DOCKETED	
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Project Title:	Corby Battery Energy Storage System Project
TN #:	273315
Document Title:	Data Request Response #9 - Part 3
Description:	Data Request responses related to groundwater - Part 3 (Appendices 2-G and 2-H)
Filer:	Doug Urry
Organization:	Tetra Tech
Submitter Role:	Applicant Consultant
Submission Date:	11/2/2026 3:05:16 PM
Docketed Date:	11/2/2026

APPENDIX 2-G: GEOTECHNICAL LETTER OF MEMORANDUM WITH UPDATED LIQUEFACTION EVALUATION

www.RRCcompanies.com

810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
512.992.2087

October 29, 2026

Mr. Ziad Abughali
NextEra Energy Resources, LLC
700 Universe Boulevard
Juno Beach, FL 33408

Re: **Geotechnical Letter – Liquefaction Evaluation with Supplemental Groundwater Data**
Corby BESS Project
Solano County, California
RRC Project No. GE23006031

RRC Power & Energy, LLC (RRC) has performed additional liquefaction evaluation of the Corby BESS project based on the updated groundwater data.

This letter presents the revised liquefaction potential assessment for the proposed project. The purpose of this evaluation is to assess the potential for liquefaction considering the revised groundwater table depth of 5 feet below ground surface (bgs), compared to the previously assumed depth of 7 feet bgs.

Seismically induced liquefaction is a phenomenon in which cyclic stresses, produced by earthquake-induced ground motion, create excess pore pressures in soils. The soils may thereby acquire a high degree of mobility, and lead to lateral movement, sliding, sand boils, consolidation and settlement of loose sediments, and other damaging deformations. This phenomenon occurs only below the water table, but after liquefaction has developed, it can propagate upward into overlying, non-saturated soil as excess pore water dissipates. Typically, liquefaction has a relatively low potential at depths greater than 45 feet and is virtually unknown below a depth of 60 feet when relative densities are 40 to 60 percent and effective overburden pressures are two or more atmospheres (i.e., 4,232 psf [Seed, 2005]).

Liquefaction susceptibility is related to numerous factors and the following conditions should be concurrently present for liquefaction to occur: 1) sediments must be relatively young in age and not have developed a large amount of cementation; 2) sediments generally consist of medium- to fine-grained relatively cohesionless sands; 3) the sediments must have low relative density; 4) free groundwater must be present in the sediment; and, 5) the site must experience a seismic event of a sufficient duration and magnitude, to induce straining of soil particles.

Settlement estimates were developed using both the Robertson (2009) CPT-based procedure and the Boulanger and Idriss (2014) methodology. The analyses incorporated a design earthquake with a moment magnitude (Mw) of 6.8 and a peak ground acceleration (PGAm) of approximately 0.61g. The earthquake magnitude was selected based on the controlling seismic source identified during the seismic hazard evaluation and available USGS seismic data.
Geotechnical borings performed across the site, together with laboratory testing and soil classification, indicate that the subsurface profile generally consists of predominantly cohesive soils classified as lean clay (CL) and fat clay (CH), with localized thin layers of loose to medium dense sand encountered below the groundwater table. Laboratory testing indicates that the native soils are primarily cohesive in nature and, therefore, are generally not considered susceptible to liquefaction. However, CPT-based Soil Behavior Type (SBT) classifications identified isolated intervals exhibiting sand like and sandy silt behavior within an otherwise clay-dominated profile.

The CPT soundings indicate that the majority of the subsurface profile falls within Robertson SBT zones corresponding to clay, silty clay, and clayey silt materials, with only limited and discontinuous intervals classified as sandy silt, silty sand, or sand. These granular layers were generally thin, laterally variable, and interbedded within the cohesive deposits. As a result, the continuity and thickness of potentially liquefiable strata varied significantly across the site.
Because liquefaction susceptibility is primarily associated with the localized saturated granular layers identified in the CPT soundings, the estimated settlements varied between testing locations. Locations containing thicker and/or looser granular strata generally produced higher settlement estimates, whereas locations dominated by cohesive soils produced lower settlement estimates. Based on the analyses performed, estimated liquefaction-induced settlements range from approximately 0.9 to 2.7 inches across the site.

Estimated liquefaction induced settlements for each testing location are summarized in Table below with groundwater table 5 feet and 7 feet.

Estimated Liquefaction Induced Settlements

Location	Using Groundwater Table of 5 feet below ground surface		Using Groundwater Table of 7 feet below ground surface	
	Liquefaction Settlement using Robertson (2009) (inches)	Liquefaction Settlement using B&I (2014) (inches)	Liquefaction Settlement using Robertson (2009) (inches)	Liquefaction Settlement using B&I (2014) (inches)
CPT-11	0.56	0.92	0.45	0.84
CPT-12	0.8	1.87	0.66	1.61
CPT-13	0.32	1.44	0.24	1.23
CPT-14	1.28	2.7	1.28	2.69
CPT-15	0.59	1.12	0.48	0.95

The liquefaction assessment results are consistent with those presented in our May 29, 2026 report. The variation in calculated liquefaction-induced settlement is negligible, and our previous recommendations remain applicable.

Should you have any questions concerning this design memorandum, please do not hesitate to contact us. Your business is always appreciated.

Sincerely,

RRC Power & Energy, LLC

Prepared by

Manoj Keerthipati, PE.
Geotechnical Engineer

Reviewed by

Yuqing "Jeffrey" Liu, PE.
Geotechnical Engineering Manager

Attachments: Appendix A

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FIRM REGISTRATION NO. AL CA- 5474-E

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APPENDIX A

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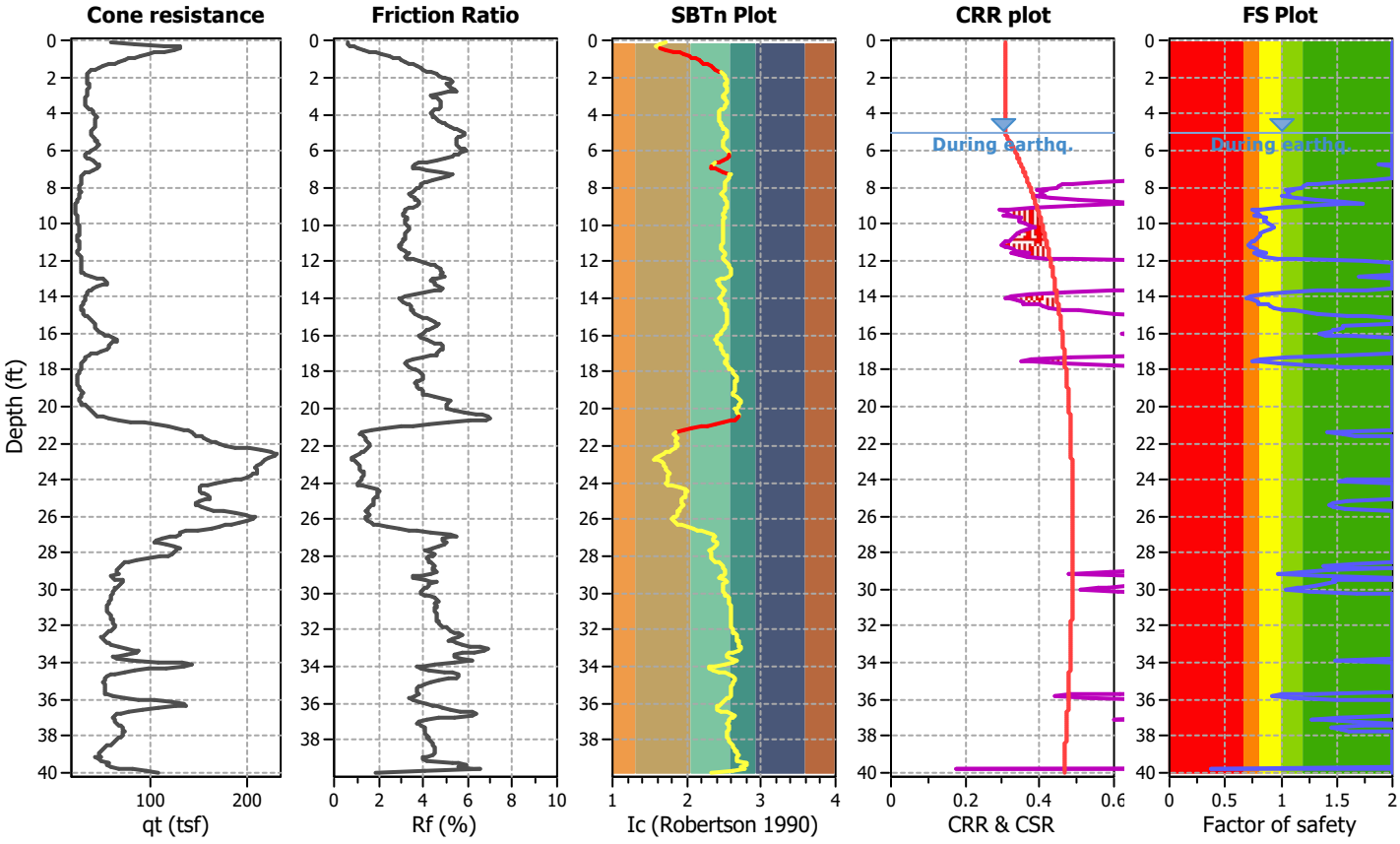
LIQUEFACTION ANALYSIS REPORT

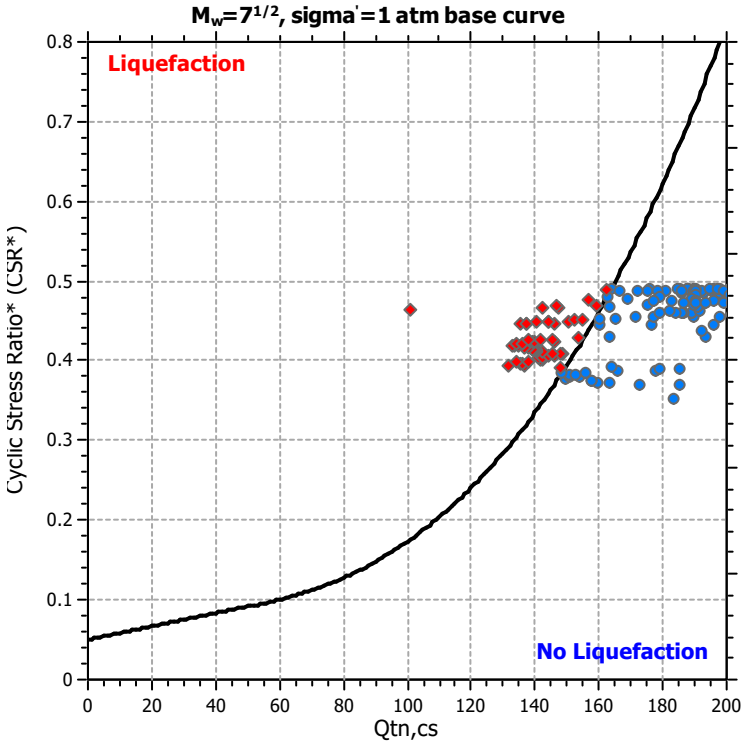
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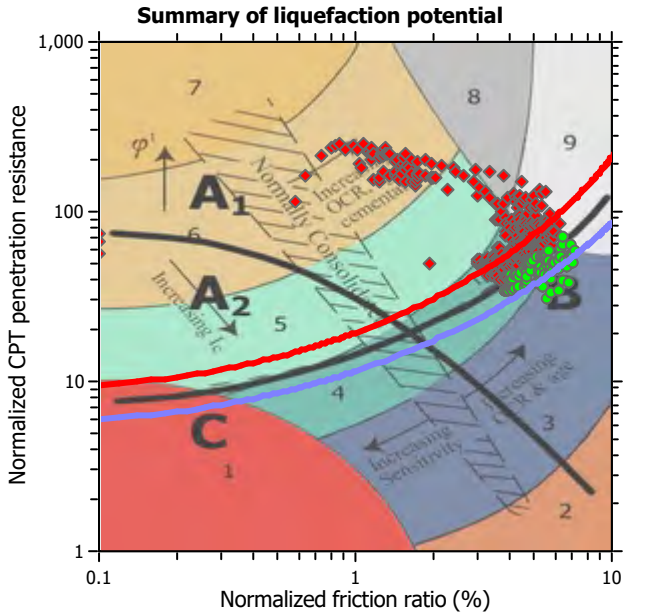
CPT file : CPT-11

Input parameters and analysis data

Analysis method:	Robertson (2009)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	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:	6.80	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

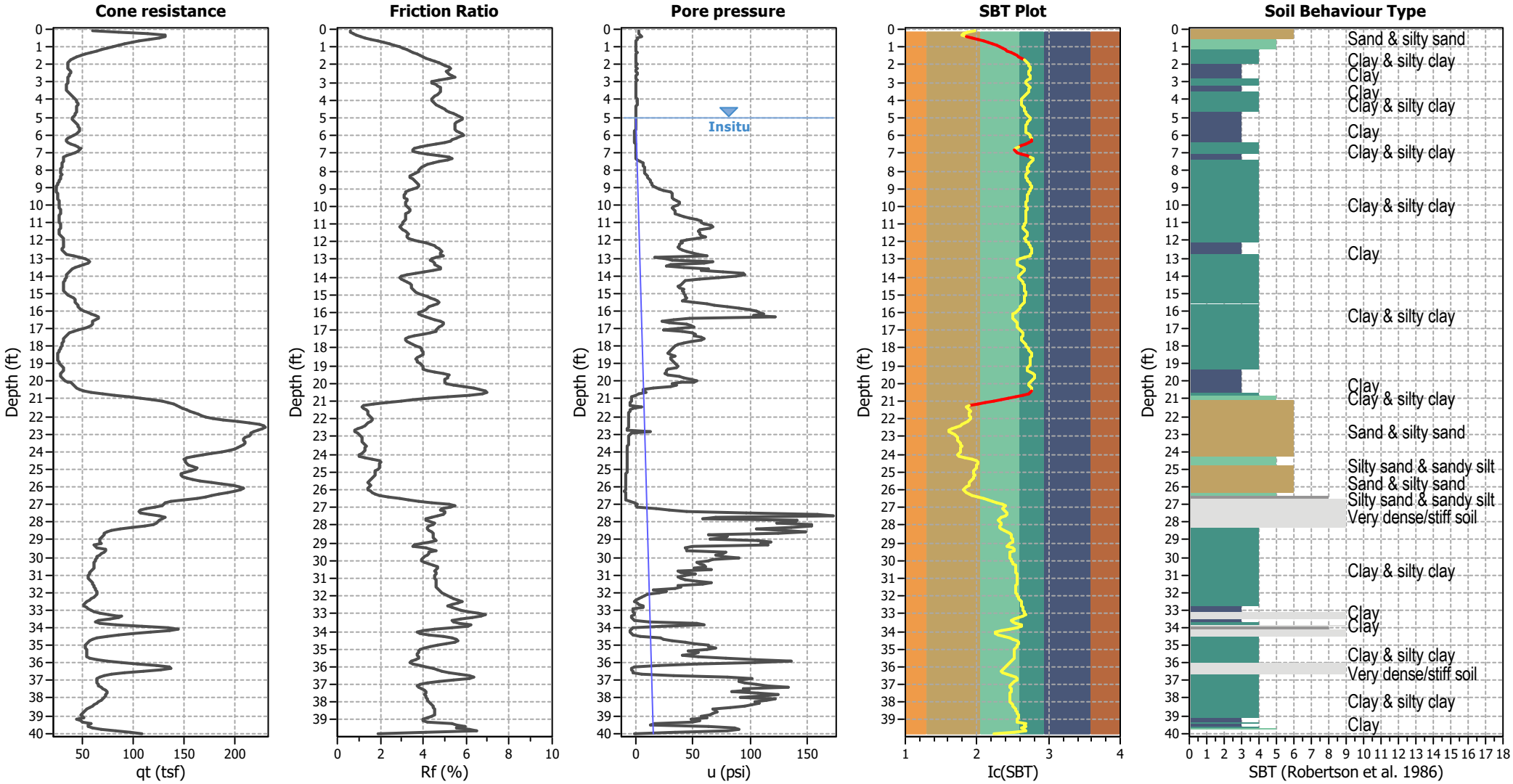






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



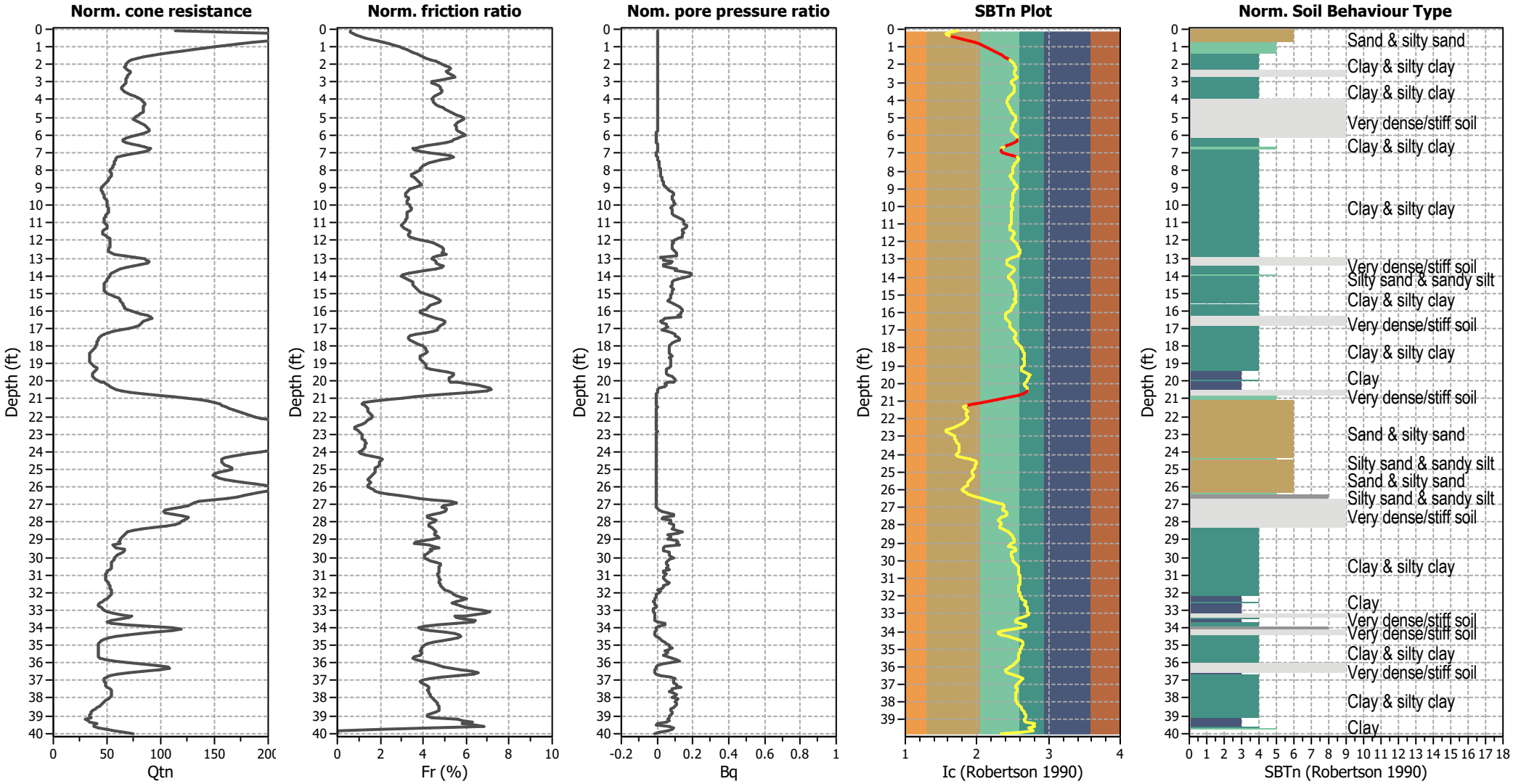
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 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

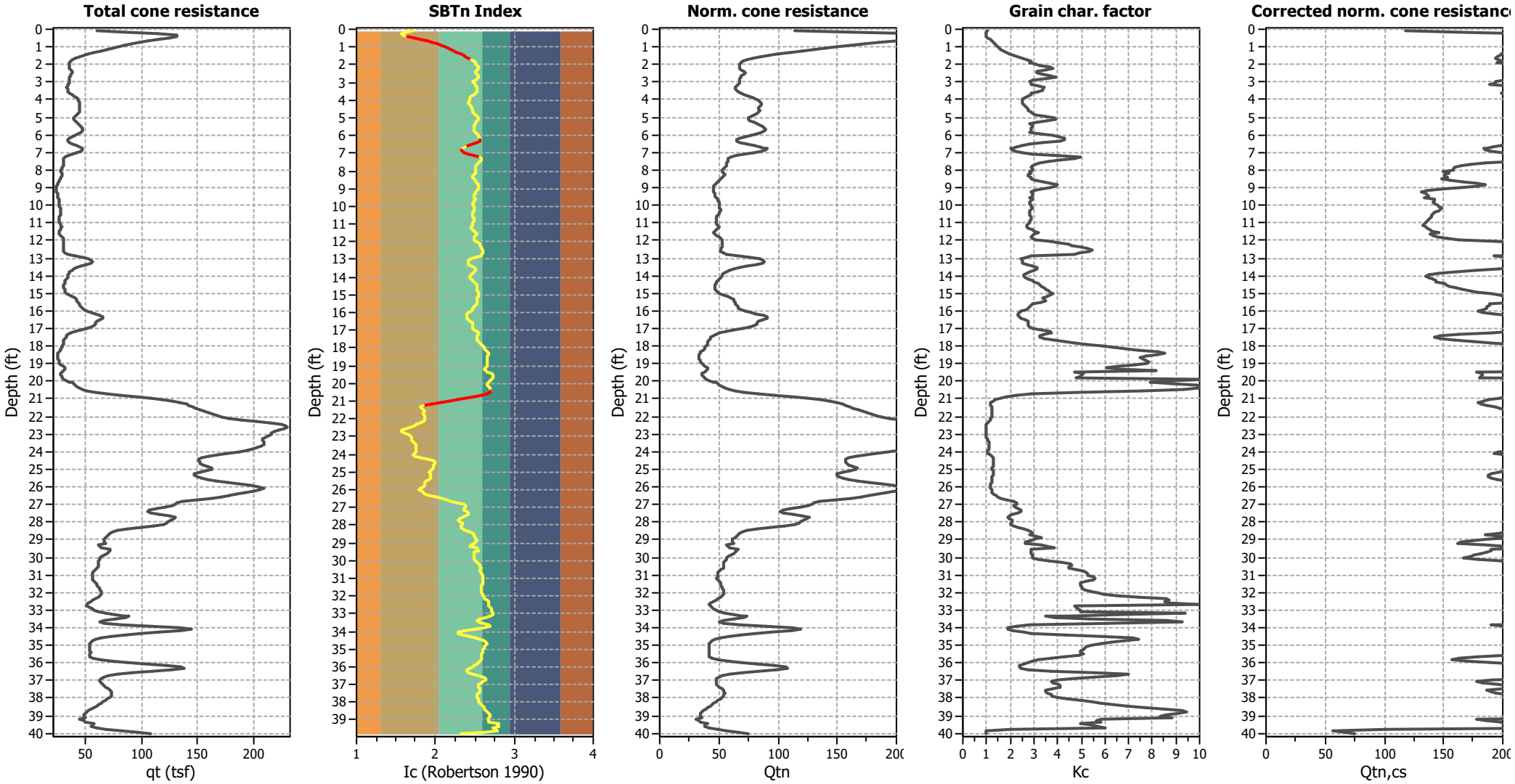
CPT basic interpretation plots (normalized)



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

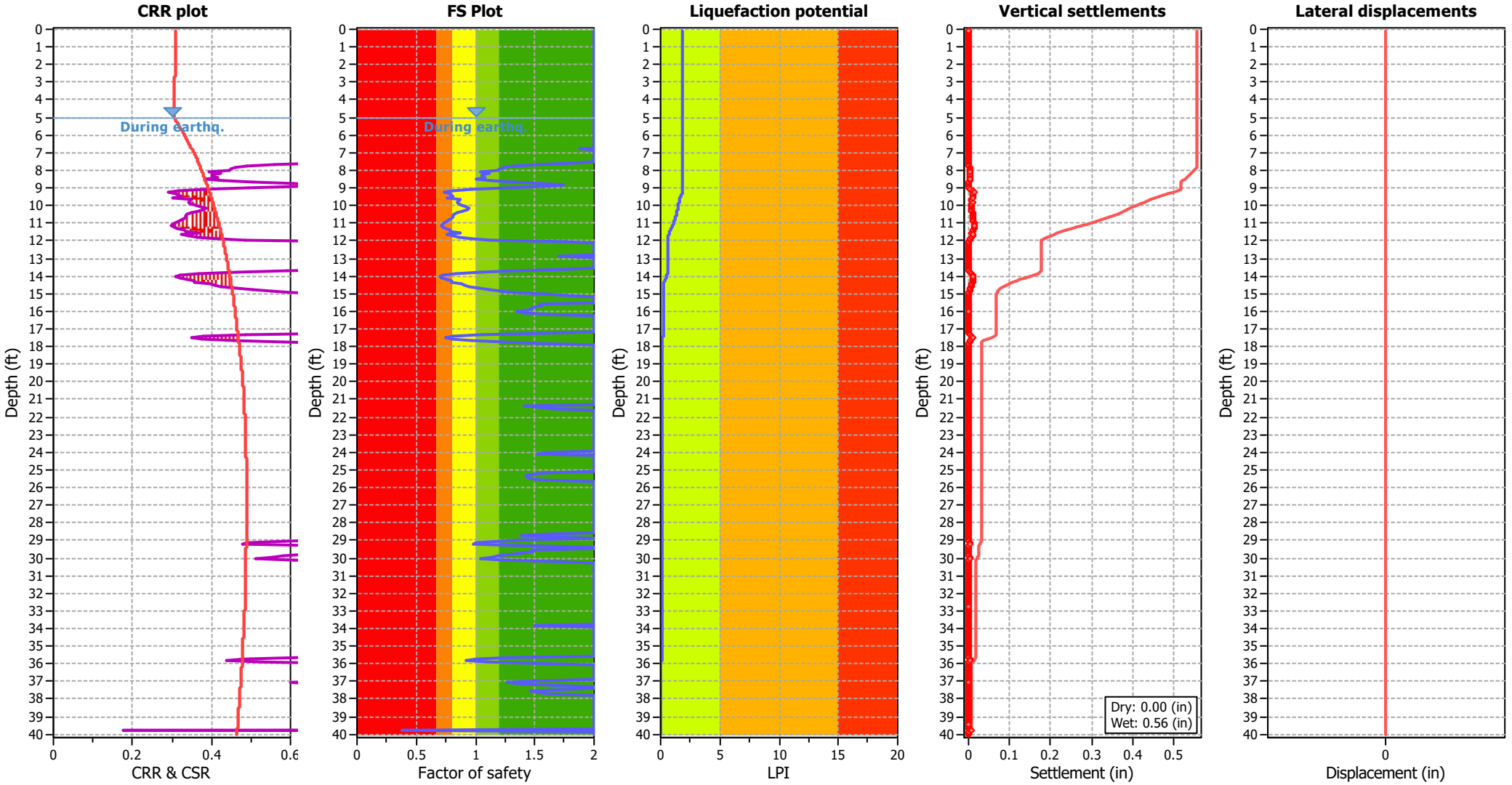
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

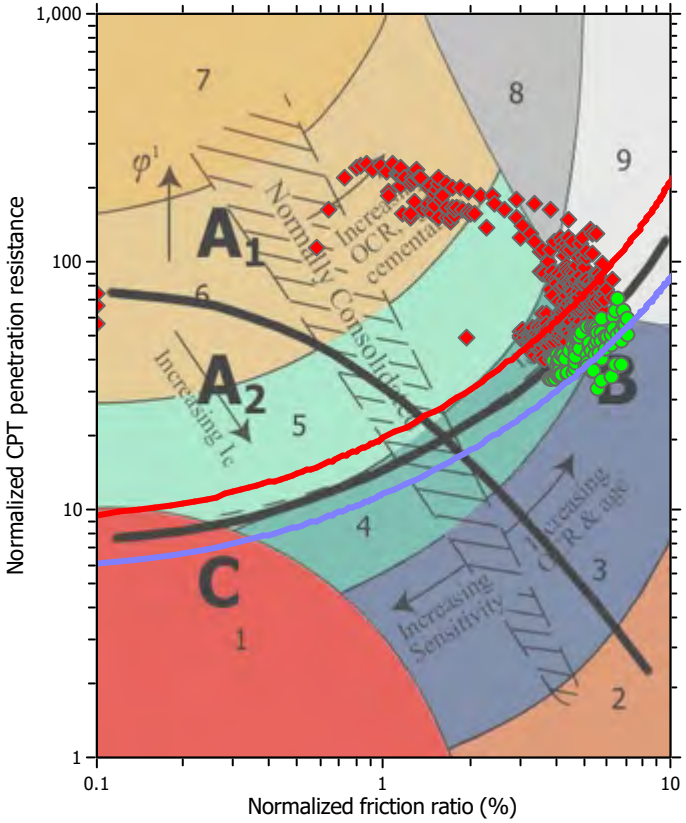
F.S. color scheme

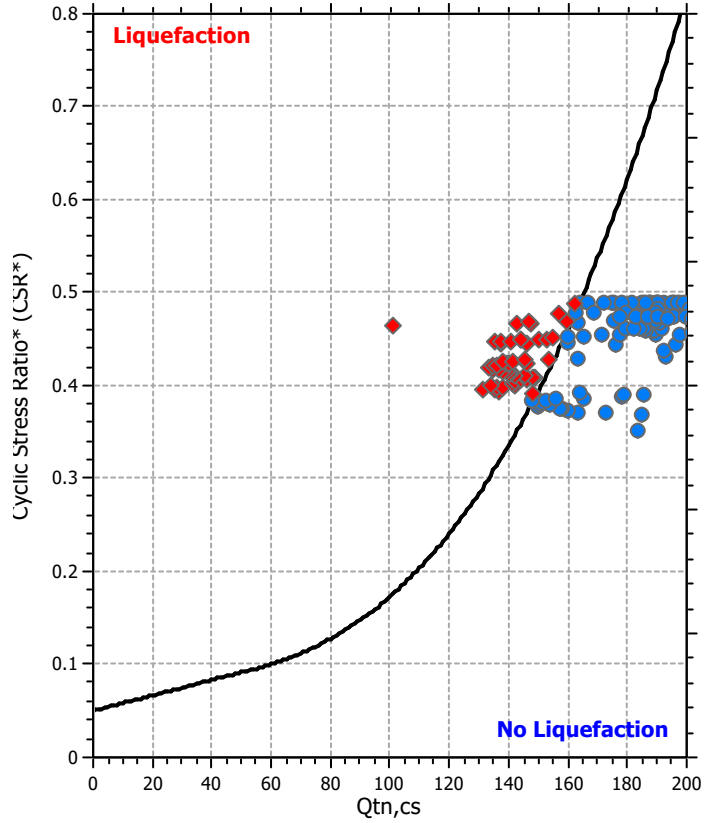
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

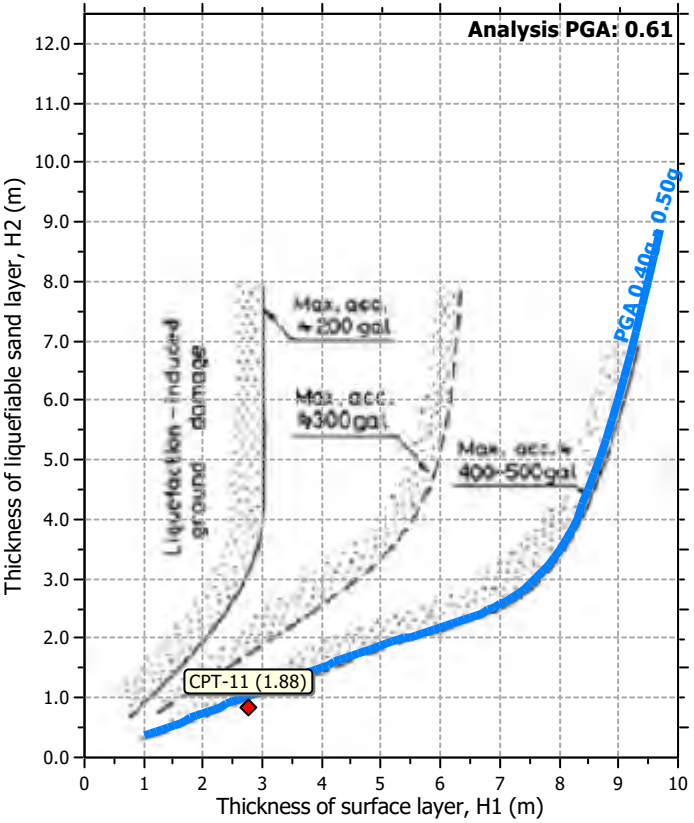
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



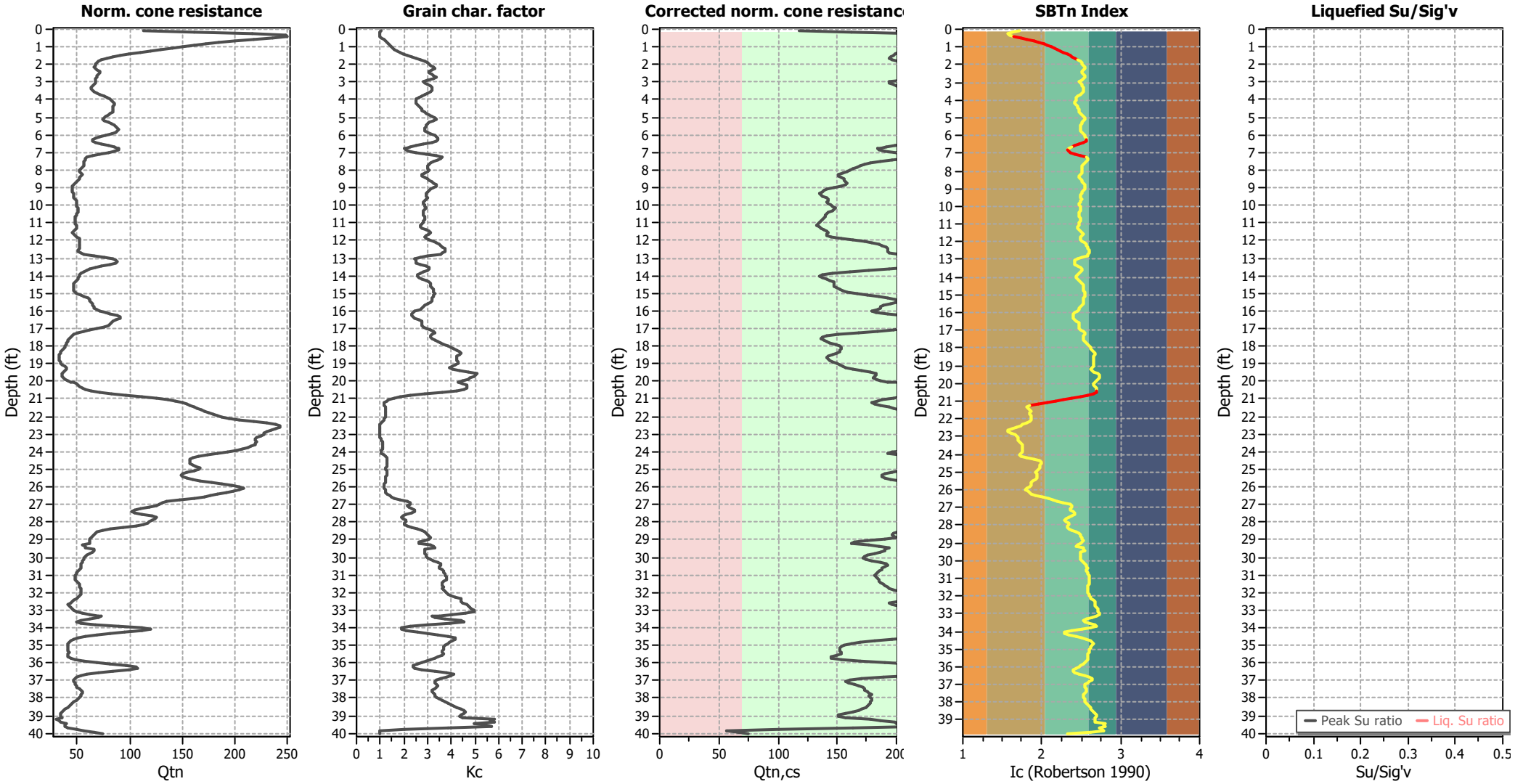




Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

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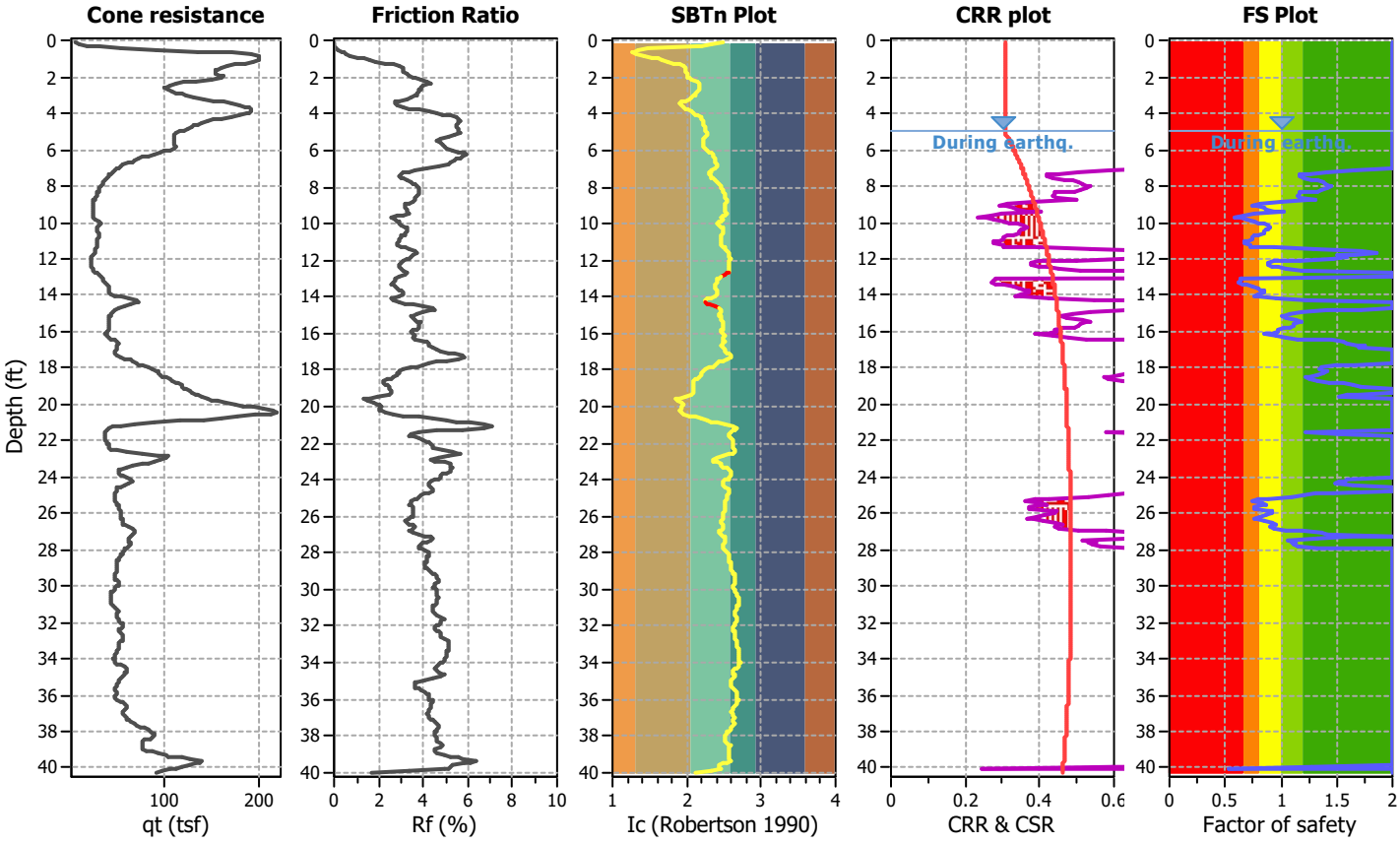
LIQUEFACTION ANALYSIS REPORT

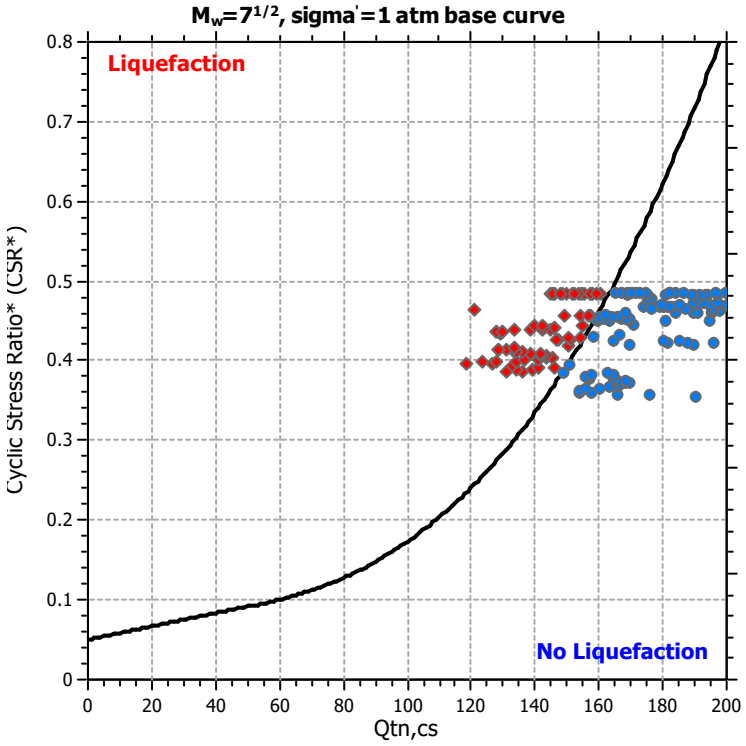
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

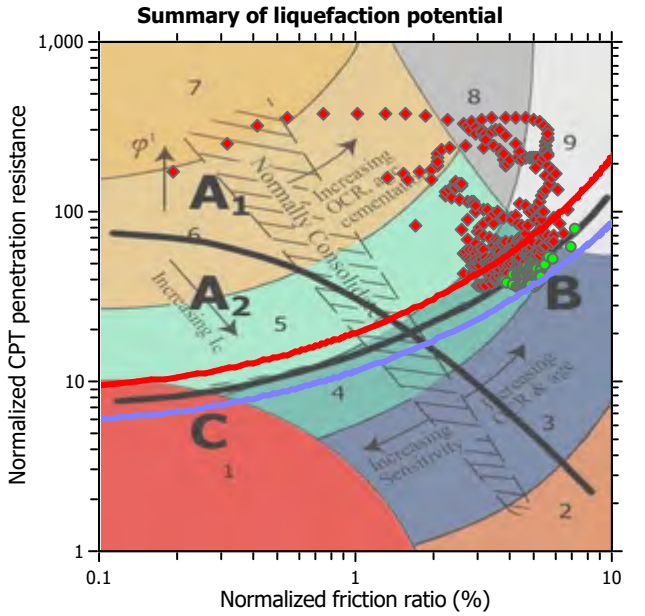
CPT file : CPT-12

Input parameters and analysis data

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Fines correction method:	Robertson (2009)	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:	6.80	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

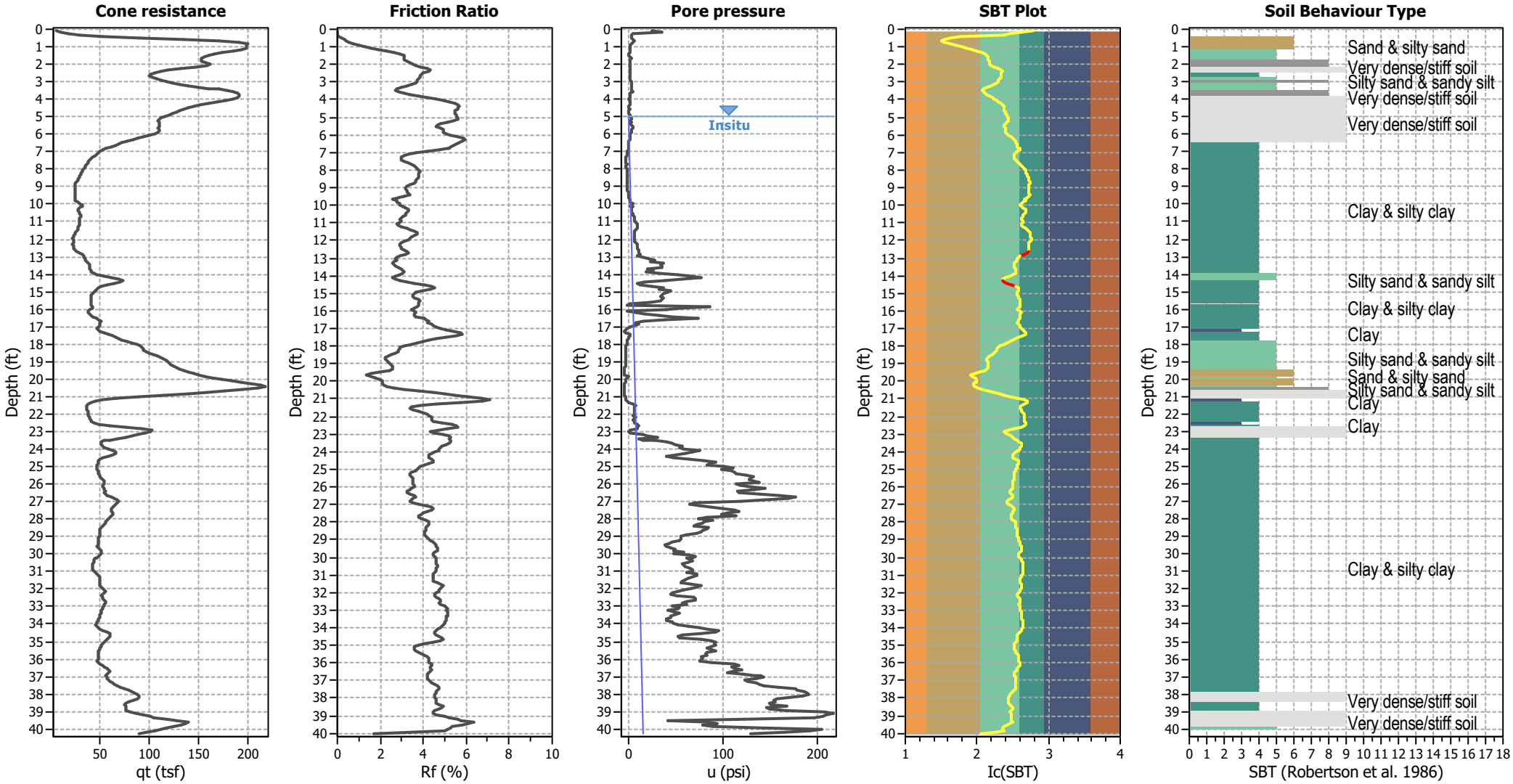






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



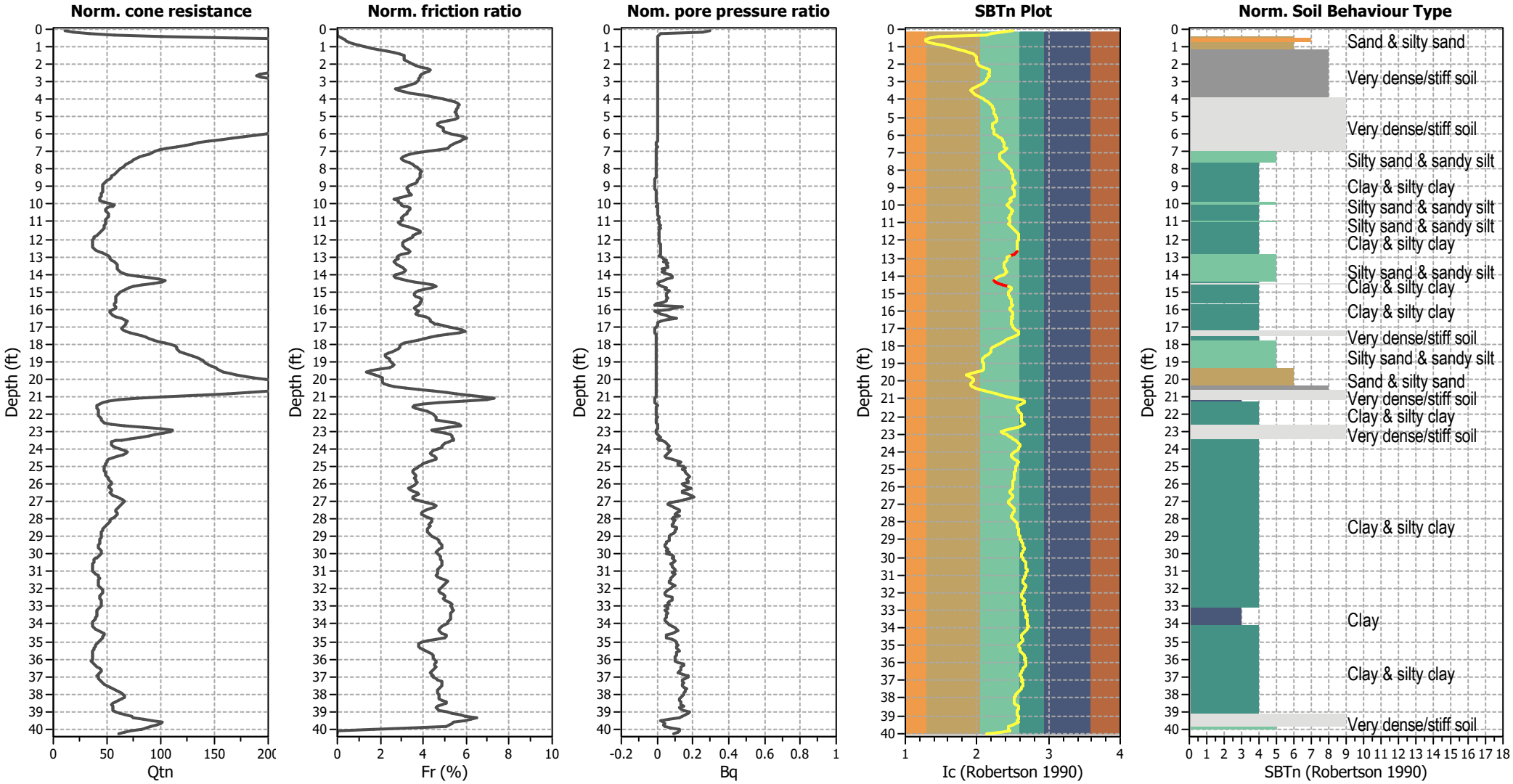
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 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)



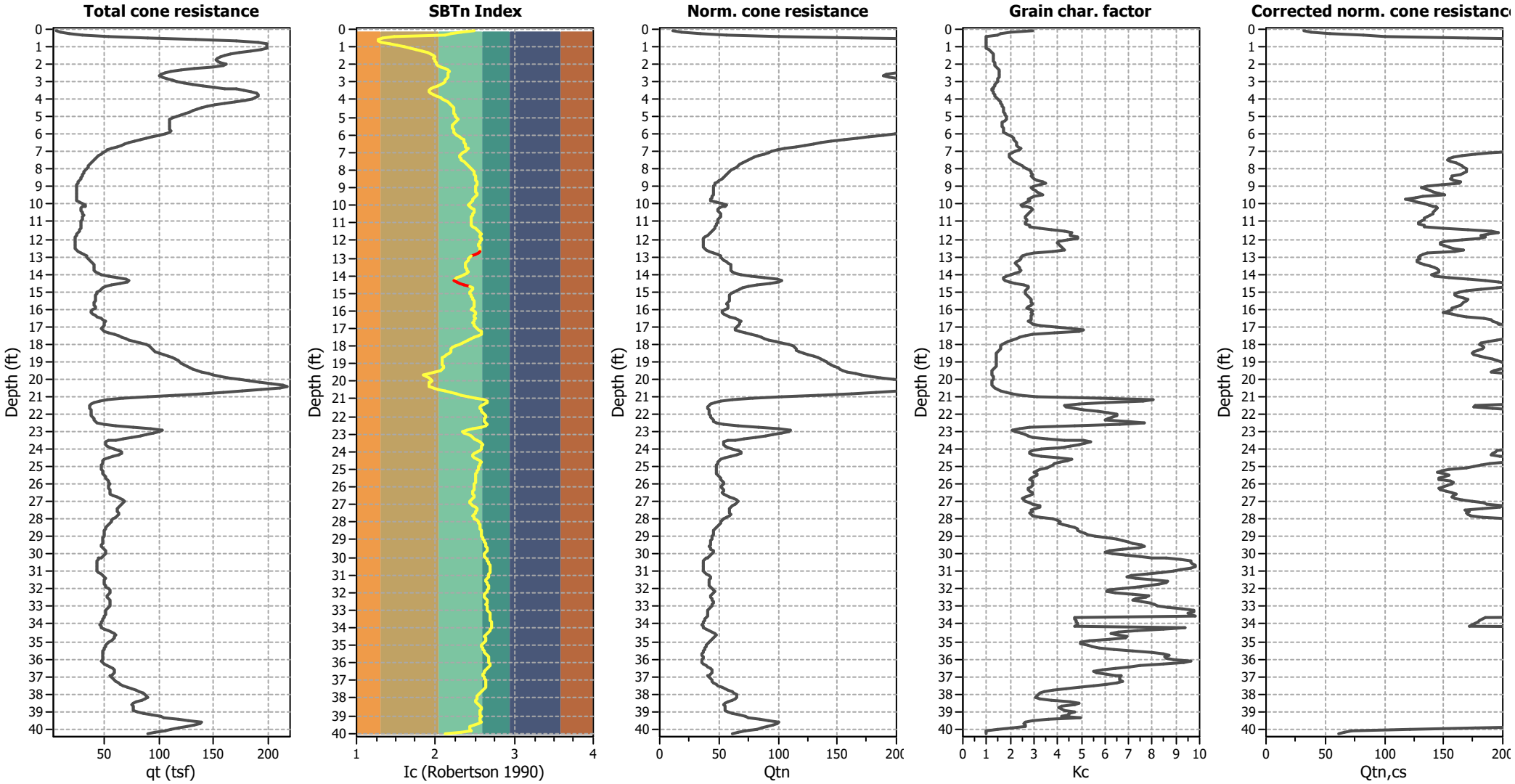
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 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

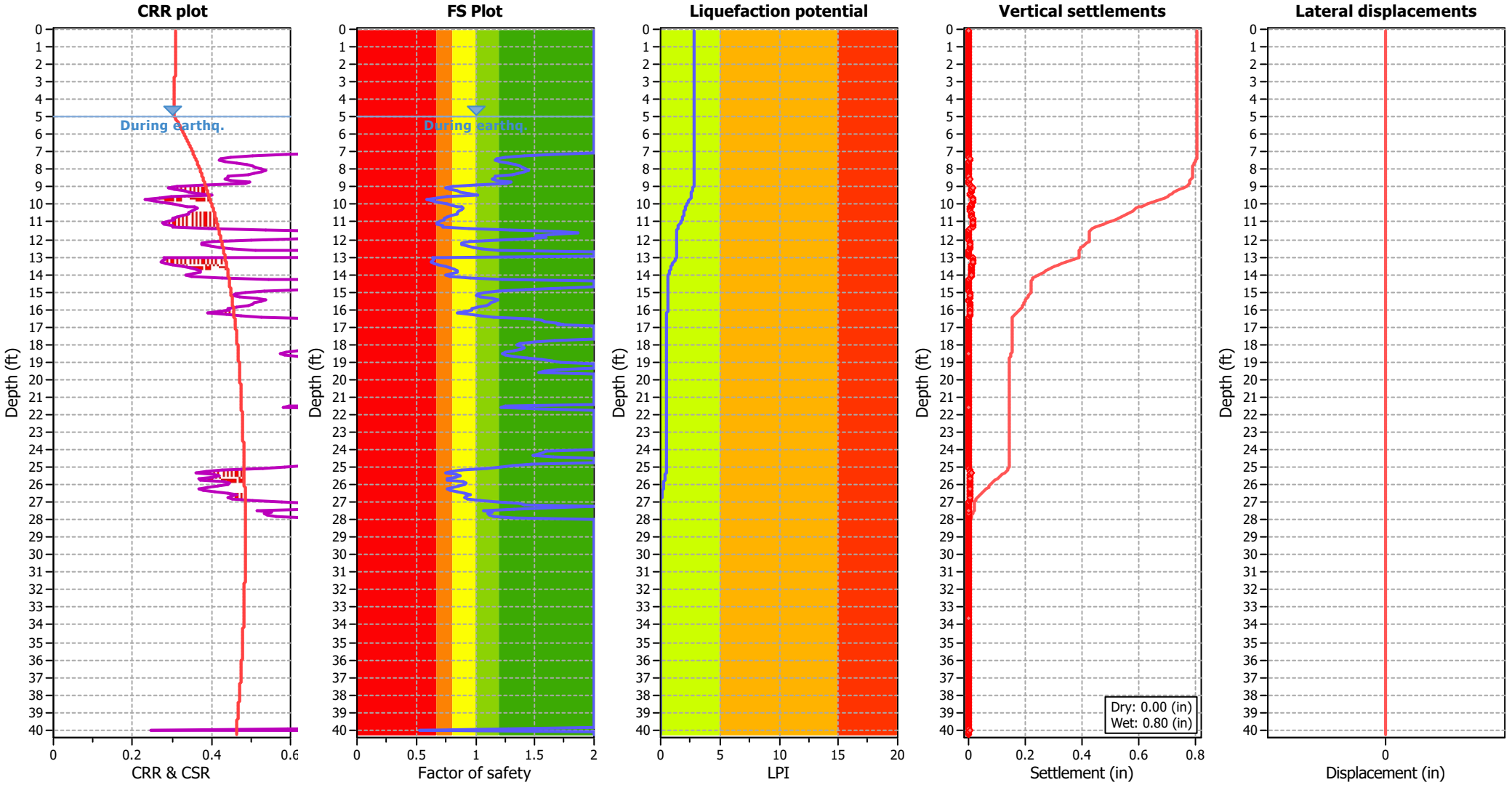
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

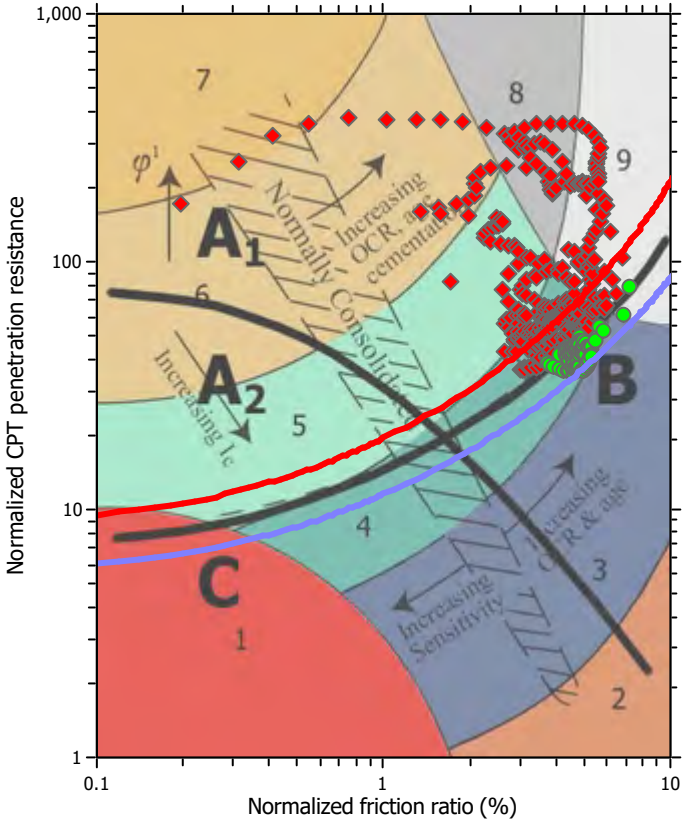
F.S. color scheme

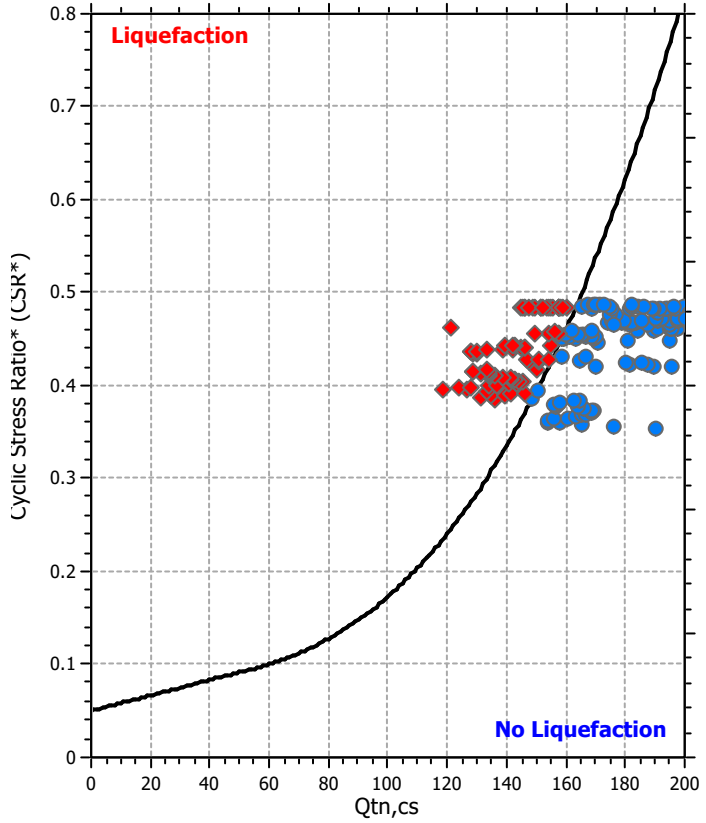
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

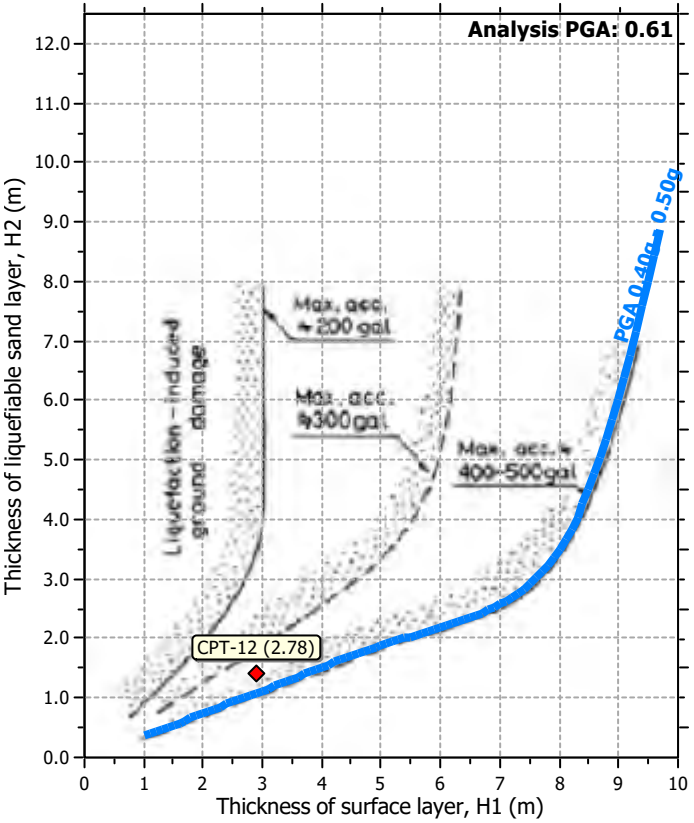
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



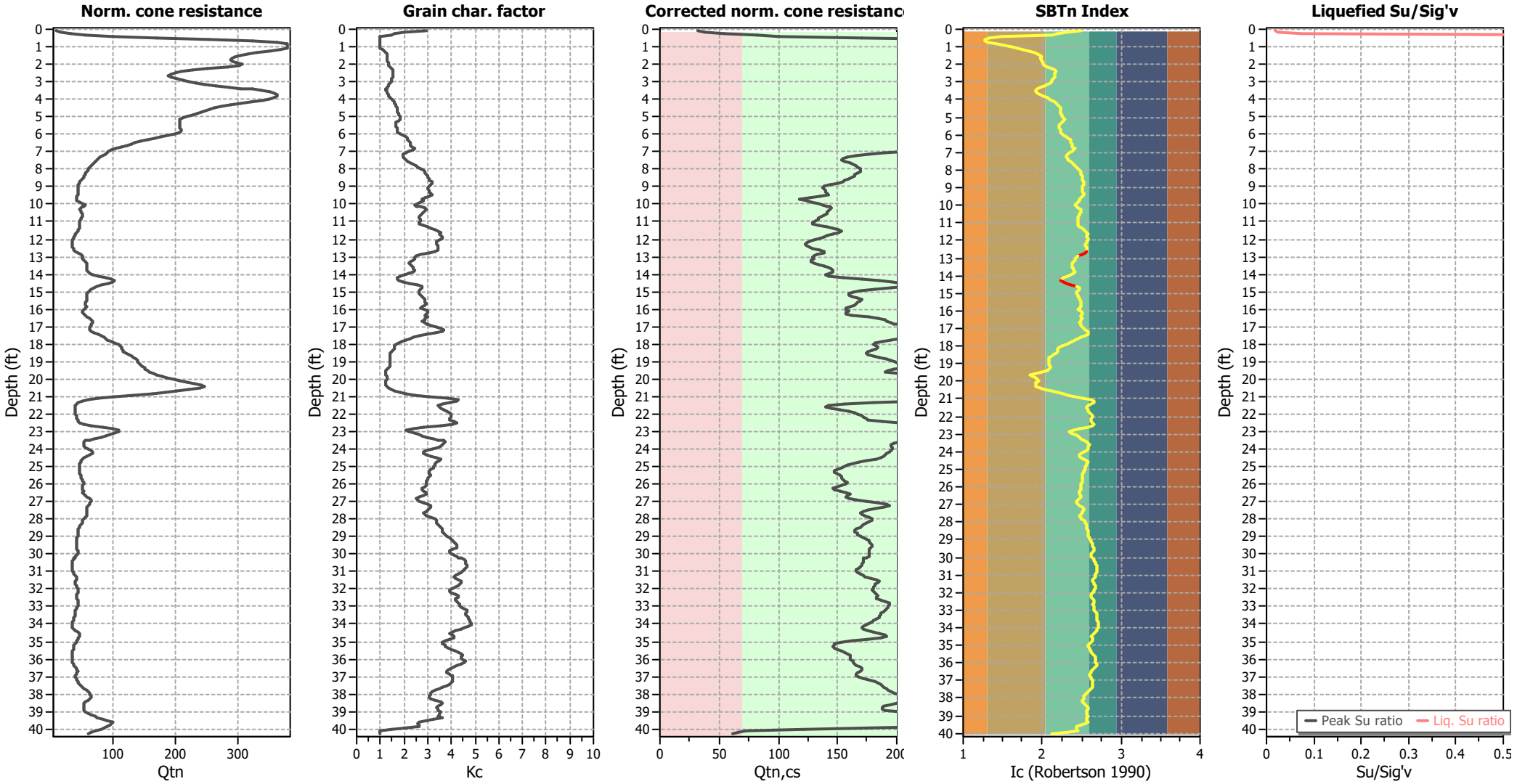




Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

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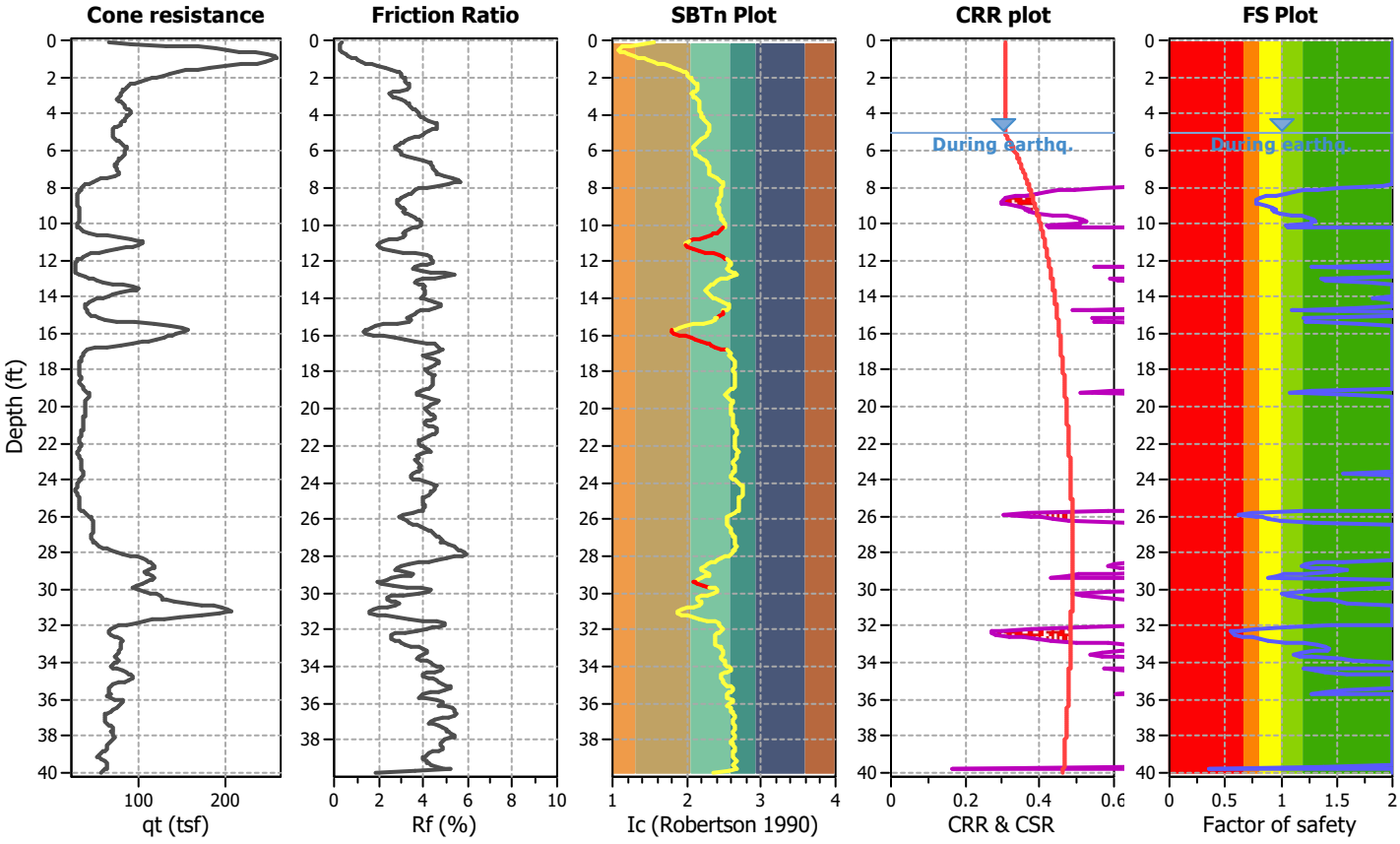
LIQUEFACTION ANALYSIS REPORT

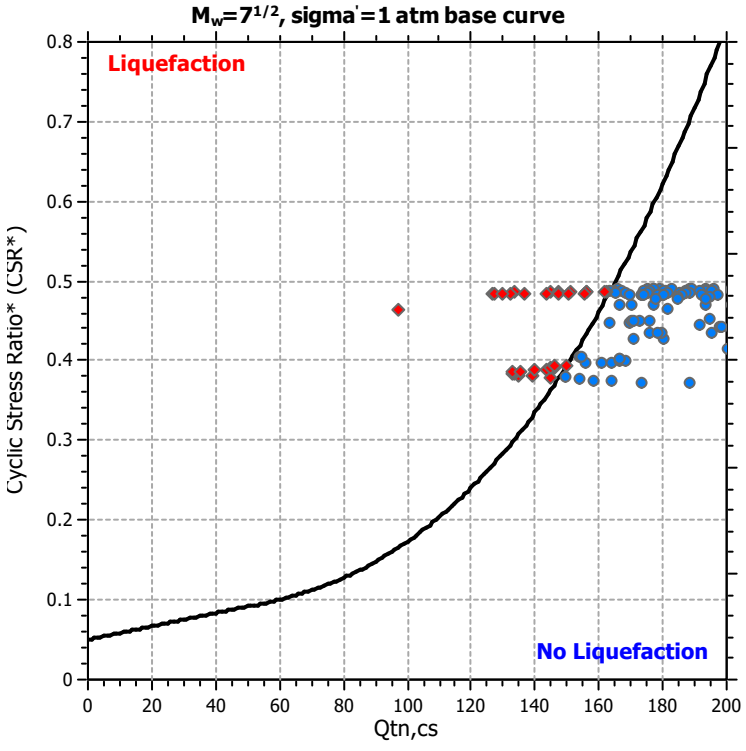
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

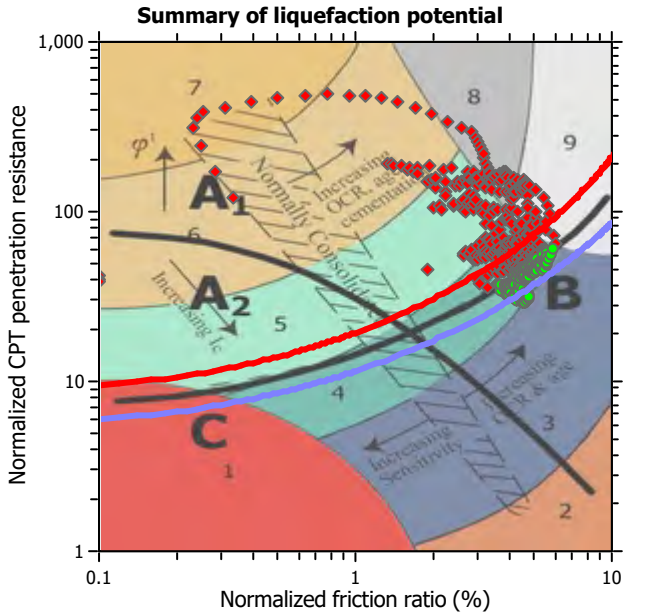
CPT file : CPT-13

Input parameters and analysis data

Analysis method:	Robertson (2009)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	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:	6.80	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

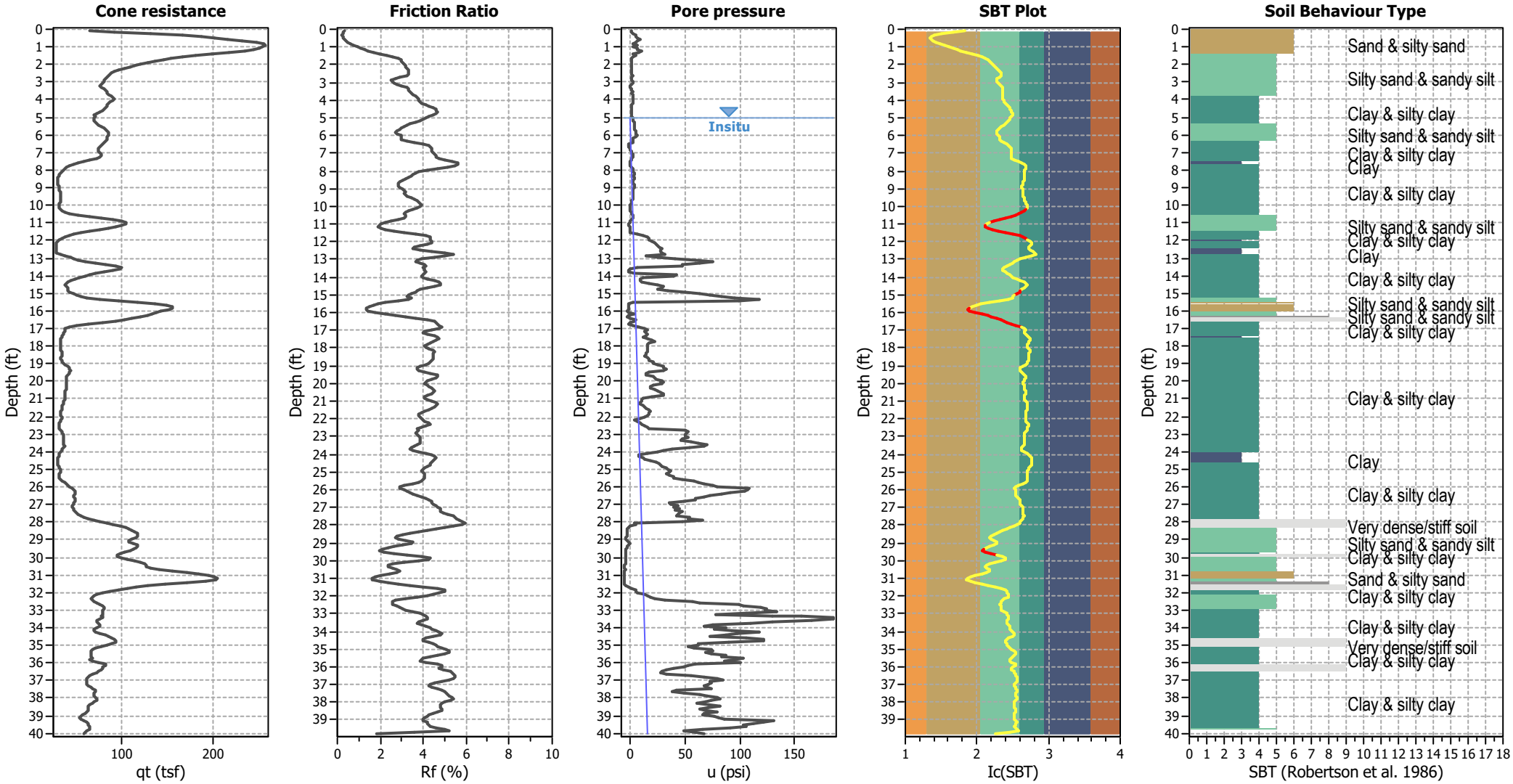






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



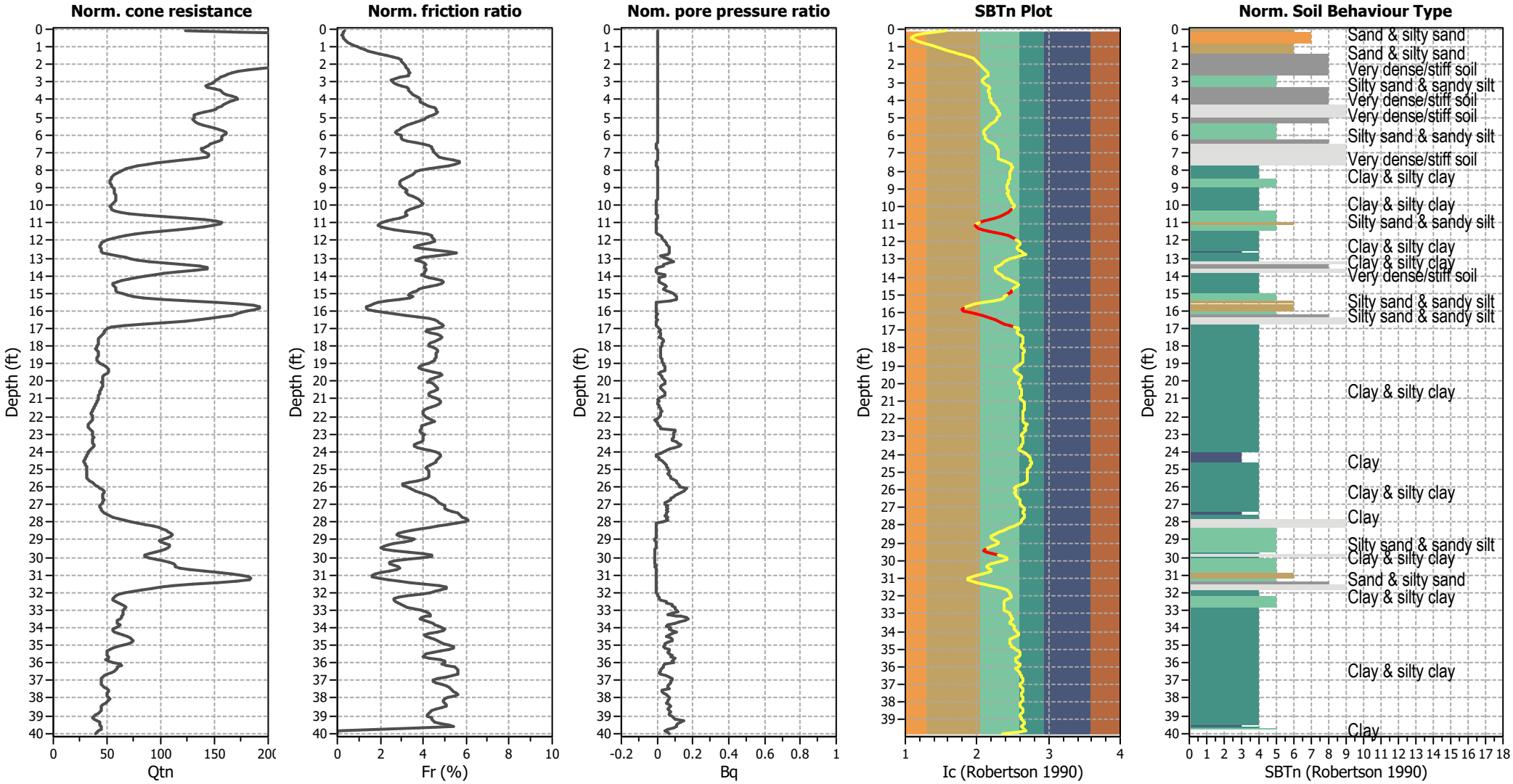
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 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)



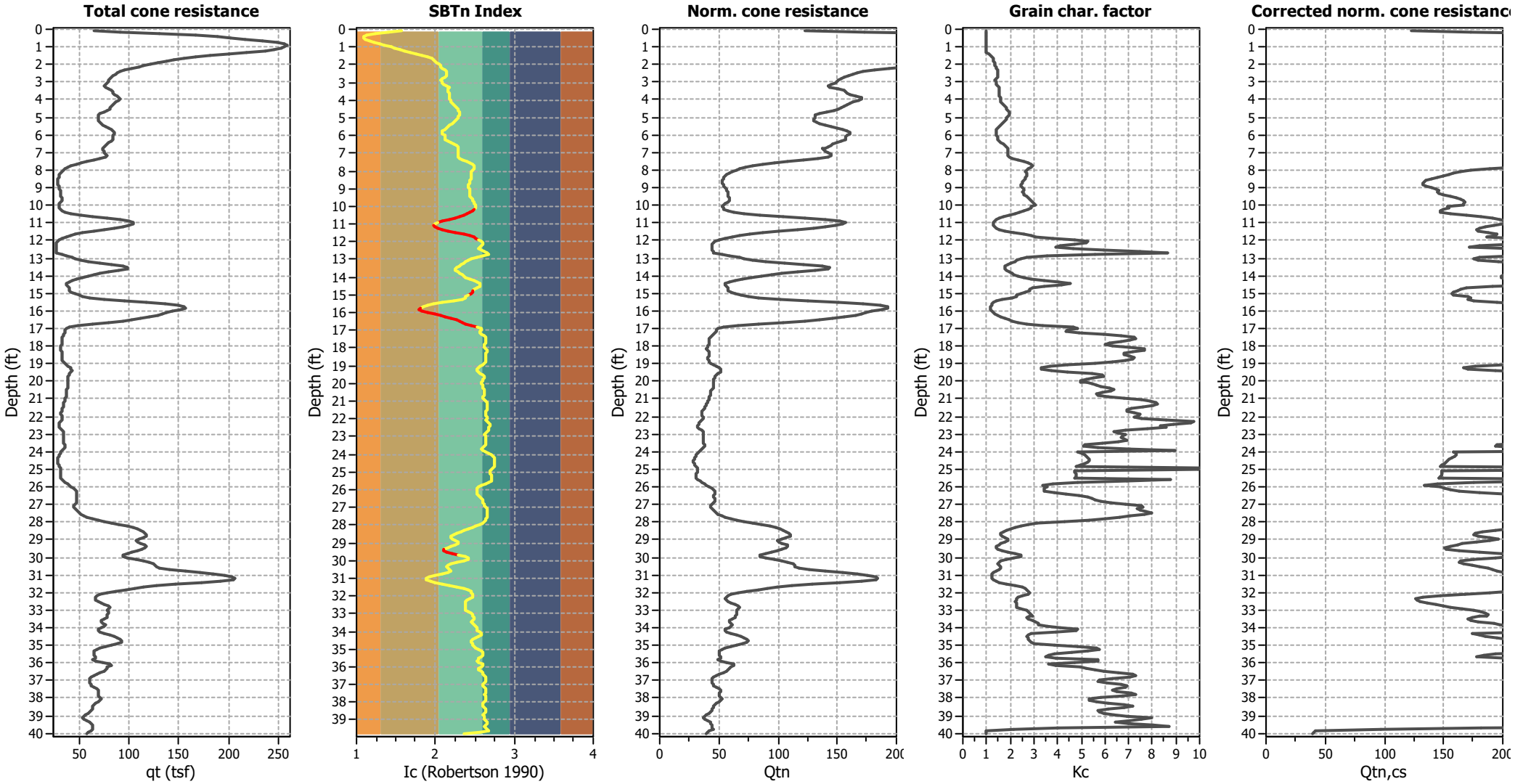
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 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

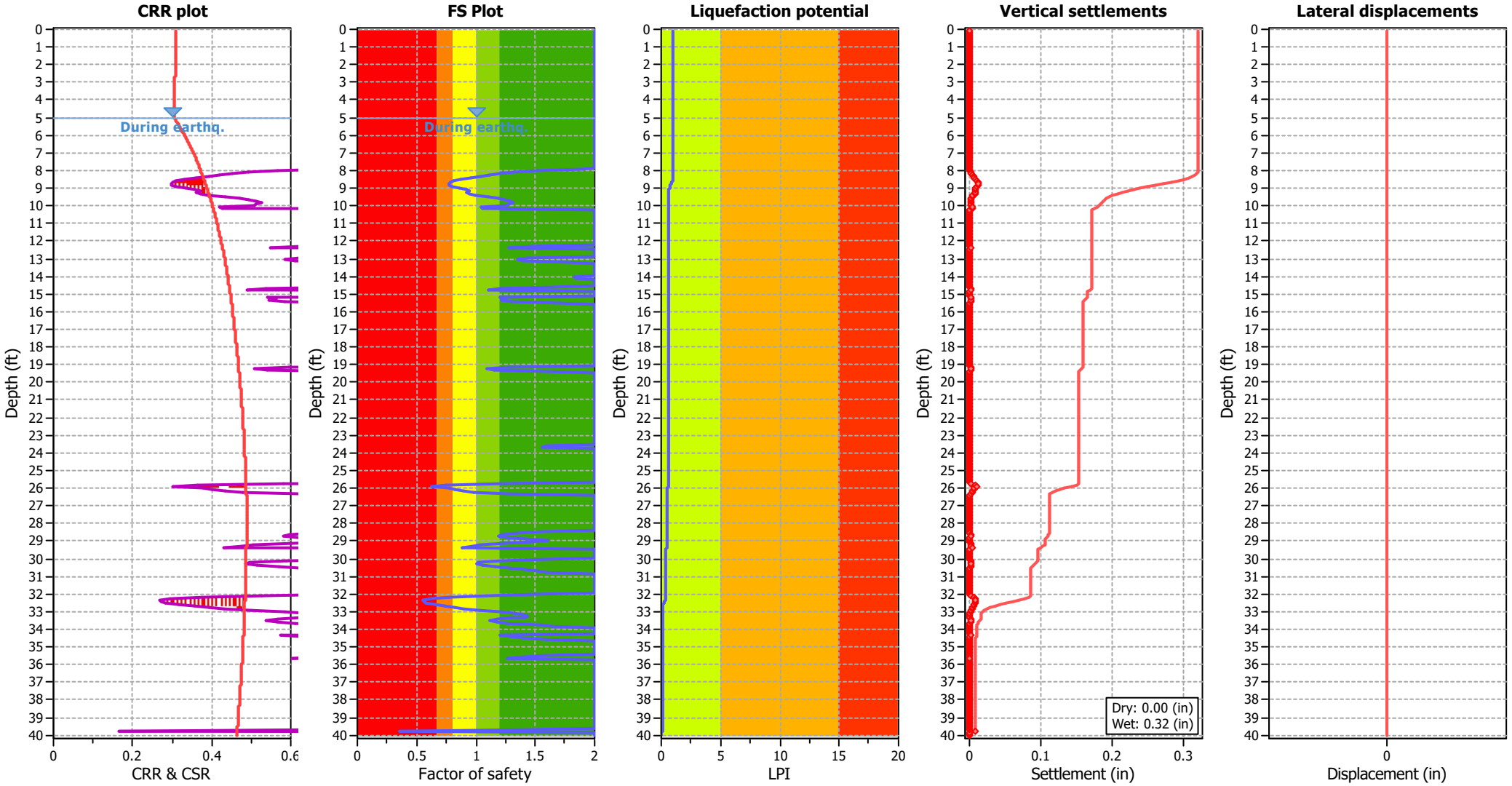
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

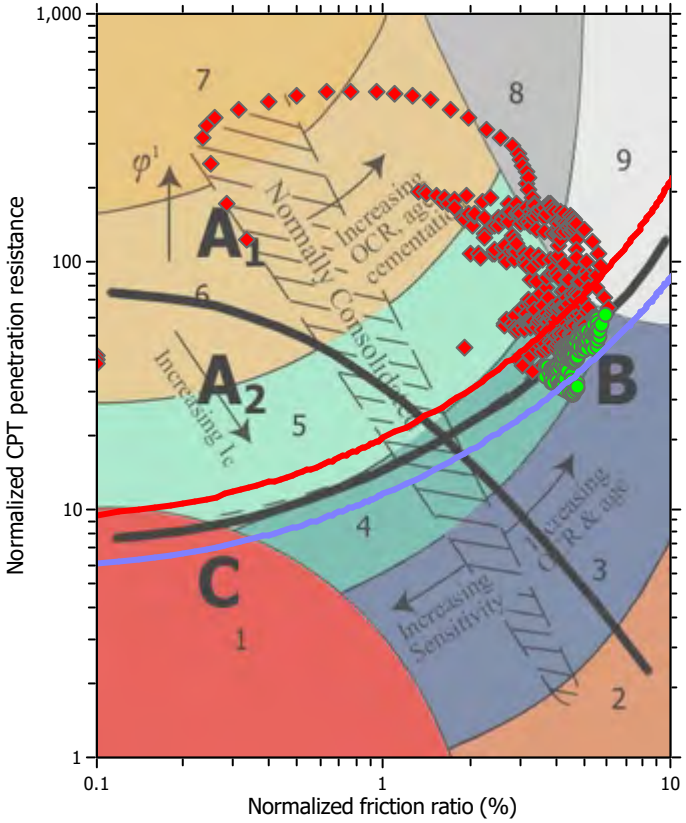
F.S. color scheme

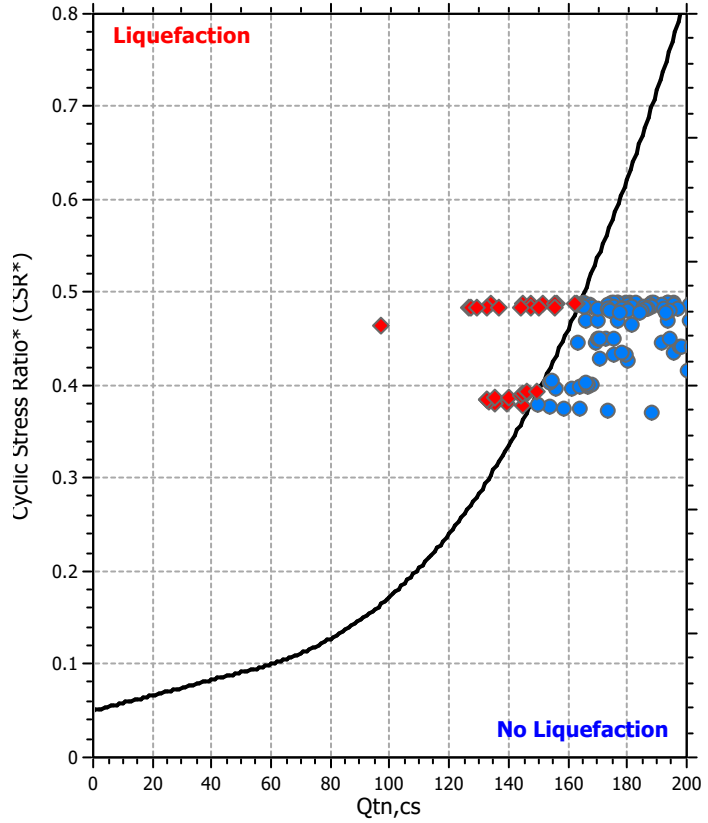
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

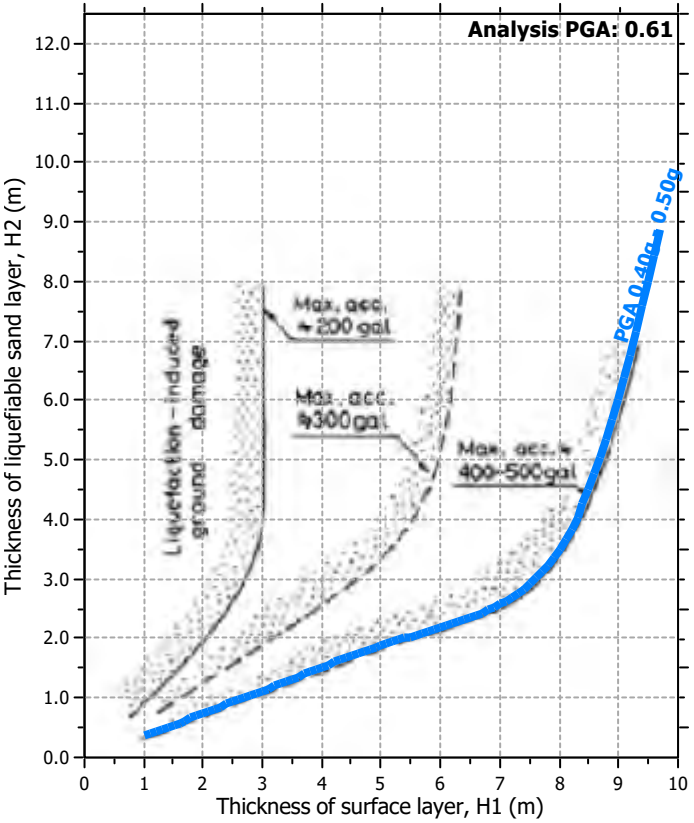
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



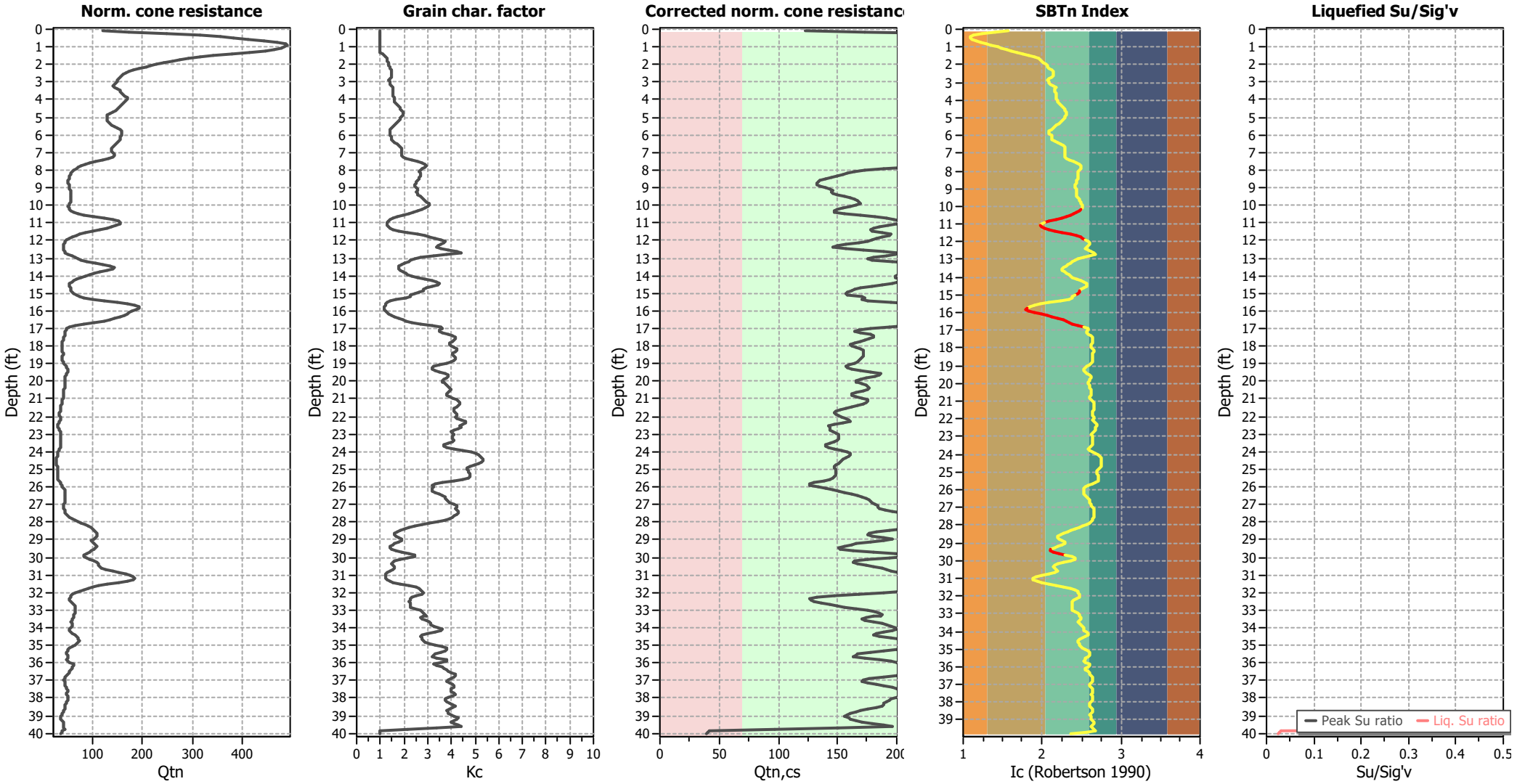




Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

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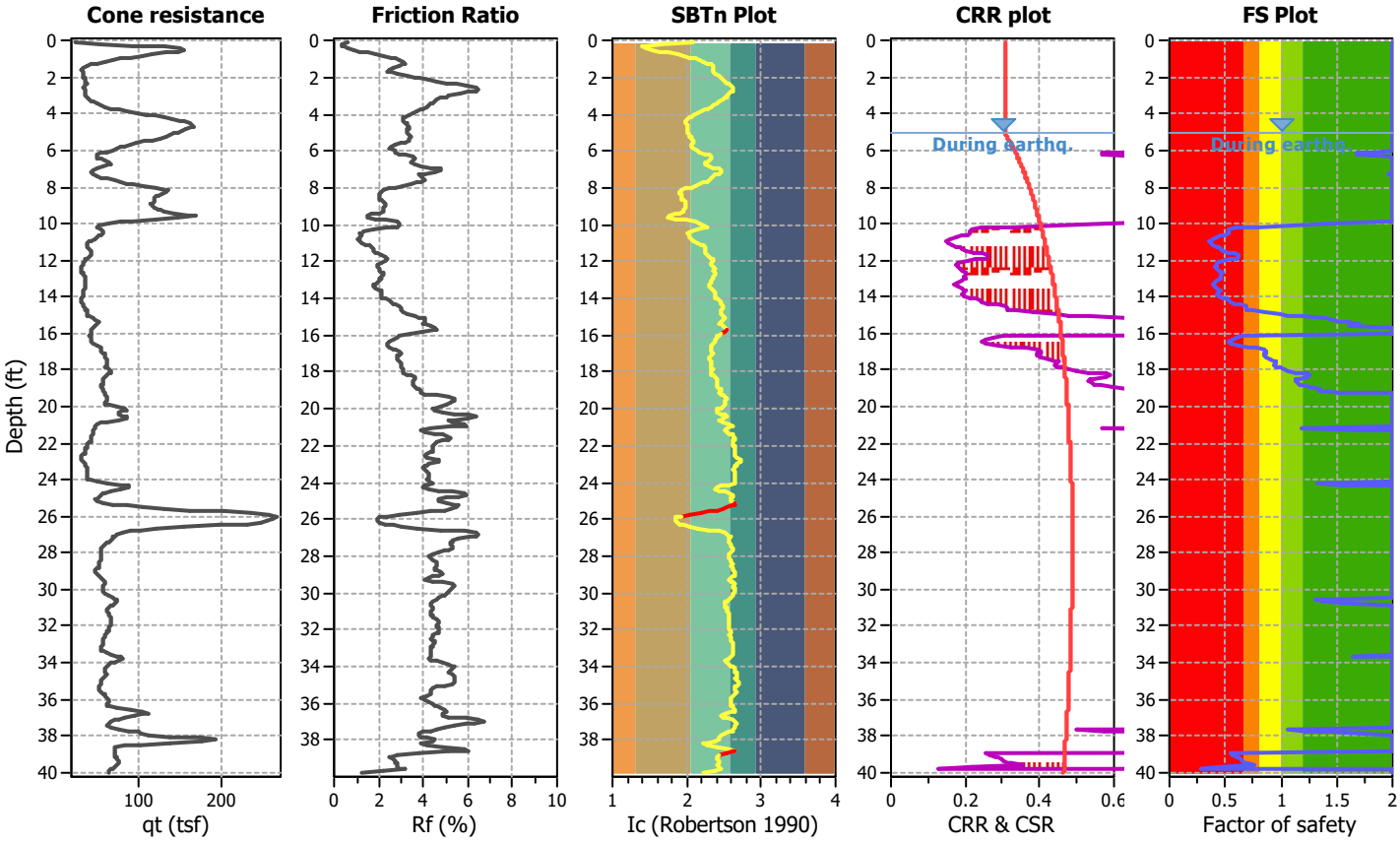
LIQUEFACTION ANALYSIS REPORT

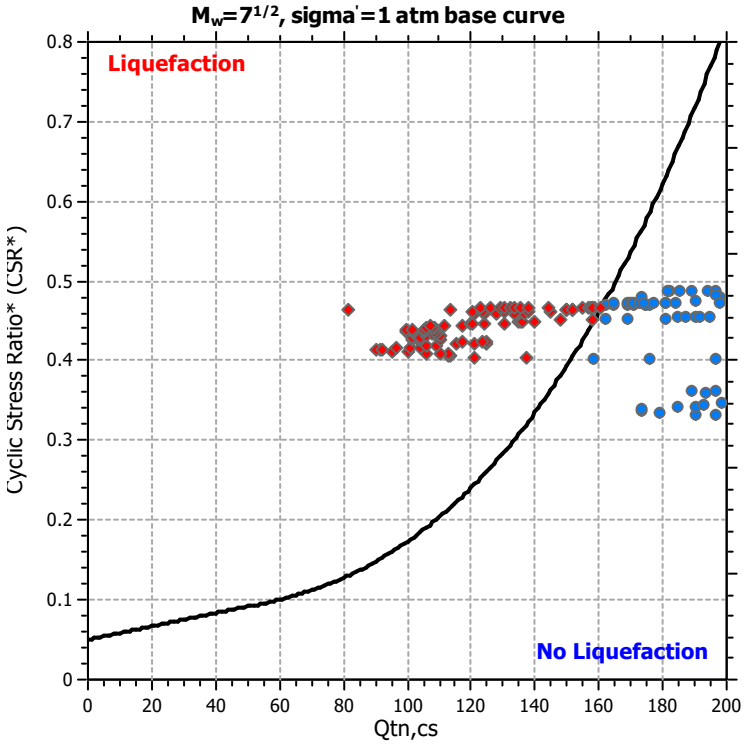
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

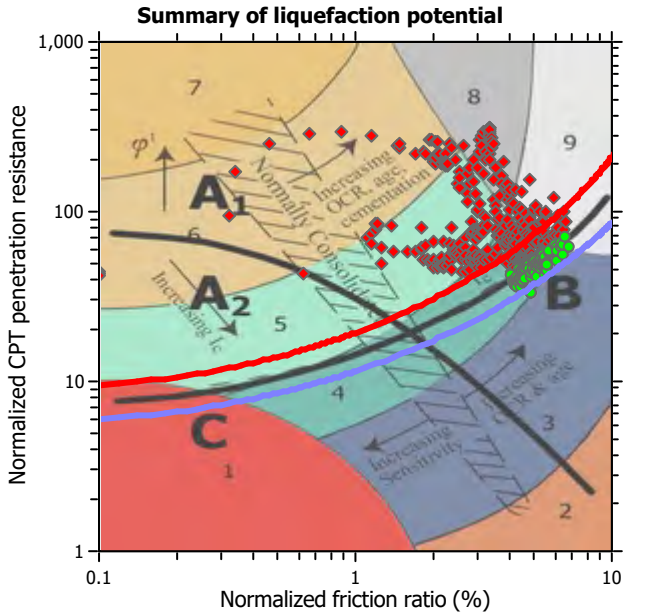
CPT file : CPT-14

Input parameters and analysis data

Analysis method:	Robertson (2009)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	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:	6.80	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

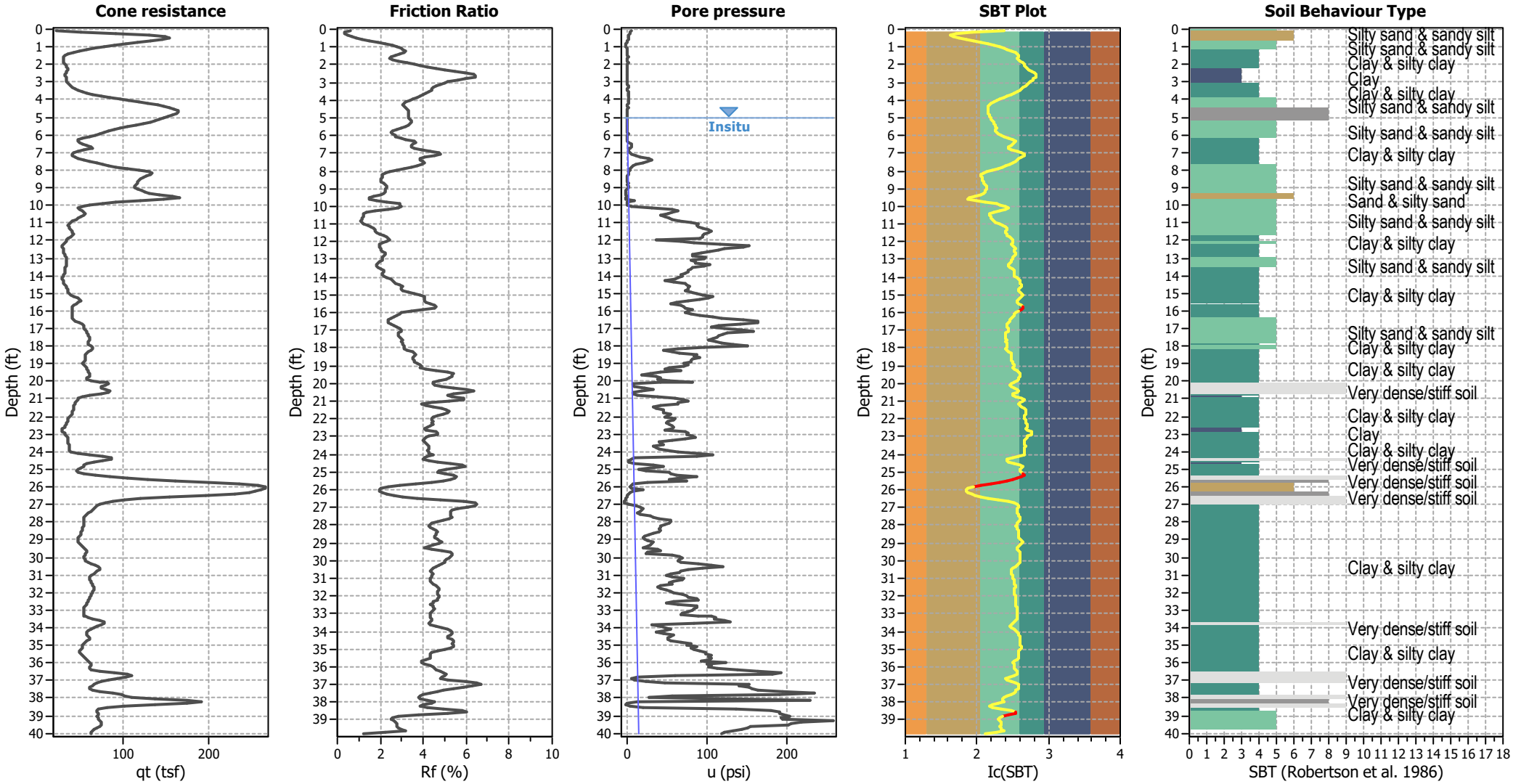






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



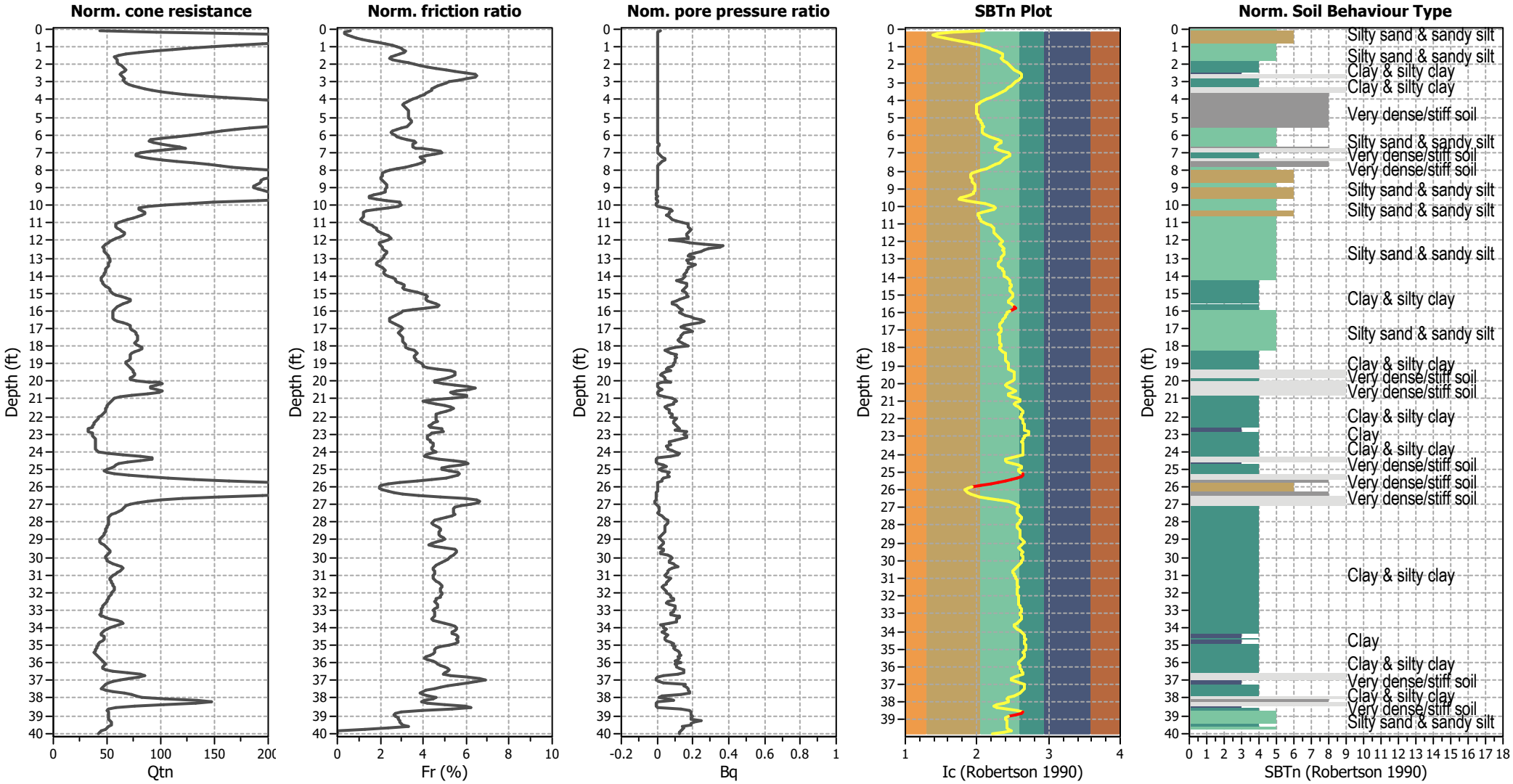
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 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)



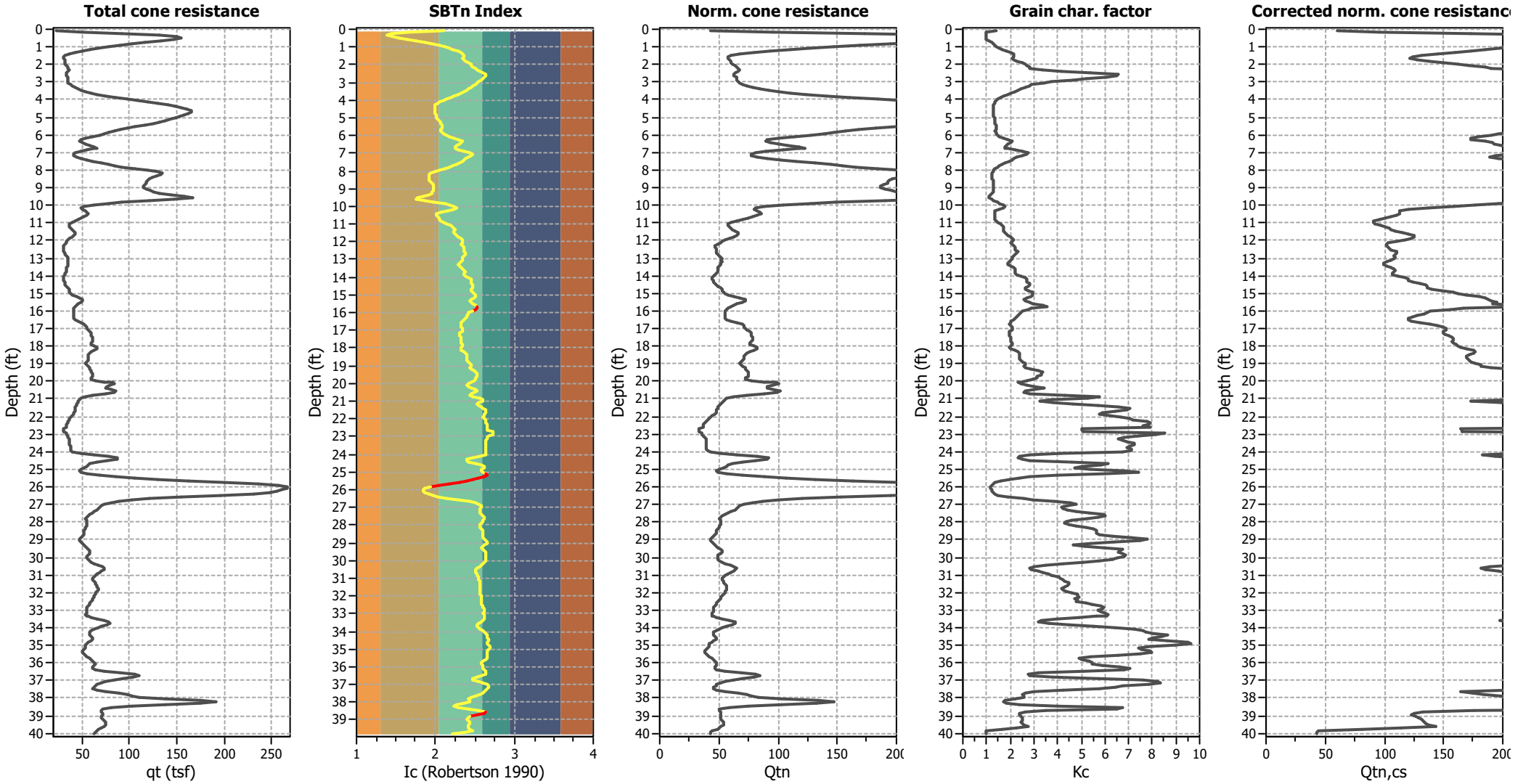
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 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

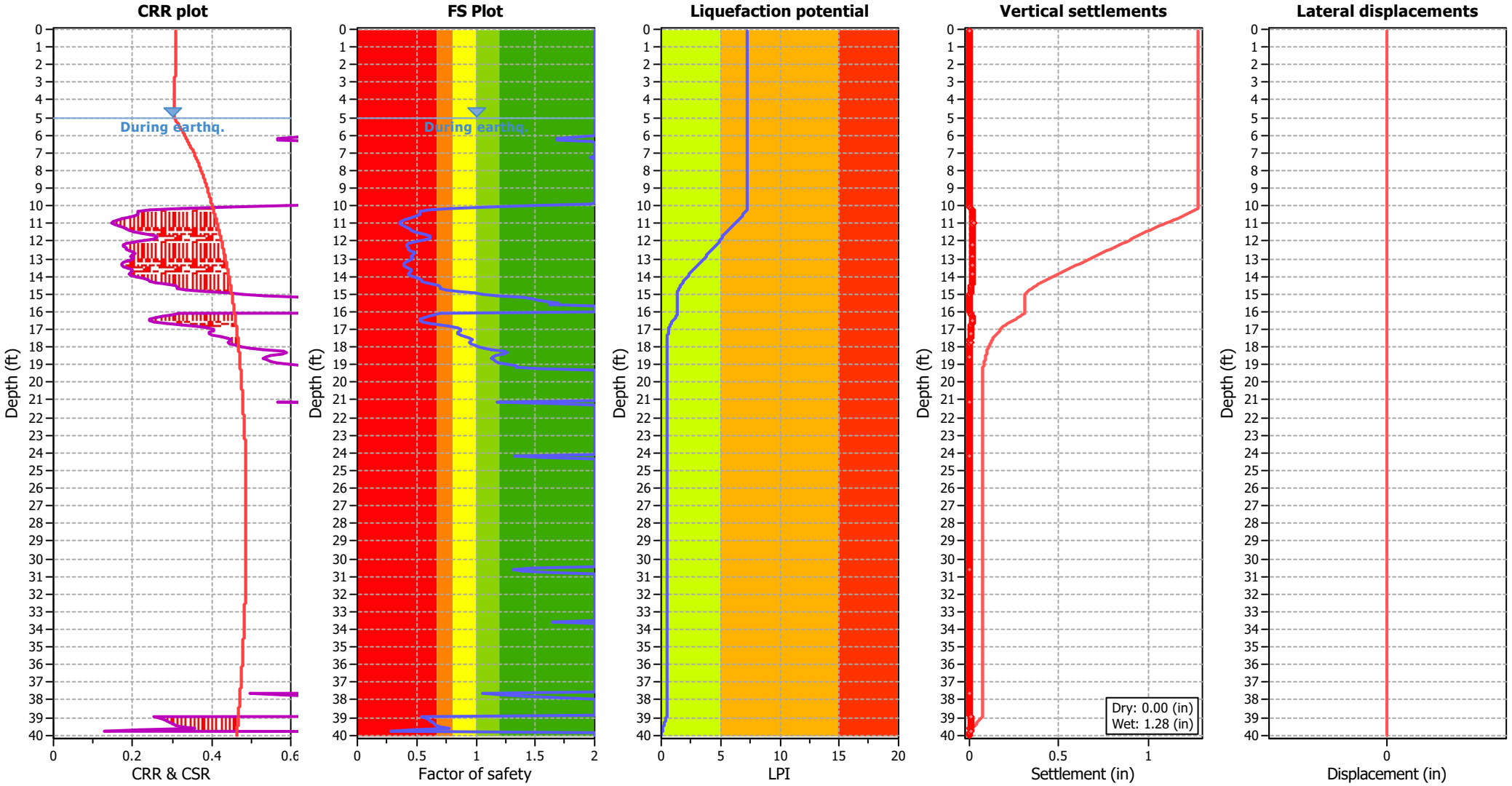
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

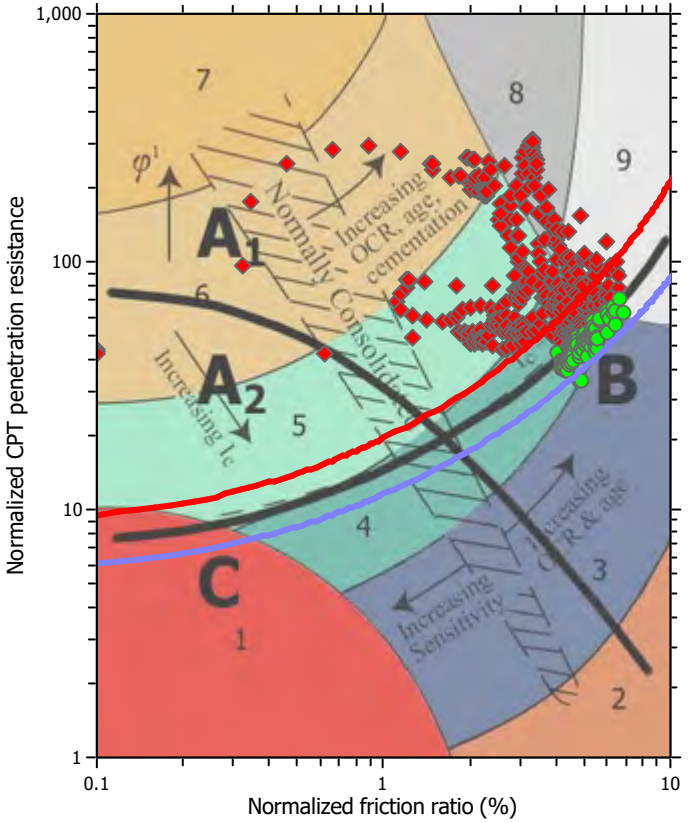
F.S. color scheme

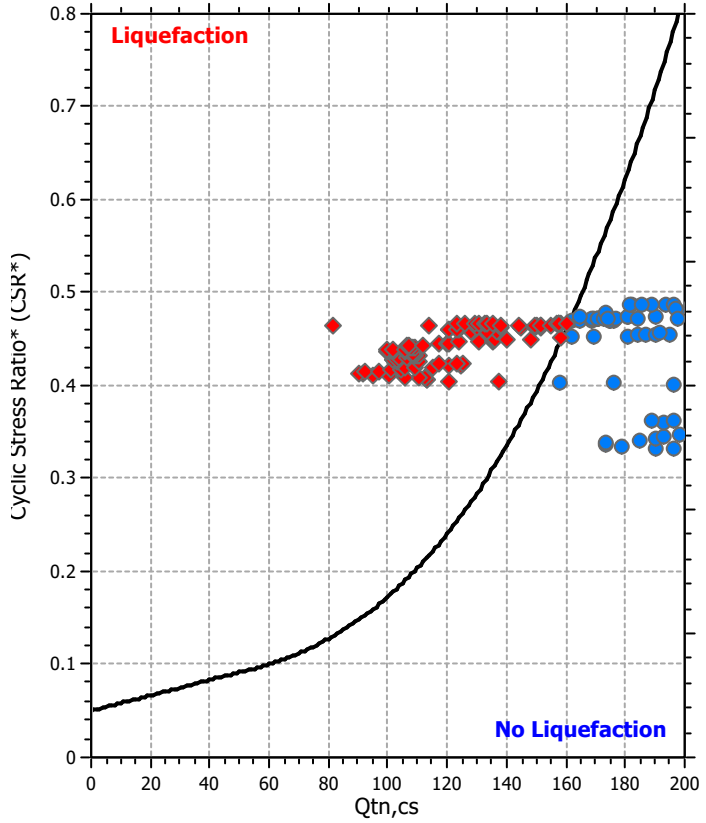
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

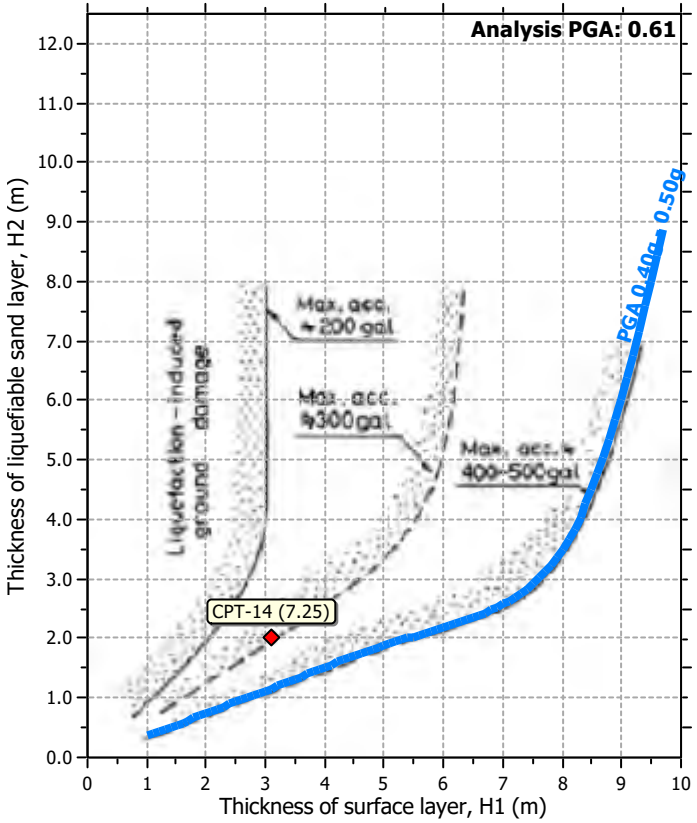
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



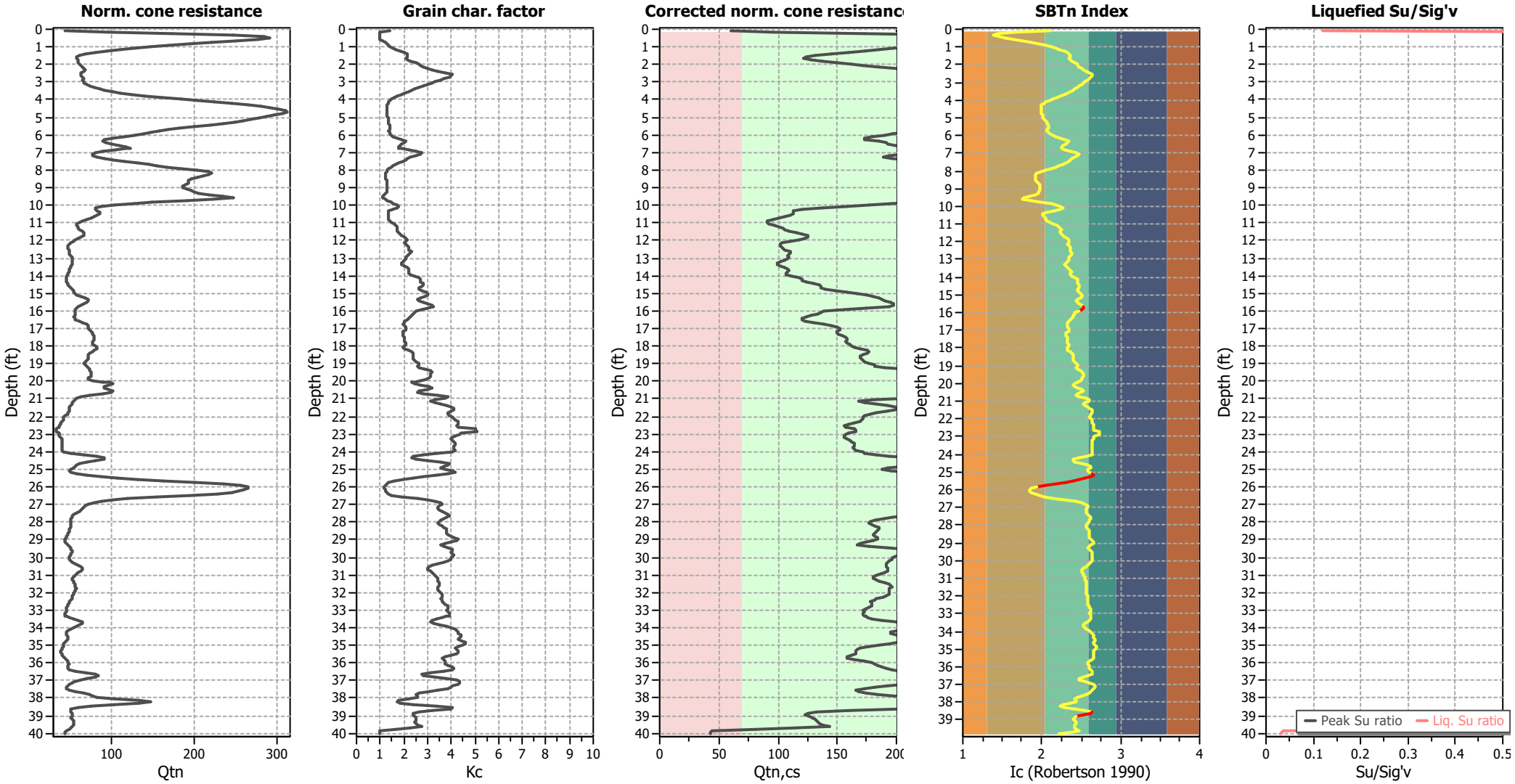




Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

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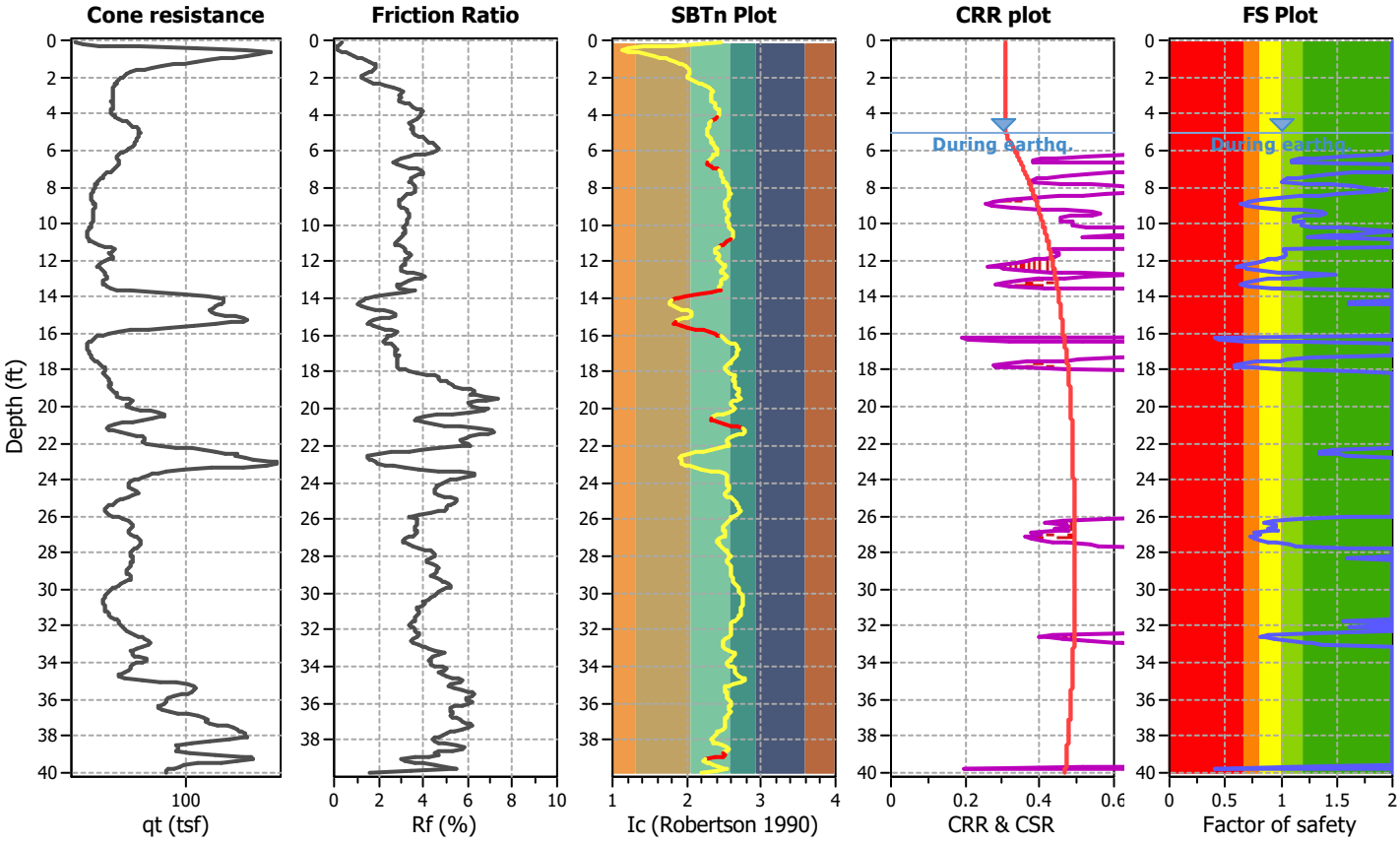
LIQUEFACTION ANALYSIS REPORT

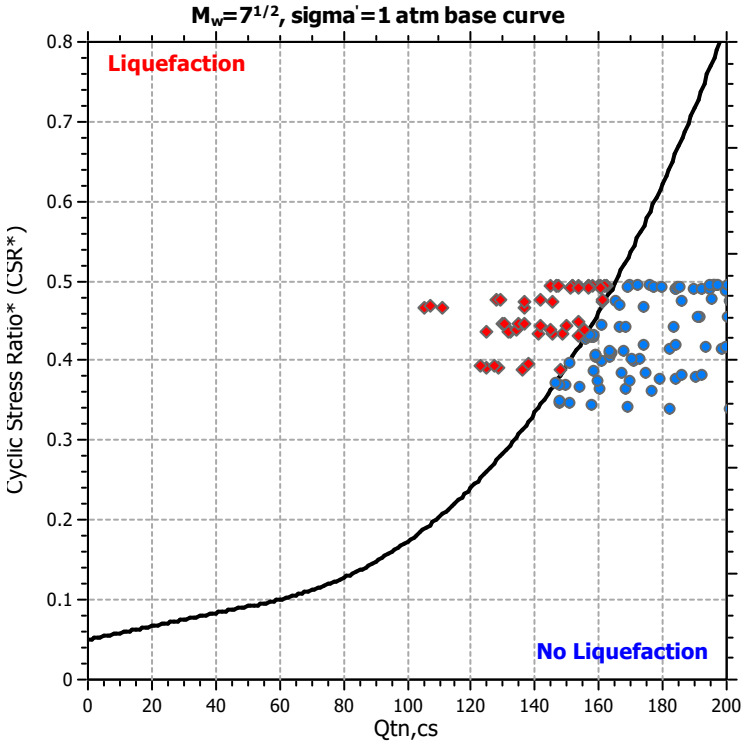
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

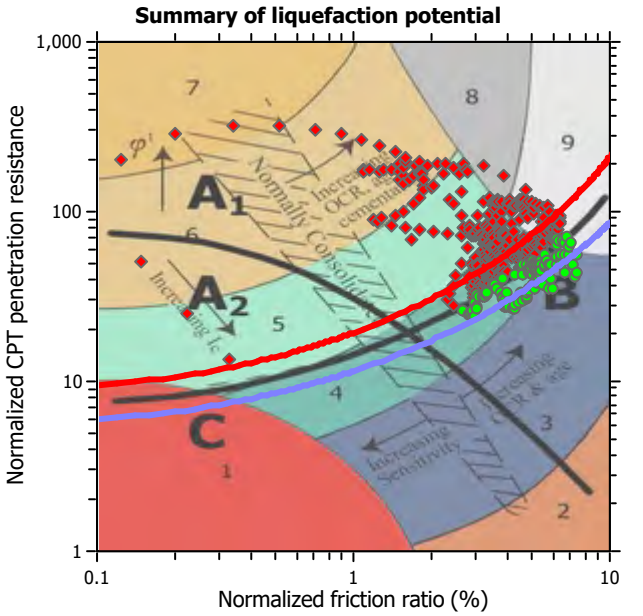
CPT file : CPT-15

Input parameters and analysis data

Analysis method:	Robertson (2009)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	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:	6.80	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

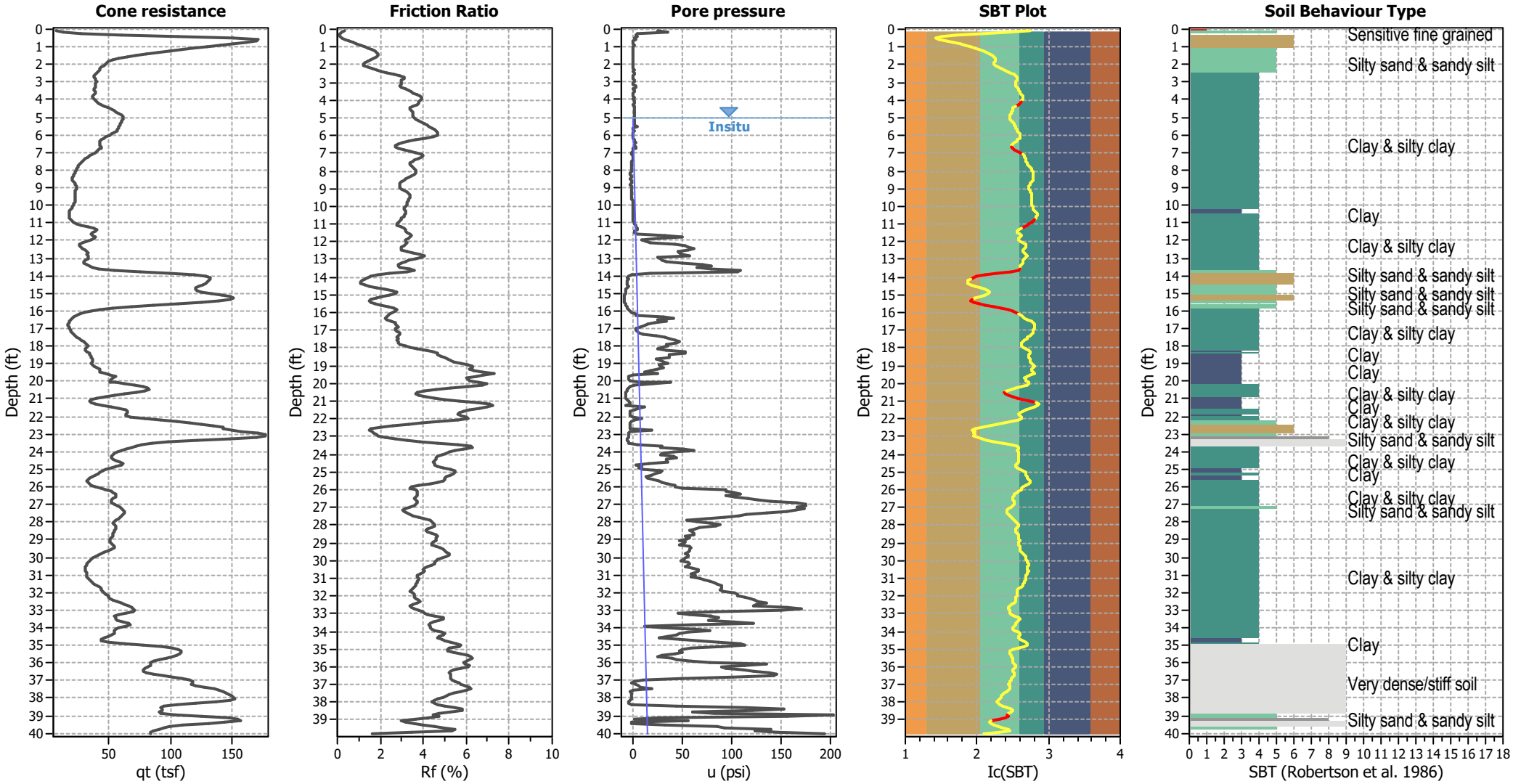






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



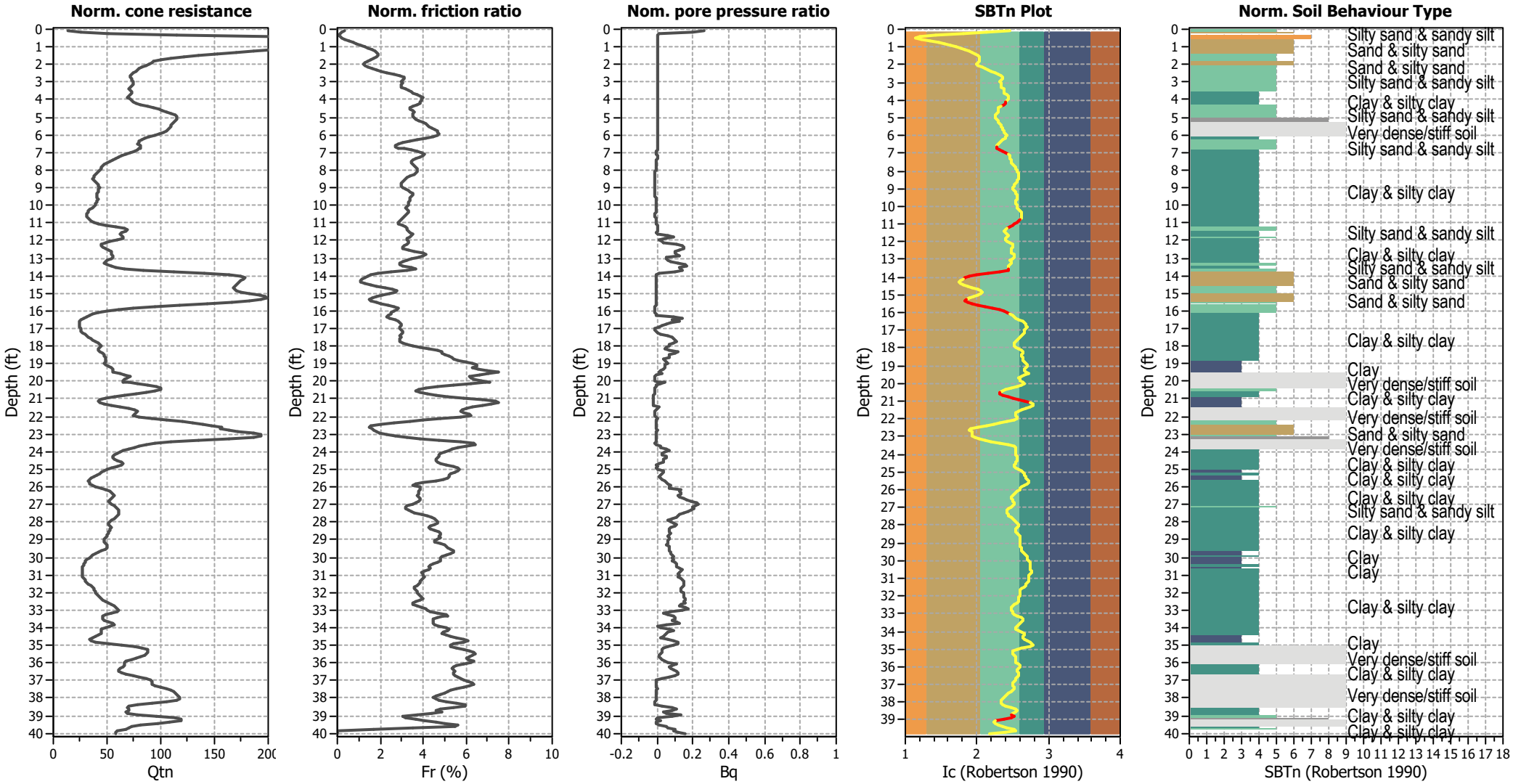
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 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)



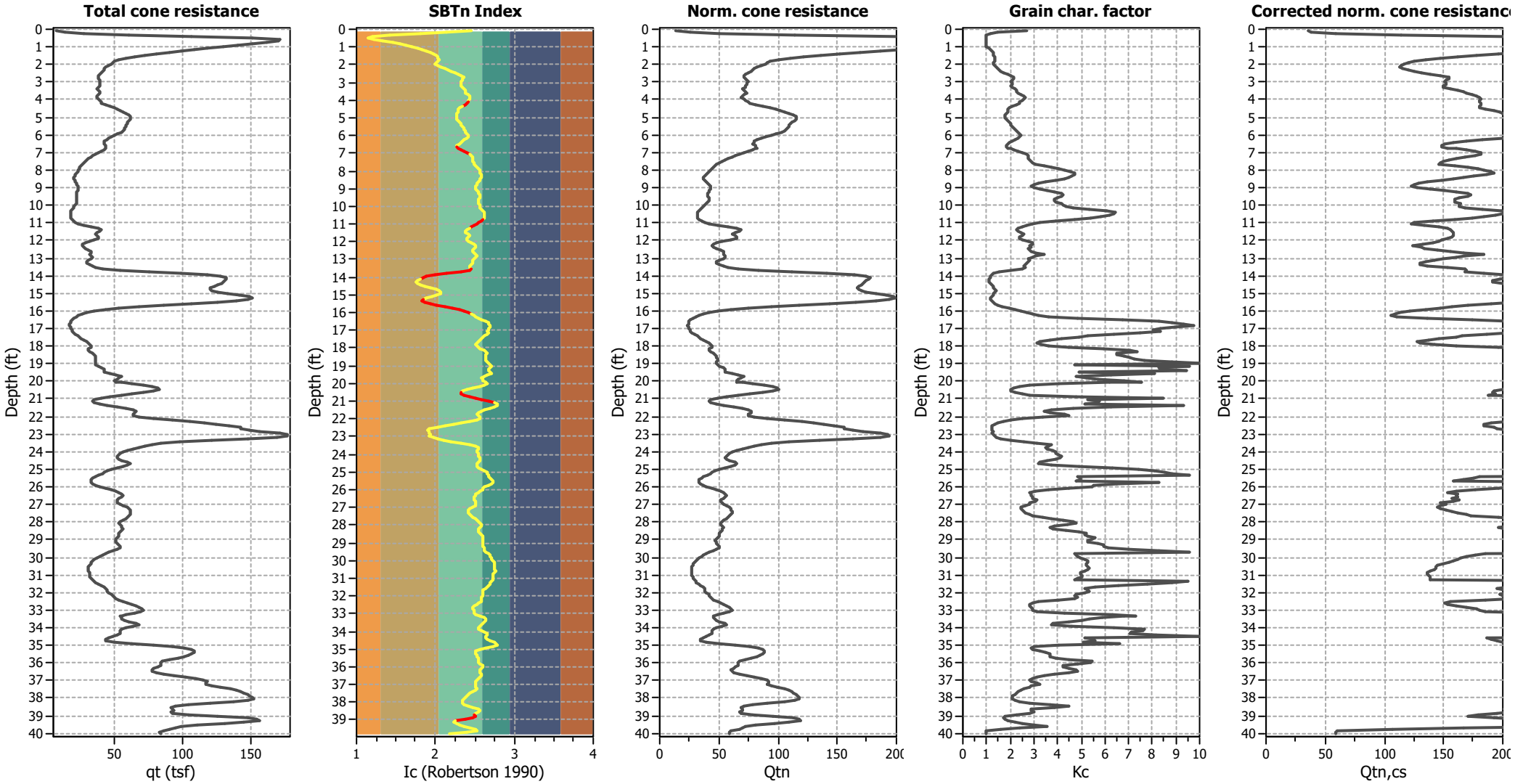
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 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

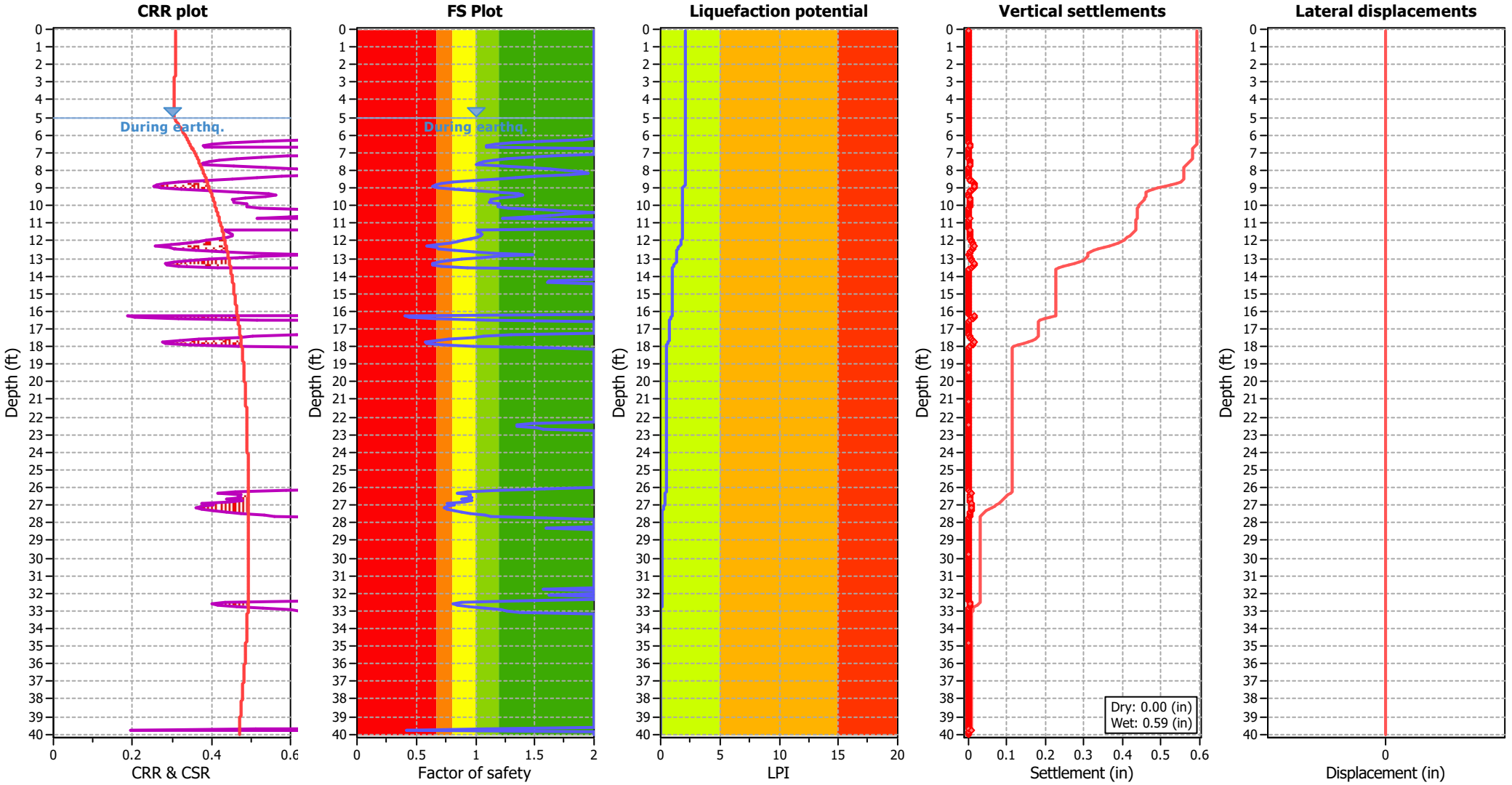
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

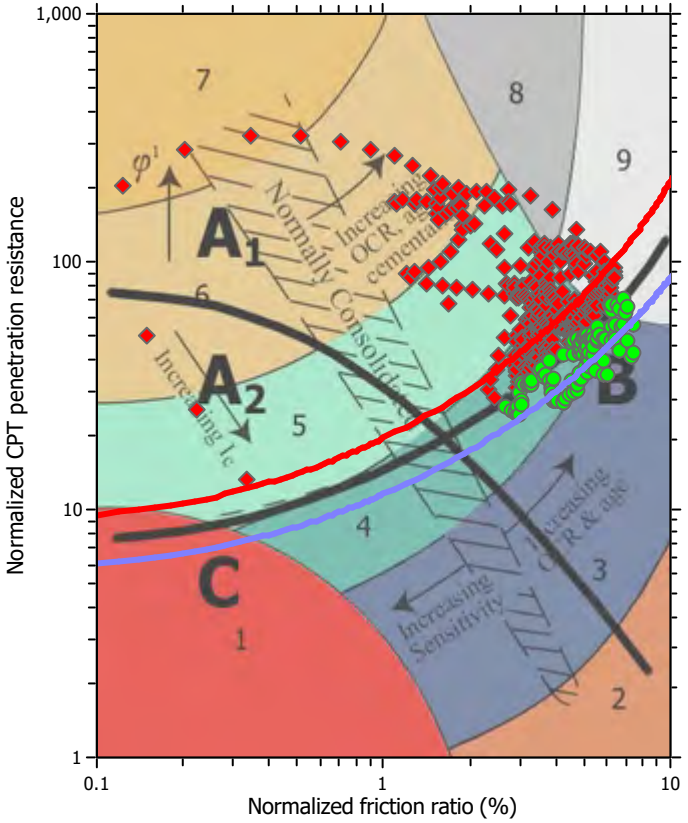
F.S. color scheme

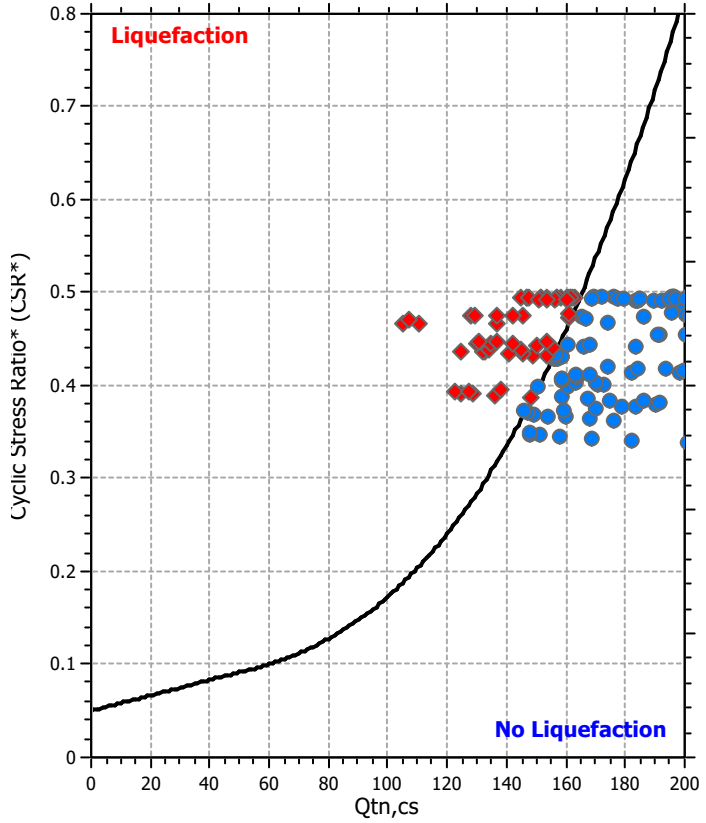
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

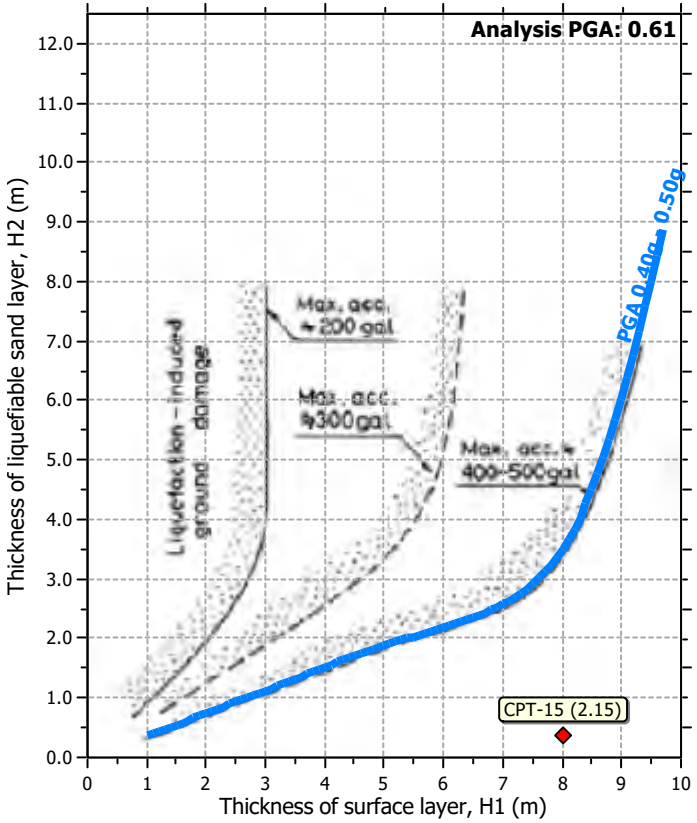
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



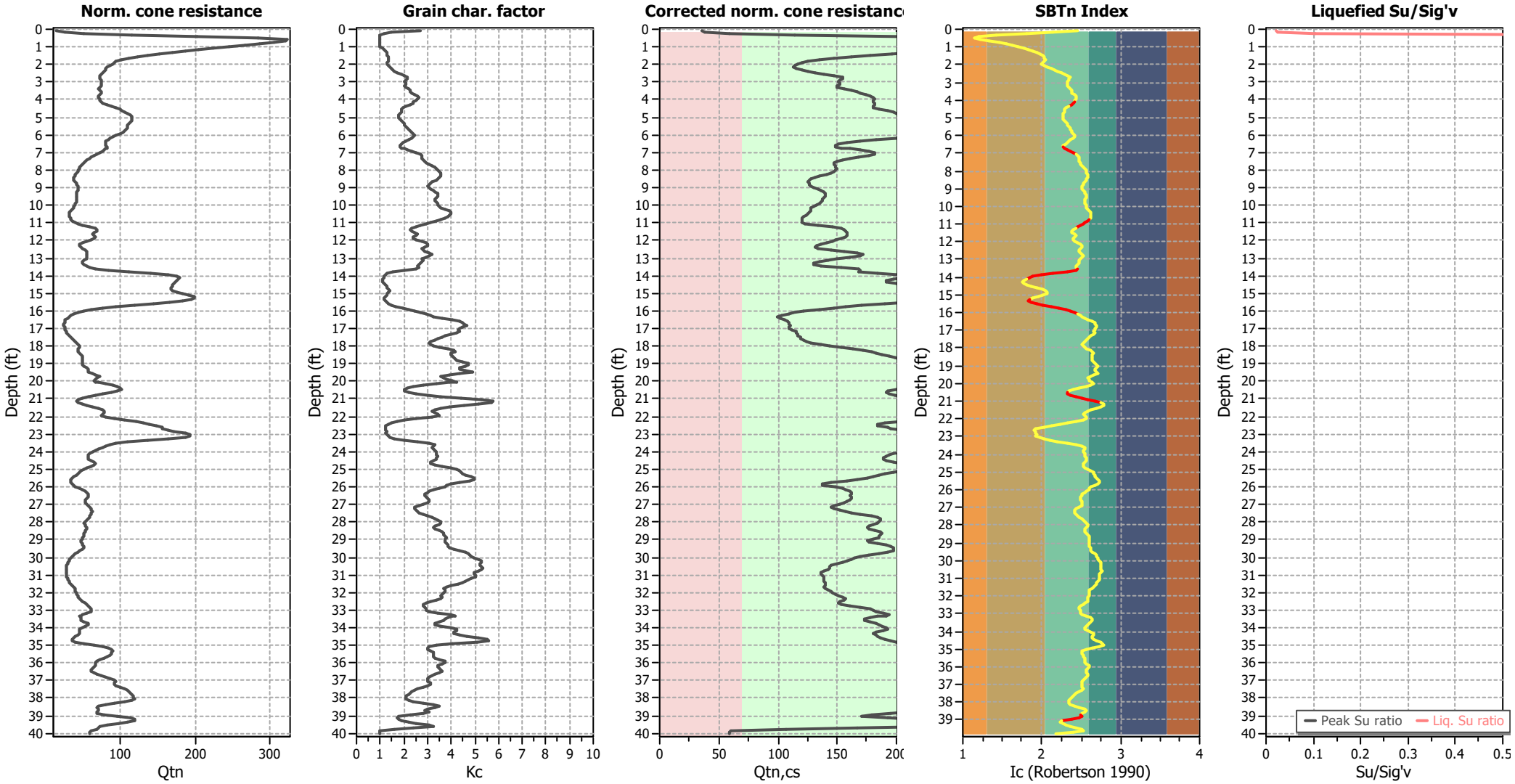




Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Check for strength loss plots (Robertson (2010))

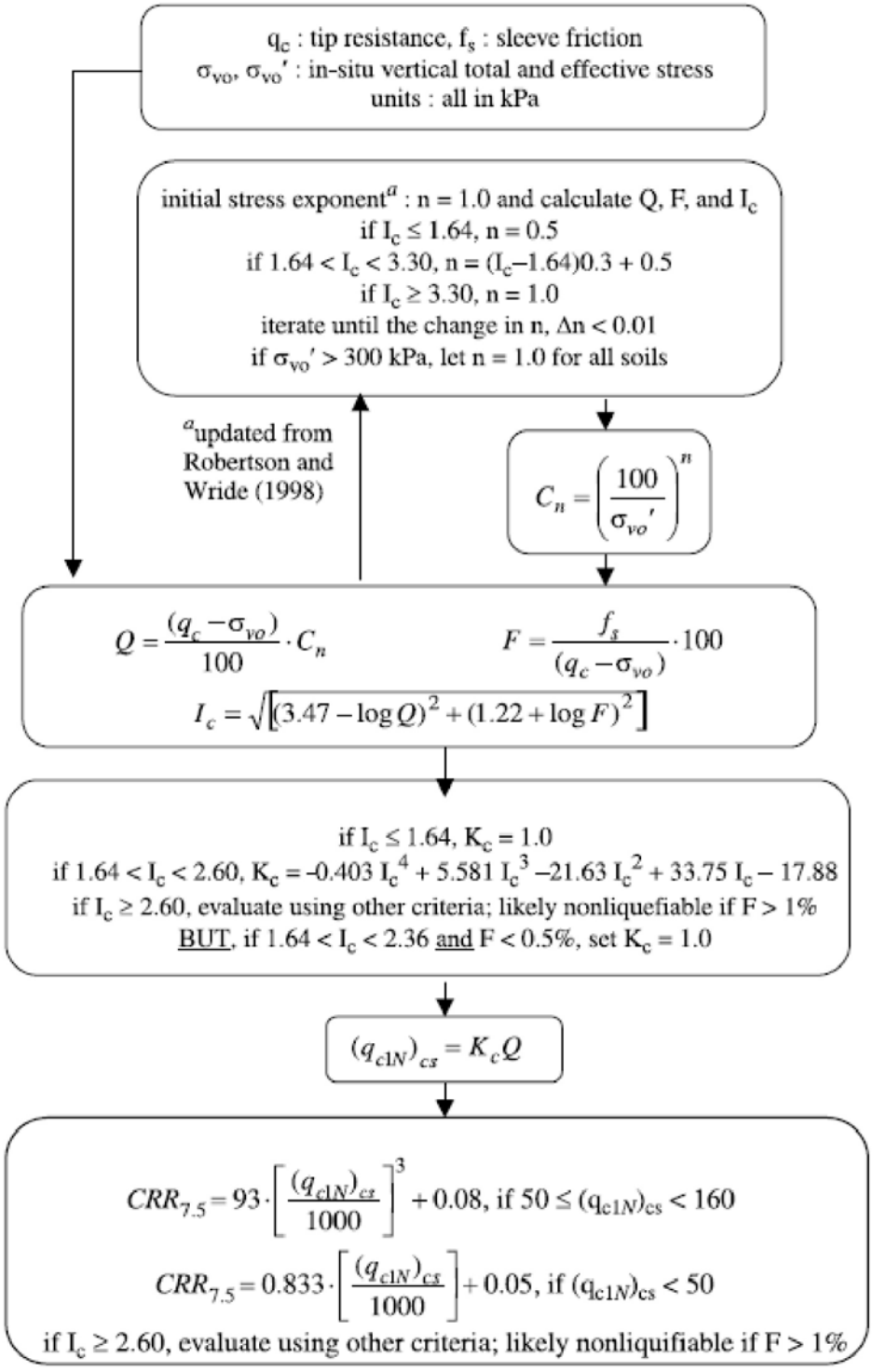


Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
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Earthquake magnitude M_w:	6.80	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

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

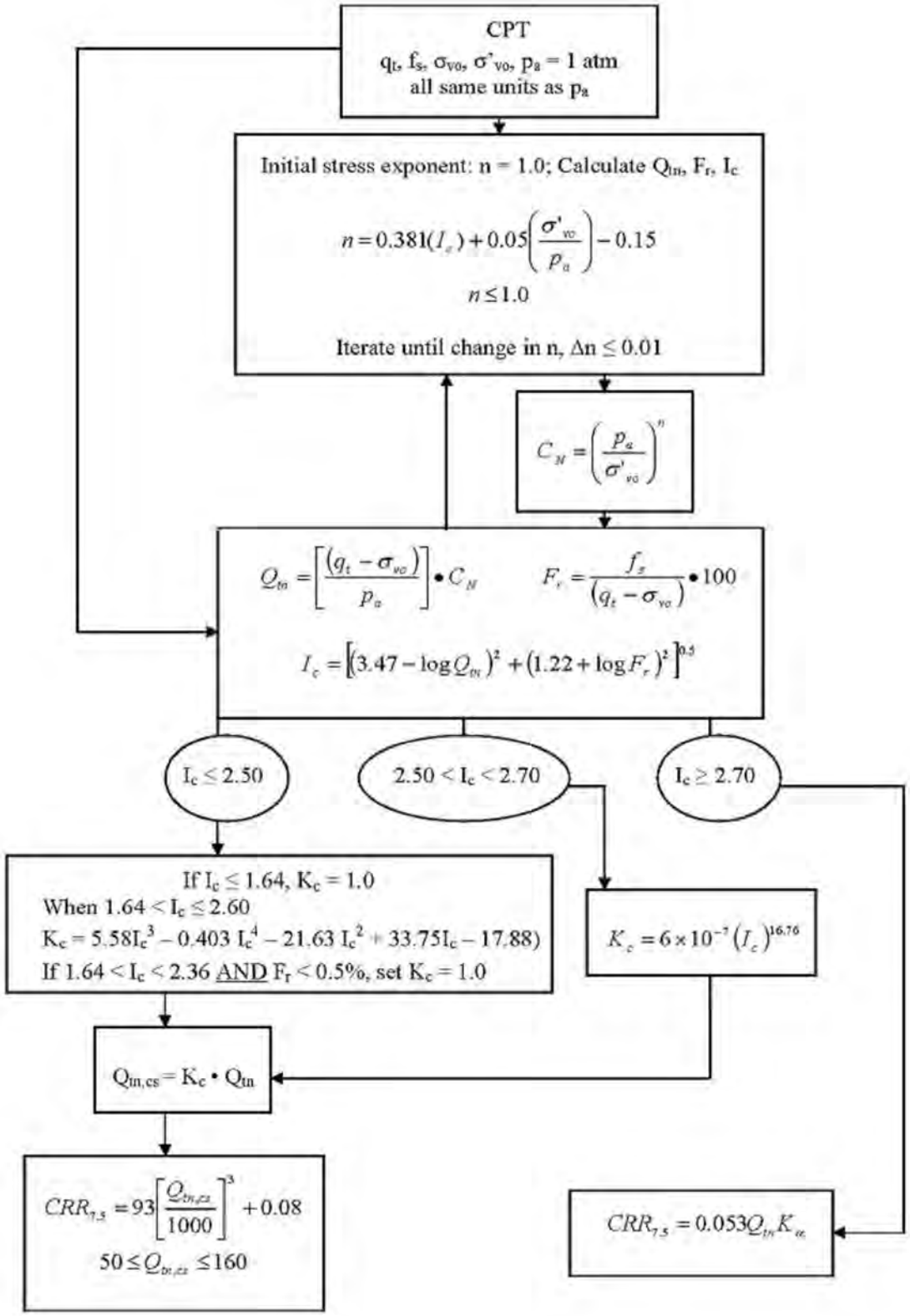
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of 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

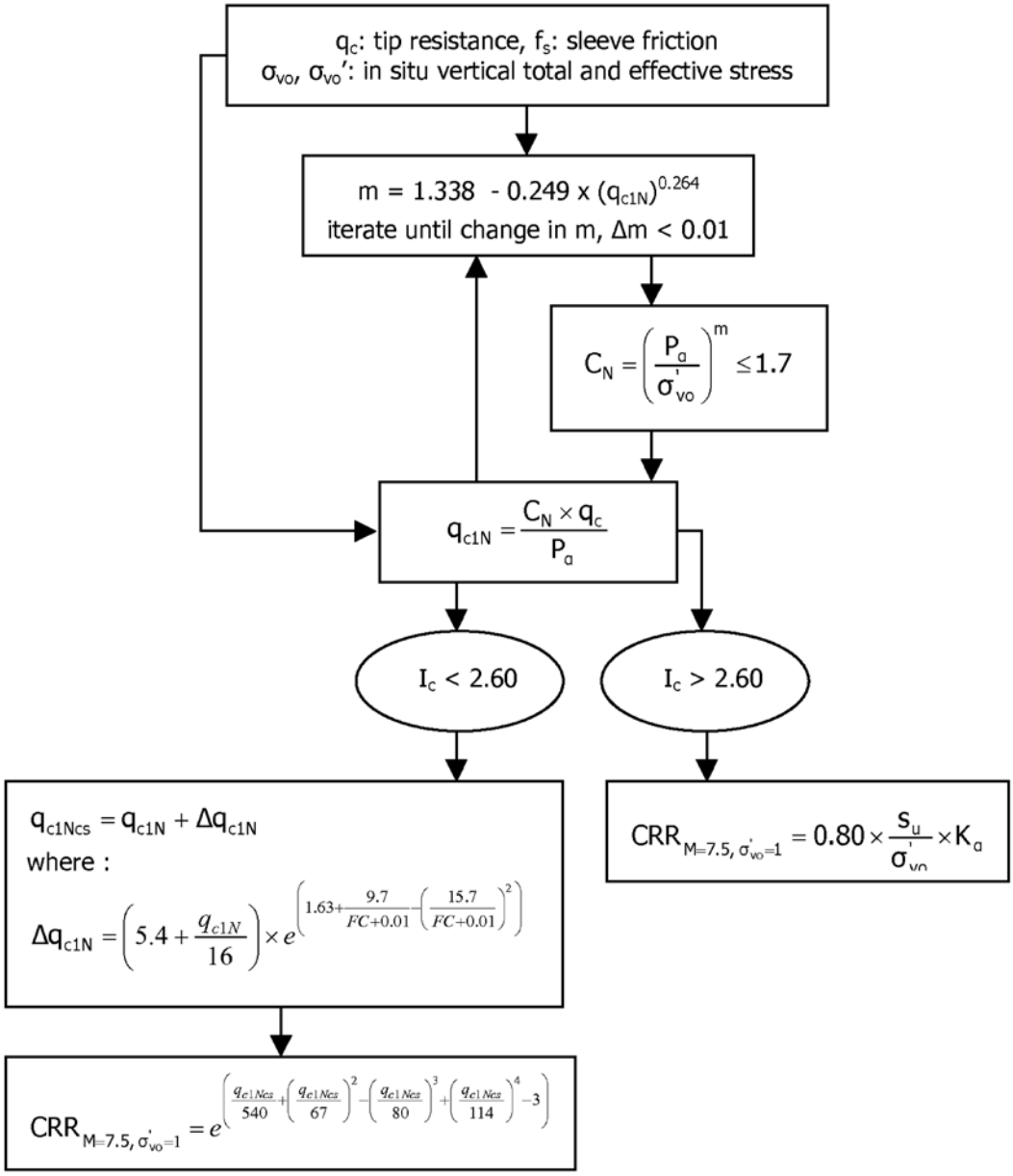
Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

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]:

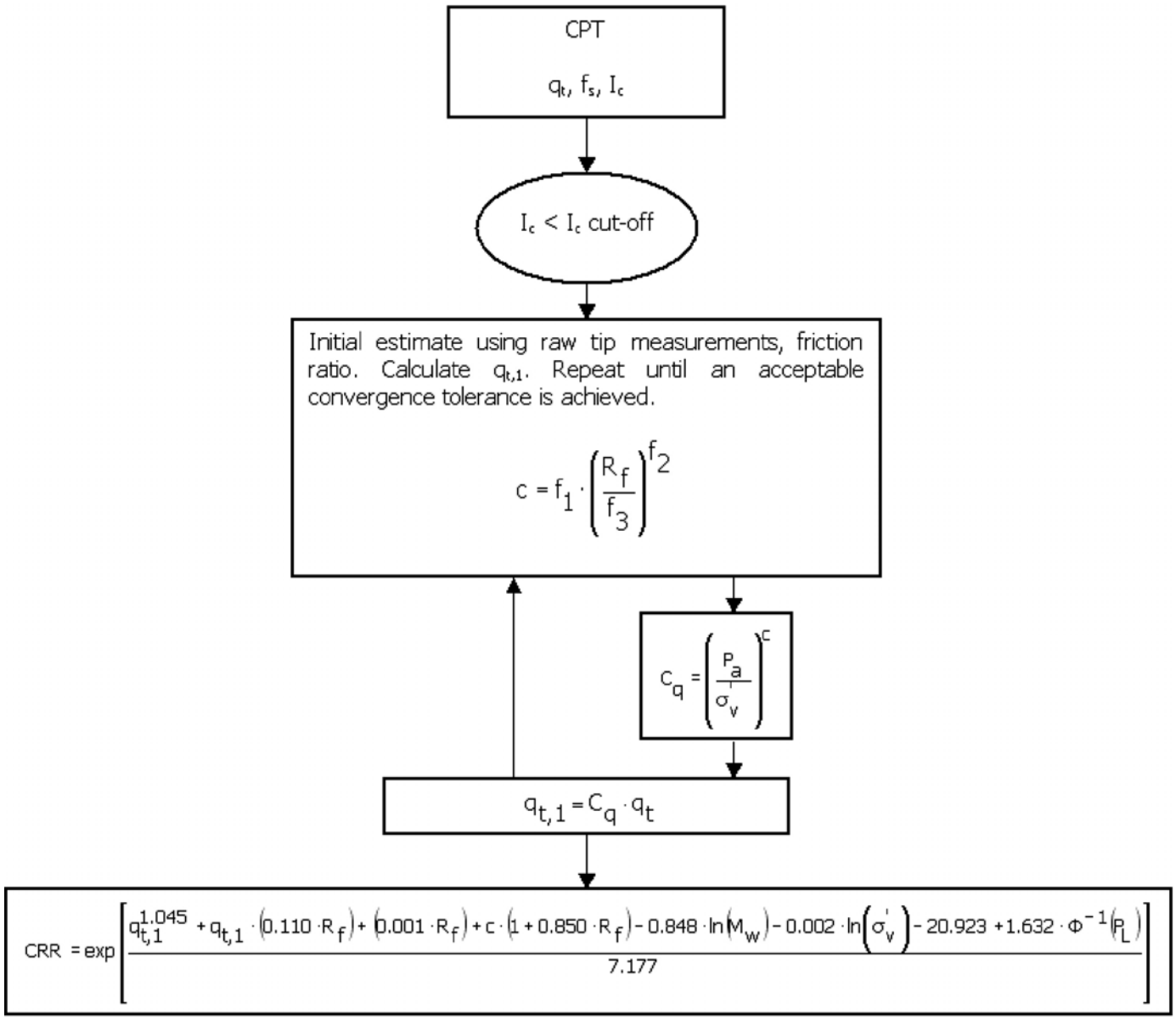


[1] P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

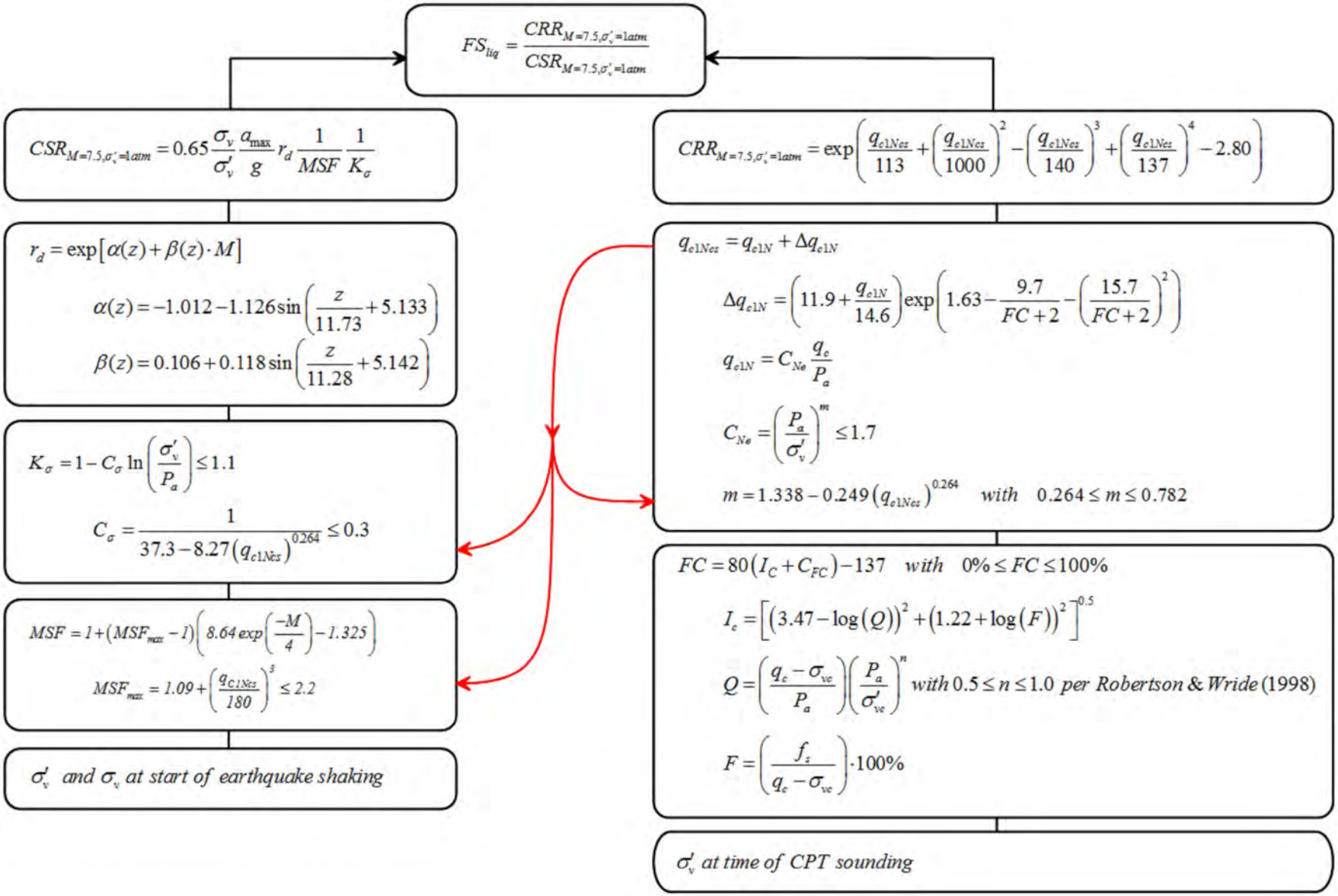
Procedure for the evaluation of soil liquefaction resistance, Idriss & Boulanger (2008)



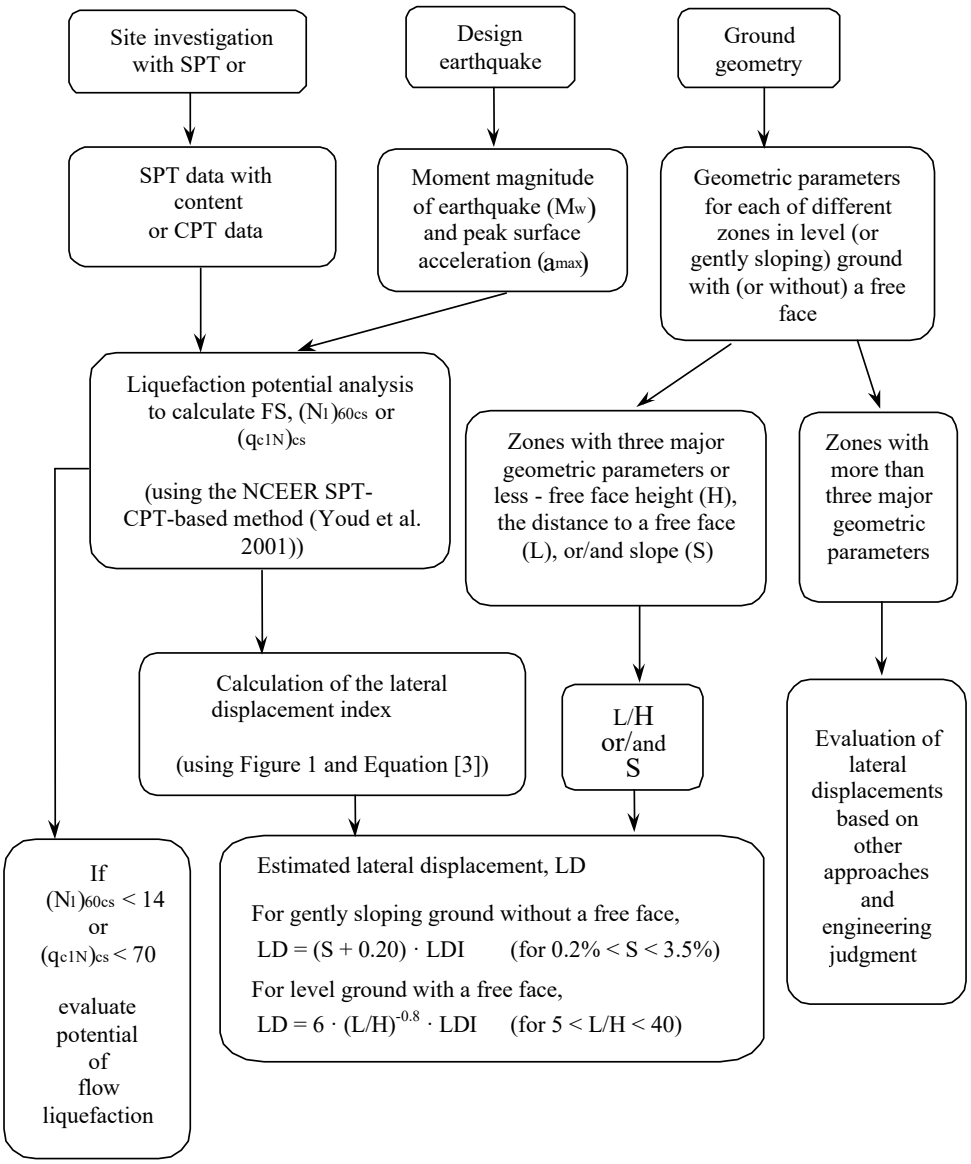
Procedure for the evaluation of soil liquefaction resistance (sandy soils), Moss et al. (2006)



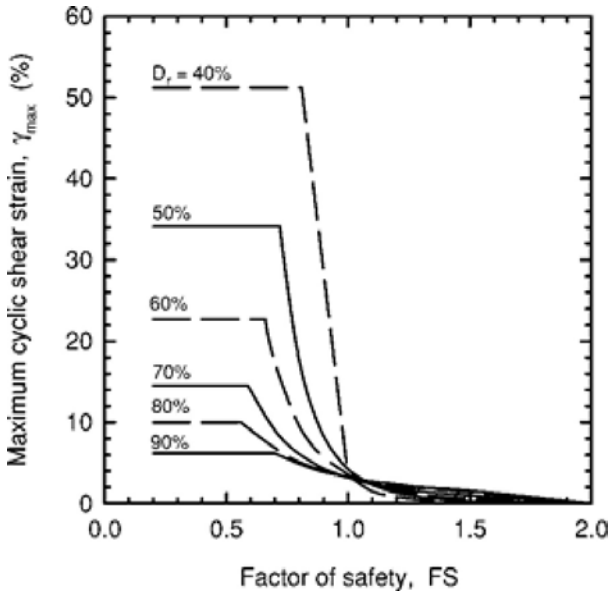
Procedure for the evaluation of soil liquefaction resistance, Boulanger & Idriss(2014)



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



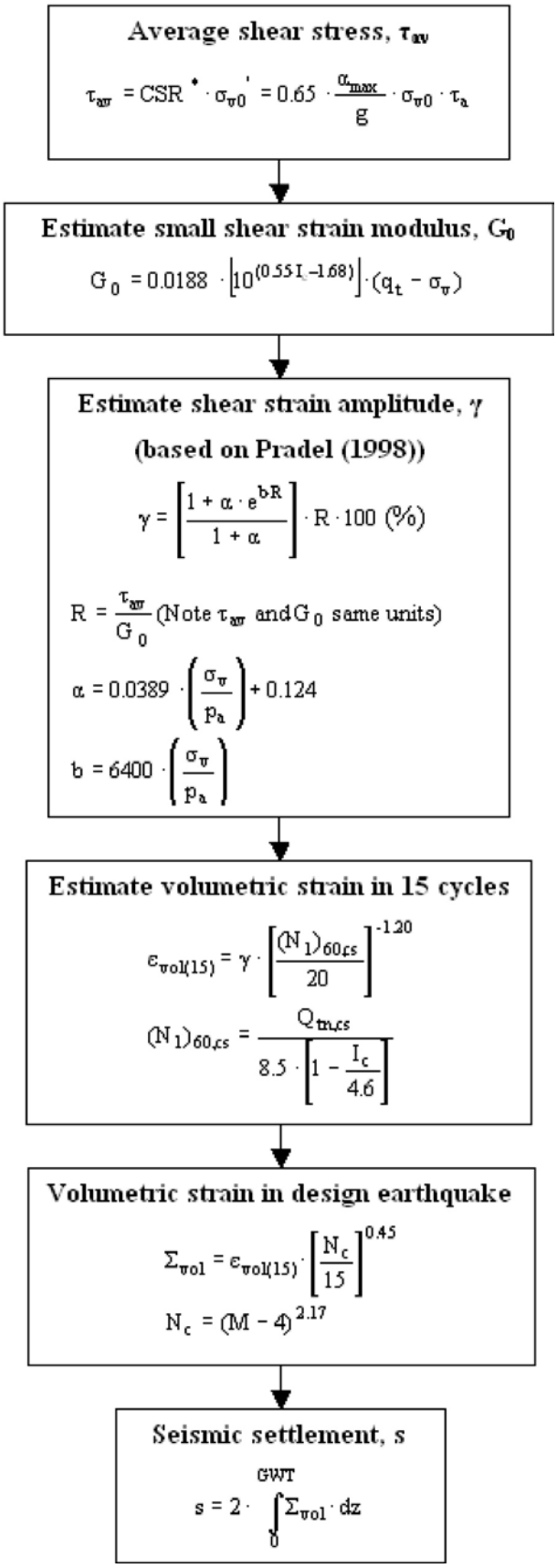
[1] **Figure 1**

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

[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.

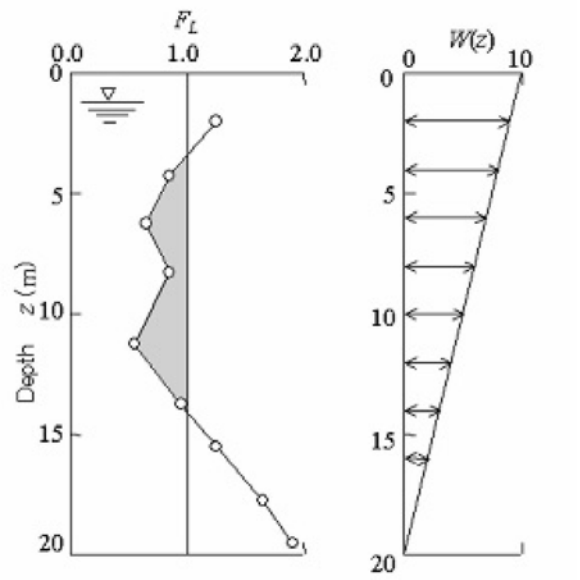
To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

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

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).

References

- Lunne, T., Robertson, P.K., and Powell, J.J.M 1997. Cone penetration testing in geotechnical practice, E & FN Spon Routledge, 352 p, ISBN 0-7514-0393-8.

- Boulanger, R.W. and Idriss, I. M., 2007. Evaluation of Cyclic Softening in Silts and Clays. ASCE Journal of Geotechnical and Geoenvironmental Engineering June, Vol. 133, No. 6 pp 641-652

- Boulanger, R.W. and Idriss, I. M., 2014. CPT AND SPT BASED LIQUEFACTION TRIGGERING PROCEDURES. DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING COLLEGE OF ENGINEERING UNIVERSITY OF CALIFORNIA AT DAVIS

- Robertson, P.K. and Cabal, K.L., 2007, Guide to Cone Penetration Testing for Geotechnical Engineering. Available at no cost at http://www.geologismiki.gr/

- Robertson, P.K. 1990. Soil classification using the cone penetration test. Canadian Geotechnical Journal, 27 (1), 151-8.

- Robertson, P.K. and Wride, C.E., 1998. Cyclic Liquefaction and its Evaluation based on the CPT Canadian Geotechnical Journal, 1998, Vol. 35, August.

- Youd, T.L., Idriss, I.M., Andrus, R.D., Arango, I., Castro, G., Christian, J.T., Dobry, R., Finn, W.D.L., Harder, L.F., Hynes, M.E., Ishihara, K., Koester, J., Liao, S., Marcuson III, W.F., Martin, G.R., Mitchell, J.K., Moriwaki, Y., Power, M.S., Robertson, P.K., Seed, R., and Stokoe, K.H., Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshop on Evaluation of Liquefaction Resistance of Soils, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 127, October, pp 817-833

- Zhang, G., Robertson. P.K., Brachman, R., 2002, Estimating Liquefaction Induced Ground Settlements from the CPT, Canadian Geotechnical Journal, 39: pp 1168-1180

- Zhang, G., Robertson. P.K., Brachman, R., 2004, Estimating Liquefaction Induced Lateral Displacements using the SPT and CPT, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 130, No. 8, 861-871

- Pradel, D., 1998, Procedure to Evaluate Earthquake-Induced Settlements in Dry Sandy Soils, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 124, No. 4, 364-368

- Iwasaki, T., 1986, Soil liquefaction studies in Japan: state-of-the-art, Soil Dynamics and Earthquake Engineering, Vol. 5, No. 1, 2-70

- Papathanassiou G., 2008, LPI-based approach for calibrating the severity of liquefaction-induced failures and for assessing the probability of liquefaction surface evidence, Eng. Geol. 96:94–104

- P.K. Robertson, 2009, Interpretation of Cone Penetration Tests - a unified approach., Canadian Geotechnical Journal, Vol. 46, No. 11, pp 1337-1355

- 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

- 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

- R. E. S. Moss, R. B. Seed, R. E. Kayen, J. P. Stewart, A. Der Kiureghian, K. O. Cetin, CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, Journal of Geotechnical and Geoenvironmental Engineering, Vol. 132, No. 8, August 1, 2006

- I. M. Idriss and R. W. Boulanger, 2008. Soil liquefaction during earthquakes, Earthquake Engineering Research Institute MNO-12

- Jonathan D. Bray & Jorge Macedo, Department of Civil & Environmental Engineering, Univ. of California, Berkeley, CA, USA, Simplified procedure for estimating liquefaction-induced building settlement, *Proceedings of the 19th International Conference on Soil Mechanics and Geotechnical Engineering, Seoul 201*

APPENDIX 2-H: SITE SPECIFIC SEISMIC STUDY

CONFIDENTIAL

Site-Specific Seismic Study & Seismic Hazard Analysis

Corby BESS Project
Solano County, CA



PREPARED FOR

NEXTera ENERGY RESOURCES

Prepared By:

RRC

810 Hesters Crossing Road, Suite 120
Round Rock, TX 78681
512.992.2087 | www.RRCcompanies.com

RRC Project No. GE23006031
May 29, 2026

experience matters

May 29, 2026

NextEra Energy Resources, LLC
700 Universe Boulevard
Juno Beach, FL 334081

Attn: Mr. Michael Benson

Re: Site-Specific Seismic Study & Seismic Hazard Analysis
Corby BESS Project
Solano County, California
RRC Project No. GE23006031

RRC Power & Energy, LLC (RRC) has completed the authorized Site-Specific seismic hazard analysis for the proposed Corby BESS Project. The purpose of this study is to update site specific seismic parameters to as per applicable codes (ASCE 7-22) and evaluate seismic hazards and provide design recommendations for the project. This report should be used along with the Preliminary Geotechnical Report for design purposes.

Should you have any questions concerning this Report, please do not hesitate to contact us. Your business is always appreciated.

Sincerely,

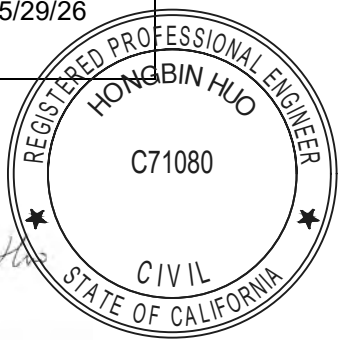
RRC Power & Energy, LLC



Manoj Keerthipati, PE.
Geotechnical Engineer

REVISION HISTORY

Revision	Description	Prepared by	Reviewed by	Issued Date
0	Draft Site-Specific Seismic Study & Seismic Hazard Analysis	Manoj Keerthipati		5/29/2026
1	Draft Site-Specific Seismic Study & Seismic Hazard Analysis	Manoj Keerthipati		4/30/26
2	Final Site-Specific Seismic Study & Seismic Hazard Analysis	Manoj Keerthipati		5/29/26



Reviewed by

Hongbin Huo, Ph.D., P.E.
Vice President

05/29/2026

Prepared by

Manoj Keerthipati, PE.
Geotechnical Engineer

Reviewed by

Yuqing “Jeffrey” Liu, PE.
Geotechnical Engineering Manager

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APPENDICES

APPENDIX A

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Boring Log Key
Borings

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Laboratory Data

APPENDIX C

1-D MASW Survey Results
ASCE Hazard Report
Deaggregation data

APPENDIX D

Liquefaction Analysis

SITE-SPECIFIC SEISMIC STUDY & SEISMIC HAZARD ANALYSIS

1.0 INTRODUCTION

The purpose of this site-specific seismic study and seismic hazard analysis is to develop site-specific ground motion criteria in terms of peak ground accelerations and response spectral accelerations for the subject site by using a seismic source model (proximity to active faults, major historical earthquakes, and regional seismicity) and subsurface soil conditions at the site. The response spectrum is a graphical representation relating to the maximum response of a single degree of freedom, elastic damped oscillator with different fundamental periods to dynamic loads. Site-specific spectrum for any given return period represents earthquake ground motions consistent with the seismic source model and the local site response. Specifically, our scope of services includes the following:

- Literature review of available geologic and seismic setting of the area and developing a site-specific seismic source model.
- Estimating the average shear wave velocity in the upper 100 feet (Vs30) of the site based on the available results of the field explorations.
- Characterization of site-specific dynamic properties of soil
- Characterize seismic sources and the ground motion models
- Model the fault data inputs using the latest available geologic, seismologic, and paleo seismic data and the currently accepted models of fault behavior.
- Estimating site-specific seismic design criteria in accordance with American Society of Civil Engineers (ASCE 7-22).
- Report preparation of the results of the site-specific seismic hazard analysis
- Liquefaction and Lateral spread evaluation.
- Post liquefaction geotechnical design parameters.

2.0 GENERAL

For this study, we used data obtained from preliminary geotechnical study performed by RRC in December 2024 and geophysical data collected in April 2026. This report should be used along with the Preliminary Geotechnical Report for design purposes. The approximate boundaries of the site and locations of borings performed as part of preliminary geotechnical study are shown in Figure 1 to 3 within Appendix A.

Background seismicity is used to model earthquakes in areas without mapped surface-rupturing faults and for areas with faults, but where many earthquakes appear not to be associated with mapped faults. Background seismicity models earthquake activity in the shallow crust between the mapped faults and the deep seismogenic crust.

The rates and magnitudes of earthquakes modelled by a distributed seismicity source are calculated based on historical earthquakes in the declustered earthquake catalog. The locations of earthquakes modelled by a distributed seismicity source can follow either a uniform distribution, uniform-area source, or a non-uniform distribution in a gridded-area source.

Uniform-area sources model earthquake activity rates as earthquakes randomly located within the defined source area. Uniform-area sources are based on geological provinces where the nature and rate of tectonic activities appear similar. Uniform-area sources are useful to model earthquakes with large magnitudes that occur infrequently over long timescales (i.e., 10,000 to 100,000 years).

3.0 SEISMIC STUDY

This section presents the results of the site-specific seismic analysis as per ASCE 7-22. The geographic coordinates of the point used in the calculation were 38.391617ºN, -121.907644ºW.

3.1 Seismic Sources

Seismic source characterization is concerned with three fundamental elements: (1) the identification, location and geometry of significant sources of earthquakes; (2) the maximum size of the earthquakes associated with these sources; and (3) the rate at which the earthquakes occur. The seismic source model includes crustal faults capable of generating large surface-faulting earthquakes, and an areal source Zone, which accounts for background crustal seismicity that cannot be attributed to identified faults explicitly included in the seismic source model. The summary of nearby faults are presented in Table 3.1 below.

Table 3.1. Summary of Nearby Faults

Fault	Type	Max Magnitude	Distance to Site (km)
Great Valley – Gordon Valley	Reverse	6.8	13
Great Valley – Midland	Reverse	6.7	7
Hunting Creek -Berryessa	Strike Slip	7.1	28
Great Valley – Kirby Hills	Reverse	6.4	19
Great Valley – Trout Creek	Reverse	7.0	19

Our review indicates that there are no known active faults crossing the project site (Tan, 1999; Jennings and Bryant, 2010) and the site is not within an Alquist-Priolo Earthquake Fault Zone (CGS, 2018). However, the site is situated in a region of active faulting. The Gordon Valley segment of the Great Valley Fault Zone is the closest, known, active fault to the site and should have the greatest effect on the site, should the design earthquake occur. Jennings, C.W. (1994), indicate a maximum magnitude of 6.8, a 1,400- to 2,500-year recurrence interval, and a slip rate between 1.0 and 5 mm/yr for this fault.

The deaggregation data obtained from unified hazard tool for the project site are presented in Appendix C.

3.2 Site Characterization

Five Seismic Cone Penetration Tests were conducted at the project site to estimate subsurface shear wave velocities. The average shear wave velocity in the upper 40 feet (VS15) was determined to range from approximately 628 feet/second (192 m/s) to 1,673 feet/second (510 m/s).

The Multi-Channel-Analysis-of-Surface-Waves (MASW) method is a non-intrusive/non-destructive technique which uses Rayleigh waves to evaluate the stiffness of subsurface strata. Rayleigh waves of different wavelengths (or frequencies) travel at different velocities as they propagate through different soils. The waves also bounce along the surface of different layers, called dispersion.

For a 1-D MASW survey, twenty-four geophones with a 5-foot spacing are laid out in a linear array. The total length of the array is approximately 115 feet. A 16-pound sledgehammer striking a metal plate is employed as the seismic source located 10, 25 and 40 feet away from the first geophone. RRC uses SurfSeis 4.04 software to collect and process the seismic data.

The weighted average for measured shear wave velocities below assumed foundation bearing elevation at the project site for selected turbine locations were determined to be in the range of 1,039 to 1,275 feet per second (ft/sec).

The weighted average is calculated based on the following formula based on the 2024 International Building Code (IBC):

$$\overline{V_S} = \frac{\sum_i^n d_i}{\sum_i^n \frac{d_i}{V_{si}}}$$

Where:

d_i = Thickness of any layer between 0 and 100 feet; and

V_{si}= Shear wave velocity of a layer.

Note that the measured shear wave velocity using MASW may not be available up to 100 feet. In the case where measured shear wave velocity is available for less than 100 feet, the weighted shear wave velocity is calculated based on available depths.

The results of the MASW surveys completed as part of this study at the project site are presented in Appendix C.

To estimate VS30 (average shear wave velocity in the top 30 meters), a correlation developed by Boore (2004) and adopted in the Caltrans Geotechnical Design Manual (January 2021 edition) was applied to the VS15 data. Based on this methodology, an approximate VS30 value of 316 m/s was derived. This value has been used in the Probabilistic Seismic Hazard Analysis (PSHA) presented in this report.

3.3 Response Spectra for various Return periods

For this site we evaluated MCE_R response spectra for various return periods. Table 3.3.1 below shows the maximum-direction (MCE_R) Uniform Hazard Spectra for Annual Probability of Exceedance (AEPs) of 1/50, 1/100, 1/200, 1/225, 1/475, 1/975, 1/1033 and 1/2,475 years and spectral periods ranging from 0.01 to 10.0 seconds.

Table 3.3.1. MCE_R Uniform Hazard Response Spectral Ordinates

Spectral Period (s)	MCE_R Spectral Response Acceleration (g)							
	40% in 25 (50 Years) AEP	40% in 50 (100 Years) AEP	40% in 100 (200 Years) AEP	20% in 50 (225 Years) AEP	10% in 50 (475 Years) AEP	5% in 50 (975 Years) AEP	7% in 75 (1033 Years) AEP	2% in 50 (2475 Years) AEP
0.01 (PGA)	0.11332	0.16782	0.234828	0.247409	0.338533	0.446254	0.455981	0.611173
0.02	0.113947	0.169121	0.23657	0.249663	0.34033	0.445713	0.455128	0.614124
0.03	0.119169	0.177051	0.247387	0.261273	0.356624	0.468906	0.478364	0.647001
0.05	0.140369	0.209646	0.295418	0.310524	0.426084	0.554583	0.566366	0.759136
0.075	0.178053	0.266159	0.373016	0.394158	0.537572	0.705062	0.719064	0.968079
0.1	0.21305	0.317877	0.447577	0.470418	0.645082	0.835783	0.853313	1.137334
0.15	0.258711	0.385481	0.539602	0.569507	0.775293	1.014893	1.034181	1.374773
0.2	0.276474	0.412944	0.578972	0.612432	0.835732	1.095274	1.11735	1.50293
0.25	0.276141	0.412985	0.581136	0.615137	0.844687	1.114572	1.137983	1.544284
0.3	0.267322	0.400331	0.565479	0.598509	0.826608	1.097955	1.121523	1.535249
0.4	0.237793	0.35737	0.508466	0.53744	0.748685	1.003658	1.025201	1.413432
0.5	0.212027	0.319119	0.455759	0.480868	0.672402	0.897471	0.918536	1.263
0.75	0.154089	0.232839	0.334146	0.352672	0.49539	0.662734	0.678415	0.937839
1	0.114935	0.174717	0.251539	0.266307	0.374831	0.506479	0.517698	0.721027
1.5	0.074217	0.113388	0.163747	0.173315	0.244085	0.329559	0.336696	0.465518
2	0.052429	0.080812	0.117116	0.124207	0.174864	0.235341	0.240499	0.332606
3	0.031715	0.049754	0.072683	0.077362	0.10906	0.145728	0.149068	0.204134
4	0.021533	0.034366	0.050919	0.05393	0.077161	0.103391	0.10585	0.144667
5	0.015311	0.024944	0.037624	0.040037	0.058189	0.079194	0.08118	0.112538
7.5	0.008381	0.014086	0.022002	0.023574	0.035372	0.049774	0.051045	0.073225
10	0.005134	0.008919	0.014338	0.015437	0.023948	0.034759	0.035752	0.053264

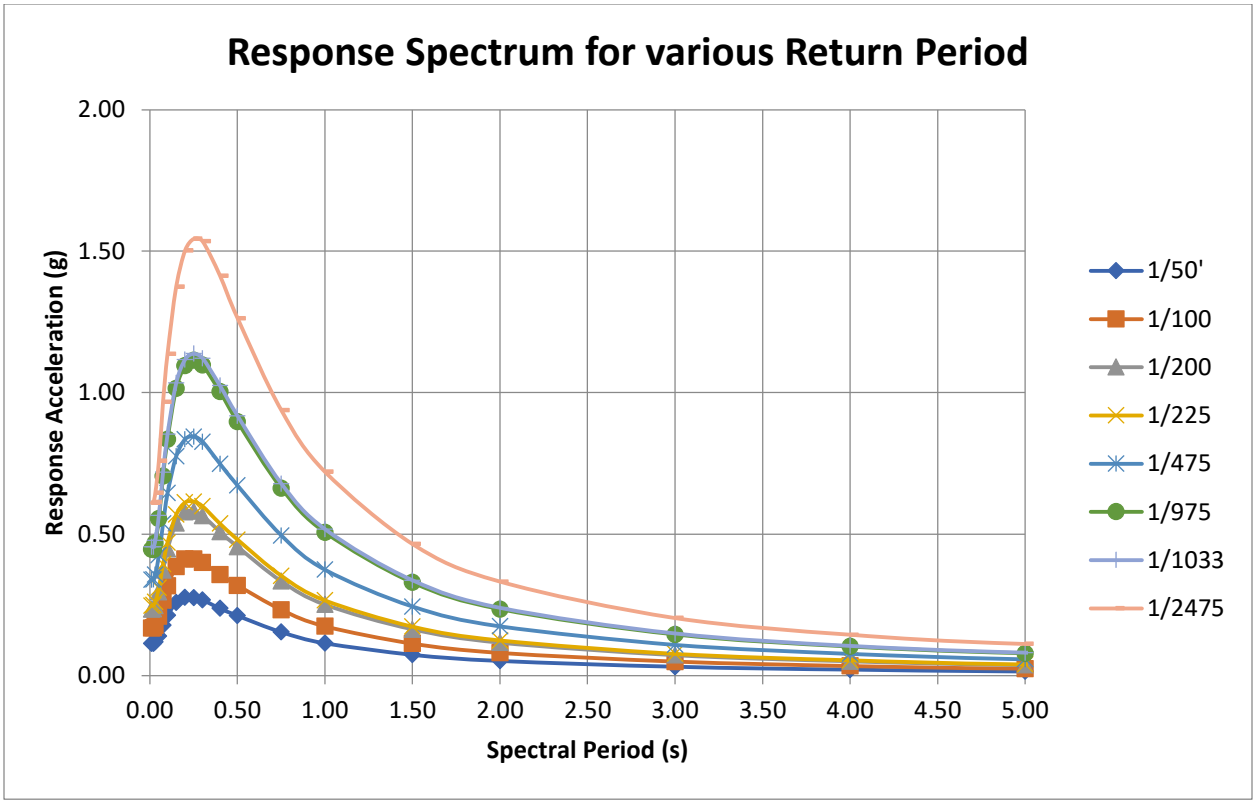


Figure 3.3.1. Response Spectra for various Return Periods

Different probabilities of exceedance may be selected, depending on the level of performance required.

For this study a probabilistic seismic hazards analysis (PSHA) procedure was used to estimate the peak and spectral ground motions corresponding to 1 percent probability of exceedance in 50 years (2475 years). The PSHA approach is based on the earthquake characteristics and its causative fault. These characteristics include such items as magnitude of the earthquake, distance from the site to the causative fault, and the length and activity of the fault. The effects of site soil conditions and mechanism of faulting are accounted for in the GMPE(s) used for the site. The theory behind seismic risk analysis has been developed over many years (Cornell, 1968, 1971; Merz and Cornell, 1973) and is based on the "total probability theorem" and on the assumption that earthquakes are events that are independent of time and space from one another.

3.4 Probabilistic Seismic Hazard Analysis

As per ASCE 7-22 Chapter 21, the probabilistic spectral response accelerations shall be taken as the spectral response accelerations in the direction of maximum horizontal response represented by a 5% damped acceleration response spectrum that is expected to achieve a 1% probability of collapse within a 50-year period. At each spectral response period for which the acceleration is computed, ordinates of the probabilistic ground motion response spectrum shall be determined from iterative integration of a site-specific hazard curve with a lognormal probability

density function representing the collapse fragility (i.e., probability of collapse as a function of spectral response acceleration). The ordinate of the probabilistic ground motion response spectrum at each period shall achieve a 1% probability of collapse within 50-year period for a collapse fragility that has (1) a 10% probability of collapse at said ordinate of the probabilistic ground motion response spectrum and (2) a logarithmic standard deviation

Table 3.4.1 PSHA Probabilistic Response Spectrum

Period (s)	UHGM (g)
0.01 (PGA)	0.7564
0.10	1.4066
0.20	1.8395
0.30	1.9239
0.50	1.6133
0.75	1.2027
1	0.9257
2	0.4249
3	0.2591
4	0.1840
5	0.1438

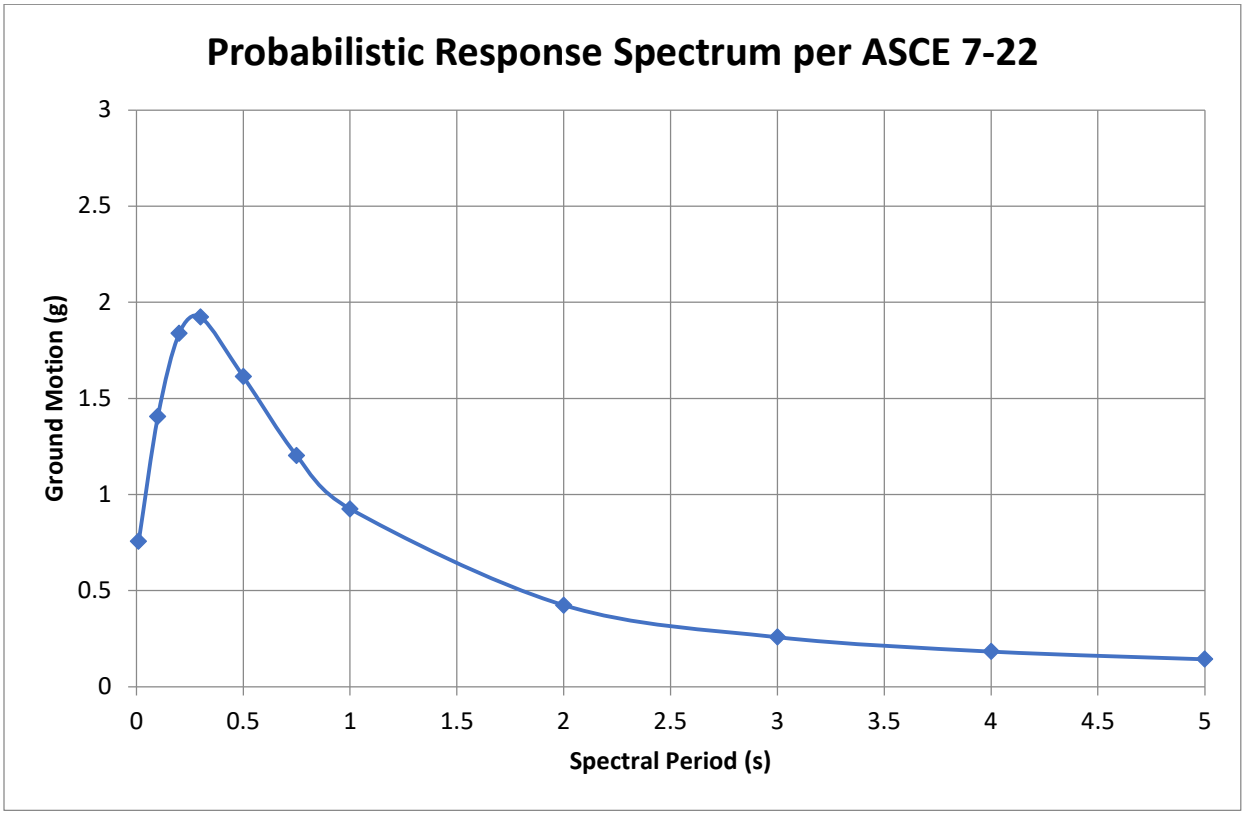


Figure 3.4.1. PSHA Probabilistic Response Spectrum

3.5 Deterministic Seismic Hazard Analysis

The deterministic seismic hazard analysis (DSHA) approach is also based on the characteristics of the earthquake and the causative fault associated with the earthquake. These characteristics include such items as magnitude of the earthquake and distance from the site to the causative fault. The effects of site soil conditions and mechanism of faulting are also accounted for in the GMPE for this site. Per ASCE 7-22, the 84th percentile deterministic site-specific spectral acceleration values at the site were estimated for the Green Valley Fault (M6.8), which is the controlling seismic model for this site.

As discussed earlier, the MCE_R response spectrum is developed by comparing probabilistic, deterministic, and 80% of the code values. These NGA GMPEs present the spectral accelerations in terms of geometric mean values of the rotated two horizontal ground motions. To estimate both the deterministic and probabilistic the spectral accelerations in the direction of the maximum horizontal response at each period from geometric mean values, we have used the scale factors as used by USGS. To obtain spectral acceleration values in the maximum direction, scaling factors were used.

Figure 3.5.1 and Table 3.5.1 show that for all practical purposes the controlling deterministic values are governed by the 84th percentile site-specific deterministic spectrum for entire range of periods up to 10.0 seconds. Therefore, the deterministic values are controlled by the site-specific deterministic spectrum.

Table 3.5.1 DSHA Deterministic Response Spectrum

Period (s)	84 th- Percentile Spectral Acceleration (g)
0.01	0.6757
0.02	0.6321
0.03	0.6523
0.05	0.7232
0.075	0.8505
0.1	1.0178
0.15	1.2410
0.2	1.3571
0.25	1.3991
0.3	1.3856
0.4	1.2895
0.5	1.1536
0.75	0.8187
1	0.5969
1.5	0.3466
2	0.2245
3	0.1211
4	0.0740
5	0.0504

7.5	0.0230
10	0.0129

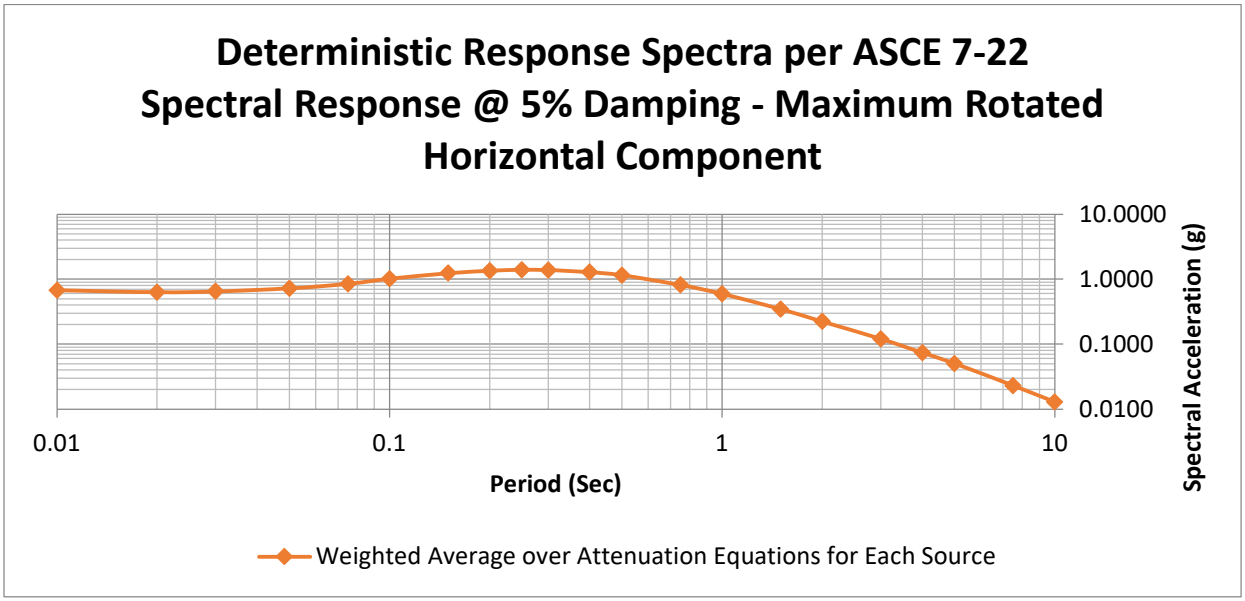


Figure 3.5.1. DSHA Deterministic Response Spectrum

3.6 Site-Specific Design Acceleration Parameters

Site-specific probabilistic spectrum is compared with the controlling deterministic spectrum on Figure 3.6.1. Figure 3.6.1 show that the probabilistic values are greater than the controlling deterministic for all the periods. The Design spectrum was developed by taking two-thirds of the MCE_R spectrum and 80% of the code spectrum. Site-specific MCER spectrum is taken as 1.5 times the Design spectrum.

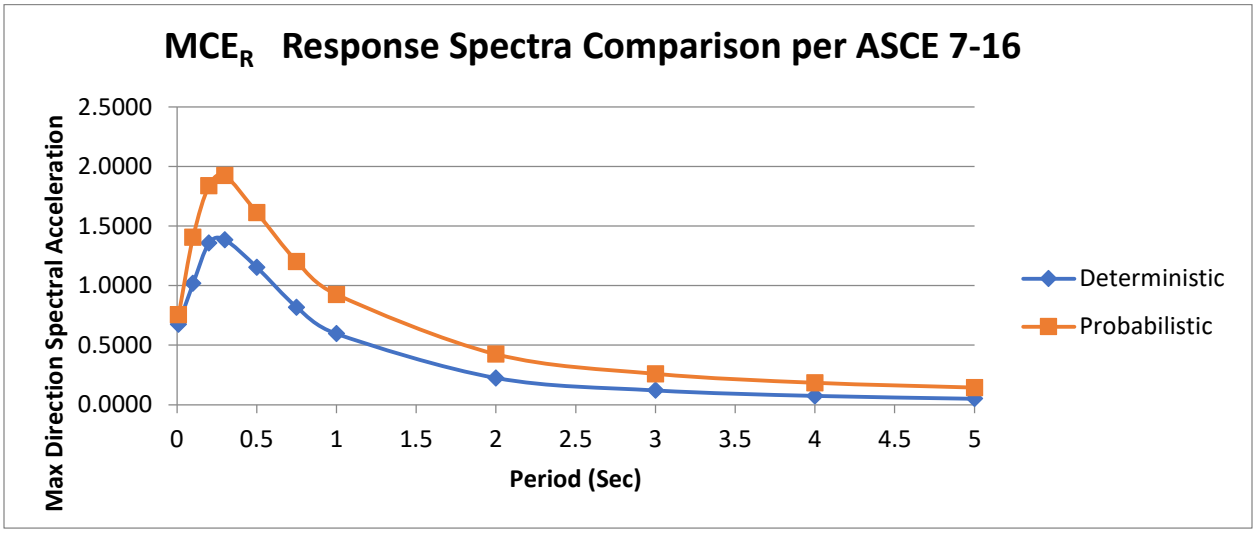


Figure 3.6.1 MCE_R Response Spectrum Comparison

3.7 Seismic Design Parameters

The following table summarizes the site-specific seismic design criteria in accordance with American Society of Civil Engineers (ASCE 7-22 [ASCE, 2022]). The short spectral response uses a period of 0.2 seconds. Based on the findings from our onsite subsurface exploration and our experience with other similar sites, it is our opinion that Site Class "CD" conditions are applicable to the proposed development.

Table 3.4.1. Seismic Design Parameters

Parameter	Value
Site Soil Calss	CD
The MCE_R spectral response acceleration at 0.2 seconds, S_S	1.36
The MCE_R spectral response acceleration at 1 second, S_1	0.42
Maximum Considered Earthquake Spectral Response Acceleration (1 sec), S_{M1}	0.84
Maximum Considered Earthquake Spectral Response Acceleration (0.2 sec), S_{MS}	1.57
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.56
5% Damped Design Spectral Response Acceleration (0.2 sec), S_{DS}	1.05
PGA_M	0.61
Seismic Design Category	D

4.0 GEOTECHNICAL EVALUATION

4.1 Liquefaction Potential

Seismically induced liquefaction is a phenomenon in which cyclic stresses, produced by earthquake-induced ground motion, create excess pore pressures in soils. The soils may thereby acquire a high degree of mobility, and lead to lateral movement, sliding, sand boils, consolidation and settlement of loose sediments, and other damaging deformations. This phenomenon occurs only below the water table, but after liquefaction has developed, it can propagate upward into overlying, non-saturated soil as excess pore water dissipates. Typically, liquefaction has a relatively low potential at depths greater than 45 feet and is virtually unknown below a depth of 60 feet when relative densities are 40 to 60 percent and effective overburden pressures are two or more atmospheres (i.e., 4,232 psf [Seed, 2005]).

Liquefaction susceptibility is related to numerous factors and the following conditions should be concurrently present for liquefaction to occur: 1) sediments must be relatively young in age and not have developed a large amount of cementation; 2) sediments generally consist of medium- to fine-grained relatively cohesionless sands; 3) the sediments must have low relative density; 4) free groundwater must be present in the sediment; and, 5) the site must experience a seismic event of a sufficient duration and magnitude, to induce straining of soil particles.

Settlement estimates were developed using both the Robertson (2009) CPT-based procedure and the Boulanger and Idriss (2014) methodology. The analyses incorporated a design earthquake with a moment magnitude (Mw) of 6.8 and a peak ground acceleration (PGAm) of

approximately 0.61g. The earthquake magnitude was selected based on the controlling seismic source identified during the seismic hazard evaluation and available USGS seismic data.

Geotechnical borings performed across the site, together with laboratory testing and soil classification, indicate that the subsurface profile generally consists of predominantly cohesive soils classified as lean clay (CL) and fat clay (CH), with localized thin layers of loose to medium dense sand encountered below the groundwater table. Laboratory testing indicates that the native soils are primarily cohesive in nature and, therefore, are generally not considered susceptible to liquefaction. However, CPT-based Soil Behavior Type (SBT) classifications identified isolated intervals exhibiting sand like and sandy silt behavior within an otherwise clay-dominated profile.

The CPT soundings indicate that the majority of the subsurface profile falls within Robertson SBT zones corresponding to clay, silty clay, and clayey silt materials, with only limited and discontinuous intervals classified as sandy silt, silty sand, or sand. These granular layers were generally thin, laterally variable, and interbedded within the cohesive deposits. As a result, the continuity and thickness of potentially liquefiable strata varied significantly across the site.

Because liquefaction susceptibility is primarily associated with the localized saturated granular layers identified in the CPT soundings, the estimated settlements varied between testing locations. Locations containing thicker and/or looser granular strata generally produced higher settlement estimates, whereas locations dominated by cohesive soils produced lower settlement estimates. Based on the analyses performed, estimated liquefaction-induced settlements range from approximately 0.5 to 2.7 inches across the site.

Estimated liquefaction induced settlements for each testing location are summarized in Table 4.1.1. Although the majority of the subsurface profile consists of cohesive soils that are not expected to liquefy, localized post-liquefaction settlements may occur where thin saturated granular layers are present below the groundwater table. The calculated settlements should be considered in the evaluation of foundation performance and overall site development. Given the discontinuous nature of the potentially liquefiable layers and the predominance of cohesive soils across the site, the estimated settlements are expected to be localized rather than uniform across the project area.

Table 4.1.1 Estimated Liquefaction Induced Settlements

Location	Latitude	Longitude	Liquefaction Settlement using Robertson (2009) (inches)	Liquefaction Settlement using B&I (2014) (inches)	Liquefying depth (feet)
CPT-11	38.391498	-121.906770	0.45	0.84	9-12
CPT-12	38.391873	-121.906619	0.66	1.61	9.5-11.5& 13-15
CPT-13	38.391643	-121.907581	0.24	1.23	8-10
CPT-14	38.391083	-121.906525	1.28	2.69	10-14.5
CPT-15	38.391096	-121.907301	0.48	0.95	11-12 & 13-14

4.2 Lateral spreading

For the lateral spreading evaluation, we used the Updated Youd & Bartlett methodology for free-face conditions, as recommended by CDMG Special Publication 117, and considered the site plans prepared by Burns & McDonnell, issued March 20, 2026. A global lateral spreading analysis was performed assuming a uniform liquefiable soil layer and free-face conditions representative of the site.

The lateral spreading analysis was performed using the Updated Youd & Bartlett empirical methodology for free-face conditions, as recommended by CDMG Special Publication 117. The analysis incorporates several site-specific and seismic input parameters that influence the magnitude of liquefaction-induced lateral ground displacement, including:

- **Earthquake Moment Magnitude (Mw):** The Gordon Valley segment of the Great Valley Fault Zone is the closest known active fault to the site and is expected to have the greatest influence on site seismic response during the design earthquake. Based on Jennings (1994), a maximum moment magnitude (Mw) of 6.8 was used in the analysis.
- **Distance to Seismic Source (R):** The shortest distance from the site to the causative fault was estimated to be approximately 13 kilometers.
- **Free-Face Ratio (F):** A representative Defined as the vertical height of the free face divided by the horizontal distance from the free face to the point of interest, expressed as a percentage. A free-face ratio of 5% was assumed for the analysis.
- **Distance from Free Face (L):** A representative horizontal distance of approximately 100 feet represented by Boring B-3 to basin was assumed between the free face and the location where lateral displacement was evaluated.
- **Ground Slope (S):** A ground slope of 1 percent was assumed to represent the relatively level site conditions. Ground slope influences the tendency for lateral soil movement during liquefaction.
- **Thickness of Liquefiable Soils (T15):** The cumulative thickness of liquefiable soil layers having corrected SPT resistance values of $(N_1)_{60} \leq 15$. These soils are considered most susceptible to liquefaction-induced deformation. Based on subsurface exploration, the liquefiable layer encountered at Boring B-3 was approximately 1.5 feet thick.
- **Average Fines Content (F15):** The average fines content of the liquefiable soil layer used to characterize soil behavior during liquefaction. A fines content of 46 percent, measured within the liquefiable layer at Boring B-3, was used in the analysis.
- **Mean Grain Size (D50,15):** Based on available laboratory data and sieve analysis, a representative median grain size (D50) of 0.1 mm was assumed for the liquefiable soils, reflecting the fine-grained nature of the material and its susceptibility to liquefaction-related deformation.

These parameters were incorporated into the empirical regression equations developed by Youd et al. to estimate the expected magnitude of permanent ground displacement resulting from liquefaction-induced lateral spreading. Based on the analysis, the anticipated lateral ground displacement under free-face conditions is estimated to be approximately 1.5 inches. This estimated displacement provides a basis for evaluating the potential effects of liquefaction-induced ground movement on the proposed improvements and for developing appropriate foundation design recommendations. Detailed calculations and supporting data are provided in Appendix D.

It should be noted that the lateral spreading analysis was performed using the empirical procedures of Youd and Bartlett, which assume the presence of a laterally continuous and relatively uniform liquefiable soil layer. However, the results of the subsurface exploration and CPT soundings indicate that subsurface conditions across the site are highly variable, with liquefiable soils occurring intermittently and not as a continuous sheet like deposit. The identified liquefiable zones are generally thin and discontinuous, with significant lateral and vertical variability in soil stratigraphy. Consequently, the estimated lateral displacement of approximately 1.5 inches should be considered a conservative assessment. Given the discontinuous nature of the liquefiable soils, the actual magnitude of lateral spreading is expected to be less than that predicted by the empirical model, and the development of large-scale, coherent lateral spreading across the site is not anticipated.

4.3 Post Liquefaction Geotechnical Parameters

Based on the liquefaction evaluation, a thin liquefiable soil layer was identified between depths of approximately 10 and 12 feet below ground surface. Settlement of the surrounding soils during a seismic event may induce negative skin friction (downdrag) on driven pile foundations. For design purposes, a downdrag load of approximately 1 to 1.5 kips per pile was estimated assuming a unit negative skin friction of 150 psf acting over the thickness of the liquefiable layer.

The estimated downdrag load is relatively small compared to the anticipated axial capacity of the driven piles and is not expected to significantly impact foundation performance. Nevertheless, the estimated downdrag load should be included as an additional permanent axial compressive load in the structural design of the piles. The liquefiable layer should not be considered to provide positive skin friction or axial resistance under seismic loading conditions.

4.4 Seismic Surcharge

For site retaining walls with more than 6 feet of retained materials (as measured vertically from the bottom of the wall footing at the heel to the ground surface), or retaining walls that could present ingress/egress constraints to emergency personnel and equipment, in the event of failure, RRC recommends that the walls be evaluated for seismic surcharge in general accordance with building code requirements. The retaining walls in this category should maintain an overturning Factor-of-Safety (FOS) of approximately 1.1 when the seismic surcharge (seismic increment), is applied. For restrained walls, the seismic surcharge should be applied as a uniform surcharge load from the bottom of the footing (excluding shear keys) to the top of the backfill at the heel of the wall footing. For cantilevered walls, the seismic surcharge should be applied as an inverted triangular pressure distribution for the portion of the wall located above 0.6H up from the bottom

of the footing to the top of the retained soils, where “H” equals the retained soil height. For the evaluation of the seismic surcharge, the bearing pressure may exceed the static value by one-third, considering the transient nature of this surcharge. This is for local wall stability only.

This seismic surcharge may be taken as 21H, where “H” equals the height of the retained soils measured vertically from the bottom of the footing to the ground surface. The 21H seismic increment is derived from the guidelines set forth in City of Los Angeles Department of Building and Safety (LADBS) Information Bulletin Document No.: P/BC 2020-83 (LADBS, 2020), which are based on Seed and Whitman (1970).

5.0 LIMITATIONS

This report is prepared based on limited subsurface exploration available and in accordance with applicable codes. It is likely soil conditions will vary between or beyond the points explored. If soil conditions are encountered during construction that differ from those described herein, we should be notified immediately in order to provide supplemental recommendations (if needed). If the scope of the proposed construction, including the proposed loads or structural locations, changes from those described in this report, our data should also be reviewed.

We have prepared this report in substantial accordance with the generally accepted geotechnical engineering practice as it exists in the site area at the time of our study. The recommendations provided in this report assume that an adequate program of tests and observations will be performed during the construction phase in order to evaluate compliance with our recommendations. RRC should be contacted if field conditions differ from the findings listed in the report to reevaluate our conclusions and recommendations.

This report may be used only by the client and only for the purposes stated, within three years of its issuance. Land use, site conditions (both on site and off site) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client, or the related design team members for this project, who wishes to use this report shall notify RRC of such intended use. Based on the intended use of the report, RRC may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release RRC from any liability resulting from the use of this report by any unauthorized party.

Other standards or documents referenced in any given standard cited in this report, or otherwise relied upon by the authors of this report, are only mentioned in the given standard; they are not incorporated into it or "included by reference," as that latter term is used relative to contracts or other matters of law.

6.0 REFERENCES

1. Abrahamson, N.A., Silva, W.J., and Kamai, R., 2014, Summary of the ASK 14 Ground Motion relation for active crustal regions: Earthquake Spectra, Volume 30, Issue 3, pages 1025-1055.

2. ASCE, “Minimum Design Loads for Buildings and Other Structures,” ASCE Standard ASCE/SEI 7-22.

3. ASCE Hazard Tool (ASCE), https://ascehazardtool.org/

4. Boore, D.M. (2004). "Estimating Vs(30) (or NEHRP Site Classes) from Shallow Velocity Models (Depths < 30 m)."Bulletin of the Seismological Society of America, Vol. 94, No. 2, April 2004.

5. Boore, D.M., Stewart, J.P., Seyhan, Emel, and Atkinson, G.A., 2014, NGA-West2 equations for predicting PGA, PGV, and 5% damped PSA for shallow crustal earthquakes: Earthquake Spectra. 2014.

6. Boulanger, R.W., and Idriss, I.M. (2014). *CPT and SPT Based Liquefaction Triggering Procedures*. Report No. UCD/CGM-14/01, Center for Geotechnical Modeling, University of California, Davis, Davis, California.

7. Campbell, K.W., and Bozorgnia, Yousef, 2014, Campbell-Bozorgnia NGA-West2 ground motion model for the average horizontal components of PGA, PGV, and 5%-damped linear response spectra: Earthquake Spectra. 2014;30(3):1087-1115.

8. Cornell, C.A. (1968), "Engineering Seismic Risk Analysis," Bulletin of the Seismological Society of America, Vol. 58, No. 5

9. Cornell, C.A. (1971), "Probabilistic Analysis of Damage to Structures Under Seismic Loading, Dynamic Waves in Civil Engineering," London, Interscience.

10. Gutenberg, B. and Richter, C.F. (1956), "Earthquake Magnitude, Intensity, Energy and Acceleration," Bulletin of the Seismological Society of America, Vol. 46, No. 2.

11. Idriss, I. M., & Boulanger, R. W. (2008). Soil Liquefaction During Earthquakes. Earthquake Engineering Research Institute, MNO-12

12. International Building Code (IBC) 2024, International Code Council.

13. Petersen, Mark D., Frankel, Arthur D., Harmsen, Stephen C., Mueller, Charles S., Haller, Kathleen M., Wheeler, Russell L., Wesson, Robert L., Zeng, Yuehua, Boyd, Oliver S., Perkins, David M., Luco, Nicolas, Field, Edward H., Wills, Chris J., and Rukstales, Kenneth S. (2008), "Documentation for the 2008 Update of the United States National Seismic Hazard Maps," U.S. Geological Survey Open-File Report 2008–1128, 61 NAVFAC DM 7.01 Soil Mechanics, 1982.

14. Robertson, P.K. (2009). "Interpretation of Cone Penetration Tests, A Unified Approach." Canadian Geotechnical Journal, Vol. 46, No. 11, pp. 1337–1355.

15. Schwartz, D.P. and Coppersmith, K.J. (1984), "Fault behavior and characteristic earthquakes: examples from Wasatch and San Andreas fault zones," Journal of Geophysical Research, Vol. 89, pp. 5681-5698. Broughton, J. and Van Arsdale, R., 2004, Surficial geologic map of the Northwest Memphis quadrangle, Shelby County, Tennessee, and Crittenden County, Arkansas, U.S. Geological Survey, Scientific Investigations Map SIM-2838, scale 1:24,000.

16. Seed, 2005, Evaluation and mitigation of soil liquefaction hazard "evaluation of field data and procedures for evaluating the risk of triggering (or inception) of liquefaction", *in* Geotechnical earthquake engineering; short course, San Diego, California, April 8-9

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APPENDIX A

Table A1 - Summary of Subsurface Exploration and Geographic Coordinates

Boring ID	Latitude	Longitude	Electrical Resistivity Testing Date	Thermal Resistivity Sampling Date	CPT Soundings	CBR Sampling Date	Chemical Sampling Date	Infiltration Date	PLT Testing Date	Piezometer Location?	Piezometer Installation Date	Drilling/ Excavation Date	Auger (ft)	Air/Mud Rotary (ft)	Rock Core (ft.)	Total Depth (ft)	Groundwater During Drilling (ft)	Groundwater Immediately After Drilling (ft)	Remarks
B-1	38.39050985	-121.9066864					9/13/2023	9/15/2023				9/13/2023	40.5			40.5	14	11	Drilling location was moved about 80 ft.toward north due to wet soil condition and high rutting
B-2	38.39110343	-121.908087		9/14/2023		9/14/2023		9/15/2023				9/14/2023	20.5			20.5	9	10	
B-3	38.39149962	-121.9067698	9/25/2023						10/4/2023			9/13/2023	40.5			40.5	12	12	
B-4	38.39204075	-121.9072708		9/14/2023			9/14/2023					9/14/2023	20.5			20.5	9	15	
B-5	38.39262045	-121.9066633	9/26/2023					9/15/2023	10/4/2023			9/14/2023	20.5			20.5	13	11	
B-6	38.39281334	-121.9085437		9/14/2023								9/14/2023	20.5			20.5	9	9	Drilling location was moved about 20 ft. toward north due to wet soil condition and possible high rutting
B-7	38.39362688	-121.9067287					9/14/2023					9/14/2023	20.5			20.5	9	9	
B-8	38.39383999	-121.907111							10/4/2023			9/12/2023	20.5			20.5	9	7.5	
B-9	38.39453657	-121.9069315						9/15/2023		Yes	9/12/2023	9/12/2023	20.5			20.5	9	9	
B-9A	38.39453657	-121.9069315										9/14/2023	15.5			15.5	10	9	Drilled an offset borehole B-9A to verify the low blow counts.
B-10	38.39455202	-121.9084521	9/26/2023	9/14/2023			9/14/2023	9/15/2023	10/4/2023			9/14/2023	40.5			40.5	10	8	
CPT-11	38.39149800	-121.9067700			X							11/15/2024				40.5	9	NA	
CPT-12	38.39187300	-121.9066190			X							11/15/2024				40.5	11	NA	
CPT-13	38.39164300	-121.9075810			X							11/15/2024				40.5	10	NA	
CPT-14	38.39108300	-121.9065250			X							11/15/2024				40.5	9	NA	
CPT-15	38.39109600	-121.9073010			X							11/15/2024				40.5	9	NA	
TP-1	38.39087433	-121.907887										9/28/2023	10.0			10.0	NE	NE	
TP-SUB	38.39405128	-121.9085067	9/27/2023									9/28/2023	10.0			10.0	NE	NE	

Notes: NE = Not Encountered; NA = Not Available

Table A2: Well Log Information Obtained from the California Department of Water Resources

Well Report No. (WCR)	**Latitude**	**Longitude**	**Elevation** (feet above sea level)	**Well Depth** (feet below land surface)	**Water Level Record** (feet below land surface)	**Date of Record** (MM/DD/YYYY)
WCR2015-010080	38.370162	-121.954201		33	16	07/01/2015
WCR2015-010061	38.369795	-121.954574		30	14	07/10/2015
WCR2015-010072	38.370125	-121.954361		30.5	15	07/08/2015
WCR2015-010082	38.370247	-121.953885		36	15	07/01/2015
WCR2015-009495	38.370211	-121.954288		32	16	07/01/2015
WCR2015-010062	38.370454	-121.954646		31	13	07/10/2015
WCR2015-010083	38.370483	-121.954115		36	15	06/30/2015
WCR2015-010065	38.371142	-121.953651		30	14	07/09/2015
WCR2015-009493	38.369742	-121.954083		36	13	06/30/2015
WCR2017-004680	38.409282	-121.873790		860	98.6	08/12/2017
WCR2015-010088	38.369857	-121.954495		32	16	07/02/2015
WCR2015-010075	38.3699	-121.954244		32	17	07/08/2015
WCR2020-011895	38.3807	-121.846		870	65	08/31/2020
WCR2015-010076	38.369922	-121.954384		32.5	16	07/07/2015
WCR2015-010084	38.369899	-121.954348		33.5	16	07/01/2015
WCR2015-010081	38.369973	-121.954461		31.5	16	07/01/2015
WCR2015-009494	38.370046	-121.954124		31	17	07/02/2015
WCR2015-010078	38.370192	-121.954488		36	14	07/07/2015
WCR2015-009492	38.371129	-121.953659		60	14	07/09/2015
WCR2017-004723	38.3875548	-121.8614093		379	35.2	08/22/2017
WCR2019-016933	38.40635	-121.98158		400	315	12/24/2018
WCR2015-010063	38.370666	-121.954416		60	14	07/09/2015
WCR2015-010079	38.369909	-121.954659		30.5	15	07/02/2015
WCR2015-010064	38.370689	-121.954396		30	14	07/09/2015
N/D = No Data Available	https://dwr.maps.arcgis.com/apps/webappviewer/index.html?id=181078580a214c0986e2da28f8623b37					

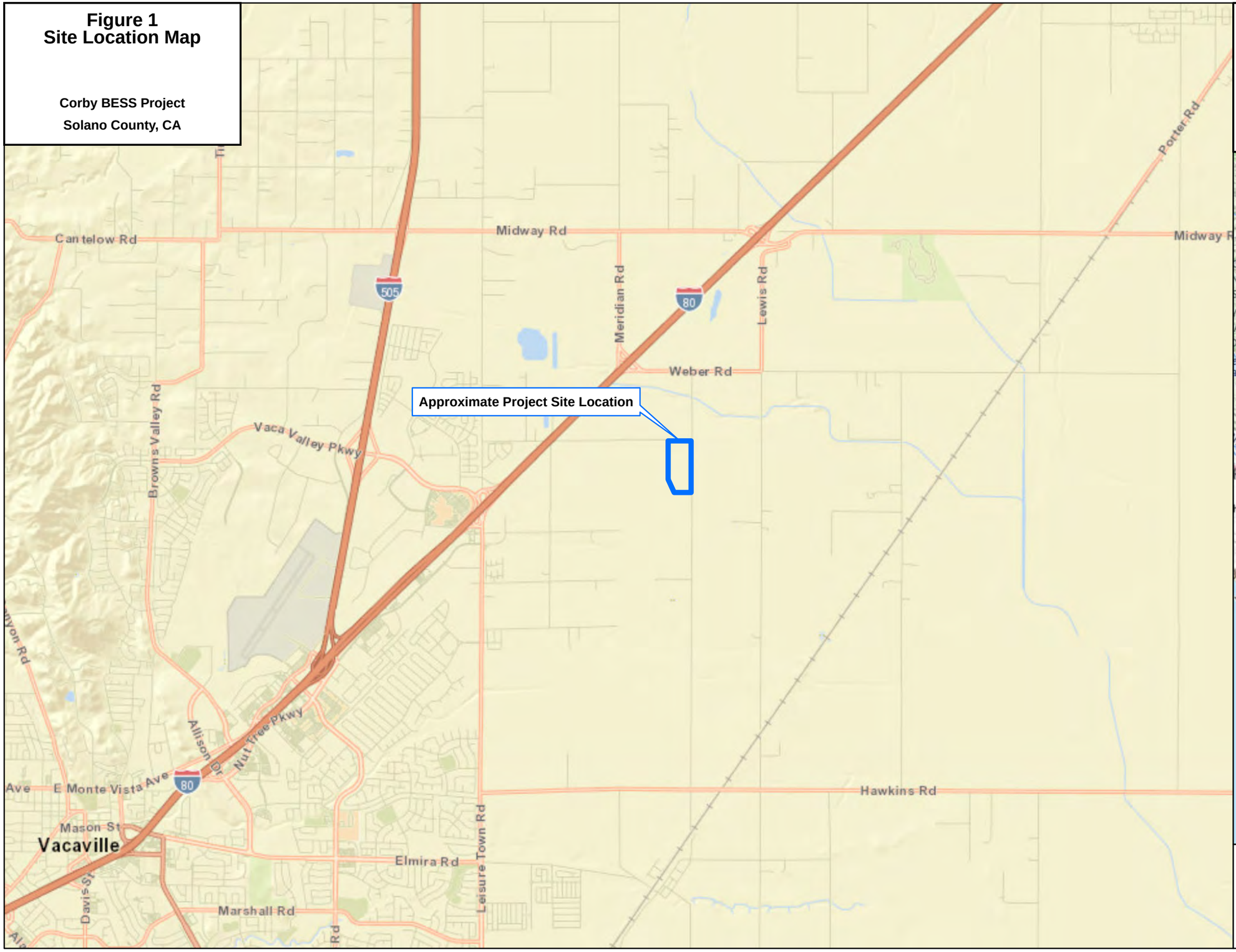
Table A3: Summary of Groundwater Level Measurements

Boring No.	Latitude	Longitude	Installation Date	Pipe Stick Out Length (ft)	Pipe Length (ft)	Groundwater Immediately After Installation (ft)	Groundwater 24 hours After Installation (ft)	Groundwater 48 hours After Installation (ft)	Groundwater One Month After Installation (ft)
B-9	38.394527	-121.906933	09/13/23	2	15	9.0	10.0	10.1	11.1

Figure 1
Site Location Map

Corby BESS Project

Solano County, CA



0 0.5 1 1.5 Miles

N

Legend

Project Boundary



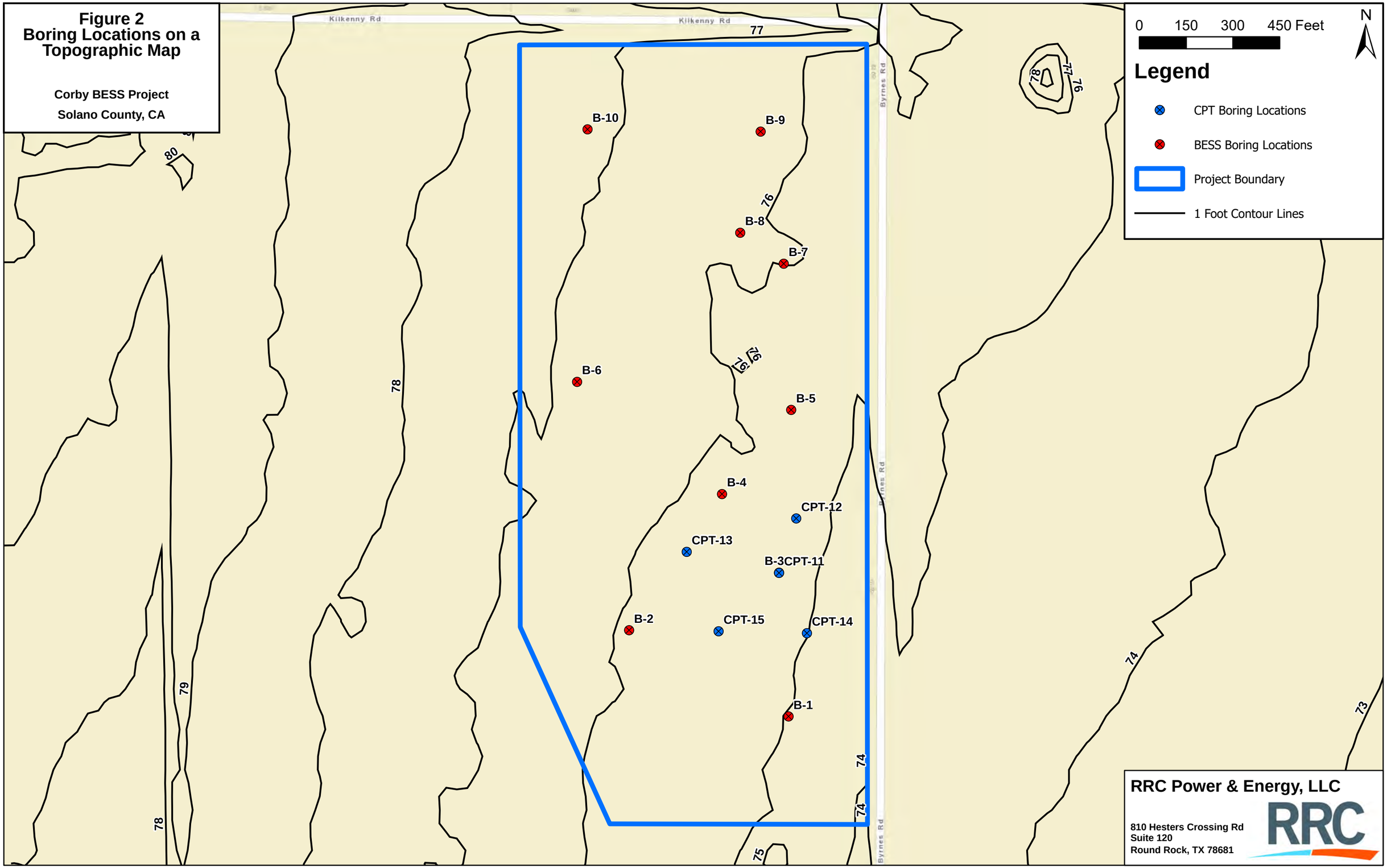
RRC Power & Energy, LLC

810 Hesters Crossing Rd
Suite 120
Round Rock, TX 78681

Figure 2
Boring Locations on a Topographic Map

Corby BESS Project

Solano County, CA



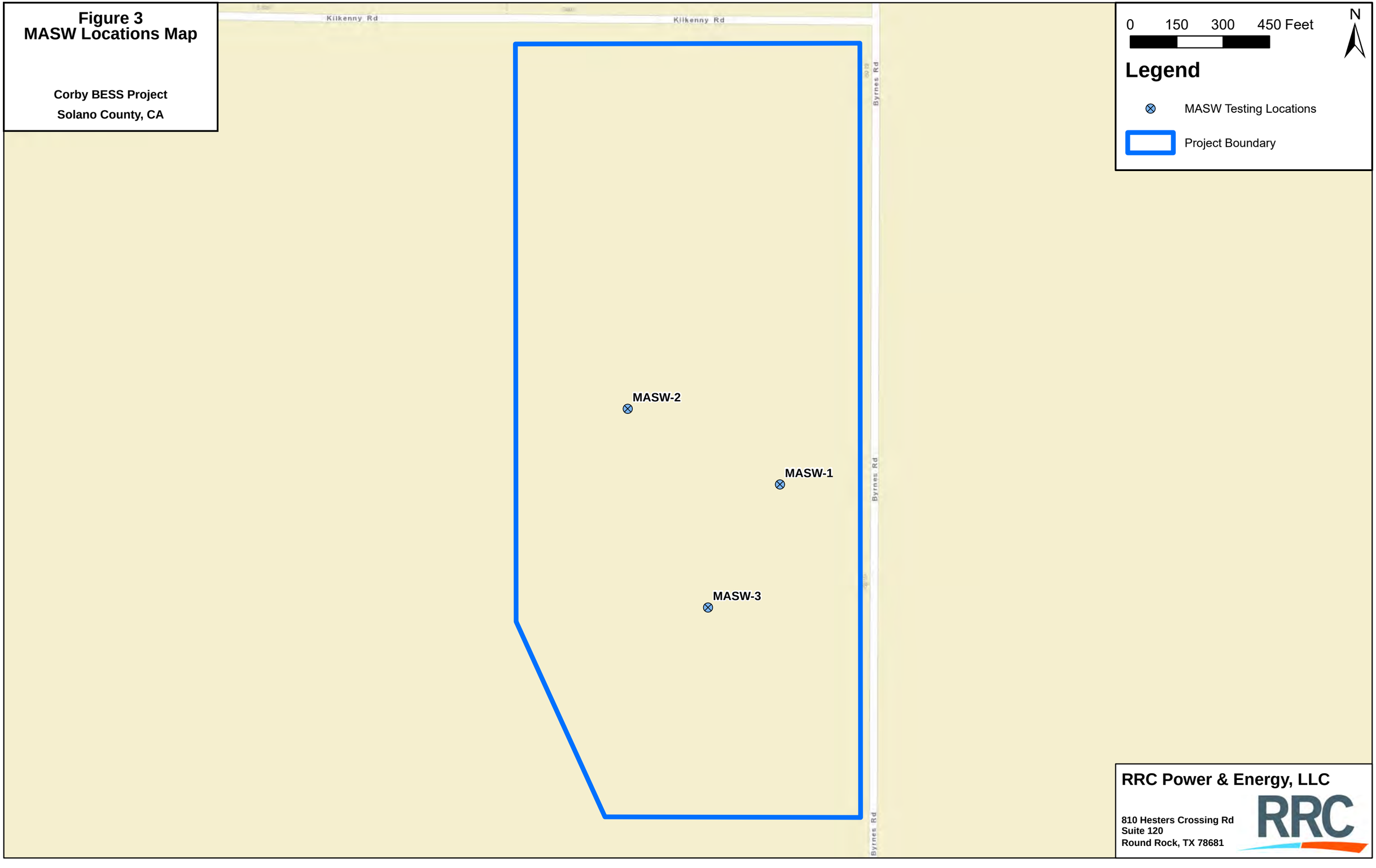
RRC Power & Energy, LLC

810 Hesters Crossing Rd
Suite 120
Round Rock, TX 78681

Figure 3
MASW Locations Map

Corby BESS Project

Solano County, CA



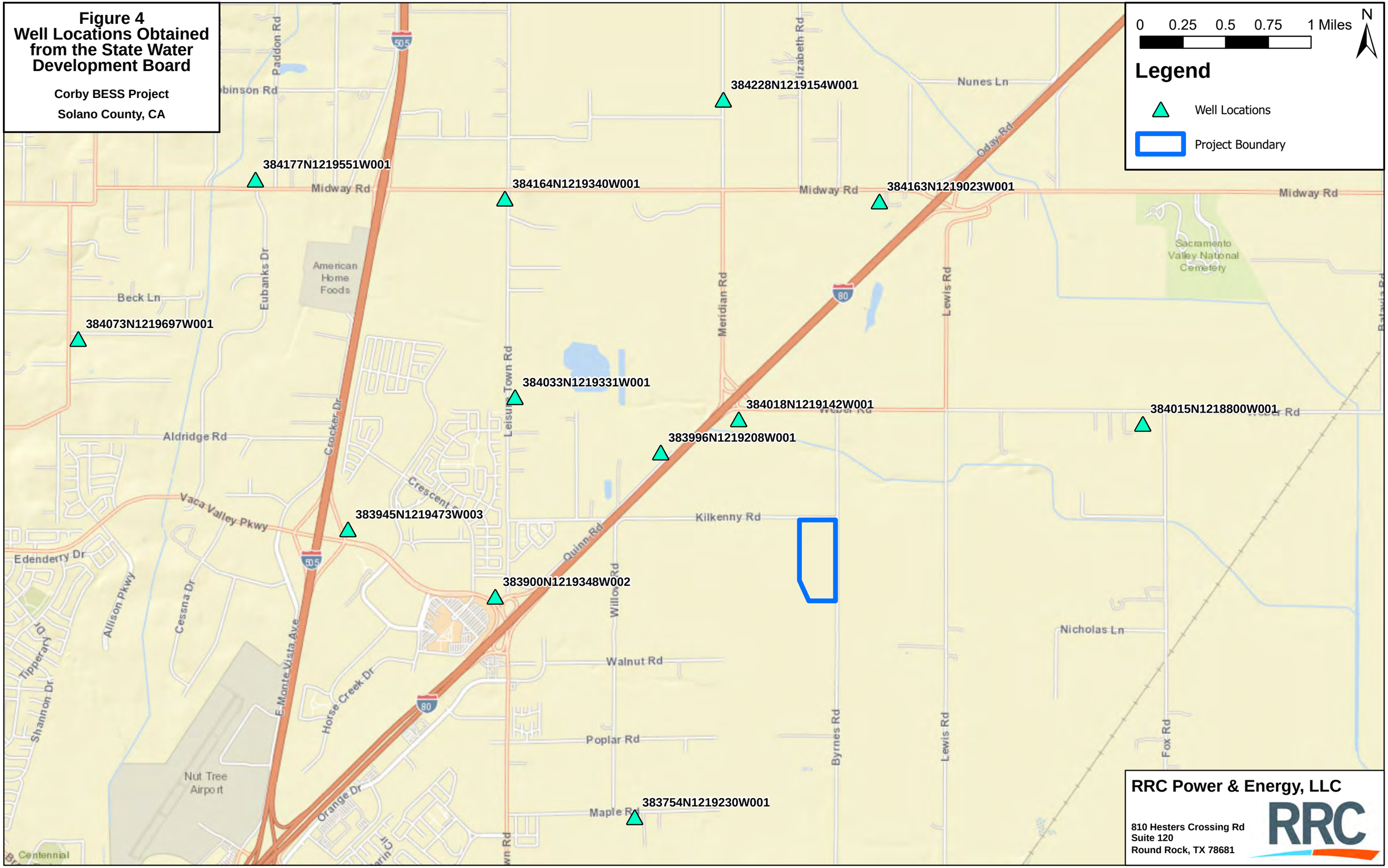
RRC Power & Energy, LLC

810 Hesters Crossing Rd
Suite 120
Round Rock, TX 78681

Figure 4
Well Locations Obtained from the State Water Development Board

Corby BESS Project

Solano County, CA



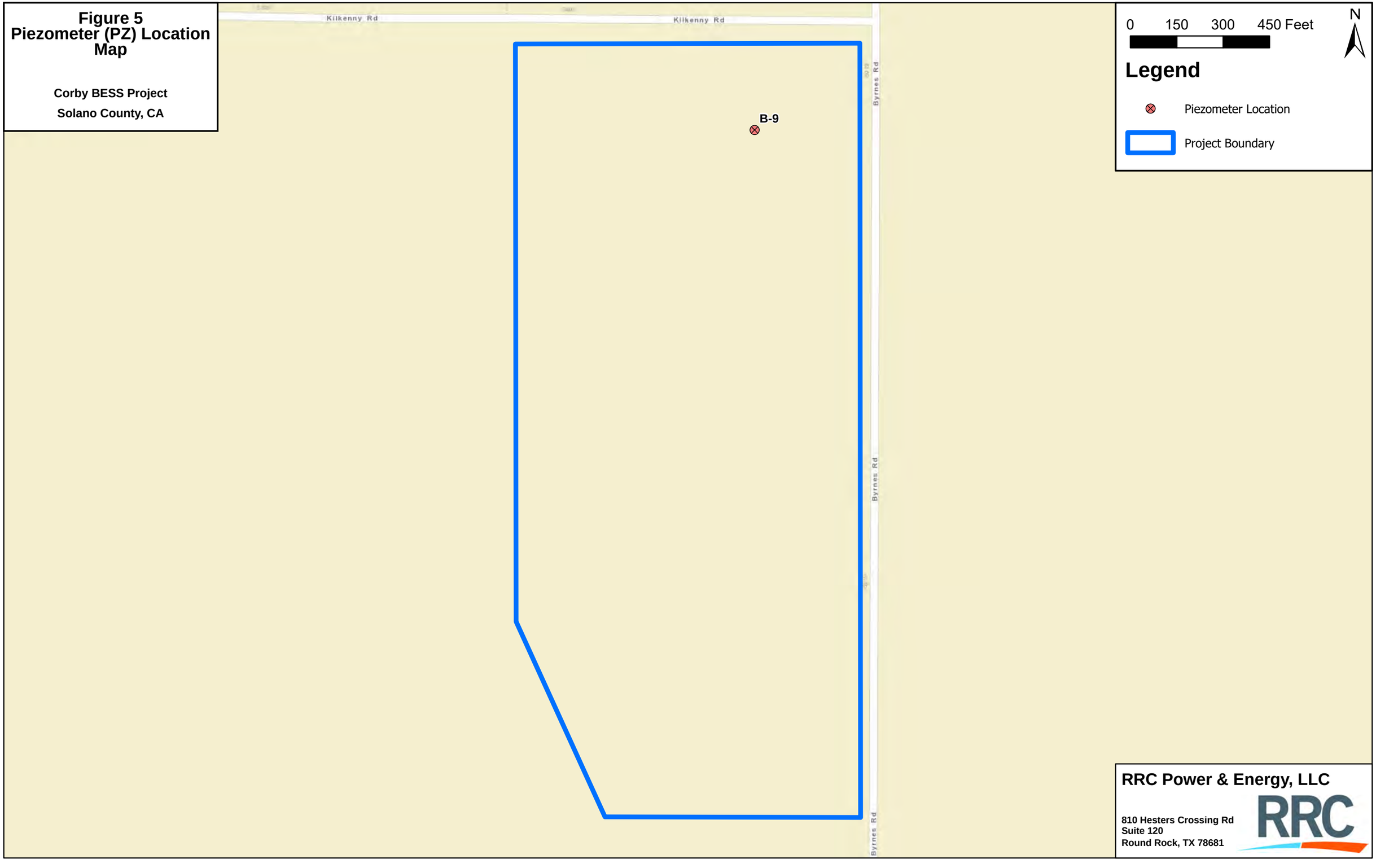
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Suite 120
Round Rock, TX 78681

Figure 5
Piezometer (PZ) Location Map

Corby BESS Project

Solano County, CA



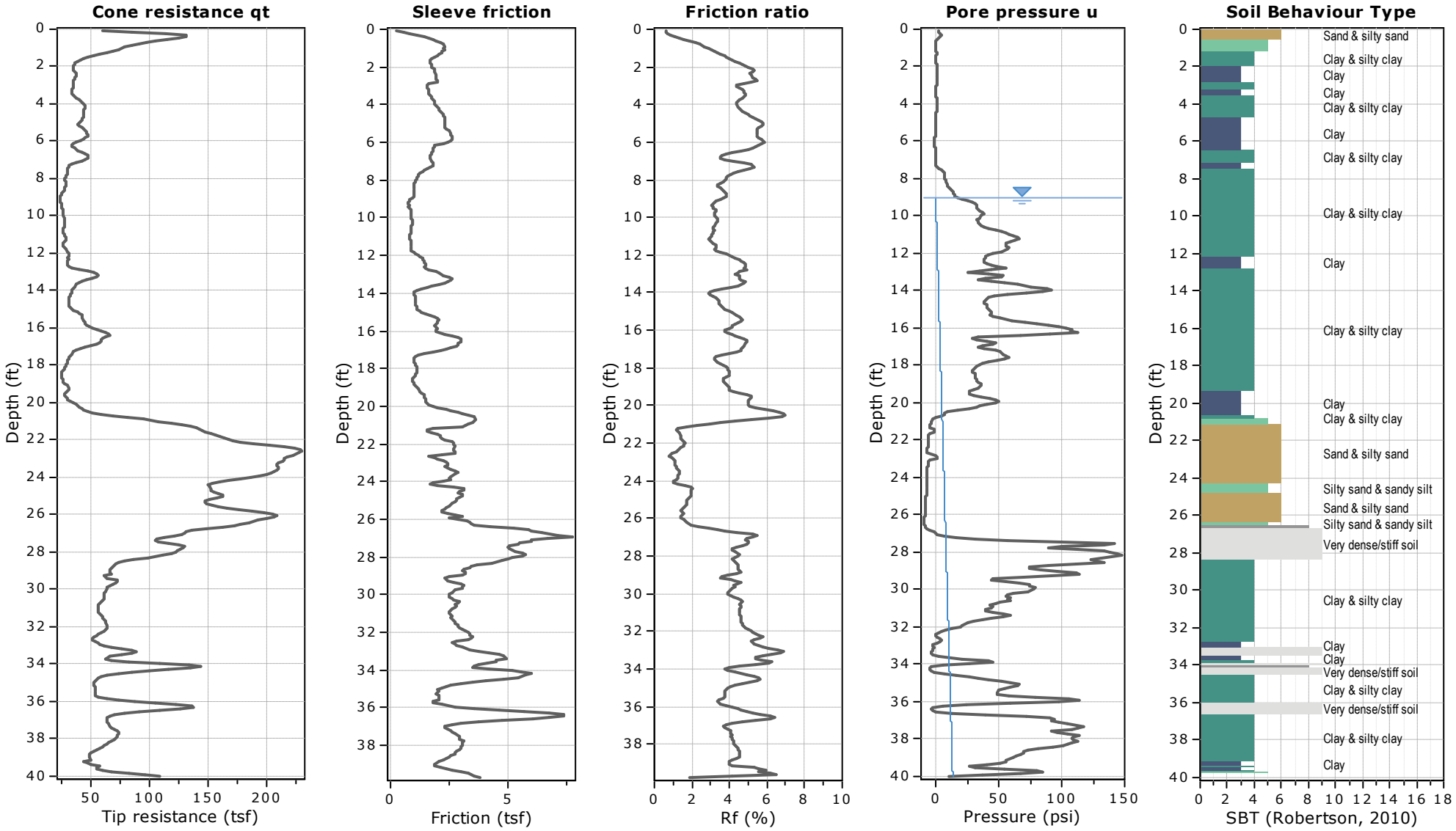
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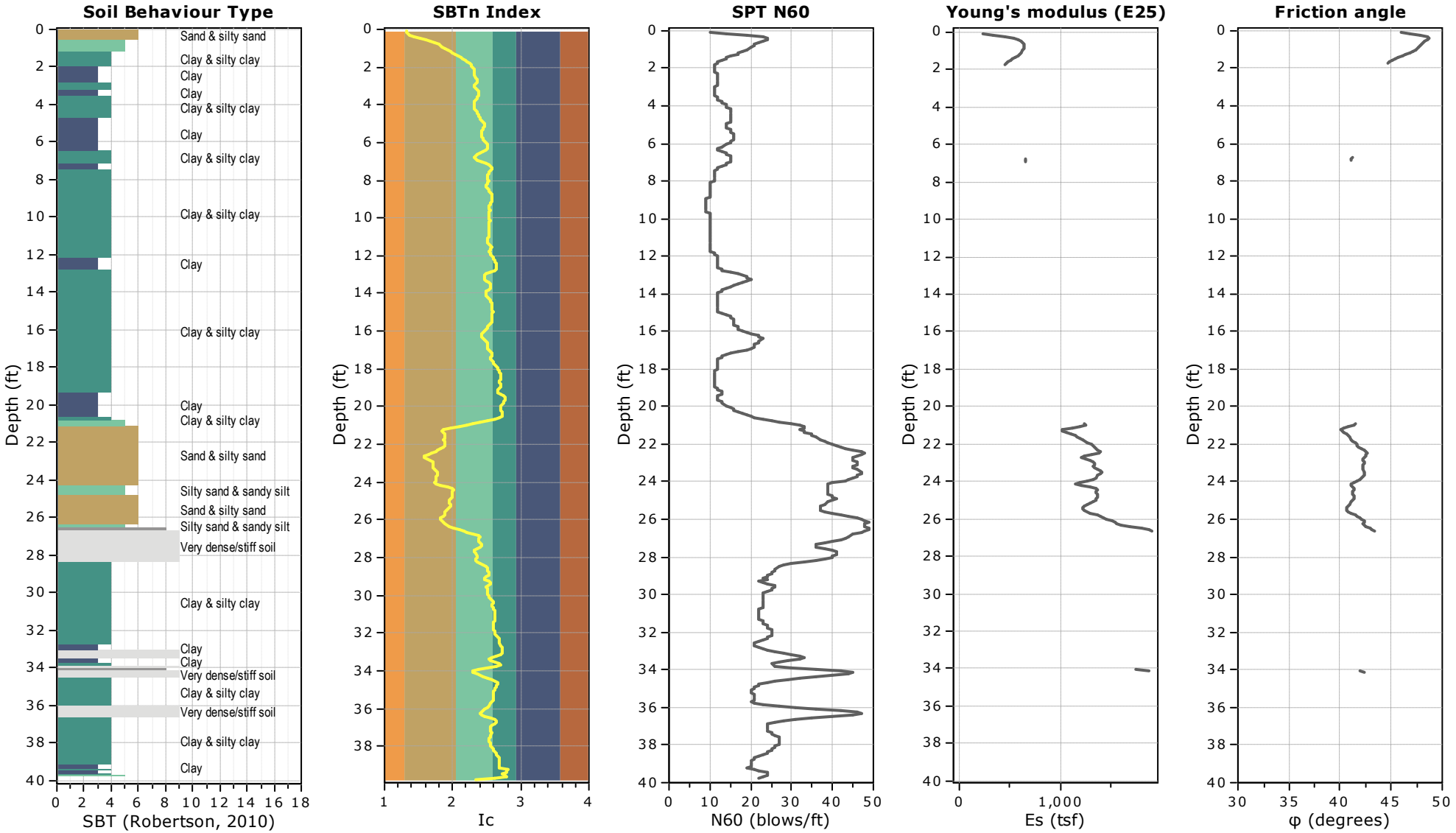
Project: **Corby BESS Project**
Location: **Solano County, CA**

CPT: SP11
Total depth: 40.03 ft, Date: 11/15/2024
Coords: lat 38.391583° lon -121.90682°
Cone Type: CPTu
Cone Operator: ConeTec



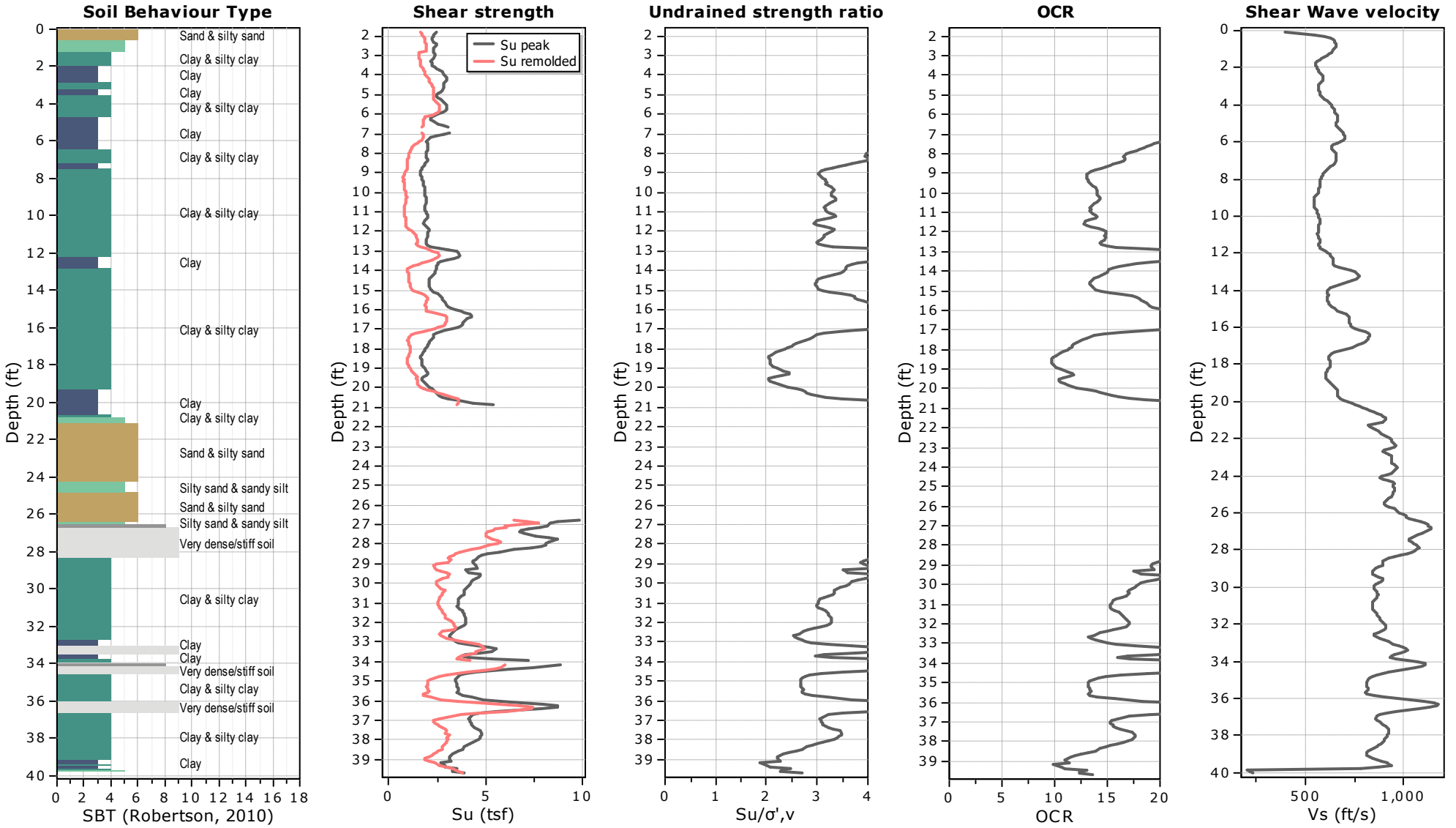
Project: Corby BESS Project
Location: Solano County, CA

CPT: SP11
Total depth: 40.03 ft, Date: 11/15/2024
Coords: lat 38.391583° lon -121.90682°
Cone Type: CPTu
Cone Operator: ConeTec



Project: **Corby BESS Project**
Location: **Solano County, CA**

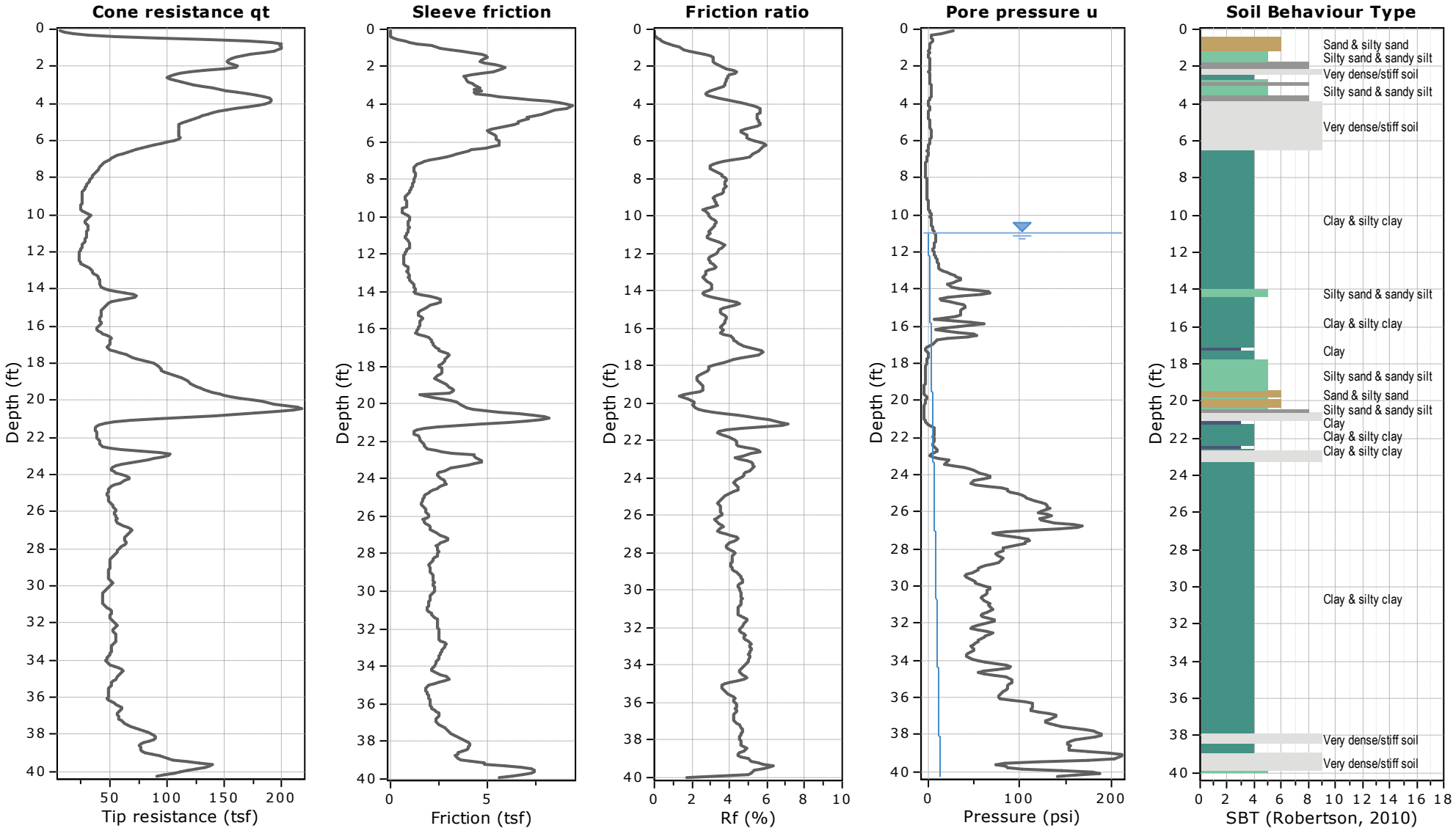
CPT: SP11
Total depth: 40.03 ft, Date: 11/15/2024
Coords: lat 38.391583° lon -121.90682°
Cone Type: CPTu
Cone Operator: ConeTec



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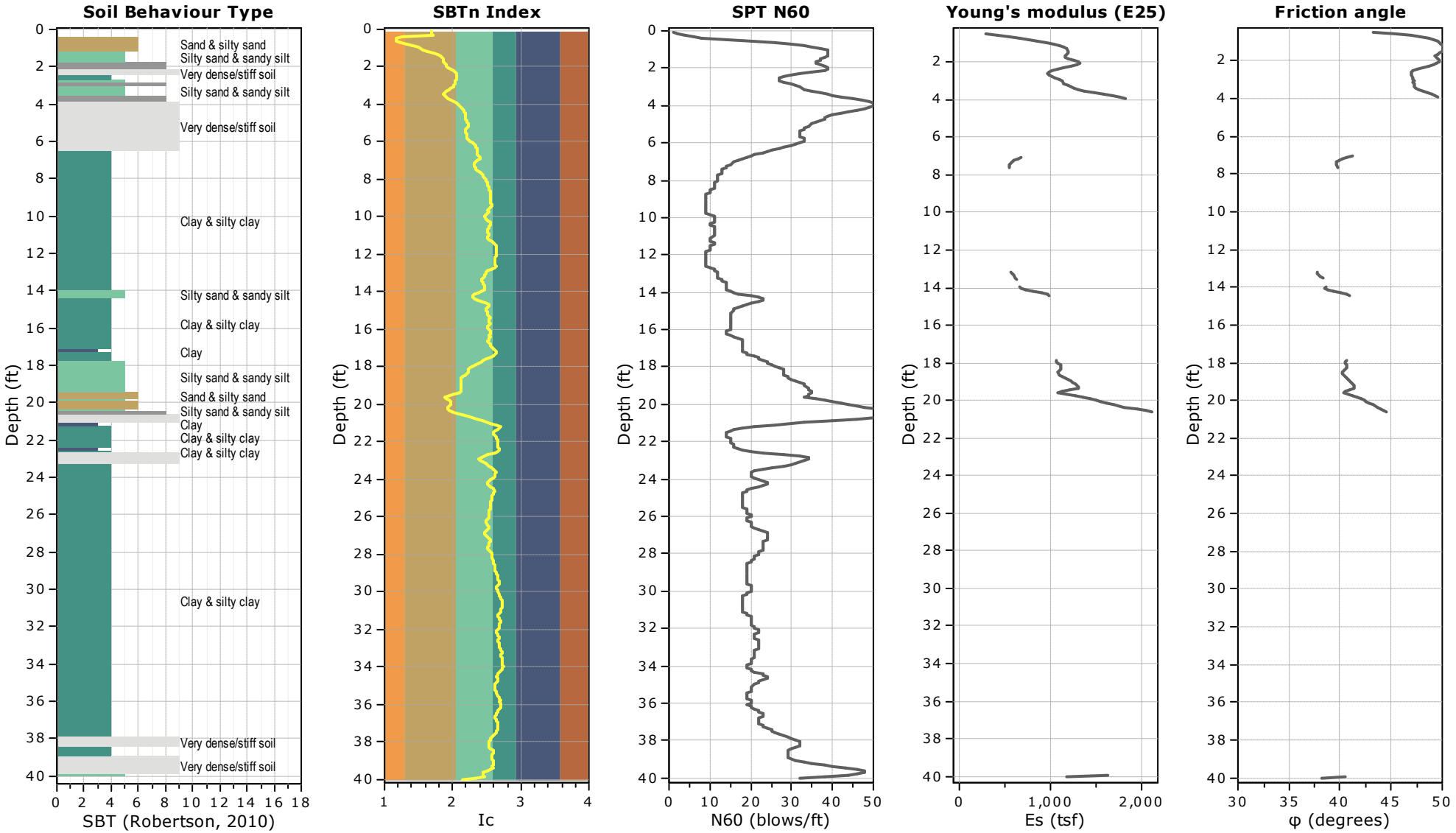
Project: **Corby BESS Project**
Location: **Solano County, CA**

CPT: SP12
Total depth: 40.27 ft, Date: 11/15/2024
Coords: lat 38.391922° lon -121.906529°
Cone Type: CPTu
Cone Operator: ConeTec



Project: **Corby BESS Project**
Location: **Solano County, CA**

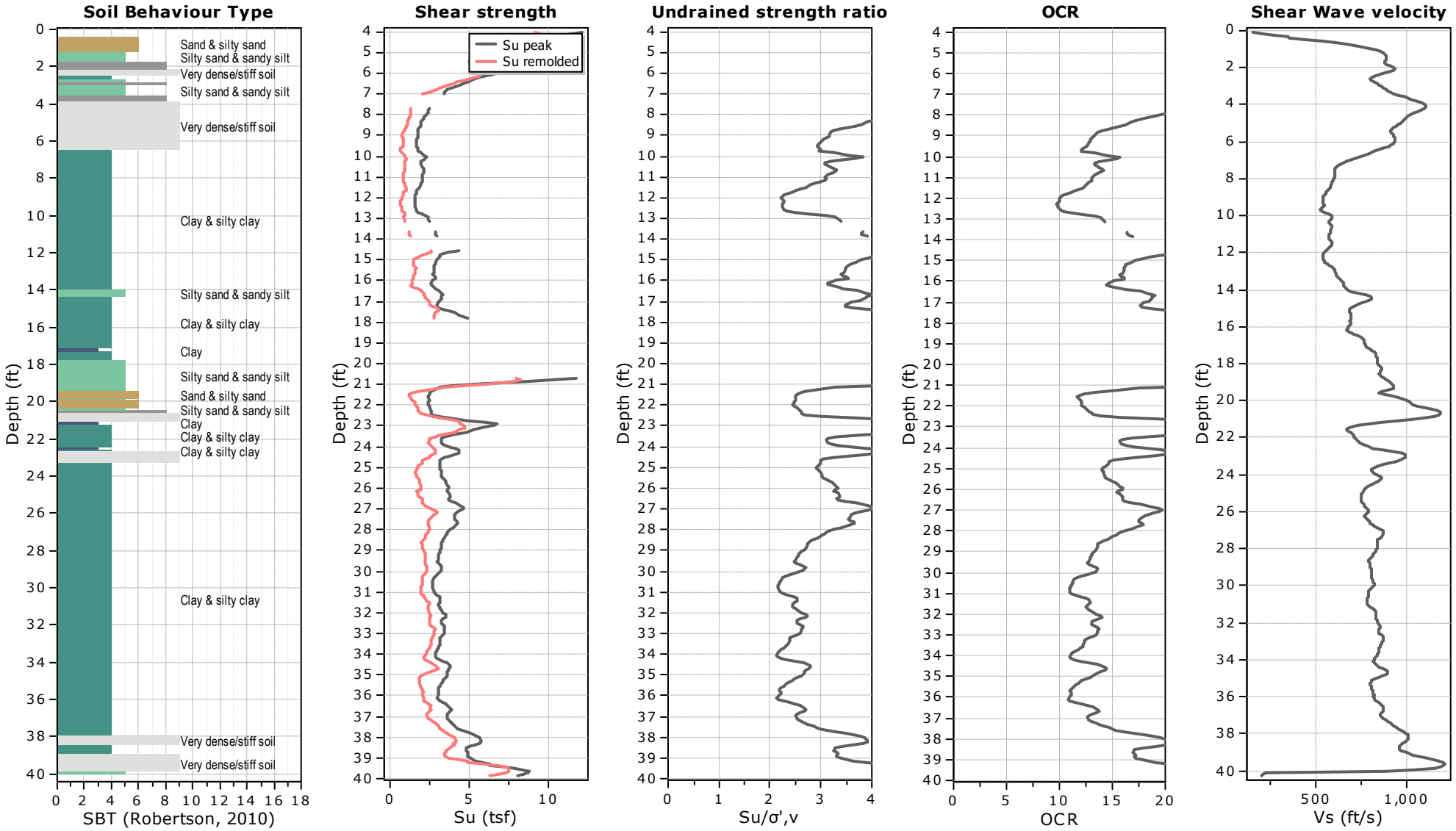
CPT: SP12
Total depth: 40.27 ft, Date: 11/15/2024
Coords: lat 38.391922° lon -121.906529°
Cone Type: CPTu
Cone Operator: ConeTec



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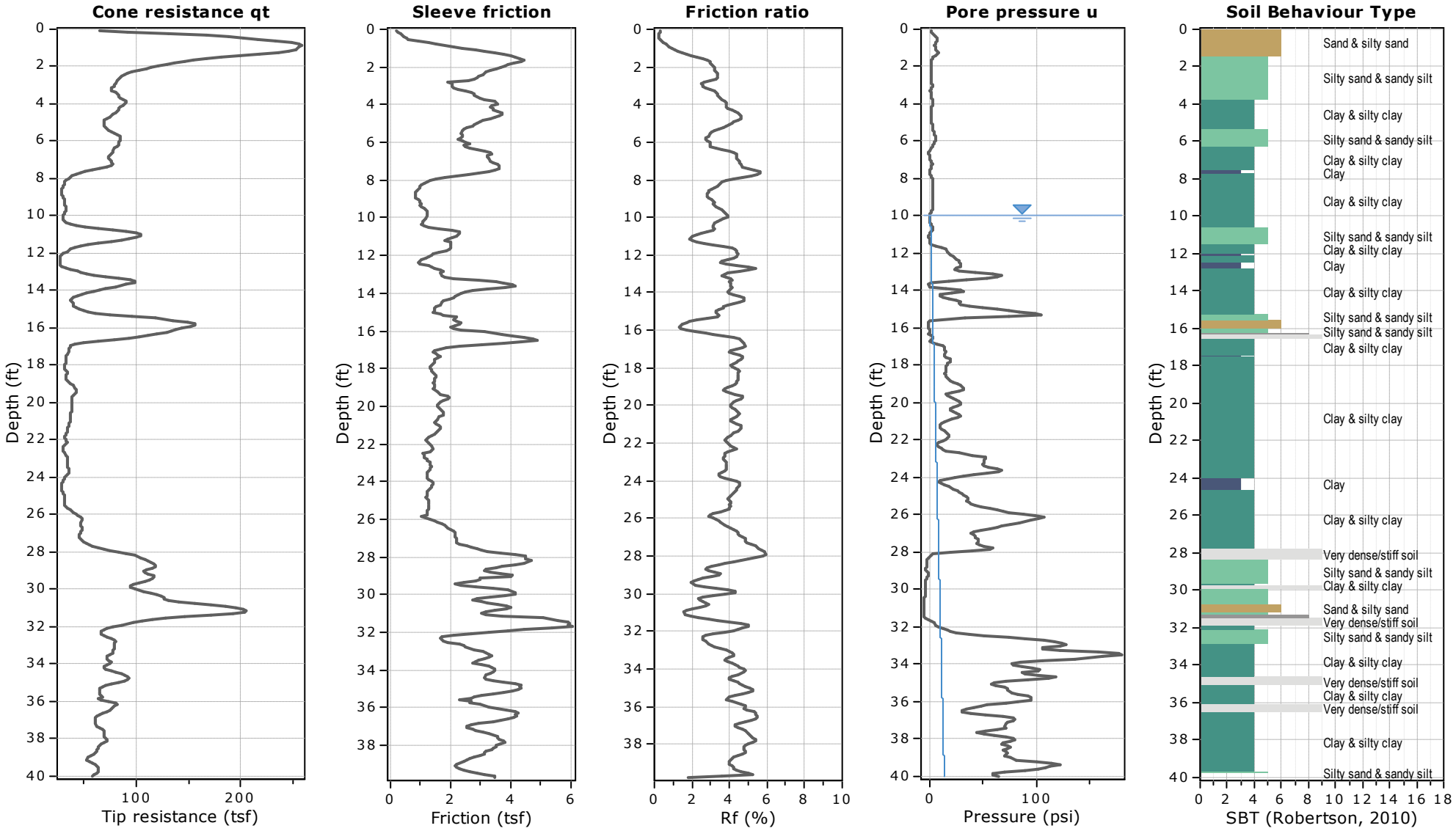
CPT: SP12
Total depth: 40.27 ft, Date: 11/15/2024
Coords: lat 38.391922° lon -121.906529°
Cone Type: CPTu
Cone Operator: ConeTec

Project: **Corby BESS Project**
Location: **Solano County, CA**



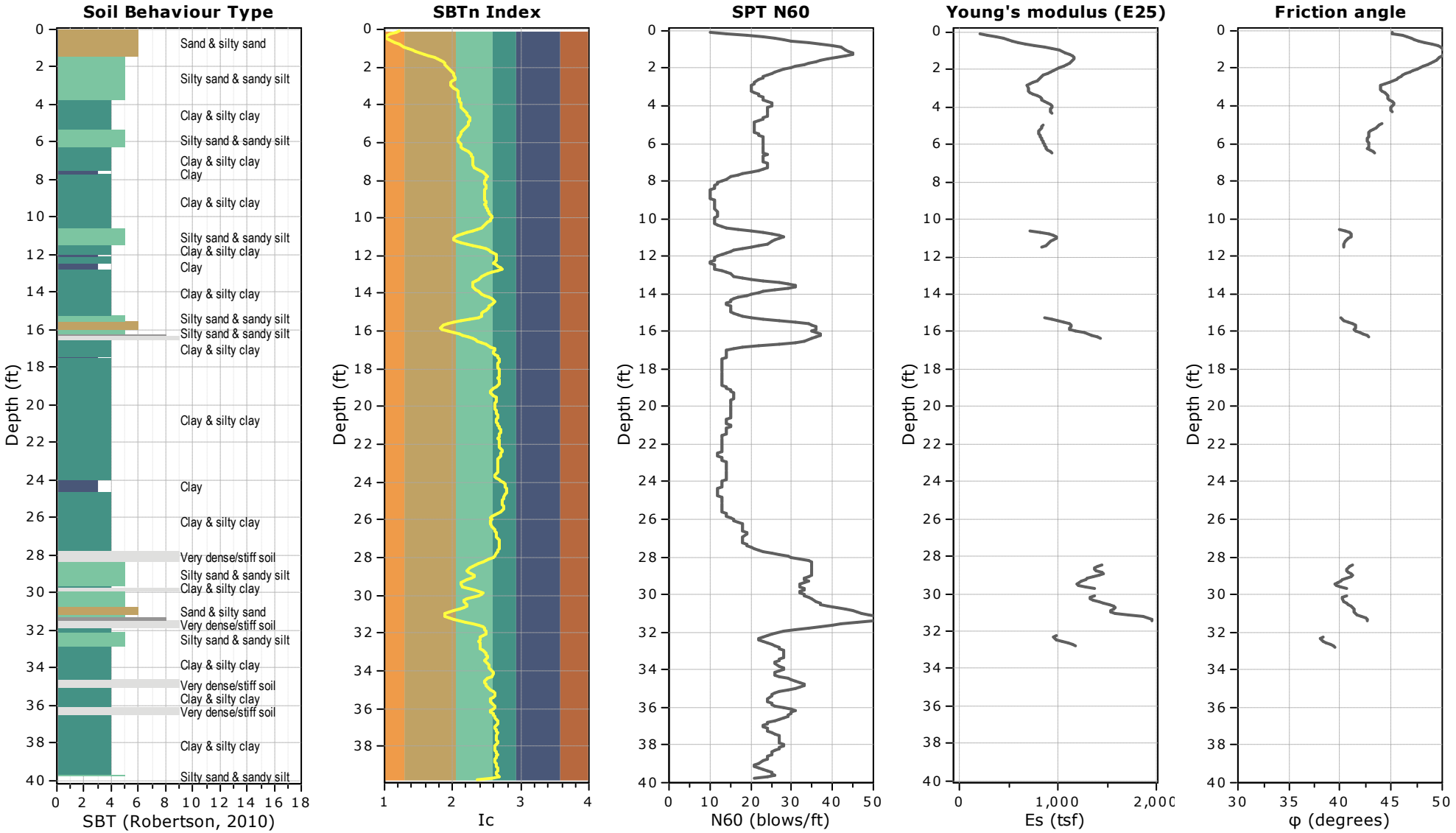
Project: **Corby BESS Project**
Location: **Solano County, CA**

CPT: SP13
Total depth: 40.03 ft, Date: 11/15/2024
Coords: lat 38.391617° lon -121.907644°
Cone Type: CPTu
Cone Operator: ConeTec



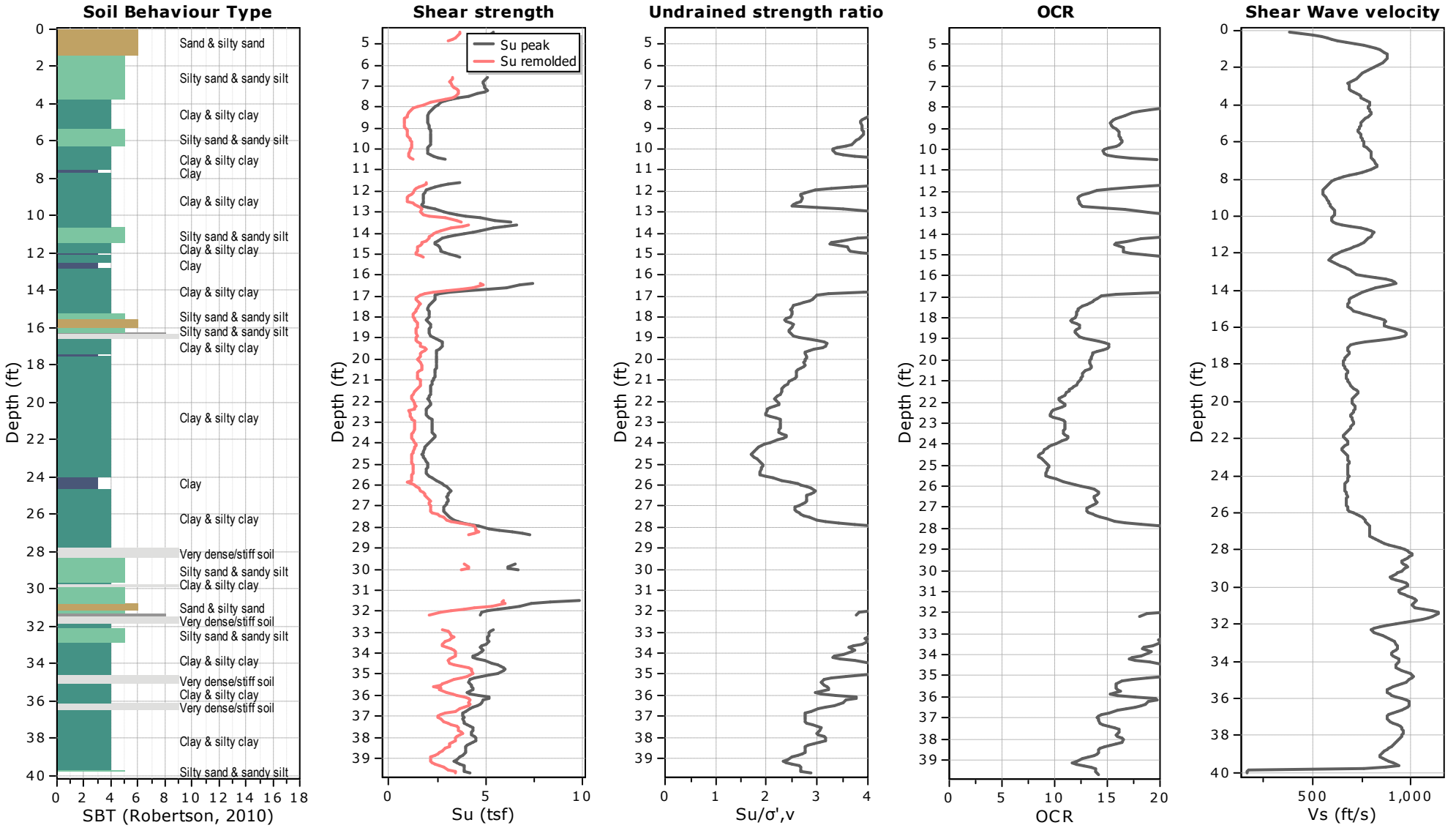
Project: **Corby BESS Project**
Location: **Solano County, CA**

CPT: SP13
Total depth: 40.03 ft, Date: 11/15/2024
Coords: lat 38.391617° lon -121.907644°
Cone Type: CPTu
Cone Operator: ConeTec



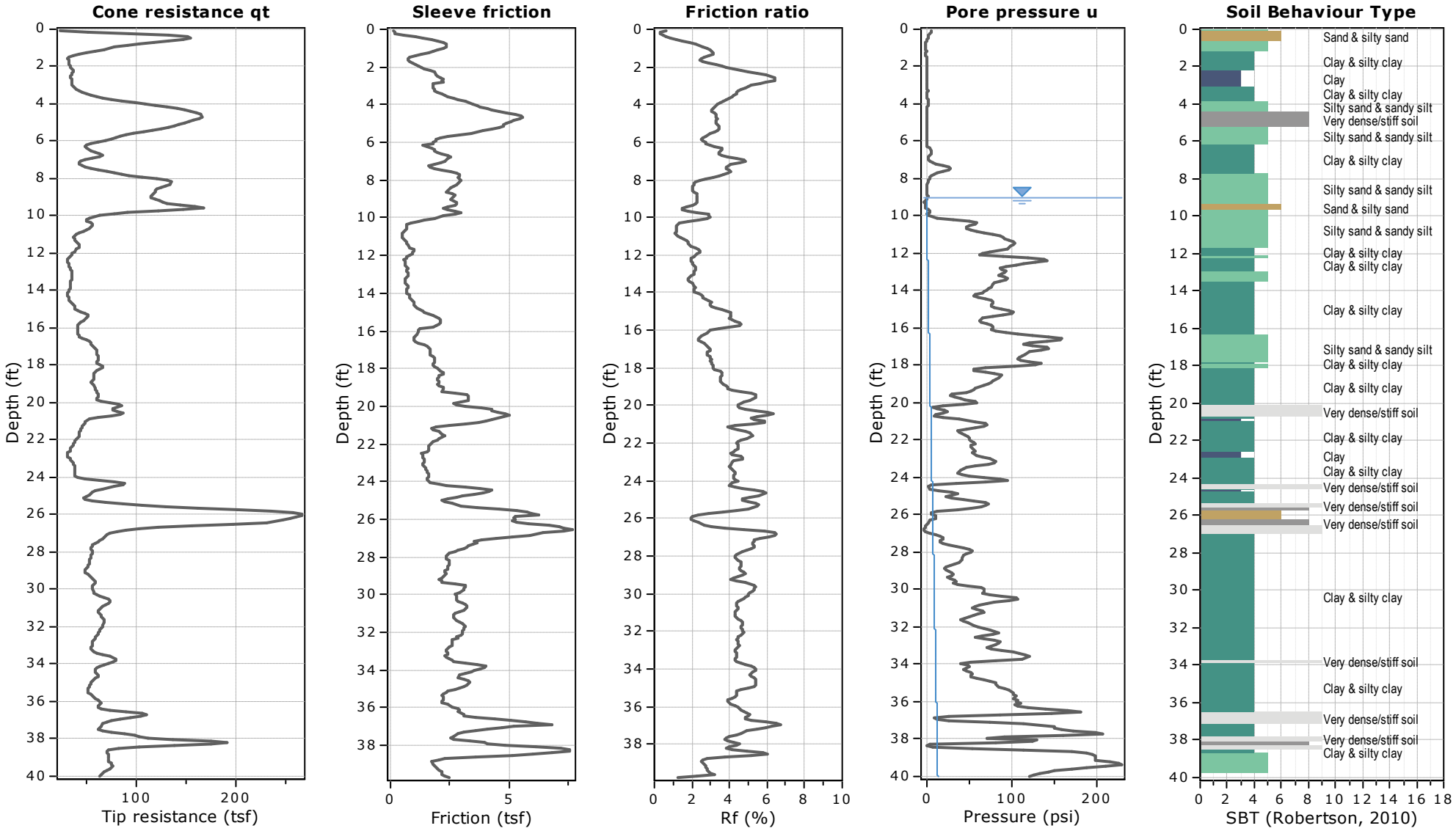
Project: **Corby BESS Project**
Location: **Solano County, CA**

CPT: SP13
Total depth: 40.03 ft, Date: 11/15/2024
Coords: lat 38.391617° lon -121.907644°
Cone Type: CPTu
Cone Operator: ConeTec



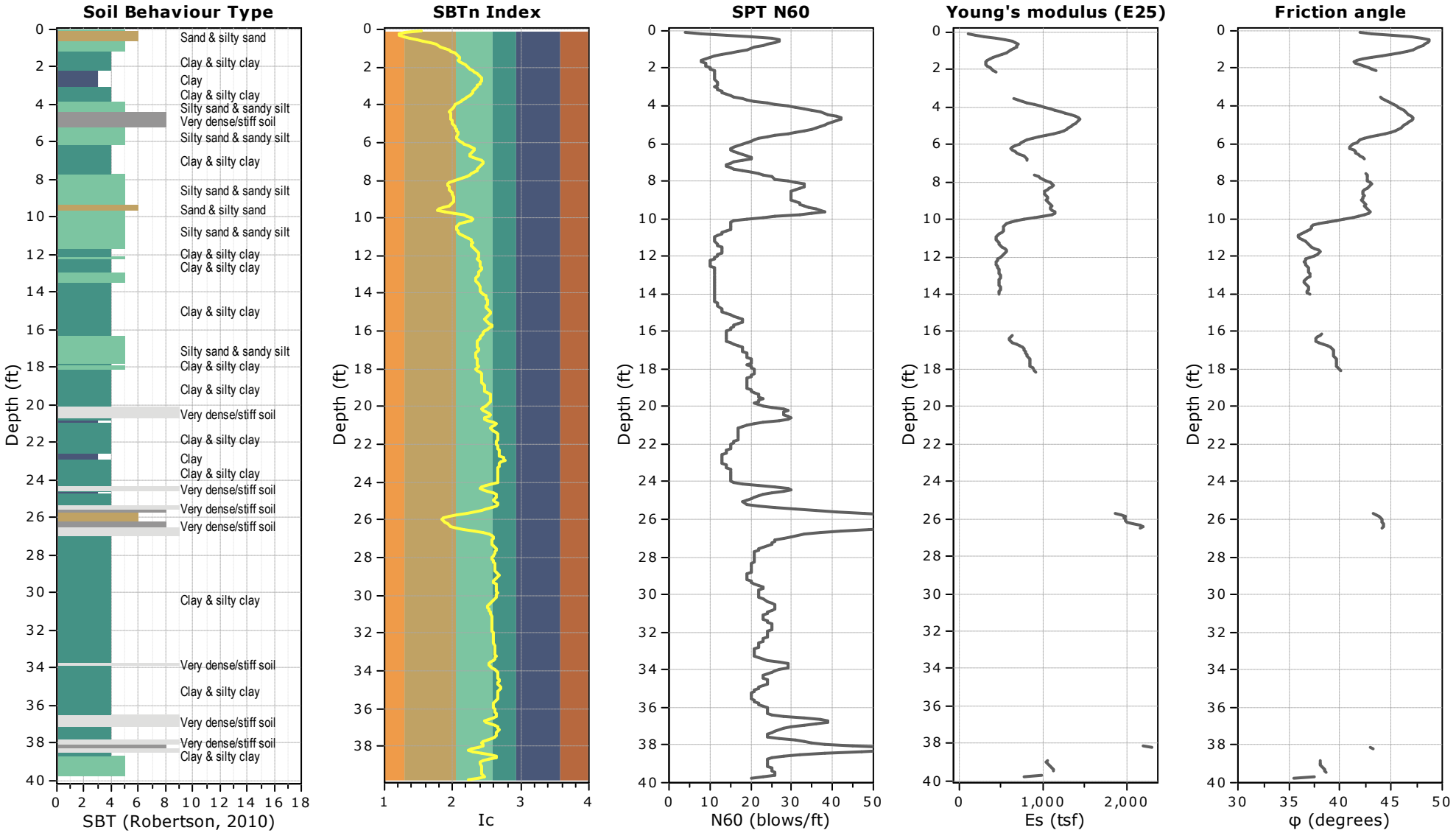
Project: **Corby BESS Project**
Location: **Solano County, CA**

CPT: SP14
Total depth: 40.03 ft, Date: 11/15/2024
Coords: lat 38.390967° lon -121.906555°
Cone Type: CPTu
Cone Operator: ConeTec



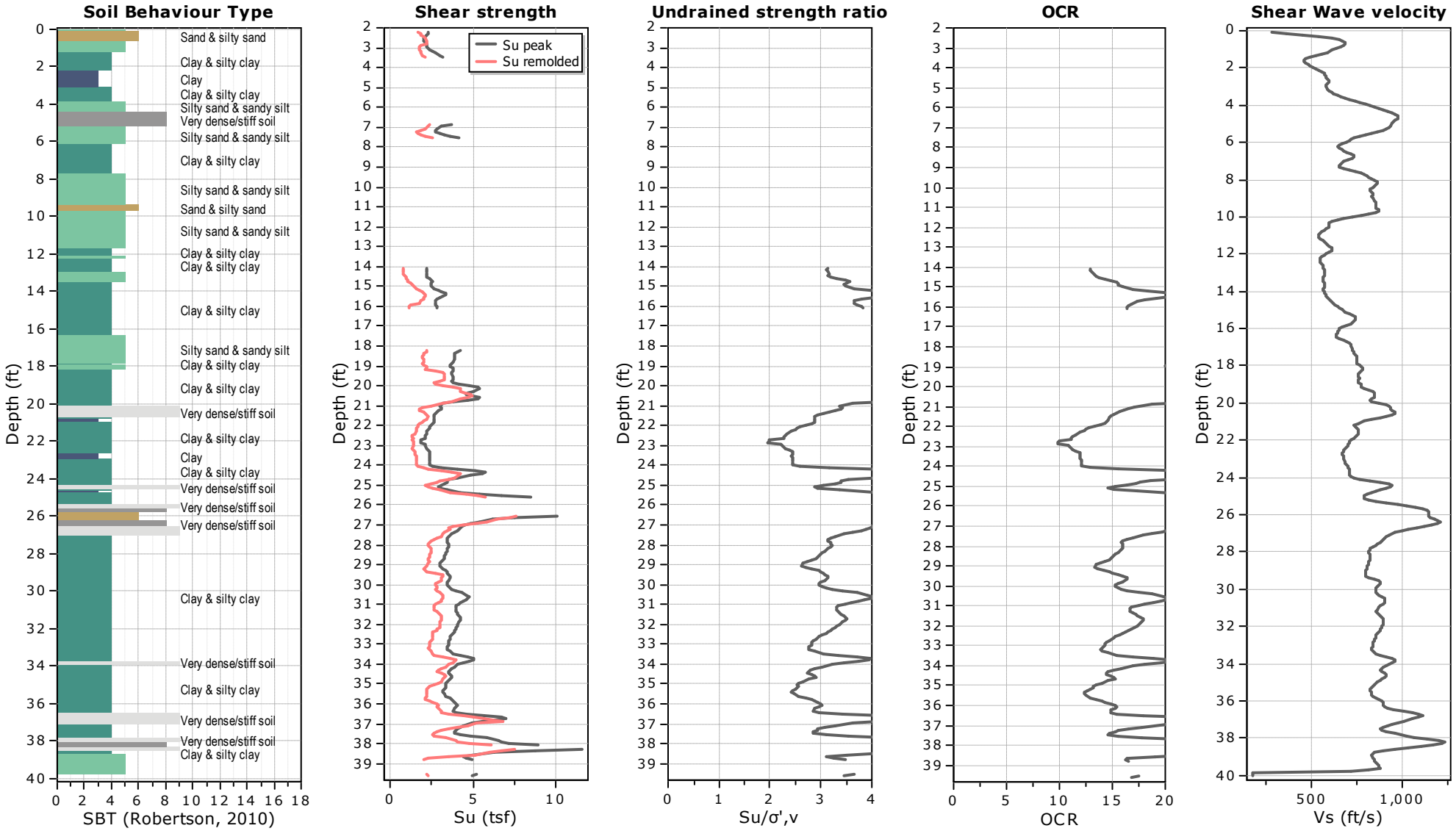
Project: **Corby BESS Project**
Location: **Solano County, CA**

CPT: SP14
Total depth: 40.03 ft, Date: 11/15/2024
Coords: lat 38.390967° lon -121.906555°
Cone Type: CPTu
Cone Operator: ConeTec



Project: **Corby BESS Project**
Location: **Solano County, CA**

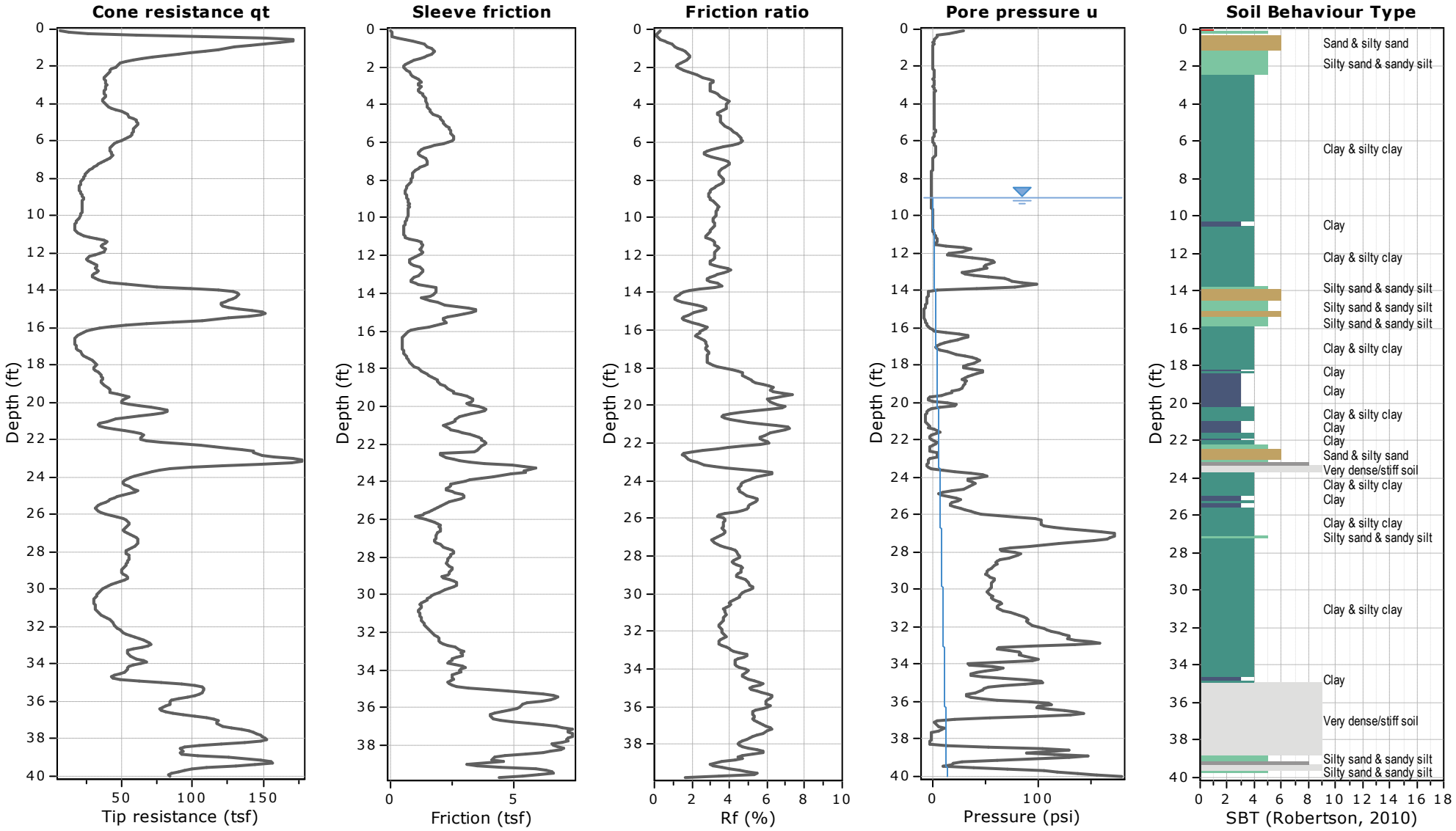
CPT: SP14
Total depth: 40.03 ft, Date: 11/15/2024
Coords: lat 38.390967° lon -121.906555°
Cone Type: CPTu
Cone Operator: ConeTec



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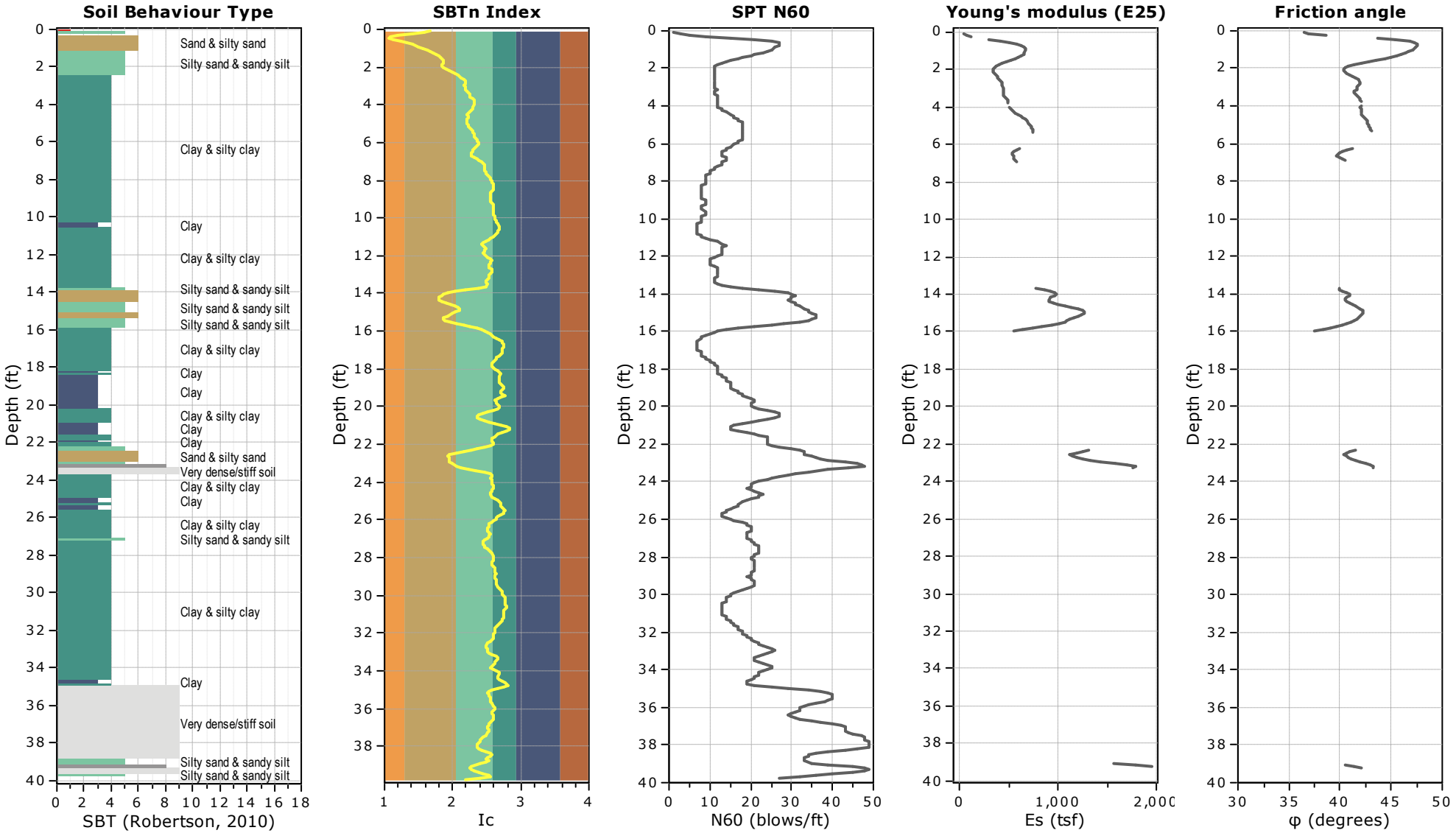
Project: **Corby BESS Project**
Location: **Solano County, CA**

CPT: SP15
Total depth: 40.03 ft, Date: 11/15/2024
Coords: lat 38.391056° lon -121.907366°
Cone Type: CPTu
Cone Operator: ConeTec



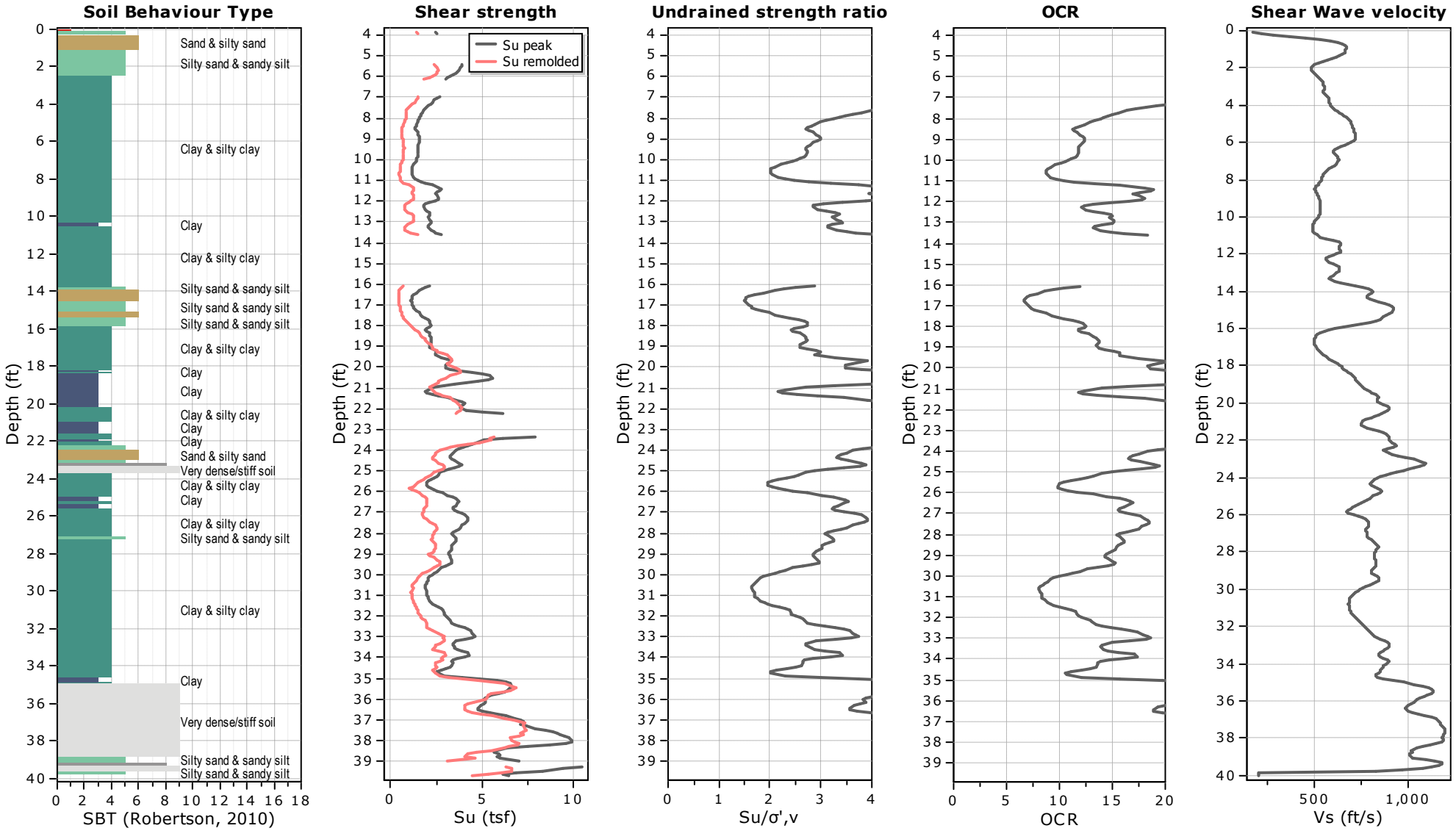
Project: **Corby BESS Project**
Location: **Solano County, CA**

CPT: SP15
Total depth: 40.03 ft, Date: 11/15/2024
Coords: lat 38.391056° lon -121.907366°
Cone Type: CPTu
Cone Operator: ConeTec

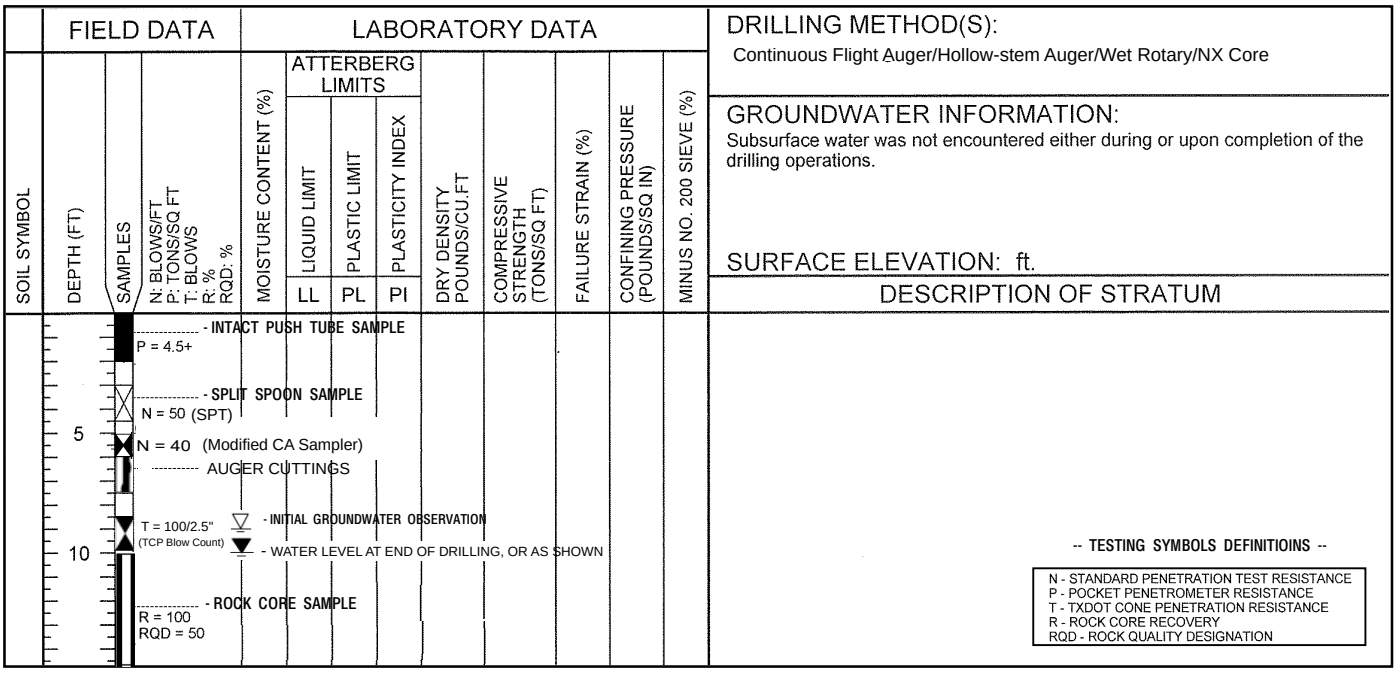


Project: **Corby BESS Project**
Location: **Solano County, CA**

CPT: SP15
Total depth: 40.03 ft, Date: 11/15/2024
Coords: lat 38.391056° lon -121.907366°
Cone Type: CPTu
Cone Operator: ConeTec



BORING LOG KEY



TYPICAL SOIL AND ROCK SYMBOLS (USCS CLASSIFICATION)

- Lean Clay (CL)
- Fat Clay (CH)
- Silt (ML)
- Elastic Silt (MH)
- Silty Sand (SM)
- Clayey Sand (SC)
- Silty, Clayey Sand (SC-SM)
- Poorly-Graded Sand (SP)
- Well-Graded Sand (SW)
- Poorly-Graded Gravel (GP)
- Well-Graded Gravel (GW)
- Clayey Gravel (GC)
- Silty Gravel (GM)
- Silty Clay (CL-ML)
- Claystone
- BASALT:
- Limestone
- Sandstone
- Siltstone
- Fill Material
- Shale

DEGREE OF WEATHERING

1) Unweathered: No evidence of any chemical or mechanical alteration.
2) Slightly weathered: Slight discoloration on surface, slight alteration along discontinuities, less than 10% of the rock volume altered.
3) Moderately weathered: Discoloring evident, surface pitted and altered with alteration penetrating well below rock surfaces, weathering "halos" evident, 10% to 50% of the rock volume altered.
4) Highly weathered: Entire mass discolored, alteration pervading nearly all of the rock with some pockets of slightly weathered rock noticeable, some minerals leached away.
5) Decomposed: rock reduced to a soil with relicit rock texture, generally molded and crumbled by hand.

SOIL STRUCTURE

Calcareous..... Containing calcium carbonate

Slickensided..... The presence of planes of weakness having a slick and glossy appearance

Interbedded..... Alternating layers of varying material

LOG OF BORING B-01

RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: NextEra Energy Resources, Inc.
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031
DATE(S) DRILLED: 9/13/2023

DRILLING METHOD(S):
Hollow Stem Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 14 ft. during drilling and measured at 11 ft. immediately after drilling

SURFACE ELEVATION (FT):

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	NEXT ERA SOIL BEHAVIOR CLASSIFICATION (SBC)	DESCRIPTION OF STRATUM
														6 in. Topsoil
			N = 8	20									E-11	FAT CLAY (CH), trace Sand, dark brown to gray, medium stiff, moist, trace roots
	5		N = 10	20								69	E-10	SANDY FAT CLAY (CH), light brown, stiff, moist, calcareous
			P = 4.5	19	43	13	30	111	3.91	8.3	0.0	66	D-10	SANDY LEAN CLAY (CL), with Sand, brown, stiff to very stiff, dry to moist, calcareous
	10		N = 24										D-9	
			N = 13	25	61	21	40						E-10	FAT CLAY (CH), with Sand, brown, stiff, moist, calcareous
	15		N = 14										E-10	SANDY FAT CLAY (CH), light brown, stiff, moist to wet, iron stained, calcareous
	20		N = 16										E-9	FAT CLAY (CH), with Sand, brown, very stiff, dry to moist, iron stained, calcareous
	25		N = 15										D-9	SANDY LEAN CLAY (CL), brown, very stiff, dry to moist, iron stained, calcareous
	30		N = 17										E-9	FAT CLAY (CH), with Sand, brown, very stiff, dry to moist, iron stained, calcareous
	35		N = 24										D-9	LEAN CLAY (CL), with Sand, brown, very stiff, dry to moist, iron stained, calcareous
	40		N = 22										C-5	CLAYEY SAND (SC), brown to gray, medium dense, moist, fine grained, iron stained
														Total Depth = 40.5 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
GPS COORDINATES: Lat. 38.390737, Long. -121.906687

RENEWABLE LOG NEXTERA SBC - LOG A GNNL01.GDT - 10/31/23 09:46 - R:\OPERATIONS\OP202 DESIGN\GEOTECHNICAL\G DRIVE\GINT\PROJECTS\2023\CORBY BESS - GE2306031\CORBY BESS - GE2306031.GPJ

LOG OF BORING B-02

RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: NextEra Energy Resources, Inc.
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031
DATE(S) DRILLED: 9/14/2023

DRILLING METHOD(S):
Hollow Stem Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 9 ft. during drilling and measured at 10 ft. immediately after drilling

SURFACE ELEVATION (FT):

FIELD DATA | LABORATORY DATA

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT (LL)	ATTERBERG LIMITS: PLASTIC LIMIT (PL)	ATTERBERG LIMITS: PLASTICITY INDEX (PI)	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	NEXT ERA SOIL BEHAVIOR CLASSIFICATION (SBC)	DESCRIPTION OF STRATUM
														6 in. Topsoil
			P = 4.5	21	47	15	32	108				56	D-8	SANDY LEAN CLAY (CL), brown, stiff to hard, moist, iron stained
				17	40	16	24					67		
	5		N = 13	21									D-10	
			N = 19	20	42	16	26					75	D-9	LEAN CLAY (CL), with Sand, brown, very stiff, moist, iron stained, trace calcareous
	10		N = 12	22									C-5	POORLY-GRADED SAND (SP-SC), with Clay, brown, medium dense, wet, fine grained
			N = 15										E-9	SANDY FAT CLAY (CH), brown, very stiff, moist, iron stained
	15		N = 20										E-9	
	20		N = 19										C-5	POORLY-GRADED SAND (SP-SC), with Clay, brown, medium dense, moist to wet, fine grained
														Total Depth = 20.5 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
GPS COORDINATES: Lat. 38.391106, Long. -121.908086

RENEWABLE LOG NEXTERA SBC - LOG A GNNL01.GDT - 10/31/23 09:47 - R:\OPERATIONS\OP2102 DESIGN\GEOTECHNICAL\G DRIVE\GINT\PROJECTS\2023\CORBY BESS - GE2306031\CORBY BESS - GE2306031.GPJ

LOG OF BORING B-03

RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: NextEra Energy Resources, Inc.
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031
DATE(S) DRILLED: 9/13/2023

DRILLING METHOD(S):
Hollow Stem Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 12 ft. during drilling and measured at 12 ft. immediately after drilling

SURFACE ELEVATION (FT):

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	NEXT ERA SOIL BEHAVIOR CLASSIFICATION (SBC)	DESCRIPTION OF STRATUM
														6 in. Topsoil
			N = 4	19	41	14	27					79	D-12	LEAN CLAY (CL), with Sand, brown to gray, soft, moist, trace roots
	5		P = 4.5	21	53	13	40	95				75	E-8	FAT CLAY (CH), with Sand, brown, hard, dry to moist
			N = 8	18								41	C-6	CLAYEY SAND (SC), light brown, loose, moist, fine grained
	10		N = 16	20									D-9	LEAN CLAY (CL), with Sand, brown, very stiff, moist
			N = 15										C-5	POORLY-GRADED SAND (SP-SC), with Clay, brown, medium dense, moist to wet, fine grained
	15		N = 16	30								67	E-9	SANDY FAT CLAY (CH), brown, very stiff, moist
	20		N = 10										D-10	SANDY LEAN CLAY (CL), brown, stiff, moist
	25		N = 13										D-10	LEAN CLAY (CL), with Sand, brown, stiff, moist
	30		N = 26										E-9	FAT CLAY (CH), with Sand, brown, very stiff, moist, trace Gypsum
	35		N = 19										D-9	LEAN CLAY (CL), with Sand, brown to gray, very stiff, moist
	40		N = 22										D-9	SANDY LEAN CLAY (CL), brown, very stiff, moist
														Total Depth = 40.5 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
GPS COORDINATES: Lat. 38.391498, Long. -121.906770

RENEWABLE LOG NEXTERA SBC - LOG A GNNL01.GDT - 10/31/23 09:47 - R:\OPERATIONS\OP202 DESIGN\GEOTECHNICAL\G DRIVE\GINT\PROJECTS\2023\CORBY BESS - GE2306031\CORBY BESS - GE2306031.GPJ

LOG OF BORING B-04

RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: NextEra Energy Resources, Inc.
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031
DATE(S) DRILLED: 9/14/2023

DRILLING METHOD(S):
Hollow Stem Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 9 ft. during drilling and measured at 15 ft. immediately after drilling

SURFACE ELEVATION (FT):

DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT (LL)	ATTERBERG LIMITS PLASTIC LIMIT (PL)	ATTERBERG LIMITS PLASTICITY INDEX (PI)	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	NEXT ERA SOIL BEHAVIOR CLASSIFICATION (SBC)	DESCRIPTION OF STRATUM
													6 in. Topsoil
		P = 2.0	21 16	47 32	16 14	31 18	106				65 61	D-10	SANDY LEAN CLAY (CL), brown, stiff to very stiff, dry to moist, trace calcareous nodules
5		N = 15	19									D-9	
		N = 18										D-9	
10		N = 10	21	39	15	24						D-10	LEAN CLAY (CL), with Sand, brown, stiff, moist, iron stained
		N = 11										D-10	SANDY LEAN CLAY (CL), brown, stiff, moist to wet, iron stained
15		N = 14	23									D-10	Grading moist
20		N = 23										D-9	LEAN CLAY (CL), trace Sand, brown, very stiff, dry to moist, iron stained
													Total Depth = 20.5 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
GPS COORDINATES: Lat. 38.392040, Long. -121.907267

RENEWABLE LOG NEXTERA SBC - LOG A GNNL01.GDT - 10/31/23 09:47 - R:\OPERATIONS\OP2102 DESIGN\GEOTECHNICAL\G DRIVE\GINT\PROJECTS\2023\CORBY BESS - GE2306031\CORBY BESS - GE2306031.GPJ

LOG OF BORING B-05

RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: NextEra Energy Resources, Inc.
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031
DATE(S) DRILLED: 9/14/2023

DRILLING METHOD(S):
Hollow Stem Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 13 ft. during drilling and measured at 11 ft. immediately after drilling

SURFACE ELEVATION (FT):

FIELD DATA | LABORATORY DATA

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	NEXT ERA SOIL BEHAVIOR CLASSIFICATION (SBC)	DESCRIPTION OF STRATUM
														6 in. Topsoil
			N = 10	16									D-10	LEAN CLAY (CL), with Sand, brown, stiff to hard, moist, trace roots
	5		P = 4.5	18	40	15	25	106				76	D-8	
			N = 14	21	48	18	30					86	D-10	Grading trace Sand, iron stained
	10		N = 13	25									E-10	FAT CLAY (CH), with Sand, brown, stiff, moist, iron stained
			N = 12	21									C-5	POORLY-GRADED SAND (SP-SC), with Clay, brown, medium dense, wet, fine grained
	15		N = 13										C-5	CLAYEY SAND (SC), brown, medium dense, wet, fine grained
	20		N = 16										E-9	FAT CLAY (CH), with Sand, brown, very stiff, dry to moist, iron stained
														Total Depth = 20.5 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
GPS COORDINATES: Lat. 38.392609, Long. -121.906669

RENEWABLE LOG NEXTERA SBC - LOG A GNNL01.GDT - 10/31/23 09:47 - R:\OPERATIONS\OP2\02 DESIGN\GEOTECHNICAL\G DRIVE\GINT\PROJECTS\2023\CORBY BESS - GE2306031\CORBY BESS - GE2306031.GPJ

LOG OF BORING B-06

RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: NextEra Energy Resources, Inc.
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031
DATE(S) DRILLED: 9/14/2023

DRILLING METHOD(S):
Hollow Stem Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 9 ft. during drilling and measured at 9 ft. immediately after drilling

SURFACE ELEVATION (FT):

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	NEXT ERA SOIL BEHAVIOR CLASSIFICATION (SBC)	DESCRIPTION OF STRATUM
														6 in. Topsoil
			P = 2.0	17 16	44 38	14 13	30 25	111				58 67	D-10	SANDY LEAN CLAY (CL), brown, stiff to very stiff, moist, iron stained
	5		N = 16	18									D-9	
			N = 17	22	52	19	33					91	E-9	FAT CLAY (CH), trace Sand, brown, very stiff, moist, calcareous
	10		N = 11	27								36	C-5	CLAYEY SAND (SC), brown, medium dense, wet, fine grained
			N = 15	19									C-5	POORLY-GRADED SAND (SP-SC), with Clay, brown, medium dense, wet, fine grained
	15		N = 11										D-10	SANDY LEAN CLAY (CL), brown, stiff, moist, calcareous
	20		N = 19										E-9	FAT CLAY (CH), with Sand, brown, very stiff, dry to moist, trace Gypsum
														Total Depth = 20.5 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
GPS COORDINATES: Lat. 38.392874, Long. -121.908534

RENEWABLE LOG NEXTERA SBC - LOG A GNNL01.GDT - 10/31/23 09:47 - R:\OPERATIONS\OP202 DESIGN\GEOTECHNICAL\G DRIVE\GINT\PROJECTS\2023\CORBY BESS - GE2306031\CORBY BESS - GE2306031.GPJ

LOG OF BORING B-07

RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: NextEra Energy Resources, Inc.
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031
DATE(S) DRILLED: 9/14/2023

DRILLING METHOD(S):
Hollow Stem Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 9 ft. during drilling and measured at 9 ft. immediately after drilling

SURFACE ELEVATION (FT):

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	NEXT ERA SOIL BEHAVIOR CLASSIFICATION (SBC)	DESCRIPTION OF STRATUM
														6 in. Topsoil
			N = 2	24	44	15	29					65	D-12	SANDY LEAN CLAY (CL), dark brown, soft, moist, trace roots
			P = 4.0	24	51	20	31	100	1.26	1.8	0.0	89	E-11	FAT CLAY (CH), trace Sand, dark brown, medium stiff to stiff, moist
	5		N = 11	26								82	E-10	Grading with Sand, brown
	10		N = 12	17									C-5	CLAYEY SAND (SC), brown, medium dense, moist, fine grained
			N = 21	19									C-5	POORLY-GRADED SAND (SP), trace Clay, brown, medium dense, moist to wet, fine grained
	15		N = 25										C-5	CLAYEY SAND (SC), brown, medium dense, moist to wet, fine grained
	20		N = 10										D-10	SANDY LEAN CLAY (CL), brown, stiff, moist, iron stained
														Total Depth = 20.5 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
GPS COORDINATES: Lat. 38.393626, Long. -121.906731

RENEWABLE LOG NEXTERA SBC - LOG A GNNL01.GDT - 10/31/23 09:47 - R:\OPERATIONS\OP2\02 DESIGN\GEOTECHNICAL\G DRIVE\GINT\PROJECTS\2023\CORBY BESS - GE2306031\CORBY BESS - GE2306031.GPJ

LOG OF BORING B-08

RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: NextEra Energy Resources, Inc.
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031
DATE(S) DRILLED: 9/12/2023

DRILLING METHOD(S):
Hollow Stem Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 9 ft. during drilling and measured at 7.5 ft. immediately after drilling

SURFACE ELEVATION (FT):

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	NEXT ERA SOIL BEHAVIOR CLASSIFICATION (SBC)	DESCRIPTION OF STRATUM
														6 in. Topsoil
			N = 7	21	39	15	24					66	D-11	SANDY LEAN CLAY (CL), dark brown, medium stiff to very stiff, dry to moist
	5		N = 40										D-9	Grading brown
			N = 9	18								65	D-10	
	10		N = 8	21								29	C-6	CLAYEY SAND (SC), brown, loose, moist to wet, fine grained
			N = 18										C-5	POORLY-GRADED SAND (SP), trace Clay, brown, medium dense, wet, fine to medium grained
	15		N = 12										C-5	
	20		N = 31										C-4	CLAYEY SAND (SC), brown, dense, moist, fine grained
														Total Depth = 20.5 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
GPS COORDINATES: Lat. 38.393837, Long. -121.907115

RENEWABLE LOG NEXTERA SBC - LOG A GNNL01.GDT - 10/31/23 09:48 - R:\OPERATIONS\OP2\02 DESIGN\GEOTECHNICAL\G DRIVE\GINT\PROJECTS\2023\CORBY BESS - GE2306031\CORBY BESS - GE2306031.GPJ

LOG OF BORING B-09

RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: NextEra Energy Resources, Inc.
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031
DATE(S) DRILLED: 9/12/2023

DRILLING METHOD(S):
Hollow Stem Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 9 ft. during drilling and measured at 9 ft. immediately after drilling

SURFACE ELEVATION (FT):

FIELD DATA | LABORATORY DATA

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT (LL)	ATTERBERG LIMITS: PLASTIC LIMIT (PL)	ATTERBERG LIMITS: PLASTICITY INDEX (PI)	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	NEXT ERA SOIL BEHAVIOR CLASSIFICATION (SBC)	DESCRIPTION OF STRATUM
														6 in. Topsoil
			N = 13										E-11	FAT CLAY (CH), trace Sand, brown, medium stiff to stiff, dry to moist
	5		N = 14	23	53	22	31					86	E-10	
			N = 9	19								56	D-10	SANDY LEAN CLAY (CL), brown, stiff, moist
	10		N = 7	27								37	C-6	CLAYEY SAND (SC), brown, loose, moist, fine grained
			N = 3	24								60	E-12	SANDY FAT CLAY (CH), brown, soft to stiff, moist to wet
	15		N = 9										E-10	Grading moist
	20		N = 10										D-10	SANDY LEAN CLAY (CL), brown, stiff, moist
														FAT CLAY (CH), trace Sand, brown, stiff, moist
														Total Depth = 20.5 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
GPS COORDINATES: Lat. 38.394527, Long. -121.906933

RENEWABLE LOG NEXTERA SBC - LOG A GNNL01.GDT - 10/31/23 09:48 - R:\OPERATIONS\OP2102 DESIGN\GEOTECHNICAL\G DRIVE\GINT\PROJECTS\2023\CORBY BESS - GE2306031\CORBY BESS - GE2306031.GPJ

LOG OF BORING B-09A

RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: NextEra Energy Resources, Inc.
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031
DATE(S) DRILLED: 9/14/2023

DRILLING METHOD(S):
Hollow Stem Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 10 ft. during drilling and measured at 9 ft. immediately after drilling

SURFACE ELEVATION (FT):

FIELD DATA				LABORATORY DATA									
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	NEXT ERA SOIL BEHAVIOR CLASSIFICATION (SBC)	DESCRIPTION OF STRATUM
	5													Undifferentiated Overburden. Refer to B-09 for detailed soil description.
	10													
	15		P = 3.5 N = 10										D-10 D-10	SANDY LEAN CLAY (CL), brown, stiff, moist, iron stained
														Total Depth = 15.5 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
GPS COORDINATES: Lat. 38.394498, Long. -121.906980

RENEWABLE LOG NEXTERA SBC - LOG A GNNL01.GDT - 10/31/23 09:48 - R:\OPERATIONS\OP202 DESIGN\GEOTECHNICAL\G DRIVE\GINT\PROJECTS\2023\CORBY BESS - GE2306031\CORBY BESS - GE2306031.GPJ

LOG OF BORING B-10

RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: NextEra Energy Resources, Inc.
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031
DATE(S) DRILLED: 9/14/2023

DRILLING METHOD(S):
Hollow Stem Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 10 ft. during drilling and measured at 8 ft. immediately after drilling

SURFACE ELEVATION (FT):

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	NEXT ERA SOIL BEHAVIOR CLASSIFICATION (SBC)	DESCRIPTION OF STRATUM
														6 in. Topsoil
			P = 4.5	23	55	17	38	103				87	D-8	LEAN CLAY (CL), with Sand, brown, stiff to hard, dry to moist
				19	36	15	21					74		
	5		N = 19	20	47	21	26					85	D-9	
			N = 14	21									D-10	
	10		N = 10	20								73	D-10	
			N = 11	22									D-10	
	15		N = 16										D-9	
	20		N = 13										D-10	Grading iron stained, calcareous
	25		N = 10										D-10	
	30		N = 20										D-9	
	35		N = 28										D-9	
	40		N = 35										D-8	
														Total Depth = 40.5 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
GPS COORDINATES: Lat. 38.394553, Long. -121.908452

RENEWABLE LOG NEXTERA SBC - LOG A GNNL01.GDT - 10/31/23 09:48 - R:\OPERATIONS\OP2102 DESIGN\GEOTECHNICAL\G DRIVE\GINT\PROJECTS\2023\CORBY BESS - GE2306031\CORBY BESS - GE2306031.GPJ

www.RRCcompanies.com

810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78661
512.992.2087

APPENDIX B

SUMMARY OF LABORATORY RESULTS

RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: NextEra Energy Resources, Inc.
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031

Borehole	Depth (ft)	USCS	Water Content (%)	Dry Unit Weight (pcf)	< No. 200	LL	PL	PI	Compressive Strength (tsf)	Strain at Failure (%)	Confining Pressure (psi)	Organic Matter (%)	Chlorides (%/weight)	Sulfates (%/weight)	pH	Minimum Resistivity (ohm-cm)
B-01	1.0		20									2.4				
B-01	1.0												0.0002	0.0018	8.5	871
B-01	3.5		20		69											
B-01	6.0	CL	19	111	66	43	13	30	3.91	8.3	0.0					
B-01	12.0		25			61	21	40								
B-02	1.0	CL	21	108	56	47	15	32								
B-02	1.0	CL	17		67	40	16	24								
B-02	3.5		21													
B-02	6.0	CL	20		75	42	16	26								
B-02	9.0		22													
B-03	1.0	CL	19		79	41	14	27								
B-03	3.5	CH	21	95	75	53	13	40								
B-03	6.0		18		41											
B-03	9.0		20													
B-03	14.0		30		67											
B-04	1.0	CL	21	106	65	47	16	31								
B-04	1.0	CL	16		61	32	14	18								
B-04	1.0												0.0006	0.0023	8.2	2,077
B-04	3.5		19													
B-04	9.0		21			39	15	24								
B-04	14.0		23													
B-05	1.0		16									1.8				
B-05	3.5	CL	18	106	76	40	15	25								
B-05	6.0	CL	21		86	48	18	30								
B-05	9.0		25													
B-05	12.0		21													
B-06	1.0	CL	17	111	58	44	14	30								
B-06	1.0	CL	16		67	38	13	25								
B-06	3.5		18									2.2				
B-06	6.0	CH	22		91	52	19	33								
B-06	9.0		27		36											

ND Not Detected;
*Denotes Total Unit Weight

RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

SUMMARY OF LABORATORY RESULTS

CLIENT: NextEra Energy Resources, Inc.
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031

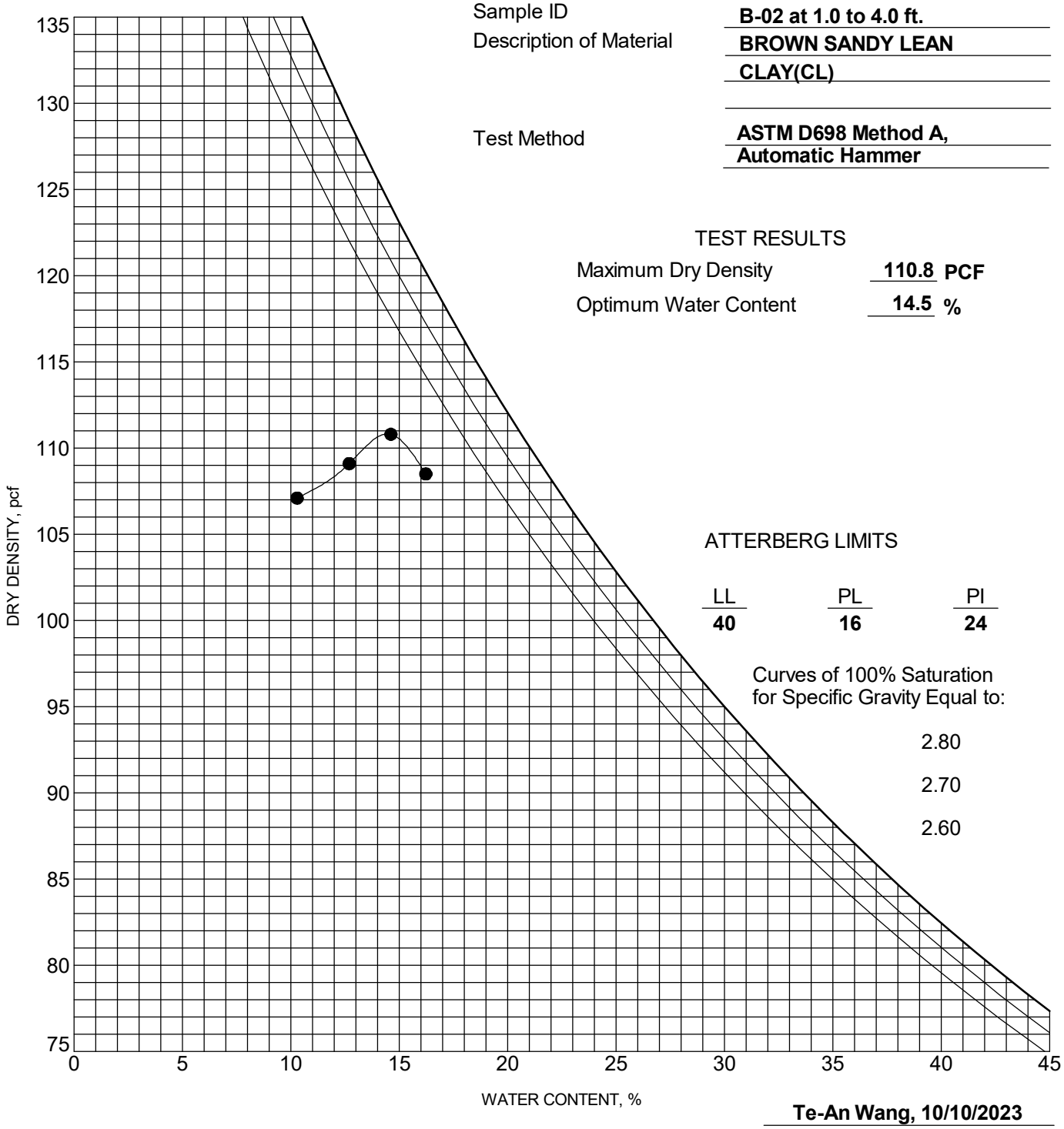
Borehole	Depth (ft)	USCS	Water Content (%)	Dry Unit Weight (pcf)	< No. 200	LL	PL	PI	Compressive Strength (tsf)	Strain at Failure (%)	Confining Pressure (psi)	Organic Matter (%)	Chlorides (%/weight)	Sulfates (%/weight)	pH	Minimum Resistivity (ohm-cm)
B-06	12.0		19													
B-07	1.0	CL	24		65	44	15	29								
B-07	1.0												0.0006	0.0023	8.4	804
B-07	2.5	CH	24	100	89	51	20	31	1.26	1.8	0.0					
B-07	4.5		26		82											
B-07	9.0		17													
B-07	12.0		19													
B-08	1.0	CL	21		66	39	15	24								
B-08	6.0		18		65											
B-08	9.0		21		29											
B-09	3.5	CH	23		86	53	22	31								
B-09	6.0		19		56											
B-09	9.0		27		37											
B-09	12.0		24		60											
B-10	1.0	CH	23	103	87	55	17	38								
B-10	1.0	CL	19		74	36	15	21								
B-10	1.0												0.0020	0.0037	8.0	1,273
B-10	3.5	CL	20		85	47	21	26								
B-10	6.0		21													
B-10	9.0		20		73											
B-10	12.0		22													

ND Not Detected;
*Denotes Total Unit Weight

MOISTURE-DENSITY RELATIONSHIP

Beyond Engineering & Testing, LLC
3801 Doris Lane, Suite B
Round Rock, TX 78664
Telephone: (512) 358-6048

CLIENT: RRC Power & Energy, LLC
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031



Sample ID: **B-02 at 1.0 to 4.0 ft.**
Description of Material: **BROWN SANDY LEAN CLAY(CL)**

Test Method: **ASTM D698 Method A, Automatic Hammer**

TEST RESULTS

Maximum Dry Density: **110.8 PCF**
Optimum Water Content: **14.5 %**

ATTERBERG LIMITS

LL	PL	PI
40	**16**	**24**

Curves of 100% Saturation for Specific Gravity Equal to:

2.80
2.70
2.60

Te-An Wang, 10/10/2023
Analysis & Quality Review/Date

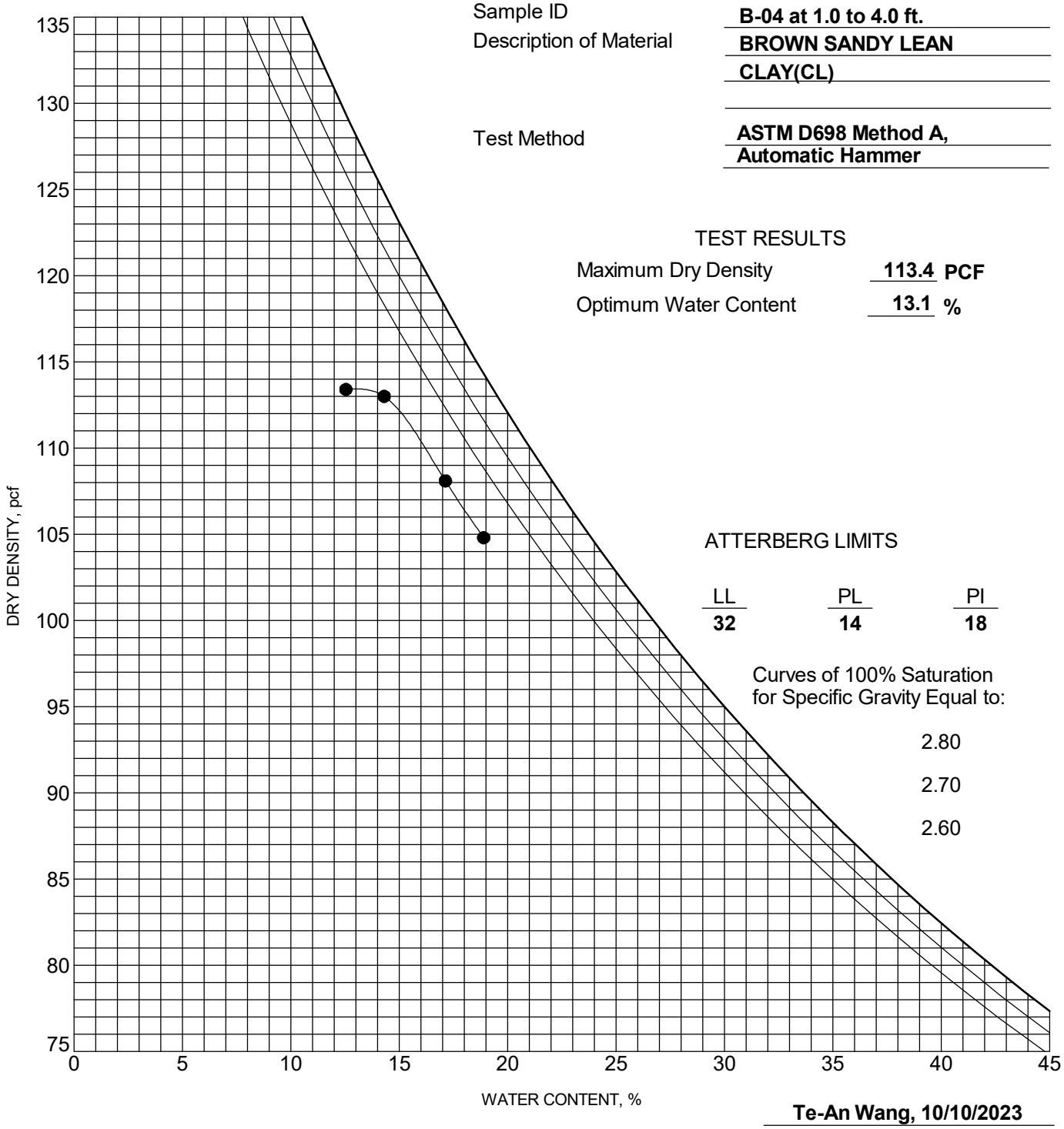
Specimens prepared by: T.W.

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MOISTURE-DENSITY RELATIONSHIP

Beyond Engineering & Testing, LLC
3801 Doris Lane, Suite B
Round Rock, TX 78664
Telephone: (512) 358-6048

CLIENT: RRC Power & Energy, LLC
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031



Sample ID: **B-04 at 1.0 to 4.0 ft.**
Description of Material: **BROWN SANDY LEAN CLAY(CL)**

Test Method: **ASTM D698 Method A, Automatic Hammer**

TEST RESULTS

Maximum Dry Density	**113.4**	**PCF**
Optimum Water Content	**13.1**	**%**

ATTERBERG LIMITS

LL	PL	PI
32	**14**	**18**

Curves of 100% Saturation for Specific Gravity Equal to:

2.80
2.70
2.60

Te-An Wang, 10/10/2023
Analysis & Quality Review/Date

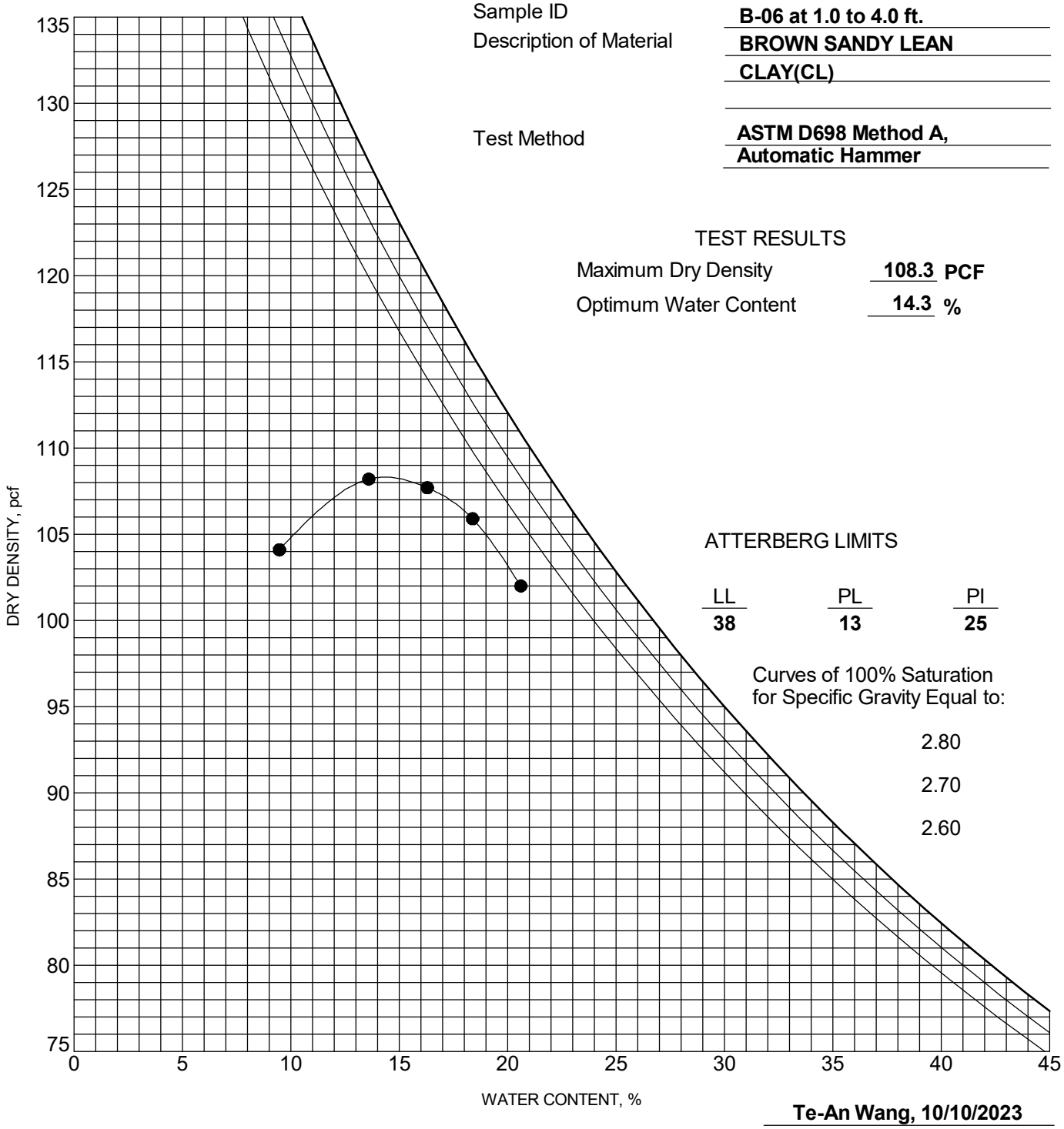
Specimens prepared by: T.W.

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MOISTURE-DENSITY RELATIONSHIP

Beyond Engineering & Testing, LLC
3801 Doris Lane, Suite B
Round Rock, TX 78664
Telephone: (512) 358-6048

CLIENT: RRC Power & Energy, LLC
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031



Sample ID: **B-06 at 1.0 to 4.0 ft.**
Description of Material: **BROWN SANDY LEAN CLAY(CL)**

Test Method: **ASTM D698 Method A, Automatic Hammer**

TEST RESULTS

Maximum Dry Density	**108.3**	**PCF**
Optimum Water Content	**14.3**	**%**

ATTERBERG LIMITS

LL	PL	PI
38	**13**	**25**

Curves of 100% Saturation for Specific Gravity Equal to:

2.80
2.70
2.60

Te-An Wang, 10/10/2023
Analysis & Quality Review/Date

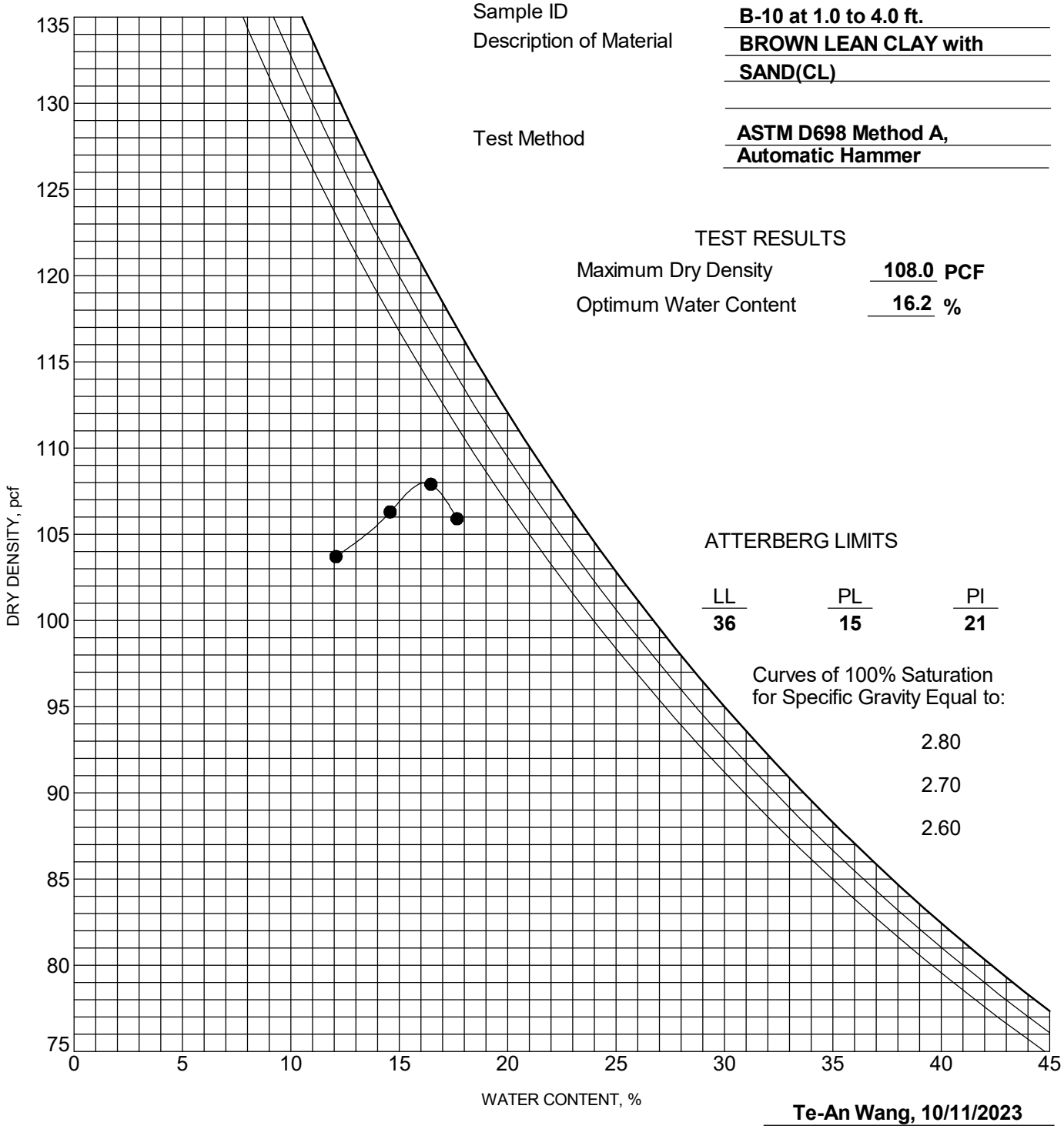
Specimens prepared by: T.W.

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MOISTURE-DENSITY RELATIONSHIP

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3801 Doris Lane, Suite B
Round Rock, TX 78664
Telephone: (512) 358-6048

CLIENT: RRC Power & Energy, LLC
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031



Sample ID: **B-10 at 1.0 to 4.0 ft.**
Description of Material: **BROWN LEAN CLAY with SAND(CL)**

Test Method: **ASTM D698 Method A, Automatic Hammer**

TEST RESULTS

Maximum Dry Density	**108.0**	**PCF**
Optimum Water Content	**16.2**	**%**

ATTERBERG LIMITS

LL	PL	PI
36	**15**	**21**

Curves of 100% Saturation for Specific Gravity Equal to:

2.80
2.70
2.60

Te-An Wang, 10/11/2023
Analysis & Quality Review/Date

Specimens prepared by: T.W.

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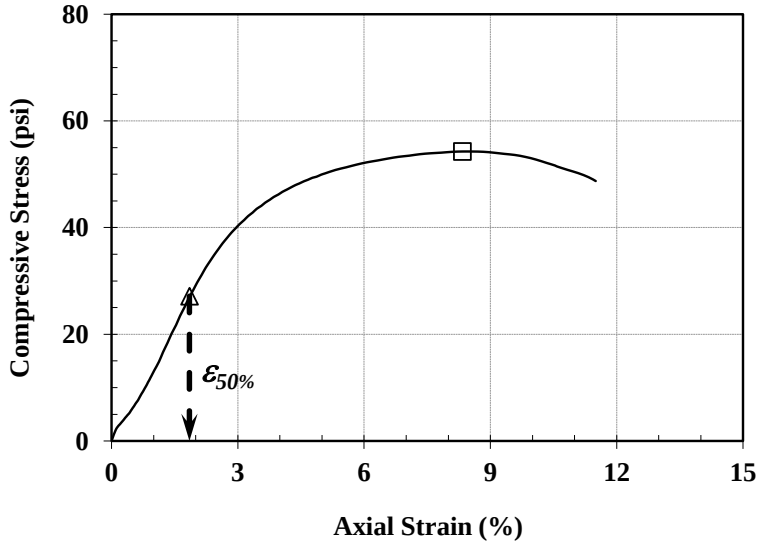
Beyond Engineering & Testing, LLC
3801 Doris Lane, Suite B
Round Rock, TX 78664
(512) 358-6048

Unconfined Compression Test Report

Client: RRC Power & Energy, LLC
Project: Corby BESS
Sample I.D.: B-1 at 6 ft

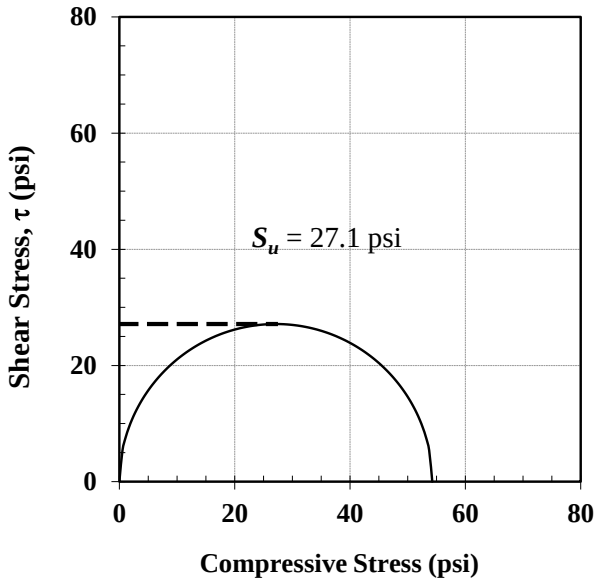
Project No.: GE2306031
Test Method: ASTM D2166
Test Date: 10/3/2023

Type of Specimen: Shelby Tube
Strain Rate: 1.0 %/min



Initial Specimen Conditions		
Avg. Diameter (in)	D_o	2.86
Avg. Height (in)	H_o	5.59
In-situ Moisture Content (%)	w_o	18.6
Total Unit Weight (pcf)	γ_{total}	131.8
Dry Unit Weight (pcf)	γ_{dry}	111.1
Saturation (%)	S_r	97.2
Void Ratio	e_o	0.52
Specific Gravity (Assumed)	G_s	2.70

Mohr Circles for Peak Stress at Failure



Stresses at Failure	
Unconfined Compressive Strength, q_u (psi)	54.3
Axial Strain at Failure (%)	8.3
Axial Strain at 50 % of q_u (%)	1.9
Total Stresses at Failure	
Major Principal Stress, σ_1 (psi)	54.3
Minor Principal Stress, σ_3 (psi)	0
Undrained Shear Strength, S_u (tsf)	1.95

Note: Failure was determined at the maximum deviator stress or deviator stress at 15 % axial strain, whenever is obtained first.

Te-An Wang, EIT, 10/10/23
Quality Review/Date
Specimen prepared & tested by: A.B.

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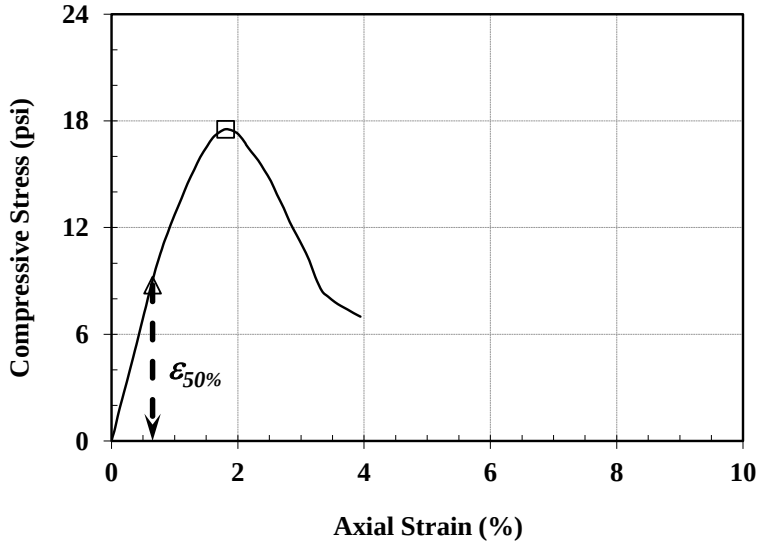
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3801 Doris Lane, Suite B
Round Rock, TX 78664
(512) 358-6048

Unconfined Compression Test Report

Client: RRC Power & Energy, LLC
Project: Corby BESS
Sample I.D.: B-7 at 2.5 ft

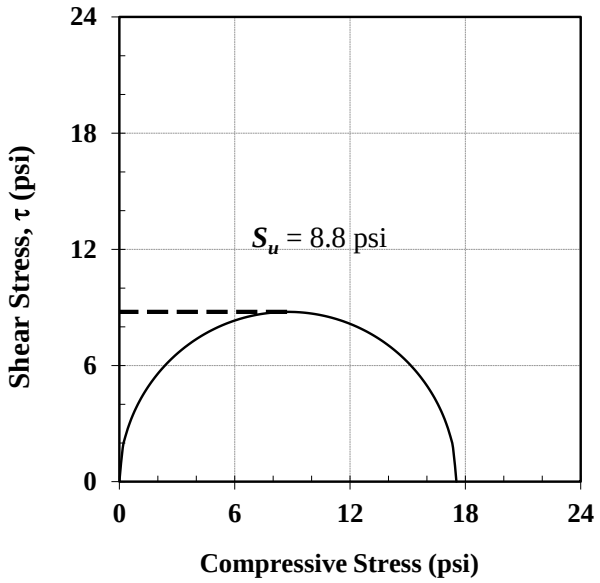
Project No.: GE2306031
Test Method: ASTM D2166
Test Date: 10/3/2023

Type of Specimen: Shelby Tube
Strain Rate: 1.0 %/min



Initial Specimen Conditions		
Avg. Diameter (in)	D_o	2.86
Avg. Height (in)	H_o	5.60
In-situ Moisture Content (%)	w_o	24.4
Total Unit Weight (pcf)	γ_{total}	124.2
Dry Unit Weight (pcf)	γ_{dry}	99.9
Saturation (%)	S_r	95.6
Void Ratio	e_o	0.69
Specific Gravity (Assumed)	G_s	2.70

Mohr Circles for Peak Stress at Failure



Stresses at Failure	
Unconfined Compressive Strength, q_u (psi)	17.5
Axial Strain at Failure (%)	1.8
Axial Strain at 50 % of q_u (%)	0.7
Total Stresses at Failure	
Major Principal Stress, σ_1 (psi)	17.5
Minor Principal Stress, σ_3 (psi)	0
Undrained Shear Strength, S_u (tsf)	0.63

Note: Failure was determined at the maximum deviator stress or deviator stress at 15 % axial strain, whenever is obtained first.

Te-An Wang, EIT, 10/10/23
Quality Review/Date
Specimen prepared & tested by: A.B.

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3801 Doris Lane, Suite B
Round Rock, TX 78664
(512) 358-6048

One-Dimensional Swell or Collapse of Soils

Client: RRC Power & Energy, LLC
Project Name: Corby BESS
Sample ID: B-3 at 3.5 ft

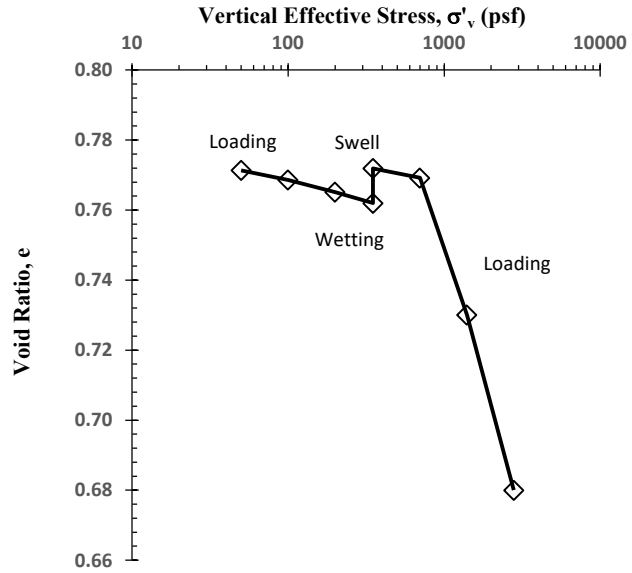
Beyond Project No.: GE2306031
Test Method: ASTM D4546, Method C
Test Date: 10/6/23-10/11/23

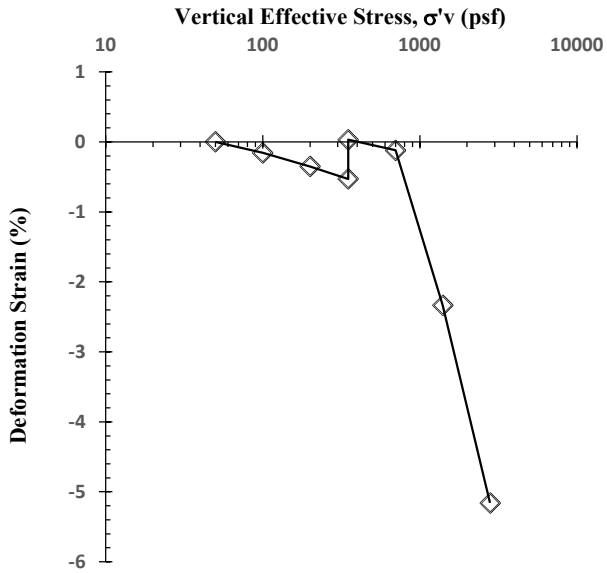
Specimen Conditions	
Avg. Water Content of Trimmings (%)	21.1
Final Specimen Water Content (%)	25.1
Initial Specimen Height (in)	0.796
Final Specimen Height (in)	0.754
Initial Dry Unit Weight, γ_o (pcf)	95.1
Final Dry Unit Weight, γ_f (pcf)	100.3
Initial Void Ratio, e_o	0.771
Final Void Ratio, e_f	0.680
Initial Degree of Saturation (%)	73.9
Final Degree of Saturation (%)	99.6
Swell Strain (%)	0.6

Specimen was inundated with tap water during testing. Loading increment duration was minimum 24 hours. . The calculation included the machine deflections that measured in each loading steps.

Gs assumed to be 2.70

Specimen Diameter: 2.496 inches





	Dry				Inundated			
Stage No.	1	2	3	4	5	6	7	8
σ'_v (psf)	50	100	200	350	350	700	1400	2800
Height (inch)	0.796	0.794	0.793	0.791	0.796	0.795	0.777	0.754
Void Ratio, e	0.771	0.769	0.765	0.762	0.772	0.769	0.730	0.680
Axial Strain (%)	0.00	-0.16	-0.35	-0.53	0.03	-0.12	-2.33	-5.16

Huamiao Cao, P.E. 10/13/23
Analysis & Quality Review/Date
Specimen prepared and tested by: J.Z.

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3801 Doris Lane, Suite B
Round Rock, TX 78664
(512) 358-6048

One-Dimensional Swell or Collapse of Soils

Client:	RRC Power & Energy, LLC	**Beyond Project No.:**	GE2306031
Project Name:	Corby BESS	**Test Method:**	ASTM D4546, Method C
Sample ID:	B-3 at 3.5 ft	**Test Date:**	10/6/23-10/11/23



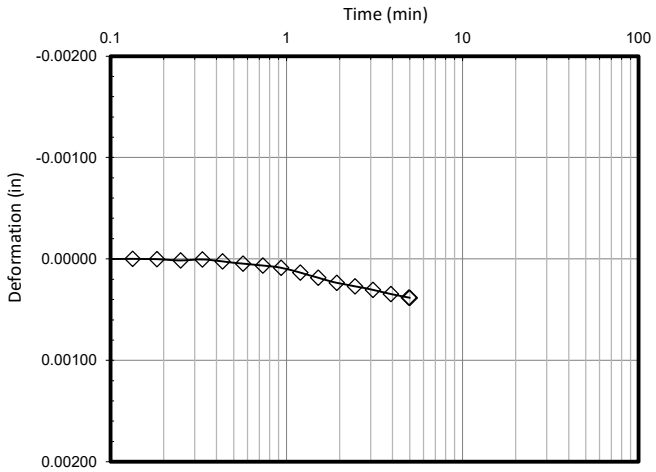


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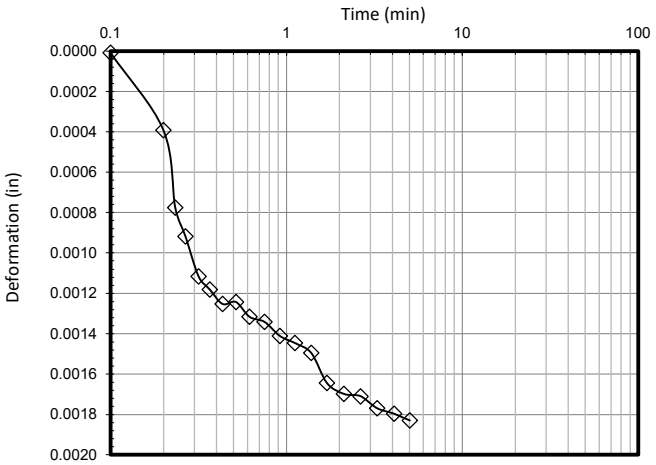
One-Dimensional Swell or Collapse of Soils

Client:	RRC Power & Energy, LLC	**Beyond Project No.:**	GE2306031
Project Name:	Corby BESS	**Test Method:**	ASTM D4546, Method C
Sample ID:	B-3 at 3.5 ft	**Test Date:**	10/6/23-10/11/23

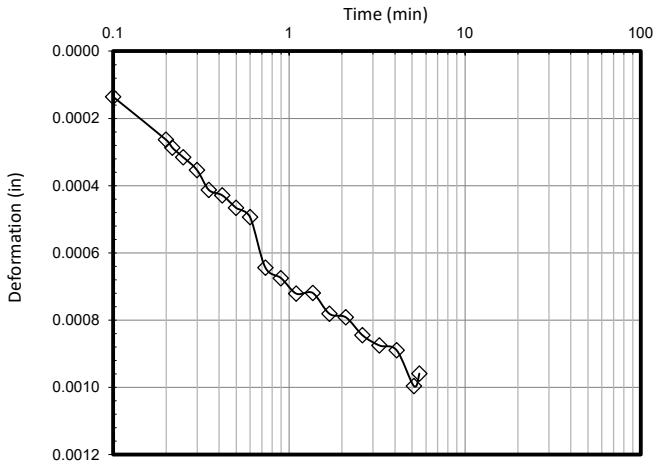
50-psf Load (Seating Load)



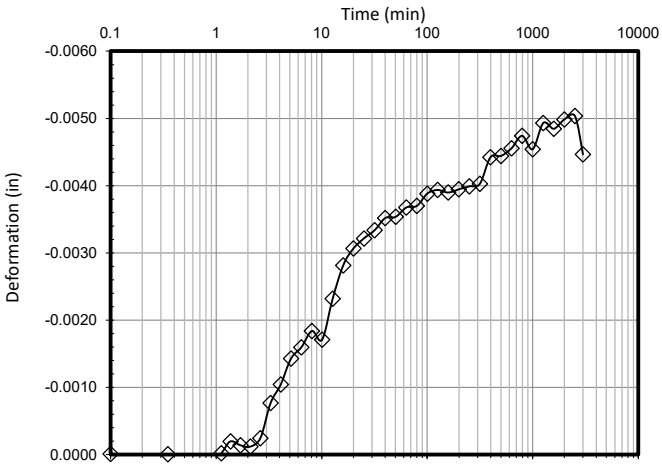
350-psf Load



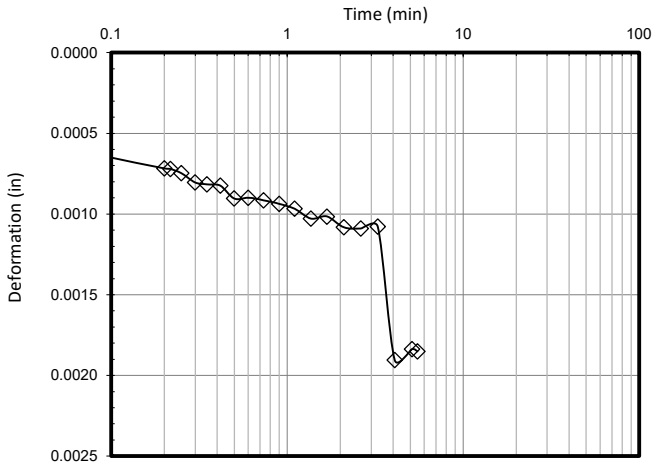
100-psf Load



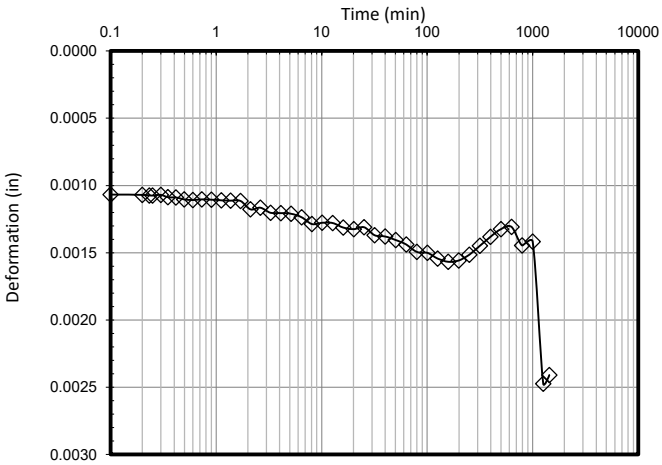
350-psf Load (inundated)



200-psf Load



700-psf Load (inundated)

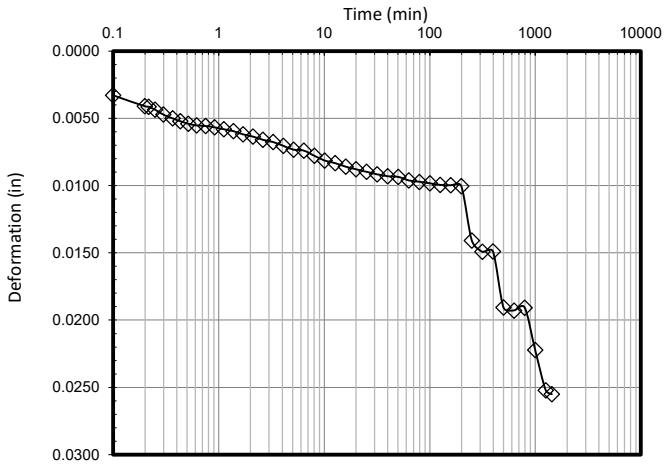


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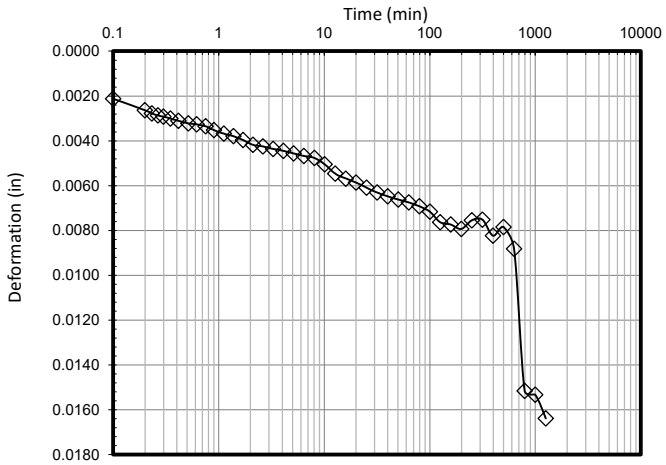
One-Dimensional Swell or Collapse of Soils

Client:	RRC Power & Energy, LLC	**Beyond Project No.:**	GE2306031
Project Name:	Corby BESS	**Test Method:**	ASTM D4546, Method C
Sample ID:	B-3 at 3.5 ft	**Test Date:**	10/6/23-10/11/23

1400-psf Load (inundated)



2800-psf Load (inundated)



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(512) 358-6048

One-Dimensional Swell or Collapse of Soils

Client: RRC Power & Energy, LLC
Project Name: Corby BESS
Sample ID: B-5 at 3.5 ft

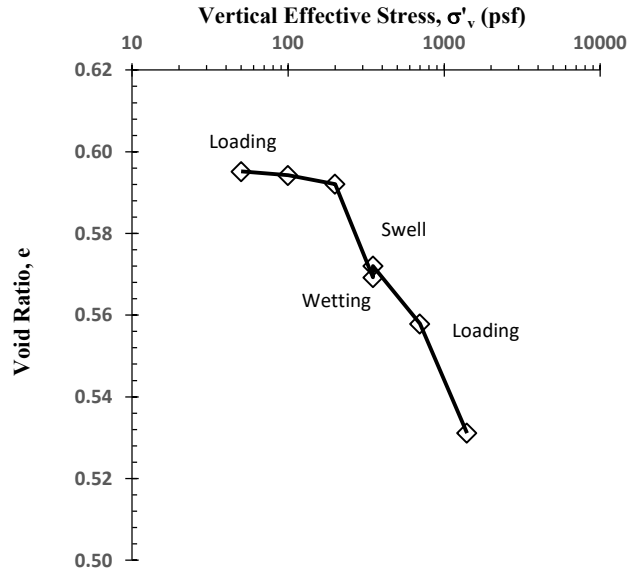
Beyond Project No.: GE2306031
Test Method: ASTM D4546, Method C
Test Date: 10/6/23-10/10/23

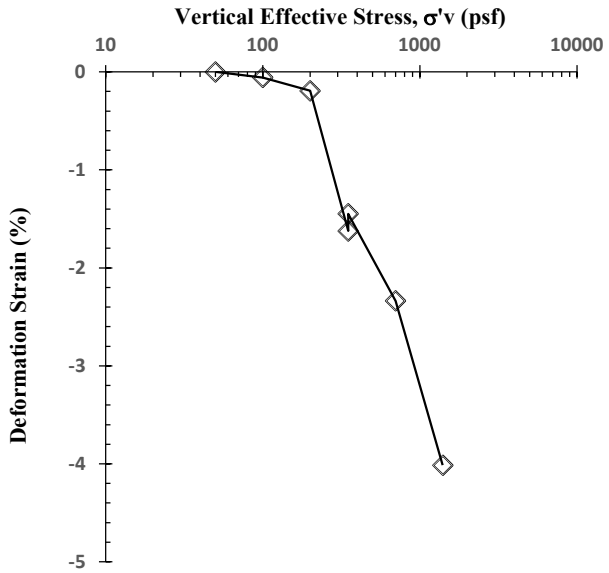
Specimen Conditions	
Avg. Water Content of Trimmings (%)	18.3
Final Specimen Water Content (%)	19.1
Initial Specimen Height (in)	0.789
Final Specimen Height (in)	0.757
Initial Dry Unit Weight, γ_o (pcf)	105.6
Final Dry Unit Weight, γ_f (pcf)	110.0
Initial Void Ratio, e_o	0.595
Final Void Ratio, e_f	0.531
Initial Degree of Saturation (%)	82.9
Final Degree of Saturation (%)	97.3
Swell Strain (%)	0.2

Specimen was inundated with tap water during testing. Loading increment duration was minimum 24 hours. . The calculation included the machine deflections that measured in each loading steps.

Gs assumed to be 2.70

Specimen Diameter: 2.496 inches





	Dry				Inundated		
Stage No.	1	2	3	4	5	6	7
σ'_v (psf)	50	100	200	350	350	700	1400
Height (inch)	0.789	0.789	0.787	0.776	0.778	0.771	0.757
Void Ratio, e	0.595	0.594	0.592	0.569	0.572	0.558	0.531
Axial Strain (%)	0.00	-0.06	-0.19	-1.62	-1.45	-2.34	-4.01

Huamiao Cao, P.E. 10/13/23
Analysis & Quality Review/Date
Specimen prepared and tested by: J.Z.

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Round Rock, TX 78664
(512) 358-6048

One-Dimensional Swell or Collapse of Soils

Client:	RRC Power & Energy, LLC	**Beyond Project No.:**	GE2306031
Project Name:	Corby BESS	**Test Method:**	ASTM D4546, Method C
Sample ID:	B-5 at 3.5 ft	**Test Date:**	10/6/23-10/10/23



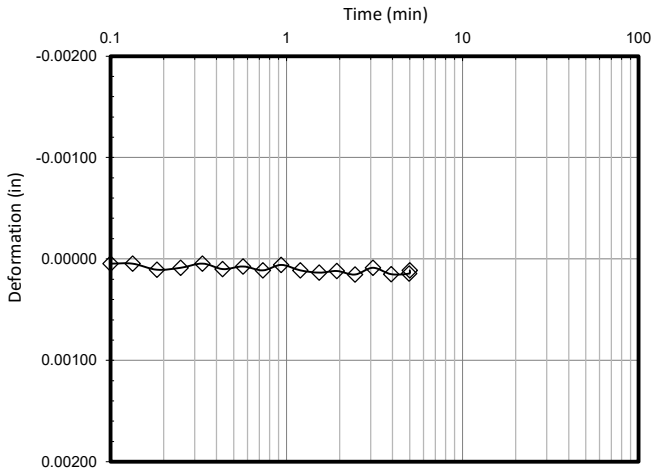


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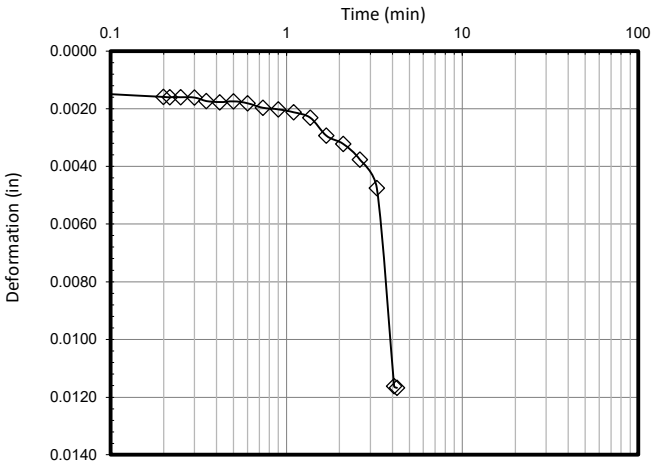
One-Dimensional Swell or Collapse of Soils

Client:	RRC Power & Energy, LLC	**Beyond Project No.:**	GE2306031
Project Name:	Corby BESS	**Test Method:**	ASTM D4546, Method C
Sample ID:	B-5 at 3.5 ft	**Test Date:**	10/6/23-10/10/23

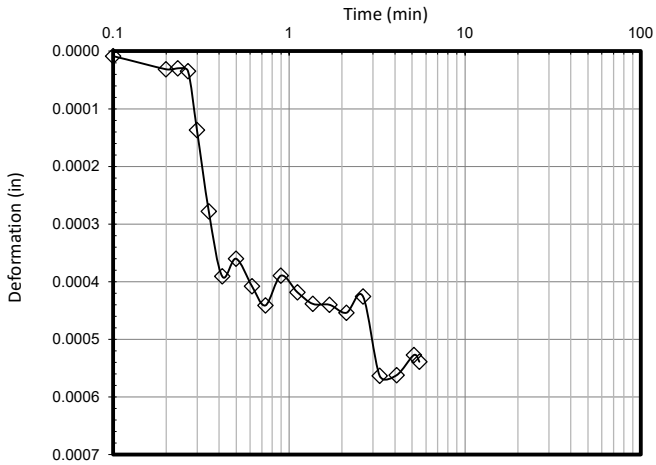
50-psf Load (Seating Load)



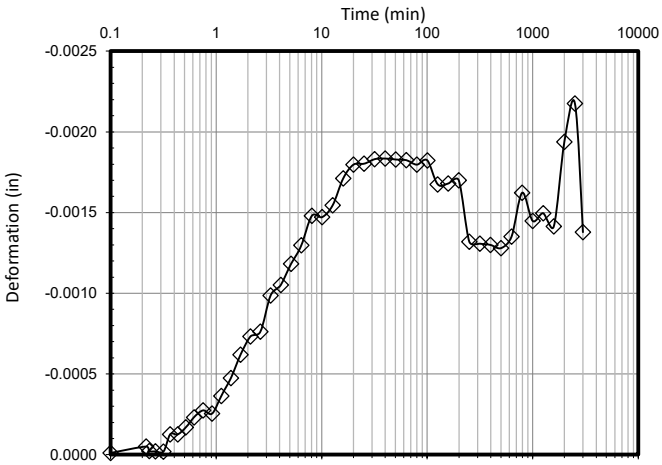
350-psf Load



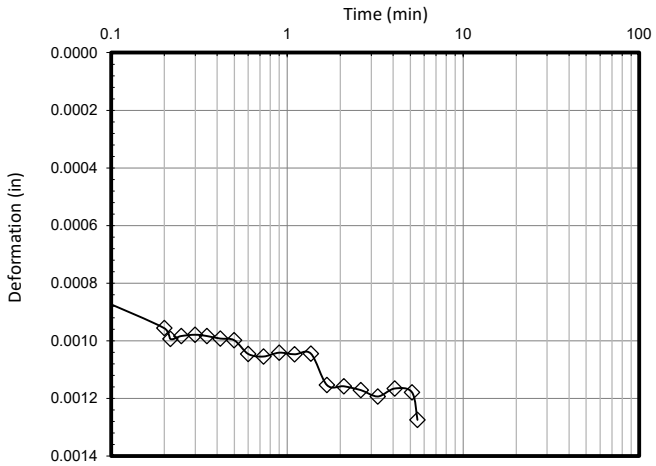
100-psf Load



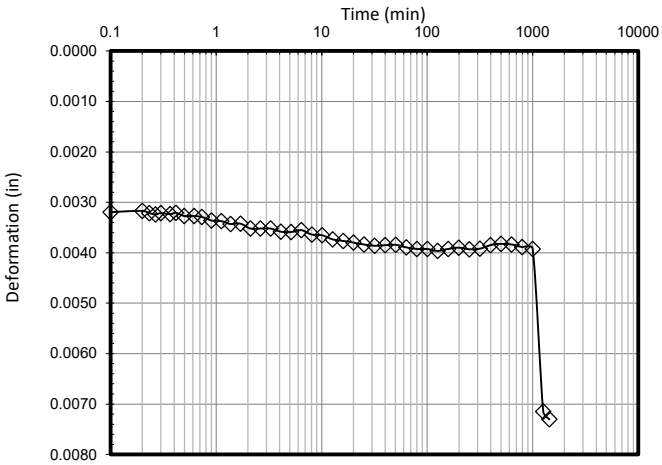
350-psf Load (inundated)



200-psf Load



700-psf Load (inundated)

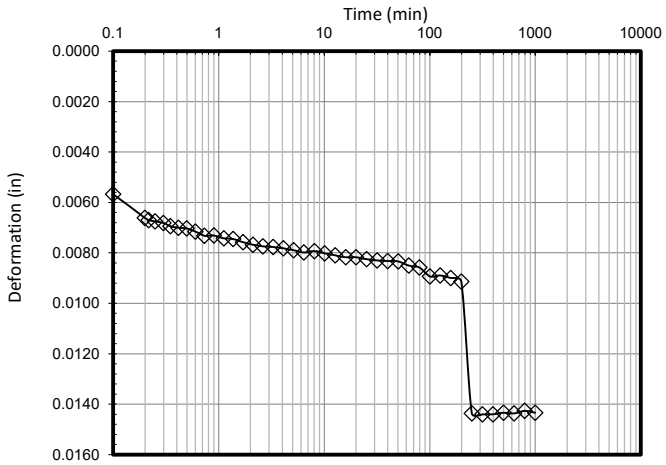


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Round Rock, TX 78664
(512) 358-6048

One-Dimensional Swell or Collapse of Soils

Client:	RRC Power & Energy, LLC	**Beyond Project No.:**	GE2306031
Project Name:	Corby BESS	**Test Method:**	ASTM D4546, Method C
Sample ID:	B-5 at 3.5 ft	**Test Date:**	10/6/23-10/10/23

1400-psf Load (inundated)



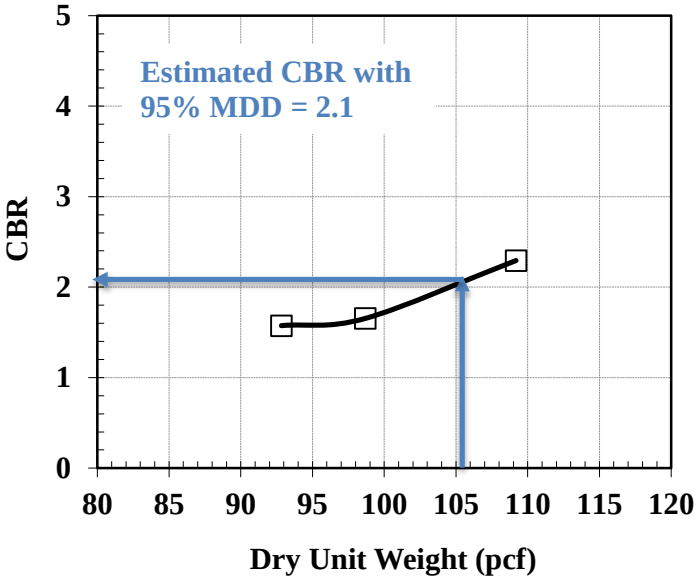
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CBR (California Bearing Ratio) Test

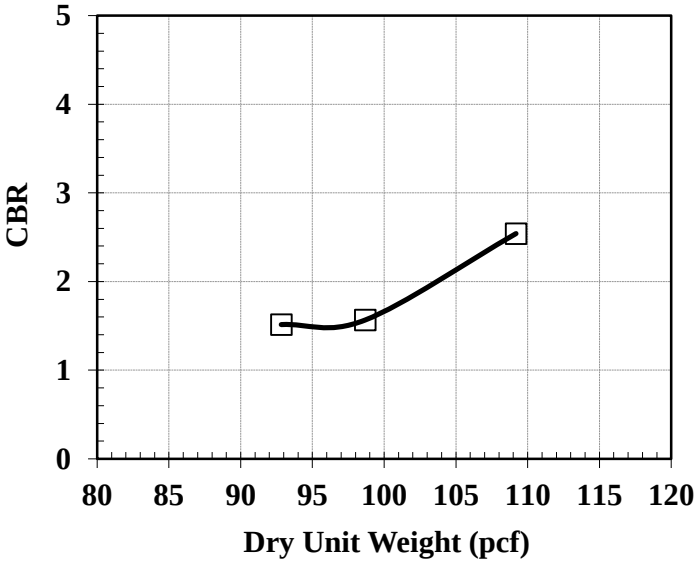
Client: RRC Power & Energy, LLC
Project: Corby BESS
Sample No: B-2 at 1-4 ft

Beyond Project No.: GE2306031
Test Method: ASTM D1883
Test Date: 10/18/2023
Rate of Penetration: 0.05 in/min

CBR for 0.100-in Penetration



CBR for 0.200-in Penetration



Initial Conditions			
Specimen No.	1	2	3
Blows per Layer	20	35	60
Surcharge Weight (lbs)	10	10	10
Water Content (%)	22.7	16.3	13.1
Dry Unit Weight (pcf)	92.8	98.7	109.2
Percent Compaction (%)	83.8	89.1	98.5
Final Conditions (soaked)			
Water Content (%) at top 1-in layer after soaking	30.4	30.5	26.4
Swell (% of initial height)	2.4	2.3	2.8
Bearing Ratio of Sample at 0.100 in penetration	1.6	1.7	2.3
Bearing Ratio of Sample at 0.200 in penetration	1.5	1.6	2.5

Note: Soil specimens were molded to a range of densities using 20, 35 and 60 blows at optimum moisture content as per ASTM D 1883 to develop the CBR versus dry density curve. It was allowed the specimens to soak for 96 hrs prior bearing test. Removed the free water and allow the specimens to drain out for 15 min. The 10-lbs surcharge load was placed during bearing test.

Xuewei Ning, 10/19/23

Analysis & Quality Review/Date

Specimens prepared and tested by: A.S.

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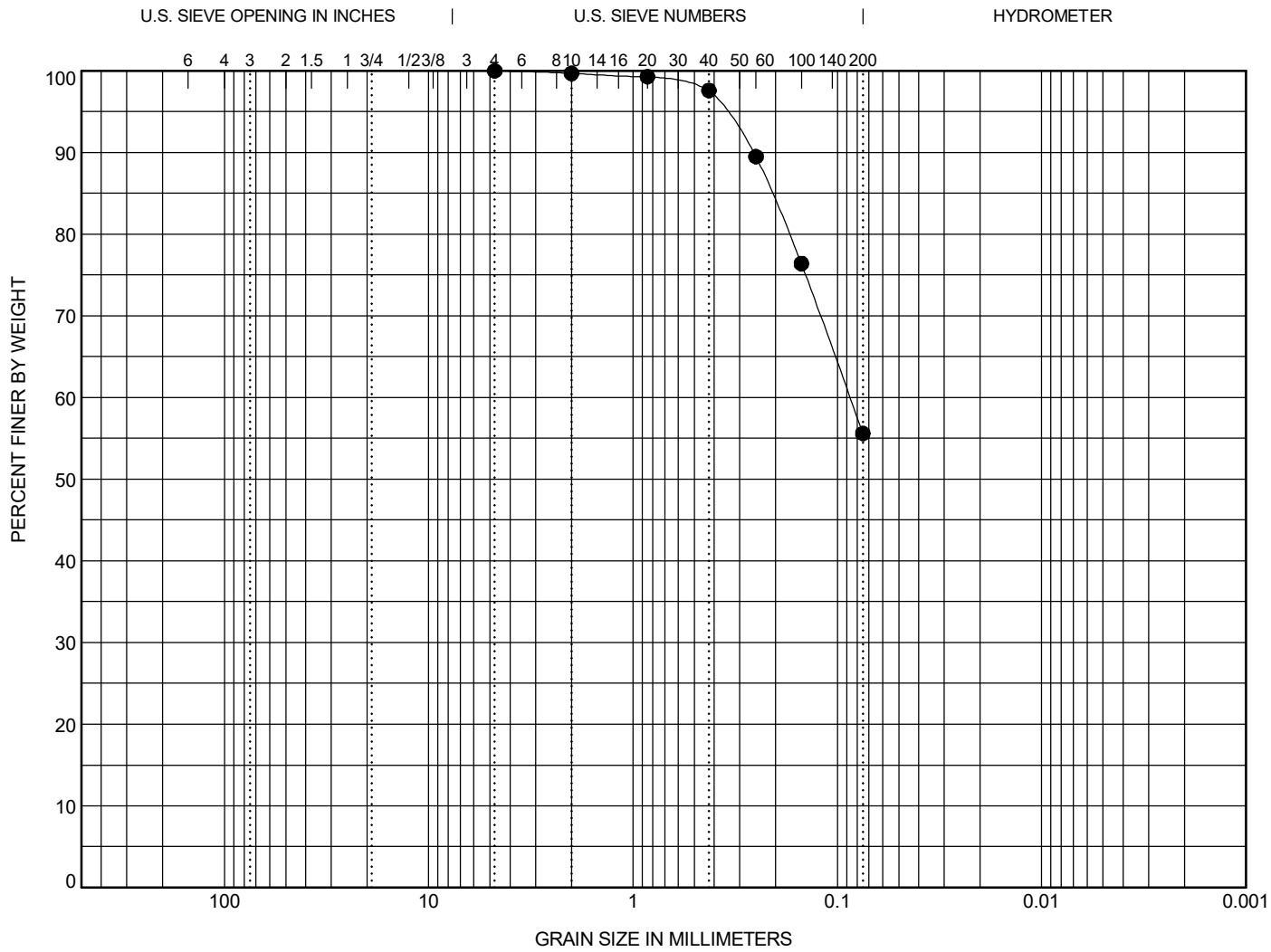
GRAIN SIZE DISTRIBUTION

Beyond Engineering & Testing, LLC
3801 Doris Lane, Suite B
Round Rock, TX 78664
Telephone: (512) 358-6048

CLIENT: RRC Power & Energy, LLC
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031

Sample ID: **B-02 at 1.0 ft.** Date: 10/24/2023

Test Method: **ASTM D6913**



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
SANDY LEAN CLAY(CL)	**47**	**15**	**32**		

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
4.75	**0.087**			**0.0**	**44.4**	**55.6**	

Te-An Wang, 10/24/2023
Analysis & Quality Review/Date

Specimens prepared by: T.W.

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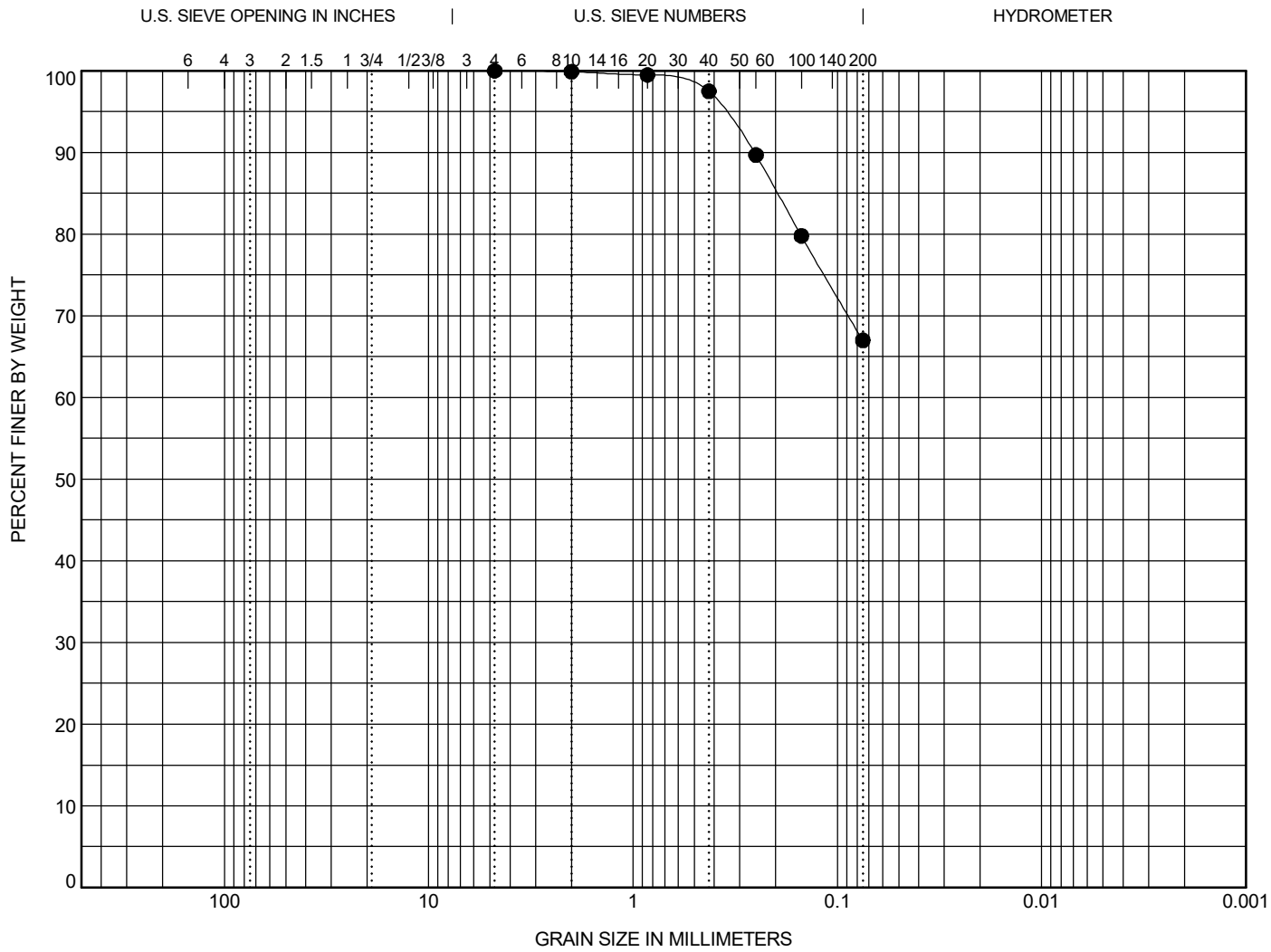
GRAIN SIZE DISTRIBUTION

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Telephone: (512) 358-6048

CLIENT: RRC Power & Energy, LLC
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031

Sample ID: **B-02 at 1.0 ft.** Date:

Test Method: **ASTM D6913**



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
SANDY LEAN CLAY(CL)	**40**	**16**	**24**		

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
4.75				**0.0**	**33.0**	**67.0**	

Te-An Wang,
Analysis & Quality Review/Date

Specimens prepared by: T.W.

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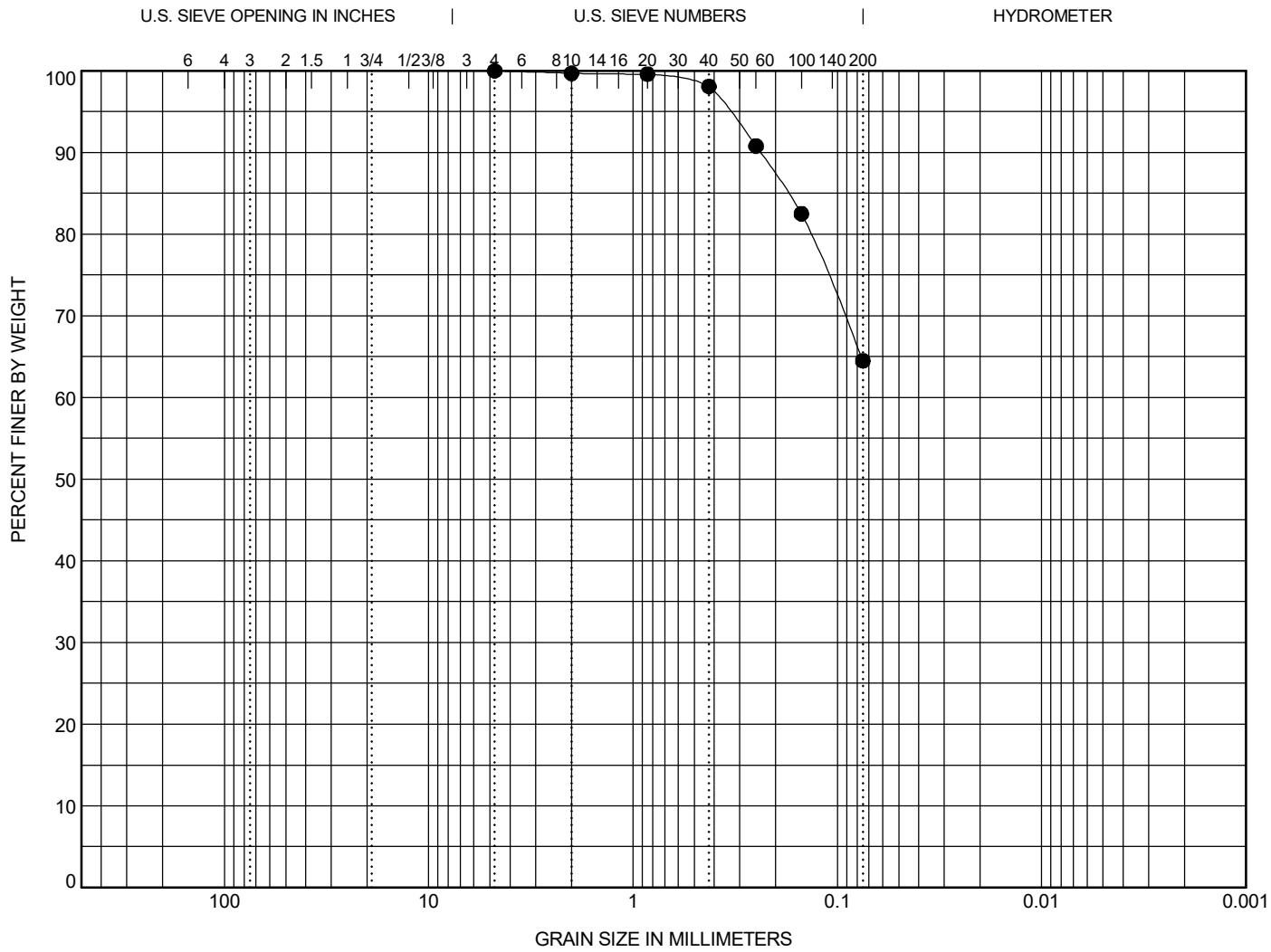
GRAIN SIZE DISTRIBUTION

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CLIENT: RRC Power & Energy, LLC
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031

Sample ID: **B-04 at 1.0 ft.** Date: 10/24/2023

Test Method: **ASTM D6913**



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
SANDY LEAN CLAY(CL)	**47**	**16**	**31**		

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
4.75				**0.0**	**35.5**	**64.5**	

Te-An Wang, 10/24/2023
Analysis & Quality Review/Date

Specimens prepared by: T.W.

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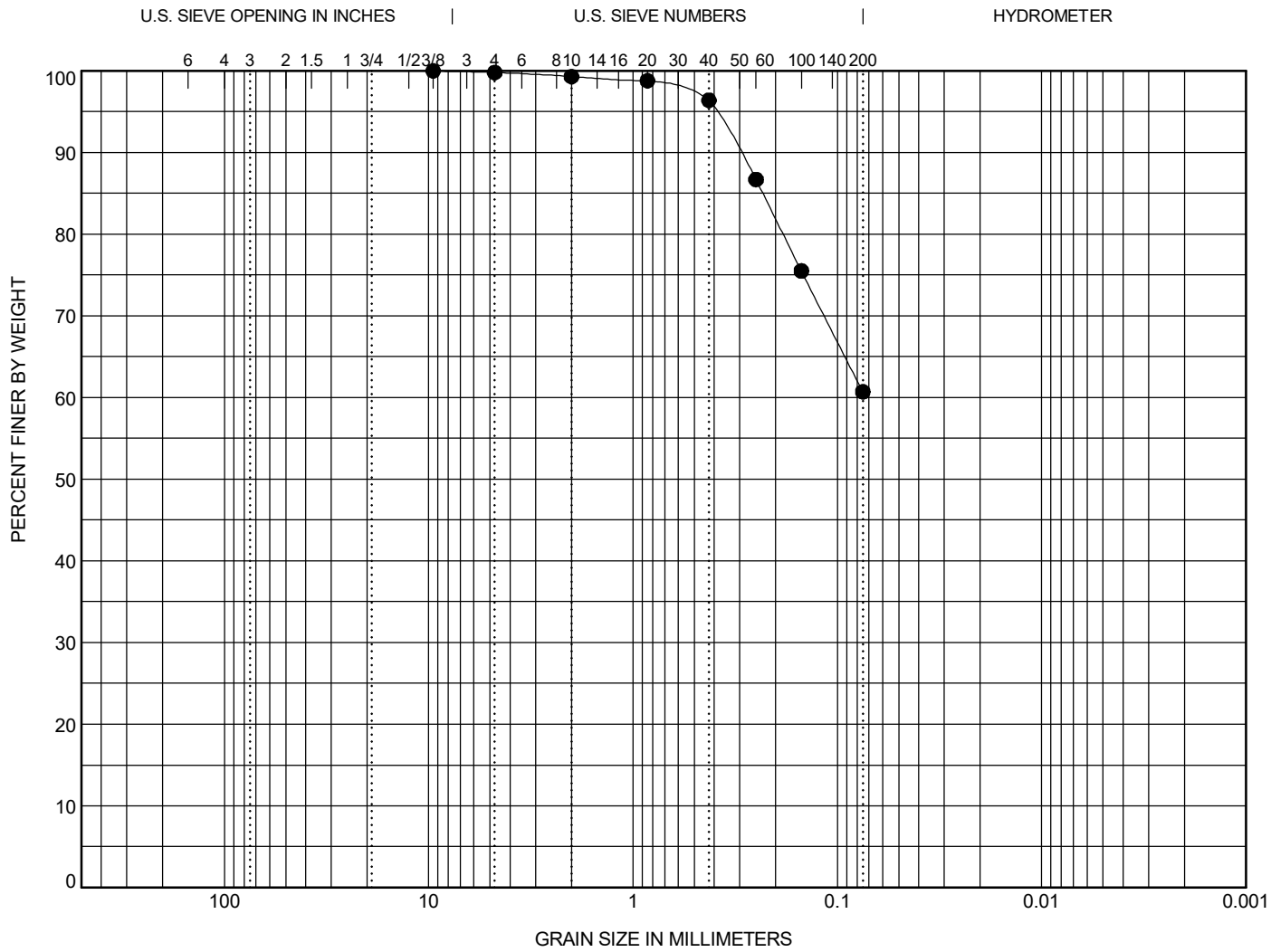
GRAIN SIZE DISTRIBUTION

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Telephone: (512) 358-6048

CLIENT: RRC Power & Energy, LLC
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031

Sample ID: **B-04 at 1.0 ft.** Date:

Test Method: **ASTM D6913**



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
SANDY LEAN CLAY(CL)	**32**	**14**	**18**		

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
9.5				**0.2**	**39.1**	**60.7**	

Te-An Wang,
Analysis & Quality Review/Date

Specimens prepared by: T.W.

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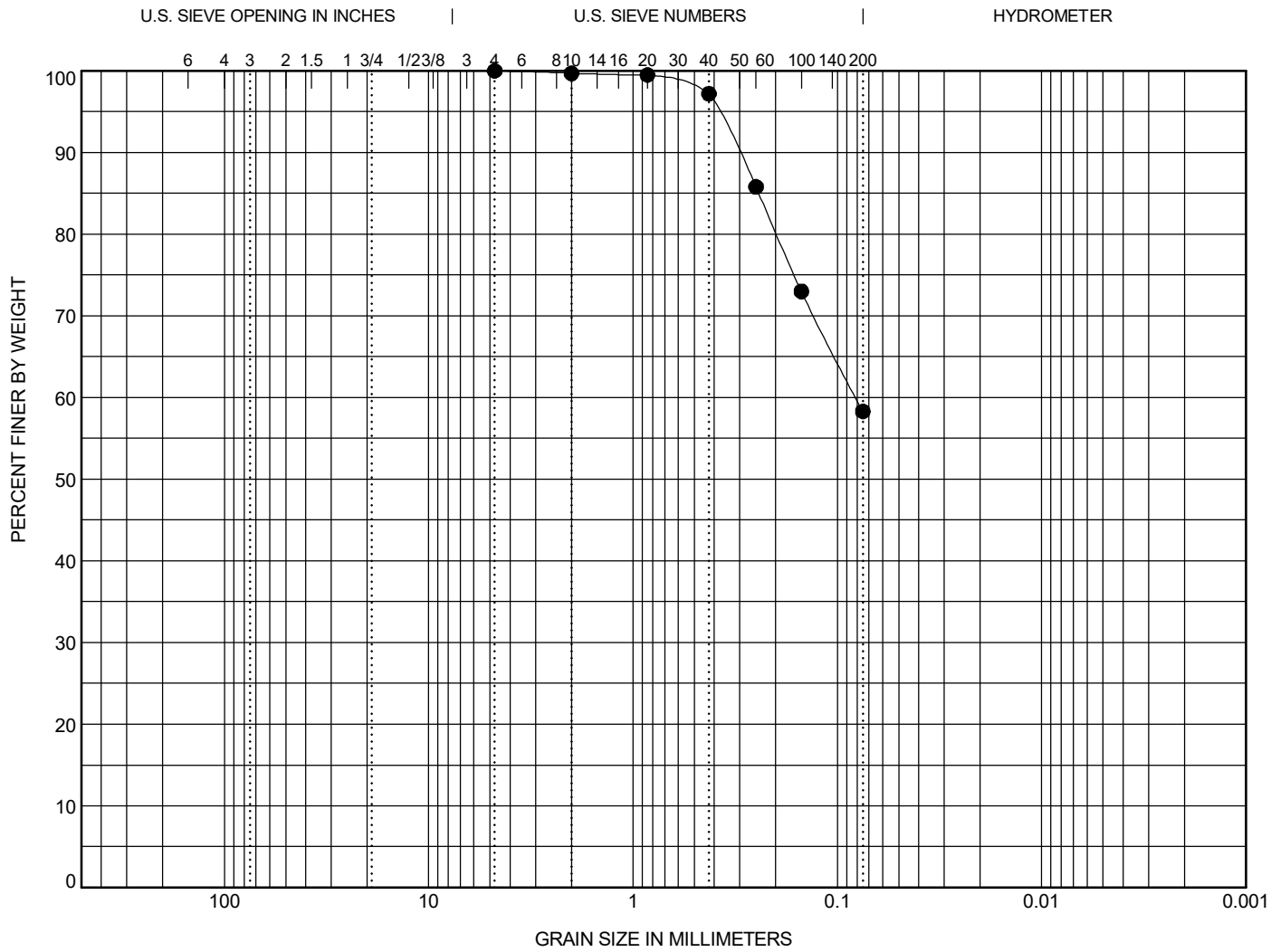
GRAIN SIZE DISTRIBUTION

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Telephone: (512) 358-6048

CLIENT: RRC Power & Energy, LLC
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031

Sample ID: **B-06 at 1.0 ft.** Date: 10/24/2023

Test Method: **ASTM D6913**



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
SANDY LEAN CLAY(CL)	**44**	**14**	**30**		

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
4.75	**0.081**			**0.0**	**41.7**	**58.3**	

Te-An Wang, 10/24/2023
Analysis & Quality Review/Date

Specimens prepared by: T.W.

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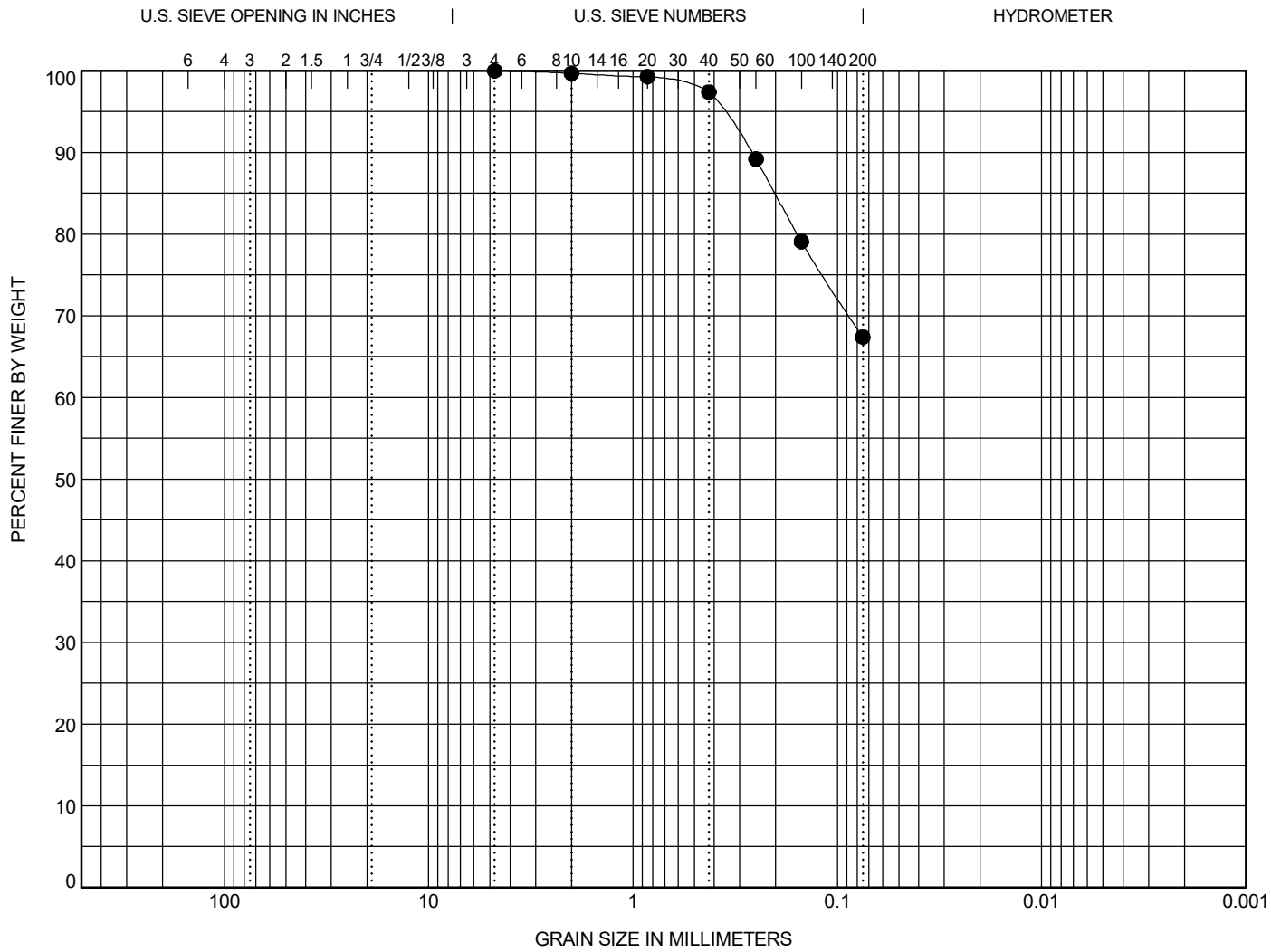
GRAIN SIZE DISTRIBUTION

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Telephone: (512) 358-6048

CLIENT: RRC Power & Energy, LLC
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031

Sample ID: **B-06 at 1.0 ft.** Date:

Test Method: **ASTM D6913**



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
SANDY LEAN CLAY(CL)	**38**	**13**	**25**		

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
4.75				**0.0**	**32.6**	**67.4**	

Te-An Wang,
Analysis & Quality Review/Date

Specimens prepared by: T.W.

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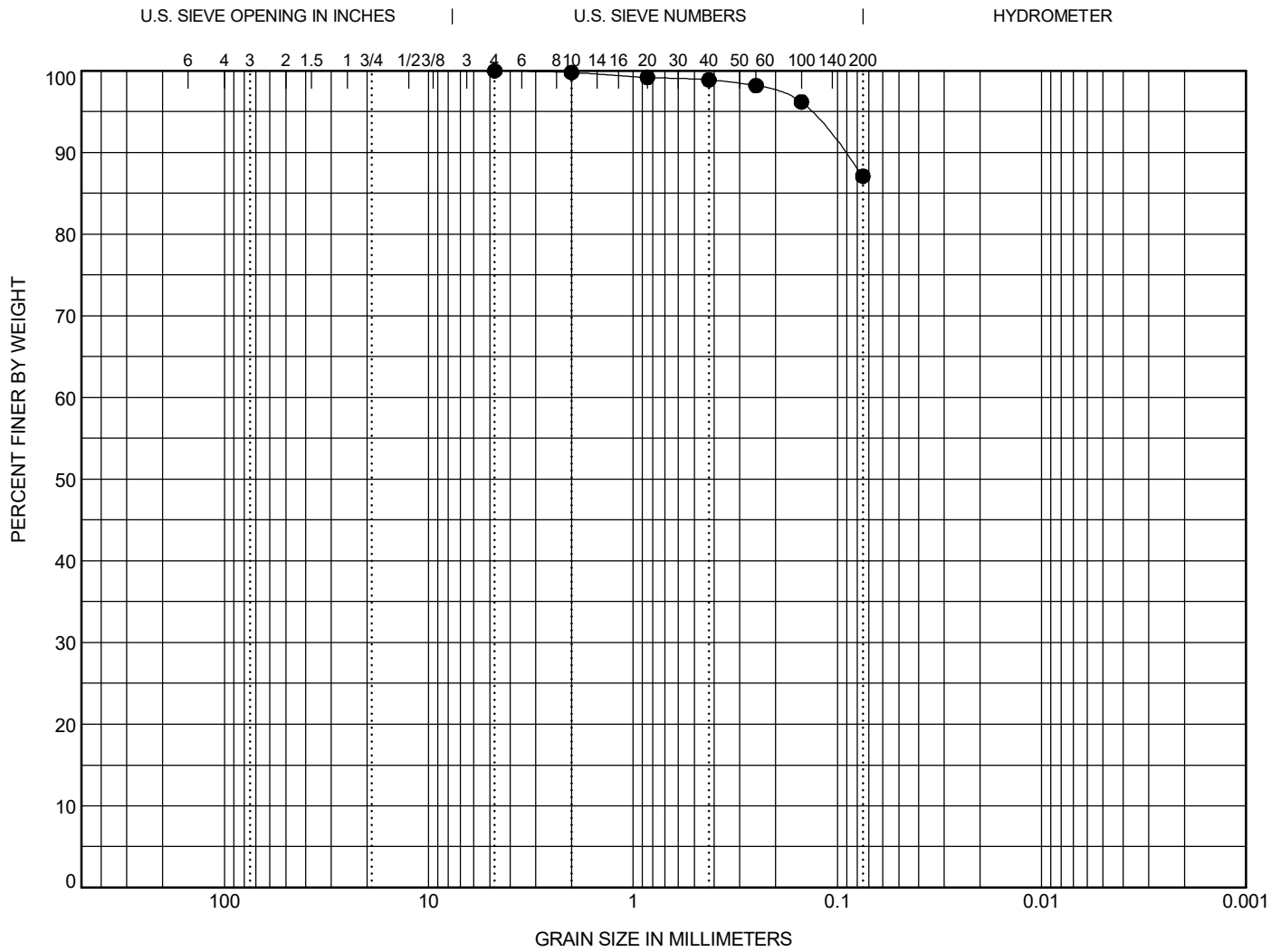
GRAIN SIZE DISTRIBUTION

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Round Rock, TX 78664
Telephone: (512) 358-6048

CLIENT: RRC Power & Energy, LLC
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031

Sample ID: **B-10 at 1.0 ft.** Date: 10/24/2023

Test Method: **ASTM D6913**



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
FAT CLAY(CH)	**55**	**17**	**38**		

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
4.75				**0.0**	**12.9**	**87.1**	

Te-An Wang, 10/24/2023
Analysis & Quality Review/Date

Specimens prepared by: T.W.

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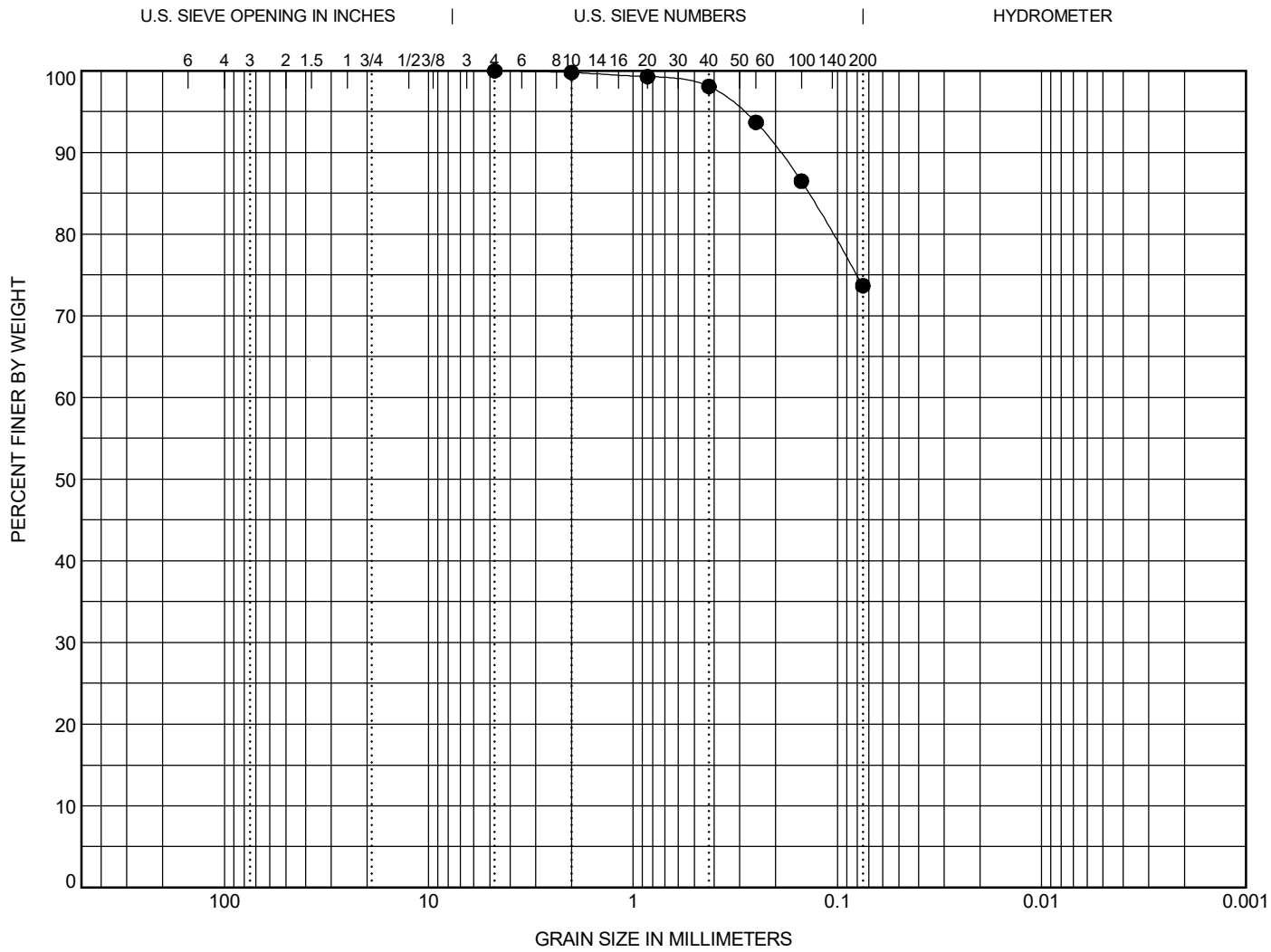
GRAIN SIZE DISTRIBUTION

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Telephone: (512) 358-6048

CLIENT: RRC Power & Energy, LLC
PROJECT: Corby BESS
LOCATION: Solano County, California
NUMBER: GE2306031

Sample ID: **B-10 at 1.0 ft.** Date:

Test Method: **ASTM D6913**



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
LEAN CLAY with SAND(CL)	**36**	**15**	**21**		

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
4.75				**0.0**	**26.3**	**73.7**	

Te-An Wang,
Analysis & Quality Review/Date

Specimens prepared by: T.W.

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Soil Analysis Lab Results

Client: RRC Power & Energy LLC
Job Name: Corby Bess
Client Job Number: GE2306031
Project X Job Number: S231002I
October 3, 2023

	Method	ASTM D4327		ASTM D4327		ASTM G187		ASTM G51	ASTM G200	SM 4500-D	ASTM D4327	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D4327	ASTM D4327
Bore# / Description	**Depth**	**Sulfates** SO_4^{2-}		**Chlorides** Cl^-		**Resistivity** As Rec'd | Minimum		**pH**	**Redox**	**Sulfide** S^{2-}	**Nitrate** NO_3^-	**Ammonium** NH_4^+	**Lithium** Li^+	**Sodium** Na^+	**Potassium** K^+	**Magnesium** Mg^{2+}	**Calcium** Ca^{2+}	**Fluoride** F_2^{--}	**Phosphate** PO_4^{3-}
	(ft)	(mg/kg)	(wt%)	(mg/kg)	(wt%)	(Ohm-cm)	(Ohm-cm)		(mV)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
B-01	1-3	17.9	0.0018	2.0	0.0002	938	871	8.5	164	1.3	2.5	1.1	ND	70.5	1.5	51.5	92.9	12.3	5.2
B-04	1-3	23.2	0.0023	6.4	0.0006	2,613	2,077	8.2	144	3.3	8.8	1.2	ND	18.5	4.5	50.4	150.9	6.7	4.1
B-07	1-3	22.8	0.0023	5.8	0.0006	871	804	8.4	146	0.6	0.7	1.0	ND	25.8	3.2	28.0	86.5	7.8	88.5
B-10	1-3	36.6	0.0037	20.4	0.0020	1,340	1,273	8.0	155	3.1	1.3	0.2	ND	31.9	2.8	48.1	141.2	6.7	5.7

Cations and Anions, except Sulfide and Bicarbonate, tested with Ion Chromatography
mg/kg = milligrams per kilogram (parts per million) of dry soil weight
ND = 0 = Not Detected | NT = Not Tested | Unk = Unknown
Chemical Analysis performed on 1:3 Soil-To-Water extract
PPM = mg/kg (soil) = mg/L (Liquid)

Note: Sometimes a bad sulfate hit is a contaminated spot. Typical fertilizers are Potassium chloride, ammonium sulfate or ammonium sulfate nitrate (ASN). So this is another reason why testing full corrosion series is good because we then have the data to see if those other ingredients are present meaning the soil sample is just fertilizer-contaminated soil. This can happen often when the soil samples collected are simply surface scoops which is why it's best to dig in a foot, throw away the top and test the deeper stuff. Dairy farms are also notorious for these items.

Percolation Test Data Sheet

Project:	Corby BESS	Project No:	GE2306031	Date:	9/15/2023
Test Hole No:	B-1	Tested By:	Edgar Moriel		
Latitude	38.3905098	Longitude	-121.906686		
Depth of Test Hole, D_T :	58 in.	USCS Soil Classification:		CH with Sand	
Total Hole/Piezometer Dimensions (inches)				Length	Width
Diameter (if round)=	4.75 in.	Sides =		N/A	N/A

Trail No.	Start Time (min.)	Stop Time (min.)	Δt Time Interval (min.)	D_o Initial Depth to Water (cm)	D_f Final Depth to Water (cm)	ΔD Change in Water Level (cm)	Greater than or Equal to 6"? (Y/N)
1	0	30	30	3.40	4.40	1.00	N
2	30	60	30	4.40	5.30	0.90	N
3	60	90	30	5.30	6.00	0.70	N
4	90	120	30	6.00	6.80	0.80	N
5	120	150	30	6.80	7.60	0.80	N

COMMENTS: Pre-soaked 14 hrs before testing - then filled up twice before testing
Reference point of measuring water level is at the top of the hole.

Percolation Test Data Sheet

Project:	Corby BESS	Project No:	GE2306031	Date:	9/15/2023
Test Hole No:	B-2	Tested By:	Edgar Moriel		
Latitude	38.3911034	Longitude	-121.90808		
Depth of Test Hole, D_T :	58 in.	USCS Soil Classification:		CH with Sand	
Total Hole/Piezometer Dimensions (inches)				Length	Width
Diameter (if round)=	7.5 in.	Sides =		N/A	N/A

Trail No.	Start Time (min.)	Stop Time (min.)	Δt Time Interval (min.)	D_o Initial Depth to Water (cm)	D_f Final Depth to Water (cm)	ΔD Change in Water Level (cm)	Greater than or Equal to 6"? (Y/N)
1	0	30	30	3.10	4.20	1.10	N
2	30	60	30	4.20	5.20	1.00	N
3	60	90	30	5.20	6.00	0.80	N
4	90	120	30	6.00	6.80	0.80	N
5	120	150	30	6.80	7.50	0.70	N

COMMENTS: Pre-soaked 18 hrs before testing - then filled up twice before testing
Reference point of measuring water level is at the top of the hole.

Percolation Test Data Sheet

Project:	Corby BESS	Project No:	GE2306031	Date:	9/15/2023
Test Hole No:	B-5	Tested By:	Edgar Moriel		
Latitude	38.3926204	Longitude	-121.906663		
Depth of Test Hole, D_T :	58 in.	USCS Soil Classification:		CH with Sand	
Total Hole/Piezometer Dimensions (inches)				Length	Width
Diameter (if round)=	7.5 in.	Sides =		N/A	N/A

Trail No.	Start Time (min.)	Stop Time (min.)	Δt Time Interval (min.)	D_o Initial Depth to Water (cm)	D_f Final Depth to Water (cm)	ΔD Change in Water Level (cm)	Greater than or Equal to 6"? (Y/N)
1	0	30	30	1.00	1.50	0.50	N
2	30	60	30	1.50	1.80	0.30	N
3	60	90	30	1.80	2.10	0.30	N
4	90	120	30	2.10	2.50	0.40	N
5	120	150	30	2.50	2.80	0.30	N

COMMENTS: Pre-soaked 18 hrs before testing - then filled up twice before testing
Reference point of measuring water level is at the top of the hole.

Percolation Test Data Sheet

Project:	Corby BESS	Project No:	GE2306031	Date:	9/15/2023
Test Hole No:	B-9	Tested By:	Edgar Moriel		
Latitude	38.3945365	Longitude	-121.906931		
Depth of Test Hole, D_T :	58 in.	USCS Soil Classification:		CH with Sand	
Total Hole/Piezometer Dimensions (inches)				Length	Width
Diameter (if round)=	4.75 in.	Sides =		N/A	N/A

Trail No.	Start Time (min.)	Stop Time (min.)	Δt Time Interval (min.)	D_o Initial Depth to Water (cm)	D_f Final Depth to Water (cm)	ΔD Change in Water Level (cm)	Greater than or Equal to 6"? (Y/N)
1	0	30	30	8.80	10.80	2.00	N
2	30	60	30	10.80	12.50	1.70	N
3	60	90	30	12.50	13.40	0.90	N
4	90	120	30	13.40	14.30	0.90	N
5	120	150	30	14.30	15.10	0.80	N

COMMENTS: Pre-soaked 14 hrs before testing - then filled up twice before testing
Reference point of measuring water level is at the top of the hole.

Percolation Test Data Sheet

Project:	Corby BESS	Project No:	GE2306031	Date:	9/15/2023
Test Hole No:	B-10	Tested By:	Edgar Moriel		
Latitude	38.394552	Longitude	-121.908452		
Depth of Test Hole, D_T :	58 in.	USCS Soil Classification:		CH with Sand	
Total Hole/Piezometer Dimensions (inches)				Length	Width
Diameter (if round)=	7.5 in.	Sides =		N/A	N/A

Trail No.	Start Time (min.)	Stop Time (min.)	Δt Time Interval (min.)	D_o Initial Depth to Water (cm)	D_f Final Depth to Water (cm)	ΔD Change in Water Level (cm)	Greater than or Equal to 6"? (Y/N)
1	0	30	30	5.10	6.80	1.70	N
2	30	60	30	6.80	8.10	1.30	N
3	60	90	30	8.10	9.30	1.20	N
4	90	120	30	9.30	10.40	1.10	N
5	120	150	30	10.40	11.50	1.10	N

COMMENTS: Pre-soaked 21 hrs before testing - then filled up twice before testing
Reference point of measuring water level is at the top of the hole.

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APPENDIX C

ROUND ROCK GEOPHYSICS
EXCELLENCE SINCE 2010

Multi-Channel Analysis of Surface Waves (MASW) – 1-D Shear-Wave Velocity Report

Corby BESS Project – Site Characterization

Performed by: Round Rock Geophysics
Date: April 17, 2026

1. Introduction

Round Rock Geophysics conducted Multi-Channel Analysis of Surface Waves (MASW) surveys at the Corby BESS project site to obtain **1-D shear-wave velocity (Vs) profiles** at selected GPS-referenced locations. The objective of the MASW program was to characterize near-surface stiffness, identify velocity layering, and provide Vs data suitable for geotechnical, structural, and seismic design applications.

2. Field Acquisition

Data were collected using a **24-channel linear array** with **5-ft geophone spacing**, producing an active spread length of 115 ft. **Vertical 8-Hz geophones** were used to optimize Rayleigh-wave energy capture in the frequency range appropriate for shallow subsurface profiling.

To broaden wavelength coverage and improve depth resolution, seismic energy was generated using an impulsive source at **shot-point offsets of 10 ft, 25 ft, and 40 ft**. These offsets allowed the survey to capture both short- and long-wavelength surface waves, improving the reliability of the resulting 1-D Vs inversions.

3. Data Processing

All MASW data were processed using **SurfSeis** software developed by the Kansas Geological Survey. The processing workflow included:

- Time-domain quality control and trace normalization

- Generation of frequency–phase velocity dispersion images
- Picking of fundamental-mode dispersion curves
- Inversion of dispersion curves to produce **1-D shear-wave velocity profiles** at each survey location.

Multiple inversion iterations were performed to ensure stable, geologically consistent Vs models.

4. Results

The MASW program produced **1-D shear-wave velocity profiles** defining the vertical variation of Vs with depth at each surveyed location. These profiles identify contrasts associated with soil layering, weathered zones, and stiffness transitions relevant to engineering design.

Results are provided in two formats:

- **Spreadsheet format:** tabulated Vs values, layer boundaries, and inversion parameters
- **Graphical format:** dispersion images and corresponding 1-D Vs profiles

These outputs provide a reliable basis for evaluating small-strain shear modulus, estimating dynamic soil properties, and supporting seismic site classification where required.

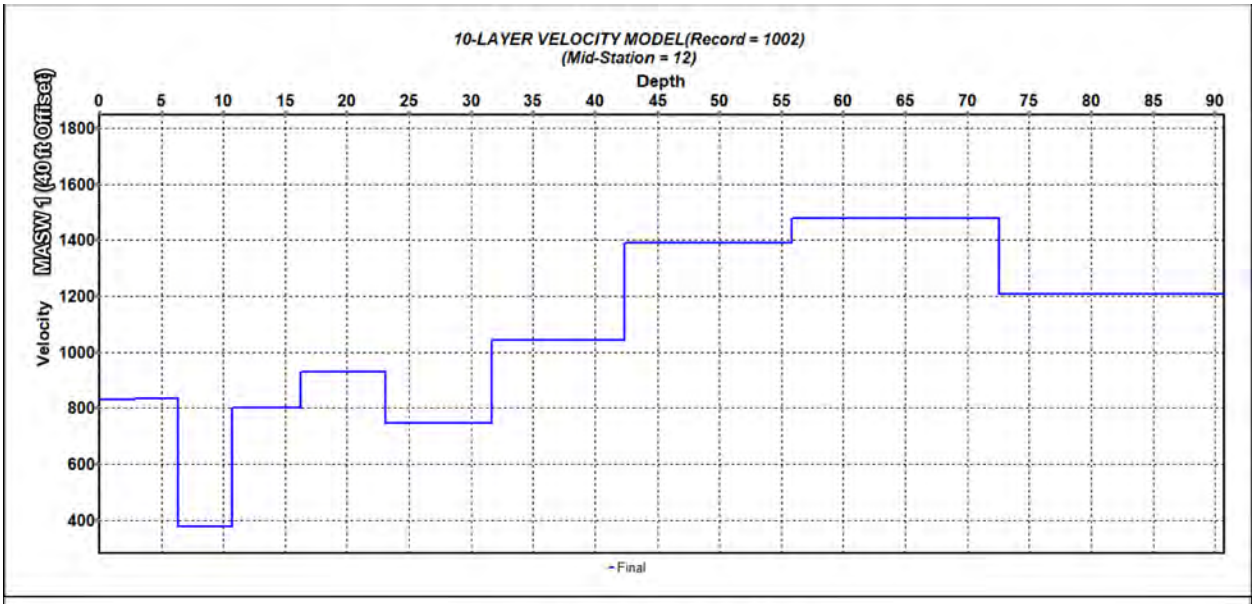
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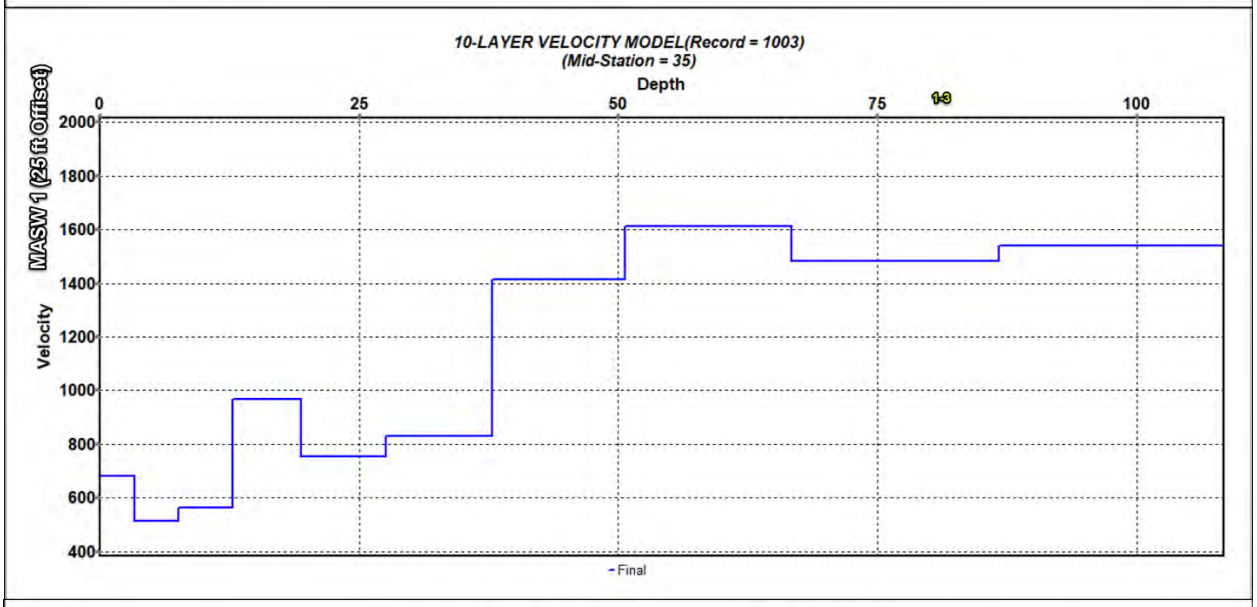
5. Conclusion

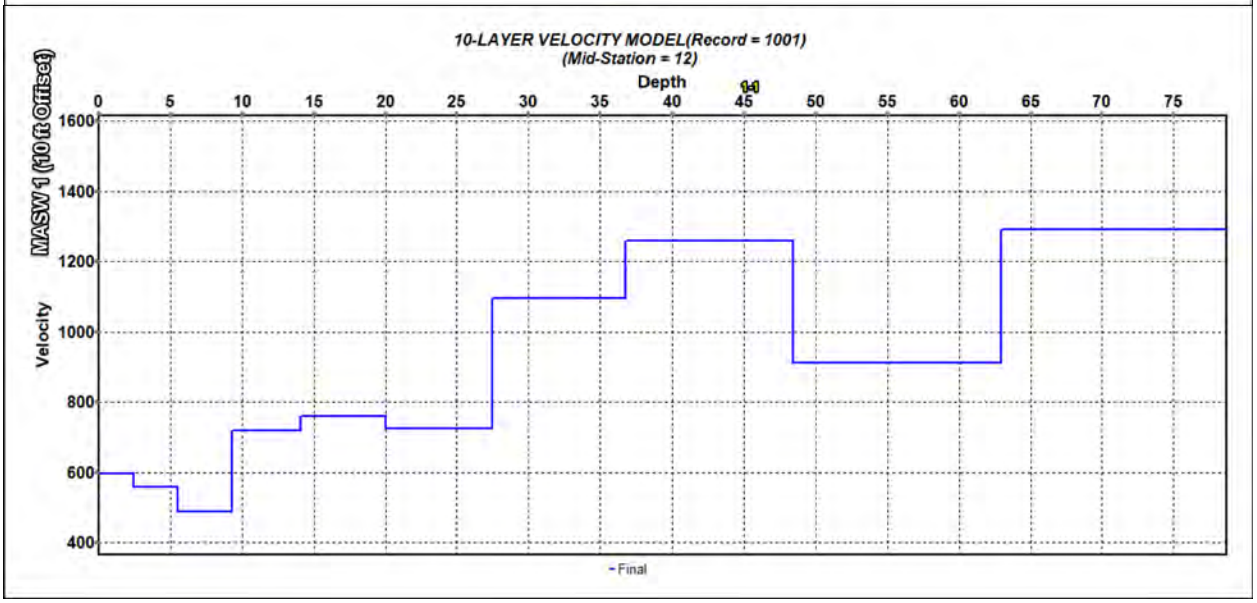
Round Rock Geophysics successfully completed MASW surveys to generate high-quality **1-D shear-wave velocity profiles** at the Corby BESS project site. The combination of close geophone spacing, multiple shot offsets, and SurfSeis inversion produced robust Vs profiles suitable for geotechnical and engineering analysis. The accompanying spreadsheet and graphical outputs should be used alongside geotechnical borings and laboratory data to support final design recommendations.

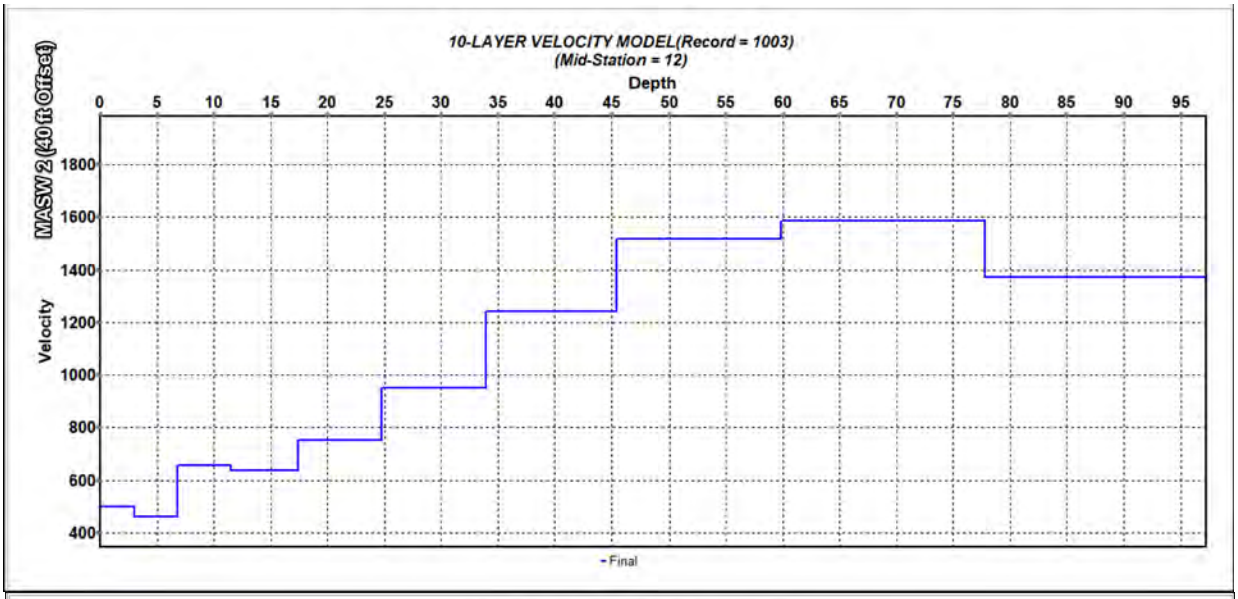
Results of the MASW surveys

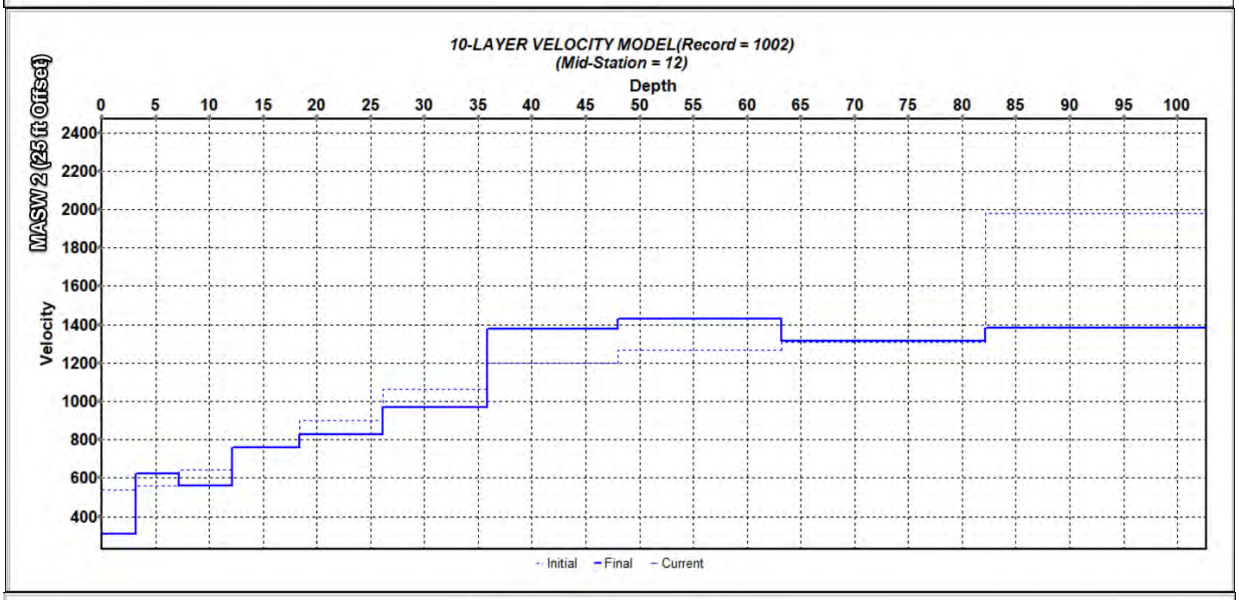
MASW-1: Latitude 38.392077°, Longitude -121.906707°								
Source Offset (Ft)	**Depth (Ft)**	**Shear Wave Velocity (Ft/Sec)**	**Source Offset (Ft)**	**Depth (Ft)**	**Shear Wave Velocity (Ft/Sec)**	**Source Offset (Ft)**	**Depth (Ft)**	**Shear Wave Velocity (Ft/Sec)**
10.00	-2.44	597.46	25.00	-2.81	829.67	40.00	-3.36	680.91
	-5.49	559.31		-6.33	833.71		-7.56	512.03
	-9.30	488.15		-10.73	375.01		-12.82	562.73
	-14.07	717.95		-16.22	802.52		-19.38	968.23
	-20.02	758.53		-23.09	930.99		-27.59	754.40
	-27.47	725.44		-31.67	745.77		-37.85	830.76
	-36.78	1,096.78		-42.40	1,042.61		-50.67	1,411.81
	-48.41	1,257.91		-55.82	1,389.71		-66.70	1,612.58
	-62.95	912.56		-72.59	1,478.43		-86.74	1,483.26
	-78.69	1,291.75		-90.73	1,209.05		-108.42	1,537.43
MASW-2: Latitude 38.392602°, Longitude -121.908055°								
Source Offset (Ft)	**Depth (Ft)**	**Shear Wave Velocity (Ft/Sec)**	**Source Offset (Ft)**	**Depth (Ft)**	**Shear Wave Velocity (Ft/Sec)**	**Source Offset (Ft)**	**Depth (Ft)**	**Shear Wave Velocity (Ft/Sec)**
10.00	-2.93	581.17	25.00	-3.18	307.01	40.00	-3.02	499.36
	-6.59	460.79		-7.16	622.61		-6.78	460.73
	-11.17	520.81		-12.14	559.48		-11.50	656.34
	-16.89	726.76		-18.36	760.18		-17.38	637.15
	-24.04	728.25		-26.13	828.36		-24.75	753.09
	-32.98	1,009.60		-35.85	968.18		-33.95	949.57
	-44.16	1,111.33		-48.00	1,378.47		-45.45	1,242.11
	-58.13	1,292.37		-63.18	1,430.92		-59.83	1,517.29
	-75.59	1,425.86		-82.16	1,314.47		-77.80	1,587.24
	-94.49	1,219.77		-102.70	1,382.79		-97.25	1,371.38
MASW-3: Latitude 38.391223°, Longitude -121.907344°								
Source Offset (Ft)	**Depth (Ft)**	**Shear Wave Velocity (Ft/Sec)**	**Source Offset (Ft)**	**Depth (Ft)**	**Shear Wave Velocity (Ft/Sec)**	**Source Offset (Ft)**	**Depth (Ft)**	**Shear Wave Velocity (Ft/Sec)**
10.00	-2.80	467.33	25.00	-2.94	551.46	40.00	-3.31	516.56
	-6.31	443.26		-6.62	434.95		-7.44	432.95
	-10.68	588.32		-11.21	619.99		-12.61	748.53
	-16.16	642.47		-16.96	627.93		-19.07	627.91
	-23.00	787.94		-24.14	811.73		-27.15	769.71
	-31.55	1,048.10		-33.11	1,076.34		-37.25	1,359.90
	-42.24	1,251.94		-44.33	1,228.24		-49.87	1,544.60
	-55.60	1,323.55		-58.35	1,439.83		-65.64	1,454.64
	-72.30	1,247.82		-75.88	1,581.28		-85.36	1,231.03
	-90.38	1,331.23		-94.85	1,364.16		-106.70	1,689.94

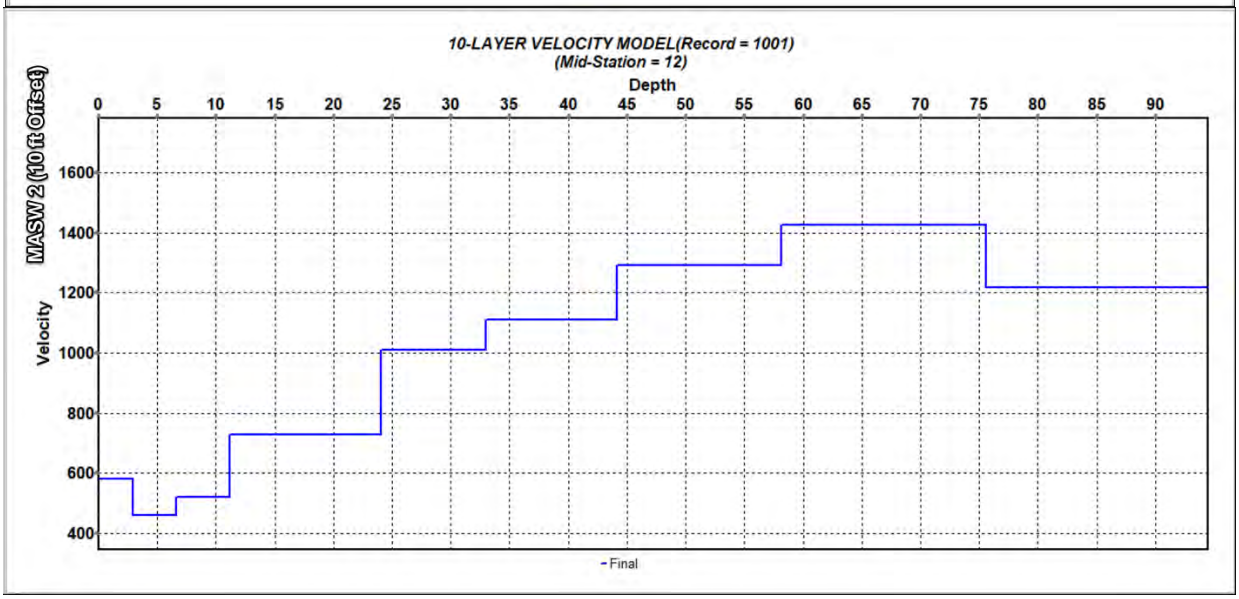

10-LAYER VELOCITY MODEL(Record = 1002)
(Mid-Station = 12)
Depth
MASW 1 (10 ft Offset)
Velocity
Final

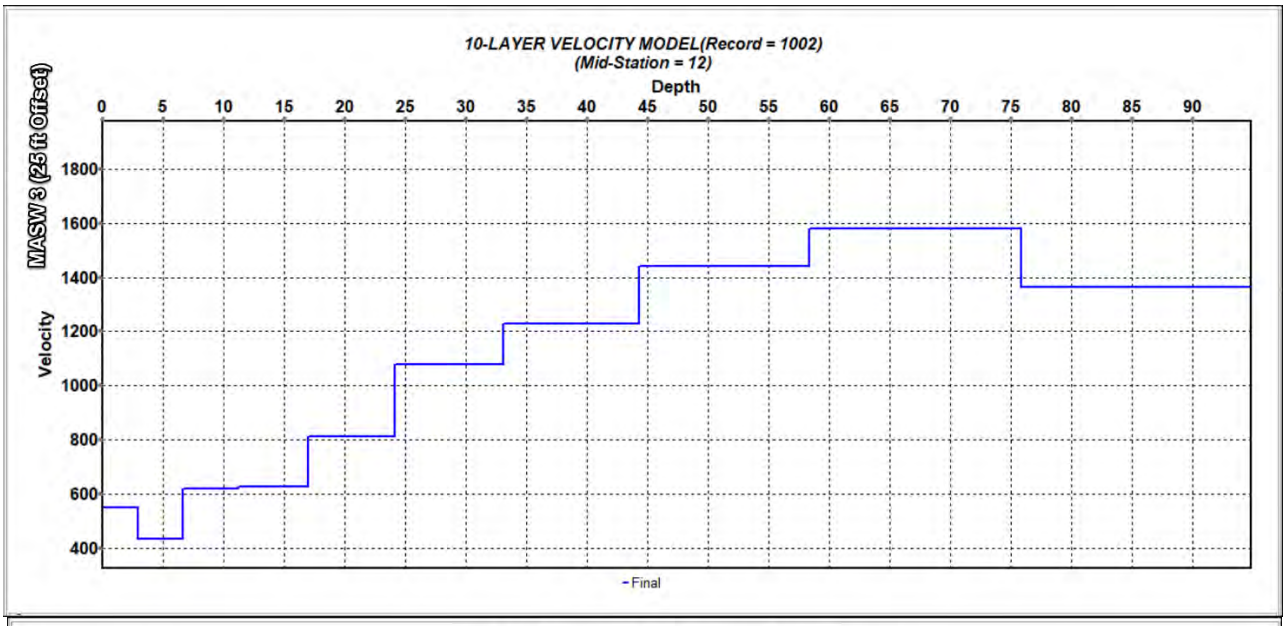

10-LAYER VELOCITY MODEL(Record = 1003)
(Mid-Station = 35)
Depth
MASW 1 (25 ft Offset)
Velocity
Final

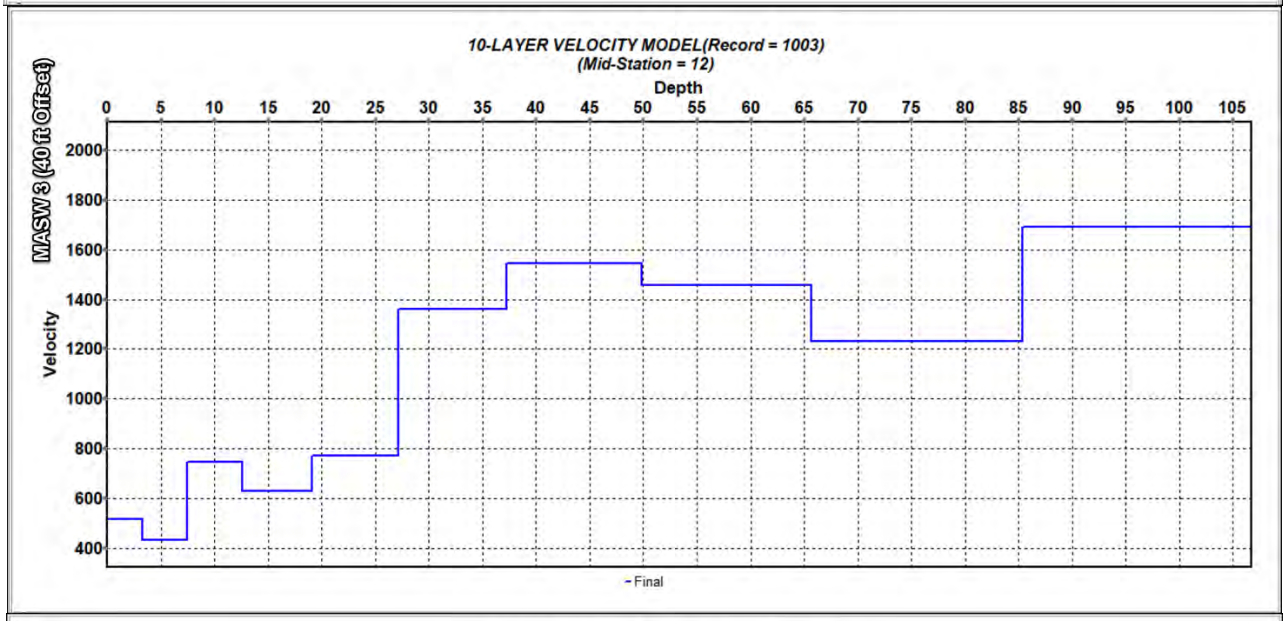

10-LAYER VELOCITY MODEL(Record = 1001)
(Mid-Station = 12)
Depth
MASW 1 (10 ft Offset)
Velocity
Final

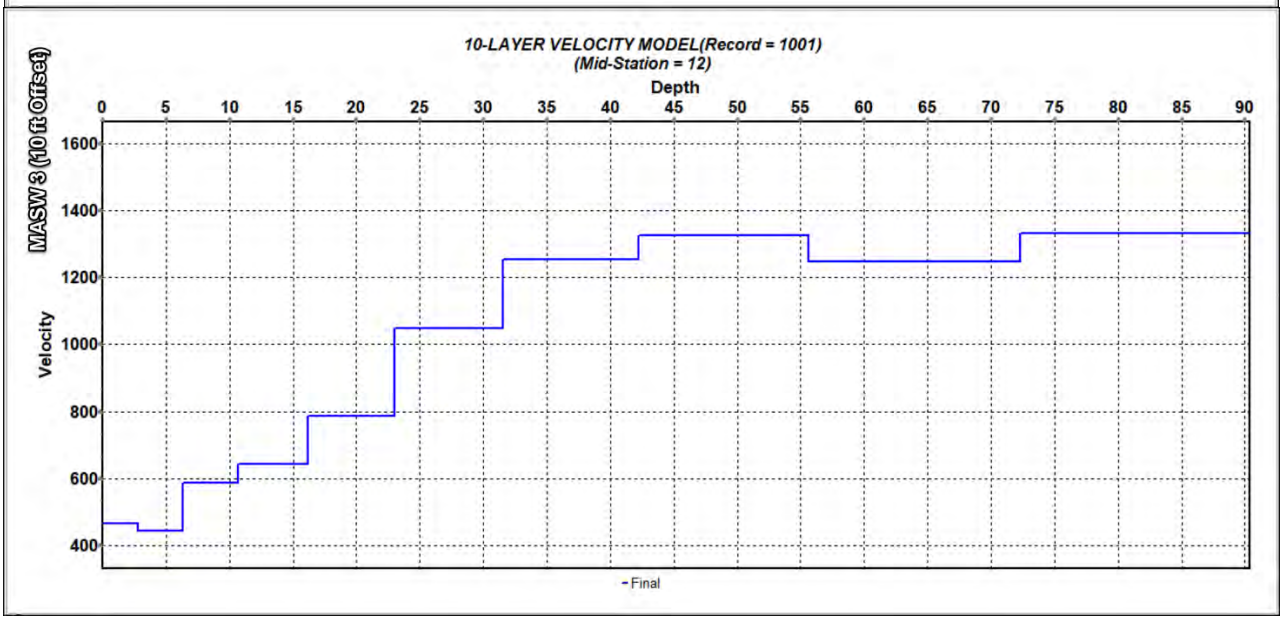

10-LAYER VELOCITY MODEL(Record = 1003)
(Mid-Station = 12)
MASW 2 (40 ft Offset)
Depth
Velocity
Final


10-LAYER VELOCITY MODEL(Record = 1002)
(Mid-Station = 12)
MASW 2 (25 ft Offset)
Depth
Velocity
Initial
Final
Current


10-LAYER VELOCITY MODEL(Record = 1001)
(Mid-Station = 12)
MASW 2 (10 ft Offset)
Depth
Velocity
Final


10-LAYER VELOCITY MODEL(Record = 1002)
(Mid-Station = 12)
MASW 3 (25 ft Offset)
Depth
Velocity
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90
400 600 800 1000 1200 1400 1600 1800
Final


10-LAYER VELOCITY MODEL(Record = 1003)
(Mid-Station = 12)
MASW 3 (40 ft Offset)
Depth
Velocity
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105
400 600 800 1000 1200 1400 1600 1800 2000
Final


10-LAYER VELOCITY MODEL(Record = 1001)
(Mid-Station = 12)
MASW 3 (10 ft Offset)
Depth
Velocity
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90
400 600 800 1000 1200 1400 1600
Final

ASCE Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-22	**Latitude:**	38.391617
Risk Category:	II	**Longitude:**	-121.907644
Soil Class:	CD	**Elevation:**	75.85152796202573 ft (NAVD 88)





Seismic

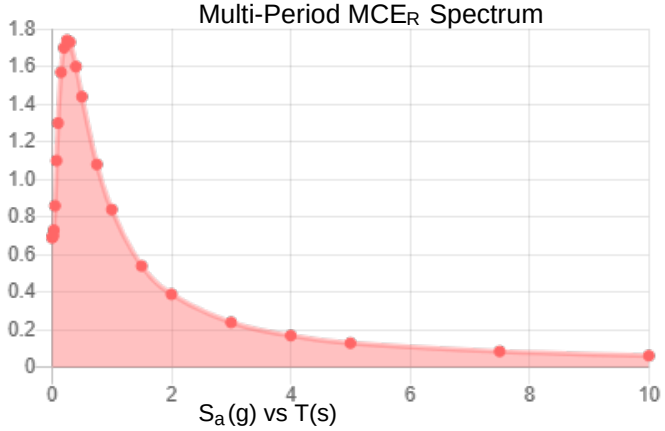
Site Soil Class: CD

Results:

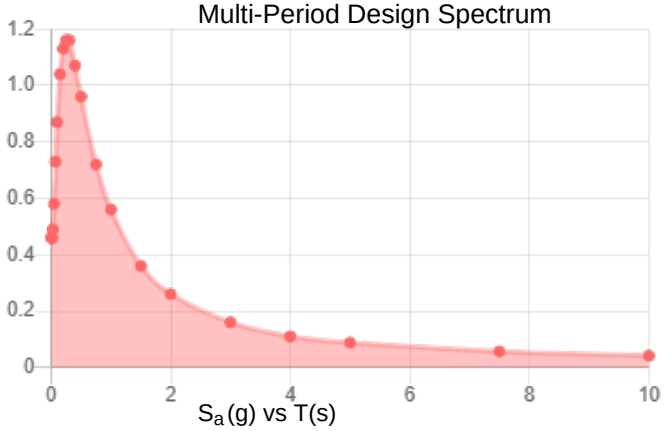
PGA_M :	0.61	T_L :	8
S_{MS} :	1.57	S_S :	1.36
S_{M1} :	0.84	S_1 :	0.42
S_{DS} :	1.05	V_{S30} :	365
S_{D1} :	0.56		

Seismic Design Category: D

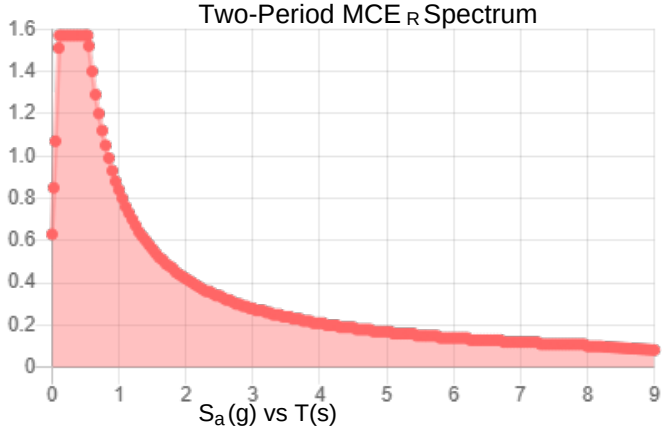
Multi-Period MCE_R Spectrum



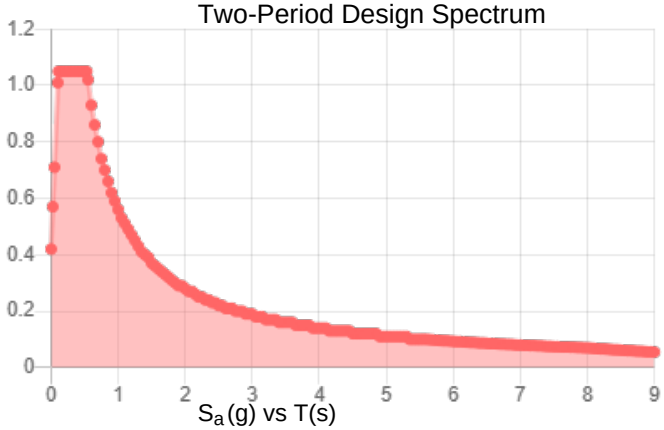
Multi-Period Design Spectrum



Two-Period MCE_R Spectrum



Two-Period Design Spectrum



MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: Thu Apr 30 2026

Date Source:
USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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U.S. Geological Survey - Earthquake Hazards Program

Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Please also see the new USGS Earthquake Hazard Toolbox for access to the most recent NSHMs for the conterminous U.S. and Hawaii.

Input

Edition

Dynamic: Conterminous U.S. 2014 (u…

Spectral Period

Peak Ground Acceleration

Latitude

Decimal degrees

38.391617

Time Horizon

Return period in years

2475

Longitude

Decimal degrees, negative values for western longitudes

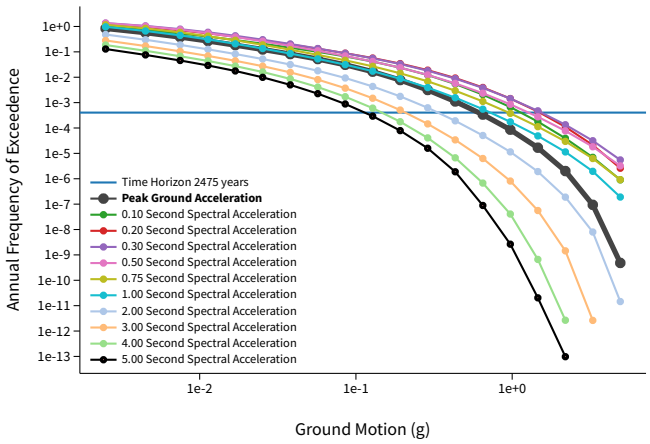
-121.907644

Site Class

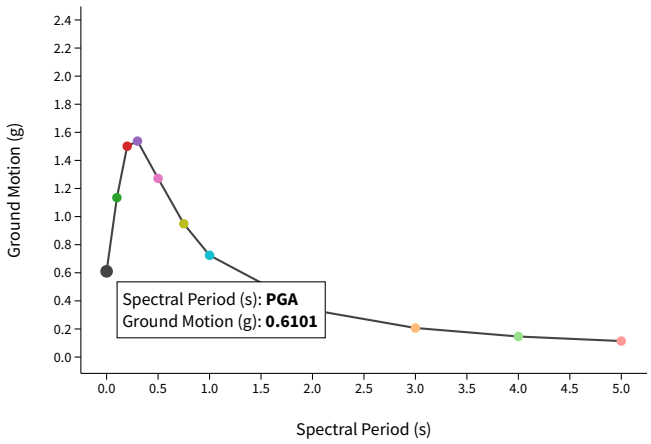
360 m/s (C/D boundary)

Hazard Curve

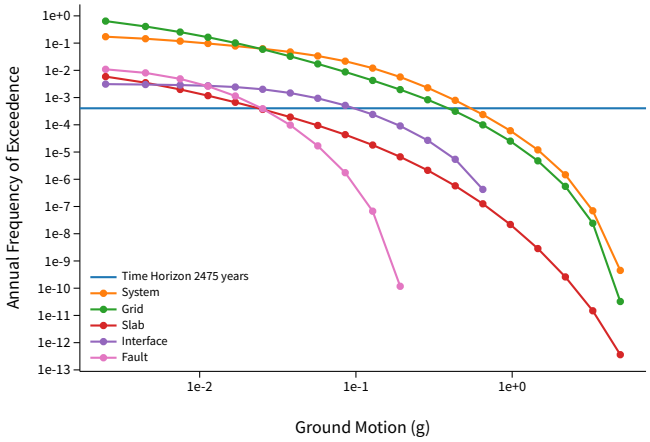
Hazard Curves



Uniform Hazard Response Spectrum



Component Curves for Peak Ground Acceleration

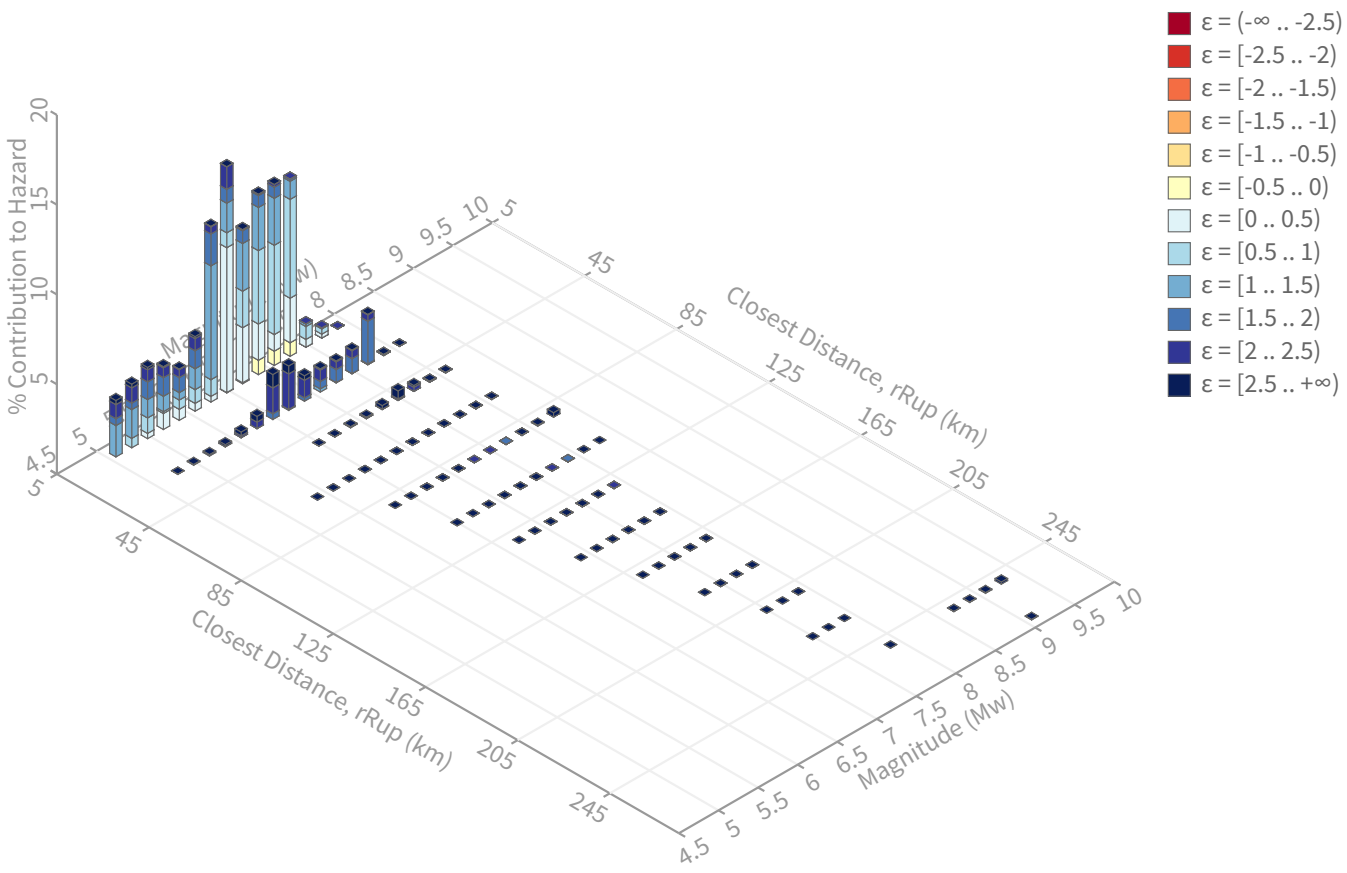


View Raw Data

Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 2475 yrs
Exceedance rate: 0.0004040404 yr^{-1}
PGA ground motion: 0.61012811 g

Recovered targets

Return period: 2791.676 yrs
Exceedance rate: 0.00035820775 yr^{-1}

Totals

Binned: 100 %
Residual: 0 %
Trace: 0.15 %

Mean (over all sources)

m: 6.61
r: 14.64 km
ε_0: 1.18 σ

Mode (largest m-r bin)

m: 6.53
r: 9.57 km
ε_0: 0.73 σ
Contribution: 12.59 %

Mode (largest m-r-ε_0 bin)

m: 6.54
r: 7 km
ε_0: 0.3 σ
Contribution: 8.06 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km
m: min = 4.4, max = 9.4, Δ = 0.2
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0: [-∞ .. -2.5)
ε1: [-2.5 .. -2.0)
ε2: [-2.0 .. -1.5)
ε3: [-1.5 .. -1.0)
ε4: [-1.0 .. -0.5)
ε5: [-0.5 .. 0.0)
ε6: [0.0 .. 0.5)
ε7: [0.5 .. 1.0)
ε8: [1.0 .. 1.5)
ε9: [1.5 .. 2.0)
ε10: [2.0 .. 2.5)
ε11: [2.5 .. +∞]

Deaggregation Contributors

Source Set ↳ Source	Type	r	m	ε_0	lon	lat	az	%
UC33brAvg_FM31	System							45.91
Great Valley 06 (Midland) alt1 [0]		7.12	6.74	0.19	121.835°W	38.426°N	58.94	15.90
Great Valley 04b Gordon Valley [2]		13.12	6.77	1.06	122.001°W	38.356°N	244.45	15.46
Hunting Creek - Berryessa [0]		27.87	7.15	2.09	122.223°W	38.415°N	275.59	3.45
Great Valley 04b Gordon Valley [1]		14.01	6.99	0.99	122.025°W	38.401°N	275.66	2.61
Great Valley 04a Trout Creek [2]		19.98	6.97	1.45	122.013°W	38.526°N	328.48	1.88
Great Valley 05 Pittsburg - Kirby Hills alt1 [3]		19.56	6.38	2.21	121.944°W	38.216°N	189.23	1.77
UC33brAvg_FM32	System							24.22
Great Valley 04b Gordon Valley [2]		13.12	7.14	0.81	122.001°W	38.356°N	244.45	11.86
Hunting Creek - Berryessa [0]		27.87	7.15	2.09	122.223°W	38.415°N	275.59	3.35
Great Valley 04a Trout Creek [2]		19.98	6.93	1.48	122.013°W	38.526°N	328.48	1.87
Great Valley 05 Pittsburg Kirby Hills alt2 [0]		17.30	6.45	1.60	121.976°W	38.284°N	206.41	1.33
Great Valley 04b Gordon Valley [1]		14.01	6.93	1.04	122.025°W	38.401°N	275.66	1.12
UC33brAvg_FM32 (opt)	Grid							14.99
PointSourceFinite: -121.908, 38.405		5.14	5.73	0.87	121.908°W	38.405°N	0.00	3.43
PointSourceFinite: -121.908, 38.405		5.14	5.73	0.87	121.908°W	38.405°N	0.00	3.43
UC33brAvg_FM31 (opt)	Grid							14.64
PointSourceFinite: -121.908, 38.405		5.27	5.65	0.92	121.908°W	38.405°N	0.00	3.10
PointSourceFinite: -121.908, 38.405		5.27	5.65	0.92	121.908°W	38.405°N	0.00	3.10

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Round Rock, TX 78661
512.992.2087

APPENDIX D

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Summary data report 13

CPT-14 results
Summary data report 19

CPT-15 results
Summary data report 25

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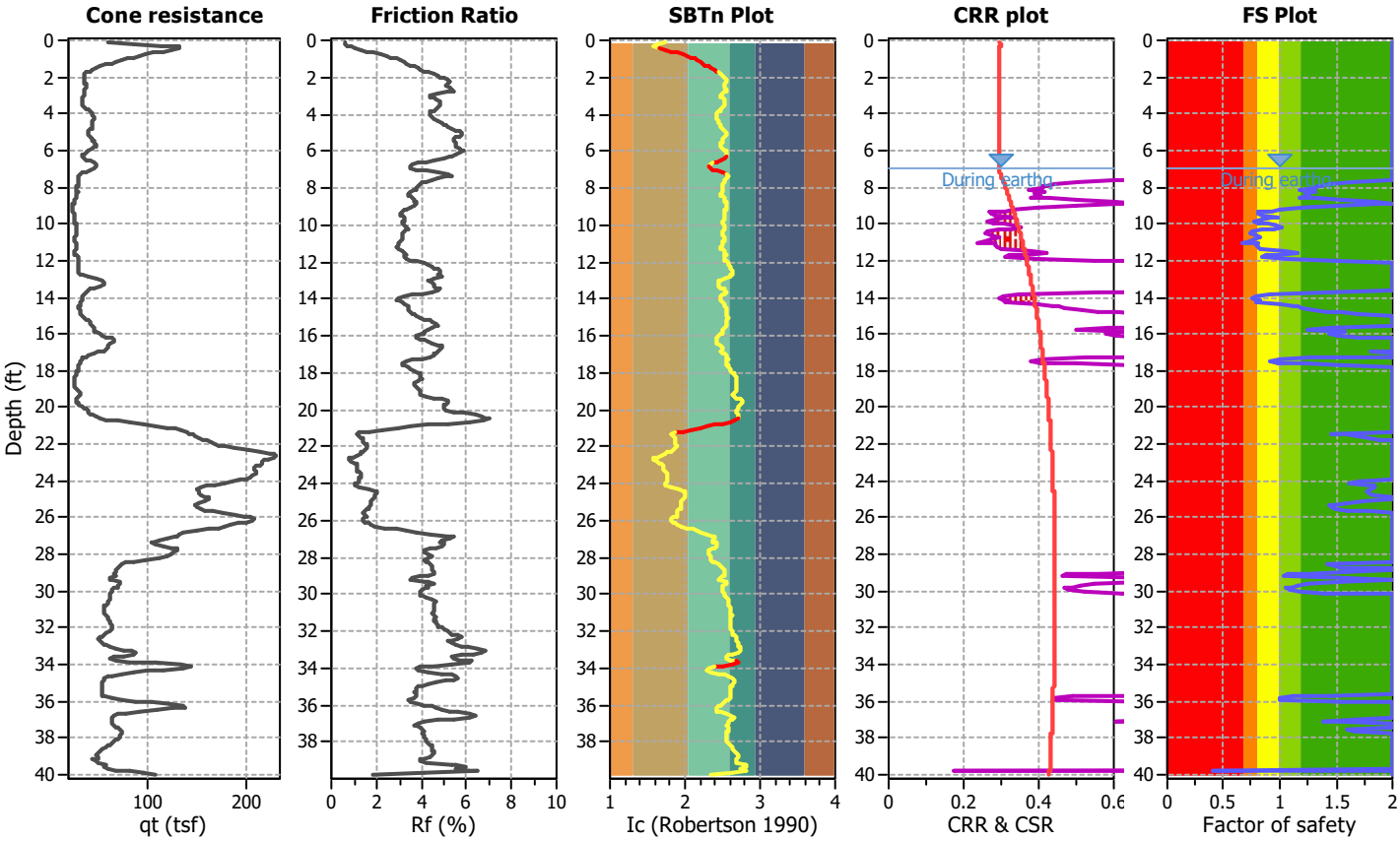
LIQUEFACTION ANALYSIS REPORT

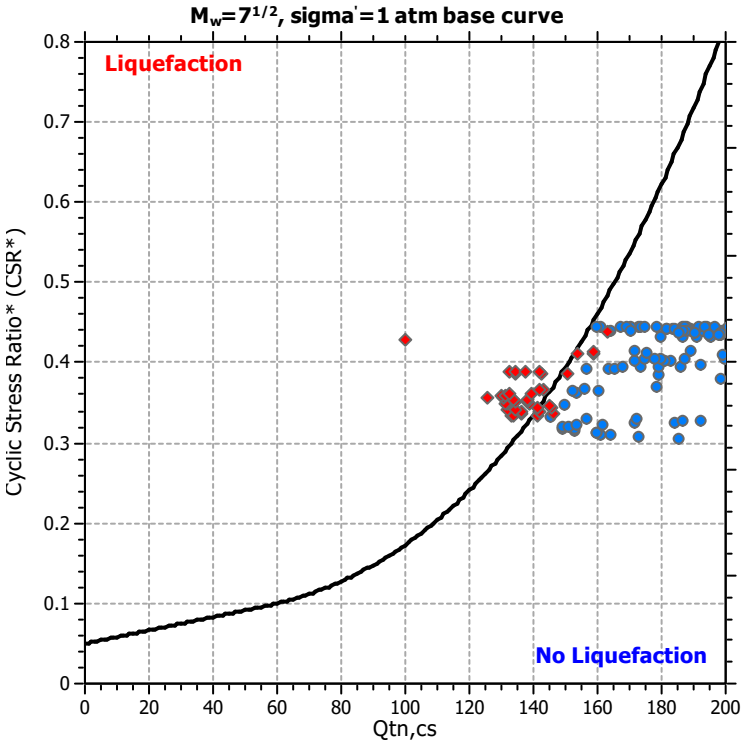
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

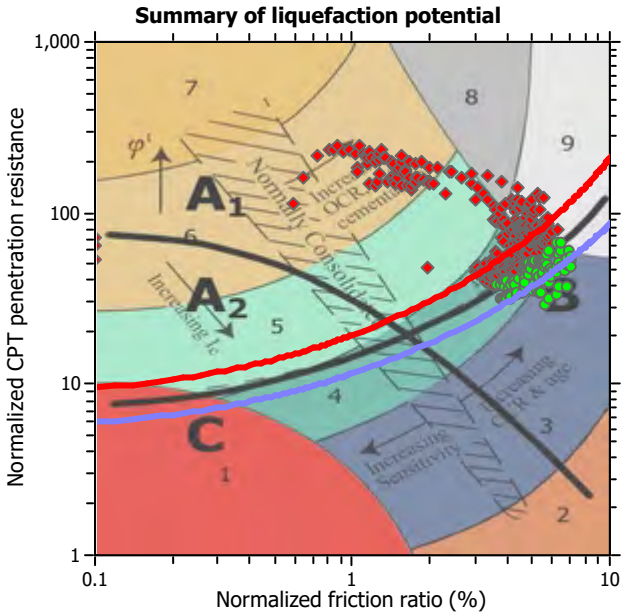
CPT file : CPT-11

Input parameters and analysis data

Analysis method:	Robertson (2009)	G.W.T. (in-situ):	7.00 ft	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	7.00 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:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

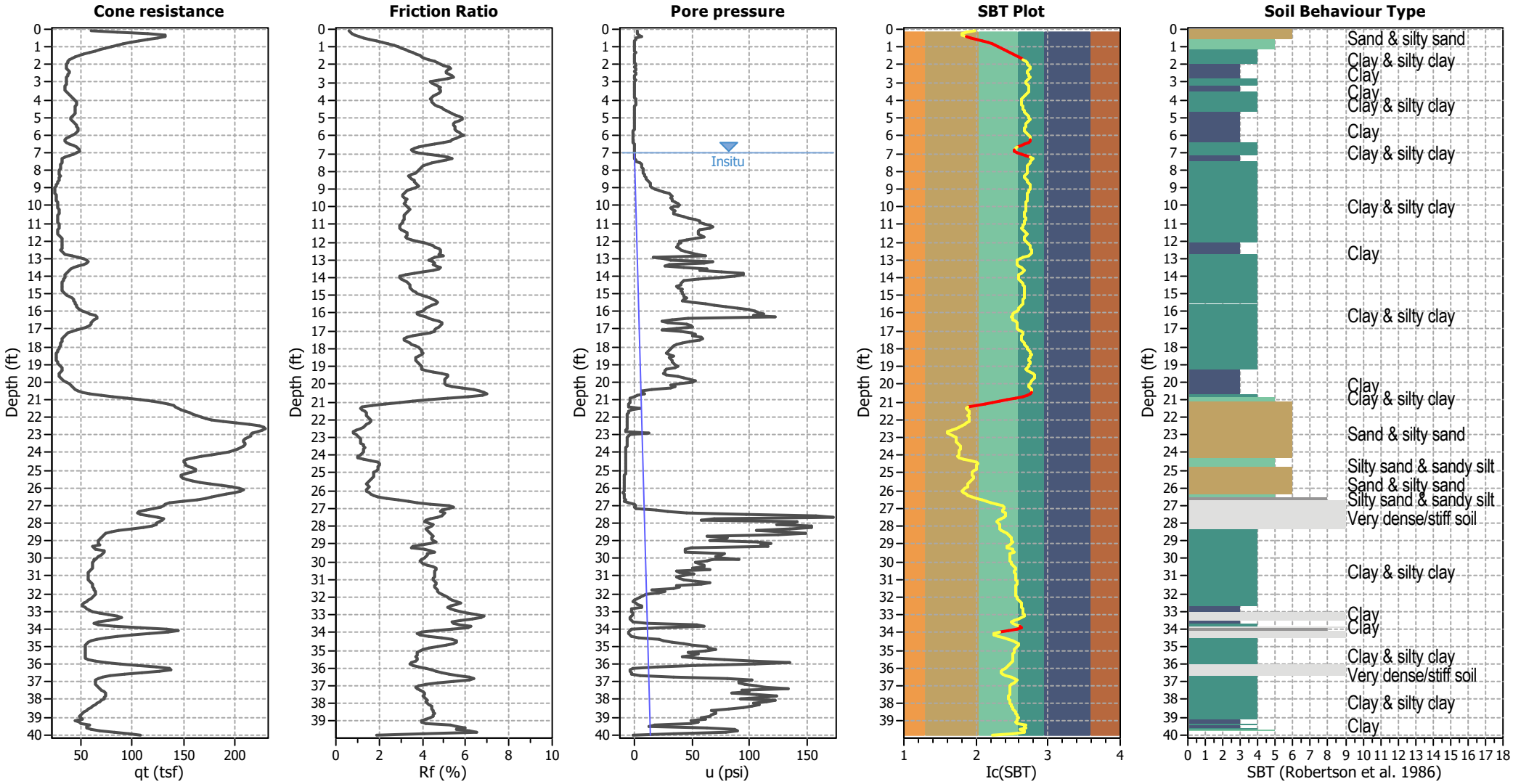






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



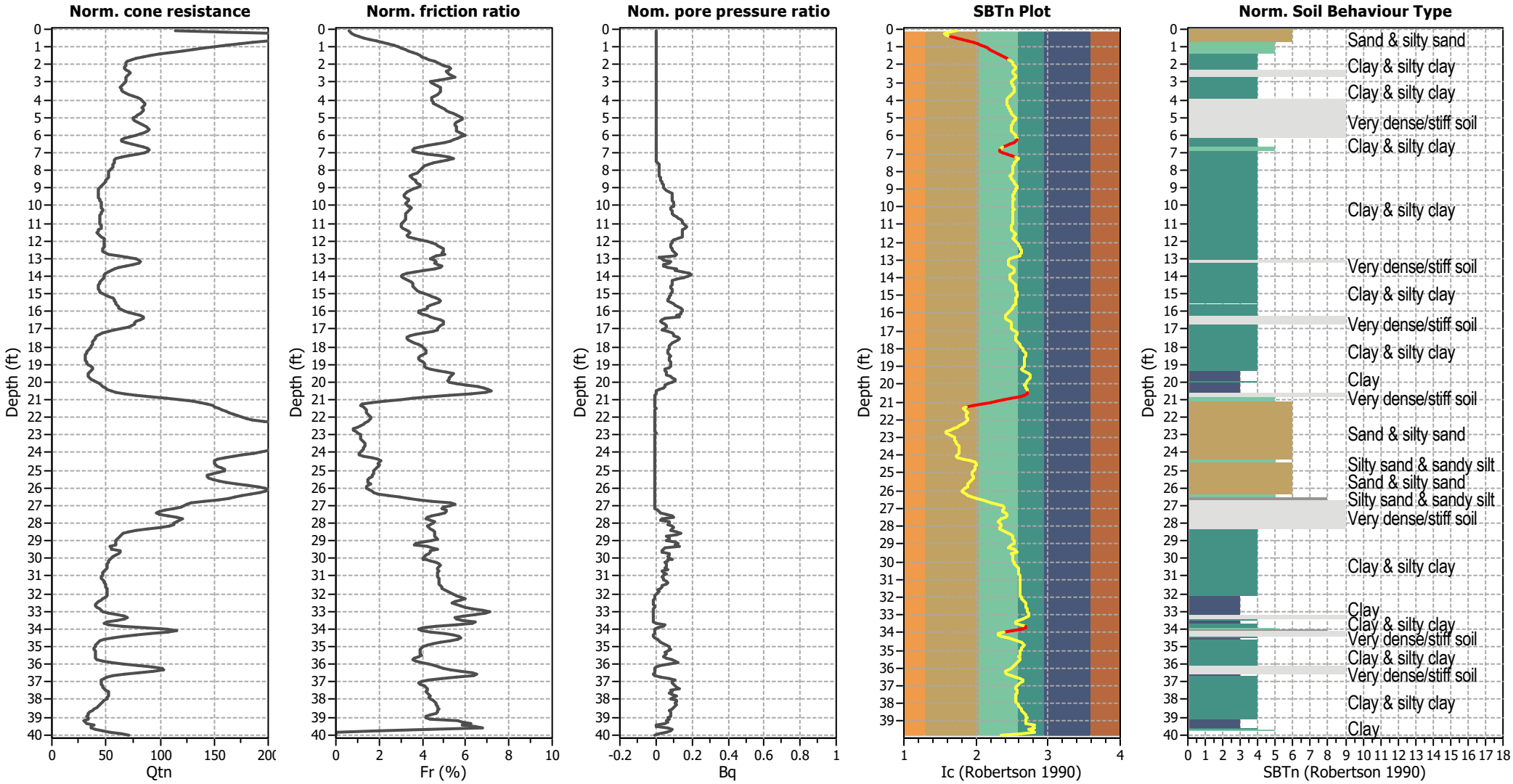
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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)



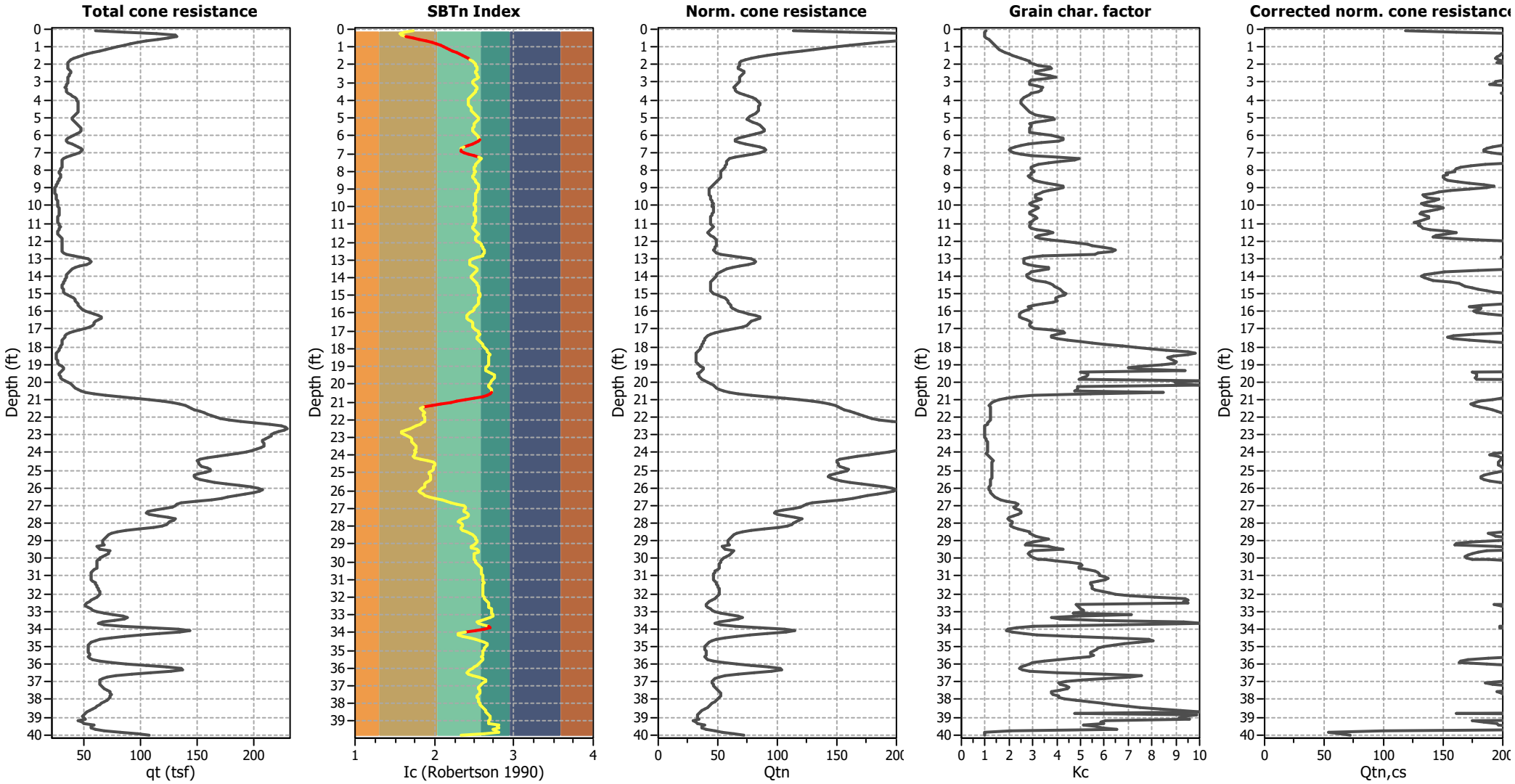
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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

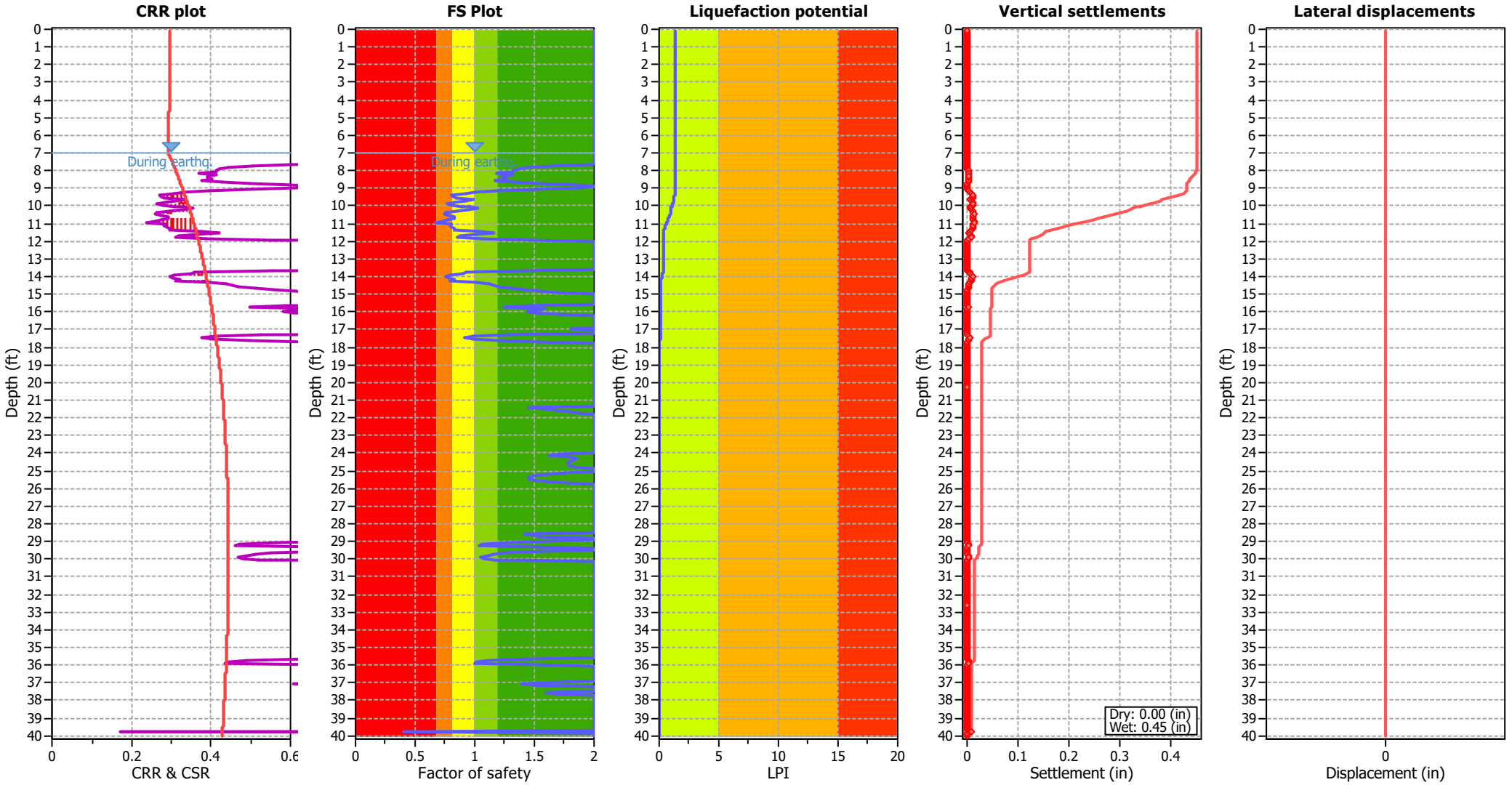
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

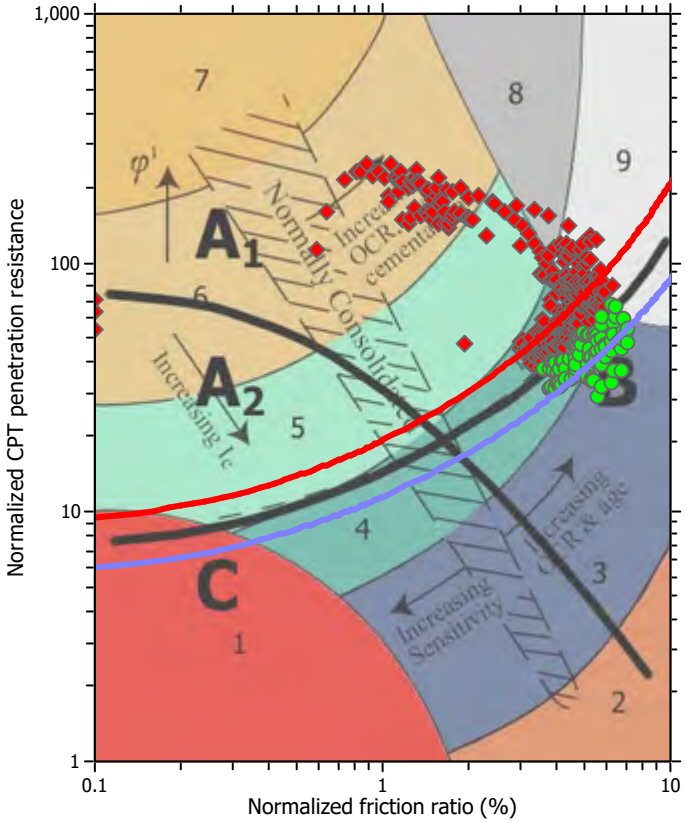
F.S. color scheme

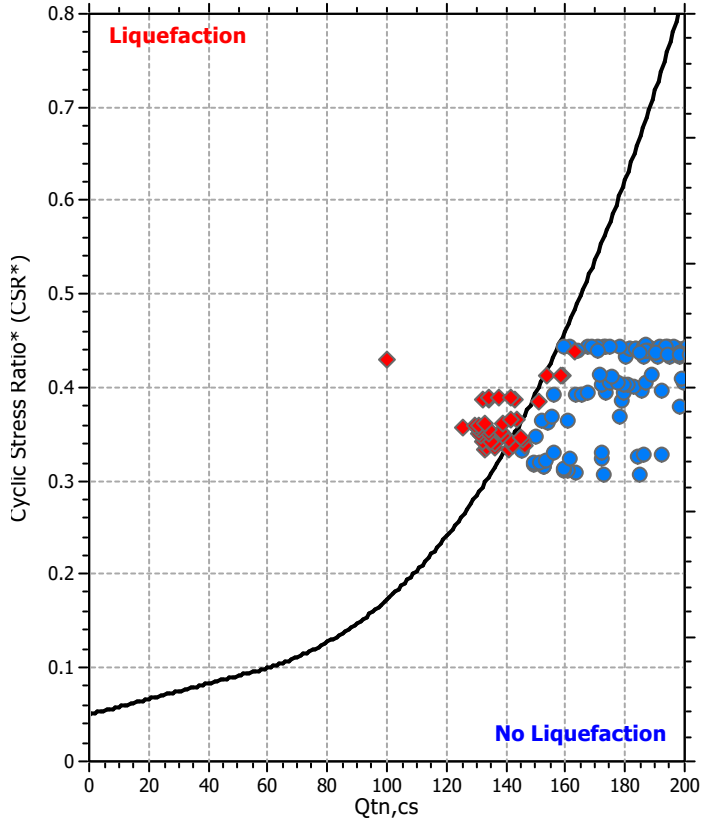
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

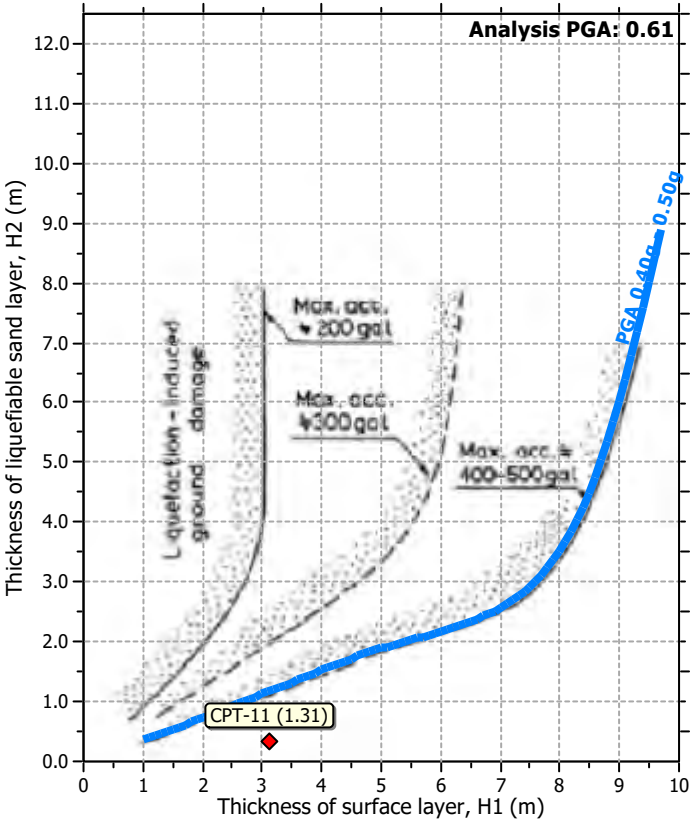
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots







Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

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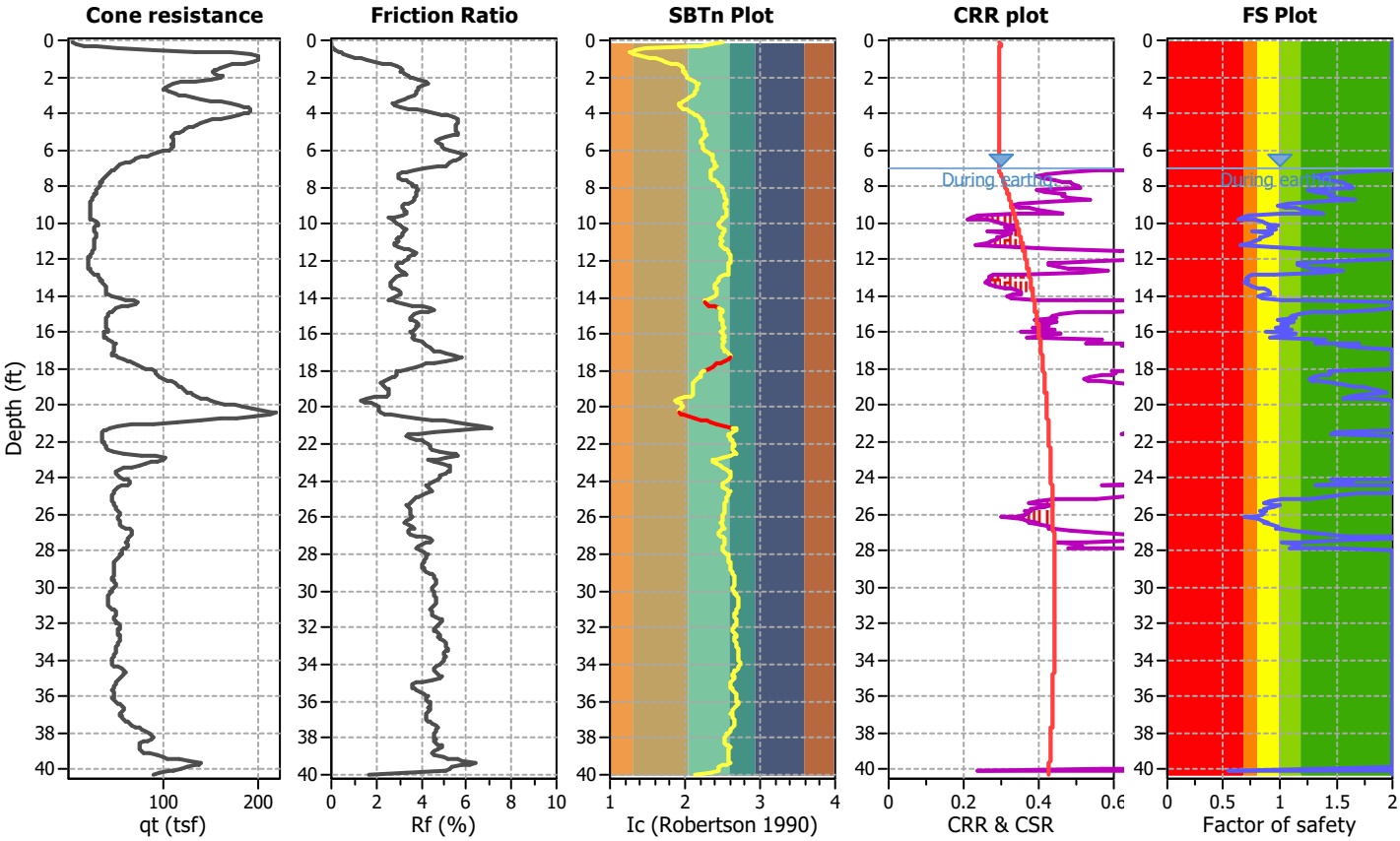
LIQUEFACTION ANALYSIS REPORT

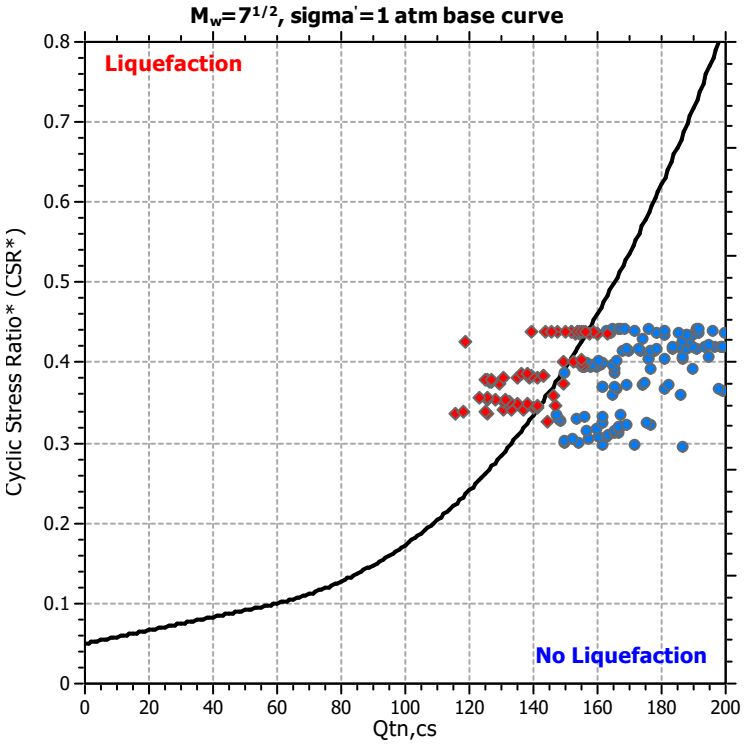
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

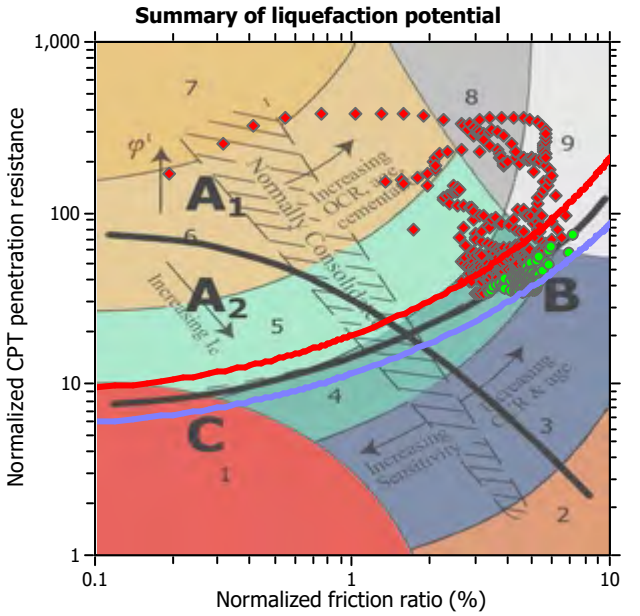
CPT file : CPT-12

Input parameters and analysis data

Analysis method:	Robertson (2009)	G.W.T. (in-situ):	7.00 ft	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	7.00 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:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

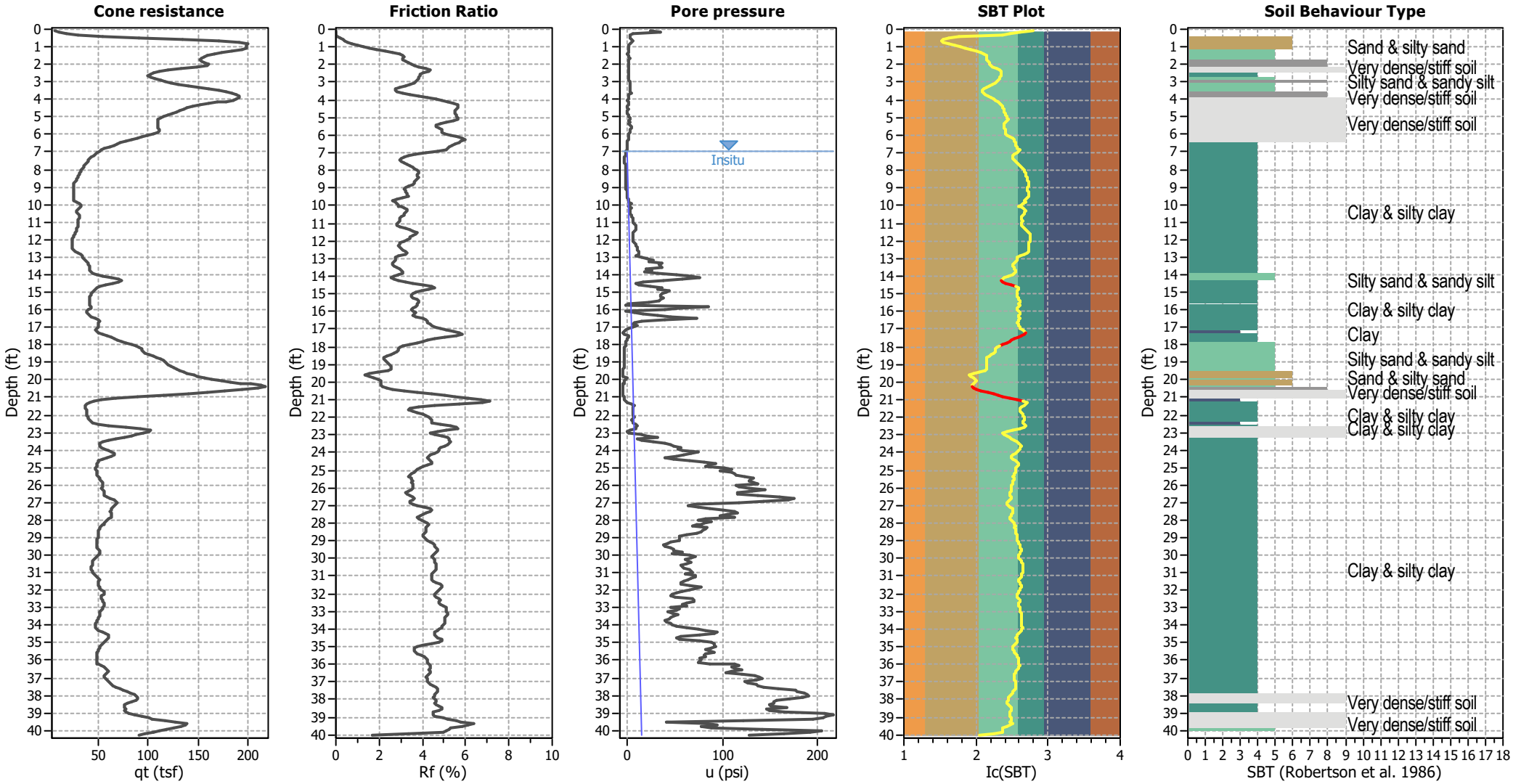






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



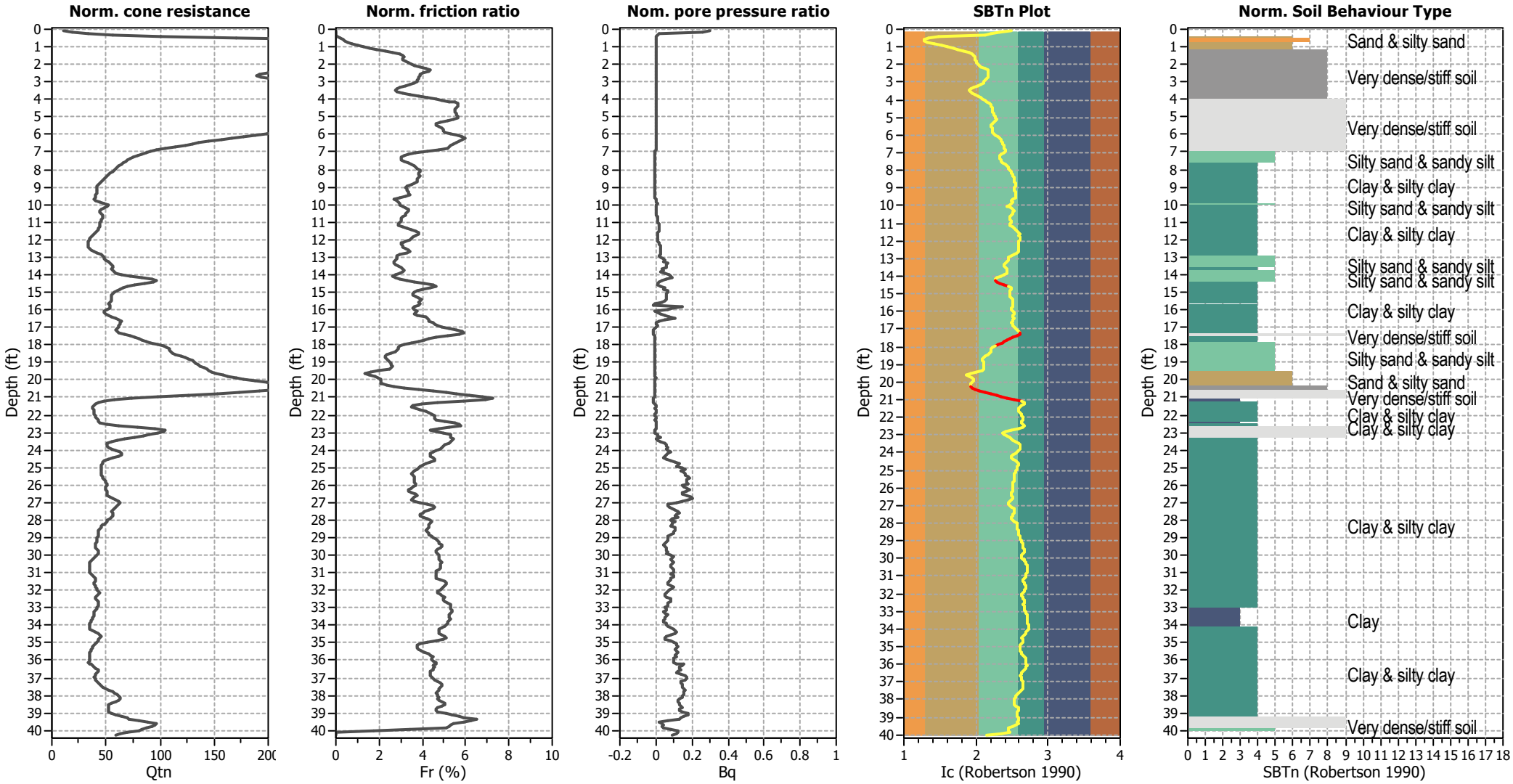
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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)



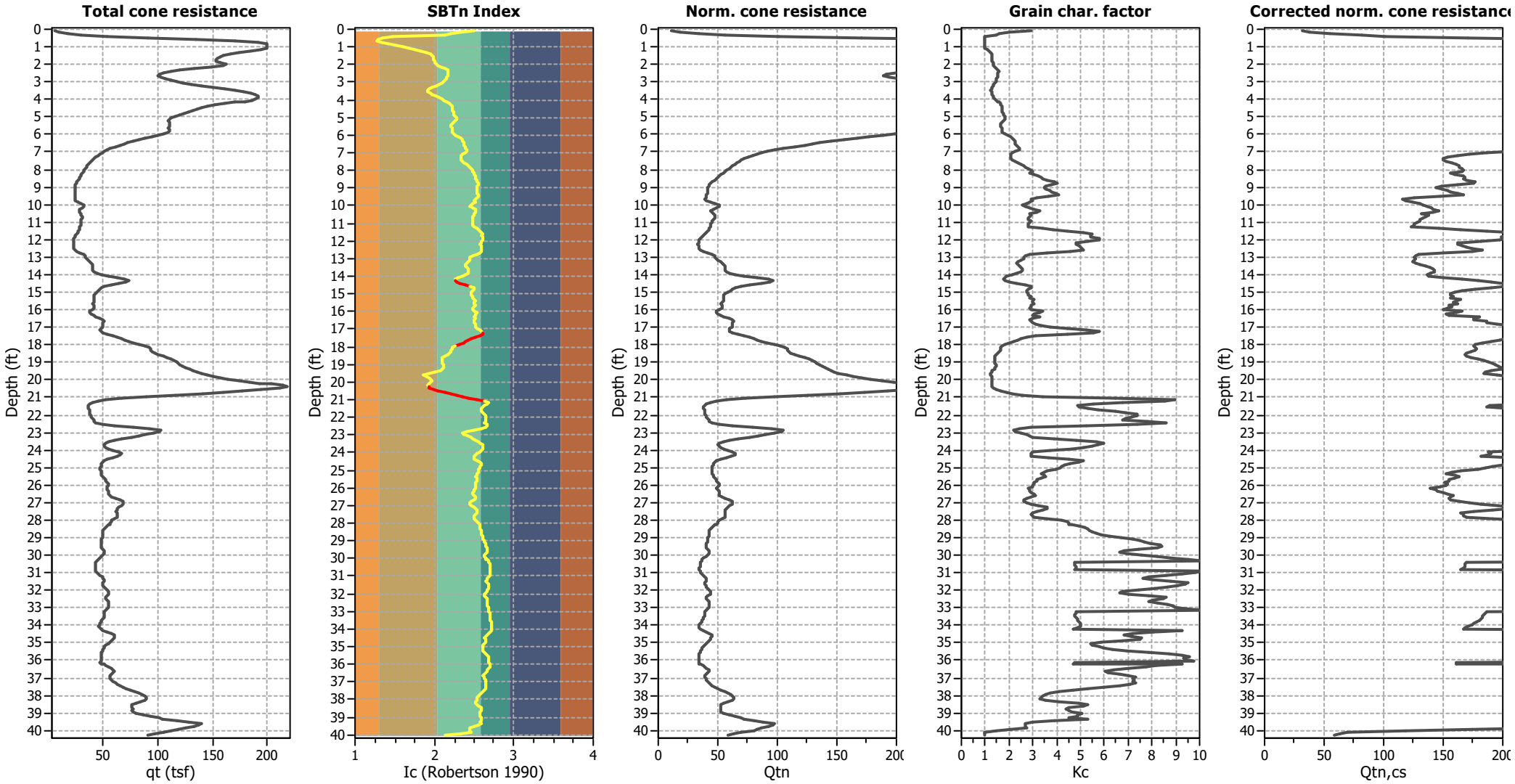
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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

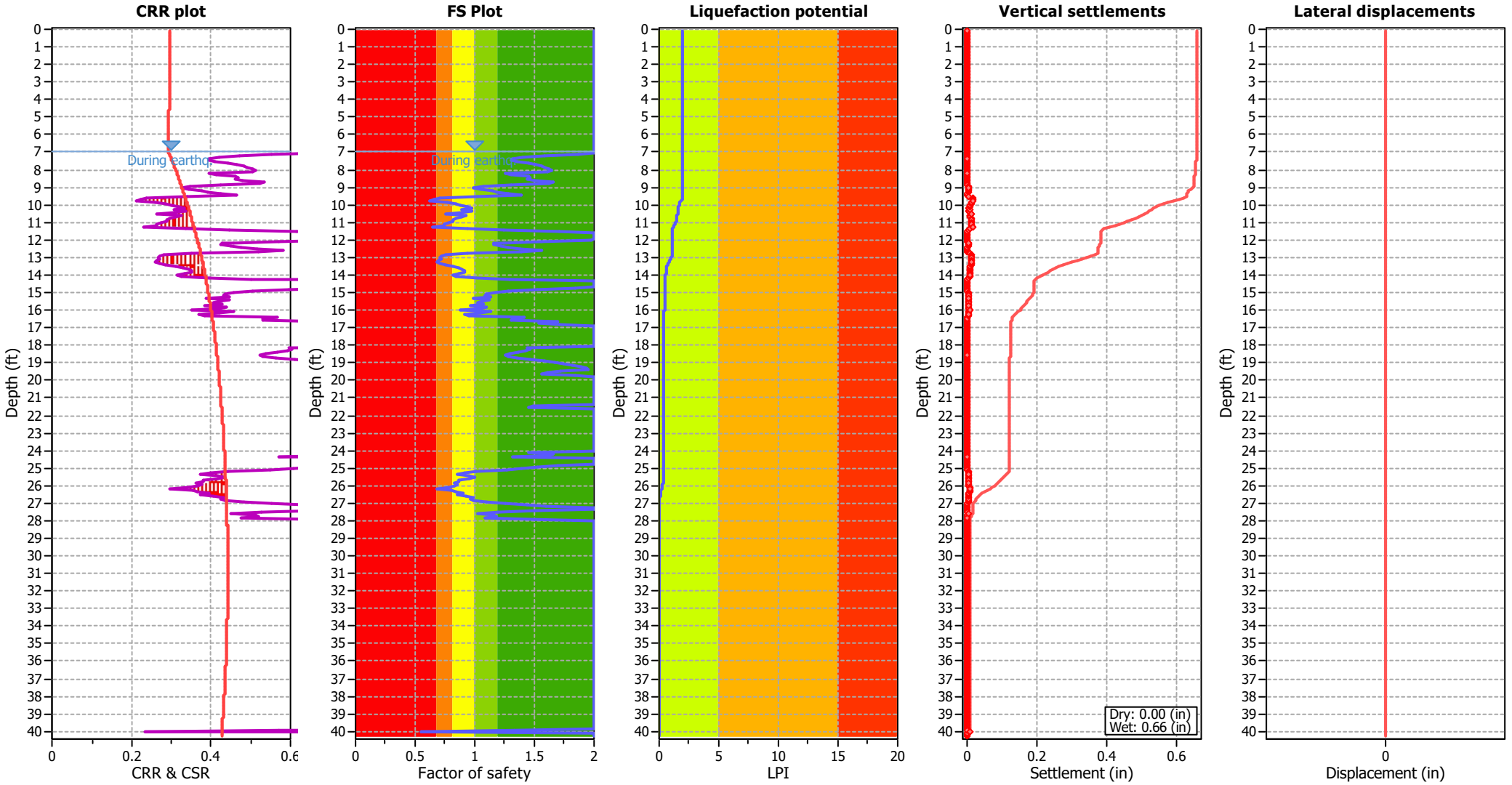
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

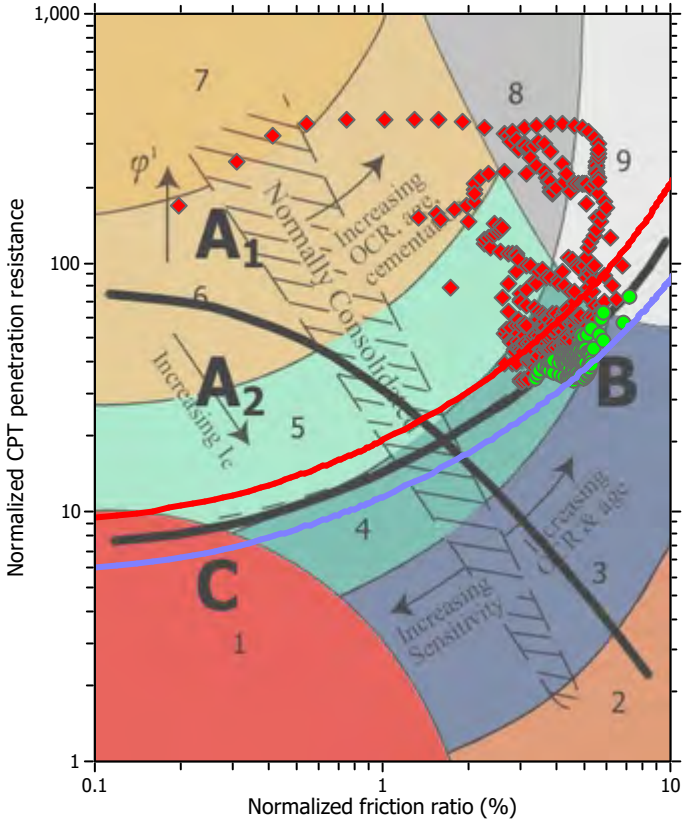
F.S. color scheme

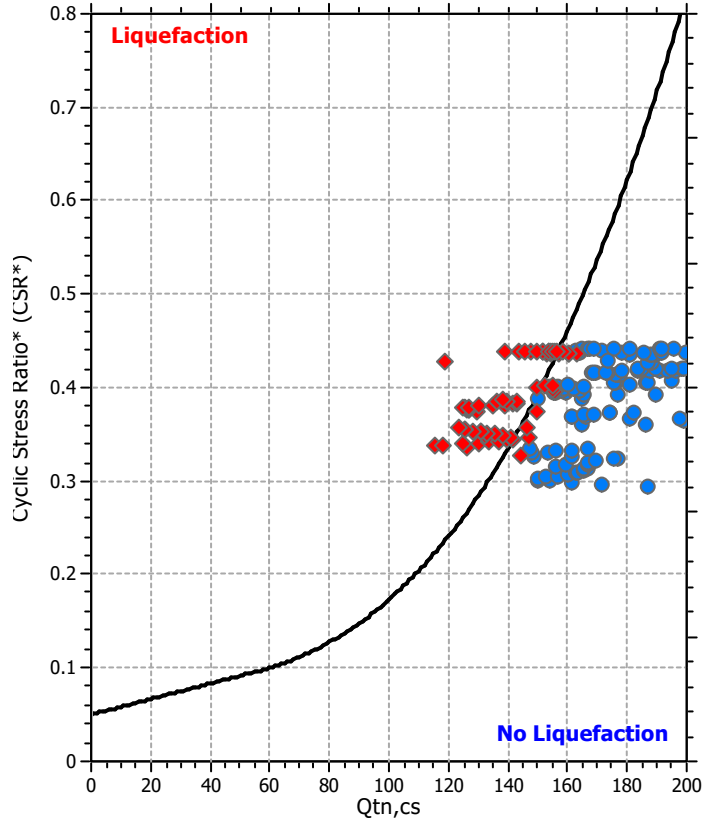
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

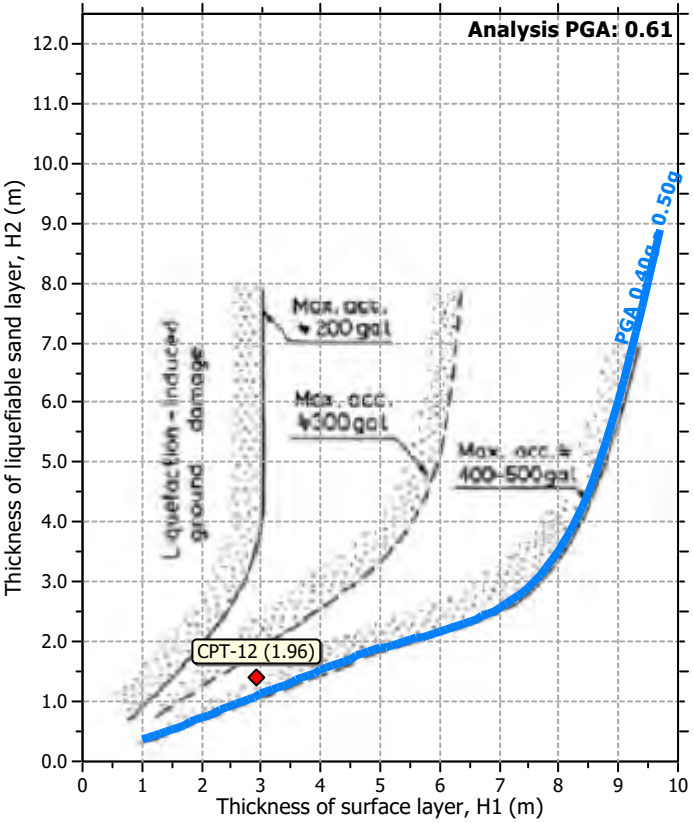
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots







Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

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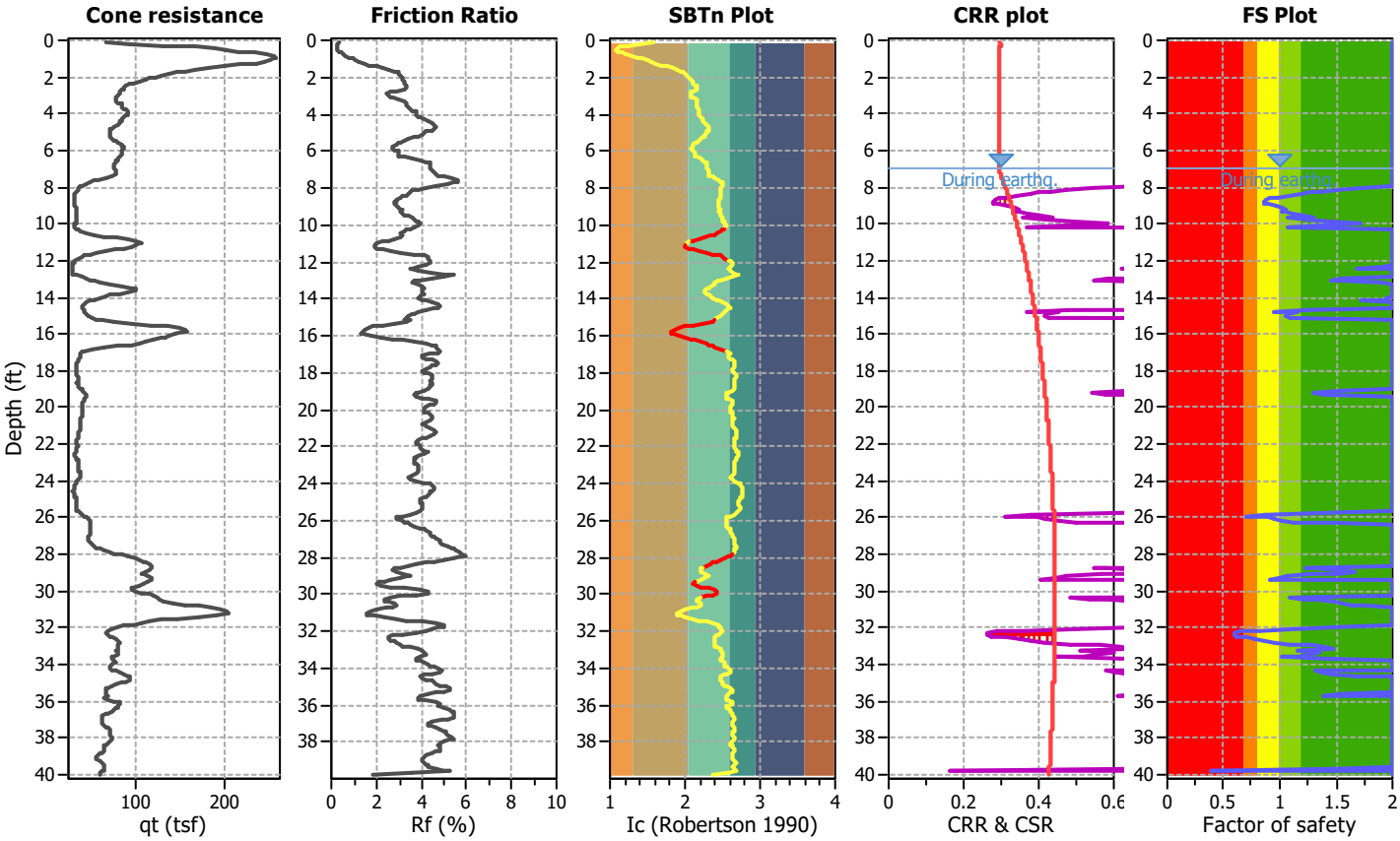
LIQUEFACTION ANALYSIS REPORT

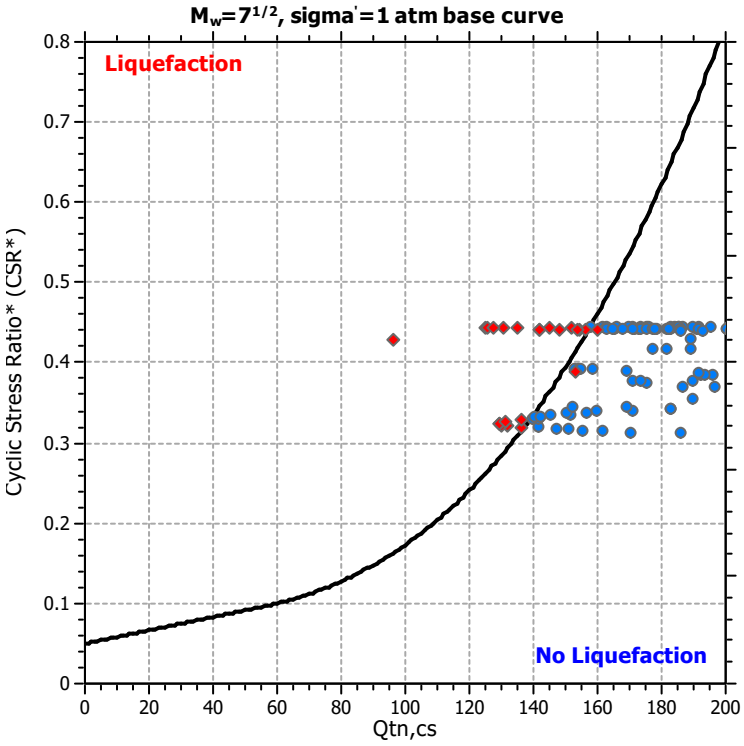
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

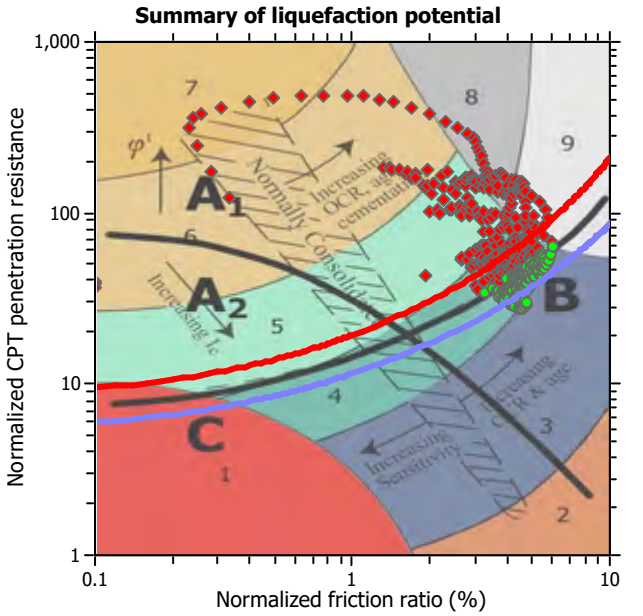
CPT file : CPT-13

Input parameters and analysis data

Analysis method:	Robertson (2009)	G.W.T. (in-situ):	7.00 ft	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	7.00 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:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

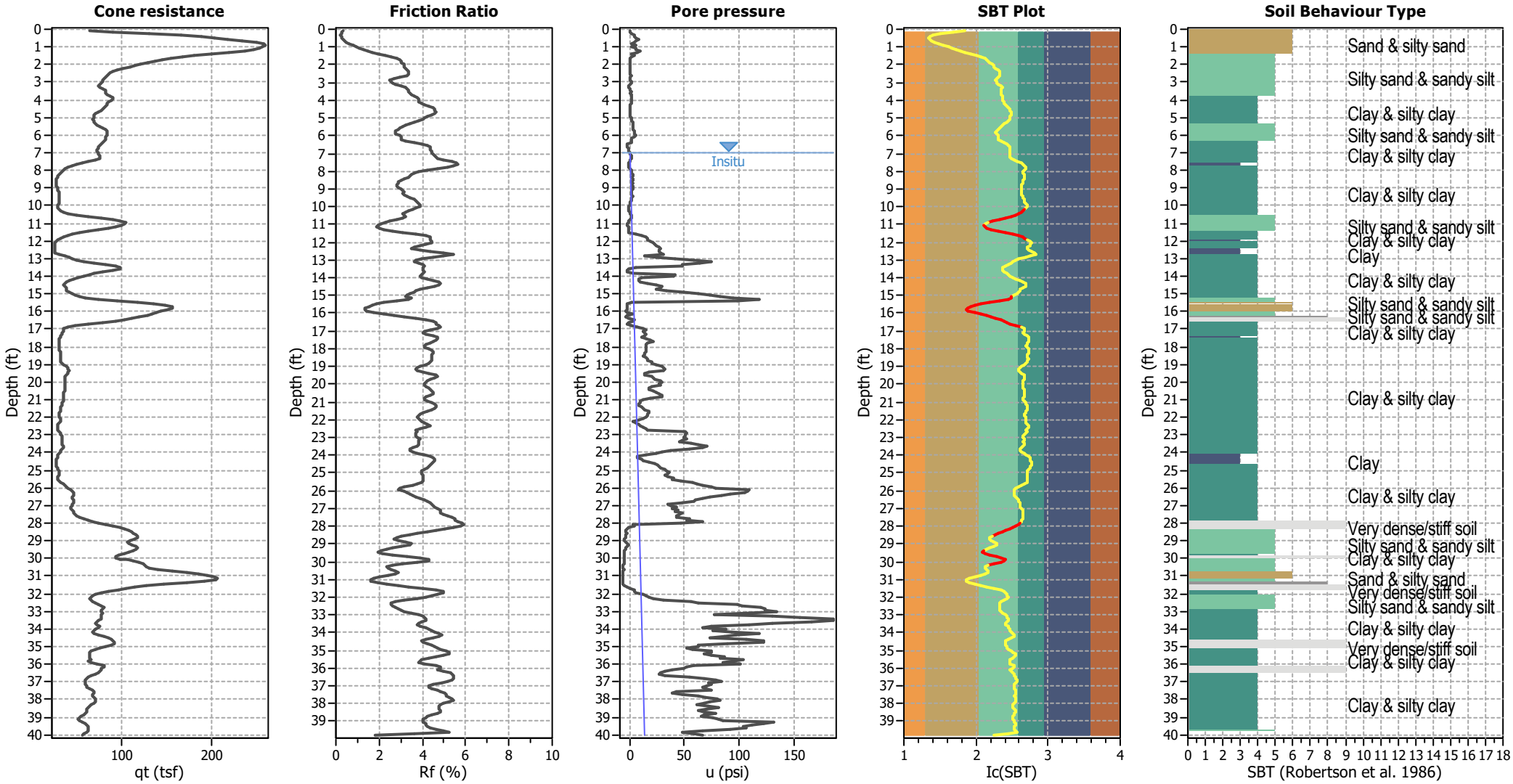






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



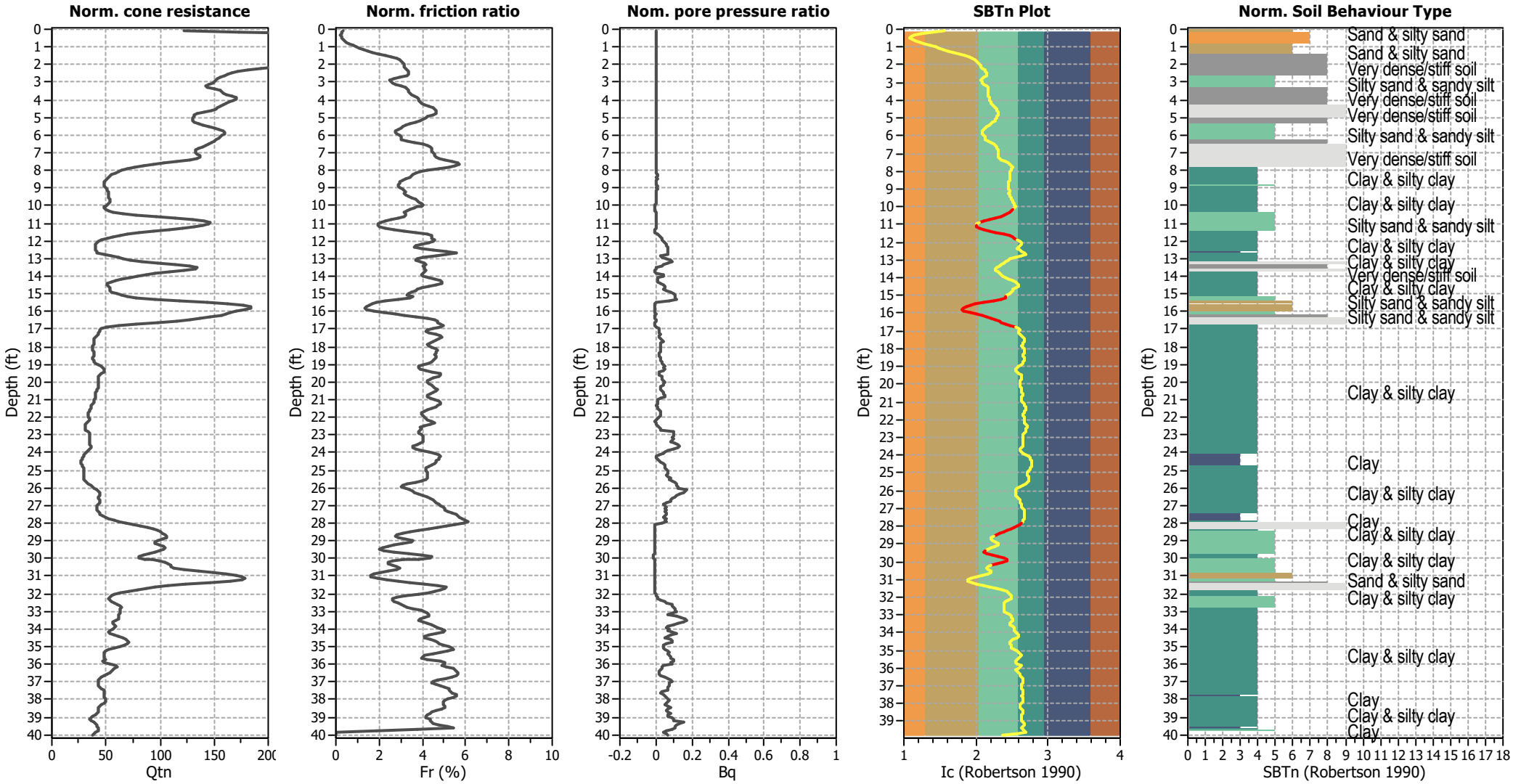
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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)



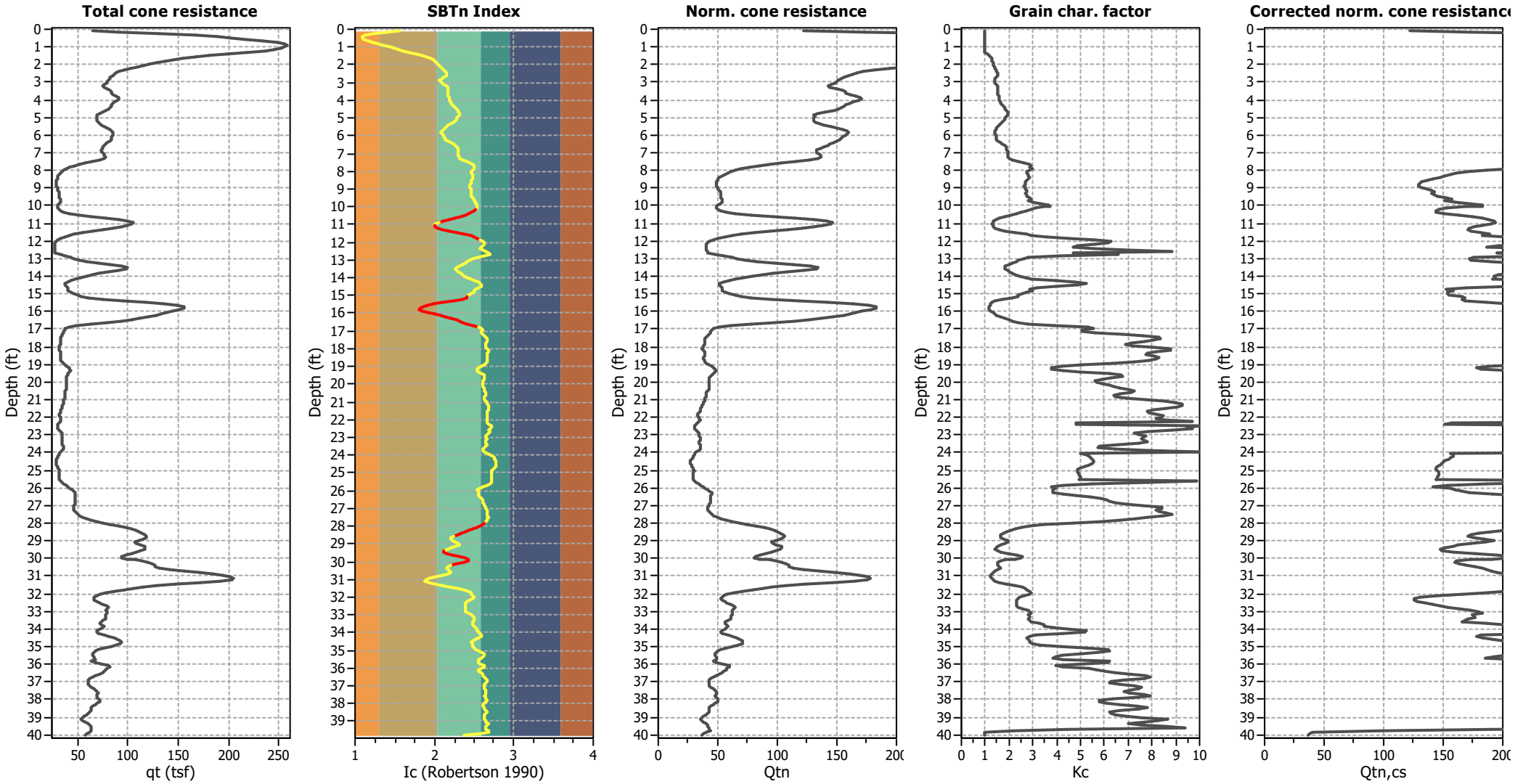
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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

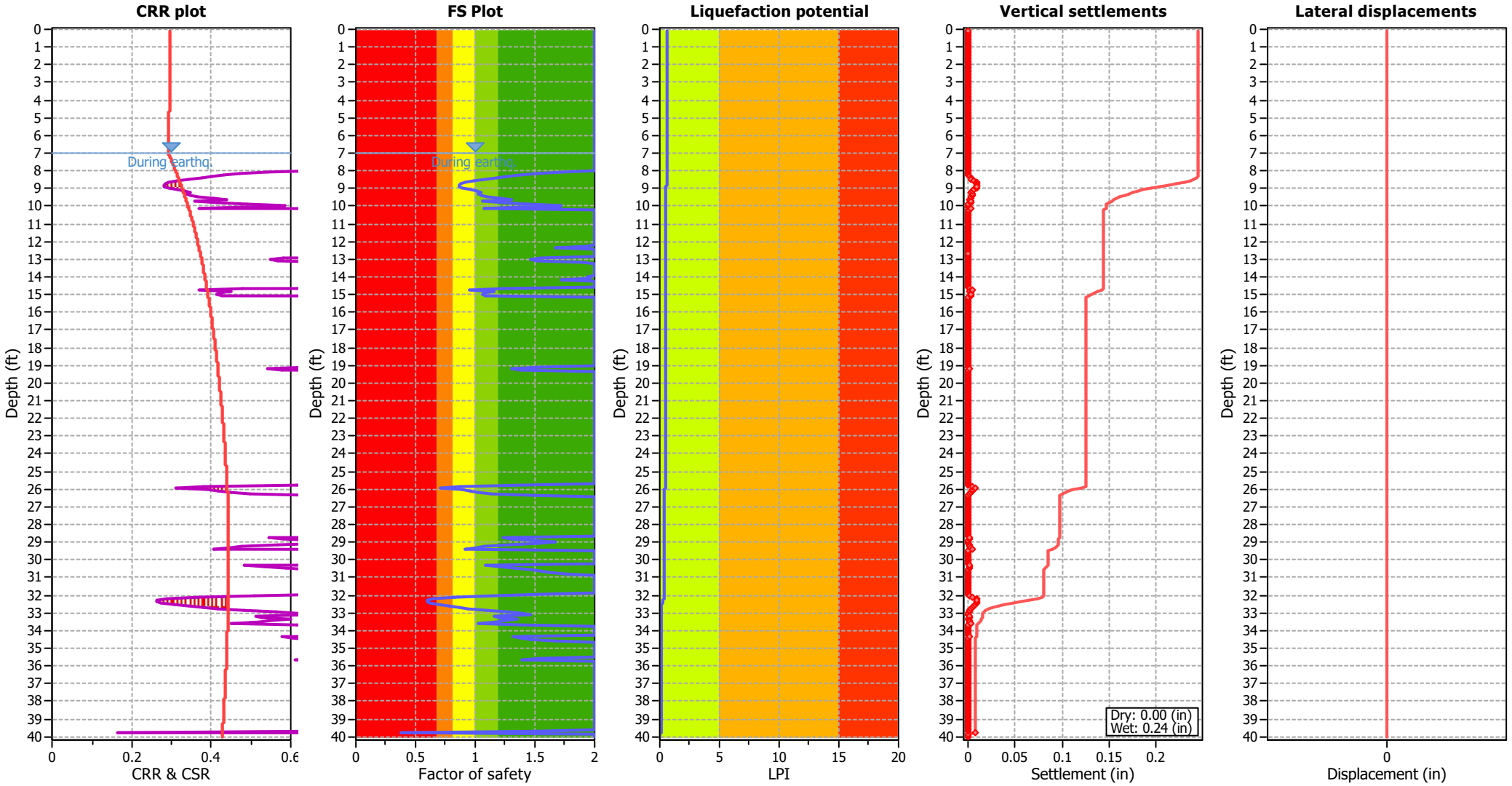
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

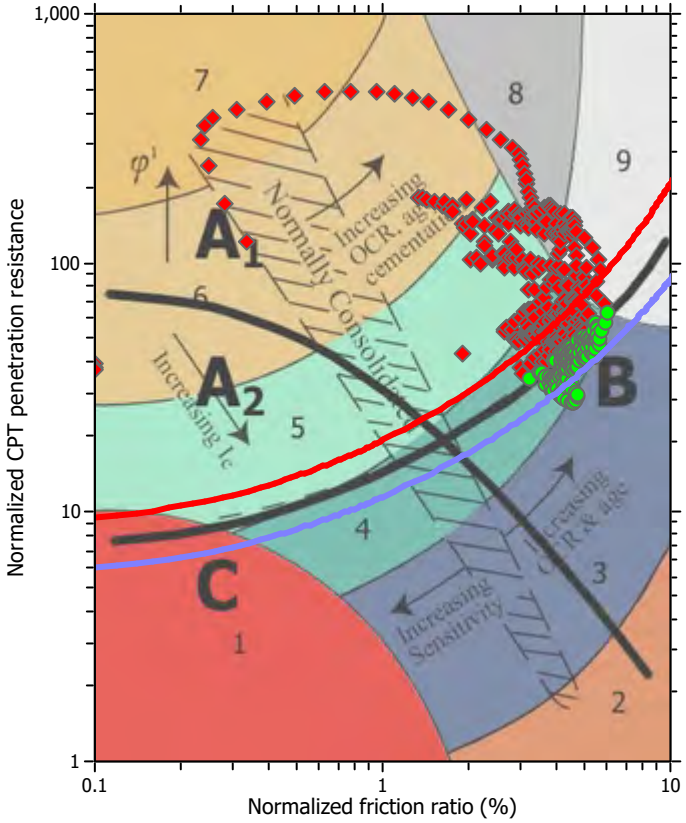
F.S. color scheme

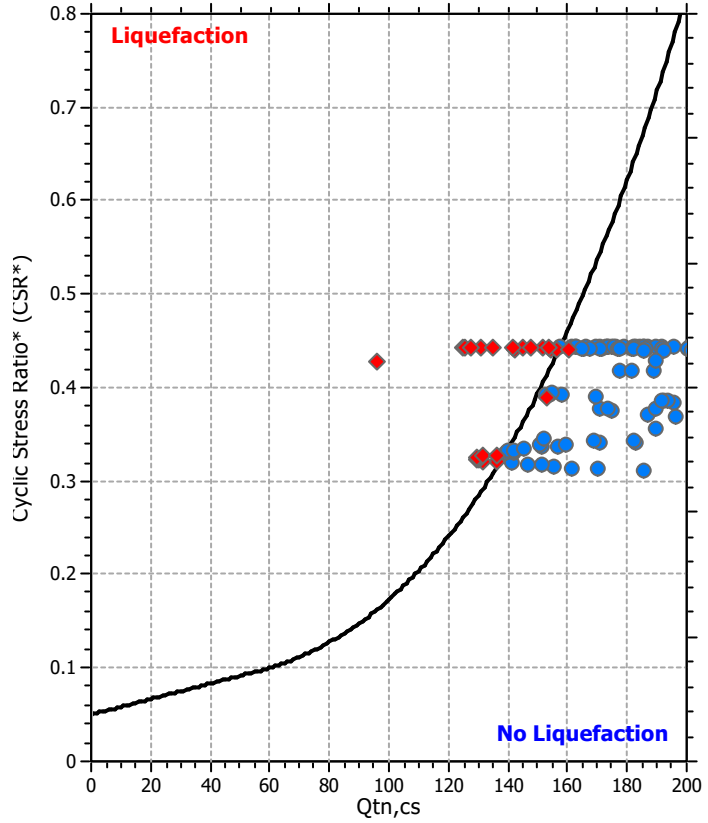
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

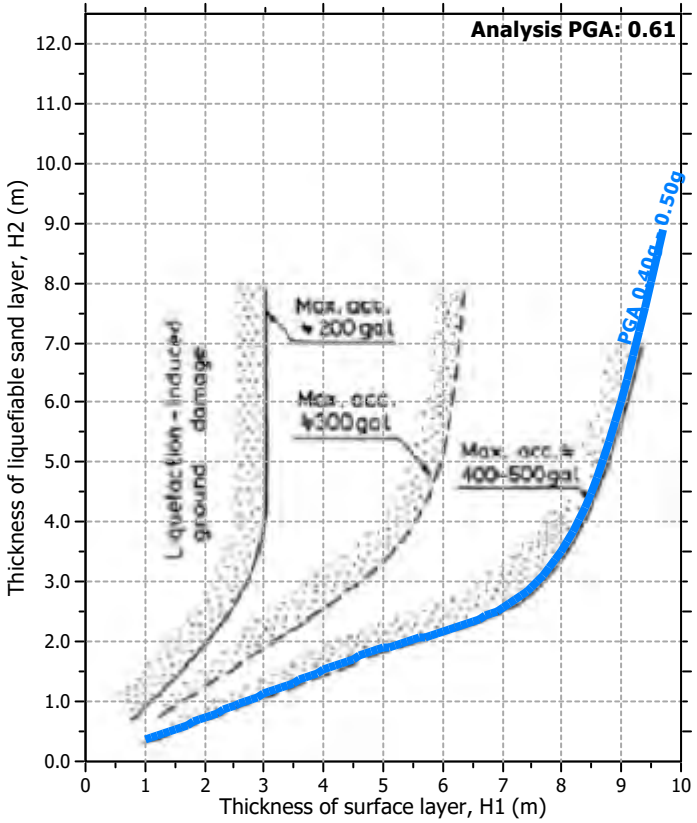
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots







Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

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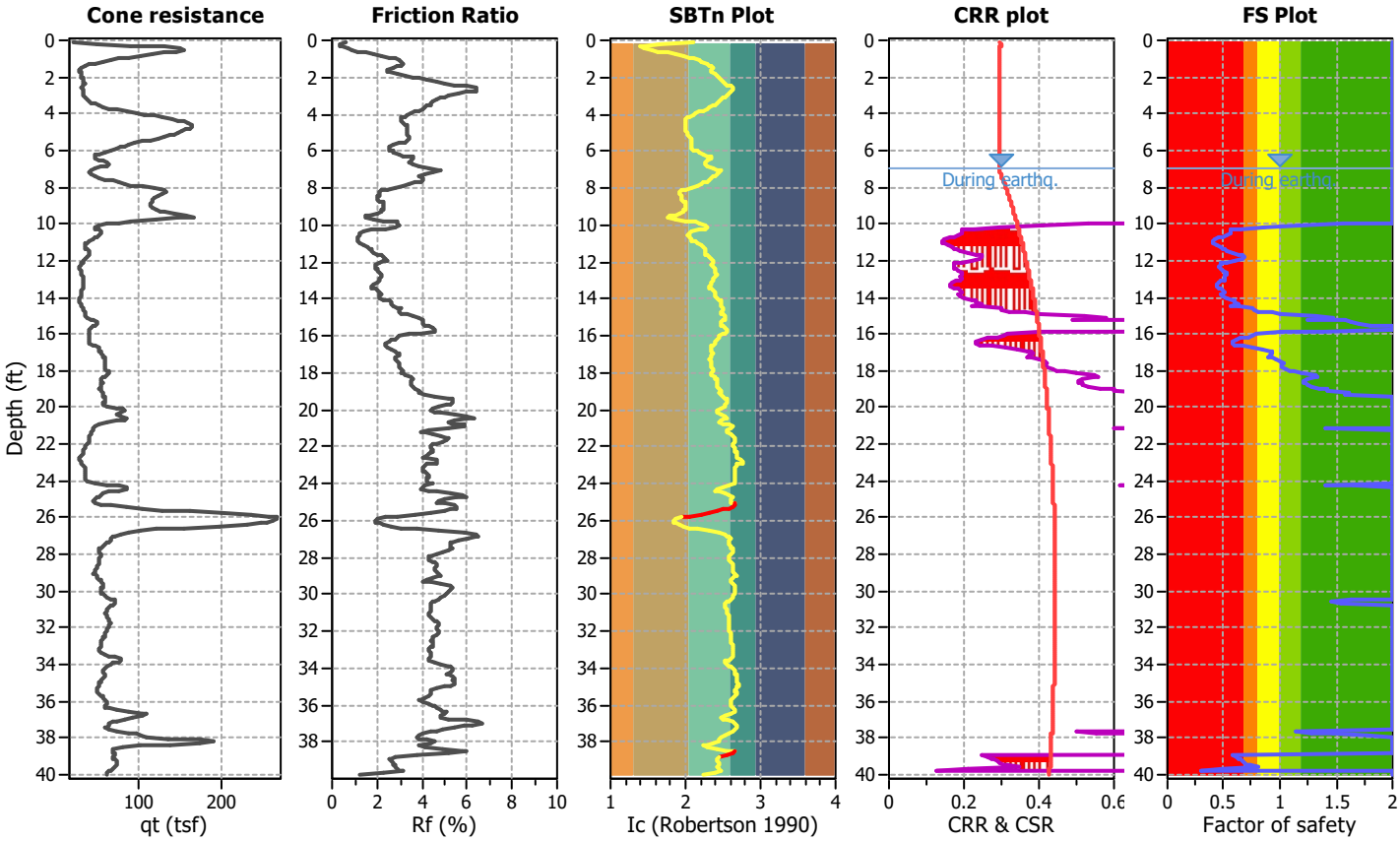
LIQUEFACTION ANALYSIS REPORT

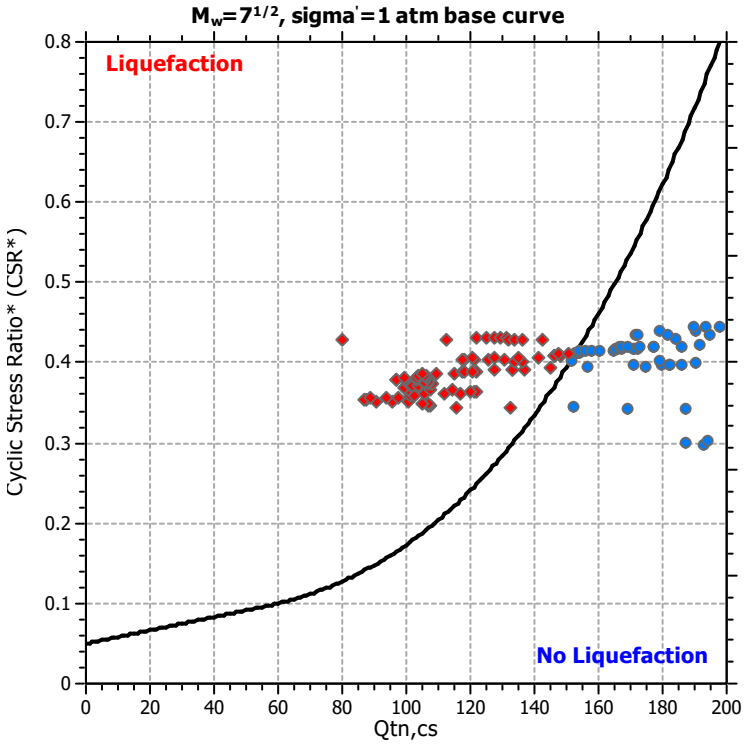
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

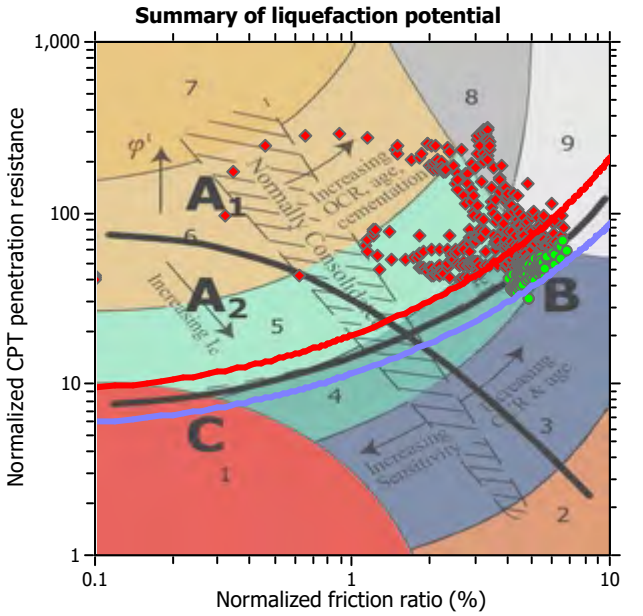
CPT file : CPT-14

Input parameters and analysis data

Analysis method:	Robertson (2009)	G.W.T. (in-situ):	7.00 ft	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	7.00 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:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

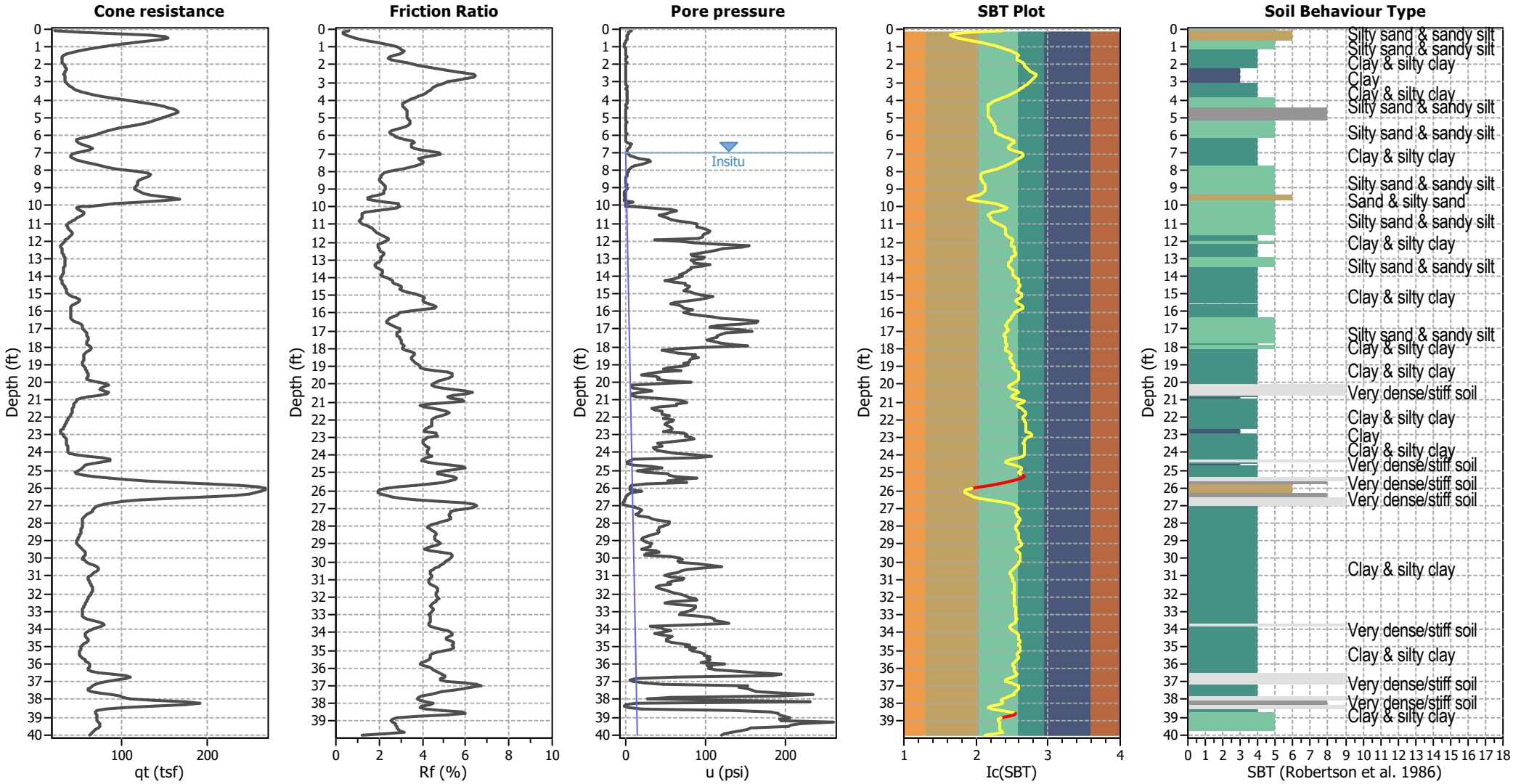






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



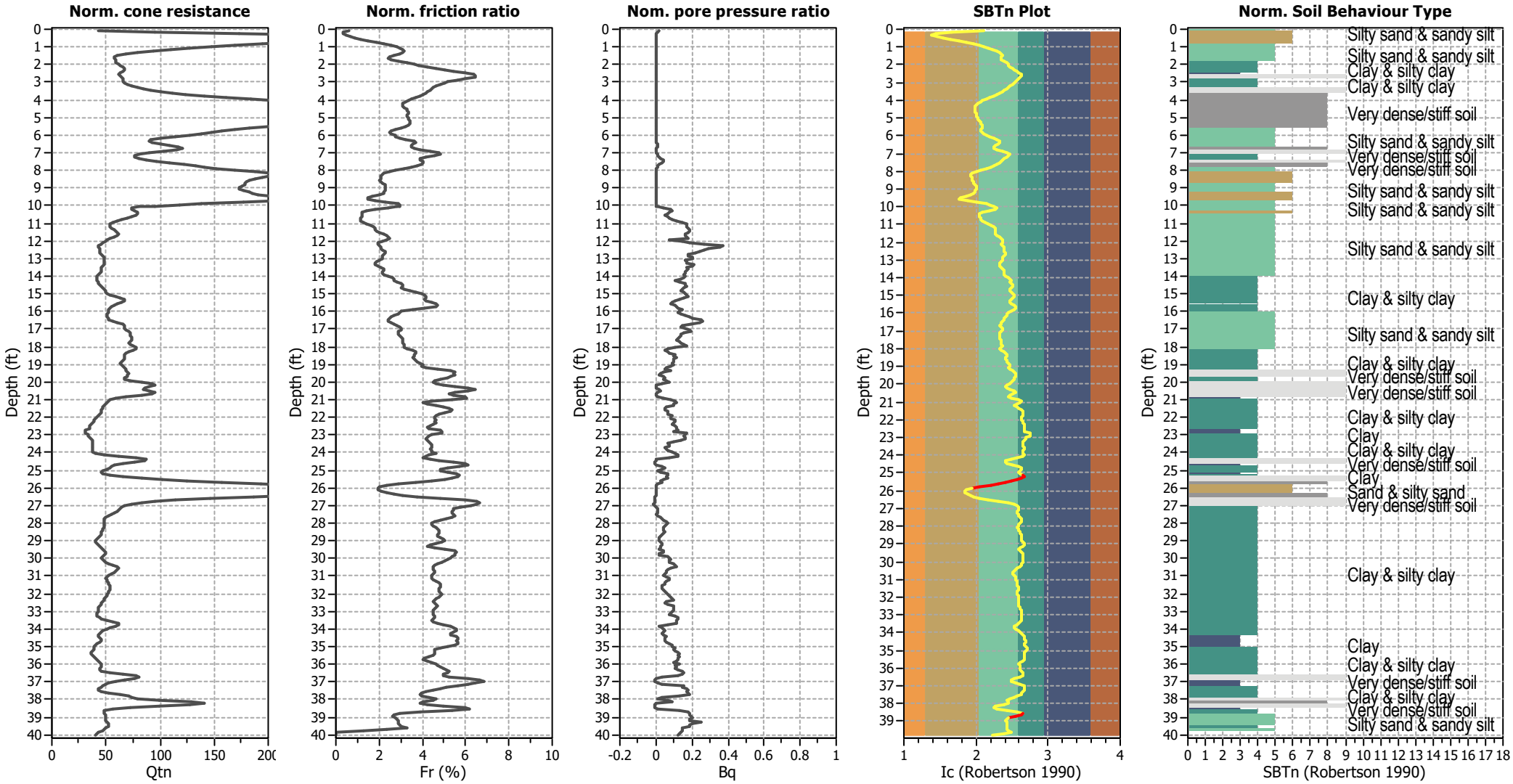
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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)



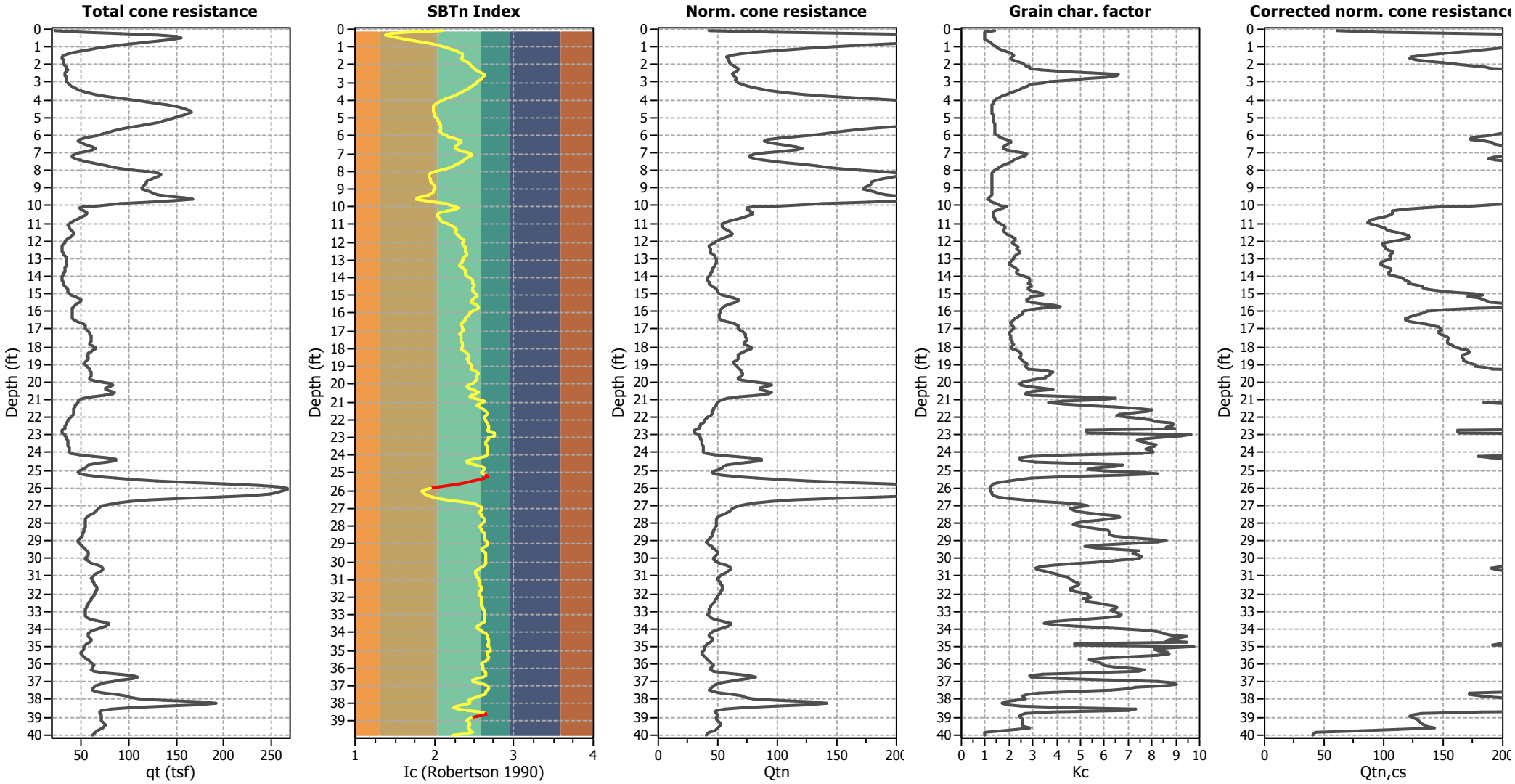
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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

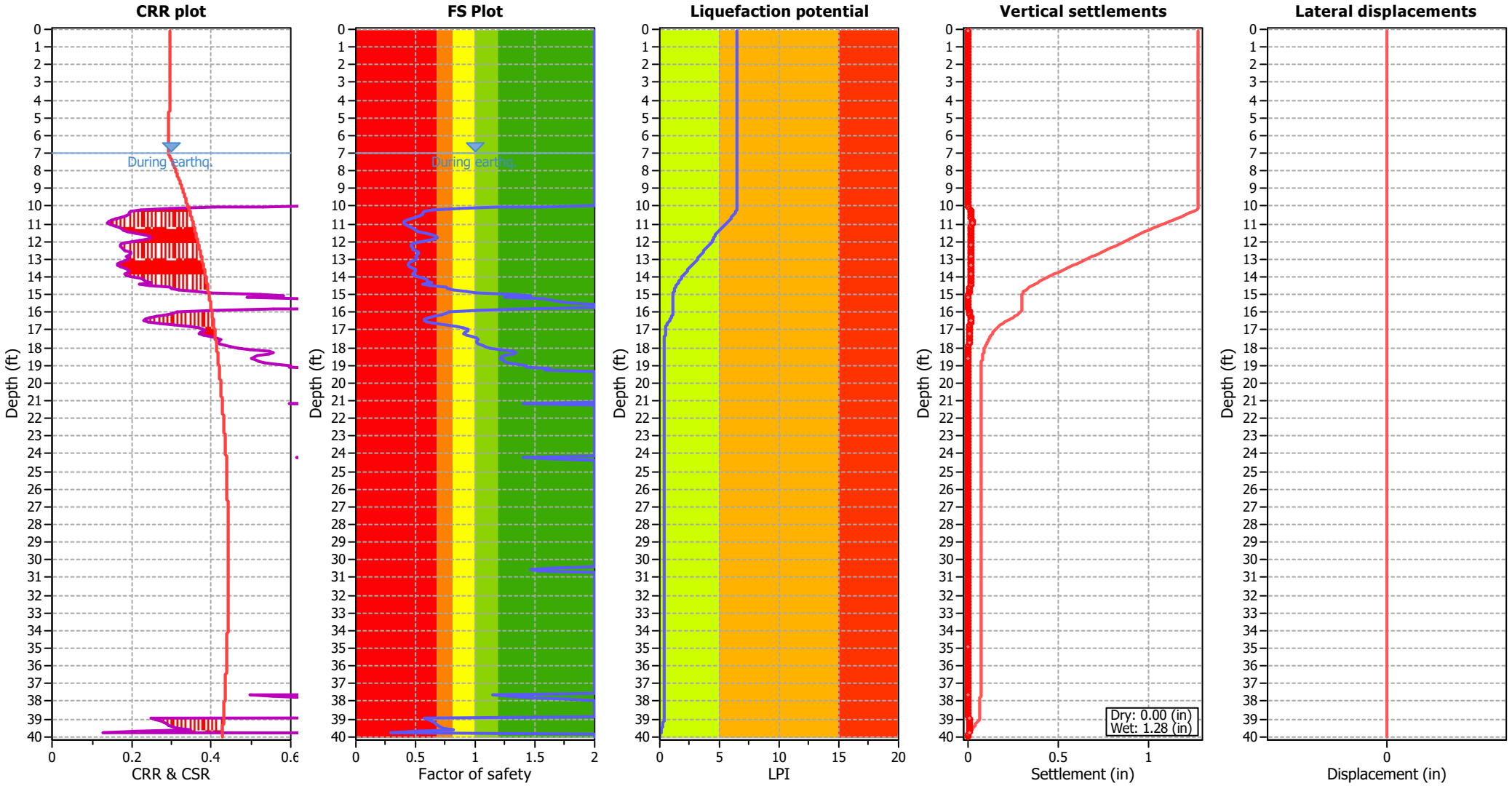
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_o applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

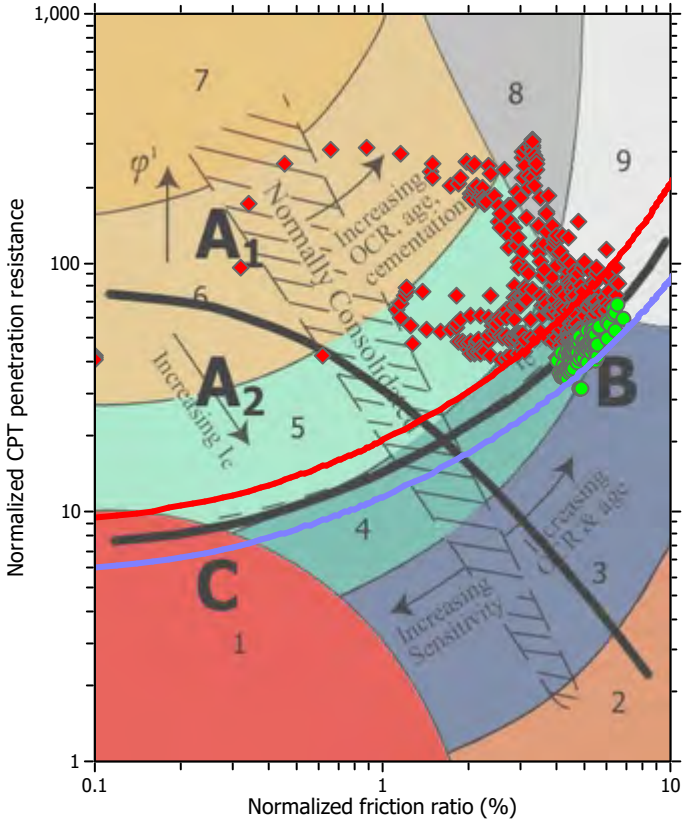
F.S. color scheme

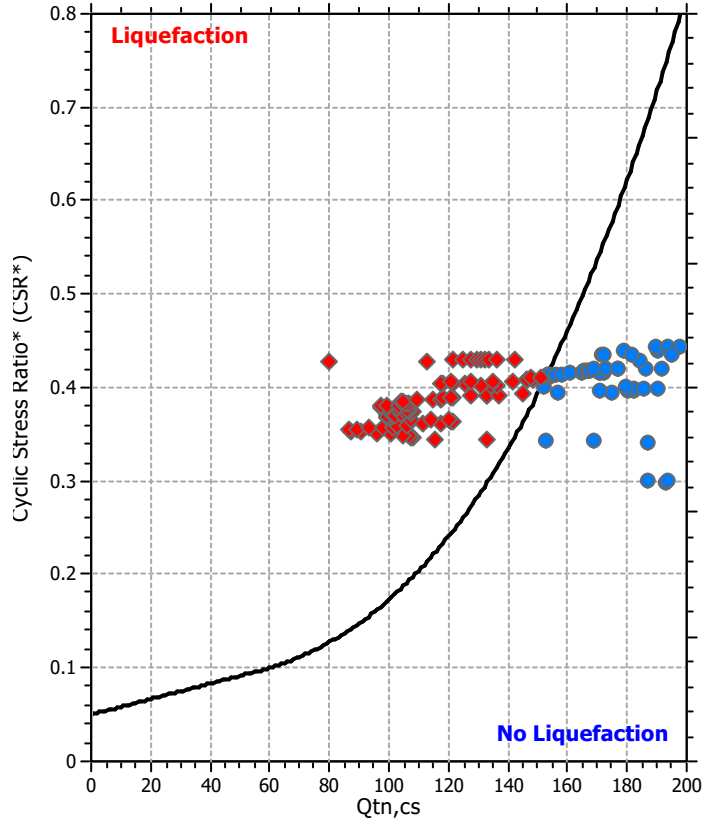
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

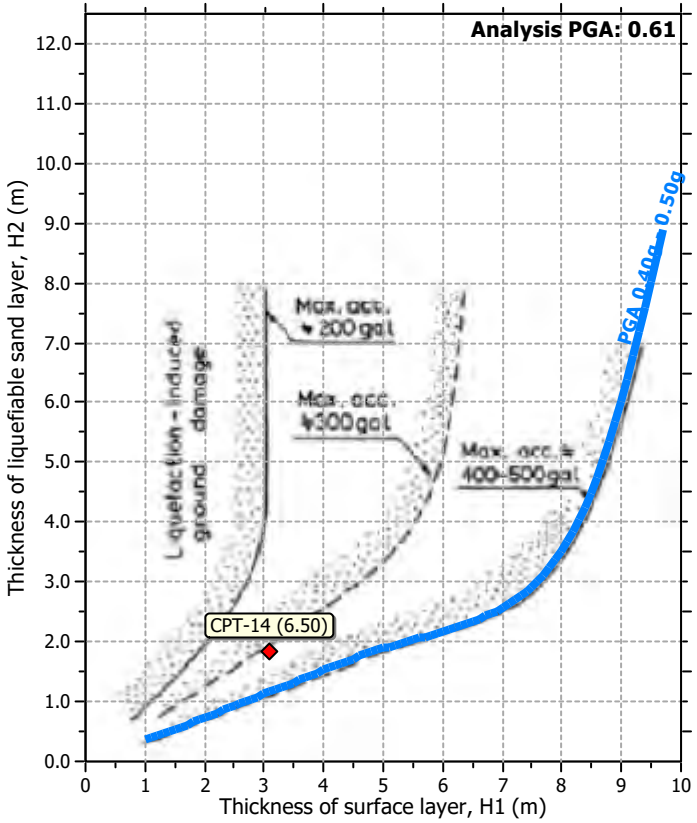
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots







Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

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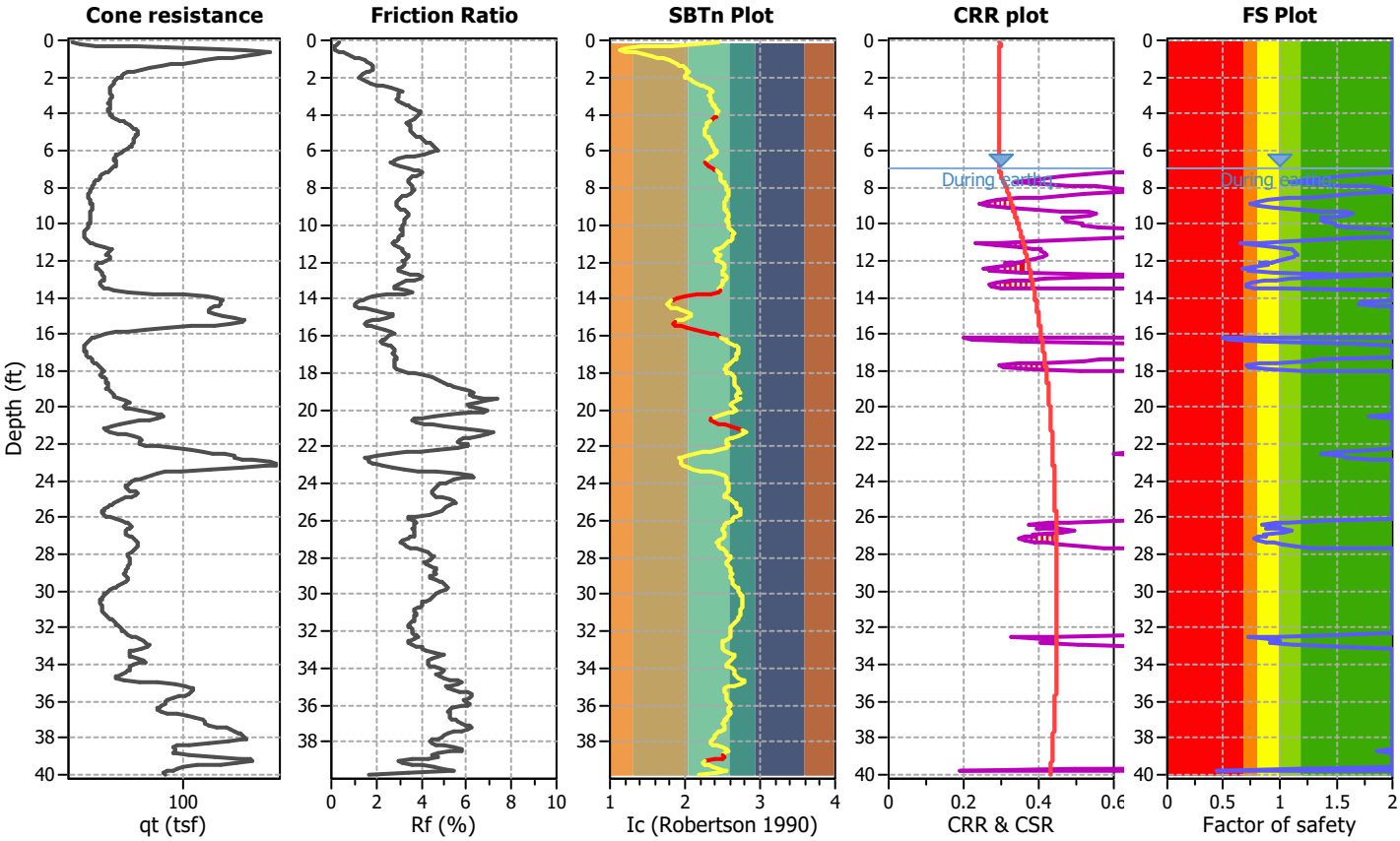
LIQUEFACTION ANALYSIS REPORT

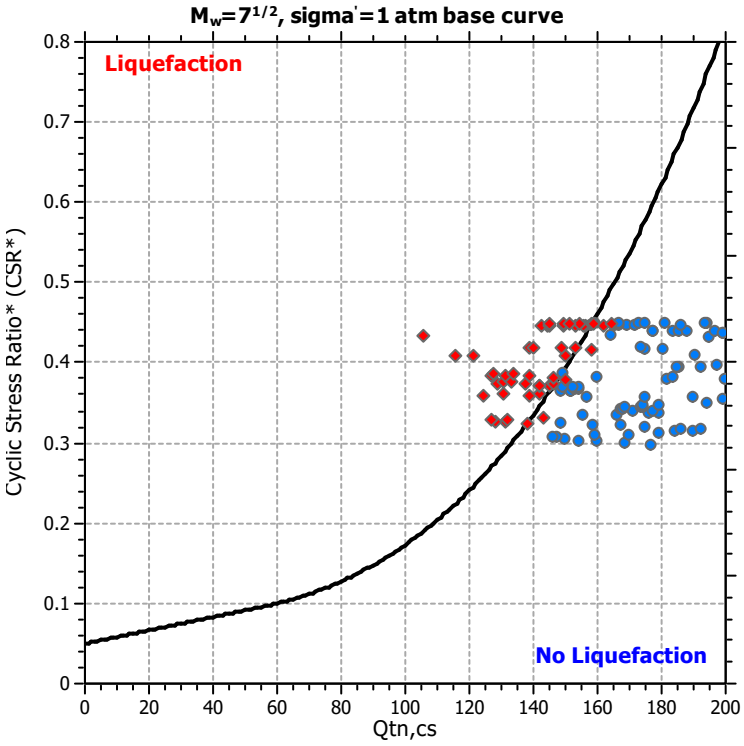
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

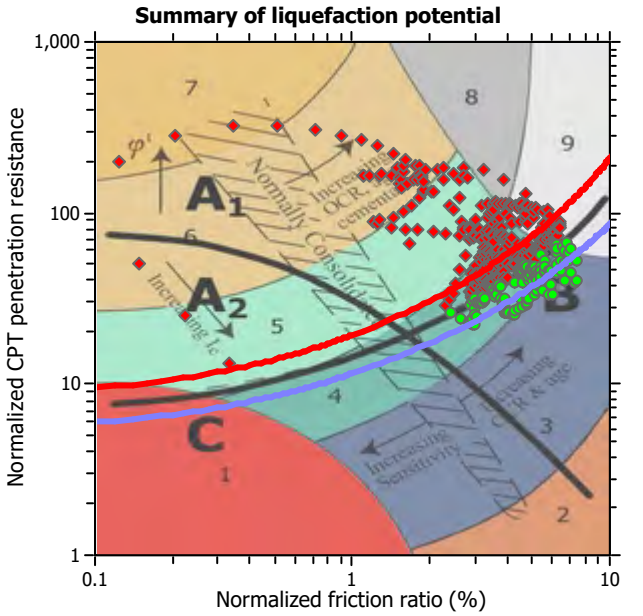
CPT file : CPT-15

Input parameters and analysis data

Analysis method:	Robertson (2009)	G.W.T. (in-situ):	7.00 ft	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	7.00 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:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

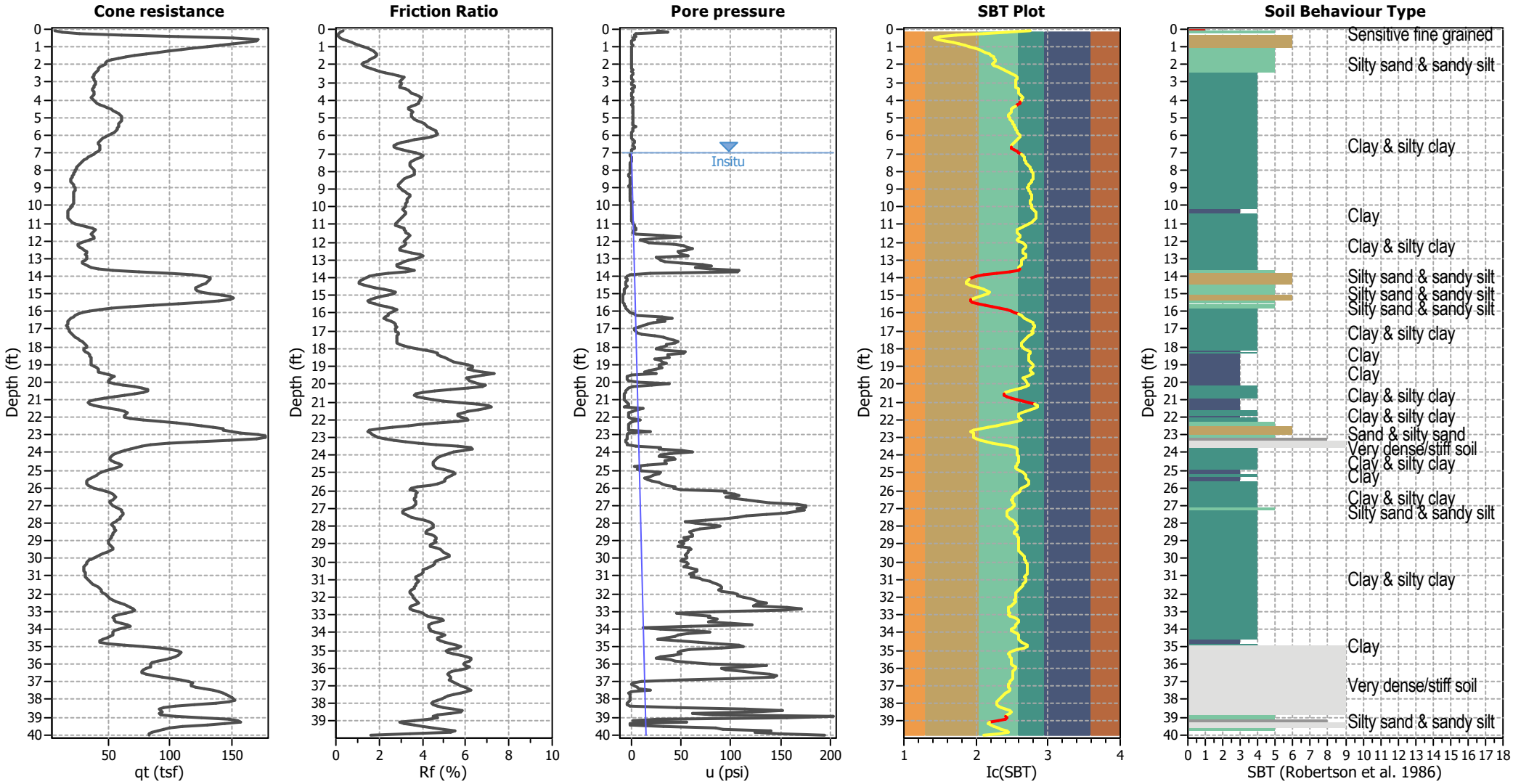






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



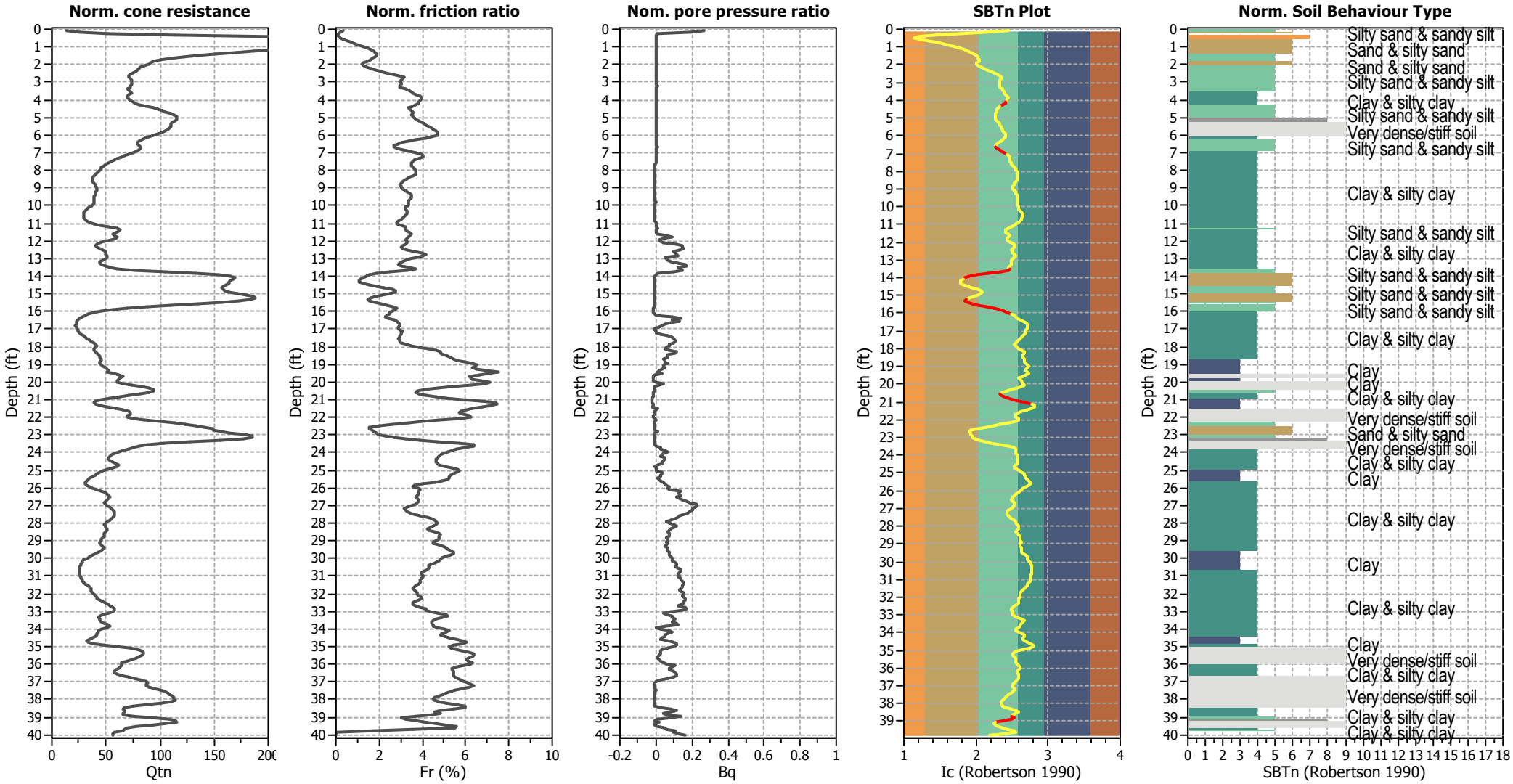
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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)



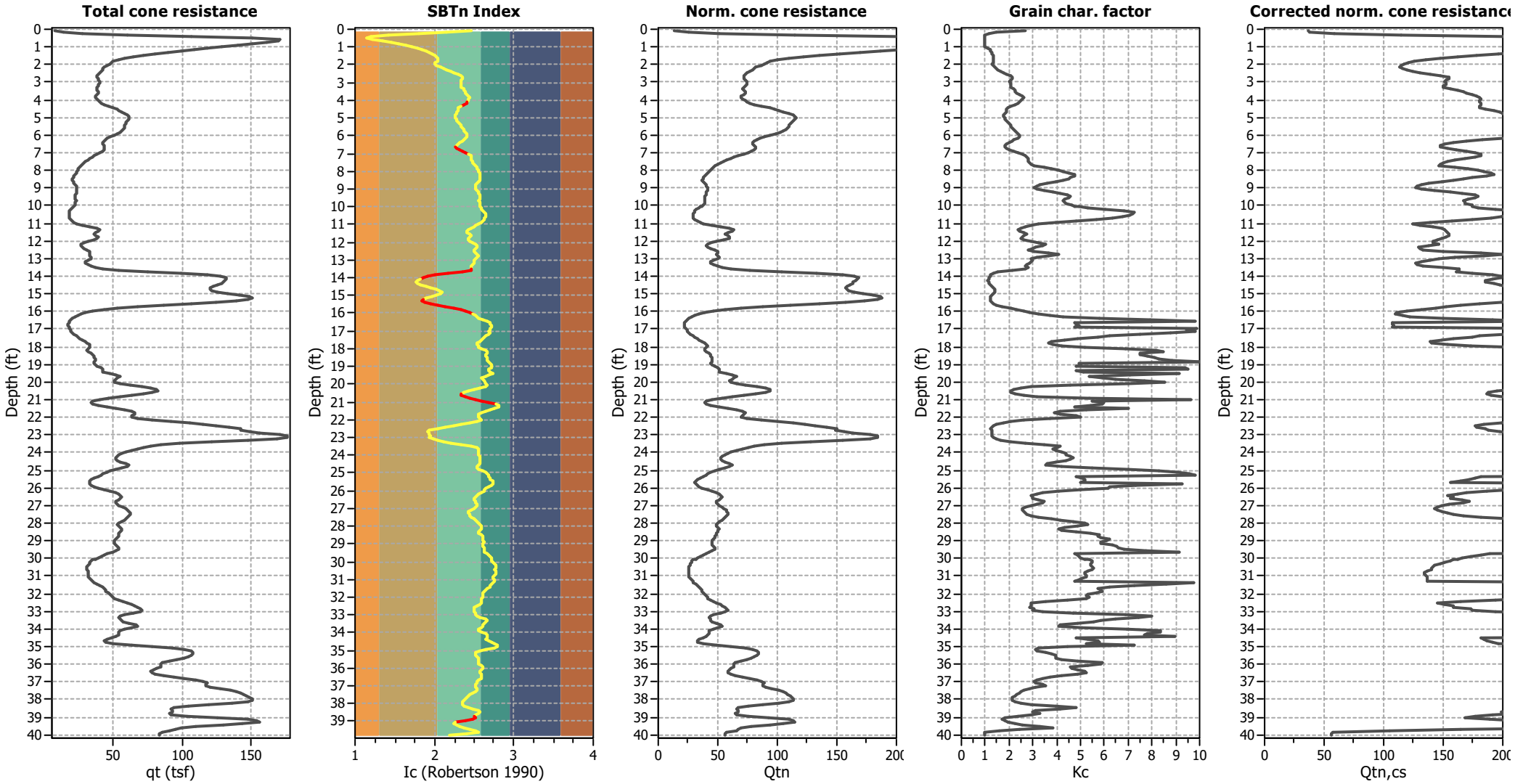
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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

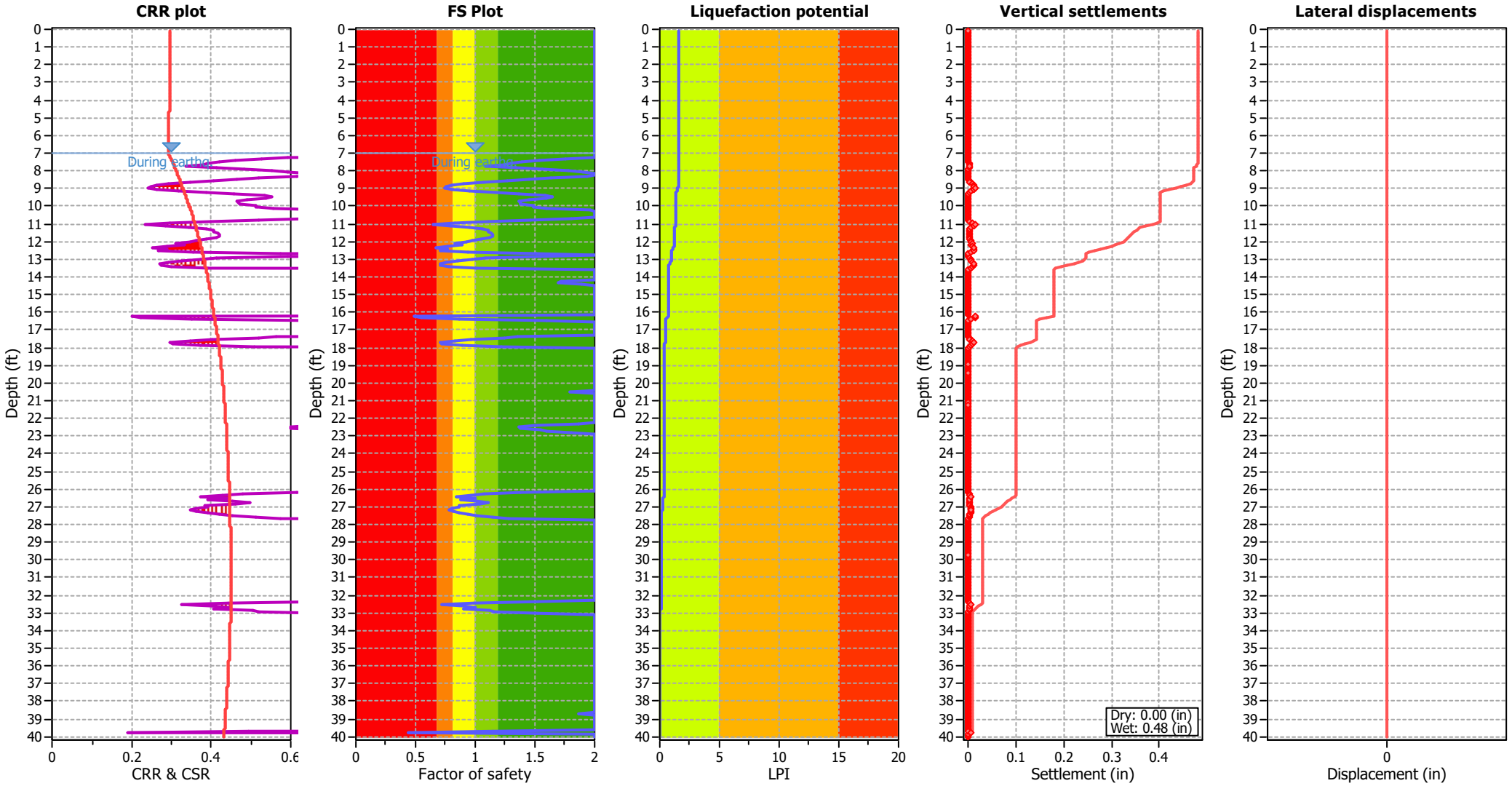
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

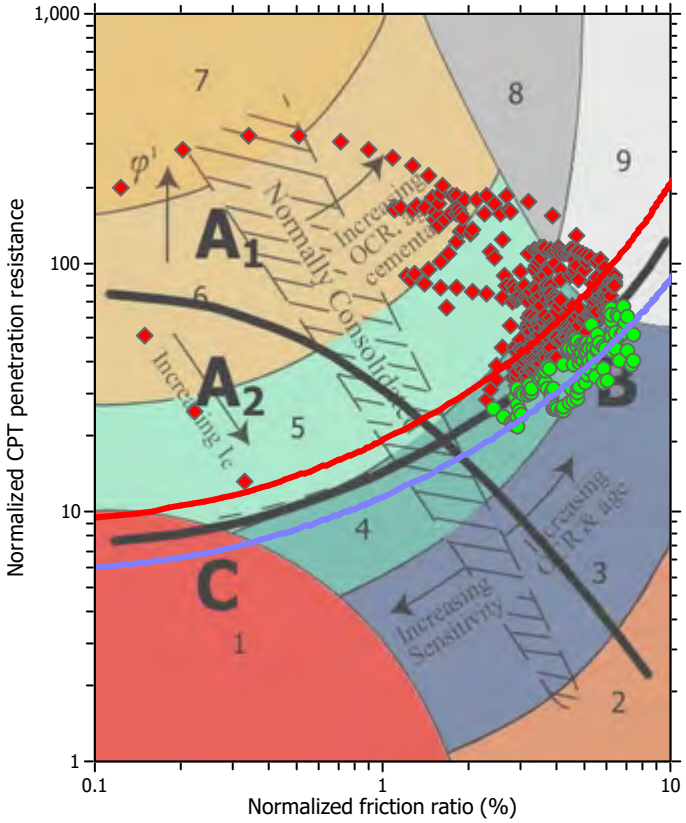
F.S. color scheme

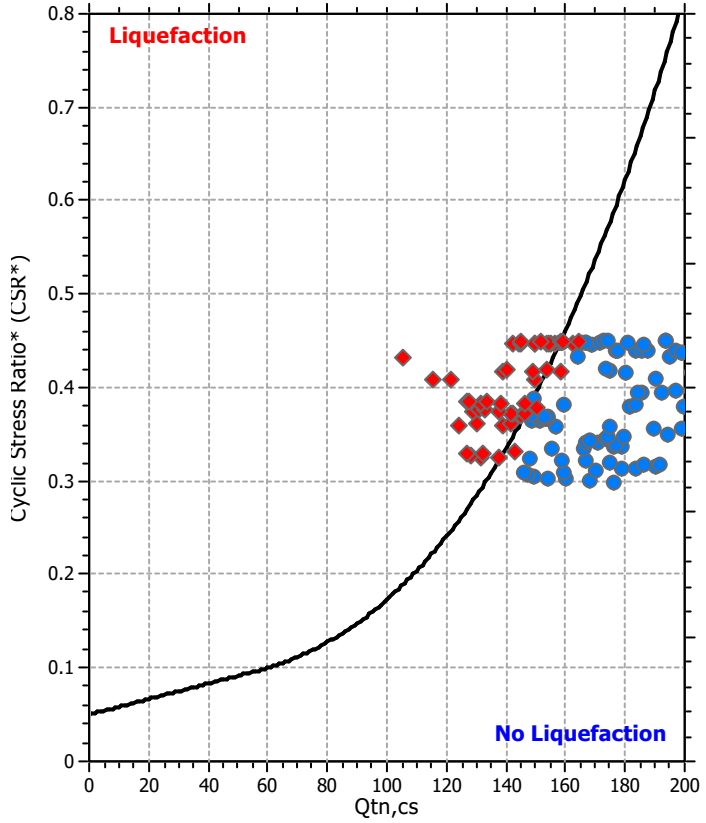
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

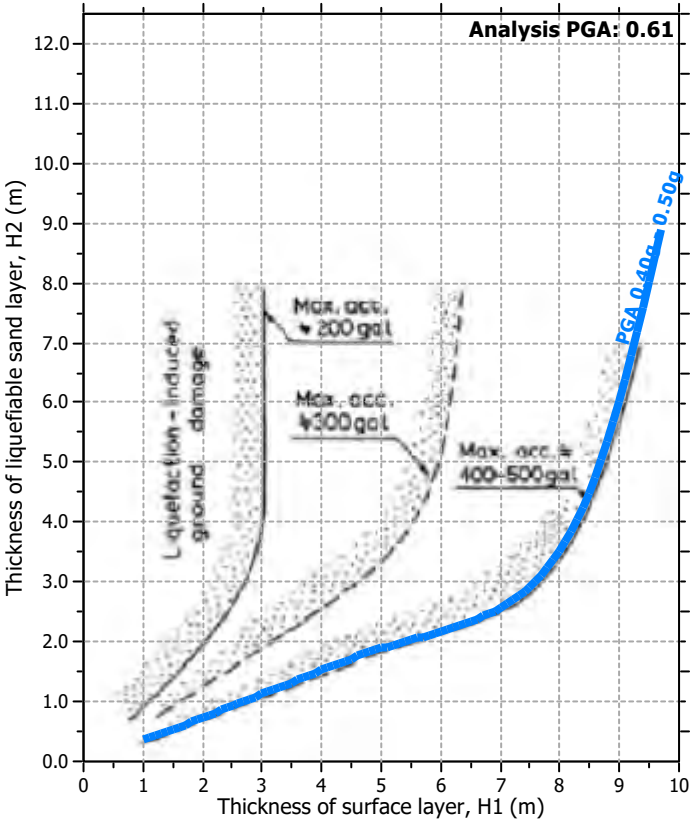
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots







Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

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CPT-14 results
Summary data report 19

CPT-15 results
Summary data report 25

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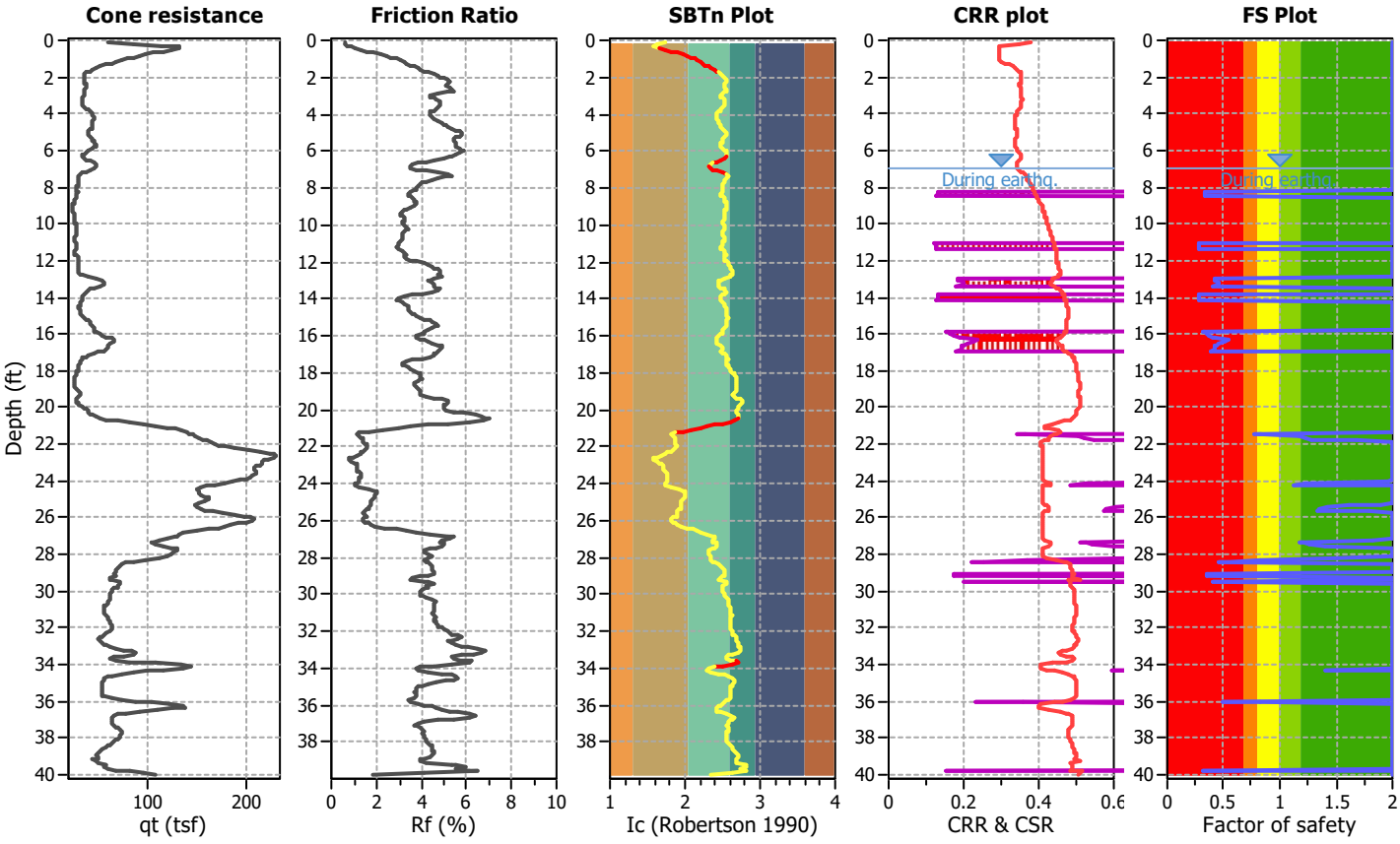
LIQUEFACTION ANALYSIS REPORT

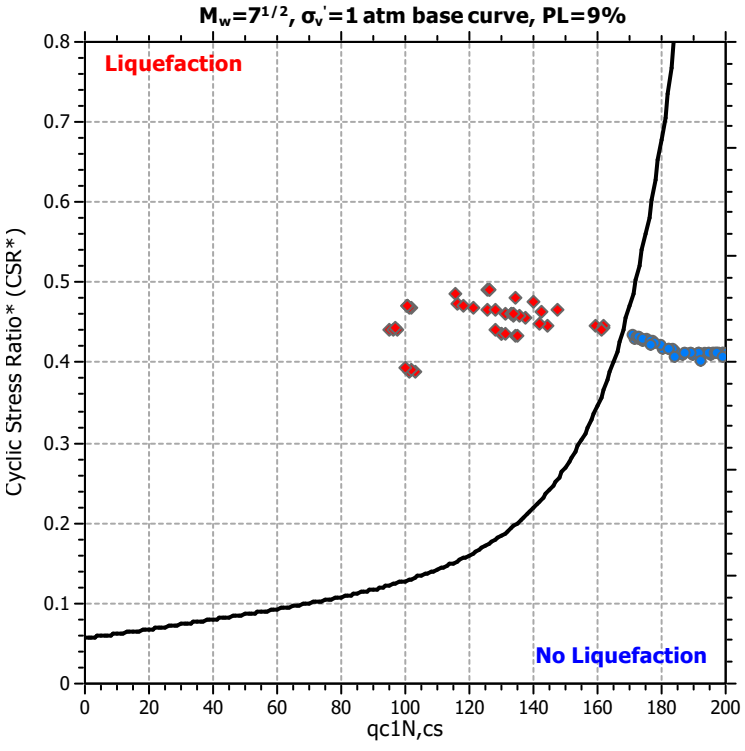
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

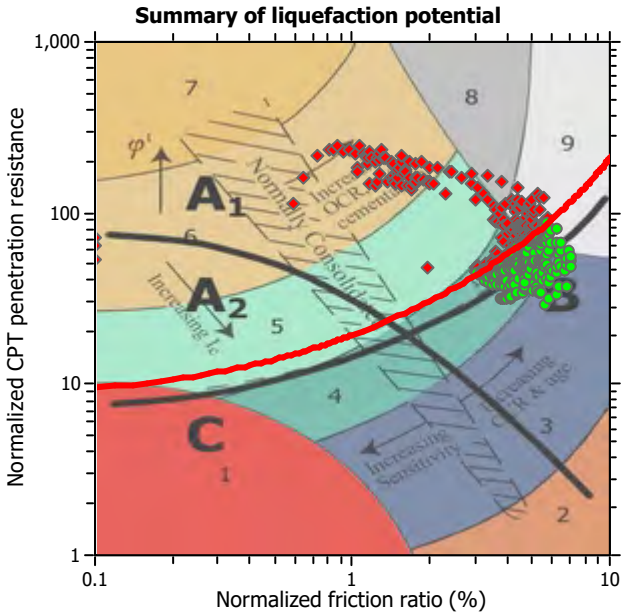
CPT file : CPT-11

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	7.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	7.00 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:	6.70	Ic cut-off value:	2.50	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

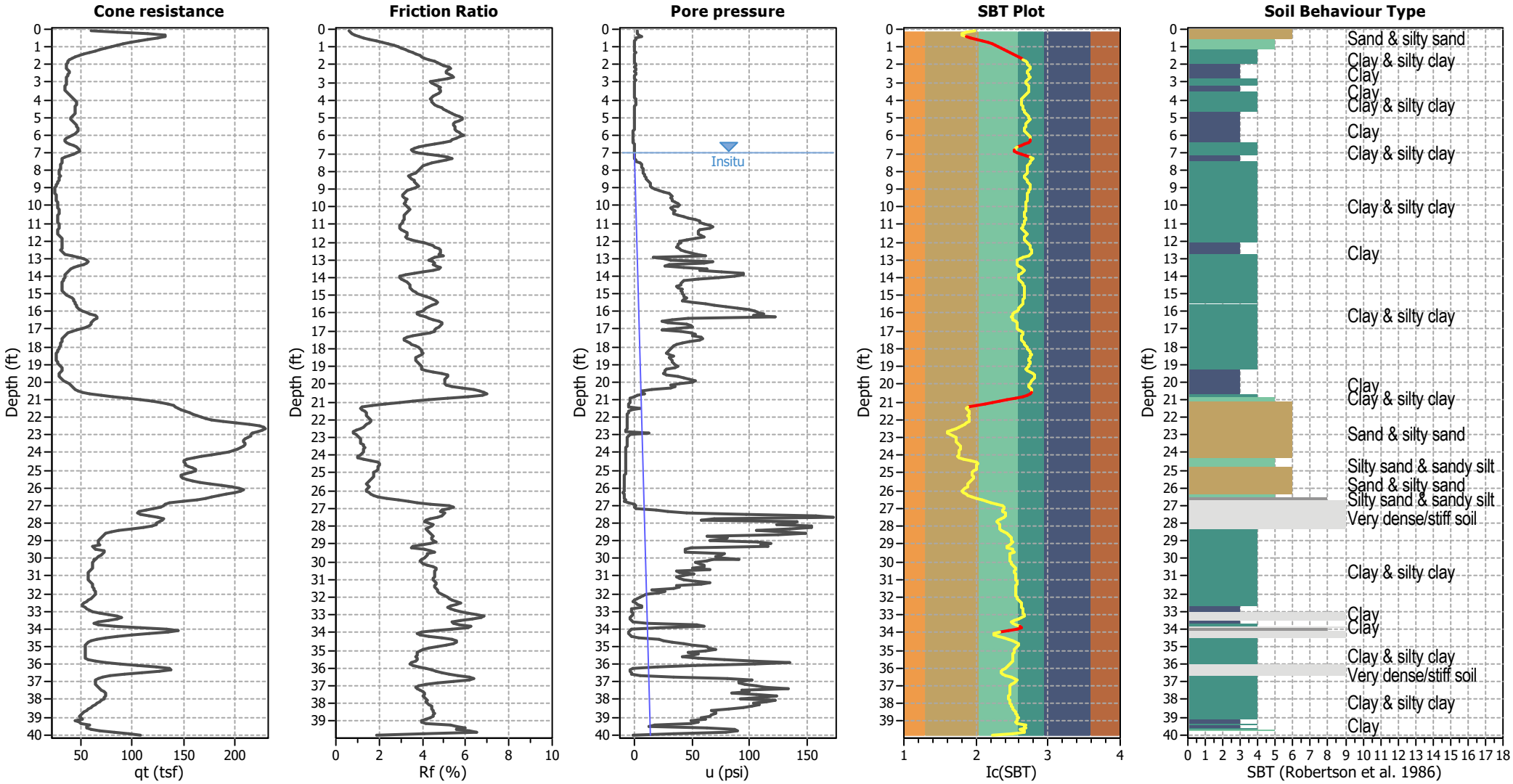






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
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Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
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CPT basic interpretation plots



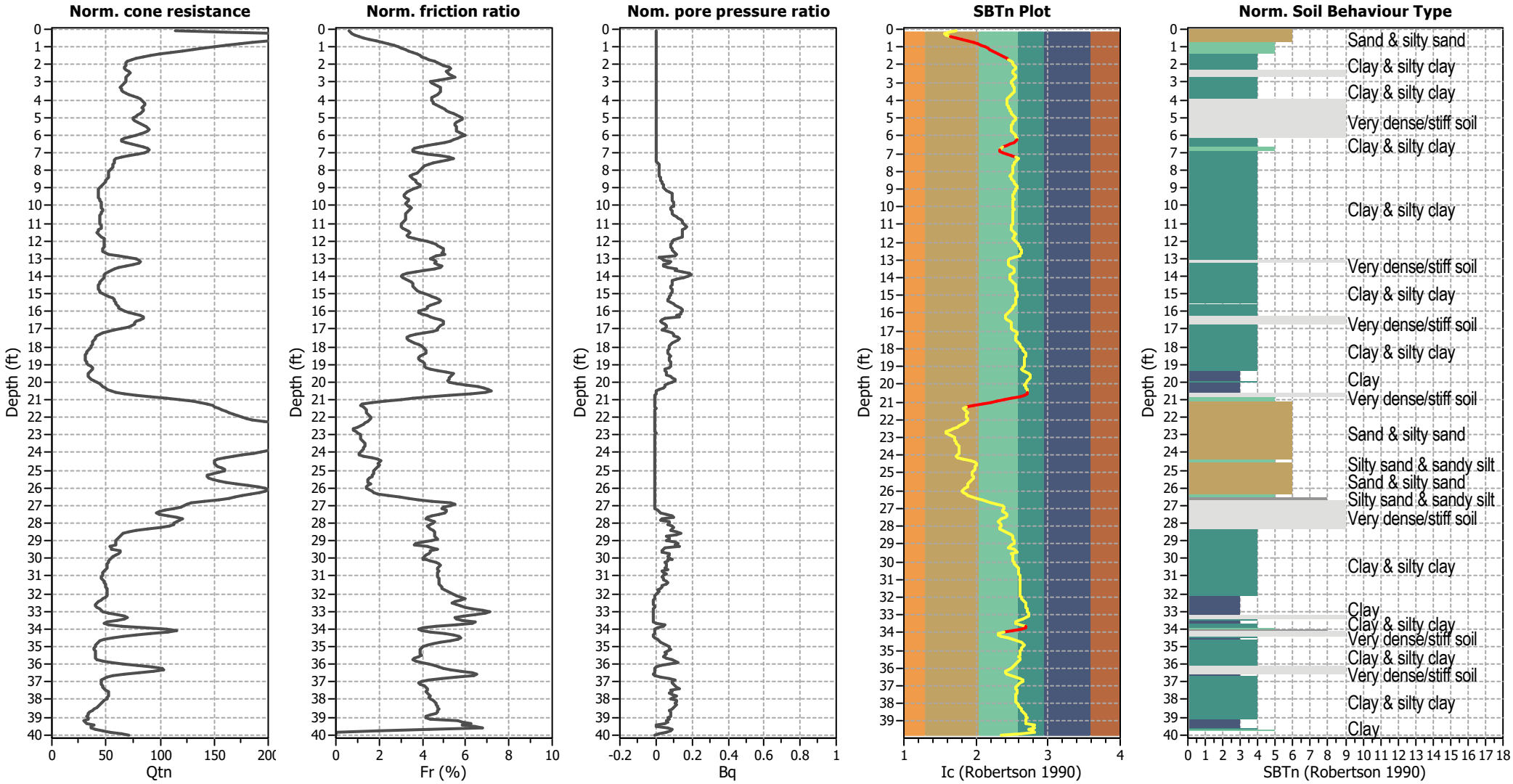
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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)



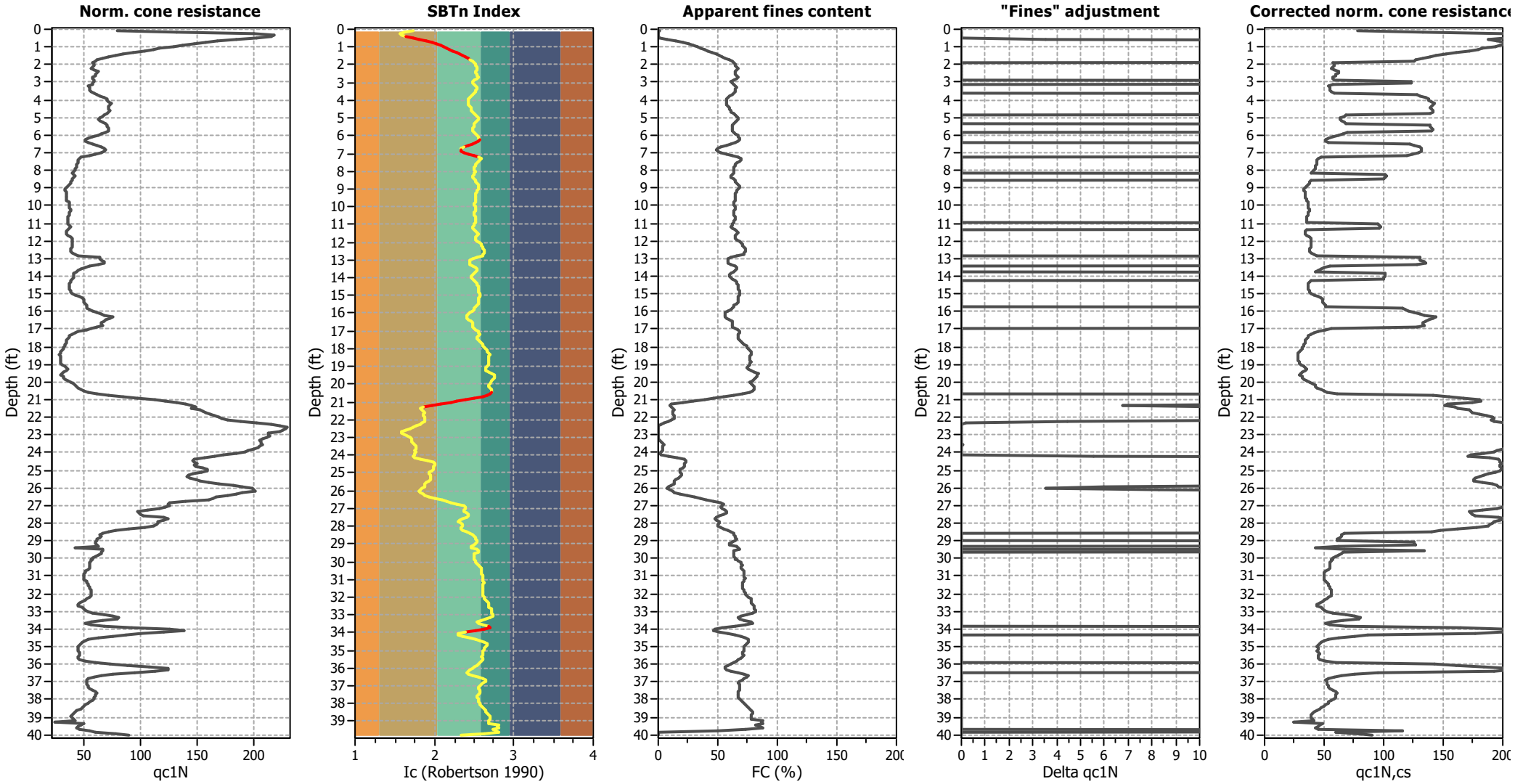
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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

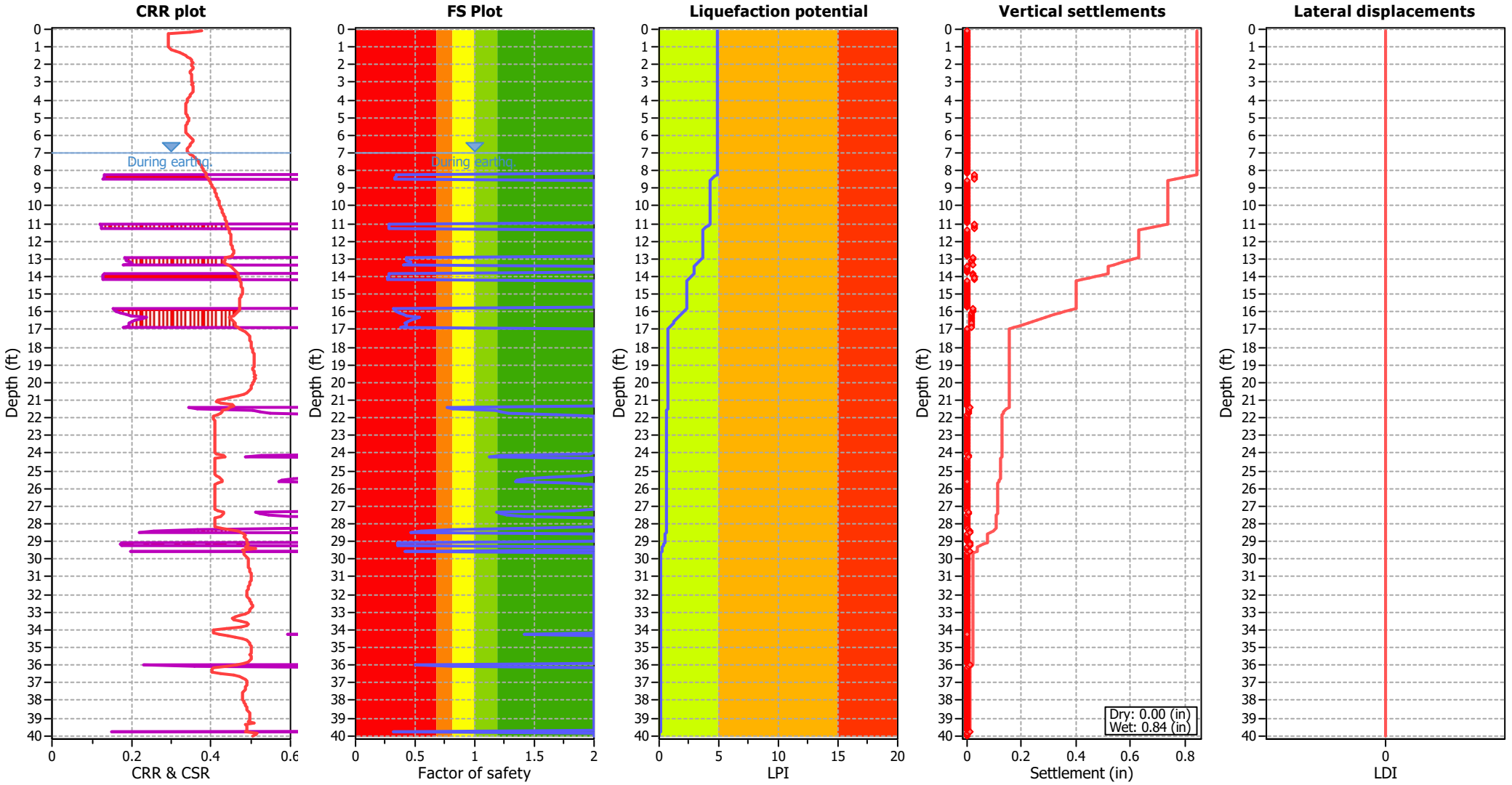
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

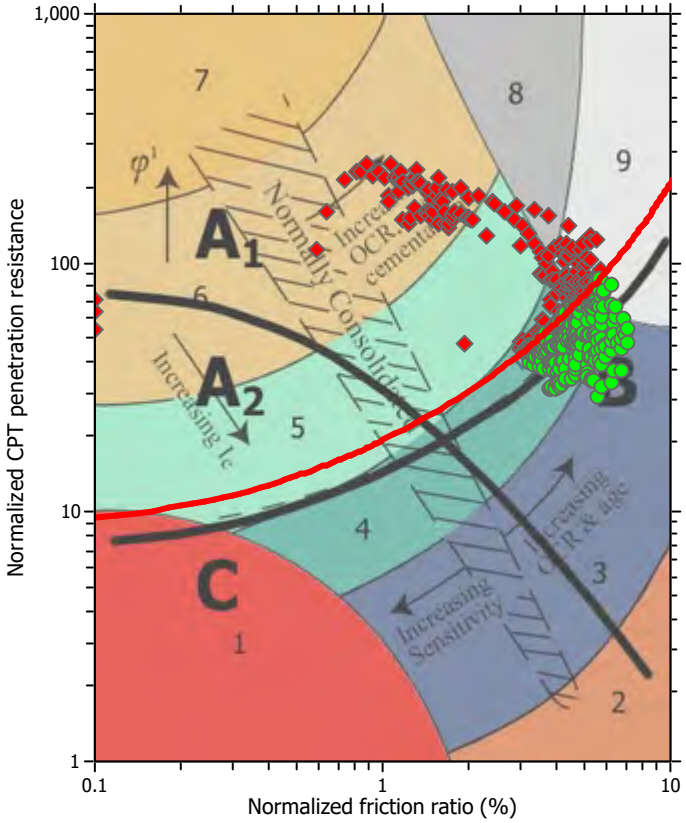
F.S. color scheme

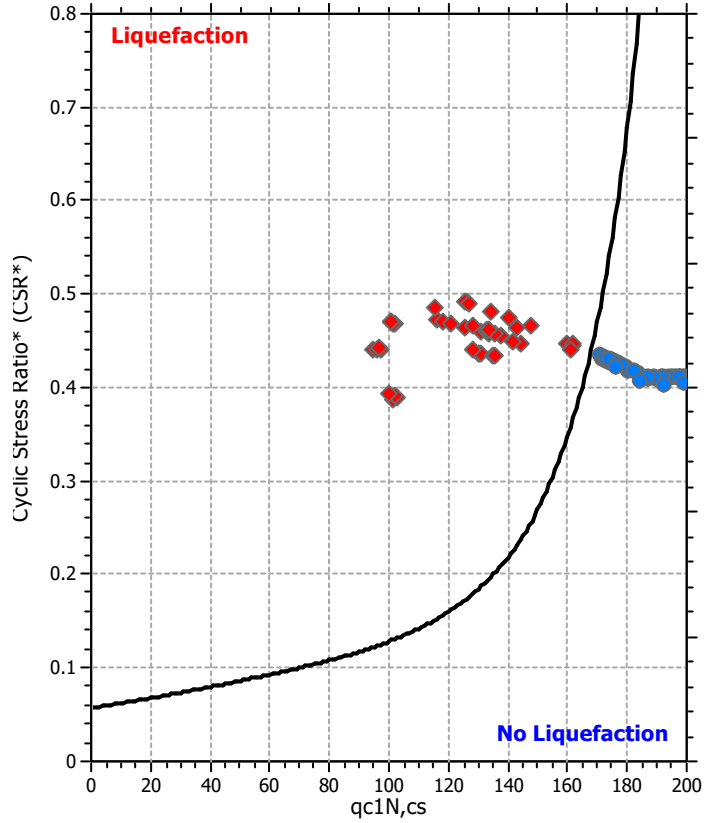
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

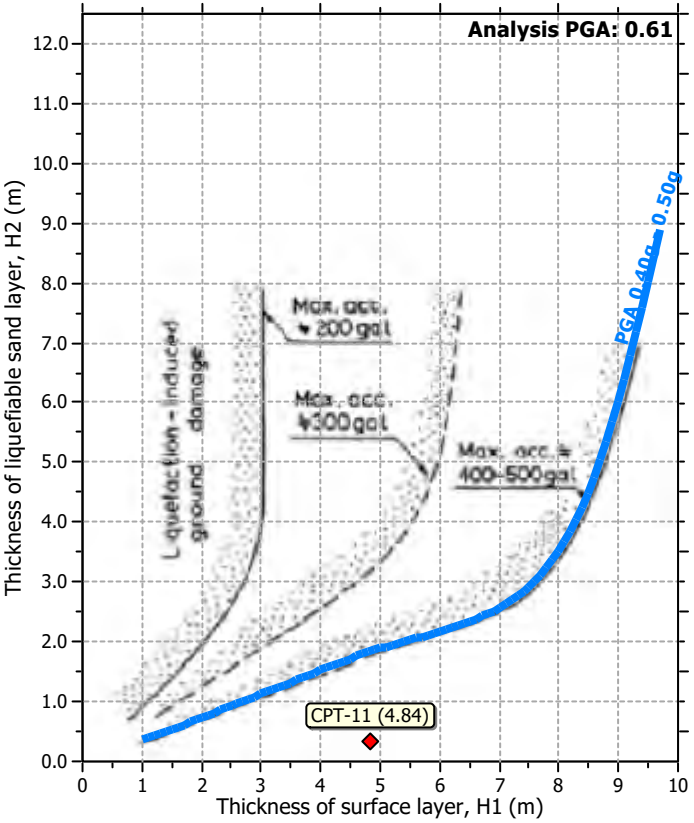
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots







Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

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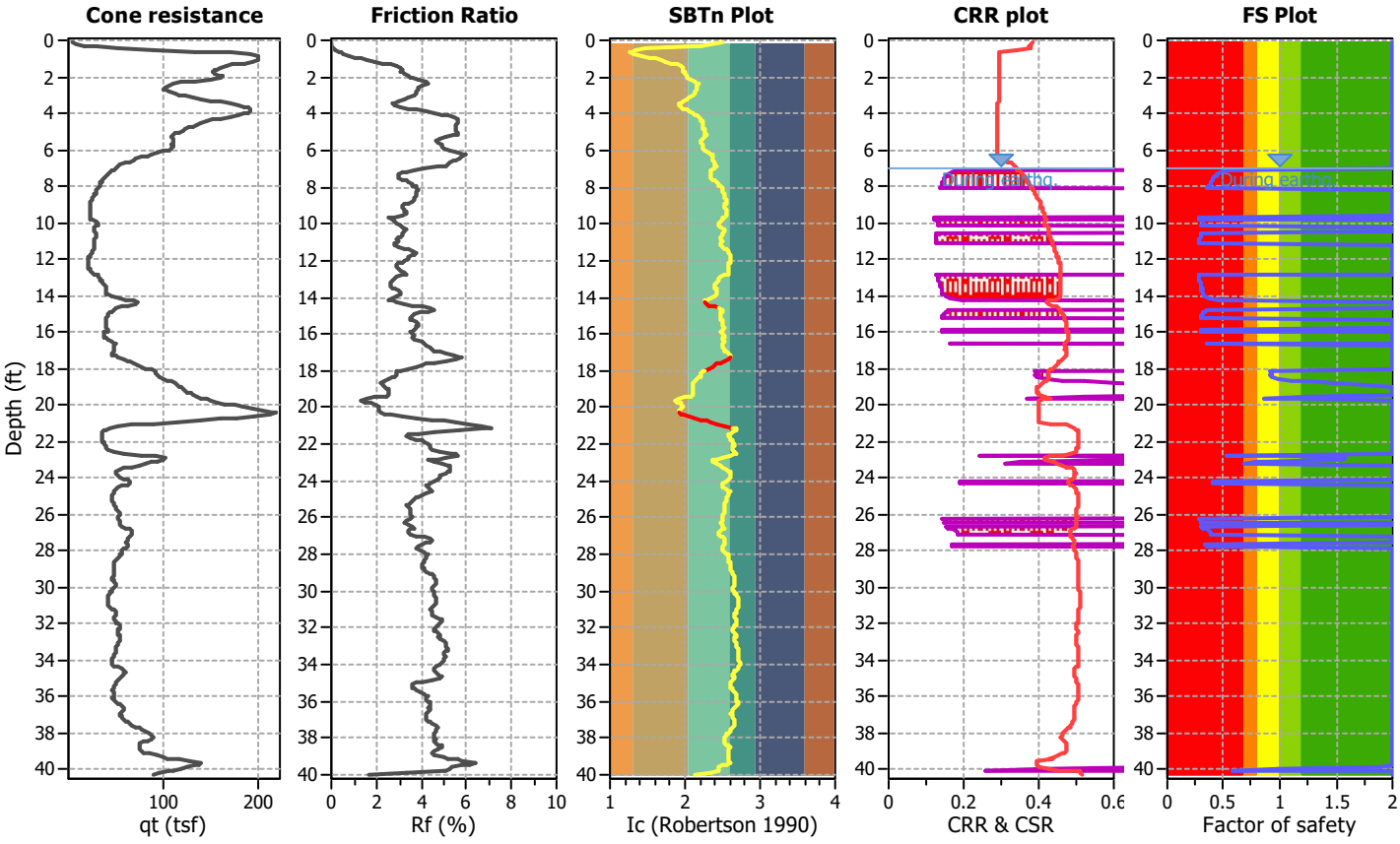
LIQUEFACTION ANALYSIS REPORT

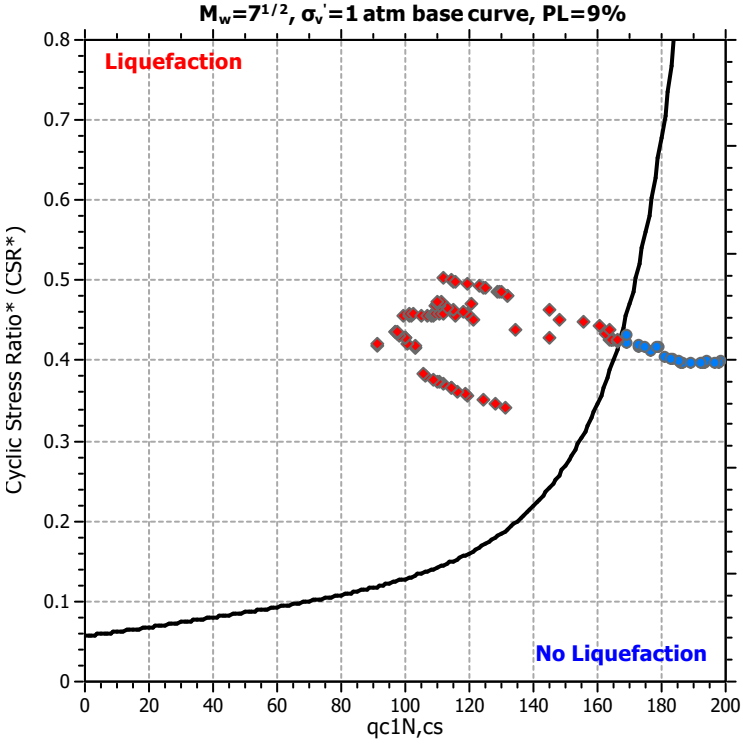
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

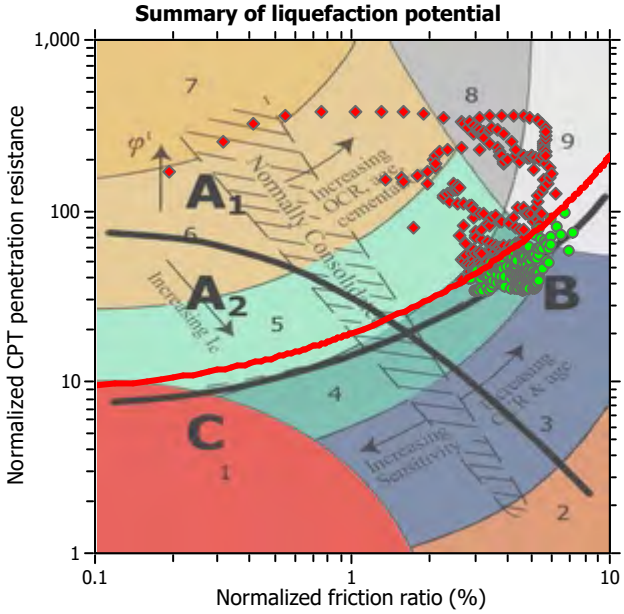
CPT file : CPT-12

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	7.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	7.00 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:	6.70	Ic cut-off value:	2.50	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

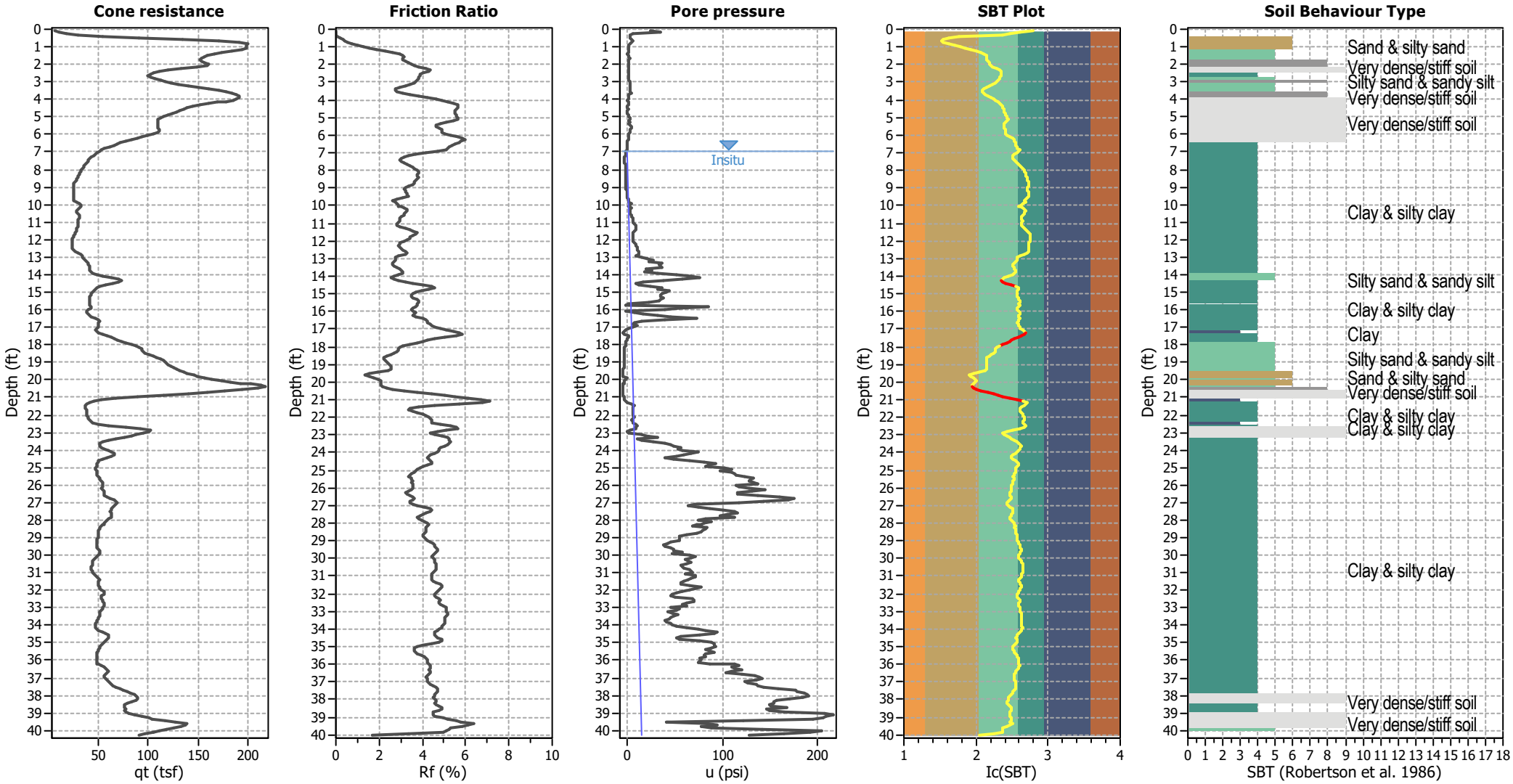






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



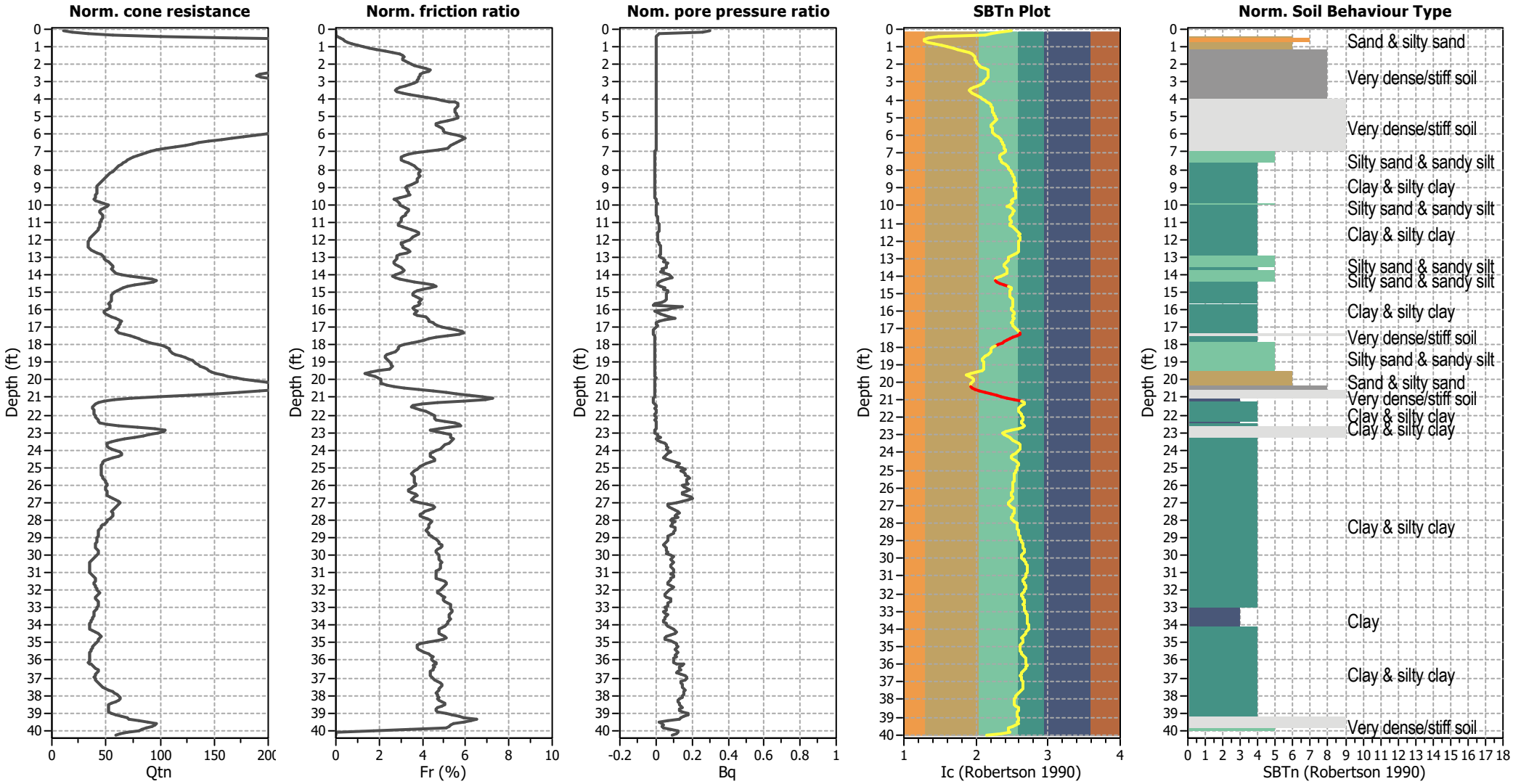
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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)



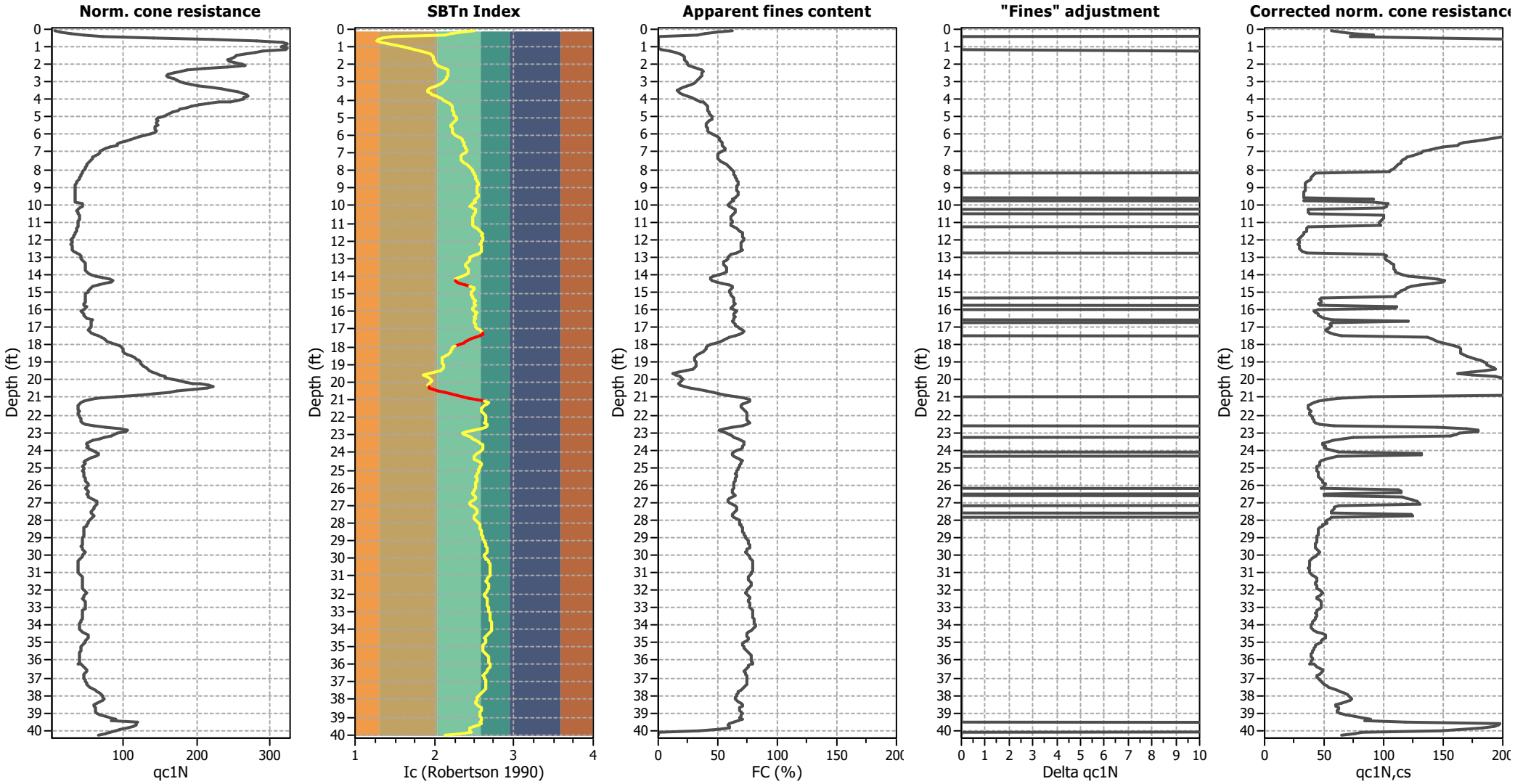
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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

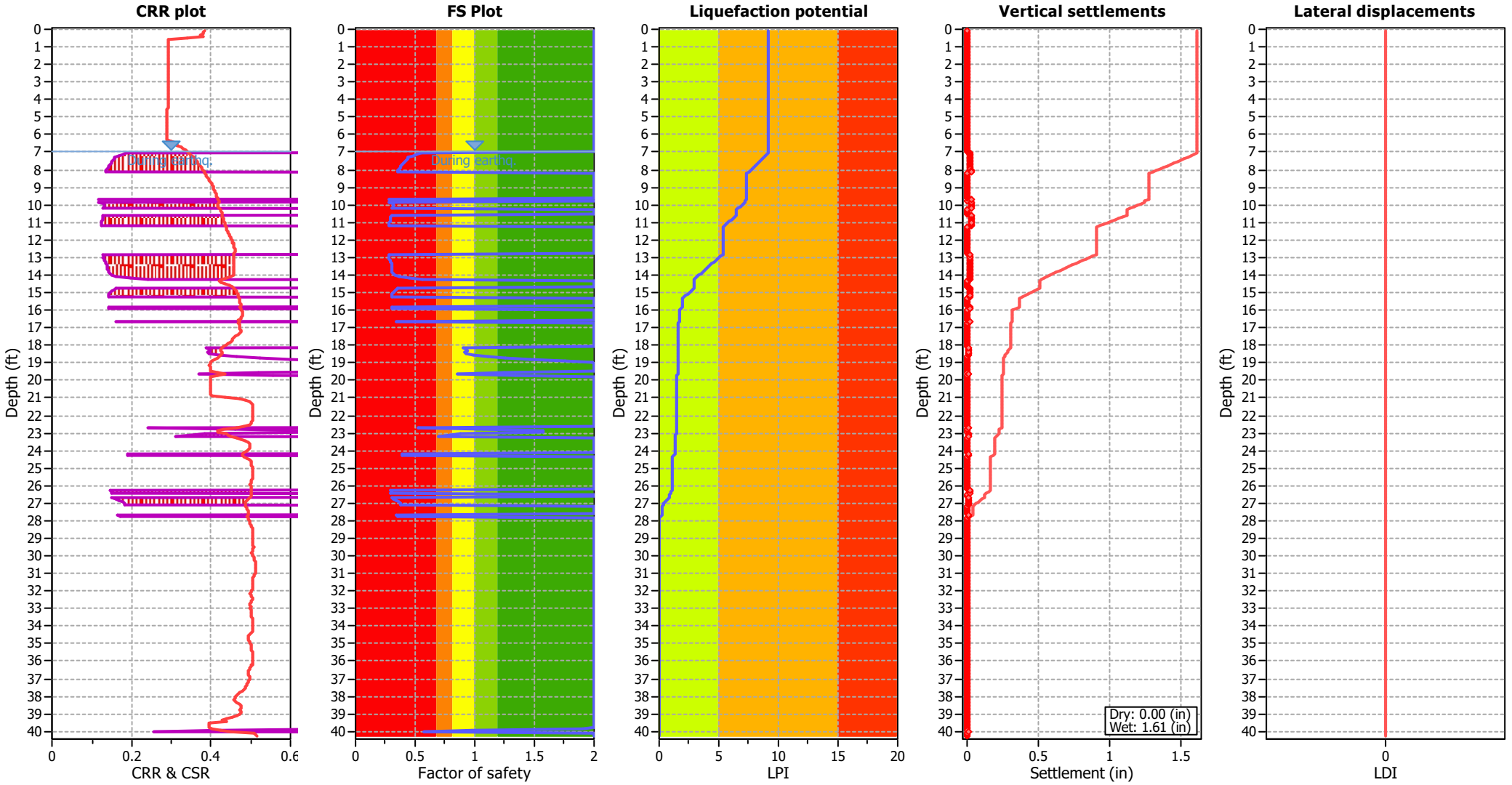
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

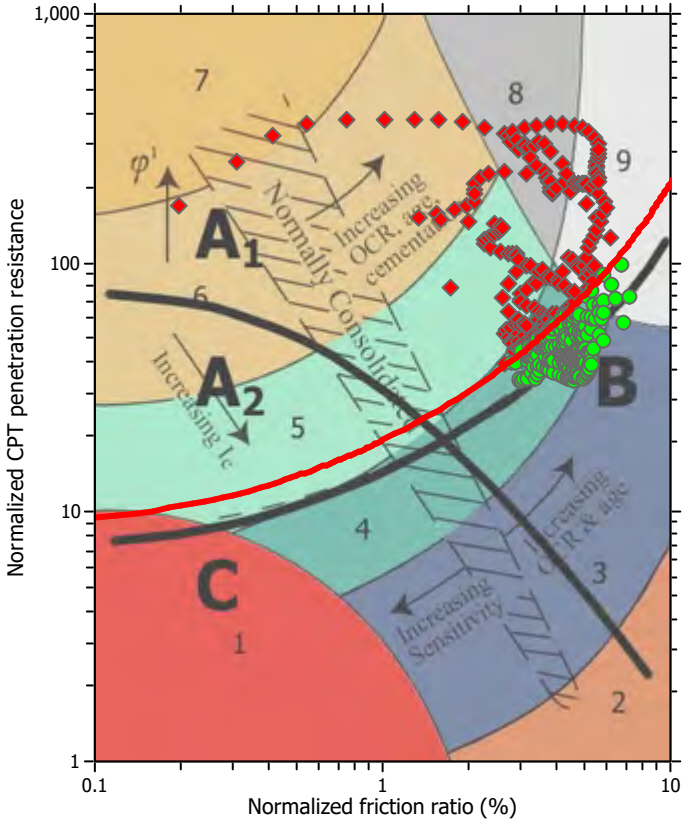
F.S. color scheme

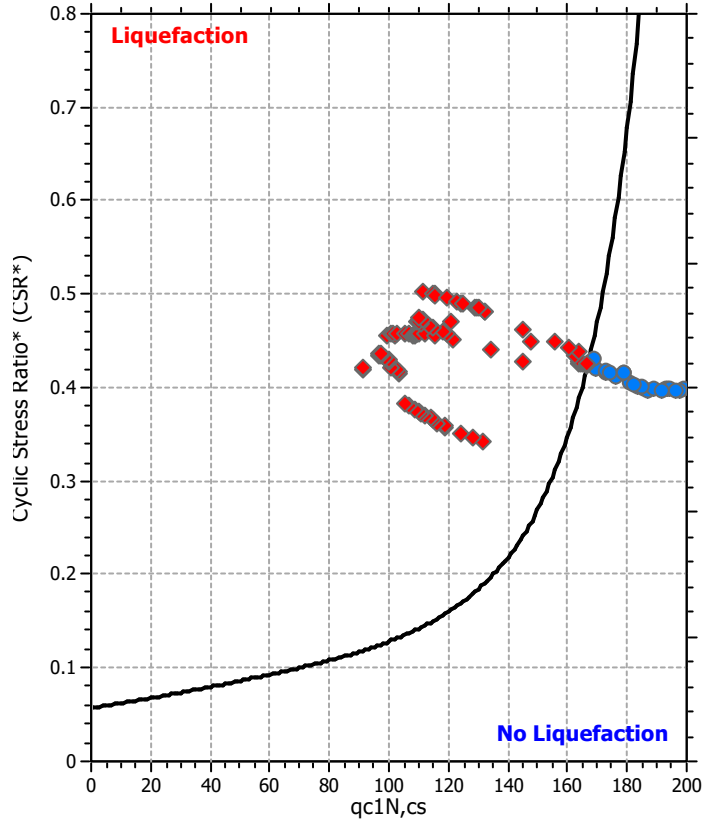
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

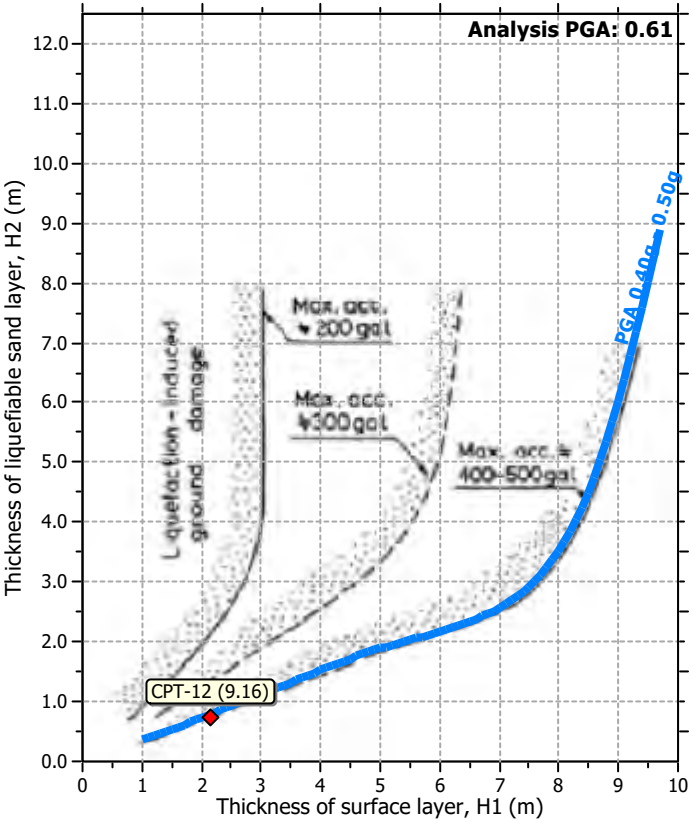
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots







Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

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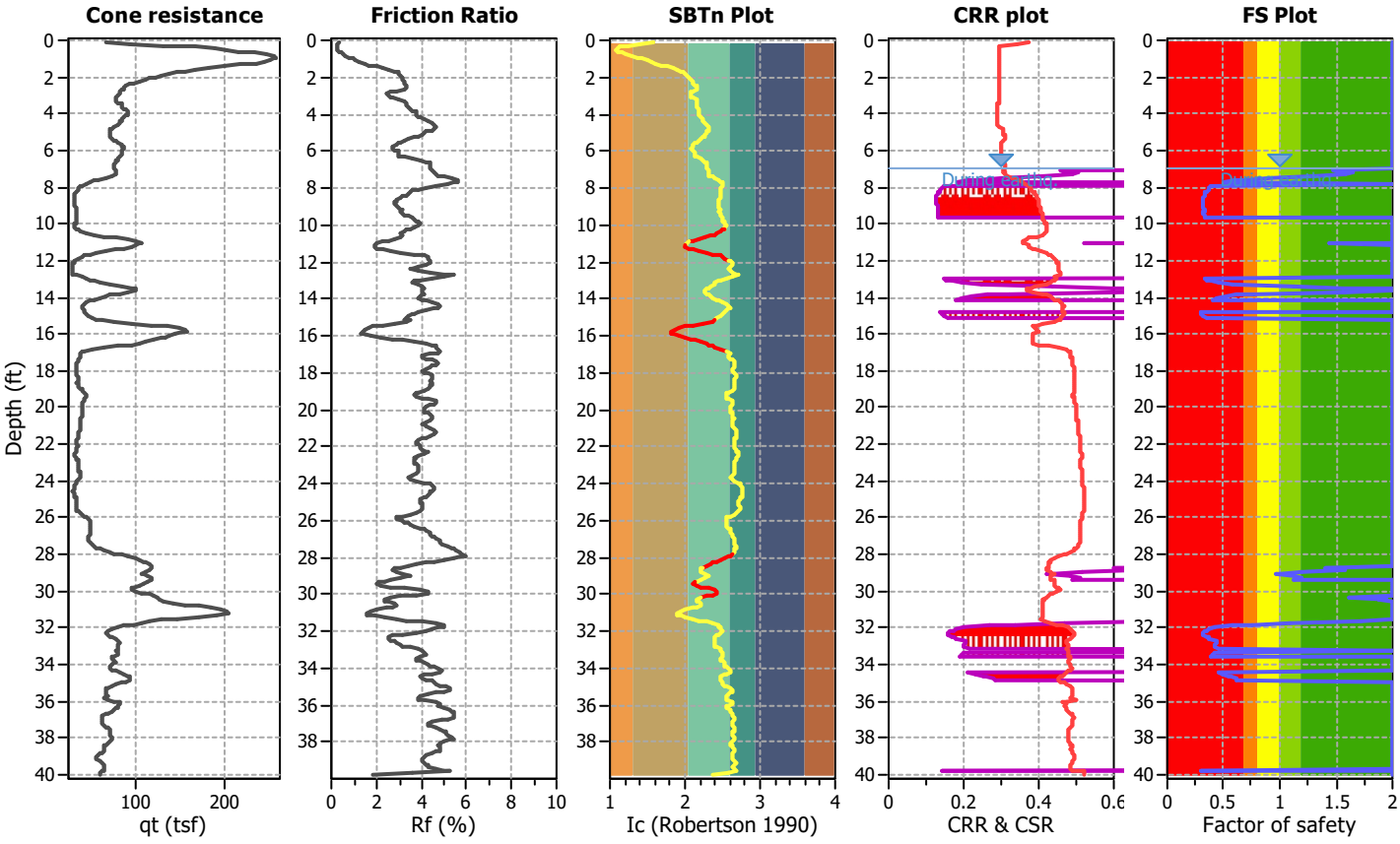
LIQUEFACTION ANALYSIS REPORT

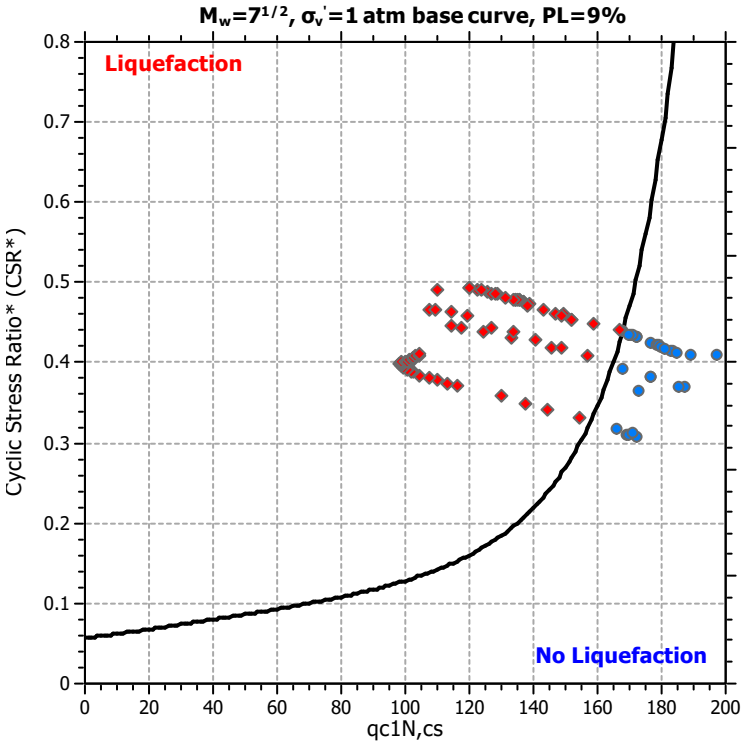
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

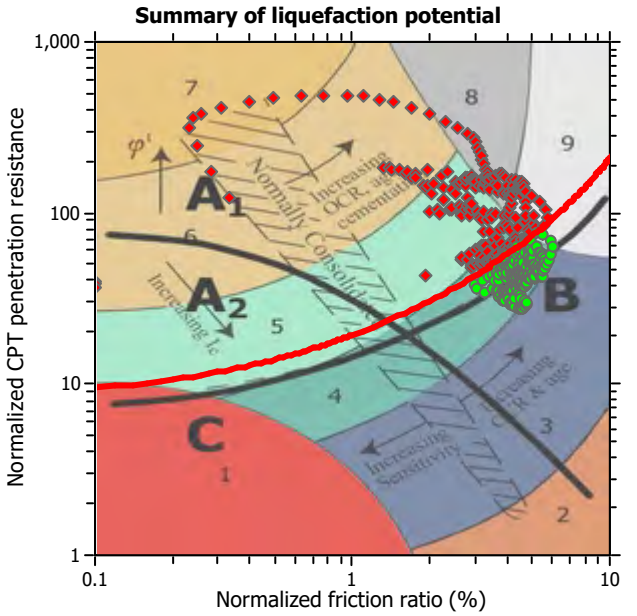
CPT file : CPT-13

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	7.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	7.00 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:	6.70	Ic cut-off value:	2.50	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

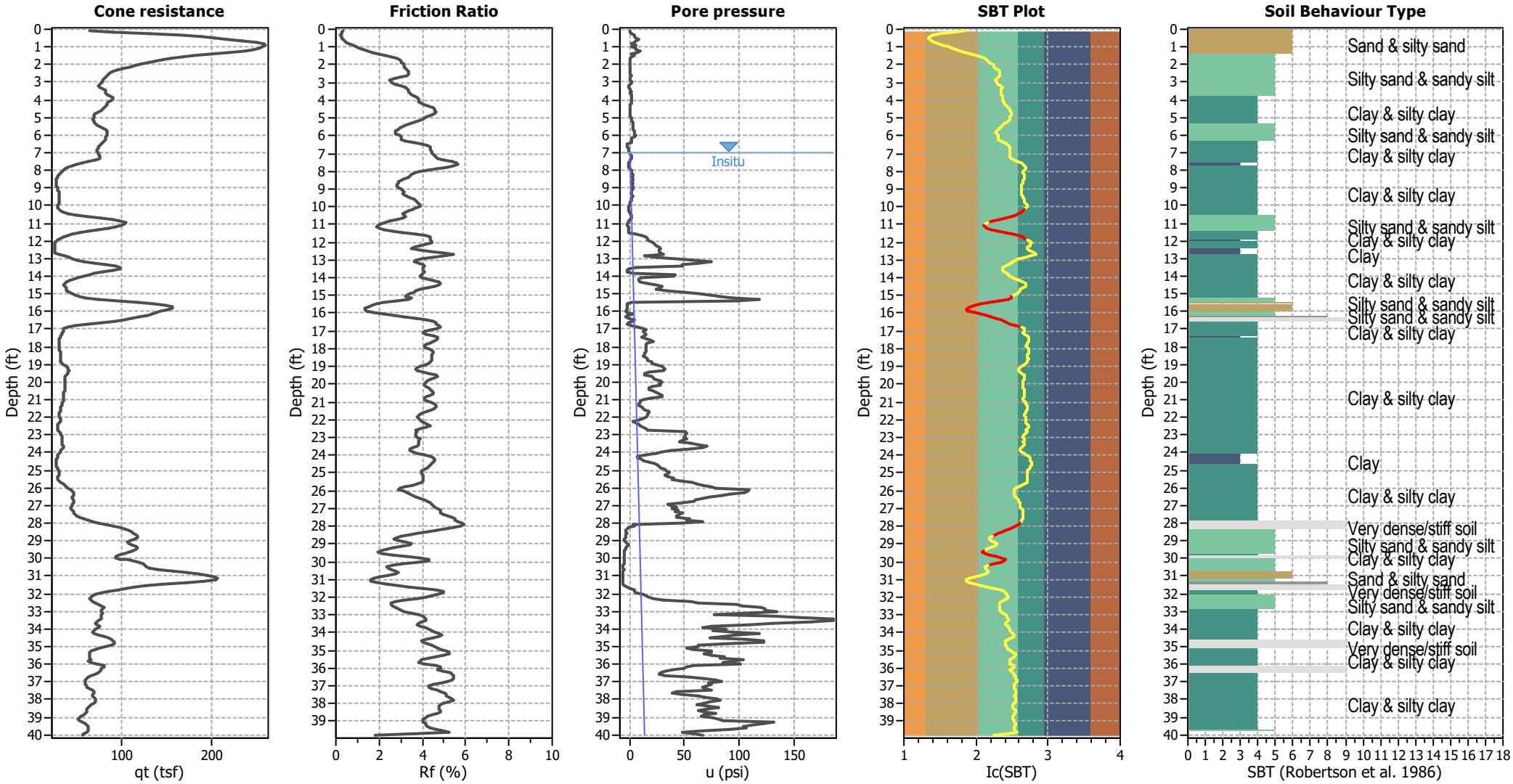






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



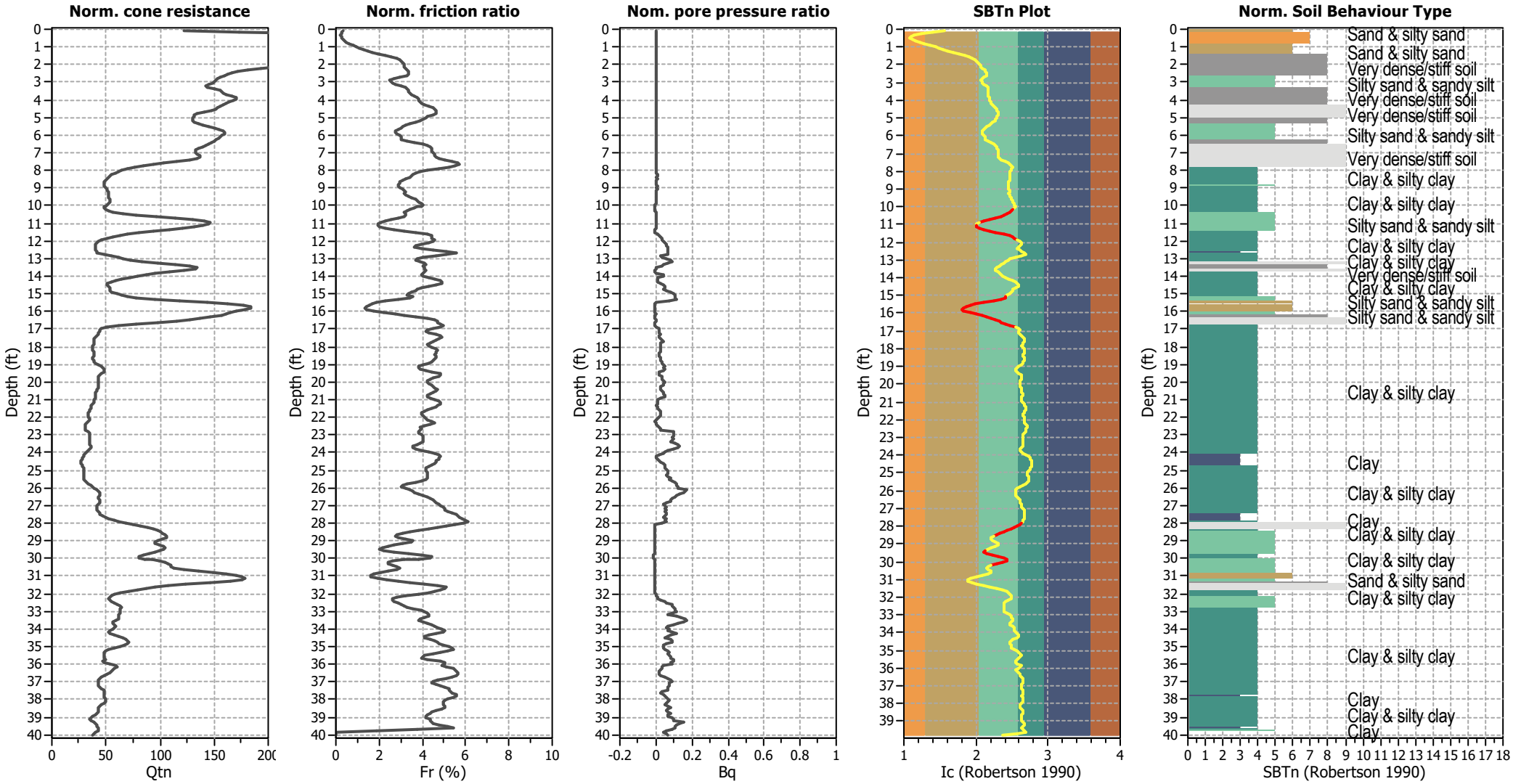
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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)



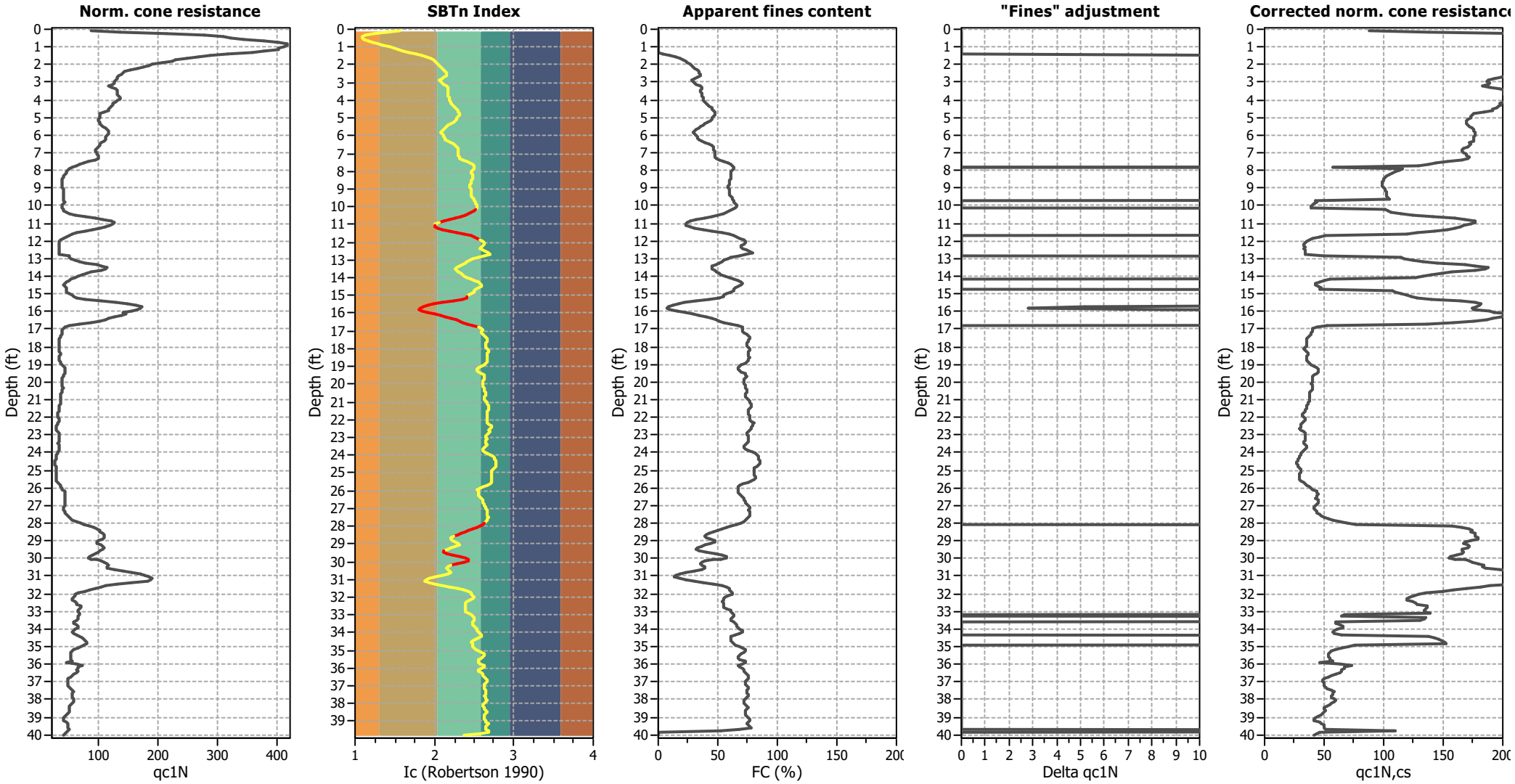
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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

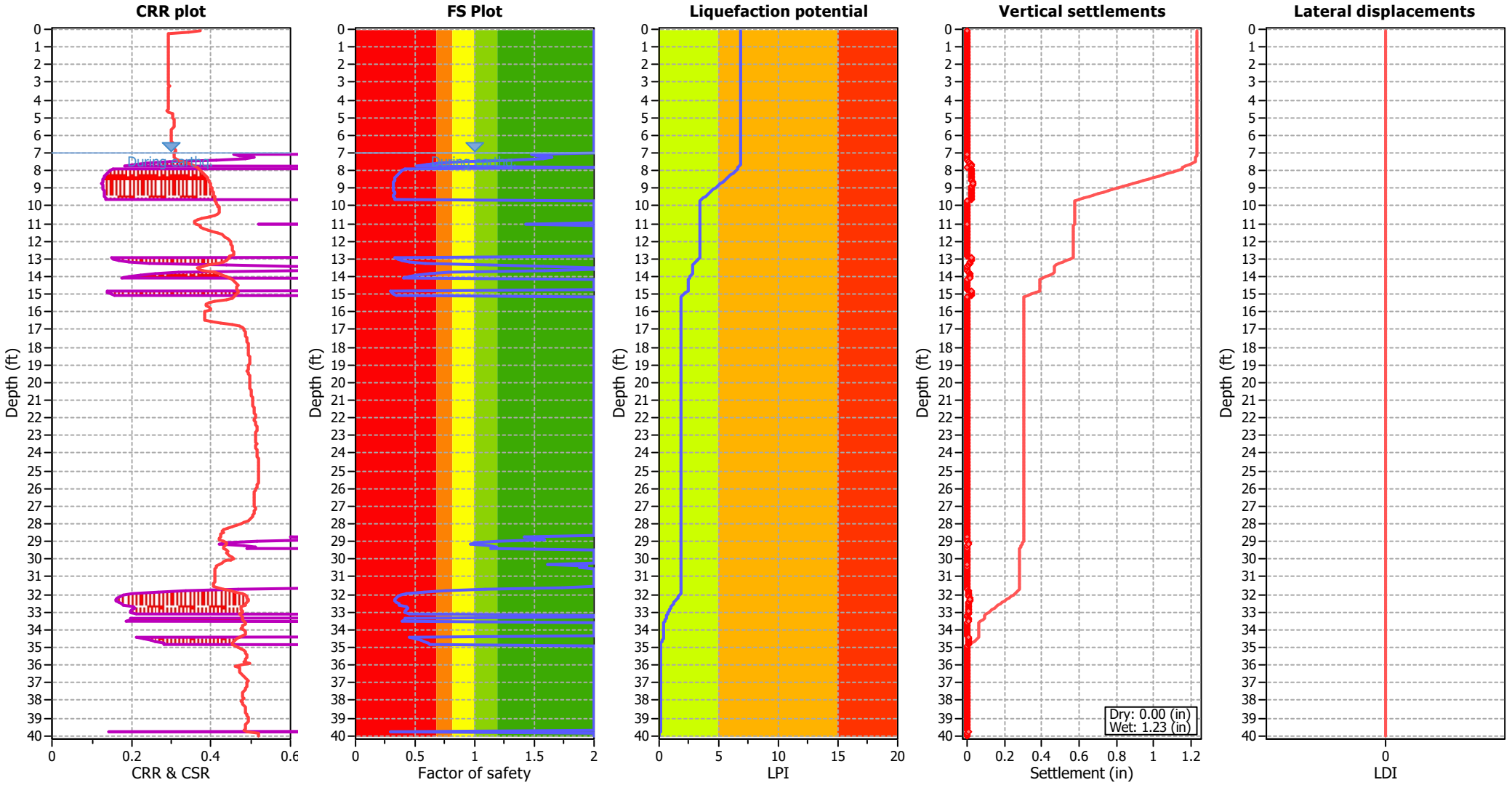
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

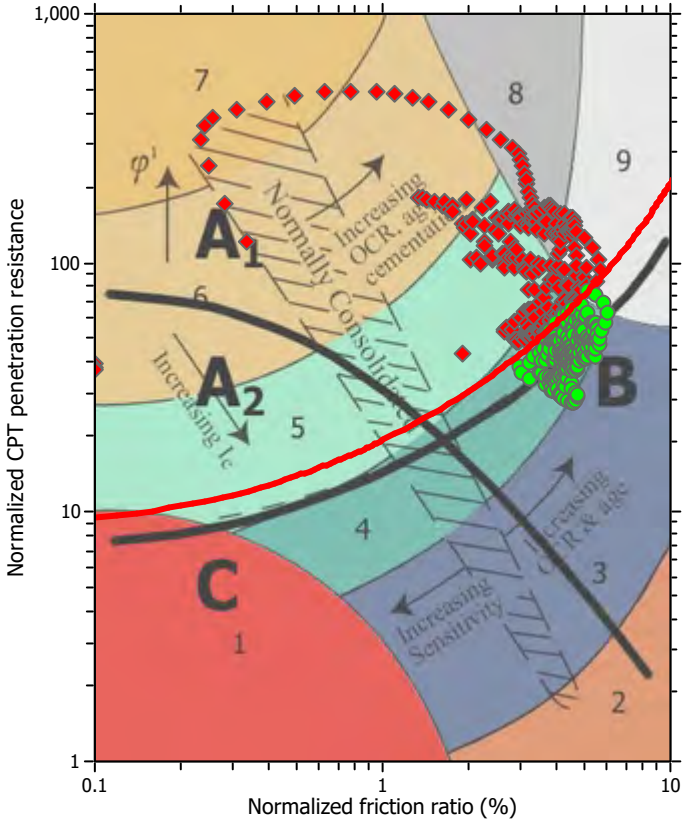
F.S. color scheme

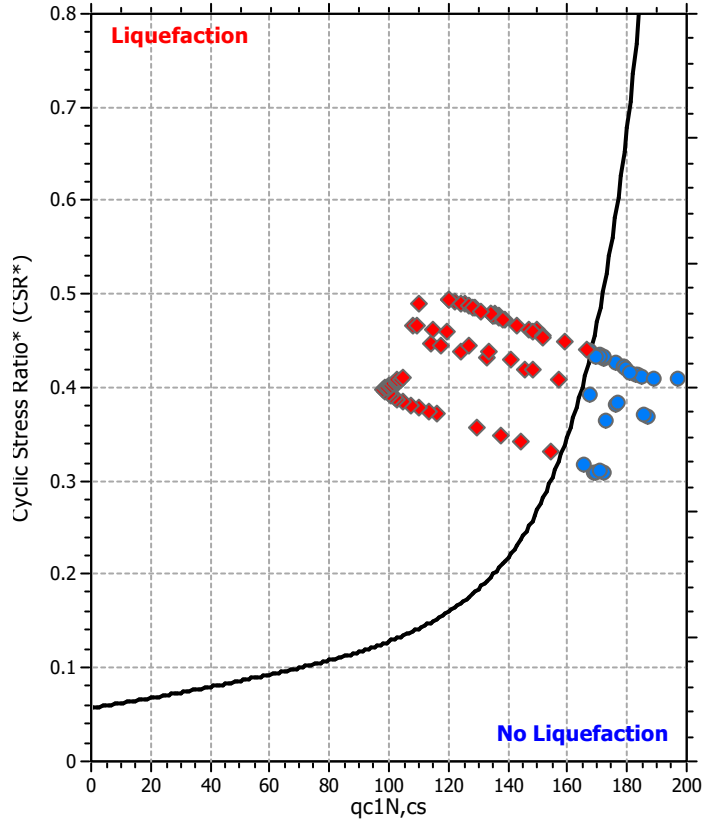
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

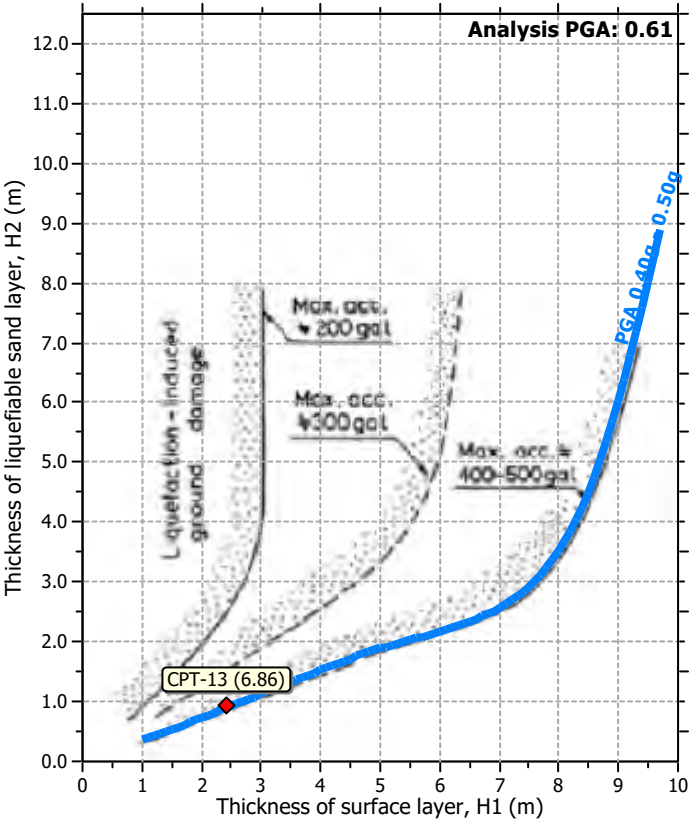
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots







Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

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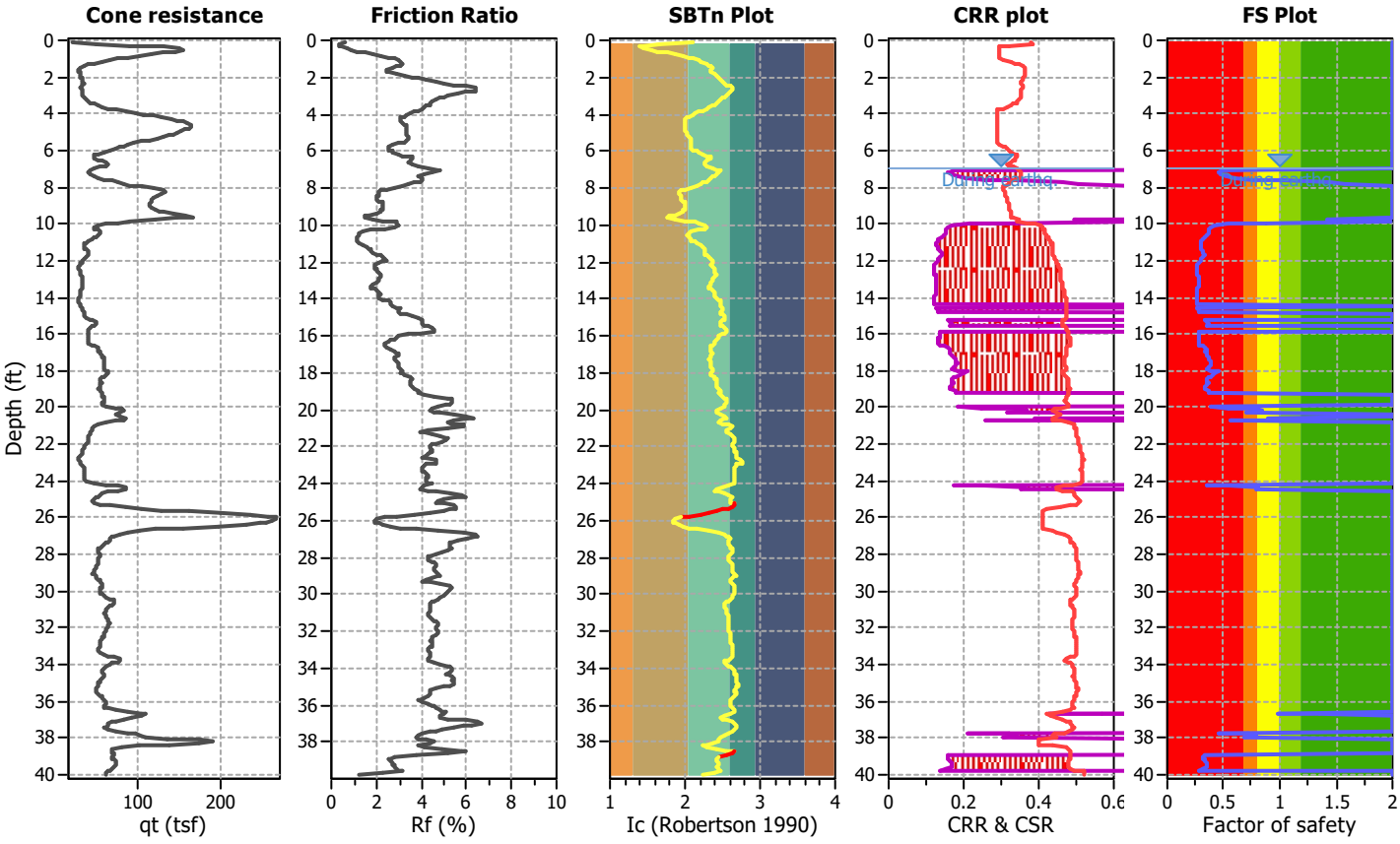
LIQUEFACTION ANALYSIS REPORT

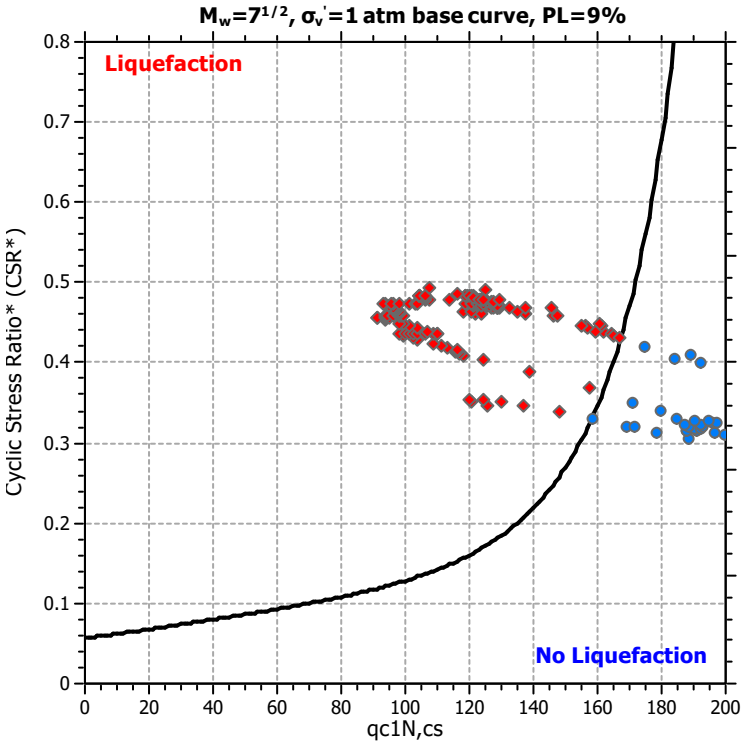
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

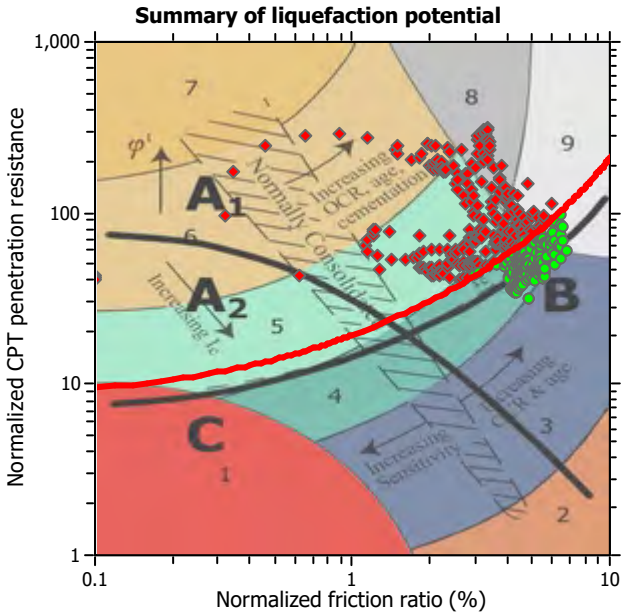
CPT file : CPT-14

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	7.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	7.00 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:	6.70	Ic cut-off value:	2.50	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

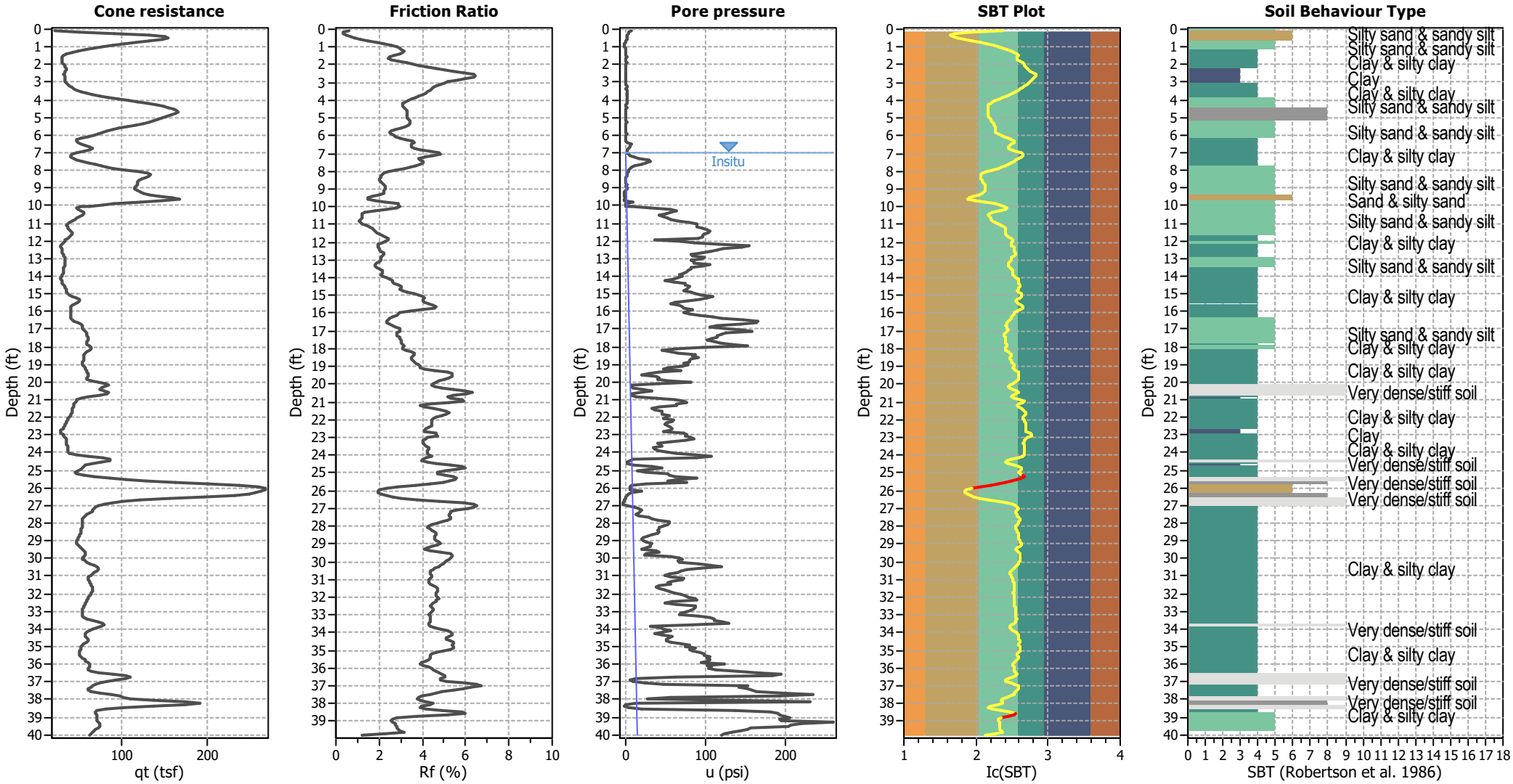






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



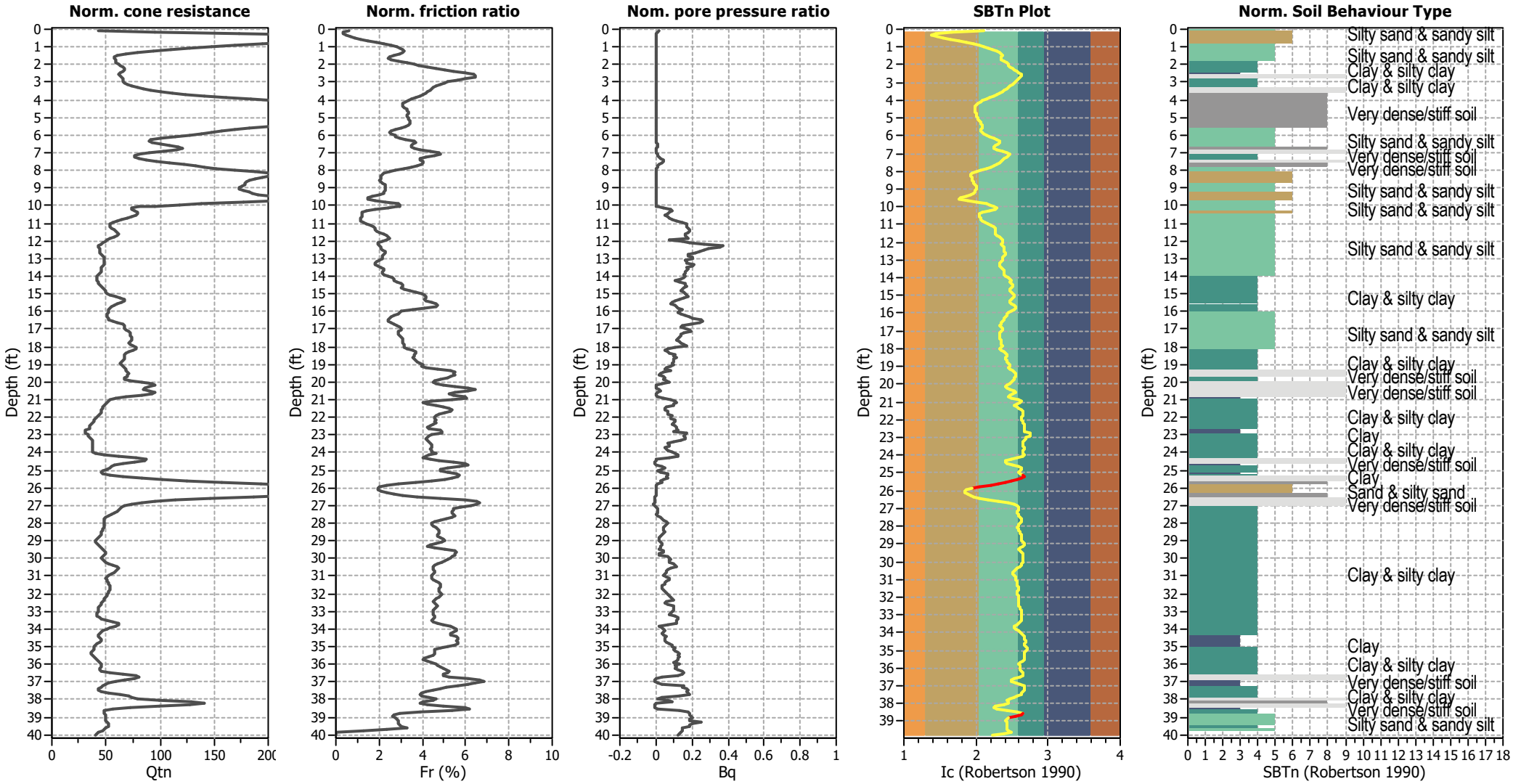
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 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)



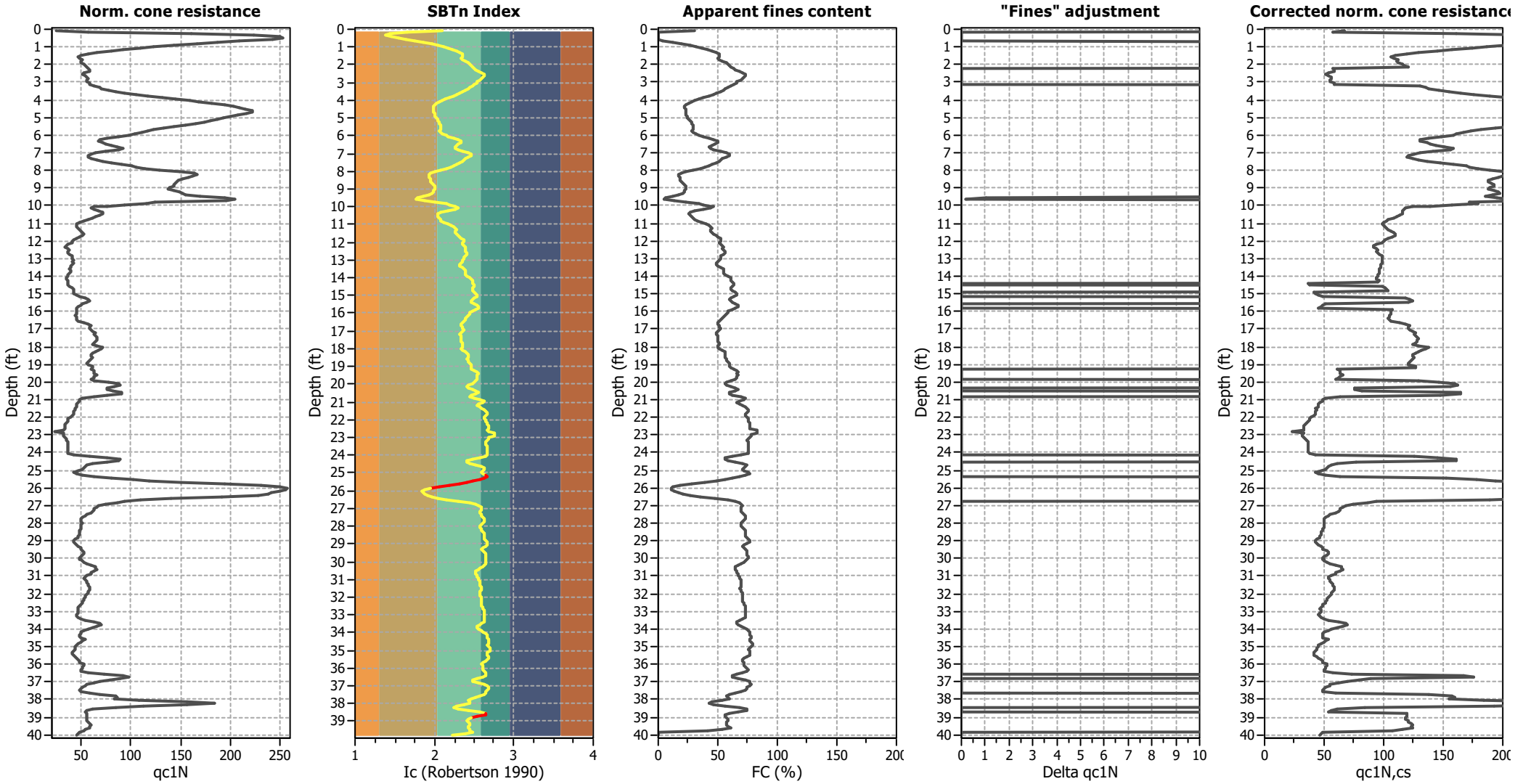
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
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Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

SBTn legend

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5. Silty sand to sandy silt
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7. Gravely sand to sand
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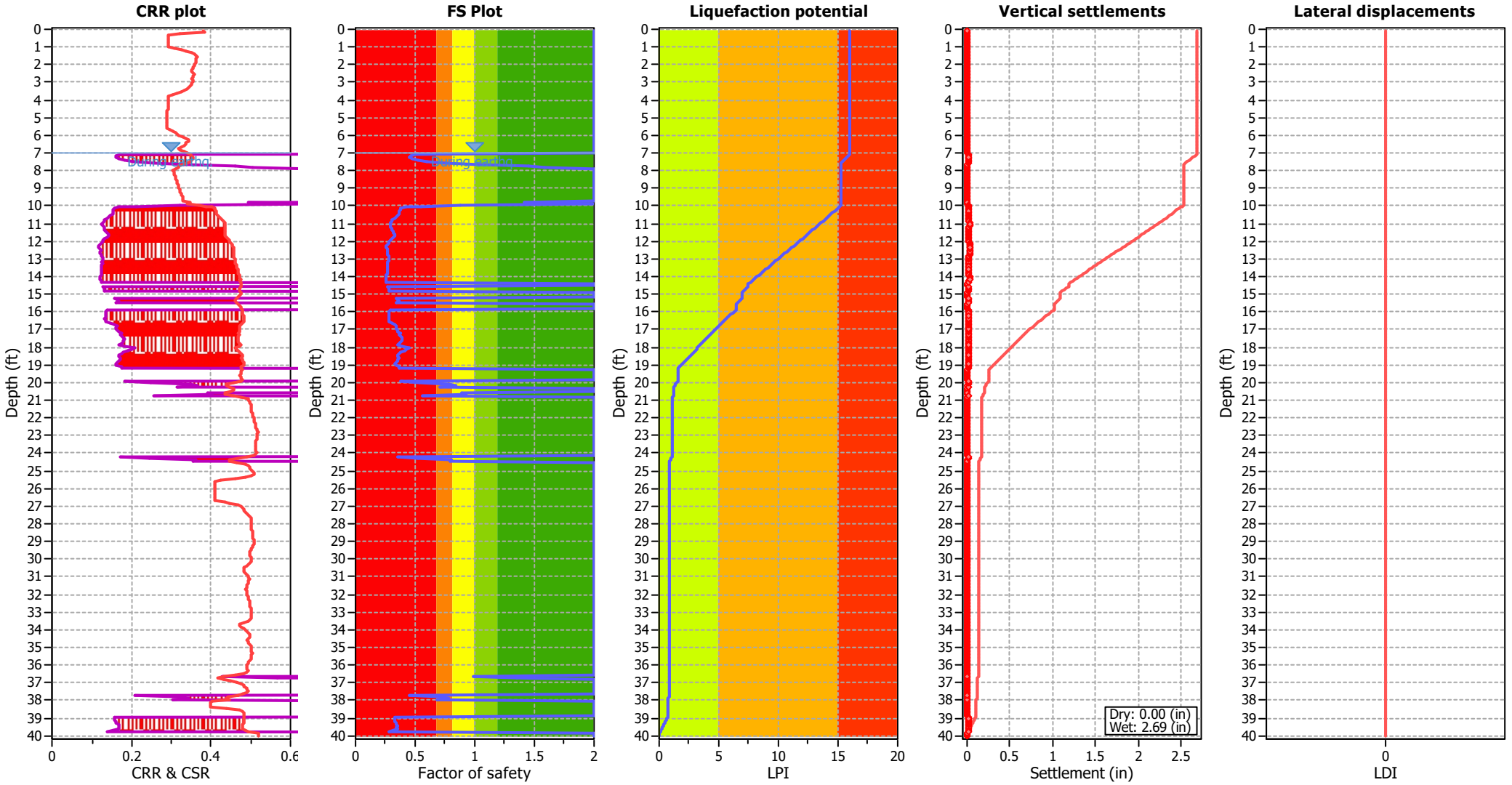
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
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Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

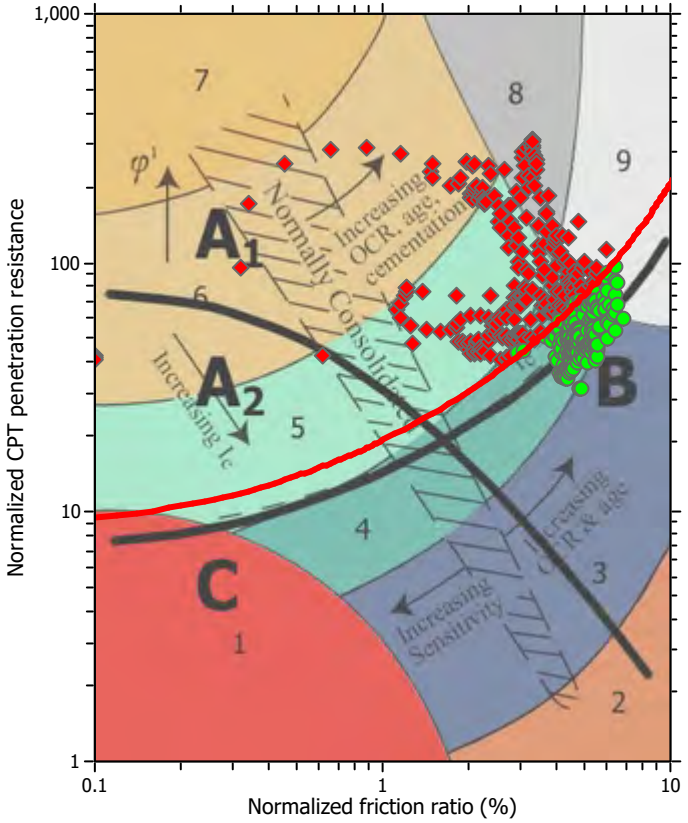
F.S. color scheme

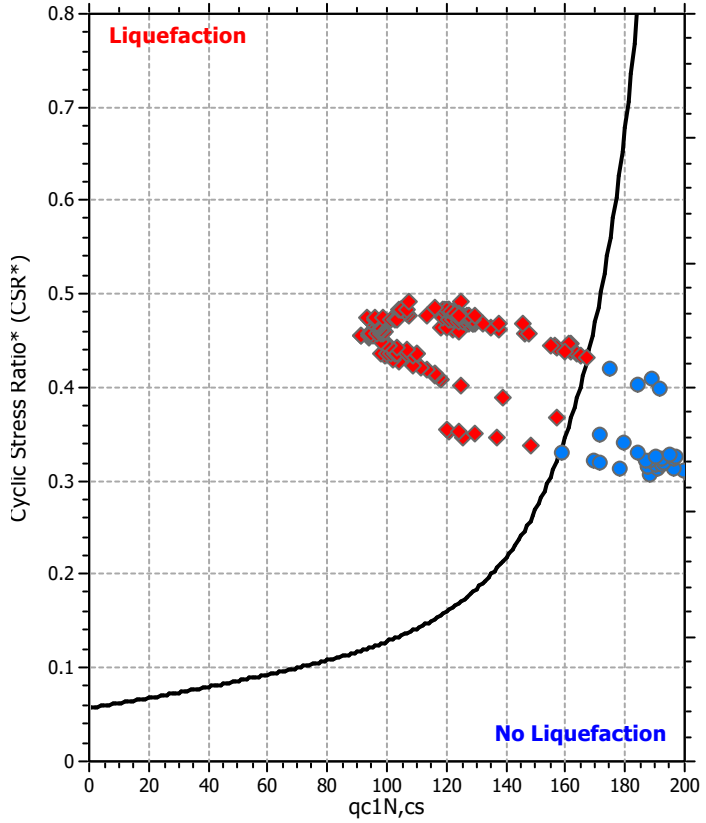
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

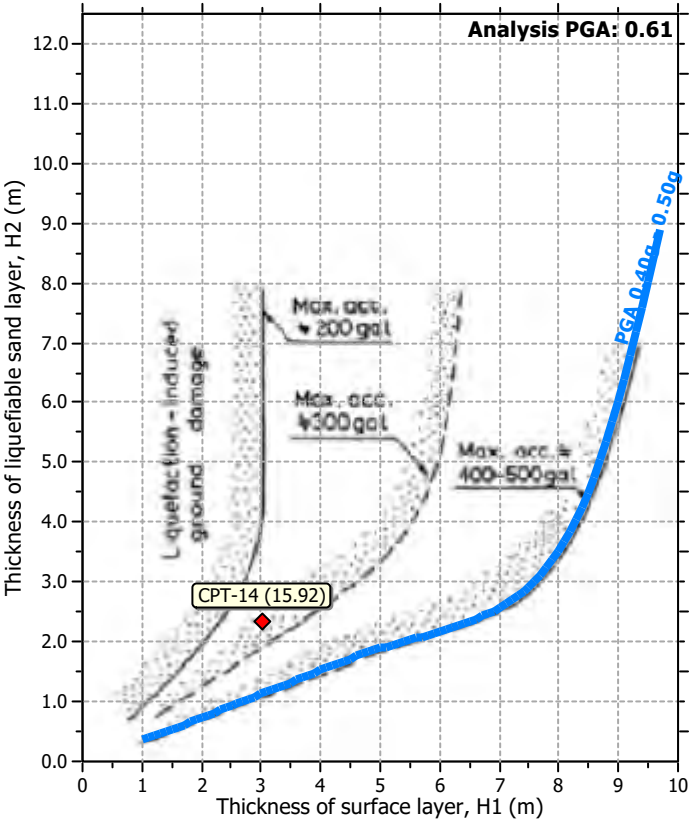
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots







Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
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RRC Power & Energy
810 Hesters Crossing Road, Suite 120
Round Rock, TX 78681
www.RRCcompanies.com

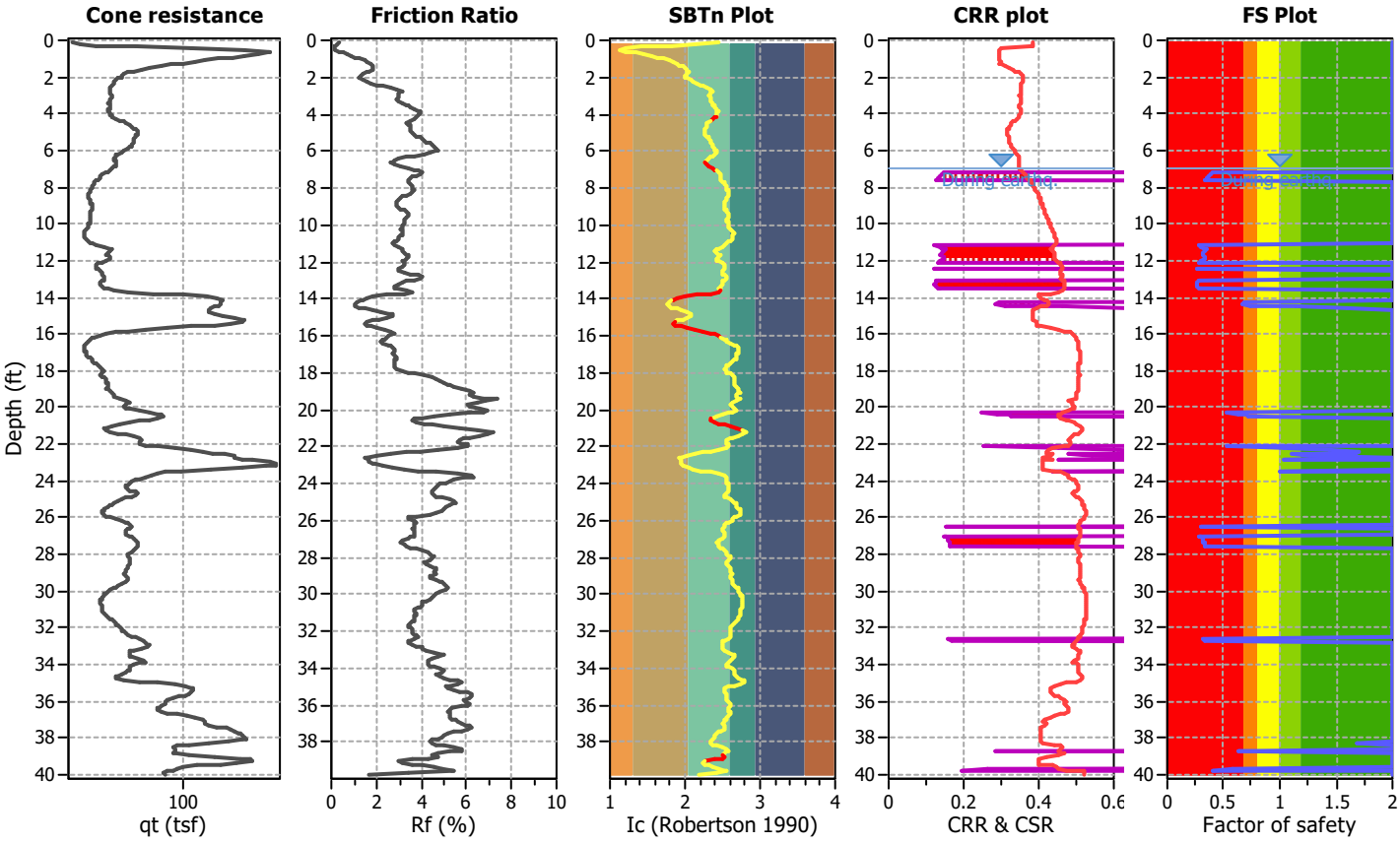
LIQUEFACTION ANALYSIS REPORT

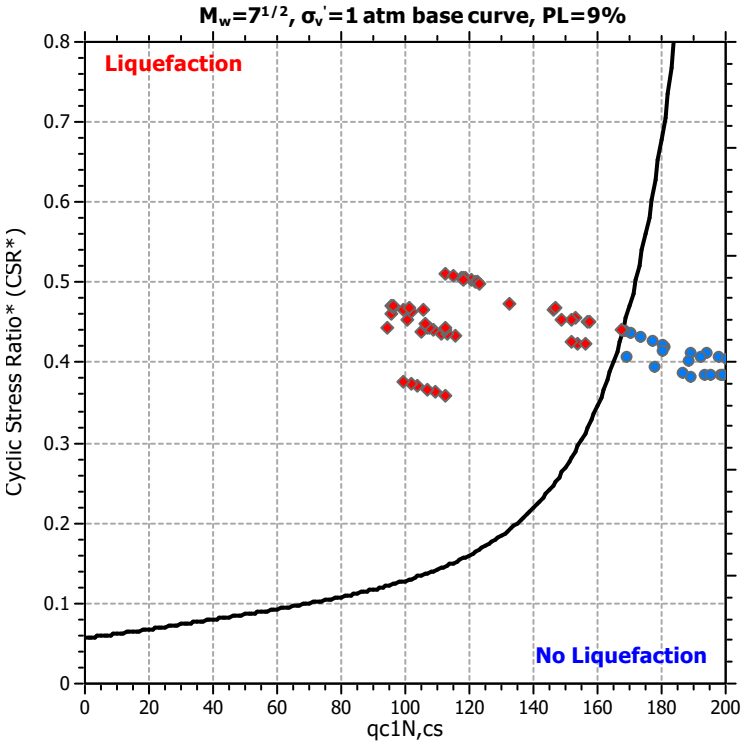
Project title : CORBY BESS - GE2306031 **Location : Solano County, California**

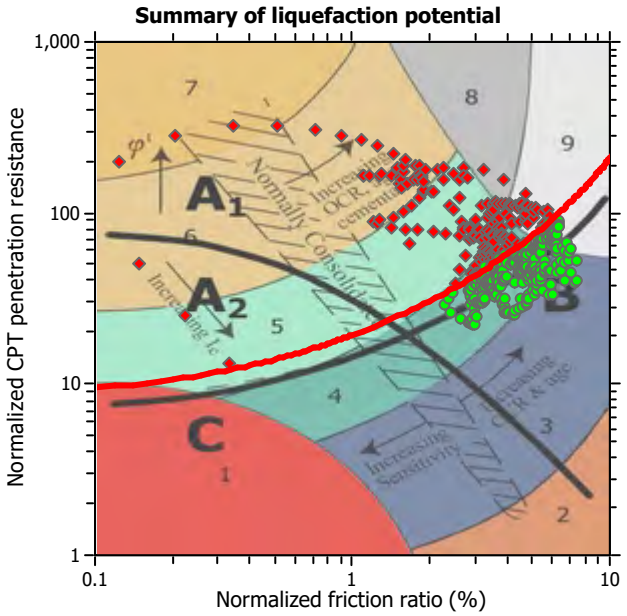
CPT file : CPT-15

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	7.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	7.00 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:	6.70	Ic cut-off value:	2.50	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.61	Unit weight calculation:	Based on SBT	K_σ applied:	No		

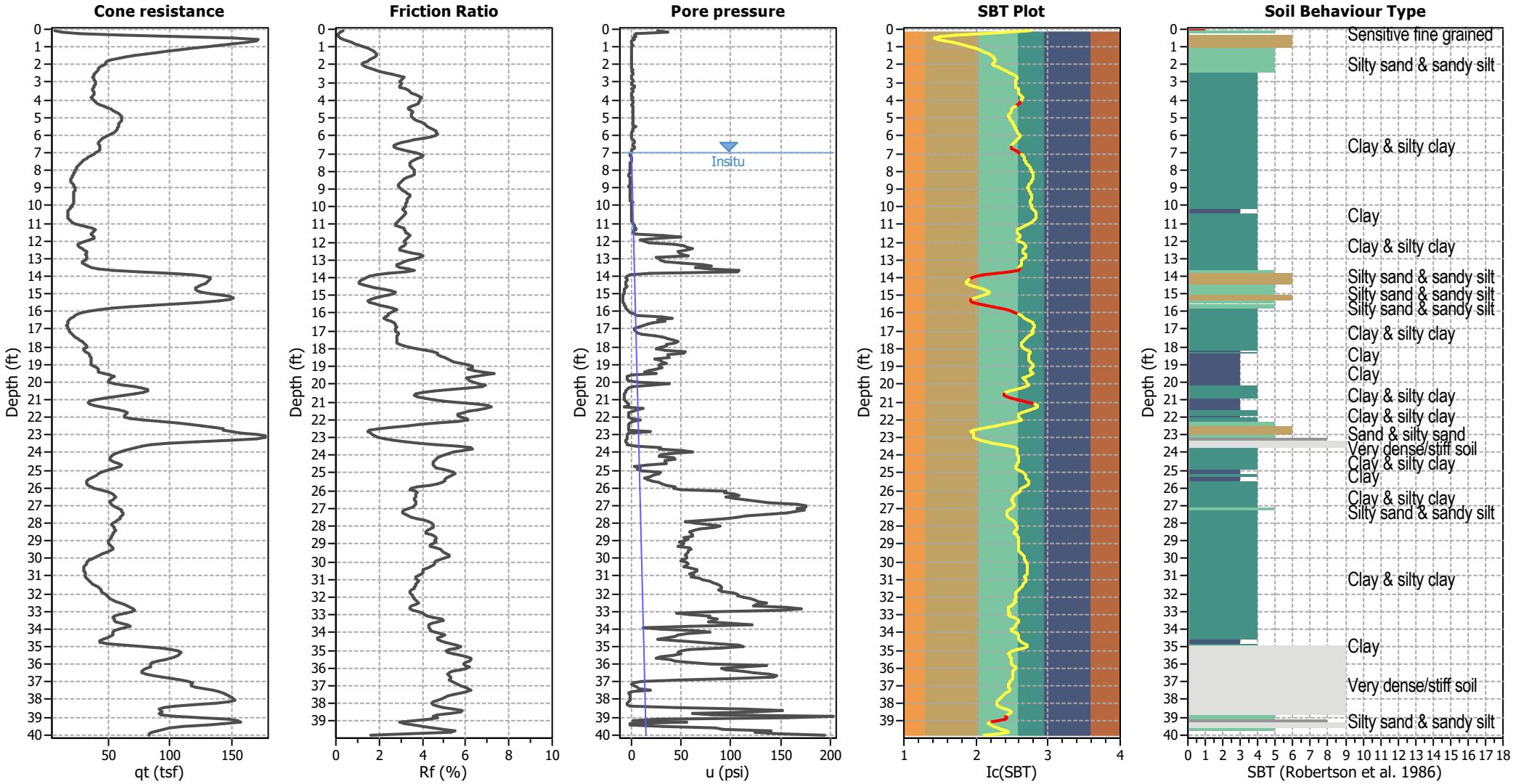






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
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Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity,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

CPT basic interpretation plots



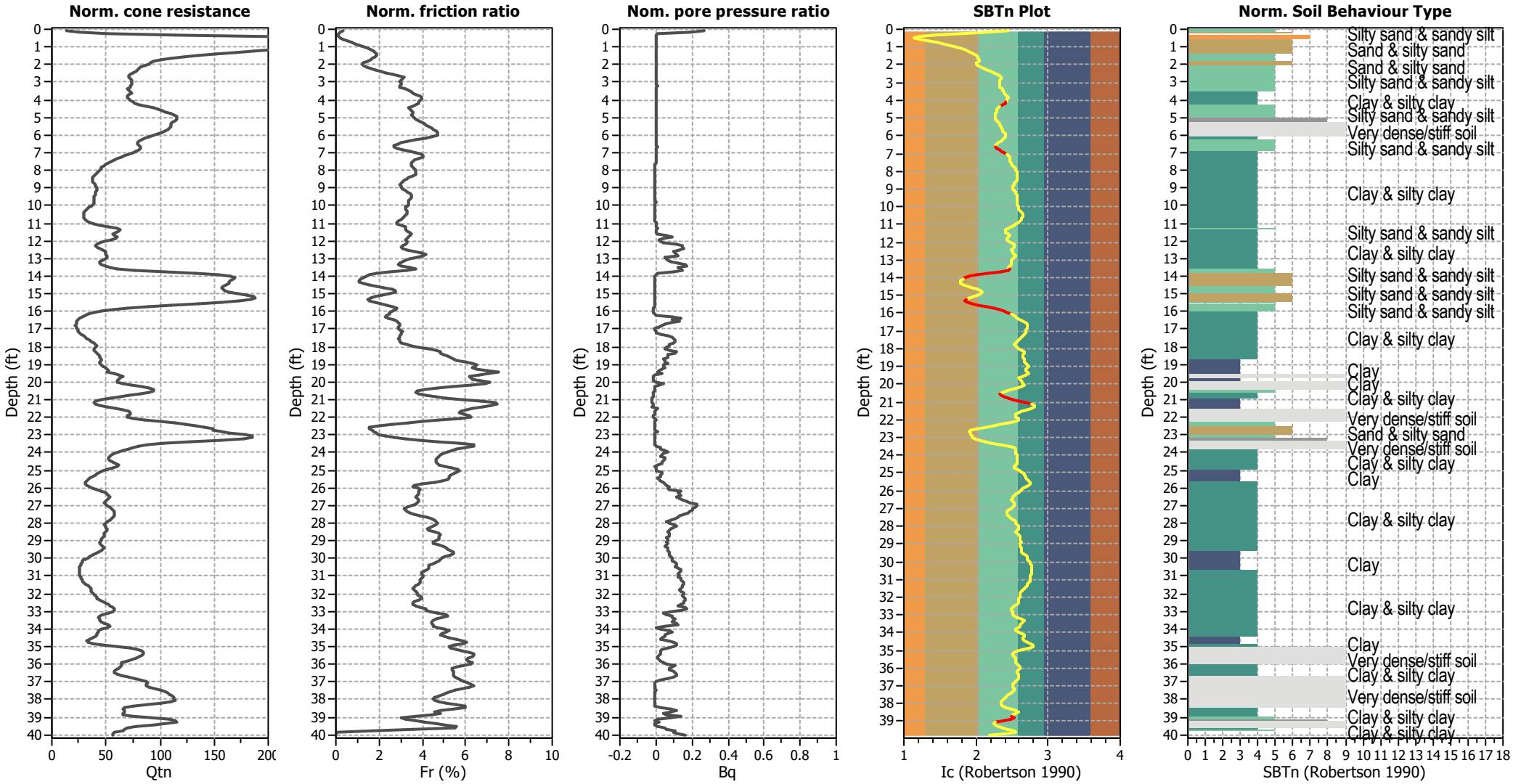
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
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Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

SBT legend

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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)



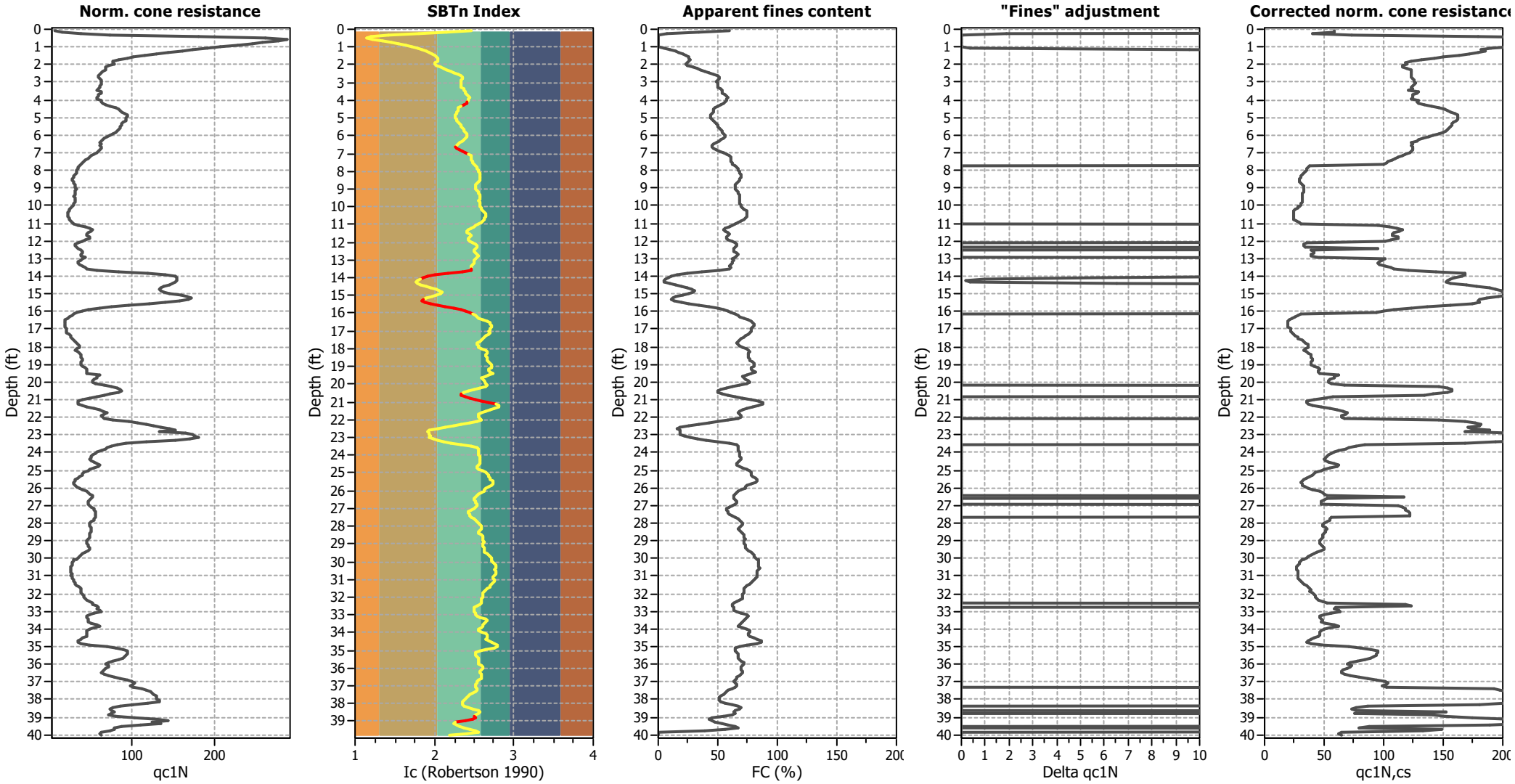
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

SBTn legend

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9. Very stiff fine grained

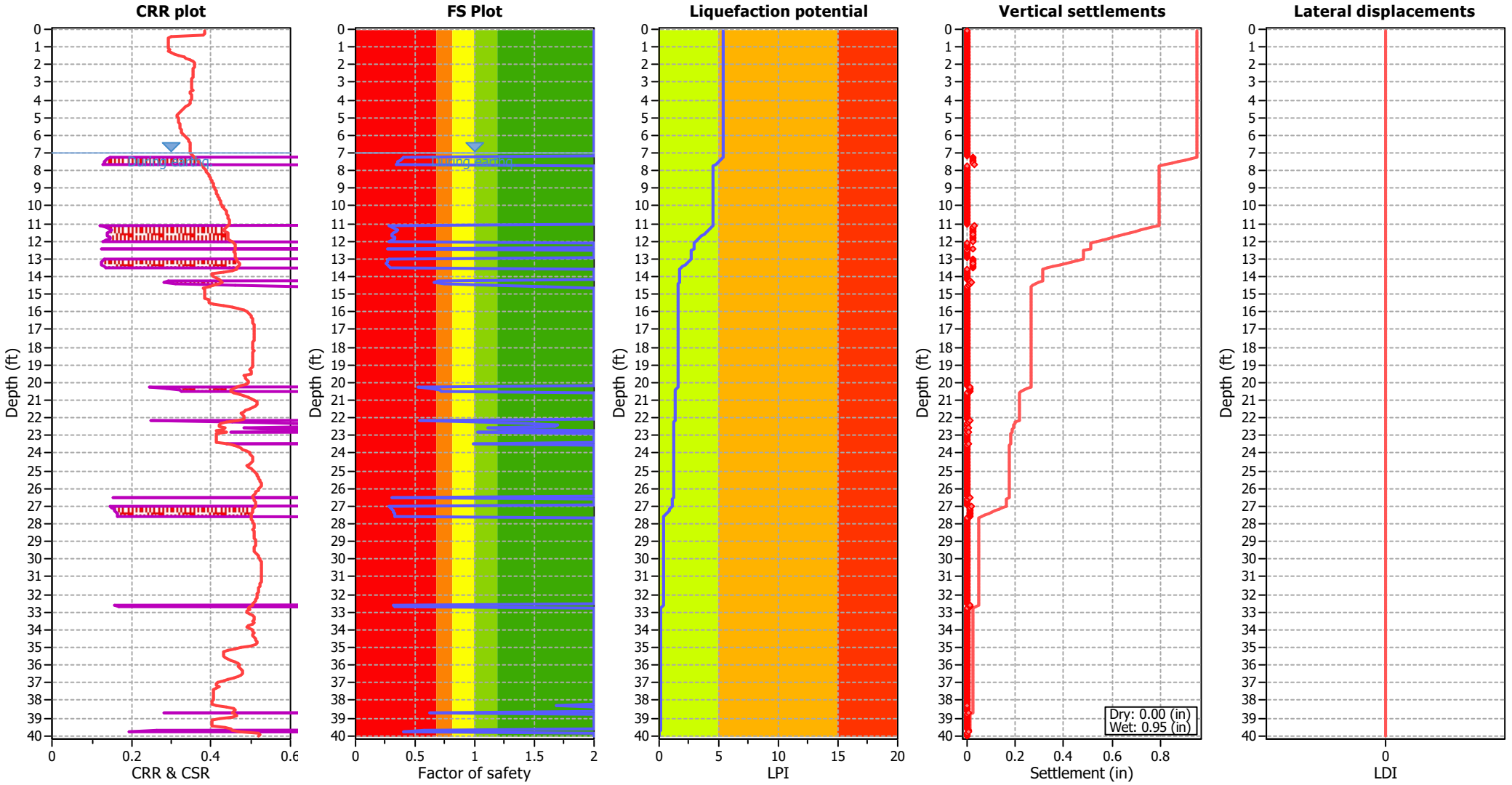
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
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Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

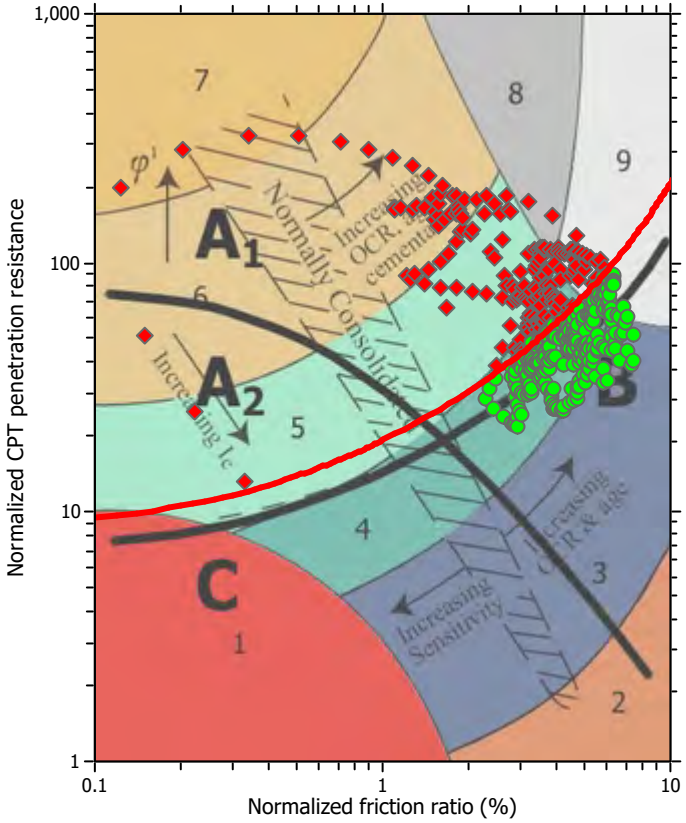
F.S. color scheme

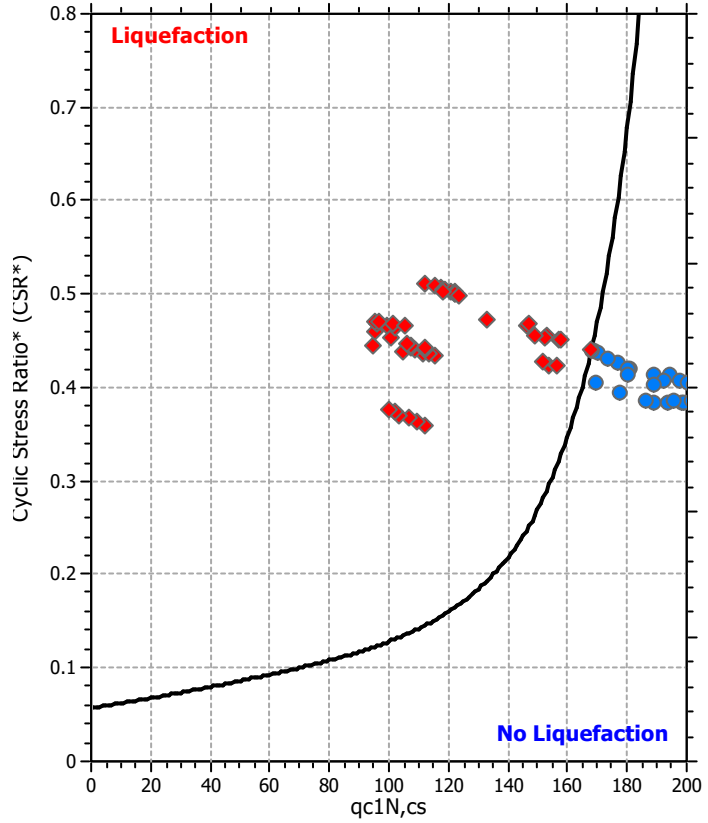
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

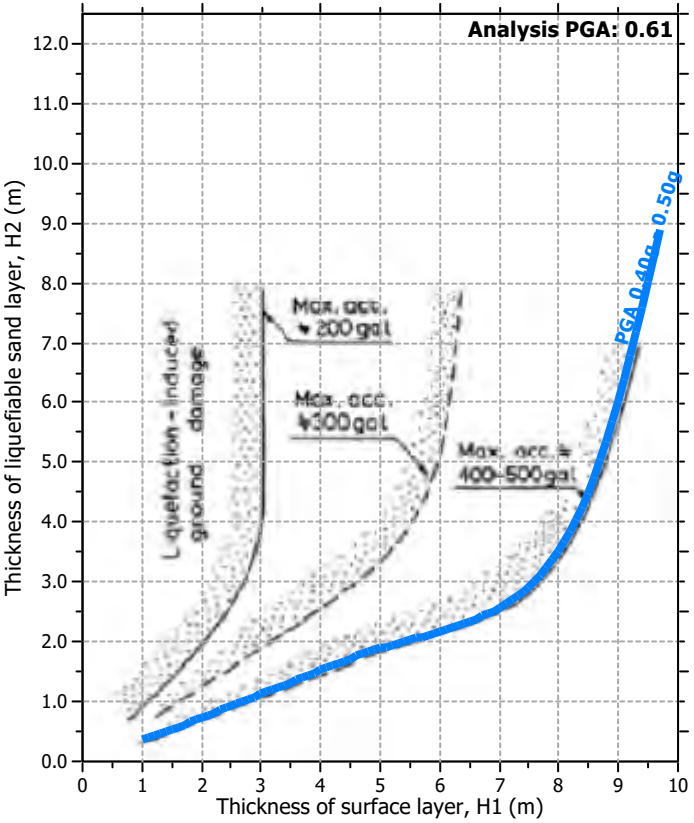
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots







Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.50	K_σ applied:	No
Earthquake magnitude M_w:	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.61	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	7.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

LATERAL SPREAD ANALYSIS FOR FREE FACE CONDITION

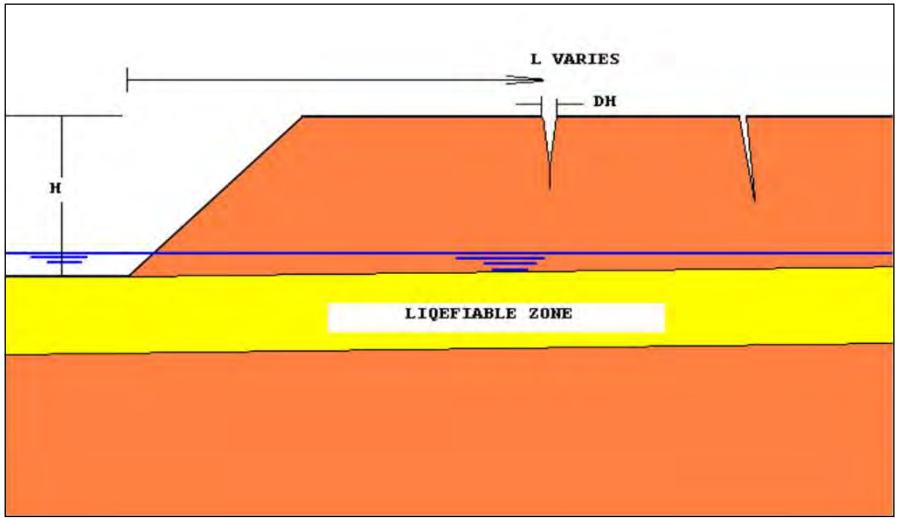
(REPRESENTED BY B-3)

M	EARTHQUAKE MOMENT MAGNITUDE	6.8
R	HORIZONTAL OR MAPPED DISTANCE TO THE NEAREST BOUND OF SEISMIC ENERGY SOURCE (KM)	13
H	FREE FACE HEIGHT (FEET)	5
L	DISTANCE FROM THE BASE OF FREE FACE TO THE POINT IN QUESTION IN SAME UNITS AS H	100
T_{15}	CUMULATIVE THICKNESS OF SATURATED GRANULAR LAYERS WITH N1(60)<=15 (METERS)	0.5
F_{15}	AVERAGE FINES CONTENT (<#200) FOR GRANULAR MATERIALS INCLUDED WITHIN T_{15} (%)	46
$D50_{15}$	AVERAGE MEAN GRAIN SIZE, D50 , FOR GRANULAR MATERIALS WITHIN T_{15} (mm)	0.1

OUTPUT

Ro	DISTANCE TERM THAT IS A FUNCTION OF MAGNITUDE (KM)	2.58
R*	MODIFIED SOURCE DISTANCE (KM)	15.58
W	FREE FACE RATIO- H/L %	5.00
LOG D_H	-1.408663315	
D_H	ESTIMATED LATERAL GROUND DISPLACEMENT IN (METERS)	0.04
D_H	ESTIMATED LATERAL GROUND DISPLACEMENT IN (FEET)	0.13
RESULT:	*SINCE DH<=1 FEET DAMAGE TO IMPROVEMENTS FROM LATERAL SPREADING IS UNLIKELY*	

ESTIMATION OF LATERAL DISPLACEMENT MAGNITUDE IN ACCORDANCE WITH "UPDATED YOUD & BARTLET" METHODOLOGY FOR FREE FACE CONDITION, AS RECOMMENDED BY CDMG SPECIAL PUBLICATION 117



17. USGS online Earthquake Catalog, https://earthquake.usgs.gov/earthquakes/search/.

18. U.S. Department of Transportation, Federal Highway Administration, "Corrosion/Degradation of Soil Reinforcements for Mechanically Stabilized Earth Walls and Reinforced Soil Slopes," Publication No. FHWA-NHI-00-044, September 2000.

19. Youd, T.L., Hansen, C.M., and Barlett, S.F., 1998, Revised Multilayer Linear Regression (MLR) for Predicting Lateral Spread Displacement *in* Journal of Geotechnical and Geoenvironmental Engineering, Published December 2002, page 1008-1017.

20. City of Los Angeles Department of Building and Safety, 2020, Information bulletin / public - building code, reference no.: LABC 1610.1, 1807.2, document no.: P/BC 2020-083, dated January 1.