.16	0.00
12.96	2.00	0.00	0.00	0.16	0.00	13.12	2.00	0.00	0.00	0.16	0.00
13.29	2.00	0.00	0.00	0.16	0.00	13.45	2.00	0.00	0.00	0.16	0.00
13.62	2.00	0.00	0.00	0.16	0.00	13.78	2.00	0.00	0.00	0.16	0.00
13.94	2.00	0.00	0.00	0.16	0.00	14.11	2.00	0.00	0.00	0.16	0.00
14.27	2.00	0.00	0.00	0.16	0.00	14.44	2.00	0.00	0.00	0.16	0.00
14.60	2.00	0.00	0.00	0.16	0.00	14.76	2.00	0.00	0.00	0.16	0.00
14.93	2.00	0.00	0.00	0.16	0.00	15.09	2.00	0.00	0.00	0.16	0.00
15.26	2.00	0.00	0.00	0.16	0.00	15.42	2.00	0.00	0.00	0.16	0.00
15.58	2.00	0.00	0.00	0.16	0.00	15.75	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
15.91	2.00	0.00	0.00	0.16	0.00	16.08	2.00	0.00	0.00	0.16	0.00
16.24	2.00	0.00	0.00	0.16	0.00	16.40	2.00	0.00	0.00	0.16	0.00
16.57	2.00	0.00	0.00	0.16	0.00	16.73	2.00	0.00	0.00	0.16	0.00
16.90	2.00	0.00	0.00	0.16	0.00	17.06	2.00	0.00	0.00	0.16	0.00
17.22	2.00	0.00	0.00	0.16	0.00	17.39	2.00	0.00	0.00	0.16	0.00
17.55	2.00	0.00	0.00	0.16	0.00	17.72	2.00	0.00	0.00	0.16	0.00
17.88	2.00	0.00	0.00	0.16	0.00	18.04	2.00	0.00	0.00	0.16	0.00
18.21	2.00	0.00	0.00	0.16	0.00	18.37	2.00	0.00	0.00	0.16	0.00
18.54	2.00	0.00	0.00	0.16	0.00	18.70	2.00	0.00	0.00	0.16	0.00
18.86	2.00	0.00	0.00	0.16	0.00	19.03	2.00	0.00	0.00	0.16	0.00
19.19	2.00	0.00	0.00	0.16	0.00	19.36	2.00	0.00	0.00	0.16	0.00
19.52	2.00	0.00	0.00	0.16	0.00	19.69	2.00	0.00	0.00	0.16	0.00
19.85	2.00	0.00	0.00	0.16	0.00	20.01	2.00	0.00	0.00	0.16	0.00
20.18	2.00	0.00	0.00	0.16	0.00	20.34	2.00	0.00	0.00	0.16	0.00
20.51	2.00	0.00	0.00	0.16	0.00	20.67	2.00	0.00	0.00	0.16	0.00
20.83	2.00	0.00	0.00	0.16	0.00	21.00	2.00	0.00	0.00	0.16	0.00
21.16	2.00	0.00	0.00	0.16	0.00	21.33	2.00	0.00	0.00	0.16	0.00
21.49	2.00	0.00	0.00	0.16	0.00	21.65	2.00	0.00	0.00	0.16	0.00
21.82	2.00	0.00	0.00	0.16	0.00	21.98	2.00	0.00	0.00	0.16	0.00
22.15	2.00	0.00	0.00	0.16	0.00	22.31	2.00	0.00	0.00	0.16	0.00
22.47	2.00	0.00	0.00	0.16	0.00	22.64	2.00	0.00	0.00	0.16	0.00
22.80	2.00	0.00	0.00	0.16	0.00	22.97	2.00	0.00	0.00	0.16	0.00
23.13	2.00	0.00	0.00	0.16	0.00	23.29	2.00	0.00	0.00	0.16	0.00
23.46	2.00	0.00	0.00	0.16	0.00	23.62	2.00	0.00	0.00	0.16	0.00
23.79	2.00	0.00	0.00	0.16	0.00	23.95	2.00	0.00	0.00	0.16	0.00
24.11	2.00	0.00	0.00	0.16	0.00	24.28	2.00	0.00	0.00	0.16	0.00
24.44	2.00	0.00	0.00	0.16	0.00	24.61	2.00	0.00	0.00	0.16	0.00
24.77	2.00	0.00	0.00	0.16	0.00	24.93	2.00	0.00	0.00	0.16	0.00
25.10	2.00	0.00	0.00	0.16	0.00	25.26	2.00	0.00	0.00	0.16	0.00
25.43	2.00	0.00	0.00	0.16	0.00	25.59	2.00	0.00	0.00	0.16	0.00
25.75	0.17	0.83	0.27	0.16	0.25	25.92	0.17	0.83	0.27	0.16	0.25
26.08	2.00	0.00	0.00	0.16	0.00	26.25	2.00	0.00	0.00	0.16	0.00
26.41	2.00	0.00	0.00	0.16	0.00	26.57	2.00	0.00	0.00	0.16	0.00
26.74	2.00	0.00	0.00	0.16	0.00	26.90	2.00	0.00	0.00	0.16	0.00
27.07	2.00	0.00	0.00	0.16	0.00	27.23	2.00	0.00	0.00	0.16	0.00
27.40	2.00	0.00	0.00	0.16	0.00	27.56	2.00	0.00	0.00	0.16	0.00
27.72	0.15	0.85	0.26	0.16	0.25	27.89	0.11	0.89	0.25	0.16	0.25
28.05	0.11	0.89	0.25	0.16	0.26	28.22	0.11	0.89	0.24	0.16	0.25
28.38	2.00	0.00	0.00	0.16	0.00	28.54	2.00	0.00	0.00	0.16	0.00
28.71	2.00	0.00	0.00	0.16	0.00	28.87	2.00	0.00	0.00	0.16	0.00
29.04	2.00	0.00	0.00	0.16	0.00	29.20	2.00	0.00	0.00	0.16	0.00
29.36	2.00	0.00	0.00	0.16	0.00	29.53	2.00	0.00	0.00	0.16	0.00
29.69	2.00	0.00	0.00	0.16	0.00	29.86	2.00	0.00	0.00	0.16	0.00
30.02	2.00	0.00	0.00	0.16	0.00	30.18	0.23	0.77	0.29	0.16	0.21
30.35	0.25	0.75	0.30	0.16	0.20	30.51	0.33	0.67	0.34	0.16	0.18
30.68	2.00	0.00	0.00	0.16	0.00	30.84	2.00	0.00	0.00	0.16	0.00
31.00	2.00	0.00	0.00	0.16	0.00	31.17	0.17	0.83	0.27	0.16	0.22
31.33	0.16	0.84	0.26	0.16	0.22	31.50	0.18	0.82	0.27	0.16	0.21

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.66	2.00	0.00	0.00	0.16	0.00	31.82	2.00	0.00	0.00	0.16	0.00
31.99	2.00	0.00	0.00	0.16	0.00	32.15	2.00	0.00	0.00	0.16	0.00
32.32	2.00	0.00	0.00	0.16	0.00	32.48	2.00	0.00	0.00	0.16	0.00
32.64	2.00	0.00	0.00	0.16	0.00	32.81	2.00	0.00	0.00	0.16	0.00
32.97	2.00	0.00	0.00	0.16	0.00	33.14	2.00	0.00	0.00	0.16	0.00
33.30	2.00	0.00	0.00	0.16	0.00	33.46	2.00	0.00	0.00	0.16	0.00
33.63	2.00	0.00	0.00	0.16	0.00	33.79	2.00	0.00	0.00	0.16	0.00
33.96	2.00	0.00	0.00	0.16	0.00	34.12	2.00	0.00	0.00	0.16	0.00
34.28	2.00	0.00	0.00	0.16	0.00	34.45	2.00	0.00	0.00	0.16	0.00
34.61	2.00	0.00	0.00	0.16	0.00	34.78	2.00	0.00	0.00	0.16	0.00
34.94	2.00	0.00	0.00	0.16	0.00	35.10	2.00	0.00	0.00	0.16	0.00
35.27	2.00	0.00	0.00	0.16	0.00	35.43	2.00	0.00	0.00	0.16	0.00
35.60	2.00	0.00	0.00	0.16	0.00	35.76	0.16	0.84	0.26	0.16	0.19
35.93	0.12	0.88	0.25	0.16	0.20	36.09	0.14	0.86	0.25	0.16	0.19
36.25	0.12	0.88	0.25	0.16	0.20	36.42	0.09	0.91	0.24	0.16	0.20
36.58	2.00	0.00	0.00	0.16	0.00	36.75	2.00	0.00	0.00	0.16	0.00
36.91	2.00	0.00	0.00	0.16	0.00	37.07	2.00	0.00	0.00	0.16	0.00
37.24	2.00	0.00	0.00	0.16	0.00	37.40	2.00	0.00	0.00	0.16	0.00
37.57	2.00	0.00	0.00	0.16	0.00	37.73	2.00	0.00	0.00	0.16	0.00
37.89	2.00	0.00	0.00	0.16	0.00	38.06	2.00	0.00	0.00	0.16	0.00
38.22	2.00	0.00	0.00	0.16	0.00	38.39	2.00	0.00	0.00	0.16	0.00
38.55	2.00	0.00	0.00	0.16	0.00	38.71	2.00	0.00	0.00	0.16	0.00
38.88	2.00	0.00	0.00	0.16	0.00	39.04	2.00	0.00	0.00	0.16	0.00
39.21	2.00	0.00	0.00	0.16	0.00	39.37	2.00	0.00	0.00	0.16	0.00
39.53	2.00	0.00	0.00	0.16	0.00	39.70	2.00	0.00	0.00	0.16	0.00
39.86	2.00	0.00	0.00	0.16	0.00	40.03	2.00	0.00	0.00	0.16	0.00
40.19	2.00	0.00	0.00	0.16	0.00	40.35	2.00	0.00	0.00	0.16	0.00
40.52	2.00	0.00	0.00	0.16	0.00	40.68	2.00	0.00	0.00	0.16	0.00
40.85	0.22	0.78	0.28	0.16	0.15	41.01	0.18	0.82	0.27	0.16	0.15
41.17	0.16	0.84	0.26	0.16	0.16	41.34	0.14	0.86	0.25	0.16	0.16
41.50	0.13	0.87	0.25	0.16	0.16	41.67	2.00	0.00	0.00	0.16	0.00
41.83	2.00	0.00	0.00	0.16	0.00	41.99	2.00	0.00	0.00	0.16	0.00
42.16	2.00	0.00	0.00	0.16	0.00	42.32	2.00	0.00	0.00	0.16	0.00
42.49	2.00	0.00	0.00	0.16	0.00	42.65	2.00	0.00	0.00	0.16	0.00
42.81	2.00	0.00	0.00	0.16	0.00	42.98	2.00	0.00	0.00	0.16	0.00
43.14	2.00	0.00	0.00	0.16	0.00	43.31	2.00	0.00	0.00	0.16	0.00
43.47	2.00	0.00	0.00	0.16	0.00	43.64	2.00	0.00	0.00	0.16	0.00
43.80	2.00	0.00	0.00	0.16	0.00	43.96	2.00	0.00	0.00	0.16	0.00
44.13	2.00	0.00	0.00	0.16	0.00	44.29	2.00	0.00	0.00	0.16	0.00
44.46	2.00	0.00	0.00	0.16	0.00	44.62	2.00	0.00	0.00	0.16	0.00
44.78	2.00	0.00	0.00	0.16	0.00	44.95	2.00	0.00	0.00	0.16	0.00
45.11	2.00	0.00	0.00	0.16	0.00	45.28	2.00	0.00	0.00	0.16	0.00
45.44	2.00	0.00	0.00	0.16	0.00	45.60	2.00	0.00	0.00	0.16	0.00
45.77	2.00	0.00	0.00	0.16	0.00	45.93	2.00	0.00	0.00	0.16	0.00
46.10	2.00	0.00	0.00	0.16	0.00	46.26	2.00	0.00	0.00	0.16	0.00
46.42	0.21	0.79	0.28	0.16	0.12	46.59	0.17	0.83	0.26	0.16	0.12
46.75	0.16	0.84	0.26	0.16	0.12	46.92	2.00	0.00	0.00	0.16	0.00
47.08	2.00	0.00	0.00	0.16	0.00	47.24	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
47.41	2.00	0.00	0.00	0.16	0.00	47.57	2.00	0.00	0.00	0.16	0.00
47.74	2.00	0.00	0.00	0.16	0.00	47.90	2.00	0.00	0.00	0.16	0.00
48.06	2.00	0.00	0.00	0.16	0.00	48.23	2.00	0.00	0.00	0.16	0.00
48.39	2.00	0.00	0.00	0.16	0.00	48.56	2.00	0.00	0.00	0.16	0.00
48.72	2.00	0.00	0.00	0.16	0.00	48.88	2.00	0.00	0.00	0.16	0.00
49.05	2.00	0.00	0.00	0.16	0.00	49.21	2.00	0.00	0.00	0.16	0.00
49.38	2.00	0.00	0.00	0.16	0.00	49.54	2.00	0.00	0.00	0.16	0.00
49.70	2.00	0.00	0.00	0.16	0.00	49.87	2.00	0.00	0.00	0.16	0.00
50.03	2.00	0.00	0.00	0.16	0.00						

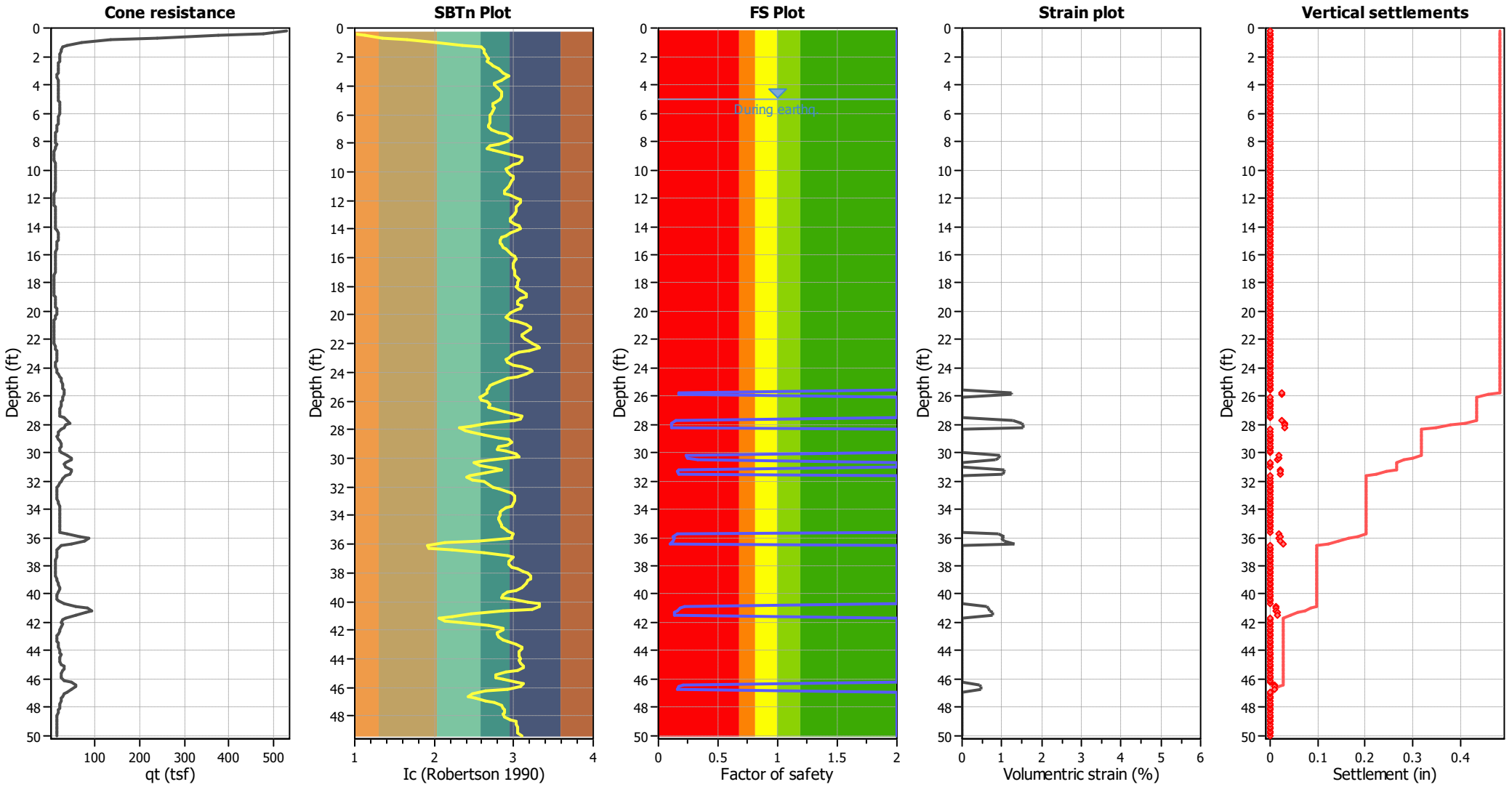
Overall liquefaction potential: 4.87

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement due to soil liquefaction ::

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
5.09	159.14	2.00	0.00	0.91	0.00	5.25	160.39	2.00	0.00	0.91	0.00
5.41	162.84	2.00	0.00	0.91	0.00	5.58	165.14	2.00	0.00	0.91	0.00
5.74	157.88	2.00	0.00	0.90	0.00	5.91	150.87	2.00	0.00	0.90	0.00
6.07	145.31	2.00	0.00	0.90	0.00	6.23	142.37	2.00	0.00	0.89	0.00
6.40	135.64	2.00	0.00	0.89	0.00	6.56	126.10	2.00	0.00	0.89	0.00
6.73	115.17	2.00	0.00	0.89	0.00	6.89	107.42	2.00	0.00	0.88	0.00
7.05	107.99	2.00	0.00	0.88	0.00	7.22	115.29	2.00	0.00	0.88	0.00
7.38	127.69	2.00	0.00	0.87	0.00	7.55	137.26	2.00	0.00	0.87	0.00
7.71	142.18	2.00	0.00	0.87	0.00	7.87	134.58	2.00	0.00	0.87	0.00
8.04	117.53	2.00	0.00	0.86	0.00	8.20	95.12	2.00	0.00	0.86	0.00
8.37	83.03	2.00	0.00	0.86	0.00	8.53	83.98	2.00	0.00	0.86	0.00
8.69	97.56	2.00	0.00	0.85	0.00	8.86	110.88	2.00	0.00	0.85	0.00
9.02	122.49	2.00	0.00	0.85	0.00	9.19	127.66	2.00	0.00	0.84	0.00
9.35	128.55	2.00	0.00	0.84	0.00	9.51	124.56	2.00	0.00	0.84	0.00
9.68	120.22	2.00	0.00	0.84	0.00	9.84	117.45	2.00	0.00	0.83	0.00
10.01	118.29	2.00	0.00	0.83	0.00	10.17	120.44	2.00	0.00	0.83	0.00
10.33	122.40	2.00	0.00	0.82	0.00	10.50	124.72	2.00	0.00	0.82	0.00
10.66	126.05	2.00	0.00	0.82	0.00	10.83	125.50	2.00	0.00	0.82	0.00
10.99	119.82	2.00	0.00	0.81	0.00	11.15	111.22	2.00	0.00	0.81	0.00
11.32	102.48	2.00	0.00	0.81	0.00	11.48	98.64	2.00	0.00	0.81	0.00
11.65	103.66	2.00	0.00	0.80	0.00	11.81	112.58	2.00	0.00	0.80	0.00
11.98	118.43	2.00	0.00	0.80	0.00	12.14	120.86	2.00	0.00	0.79	0.00
12.30	122.64	2.00	0.00	0.79	0.00	12.47	123.84	2.00	0.00	0.79	0.00
12.63	125.75	2.00	0.00	0.79	0.00	12.80	127.78	2.00	0.00	0.78	0.00
12.96	127.20	2.00	0.00	0.78	0.00	13.12	123.96	2.00	0.00	0.78	0.00
13.29	119.09	2.00	0.00	0.77	0.00	13.45	124.82	2.00	0.00	0.77	0.00
13.62	135.10	2.00	0.00	0.77	0.00	13.78	146.30	2.00	0.00	0.77	0.00
13.94	156.05	2.00	0.00	0.76	0.00	14.11	159.39	2.00	0.00	0.76	0.00
14.27	158.17	2.00	0.00	0.76	0.00	14.44	149.66	2.00	0.00	0.76	0.00
14.60	142.98	2.00	0.00	0.75	0.00	14.76	136.17	2.00	0.00	0.75	0.00
14.93	130.26	2.00	0.00	0.75	0.00	15.09	125.81	2.00	0.00	0.74	0.00
15.26	123.40	2.00	0.00	0.74	0.00	15.42	121.04	2.00	0.00	0.74	0.00
15.58	123.17	2.00	0.00	0.74	0.00	15.75	127.17	2.00	0.00	0.73	0.00
15.91	129.42	2.00	0.00	0.73	0.00	16.08	126.26	2.00	0.00	0.73	0.00
16.24	121.62	2.00	0.00	0.72	0.00	16.40	117.13	2.00	0.00	0.72	0.00
16.57	114.50	2.00	0.00	0.72	0.00	16.73	111.93	2.00	0.00	0.72	0.00
16.90	108.38	2.00	0.00	0.71	0.00	17.06	104.96	2.00	0.00	0.71	0.00
17.22	103.31	2.00	0.00	0.71	0.00	17.39	102.84	2.00	0.00	0.71	0.00
17.55	100.63	2.00	0.00	0.70	0.00	17.72	94.72	2.00	0.00	0.70	0.00
17.88	88.41	2.00	0.00	0.70	0.00	18.04	83.86	2.00	0.00	0.69	0.00
18.21	86.54	2.00	0.00	0.69	0.00	18.37	91.40	2.00	0.00	0.69	0.00
18.54	98.56	2.00	0.00	0.69	0.00	18.70	103.31	2.00	0.00	0.68	0.00
18.86	107.53	2.00	0.00	0.68	0.00	19.03	111.15	2.00	0.00	0.68	0.00
19.19	115.43	2.00	0.00	0.67	0.00	19.36	121.41	2.00	0.00	0.67	0.00
19.52	123.50	2.00	0.00	0.67	0.00	19.69	121.46	2.00	0.00	0.67	0.00
19.85	113.88	2.00	0.00	0.66	0.00	20.01	105.05	2.00	0.00	0.66	0.00
20.18	98.62	2.00	0.00	0.66	0.00	20.34	97.65	2.00	0.00	0.66	0.00
20.51	100.04	2.00	0.00	0.65	0.00	20.67	103.85	2.00	0.00	0.65	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
20.83	105.23	2.00	0.00	0.65	0.00	21.00	104.19	2.00	0.00	0.64	0.00
21.16	100.76	2.00	0.00	0.64	0.00	21.33	96.12	2.00	0.00	0.64	0.00
21.49	91.89	2.00	0.00	0.64	0.00	21.65	91.78	2.00	0.00	0.63	0.00
21.82	96.60	2.00	0.00	0.63	0.00	21.98	108.75	2.00	0.00	0.63	0.00
22.15	120.49	2.00	0.00	0.62	0.00	22.31	127.68	2.00	0.00	0.62	0.00
22.47	128.49	2.00	0.00	0.62	0.00	22.64	125.46	2.00	0.00	0.62	0.00
22.80	121.28	2.00	0.00	0.61	0.00	22.97	115.81	2.00	0.00	0.61	0.00
23.13	109.15	2.00	0.00	0.61	0.00	23.29	106.62	2.00	0.00	0.61	0.00
23.46	112.50	2.00	0.00	0.60	0.00	23.62	123.44	2.00	0.00	0.60	0.00
23.79	137.48	2.00	0.00	0.60	0.00	23.95	145.37	2.00	0.00	0.59	0.00
24.11	148.27	2.00	0.00	0.59	0.00	24.28	145.52	2.00	0.00	0.59	0.00
24.44	137.12	2.00	0.00	0.59	0.00	24.61	128.57	2.00	0.00	0.58	0.00
24.77	119.84	2.00	0.00	0.58	0.00	24.93	114.40	2.00	0.00	0.58	0.00
25.10	113.49	2.00	0.00	0.57	0.00	25.26	115.22	2.00	0.00	0.57	0.00
25.43	115.87	2.00	0.00	0.57	0.00	25.59	110.92	2.00	0.00	0.57	0.00
25.75	105.43	0.17	1.26	0.56	0.02	25.92	106.60	0.17	1.24	0.56	0.02
26.08	113.92	2.00	0.00	0.56	0.00	26.25	118.03	2.00	0.00	0.56	0.00
26.41	111.91	2.00	0.00	0.55	0.00	26.57	124.22	2.00	0.00	0.55	0.00
26.74	156.76	2.00	0.00	0.55	0.00	26.90	188.02	2.00	0.00	0.54	0.00
27.07	195.72	2.00	0.00	0.54	0.00	27.23	180.67	2.00	0.00	0.54	0.00
27.40	161.13	2.00	0.00	0.54	0.00	27.56	121.24	2.00	0.00	0.53	0.00
27.72	96.03	0.15	1.28	0.53	0.03	27.89	79.41	0.11	1.49	0.53	0.03
28.05	75.30	0.11	1.55	0.52	0.03	28.22	74.66	0.11	1.55	0.52	0.03
28.38	84.56	2.00	0.00	0.52	0.00	28.54	99.56	2.00	0.00	0.52	0.00
28.71	109.93	2.00	0.00	0.51	0.00	28.87	113.98	2.00	0.00	0.51	0.00
29.04	109.56	2.00	0.00	0.51	0.00	29.20	107.10	2.00	0.00	0.51	0.00
29.36	119.54	2.00	0.00	0.50	0.00	29.53	153.40	2.00	0.00	0.50	0.00
29.69	179.28	2.00	0.00	0.50	0.00	29.86	181.98	2.00	0.00	0.49	0.00
30.02	156.25	2.00	0.00	0.49	0.00	30.18	123.91	0.23	0.96	0.49	0.02
30.35	127.57	0.25	0.93	0.49	0.02	30.51	146.20	0.33	0.83	0.48	0.02
30.68	169.26	2.00	0.00	0.48	0.00	30.84	159.05	2.00	0.00	0.48	0.00
31.00	127.28	2.00	0.00	0.47	0.00	31.17	104.54	0.17	1.06	0.47	0.02
31.33	102.22	0.16	1.08	0.47	0.02	31.50	107.41	0.18	1.03	0.47	0.02
31.66	111.23	2.00	0.00	0.46	0.00	31.82	106.17	2.00	0.00	0.46	0.00
31.99	100.63	2.00	0.00	0.46	0.00	32.15	99.07	2.00	0.00	0.46	0.00
32.32	99.57	2.00	0.00	0.45	0.00	32.48	98.86	2.00	0.00	0.45	0.00
32.64	96.17	2.00	0.00	0.45	0.00	32.81	94.22	2.00	0.00	0.44	0.00
32.97	93.03	2.00	0.00	0.44	0.00	33.14	92.38	2.00	0.00	0.44	0.00
33.30	92.67	2.00	0.00	0.44	0.00	33.46	92.64	2.00	0.00	0.43	0.00
33.63	94.48	2.00	0.00	0.43	0.00	33.79	94.77	2.00	0.00	0.43	0.00
33.96	95.69	2.00	0.00	0.42	0.00	34.12	94.49	2.00	0.00	0.42	0.00
34.28	95.79	2.00	0.00	0.42	0.00	34.45	99.00	2.00	0.00	0.42	0.00
34.61	102.65	2.00	0.00	0.41	0.00	34.78	101.90	2.00	0.00	0.41	0.00
34.94	111.19	2.00	0.00	0.41	0.00	35.10	115.07	2.00	0.00	0.41	0.00
35.27	122.48	2.00	0.00	0.40	0.00	35.43	118.89	2.00	0.00	0.40	0.00
35.60	122.59	2.00	0.00	0.40	0.00	35.76	99.28	0.16	0.93	0.39	0.02
35.93	83.44	0.12	1.06	0.39	0.02	36.09	91.03	0.14	0.98	0.39	0.02
36.25	80.57	0.12	1.08	0.39	0.02	36.42	61.97	0.09	1.32	0.38	0.03

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
36.58	76.02	2.00	0.00	0.38	0.00	36.75	88.73	2.00	0.00	0.38	0.00
36.91	89.20	2.00	0.00	0.37	0.00	37.07	84.83	2.00	0.00	0.37	0.00
37.24	79.06	2.00	0.00	0.37	0.00	37.40	72.62	2.00	0.00	0.37	0.00
37.57	67.96	2.00	0.00	0.36	0.00	37.73	69.29	2.00	0.00	0.36	0.00
37.89	73.48	2.00	0.00	0.36	0.00	38.06	77.04	2.00	0.00	0.35	0.00
38.22	78.64	2.00	0.00	0.35	0.00	38.39	81.35	2.00	0.00	0.35	0.00
38.55	85.54	2.00	0.00	0.35	0.00	38.71	91.79	2.00	0.00	0.34	0.00
38.88	95.62	2.00	0.00	0.34	0.00	39.04	97.72	2.00	0.00	0.34	0.00
39.21	97.53	2.00	0.00	0.34	0.00	39.37	94.01	2.00	0.00	0.33	0.00
39.53	90.02	2.00	0.00	0.33	0.00	39.70	85.66	2.00	0.00	0.33	0.00
39.86	98.27	2.00	0.00	0.32	0.00	40.03	123.43	2.00	0.00	0.32	0.00
40.19	149.03	2.00	0.00	0.32	0.00	40.35	157.87	2.00	0.00	0.32	0.00
40.52	155.66	2.00	0.00	0.31	0.00	40.68	146.38	2.00	0.00	0.31	0.00
40.85	119.39	0.22	0.62	0.31	0.01	41.01	107.45	0.18	0.67	0.30	0.01
41.17	101.62	0.16	0.70	0.30	0.01	41.34	89.87	0.14	0.76	0.30	0.02
41.50	87.61	0.13	0.77	0.30	0.02	41.67	111.36	2.00	0.00	0.29	0.00
41.83	120.75	2.00	0.00	0.29	0.00	41.99	114.09	2.00	0.00	0.29	0.00
42.16	102.42	2.00	0.00	0.29	0.00	42.32	94.41	2.00	0.00	0.28	0.00
42.49	87.92	2.00	0.00	0.28	0.00	42.65	85.21	2.00	0.00	0.28	0.00
42.81	83.99	2.00	0.00	0.27	0.00	42.98	86.64	2.00	0.00	0.27	0.00
43.14	90.79	2.00	0.00	0.27	0.00	43.31	97.12	2.00	0.00	0.27	0.00
43.47	101.20	2.00	0.00	0.26	0.00	43.64	104.92	2.00	0.00	0.26	0.00
43.80	106.81	2.00	0.00	0.26	0.00	43.96	119.68	2.00	0.00	0.25	0.00
44.13	128.84	2.00	0.00	0.25	0.00	44.29	141.10	2.00	0.00	0.25	0.00
44.46	143.56	2.00	0.00	0.25	0.00	44.62	140.59	2.00	0.00	0.24	0.00
44.78	128.94	2.00	0.00	0.24	0.00	44.95	116.73	2.00	0.00	0.24	0.00
45.11	107.11	2.00	0.00	0.24	0.00	45.28	109.34	2.00	0.00	0.23	0.00
45.44	121.70	2.00	0.00	0.23	0.00	45.60	135.35	2.00	0.00	0.23	0.00
45.77	151.86	2.00	0.00	0.22	0.00	45.93	154.44	2.00	0.00	0.22	0.00
46.10	153.68	2.00	0.00	0.22	0.00	46.26	130.06	2.00	0.00	0.22	0.00
46.42	113.77	0.21	0.45	0.21	0.01	46.59	100.86	0.17	0.49	0.21	0.01
46.75	98.31	0.16	0.49	0.21	0.01	46.92	100.14	2.00	0.00	0.20	0.00
47.08	104.07	2.00	0.00	0.20	0.00	47.24	104.80	2.00	0.00	0.20	0.00
47.41	101.05	2.00	0.00	0.20	0.00	47.57	95.91	2.00	0.00	0.19	0.00
47.74	88.19	2.00	0.00	0.19	0.00	47.90	82.30	2.00	0.00	0.19	0.00
48.06	79.80	2.00	0.00	0.19	0.00	48.23	79.06	2.00	0.00	0.18	0.00
48.39	80.12	2.00	0.00	0.18	0.00	48.56	78.73	2.00	0.00	0.18	0.00
48.72	78.35	2.00	0.00	0.17	0.00	48.88	77.86	2.00	0.00	0.17	0.00
49.05	77.68	2.00	0.00	0.17	0.00	49.21	77.73	2.00	0.00	0.17	0.00
49.38	79.37	2.00	0.00	0.16	0.00	49.54	-1.00	2.00	0.00	0.16	0.00
49.70	-1.00	2.00	0.00	0.16	0.00	49.87	-1.00	2.00	0.00	0.15	0.00
50.03	-1.00	2.00	0.00	0.15	0.00						

Total estimated settlement: 0.48

Abbreviations

$Q_{tn,cs}$:	Equivalent clean sand normalized cone resistance
FS:	Factor of safety against liquefaction
e_v (%):	Post-liquefaction volumentric strain
DF:	e_v depth weighting factor
Settlement:	Calculated settlement

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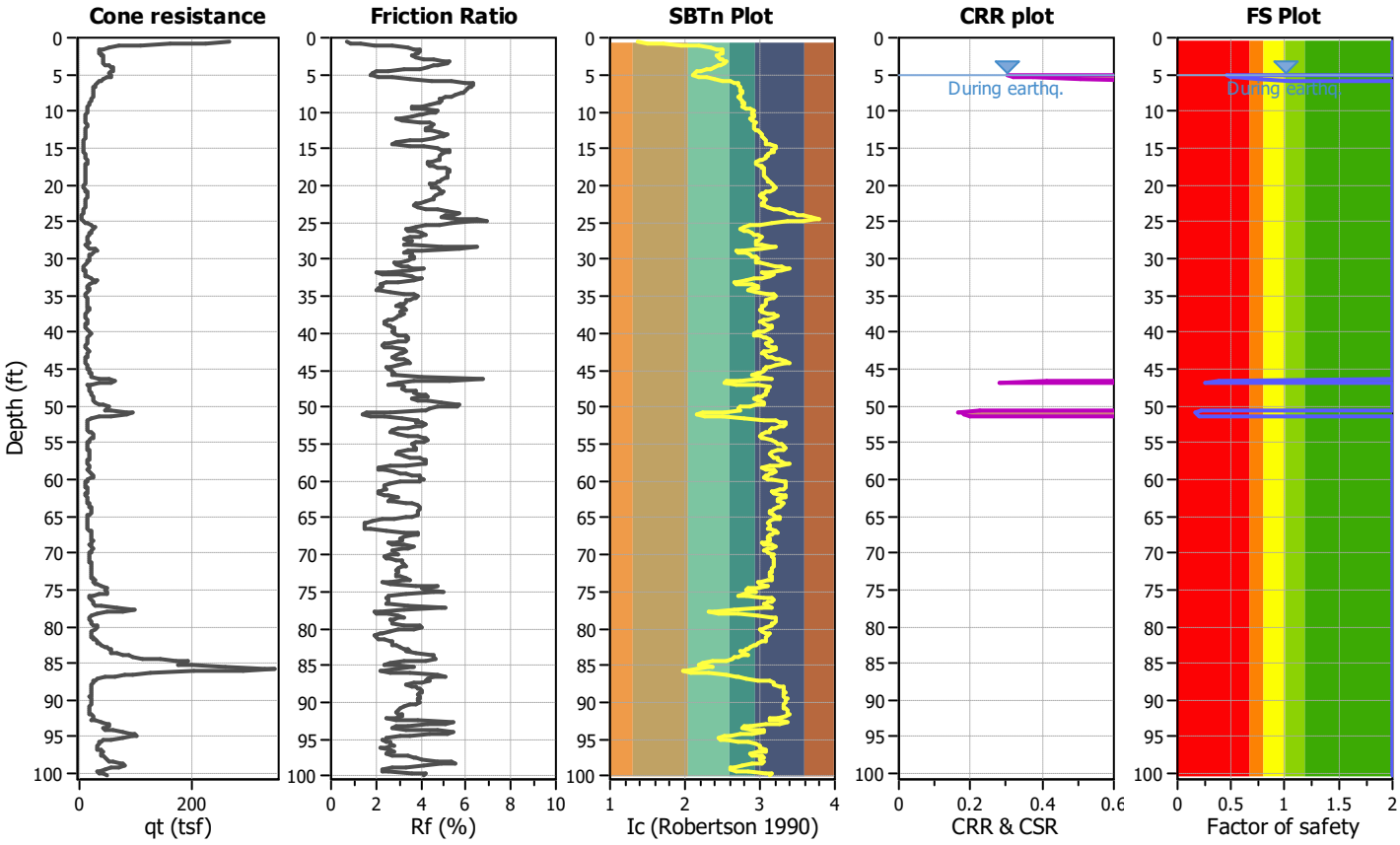
LIQUEFACTION ANALYSIS REPORT

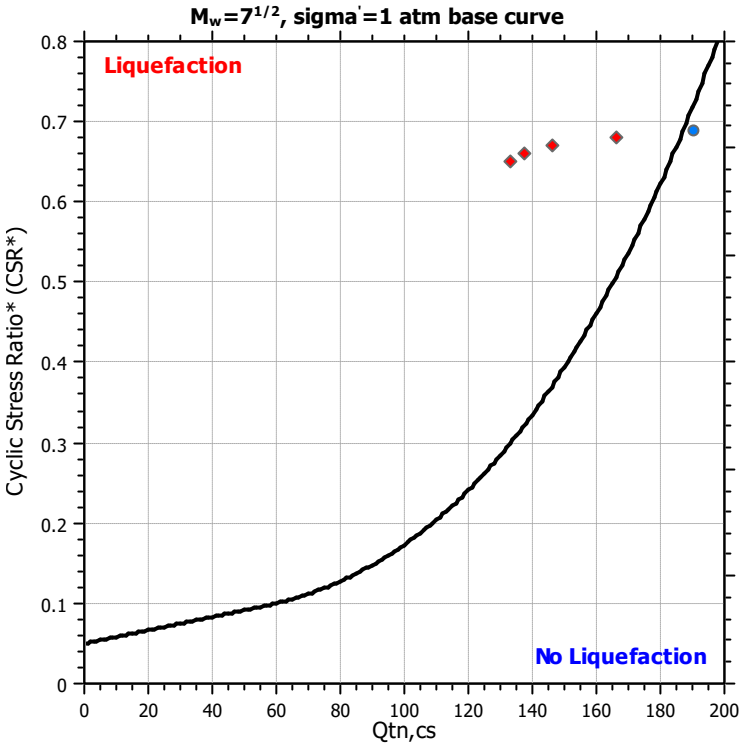
Project title : 306774-001 – 2334 Lundy Place Warehouse **Location : 2334 Lundy Place, San Jose**

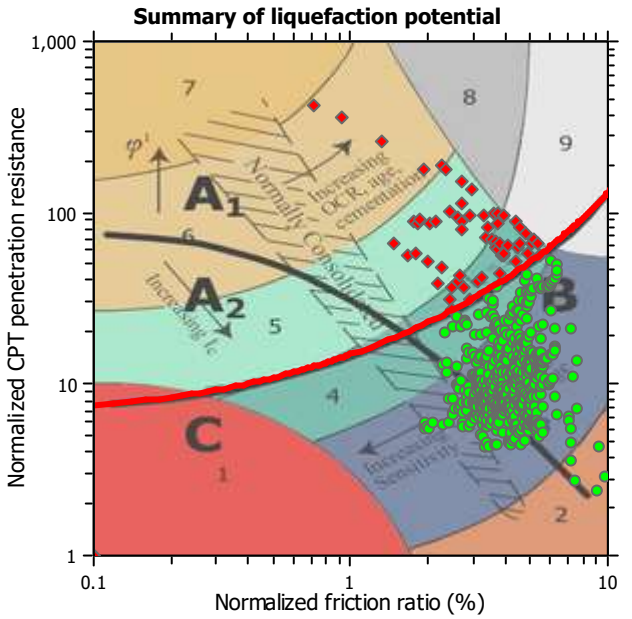
CPT file : CPT-02

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	10.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	60.00 ft
Earthquake magnitude M_w:	7.96	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.86	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

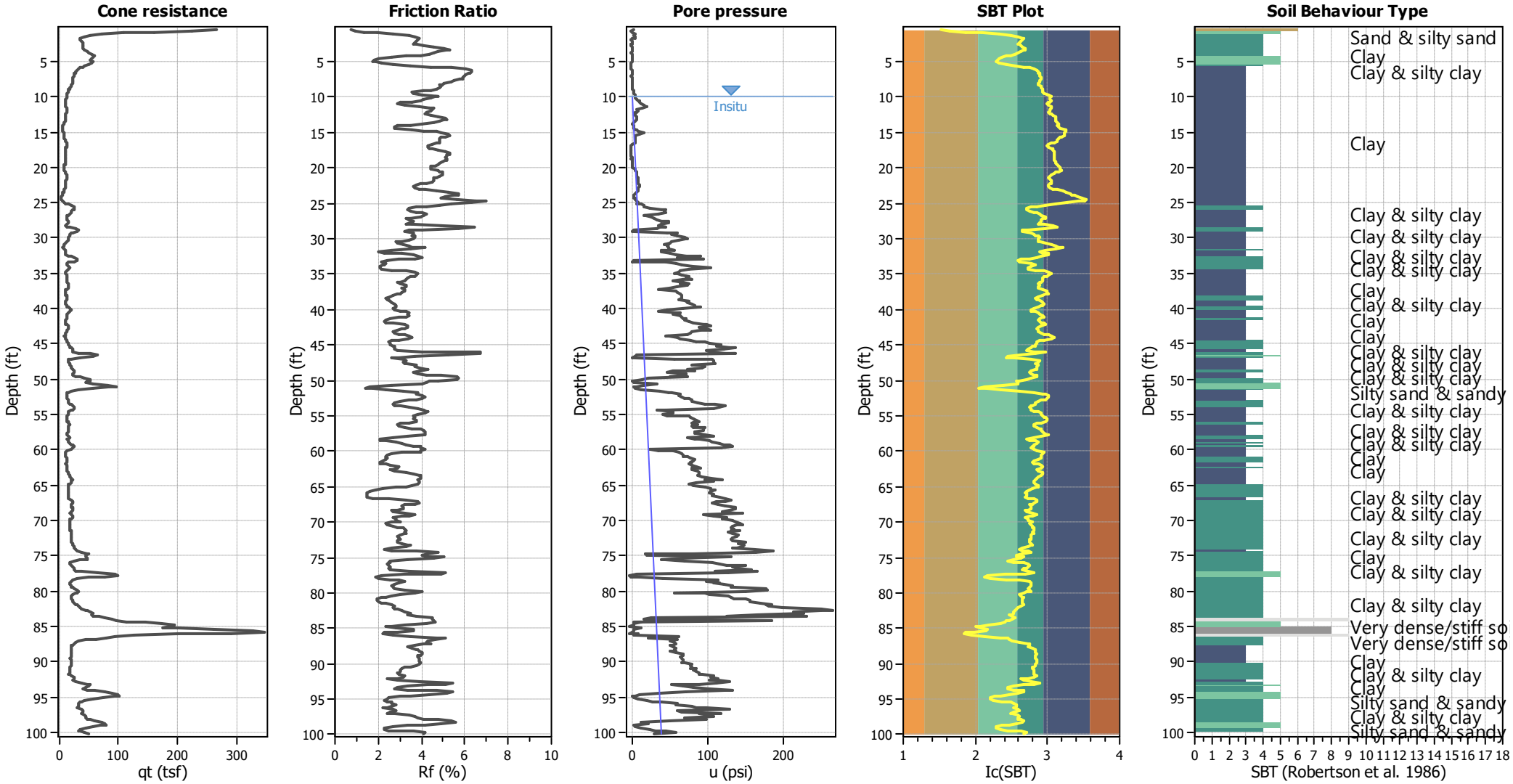






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



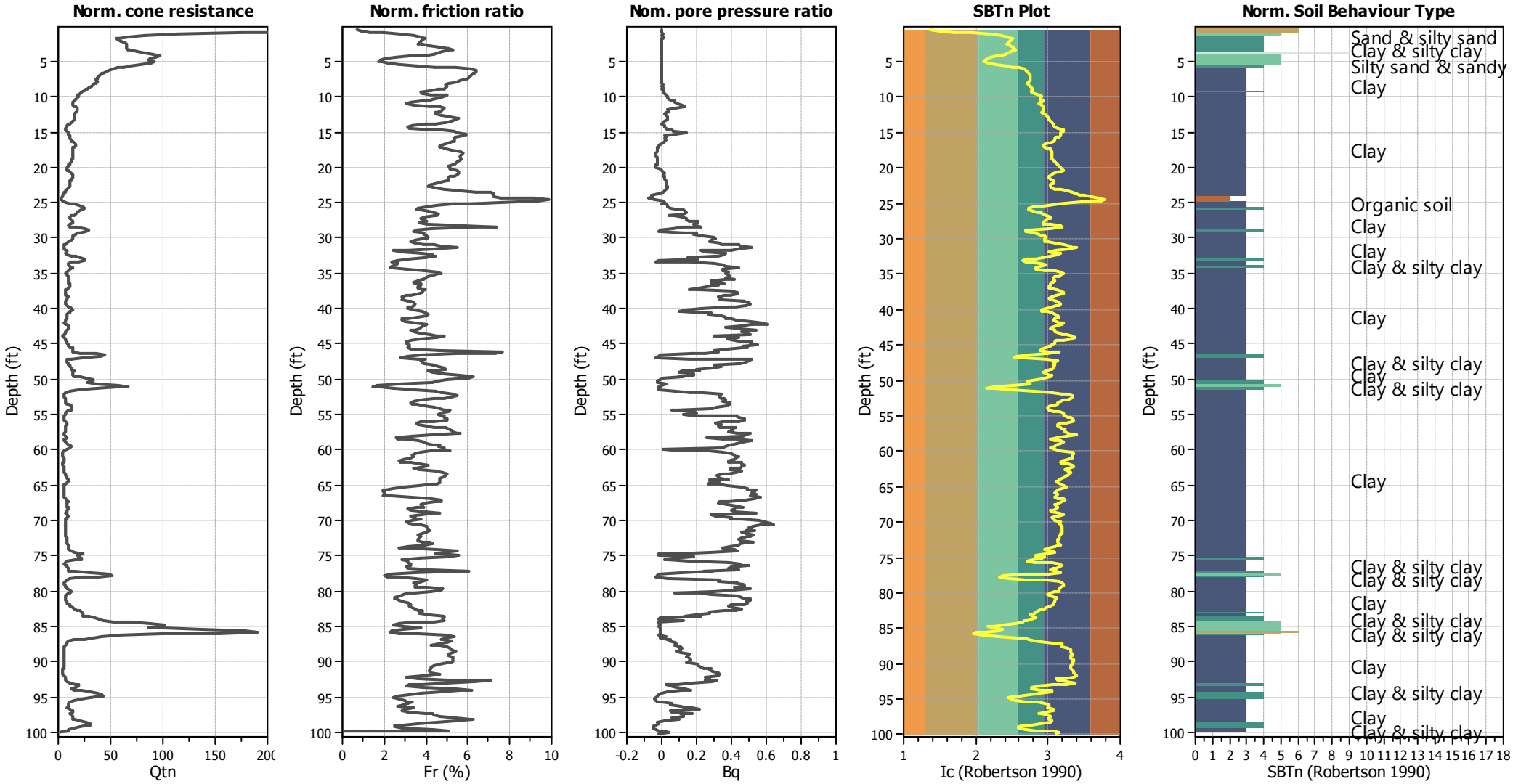
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

CPT basic interpretation plots (normalized)



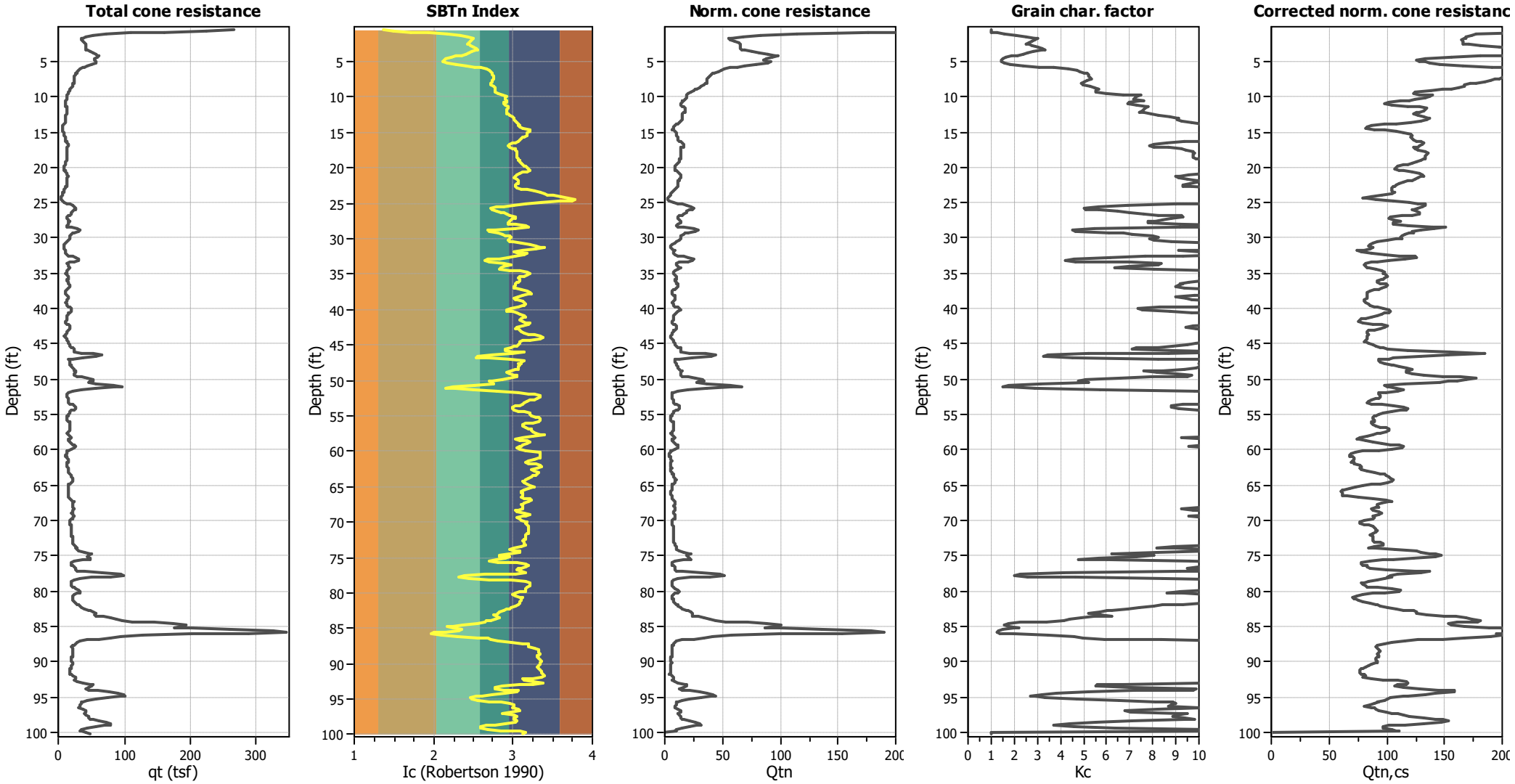
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

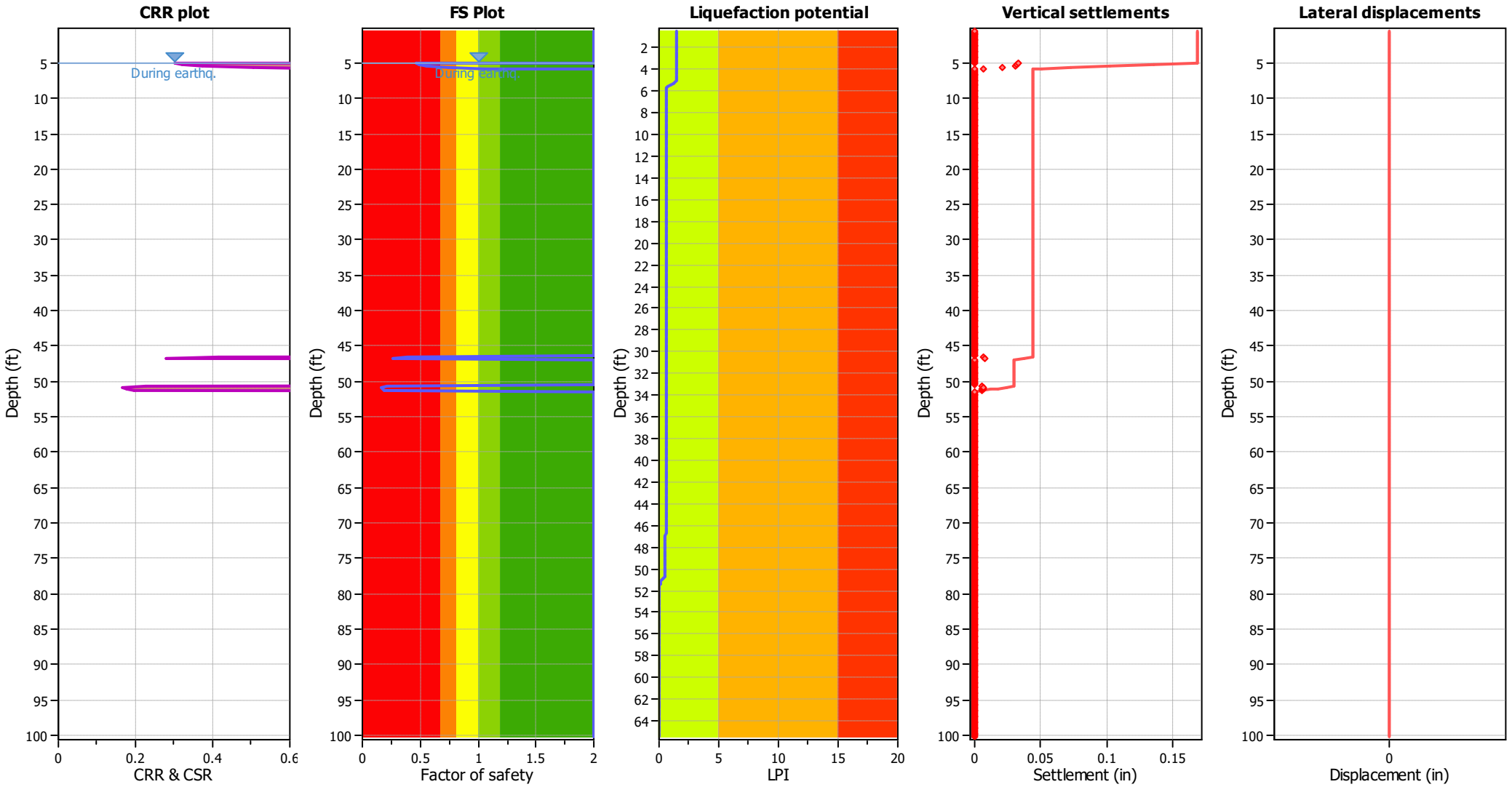
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

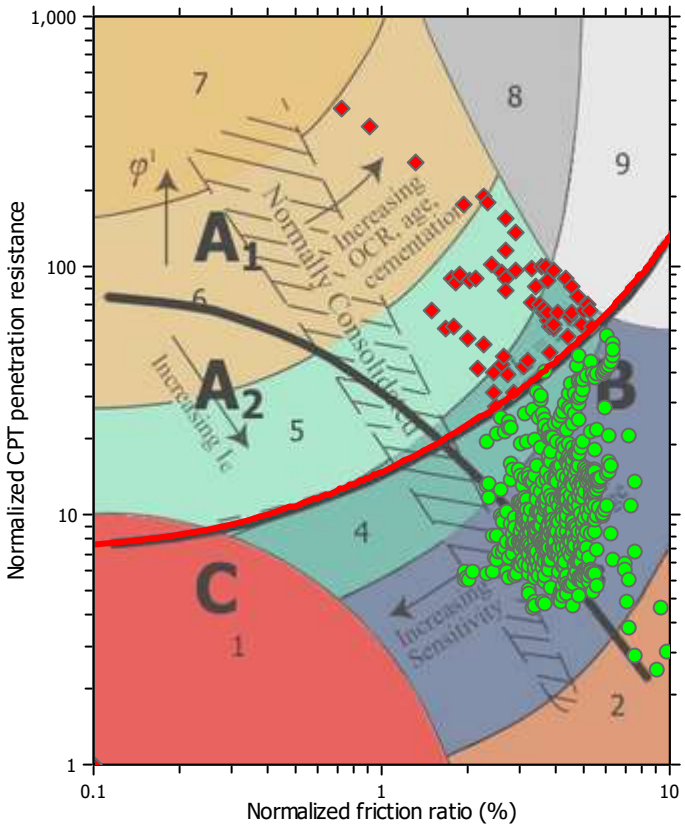
F.S. color scheme

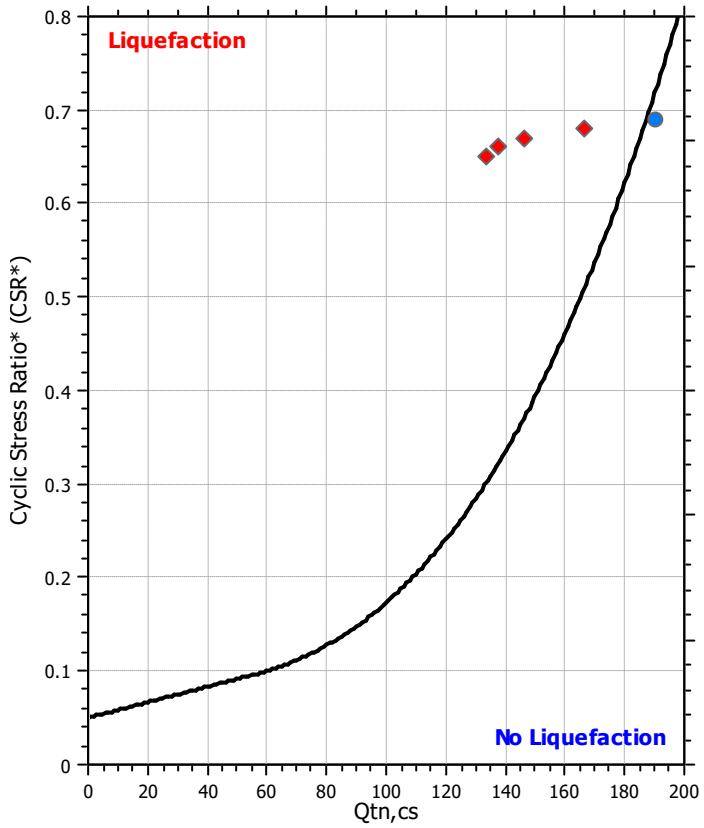
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

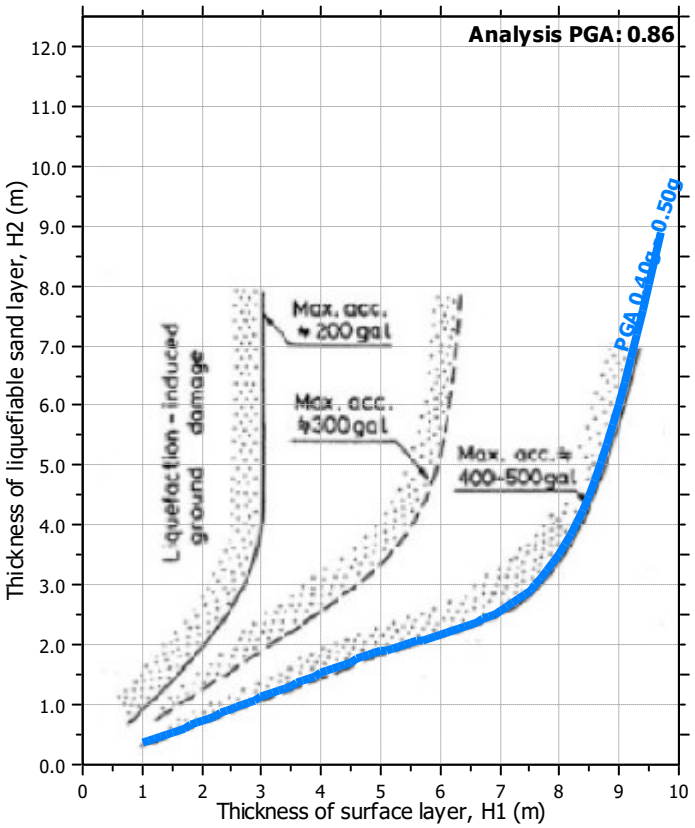
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



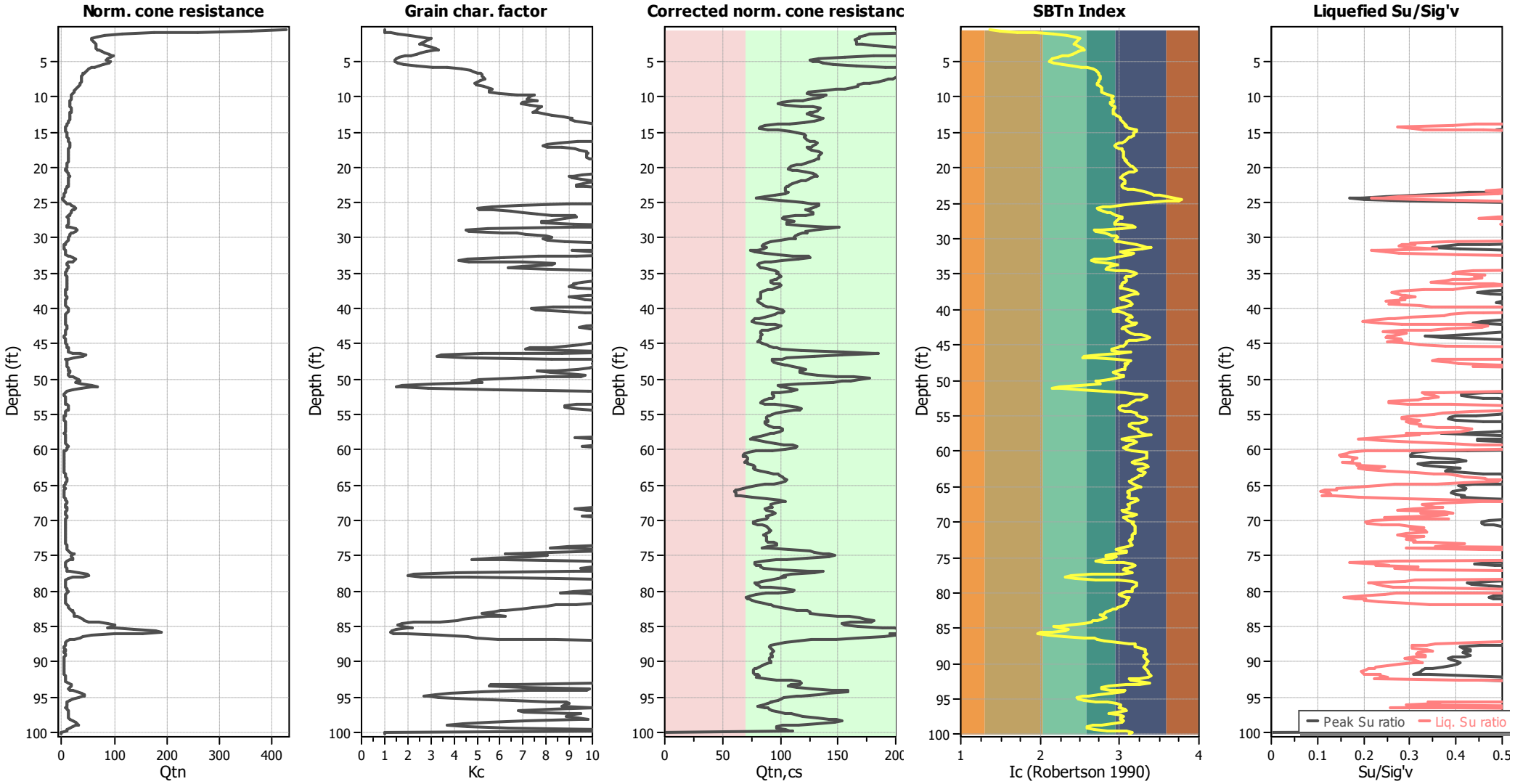




Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

:: Field input data ::

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
1	0.49	289.56	1.84	3.64	1.15	128.67
2	0.66	217.25	2.08	-0.11	2.73	128.76
3	0.82	167.75	2.25	-0.02	6.22	128.15
4	0.98	98.51	2.02	1.07	11.32	127.20
5	1.15	63.75	2.06	4.43	18.12	125.47
6	1.31	51.30	1.70	2.63	24.08	124.00
7	1.48	39.45	1.51	4.86	27.43	122.54
8	1.64	35.16	1.41	4.84	30.28	121.57
9	1.80	33.74	1.33	0.50	30.82	121.16
10	1.97	35.21	1.33	-0.52	30.25	121.22
11	2.13	37.47	1.42	0.09	29.14	121.64
12	2.30	40.33	1.48	0.89	28.21	122.01
13	2.46	41.33	1.48	0.36	27.67	122.23
14	2.62	41.19	1.50	-0.10	28.27	122.50
15	2.79	40.00	1.66	-0.29	29.33	123.05
16	2.95	41.26	1.84	-0.04	30.88	123.89
17	3.12	41.61	2.10	0.72	32.28	124.61
18	3.28	40.26	2.23	-0.06	32.86	125.13
19	3.44	43.10	2.26	0.02	31.94	125.34
20	3.61	46.83	2.20	-0.07	29.84	125.59
21	3.77	51.21	2.29	-0.45	28.07	126.06
22	3.94	55.78	2.50	-0.05	26.39	126.59
23	4.10	61.14	2.50	0.30	24.41	126.56
24	4.27	62.84	2.10	1.59	21.89	125.37
25	4.43	59.00	1.40	0.67	19.60	123.23
26	4.59	53.63	1.04	1.30	17.70	120.78
27	4.76	51.68	0.88	0.43	16.81	119.76
28	4.92	55.80	0.98	0.41	16.14	119.92
29	5.09	60.08	1.07	0.11	16.37	120.65
30	5.25	57.20	1.16	-0.94	18.06	121.28
31	5.41	49.50	1.31	-0.85	21.72	121.89
32	5.58	42.46	1.52	-0.75	26.48	122.60
33	5.74	39.34	1.76	-0.42	31.17	123.26
34	5.91	35.80	1.94	-1.01	35.29	123.71
35	6.07	31.99	2.02	-0.10	38.46	123.77
36	6.23	30.81	1.96	0.26	40.38	123.47
37	6.40	29.28	1.83	0.72	41.28	122.93
38	6.56	26.98	1.71	0.35	42.02	122.28
39	6.73	25.96	1.60	0.20	42.66	121.70
40	6.89	25.19	1.52	1.34	42.93	121.25
41	7.05	24.42	1.47	-0.59	43.06	120.91
42	7.22	24.27	1.43	0.00	43.31	120.63
43	7.38	23.53	1.38	0.97	43.63	120.34
44	7.55	22.67	1.34	0.71	43.60	120.02
45	7.71	23.05	1.28	0.69	42.75	119.79
46	7.87	24.07	1.25	0.84	42.08	119.59
47	8.04	23.05	1.22	0.33	41.47	119.02
48	8.20	21.86	1.02	0.20	41.74	118.51

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
49	8.37	21.62	1.05	1.54	41.91	117.93
50	8.53	20.62	1.01	0.62	43.23	117.54
51	8.69	18.43	0.91	1.20	44.13	116.84
52	8.86	18.02	0.84	0.97	45.01	116.02
53	9.02	16.92	0.77	1.50	44.78	115.12
54	9.19	16.15	0.65	1.87	44.64	113.90
55	9.35	14.90	0.53	2.36	44.44	112.20
56	9.51	13.26	0.41	3.14	46.55	111.51
57	9.68	12.56	0.55	3.83	49.83	111.69
58	9.84	12.36	0.60	4.72	53.14	112.62
59	10.01	12.45	0.64	5.15	52.44	112.65
60	10.17	13.45	0.54	5.33	52.14	112.16
61	10.33	11.72	0.49	6.57	51.97	111.10
62	10.50	10.62	0.43	8.82	53.60	110.01
63	10.66	10.30	0.38	10.90	53.12	108.85
64	10.83	10.24	0.32	10.62	51.11	107.55
65	10.99	10.11	0.26	12.87	50.72	107.01
66	11.15	9.81	0.31	15.81	52.25	107.85
67	11.32	10.38	0.42	18.95	54.18	109.97
68	11.48	12.05	0.56	20.93	54.39	111.58
69	11.65	12.58	0.59	14.75	54.09	112.43
70	11.81	12.52	0.58	6.93	53.68	112.43
71	11.98	12.70	0.55	8.18	53.48	112.33
72	12.14	12.80	0.56	6.83	52.96	111.99
73	12.30	12.43	0.51	4.57	53.62	111.59
74	12.47	11.56	0.48	4.00	54.99	111.02
75	12.63	10.83	0.47	4.53	56.22	111.00
76	12.80	10.85	0.52	5.91	58.38	111.36
77	12.96	10.82	0.57	5.83	59.54	111.83
78	13.12	10.96	0.57	5.70	59.76	112.00
79	13.29	11.11	0.56	5.69	59.64	111.77
80	13.45	10.65	0.52	3.79	60.18	110.99
81	13.62	9.51	0.43	2.71	62.01	109.54
82	13.78	8.07	0.33	1.38	63.64	107.42
83	13.94	7.25	0.24	1.74	64.24	105.39
84	14.11	7.10	0.22	2.86	63.48	103.32
85	14.27	6.41	0.15	3.24	64.71	102.24
86	14.44	5.89	0.17	3.59	67.38	101.63
87	14.60	5.76	0.18	4.47	74.06	102.91
88	14.76	5.41	0.26	6.19	74.34	104.71
89	14.93	7.21	0.32	7.90	73.50	106.81
90	15.09	7.81	0.40	15.45	70.73	108.23
91	15.26	7.90	0.42	10.95	71.31	109.09
92	15.42	8.08	0.45	5.30	70.85	109.36
93	15.58	8.55	0.44	4.34	68.79	109.68
94	15.75	9.36	0.46	4.95	66.43	109.84
95	15.91	9.49	0.46	4.75	65.23	110.15
96	16.08	9.65	0.48	5.65	64.53	110.45

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
97	16.24	10.24	0.50	5.41	63.19	110.98
98	16.40	11.11	0.53	4.67	60.86	111.86
99	16.57	12.63	0.62	4.15	57.71	112.67
100	16.73	14.09	0.63	0.98	55.60	113.22
101	16.90	14.73	0.62	-0.46	54.69	113.02
102	17.06	13.15	0.56	-0.39	55.45	112.41
103	17.22	11.71	0.52	-0.25	57.95	111.67
104	17.39	11.53	0.50	-0.46	60.25	111.47
105	17.55	11.32	0.55	-0.66	61.06	111.92
106	17.72	12.06	0.61	-0.89	62.20	112.65
107	17.88	12.18	0.66	-1.31	62.19	113.11
108	18.04	12.29	0.65	-1.78	62.41	113.14
109	18.21	12.08	0.62	-1.24	62.27	112.98
110	18.37	12.08	0.62	-1.04	62.21	112.90
111	18.54	12.28	0.63	0.00	62.21	112.94
112	18.70	12.25	0.63	-0.13	62.68	112.94
113	18.86	11.84	0.62	-0.01	63.41	112.69
114	19.03	11.45	0.58	0.35	64.09	112.31
115	19.19	11.24	0.55	0.27	64.91	111.72
116	19.36	10.44	0.51	0.52	65.85	111.13
117	19.52	10.07	0.47	0.67	67.45	110.41
118	19.69	9.39	0.44	0.82	68.87	109.71
119	19.85	8.85	0.40	1.02	69.39	108.97
120	20.01	8.93	0.36	1.19	71.78	108.42
121	20.18	7.71	0.37	3.76	72.56	108.19
122	20.34	8.28	0.38	4.49	73.76	108.78
123	20.51	9.14	0.45	4.82	70.90	109.84
124	20.67	10.30	0.52	5.90	67.46	111.33
125	20.83	12.19	0.61	6.58	64.27	112.56
126	21.00	13.13	0.67	6.54	61.55	113.43
127	21.16	13.89	0.68	6.96	60.04	113.70
128	21.33	13.98	0.65	7.53	59.20	113.54
129	21.49	13.55	0.62	8.23	59.82	113.09
130	21.65	12.58	0.58	8.04	61.21	112.60
131	21.82	12.08	0.56	8.74	62.93	112.09
132	21.98	11.52	0.53	8.36	63.65	111.60
133	22.15	11.34	0.49	8.68	62.94	111.08
134	22.31	11.74	0.46	9.34	61.68	110.64
135	22.47	11.68	0.44	9.69	60.46	110.36
136	22.64	11.77	0.43	9.84	60.44	110.10
137	22.80	11.42	0.41	9.58	62.00	109.76
138	22.97	10.21	0.40	9.41	65.72	109.29
139	23.13	9.02	0.39	8.49	71.25	108.65
140	23.29	7.94	0.36	7.64	78.63	108.26
141	23.46	6.89	0.39	6.83	84.23	108.23
142	23.62	7.20	0.42	6.52	89.44	108.22
143	23.79	6.49	0.38	4.87	93.00	107.51
144	23.95	5.47	0.30	2.66	100.00	105.70

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
145	24.11	4.60	0.22	3.67	100.00	103.53
146	24.28	3.84	0.19	3.62	100.00	101.64
147	24.44	3.29	0.17	3.84	100.00	101.90
148	24.61	3.67	0.26	4.88	100.00	104.08
149	24.77	5.18	0.38	6.72	100.00	107.37
150	24.93	7.32	0.51	8.26	86.27	110.61
151	25.10	11.84	0.67	7.07	69.73	113.03
152	25.26	16.05	0.74	11.77	59.21	115.05
153	25.43	19.20	0.89	16.20	50.80	116.49
154	25.59	25.28	0.94	16.52	45.10	117.48
155	25.75	28.13	0.93	24.28	41.96	117.61
156	25.92	25.39	0.86	39.12	42.28	117.05
157	26.08	22.09	0.77	44.47	45.06	116.35
158	26.25	20.43	0.78	43.03	48.77	116.00
159	26.41	18.65	0.83	44.29	51.06	116.09
160	26.57	19.52	0.83	36.07	53.74	115.65
161	26.74	16.33	0.69	16.07	56.25	114.33
162	26.90	12.88	0.52	18.27	60.39	112.26
163	27.07	11.58	0.42	25.44	60.53	110.57
164	27.23	12.96	0.39	30.58	58.62	110.55
165	27.40	14.14	0.50	33.58	57.12	111.64
166	27.56	14.81	0.59	38.43	55.80	112.86
167	27.72	16.57	0.61	49.74	54.59	112.95
168	27.89	15.46	0.50	49.00	54.50	112.18
169	28.05	13.25	0.44	38.85	60.09	111.41
170	28.22	10.44	0.52	36.14	70.32	112.43
171	28.38	10.52	0.80	44.29	73.33	115.33
172	28.54	16.70	1.22	36.78	60.15	117.98
173	28.71	27.87	1.21	34.26	44.33	119.60
174	28.87	40.91	1.07	2.96	39.53	119.36
175	29.04	27.09	0.99	1.39	40.32	118.15
176	29.20	20.10	0.79	47.17	47.14	116.71
177	29.36	21.45	0.75	60.58	49.92	115.57
178	29.53	18.59	0.71	53.17	51.59	114.65
179	29.69	15.18	0.58	59.59	55.22	113.84
180	29.86	15.25	0.60	70.45	56.40	113.46
181	30.02	16.31	0.64	74.42	55.52	113.67
182	30.18	16.48	0.61	72.30	54.81	113.05
183	30.35	14.61	0.46	62.20	55.60	111.57
184	30.51	12.72	0.36	52.59	58.62	109.34
185	30.68	10.03	0.29	51.64	65.53	107.72
186	30.84	7.93	0.30	43.92	73.83	106.54
187	31.00	7.34	0.27	47.99	80.40	106.07
188	31.17	7.19	0.27	45.99	83.87	105.81
189	31.33	6.54	0.29	48.54	89.83	106.33
190	31.50	6.08	0.35	48.80	80.64	106.27
191	31.66	9.90	0.23	55.90	66.91	106.12
192	31.82	12.36	0.21	38.40	59.88	105.30

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
193	31.99	9.16	0.24	39.40	63.13	105.71
194	32.15	8.66	0.27	51.20	70.85	107.23
195	32.32	10.04	0.40	58.13	68.67	109.99
196	32.48	13.71	0.60	71.43	60.45	113.15
197	32.64	19.82	0.78	90.39	53.95	116.20
198	32.81	24.58	1.09	59.94	47.38	117.64
199	32.97	27.99	0.93	94.54	39.94	117.96
200	33.14	37.39	0.72	2.36	37.85	116.23
201	33.30	22.55	0.53	0.86	40.09	113.42
202	33.46	13.14	0.33	44.55	51.07	110.04
203	33.63	12.05	0.28	58.56	56.81	107.90
204	33.79	12.70	0.30	66.40	56.29	107.89
205	33.96	13.10	0.33	80.33	50.98	108.75
206	34.12	17.47	0.35	104.62	48.37	109.59
207	34.28	16.78	0.39	104.55	48.14	110.09
208	34.45	14.64	0.39	76.63	55.55	110.46
209	34.61	11.67	0.46	63.48	65.06	110.20
210	34.78	9.49	0.42	62.29	71.34	110.10
211	34.94	11.00	0.42	57.49	74.39	109.76
212	35.10	9.70	0.42	59.75	71.66	110.32
213	35.27	11.76	0.49	66.79	69.00	110.78
214	35.43	13.10	0.47	75.14	64.79	111.35
215	35.60	13.41	0.49	71.76	63.53	111.24
216	35.76	12.38	0.46	79.04	63.78	110.96
217	35.93	12.58	0.42	68.11	64.83	110.42
218	36.09	12.04	0.41	55.10	63.70	109.94
219	36.25	12.58	0.38	68.29	61.51	110.11
220	36.42	14.45	0.43	75.05	60.13	110.95
221	36.58	14.66	0.53	64.75	60.51	111.98
222	36.75	14.36	0.56	74.20	59.69	112.38
223	36.91	16.30	0.50	61.14	59.22	112.06
224	37.07	14.69	0.46	50.84	60.69	111.29
225	37.24	12.13	0.44	36.37	65.83	110.24
226	37.40	10.94	0.37	37.89	71.08	109.00
227	37.57	9.53	0.31	58.69	73.44	107.81
228	37.73	9.04	0.29	60.20	74.92	107.24
229	37.89	9.24	0.31	63.30	72.04	107.43
230	38.06	11.09	0.32	65.31	66.74	107.96
231	38.22	12.62	0.33	67.06	62.49	108.53
232	38.39	12.91	0.35	65.76	59.37	108.69
233	38.55	13.72	0.32	66.76	60.91	108.63
234	38.71	11.48	0.33	62.72	62.09	108.00
235	38.88	10.96	0.28	76.39	66.48	107.61
236	39.04	10.31	0.30	71.07	68.93	107.42
237	39.21	9.71	0.32	74.55	70.43	107.46
238	39.37	10.21	0.30	80.18	68.83	108.18
239	39.53	12.08	0.37	82.67	66.49	108.94
240	39.70	12.21	0.40	83.00	62.69	110.08

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
241	39.86	14.69	0.43	90.82	56.55	111.42
242	40.03	20.38	0.54	67.34	52.76	112.89
243	40.19	19.79	0.64	46.77	53.41	113.77
244	40.35	17.18	0.62	35.57	58.44	113.59
245	40.52	15.22	0.55	59.23	61.99	112.83
246	40.68	14.48	0.51	63.58	64.49	111.94
247	40.85	13.03	0.47	55.54	67.88	111.23
248	41.01	11.40	0.45	64.28	69.76	110.26
249	41.17	11.63	0.36	66.47	67.99	109.39
250	41.34	12.64	0.33	68.35	65.17	108.47
251	41.50	11.73	0.31	72.22	64.13	107.69
252	41.67	11.13	0.27	69.94	66.62	106.81
253	41.83	9.76	0.24	75.88	69.93	106.41
254	41.99	9.28	0.28	81.53	73.56	107.04
255	42.16	9.79	0.35	94.98	72.83	109.37
256	42.32	13.01	0.53	99.51	67.18	111.49
257	42.49	16.08	0.58	104.26	62.21	112.88
258	42.65	16.78	0.57	88.51	61.14	112.66
259	42.81	13.60	0.47	98.39	62.60	111.81
260	42.98	13.04	0.43	105.23	64.54	110.47
261	43.14	12.69	0.36	91.23	65.52	109.27
262	43.31	11.16	0.31	78.86	68.89	108.62
263	43.47	10.31	0.37	76.83	73.30	108.40
264	43.64	10.17	0.35	74.36	78.08	108.41
265	43.80	9.35	0.33	45.06	83.91	107.83
266	43.96	7.60	0.32	49.43	88.44	107.41
267	44.13	8.33	0.32	60.21	83.93	107.80
268	44.29	11.20	0.36	63.65	73.58	108.53
269	44.46	12.88	0.36	77.20	66.94	108.86
270	44.62	12.45	0.32	85.96	64.64	108.77
271	44.78	12.22	0.33	95.97	64.90	108.95
272	44.95	12.71	0.39	102.23	62.78	109.74
273	45.11	15.02	0.42	118.26	61.30	110.88
274	45.28	15.47	0.49	111.82	58.92	111.86
275	45.44	16.68	0.53	129.19	56.31	112.89
276	45.60	20.03	0.58	137.39	52.43	113.83
277	45.77	21.62	0.65	121.24	51.68	114.70
278	45.93	20.83	0.71	98.09	58.57	117.14
279	46.10	20.28	1.35	104.88	68.95	120.88
280	46.26	21.54	2.46	123.33	58.11	124.77
281	46.42	53.40	2.93	137.89	42.85	127.38
282	46.59	79.22	2.90	7.57	33.50	126.71
283	46.75	58.45	1.25	3.92	32.45	124.11
284	46.92	34.79	1.00	0.17	39.38	118.43
285	47.08	13.20	0.52	56.55	56.17	114.83
286	47.24	13.88	0.49	106.45	68.01	111.77
287	47.41	14.52	0.48	108.53	65.74	111.93
288	47.57	14.62	0.53	107.58	65.35	112.30

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
289	47.74	14.97	0.56	110.89	63.26	113.37
290	47.90	19.23	0.67	79.35	65.05	114.40
291	48.06	15.71	0.79	92.15	63.40	114.68
292	48.23	17.55	0.60	96.22	63.42	115.62
293	48.39	21.52	0.92	93.60	62.65	116.89
294	48.56	20.52	1.16	73.64	60.76	117.79
295	48.72	22.89	0.88	83.56	57.04	117.86
296	48.88	27.46	0.88	54.39	53.68	117.63
297	49.05	23.73	1.03	47.48	56.17	117.82
298	49.21	21.59	0.97	71.73	59.37	118.21
299	49.38	24.17	1.07	72.43	62.03	119.24
300	49.54	23.83	1.49	51.30	61.23	121.54
301	49.70	31.64	2.07	74.16	55.22	124.12
302	49.87	48.44	2.50	21.23	49.51	125.89
303	50.03	47.09	2.67	13.94	42.52	126.45
304	50.20	59.08	2.17	2.27	40.72	126.04
305	50.36	52.08	2.06	0.12	42.19	124.98
306	50.52	33.32	1.92	3.70	43.06	123.86
307	50.69	47.70	1.44	33.52	31.91	122.92
308	50.85	87.24	1.04	15.68	20.48	123.08
309	51.02	111.48	1.48	6.30	17.52	123.79
310	51.18	89.57	1.63	3.05	20.94	123.88
311	51.35	52.78	1.28	4.98	30.28	122.25
312	51.51	29.29	1.10	11.54	45.47	119.18
313	51.67	17.60	0.77	37.27	62.50	116.17
314	51.84	15.35	0.56	47.91	73.14	113.32
315	52.00	12.19	0.49	53.18	78.35	111.78
316	52.17	11.11	0.50	63.81	83.81	111.44
317	52.33	11.71	0.53	62.84	84.57	111.71
318	52.49	12.09	0.55	65.68	82.18	111.88
319	52.66	12.56	0.51	69.87	78.86	111.86
320	52.82	13.42	0.50	75.55	74.73	111.69
321	52.99	14.22	0.48	79.50	70.71	111.15
322	53.15	14.25	0.39	78.99	68.35	110.57
323	53.31	13.98	0.39	86.43	67.58	110.42
324	53.48	14.35	0.45	96.43	64.05	111.87
325	53.64	19.68	0.60	110.30	60.62	114.03
326	53.81	22.13	0.79	123.87	58.58	116.28
327	53.97	23.16	1.00	115.50	58.52	117.86
328	54.13	25.25	1.10	108.72	59.74	118.40
329	54.30	23.56	1.00	44.75	62.90	117.85
330	54.46	18.38	0.85	32.59	68.82	116.30
331	54.63	15.07	0.68	54.48	73.54	114.61
332	54.79	15.32	0.58	54.73	74.26	113.32
333	54.95	15.13	0.55	40.51	75.82	112.39
334	55.12	12.41	0.49	47.15	79.38	111.76
335	55.28	11.75	0.48	76.48	83.13	111.04
336	55.45	11.48	0.45	77.86	84.05	110.76

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
337	55.61	11.11	0.45	81.24	84.98	110.86
338	55.77	11.38	0.51	84.86	83.41	111.24
339	55.94	12.72	0.50	88.54	76.64	111.59
340	56.10	15.55	0.47	83.36	70.02	111.72
341	56.27	16.35	0.48	79.31	67.25	111.93
342	56.43	15.46	0.52	86.48	67.38	112.21
343	56.59	16.15	0.52	80.36	70.37	112.59
344	56.76	14.76	0.58	81.38	72.58	113.17
345	56.92	14.84	0.65	97.00	75.31	113.89
346	57.09	15.45	0.70	94.31	75.33	114.35
347	57.25	15.59	0.69	94.50	76.39	114.36
348	57.41	14.35	0.67	84.11	79.50	113.63
349	57.58	12.11	0.55	82.49	84.93	112.47
350	57.74	10.57	0.48	86.11	88.90	111.65
351	57.91	11.01	0.53	96.18	77.28	111.46
352	58.07	17.76	0.44	109.07	67.32	111.30
353	58.23	17.66	0.38	73.69	60.28	110.22
354	58.40	15.33	0.31	83.76	64.86	109.19
355	58.56	11.99	0.33	89.37	70.97	109.06
356	58.73	12.59	0.40	101.93	73.98	110.32
357	58.89	15.16	0.51	107.01	70.73	112.26
358	59.06	17.59	0.64	115.46	67.15	114.04
359	59.22	19.38	0.73	121.13	65.23	115.83
360	59.38	21.54	0.94	128.84	64.32	117.27
361	59.55	22.74	1.07	133.94	61.46	118.19
362	59.71	26.27	1.01	117.74	64.97	117.76
363	59.88	17.16	0.84	23.21	69.83	115.79
364	60.04	13.37	0.51	35.04	82.54	112.62
365	60.20	11.04	0.35	54.84	84.29	109.38
366	60.37	10.82	0.29	61.40	84.93	107.57
367	60.53	10.38	0.28	65.94	84.40	106.73
368	60.70	10.17	0.26	67.19	84.31	106.47
369	60.86	10.51	0.26	68.48	84.31	106.52
370	61.02	10.38	0.28	73.28	82.82	107.18
371	61.19	11.50	0.32	77.55	78.63	107.71
372	61.35	13.06	0.30	83.94	72.70	108.14
373	61.52	14.33	0.31	80.86	70.50	108.09
374	61.68	12.90	0.30	78.41	72.48	107.67
375	61.84	11.26	0.27	80.39	79.66	107.65
376	62.01	10.39	0.33	76.19	84.36	107.68
377	62.17	10.71	0.32	80.13	85.56	108.96
378	62.34	12.33	0.43	84.45	81.31	109.55
379	62.50	13.16	0.40	90.85	76.05	109.83
380	62.66	14.19	0.33	80.39	76.04	109.35
381	62.83	11.72	0.36	79.04	78.83	109.60
382	62.99	12.01	0.44	87.11	82.91	110.87
383	63.16	13.80	0.55	89.04	81.38	112.34
384	63.32	14.92	0.62	89.02	79.36	113.52

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
385	63.48	15.48	0.68	88.85	77.48	114.28
386	63.65	16.75	0.72	87.28	75.03	114.85
387	63.81	18.05	0.74	93.97	72.27	115.52
388	63.98	19.27	0.83	103.83	69.34	116.07
389	64.14	20.58	0.84	120.00	67.81	116.64
390	64.30	21.31	0.90	95.99	67.13	116.86
391	64.47	20.67	0.88	107.56	68.07	116.56
392	64.63	19.29	0.76	85.33	70.94	115.61
393	64.80	16.20	0.65	75.99	74.57	113.90
394	64.96	14.02	0.48	77.49	78.05	112.20
395	65.12	13.52	0.43	82.25	77.08	110.47
396	65.29	13.58	0.34	96.06	72.23	109.06
397	65.45	14.55	0.26	104.39	68.46	107.81
398	65.62	13.84	0.26	104.38	66.23	106.64
399	65.78	13.17	0.22	109.82	65.69	105.95
400	65.94	13.93	0.20	104.77	67.06	105.55
401	66.11	12.35	0.23	102.98	67.56	105.77
402	66.27	13.23	0.23	107.72	66.94	105.90
403	66.44	14.56	0.20	109.19	65.15	106.21
404	66.60	14.13	0.25	106.89	68.36	107.32
405	66.77	12.58	0.35	115.93	74.39	109.82
406	66.93	14.37	0.53	122.84	75.56	112.85
407	67.09	18.58	0.78	131.73	72.56	115.51
408	67.26	20.98	0.96	122.96	68.99	116.72
409	67.42	21.39	0.85	112.90	66.88	116.56
410	67.59	20.86	0.69	107.42	65.69	115.40
411	67.75	19.19	0.61	113.97	66.54	114.54
412	67.91	18.06	0.64	124.22	67.73	114.39
413	68.08	18.90	0.67	137.19	66.95	114.78
414	68.24	20.80	0.70	135.45	63.42	114.72
415	68.41	21.70	0.58	136.56	60.29	114.22
416	68.57	21.45	0.52	129.25	62.26	114.18
417	68.73	18.58	0.71	120.79	68.84	114.61
418	68.90	15.82	0.75	137.69	74.50	114.79
419	69.06	16.52	0.62	146.56	69.99	115.06
420	69.23	23.78	0.73	95.64	66.59	114.85
421	69.39	19.25	0.66	108.27	61.62	114.46
422	69.55	21.51	0.47	126.51	64.02	114.39
423	69.72	20.48	0.74	120.58	65.11	113.95
424	69.88	16.74	0.57	122.37	69.98	113.52
425	70.05	15.59	0.42	133.27	70.93	111.71
426	70.21	15.54	0.40	136.43	70.23	110.71
427	70.37	15.09	0.41	142.88	70.85	110.97
428	70.54	15.45	0.47	147.60	72.03	111.78
429	70.70	16.24	0.54	139.03	72.28	112.74
430	70.87	17.10	0.59	133.42	72.77	113.59
431	71.03	17.22	0.65	131.04	72.41	113.86
432	71.19	17.29	0.60	135.38	72.68	114.07

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
433	71.36	17.45	0.64	130.64	72.00	114.14
434	71.52	17.88	0.66	143.66	72.04	114.45
435	71.69	18.17	0.67	128.06	71.21	114.26
436	71.85	17.78	0.58	133.21	70.36	113.81
437	72.01	17.71	0.55	140.81	69.50	113.45
438	72.18	18.02	0.58	139.82	69.61	113.80
439	72.34	18.52	0.66	139.11	69.22	114.12
440	72.51	19.04	0.61	133.61	68.18	114.19
441	72.67	19.41	0.59	131.74	67.61	114.08
442	72.83	18.98	0.63	133.57	68.04	114.09
443	73.00	18.48	0.62	149.80	69.04	114.47
444	73.16	19.26	0.69	145.43	70.37	115.28
445	73.33	19.73	0.84	140.29	69.57	115.95
446	73.49	21.19	0.79	149.46	65.64	116.27
447	73.65	24.72	0.72	146.11	59.06	115.42
448	73.82	25.82	0.53	138.92	55.93	114.78
449	73.98	24.06	0.60	132.88	59.31	115.44
450	74.15	21.76	0.92	161.72	64.21	118.44
451	74.31	28.61	1.53	188.03	64.96	121.34
452	74.48	34.10	1.90	163.30	56.20	123.06
453	74.64	48.39	1.65	81.02	48.14	124.50
454	74.80	56.41	2.24	17.79	47.61	125.34
455	74.97	44.17	2.49	20.81	55.52	125.57
456	75.13	32.23	2.09	131.30	52.48	124.65
457	75.30	52.80	1.48	68.75	45.11	123.12
458	75.46	53.80	1.23	39.05	40.67	121.19
459	75.62	34.08	0.97	42.17	46.96	118.43
460	75.79	19.65	0.55	69.60	61.64	114.67
461	75.95	16.51	0.36	106.97	69.77	111.88
462	76.12	17.15	0.48	116.62	72.43	111.67
463	76.28	16.21	0.54	125.71	69.74	112.45
464	76.44	19.94	0.48	150.90	66.03	113.58
465	76.61	23.42	0.68	133.72	63.27	113.85
466	76.77	19.94	0.57	138.96	61.23	114.85
467	76.94	25.42	0.68	158.27	65.95	117.26
468	77.10	25.37	1.40	109.57	70.45	121.02
469	77.26	27.13	2.21	166.34	59.97	123.88
470	77.43	57.51	2.09	127.05	37.67	125.97
471	77.59	108.01	2.06	7.44	25.78	126.47
472	77.76	112.74	1.91	-2.98	23.35	126.07
473	77.92	75.83	1.66	-1.08	28.06	124.32
474	78.08	45.40	1.23	9.76	40.31	121.45
475	78.25	26.02	0.89	41.36	57.11	118.15
476	78.41	20.41	0.68	113.36	69.93	115.58
477	78.58	17.59	0.63	98.99	73.35	113.68
478	78.74	16.89	0.46	115.30	74.57	112.62
479	78.90	17.18	0.47	107.60	74.32	111.97
480	79.07	16.17	0.50	121.77	74.17	112.38

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
481	79.23	17.67	0.53	132.96	71.53	113.05
482	79.40	20.70	0.58	130.59	69.54	113.76
483	79.56	19.64	0.63	135.16	70.05	115.60
484	79.72	21.41	0.98	177.85	69.64	118.20
485	79.89	28.45	1.40	179.04	64.38	120.00
486	80.05	33.47	1.26	149.78	60.11	120.20
487	80.22	31.32	0.98	57.34	57.81	118.29
488	80.38	25.59	0.60	96.95	60.58	115.79
489	80.54	20.38	0.55	101.70	64.43	113.24
490	80.71	17.78	0.44	126.93	67.04	111.73
491	80.87	18.63	0.35	131.67	66.12	110.88
492	81.04	18.93	0.41	135.35	65.20	111.04
493	81.20	18.80	0.46	151.19	64.32	111.73
494	81.36	20.90	0.45	155.96	64.04	112.44
495	81.53	20.79	0.52	156.19	64.10	113.52
496	81.69	21.40	0.66	170.10	63.71	115.00
497	81.86	25.32	0.78	185.07	60.46	116.53
498	82.02	30.13	0.88	176.77	57.17	117.40
499	82.19	30.03	0.87	182.16	55.64	118.04
500	82.35	30.70	0.95	199.29	53.01	118.89
501	82.51	33.93	1.17	249.93	50.65	120.54
502	82.68	42.11	1.48	265.81	47.79	122.17
503	82.84	46.69	1.65	249.65	46.94	123.54
504	83.01	46.32	1.91	213.62	45.31	124.26
505	83.17	53.31	1.88	228.11	43.01	124.79
506	83.33	60.35	1.91	165.17	45.42	125.48
507	83.50	44.95	2.50	126.61	47.71	127.01
508	83.66	58.80	3.25	231.63	44.07	128.76
509	83.83	94.10	3.45	26.57	41.38	130.23
510	83.99	77.24	4.04	15.71	38.86	131.35
511	84.15	89.72	4.54	185.54	37.55	132.33
512	84.32	118.68	4.78	2.47	33.27	133.21
513	84.48	127.21	4.96	12.21	25.57	133.69
514	84.65	187.95	4.29	2.63	20.59	133.87
515	84.81	202.84	4.30	1.95	18.06	134.20
516	84.97	189.91	5.05	-2.34	20.73	135.27
517	85.14	168.32	6.63	11.85	24.79	136.49
518	85.30	169.19	7.60	13.18	23.20	137.28
519	85.47	261.13	7.57	2.47	17.44	137.28
520	85.63	349.21	7.29	2.18	13.04	137.28
521	85.79	370.26	7.79	0.11	12.24	137.28
522	85.96	318.54	8.01	-2.11	15.56	137.28
523	86.12	178.77	7.22	9.10	22.75	137.28
524	86.29	106.72	6.02	2.67	33.57	135.20
525	86.45	94.52	4.77	61.71	39.98	132.92
526	86.61	82.72	3.73	22.41	41.67	130.46
527	86.78	59.93	2.50	60.13	46.18	127.52
528	86.94	40.83	1.78	60.90	56.83	124.08

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
529	87.11	29.10	1.33	50.46	67.54	121.18
530	87.27	23.09	1.10	56.37	71.97	118.99
531	87.43	26.23	0.87	57.77	72.42	117.61
532	87.60	24.03	0.82	55.05	72.56	116.52
533	87.76	19.77	0.75	50.94	78.63	115.88
534	87.93	18.53	0.75	55.56	82.91	115.50
535	88.09	19.48	0.76	58.09	83.14	115.78
536	88.25	20.23	0.83	56.35	82.27	116.21
537	88.42	20.31	0.87	57.75	82.90	116.47
538	88.58	19.76	0.84	51.52	83.87	116.29
539	88.75	19.06	0.79	57.96	83.48	116.04
540	88.91	19.92	0.78	68.45	82.07	116.04
541	89.07	20.77	0.83	67.56	81.65	116.21
542	89.24	19.78	0.83	64.93	83.04	116.11
543	89.40	18.64	0.77	65.29	85.27	115.69
544	89.57	18.10	0.72	66.38	86.24	115.43
545	89.73	18.51	0.77	67.78	85.42	115.58
546	89.90	19.60	0.80	68.02	84.64	115.95
547	90.06	19.62	0.82	65.25	83.92	116.01
548	90.22	19.27	0.78	69.26	83.05	115.70
549	90.39	19.48	0.70	78.97	82.04	115.07
550	90.55	18.84	0.64	78.04	81.52	114.27
551	90.72	17.83	0.57	78.72	82.68	113.64
552	90.88	17.30	0.56	78.44	84.51	113.10
553	91.04	16.39	0.54	84.53	85.78	112.79
554	91.21	16.38	0.52	82.23	86.18	112.46
555	91.37	16.38	0.50	84.44	86.09	112.32
556	91.54	16.19	0.51	89.57	87.37	112.28
557	91.70	15.44	0.52	89.38	90.02	112.72
558	91.86	15.48	0.60	93.28	85.73	113.34
559	92.03	19.86	0.61	108.63	76.28	114.27
560	92.19	24.81	0.65	103.75	66.92	114.51
561	92.36	25.76	0.57	114.46	68.66	116.16
562	92.52	22.89	1.04	101.70	77.27	117.61
563	92.68	19.34	1.21	113.41	87.54	119.43
564	92.85	21.04	1.45	129.41	77.14	121.09
565	93.01	39.07	1.66	113.09	63.84	122.49
566	93.18	46.70	1.66	89.80	50.06	123.14
567	93.34	52.65	1.49	52.14	44.95	122.79
568	93.50	52.34	1.31	69.00	44.58	122.35
569	93.67	44.93	1.42	82.23	51.07	122.76
570	93.83	36.33	1.89	102.06	62.67	124.24
571	94.00	38.41	2.54	133.99	62.22	126.46
572	94.16	59.77	3.20	124.21	52.09	128.48
573	94.32	76.60	3.50	72.47	42.97	129.82
574	94.49	92.10	3.48	36.54	35.94	129.63
575	94.65	99.56	2.45	10.04	32.03	129.56
576	94.82	104.85	3.12	5.11	28.90	128.27

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
577	94.98	97.64	1.98	1.72	29.92	127.43
578	95.14	78.58	1.79	3.68	32.93	124.71
579	95.31	49.68	1.35	7.98	40.38	122.37
580	95.47	40.24	0.95	20.99	49.00	120.32
581	95.64	38.08	1.08	27.64	55.66	118.99
582	95.80	33.20	0.91	38.84	58.93	118.90
583	95.96	32.60	0.98	59.46	59.24	118.01
584	96.13	33.30	0.78	57.62	58.59	117.16
585	96.29	30.32	0.63	78.83	57.99	116.16
586	96.46	29.41	0.69	85.63	63.24	116.98
587	96.62	27.19	1.08	98.56	63.87	117.52
588	96.78	30.70	0.81	130.37	56.40	118.70
589	96.95	48.51	0.97	60.91	50.14	119.17
590	97.11	37.77	1.18	65.95	51.31	120.19
591	97.28	33.85	1.22	117.55	59.69	121.22
592	97.44	40.88	1.56	89.29	61.27	121.84
593	97.60	37.26	1.53	99.82	59.32	122.88
594	97.77	44.23	1.74	108.07	58.87	123.92
595	97.93	48.75	2.19	70.49	60.88	125.37
596	98.10	42.01	2.65	79.58	62.36	126.66
597	98.26	49.59	2.92	99.49	61.07	127.56
598	98.43	59.40	3.01	49.91	51.71	128.26
599	98.59	71.16	3.00	12.48	44.36	128.65
600	98.75	83.77	2.89	21.16	38.80	127.93
601	98.92	79.15	1.95	2.32	35.15	126.43
602	99.08	73.66	1.52	2.52	35.18	124.11
603	99.25	58.13	1.35	4.22	39.75	122.07
604	99.41	40.09	1.03	12.30	48.25	120.33
605	99.57	34.61	0.97	24.62	64.26	120.84
606	99.74	31.35	1.86	32.10	69.98	121.07
607	99.90	31.01	1.27	45.70	67.18	121.75
608	100.07	41.91	1.25	58.87	N/A	87.36
609	100.23	51.57	-269759.35	29.34	N/A	87.36

Abbreviations

Depth:	Depth from free surface, at which CPT was performed (ft)
q_c:	Measured cone resistance (tsf)
f_s:	Sleeve friction resistance (tsf)
u:	Pore pressure (tsf)
Fines content:	Percentage of fines in soil (%)
Unit weight:	Bulk soil unit weight (pcf)

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.49	2.00	0.00	0.00	0.16	0.00	0.66	2.00	0.00	0.00	0.16	0.00
0.82	2.00	0.00	0.00	0.16	0.00	0.98	2.00	0.00	0.00	0.16	0.00
1.15	2.00	0.00	0.00	0.16	0.00	1.31	2.00	0.00	0.00	0.16	0.00
1.48	2.00	0.00	0.00	0.16	0.00	1.64	2.00	0.00	0.00	0.16	0.00
1.80	2.00	0.00	0.00	0.16	0.00	1.97	2.00	0.00	0.00	0.16	0.00
2.13	2.00	0.00	0.00	0.16	0.00	2.30	2.00	0.00	0.00	0.16	0.00
2.46	2.00	0.00	0.00	0.16	0.00	2.62	2.00	0.00	0.00	0.16	0.00
2.79	2.00	0.00	0.00	0.16	0.00	2.95	2.00	0.00	0.00	0.16	0.00
3.12	2.00	0.00	0.00	0.16	0.00	3.28	2.00	0.00	0.00	0.16	0.00
3.44	2.00	0.00	0.00	0.16	0.00	3.61	2.00	0.00	0.00	0.16	0.00
3.77	2.00	0.00	0.00	0.16	0.00	3.94	2.00	0.00	0.00	0.16	0.00
4.10	2.00	0.00	0.00	0.16	0.00	4.27	2.00	0.00	0.00	0.16	0.00
4.43	2.00	0.00	0.00	0.16	0.00	4.59	2.00	0.00	0.00	0.16	0.00
4.76	2.00	0.00	0.00	0.16	0.00	4.92	2.00	0.00	0.00	0.16	0.00
5.09	0.46	0.54	0.44	0.16	0.25	5.25	0.49	0.51	0.46	0.16	0.24
5.41	0.56	0.44	0.55	0.16	0.20	5.58	0.75	0.25	1.16	0.16	0.12
5.74	1.05	0.00	0.00	0.16	0.00	5.91	2.00	0.00	0.00	0.16	0.00
6.07	2.00	0.00	0.00	0.16	0.00	6.23	2.00	0.00	0.00	0.16	0.00
6.40	2.00	0.00	0.00	0.16	0.00	6.56	2.00	0.00	0.00	0.16	0.00
6.73	2.00	0.00	0.00	0.16	0.00	6.89	2.00	0.00	0.00	0.16	0.00
7.05	2.00	0.00	0.00	0.16	0.00	7.22	2.00	0.00	0.00	0.16	0.00
7.38	2.00	0.00	0.00	0.16	0.00	7.55	2.00	0.00	0.00	0.16	0.00
7.71	2.00	0.00	0.00	0.16	0.00	7.87	2.00	0.00	0.00	0.16	0.00
8.04	2.00	0.00	0.00	0.16	0.00	8.20	2.00	0.00	0.00	0.16	0.00
8.37	2.00	0.00	0.00	0.16	0.00	8.53	2.00	0.00	0.00	0.16	0.00
8.69	2.00	0.00	0.00	0.16	0.00	8.86	2.00	0.00	0.00	0.16	0.00
9.02	2.00	0.00	0.00	0.16	0.00	9.19	2.00	0.00	0.00	0.16	0.00
9.35	2.00	0.00	0.00	0.16	0.00	9.51	2.00	0.00	0.00	0.16	0.00
9.68	2.00	0.00	0.00	0.16	0.00	9.84	2.00	0.00	0.00	0.16	0.00
10.01	2.00	0.00	0.00	0.16	0.00	10.17	2.00	0.00	0.00	0.16	0.00
10.33	2.00	0.00	0.00	0.16	0.00	10.50	2.00	0.00	0.00	0.16	0.00
10.66	2.00	0.00	0.00	0.16	0.00	10.83	2.00	0.00	0.00	0.16	0.00
10.99	2.00	0.00	0.00	0.16	0.00	11.15	2.00	0.00	0.00	0.16	0.00
11.32	2.00	0.00	0.00	0.16	0.00	11.48	2.00	0.00	0.00	0.16	0.00
11.65	2.00	0.00	0.00	0.16	0.00	11.81	2.00	0.00	0.00	0.16	0.00
11.98	2.00	0.00	0.00	0.16	0.00	12.14	2.00	0.00	0.00	0.16	0.00
12.30	2.00	0.00	0.00	0.16	0.00	12.47	2.00	0.00	0.00	0.16	0.00
12.63	2.00	0.00	0.00	0.16	0.00	12.80	2.00	0.00	0.00	0.16	0.00
12.96	2.00	0.00	0.00	0.16	0.00	13.12	2.00	0.00	0.00	0.16	0.00
13.29	2.00	0.00	0.00	0.16	0.00	13.45	2.00	0.00	0.00	0.16	0.00
13.62	2.00	0.00	0.00	0.16	0.00	13.78	2.00	0.00	0.00	0.16	0.00
13.94	2.00	0.00	0.00	0.16	0.00	14.11	2.00	0.00	0.00	0.16	0.00
14.27	2.00	0.00	0.00	0.16	0.00	14.44	2.00	0.00	0.00	0.16	0.00
14.60	2.00	0.00	0.00	0.16	0.00	14.76	2.00	0.00	0.00	0.16	0.00
14.93	2.00	0.00	0.00	0.16	0.00	15.09	2.00	0.00	0.00	0.16	0.00
15.26	2.00	0.00	0.00	0.16	0.00	15.42	2.00	0.00	0.00	0.16	0.00
15.58	2.00	0.00	0.00	0.16	0.00	15.75	2.00	0.00	0.00	0.16	0.00
15.91	2.00	0.00	0.00	0.16	0.00	16.08	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
16.24	2.00	0.00	0.00	0.16	0.00	16.40	2.00	0.00	0.00	0.16	0.00
16.57	2.00	0.00	0.00	0.16	0.00	16.73	2.00	0.00	0.00	0.16	0.00
16.90	2.00	0.00	0.00	0.16	0.00	17.06	2.00	0.00	0.00	0.16	0.00
17.22	2.00	0.00	0.00	0.16	0.00	17.39	2.00	0.00	0.00	0.16	0.00
17.55	2.00	0.00	0.00	0.16	0.00	17.72	2.00	0.00	0.00	0.16	0.00
17.88	2.00	0.00	0.00	0.16	0.00	18.04	2.00	0.00	0.00	0.16	0.00
18.21	2.00	0.00	0.00	0.16	0.00	18.37	2.00	0.00	0.00	0.16	0.00
18.54	2.00	0.00	0.00	0.16	0.00	18.70	2.00	0.00	0.00	0.16	0.00
18.86	2.00	0.00	0.00	0.16	0.00	19.03	2.00	0.00	0.00	0.16	0.00
19.19	2.00	0.00	0.00	0.16	0.00	19.36	2.00	0.00	0.00	0.16	0.00
19.52	2.00	0.00	0.00	0.16	0.00	19.69	2.00	0.00	0.00	0.16	0.00
19.85	2.00	0.00	0.00	0.16	0.00	20.01	2.00	0.00	0.00	0.16	0.00
20.18	2.00	0.00	0.00	0.16	0.00	20.34	2.00	0.00	0.00	0.16	0.00
20.51	2.00	0.00	0.00	0.16	0.00	20.67	2.00	0.00	0.00	0.16	0.00
20.83	2.00	0.00	0.00	0.16	0.00	21.00	2.00	0.00	0.00	0.16	0.00
21.16	2.00	0.00	0.00	0.16	0.00	21.33	2.00	0.00	0.00	0.16	0.00
21.49	2.00	0.00	0.00	0.16	0.00	21.65	2.00	0.00	0.00	0.16	0.00
21.82	2.00	0.00	0.00	0.16	0.00	21.98	2.00	0.00	0.00	0.16	0.00
22.15	2.00	0.00	0.00	0.16	0.00	22.31	2.00	0.00	0.00	0.16	0.00
22.47	2.00	0.00	0.00	0.16	0.00	22.64	2.00	0.00	0.00	0.16	0.00
22.80	2.00	0.00	0.00	0.16	0.00	22.97	2.00	0.00	0.00	0.16	0.00
23.13	2.00	0.00	0.00	0.16	0.00	23.29	2.00	0.00	0.00	0.16	0.00
23.46	2.00	0.00	0.00	0.16	0.00	23.62	2.00	0.00	0.00	0.16	0.00
23.79	2.00	0.00	0.00	0.16	0.00	23.95	2.00	0.00	0.00	0.16	0.00
24.11	2.00	0.00	0.00	0.16	0.00	24.28	2.00	0.00	0.00	0.16	0.00
24.44	2.00	0.00	0.00	0.16	0.00	24.61	2.00	0.00	0.00	0.16	0.00
24.77	2.00	0.00	0.00	0.16	0.00	24.93	2.00	0.00	0.00	0.16	0.00
25.10	2.00	0.00	0.00	0.16	0.00	25.26	2.00	0.00	0.00	0.16	0.00
25.43	2.00	0.00	0.00	0.16	0.00	25.59	2.00	0.00	0.00	0.16	0.00
25.75	2.00	0.00	0.00	0.16	0.00	25.92	2.00	0.00	0.00	0.16	0.00
26.08	2.00	0.00	0.00	0.16	0.00	26.25	2.00	0.00	0.00	0.16	0.00
26.41	2.00	0.00	0.00	0.16	0.00	26.57	2.00	0.00	0.00	0.16	0.00
26.74	2.00	0.00	0.00	0.16	0.00	26.90	2.00	0.00	0.00	0.16	0.00
27.07	2.00	0.00	0.00	0.16	0.00	27.23	2.00	0.00	0.00	0.16	0.00
27.40	2.00	0.00	0.00	0.16	0.00	27.56	2.00	0.00	0.00	0.16	0.00
27.72	2.00	0.00	0.00	0.16	0.00	27.89	2.00	0.00	0.00	0.16	0.00
28.05	2.00	0.00	0.00	0.16	0.00	28.22	2.00	0.00	0.00	0.16	0.00
28.38	2.00	0.00	0.00	0.16	0.00	28.54	2.00	0.00	0.00	0.16	0.00
28.71	2.00	0.00	0.00	0.16	0.00	28.87	2.00	0.00	0.00	0.16	0.00
29.04	2.00	0.00	0.00	0.16	0.00	29.20	2.00	0.00	0.00	0.16	0.00
29.36	2.00	0.00	0.00	0.16	0.00	29.53	2.00	0.00	0.00	0.16	0.00
29.69	2.00	0.00	0.00	0.16	0.00	29.86	2.00	0.00	0.00	0.16	0.00
30.02	2.00	0.00	0.00	0.16	0.00	30.18	2.00	0.00	0.00	0.16	0.00
30.35	2.00	0.00	0.00	0.16	0.00	30.51	2.00	0.00	0.00	0.16	0.00
30.68	2.00	0.00	0.00	0.16	0.00	30.84	2.00	0.00	0.00	0.16	0.00
31.00	2.00	0.00	0.00	0.16	0.00	31.17	2.00	0.00	0.00	0.16	0.00
31.33	2.00	0.00	0.00	0.16	0.00	31.50	2.00	0.00	0.00	0.16	0.00
31.66	2.00	0.00	0.00	0.16	0.00	31.82	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.99	2.00	0.00	0.00	0.16	0.00	32.15	2.00	0.00	0.00	0.16	0.00
32.32	2.00	0.00	0.00	0.16	0.00	32.48	2.00	0.00	0.00	0.16	0.00
32.64	2.00	0.00	0.00	0.16	0.00	32.81	2.00	0.00	0.00	0.16	0.00
32.97	2.00	0.00	0.00	0.16	0.00	33.14	2.00	0.00	0.00	0.16	0.00
33.30	2.00	0.00	0.00	0.16	0.00	33.46	2.00	0.00	0.00	0.16	0.00
33.63	2.00	0.00	0.00	0.16	0.00	33.79	2.00	0.00	0.00	0.16	0.00
33.96	2.00	0.00	0.00	0.16	0.00	34.12	2.00	0.00	0.00	0.16	0.00
34.28	2.00	0.00	0.00	0.16	0.00	34.45	2.00	0.00	0.00	0.16	0.00
34.61	2.00	0.00	0.00	0.16	0.00	34.78	2.00	0.00	0.00	0.16	0.00
34.94	2.00	0.00	0.00	0.16	0.00	35.10	2.00	0.00	0.00	0.16	0.00
35.27	2.00	0.00	0.00	0.16	0.00	35.43	2.00	0.00	0.00	0.16	0.00
35.60	2.00	0.00	0.00	0.16	0.00	35.76	2.00	0.00	0.00	0.16	0.00
35.93	2.00	0.00	0.00	0.16	0.00	36.09	2.00	0.00	0.00	0.16	0.00
36.25	2.00	0.00	0.00	0.16	0.00	36.42	2.00	0.00	0.00	0.16	0.00
36.58	2.00	0.00	0.00	0.16	0.00	36.75	2.00	0.00	0.00	0.16	0.00
36.91	2.00	0.00	0.00	0.16	0.00	37.07	2.00	0.00	0.00	0.16	0.00
37.24	2.00	0.00	0.00	0.16	0.00	37.40	2.00	0.00	0.00	0.16	0.00
37.57	2.00	0.00	0.00	0.16	0.00	37.73	2.00	0.00	0.00	0.16	0.00
37.89	2.00	0.00	0.00	0.16	0.00	38.06	2.00	0.00	0.00	0.16	0.00
38.22	2.00	0.00	0.00	0.16	0.00	38.39	2.00	0.00	0.00	0.16	0.00
38.55	2.00	0.00	0.00	0.16	0.00	38.71	2.00	0.00	0.00	0.16	0.00
38.88	2.00	0.00	0.00	0.16	0.00	39.04	2.00	0.00	0.00	0.16	0.00
39.21	2.00	0.00	0.00	0.16	0.00	39.37	2.00	0.00	0.00	0.16	0.00
39.53	2.00	0.00	0.00	0.16	0.00	39.70	2.00	0.00	0.00	0.16	0.00
39.86	2.00	0.00	0.00	0.16	0.00	40.03	2.00	0.00	0.00	0.16	0.00
40.19	2.00	0.00	0.00	0.16	0.00	40.35	2.00	0.00	0.00	0.16	0.00
40.52	2.00	0.00	0.00	0.16	0.00	40.68	2.00	0.00	0.00	0.16	0.00
40.85	2.00	0.00	0.00	0.16	0.00	41.01	2.00	0.00	0.00	0.16	0.00
41.17	2.00	0.00	0.00	0.16	0.00	41.34	2.00	0.00	0.00	0.16	0.00
41.50	2.00	0.00	0.00	0.16	0.00	41.67	2.00	0.00	0.00	0.16	0.00
41.83	2.00	0.00	0.00	0.16	0.00	41.99	2.00	0.00	0.00	0.16	0.00
42.16	2.00	0.00	0.00	0.16	0.00	42.32	2.00	0.00	0.00	0.16	0.00
42.49	2.00	0.00	0.00	0.16	0.00	42.65	2.00	0.00	0.00	0.16	0.00
42.81	2.00	0.00	0.00	0.16	0.00	42.98	2.00	0.00	0.00	0.16	0.00
43.14	2.00	0.00	0.00	0.16	0.00	43.31	2.00	0.00	0.00	0.16	0.00
43.47	2.00	0.00	0.00	0.16	0.00	43.64	2.00	0.00	0.00	0.16	0.00
43.80	2.00	0.00	0.00	0.16	0.00	43.96	2.00	0.00	0.00	0.16	0.00
44.13	2.00	0.00	0.00	0.16	0.00	44.29	2.00	0.00	0.00	0.16	0.00
44.46	2.00	0.00	0.00	0.16	0.00	44.62	2.00	0.00	0.00	0.16	0.00
44.78	2.00	0.00	0.00	0.16	0.00	44.95	2.00	0.00	0.00	0.16	0.00
45.11	2.00	0.00	0.00	0.16	0.00	45.28	2.00	0.00	0.00	0.16	0.00
45.44	2.00	0.00	0.00	0.16	0.00	45.60	2.00	0.00	0.00	0.16	0.00
45.77	2.00	0.00	0.00	0.16	0.00	45.93	2.00	0.00	0.00	0.16	0.00
46.10	2.00	0.00	0.00	0.16	0.00	46.26	2.00	0.00	0.00	0.16	0.00
46.42	2.00	0.00	0.00	0.16	0.00	46.59	0.39	0.61	0.38	0.16	0.09
46.75	0.27	0.73	0.31	0.16	0.11	46.92	2.00	0.00	0.00	0.16	0.00
47.08	2.00	0.00	0.00	0.16	0.00	47.24	2.00	0.00	0.00	0.16	0.00
47.41	2.00	0.00	0.00	0.16	0.00	47.57	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
47.74	2.00	0.00	0.00	0.16	0.00	47.90	2.00	0.00	0.00	0.16	0.00
48.06	2.00	0.00	0.00	0.16	0.00	48.23	2.00	0.00	0.00	0.16	0.00
48.39	2.00	0.00	0.00	0.16	0.00	48.56	2.00	0.00	0.00	0.16	0.00
48.72	2.00	0.00	0.00	0.16	0.00	48.88	2.00	0.00	0.00	0.16	0.00
49.05	2.00	0.00	0.00	0.16	0.00	49.21	2.00	0.00	0.00	0.16	0.00
49.38	2.00	0.00	0.00	0.16	0.00	49.54	2.00	0.00	0.00	0.16	0.00
49.70	2.00	0.00	0.00	0.16	0.00	49.87	2.00	0.00	0.00	0.16	0.00
50.03	2.00	0.00	0.00	0.16	0.00	50.20	2.00	0.00	0.00	0.16	0.00
50.36	2.00	0.00	0.00	0.16	0.00	50.52	2.00	0.00	0.00	0.16	0.00
50.69	0.22	0.78	0.29	0.16	0.09	50.85	0.16	0.84	0.26	0.16	0.09
51.02	0.17	0.83	0.27	0.16	0.09	51.18	0.18	0.82	0.27	0.16	0.09
51.35	0.19	0.81	0.27	0.16	0.09	51.51	2.00	0.00	0.00	0.16	0.00
51.67	2.00	0.00	0.00	0.16	0.00	51.84	2.00	0.00	0.00	0.16	0.00
52.00	2.00	0.00	0.00	0.16	0.00	52.17	2.00	0.00	0.00	0.16	0.00
52.33	2.00	0.00	0.00	0.16	0.00	52.49	2.00	0.00	0.00	0.16	0.00
52.66	2.00	0.00	0.00	0.16	0.00	52.82	2.00	0.00	0.00	0.16	0.00
52.99	2.00	0.00	0.00	0.16	0.00	53.15	2.00	0.00	0.00	0.16	0.00
53.31	2.00	0.00	0.00	0.16	0.00	53.48	2.00	0.00	0.00	0.16	0.00
53.64	2.00	0.00	0.00	0.16	0.00	53.81	2.00	0.00	0.00	0.16	0.00
53.97	2.00	0.00	0.00	0.16	0.00	54.13	2.00	0.00	0.00	0.16	0.00
54.30	2.00	0.00	0.00	0.16	0.00	54.46	2.00	0.00	0.00	0.16	0.00
54.63	2.00	0.00	0.00	0.16	0.00	54.79	2.00	0.00	0.00	0.16	0.00
54.95	2.00	0.00	0.00	0.16	0.00	55.12	2.00	0.00	0.00	0.16	0.00
55.28	2.00	0.00	0.00	0.16	0.00	55.45	2.00	0.00	0.00	0.16	0.00
55.61	2.00	0.00	0.00	0.16	0.00	55.77	2.00	0.00	0.00	0.16	0.00
55.94	2.00	0.00	0.00	0.16	0.00	56.10	2.00	0.00	0.00	0.16	0.00
56.27	2.00	0.00	0.00	0.16	0.00	56.43	2.00	0.00	0.00	0.16	0.00
56.59	2.00	0.00	0.00	0.16	0.00	56.76	2.00	0.00	0.00	0.16	0.00
56.92	2.00	0.00	0.00	0.16	0.00	57.09	2.00	0.00	0.00	0.16	0.00
57.25	2.00	0.00	0.00	0.16	0.00	57.41	2.00	0.00	0.00	0.16	0.00
57.58	2.00	0.00	0.00	0.16	0.00	57.74	2.00	0.00	0.00	0.16	0.00
57.91	2.00	0.00	0.00	0.16	0.00	58.07	2.00	0.00	0.00	0.16	0.00
58.23	2.00	0.00	0.00	0.16	0.00	58.40	2.00	0.00	0.00	0.16	0.00
58.56	2.00	0.00	0.00	0.16	0.00	58.73	2.00	0.00	0.00	0.16	0.00
58.89	2.00	0.00	0.00	0.16	0.00	59.06	2.00	0.00	0.00	0.16	0.00
59.22	2.00	0.00	0.00	0.16	0.00	59.38	2.00	0.00	0.00	0.16	0.00
59.55	2.00	0.00	0.00	0.16	0.00	59.71	2.00	0.00	0.00	0.16	0.00
59.88	2.00	0.00	0.00	0.16	0.00	60.04	2.00	0.00	0.00	0.16	0.00
60.20	2.00	0.00	0.00	0.16	0.00	60.37	2.00	0.00	0.00	0.16	0.00
60.53	2.00	0.00	0.00	0.16	0.00	60.70	2.00	0.00	0.00	0.16	0.00
60.86	2.00	0.00	0.00	0.16	0.00	61.02	2.00	0.00	0.00	0.16	0.00
61.19	2.00	0.00	0.00	0.16	0.00	61.35	2.00	0.00	0.00	0.16	0.00
61.52	2.00	0.00	0.00	0.16	0.00	61.68	2.00	0.00	0.00	0.16	0.00
61.84	2.00	0.00	0.00	0.16	0.00	62.01	2.00	0.00	0.00	0.16	0.00
62.17	2.00	0.00	0.00	0.16	0.00	62.34	2.00	0.00	0.00	0.16	0.00
62.50	2.00	0.00	0.00	0.16	0.00	62.66	2.00	0.00	0.00	0.16	0.00
62.83	2.00	0.00	0.00	0.16	0.00	62.99	2.00	0.00	0.00	0.16	0.00
63.16	2.00	0.00	0.00	0.16	0.00	63.32	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
63.48	2.00	0.00	0.00	0.16	0.00	63.65	2.00	0.00	0.00	0.16	0.00
63.81	2.00	0.00	0.00	0.16	0.00	63.98	2.00	0.00	0.00	0.16	0.00
64.14	2.00	0.00	0.00	0.16	0.00	64.30	2.00	0.00	0.00	0.16	0.00
64.47	2.00	0.00	0.00	0.16	0.00	64.63	2.00	0.00	0.00	0.16	0.00
64.80	2.00	0.00	0.00	0.16	0.00	64.96	2.00	0.00	0.00	0.16	0.00
65.12	2.00	0.00	0.00	0.16	0.00	65.29	2.00	0.00	0.00	0.16	0.00
65.45	2.00	0.00	0.00	0.16	0.00	65.62	2.00	0.00	0.00	0.16	0.00
65.78	2.00	0.00	0.00	0.16	0.00	65.94	2.00	0.00	0.00	0.16	0.00
66.11	2.00	0.00	0.00	0.16	0.00	66.27	2.00	0.00	0.00	0.16	0.00
66.44	2.00	0.00	0.00	0.16	0.00	66.60	2.00	0.00	0.00	0.16	0.00
66.77	2.00	0.00	0.00	0.16	0.00	66.93	2.00	0.00	0.00	0.16	0.00
67.09	2.00	0.00	0.00	0.16	0.00	67.26	2.00	0.00	0.00	0.16	0.00
67.42	2.00	0.00	0.00	0.16	0.00	67.59	2.00	0.00	0.00	0.16	0.00
67.75	2.00	0.00	0.00	0.16	0.00	67.91	2.00	0.00	0.00	0.16	0.00
68.08	2.00	0.00	0.00	0.16	0.00	68.24	2.00	0.00	0.00	0.16	0.00
68.41	2.00	0.00	0.00	0.16	0.00	68.57	2.00	0.00	0.00	0.16	0.00
68.73	2.00	0.00	0.00	0.16	0.00	68.90	2.00	0.00	0.00	0.16	0.00
69.06	2.00	0.00	0.00	0.16	0.00	69.23	2.00	0.00	0.00	0.16	0.00
69.39	2.00	0.00	0.00	0.16	0.00	69.55	2.00	0.00	0.00	0.16	0.00
69.72	2.00	0.00	0.00	0.16	0.00	69.88	2.00	0.00	0.00	0.16	0.00
70.05	2.00	0.00	0.00	0.16	0.00	70.21	2.00	0.00	0.00	0.16	0.00
70.37	2.00	0.00	0.00	0.16	0.00	70.54	2.00	0.00	0.00	0.16	0.00
70.70	2.00	0.00	0.00	0.16	0.00	70.87	2.00	0.00	0.00	0.16	0.00
71.03	2.00	0.00	0.00	0.16	0.00	71.19	2.00	0.00	0.00	0.16	0.00
71.36	2.00	0.00	0.00	0.16	0.00	71.52	2.00	0.00	0.00	0.16	0.00
71.69	2.00	0.00	0.00	0.16	0.00	71.85	2.00	0.00	0.00	0.16	0.00
72.01	2.00	0.00	0.00	0.16	0.00	72.18	2.00	0.00	0.00	0.16	0.00
72.34	2.00	0.00	0.00	0.16	0.00	72.51	2.00	0.00	0.00	0.16	0.00
72.67	2.00	0.00	0.00	0.16	0.00	72.83	2.00	0.00	0.00	0.16	0.00
73.00	2.00	0.00	0.00	0.16	0.00	73.16	2.00	0.00	0.00	0.16	0.00
73.33	2.00	0.00	0.00	0.16	0.00	73.49	2.00	0.00	0.00	0.16	0.00
73.65	2.00	0.00	0.00	0.16	0.00	73.82	2.00	0.00	0.00	0.16	0.00
73.98	2.00	0.00	0.00	0.16	0.00	74.15	2.00	0.00	0.00	0.16	0.00
74.31	2.00	0.00	0.00	0.16	0.00	74.48	2.00	0.00	0.00	0.16	0.00
74.64	2.00	0.00	0.00	0.16	0.00	74.80	2.00	0.00	0.00	0.16	0.00
74.97	2.00	0.00	0.00	0.16	0.00	75.13	2.00	0.00	0.00	0.16	0.00
75.30	2.00	0.00	0.00	0.16	0.00	75.46	2.00	0.00	0.00	0.16	0.00
75.62	2.00	0.00	0.00	0.16	0.00	75.79	2.00	0.00	0.00	0.16	0.00
75.95	2.00	0.00	0.00	0.16	0.00	76.12	2.00	0.00	0.00	0.16	0.00
76.28	2.00	0.00	0.00	0.16	0.00	76.44	2.00	0.00	0.00	0.16	0.00
76.61	2.00	0.00	0.00	0.16	0.00	76.77	2.00	0.00	0.00	0.16	0.00
76.94	2.00	0.00	0.00	0.16	0.00	77.10	2.00	0.00	0.00	0.16	0.00
77.26	2.00	0.00	0.00	0.16	0.00	77.43	2.00	0.00	0.00	0.16	0.00
77.59	2.00	0.00	0.00	0.16	0.00	77.76	2.00	0.00	0.00	0.16	0.00
77.92	2.00	0.00	0.00	0.16	0.00	78.08	2.00	0.00	0.00	0.16	0.00
78.25	2.00	0.00	0.00	0.16	0.00	78.41	2.00	0.00	0.00	0.16	0.00
78.58	2.00	0.00	0.00	0.16	0.00	78.74	2.00	0.00	0.00	0.16	0.00
78.90	2.00	0.00	0.00	0.16	0.00	79.07	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
79.23	2.00	0.00	0.00	0.16	0.00	79.40	2.00	0.00	0.00	0.16	0.00
79.56	2.00	0.00	0.00	0.16	0.00	79.72	2.00	0.00	0.00	0.16	0.00
79.89	2.00	0.00	0.00	0.16	0.00	80.05	2.00	0.00	0.00	0.16	0.00
80.22	2.00	0.00	0.00	0.16	0.00	80.38	2.00	0.00	0.00	0.16	0.00
80.54	2.00	0.00	0.00	0.16	0.00	80.71	2.00	0.00	0.00	0.16	0.00
80.87	2.00	0.00	0.00	0.16	0.00	81.04	2.00	0.00	0.00	0.16	0.00
81.20	2.00	0.00	0.00	0.16	0.00	81.36	2.00	0.00	0.00	0.16	0.00
81.53	2.00	0.00	0.00	0.16	0.00	81.69	2.00	0.00	0.00	0.16	0.00
81.86	2.00	0.00	0.00	0.16	0.00	82.02	2.00	0.00	0.00	0.16	0.00
82.19	2.00	0.00	0.00	0.16	0.00	82.35	2.00	0.00	0.00	0.16	0.00
82.51	2.00	0.00	0.00	0.16	0.00	82.68	2.00	0.00	0.00	0.16	0.00
82.84	2.00	0.00	0.00	0.16	0.00	83.01	2.00	0.00	0.00	0.16	0.00
83.17	2.00	0.00	0.00	0.16	0.00	83.33	2.00	0.00	0.00	0.16	0.00
83.50	2.00	0.00	0.00	0.16	0.00	83.66	2.00	0.00	0.00	0.16	0.00
83.83	2.00	0.00	0.00	0.16	0.00	83.99	2.00	0.00	0.00	0.16	0.00
84.15	2.00	0.00	0.00	0.16	0.00	84.32	2.00	0.00	0.00	0.16	0.00
84.48	2.00	0.00	0.00	0.16	0.00	84.65	2.00	0.00	0.00	0.16	0.00
84.81	2.00	0.00	0.00	0.16	0.00	84.97	2.00	0.00	0.00	0.16	0.00
85.14	2.00	0.00	0.00	0.16	0.00	85.30	2.00	0.00	0.00	0.16	0.00
85.47	2.00	0.00	0.00	0.16	0.00	85.63	2.00	0.00	0.00	0.16	0.00
85.79	2.00	0.00	0.00	0.16	0.00	85.96	2.00	0.00	0.00	0.16	0.00
86.12	2.00	0.00	0.00	0.16	0.00	86.29	2.00	0.00	0.00	0.16	0.00
86.45	2.00	0.00	0.00	0.16	0.00	86.61	2.00	0.00	0.00	0.16	0.00
86.78	2.00	0.00	0.00	0.16	0.00	86.94	2.00	0.00	0.00	0.16	0.00
87.11	2.00	0.00	0.00	0.16	0.00	87.27	2.00	0.00	0.00	0.16	0.00
87.43	2.00	0.00	0.00	0.16	0.00	87.60	2.00	0.00	0.00	0.16	0.00
87.76	2.00	0.00	0.00	0.16	0.00	87.93	2.00	0.00	0.00	0.16	0.00
88.09	2.00	0.00	0.00	0.16	0.00	88.25	2.00	0.00	0.00	0.16	0.00
88.42	2.00	0.00	0.00	0.16	0.00	88.58	2.00	0.00	0.00	0.16	0.00
88.75	2.00	0.00	0.00	0.16	0.00	88.91	2.00	0.00	0.00	0.16	0.00
89.07	2.00	0.00	0.00	0.16	0.00	89.24	2.00	0.00	0.00	0.16	0.00
89.40	2.00	0.00	0.00	0.16	0.00	89.57	2.00	0.00	0.00	0.16	0.00
89.73	2.00	0.00	0.00	0.16	0.00	89.90	2.00	0.00	0.00	0.16	0.00
90.06	2.00	0.00	0.00	0.16	0.00	90.22	2.00	0.00	0.00	0.16	0.00
90.39	2.00	0.00	0.00	0.16	0.00	90.55	2.00	0.00	0.00	0.16	0.00
90.72	2.00	0.00	0.00	0.16	0.00	90.88	2.00	0.00	0.00	0.16	0.00
91.04	2.00	0.00	0.00	0.16	0.00	91.21	2.00	0.00	0.00	0.16	0.00
91.37	2.00	0.00	0.00	0.16	0.00	91.54	2.00	0.00	0.00	0.16	0.00
91.70	2.00	0.00	0.00	0.16	0.00	91.86	2.00	0.00	0.00	0.16	0.00
92.03	2.00	0.00	0.00	0.16	0.00	92.19	2.00	0.00	0.00	0.16	0.00
92.36	2.00	0.00	0.00	0.16	0.00	92.52	2.00	0.00	0.00	0.16	0.00
92.68	2.00	0.00	0.00	0.16	0.00	92.85	2.00	0.00	0.00	0.16	0.00
93.01	2.00	0.00	0.00	0.16	0.00	93.18	2.00	0.00	0.00	0.16	0.00
93.34	2.00	0.00	0.00	0.16	0.00	93.50	2.00	0.00	0.00	0.16	0.00
93.67	2.00	0.00	0.00	0.16	0.00	93.83	2.00	0.00	0.00	0.16	0.00
94.00	2.00	0.00	0.00	0.16	0.00	94.16	2.00	0.00	0.00	0.16	0.00
94.32	2.00	0.00	0.00	0.16	0.00	94.49	2.00	0.00	0.00	0.16	0.00
94.65	2.00	0.00	0.00	0.16	0.00	94.82	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
94.98	2.00	0.00	0.00	0.16	0.00	95.14	2.00	0.00	0.00	0.16	0.00
95.31	2.00	0.00	0.00	0.16	0.00	95.47	2.00	0.00	0.00	0.16	0.00
95.64	2.00	0.00	0.00	0.16	0.00	95.80	2.00	0.00	0.00	0.16	0.00
95.96	2.00	0.00	0.00	0.16	0.00	96.13	2.00	0.00	0.00	0.16	0.00
96.29	2.00	0.00	0.00	0.16	0.00	96.46	2.00	0.00	0.00	0.16	0.00
96.62	2.00	0.00	0.00	0.16	0.00	96.78	2.00	0.00	0.00	0.16	0.00
96.95	2.00	0.00	0.00	0.16	0.00	97.11	2.00	0.00	0.00	0.16	0.00
97.28	2.00	0.00	0.00	0.16	0.00	97.44	2.00	0.00	0.00	0.16	0.00
97.60	2.00	0.00	0.00	0.16	0.00	97.77	2.00	0.00	0.00	0.16	0.00
97.93	2.00	0.00	0.00	0.16	0.00	98.10	2.00	0.00	0.00	0.16	0.00
98.26	2.00	0.00	0.00	0.16	0.00	98.43	2.00	0.00	0.00	0.16	0.00
98.59	2.00	0.00	0.00	0.16	0.00	98.75	2.00	0.00	0.00	0.16	0.00
98.92	2.00	0.00	0.00	0.16	0.00	99.08	2.00	0.00	0.00	0.16	0.00
99.25	2.00	0.00	0.00	0.16	0.00	99.41	2.00	0.00	0.00	0.16	0.00
99.57	2.00	0.00	0.00	0.16	0.00	99.74	2.00	0.00	0.00	0.16	0.00
99.90	2.00	0.00	0.00	0.16	0.00	100.07	2.00	0.00	0.00	0.16	0.00
100.23	2.00	0.00	0.00	0.16	0.00						

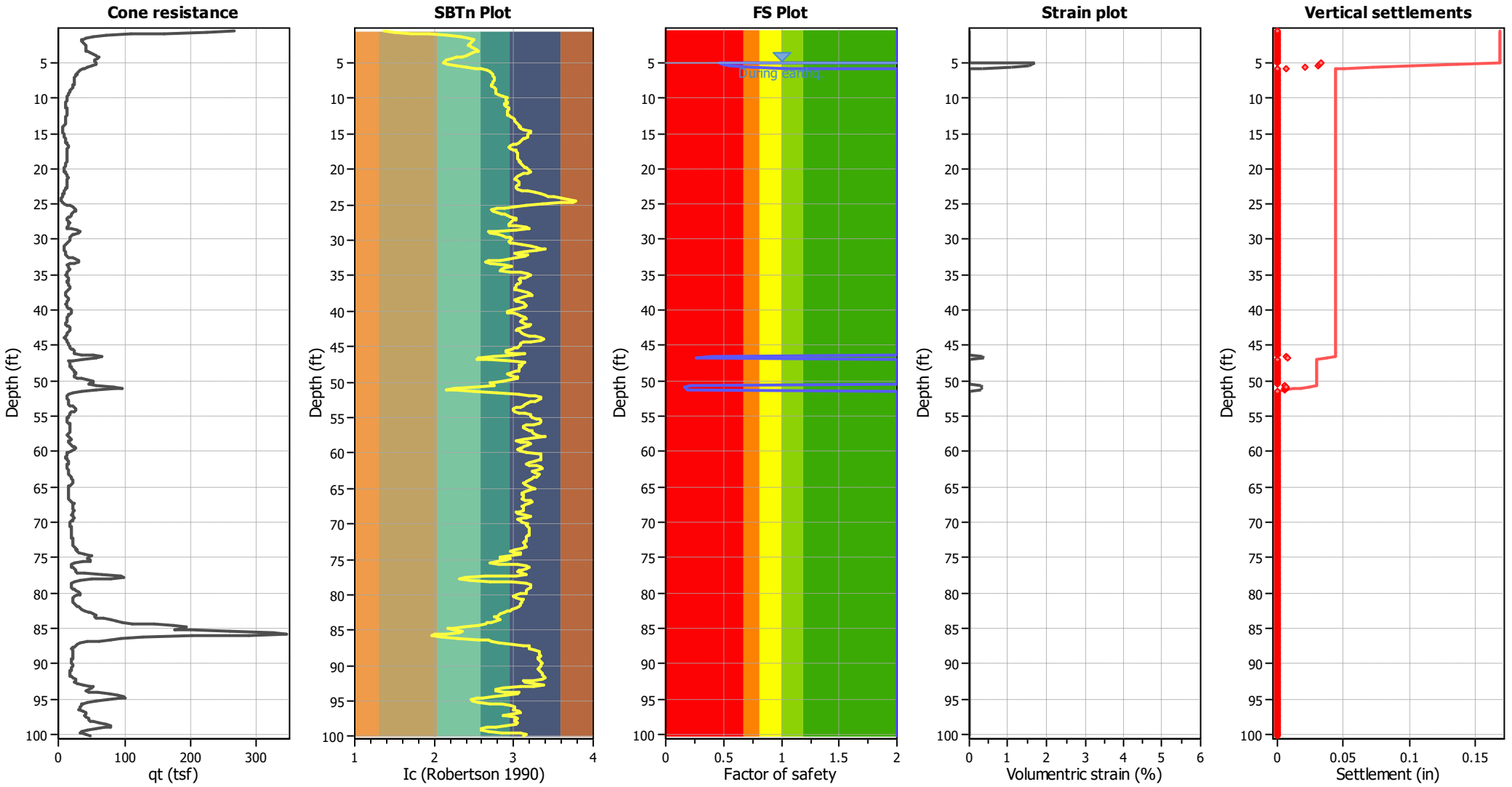
Overall liquefaction potential: 1.45

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement due to soil liquefaction ::

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
5.09	133.41	0.46	1.69	0.91	0.03	5.25	137.48	0.49	1.64	0.91	0.03
5.41	146.43	0.56	1.55	0.91	0.03	5.58	166.19	0.75	1.08	0.91	0.02
5.74	190.57	1.05	0.33	0.90	0.01	5.91	212.42	2.00	0.00	0.90	0.00
6.07	225.53	2.00	0.00	0.90	0.00	6.23	228.49	2.00	0.00	0.89	0.00
6.40	224.03	2.00	0.00	0.89	0.00	6.56	217.79	2.00	0.00	0.89	0.00
6.73	212.16	2.00	0.00	0.89	0.00	6.89	207.19	2.00	0.00	0.88	0.00
7.05	203.40	2.00	0.00	0.88	0.00	7.22	200.62	2.00	0.00	0.88	0.00
7.38	198.06	2.00	0.00	0.87	0.00	7.55	194.28	2.00	0.00	0.87	0.00
7.71	189.33	2.00	0.00	0.87	0.00	7.87	185.20	2.00	0.00	0.87	0.00
8.04	177.45	2.00	0.00	0.86	0.00	8.20	172.88	2.00	0.00	0.86	0.00
8.37	167.53	2.00	0.00	0.86	0.00	8.53	166.86	2.00	0.00	0.86	0.00
8.69	162.20	2.00	0.00	0.85	0.00	8.86	156.53	2.00	0.00	0.85	0.00
9.02	148.23	2.00	0.00	0.85	0.00	9.19	138.13	2.00	0.00	0.84	0.00
9.35	124.58	2.00	0.00	0.84	0.00	9.51	122.70	2.00	0.00	0.84	0.00
9.68	128.29	2.00	0.00	0.84	0.00	9.84	139.24	2.00	0.00	0.83	0.00
10.01	137.43	2.00	0.00	0.83	0.00	10.17	132.87	2.00	0.00	0.83	0.00
10.33	124.78	2.00	0.00	0.82	0.00	10.50	119.38	2.00	0.00	0.82	0.00
10.66	111.33	2.00	0.00	0.82	0.00	10.83	101.56	2.00	0.00	0.82	0.00
10.99	98.12	2.00	0.00	0.81	0.00	11.15	103.88	2.00	0.00	0.81	0.00
11.32	118.10	2.00	0.00	0.81	0.00	11.48	128.72	2.00	0.00	0.81	0.00
11.65	134.00	2.00	0.00	0.80	0.00	11.81	133.03	2.00	0.00	0.80	0.00
11.98	131.65	2.00	0.00	0.80	0.00	12.14	128.15	2.00	0.00	0.79	0.00
12.30	125.91	2.00	0.00	0.79	0.00	12.47	123.39	2.00	0.00	0.79	0.00
12.63	127.33	2.00	0.00	0.79	0.00	12.80	131.67	2.00	0.00	0.78	0.00
12.96	135.77	2.00	0.00	0.78	0.00	13.12	136.82	2.00	0.00	0.78	0.00
13.29	134.56	2.00	0.00	0.77	0.00	13.45	129.07	2.00	0.00	0.77	0.00
13.62	120.42	2.00	0.00	0.77	0.00	13.78	108.36	2.00	0.00	0.77	0.00
13.94	97.66	2.00	0.00	0.76	0.00	14.11	87.38	2.00	0.00	0.76	0.00
14.27	83.19	2.00	0.00	0.76	0.00	14.44	81.64	2.00	0.00	0.76	0.00
14.60	89.25	2.00	0.00	0.75	0.00	14.76	97.68	2.00	0.00	0.75	0.00
14.93	108.28	2.00	0.00	0.75	0.00	15.09	115.01	2.00	0.00	0.74	0.00
15.26	120.46	2.00	0.00	0.74	0.00	15.42	121.56	2.00	0.00	0.74	0.00
15.58	122.13	2.00	0.00	0.74	0.00	15.75	121.32	2.00	0.00	0.73	0.00
15.91	122.20	2.00	0.00	0.73	0.00	16.08	123.36	2.00	0.00	0.73	0.00
16.24	125.52	2.00	0.00	0.72	0.00	16.40	129.33	2.00	0.00	0.72	0.00
16.57	131.75	2.00	0.00	0.72	0.00	16.73	130.74	2.00	0.00	0.72	0.00
16.90	127.97	2.00	0.00	0.71	0.00	17.06	126.49	2.00	0.00	0.71	0.00
17.22	123.56	2.00	0.00	0.71	0.00	17.39	123.92	2.00	0.00	0.71	0.00
17.55	127.34	2.00	0.00	0.70	0.00	17.72	133.18	2.00	0.00	0.70	0.00
17.88	136.21	2.00	0.00	0.70	0.00	18.04	136.22	2.00	0.00	0.69	0.00
18.21	134.50	2.00	0.00	0.69	0.00	18.37	133.53	2.00	0.00	0.69	0.00
18.54	133.45	2.00	0.00	0.69	0.00	18.70	133.46	2.00	0.00	0.68	0.00
18.86	131.89	2.00	0.00	0.68	0.00	19.03	129.37	2.00	0.00	0.68	0.00
19.19	125.52	2.00	0.00	0.67	0.00	19.36	121.93	2.00	0.00	0.67	0.00
19.52	118.01	2.00	0.00	0.67	0.00	19.69	114.25	2.00	0.00	0.67	0.00
19.85	109.85	2.00	0.00	0.66	0.00	20.01	107.62	2.00	0.00	0.66	0.00
20.18	106.43	2.00	0.00	0.66	0.00	20.34	110.07	2.00	0.00	0.66	0.00
20.51	114.75	2.00	0.00	0.65	0.00	20.67	121.96	2.00	0.00	0.65	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
20.83	127.69	2.00	0.00	0.65	0.00	21.00	131.30	2.00	0.00	0.64	0.00
21.16	131.56	2.00	0.00	0.64	0.00	21.33	129.32	2.00	0.00	0.64	0.00
21.49	126.42	2.00	0.00	0.64	0.00	21.65	123.94	2.00	0.00	0.63	0.00
21.82	121.63	2.00	0.00	0.63	0.00	21.98	118.68	2.00	0.00	0.63	0.00
22.15	114.66	2.00	0.00	0.62	0.00	22.31	110.87	2.00	0.00	0.62	0.00
22.47	108.16	2.00	0.00	0.62	0.00	22.64	106.46	2.00	0.00	0.62	0.00
22.80	105.37	2.00	0.00	0.61	0.00	22.97	104.83	2.00	0.00	0.61	0.00
23.13	103.91	2.00	0.00	0.61	0.00	23.29	104.53	2.00	0.00	0.61	0.00
23.46	106.07	2.00	0.00	0.60	0.00	23.62	107.31	2.00	0.00	0.60	0.00
23.79	104.04	2.00	0.00	0.60	0.00	23.95	95.67	2.00	0.00	0.59	0.00
24.11	86.61	2.00	0.00	0.59	0.00	24.28	79.65	2.00	0.00	0.59	0.00
24.44	81.62	2.00	0.00	0.59	0.00	24.61	90.77	2.00	0.00	0.58	0.00
24.77	105.20	2.00	0.00	0.58	0.00	24.93	119.01	2.00	0.00	0.58	0.00
25.10	127.22	2.00	0.00	0.57	0.00	25.26	133.15	2.00	0.00	0.57	0.00
25.43	133.07	2.00	0.00	0.57	0.00	25.59	131.32	2.00	0.00	0.57	0.00
25.75	126.45	2.00	0.00	0.56	0.00	25.92	122.89	2.00	0.00	0.56	0.00
26.08	122.55	2.00	0.00	0.56	0.00	26.25	125.42	2.00	0.00	0.56	0.00
26.41	128.86	2.00	0.00	0.55	0.00	26.57	128.72	2.00	0.00	0.55	0.00
26.74	122.49	2.00	0.00	0.55	0.00	26.90	112.75	2.00	0.00	0.54	0.00
27.07	103.03	2.00	0.00	0.54	0.00	27.23	101.42	2.00	0.00	0.54	0.00
27.40	105.99	2.00	0.00	0.54	0.00	27.56	111.62	2.00	0.00	0.53	0.00
27.72	110.69	2.00	0.00	0.53	0.00	27.89	106.04	2.00	0.00	0.53	0.00
28.05	106.06	2.00	0.00	0.52	0.00	28.22	118.32	2.00	0.00	0.52	0.00
28.38	140.20	2.00	0.00	0.52	0.00	28.54	150.67	2.00	0.00	0.52	0.00
28.71	141.02	2.00	0.00	0.51	0.00	28.87	129.67	2.00	0.00	0.51	0.00
29.04	122.46	2.00	0.00	0.51	0.00	29.20	123.69	2.00	0.00	0.51	0.00
29.36	119.61	2.00	0.00	0.50	0.00	29.53	115.53	2.00	0.00	0.50	0.00
29.69	113.80	2.00	0.00	0.50	0.00	29.86	112.40	2.00	0.00	0.49	0.00
30.02	112.61	2.00	0.00	0.49	0.00	30.18	108.36	2.00	0.00	0.49	0.00
30.35	100.56	2.00	0.00	0.49	0.00	30.51	91.56	2.00	0.00	0.48	0.00
30.68	87.77	2.00	0.00	0.48	0.00	30.84	85.60	2.00	0.00	0.48	0.00
31.00	85.32	2.00	0.00	0.47	0.00	31.17	84.89	2.00	0.00	0.47	0.00
31.33	88.29	2.00	0.00	0.47	0.00	31.50	85.83	2.00	0.00	0.47	0.00
31.66	80.85	2.00	0.00	0.46	0.00	31.82	74.76	2.00	0.00	0.46	0.00
31.99	77.53	2.00	0.00	0.46	0.00	32.15	86.50	2.00	0.00	0.46	0.00
32.32	98.41	2.00	0.00	0.45	0.00	32.48	110.62	2.00	0.00	0.45	0.00
32.64	124.38	2.00	0.00	0.45	0.00	32.81	125.90	2.00	0.00	0.44	0.00
32.97	116.10	2.00	0.00	0.44	0.00	33.14	102.27	2.00	0.00	0.44	0.00
33.30	91.29	2.00	0.00	0.44	0.00	33.46	87.24	2.00	0.00	0.43	0.00
33.63	81.58	2.00	0.00	0.43	0.00	33.79	81.11	2.00	0.00	0.43	0.00
33.96	81.43	2.00	0.00	0.42	0.00	34.12	82.73	2.00	0.00	0.42	0.00
34.28	84.45	2.00	0.00	0.42	0.00	34.45	91.04	2.00	0.00	0.42	0.00
34.61	95.30	2.00	0.00	0.41	0.00	34.78	97.51	2.00	0.00	0.41	0.00
34.94	96.83	2.00	0.00	0.41	0.00	35.10	98.44	2.00	0.00	0.41	0.00
35.27	99.47	2.00	0.00	0.40	0.00	35.43	100.17	2.00	0.00	0.40	0.00
35.60	98.71	2.00	0.00	0.40	0.00	35.76	97.26	2.00	0.00	0.39	0.00
35.93	95.01	2.00	0.00	0.39	0.00	36.09	92.02	2.00	0.00	0.39	0.00
36.25	91.49	2.00	0.00	0.39	0.00	36.42	94.50	2.00	0.00	0.38	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
36.58	99.75	2.00	0.00	0.38	0.00	36.75	101.10	2.00	0.00	0.38	0.00
36.91	98.97	2.00	0.00	0.37	0.00	37.07	95.91	2.00	0.00	0.37	0.00
37.24	93.45	2.00	0.00	0.37	0.00	37.40	89.74	2.00	0.00	0.37	0.00
37.57	85.19	2.00	0.00	0.36	0.00	37.73	83.12	2.00	0.00	0.36	0.00
37.89	82.90	2.00	0.00	0.36	0.00	38.06	83.08	2.00	0.00	0.35	0.00
38.22	83.52	2.00	0.00	0.35	0.00	38.39	82.51	2.00	0.00	0.35	0.00
38.55	82.91	2.00	0.00	0.35	0.00	38.71	80.86	2.00	0.00	0.34	0.00
38.88	81.01	2.00	0.00	0.34	0.00	39.04	81.02	2.00	0.00	0.34	0.00
39.21	81.57	2.00	0.00	0.34	0.00	39.37	83.85	2.00	0.00	0.33	0.00
39.53	86.05	2.00	0.00	0.33	0.00	39.70	89.19	2.00	0.00	0.33	0.00
39.86	91.55	2.00	0.00	0.32	0.00	40.03	96.79	2.00	0.00	0.32	0.00
40.19	101.68	2.00	0.00	0.32	0.00	40.35	103.24	2.00	0.00	0.32	0.00
40.52	101.40	2.00	0.00	0.31	0.00	40.68	98.06	2.00	0.00	0.31	0.00
40.85	96.07	2.00	0.00	0.31	0.00	41.01	92.05	2.00	0.00	0.30	0.00
41.17	87.31	2.00	0.00	0.30	0.00	41.34	82.15	2.00	0.00	0.30	0.00
41.50	78.58	2.00	0.00	0.30	0.00	41.67	76.11	2.00	0.00	0.29	0.00
41.83	75.61	2.00	0.00	0.29	0.00	41.99	78.93	2.00	0.00	0.29	0.00
42.16	88.28	2.00	0.00	0.29	0.00	42.32	95.79	2.00	0.00	0.28	0.00
42.49	100.03	2.00	0.00	0.28	0.00	42.65	98.11	2.00	0.00	0.28	0.00
42.81	94.61	2.00	0.00	0.27	0.00	42.98	89.23	2.00	0.00	0.27	0.00
43.14	84.37	2.00	0.00	0.27	0.00	43.31	82.87	2.00	0.00	0.27	0.00
43.47	83.27	2.00	0.00	0.26	0.00	43.64	84.56	2.00	0.00	0.26	0.00
43.80	83.42	2.00	0.00	0.26	0.00	43.96	82.46	2.00	0.00	0.25	0.00
44.13	83.08	2.00	0.00	0.25	0.00	44.29	83.36	2.00	0.00	0.25	0.00
44.46	82.37	2.00	0.00	0.25	0.00	44.62	81.01	2.00	0.00	0.24	0.00
44.78	81.73	2.00	0.00	0.24	0.00	44.95	83.92	2.00	0.00	0.24	0.00
45.11	87.94	2.00	0.00	0.24	0.00	45.28	90.87	2.00	0.00	0.23	0.00
45.44	93.86	2.00	0.00	0.23	0.00	45.60	97.07	2.00	0.00	0.23	0.00
45.77	100.79	2.00	0.00	0.22	0.00	45.93	118.65	2.00	0.00	0.22	0.00
46.10	155.21	2.00	0.00	0.22	0.00	46.26	180.74	2.00	0.00	0.22	0.00
46.42	184.66	2.00	0.00	0.21	0.00	46.59	153.22	0.39	0.35	0.21	0.01
46.75	129.19	0.27	0.39	0.21	0.01	46.92	105.74	2.00	0.00	0.20	0.00
47.08	101.93	2.00	0.00	0.20	0.00	47.24	93.40	2.00	0.00	0.20	0.00
47.41	93.02	2.00	0.00	0.20	0.00	47.57	94.44	2.00	0.00	0.19	0.00
47.74	98.54	2.00	0.00	0.19	0.00	47.90	104.87	2.00	0.00	0.19	0.00
48.06	105.29	2.00	0.00	0.19	0.00	48.23	110.45	2.00	0.00	0.18	0.00
48.39	117.51	2.00	0.00	0.18	0.00	48.56	121.64	2.00	0.00	0.18	0.00
48.72	118.73	2.00	0.00	0.17	0.00	48.88	116.47	2.00	0.00	0.17	0.00
49.05	117.32	2.00	0.00	0.17	0.00	49.21	122.53	2.00	0.00	0.17	0.00
49.38	131.74	2.00	0.00	0.16	0.00	49.54	148.69	2.00	0.00	0.16	0.00
49.70	164.13	2.00	0.00	0.16	0.00	49.87	177.00	2.00	0.00	0.15	0.00
50.03	168.68	2.00	0.00	0.15	0.00	50.20	160.53	2.00	0.00	0.15	0.00
50.36	153.70	2.00	0.00	0.15	0.00	50.52	145.59	2.00	0.00	0.14	0.00
50.69	116.10	0.22	0.29	0.14	0.01	50.85	97.60	0.16	0.33	0.14	0.01
51.02	100.96	0.17	0.31	0.14	0.01	51.18	102.08	0.18	0.30	0.13	0.01
51.35	108.13	0.19	0.28	0.13	0.01	51.51	114.68	2.00	0.00	0.13	0.00
51.67	109.39	2.00	0.00	0.12	0.00	51.84	99.15	2.00	0.00	0.12	0.00
52.00	93.20	2.00	0.00	0.12	0.00	52.17	92.98	2.00	0.00	0.12	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
52.33	94.36	2.00	0.00	0.11	0.00	52.49	94.41	2.00	0.00	0.11	0.00
52.66	93.25	2.00	0.00	0.11	0.00	52.82	91.08	2.00	0.00	0.10	0.00
52.99	87.14	2.00	0.00	0.10	0.00	53.15	83.71	2.00	0.00	0.10	0.00
53.31	82.71	2.00	0.00	0.10	0.00	53.48	87.27	2.00	0.00	0.09	0.00
53.64	95.31	2.00	0.00	0.09	0.00	53.81	105.49	2.00	0.00	0.09	0.00
53.97	114.52	2.00	0.00	0.09	0.00	54.13	118.73	2.00	0.00	0.08	0.00
54.30	117.46	2.00	0.00	0.08	0.00	54.46	111.51	2.00	0.00	0.08	0.00
54.63	103.94	2.00	0.00	0.07	0.00	54.79	97.34	2.00	0.00	0.07	0.00
54.95	93.22	2.00	0.00	0.07	0.00	55.12	91.18	2.00	0.00	0.07	0.00
55.28	88.76	2.00	0.00	0.06	0.00	55.45	87.61	2.00	0.00	0.06	0.00
55.61	88.19	2.00	0.00	0.06	0.00	55.77	89.42	2.00	0.00	0.05	0.00
55.94	89.08	2.00	0.00	0.05	0.00	56.10	87.39	2.00	0.00	0.05	0.00
56.27	87.13	2.00	0.00	0.05	0.00	56.43	88.33	2.00	0.00	0.04	0.00
56.59	91.15	2.00	0.00	0.04	0.00	56.76	94.60	2.00	0.00	0.04	0.00
56.92	99.09	2.00	0.00	0.04	0.00	57.09	101.38	2.00	0.00	0.03	0.00
57.25	101.72	2.00	0.00	0.03	0.00	57.41	98.81	2.00	0.00	0.03	0.00
57.58	94.43	2.00	0.00	0.02	0.00	57.74	91.30	2.00	0.00	0.02	0.00
57.91	87.47	2.00	0.00	0.02	0.00	58.07	83.42	2.00	0.00	0.02	0.00
58.23	76.20	2.00	0.00	0.01	0.00	58.40	74.25	2.00	0.00	0.01	0.00
58.56	75.66	2.00	0.00	0.01	0.00	58.73	81.28	2.00	0.00	0.00	0.00
58.89	88.36	2.00	0.00	0.00	0.00	59.06	95.05	2.00	0.00	0.00	0.00
59.22	103.13	2.00	0.00	0.00	0.00	59.38	110.59	2.00	0.00	0.00	0.00
59.55	114.01	2.00	0.00	0.00	0.00	59.71	113.59	2.00	0.00	0.00	0.00
59.88	104.76	2.00	0.00	0.00	0.00	60.04	92.89	2.00	0.00	0.00	0.00
60.20	79.10	2.00	0.00	0.00	0.00	60.37	72.40	2.00	0.00	0.00	0.00
60.53	69.40	2.00	0.00	0.00	0.00	60.70	68.46	2.00	0.00	0.00	0.00
60.86	68.54	2.00	0.00	0.00	0.00	61.02	70.44	2.00	0.00	0.00	0.00
61.19	71.44	2.00	0.00	0.00	0.00	61.35	71.55	2.00	0.00	0.00	0.00
61.52	70.77	2.00	0.00	0.00	0.00	61.68	69.81	2.00	0.00	0.00	0.00
61.84	71.17	2.00	0.00	0.00	0.00	62.01	72.01	2.00	0.00	0.00	0.00
62.17	76.80	2.00	0.00	0.00	0.00	62.34	78.19	2.00	0.00	0.00	0.00
62.50	77.99	2.00	0.00	0.00	0.00	62.66	76.12	2.00	0.00	0.00	0.00
62.83	77.61	2.00	0.00	0.00	0.00	62.99	83.51	2.00	0.00	0.00	0.00
63.16	89.52	2.00	0.00	0.00	0.00	63.32	94.42	2.00	0.00	0.00	0.00
63.48	97.52	2.00	0.00	0.00	0.00	63.65	99.47	2.00	0.00	0.00	0.00
63.81	101.76	2.00	0.00	0.00	0.00	63.98	103.29	2.00	0.00	0.00	0.00
64.14	105.54	2.00	0.00	0.00	0.00	64.30	106.26	2.00	0.00	0.00	0.00
64.47	105.00	2.00	0.00	0.00	0.00	64.63	101.07	2.00	0.00	0.00	0.00
64.80	93.76	2.00	0.00	0.00	0.00	64.96	86.92	2.00	0.00	0.00	0.00
65.12	79.39	2.00	0.00	0.00	0.00	65.29	72.91	2.00	0.00	0.00	0.00
65.45	67.69	2.00	0.00	0.00	0.00	65.62	63.52	2.00	0.00	0.00	0.00
65.78	61.38	2.00	0.00	0.00	0.00	65.94	60.59	2.00	0.00	0.00	0.00
66.11	61.24	2.00	0.00	0.00	0.00	66.27	61.43	2.00	0.00	0.00	0.00
66.44	61.77	2.00	0.00	0.00	0.00	66.60	65.76	2.00	0.00	0.00	0.00
66.77	75.59	2.00	0.00	0.00	0.00	66.93	88.10	2.00	0.00	0.00	0.00
67.09	99.75	2.00	0.00	0.00	0.00	67.26	104.54	2.00	0.00	0.00	0.00
67.42	102.47	2.00	0.00	0.00	0.00	67.59	95.82	2.00	0.00	0.00	0.00
67.75	91.98	2.00	0.00	0.00	0.00	67.91	91.71	2.00	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
68.08	93.14	2.00	0.00	0.00	0.00	68.24	91.08	2.00	0.00	0.00	0.00
68.41	87.12	2.00	0.00	0.00	0.00	68.57	87.87	2.00	0.00	0.00	0.00
68.73	92.76	2.00	0.00	0.00	0.00	68.90	95.68	2.00	0.00	0.00	0.00
69.06	95.19	2.00	0.00	0.00	0.00	69.23	92.61	2.00	0.00	0.00	0.00
69.39	88.32	2.00	0.00	0.00	0.00	69.55	89.11	2.00	0.00	0.00	0.00
69.72	87.58	2.00	0.00	0.00	0.00	69.88	87.56	2.00	0.00	0.00	0.00
70.05	80.24	2.00	0.00	0.00	0.00	70.21	76.16	2.00	0.00	0.00	0.00
70.37	77.22	2.00	0.00	0.00	0.00	70.54	80.63	2.00	0.00	0.00	0.00
70.70	84.58	2.00	0.00	0.00	0.00	70.87	88.37	2.00	0.00	0.00	0.00
71.03	89.37	2.00	0.00	0.00	0.00	71.19	90.32	2.00	0.00	0.00	0.00
71.36	90.31	2.00	0.00	0.00	0.00	71.52	91.68	2.00	0.00	0.00	0.00
71.69	90.40	2.00	0.00	0.00	0.00	71.85	87.96	2.00	0.00	0.00	0.00
72.01	85.98	2.00	0.00	0.00	0.00	72.18	87.49	2.00	0.00	0.00	0.00
72.34	88.67	2.00	0.00	0.00	0.00	72.51	88.47	2.00	0.00	0.00	0.00
72.67	87.67	2.00	0.00	0.00	0.00	72.83	87.81	2.00	0.00	0.00	0.00
73.00	89.83	2.00	0.00	0.00	0.00	73.16	94.07	2.00	0.00	0.00	0.00
73.33	96.91	2.00	0.00	0.00	0.00	73.49	96.57	2.00	0.00	0.00	0.00
73.65	88.97	2.00	0.00	0.00	0.00	73.82	84.25	2.00	0.00	0.00	0.00
73.98	89.02	2.00	0.00	0.00	0.00	74.15	106.87	2.00	0.00	0.00	0.00
74.31	125.23	2.00	0.00	0.00	0.00	74.48	129.51	2.00	0.00	0.00	0.00
74.64	137.02	2.00	0.00	0.00	0.00	74.80	142.75	2.00	0.00	0.00	0.00
74.97	147.47	2.00	0.00	0.00	0.00	75.13	142.76	2.00	0.00	0.00	0.00
75.30	122.72	2.00	0.00	0.00	0.00	75.46	105.05	2.00	0.00	0.00	0.00
75.62	97.23	2.00	0.00	0.00	0.00	75.79	85.87	2.00	0.00	0.00	0.00
75.95	77.76	2.00	0.00	0.00	0.00	76.12	77.70	2.00	0.00	0.00	0.00
76.28	79.81	2.00	0.00	0.00	0.00	76.44	82.96	2.00	0.00	0.00	0.00
76.61	82.82	2.00	0.00	0.00	0.00	76.77	85.97	2.00	0.00	0.00	0.00
76.94	99.61	2.00	0.00	0.00	0.00	77.10	124.25	2.00	0.00	0.00	0.00
77.26	136.77	2.00	0.00	0.00	0.00	77.43	129.74	2.00	0.00	0.00	0.00
77.59	109.91	2.00	0.00	0.00	0.00	77.76	103.66	2.00	0.00	0.00	0.00
77.92	101.17	2.00	0.00	0.00	0.00	78.08	104.59	2.00	0.00	0.00	0.00
78.25	97.95	2.00	0.00	0.00	0.00	78.41	92.19	2.00	0.00	0.00	0.00
78.58	84.82	2.00	0.00	0.00	0.00	78.74	80.74	2.00	0.00	0.00	0.00
78.90	78.07	2.00	0.00	0.00	0.00	79.07	79.54	2.00	0.00	0.00	0.00
79.23	81.40	2.00	0.00	0.00	0.00	79.40	83.56	2.00	0.00	0.00	0.00
79.56	91.77	2.00	0.00	0.00	0.00	79.72	104.68	2.00	0.00	0.00	0.00
79.89	112.00	2.00	0.00	0.00	0.00	80.05	110.15	2.00	0.00	0.00	0.00
80.22	98.06	2.00	0.00	0.00	0.00	80.38	87.84	2.00	0.00	0.00	0.00
80.54	79.05	2.00	0.00	0.00	0.00	80.71	74.33	2.00	0.00	0.00	0.00
80.87	71.03	2.00	0.00	0.00	0.00	81.04	71.23	2.00	0.00	0.00	0.00
81.20	73.22	2.00	0.00	0.00	0.00	81.36	75.58	2.00	0.00	0.00	0.00
81.53	79.61	2.00	0.00	0.00	0.00	81.69	85.41	2.00	0.00	0.00	0.00
81.86	90.41	2.00	0.00	0.00	0.00	82.02	92.34	2.00	0.00	0.00	0.00
82.19	94.24	2.00	0.00	0.00	0.00	82.35	100.92	2.00	0.00	0.00	0.00
82.51	108.13	2.00	0.00	0.00	0.00	82.68	115.05	2.00	0.00	0.00	0.00
82.84	122.88	2.00	0.00	0.00	0.00	83.01	125.75	2.00	0.00	0.00	0.00
83.17	126.22	2.00	0.00	0.00	0.00	83.33	134.39	2.00	0.00	0.00	0.00
83.50	149.60	2.00	0.00	0.00	0.00	83.66	159.33	2.00	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
83.83	168.15	2.00	0.00	0.00	0.00	83.99	173.75	2.00	0.00	0.00	0.00
84.15	180.75	2.00	0.00	0.00	0.00	84.32	178.32	2.00	0.00	0.00	0.00
84.48	161.25	2.00	0.00	0.00	0.00	84.65	153.64	2.00	0.00	0.00	0.00
84.81	156.17	2.00	0.00	0.00	0.00	84.97	167.21	2.00	0.00	0.00	0.00
85.14	188.64	2.00	0.00	0.00	0.00	85.30	199.01	2.00	0.00	0.00	0.00
85.47	205.38	2.00	0.00	0.00	0.00	85.63	233.78	2.00	0.00	0.00	0.00
85.79	244.77	2.00	0.00	0.00	0.00	85.96	215.93	2.00	0.00	0.00	0.00
86.12	194.88	2.00	0.00	0.00	0.00	86.29	199.70	2.00	0.00	0.00	0.00
86.45	190.51	2.00	0.00	0.00	0.00	86.61	167.87	2.00	0.00	0.00	0.00
86.78	148.49	2.00	0.00	0.00	0.00	86.94	126.59	2.00	0.00	0.00	0.00
87.11	115.67	2.00	0.00	0.00	0.00	87.27	104.97	2.00	0.00	0.00	0.00
87.43	97.79	2.00	0.00	0.00	0.00	87.60	92.41	2.00	0.00	0.00	0.00
87.76	91.28	2.00	0.00	0.00	0.00	87.93	90.54	2.00	0.00	0.00	0.00
88.09	91.85	2.00	0.00	0.00	0.00	88.25	93.60	2.00	0.00	0.00	0.00
88.42	94.95	2.00	0.00	0.00	0.00	88.58	94.28	2.00	0.00	0.00	0.00
88.75	92.85	2.00	0.00	0.00	0.00	88.91	92.44	2.00	0.00	0.00	0.00
89.07	93.04	2.00	0.00	0.00	0.00	89.24	92.86	2.00	0.00	0.00	0.00
89.40	91.33	2.00	0.00	0.00	0.00	89.57	90.28	2.00	0.00	0.00	0.00
89.73	90.71	2.00	0.00	0.00	0.00	89.90	92.18	2.00	0.00	0.00	0.00
90.06	92.22	2.00	0.00	0.00	0.00	90.22	90.46	2.00	0.00	0.00	0.00
90.39	87.28	2.00	0.00	0.00	0.00	90.55	83.66	2.00	0.00	0.00	0.00
90.72	81.24	2.00	0.00	0.00	0.00	90.88	79.37	2.00	0.00	0.00	0.00
91.04	78.32	2.00	0.00	0.00	0.00	91.21	77.05	2.00	0.00	0.00	0.00
91.37	76.46	2.00	0.00	0.00	0.00	91.54	76.45	2.00	0.00	0.00	0.00
91.70	78.54	2.00	0.00	0.00	0.00	91.86	80.17	2.00	0.00	0.00	0.00
92.03	81.78	2.00	0.00	0.00	0.00	92.19	79.79	2.00	0.00	0.00	0.00
92.36	87.22	2.00	0.00	0.00	0.00	92.52	97.00	2.00	0.00	0.00	0.00
92.68	110.03	2.00	0.00	0.00	0.00	92.85	116.35	2.00	0.00	0.00	0.00
93.01	117.90	2.00	0.00	0.00	0.00	93.18	116.85	2.00	0.00	0.00	0.00
93.34	109.62	2.00	0.00	0.00	0.00	93.50	106.64	2.00	0.00	0.00	0.00
93.67	115.06	2.00	0.00	0.00	0.00	93.83	128.08	2.00	0.00	0.00	0.00
94.00	144.33	2.00	0.00	0.00	0.00	94.16	158.90	2.00	0.00	0.00	0.00
94.32	158.00	2.00	0.00	0.00	0.00	94.49	142.75	2.00	0.00	0.00	0.00
94.65	133.81	2.00	0.00	0.00	0.00	94.82	118.04	2.00	0.00	0.00	0.00
94.98	114.39	2.00	0.00	0.00	0.00	95.14	103.39	2.00	0.00	0.00	0.00
95.31	101.05	2.00	0.00	0.00	0.00	95.47	98.70	2.00	0.00	0.00	0.00
95.64	91.59	2.00	0.00	0.00	0.00	95.80	93.22	2.00	0.00	0.00	0.00
95.96	89.27	2.00	0.00	0.00	0.00	96.13	85.09	2.00	0.00	0.00	0.00
96.29	80.64	2.00	0.00	0.00	0.00	96.46	86.62	2.00	0.00	0.00	0.00
96.62	89.20	2.00	0.00	0.00	0.00	96.78	90.28	2.00	0.00	0.00	0.00
96.95	93.24	2.00	0.00	0.00	0.00	97.11	99.00	2.00	0.00	0.00	0.00
97.28	104.90	2.00	0.00	0.00	0.00	97.44	109.35	2.00	0.00	0.00	0.00
97.60	114.01	2.00	0.00	0.00	0.00	97.77	120.09	2.00	0.00	0.00	0.00
97.93	131.62	2.00	0.00	0.00	0.00	98.10	142.64	2.00	0.00	0.00	0.00
98.26	148.64	2.00	0.00	0.00	0.00	98.43	153.08	2.00	0.00	0.00	0.00
98.59	146.80	2.00	0.00	0.00	0.00	98.75	132.07	2.00	0.00	0.00	0.00
98.92	115.48	2.00	0.00	0.00	0.00	99.08	101.83	2.00	0.00	0.00	0.00
99.25	97.06	2.00	0.00	0.00	0.00	99.41	96.43	2.00	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
99.57	104.41	2.00	0.00	0.00	0.00	99.74	108.68	2.00	0.00	0.00	0.00
99.90	111.03	2.00	0.00	0.00	0.00	100.07	-1.00	2.00	0.00	0.00	0.00
100.23	-1.00	2.00	0.00	0.00	0.00						

Total estimated settlement: 0.17

Abbreviations

$Q_{tn,cs}$: Equivalent clean sand normalized cone resistance
FS: Factor of safety against liquefaction
e_v (%): Post-liquefaction volumentric strain
DF: e_v depth weighting factor
Settlement: Calculated settlement

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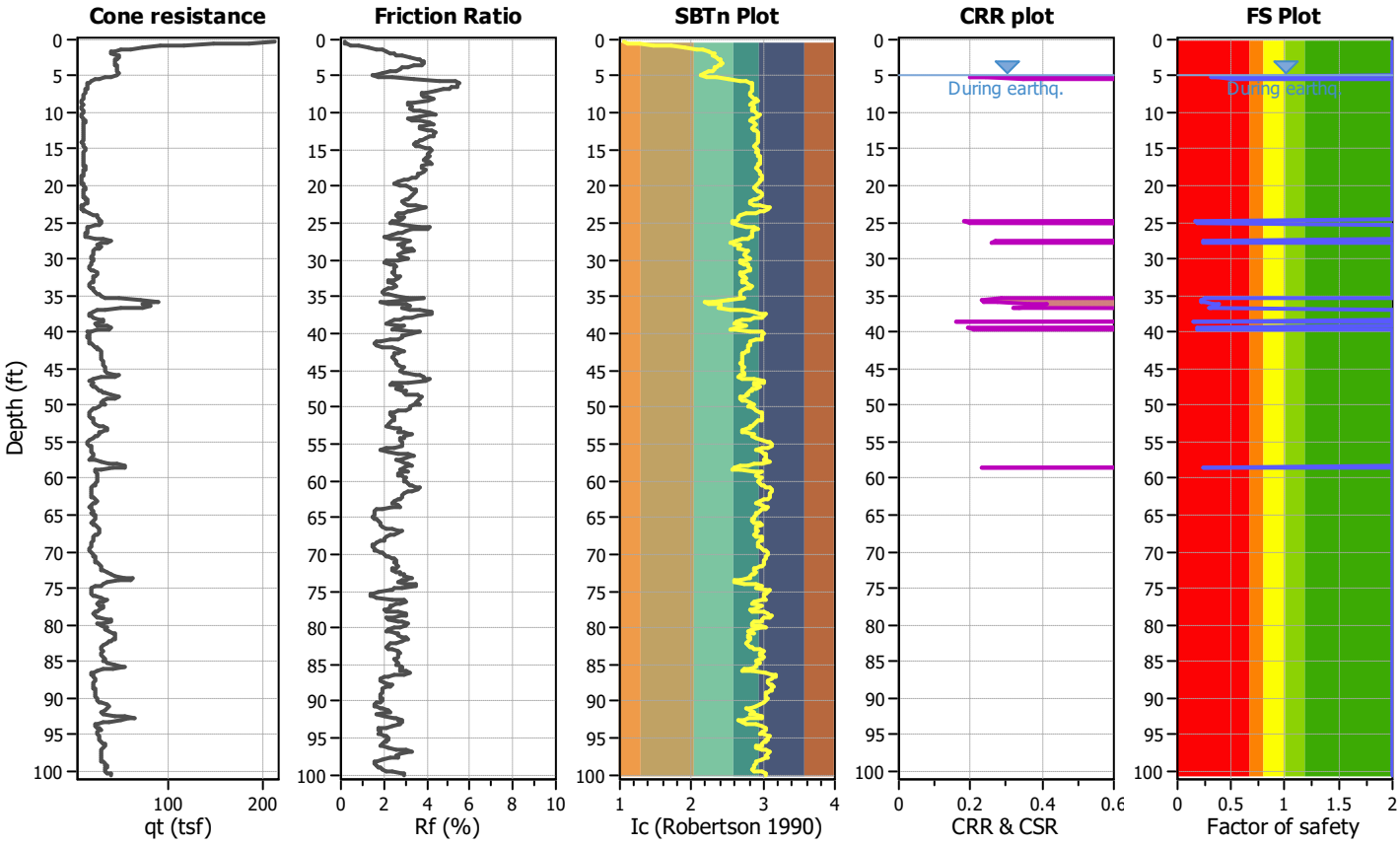
LIQUEFACTION ANALYSIS REPORT

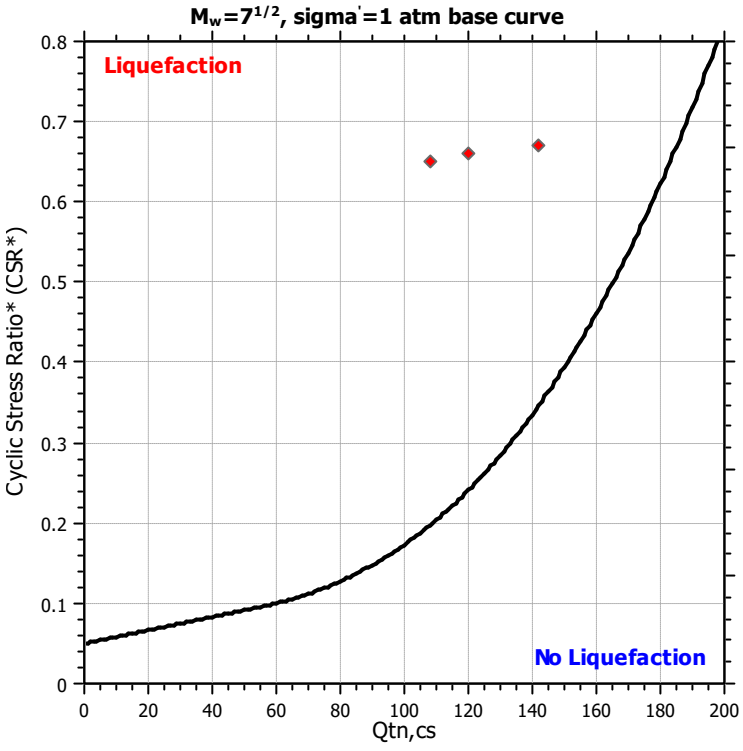
Project title : 306774-001 – 2334 Lundy Place Warehouse **Location : 2334 Lundy Place, San Jose**

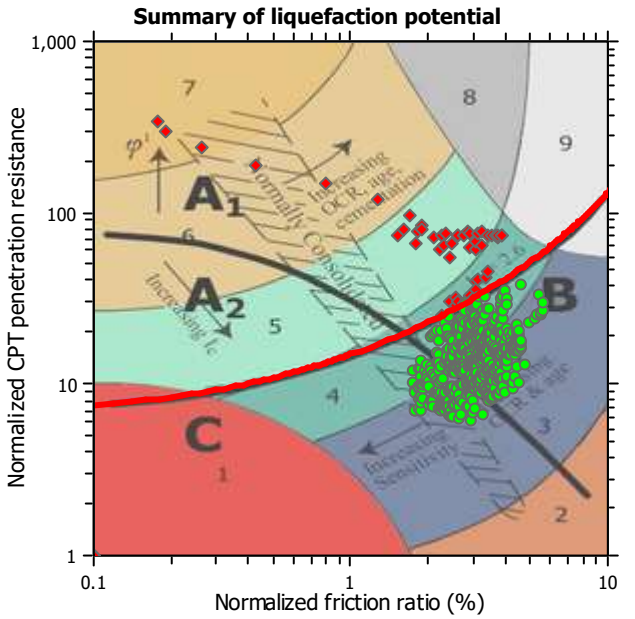
CPT file : CPT-04

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	8.80 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	60.00 ft
Earthquake magnitude M_w:	7.96	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.86	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

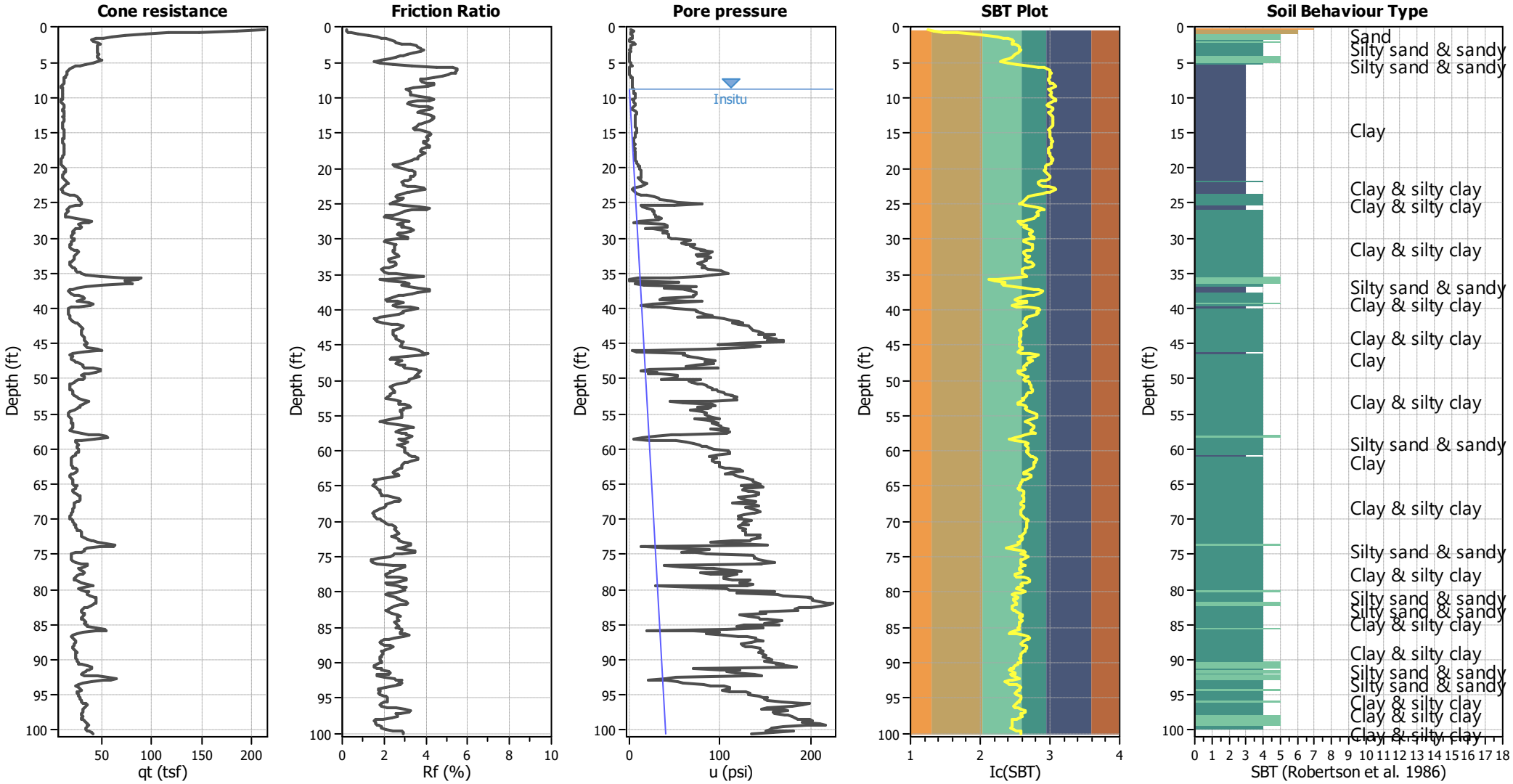






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



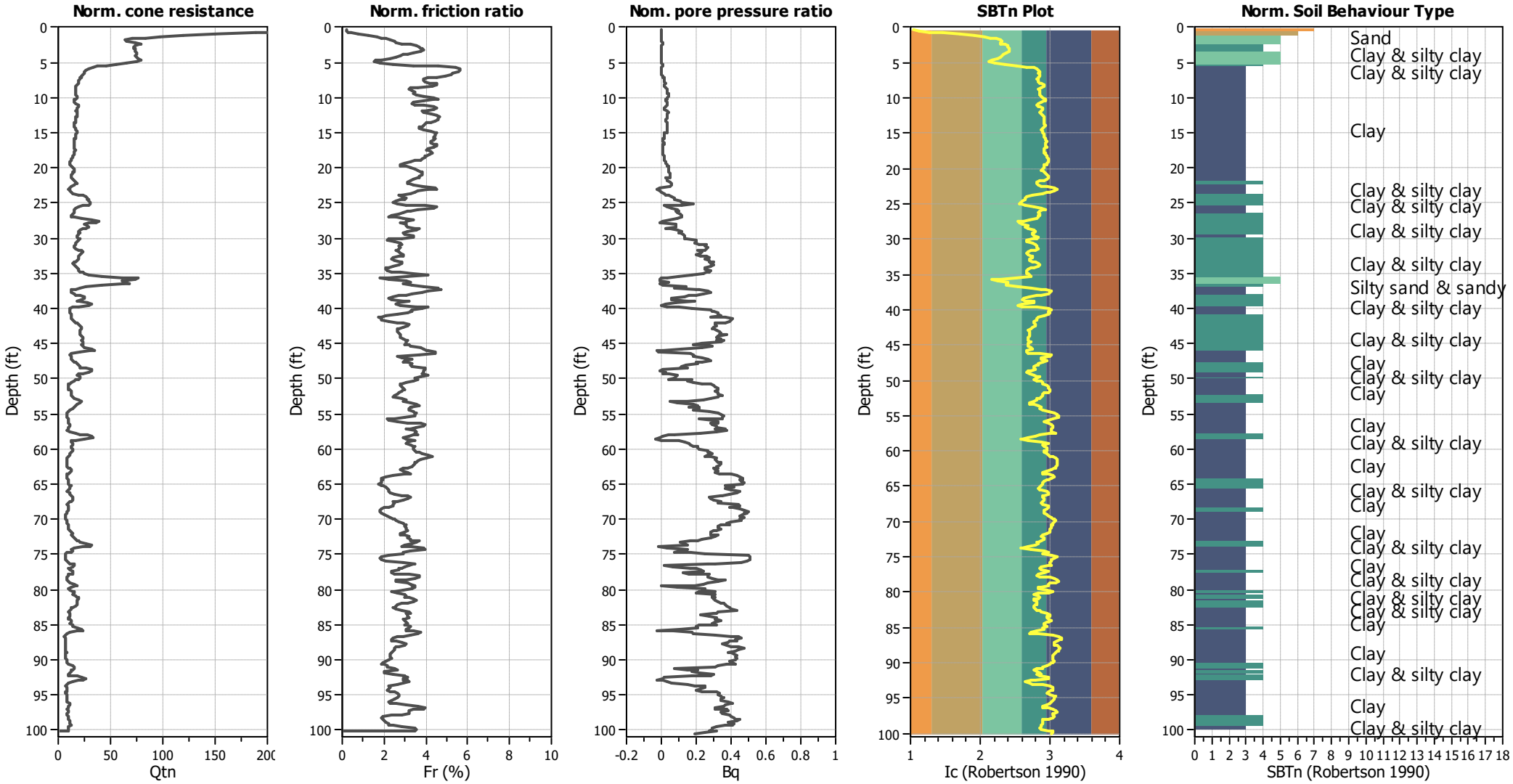
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	8.80 ft	Fill height:	N/A	Limit depth:	60.00 ft

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

CPT basic interpretation plots (normalized)



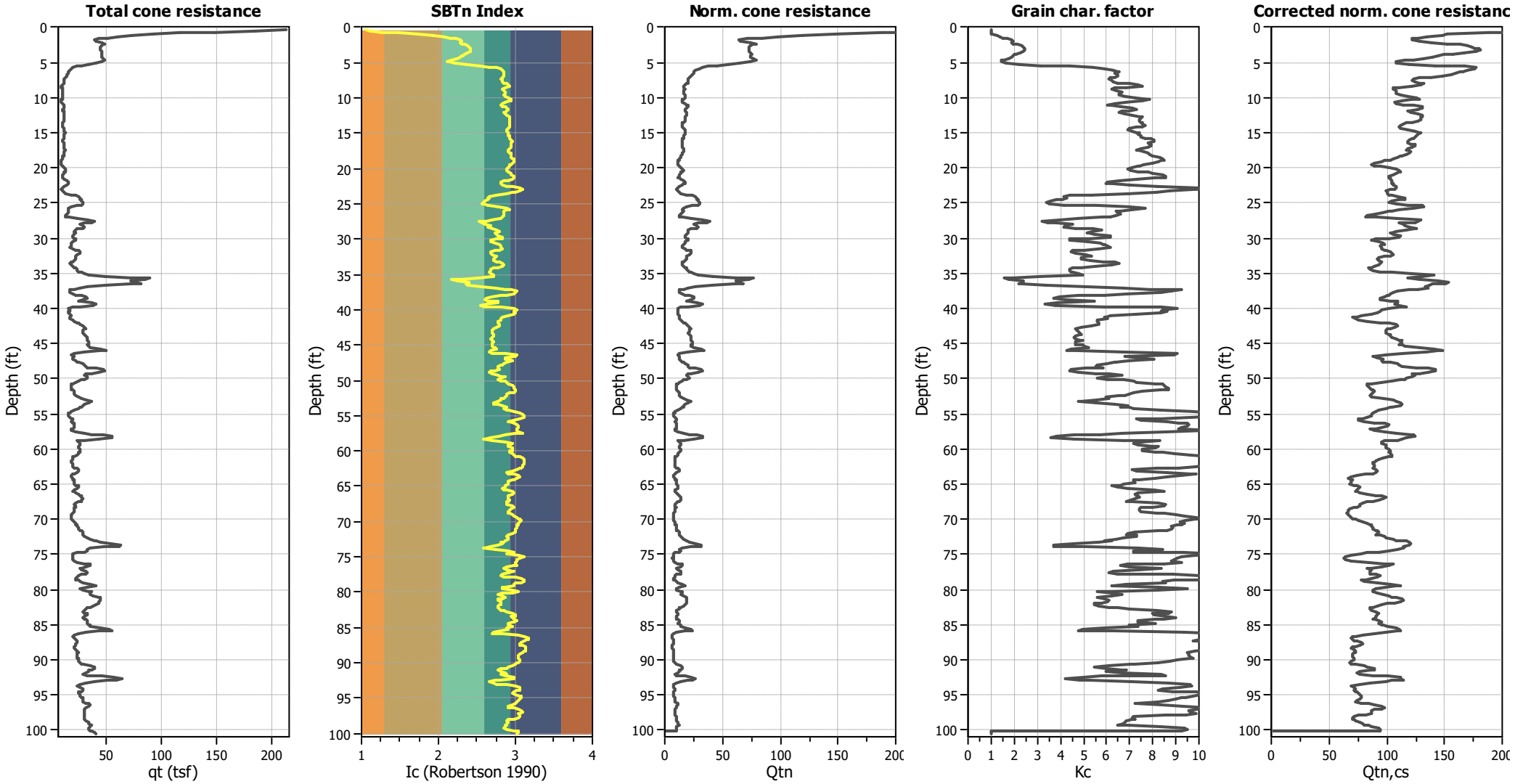
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	8.80 ft	Fill height:	N/A	Limit depth:	60.00 ft

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

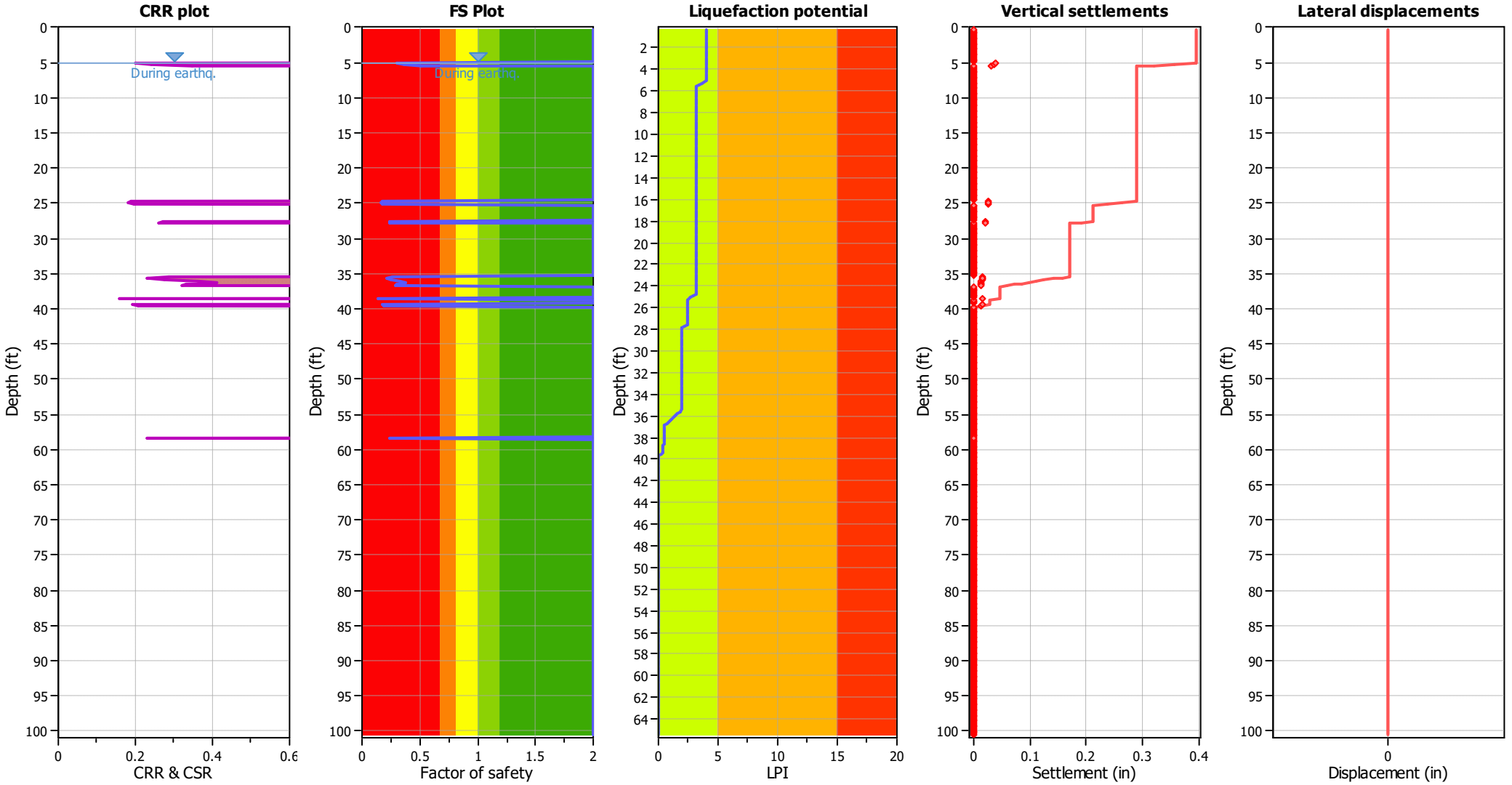
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	8.80 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	8.80 ft	Fill height:	N/A	Limit depth:	60.00 ft

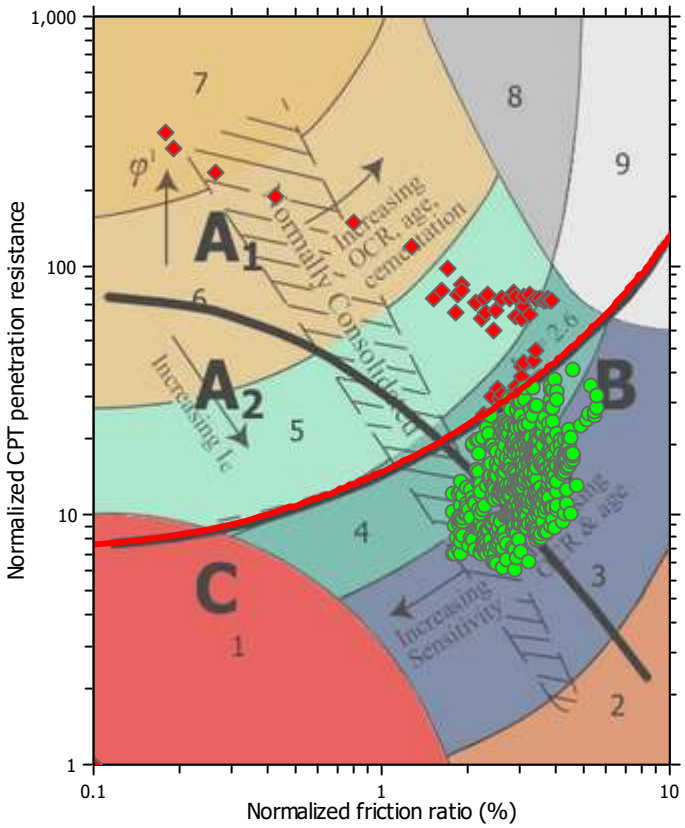
F.S. color scheme

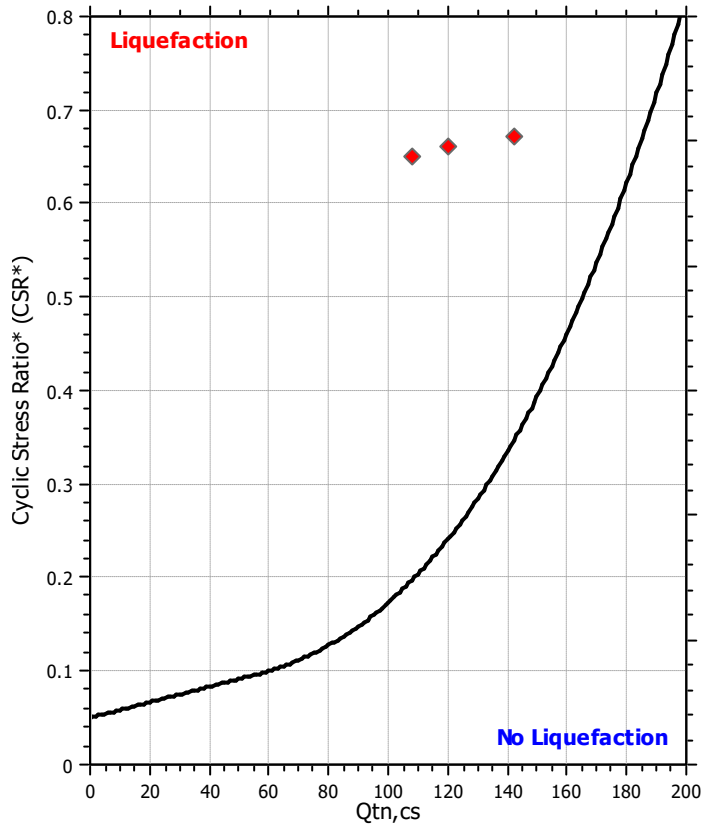
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

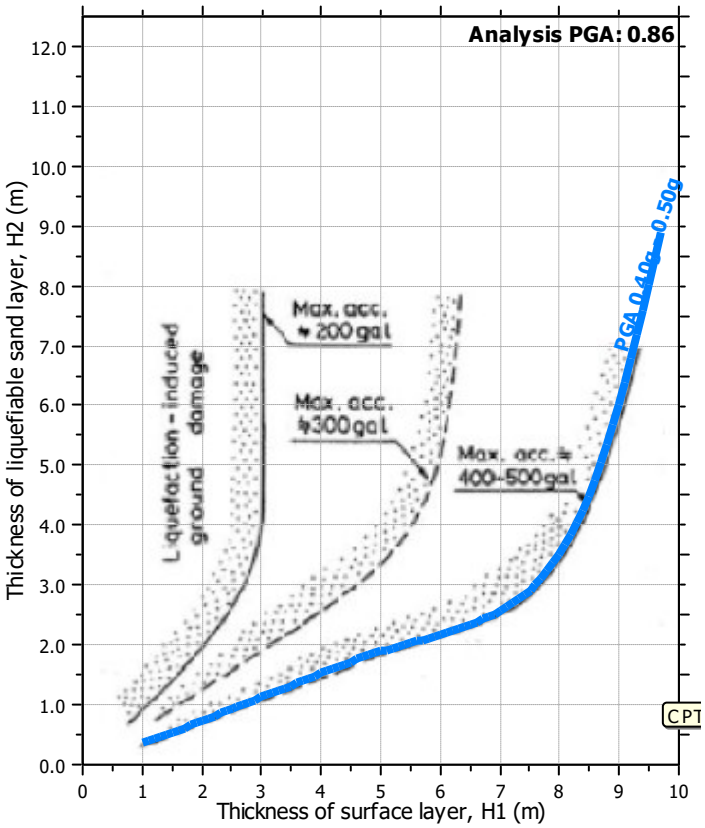
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



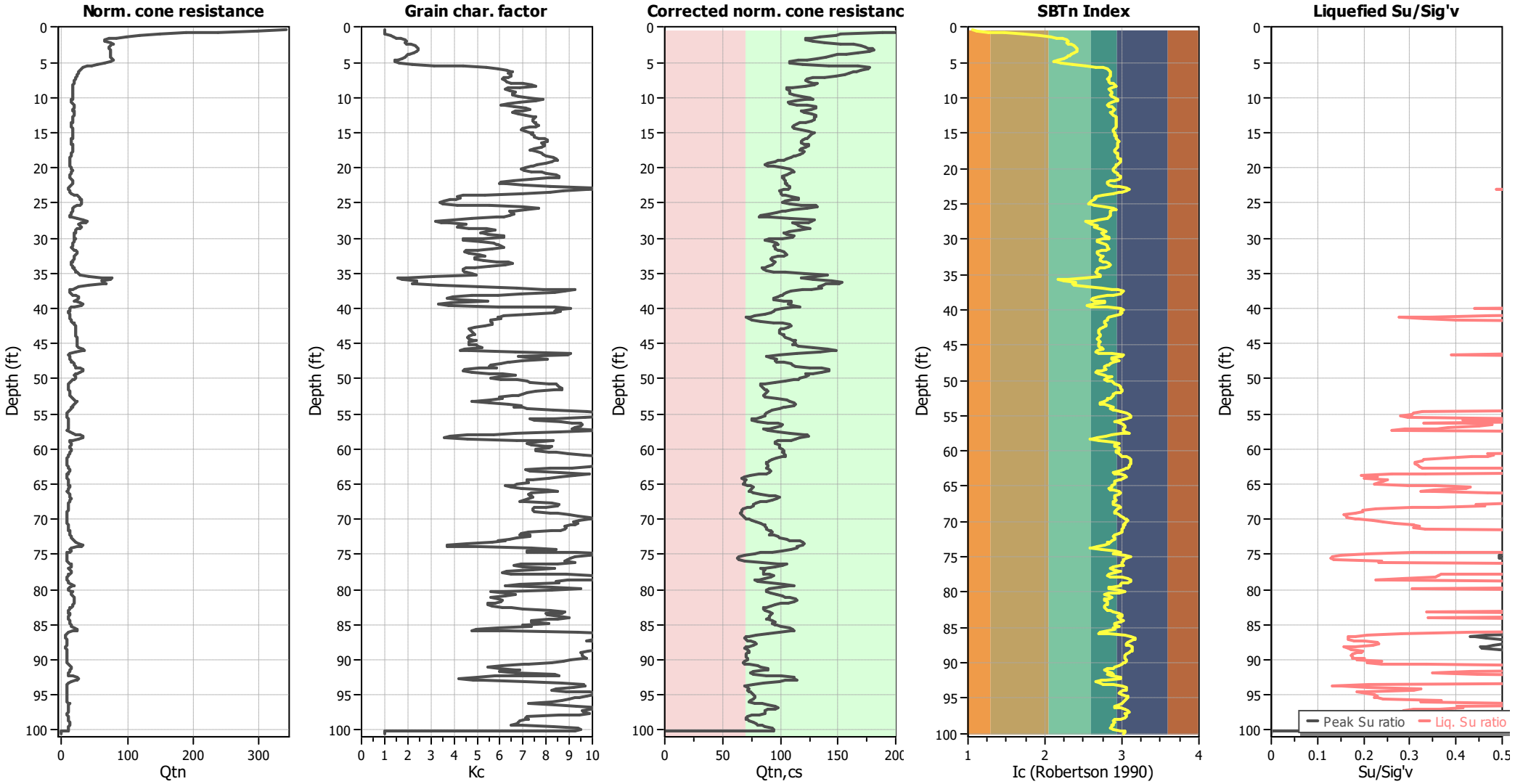




Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	8.80 ft	Fill height:	N/A	Limit depth:	60.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.96	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.86	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	8.80 ft	Fill height:	N/A	Limit depth:	60.00 ft

:: Field input data ::

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
1	0.33	227.50	0.37	1.04	0.00	116.21
2	0.49	182.88	0.39	4.21	0.00	115.38
3	0.66	144.25	0.30	2.41	0.09	115.59
4	0.82	116.61	0.49	1.75	2.37	116.84
5	0.98	91.30	0.72	1.23	6.34	119.16
6	1.15	72.13	1.02	2.70	10.90	120.30
7	1.31	59.13	1.07	2.99	14.98	120.51
8	1.48	50.99	0.99	2.48	17.51	119.86
9	1.64	46.37	0.91	1.84	20.20	119.01
10	1.80	35.79	0.89	0.26	22.19	118.63
11	1.97	38.43	0.94	0.32	22.87	119.41
12	2.13	48.76	1.20	4.14	22.05	120.91
13	2.30	51.19	1.44	6.47	22.57	122.29
14	2.46	47.28	1.59	4.13	24.25	122.99
15	2.62	46.03	1.66	2.11	25.84	123.21
16	2.79	45.29	1.65	1.74	26.42	123.28
17	2.95	45.21	1.66	1.29	26.78	123.41
18	3.12	45.50	1.75	1.08	27.07	123.67
19	3.28	46.13	1.82	0.70	27.18	123.76
20	3.44	45.54	1.73	1.13	26.67	123.55
21	3.61	46.09	1.59	0.58	25.37	123.04
22	3.77	48.05	1.46	0.08	24.04	122.43
23	3.94	47.01	1.33	-0.01	23.21	121.89
24	4.10	45.80	1.28	-0.04	22.81	121.41
25	4.27	46.19	1.22	0.21	22.03	121.00
26	4.43	47.72	1.11	0.39	20.45	120.46
27	4.59	50.04	0.99	0.33	18.08	119.33
28	4.76	50.91	0.71	0.46	16.46	118.11
29	4.92	48.13	0.68	0.74	16.63	117.08
30	5.09	40.65	0.73	1.30	19.54	117.06
31	5.25	34.29	0.79	2.05	24.87	117.57
32	5.41	28.45	0.98	2.48	31.55	118.20
33	5.58	23.32	1.12	1.52	38.74	118.68
34	5.74	20.35	1.18	0.48	43.80	118.39
35	5.91	18.68	1.01	0.04	46.33	117.70
36	6.07	17.38	0.93	0.12	48.08	116.74
37	6.23	15.23	0.88	0.60	48.84	116.21
38	6.40	16.35	0.85	0.03	49.18	115.93
39	6.56	16.25	0.84	0.50	48.34	115.69
40	6.73	15.54	0.80	0.18	48.89	115.12
41	6.89	14.28	0.70	0.88	48.92	114.24
42	7.05	14.03	0.61	1.67	48.23	113.06
43	7.22	13.47	0.51	2.43	47.47	112.00
44	7.38	12.67	0.48	3.10	47.19	111.21
45	7.55	12.66	0.47	3.21	47.65	111.01
46	7.71	12.65	0.48	3.44	47.92	111.24
47	7.87	12.90	0.52	3.79	48.87	111.66
48	8.04	12.67	0.55	3.64	50.96	111.82

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
49	8.20	11.24	0.54	2.58	52.77	111.06
50	8.37	10.12	0.40	2.60	53.52	109.79
51	8.53	10.01	0.35	3.06	50.58	108.47
52	8.69	11.17	0.32	3.80	48.31	108.15
53	8.86	11.27	0.34	4.44	47.58	108.33
54	9.02	10.86	0.36	5.05	48.62	108.44
55	9.19	10.56	0.34	4.77	49.59	108.35
56	9.35	10.42	0.34	5.23	49.52	108.24
57	9.51	10.74	0.35	5.70	49.24	108.38
58	9.68	11.00	0.36	6.02	48.99	109.08
59	9.84	11.77	0.43	6.26	50.08	109.99
60	10.01	11.50	0.49	5.70	52.08	110.76
61	10.17	10.87	0.50	4.95	54.37	110.61
62	10.33	9.93	0.42	3.57	54.85	109.63
63	10.50	9.66	0.34	4.18	53.46	108.39
64	10.66	9.91	0.32	5.02	50.42	107.88
65	10.83	11.15	0.34	6.22	48.13	108.53
66	10.99	12.35	0.40	6.44	46.78	109.97
67	11.15	13.59	0.50	6.99	47.54	111.27
68	11.32	13.11	0.55	5.47	49.50	111.98
69	11.48	12.11	0.55	3.92	51.64	111.60
70	11.65	11.13	0.46	3.85	52.37	110.86
71	11.81	11.27	0.43	6.00	50.93	110.10
72	11.98	12.00	0.41	6.62	49.60	110.31
73	12.14	12.66	0.47	7.69	48.99	110.84
74	12.30	12.92	0.51	7.38	50.19	111.56
75	12.47	12.45	0.55	6.79	51.66	111.80
76	12.63	11.97	0.53	6.59	53.00	111.74
77	12.80	11.81	0.51	6.30	53.38	111.56
78	12.96	11.93	0.52	6.68	53.15	111.58
79	13.12	12.33	0.53	6.30	53.04	111.62
80	13.29	12.09	0.51	6.41	53.01	111.31
81	13.45	11.47	0.46	7.16	53.16	110.59
82	13.62	11.03	0.41	7.01	53.36	109.86
83	13.78	10.78	0.40	7.12	53.57	109.39
84	13.94	10.65	0.39	7.03	53.84	109.13
85	14.11	10.52	0.37	6.98	53.57	109.01
86	14.27	10.89	0.38	7.16	52.28	109.22
87	14.44	12.02	0.41	7.86	51.04	109.86
88	14.60	12.70	0.45	8.03	50.80	110.83
89	14.76	12.98	0.53	8.12	51.67	111.66
90	14.93	12.97	0.56	8.40	52.36	112.14
91	15.09	13.20	0.55	5.70	52.84	112.26
92	15.26	12.95	0.56	5.86	52.71	112.08
93	15.42	12.88	0.52	6.19	53.08	111.90
94	15.58	12.64	0.52	5.85	53.16	111.68
95	15.75	12.57	0.51	5.39	54.04	111.46
96	15.91	11.86	0.49	4.64	55.02	111.14

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
97	16.08	11.40	0.47	5.00	55.65	110.70
98	16.24	11.47	0.44	4.96	55.42	110.51
99	16.40	11.79	0.45	5.22	54.62	110.70
100	16.57	12.39	0.49	5.57	54.72	111.24
101	16.73	12.49	0.54	4.55	54.98	111.72
102	16.90	12.60	0.54	4.21	55.06	111.77
103	17.06	12.55	0.50	4.53	54.46	111.52
104	17.22	12.60	0.48	5.59	53.20	111.25
105	17.39	13.21	0.48	5.17	52.48	111.32
106	17.55	13.41	0.51	5.47	52.59	111.50
107	17.72	12.97	0.51	5.71	53.68	111.70
108	17.88	12.77	0.52	5.69	54.48	111.46
109	18.04	12.39	0.47	5.96	54.88	111.03
110	18.21	11.94	0.44	6.33	55.24	110.41
111	18.37	11.48	0.42	6.59	55.22	109.86
112	18.54	10.95	0.39	6.13	56.56	109.33
113	18.70	10.26	0.37	6.67	57.00	108.62
114	18.86	10.21	0.33	6.73	57.34	108.13
115	19.03	10.11	0.33	6.80	56.73	107.40
116	19.19	9.67	0.28	7.30	56.29	106.86
117	19.36	9.81	0.27	8.17	55.23	106.20
118	19.52	10.39	0.25	8.79	53.61	105.96
119	19.69	10.43	0.25	9.46	52.95	106.48
120	19.85	11.04	0.31	10.46	52.56	107.80
121	20.01	12.74	0.39	11.08	51.52	109.52
122	20.18	14.25	0.46	11.72	50.88	110.71
123	20.34	13.97	0.48	12.54	51.22	111.20
124	20.51	13.50	0.47	12.71	52.75	111.10
125	20.67	12.77	0.45	12.02	54.51	110.65
126	20.83	11.72	0.42	12.83	55.33	109.97
127	21.00	11.25	0.38	12.64	56.99	109.20
128	21.16	10.44	0.35	12.31	57.47	108.63
129	21.33	10.61	0.35	12.50	57.60	108.57
130	21.49	11.22	0.37	9.51	55.78	109.13
131	21.65	12.64	0.41	11.08	52.77	109.95
132	21.82	14.93	0.44	12.17	49.44	110.81
133	21.98	15.99	0.47	15.16	46.93	111.38
134	22.15	16.56	0.48	18.39	46.49	111.66
135	22.31	16.12	0.48	18.60	47.60	111.51
136	22.47	14.49	0.45	16.25	50.92	111.00
137	22.64	12.19	0.43	13.38	56.06	110.23
138	22.80	10.15	0.41	4.83	62.88	109.52
139	22.97	9.16	0.40	2.74	65.59	108.93
140	23.13	10.11	0.36	3.51	62.47	108.67
141	23.29	11.55	0.35	5.13	58.23	108.56
142	23.46	11.58	0.35	6.62	56.02	109.06
143	23.62	12.41	0.41	8.71	51.16	110.34
144	23.79	18.22	0.49	13.26	43.70	112.12

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
145	23.95	24.07	0.57	18.76	38.83	113.95
146	24.11	25.51	0.69	26.46	37.43	115.39
147	24.28	26.11	0.79	32.62	38.06	116.37
148	24.44	26.62	0.83	33.82	37.33	116.60
149	24.61	28.13	0.74	33.97	35.86	116.30
150	24.77	28.19	0.67	46.27	34.48	115.77
151	24.93	27.53	0.67	53.06	33.32	115.75
152	25.10	30.52	0.71	79.39	34.19	116.45
153	25.26	29.27	0.87	49.38	37.41	117.02
154	25.43	23.00	0.90	12.33	44.41	117.05
155	25.59	17.82	0.87	15.08	51.06	115.80
156	25.75	15.96	0.62	19.73	53.89	114.14
157	25.92	15.24	0.51	26.08	51.45	112.52
158	26.08	16.38	0.49	27.89	49.39	111.95
159	26.25	16.87	0.49	25.33	48.52	111.54
160	26.41	15.35	0.42	26.55	48.89	110.68
161	26.57	14.11	0.35	27.81	49.35	109.23
162	26.74	13.41	0.29	28.20	48.42	107.84
163	26.90	13.62	0.25	29.14	47.43	107.57
164	27.07	14.58	0.31	32.23	46.11	110.17
165	27.23	20.21	0.59	35.39	40.82	114.89
166	27.40	34.95	1.05	31.24	36.71	119.36
167	27.56	43.87	1.58	11.37	32.29	120.61
168	27.72	42.19	0.95	4.00	33.64	119.78
169	27.89	25.67	0.76	4.85	35.43	117.19
170	28.05	24.54	0.75	38.68	39.65	116.35
171	28.22	28.33	0.80	41.82	37.76	117.21
172	28.38	33.15	0.97	42.04	37.43	118.01
173	28.54	29.55	0.99	17.50	40.06	118.08
174	28.71	22.89	0.89	25.89	43.87	116.96
175	28.87	21.11	0.69	34.82	45.54	115.59
176	29.04	21.63	0.63	41.48	43.93	114.53
177	29.20	21.89	0.60	37.27	42.83	114.14
178	29.36	21.67	0.58	40.77	42.92	113.94
179	29.53	20.92	0.58	43.41	44.26	113.94
180	29.69	19.84	0.62	42.68	47.41	114.37
181	29.86	18.49	0.72	43.34	47.31	114.29
182	30.02	20.91	0.56	47.06	43.33	113.79
183	30.18	24.17	0.45	51.93	39.01	112.55
184	30.35	21.57	0.43	66.53	38.92	111.94
185	30.51	19.02	0.46	62.38	42.62	112.17
186	30.68	18.88	0.53	57.20	45.32	112.38
187	30.84	18.45	0.49	62.27	45.93	112.45
188	31.00	18.36	0.48	72.14	46.13	112.00
189	31.17	17.36	0.45	67.47	46.84	111.62
190	31.33	16.56	0.44	69.94	47.41	111.64
191	31.50	17.77	0.49	74.92	45.08	112.44
192	31.66	22.44	0.56	83.61	42.12	113.58

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
193	31.82	24.51	0.61	78.50	39.41	114.73
194	31.99	26.64	0.69	91.11	39.10	115.34
195	32.15	25.51	0.70	87.61	40.15	115.51
196	32.32	23.25	0.67	74.40	42.27	115.10
197	32.48	21.45	0.63	75.77	43.73	114.42
198	32.64	20.78	0.56	85.82	42.78	113.62
199	32.81	22.10	0.49	89.64	41.45	112.92
200	32.97	21.44	0.47	82.91	41.31	112.75
201	33.14	20.61	0.53	85.09	43.27	112.61
202	33.30	18.76	0.49	79.46	46.10	112.50
203	33.46	17.18	0.48	80.24	48.18	112.01
204	33.63	16.85	0.46	74.56	49.11	111.69
205	33.79	16.94	0.44	79.64	47.75	111.57
206	33.96	18.59	0.45	82.65	44.54	111.56
207	34.12	21.04	0.43	79.66	41.52	111.68
208	34.28	21.88	0.43	83.25	39.49	111.87
209	34.45	22.61	0.46	87.03	39.02	112.24
210	34.61	22.92	0.48	101.56	38.85	112.99
211	34.78	24.54	0.55	103.75	39.13	114.12
212	34.94	26.01	0.68	104.25	39.51	116.03
213	35.10	29.69	0.93	108.46	40.92	118.36
214	35.27	32.07	1.28	91.22	41.65	121.11
215	35.43	38.95	1.83	78.92	31.89	122.64
216	35.60	73.72	1.33	44.98	22.48	123.94
217	35.76	101.65	1.51	9.58	18.01	124.70
218	35.93	92.86	1.97	0.20	20.58	125.80
219	36.09	63.93	2.19	0.31	26.30	126.45
220	36.25	61.54	2.39	53.74	26.52	127.33
221	36.42	102.88	2.71	12.47	25.08	127.57
222	36.58	78.82	2.27	6.86	25.43	126.23
223	36.75	41.59	1.34	15.51	32.75	123.50
224	36.91	31.35	1.33	73.22	42.05	120.36
225	37.07	26.69	1.01	38.15	49.83	119.02
226	37.24	18.86	0.99	67.30	54.72	117.00
227	37.40	17.09	0.70	60.62	60.19	115.38
228	37.57	15.80	0.61	69.10	58.52	113.85
229	37.73	16.69	0.58	73.81	56.75	113.51
230	37.89	17.98	0.60	73.88	50.86	113.87
231	38.06	23.12	0.62	72.42	46.37	114.66
232	38.22	25.59	0.69	70.21	40.72	115.68
233	38.39	32.06	0.76	69.88	36.59	116.45
234	38.55	36.68	0.74	36.49	35.17	116.10
235	38.71	28.35	0.57	33.61	37.76	115.25
236	38.88	21.96	0.59	61.62	44.27	115.29
237	39.04	23.24	0.86	80.30	44.13	116.61
238	39.21	33.47	0.92	54.86	36.05	118.71
239	39.37	51.79	1.08	25.17	32.89	119.42
240	39.53	38.91	1.02	13.56	35.35	119.31

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
241	39.70	25.12	0.95	26.01	46.27	117.43
242	39.86	16.24	0.69	38.58	56.80	115.14
243	40.03	16.30	0.52	49.38	59.47	112.95
244	40.19	16.20	0.47	71.64	57.01	112.17
245	40.35	16.43	0.52	74.67	56.78	111.95
246	40.52	15.75	0.48	74.34	57.88	111.86
247	40.68	14.92	0.46	78.29	56.92	111.30
248	40.85	16.11	0.41	83.41	52.51	110.69
249	41.01	18.10	0.35	90.81	47.37	109.38
250	41.17	17.82	0.24	75.75	46.66	108.51
251	41.34	14.90	0.30	93.31	46.30	107.84
252	41.50	16.93	0.28	103.37	46.77	108.37
253	41.67	18.02	0.30	109.98	44.92	109.45
254	41.83	19.49	0.41	120.45	44.77	111.53
255	41.99	22.49	0.56	124.40	45.08	113.86
256	42.16	24.78	0.72	114.36	45.07	115.56
257	42.32	25.59	0.80	120.47	45.15	116.67
258	42.49	26.62	0.86	130.82	43.66	117.13
259	42.65	29.43	0.83	133.51	41.59	117.25
260	42.81	30.40	0.80	134.18	40.12	117.00
261	42.98	28.94	0.76	133.99	40.13	116.56
262	43.14	27.49	0.71	136.78	40.58	116.19
263	43.31	27.76	0.70	142.40	40.75	116.16
264	43.47	28.41	0.75	147.09	41.06	116.32
265	43.64	27.53	0.75	143.24	41.37	116.64
266	43.80	28.35	0.79	160.77	41.29	116.79
267	43.96	29.37	0.79	149.25	40.31	117.22
268	44.13	31.75	0.85	149.09	39.71	117.65
269	44.29	31.99	0.91	161.36	40.28	118.15
270	44.46	30.56	0.96	151.57	41.23	118.44
271	44.62	30.70	0.97	169.40	41.62	118.65
272	44.78	32.14	0.99	170.29	40.22	118.87
273	44.95	35.72	1.00	121.78	40.24	119.00
274	45.11	32.55	1.01	97.13	40.19	118.81
275	45.28	32.01	0.92	128.74	41.80	118.73
276	45.44	31.13	1.01	143.38	42.05	119.07
277	45.60	33.39	1.14	127.15	42.91	120.76
278	45.77	39.69	1.64	88.40	39.22	123.39
279	45.93	60.98	2.25	19.00	38.23	124.57
280	46.10	48.14	1.85	2.96	40.17	123.75
281	46.26	27.69	1.19	8.33	49.67	120.41
282	46.42	16.26	0.78	60.52	59.63	116.39
283	46.59	18.21	0.53	58.94	59.06	113.75
284	46.75	20.30	0.49	65.71	50.58	112.55
285	46.92	22.03	0.46	63.39	50.14	112.50
286	47.08	18.49	0.52	75.38	52.36	112.85
287	47.24	18.34	0.58	82.50	55.58	113.87
288	47.41	21.67	0.69	93.79	51.12	114.06

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
289	47.57	23.53	0.52	87.43	48.51	114.75
290	47.74	24.41	0.70	82.58	48.18	115.93
291	47.90	26.45	0.97	92.47	46.85	117.46
292	48.06	32.17	0.94	73.53	44.72	118.05
293	48.23	31.61	0.85	63.05	44.51	118.49
294	48.39	29.49	1.12	65.53	46.10	120.21
295	48.56	36.88	1.64	97.87	42.31	122.44
296	48.72	54.89	1.82	22.09	39.32	124.06
297	48.88	51.59	1.96	12.60	38.74	124.22
298	49.05	41.47	1.72	29.67	40.67	122.99
299	49.21	39.17	1.14	20.07	44.43	121.03
300	49.38	28.46	1.06	34.31	47.08	119.65
301	49.54	28.04	1.19	52.19	49.73	119.45
302	49.70	32.63	1.12	53.05	46.47	119.73
303	49.87	36.30	1.10	48.62	44.89	119.37
304	50.03	30.09	1.00	34.93	46.73	118.73
305	50.20	25.39	0.92	79.17	49.88	117.55
306	50.36	25.26	0.75	65.33	51.71	116.12
307	50.52	21.47	0.60	69.41	52.39	114.22
308	50.69	18.40	0.46	74.78	55.75	112.43
309	50.85	17.24	0.42	80.71	56.99	111.38
310	51.02	17.38	0.44	84.39	57.34	111.33
311	51.18	17.80	0.45	87.10	57.57	111.62
312	51.35	17.62	0.47	90.60	57.98	111.77
313	51.51	17.29	0.47	91.62	58.01	112.13
314	51.67	18.61	0.52	95.29	56.75	112.48
315	51.84	19.88	0.52	97.19	53.32	112.90
316	52.00	21.08	0.52	104.61	51.74	112.84
317	52.17	20.39	0.49	104.89	51.16	112.78
318	52.33	20.31	0.50	114.12	50.14	112.60
319	52.49	21.91	0.48	112.38	49.01	112.93
320	52.66	22.84	0.54	118.35	46.66	113.55
321	52.82	25.95	0.59	115.00	47.01	115.67
322	52.99	28.86	0.95	119.03	44.69	117.94
323	53.15	37.40	1.15	90.21	41.32	119.13
324	53.31	41.05	0.93	44.86	40.89	119.24
325	53.48	31.61	0.98	59.12	44.53	119.07
326	53.64	27.61	1.16	90.61	48.21	118.63
327	53.81	30.58	0.84	93.81	50.65	118.07
328	53.97	24.63	0.83	75.36	49.40	116.92
329	54.13	25.25	0.77	90.20	51.17	116.45
330	54.30	26.09	0.73	86.65	51.88	115.51
331	54.46	20.41	0.59	67.75	56.60	114.27
332	54.63	16.77	0.52	79.51	62.18	112.83
333	54.79	16.10	0.49	85.01	65.11	112.16
334	54.95	15.99	0.49	82.86	66.19	111.94
335	55.12	15.38	0.49	83.99	66.69	111.68
336	55.28	15.20	0.45	86.77	66.83	111.59

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
337	55.45	15.63	0.47	91.84	62.00	111.25
338	55.61	18.79	0.39	98.73	56.84	111.01
339	55.77	20.24	0.37	71.58	52.40	110.30
340	55.94	17.61	0.35	87.23	53.30	110.20
341	56.10	17.68	0.39	93.19	57.70	111.18
342	56.27	18.85	0.53	97.26	59.69	113.04
343	56.43	20.03	0.69	90.76	61.30	114.76
344	56.59	20.51	0.78	96.58	61.61	115.53
345	56.76	20.69	0.73	101.52	61.39	115.31
346	56.92	19.62	0.63	101.08	60.18	114.60
347	57.09	19.82	0.59	108.77	59.80	113.47
348	57.25	18.29	0.48	89.80	60.59	112.44
349	57.41	16.25	0.43	100.23	64.46	112.71
350	57.58	16.67	0.67	109.65	57.89	115.45
351	57.74	32.87	1.02	107.00	49.57	118.13
352	57.91	37.86	1.12	55.39	45.42	120.81
353	58.07	39.86	1.63	46.24	39.71	122.63
354	58.23	62.45	1.74	28.06	35.71	123.74
355	58.40	62.78	1.59	14.36	34.29	123.18
356	58.56	42.01	1.25	4.57	39.90	121.08
357	58.73	25.76	0.89	22.33	49.96	118.25
358	58.89	22.95	0.71	50.44	56.53	115.88
359	59.06	23.89	0.62	62.14	53.43	115.25
360	59.22	25.56	0.70	70.97	51.78	115.63
361	59.38	26.39	0.78	76.63	52.61	116.25
362	59.55	24.66	0.79	80.35	55.39	116.38
363	59.71	23.83	0.76	85.11	56.40	116.22
364	59.88	24.24	0.75	87.63	55.78	116.25
365	60.04	25.64	0.79	92.22	53.50	116.53
366	60.20	25.92	0.82	108.64	53.42	116.86
367	60.37	25.37	0.84	109.83	55.72	116.94
368	60.53	24.40	0.83	109.33	57.17	116.85
369	60.70	23.47	0.82	110.13	59.09	116.74
370	60.86	22.51	0.84	96.56	61.77	116.59
371	61.02	20.75	0.82	88.45	64.72	116.26
372	61.19	19.27	0.76	91.67	66.52	115.58
373	61.35	18.71	0.67	96.69	66.50	114.68
374	61.52	18.43	0.58	91.58	66.05	113.93
375	61.68	17.92	0.58	91.69	65.84	113.41
376	61.84	17.77	0.55	94.44	65.83	113.28
377	62.01	18.09	0.55	98.54	65.14	113.20
378	62.17	18.38	0.56	99.24	64.59	113.30
379	62.34	18.59	0.57	98.75	64.10	113.43
380	62.50	18.98	0.57	98.87	62.72	113.65
381	62.66	20.38	0.59	106.35	59.82	113.91
382	62.83	22.54	0.59	110.43	55.98	114.44
383	62.99	25.33	0.65	121.08	51.71	114.87
384	63.16	25.58	0.65	124.66	52.34	115.13

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
385	63.32	22.54	0.66	112.15	57.61	114.77
386	63.48	19.13	0.61	106.26	61.71	113.77
387	63.65	17.85	0.47	113.15	62.77	112.17
388	63.81	17.37	0.36	116.89	60.37	110.29
389	63.98	17.13	0.29	121.27	57.78	109.10
390	64.14	17.80	0.31	129.50	55.71	108.88
391	64.30	19.00	0.32	134.26	52.82	109.51
392	64.47	19.82	0.36	135.51	51.81	109.73
393	64.63	19.52	0.33	135.94	51.92	109.58
394	64.80	18.48	0.30	139.99	52.01	109.43
395	64.96	19.31	0.34	144.76	49.98	109.62
396	65.12	22.74	0.34	123.98	49.45	110.77
397	65.29	22.27	0.45	143.94	47.84	111.71
398	65.45	24.43	0.46	146.77	48.95	112.15
399	65.62	22.48	0.42	126.94	50.69	111.81
400	65.78	19.12	0.41	125.12	55.64	111.15
401	65.94	18.70	0.39	131.37	57.21	110.65
402	66.11	19.29	0.35	136.20	56.48	111.03
403	66.27	20.75	0.45	142.98	52.67	111.93
404	66.44	23.70	0.51	142.36	52.06	113.58
405	66.60	25.11	0.64	136.66	52.36	115.12
406	66.77	25.58	0.79	139.10	52.77	116.32
407	66.93	27.81	0.82	119.35	53.02	116.86
408	67.09	27.04	0.80	123.87	52.08	116.70
409	67.26	26.73	0.73	129.12	51.37	116.04
410	67.42	26.28	0.63	139.74	50.62	115.14
411	67.59	24.94	0.57	129.91	51.34	113.64
412	67.75	20.78	0.41	113.29	56.42	112.65
413	67.91	18.78	0.48	137.50	57.54	111.93
414	68.08	21.41	0.45	142.93	57.32	112.12
415	68.24	21.44	0.44	128.59	55.21	111.63
416	68.41	20.39	0.38	129.90	53.18	110.66
417	68.57	19.29	0.30	134.91	52.87	109.59
418	68.73	19.04	0.30	140.50	52.87	109.12
419	68.90	19.12	0.32	144.19	53.24	109.08
420	69.06	18.82	0.30	136.88	56.06	109.04
421	69.23	17.93	0.30	136.72	57.38	108.86
422	69.39	17.54	0.31	126.91	59.35	108.97
423	69.55	17.24	0.32	120.71	60.83	109.10
424	69.72	16.96	0.32	122.55	62.73	109.44
425	69.88	16.58	0.36	119.69	63.58	109.81
426	70.05	17.21	0.38	123.35	62.71	110.66
427	70.21	19.55	0.44	133.92	61.06	111.53
428	70.37	20.34	0.48	126.02	60.17	112.48
429	70.54	20.70	0.53	124.36	60.74	113.40
430	70.70	21.46	0.61	131.36	60.37	114.02
431	70.87	22.65	0.61	123.65	59.49	114.57
432	71.03	23.65	0.64	119.80	58.66	114.63

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
433	71.19	23.01	0.62	121.11	58.92	114.90
434	71.36	23.15	0.67	128.44	58.68	115.07
435	71.52	24.56	0.68	125.26	57.91	115.68
436	71.69	26.13	0.76	127.02	56.30	116.30
437	71.85	27.92	0.81	127.81	52.23	116.46
438	72.01	28.89	0.69	128.34	50.86	116.24
439	72.18	27.65	0.68	128.76	50.60	116.04
440	72.34	27.46	0.75	143.34	52.50	116.57
441	72.51	27.70	0.86	140.24	52.44	117.34
442	72.67	30.71	0.90	143.41	49.90	118.15
443	72.83	35.84	0.97	134.04	48.44	119.48
444	73.00	37.38	1.31	133.03	46.22	120.42
445	73.16	41.56	1.23	113.05	47.71	121.54
446	73.33	39.50	1.52	89.97	44.97	122.43
447	73.49	50.64	1.68	122.43	39.85	123.75
448	73.65	68.14	1.80	151.69	35.25	124.68
449	73.82	69.07	1.90	12.13	35.04	124.08
450	73.98	47.41	1.29	17.61	42.07	122.57
451	74.15	29.44	1.22	41.65	52.70	120.54
452	74.31	28.29	1.20	88.77	57.04	119.74
453	74.48	37.98	1.00	71.04	51.71	118.44
454	74.64	29.99	0.66	56.88	51.72	116.68
455	74.80	21.08	0.65	74.30	60.59	114.08
456	74.97	18.37	0.44	84.75	65.80	112.10
457	75.13	17.72	0.32	135.83	62.79	109.80
458	75.30	18.07	0.28	137.82	60.21	108.54
459	75.46	17.63	0.28	137.44	59.47	108.18
460	75.62	17.76	0.27	139.50	59.51	108.28
461	75.79	18.23	0.29	143.19	59.11	108.81
462	75.95	19.10	0.33	150.42	58.46	110.61
463	76.12	22.50	0.49	159.63	60.26	114.39
464	76.28	26.46	0.97	139.10	57.43	117.78
465	76.44	35.43	1.22	145.89	50.85	119.48
466	76.61	40.60	1.02	38.27	49.27	119.12
467	76.77	29.27	0.80	55.59	50.91	117.51
468	76.94	25.65	0.70	85.58	56.53	115.63
469	77.10	26.29	0.54	93.30	56.77	114.76
470	77.26	25.25	0.60	105.89	52.92	115.40
471	77.43	30.29	0.83	123.99	47.89	115.77
472	77.59	36.82	0.57	78.44	47.01	116.05
473	77.76	28.50	0.66	88.96	48.79	115.87
474	77.92	26.22	0.81	119.07	58.73	116.30
475	78.08	24.79	0.79	109.77	63.27	116.54
476	78.25	22.61	0.78	103.28	65.87	115.79
477	78.41	20.84	0.63	103.98	66.83	114.60
478	78.58	20.27	0.50	113.27	64.36	113.61
479	78.74	22.35	0.54	133.44	59.00	113.42
480	78.90	26.73	0.54	129.59	57.10	114.28

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
481	79.07	25.63	0.66	121.86	57.49	116.78
482	79.23	30.56	1.17	136.49	50.46	119.37
483	79.40	47.39	1.32	129.66	47.85	121.24
484	79.56	43.32	1.39	29.34	47.81	120.66
485	79.72	28.36	0.90	68.13	56.18	118.75
486	79.89	24.74	0.69	107.92	61.26	116.28
487	80.05	24.16	0.68	110.70	56.42	116.23
488	80.22	34.49	0.82	160.24	47.79	116.87
489	80.38	39.03	0.77	128.80	44.84	117.27
490	80.54	32.48	0.75	118.77	47.74	117.55
491	80.71	29.46	0.95	162.93	49.69	118.32
492	80.87	38.14	1.05	170.01	47.68	119.59
493	81.04	42.30	1.17	200.56	44.72	120.63
494	81.20	42.61	1.30	196.60	44.90	121.40
495	81.36	42.16	1.39	201.28	46.28	121.89
496	81.53	41.78	1.44	201.53	47.15	122.05
497	81.69	41.18	1.40	209.58	46.83	121.78
498	81.86	41.18	1.24	217.52	45.63	121.06
499	82.02	40.31	1.07	224.15	44.30	120.15
500	82.19	39.14	0.98	221.10	44.13	119.17
501	82.35	36.15	0.87	211.17	45.15	118.20
502	82.51	32.85	0.76	200.91	47.12	117.09
503	82.68	29.75	0.68	187.35	48.92	116.16
504	82.84	28.85	0.65	182.47	50.98	116.09
505	83.01	29.01	0.77	186.29	56.06	116.34
506	83.17	26.54	0.78	144.65	58.58	116.92
507	83.33	27.33	0.84	149.57	57.98	117.53
508	83.50	33.03	0.94	151.12	55.34	117.76
509	83.66	32.76	0.81	121.78	55.64	117.78
510	83.83	27.22	0.86	132.02	57.56	117.21
511	83.99	27.37	0.80	142.21	59.23	116.85
512	84.15	28.36	0.73	143.48	57.41	116.73
513	84.32	29.61	0.79	152.21	55.80	117.05
514	84.48	31.24	0.86	167.71	52.71	117.69
515	84.65	32.50	0.91	158.76	52.62	118.00
516	84.81	31.29	0.89	149.12	55.74	118.11
517	84.97	30.20	0.91	165.28	51.56	118.23
518	85.14	37.31	0.92	125.94	51.14	118.58
519	85.30	34.31	1.00	118.27	52.62	119.15
520	85.47	30.38	1.14	147.35	46.40	121.42
521	85.63	64.72	1.73	107.87	41.76	122.88
522	85.79	60.59	1.60	18.63	40.79	123.25
523	85.96	38.12	1.31	69.84	47.87	121.50
524	86.12	30.32	1.03	98.86	60.85	118.78
525	86.29	23.11	0.68	85.21	66.71	115.99
526	86.45	19.04	0.51	104.40	70.92	113.29
527	86.61	17.97	0.44	119.34	71.13	111.79
528	86.78	18.85	0.41	130.18	68.69	111.26

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
529	86.94	19.71	0.40	139.12	65.88	111.18
530	87.11	20.39	0.41	139.38	63.38	111.49
531	87.27	22.18	0.44	146.62	62.13	112.11
532	87.43	22.86	0.49	140.60	62.70	112.96
533	87.60	22.13	0.56	134.41	65.33	113.53
534	87.76	21.00	0.57	122.48	67.75	113.67
535	87.93	20.77	0.54	125.60	68.25	113.08
536	88.09	20.23	0.45	127.54	67.60	112.12
537	88.25	19.20	0.39	134.27	67.19	111.33
538	88.42	19.12	0.41	144.47	66.53	111.27
539	88.58	20.59	0.43	144.38	64.43	112.00
540	88.75	23.17	0.49	147.41	62.41	112.51
541	88.91	22.98	0.48	141.84	61.15	112.73
542	89.07	22.92	0.46	143.52	61.20	112.45
543	89.24	22.37	0.44	147.51	61.40	112.15
544	89.40	21.87	0.43	150.60	61.50	112.01
545	89.57	22.42	0.44	148.08	61.86	112.02
546	89.73	21.94	0.45	151.76	62.18	112.45
547	89.90	22.68	0.51	154.47	61.71	112.63
548	90.06	23.47	0.47	156.55	59.64	112.56
549	90.22	24.60	0.41	149.20	58.34	112.17
550	90.39	23.40	0.43	158.71	56.30	111.90
551	90.55	25.57	0.41	169.35	52.04	112.10
552	90.72	27.64	0.43	162.12	51.40	113.43
553	90.88	28.68	0.65	172.44	47.12	116.06
554	91.04	43.83	0.92	183.42	44.32	117.15
555	91.21	40.61	0.67	70.85	46.68	118.29
556	91.37	30.03	1.03	101.54	49.71	117.75
557	91.54	35.36	0.80	121.81	50.60	117.18
558	91.70	35.80	0.52	106.98	46.44	115.16
559	91.86	29.35	0.46	116.38	49.59	113.94
560	92.03	24.31	0.58	137.89	56.90	114.71
561	92.19	30.11	0.73	145.94	57.45	117.45
562	92.36	38.76	1.18	133.04	45.57	120.79
563	92.52	64.10	1.62	50.97	42.09	123.57
564	92.68	63.05	2.01	40.02	38.03	124.57
565	92.85	66.18	1.64	20.64	41.03	124.14
566	93.01	47.70	1.47	40.32	43.14	122.19
567	93.18	39.66	1.00	53.57	51.20	119.86
568	93.34	29.30	0.79	59.16	58.05	116.93
569	93.50	24.98	0.55	81.12	61.85	114.12
570	93.67	23.21	0.35	89.70	61.87	111.97
571	93.83	22.44	0.40	103.92	61.95	111.94
572	94.00	24.46	0.55	110.73	60.11	113.01
573	94.16	28.52	0.52	110.77	57.16	113.80
574	94.32	29.51	0.52	103.13	56.18	113.79
575	94.49	26.14	0.53	109.71	58.86	113.51
576	94.65	23.17	0.49	127.74	62.68	113.45

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
577	94.82	23.58	0.54	132.54	63.94	113.69
578	94.98	24.93	0.59	131.86	63.33	114.28
579	95.14	25.63	0.60	142.02	62.20	114.57
580	95.31	25.92	0.59	147.33	61.04	114.73
581	95.47	26.93	0.61	152.68	60.36	114.92
582	95.64	27.29	0.64	149.21	59.26	114.76
583	95.80	27.09	0.54	151.57	57.96	114.28
584	95.96	27.25	0.50	168.85	56.39	114.09
585	96.13	28.71	0.58	190.15	52.35	115.19
586	96.29	32.89	0.76	197.82	52.21	116.77
587	96.46	33.79	0.89	190.02	56.73	118.31
588	96.62	32.06	1.08	180.10	60.64	119.12
589	96.78	29.72	1.12	152.51	64.35	119.18
590	96.95	28.31	0.98	146.42	65.32	118.48
591	97.11	27.94	0.83	169.01	63.03	117.56
592	97.28	29.53	0.77	175.07	61.62	117.12
593	97.44	28.81	0.83	158.97	61.87	117.19
594	97.60	28.01	0.86	160.60	62.77	116.99
595	97.77	27.45	0.72	171.81	61.01	116.04
596	97.93	27.96	0.54	175.12	57.67	114.72
597	98.10	28.58	0.50	178.81	51.80	113.58
598	98.26	28.56	0.46	182.89	51.52	113.19
599	98.43	26.99	0.47	186.02	52.13	113.22
600	98.59	27.47	0.51	198.97	51.69	113.56
601	98.75	30.27	0.52	201.28	50.60	114.22
602	98.92	31.34	0.58	190.06	50.08	115.16
603	99.08	32.08	0.70	209.06	49.85	115.91
604	99.25	33.76	0.69	215.54	48.94	116.39
605	99.41	35.34	0.69	195.04	50.66	117.01
606	99.57	32.07	0.89	169.65	56.66	117.87
607	99.74	32.07	0.99	156.78	60.88	118.79
608	99.90	31.93	1.07	155.49	61.33	118.96
609	100.07	32.37	0.96	151.17	60.24	119.19
610	100.23	34.89	1.06	180.19	N/A	87.36
611	100.39	39.06	-269759.36	158.38	N/A	87.36
612	100.56	39.11	-269759.36	134.02	N/A	87.36

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_c: Measured cone resistance (tsf)
f_s: Sleeve friction resistance (tsf)
u: Pore pressure (tsf)
Fines content: Percentage of fines in soil (%)
Unit weight: Bulk soil unit weight (pcf)

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.33	2.00	0.00	0.00	0.16	0.00	0.49	2.00	0.00	0.00	0.16	0.00
0.66	2.00	0.00	0.00	0.16	0.00	0.82	2.00	0.00	0.00	0.16	0.00
0.98	2.00	0.00	0.00	0.16	0.00	1.15	2.00	0.00	0.00	0.16	0.00
1.31	2.00	0.00	0.00	0.16	0.00	1.48	2.00	0.00	0.00	0.16	0.00
1.64	2.00	0.00	0.00	0.16	0.00	1.80	2.00	0.00	0.00	0.16	0.00
1.97	2.00	0.00	0.00	0.16	0.00	2.13	2.00	0.00	0.00	0.16	0.00
2.30	2.00	0.00	0.00	0.16	0.00	2.46	2.00	0.00	0.00	0.16	0.00
2.62	2.00	0.00	0.00	0.16	0.00	2.79	2.00	0.00	0.00	0.16	0.00
2.95	2.00	0.00	0.00	0.16	0.00	3.12	2.00	0.00	0.00	0.16	0.00
3.28	2.00	0.00	0.00	0.16	0.00	3.44	2.00	0.00	0.00	0.16	0.00
3.61	2.00	0.00	0.00	0.16	0.00	3.77	2.00	0.00	0.00	0.16	0.00
3.94	2.00	0.00	0.00	0.16	0.00	4.10	2.00	0.00	0.00	0.16	0.00
4.27	2.00	0.00	0.00	0.16	0.00	4.43	2.00	0.00	0.00	0.16	0.00
4.59	2.00	0.00	0.00	0.16	0.00	4.76	2.00	0.00	0.00	0.16	0.00
4.92	2.00	0.00	0.00	0.16	0.00	5.09	0.31	0.00	0.00	0.16	0.32
5.25	0.36	0.00	0.00	0.16	0.29	5.41	0.52	0.00	0.00	0.16	0.22
5.58	2.00	0.00	0.00	0.16	0.00	5.74	2.00	0.00	0.00	0.16	0.00
5.91	2.00	0.00	0.00	0.16	0.00	6.07	2.00	0.00	0.00	0.16	0.00
6.23	2.00	0.00	0.00	0.16	0.00	6.40	2.00	0.00	0.00	0.16	0.00
6.56	2.00	0.00	0.00	0.16	0.00	6.73	2.00	0.00	0.00	0.16	0.00
6.89	2.00	0.00	0.00	0.16	0.00	7.05	2.00	0.00	0.00	0.16	0.00
7.22	2.00	0.00	0.00	0.16	0.00	7.38	2.00	0.00	0.00	0.16	0.00
7.55	2.00	0.00	0.00	0.16	0.00	7.71	2.00	0.00	0.00	0.16	0.00
7.87	2.00	0.00	0.00	0.16	0.00	8.04	2.00	0.00	0.00	0.16	0.00
8.20	2.00	0.00	0.00	0.16	0.00	8.37	2.00	0.00	0.00	0.16	0.00
8.53	2.00	0.00	0.00	0.16	0.00	8.69	2.00	0.00	0.00	0.16	0.00
8.86	2.00	0.00	0.00	0.16	0.00	9.02	2.00	0.00	0.00	0.16	0.00
9.19	2.00	0.00	0.00	0.16	0.00	9.35	2.00	0.00	0.00	0.16	0.00
9.51	2.00	0.00	0.00	0.16	0.00	9.68	2.00	0.00	0.00	0.16	0.00
9.84	2.00	0.00	0.00	0.16	0.00	10.01	2.00	0.00	0.00	0.16	0.00
10.17	2.00	0.00	0.00	0.16	0.00	10.33	2.00	0.00	0.00	0.16	0.00
10.50	2.00	0.00	0.00	0.16	0.00	10.66	2.00	0.00	0.00	0.16	0.00
10.83	2.00	0.00	0.00	0.16	0.00	10.99	2.00	0.00	0.00	0.16	0.00
11.15	2.00	0.00	0.00	0.16	0.00	11.32	2.00	0.00	0.00	0.16	0.00
11.48	2.00	0.00	0.00	0.16	0.00	11.65	2.00	0.00	0.00	0.16	0.00
11.81	2.00	0.00	0.00	0.16	0.00	11.98	2.00	0.00	0.00	0.16	0.00
12.14	2.00	0.00	0.00	0.16	0.00	12.30	2.00	0.00	0.00	0.16	0.00
12.47	2.00	0.00	0.00	0.16	0.00	12.63	2.00	0.00	0.00	0.16	0.00
12.80	2.00	0.00	0.00	0.16	0.00	12.96	2.00	0.00	0.00	0.16	0.00
13.12	2.00	0.00	0.00	0.16	0.00	13.29	2.00	0.00	0.00	0.16	0.00
13.45	2.00	0.00	0.00	0.16	0.00	13.62	2.00	0.00	0.00	0.16	0.00
13.78	2.00	0.00	0.00	0.16	0.00	13.94	2.00	0.00	0.00	0.16	0.00
14.11	2.00	0.00	0.00	0.16	0.00	14.27	2.00	0.00	0.00	0.16	0.00
14.44	2.00	0.00	0.00	0.16	0.00	14.60	2.00	0.00	0.00	0.16	0.00
14.76	2.00	0.00	0.00	0.16	0.00	14.93	2.00	0.00	0.00	0.16	0.00
15.09	2.00	0.00	0.00	0.16	0.00	15.26	2.00	0.00	0.00	0.16	0.00
15.42	2.00	0.00	0.00	0.16	0.00	15.58	2.00	0.00	0.00	0.16	0.00
15.75	2.00	0.00	0.00	0.16	0.00	15.91	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
16.08	2.00	0.00	0.00	0.16	0.00	16.24	2.00	0.00	0.00	0.16	0.00
16.40	2.00	0.00	0.00	0.16	0.00	16.57	2.00	0.00	0.00	0.16	0.00
16.73	2.00	0.00	0.00	0.16	0.00	16.90	2.00	0.00	0.00	0.16	0.00
17.06	2.00	0.00	0.00	0.16	0.00	17.22	2.00	0.00	0.00	0.16	0.00
17.39	2.00	0.00	0.00	0.16	0.00	17.55	2.00	0.00	0.00	0.16	0.00
17.72	2.00	0.00	0.00	0.16	0.00	17.88	2.00	0.00	0.00	0.16	0.00
18.04	2.00	0.00	0.00	0.16	0.00	18.21	2.00	0.00	0.00	0.16	0.00
18.37	2.00	0.00	0.00	0.16	0.00	18.54	2.00	0.00	0.00	0.16	0.00
18.70	2.00	0.00	0.00	0.16	0.00	18.86	2.00	0.00	0.00	0.16	0.00
19.03	2.00	0.00	0.00	0.16	0.00	19.19	2.00	0.00	0.00	0.16	0.00
19.36	2.00	0.00	0.00	0.16	0.00	19.52	2.00	0.00	0.00	0.16	0.00
19.69	2.00	0.00	0.00	0.16	0.00	19.85	2.00	0.00	0.00	0.16	0.00
20.01	2.00	0.00	0.00	0.16	0.00	20.18	2.00	0.00	0.00	0.16	0.00
20.34	2.00	0.00	0.00	0.16	0.00	20.51	2.00	0.00	0.00	0.16	0.00
20.67	2.00	0.00	0.00	0.16	0.00	20.83	2.00	0.00	0.00	0.16	0.00
21.00	2.00	0.00	0.00	0.16	0.00	21.16	2.00	0.00	0.00	0.16	0.00
21.33	2.00	0.00	0.00	0.16	0.00	21.49	2.00	0.00	0.00	0.16	0.00
21.65	2.00	0.00	0.00	0.16	0.00	21.82	2.00	0.00	0.00	0.16	0.00
21.98	2.00	0.00	0.00	0.16	0.00	22.15	2.00	0.00	0.00	0.16	0.00
22.31	2.00	0.00	0.00	0.16	0.00	22.47	2.00	0.00	0.00	0.16	0.00
22.64	2.00	0.00	0.00	0.16	0.00	22.80	2.00	0.00	0.00	0.16	0.00
22.97	2.00	0.00	0.00	0.16	0.00	23.13	2.00	0.00	0.00	0.16	0.00
23.29	2.00	0.00	0.00	0.16	0.00	23.46	2.00	0.00	0.00	0.16	0.00
23.62	2.00	0.00	0.00	0.16	0.00	23.79	2.00	0.00	0.00	0.16	0.00
23.95	2.00	0.00	0.00	0.16	0.00	24.11	2.00	0.00	0.00	0.16	0.00
24.28	2.00	0.00	0.00	0.16	0.00	24.44	2.00	0.00	0.00	0.16	0.00
24.61	2.00	0.00	0.00	0.16	0.00	24.77	0.17	0.00	0.00	0.16	0.26
24.93	0.16	0.00	0.00	0.16	0.26	25.10	0.18	0.00	0.00	0.16	0.25
25.26	2.00	0.00	0.00	0.16	0.00	25.43	2.00	0.00	0.00	0.16	0.00
25.59	2.00	0.00	0.00	0.16	0.00	25.75	2.00	0.00	0.00	0.16	0.00
25.92	2.00	0.00	0.00	0.16	0.00	26.08	2.00	0.00	0.00	0.16	0.00
26.25	2.00	0.00	0.00	0.16	0.00	26.41	2.00	0.00	0.00	0.16	0.00
26.57	2.00	0.00	0.00	0.16	0.00	26.74	2.00	0.00	0.00	0.16	0.00
26.90	2.00	0.00	0.00	0.16	0.00	27.07	2.00	0.00	0.00	0.16	0.00
27.23	2.00	0.00	0.00	0.16	0.00	27.40	2.00	0.00	0.00	0.16	0.00
27.56	0.24	0.00	0.00	0.16	0.22	27.72	0.23	0.00	0.00	0.16	0.22
27.89	2.00	0.00	0.00	0.16	0.00	28.05	2.00	0.00	0.00	0.16	0.00
28.22	2.00	0.00	0.00	0.16	0.00	28.38	2.00	0.00	0.00	0.16	0.00
28.54	2.00	0.00	0.00	0.16	0.00	28.71	2.00	0.00	0.00	0.16	0.00
28.87	2.00	0.00	0.00	0.16	0.00	29.04	2.00	0.00	0.00	0.16	0.00
29.20	2.00	0.00	0.00	0.16	0.00	29.36	2.00	0.00	0.00	0.16	0.00
29.53	2.00	0.00	0.00	0.16	0.00	29.69	2.00	0.00	0.00	0.16	0.00
29.86	2.00	0.00	0.00	0.16	0.00	30.02	2.00	0.00	0.00	0.16	0.00
30.18	2.00	0.00	0.00	0.16	0.00	30.35	2.00	0.00	0.00	0.16	0.00
30.51	2.00	0.00	0.00	0.16	0.00	30.68	2.00	0.00	0.00	0.16	0.00
30.84	2.00	0.00	0.00	0.16	0.00	31.00	2.00	0.00	0.00	0.16	0.00
31.17	2.00	0.00	0.00	0.16	0.00	31.33	2.00	0.00	0.00	0.16	0.00
31.50	2.00	0.00	0.00	0.16	0.00	31.66	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.82	2.00	0.00	0.00	0.16	0.00	31.99	2.00	0.00	0.00	0.16	0.00
32.15	2.00	0.00	0.00	0.16	0.00	32.32	2.00	0.00	0.00	0.16	0.00
32.48	2.00	0.00	0.00	0.16	0.00	32.64	2.00	0.00	0.00	0.16	0.00
32.81	2.00	0.00	0.00	0.16	0.00	32.97	2.00	0.00	0.00	0.16	0.00
33.14	2.00	0.00	0.00	0.16	0.00	33.30	2.00	0.00	0.00	0.16	0.00
33.46	2.00	0.00	0.00	0.16	0.00	33.63	2.00	0.00	0.00	0.16	0.00
33.79	2.00	0.00	0.00	0.16	0.00	33.96	2.00	0.00	0.00	0.16	0.00
34.12	2.00	0.00	0.00	0.16	0.00	34.28	2.00	0.00	0.00	0.16	0.00
34.45	2.00	0.00	0.00	0.16	0.00	34.61	2.00	0.00	0.00	0.16	0.00
34.78	2.00	0.00	0.00	0.16	0.00	34.94	2.00	0.00	0.00	0.16	0.00
35.10	2.00	0.00	0.00	0.16	0.00	35.27	2.00	0.00	0.00	0.16	0.00
35.43	0.26	0.00	0.00	0.16	0.17	35.60	0.21	0.00	0.00	0.16	0.18
35.76	0.21	0.00	0.00	0.16	0.18	35.93	0.25	0.00	0.00	0.16	0.17
36.09	0.33	0.00	0.00	0.16	0.15	36.25	0.38	0.00	0.00	0.16	0.14
36.42	0.36	0.00	0.00	0.16	0.14	36.58	0.30	0.00	0.00	0.16	0.15
36.75	0.29	0.00	0.00	0.16	0.16	36.91	2.00	0.00	0.00	0.16	0.00
37.07	2.00	0.00	0.00	0.16	0.00	37.24	2.00	0.00	0.00	0.16	0.00
37.40	2.00	0.00	0.00	0.16	0.00	37.57	2.00	0.00	0.00	0.16	0.00
37.73	2.00	0.00	0.00	0.16	0.00	37.89	2.00	0.00	0.00	0.16	0.00
38.06	2.00	0.00	0.00	0.16	0.00	38.22	2.00	0.00	0.00	0.16	0.00
38.39	2.00	0.00	0.00	0.16	0.00	38.55	0.14	0.86	0.26	0.16	0.18
38.71	2.00	0.00	0.00	0.16	0.00	38.88	2.00	0.00	0.00	0.16	0.00
39.04	2.00	0.00	0.00	0.16	0.00	39.21	2.00	0.00	0.00	0.16	0.00
39.37	0.18	0.82	0.27	0.16	0.16	39.53	0.19	0.81	0.27	0.16	0.16
39.70	2.00	0.00	0.00	0.16	0.00	39.86	2.00	0.00	0.00	0.16	0.00
40.03	2.00	0.00	0.00	0.16	0.00	40.19	2.00	0.00	0.00	0.16	0.00
40.35	2.00	0.00	0.00	0.16	0.00	40.52	2.00	0.00	0.00	0.16	0.00
40.68	2.00	0.00	0.00	0.16	0.00	40.85	2.00	0.00	0.00	0.16	0.00
41.01	2.00	0.00	0.00	0.16	0.00	41.17	2.00	0.00	0.00	0.16	0.00
41.34	2.00	0.00	0.00	0.16	0.00	41.50	2.00	0.00	0.00	0.16	0.00
41.67	2.00	0.00	0.00	0.16	0.00	41.83	2.00	0.00	0.00	0.16	0.00
41.99	2.00	0.00	0.00	0.16	0.00	42.16	2.00	0.00	0.00	0.16	0.00
42.32	2.00	0.00	0.00	0.16	0.00	42.49	2.00	0.00	0.00	0.16	0.00
42.65	2.00	0.00	0.00	0.16	0.00	42.81	2.00	0.00	0.00	0.16	0.00
42.98	2.00	0.00	0.00	0.16	0.00	43.14	2.00	0.00	0.00	0.16	0.00
43.31	2.00	0.00	0.00	0.16	0.00	43.47	2.00	0.00	0.00	0.16	0.00
43.64	2.00	0.00	0.00	0.16	0.00	43.80	2.00	0.00	0.00	0.16	0.00
43.96	2.00	0.00	0.00	0.16	0.00	44.13	2.00	0.00	0.00	0.16	0.00
44.29	2.00	0.00	0.00	0.16	0.00	44.46	2.00	0.00	0.00	0.16	0.00
44.62	2.00	0.00	0.00	0.16	0.00	44.78	2.00	0.00	0.00	0.16	0.00
44.95	2.00	0.00	0.00	0.16	0.00	45.11	2.00	0.00	0.00	0.16	0.00
45.28	2.00	0.00	0.00	0.16	0.00	45.44	2.00	0.00	0.00	0.16	0.00
45.60	2.00	0.00	0.00	0.16	0.00	45.77	2.00	0.00	0.00	0.16	0.00
45.93	2.00	0.00	0.00	0.16	0.00	46.10	2.00	0.00	0.00	0.16	0.00
46.26	2.00	0.00	0.00	0.16	0.00	46.42	2.00	0.00	0.00	0.16	0.00
46.59	2.00	0.00	0.00	0.16	0.00	46.75	2.00	0.00	0.00	0.16	0.00
46.92	2.00	0.00	0.00	0.16	0.00	47.08	2.00	0.00	0.00	0.16	0.00
47.24	2.00	0.00	0.00	0.16	0.00	47.41	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
47.57	2.00	0.00	0.00	0.16	0.00	47.74	2.00	0.00	0.00	0.16	0.00
47.90	2.00	0.00	0.00	0.16	0.00	48.06	2.00	0.00	0.00	0.16	0.00
48.23	2.00	0.00	0.00	0.16	0.00	48.39	2.00	0.00	0.00	0.16	0.00
48.56	2.00	0.00	0.00	0.16	0.00	48.72	2.00	0.00	0.00	0.16	0.00
48.88	2.00	0.00	0.00	0.16	0.00	49.05	2.00	0.00	0.00	0.16	0.00
49.21	2.00	0.00	0.00	0.16	0.00	49.38	2.00	0.00	0.00	0.16	0.00
49.54	2.00	0.00	0.00	0.16	0.00	49.70	2.00	0.00	0.00	0.16	0.00
49.87	2.00	0.00	0.00	0.16	0.00	50.03	2.00	0.00	0.00	0.16	0.00
50.20	2.00	0.00	0.00	0.16	0.00	50.36	2.00	0.00	0.00	0.16	0.00
50.52	2.00	0.00	0.00	0.16	0.00	50.69	2.00	0.00	0.00	0.16	0.00
50.85	2.00	0.00	0.00	0.16	0.00	51.02	2.00	0.00	0.00	0.16	0.00
51.18	2.00	0.00	0.00	0.16	0.00	51.35	2.00	0.00	0.00	0.16	0.00
51.51	2.00	0.00	0.00	0.16	0.00	51.67	2.00	0.00	0.00	0.16	0.00
51.84	2.00	0.00	0.00	0.16	0.00	52.00	2.00	0.00	0.00	0.16	0.00
52.17	2.00	0.00	0.00	0.16	0.00	52.33	2.00	0.00	0.00	0.16	0.00
52.49	2.00	0.00	0.00	0.16	0.00	52.66	2.00	0.00	0.00	0.16	0.00
52.82	2.00	0.00	0.00	0.16	0.00	52.99	2.00	0.00	0.00	0.16	0.00
53.15	2.00	0.00	0.00	0.16	0.00	53.31	2.00	0.00	0.00	0.16	0.00
53.48	2.00	0.00	0.00	0.16	0.00	53.64	2.00	0.00	0.00	0.16	0.00
53.81	2.00	0.00	0.00	0.16	0.00	53.97	2.00	0.00	0.00	0.16	0.00
54.13	2.00	0.00	0.00	0.16	0.00	54.30	2.00	0.00	0.00	0.16	0.00
54.46	2.00	0.00	0.00	0.16	0.00	54.63	2.00	0.00	0.00	0.16	0.00
54.79	2.00	0.00	0.00	0.16	0.00	54.95	2.00	0.00	0.00	0.16	0.00
55.12	2.00	0.00	0.00	0.16	0.00	55.28	2.00	0.00	0.00	0.16	0.00
55.45	2.00	0.00	0.00	0.16	0.00	55.61	2.00	0.00	0.00	0.16	0.00
55.77	2.00	0.00	0.00	0.16	0.00	55.94	2.00	0.00	0.00	0.16	0.00
56.10	2.00	0.00	0.00	0.16	0.00	56.27	2.00	0.00	0.00	0.16	0.00
56.43	2.00	0.00	0.00	0.16	0.00	56.59	2.00	0.00	0.00	0.16	0.00
56.76	2.00	0.00	0.00	0.16	0.00	56.92	2.00	0.00	0.00	0.16	0.00
57.09	2.00	0.00	0.00	0.16	0.00	57.25	2.00	0.00	0.00	0.16	0.00
57.41	2.00	0.00	0.00	0.16	0.00	57.58	2.00	0.00	0.00	0.16	0.00
57.74	2.00	0.00	0.00	0.16	0.00	57.91	2.00	0.00	0.00	0.16	0.00
58.07	2.00	0.00	0.00	0.16	0.00	58.23	2.00	0.00	0.00	0.16	0.00
58.40	0.24	0.00	0.00	0.16	0.04	58.56	2.00	0.00	0.00	0.16	0.00
58.73	2.00	0.00	0.00	0.16	0.00	58.89	2.00	0.00	0.00	0.16	0.00
59.06	2.00	0.00	0.00	0.16	0.00	59.22	2.00	0.00	0.00	0.16	0.00
59.38	2.00	0.00	0.00	0.16	0.00	59.55	2.00	0.00	0.00	0.16	0.00
59.71	2.00	0.00	0.00	0.16	0.00	59.88	2.00	0.00	0.00	0.16	0.00
60.04	2.00	0.00	0.00	0.16	0.00	60.20	2.00	0.00	0.00	0.16	0.00
60.37	2.00	0.00	0.00	0.16	0.00	60.53	2.00	0.00	0.00	0.16	0.00
60.70	2.00	0.00	0.00	0.16	0.00	60.86	2.00	0.00	0.00	0.16	0.00
61.02	2.00	0.00	0.00	0.16	0.00	61.19	2.00	0.00	0.00	0.16	0.00
61.35	2.00	0.00	0.00	0.16	0.00	61.52	2.00	0.00	0.00	0.16	0.00
61.68	2.00	0.00	0.00	0.16	0.00	61.84	2.00	0.00	0.00	0.16	0.00
62.01	2.00	0.00	0.00	0.16	0.00	62.17	2.00	0.00	0.00	0.16	0.00
62.34	2.00	0.00	0.00	0.16	0.00	62.50	2.00	0.00	0.00	0.16	0.00
62.66	2.00	0.00	0.00	0.16	0.00	62.83	2.00	0.00	0.00	0.16	0.00
62.99	2.00	0.00	0.00	0.16	0.00	63.16	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
63.32	2.00	0.00	0.00	0.16	0.00	63.48	2.00	0.00	0.00	0.16	0.00
63.65	2.00	0.00	0.00	0.16	0.00	63.81	2.00	0.00	0.00	0.16	0.00
63.98	2.00	0.00	0.00	0.16	0.00	64.14	2.00	0.00	0.00	0.16	0.00
64.30	2.00	0.00	0.00	0.16	0.00	64.47	2.00	0.00	0.00	0.16	0.00
64.63	2.00	0.00	0.00	0.16	0.00	64.80	2.00	0.00	0.00	0.16	0.00
64.96	2.00	0.00	0.00	0.16	0.00	65.12	2.00	0.00	0.00	0.16	0.00
65.29	2.00	0.00	0.00	0.16	0.00	65.45	2.00	0.00	0.00	0.16	0.00
65.62	2.00	0.00	0.00	0.16	0.00	65.78	2.00	0.00	0.00	0.16	0.00
65.94	2.00	0.00	0.00	0.16	0.00	66.11	2.00	0.00	0.00	0.16	0.00
66.27	2.00	0.00	0.00	0.16	0.00	66.44	2.00	0.00	0.00	0.16	0.00
66.60	2.00	0.00	0.00	0.16	0.00	66.77	2.00	0.00	0.00	0.16	0.00
66.93	2.00	0.00	0.00	0.16	0.00	67.09	2.00	0.00	0.00	0.16	0.00
67.26	2.00	0.00	0.00	0.16	0.00	67.42	2.00	0.00	0.00	0.16	0.00
67.59	2.00	0.00	0.00	0.16	0.00	67.75	2.00	0.00	0.00	0.16	0.00
67.91	2.00	0.00	0.00	0.16	0.00	68.08	2.00	0.00	0.00	0.16	0.00
68.24	2.00	0.00	0.00	0.16	0.00	68.41	2.00	0.00	0.00	0.16	0.00
68.57	2.00	0.00	0.00	0.16	0.00	68.73	2.00	0.00	0.00	0.16	0.00
68.90	2.00	0.00	0.00	0.16	0.00	69.06	2.00	0.00	0.00	0.16	0.00
69.23	2.00	0.00	0.00	0.16	0.00	69.39	2.00	0.00	0.00	0.16	0.00
69.55	2.00	0.00	0.00	0.16	0.00	69.72	2.00	0.00	0.00	0.16	0.00
69.88	2.00	0.00	0.00	0.16	0.00	70.05	2.00	0.00	0.00	0.16	0.00
70.21	2.00	0.00	0.00	0.16	0.00	70.37	2.00	0.00	0.00	0.16	0.00
70.54	2.00	0.00	0.00	0.16	0.00	70.70	2.00	0.00	0.00	0.16	0.00
70.87	2.00	0.00	0.00	0.16	0.00	71.03	2.00	0.00	0.00	0.16	0.00
71.19	2.00	0.00	0.00	0.16	0.00	71.36	2.00	0.00	0.00	0.16	0.00
71.52	2.00	0.00	0.00	0.16	0.00	71.69	2.00	0.00	0.00	0.16	0.00
71.85	2.00	0.00	0.00	0.16	0.00	72.01	2.00	0.00	0.00	0.16	0.00
72.18	2.00	0.00	0.00	0.16	0.00	72.34	2.00	0.00	0.00	0.16	0.00
72.51	2.00	0.00	0.00	0.16	0.00	72.67	2.00	0.00	0.00	0.16	0.00
72.83	2.00	0.00	0.00	0.16	0.00	73.00	2.00	0.00	0.00	0.16	0.00
73.16	2.00	0.00	0.00	0.16	0.00	73.33	2.00	0.00	0.00	0.16	0.00
73.49	2.00	0.00	0.00	0.16	0.00	73.65	2.00	0.00	0.00	0.16	0.00
73.82	2.00	0.00	0.00	0.16	0.00	73.98	2.00	0.00	0.00	0.16	0.00
74.15	2.00	0.00	0.00	0.16	0.00	74.31	2.00	0.00	0.00	0.16	0.00
74.48	2.00	0.00	0.00	0.16	0.00	74.64	2.00	0.00	0.00	0.16	0.00
74.80	2.00	0.00	0.00	0.16	0.00	74.97	2.00	0.00	0.00	0.16	0.00
75.13	2.00	0.00	0.00	0.16	0.00	75.30	2.00	0.00	0.00	0.16	0.00
75.46	2.00	0.00	0.00	0.16	0.00	75.62	2.00	0.00	0.00	0.16	0.00
75.79	2.00	0.00	0.00	0.16	0.00	75.95	2.00	0.00	0.00	0.16	0.00
76.12	2.00	0.00	0.00	0.16	0.00	76.28	2.00	0.00	0.00	0.16	0.00
76.44	2.00	0.00	0.00	0.16	0.00	76.61	2.00	0.00	0.00	0.16	0.00
76.77	2.00	0.00	0.00	0.16	0.00	76.94	2.00	0.00	0.00	0.16	0.00
77.10	2.00	0.00	0.00	0.16	0.00	77.26	2.00	0.00	0.00	0.16	0.00
77.43	2.00	0.00	0.00	0.16	0.00	77.59	2.00	0.00	0.00	0.16	0.00
77.76	2.00	0.00	0.00	0.16	0.00	77.92	2.00	0.00	0.00	0.16	0.00
78.08	2.00	0.00	0.00	0.16	0.00	78.25	2.00	0.00	0.00	0.16	0.00
78.41	2.00	0.00	0.00	0.16	0.00	78.58	2.00	0.00	0.00	0.16	0.00
78.74	2.00	0.00	0.00	0.16	0.00	78.90	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
79.07	2.00	0.00	0.00	0.16	0.00	79.23	2.00	0.00	0.00	0.16	0.00
79.40	2.00	0.00	0.00	0.16	0.00	79.56	2.00	0.00	0.00	0.16	0.00
79.72	2.00	0.00	0.00	0.16	0.00	79.89	2.00	0.00	0.00	0.16	0.00
80.05	2.00	0.00	0.00	0.16	0.00	80.22	2.00	0.00	0.00	0.16	0.00
80.38	2.00	0.00	0.00	0.16	0.00	80.54	2.00	0.00	0.00	0.16	0.00
80.71	2.00	0.00	0.00	0.16	0.00	80.87	2.00	0.00	0.00	0.16	0.00
81.04	2.00	0.00	0.00	0.16	0.00	81.20	2.00	0.00	0.00	0.16	0.00
81.36	2.00	0.00	0.00	0.16	0.00	81.53	2.00	0.00	0.00	0.16	0.00
81.69	2.00	0.00	0.00	0.16	0.00	81.86	2.00	0.00	0.00	0.16	0.00
82.02	2.00	0.00	0.00	0.16	0.00	82.19	2.00	0.00	0.00	0.16	0.00
82.35	2.00	0.00	0.00	0.16	0.00	82.51	2.00	0.00	0.00	0.16	0.00
82.68	2.00	0.00	0.00	0.16	0.00	82.84	2.00	0.00	0.00	0.16	0.00
83.01	2.00	0.00	0.00	0.16	0.00	83.17	2.00	0.00	0.00	0.16	0.00
83.33	2.00	0.00	0.00	0.16	0.00	83.50	2.00	0.00	0.00	0.16	0.00
83.66	2.00	0.00	0.00	0.16	0.00	83.83	2.00	0.00	0.00	0.16	0.00
83.99	2.00	0.00	0.00	0.16	0.00	84.15	2.00	0.00	0.00	0.16	0.00
84.32	2.00	0.00	0.00	0.16	0.00	84.48	2.00	0.00	0.00	0.16	0.00
84.65	2.00	0.00	0.00	0.16	0.00	84.81	2.00	0.00	0.00	0.16	0.00
84.97	2.00	0.00	0.00	0.16	0.00	85.14	2.00	0.00	0.00	0.16	0.00
85.30	2.00	0.00	0.00	0.16	0.00	85.47	2.00	0.00	0.00	0.16	0.00
85.63	2.00	0.00	0.00	0.16	0.00	85.79	2.00	0.00	0.00	0.16	0.00
85.96	2.00	0.00	0.00	0.16	0.00	86.12	2.00	0.00	0.00	0.16	0.00
86.29	2.00	0.00	0.00	0.16	0.00	86.45	2.00	0.00	0.00	0.16	0.00
86.61	2.00	0.00	0.00	0.16	0.00	86.78	2.00	0.00	0.00	0.16	0.00
86.94	2.00	0.00	0.00	0.16	0.00	87.11	2.00	0.00	0.00	0.16	0.00
87.27	2.00	0.00	0.00	0.16	0.00	87.43	2.00	0.00	0.00	0.16	0.00
87.60	2.00	0.00	0.00	0.16	0.00	87.76	2.00	0.00	0.00	0.16	0.00
87.93	2.00	0.00	0.00	0.16	0.00	88.09	2.00	0.00	0.00	0.16	0.00
88.25	2.00	0.00	0.00	0.16	0.00	88.42	2.00	0.00	0.00	0.16	0.00
88.58	2.00	0.00	0.00	0.16	0.00	88.75	2.00	0.00	0.00	0.16	0.00
88.91	2.00	0.00	0.00	0.16	0.00	89.07	2.00	0.00	0.00	0.16	0.00
89.24	2.00	0.00	0.00	0.16	0.00	89.40	2.00	0.00	0.00	0.16	0.00
89.57	2.00	0.00	0.00	0.16	0.00	89.73	2.00	0.00	0.00	0.16	0.00
89.90	2.00	0.00	0.00	0.16	0.00	90.06	2.00	0.00	0.00	0.16	0.00
90.22	2.00	0.00	0.00	0.16	0.00	90.39	2.00	0.00	0.00	0.16	0.00
90.55	2.00	0.00	0.00	0.16	0.00	90.72	2.00	0.00	0.00	0.16	0.00
90.88	2.00	0.00	0.00	0.16	0.00	91.04	2.00	0.00	0.00	0.16	0.00
91.21	2.00	0.00	0.00	0.16	0.00	91.37	2.00	0.00	0.00	0.16	0.00
91.54	2.00	0.00	0.00	0.16	0.00	91.70	2.00	0.00	0.00	0.16	0.00
91.86	2.00	0.00	0.00	0.16	0.00	92.03	2.00	0.00	0.00	0.16	0.00
92.19	2.00	0.00	0.00	0.16	0.00	92.36	2.00	0.00	0.00	0.16	0.00
92.52	2.00	0.00	0.00	0.16	0.00	92.68	2.00	0.00	0.00	0.16	0.00
92.85	2.00	0.00	0.00	0.16	0.00	93.01	2.00	0.00	0.00	0.16	0.00
93.18	2.00	0.00	0.00	0.16	0.00	93.34	2.00	0.00	0.00	0.16	0.00
93.50	2.00	0.00	0.00	0.16	0.00	93.67	2.00	0.00	0.00	0.16	0.00
93.83	2.00	0.00	0.00	0.16	0.00	94.00	2.00	0.00	0.00	0.16	0.00
94.16	2.00	0.00	0.00	0.16	0.00	94.32	2.00	0.00	0.00	0.16	0.00
94.49	2.00	0.00	0.00	0.16	0.00	94.65	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
94.82	2.00	0.00	0.00	0.16	0.00	94.98	2.00	0.00	0.00	0.16	0.00
95.14	2.00	0.00	0.00	0.16	0.00	95.31	2.00	0.00	0.00	0.16	0.00
95.47	2.00	0.00	0.00	0.16	0.00	95.64	2.00	0.00	0.00	0.16	0.00
95.80	2.00	0.00	0.00	0.16	0.00	95.96	2.00	0.00	0.00	0.16	0.00
96.13	2.00	0.00	0.00	0.16	0.00	96.29	2.00	0.00	0.00	0.16	0.00
96.46	2.00	0.00	0.00	0.16	0.00	96.62	2.00	0.00	0.00	0.16	0.00
96.78	2.00	0.00	0.00	0.16	0.00	96.95	2.00	0.00	0.00	0.16	0.00
97.11	2.00	0.00	0.00	0.16	0.00	97.28	2.00	0.00	0.00	0.16	0.00
97.44	2.00	0.00	0.00	0.16	0.00	97.60	2.00	0.00	0.00	0.16	0.00
97.77	2.00	0.00	0.00	0.16	0.00	97.93	2.00	0.00	0.00	0.16	0.00
98.10	2.00	0.00	0.00	0.16	0.00	98.26	2.00	0.00	0.00	0.16	0.00
98.43	2.00	0.00	0.00	0.16	0.00	98.59	2.00	0.00	0.00	0.16	0.00
98.75	2.00	0.00	0.00	0.16	0.00	98.92	2.00	0.00	0.00	0.16	0.00
99.08	2.00	0.00	0.00	0.16	0.00	99.25	2.00	0.00	0.00	0.16	0.00
99.41	2.00	0.00	0.00	0.16	0.00	99.57	2.00	0.00	0.00	0.16	0.00
99.74	2.00	0.00	0.00	0.16	0.00	99.90	2.00	0.00	0.00	0.16	0.00
100.07	2.00	0.00	0.00	0.16	0.00	100.23	2.00	0.00	0.00	0.16	0.00
100.39	2.00	0.00	0.00	0.16	0.00	100.56	2.00	0.00	0.00	0.16	0.00

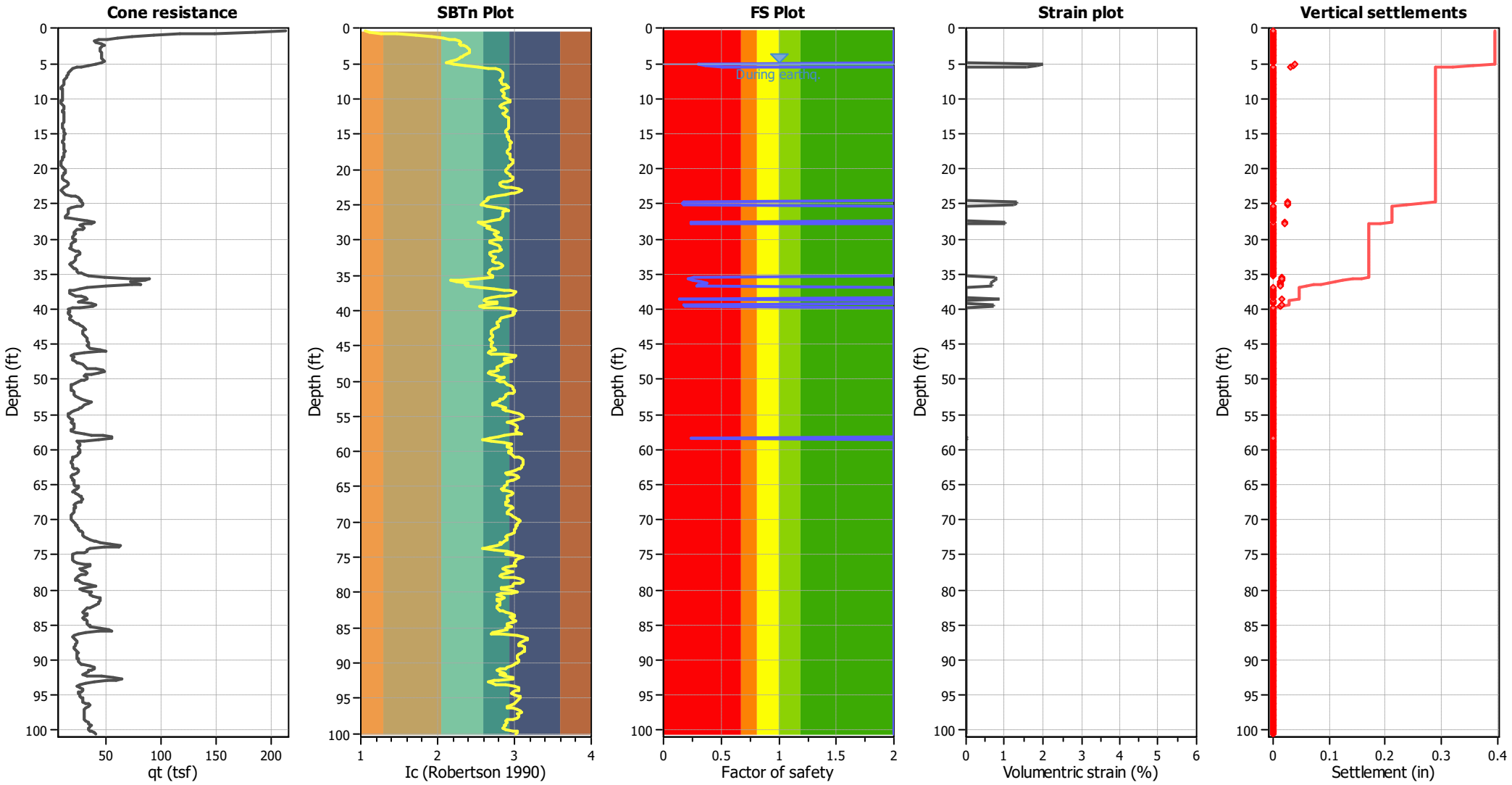
Overall liquefaction potential: 4.03

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement due to soil liquefaction ::

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
5.09	108.39	0.31	2.00	0.91	0.04	5.25	119.89	0.36	1.83	0.91	0.04
5.41	142.04	0.52	1.59	0.91	0.03	5.58	166.76	2.00	0.00	0.91	0.00
5.74	176.96	2.00	0.00	0.90	0.00	5.91	175.69	2.00	0.00	0.90	0.00
6.07	169.72	2.00	0.00	0.90	0.00	6.23	166.04	2.00	0.00	0.89	0.00
6.40	163.95	2.00	0.00	0.89	0.00	6.56	160.15	2.00	0.00	0.89	0.00
6.73	156.02	2.00	0.00	0.89	0.00	6.89	148.46	2.00	0.00	0.88	0.00
7.05	137.91	2.00	0.00	0.88	0.00	7.22	128.93	2.00	0.00	0.88	0.00
7.38	123.12	2.00	0.00	0.87	0.00	7.55	122.40	2.00	0.00	0.87	0.00
7.71	124.34	2.00	0.00	0.87	0.00	7.87	128.51	2.00	0.00	0.87	0.00
8.04	132.53	2.00	0.00	0.86	0.00	8.20	129.41	2.00	0.00	0.86	0.00
8.37	121.61	2.00	0.00	0.86	0.00	8.53	110.23	2.00	0.00	0.86	0.00
8.69	105.86	2.00	0.00	0.85	0.00	8.86	105.99	2.00	0.00	0.85	0.00
9.02	107.78	2.00	0.00	0.85	0.00	9.19	108.40	2.00	0.00	0.84	0.00
9.35	107.67	2.00	0.00	0.84	0.00	9.51	108.13	2.00	0.00	0.84	0.00
9.68	111.87	2.00	0.00	0.84	0.00	9.84	118.81	2.00	0.00	0.83	0.00
10.01	126.30	2.00	0.00	0.83	0.00	10.17	127.90	2.00	0.00	0.83	0.00
10.33	121.83	2.00	0.00	0.82	0.00	10.50	112.64	2.00	0.00	0.82	0.00
10.66	106.53	2.00	0.00	0.82	0.00	10.83	107.61	2.00	0.00	0.82	0.00
10.99	114.35	2.00	0.00	0.81	0.00	11.15	123.48	2.00	0.00	0.81	0.00
11.32	131.14	2.00	0.00	0.81	0.00	11.48	131.29	2.00	0.00	0.81	0.00
11.65	126.70	2.00	0.00	0.80	0.00	11.81	119.31	2.00	0.00	0.80	0.00
11.98	118.40	2.00	0.00	0.80	0.00	12.14	120.61	2.00	0.00	0.79	0.00
12.30	126.84	2.00	0.00	0.79	0.00	12.47	130.26	2.00	0.00	0.79	0.00
12.63	131.33	2.00	0.00	0.79	0.00	12.80	130.16	2.00	0.00	0.78	0.00
12.96	129.60	2.00	0.00	0.78	0.00	13.12	129.30	2.00	0.00	0.78	0.00
13.29	126.67	2.00	0.00	0.77	0.00	13.45	121.70	2.00	0.00	0.77	0.00
13.62	116.90	2.00	0.00	0.77	0.00	13.78	113.93	2.00	0.00	0.77	0.00
13.94	112.35	2.00	0.00	0.76	0.00	14.11	111.03	2.00	0.00	0.76	0.00
14.27	110.46	2.00	0.00	0.76	0.00	14.44	112.45	2.00	0.00	0.76	0.00
14.60	117.82	2.00	0.00	0.75	0.00	14.76	124.05	2.00	0.00	0.75	0.00
14.93	127.90	2.00	0.00	0.75	0.00	15.09	128.98	2.00	0.00	0.74	0.00
15.26	127.16	2.00	0.00	0.74	0.00	15.42	126.08	2.00	0.00	0.74	0.00
15.58	124.34	2.00	0.00	0.74	0.00	15.75	123.57	2.00	0.00	0.73	0.00
15.91	122.29	2.00	0.00	0.73	0.00	16.08	119.68	2.00	0.00	0.73	0.00
16.24	117.87	2.00	0.00	0.72	0.00	16.40	117.97	2.00	0.00	0.72	0.00
16.57	121.28	2.00	0.00	0.72	0.00	16.73	124.37	2.00	0.00	0.72	0.00
16.90	124.47	2.00	0.00	0.71	0.00	17.06	121.81	2.00	0.00	0.71	0.00
17.22	118.25	2.00	0.00	0.71	0.00	17.39	117.56	2.00	0.00	0.71	0.00
17.55	118.53	2.00	0.00	0.70	0.00	17.72	120.79	2.00	0.00	0.70	0.00
17.88	119.87	2.00	0.00	0.70	0.00	18.04	117.25	2.00	0.00	0.69	0.00
18.21	113.46	2.00	0.00	0.69	0.00	18.37	112.06	2.00	0.00	0.69	0.00
18.54	109.81	2.00	0.00	0.69	0.00	18.70	105.89	2.00	0.00	0.68	0.00
18.86	103.20	2.00	0.00	0.68	0.00	19.03	98.68	2.00	0.00	0.68	0.00
19.19	95.48	2.00	0.00	0.67	0.00	19.36	89.83	2.00	0.00	0.67	0.00
19.52	87.39	2.00	0.00	0.67	0.00	19.69	88.95	2.00	0.00	0.67	0.00
19.85	94.55	2.00	0.00	0.66	0.00	20.01	101.99	2.00	0.00	0.66	0.00
20.18	107.60	2.00	0.00	0.66	0.00	20.34	110.55	2.00	0.00	0.66	0.00
20.51	111.39	2.00	0.00	0.65	0.00	20.67	110.32	2.00	0.00	0.65	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
20.83	108.54	2.00	0.00	0.65	0.00	21.00	105.39	2.00	0.00	0.64	0.00
21.16	102.41	2.00	0.00	0.64	0.00	21.33	101.94	2.00	0.00	0.64	0.00
21.49	103.24	2.00	0.00	0.64	0.00	21.65	103.31	2.00	0.00	0.63	0.00
21.82	104.19	2.00	0.00	0.63	0.00	21.98	104.10	2.00	0.00	0.63	0.00
22.15	104.83	2.00	0.00	0.62	0.00	22.31	105.19	2.00	0.00	0.62	0.00
22.47	105.97	2.00	0.00	0.62	0.00	22.64	107.75	2.00	0.00	0.62	0.00
22.80	108.49	2.00	0.00	0.61	0.00	22.97	106.59	2.00	0.00	0.61	0.00
23.13	103.06	2.00	0.00	0.61	0.00	23.29	99.47	2.00	0.00	0.61	0.00
23.46	100.17	2.00	0.00	0.60	0.00	23.62	101.18	2.00	0.00	0.60	0.00
23.79	101.59	2.00	0.00	0.60	0.00	23.95	103.83	2.00	0.00	0.59	0.00
24.11	109.32	2.00	0.00	0.59	0.00	24.28	116.26	2.00	0.00	0.59	0.00
24.44	115.99	2.00	0.00	0.59	0.00	24.61	110.96	2.00	0.00	0.58	0.00
24.77	104.93	0.17	1.30	0.58	0.03	24.93	102.35	0.16	1.32	0.58	0.03
25.10	107.81	0.18	1.26	0.57	0.02	25.26	117.63	2.00	0.00	0.57	0.00
25.43	130.83	2.00	0.00	0.57	0.00	25.59	131.72	2.00	0.00	0.57	0.00
25.75	123.42	2.00	0.00	0.56	0.00	25.92	110.30	2.00	0.00	0.56	0.00
26.08	104.63	2.00	0.00	0.56	0.00	26.25	101.29	2.00	0.00	0.56	0.00
26.41	97.06	2.00	0.00	0.55	0.00	26.57	90.43	2.00	0.00	0.55	0.00
26.74	83.45	2.00	0.00	0.55	0.00	26.90	81.35	2.00	0.00	0.54	0.00
27.07	91.08	2.00	0.00	0.54	0.00	27.23	108.26	2.00	0.00	0.54	0.00
27.40	129.07	2.00	0.00	0.54	0.00	27.56	127.16	0.24	1.02	0.53	0.02
27.72	124.33	0.23	1.04	0.53	0.02	27.89	111.20	2.00	0.00	0.53	0.00
28.05	113.85	2.00	0.00	0.52	0.00	28.22	115.49	2.00	0.00	0.52	0.00
28.38	119.76	2.00	0.00	0.52	0.00	28.54	125.23	2.00	0.00	0.52	0.00
28.71	124.11	2.00	0.00	0.51	0.00	28.87	117.45	2.00	0.00	0.51	0.00
29.04	108.52	2.00	0.00	0.51	0.00	29.20	104.59	2.00	0.00	0.51	0.00
29.36	103.41	2.00	0.00	0.50	0.00	29.53	105.06	2.00	0.00	0.50	0.00
29.69	111.40	2.00	0.00	0.50	0.00	29.86	110.65	2.00	0.00	0.49	0.00
30.02	102.47	2.00	0.00	0.49	0.00	30.18	90.21	2.00	0.00	0.49	0.00
30.35	87.19	2.00	0.00	0.49	0.00	30.51	92.84	2.00	0.00	0.48	0.00
30.68	96.94	2.00	0.00	0.48	0.00	30.84	97.84	2.00	0.00	0.48	0.00
31.00	95.67	2.00	0.00	0.47	0.00	31.17	94.45	2.00	0.00	0.47	0.00
31.33	94.98	2.00	0.00	0.47	0.00	31.50	96.22	2.00	0.00	0.47	0.00
31.66	98.04	2.00	0.00	0.46	0.00	31.82	99.98	2.00	0.00	0.46	0.00
31.99	102.56	2.00	0.00	0.46	0.00	32.15	105.00	2.00	0.00	0.46	0.00
32.32	105.71	2.00	0.00	0.45	0.00	32.48	103.77	2.00	0.00	0.45	0.00
32.64	98.16	2.00	0.00	0.45	0.00	32.81	92.86	2.00	0.00	0.44	0.00
32.97	91.73	2.00	0.00	0.44	0.00	33.14	93.33	2.00	0.00	0.44	0.00
33.30	95.89	2.00	0.00	0.44	0.00	33.46	95.51	2.00	0.00	0.43	0.00
33.63	94.72	2.00	0.00	0.43	0.00	33.79	92.70	2.00	0.00	0.43	0.00
33.96	89.20	2.00	0.00	0.42	0.00	34.12	86.26	2.00	0.00	0.42	0.00
34.28	84.49	2.00	0.00	0.42	0.00	34.45	85.37	2.00	0.00	0.42	0.00
34.61	88.29	2.00	0.00	0.41	0.00	34.78	93.83	2.00	0.00	0.41	0.00
34.94	104.08	2.00	0.00	0.41	0.00	35.10	120.22	2.00	0.00	0.41	0.00
35.27	141.38	2.00	0.00	0.40	0.00	35.43	130.45	0.26	0.75	0.40	0.01
35.60	117.71	0.21	0.81	0.40	0.02	35.76	118.64	0.21	0.80	0.39	0.02
35.93	127.69	0.25	0.75	0.39	0.01	36.09	144.66	0.33	0.67	0.39	0.01
36.25	152.88	0.38	0.64	0.39	0.01	36.42	150.58	0.36	0.64	0.38	0.01

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
36.58	139.74	0.30	0.67	0.38	0.01	36.75	137.28	0.29	0.68	0.38	0.01
36.91	133.63	2.00	0.00	0.37	0.00	37.07	135.80	2.00	0.00	0.37	0.00
37.24	126.75	2.00	0.00	0.37	0.00	37.40	119.78	2.00	0.00	0.37	0.00
37.57	108.92	2.00	0.00	0.36	0.00	37.73	105.44	2.00	0.00	0.36	0.00
37.89	103.09	2.00	0.00	0.36	0.00	38.06	102.49	2.00	0.00	0.35	0.00
38.22	100.58	2.00	0.00	0.35	0.00	38.39	98.24	2.00	0.00	0.35	0.00
38.55	94.07	0.14	0.85	0.35	0.02	38.71	93.73	2.00	0.00	0.34	0.00
38.88	102.59	2.00	0.00	0.34	0.00	39.04	109.65	2.00	0.00	0.34	0.00
39.21	109.00	2.00	0.00	0.34	0.00	39.37	107.03	0.18	0.74	0.33	0.01
39.53	110.92	0.19	0.71	0.33	0.01	39.70	116.78	2.00	0.00	0.33	0.00
39.86	112.31	2.00	0.00	0.32	0.00	40.03	101.83	2.00	0.00	0.32	0.00
40.19	96.05	2.00	0.00	0.32	0.00	40.35	94.64	2.00	0.00	0.32	0.00
40.52	94.80	2.00	0.00	0.31	0.00	40.68	91.41	2.00	0.00	0.31	0.00
40.85	86.59	2.00	0.00	0.31	0.00	41.01	77.46	2.00	0.00	0.30	0.00
41.17	73.69	2.00	0.00	0.30	0.00	41.34	71.05	2.00	0.00	0.30	0.00
41.50	73.11	2.00	0.00	0.30	0.00	41.67	75.41	2.00	0.00	0.29	0.00
41.83	83.19	2.00	0.00	0.29	0.00	41.99	93.74	2.00	0.00	0.29	0.00
42.16	102.20	2.00	0.00	0.29	0.00	42.32	108.28	2.00	0.00	0.28	0.00
42.49	108.88	2.00	0.00	0.28	0.00	42.65	106.52	2.00	0.00	0.28	0.00
42.81	102.89	2.00	0.00	0.27	0.00	42.98	100.42	2.00	0.00	0.27	0.00
43.14	98.96	2.00	0.00	0.27	0.00	43.31	98.91	2.00	0.00	0.27	0.00
43.47	100.00	2.00	0.00	0.26	0.00	43.64	101.99	2.00	0.00	0.26	0.00
43.80	102.58	2.00	0.00	0.26	0.00	43.96	103.36	2.00	0.00	0.25	0.00
44.13	104.72	2.00	0.00	0.25	0.00	44.29	108.30	2.00	0.00	0.25	0.00
44.46	111.23	2.00	0.00	0.25	0.00	44.62	112.96	2.00	0.00	0.24	0.00
44.78	111.95	2.00	0.00	0.24	0.00	44.95	112.61	2.00	0.00	0.24	0.00
45.11	111.27	2.00	0.00	0.24	0.00	45.28	113.04	2.00	0.00	0.23	0.00
45.44	115.36	2.00	0.00	0.23	0.00	45.60	127.81	2.00	0.00	0.23	0.00
45.77	140.55	2.00	0.00	0.22	0.00	45.93	147.86	2.00	0.00	0.22	0.00
46.10	144.94	2.00	0.00	0.22	0.00	46.26	134.29	2.00	0.00	0.22	0.00
46.42	114.69	2.00	0.00	0.21	0.00	46.59	99.32	2.00	0.00	0.21	0.00
46.75	89.00	2.00	0.00	0.21	0.00	46.92	88.34	2.00	0.00	0.20	0.00
47.08	91.50	2.00	0.00	0.20	0.00	47.24	96.89	2.00	0.00	0.20	0.00
47.41	96.10	2.00	0.00	0.20	0.00	47.57	97.09	2.00	0.00	0.19	0.00
47.74	102.76	2.00	0.00	0.19	0.00	47.90	109.75	2.00	0.00	0.19	0.00
48.06	110.48	2.00	0.00	0.19	0.00	48.23	112.72	2.00	0.00	0.18	0.00
48.39	125.80	2.00	0.00	0.18	0.00	48.56	135.89	2.00	0.00	0.18	0.00
48.72	142.64	2.00	0.00	0.17	0.00	48.88	142.53	2.00	0.00	0.17	0.00
49.05	136.46	2.00	0.00	0.17	0.00	49.21	128.16	2.00	0.00	0.17	0.00
49.38	122.21	2.00	0.00	0.16	0.00	49.54	123.93	2.00	0.00	0.16	0.00
49.70	121.62	2.00	0.00	0.16	0.00	49.87	117.03	2.00	0.00	0.15	0.00
50.03	115.24	2.00	0.00	0.15	0.00	50.20	111.40	2.00	0.00	0.15	0.00
50.36	104.88	2.00	0.00	0.15	0.00	50.52	95.43	2.00	0.00	0.14	0.00
50.69	87.40	2.00	0.00	0.14	0.00	50.85	83.64	2.00	0.00	0.14	0.00
51.02	83.51	2.00	0.00	0.14	0.00	51.18	84.76	2.00	0.00	0.13	0.00
51.35	85.52	2.00	0.00	0.13	0.00	51.51	86.98	2.00	0.00	0.13	0.00
51.67	87.61	2.00	0.00	0.12	0.00	51.84	89.08	2.00	0.00	0.12	0.00
52.00	87.67	2.00	0.00	0.12	0.00	52.17	86.89	2.00	0.00	0.12	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
52.33	85.31	2.00	0.00	0.11	0.00	52.49	85.79	2.00	0.00	0.11	0.00
52.66	86.46	2.00	0.00	0.11	0.00	52.82	96.51	2.00	0.00	0.10	0.00
52.99	105.83	2.00	0.00	0.10	0.00	53.15	108.12	2.00	0.00	0.10	0.00
53.31	108.02	2.00	0.00	0.10	0.00	53.48	111.77	2.00	0.00	0.09	0.00
53.64	113.32	2.00	0.00	0.09	0.00	53.81	112.37	2.00	0.00	0.09	0.00
53.97	104.43	2.00	0.00	0.09	0.00	54.13	103.34	2.00	0.00	0.08	0.00
54.30	98.87	2.00	0.00	0.08	0.00	54.46	93.69	2.00	0.00	0.08	0.00
54.63	90.24	2.00	0.00	0.07	0.00	54.79	88.54	2.00	0.00	0.07	0.00
54.95	87.93	2.00	0.00	0.07	0.00	55.12	86.90	2.00	0.00	0.07	0.00
55.28	86.45	2.00	0.00	0.06	0.00	55.45	82.83	2.00	0.00	0.06	0.00
55.61	79.18	2.00	0.00	0.06	0.00	55.77	75.87	2.00	0.00	0.05	0.00
55.94	75.91	2.00	0.00	0.05	0.00	56.10	80.04	2.00	0.00	0.05	0.00
56.27	88.78	2.00	0.00	0.05	0.00	56.43	97.77	2.00	0.00	0.04	0.00
56.59	101.81	2.00	0.00	0.04	0.00	56.76	100.39	2.00	0.00	0.04	0.00
56.92	95.94	2.00	0.00	0.04	0.00	57.09	90.22	2.00	0.00	0.03	0.00
57.25	86.01	2.00	0.00	0.03	0.00	57.41	89.00	2.00	0.00	0.03	0.00
57.58	98.18	2.00	0.00	0.02	0.00	57.74	108.74	2.00	0.00	0.02	0.00
57.91	120.39	2.00	0.00	0.02	0.00	58.07	123.81	2.00	0.00	0.02	0.00
58.23	123.92	2.00	0.00	0.01	0.00	58.40	117.25	0.24	0.02	0.01	0.00
58.56	113.63	2.00	0.00	0.01	0.00	58.73	108.97	2.00	0.00	0.00	0.00
58.89	98.37	2.00	0.00	0.00	0.00	59.06	95.64	2.00	0.00	0.00	0.00
59.22	96.20	2.00	0.00	0.00	0.00	59.38	99.84	2.00	0.00	0.00	0.00
59.55	99.57	2.00	0.00	0.00	0.00	59.71	99.37	2.00	0.00	0.00	0.00
59.88	98.94	2.00	0.00	0.00	0.00	60.04	101.53	2.00	0.00	0.00	0.00
60.20	103.14	2.00	0.00	0.00	0.00	60.37	102.11	2.00	0.00	0.00	0.00
60.53	102.65	2.00	0.00	0.00	0.00	60.70	103.31	2.00	0.00	0.00	0.00
60.86	104.16	2.00	0.00	0.00	0.00	61.02	104.03	2.00	0.00	0.00	0.00
61.19	101.26	2.00	0.00	0.00	0.00	61.35	96.51	2.00	0.00	0.00	0.00
61.52	92.57	2.00	0.00	0.00	0.00	61.68	89.99	2.00	0.00	0.00	0.00
61.84	89.27	2.00	0.00	0.00	0.00	62.01	88.53	2.00	0.00	0.00	0.00
62.17	88.63	2.00	0.00	0.00	0.00	62.34	88.88	2.00	0.00	0.00	0.00
62.50	89.07	2.00	0.00	0.00	0.00	62.66	88.60	2.00	0.00	0.00	0.00
62.83	88.51	2.00	0.00	0.00	0.00	62.99	90.37	2.00	0.00	0.00	0.00
63.16	91.88	2.00	0.00	0.00	0.00	63.32	90.76	2.00	0.00	0.00	0.00
63.48	88.52	2.00	0.00	0.00	0.00	63.65	82.16	2.00	0.00	0.00	0.00
63.81	73.93	2.00	0.00	0.00	0.00	63.98	68.78	2.00	0.00	0.00	0.00
64.14	67.11	2.00	0.00	0.00	0.00	64.30	69.70	2.00	0.00	0.00	0.00
64.47	69.90	2.00	0.00	0.00	0.00	64.63	69.39	2.00	0.00	0.00	0.00
64.80	68.92	2.00	0.00	0.00	0.00	64.96	68.44	2.00	0.00	0.00	0.00
65.12	71.86	2.00	0.00	0.00	0.00	65.29	74.08	2.00	0.00	0.00	0.00
65.45	76.33	2.00	0.00	0.00	0.00	65.62	76.05	2.00	0.00	0.00	0.00
65.78	73.88	2.00	0.00	0.00	0.00	65.94	72.87	2.00	0.00	0.00	0.00
66.11	73.77	2.00	0.00	0.00	0.00	66.27	77.34	2.00	0.00	0.00	0.00
66.44	83.37	2.00	0.00	0.00	0.00	66.60	90.14	2.00	0.00	0.00	0.00
66.77	95.99	2.00	0.00	0.00	0.00	66.93	98.79	2.00	0.00	0.00	0.00
67.09	97.21	2.00	0.00	0.00	0.00	67.26	93.41	2.00	0.00	0.00	0.00
67.42	88.65	2.00	0.00	0.00	0.00	67.59	82.64	2.00	0.00	0.00	0.00
67.75	78.91	2.00	0.00	0.00	0.00	67.91	76.69	2.00	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
68.08	77.23	2.00	0.00	0.00	0.00	68.24	74.26	2.00	0.00	0.00	0.00
68.41	72.19	2.00	0.00	0.00	0.00	68.57	68.50	2.00	0.00	0.00	0.00
68.73	66.99	2.00	0.00	0.00	0.00	68.90	66.96	2.00	0.00	0.00	0.00
69.06	65.92	2.00	0.00	0.00	0.00	69.23	65.89	2.00	0.00	0.00	0.00
69.39	66.95	2.00	0.00	0.00	0.00	69.55	67.85	2.00	0.00	0.00	0.00
69.72	69.59	2.00	0.00	0.00	0.00	69.88	71.02	2.00	0.00	0.00	0.00
70.05	73.55	2.00	0.00	0.00	0.00	70.21	75.93	2.00	0.00	0.00	0.00
70.37	79.02	2.00	0.00	0.00	0.00	70.54	82.87	2.00	0.00	0.00	0.00
70.70	85.15	2.00	0.00	0.00	0.00	70.87	86.97	2.00	0.00	0.00	0.00
71.03	86.69	2.00	0.00	0.00	0.00	71.19	87.89	2.00	0.00	0.00	0.00
71.36	88.45	2.00	0.00	0.00	0.00	71.52	90.61	2.00	0.00	0.00	0.00
71.69	92.33	2.00	0.00	0.00	0.00	71.85	93.71	2.00	0.00	0.00	0.00
72.01	91.66	2.00	0.00	0.00	0.00	72.18	90.47	2.00	0.00	0.00	0.00
72.34	94.18	2.00	0.00	0.00	0.00	72.51	97.84	2.00	0.00	0.00	0.00
72.67	99.94	2.00	0.00	0.00	0.00	72.83	105.72	2.00	0.00	0.00	0.00
73.00	108.76	2.00	0.00	0.00	0.00	73.16	117.04	2.00	0.00	0.00	0.00
73.33	119.40	2.00	0.00	0.00	0.00	73.49	120.75	2.00	0.00	0.00	0.00
73.65	118.88	2.00	0.00	0.00	0.00	73.82	114.50	2.00	0.00	0.00	0.00
73.98	116.06	2.00	0.00	0.00	0.00	74.15	114.83	2.00	0.00	0.00	0.00
74.31	109.02	2.00	0.00	0.00	0.00	74.48	101.82	2.00	0.00	0.00	0.00
74.64	92.91	2.00	0.00	0.00	0.00	74.80	83.38	2.00	0.00	0.00	0.00
74.97	77.71	2.00	0.00	0.00	0.00	75.13	68.59	2.00	0.00	0.00	0.00
75.30	63.81	2.00	0.00	0.00	0.00	75.46	62.50	2.00	0.00	0.00	0.00
75.62	62.74	2.00	0.00	0.00	0.00	75.79	64.09	2.00	0.00	0.00	0.00
75.95	69.29	2.00	0.00	0.00	0.00	76.12	83.89	2.00	0.00	0.00	0.00
76.28	97.61	2.00	0.00	0.00	0.00	76.44	105.76	2.00	0.00	0.00	0.00
76.61	102.34	2.00	0.00	0.00	0.00	76.77	95.35	2.00	0.00	0.00	0.00
76.94	86.63	2.00	0.00	0.00	0.00	77.10	83.05	2.00	0.00	0.00	0.00
77.26	86.68	2.00	0.00	0.00	0.00	77.43	84.98	2.00	0.00	0.00	0.00
77.59	85.45	2.00	0.00	0.00	0.00	77.76	85.87	2.00	0.00	0.00	0.00
77.92	90.47	2.00	0.00	0.00	0.00	78.08	94.03	2.00	0.00	0.00	0.00
78.25	91.69	2.00	0.00	0.00	0.00	78.41	86.67	2.00	0.00	0.00	0.00
78.58	81.46	2.00	0.00	0.00	0.00	78.74	78.24	2.00	0.00	0.00	0.00
78.90	80.49	2.00	0.00	0.00	0.00	79.07	91.29	2.00	0.00	0.00	0.00
79.23	103.28	2.00	0.00	0.00	0.00	79.40	111.52	2.00	0.00	0.00	0.00
79.56	107.99	2.00	0.00	0.00	0.00	79.72	99.62	2.00	0.00	0.00	0.00
79.89	90.80	2.00	0.00	0.00	0.00	80.05	87.61	2.00	0.00	0.00	0.00
80.22	88.46	2.00	0.00	0.00	0.00	80.38	87.76	2.00	0.00	0.00	0.00
80.54	91.35	2.00	0.00	0.00	0.00	80.71	96.50	2.00	0.00	0.00	0.00
80.87	101.29	2.00	0.00	0.00	0.00	81.04	103.88	2.00	0.00	0.00	0.00
81.20	108.28	2.00	0.00	0.00	0.00	81.36	112.63	2.00	0.00	0.00	0.00
81.53	114.41	2.00	0.00	0.00	0.00	81.69	112.31	2.00	0.00	0.00	0.00
81.86	106.76	2.00	0.00	0.00	0.00	82.02	100.32	2.00	0.00	0.00	0.00
82.19	95.14	2.00	0.00	0.00	0.00	82.35	91.38	2.00	0.00	0.00	0.00
82.51	87.92	2.00	0.00	0.00	0.00	82.68	85.14	2.00	0.00	0.00	0.00
82.84	86.08	2.00	0.00	0.00	0.00	83.01	86.41	2.00	0.00	0.00	0.00
83.17	90.45	2.00	0.00	0.00	0.00	83.33	92.83	2.00	0.00	0.00	0.00
83.50	92.02	2.00	0.00	0.00	0.00	83.66	92.27	2.00	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
83.83	90.79	2.00	0.00	0.00	0.00	83.99	90.13	2.00	0.00	0.00	0.00
84.15	88.40	2.00	0.00	0.00	0.00	84.32	88.69	2.00	0.00	0.00	0.00
84.48	93.67	2.00	0.00	0.00	0.00	84.65	95.02	2.00	0.00	0.00	0.00
84.81	93.28	2.00	0.00	0.00	0.00	84.97	95.36	2.00	0.00	0.00	0.00
85.14	96.71	2.00	0.00	0.00	0.00	85.30	100.51	2.00	0.00	0.00	0.00
85.47	107.64	2.00	0.00	0.00	0.00	85.63	110.77	2.00	0.00	0.00	0.00
85.79	111.65	2.00	0.00	0.00	0.00	85.96	109.26	2.00	0.00	0.00	0.00
86.12	99.27	2.00	0.00	0.00	0.00	86.29	88.81	2.00	0.00	0.00	0.00
86.45	79.01	2.00	0.00	0.00	0.00	86.61	73.47	2.00	0.00	0.00	0.00
86.78	70.91	2.00	0.00	0.00	0.00	86.94	69.77	2.00	0.00	0.00	0.00
87.11	69.92	2.00	0.00	0.00	0.00	87.27	71.50	2.00	0.00	0.00	0.00
87.43	74.61	2.00	0.00	0.00	0.00	87.60	77.65	2.00	0.00	0.00	0.00
87.76	78.97	2.00	0.00	0.00	0.00	87.93	76.85	2.00	0.00	0.00	0.00
88.09	73.12	2.00	0.00	0.00	0.00	88.25	70.26	2.00	0.00	0.00	0.00
88.42	69.80	2.00	0.00	0.00	0.00	88.58	71.52	2.00	0.00	0.00	0.00
88.75	72.47	2.00	0.00	0.00	0.00	88.91	72.70	2.00	0.00	0.00	0.00
89.07	71.69	2.00	0.00	0.00	0.00	89.24	70.74	2.00	0.00	0.00	0.00
89.40	70.26	2.00	0.00	0.00	0.00	89.57	70.36	2.00	0.00	0.00	0.00
89.73	71.88	2.00	0.00	0.00	0.00	89.90	72.26	2.00	0.00	0.00	0.00
90.06	71.13	2.00	0.00	0.00	0.00	90.22	69.26	2.00	0.00	0.00	0.00
90.39	67.49	2.00	0.00	0.00	0.00	90.55	69.21	2.00	0.00	0.00	0.00
90.72	73.32	2.00	0.00	0.00	0.00	90.88	80.57	2.00	0.00	0.00	0.00
91.04	82.80	2.00	0.00	0.00	0.00	91.21	89.52	2.00	0.00	0.00	0.00
91.37	89.22	2.00	0.00	0.00	0.00	91.54	87.25	2.00	0.00	0.00	0.00
91.70	76.39	2.00	0.00	0.00	0.00	91.86	73.84	2.00	0.00	0.00	0.00
92.03	76.76	2.00	0.00	0.00	0.00	92.19	88.06	2.00	0.00	0.00	0.00
92.36	100.30	2.00	0.00	0.00	0.00	92.52	111.98	2.00	0.00	0.00	0.00
92.68	112.41	2.00	0.00	0.00	0.00	92.85	113.95	2.00	0.00	0.00	0.00
93.01	105.01	2.00	0.00	0.00	0.00	93.18	99.67	2.00	0.00	0.00	0.00
93.34	85.65	2.00	0.00	0.00	0.00	93.50	76.31	2.00	0.00	0.00	0.00
93.67	68.87	2.00	0.00	0.00	0.00	93.83	68.77	2.00	0.00	0.00	0.00
94.00	71.54	2.00	0.00	0.00	0.00	94.16	72.87	2.00	0.00	0.00	0.00
94.32	72.29	2.00	0.00	0.00	0.00	94.49	72.55	2.00	0.00	0.00	0.00
94.65	73.87	2.00	0.00	0.00	0.00	94.82	75.15	2.00	0.00	0.00	0.00
94.98	77.02	2.00	0.00	0.00	0.00	95.14	77.58	2.00	0.00	0.00	0.00
95.31	77.62	2.00	0.00	0.00	0.00	95.47	77.99	2.00	0.00	0.00	0.00
95.64	76.80	2.00	0.00	0.00	0.00	95.80	74.41	2.00	0.00	0.00	0.00
95.96	72.91	2.00	0.00	0.00	0.00	96.13	78.47	2.00	0.00	0.00	0.00
96.29	84.68	2.00	0.00	0.00	0.00	96.46	89.61	2.00	0.00	0.00	0.00
96.62	95.78	2.00	0.00	0.00	0.00	96.78	98.13	2.00	0.00	0.00	0.00
96.95	95.06	2.00	0.00	0.00	0.00	97.11	89.53	2.00	0.00	0.00	0.00
97.28	86.81	2.00	0.00	0.00	0.00	97.44	87.16	2.00	0.00	0.00	0.00
97.60	86.65	2.00	0.00	0.00	0.00	97.77	81.78	2.00	0.00	0.00	0.00
97.93	75.10	2.00	0.00	0.00	0.00	98.10	71.86	2.00	0.00	0.00	0.00
98.26	70.40	2.00	0.00	0.00	0.00	98.43	70.70	2.00	0.00	0.00	0.00
98.59	71.60	2.00	0.00	0.00	0.00	98.75	73.32	2.00	0.00	0.00	0.00
98.92	76.38	2.00	0.00	0.00	0.00	99.08	79.02	2.00	0.00	0.00	0.00
99.25	80.31	2.00	0.00	0.00	0.00	99.41	83.76	2.00	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
99.57	86.37	2.00	0.00	0.00	0.00	99.74	92.94	2.00	0.00	0.00	0.00
99.90	93.97	2.00	0.00	0.00	0.00	100.07	94.36	2.00	0.00	0.00	0.00
100.23	-1.00	2.00	0.00	0.00	0.00	100.39	-1.00	2.00	0.00	0.00	0.00
100.56	-1.00	2.00	0.00	0.00	0.00						

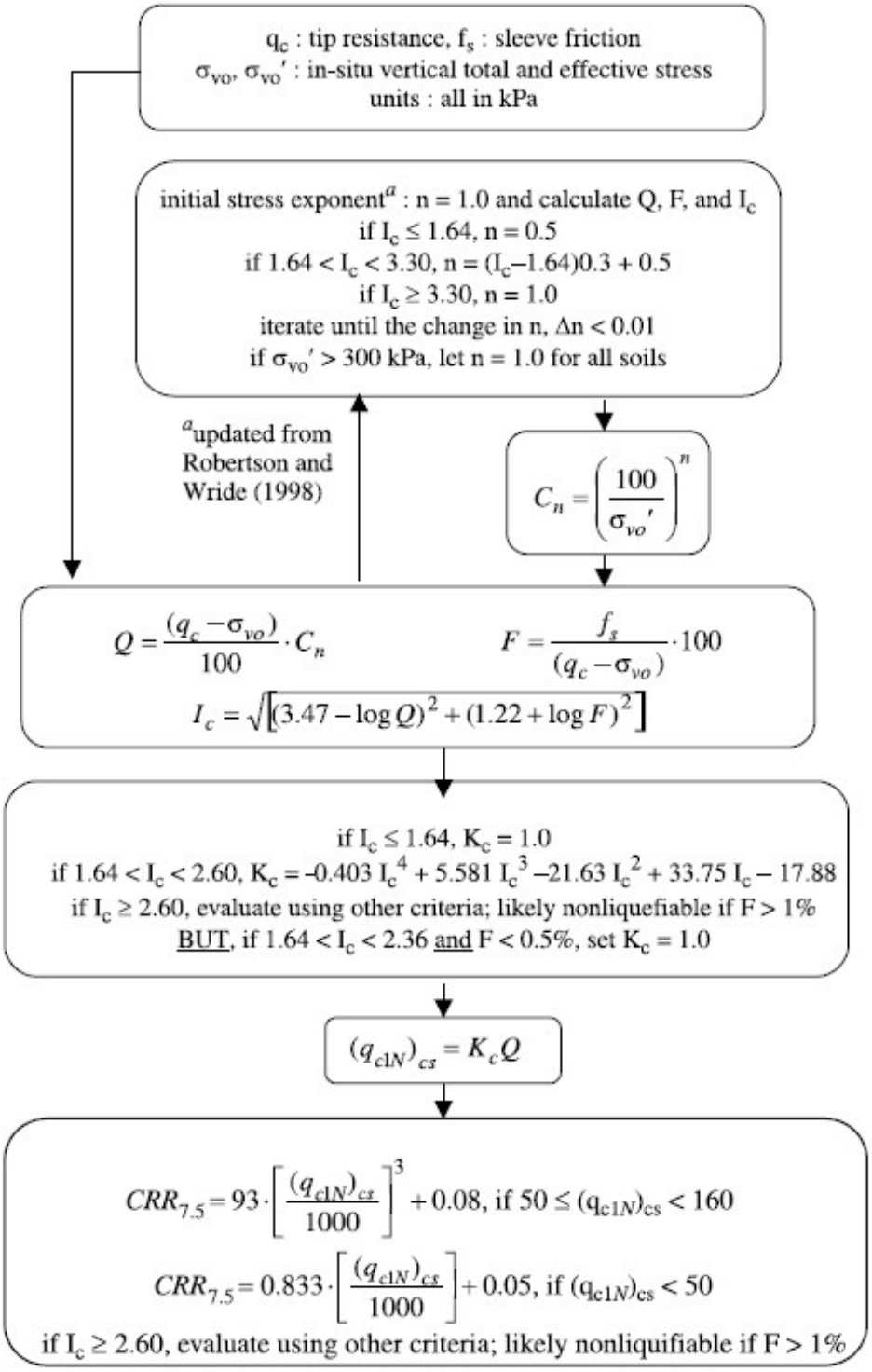
Total estimated settlement: 0.40

Abbreviations

$Q_{tn,cs}$: Equivalent clean sand normalized cone resistance
FS: Factor of safety against liquefaction
e_v (%): Post-liquefaction volumentric strain
DF: e_v depth weighting factor
Settlement: Calculated settlement

Procedure for the evaluation of soil liquefaction resistance, NCEER (1998)

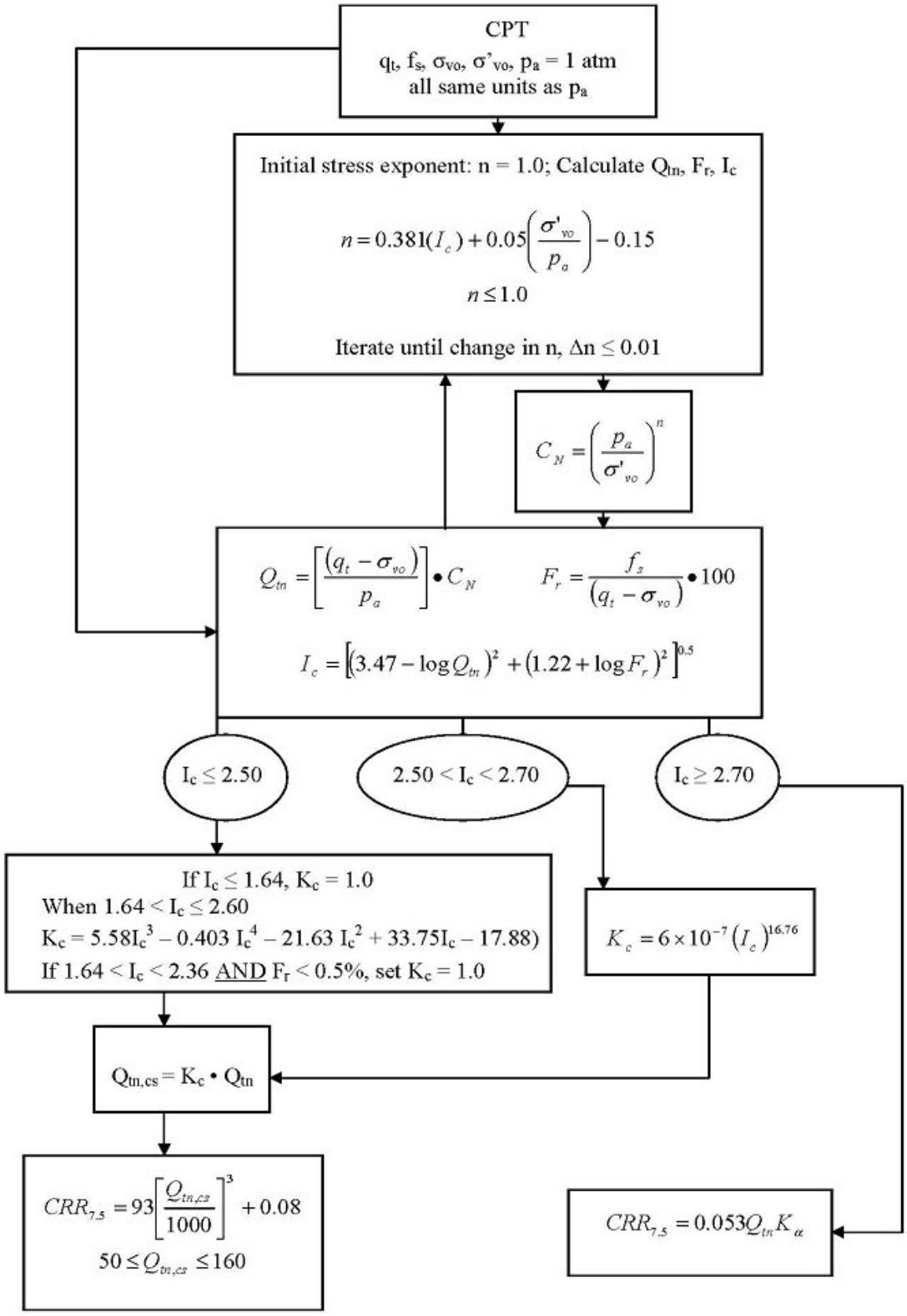
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:



[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

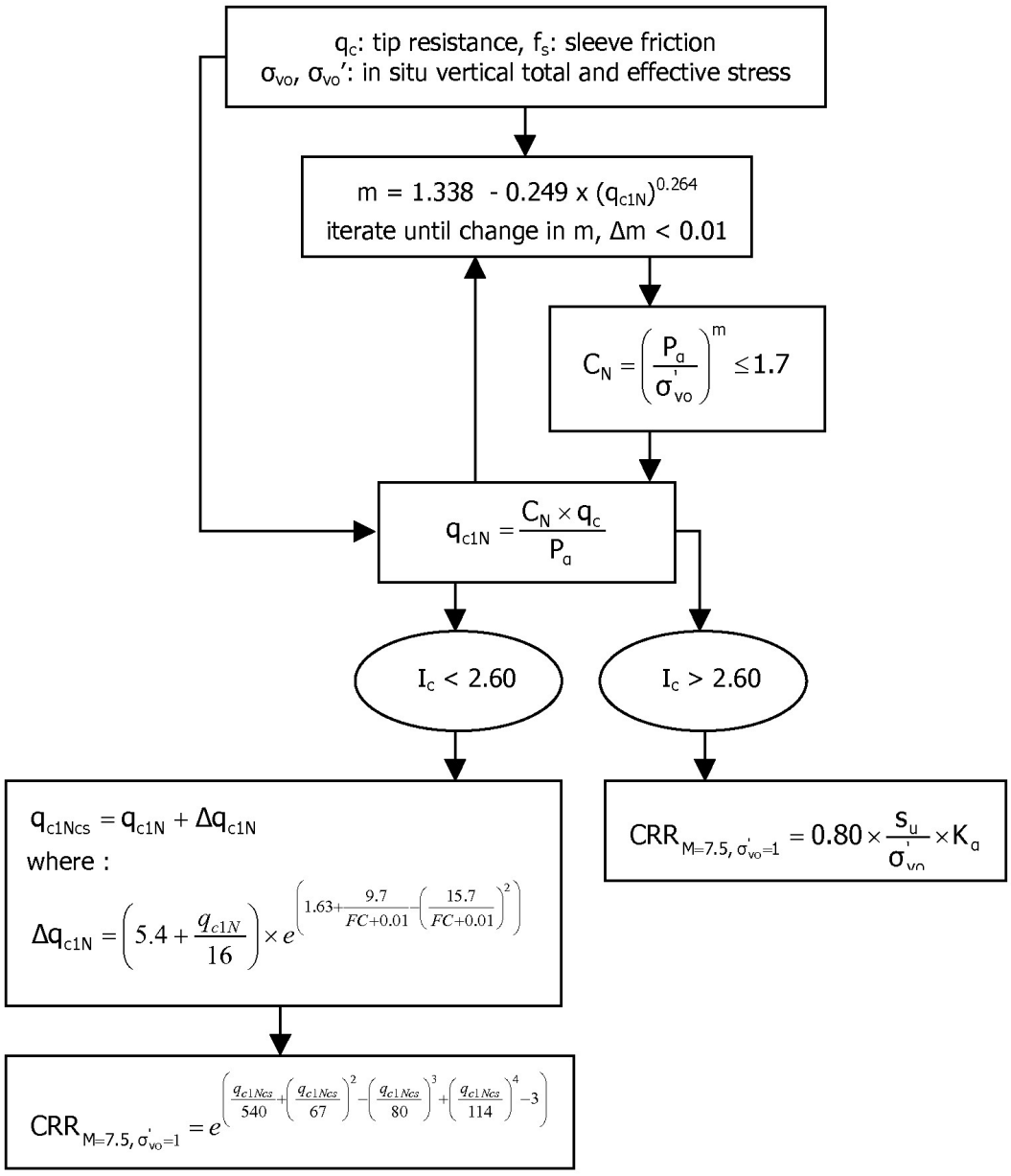
Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. This procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:

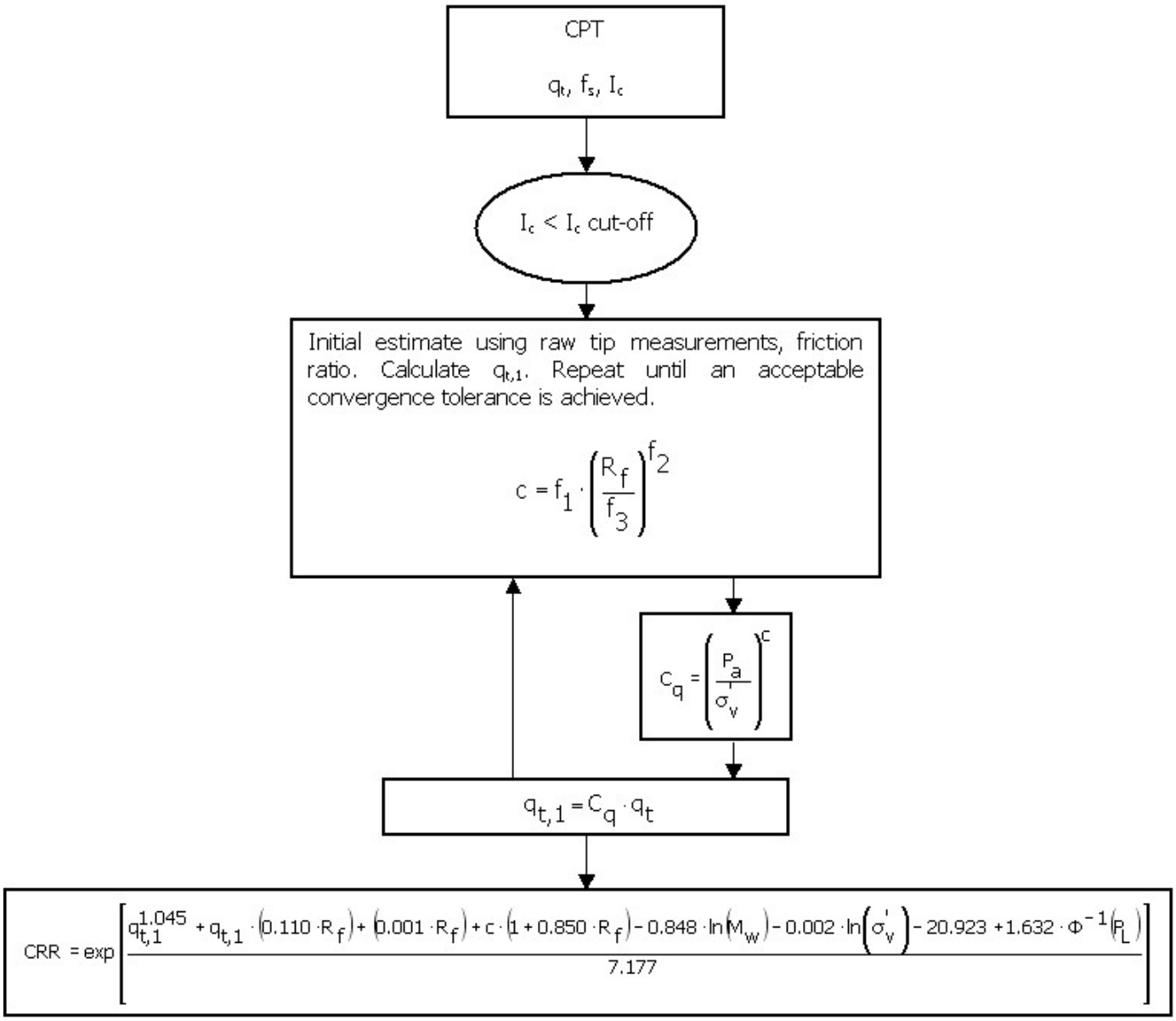


[1] P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

Procedure for the evaluation of soil liquefaction resistance, Idriss & Boulanger (2008)



Procedure for the evaluation of soil liquefaction resistance (sandy soils), Moss et al. (2006)



Procedure for the evaluation of soil liquefaction resistance, Boulanger & Idriss(2014)

$$FS_{liq} = \frac{CRR_{M=7.5,\sigma'_v=1atm}}{CSR_{M=7.5,\sigma'_v=1atm}}$$

$$CSR_{M=7.5,\sigma'_v=1atm} = 0.65 \frac{\sigma_v}{\sigma'_v} \frac{a_{max}}{g} r_d \frac{1}{MSF} \frac{1}{K_\sigma}$$

$$r_d = \exp\left[\alpha(z) + \beta(z) \cdot M\right]$$

$$\alpha(z) = -1.012 - 1.126 \sin\left(\frac{z}{11.73} + 5.133\right)$$

$$\beta(z) = 0.106 + 0.118 \sin\left(\frac{z}{11.28} + 5.142\right)$$

$$K_\sigma = 1 - C_\sigma \ln\left(\frac{\sigma'_v}{P_a}\right) \le 1.1$$

$$C_\sigma = \frac{1}{37.3 - 8.27\left(q_{c1Ncs}\right)^{0.264}} \le 0.3$$

$$MSF = 1 + \left(MSF_{max} - 1\right)\left(8.64 \exp\left(\frac{-M}{4}\right) - 1.325\right)$$

$$MSF_{max} = 1.09 + \left(\frac{q_{C1Ncs}}{180}\right)^3 \le 2.2$$

σ'_v *and* σ_v *at start of earthquake shaking*

$$CRR_{M=7.5,\sigma'_v=1atm} = \exp\left(\frac{q_{c1Ncs}}{113} + \left(\frac{q_{c1Ncs}}{1000}\right)^2 - \left(\frac{q_{c1Ncs}}{140}\right)^3 + \left(\frac{q_{c1Ncs}}{137}\right)^4 - 2.80\right)$$

$$q_{c1Ncs} = q_{c1N} + \Delta q_{c1N}$$

$$\Delta q_{c1N} = \left(11.9 + \frac{q_{c1N}}{14.6}\right) \exp\left(1.63 - \frac{9.7}{FC+2} - \left(\frac{15.7}{FC+2}\right)^2\right)$$

$$q_{c1N} = C_{Ne} \frac{q_c}{P_a}$$

$$C_{Ne} = \left(\frac{P_a}{\sigma'_v}\right)^m \le 1.7$$

$$m = 1.338 - 0.249\left(q_{c1Ncs}\right)^{0.264} \quad with \quad 0.264 \le m \le 0.782$$

$$FC = 80\left(I_C + C_{FC}\right) - 137 \quad with \quad 0\% \le FC \le 100\%$$

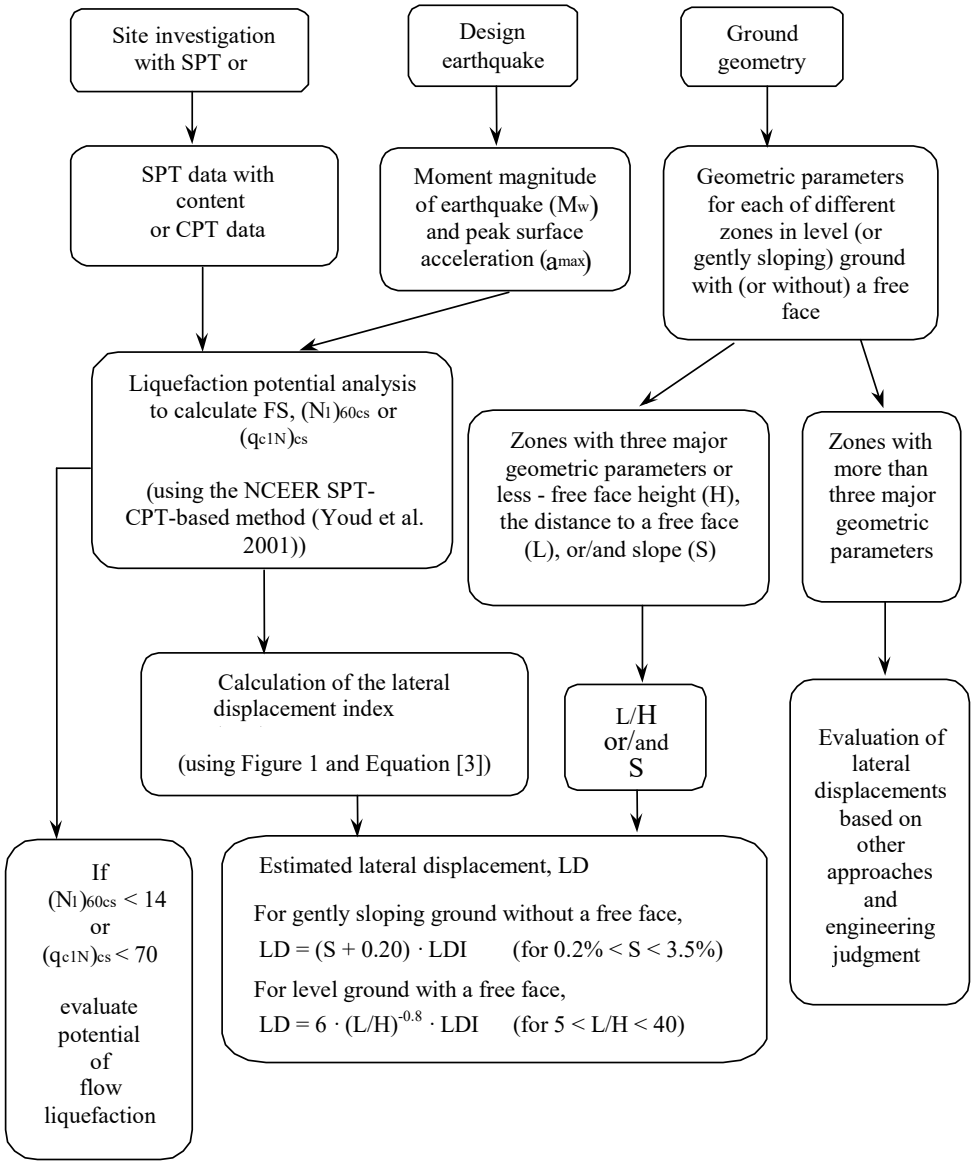
$$I_c = \left[\left(3.47 - \log\left(Q\right)\right)^2 + \left(1.22 + \log\left(F\right)\right)^2\right]^{0.5}$$

$$Q = \left(\frac{q_c - \sigma_{vc}}{P_a}\right)\left(\frac{P_a}{\sigma'_{vc}}\right)^n \; with \; 0.5 \le n \le 1.0 \; per \; Robertson \; \& \; Wride \; (1998)$$

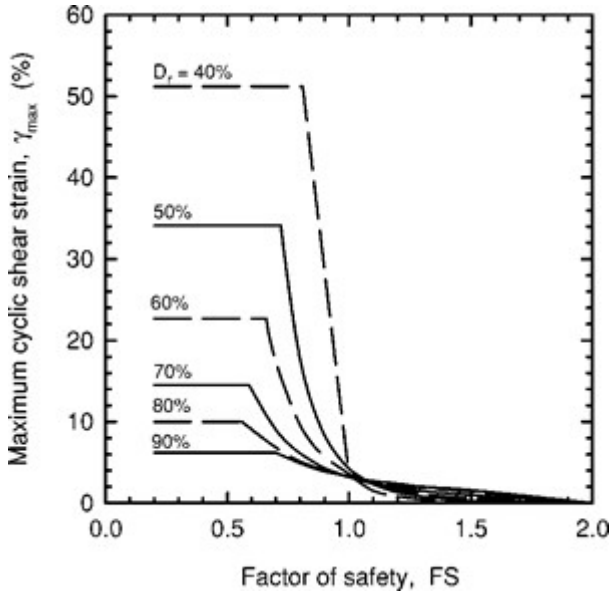
$$F = \left(\frac{f_s}{q_c - \sigma_{vc}}\right) \cdot 100\%$$

σ'_v *at time of CPT sounding*

Procedure for the evaluation of liquefaction-induced lateral spreading displacements



[1] Flow chart illustrating major steps in estimating liquefaction-induced lateral spreading displacements using the proposed approach



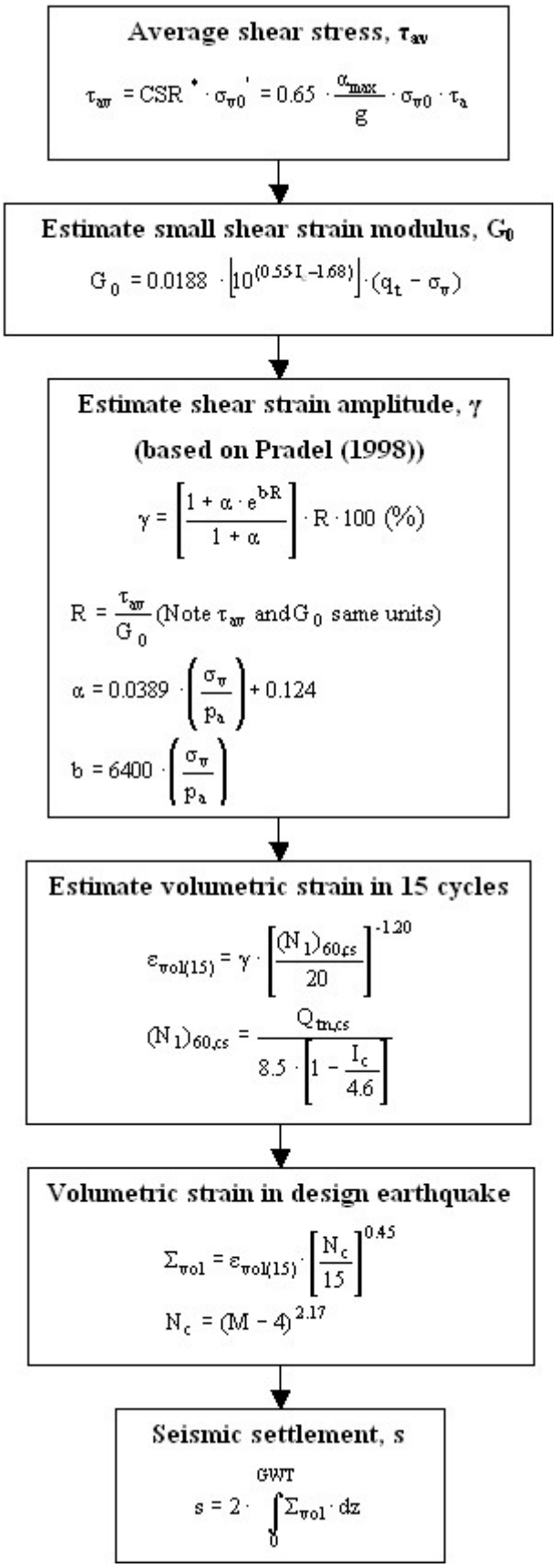
[1] **Figure 1**

$$LDI = \int_0^{z_{max}} \gamma_{max} dz$$

[1] **Equation [3]**

[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

Procedure for the estimation of seismic induced settlements in dry sands



Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, Symposium in honor of professor I. M. Idriss, San Diego, CA

Liquefaction Potential Index (LPI) calculation procedure

Calculation of the Liquefaction Potential Index (LPI) is used to interpret the liquefaction assessment calculations in terms of severity over depth. The calculation procedure is based on the methology developed by Iwasaki (1982) and is adopted by AFPS.

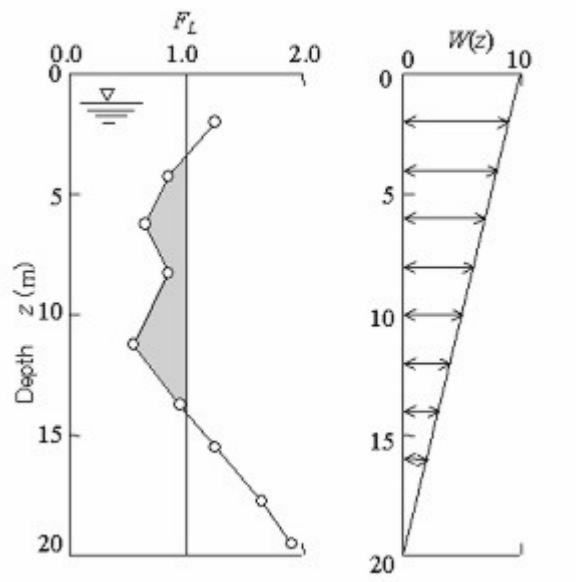
To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$\mathbf{LPI} = \int_0^{20} (10 - 0{,}5z) \times F_L \times dz$$

where:
F_L = 1 - F.S. when F.S. less than 1
F_L = 0 when F.S. greater than 1
z depth of measurment in meters

Values of LPI range between zero (0) when no test point is characterized as liquefiable and 100 when all points are characterized as susceptible to liquefaction. Iwasaki proposed four (4) discrete categories based on the numeric value of LPI:

- LPI = 0 : Liquefaction risk is very low
- 0 < LPI <= 5 : Liquefaction risk is low
- 5 < LPI <= 15 : Liquefaction risk is high
- LPI > 15 : Liquefaction risk is very high



Graphical presentation of the LPI calculation procedure

Shear-Induced Building Settlement (Ds) calculation procedure

The shear-induced building settlement (Ds) due to liquefaction below the building can be estimated using the relationship developed by Bray and Macedo (2017):

$$Ln(Ds) = c1 + c2 * LBS + 0.58 * Ln\left(Tanh\left(\frac{HL}{6}\right)\right) + 4.59 * Ln(Q) - 0.42 * Ln(Q)^2 - 0.02 * B + 0.84 * Ln(CAVdp) + 0.41 * Ln(Sa1) + \varepsilon$$

where Ds is in the units of mm, c1= -8.35 and c2= 0.072 for LBS ≤ 16, and c1= -7.48 and c2= 0.014 otherwise. Q is the building contact pressure in units of kPa, HL is the cumulative thickness of the liquefiable layers in the units of m, B is the building width in the units of m, CAVdp is a standardized version of the cumulative absolute velocity in the units of g-s, Sa1 is 5%-damped pseudo-acceleration response spectral value at a period of 1 s in the units of g, and ε is a normal random variable with zero mean and 0.50 standard deviation in Ln units. The liquefaction-induced building settlement index (LBS) is:

$$LBS = \sum W * \frac{\varepsilon_{shear}}{z} dz$$

where z (m) is the depth measured from the ground surface > 0, W is a foundation-weighting factor wherein W = 0.0 for z less than Df, which is the embedment depth of the foundation, and W = 1.0 otherwise. The shear strain parameter (ε_shear) is the liquefaction-induced free-field shear strain (in %) estimated using Zhang et al. (2004). It is calculated based on the estimated Dr of the liquefied soil layer and the calculated safety factor against liquefaction triggering (FSL).

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