

Comune di San Pietro in Casale

P.U.A. IN VARIANTE AL POC

ambito per nuovi insediamenti
su area libera (ANS-C n.3) sub comparto B

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Studio geologico-sismico

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gruppo	numero	data	settembre 2018
C	01	aggiornamenti	15/09/2018



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COMUNE DI SAN PIETRO IN CASALE

PROVINCIA DI BOLOGNA

**P.U.A. IN VARIANTE AL P.O.C.
AMBITO PER NUOVI INSEDIAMENTI SU AREA LIBERA
(ANS-C n.3) SUB COMPARTO B**

STUDIO GEOLOGICO-SISMICO

DOTT. GEOLOGO LUCA TONDI



BOLOGNA – settembre 2018



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PREMESSA

A seguito di incarico professionale ricevuto è stata effettuata un'indagine geologica su terreno sito nel Comune di San Pietro in Casale (Bo) sito nelle vicinanze di via Carlo Alberto Dalla Chiesa.

Scopo dell'indagine è stato quello di ricostruire il modello geologico e sismico del comparto per di stabilire la compatibilità alle nuove destinazioni urbanistiche (realizzazione di edifici ad uso abitativo) in relazione alla richiesta di inserimento nel P.U.A. in variante al P.O.C. per nuovi insediamenti su area libera (ANS-C n.3) sub ambito B

Per lo svolgimento di questo studio, si è fatto riferimento alle prescrizioni relative al Sub Ambito in oggetto, contenute nel "POC 2013-2018 Relazione geologica e sismica e sub-ambiti" redatto per il Comune di San Pietro in Casale, dall'Unione Reno Galliera.

Per il sub ambito B è riportato:

- Sono richiesti approfondimenti sismici di terzo livello per quanto riguarda gli aspetti quantitativi di propensione alla liquefazione, di cedimenti post sisma dei sedimenti e di risposta sismica locale. Gli ulteriori approfondimenti, nei casi sopra indicati, dovranno prevedere, ineludibilmente, prove penetrometriche elettriche con piezocono (CPTU) da spingersi fino a 20 metri di profondità. Le indagini geognostiche e geofisiche da realizzare dovranno confermare o rettificare gli esiti dello studio di MZS comunale semplificata che dovrà essere riferimento per le analisi del POC e del PUA.
- Per l'ambito di PUA si richiedono le seguenti indagini minime:

<i>TIPO INDAGINI</i>	<i>N° MINIMO</i>	<i>PROF. MINIMA</i>
Penetrometrie statiche elettriche con piezocono (CPTU)	4	20m
Indagine geofisica per la stima della Vs30 (MASW; Re.Mi; HVSR; ecc.)	1	30m

Lo studio è stato svolto come previsto secondo il D.a.L. 112/2007 e aggiornamenti seguenti (D.G.R. 2193/2015), per la valutazione della pericolosità sismica del sito

MORFOLOGIA E GEOLOGIA

L'area oggetto di studio, ricade nella zona della bassa pianura bolognese ad una quota di circa 16 m s.l.m., ed è caratterizzato da una morfologia sub-pianeggiante con bassi gradienti topografici.

La zona, dal punto di vista geo-strutturale, si colloca in corrispondenza di una geosinclinale subsidente, colmata da materiali alluvionali abbandonati dai corsi d'acqua sfocianti dalle valli appenniniche. I sedimenti continentali accumulati nel corso del Quaternario, raggiungono spessori dell'ordine 150 ÷ 200 m. (Carta Sismotettonica della Regione Emilia Romagna).

I terreni presenti sono costituiti da materiali alluvionali depositati dai corsi d'acqua che sfociavano dalle valli appenniniche durante il Quaternario. Tali processi sedimentari hanno modellato l'assetto morfologico della pianura alluvionale, differenziando le diverse forme deposizionali a seconda dei diversi ambienti sedimentari: dossi allungati in leggero rilievo, corrispondenti agli argini e/o a paleo-alvei del fiume; vaste bassure argillose e paludose, corrispondenti alle aree di decantazione delle piene. Quando i suddetti materiali alluvionali traboccavano dal letto ordinario, si espandevano ai lati di esso, perdendo in velocità e perciò abbandonando il loro carico: i detriti più grossolani si arrestavano ai lati del letto, quelli più fini invece arrivavano in sospensione anche nelle bassure più distanti; gli stessi processi sedimentari, inoltre, hanno colmato i paleoalvei di canali ora abbandonati, con materiali a granulometria decrescente dal basso verso l'alto.

In generale, le litologie di superficie sono rappresentate da limi, argille e sabbie variamente intercalate fra di loro. Solo in profondità sono presenti depositi a maggiore granulometria. I terreni che caratterizzano il primo sottosuolo sono rappresentati da sedimenti di origine fluvio-palustre depositati in massima parte dal Torrente Samoggia e dal Fiume Reno, ovvero sia depositi alluvionali aventi la tipica struttura a lenti incrociate, formati da strati di materiali a granulometria fine e/o finissima (limi ed argille) di spessore decimetrico, intercalati a strati di materiali più grossolani (limi sabbiosi e sabbie).

Al fine di poter caratterizzare il sito in analisi dal punto di vista strettamente geologico, è stata consultata anche la Carta Geologica di pianura dell'Emilia-Romagna (a cura di R.E.R. – Servizio Sistemi Informativi Geografici – Ufficio Geologico - scala 1:250.000), di cui viene riportato uno stralcio nella Tavola 3, allegata a fine testo; l'area è inserita in corrispondenza di *"Sabbie medie e fini in strati di spessore decimetrico passanti lateralmente ed intercalate a sabbie fini e finissime limose, subordinatamente limi argillosi; localmente sabbie medie e grossolane in corpi lenticolari e nastriformi. Depositi di canale ed argine prossimale"*.

INDAGINI DI CAMPAGNA E STRATIGRAFIA

Come da prescrizioni contenute nel "POC 2013-2018 Relazione geologica e sismica e sub-ambiti" redatto per il Comune di San Pietro in Casale, dall'Unione Reno Galliera, allo scopo di definire le caratteristiche dei terreni e la stratigrafia, sono state effettuate n° 4 prove penetrometriche statiche C.P.T. spinte fino alla profondità massima di - 20.0 m dal p.c..

Prove penetrometriche C.P.T.U.

Allo scopo di definire le caratteristiche dei terreni e la stratigrafia, sono state effettuate n° 4 prove penetrometriche statiche C.P.T.U. (per l'ubicazione vedi tav.4 in allegato).

La prova è caratterizzata da una strumentazione simile alla prova meccanica (CPT), ma da una punta elettrica dotata di elemento poroso di ceramica fine o di acciaio. Quindi oltre alla misurazione dei parametri di resistenza alla penetrazione **qc** ed **fs**, si misura anche la pressione interstiziale **u**, nei terreni saturi al di sotto del livello di falda.

Questa prova permette di identificare stratificazioni, anche molto sottili con differenti caratteristiche di permeabilità; tutto ciò è possibile tramite la misura contemporanea della resistenza alla punta **qc** e della pressione neutrale **u**.

Le interpretazioni stratigrafiche basate su questa tipologia di prova sono riconducibili a *Robertson*, con numerose pubblicazioni in merito. Si tratta di interpretazioni che fanno uso della carta normalizzata del comportamento dei vari tipi di terreno (SBTn – Soil Behaviour Type normalized), tarata sulla resistenza alla penetrazione della punta del cono normalizzata (**Qt**) e sul rapporto d'attrito normalizzato (**Fr**).

Le prove sono state eseguite utilizzando un penetrometro Pagani con attrezzatura avente le seguenti caratteristiche:

Canali di misura:

Resistenza di Punta (qc): 50 MPa
Attrito laterale (fs): 0,5 MPa
Pressione dinamica nei pori (u): 2,5 MPa
Inclinazione: 0 - 20°

Dimensioni:

Apertura cono: 60°
Diametro: 36 mm
Area punta: 10 cm²
Rapporto delle aree di punta (a) 0,58
Area manicotto di attrito: 150 cm²
Rapporto delle aree del manicotto (b) ... 0,014
Peso: 3,5 kg
Lunghezza totale:
Versione Sonica 1.090 mm
Versione con Cavo 855 mm

Specifiche Tecniche:

	Resistenza di Punta (qc)	Attrito Laterale (fs)	Pressione nei pori (U)
Risoluzione:	0,04% F.S.	0,05% F.S.	0,04% F.S.
Stabilità termica:	<0,05% F.S./10°C	<0,05% F.S./10°C	<0,05% F.S./10°C
Non linearità:	<0,1% F.S.	<0,5% F.S.	<0,5% F.S.
Sovraccarico:	25 %	50 %	25%

Sistema TGAS02

Stratigrafia e risultati delle indagini

A seguito viene schematizzata la stratigrafia realizzata secondo l'elaborazione dei dati ottenuti della prova penetrometrica eseguita, utilizzando le relazioni definite da Robertson, (vedi tabelle allegate a fine testo).

ASSETTO LITOSTRATIGRAFICO				
Unità litostrat.	Litologia	Id. Prova	Profondità (m dal p.c.)	Qt (Kg/cm²)
T/R	Terreno vegetale, rimaneggiato e di riporto, con detriti di materiale antropico.	CPTU1	0,0 ÷ -0,7	3,8 ÷ 11,4
		CPTU2	0,0 ÷ -0,6	1,8 ÷ 10,7
		CPTU3	0,0 ÷ -0,6	6,7 ÷ 14,0
		CPTU4	0,0 ÷ -0,6	5,5 ÷ 11,0
A	Argille limose e limi argillosi	CPTU1	-0,7 ÷ -3,0	3,9 ÷ 12,0
		CPTU2	-0,6 ÷ -3,0	6,0 ÷ 15,2
		CPTU3	-0,6 ÷ -3,6	4,0 ÷ 14,2
		CPTU4	-0,6 ÷ -3,5	6,6 ÷ 12,4
B	Limi sabbiosi con alcuni intervalli di sabbie limose	CPTU1	-3,0 ÷ -9,2	5,0 ÷ 79,4
		CPTU2	-3,0 ÷ -7,0	6,5 ÷ 37,7
		CPTU3	-3,6 ÷ -9,3	4,9 ÷ 75,8
		CPTU4	-3,5 ÷ -9,1	7,5 ÷ 41,5
C	Argille, argille limose e rari livelli di limi sabbiosi e sabbie limose	CPTU1	-9,2 ÷ -21,2	6,1 ÷ 87,0
		CPTU2	-7,0 ÷ -20,1	5,0 ÷ 31,0
		CPTU3	-9,3 ÷ -20,1	6,7 ÷ 101,8
		CPTU4	-9,1 ÷ -20,1	7,3 ÷ 65,5

Tabella 1: interpretazione prove penetrometriche statiche con piezocono (CPTU).

Il quadro stratigrafico che emerge dall'elaborazione delle prove penetrometriche mostra un grado di buona correlazione; le differenze sono limitate e relative agli spessori delle unità stratigrafiche nelle diverse verticali di prova.

Il primo orizzonte di materiale di riporto, in cui è stata ravvisata la presenza di inclusi di origine antropica, mostra una certa omogeneità nello spessore nel sito in esame.

Passando ad i terreni in posto, la prima unità superficiale vede la presenza preponderante di materiali fini, quali argille e limi, con valori di resistenza che denotano scarse proprietà geotecniche, fino a circa 3,0-3,5 m dal p.c.

Oltre, fino a circa 9 m di profondità (solo nella seconda verticale il passaggio è stato individuato

a circa 7,0 m) è stato registrato il passaggio verso terreni con una maggiore incidenza di materiali granulari, quali sabbie fini e medie e limi grossolani, con alcuni livelli di a maggioranza sabbiosa, con un grado di consistenza da moderato a medio.

Superato questo orizzonte si torna verso i termini fini, raramente intercalati da livelli al massimo decimetrici con limi sabbiosi e sabbie limose e mostra un pattern litologico abbastanza omogeneo fino alle quote raggiunte dalle indagini.

CONDIZIONI IDROGEOLOGICHE E STIMA DELLA SOGGIACENZA MINIMA

Nel foro di prova è stata effettuata un'apposita misura del livello piezometrico mediante freatimetro, ottenendo i seguenti risultati:

MISURA DEL LIVELLO DI FALDA		
Posizione	Data	Livello da p.c. (m)
CPTU1	19/07/2018	-1,65
CPTU2	19/07/2018	-1,70
CPTU3	19/07/2018	-1,60
CPTU4	19/07/2018	-1,67

Tabella 2: misurazione dei livelli idrici all'interno dei fori d'indagine.

Il livello freatico riscontrato alla data dell'esecuzione delle prove penetrometriche rivelano la presenza della falda ad una quota minima di circa -1,60 m ed una massima di -1,70 m dal p.c.

Si segnala che la prima falda superficiale è legata al ciclo meteo-climatico stagionale, pertanto presenterà livelli statici a quote più alte in corrispondenza di periodi con maggiore incidenza di eventi meteorici (mesi primaverili), e livelli più bassi in corrispondenza di assenza di manifestazioni atmosferiche (periodo fine estate/inizio delle piogge autunnali), come nel nostro caso. In particolare, in questo periodo, può risultare particolarmente depressa, a seguito di un lungo periodo siccitoso ed a un anno non particolarmente ricco in precipitazioni.

Al riguardo della stima della soggiacenza minima, facendo riferimento a misure eseguite dallo scrivente in zone limitrofe durante periodi caratterizzati da abbondanti precipitazioni, si potranno considerare livelli di soggiacenza minima di circa 1,20 m.

CONFRONTO CON PTCP E PSAI

Al fine di poter fornire una migliore descrizione della zona è stata consultata anche la tavola contenuta nel PTCP che tratta di "Tutela dei sistemi ambientali e delle risorse naturali e storico-culturali" (Tavola 1), in cui vengono riportate informazioni riguardo alla pericolosità del territorio rispetto all'inondabilità da parte dei corsi d'acqua e le fasce di pertinenza di quest'ultimi. Si tratta di una trasposizione di quanto riportato dall'Autorità di Bacino per il Piano Stralcio per l'Assetto Idrogeologico del bacino in questione, il Torrente Samoggia.

Per quanto concerne all'area in esame, di cui si riporta uno stralcio di seguito, non sono state riportate alcun tipo di campiture, a testimonianza del fatto che l'area in questione non sia in una situazione di pericolo immediato derivante dal corso d'acqua o in una posizione tale da essere rilevante per il corso d'acqua.

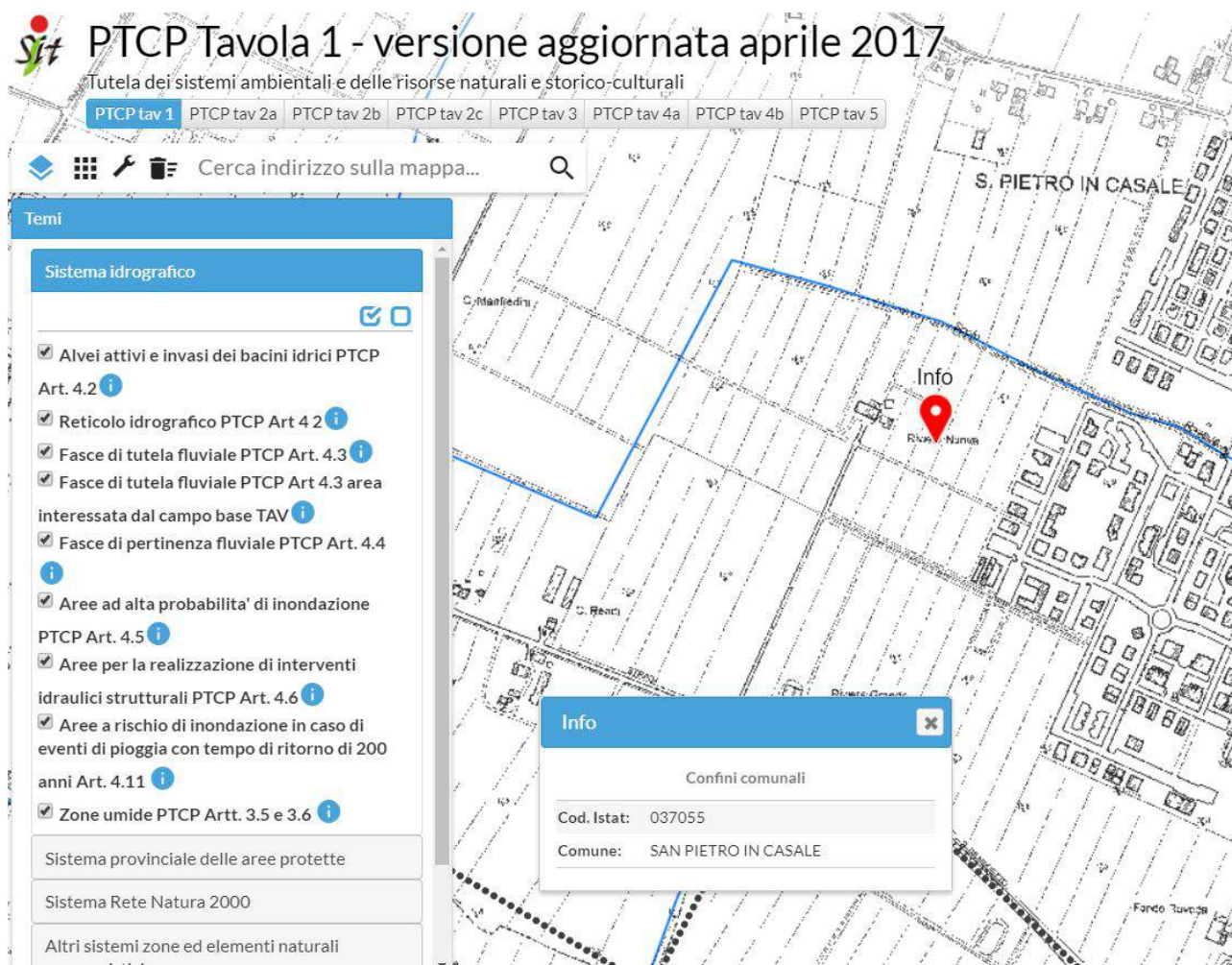


Figura 1: stralcio della tavola 1 del PTCP della Città metropolitana di Bologna.

INDAGINI SISMICHE

Come da prescrizioni contenute nel “POC 2013-2018 Relazione geologica e sismica e sub-ambiti” allo scopo di definire le VS30 si sono eseguite n° 2 indagini geofisiche (HVSr).

Per la determinazione dei parametri sismici si è fatto riferimento alla misura TR22 in quanto è risultata la più significativa per la caratterizzazione sismica del sito.

Esecuzione di misure di rumore sismico ambientale

Per le misure è stato utilizzato un tromografo digitale portatile (TROMINO), progettato specificamente per la registrazione del rumore sismico ambientale. Lo strumento è dotato di tre sensori elettrodinamici (velocimetri) orientati N-S, E-W e verticalmente, e permette la registrazione nel campo di frequenze 0-200 Hz.

In sintesi, dopo che il segnale dei tre velocimetri è stato acquisito, per un determinato tempo t , e digitalizzato a 24 bit, viene trasmesso ad un software dedicato, denominato Grilla il quale, per ciascuna delle 3 componenti del moto, esegue le seguenti operazioni:

- divisione del tracciato in finestre la cui lunghezza è immessa dall'operatore;
- depurazione del segnale dal trend di ciascuna finestra;
- “taper” con una finestra di Bartlett;

- “pad” di ciascuna finestra con degli zero;
- calcolo della trasformata di Fourier (FFT) per ciascuna finestra;
- calcolo dello spettro di ampiezza per ciascuna finestra;
- smoothing (lisciamento) dello spettro di ogni finestra secondo differenti funzioni la cui scelta viene definita dall'operatore;
- calcolo del rapporto spettrale HVSR per ogni frequenza e per ogni finestra.

Il risultato finale consiste nella graficizzazione delle medie degli HVSR di ciascuna finestra e nell'interpretazione secondo la tecnica di Nakamura.

Generalità sulla tecnica di Nakamura

Il metodo si basa sulla misura del rumore sismico ambientale, il quale risulta prodotto sia da fenomeni atmosferici (onde oceaniche, vento) sia dall'attività antropica oltre che, ovviamente, dall'attività dinamica terrestre. Si chiama anche microtremore in quanto riguarda oscillazioni molto piccole (10^{-15} (m/s²) in termini di accelerazione), inferiori di diversi ordini di grandezza rispetto a quelle indotte dai terremoti nel campo vicino.

I metodi che si basano sull'acquisizione dei microtremori si dicono passivi in quanto il rumore non è generato ad hoc, come avviene invece nel caso della sismica attiva (esplosioni).

Lo spettro in frequenza del rumore di fondo in un terreno roccioso pianeggiante presenta dei picchi a 0.14 e 0.07 Hz, comunemente interpretati come originati dalle onde oceaniche. Tali componenti spettrali vengono attenuate molto poco anche dopo tragitti di migliaia di chilometri per effetto di guida d'onda. A tale andamento generale, che è sempre presente, si sovrappongono le sorgenti locali, antropiche (traffico, industrie ma anche il semplice passeggiare di una persona) e naturali che però si attenuano fortemente a frequenze superiori a 20 Hz, a causa dell'assorbimento anelastico originato dall'attrito interno delle rocce.

Nel tragitto dalla sorgente al sito le onde elastiche (sia di terremoto che di microtremore) subiscono riflessioni, rifrazioni, intrappolamenti per fenomeni di guida d'onda e attenuazioni che dipendono dalla natura del sottosuolo attraversato. Questo significa che se da un lato l'informazione relativa alla sorgente viene persa e non sono più applicabili le tecniche della sismica classica di ray tracing, è presente comunque una parte debolmente correlata nel segnale che può essere estratta e che contiene le informazioni relative al percorso del segnale ed in particolare relative alla struttura locale vicino al sensore. Dunque, anche il debole rumore sismico, che tradizionalmente costituisce la parte di segnale scartata dalla sismologia classica, contiene informazione. Questa informazione è però sepolta all'interno del rumore casuale e può essere estratta attraverso tecniche opportune. Una di queste è la tecnica di Nakamura dei rapporti spettrali o, semplicemente, HVSR (Horizontal to Vertical Spectral Ratio).

I primi studi furono effettuati da Kanai (1957) in seguito aggiornati e modificati da vari autori per ottenere informazioni dagli spettri del rumore sismico registrati in un sito. Tra questi, la tecnica che si è maggiormente consolidata nell'uso è la tecnica dei rapporti spettrali tra le componenti del moto orizzontale e quella verticale (HVSR), applicata da Nogoshi e Igarashi (1970) e poi da Nakamura (1989), per la determinazione dell'amplificazione sismica locale. Su questo punto non è però ancora stato raggiunto consenso, sebbene sia ampiamente riconosciuto che l'HVSR è in grado di fornire stime affidabili delle frequenze principali di risonanza dei sottosuoli, informazione che è comunque di notevole importanza nell'ingegneria sismica.

La tecnica di Nakamura non richiede l'individuazione di una stazione di riferimento, permettendo così di operare in campagna utilizzando una sola stazione sismica. Il metodo HVSR considera i microtremori come composti principalmente da onde di Rayleigh e presuppone che l'amplificazione relativa agli effetti di sito sia causata dalla presenza di uno strato sedimentario giacente su di un semispazio elastico. In queste condizioni le componenti del moto sismico da analizzare sono quattro:

-) quelle orizzontali di superficie (Hs) e quelle orizzontali al bedrock (Hb);
-) quelle verticali di superficie (Vs) e quelle verticali al bedrock (Vb).

Secondo Nakamura è inoltre possibile fare una stima della forma spettrale della sorgente dei microtremori $As(\omega)$ (in funzione della frequenza) con la seguente relazione:

$$As(\omega) = Vs(\omega) / Vb(\omega) \quad (1)$$

in cui $Vs(\omega)$ e $Vb(\omega)$ sono le ordinate spettrali delle componenti verticali del moto, rispettivamente in superficie e al tetto del bedrock.

Nakamura definisce poi come effetto di sito il rapporto spettrale $Se(\omega)$:

$$Se(\omega) = Hs(\omega) / Hb(\omega) \quad (2)$$

dove $Hs(\omega)$ e $Hb(\omega)$ sono le ordinate spettrali delle componenti orizzontali del moto, rispettivamente in superficie e al tetto del bedrock.

Per compensare l'effetto di sito $Se(\omega)$ dallo spettro di sorgente $As(\omega)$ viene calcolato il rapporto spettrale modificato $Sm(\omega)$ come:

$$Sm(\omega) = Se(\omega) / As(\omega) = (Hs(\omega)/Vs(\omega)) / (Hb(\omega)/Vb(\omega)) \quad (3)$$

Nakamura assume infine che per tutte le frequenze di interesse $Hb(\omega)/Vb(\omega) = 1$, basandosi su registrazioni, sperimentalmente verificate da lui, di microtremori in pozzo; quindi l'effetto di sito modificato $Sm(\omega)$ è descritto da:

$$Sm(\omega) = Se(\omega) / As(\omega) = Hs(\omega)/Vs(\omega) \quad (4)$$

La frequenza di risonanza è ricercata al primo picco individuato dal rapporto tra la componente orizzontale e quella verticale dei segnali registrati.

Stratigrafia sismica

Le misure di microtremori vengono anche utilizzate per valutazioni stratigrafiche o, alternativamente, di velocità delle onde di taglio (Vs). Il metodo risulta molto semplice ed intuitivo nell'ipotesi di un sottosuolo stratificato orizzontalmente e i cui parametri variano solo con la profondità (sistema monodimensionale 1D).

Nel caso ideale di un sottosuolo formato da due soli strati (la copertura (1) ed il bedrock (2)), separati da una superficie orizzontale e distinguibili per un diverso valore di impedenza sismica, ovvero per differenti densità e/o velocità delle onde sismiche, un'onda che viaggia nel mezzo (1) viene parzialmente riflessa dall'orizzonte che separa i due strati. L'onda così riflessa interferisce con quelle incidenti, sommandosi e raggiungendo le massime ampiezze di oscillazione (condizione di risonanza), quando la sua lunghezza d'onda λ è 4 volte (o suoi multipli dispari) lo spessore h del primo strato. In altre parole la frequenza fondamentale di risonanza f_r della copertura (mezzo (1)), relativa alle onde P è pari a:

$$f_r = V_{P1} / (4 h) \quad (5)$$

mentre quella relativa alle onde S è:

$$f_r = V_{S1} / (4 h) \quad (6)$$

Teoricamente questo effetto è sommabile cosicché la curva HVSR mostra come massimi relativi le frequenze di risonanza dei vari strati alle varie profondità. Questo, insieme ad una stima degli spessori degli strati, che è solitamente disponibile almeno a livello di massima, è in grado di fornire previsioni sulle velocità di propagazione delle onde sismiche nel sottosuolo.

Il problema principale di questa visione è che i microtremori sono solo in parte costituiti da onde di volume, P o S. Essi sono costituiti in misura molto maggiore da onde superficiali e in particolare da onde di Rayleigh, tuttavia ci si può ricondurre a risonanza delle onde di volume poiché le onde di superficie sono prodotte dall'interferenza costruttiva di queste ultime.

Per affinare il risultato interpretativo in termini di sismostrati si procede creando curve sintetiche H/V simulando il campo di onde di superficie (Rayleigh e Love) in sistemi multistrato a strati

piani e paralleli secondo la teoria descritta in Aki (1964)¹ e Ben-Menahem e Singh (1981)². Il modello, opportunamente applicato, può essere considerato uno stimatore del profilo di Vs con errori confrontabili a quelli di metodi più tradizionali, per lo meno nei primi 30 metri di profondità³.

Analisi dei risultati

I dati misurati dallo strumento sono stati elaborati e interpretati fornendo un report finale così strutturato:

Dati delle misura.	Ora di inizio e fine registrazione, frequenza di campionamento, ecc.
Horizontal to vertical spectral ratio	Grafico H/V
H/V Time history	Grafico Time history del rapporto H/V
Directional H/V	Grafico Direzionalità del rapporto H/V
Single component spectra	Grafico delle singole componenti spettrali
Experimental vs. sintetic H/V	Sovrapposizione della curva sperimenta alla curva H/V e istogramma Velocità/Profondità

Nel sito di indagine è stata effettuata una misura di sismica passiva a stazione singola della durata di 20' allo scopo di individuare le frequenze di risonanza fondamentali dei terreni e il profilo di velocità delle onde di taglio, per poter procedere all'identificazione della categoria di sottosuolo (D.M. 14/01/08). L'utilizzo di un appropriato programma di inversione ha permesso di ricostruire il profilo di velocità in onde S del sottosuolo sulla base del confronto tra stratigrafia e curve H/V e spettrali.

La traccia acquisita mostra un andamento abbastanza regolare nei 3 differenti domini di frequenza: alta, media e bassa. In generale si tratta di passaggi di impedenza abbastanza contenuti, tant'è che la curva ottenuta dalla registrazione ha un aspetto abbastanza piatto.

Partendo con l'analisi della traccia dalle alte frequenze, sono stati individuati passaggi abbastanza gradual, con picchi locali dall'aspetto dilatato ed un'intensità massima nel rapporto H/V di circa 1,5.

Passando al dominio delle frequenze medie i passaggi di impedenza sono molto contenuti e gradual, che non danno luogo ad un massimo locale di una qualsiasi evidenza.

Arrivando infine nelle basse frequenze, l'ultimo massimo locale (che risulta poi essere il picco fondamentale dell'intera misura) è stato registrato tra le frequenze di circa 1 e 0,9 Hz, con un valore di H/V di circa 2,0.

In sintesi:

- Alle frequenze di interesse ingegneristico (1Hz-11 Hz), si può fare riferimento alla frequenza di circa 1 Hz che può dare luogo a fenomeni di doppia risonanza sismica.
- In corrispondenza del sito i terreni presentano velocità Vs₃₀ di 232 m/s. Si fa riferimento al parametro sui 30 m, perché il *bedrock* sismico è posto a profondità molto superiori.
- In base al modello sismico emerso la velocità delle Vs₃₀ rientra nella categoria di suolo sismico C (NTC 2008).

¹ Aki K., 1964. A note on the use of microseisms in determining the shallow structures of the earth's crust, *Geophysics*, 29, 665-666

² Ben -Menahem A. e Singh S.J., 1981. *Seismic Waves and Sources*, Springer-Verlag, New York

³ Castellaro S., 2007. Un'introduzione all'inversione teorica delle curve H/V a fini stratigrafici. Micromed s.p.a.

CONSIDERAZIONI SULLA SISMICITA' DELL'AREA

Classificazione sismica secondo l'O.P.C.M. n° 3274 del 20 marzo 2003

Secondo la classificazione sismica dei comuni dell'Emilia-Romagna, ai sensi dell'Ordinanza del Presidente del Consiglio dei Ministri 20 marzo 2003, n° 3274, il comune di San Pietro in Casale viene classificato in Zona 3.

Categoria topografica

Visto il contesto geologico e morfologico dell'area, come coefficiente per gli effetti di amplificazione topografica, si potrà far riferimento ad una categoria T1, che esprime la sostanziale assenza di fenomeni di amplificazione sismica dovuti a fattori topografici.

Categoria	Caratteristiche della superficie topografica
→ T1	Superficie pianeggiante, pendii e rilievi isolati con inclinazione media $i \leq 15^\circ$
T2	Pendii con inclinazione media $i > 15^\circ$
T3	Rilievi con larghezza in cresta molto minore che alla base e inclinazione media $15^\circ \leq i \leq 30^\circ$
T4	Rilievi con larghezza in cresta molto minore che alla base e inclinazione media $i > 30^\circ$

Tabella 4: categorie topografiche individuate in normativa e relativa descrizione.

Storia sismica dell'area

Dalla consultazione della mappa interattiva dei sismi storici (dal 217 A.C – 2002, tratto da "Portale Abruzzo"), si evince che il comune oggetto di studio non è stato interessato storicamente da terremoti di alta intensità.

Dall'elenco dei terremoti storici tratto da Portale Abruzzo, si può osservare che tra gli eventi sismici più importanti, avvenuti in un raggio di 30 km dalla zona oggetto di studio, il movimento tellurico più significativo è avvenuto nel comune di Molinella nel 1796 dove si sono avute magnitudo di 5,63 (Mw), ad una distanza di circa 23 km dal lotto in esame.

Passando all'analisi della situazione sismica recente, il terremoto più significativo, nello stesso intorno, si è verificato a circa 25 km dal comune oggetto di studio, con magnitudo di 5,9, appartenente allo sciame sismico del maggio-giugno 2012. Di seguito sono riportate le mappe dei terremoti storici e di quelli attuali ed i rispettivi elenchi dei principali eventi sismici, con relativa data, magnitudo, zona epicentrale e distanza di quest'ultima dal comune in cui ricade l'intervento in progetto.

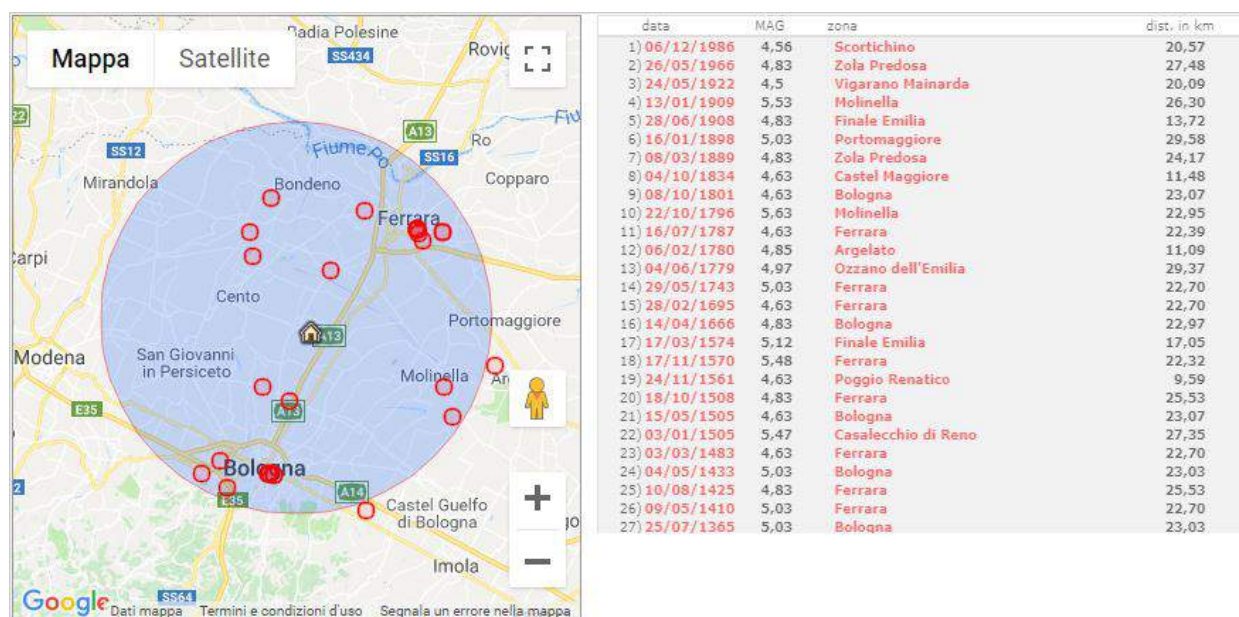


Figura 2: mappa delle zone epicentrali ed elenco dei terremoti storici nel raggio di 30 km dal comune in oggetto, tratto da Portale Abruzzo.

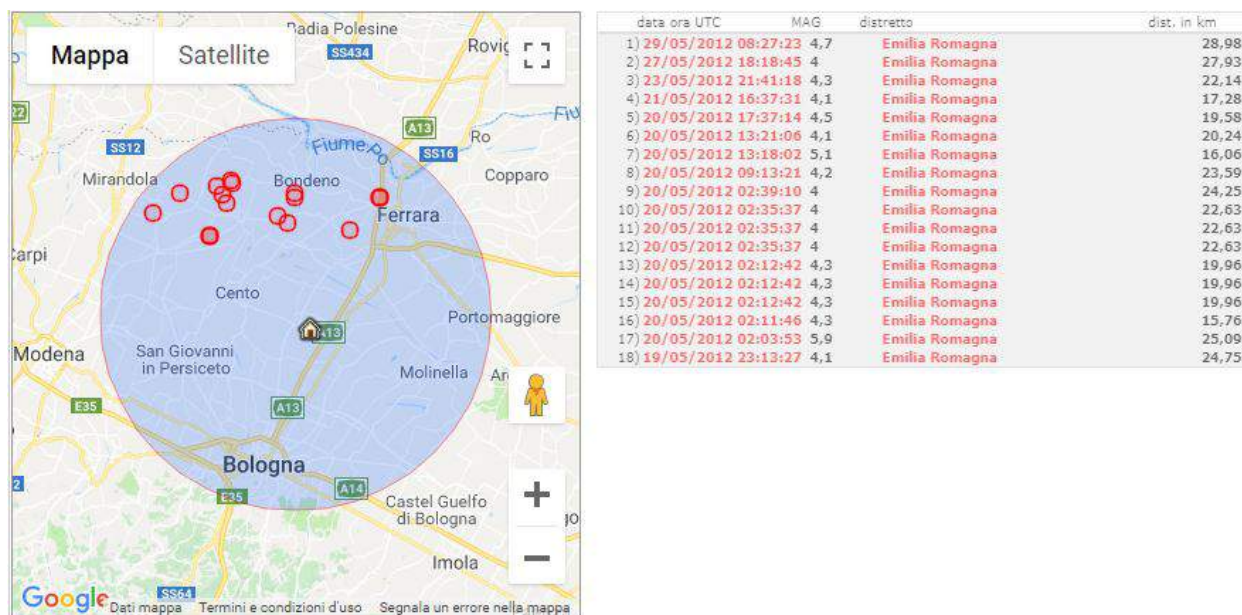


Figura 3: mappa delle zone epicentrali ed elenco dei terremoti recenti nel raggio di 30 km dal comune in oggetto, tratto da Portale Abruzzo.

Zone e sorgenti sismogenetiche

Dalla consultazione della on line della mappa sismogenetica (zonazione sismogenetica ZS9 e distribuzione delle sorgenti sismogenetiche DISS 3) si evince che l'area oggetto di studio risulta ubicata all'interno della fascia di interesse della zona sismogenetica denominata: ITCS051: Carpi – Poggio Renatico, una struttura a carattere regionale, su cui la massima magnitudo attesa è di 6.0 (Mw – Magnitudo momento). Si tratta di una struttura a cui sono collegate due sorgenti sismogenetiche: ITIS091 Casalecchio di Reno ed ITIS103: Crespellano. Di seguito viene riportata l'ubicazione geografica delle strutture sismogenetiche.

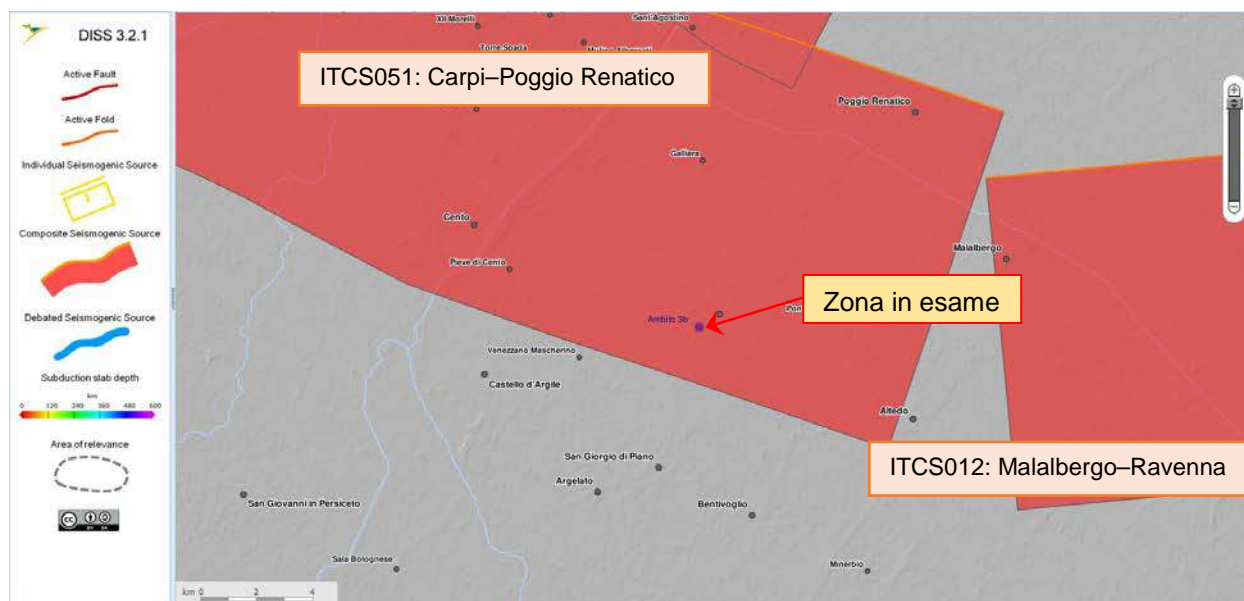


Figura 4: Mappa delle zone (ITCS) e sorgenti (ITIS) sismogenetiche collocate nell'intorno della località di Crespellano.

Pericolosità sismica da PTCP

Al fine di offrire una più completa connotazione sismica del contesto in cui ricade l'area in oggetto, si è proceduto alla consultazione dello studio di microzonazione sismica messo a disposizione dalla Città metropolitana di Bologna, con la recente revisione del PTCP (Aprile 2017), in cui è inclusa una variante in materia sismica.

In particolare è stata consultata la carta di "Rischio sismico: carta delle aree suscettibili di effetti locali" (Tav.2c). In questa tavola l'area in oggetto ricade all'interno di un'ampia zona omogenea, caratterizzata da una campitura che viene descritta come: "L1 – Area soggetta ad amplificazione per caratteristiche litologiche ed a potenziale presenza di terreni predisponenti la liquefazione". Lo studio dell'amplificazione sismica è stato affrontato nel capitolo dedicato alle indagini sismiche, mentre le verifiche alla liquefazione, nel paragrafo successivo.



Figura 5: estratto della carta di Rischio sismico (Tav2c): carta delle aree suscettibili di effetti locali.

SUSCETTIBILITÀ ALLA LIQUEFAZIONE DEI TERRENI E RELATIVE VERIFICHE

In condizioni sismiche, il termine "liquefazione" comprende una serie di fenomeni associati alla perdita di resistenza al taglio o ad accumulo di deformazioni plastiche in terreni saturi, prevalentemente sabbiosi, sollecitati da azioni cicliche e dinamiche che agiscono in condizioni non drenate. Tali fenomeni sono collegati allo sviluppo di sovrappressioni interstiziali che, se positive, causano una riduzione della tensione media efficace presente nel terreno e, quindi, una riduzione della resistenza a taglio. La riduzione della resistenza può rappresentare solo una condizione temporanea, seguita da un successivo recupero, o può indurre nel terreno una condizione di collasso generalizzata e definitiva.

L'avvenuta liquefazione si manifesta, in condizioni di *free-field* (cioè in assenza di manufatti sulla superficie del deposito), attraverso la formazione di vulcanelli di sabbia, rotture o spostamenti laterali del terreno, ovvero in presenza di manufatti, attraverso la perdita di capacità portante e/o lo sviluppo di elevati cedimenti e rotazioni.

Durante l'evento sismico, se la superficie del piano campagna è orizzontale questo può subire oscillazioni di grande ampiezza. Al termine della sollecitazione, la dissipazione delle sovrappressioni interstiziali e il conseguente riassetto dei grani possono dar luogo a fenomeni di subsidenza. I fattori principali che rendono i terreni suscettibili alla liquefazione sono legati alle caratteristiche geologiche, geotecniche e sismiche del territorio.

In base alla normativa vigente la verifica a liquefazione può essere omessa quando si manifesti almeno una delle seguenti circostanze:

- eventi sismici attesi di magnitudo M inferiore a 5;
- accelerazioni massime attese al piano campagna in assenza di manufatti (condizioni di campo libero) minori di $0,1g$;
- profondità media stagionale della falda superiore a 15 m dal piano campagna, per piano campagna sub-orizzontale e strutture con fondazioni superficiali;
- depositi costituiti da sabbie pulite con resistenza penetrometrica normalizzata $(N1)_{60} > 30$ oppure $qc_{1N} > 180$ dove $(N1)_{60}$ è il valore della resistenza determinata in prove penetrometriche dinamiche (Standard Penetration Test) normalizzata ad una tensione efficace verticale di 100 KPa e qc_{1N} è il valore della resistenza determinata in prove penetrometriche statiche (Cone Penetration Test) normalizzata ad una tensione efficace verticale di 100 KPa;
- distribuzione granulometrica esterna alle zone indicate nella Figura 7.11.1(a) nel caso di terreni con coefficiente di uniformità $U_c < 3,5$ ed in Figura 7.11.1(b) nel caso di terreni con coefficiente di uniformità $U_c > 3,5$.

Verifica a liquefazione dei terreni

Nel caso in esame, la stratigrafia mostra la presenza di alcuni livelli a comportamento granulare in falda. Si ricorda che la falda in questo caso è stata volutamente considerata a quote subsuperficiali, solo al fine di poter condurre verifiche in favore della sicurezza. Su tali livelli sono eseguite verifiche mediante un software dedicato per la determinazione della tendenza alla liquefazione: C-LIQ della GeologisMiki s.r.l., nel quale è possibile avvalersi di correlazioni efficaci per la rappresentazione quantitativa dei reali pericoli derivanti dalla liquefazione (vedi allegati).

Il metodo utilizzato per i calcoli è quello elaborato da Robertson (NCEER R&W 1998,2009).

Una volta determinato il profilo del fattore di sicurezza FS , si calcola l'indice di potenziale liquefazione IL , secondo la formulazione di Iwasaki et al. (1982), in cui si tiene conto dell'entità del FS , dello spessore dell'intervallo di calcolo e della profondità a cui è riferito:

$$IL = \sum_{i=1}^n F(W(z)) \Delta z$$

dove IL indica il rischio di liquefazione definito secondo la seguente tabella:

Valori di I_L	Rischio di liquefazione
$I_L = 0$	Molto basso
$0 < I_L \leq 5$	Basso
$5 < I_L \leq 15$	Alto
$15 < I_L$	Molto alto

Sulla base dei risultati delle prove penetrometriche statiche sono state condotte verifiche alla liquefazione considerando i seguenti dati di input:

Magnitudo = 6,00 (M_w)

P.G.A. = 0,24 g (Peak Ground Acceleration)

Livello falda = -1,00 m dal p.c. (durante il sisma)

Nel seguente istogramma vengono presentati i risultati delle verifiche eseguite sulle verticali di prova penetrometrica CPTU.



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Project title : San Pietro in Casale
Location : Via Carlo Alberto Dalla Chiesa

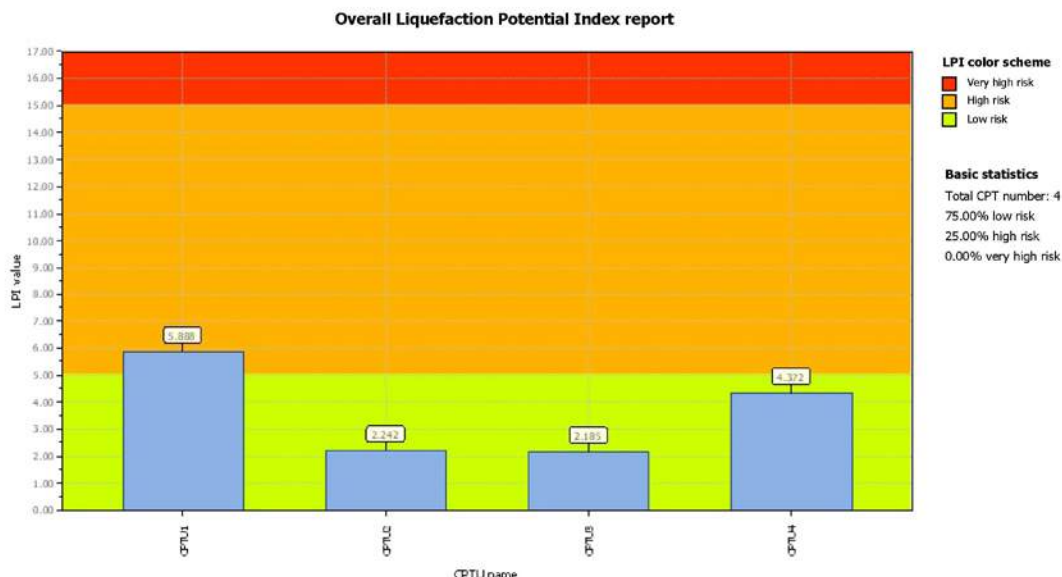


Figura 6: indice di potenziale liquefazione (IL), stimato nelle verticali di prova penetrometrica.

I risultati delle verifiche mostrano la propensione locale al fenomeno della liquefazione, con un superamento netto nel caso della CPTU1, le prove 2 e 3 con una probabilità di liquefazione moderata e l'ultima verticale di prova che approssima il limite con l'alto rischio di liquefazione. (Vedi report a fine allegati a fine testo). Si consideri anche la quota della falda considerata volutamente a stazionamento subsuperficiale, che però non è un'ipotesi del tutto inverosimile, per lo meno per alcuni periodi dell'anno.

A seguito di questa verifica non è possibile inserire il terreno indagato in una categoria di sottosuolo con approccio semplificato e quindi si procede ad uno studio approfondito della risposta sismica locale per poi ripetere le verifiche con la PGA calcolata.

CALCOLO DELLA RISPOSTA SISMICA LOCALE CON APPROFONDIMENTO

La Regione Emilia Romagna con Delibera dell'Assemblea legislativa progr. n.112, oggetto n.3121 del 2 maggio 2007 ha definito gli Indirizzi per gli studi di microzonazione sismica per la pianificazione territoriale e urbanistica.

Nel terzo livello di approfondimento sono richiesti i seguenti elaborati:

- Perimetrazione dettagliata delle aree oggetto delle indagini;
- spettri di risposta riferiti a tali aree, per un periodo di ritorno di 475 anni con smorzamento $\zeta=5\%$ e le mappe di amplificazione in termini di:

- 1) PGA/PGA_0 ;
- 2) SI/SI_0 .

Nel presente studio il livello di approfondimento è richiesto per la valutazione dei possibili fenomeni di liquefazione e, pertanto, il parametro richiesto è l'accelerazione di picco attesa (PGA), definita come la massima accelerazione orizzontale (Peak Ground Acceleration) alla superficie, risultante dallo studio di risposta sismica locale.

Negli studi di risposta sismica locale (RSL) è necessario valutare gli effetti della topografia; la delibera sopra citata indica che gli effetti topografici possono essere trascurati per pendii con inclinazione media inferiore a 15°, di conseguenza nel presente studio essi saranno omessi ed il problema sarà ricondotto ad un modello di superficie topografica e stratigrafia piano-parallela.

Definizione del profilo sismostratigrafico

Il profilo sismostratigrafico deriva da specifiche indagini eseguite nell'area in studio e dall'analisi di stratigrafie e profili geologici reperiti dall'archivio della Regione Emilia Romagna. In particolare sono state utilizzate le informazioni presenti nel Piano Strutturale Comunale del comune di San Pietro in Casale (PSC). Per l'individuazione del bedrock sismico si è fatto riferimento alla sezione geologica, derivata dalle sezioni del progetto CARG (figura 1), prodotta nell'ambito di studi⁴ sui fenomeni di liquefazione verificatisi nell'area di San Carlo - Mirabello, di altri specifici studi⁵, e all'interpretazione di specifiche indagini HVSR; dalla sezione stratigrafica citata si evidenzia la presenza del substrato sismico (bedrock sismico) a profondità dell'ordine dei 130 metri.

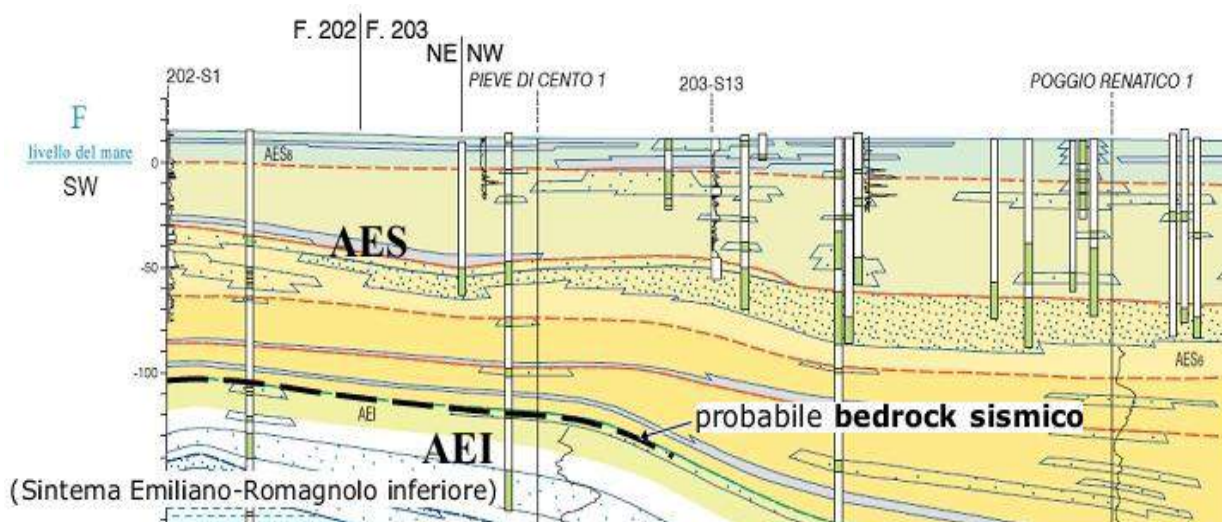


Figura 7: Sezione stratigrafica derivata dalla cartografia geologica in scala 1:50000 del progetto CARG, fogli 202 e 203. Modificato da L. Calabrese, L. Martelli, P. Severi, 2012.

Nella figura seguente è riportato il grafico HVSR di una delle prove eseguite nel sito in studio, utilizzato per la ricostruzione del profilo di Vs mediante procedimento di inversione (linea in blu).

⁴ L. Calabrese, L. Martelli, P. Severi. Stratigrafia dell'area interessata dai fenomeni di liquefazione durante il terremoto dell'Emilia (maggio 2012). Gruppo Nazionale di Geofisica della terra solida, 31° Convegno Nazionale - Potenza, 20-22 Novembre 2012.

⁵ J. Facciorusso, C. Madiati, G. Vannucchi. Risposta sismica locale e pericolosità sismica di liquefazione a San Carlo d Mirabello (FE). Università degli studi di Firenze, Facoltà di Ingegneria – Sezione Geotecnica, Ottobre 2012.

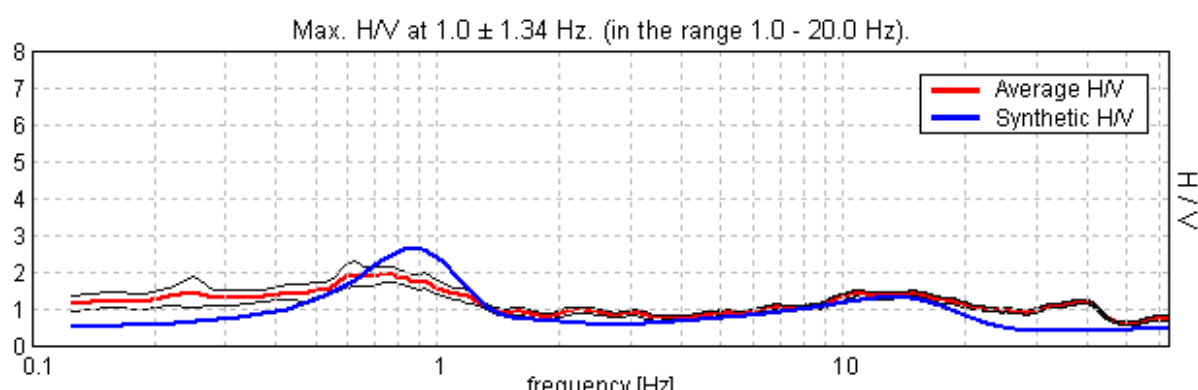
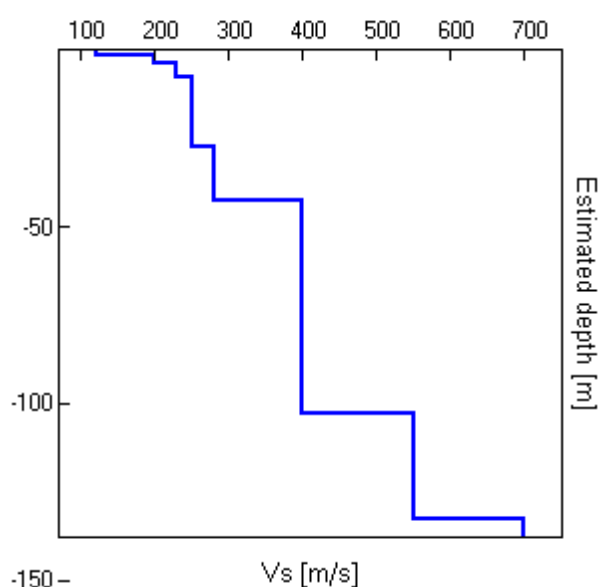


Figura 8: Grafico della prova HVSr eseguita nel sito in studio con sovrapposizione della curva di inversione (linea in blu) utilizzata per la definizione del profilo di Vs.

La sintesi di quanto fin qui esposto in termini di determinazione del profilo di Vs (velocità delle onde di taglio) è riportato nel grafico e tabella seguenti:



Profondità alla base del livello [m]	Spessore [m]	Vs [m/s]
1.60	1.60	120
3.60	2.00	200
7.60	4.00	230
27.60	20.00	250
42.60	15.00	280
102.60	60.00	400
132.60	30.00	550
inf.	inf.	700

Figura 9: profilo di Vs.

Caratterizzazione sismica – categoria di sottosuolo

La caratterizzazione sismica è finalizzata alla definizione dell'Azione Sismica di Progetto ai sensi del capitolo 3.2 del D.M.17/01/18 (Aggiornamento delle Norme Tecniche per le Costruzioni).

In termini di approccio semplificato il parametro $V_{s_{eq}}$, ossia la velocità media equivalente delle onde di taglio, in questo caso pari alla media nei primi 30 metri di sottosuolo, è stato calcolato facendo riferimento al profilo di V_s della figura 4 ed è risultato pari a 232 m/s, di conseguenza la categoria di sottosuolo risulta essere la C, così come definita dalla tabella 3.2.II delle NTC.

Spessore	V_s
1,6	120
2	200
3	230
1	230
1	250
19	250
2,4	280
Profondità	30 m
V_{s30}	232 m/sec

Figura 10: profilo di V_s .

Caratterizzazione sismica – studio di risposta sismica locale

Lo studio di risposta sismica locale (RSL) è stato svolto mediante modellazioni numeriche monodimensionali per le quali è stato utilizzato il software STRATA6, che consente di effettuare analisi lineari-elastiche (EL) e lineari-equivalenti (EQL); nelle analisi lineari equivalenti la relazione non lineare tra sforzi e deformazioni viene risolta attraverso analisi lineari complete nelle quali, al termine di ogni analisi vengono aggiornati i parametri di RIGIDEZZA e SMORZAMENTO e, con procedimento iterativo, si prosegue l'analisi fino al raggiungimento di una convergenza dei risultati ad un valore imposto. Si opera nel campo delle tensioni totali, utilizzando un modello a strati piano-paralleli di estensione orizzontale infinita, continui ed omogenei a comportamento viscoelastico linearizzato (modello di Kelvin-Voigt) posti su un semispazio sul quale si applica il moto di input (bedrock sismico). Ogni strato è caratterizzato da:

1. Densità;
2. Rigidezza al taglio o *modulo di taglio*;
3. Smorzamento o *rapporto di smorzamento (damping)*;
4. Spessore dello strato.

Per l'elaborazione sono necessari i seguenti dati in ingresso:

5. Segnali di input;
6. Profilo di velocità;
7. Curve di decadimento del modulo di rigidezza al taglio e di variazione dello smorzamento per i diversi terreni costituenti il sottosuolo in studio, per analisi lineari-equivalenti.

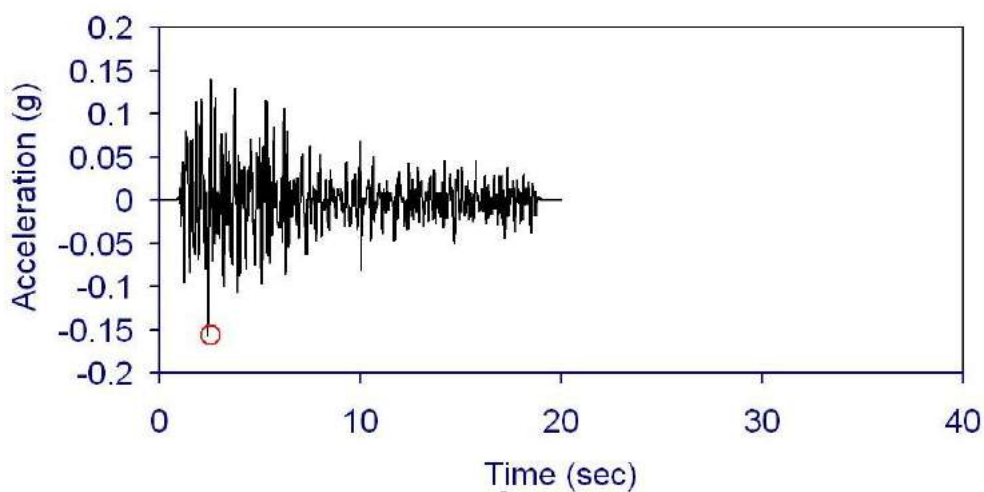
⁶ Technical **Manual** for **Strata**. Albert R. Kottke. Department of Civil, Architectural and Environmental Engineering. University of Texas, Austin. Ellen M. Rathje. Department of Civil, Architectural and Environmental Engineering. University of Texas

Segnali di input

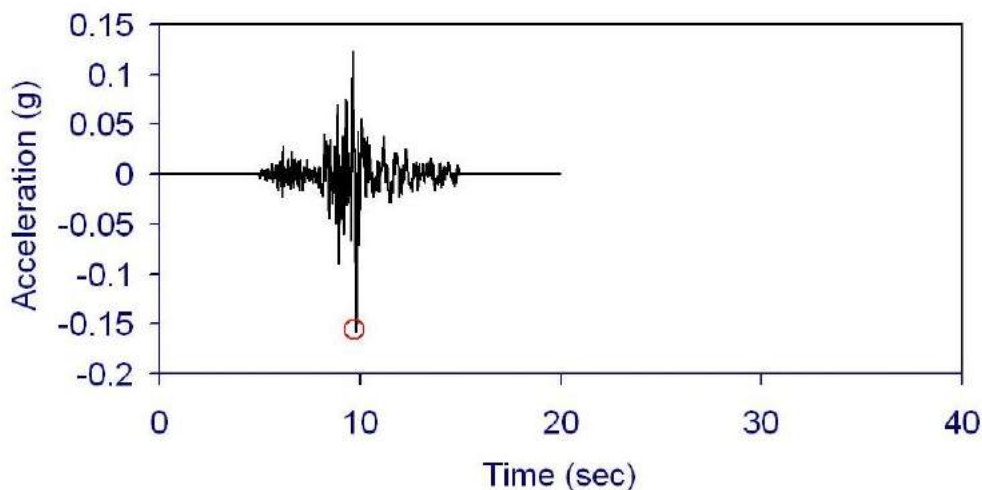
I segnali da utilizzare nelle analisi di terzo livello sono forniti dalla Regione Emilia Romagna per ogni comune e sono rappresentativi dello scuotimento atteso su un suolo di riferimento, inteso come la superficie al di sotto della quale si può assumere una velocità di propagazione delle onde di taglio (V_s) superiore o uguale a 800 m/s.

Per il comune di San Pietro in Casale l'accelerazione massima orizzontale di picco al suolo (a_{refg}), espressa in frazione dell'accelerazione di gravità g , è pari a 0,158.

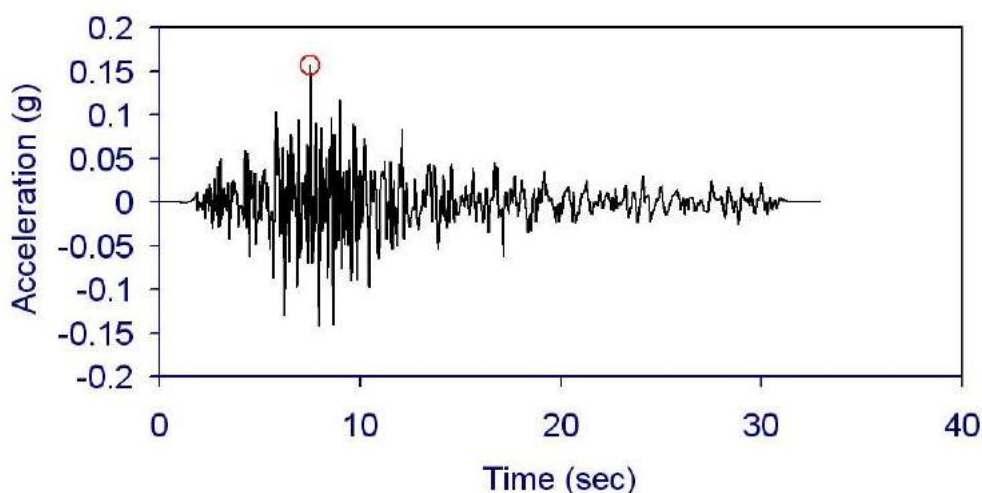
Di seguito sono mostrati gli accelerogrammi dei tre segnali di input ed il corrispondente nome di riferimento:



000046xa_037055SanPietroInCasale.xy



000126xa_037055SanPietroInCasale.xy



000354xa_037055SanPietroInCasale.xy

Profilo sismostratigrafico e curve di variazione di G e D

Il profilo di velocità utilizzato nella modellazione dinamica monodimensionale è già stato illustrato nel capitolo 2, e ad esso è stato affiancato un corrispondente profilo lito-stratigrafico. Una volta discretizzato il sottosuolo in unità omogenee si è associato ad ognuna di esse una curva di decadimento del modulo di rigidezza al taglio ($G/G_0-\gamma$) e di variazione dello smorzamento ($D-\gamma$), definendo i cosiddetti *SoilType* nel software STRATA (figura 9).

	Name	Weight (kN)	G/G_{max} Model	Damping Model
1	Limi argillosi e sabbiosi	18.00	Limi, limi argillo-sabbiosi eluvio-colluv. (COLL) MZ-M3 (L'Aquila)	Limi, limi argillo-sabbiosi eluvio-colluv. (COLL) MZ-M3 (L'Aquila)
2	Sabbie limose	18.00	Sabbie limose alluvionali (ALL) MZ-M3 (L'Aquila)	Sabbie limose alluvionali (ALL) MZ-M3 (L'Aquila)
3	Argille IP=30	19.00	Vucetic & Dobry, PI = 30	Vucetic & Dobry, PI = 30
4	Argille IP=15	20.00	Vucetic & Dobry, PI = 15	Vucetic & Dobry, PI = 15

Figura 11: screenshot della tabella "SoilType" del software STRATA, relativo alla modellazione numerica monodimensionale.

Le curve sono state opportunamente scelte in funzione di diversi parametri quali la litologia, la pressione di confinamento, il grado di sovraconsolidazione e l'indice di plasticità (figura 14).

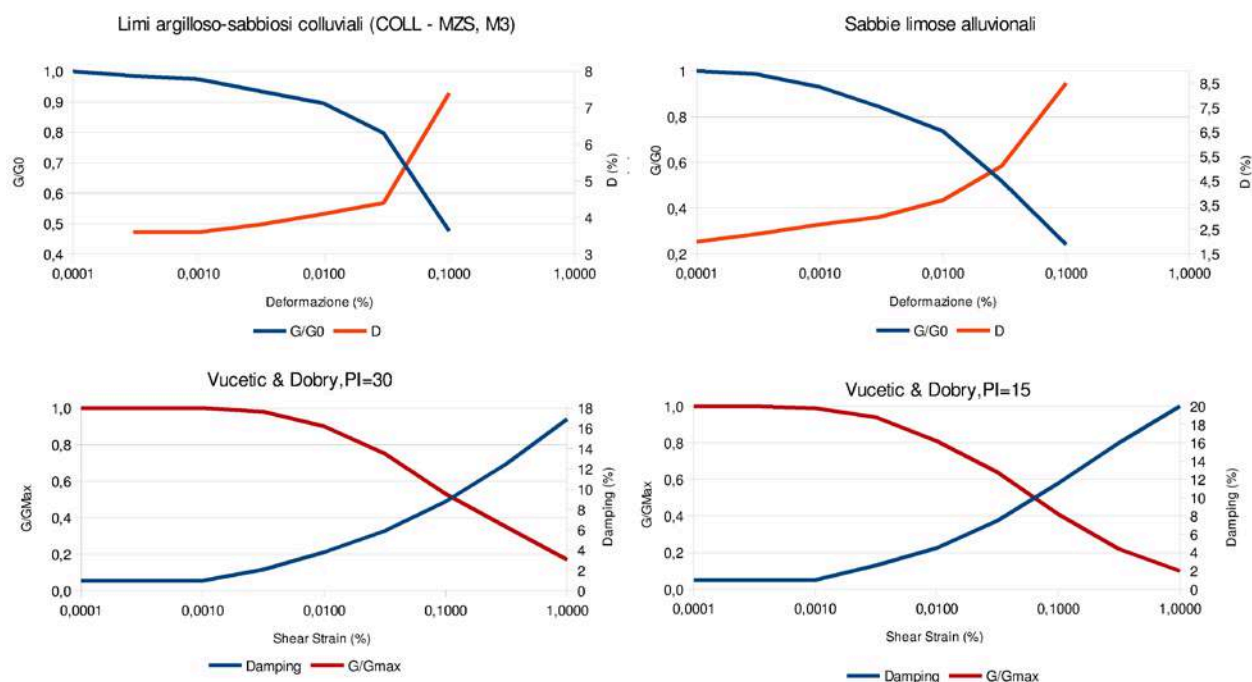


Figura 12: Grafici G/G_0 - γ e D - γ per le diverse tipologie di suolo caratterizzate nel profilo di calcolo.

Nella successiva figura sono riportati, a sintesi delle elaborazioni sismostratigrafiche e di caratterizzazione dinamica del sottosuolo, il già visto profilo di **vs** e la schermata **Soil Profile** di Strata, ossia le informazioni che, unitamente ai terremoti di input, costituiscono i dati in ingresso del software di analisi monodimensionale.

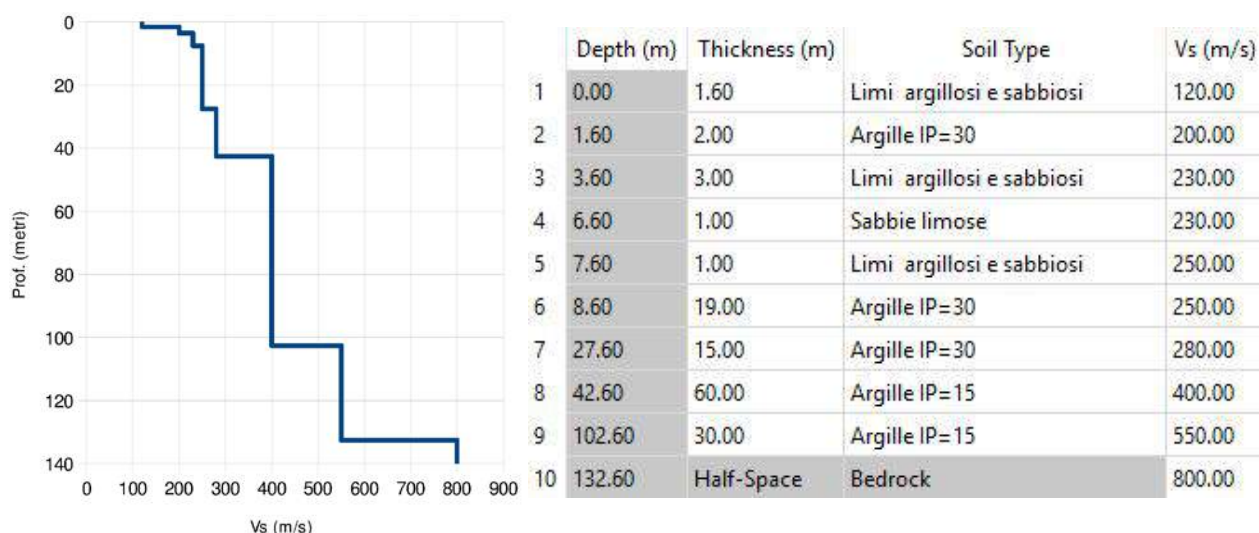


Figura 13: Profilo di velocità delle onde di taglio e associazione SoilType e Vs nella schermata SoilProfile del software STRATA.

Le modellazioni sono state svolte in condizioni lineari equivalenti (EQL) e i risultati sono, in prima approssimazione, costituiti da accelerogrammi, definiti di OUTPUT, i quali costituiscono la risposta alla superficie topografica o alla profondità scelta, in termini di storia temporale delle accelerazioni, allo specifico input imposto al tetto del bedrock sismico.

Passando dal *dominio del tempo* al *dominio delle frequenze* (o periodi) la risposta sismica viene espressa dapprima in termini di *spettro di Fourier* e quindi di *spettro di risposta* per un dato smorzamento, che nel caso in questione è del 5%; successivamente si può procedere alla normalizzazione dello spettro puntuale utilizzando le indicazioni contenute negli *Indirizzi e Criteri per la Microzonazione Sismica*⁷ o criteri arbitrari legati all'approssimazione geometrica della forma spettrale. Il risultato consiste, infine, in una serie di valori di accelerazione spettrale (S_a) associati ai diversi valori di periodo (T).

Per avere un riscontro quanto più possibile oggettivo del risultato ottenuto, almeno per quanto attiene al modello sismostratigrafico utilizzato, si può confrontare la funzione di trasferimento ottenuta dalla modellazione (ossia il rapporto tra gli spettri di Fourier alla superficie e al bedrock) con una misura di rumore ambientale (HVSr), in quanto entrambi descrivono gli effetti derivati dalle sole caratteristiche locali, prive cioè degli effetti dovuti al contenuto in frequenza dell'input sismico. Nella figura che segue è riportata la funzione di trasferimento, che confrontata con il grafico di figura 10 consente di verificare in entrambi i casi il massimo picco alla frequenza di circa 0,7-0,8 Hz, avendo in questo modo un'immediata conferma della corretta definizione del problema.

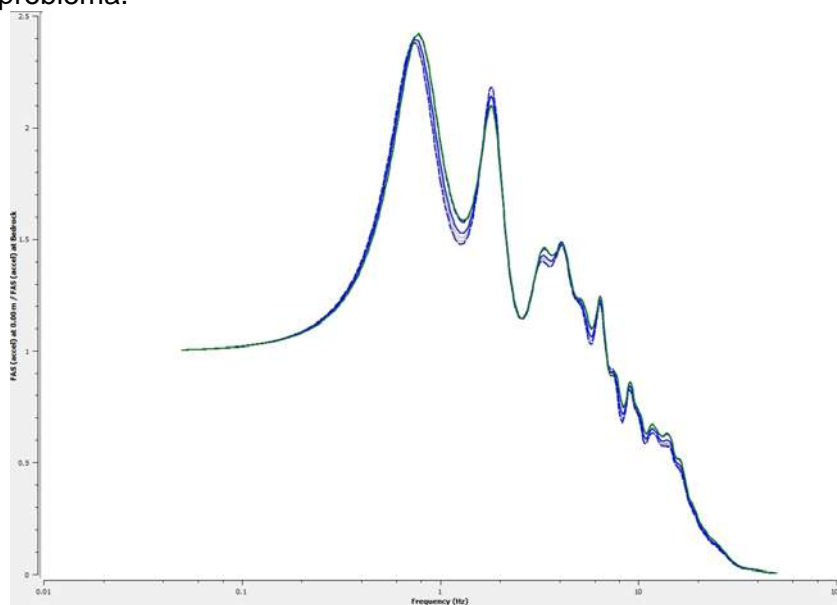


Figura 14: Grafico della funzione di trasferimento ottenuto dalla modellazione numerica di risposta sismica locale.

Come riferimento per le successive analisi e confronti è necessario valutare i parametri della pericolosità di base del sito di progetto, che per tempi di ritorno di 475 anni, ossia corrispondenti allo stato limite di salvaguardia della vita (SLV), sono riportati nella tabella seguente:

⁷ Gruppo di lavoro MS, 2008. Indirizzi e criteri per la microzonazione sismica. Conferenza delle Regioni e delle Province autonome - Dipartimento della protezione civile, Roma, 3 vol. e Dvd.

SLATO LIMITE	T_R [anni]	a_g [g]	F_0 [-]	T_C^* [s]
SLO	30	0.045	2.491	0.258
SLD	50	0.057	2.489	0.270
SLV	475	0.158	2.588	0.274
SLC	975	0.210	2.530	0.281

Nella figura seguente è sintetizzato il risultato dello studio in termini di spettri di risposta elastici, riportando lo spettro di riferimento per la spettro-compatibilità degli eventi di input, lo spettro medio degli input e lo spettro medio degli output.

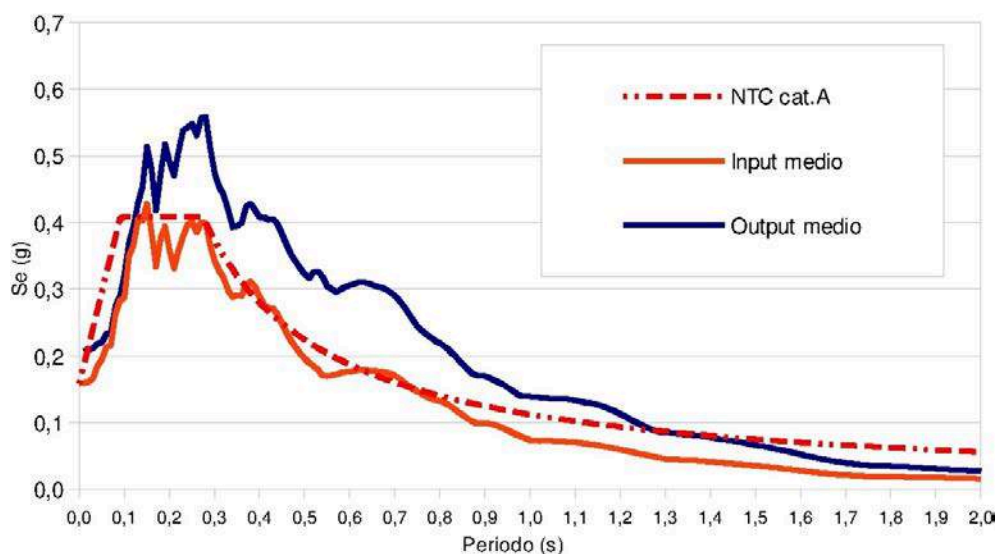


Figura 15: Il grafico mostra lo spettro di risposta elastico di riferimento ai fini della verifica di spettro-compatibilità dei terremoti di input (NTC cat. A), lo spettro medio dei tre eventi utilizzati come input (Input medio) e lo spettro medio risultante dalla modellazione di RSL (Output medio).

La prossima figura riporta il confronto tra lo spettro ottenuto dalla modellazione numerica e lo spettro che compete al sito di progetto dall'applicazione dell'approccio semplificato delle vigenti NTC, ossia lo spettro per categoria di sottosuolo C.

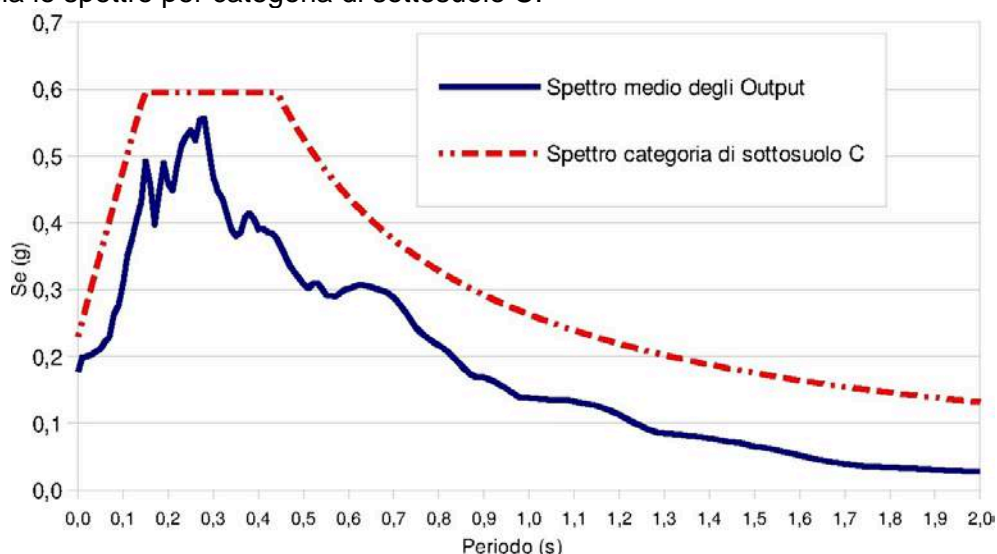


Figura 16: Il grafico mostra lo spettro di risposta elastico medio risultante dalla modellazione (Spettro medio degli Output) e lo spettro derivato dalla categoria di sottosuolo C (Spettro categoria di sottosuolo C) che compete, per valore di $V_s,30$, al sito di progetto.

Dal grafico si evince che lo spettro della categoria di sottosuolo C è decisamente più cautelativo dello spettro risultante dalla modellazione numerica monodimensionale.

In termini di PGA, che di fatto rappresenta il parametro di interesse per il presente studio, abbiamo i seguenti valori:

RIFERIMENTO	PGA (Accelerazione picco, accelerazione spettrale a periodo zero)	a_{gmax} di (Accelerazione riferimento per sito di progetto)	FA_{PGA} di (Fattore di amplificazione della $PGA=PGA/a_{gmax}$)
Studio di risposta sismica locale	0,177	0,158	1,12
Approccio semplificato NTC, cat. C	0,230		1,45

Anche in questo caso, ovviamente, abbiamo conferma del fatto che il risultato della modellazione ha fornito un valore di PGA inferiore a quello derivato dall'applicazione delle vigenti NTC. Il risultato è dovuto al fatto che in presenza di substrati sismici profondi, in questo caso è stato posto a 132,6 metri di profondità, si ha un'attenuazione della sollecitazione sismica dovuta alla distanza percorsa dalle onde ma anche all'effetto dissipativo dei terreni *teneri* che costituiscono buona parte del sottosuolo di interesse.

In considerazione di quanto fin qui esposto si ritiene corretto l'utilizzo dei parametri risultanti dall'applicazione dell'approccio semplificato delle vigenti NTC in quanto maggiormente cautelativi rispetto al risultato della modellazione numerica di risposta sismica locale.

VERIFICA A LIQUEFAZIONE CON P.G.A. CALCOLATA DA R.S.L.

Sulla base dei risultati ottenuti dal calcolo della risposta sismica locale, in particolare per quanto concerne al calcolo della *peak ground acceleration*, sono state ripetute le verifiche a liquefazione per i terreni di studio con i parametri posti di seguito:

Magnitudo = 6,00 (Mw)

P.G.A. = 0,18 g (Peak Ground Acceleration)

Livello falda = -1,00 m dal p.c. (durante il sisma)

Nel seguente istogramma vengono presentati i risultati delle verifiche eseguite sulle verticali di prova penetrometrica CPTU.

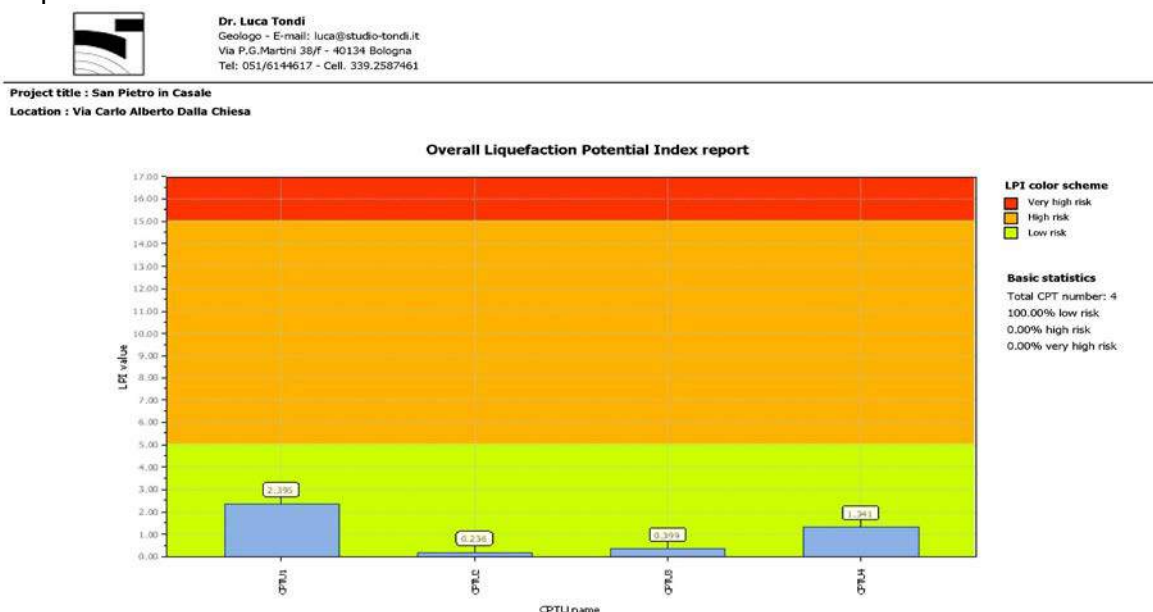


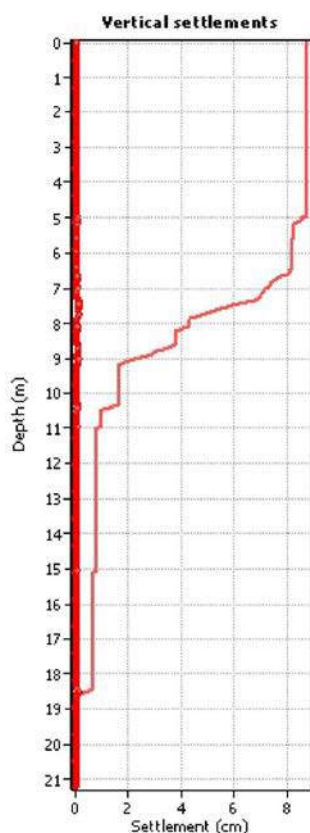
Figura 17: indice di potenziale liquefazione (IL), stimato nelle verticali di prova penetrometrica.

I risultati di queste verifiche mostrano la propensione locale al fenomeno della liquefazione, ma non la comprovata possibilità che il fenomeno di liquefazione si possa avere con le informazioni a contorno della verifica. Infatti tutte le prove risultano inquadrate nel campo della “bassa pericolosità”.

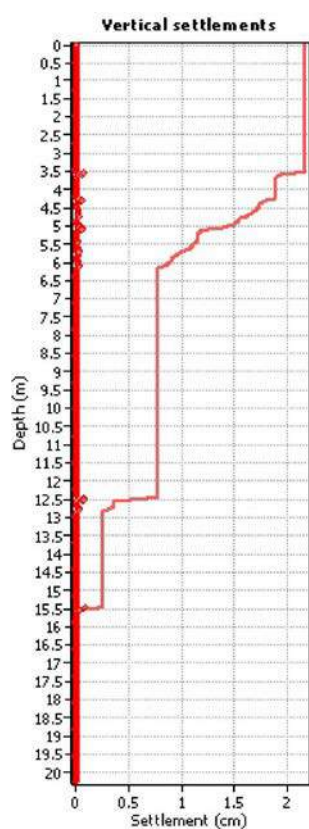
Stima dei cedimenti post- sismici

Sulla base dei risultati delle CPTU mediante software Cliq 1 della GeologisMiki si sono stimati i cedimenti postsismici verticali totali; a seguito vengono riportati i grafici generati dal programma;

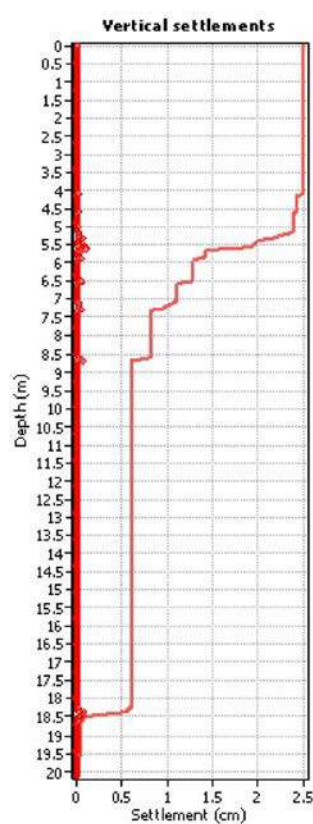
CPTU1



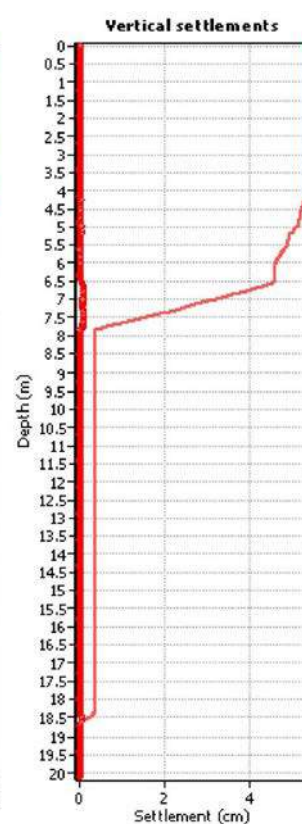
CPTU2



CPTU3



CPTU4



I risultati mostrano cedimenti variabili da 2.5 a 8,5 cm in relazione alla verticale investigata. Occorre però tener conto che tali valori sono considerati in condizioni di campo libero e il programma non tiene conto della dissipazione del cedimento relativamente alla profondità alla quale si manifesta. A parere dello scrivente risultati dell'ordine del 50% di quelli ottenuti si possono ritenere più realistici.

CONSIDERAZIONI E CONCLUSIONI

Dallo studio eseguito è emerso che nei primi 20 metri di profondità sono presenti alternanze di livelli limi e limi argillosi con intercalati a livelli di limi sabbiosi e sabbie in sub-ordine.

Dalle verifiche eseguite, utilizzando i parametri sismici derivati dallo studio della risposta sismica locale, tutte le posizioni di indagine CPTU, sono risultate ad basso rischio di liquefazione.

Facendo riferimento ai livelli misurati nei fori di sondaggio e alle condizioni idrogeologiche dell'area, si possono riscontrare livelli di soggiacenza minima dell'ordine di 1.20 m. dal p.c..

Dall'analisi di 3° livello relative alle P.G.A. locali è risultato:

	Media
PGA₀	0,158
PGA₁	0.177
FA_{PGA}	1,120

Dallo studio eseguito, non sono emerse particolari problematiche di carattere geologico relative all'area investigata. Alla luce di tutte le informazioni raccolte è possibile esprimere un parere favorevole, circa l'idoneità delle aree studiate ad essere utilizzate per futuri usi urbanistici.

Le caratteristiche dei terreni presenti, permettono l'adozione di fondazioni di tipo superficiale considerando carichi non particolarmente importanti.

In ogni caso visto il carattere di questo lavoro e ed il numero e tipologia di indagini eseguite, in fase esecutiva per ogni per ogni edificio occorrerà effettuare uno specifico studio geologico di dettaglio, calibrato sull'importanza dell'edificio di progetto e corredato da opportune indagini.

Per ogni fabbricato dovranno essere effettuate opportune prove (minimo due CPT o CPTU) spinte sino ad una profondità minima di 15 m, atte a verificare puntualmente le condizioni presenti al di sotto del sedime del fabbricato e reperire informazioni sui parametri dei terreni.

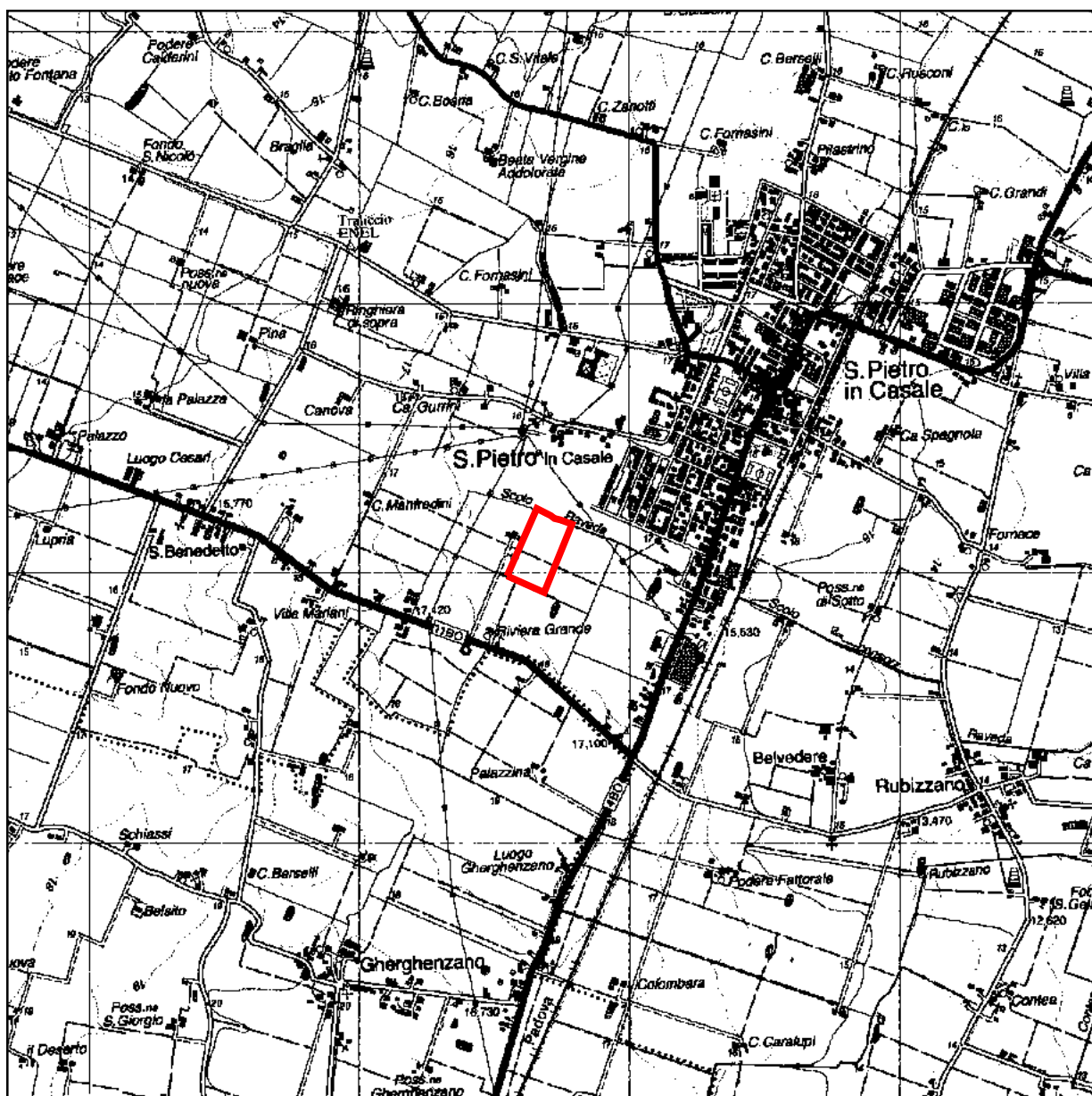
Bologna, 15-09-2018

Dott. Luca Tondi



TAVOLE

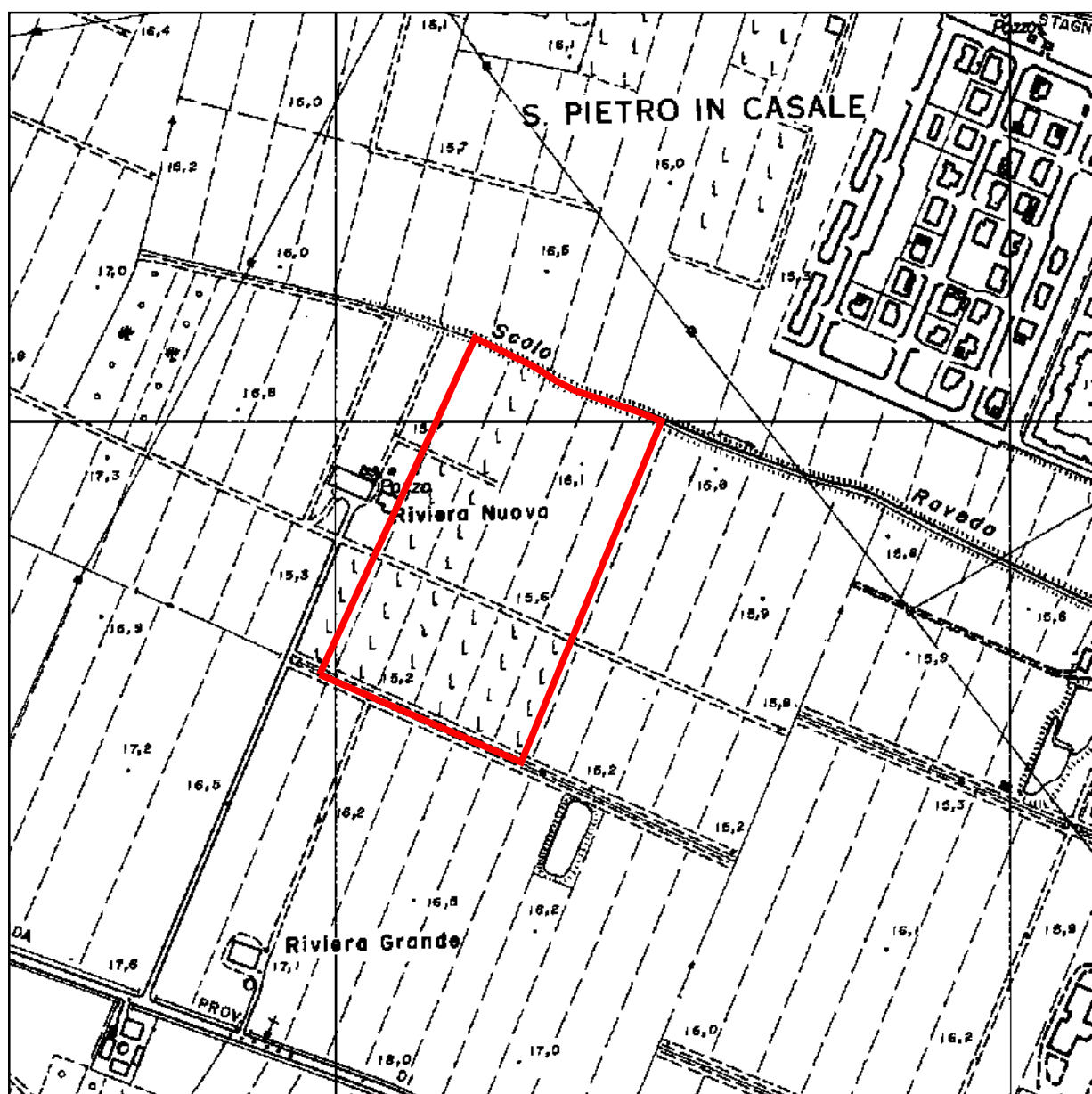
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- **Tav. 2 Corografia 1:5.000**
- **Tav. 3 Carta geologica 1:10.000**
- **Tav. 4 Ubicazione indagini planimetria**



Legenda



Area in oggetto

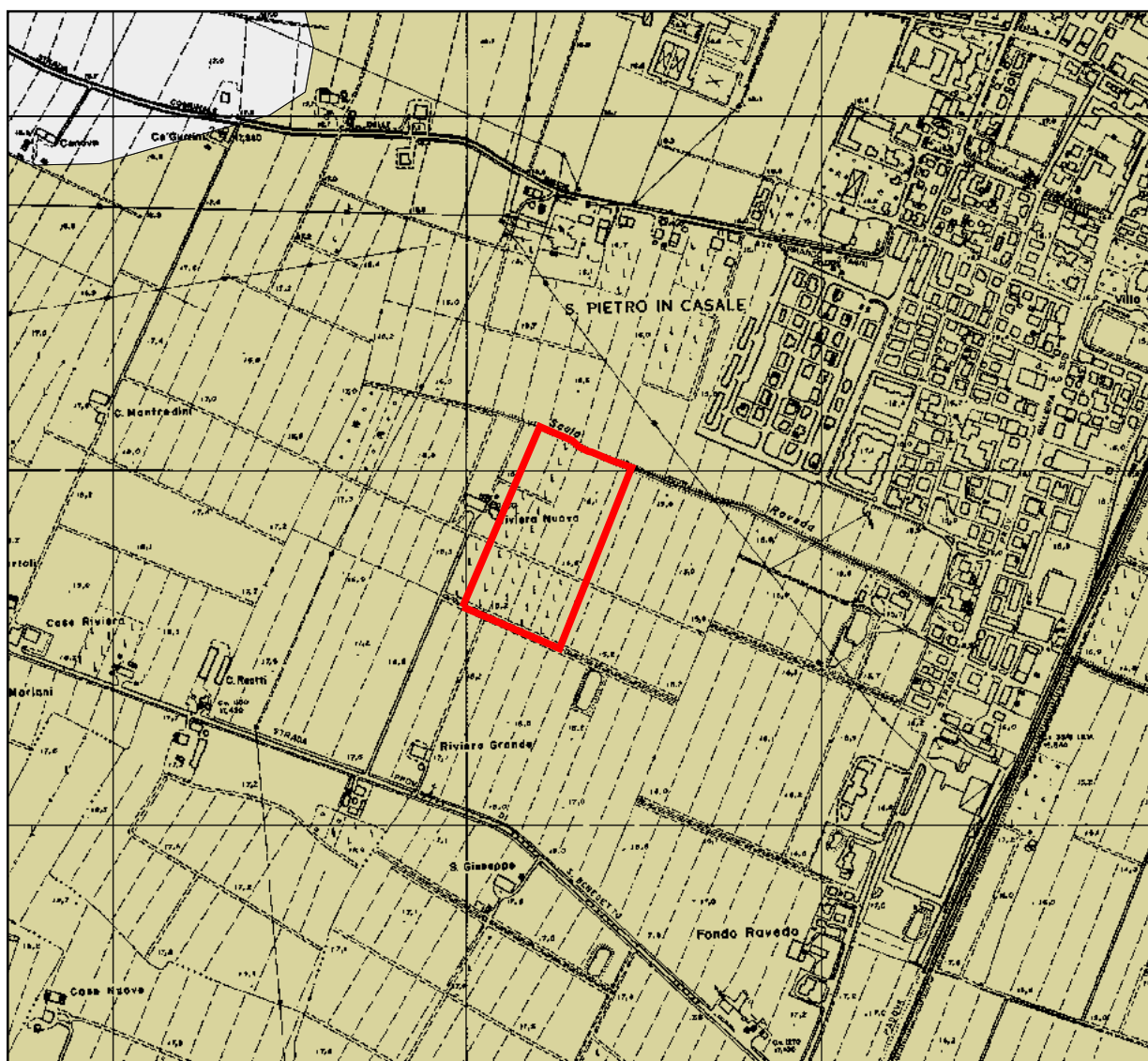


Legenda



Area in oggetto

Ingrandimento della Carta Geologica di Pianura 1:250.000*
sul C.T.R. n° 203091
Scala 1:10.000



LEGENDA



Area in oggetto

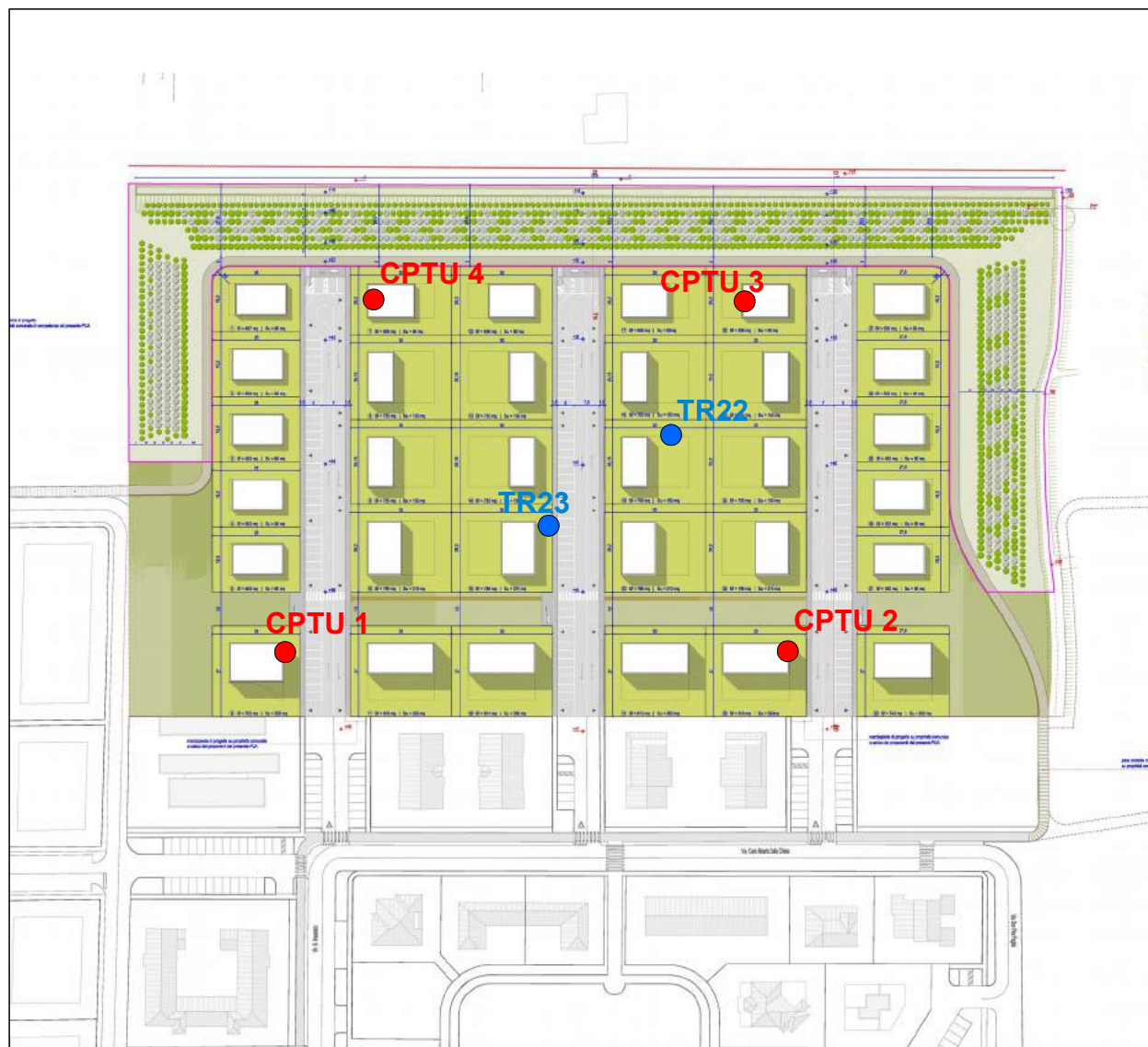
5

Sabbie medie e fini in strati di spessore decimetrico passanti lateralmente ed intercalate a sabbie fini e finissime limose subordinatamente limi argillosi; localmente sabbie medie e grossolane in corpi lenticolari e nastriformi. Depositi di canale ed argine prossimale

6

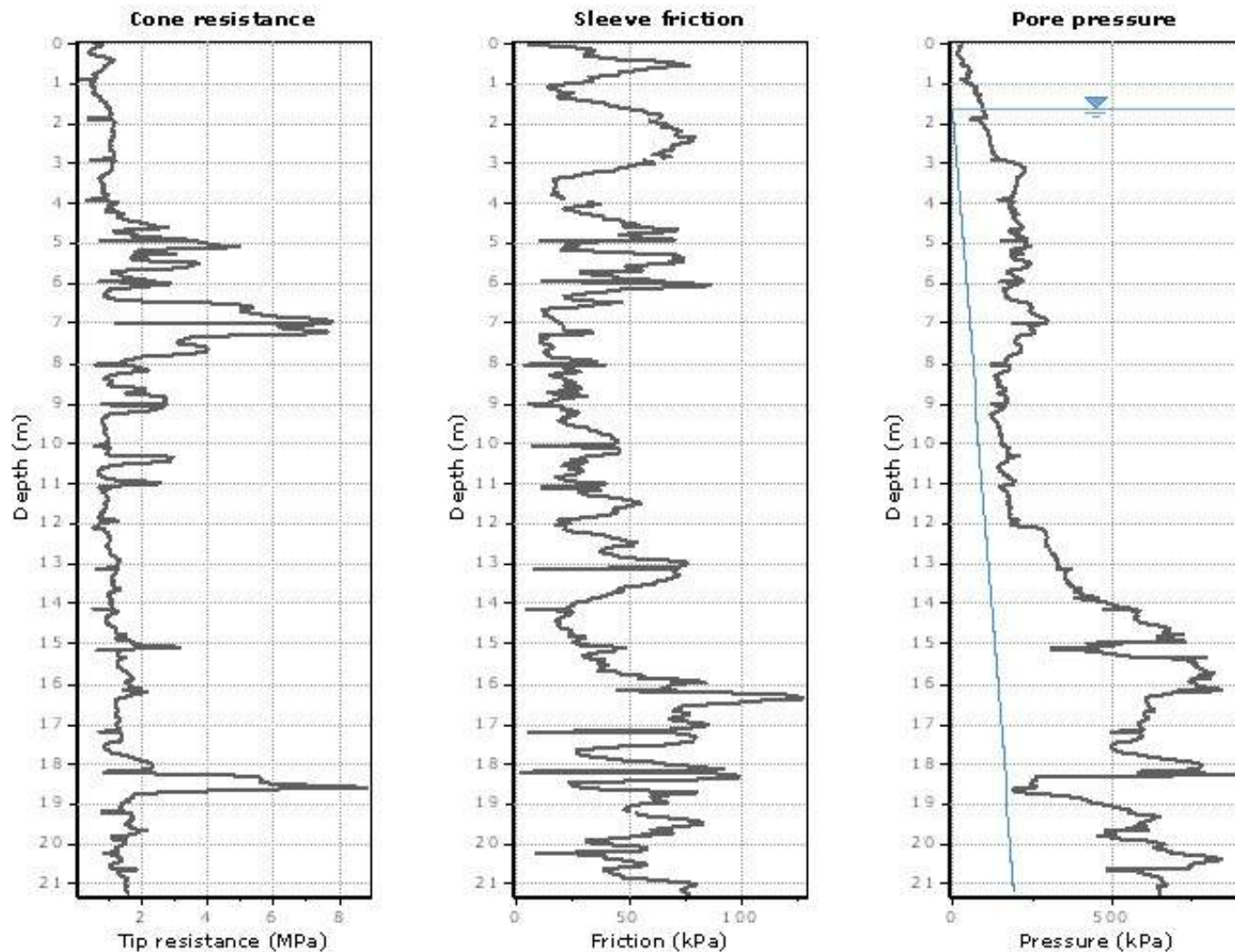
Limi sabbiosi, sabbie fini e finissime, argille limose e subordinatamente sabbie limoso-argillose intercalate. Depositi di argine distale

* R.E.R.- Servizio Sistemi Informativi Geografici -
Servizio Geologico Sismico e dei Suoli

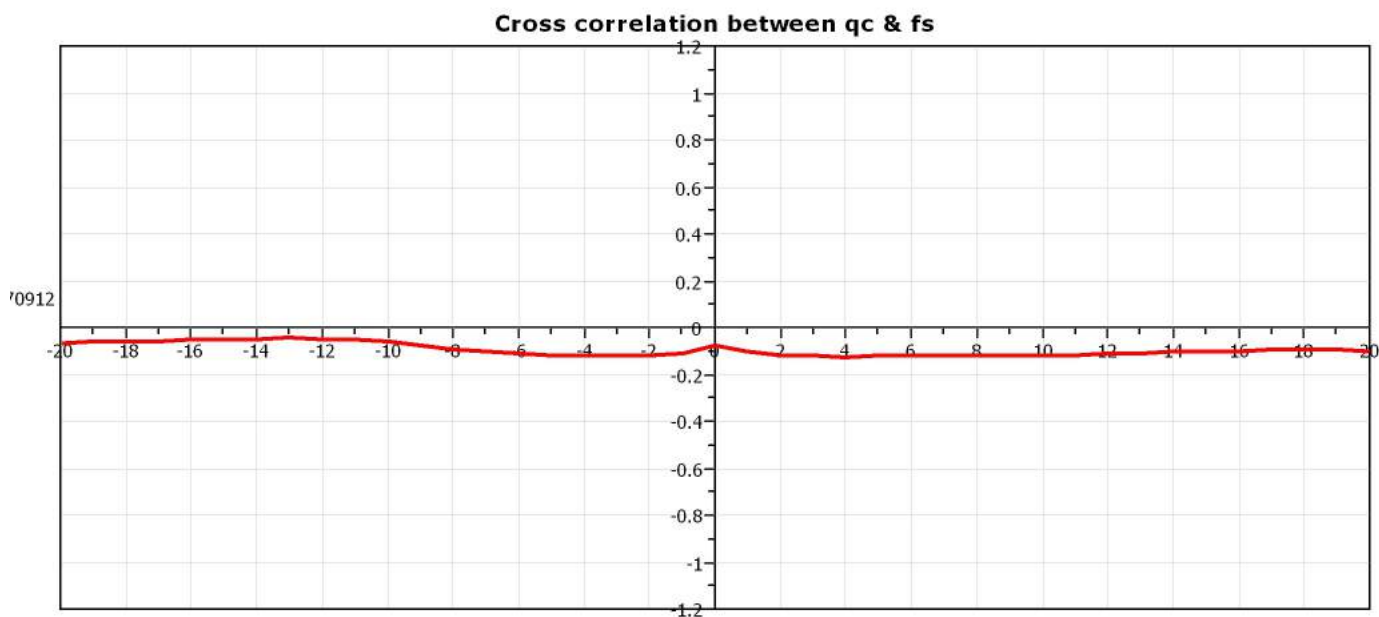
UBICAZIONE INDAGINISTRALCIO PLANIMETRIA
SCALA 1:2000**Legenda**

- **CPTU1** Prove penetrometriche statiche con piezocono
- **TR** Indagine geofisica con tomografo digitale

PROVE PENETROMETRICHE CPTU



The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



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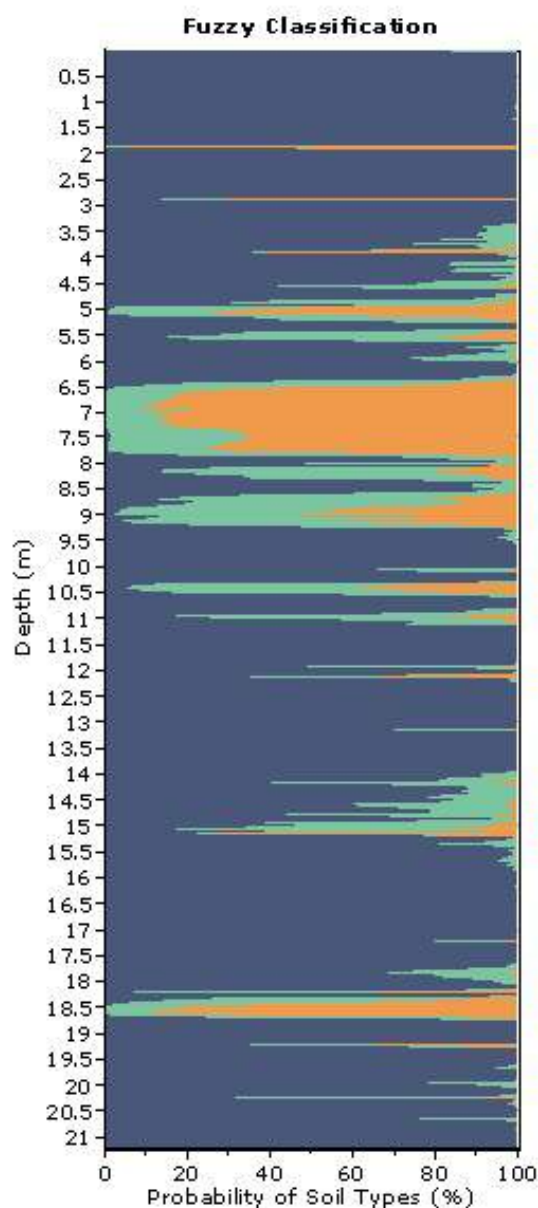
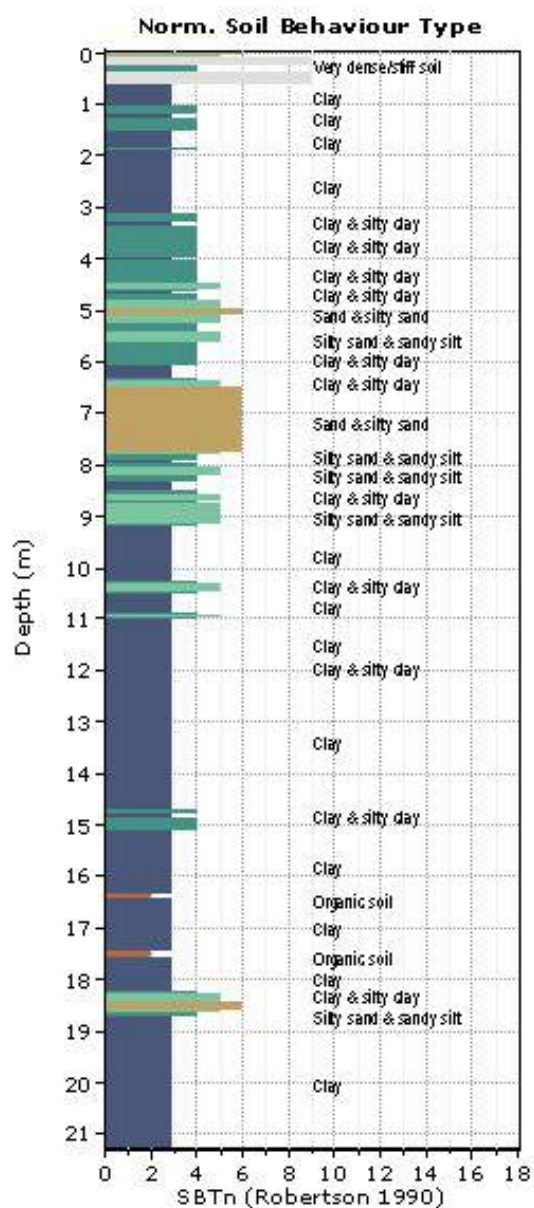
Tel: 051/6144617 - Cell. 339.2587461

Project: San Pietro in Casale

Location: Via Carlo Alberto Dalla Chiesa

CPT: CPTU1

Total depth: 21.22 m, Date: 19/07/2018



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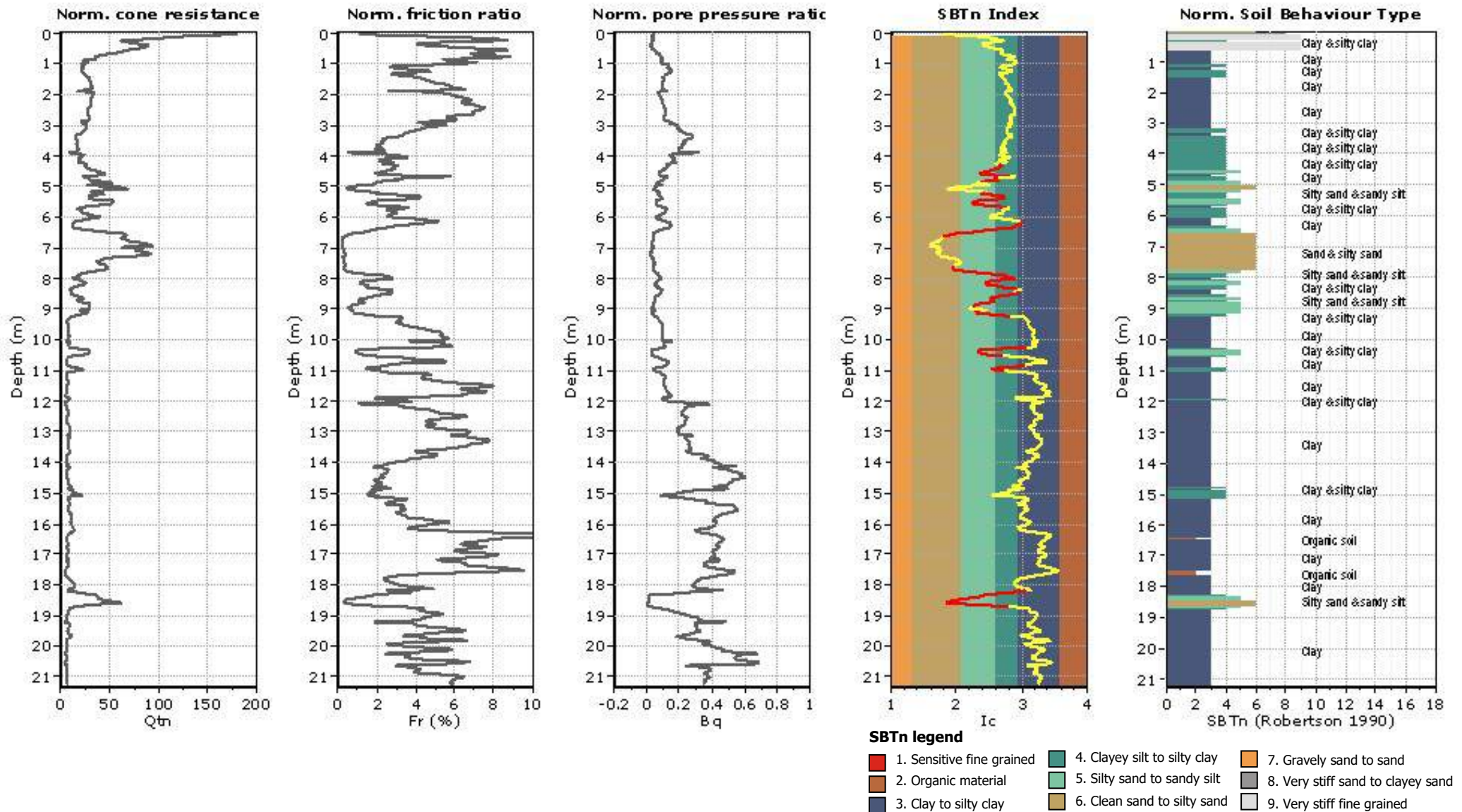
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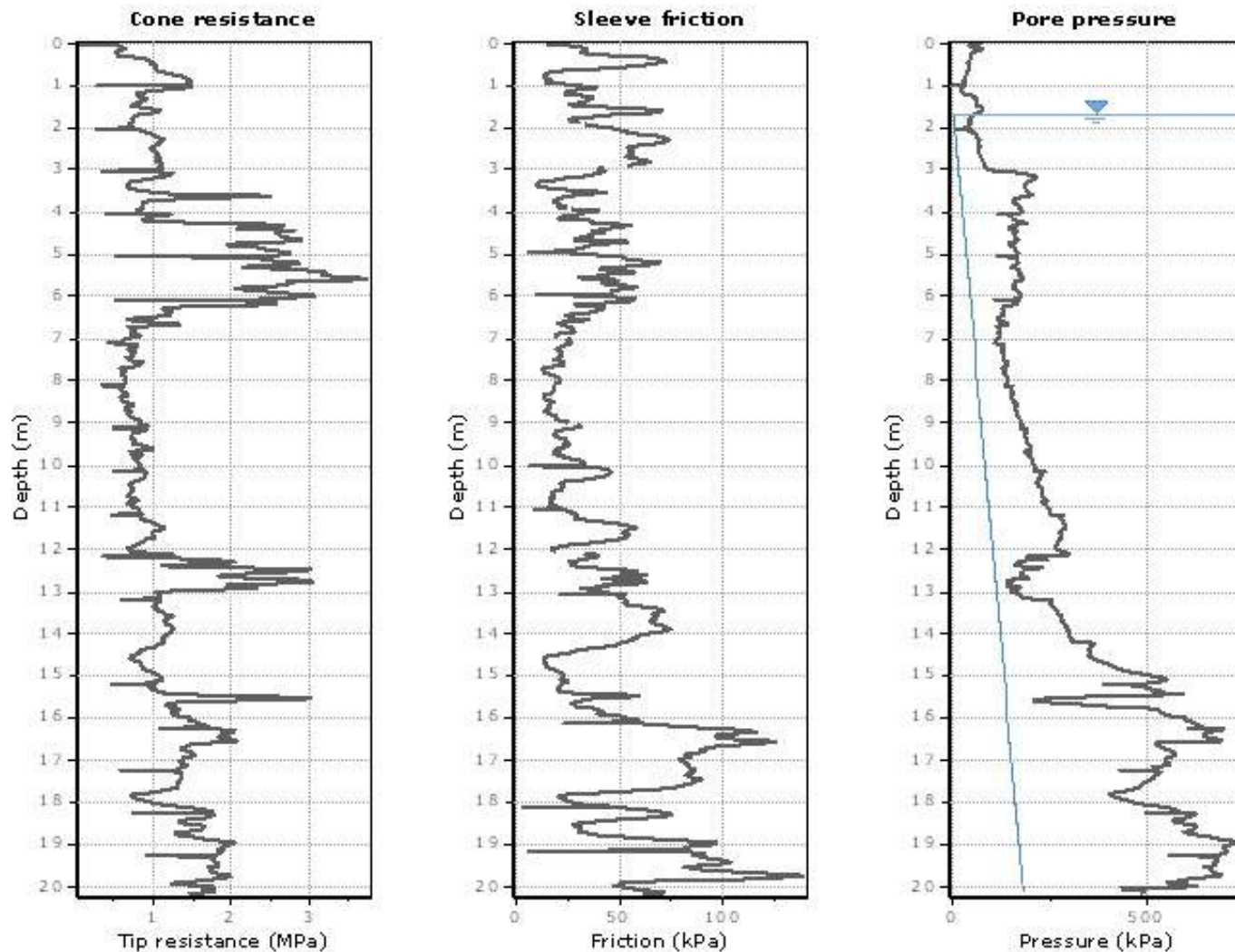
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Project: San Pietro in Casale

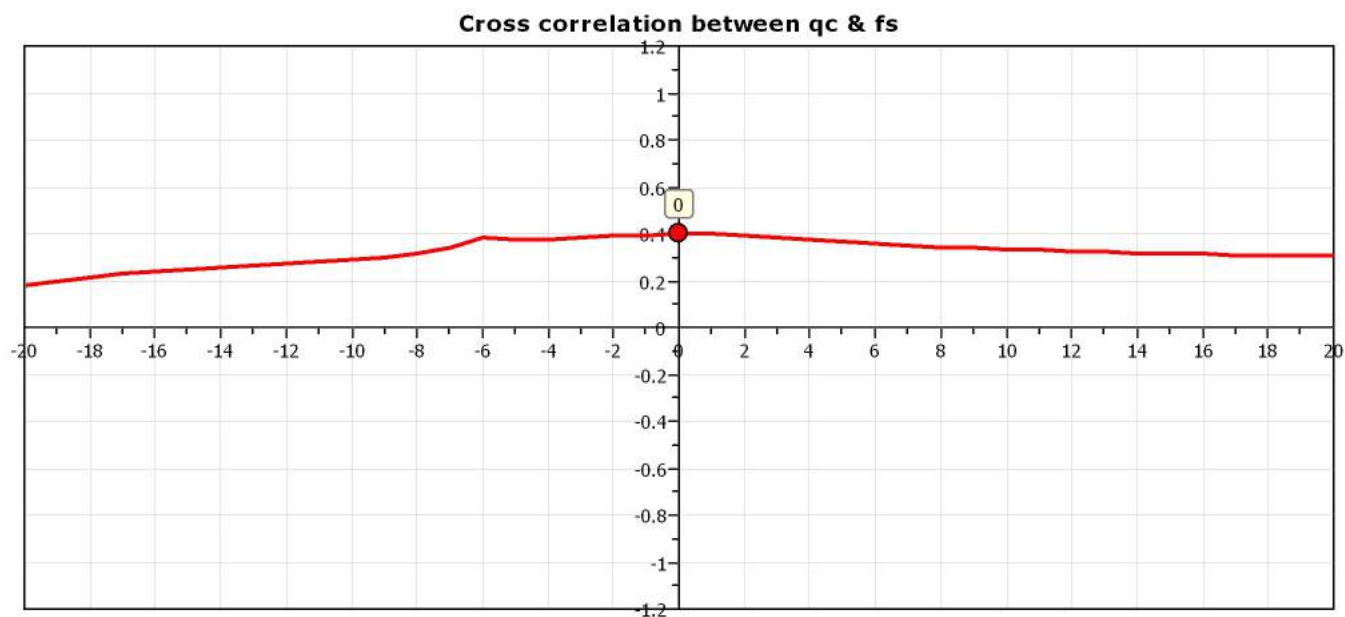
Location: Via Carlo Alberto Dalla Chiesa

CPTU CPTU2

Total depth: 20.14 m, Date: 19/07/2018



The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



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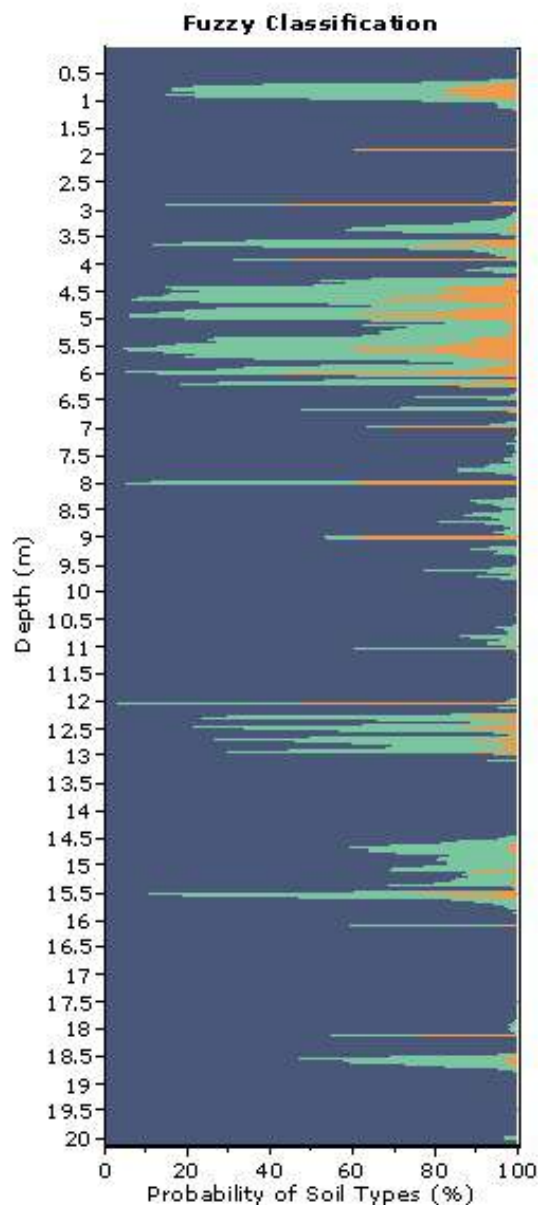
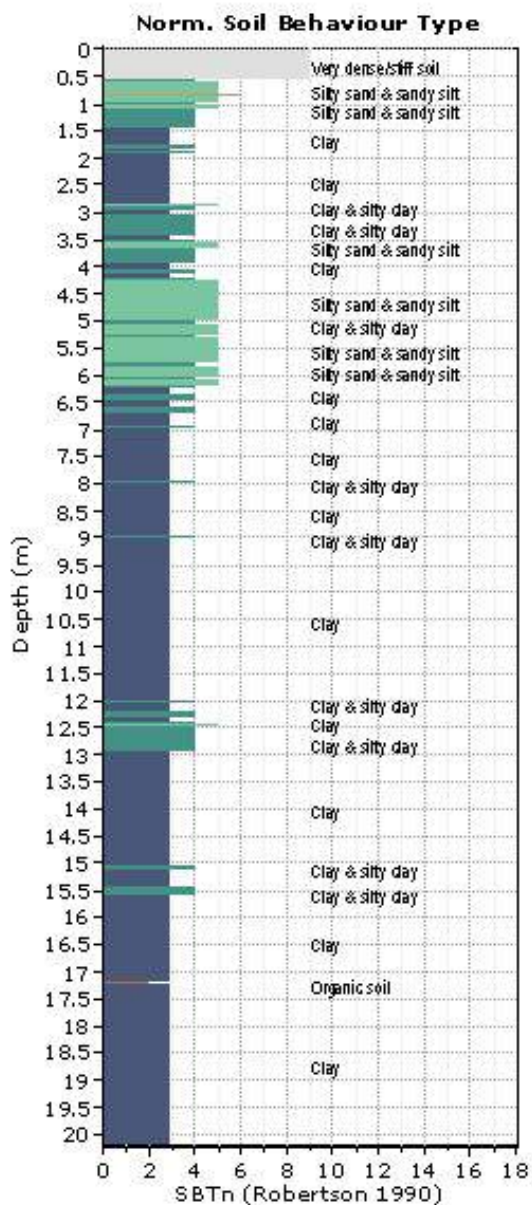
Tel: 051/6144617 - Cell. 339.2587461

Project: San Pietro in Casale

Location: Via Carlo Alberto Dalla Chiesa

CPT: CPTU2

Total depth: 20.14 m, Date: 19/07/2018



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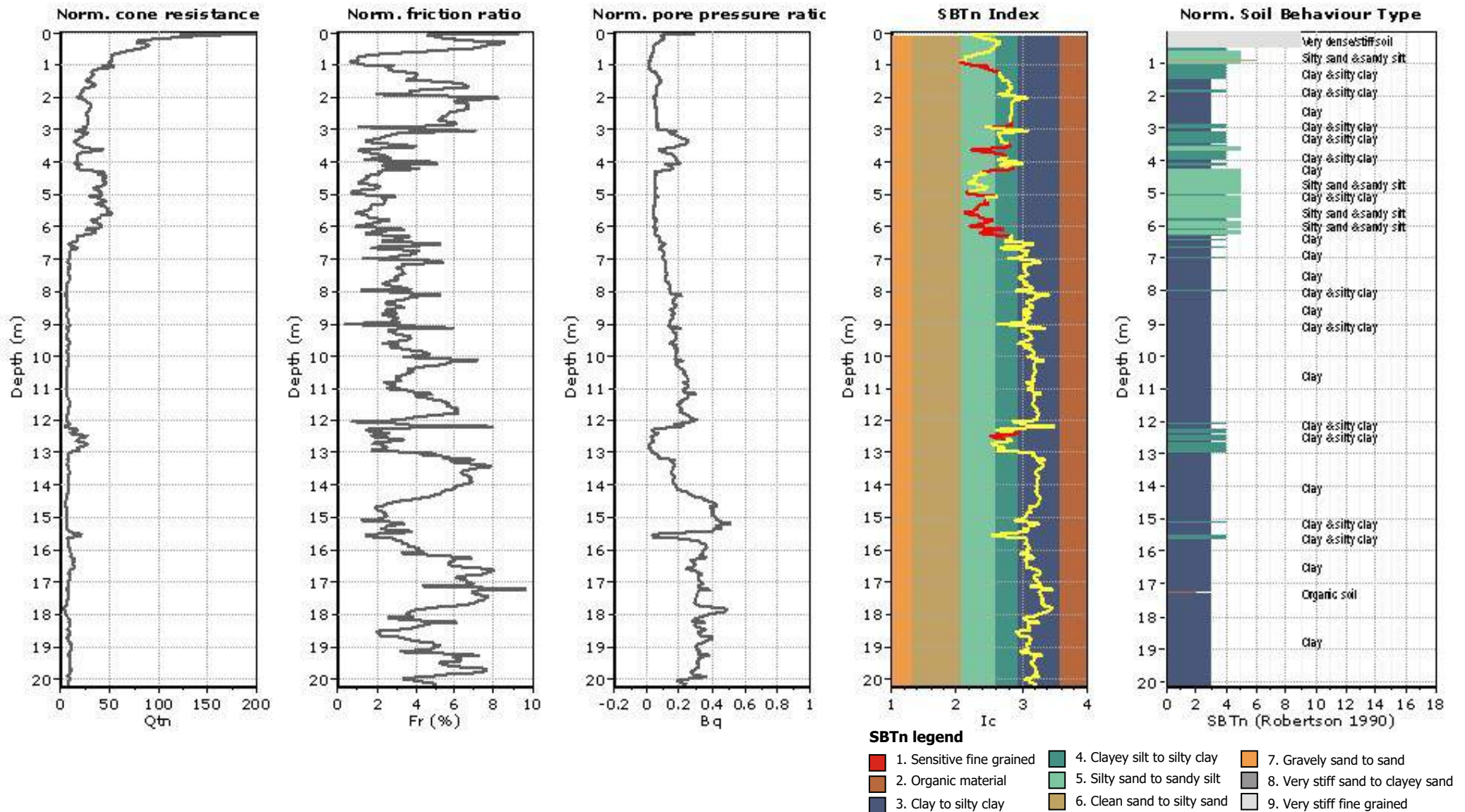
Tel: 051/6144617 - Cell. 339.2587461

Project: San Pietro in Casale

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CPT: CPTU2

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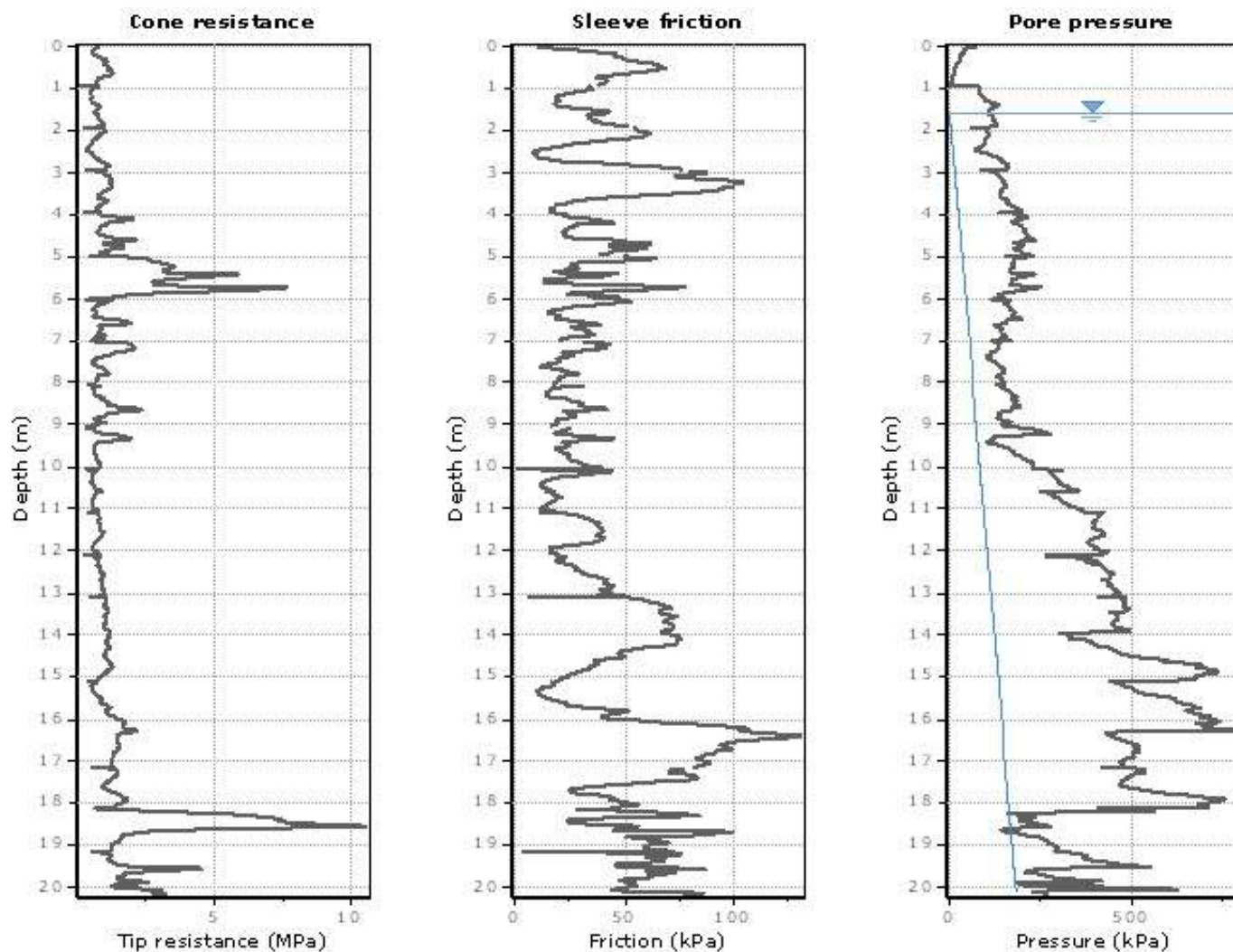
Tel: 051/6144617 - Cell. 339.2587461

Project: San Pietro in Casale

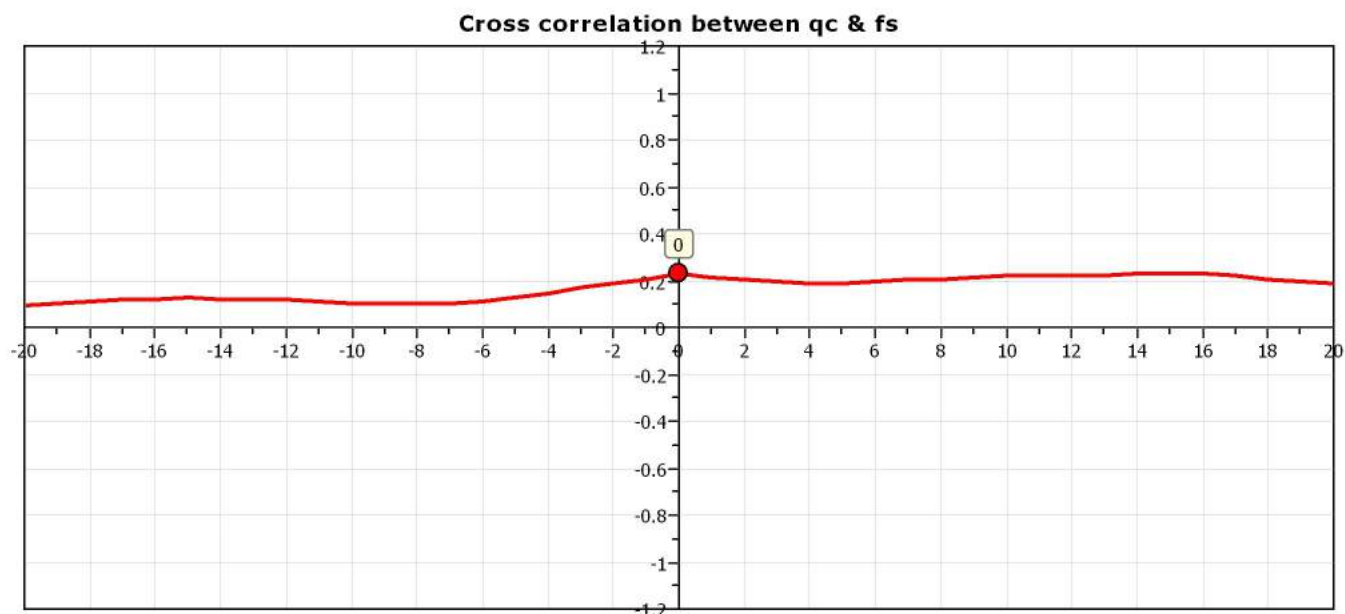
Location: Via Carlo Alberto Dalla Chiesa

CPTU CPTU3

Total depth: 20.14 m, Date: 19/07/2018



The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



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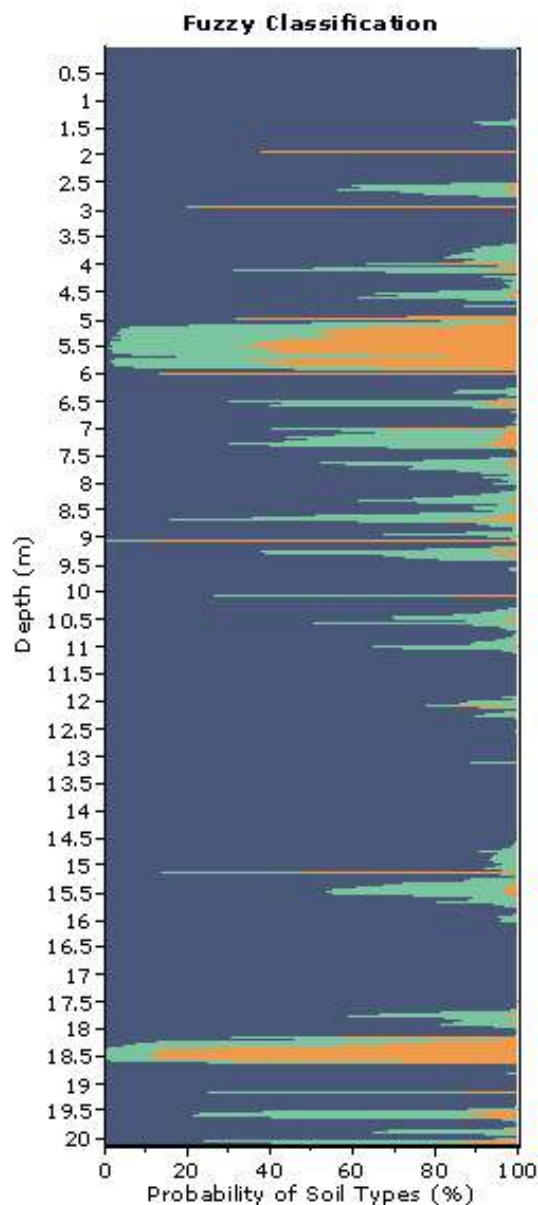
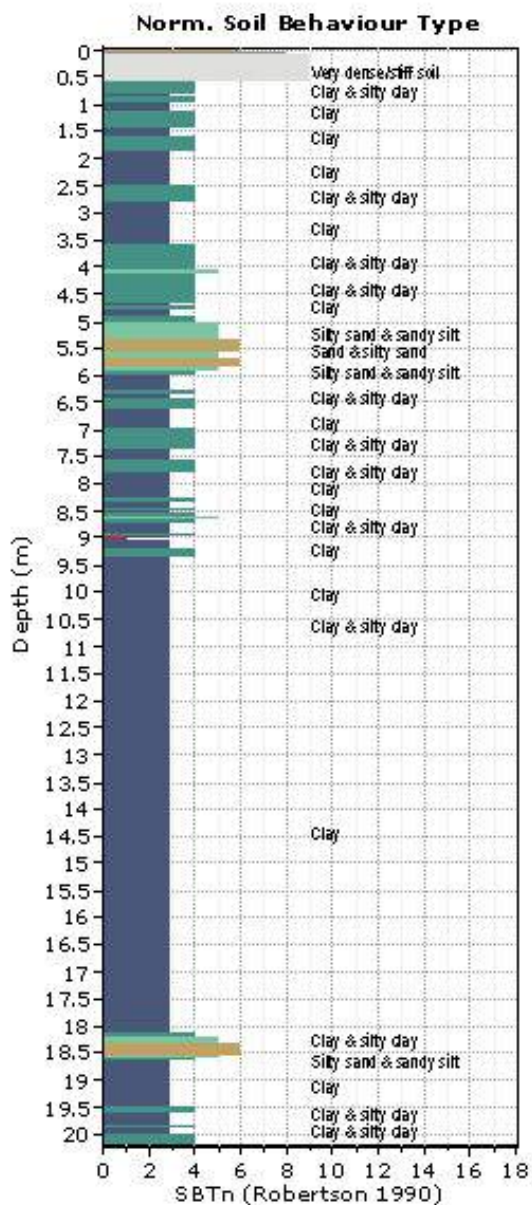
Tel: 051/6144617 - Cell. 339.2587461

Project: San Pietro in Casale

Location: Via Carlo Alberto Dalla Chiesa

CPT: CPTU3

Total depth: 20.14 m, Date: 19/07/2018



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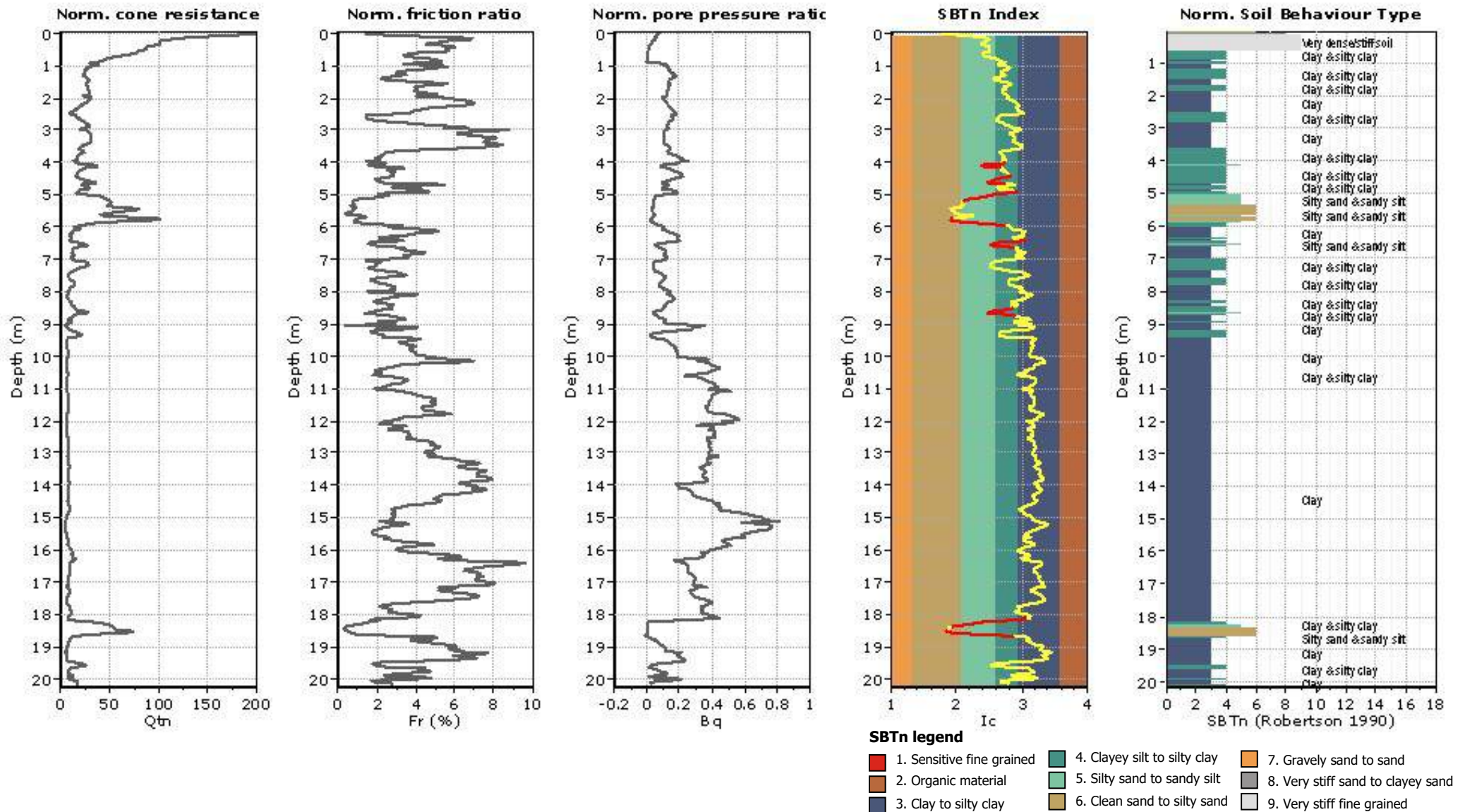
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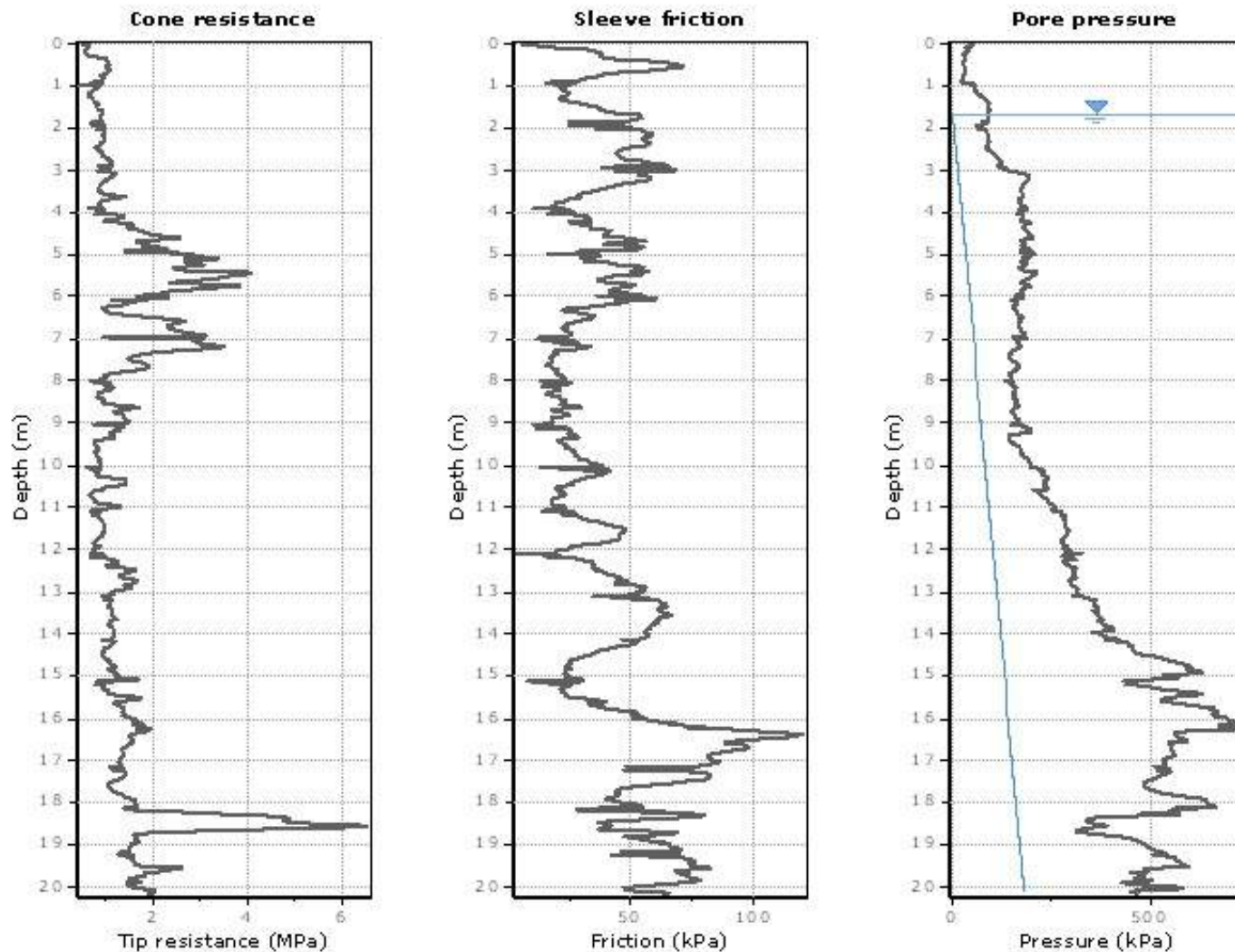
Project: San Pietro in Casale

Location: Via Carlo Alberto Dalla Chiesa

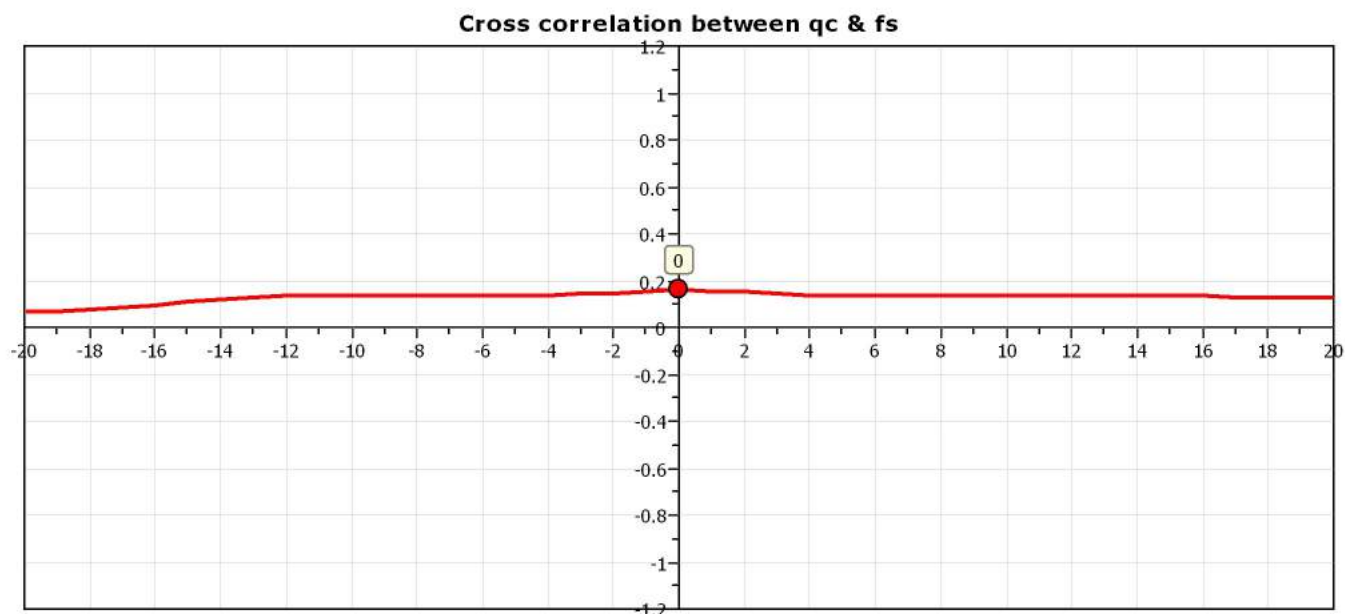
CPT: CPTU3

Total depth: 20.14 m, Date: 19/07/2018





The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



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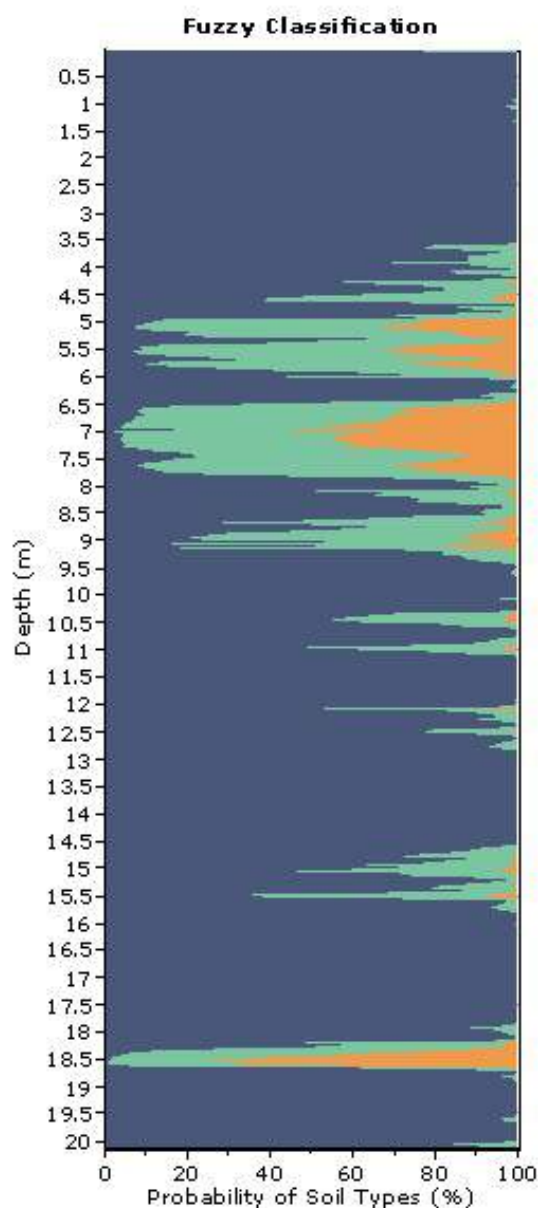
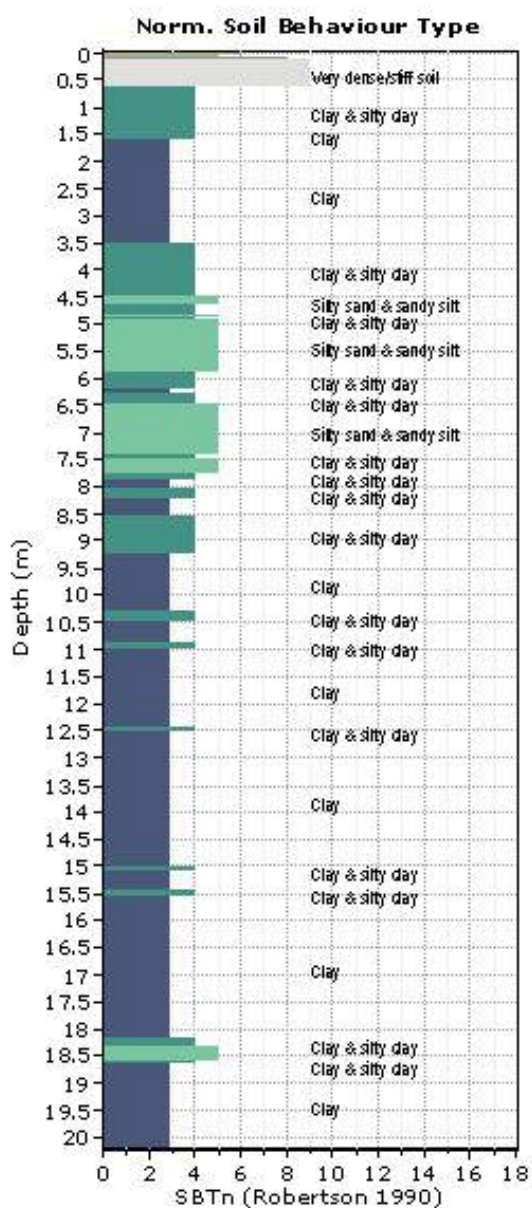
Tel: 051/6144617 - Cell. 339.2587461

Project: San Pietro in Casale

Location: Via Carlo Alberto Dalla Chiesa

CPT: CPTU4

Total depth: 20.14 m, Date: 19/07/2018



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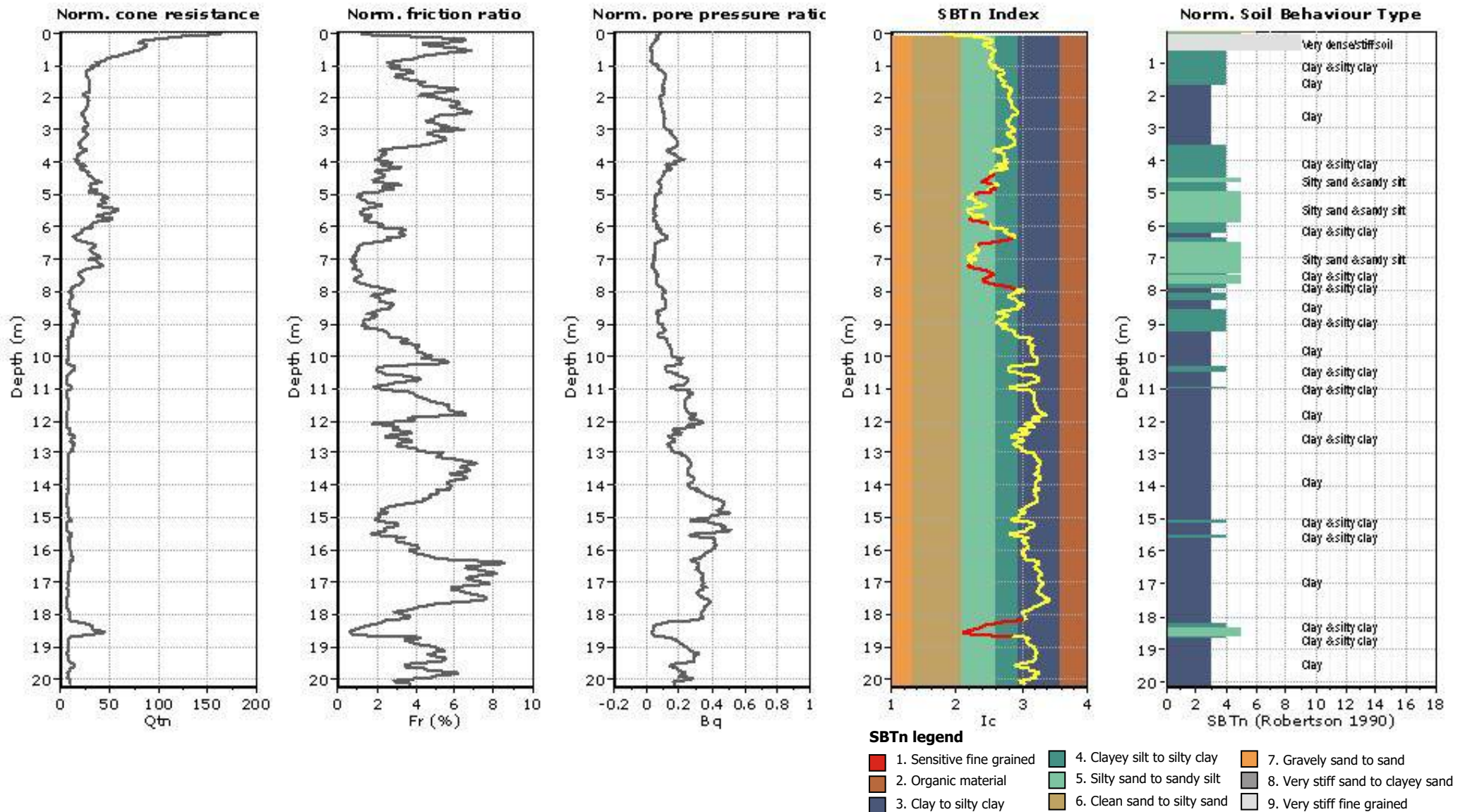
Tel: 051/6144617 - Cell. 339.2587461

Project: San Pietro in Casale

Location: Via Carlo Alberto Dalla Chiesa

CPT: CPTU4

Total depth: 20.14 m, Date: 19/07/2018



Presented below is a list of formulas used for the estimation of various soil properties. The formulas are presented in SI unit system and assume that all components are expressed in the same units.

:: Unit Weight, g (kN/m³) ::

$$g = g_w \cdot \left(0.27 \cdot \log(R_f) + 0.36 \cdot \log\left(\frac{q_t}{p_a}\right) + 1.236 \right)$$

where g_w = water unit weight

:: Permeability, k (m/s) ::

$$I_c < 3.27 \text{ and } I_c > 1.00 \text{ then } k = 10^{0.952 - 3.04 I_c}$$

$$I_c \leq 4.00 \text{ and } I_c > 3.27 \text{ then } k = 10^{-4.52 - 1.37 I_c}$$

:: N_{SPT} (blows per 30 cm) ::

$$N_{60} = \left(\frac{q_c}{p_a} \right) \cdot \frac{1}{10^{1.1268 - 0.2817 I_c}}$$

$$N_{1(60)} = Q_{tn} \cdot \frac{1}{10^{1.1268 - 0.2817 I_c}}$$

:: Young's Modulus, E_s (MPa) ::

$$(q_t - \sigma_v) \cdot 0.015 \cdot 10^{0.55 I_c + 1.68}$$

(applicable only to $I_c < I_{c_cutoff}$)

:: Relative Density, Dr (%) ::

$$100 \cdot \sqrt{\frac{Q_{tn}}{k_{DR}}} \quad (\text{applicable only to } SBT_n: 5, 6, 7 \text{ and } 8 \text{ or } I_c < I_{c_cutoff})$$

:: State Parameter, ψ ::

$$\psi = 0.56 - 0.33 \cdot \log(Q_{tn,cs})$$

:: Peak drained friction angle, ϕ (°) ::

$$\phi = 17.60 + 11 \cdot \log(Q_{tn})$$

(applicable only to $SBT_n: 5, 6, 7 \text{ and } 8$)

:: 1-D constrained modulus, M (MPa) ::

If $I_c > 2.20$
 $\alpha = 14$ for $Q_{tn} > 14$
 $\alpha = Q_{tn}$ for $Q_{tn} \leq 14$
 $M_{CPT} = \alpha \cdot (q_t - \sigma_v)$

If $I_c \leq 2.20$
 $M_{CPT} = (q_t - \sigma_v) \cdot 0.0188 \cdot 10^{0.55 I_c + 1.68}$

:: Small strain shear Modulus, G_0 (MPa) ::

$$G_0 = (q_t - \sigma_v) \cdot 0.0188 \cdot 10^{0.55 I_c + 1.68}$$

:: Shear Wave Velocity, V_s (m/s) ::

$$V_s = \left(\frac{G_0}{\rho} \right)^{0.50}$$

:: Undrained peak shear strength, S_u (kPa) ::

$$N_{kt} = 10.50 + 7 \cdot \log(F_r) \text{ or user defined}$$

$$S_u = \frac{(q_t - \sigma_v)}{N_{kt}}$$

(applicable only to $SBT_n: 1, 2, 3, 4 \text{ and } 9$ or $I_c > I_{c_cutoff}$)

:: Remolded undrained shear strength, $S_u(rem)$ (kPa) ::

$$S_{u(rem)} = f_s \quad (\text{applicable only to } SBT_n: 1, 2, 3, 4 \text{ and } 9 \text{ or } I_c > I_{c_cutoff})$$

:: Overconsolidation Ratio, OCR ::

$$k_{OCR} = \left[\frac{Q_{tn}^{0.20}}{0.25 \cdot (10.50 + 7 \cdot \log(F_r))} \right]^{1.25} \text{ or user defined}$$

$$OCR = k_{OCR} \cdot Q_{tn}$$

(applicable only to $SBT_n: 1, 2, 3, 4 \text{ and } 9$ or $I_c > I_{c_cutoff}$)

:: In situ Stress Ratio, K_0 ::

$$K_0 = (1 - \sin \phi') \cdot OCR^{\sin \phi'}$$

(applicable only to $SBT_n: 1, 2, 3, 4 \text{ and } 9$ or $I_c > I_{c_cutoff}$)

:: Soil Sensitivity, S_t ::

$$S_t = \frac{N_s}{F_r}$$

(applicable only to $SBT_n: 1, 2, 3, 4 \text{ and } 9$ or $I_c > I_{c_cutoff}$)

:: Effective Stress Friction Angle, ϕ' (°) ::

$$\phi' = 29.5^\circ \cdot B_q^{0.121} \cdot (0.256 + 0.336 \cdot B_q + \log Q_t)$$

(applicable for $0.10 < B_q < 1.00$)

References

- Robertson, P.K., Cabal K.L., Guide to Cone Penetration Testing for Geotechnical Engineering, Gregg Drilling & Testing, Inc., 5th Edition, November 2012
- Robertson, P.K., Interpretation of Cone Penetration Tests - a unified approach., Can. Geotech. J. 46(11): 1337–1355 (2009)

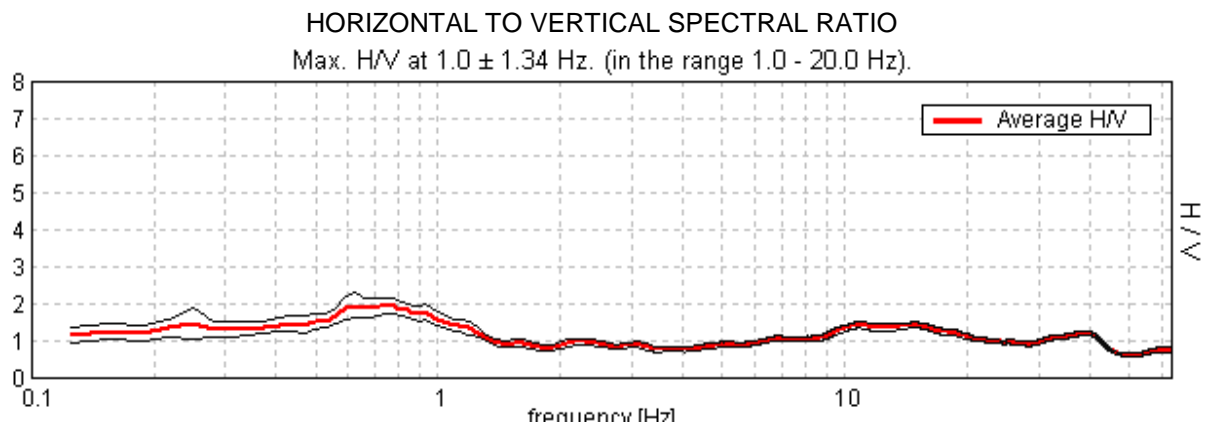
INDAGINI SISMICHE

- MISURE CON TROMOGRAFO DIGITALE

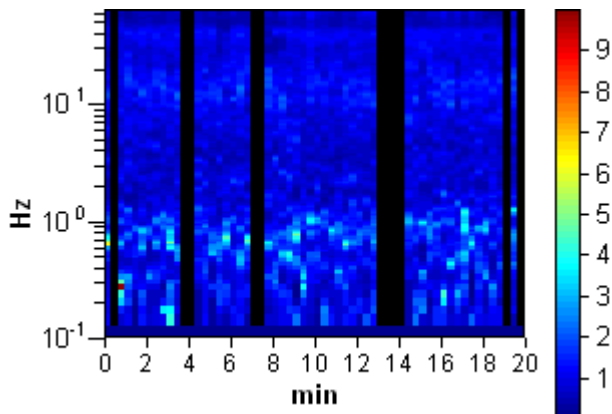
SAN PIETRO IN CASALE, 3B TR22

Start recording: 19/07/18 08:33:44 End recording: 19/07/18 08:53:45
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
GPS data not available

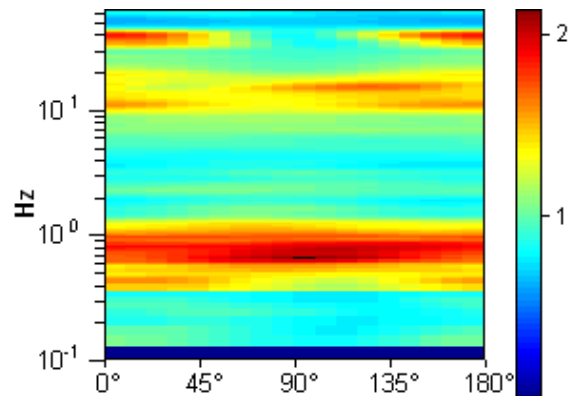
Trace length: 0h20'00". Analyzed 83% trace (automatic window selection)
Sampling frequency: 128 Hz
Window size: 20 s
Smoothing window: Triangular window
Smoothing: 10%



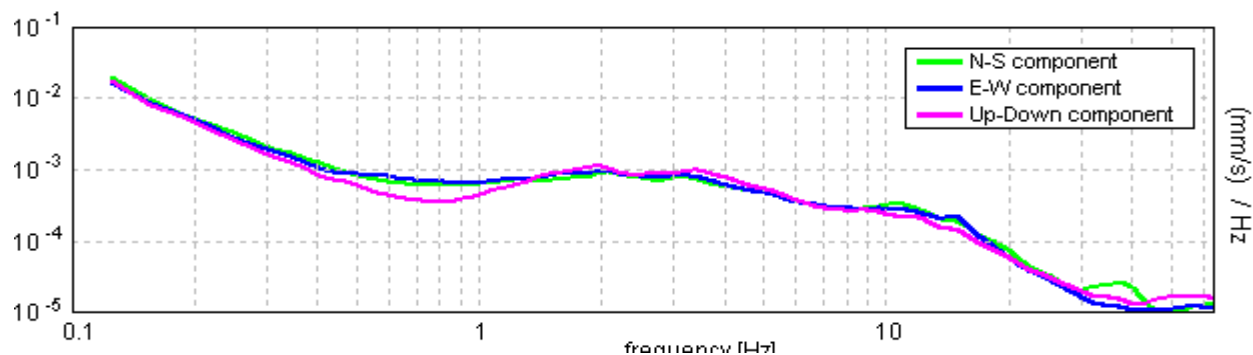
H/V TIME HISTORY



DIRECTIONAL H/V

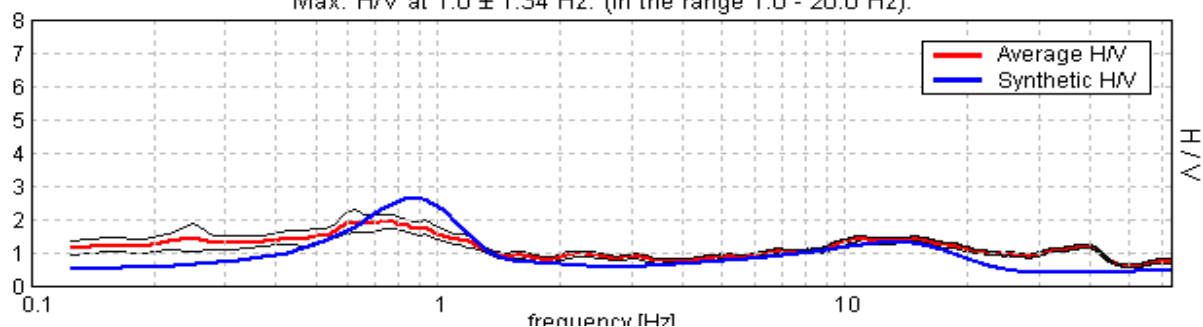


SINGLE COMPONENT SPECTRA



EXPERIMENTAL VS. SYNTHETIC H/V

Max. H/V at 1.0 ± 1.34 Hz. (in the range 1.0 - 20.0 Hz).



Depth at the bottom of the layer

Thickness [m]

Vs [m/s]

[m]

1.60

1.60

120

3.60

2.00

200

7.60

4.00

230

27.60

20.00

250

42.60

15.00

280

102.60

60.00

400

132.60

30.00

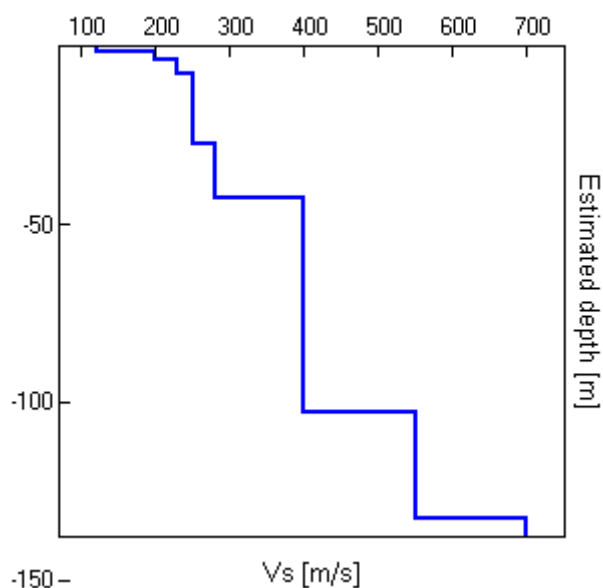
550

inf.

inf.

700

Vs(0.0-30.0)=232m/s



SAN PIETRO IN CASALE, 3B TR23

Formato dati: 16 byte

Fondo scala [mV]: n.a.

Inizio registrazione: 19/07/18 09:06:07 Fine registrazione: 19/0107/18 09:26:08

Nomi canali: NORTH SOUTH; EAST WEST; UP DOWN

Dato GPS non disponibile

Durata registrazione: 0h20'00".

Analizzato 78% tracciato (selezione manuale)

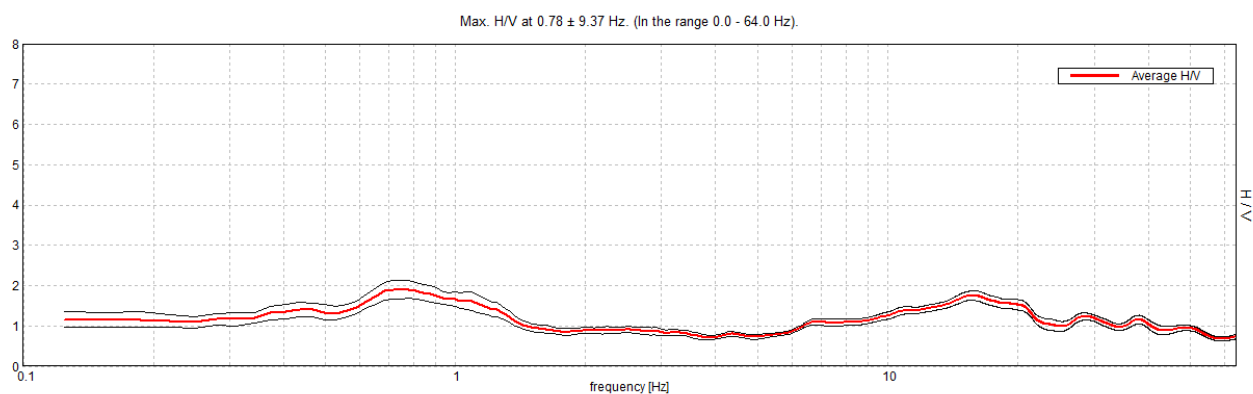
Freq. campionamento: 128 Hz

Lunghezza finestre: 20 s

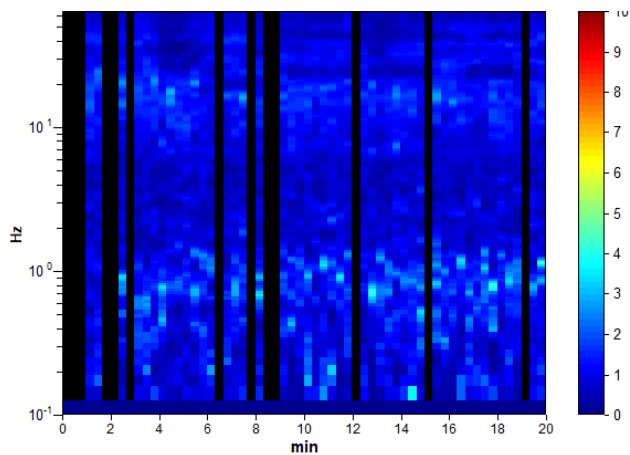
Tipo di lisciamento: Triangular window

Lisciamento: 10%

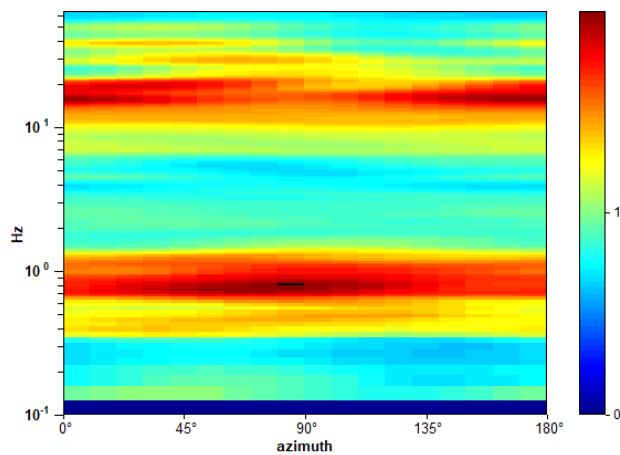
RAPPORTO SPETTRALE ORIZZONTALE SU VERTICALE



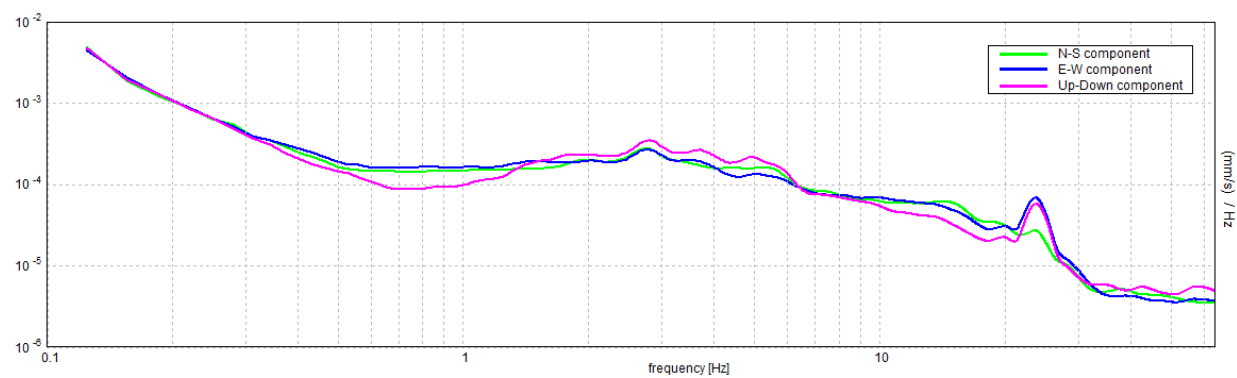
SERIE TEMPORALE H/V



DIREZIONALITA' H/V



SPETTRI DELLE SINGOLE COMPONENTI



VERIFICHE ALLA LIQUEFAZIONE

- **Metodo: NCEER R&W 1998**
- **Software: C-LIQ (GeologisMiki s.r.l.)**



Dr. Luca Tondi

Geologo - E-mail: luca@studio-tondi.it

Via P.G.Martini 38/f - 40134 Bologna

Tel: 051/6144617 - Cell. 339.2587461

LIQUEFACTION ANALYSIS REPORT

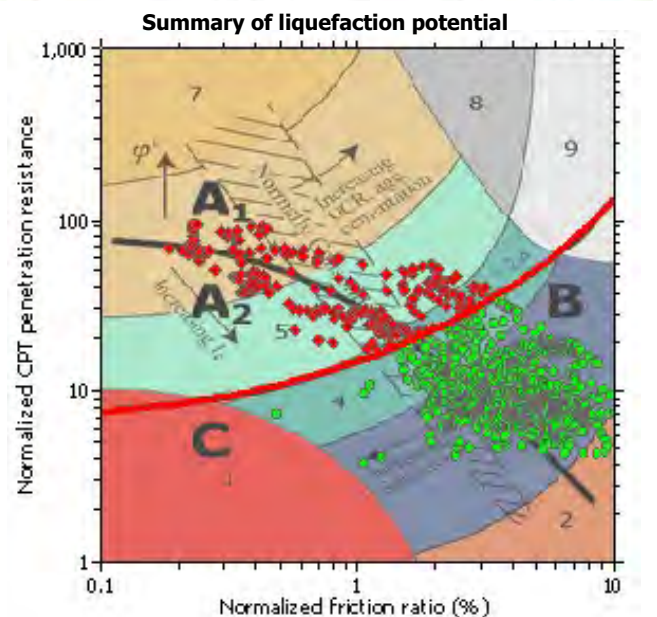
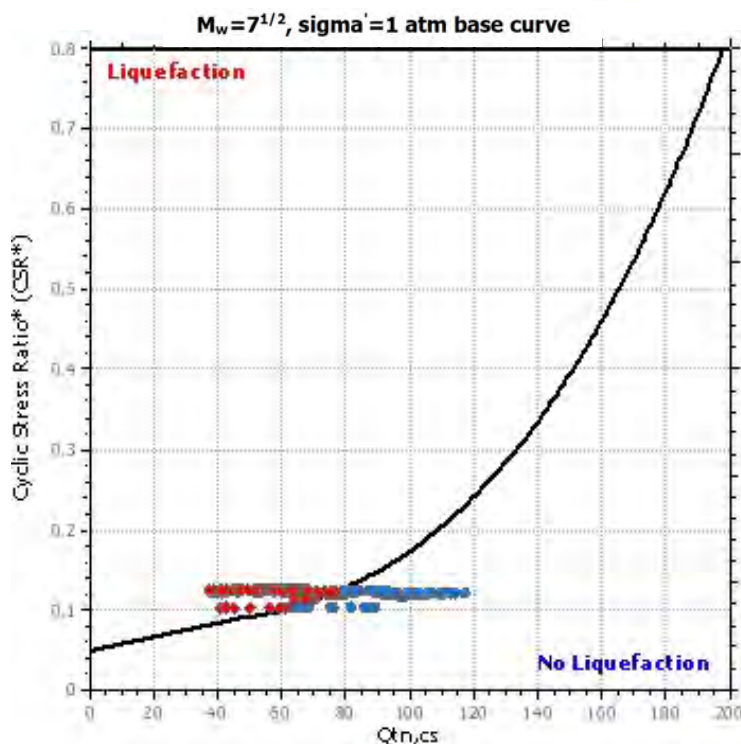
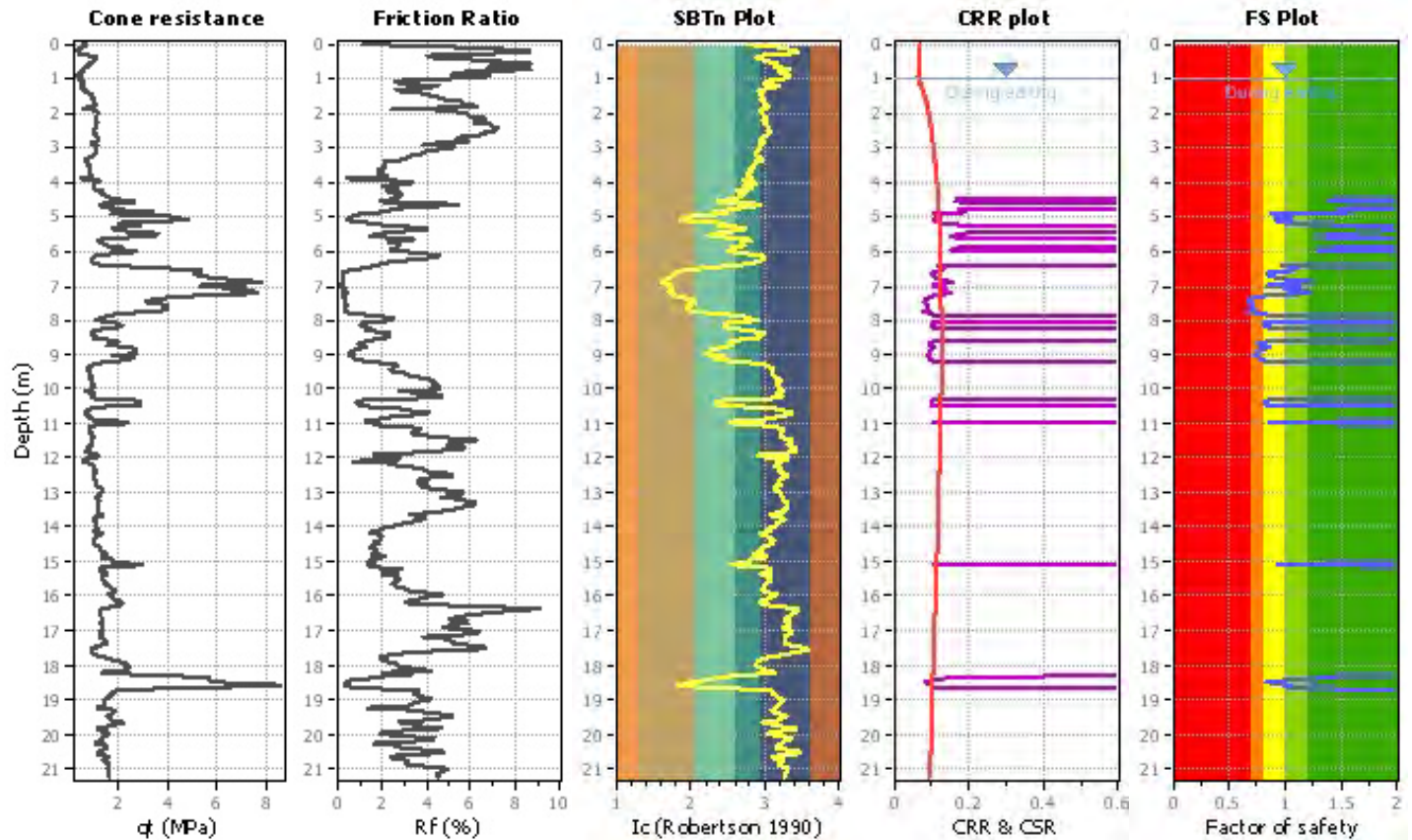
Project title : San Pietro in Casale

Location : Via Carlo Alberto Dalla Chiesa

CPT file : CPTU1

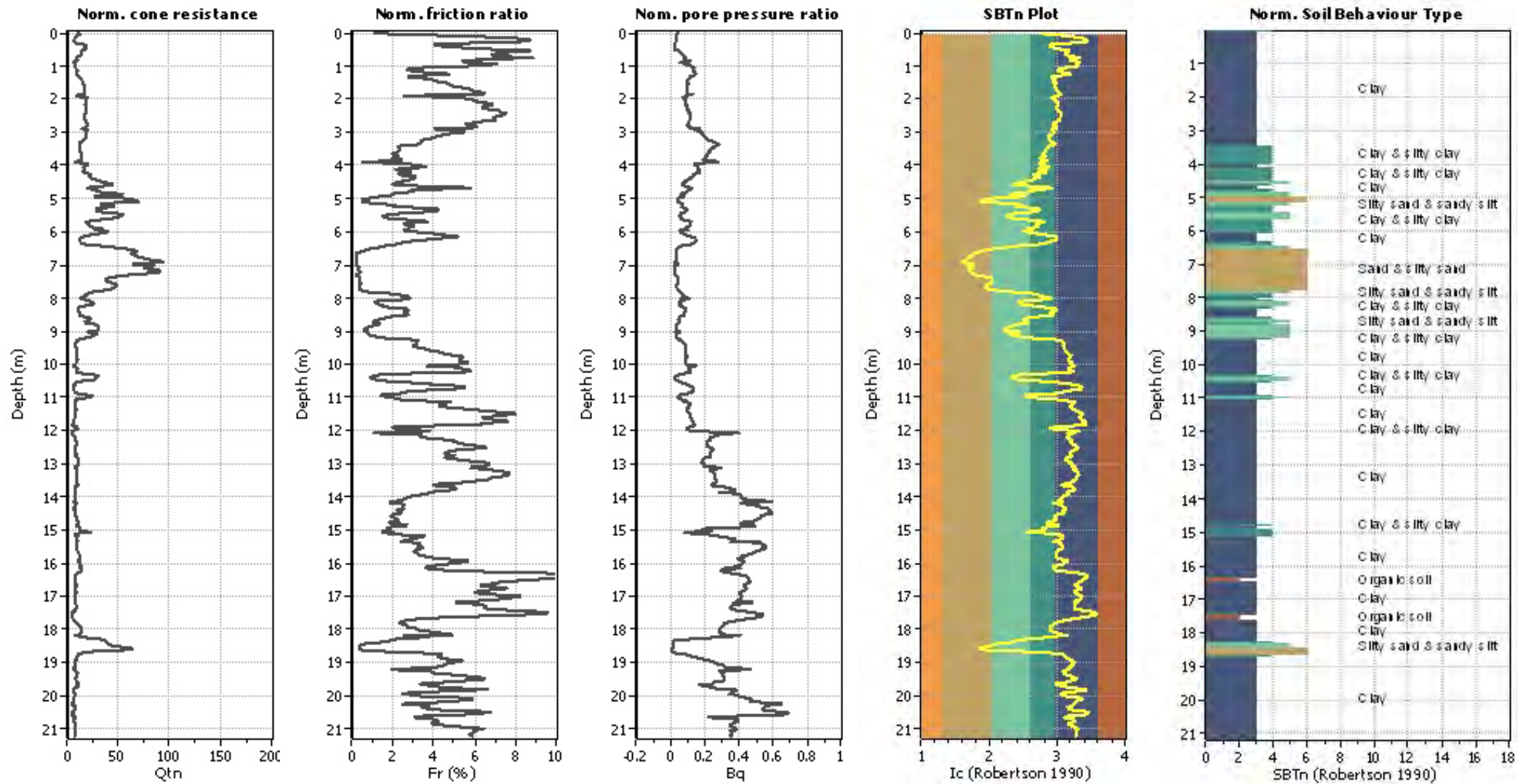
Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	1.65 m	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	1.00 m	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude M_w :	6.00	Ic cut-off value:	2.60	Trans. detect. applied:	No	Limit depth:	N/A
Peak ground acceleration:	0.18	Unit weight calculation:	Based on SBT	K_0 applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A₂: 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

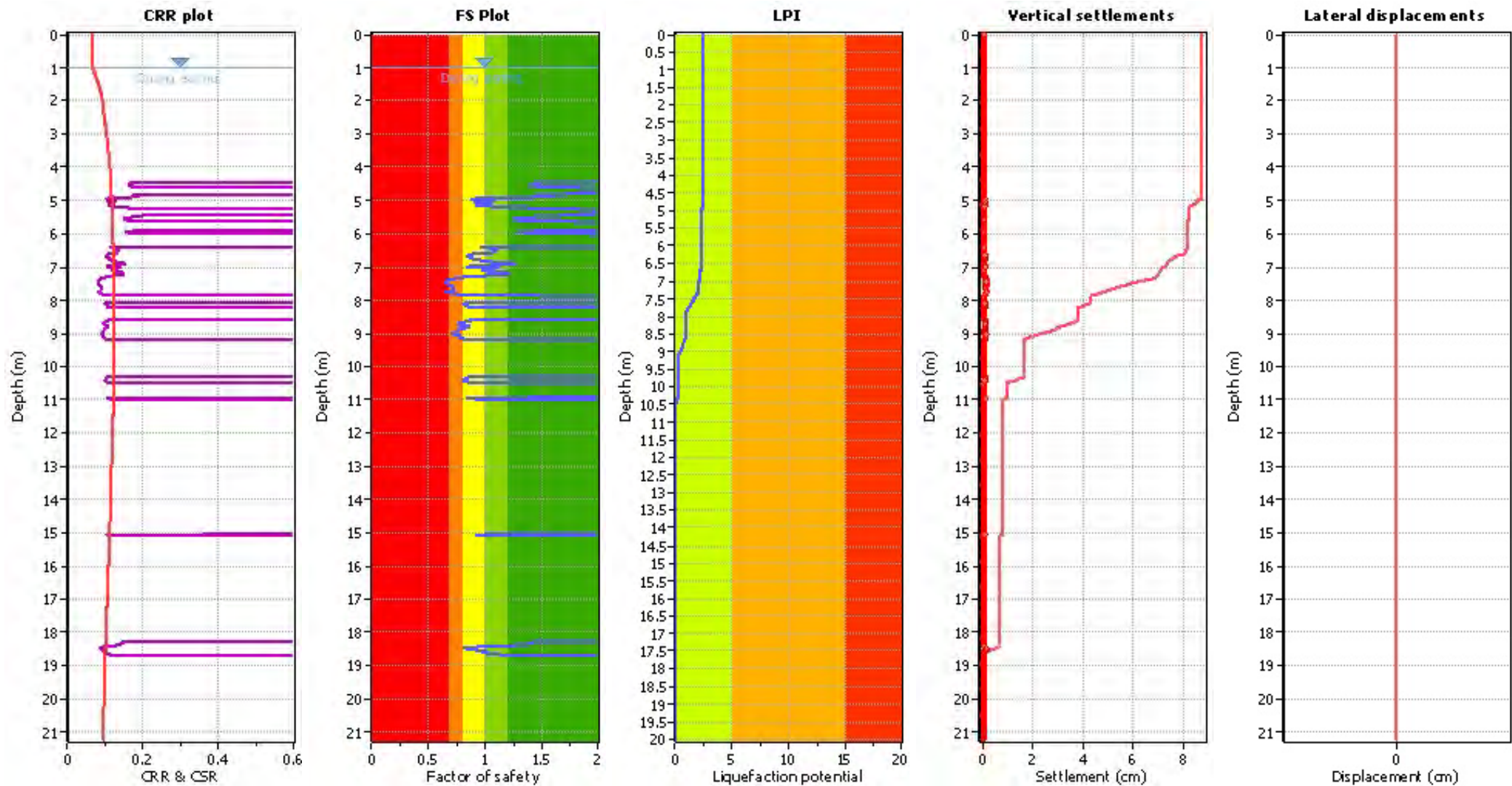
CPT basic interpretation plots (normaliz



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.18	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	1.65 m	Fill height:	N/A	Limit depth:	N/A

Liquefaction analysis overall plot



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.18	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	1.65 m	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light green	Unlike to liquefy
Dark green	Almost certain it will not liquefy

LPI color scheme

Red	Very high risk
Orange	High risk
Yellow	Low risk

:: Liquefaction Potential Index calculation data ::											
Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
0.01	2.00	0.00	9.99	0.01	0.00	0.02	2.00	0.00	9.99	0.01	0.00
0.04	2.00	0.00	9.98	0.02	0.00	0.06	2.00	0.00	9.97	0.02	0.00
0.08	2.00	0.00	9.96	0.02	0.00	0.10	2.00	0.00	9.95	0.02	0.00
0.12	2.00	0.00	9.94	0.02	0.00	0.14	2.00	0.00	9.93	0.02	0.00
0.16	2.00	0.00	9.92	0.02	0.00	0.18	2.00	0.00	9.91	0.02	0.00
0.20	2.00	0.00	9.90	0.02	0.00	0.22	2.00	0.00	9.89	0.02	0.00
0.24	2.00	0.00	9.88	0.02	0.00	0.26	2.00	0.00	9.87	0.02	0.00
0.28	2.00	0.00	9.86	0.02	0.00	0.30	2.00	0.00	9.85	0.02	0.00
0.32	2.00	0.00	9.84	0.02	0.00	0.34	2.00	0.00	9.83	0.02	0.00
0.36	2.00	0.00	9.82	0.02	0.00	0.38	2.00	0.00	9.81	0.02	0.00
0.40	2.00	0.00	9.80	0.02	0.00	0.42	2.00	0.00	9.79	0.02	0.00
0.44	2.00	0.00	9.78	0.02	0.00	0.46	2.00	0.00	9.77	0.02	0.00
0.48	2.00	0.00	9.76	0.02	0.00	0.50	2.00	0.00	9.75	0.02	0.00
0.52	2.00	0.00	9.74	0.02	0.00	0.54	2.00	0.00	9.73	0.02	0.00
0.56	2.00	0.00	9.72	0.02	0.00	0.58	2.00	0.00	9.71	0.02	0.00
0.60	2.00	0.00	9.70	0.02	0.00	0.62	2.00	0.00	9.69	0.02	0.00
0.64	2.00	0.00	9.68	0.02	0.00	0.66	2.00	0.00	9.67	0.02	0.00
0.68	2.00	0.00	9.66	0.02	0.00	0.70	2.00	0.00	9.65	0.02	0.00
0.72	2.00	0.00	9.64	0.02	0.00	0.74	2.00	0.00	9.63	0.02	0.00
0.76	2.00	0.00	9.62	0.02	0.00	0.78	2.00	0.00	9.61	0.02	0.00
0.80	2.00	0.00	9.60	0.02	0.00	0.82	2.00	0.00	9.59	0.02	0.00
0.84	2.00	0.00	9.58	0.02	0.00	0.86	2.00	0.00	9.57	0.02	0.00
0.88	2.00	0.00	9.56	0.02	0.00	0.90	2.00	0.00	9.55	0.02	0.00
0.92	2.00	0.00	9.54	0.02	0.00	0.94	2.00	0.00	9.53	0.02	0.00
0.96	2.00	0.00	9.52	0.02	0.00	0.98	2.00	0.00	9.51	0.02	0.00
1.00	2.00	0.00	9.50	0.02	0.00	1.02	2.00	0.00	9.49	0.02	0.00
1.04	2.00	0.00	9.48	0.02	0.00	1.06	2.00	0.00	9.47	0.02	0.00
1.08	2.00	0.00	9.46	0.02	0.00	1.10	2.00	0.00	9.45	0.02	0.00
1.12	2.00	0.00	9.44	0.02	0.00	1.14	2.00	0.00	9.43	0.02	0.00
1.16	2.00	0.00	9.42	0.02	0.00	1.18	2.00	0.00	9.41	0.02	0.00
1.20	2.00	0.00	9.40	0.02	0.00	1.22	2.00	0.00	9.39	0.02	0.00
1.24	2.00	0.00	9.38	0.02	0.00	1.26	2.00	0.00	9.37	0.02	0.00
1.28	2.00	0.00	9.36	0.02	0.00	1.30	2.00	0.00	9.35	0.02	0.00
1.32	2.00	0.00	9.34	0.02	0.00	1.34	2.00	0.00	9.33	0.02	0.00
1.36	2.00	0.00	9.32	0.02	0.00	1.38	2.00	0.00	9.31	0.02	0.00
1.40	2.00	0.00	9.30	0.02	0.00	1.42	2.00	0.00	9.29	0.02	0.00
1.44	2.00	0.00	9.28	0.02	0.00	1.46	2.00	0.00	9.27	0.02	0.00
1.48	2.00	0.00	9.26	0.02	0.00	1.50	2.00	0.00	9.25	0.02	0.00
1.52	2.00	0.00	9.24	0.02	0.00	1.54	2.00	0.00	9.23	0.02	0.00
1.56	2.00	0.00	9.22	0.02	0.00	1.58	2.00	0.00	9.21	0.02	0.00
1.60	2.00	0.00	9.20	0.02	0.00	1.62	2.00	0.00	9.19	0.02	0.00
1.64	2.00	0.00	9.18	0.02	0.00	1.66	2.00	0.00	9.17	0.02	0.00
1.68	2.00	0.00	9.16	0.02	0.00	1.70	2.00	0.00	9.15	0.02	0.00
1.72	2.00	0.00	9.14	0.02	0.00	1.74	2.00	0.00	9.13	0.02	0.00
1.76	2.00	0.00	9.12	0.02	0.00	1.78	2.00	0.00	9.11	0.02	0.00
1.80	2.00	0.00	9.10	0.02	0.00	1.82	2.00	0.00	9.09	0.02	0.00
1.84	2.00	0.00	9.08	0.02	0.00	1.86	2.00	0.00	9.07	0.02	0.00
1.88	2.00	0.00	9.06	0.02	0.00	1.90	2.00	0.00	9.05	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
1.92	2.00	0.00	9.04	0.02	0.00	1.94	2.00	0.00	9.03	0.02	0.00
1.96	2.00	0.00	9.02	0.02	0.00	1.98	2.00	0.00	9.01	0.02	0.00
2.00	2.00	0.00	9.00	0.02	0.00	2.02	2.00	0.00	8.99	0.02	0.00
2.04	2.00	0.00	8.98	0.02	0.00	2.06	2.00	0.00	8.97	0.02	0.00
2.08	2.00	0.00	8.96	0.02	0.00	2.10	2.00	0.00	8.95	0.02	0.00
2.12	2.00	0.00	8.94	0.02	0.00	2.14	2.00	0.00	8.93	0.02	0.00
2.16	2.00	0.00	8.92	0.02	0.00	2.18	2.00	0.00	8.91	0.02	0.00
2.20	2.00	0.00	8.90	0.02	0.00	2.22	2.00	0.00	8.89	0.02	0.00
2.24	2.00	0.00	8.88	0.02	0.00	2.26	2.00	0.00	8.87	0.02	0.00
2.28	2.00	0.00	8.86	0.02	0.00	2.30	2.00	0.00	8.85	0.02	0.00
2.32	2.00	0.00	8.84	0.02	0.00	2.34	2.00	0.00	8.83	0.02	0.00
2.36	2.00	0.00	8.82	0.02	0.00	2.38	2.00	0.00	8.81	0.02	0.00
2.40	2.00	0.00	8.80	0.02	0.00	2.42	2.00	0.00	8.79	0.02	0.00
2.44	2.00	0.00	8.78	0.02	0.00	2.46	2.00	0.00	8.77	0.02	0.00
2.48	2.00	0.00	8.76	0.02	0.00	2.50	2.00	0.00	8.75	0.02	0.00
2.52	2.00	0.00	8.74	0.02	0.00	2.54	2.00	0.00	8.73	0.02	0.00
2.56	2.00	0.00	8.72	0.02	0.00	2.58	2.00	0.00	8.71	0.02	0.00
2.60	2.00	0.00	8.70	0.02	0.00	2.62	2.00	0.00	8.69	0.02	0.00
2.64	2.00	0.00	8.68	0.02	0.00	2.66	2.00	0.00	8.67	0.02	0.00
2.68	2.00	0.00	8.66	0.02	0.00	2.70	2.00	0.00	8.65	0.02	0.00
2.72	2.00	0.00	8.64	0.02	0.00	2.74	2.00	0.00	8.63	0.02	0.00
2.76	2.00	0.00	8.62	0.02	0.00	2.78	2.00	0.00	8.61	0.02	0.00
2.80	2.00	0.00	8.60	0.02	0.00	2.82	2.00	0.00	8.59	0.02	0.00
2.84	2.00	0.00	8.58	0.02	0.00	2.86	2.00	0.00	8.57	0.02	0.00
2.88	2.00	0.00	8.56	0.02	0.00	2.90	2.00	0.00	8.55	0.02	0.00
2.92	2.00	0.00	8.54	0.02	0.00	2.94	2.00	0.00	8.53	0.02	0.00
2.96	2.00	0.00	8.52	0.02	0.00	2.98	2.00	0.00	8.51	0.02	0.00
3.00	2.00	0.00	8.50	0.02	0.00	3.02	2.00	0.00	8.49	0.02	0.00
3.04	2.00	0.00	8.48	0.02	0.00	3.07	2.00	0.00	8.46	0.03	0.00
3.08	2.00	0.00	8.46	0.01	0.00	3.10	2.00	0.00	8.45	0.02	0.00
3.12	2.00	0.00	8.44	0.02	0.00	3.14	2.00	0.00	8.43	0.02	0.00
3.16	2.00	0.00	8.42	0.02	0.00	3.18	2.00	0.00	8.41	0.02	0.00
3.20	2.00	0.00	8.40	0.02	0.00	3.22	2.00	0.00	8.39	0.02	0.00
3.24	2.00	0.00	8.38	0.02	0.00	3.26	2.00	0.00	8.37	0.02	0.00
3.28	2.00	0.00	8.36	0.02	0.00	3.30	2.00	0.00	8.35	0.02	0.00
3.32	2.00	0.00	8.34	0.02	0.00	3.34	2.00	0.00	8.33	0.02	0.00
3.36	2.00	0.00	8.32	0.02	0.00	3.38	2.00	0.00	8.31	0.02	0.00
3.40	2.00	0.00	8.30	0.02	0.00	3.42	2.00	0.00	8.29	0.02	0.00
3.44	2.00	0.00	8.28	0.02	0.00	3.46	2.00	0.00	8.27	0.02	0.00
3.48	2.00	0.00	8.26	0.02	0.00	3.50	2.00	0.00	8.25	0.02	0.00
3.52	2.00	0.00	8.24	0.02	0.00	3.54	2.00	0.00	8.23	0.02	0.00
3.56	2.00	0.00	8.22	0.02	0.00	3.58	2.00	0.00	8.21	0.02	0.00
3.60	2.00	0.00	8.20	0.02	0.00	3.62	2.00	0.00	8.19	0.02	0.00
3.64	2.00	0.00	8.18	0.02	0.00	3.66	2.00	0.00	8.17	0.02	0.00
3.68	2.00	0.00	8.16	0.02	0.00	3.70	2.00	0.00	8.15	0.02	0.00
3.72	2.00	0.00	8.14	0.02	0.00	3.74	2.00	0.00	8.13	0.02	0.00
3.76	2.00	0.00	8.12	0.02	0.00	3.78	2.00	0.00	8.11	0.02	0.00
3.80	2.00	0.00	8.10	0.02	0.00	3.82	2.00	0.00	8.09	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
3.84	2.00	0.00	8.08	0.02	0.00	3.86	2.00	0.00	8.07	0.02	0.00
3.88	2.00	0.00	8.06	0.02	0.00	3.90	2.00	0.00	8.05	0.02	0.00
3.92	2.00	0.00	8.04	0.02	0.00	3.94	2.00	0.00	8.03	0.02	0.00
3.96	2.00	0.00	8.02	0.02	0.00	3.98	2.00	0.00	8.01	0.02	0.00
4.00	2.00	0.00	8.00	0.02	0.00	4.02	2.00	0.00	7.99	0.02	0.00
4.04	2.00	0.00	7.98	0.02	0.00	4.06	2.00	0.00	7.97	0.02	0.00
4.08	2.00	0.00	7.96	0.02	0.00	4.10	2.00	0.00	7.95	0.02	0.00
4.12	2.00	0.00	7.94	0.02	0.00	4.14	2.00	0.00	7.93	0.02	0.00
4.16	2.00	0.00	7.92	0.02	0.00	4.18	2.00	0.00	7.91	0.02	0.00
4.20	2.00	0.00	7.90	0.02	0.00	4.22	2.00	0.00	7.89	0.02	0.00
4.24	2.00	0.00	7.88	0.02	0.00	4.26	2.00	0.00	7.87	0.02	0.00
4.28	2.00	0.00	7.86	0.02	0.00	4.30	2.00	0.00	7.85	0.02	0.00
4.32	2.00	0.00	7.84	0.02	0.00	4.34	2.00	0.00	7.83	0.02	0.00
4.36	2.00	0.00	7.82	0.02	0.00	4.38	2.00	0.00	7.81	0.02	0.00
4.40	2.00	0.00	7.80	0.02	0.00	4.42	2.00	0.00	7.79	0.02	0.00
4.44	2.00	0.00	7.78	0.02	0.00	4.46	1.43	0.00	7.77	0.02	0.00
4.48	1.44	0.00	7.76	0.02	0.00	4.50	1.47	0.00	7.75	0.02	0.00
4.52	1.48	0.00	7.74	0.02	0.00	4.54	1.43	0.00	7.73	0.02	0.00
4.56	1.39	0.00	7.72	0.02	0.00	4.58	1.41	0.00	7.71	0.02	0.00
4.60	1.54	0.00	7.70	0.02	0.00	4.62	1.76	0.00	7.69	0.02	0.00
4.64	2.00	0.00	7.68	0.02	0.00	4.66	2.00	0.00	7.67	0.02	0.00
4.68	2.00	0.00	7.66	0.02	0.00	4.70	2.00	0.00	7.65	0.02	0.00
4.72	2.00	0.00	7.64	0.02	0.00	4.74	2.00	0.00	7.63	0.02	0.00
4.76	2.00	0.00	7.62	0.02	0.00	4.78	2.00	0.00	7.61	0.02	0.00
4.80	2.00	0.00	7.60	0.02	0.00	4.82	1.49	0.00	7.59	0.02	0.00
4.84	1.46	0.00	7.58	0.02	0.00	4.86	1.55	0.00	7.57	0.02	0.00
4.88	1.62	0.00	7.56	0.02	0.00	4.90	1.34	0.00	7.55	0.02	0.00
4.92	1.04	0.00	7.54	0.02	0.00	4.94	0.88	0.12	7.53	0.02	0.02
4.96	0.96	0.04	7.52	0.02	0.01	4.98	1.08	0.00	7.51	0.02	0.00
5.00	1.04	0.00	7.50	0.02	0.00	5.02	1.03	0.00	7.49	0.02	0.00
5.04	1.02	0.00	7.48	0.02	0.00	5.06	0.91	0.09	7.47	0.02	0.01
5.08	0.93	0.07	7.46	0.02	0.01	5.10	1.05	0.00	7.45	0.02	0.00
5.12	1.00	0.00	7.44	0.02	0.00	5.14	0.94	0.06	7.43	0.02	0.01
5.16	0.93	0.07	7.42	0.02	0.01	5.18	1.05	0.00	7.41	0.02	0.00
5.20	1.23	0.00	7.40	0.02	0.00	5.22	1.37	0.00	7.39	0.02	0.00
5.24	1.45	0.00	7.38	0.02	0.00	5.26	1.60	0.00	7.37	0.02	0.00
5.28	1.81	0.00	7.36	0.02	0.00	5.30	2.00	0.00	7.35	0.02	0.00
5.32	2.00	0.00	7.34	0.02	0.00	5.34	2.00	0.00	7.33	0.02	0.00
5.36	2.00	0.00	7.32	0.02	0.00	5.38	2.00	0.00	7.31	0.02	0.00
5.40	2.00	0.00	7.30	0.02	0.00	5.42	1.85	0.00	7.29	0.02	0.00
5.44	1.71	0.00	7.28	0.02	0.00	5.46	1.63	0.00	7.27	0.02	0.00
5.48	1.59	0.00	7.26	0.02	0.00	5.50	1.49	0.00	7.25	0.02	0.00
5.52	1.37	0.00	7.24	0.02	0.00	5.54	1.27	0.00	7.23	0.02	0.00
5.56	1.26	0.00	7.22	0.02	0.00	5.58	1.28	0.00	7.21	0.02	0.00
5.60	1.32	0.00	7.20	0.02	0.00	5.62	1.36	0.00	7.19	0.02	0.00
5.64	2.00	0.00	7.18	0.02	0.00	5.66	2.00	0.00	7.17	0.02	0.00
5.68	2.00	0.00	7.16	0.02	0.00	5.70	2.00	0.00	7.15	0.02	0.00
5.72	2.00	0.00	7.14	0.02	0.00	5.74	2.00	0.00	7.13	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
5.76	2.00	0.00	7.12	0.02	0.00	5.78	2.00	0.00	7.11	0.02	0.00
5.80	2.00	0.00	7.10	0.02	0.00	5.82	2.00	0.00	7.09	0.02	0.00
5.84	2.00	0.00	7.08	0.02	0.00	5.86	2.00	0.00	7.07	0.02	0.00
5.88	2.00	0.00	7.06	0.02	0.00	5.90	1.43	0.00	7.05	0.02	0.00
5.92	1.52	0.00	7.04	0.02	0.00	5.94	2.00	0.00	7.03	0.02	0.00
5.96	1.29	0.00	7.02	0.02	0.00	5.98	1.32	0.00	7.01	0.02	0.00
6.00	1.75	0.00	7.00	0.02	0.00	6.02	1.92	0.00	6.99	0.02	0.00
6.04	2.00	0.00	6.98	0.02	0.00	6.06	2.00	0.00	6.97	0.02	0.00
6.08	2.00	0.00	6.96	0.02	0.00	6.10	2.00	0.00	6.95	0.02	0.00
6.12	2.00	0.00	6.94	0.02	0.00	6.14	2.00	0.00	6.93	0.02	0.00
6.16	2.00	0.00	6.92	0.02	0.00	6.18	2.00	0.00	6.91	0.02	0.00
6.20	2.00	0.00	6.90	0.02	0.00	6.22	2.00	0.00	6.89	0.02	0.00
6.24	2.00	0.00	6.88	0.02	0.00	6.26	2.00	0.00	6.87	0.02	0.00
6.28	2.00	0.00	6.86	0.02	0.00	6.30	2.00	0.00	6.85	0.02	0.00
6.32	2.00	0.00	6.84	0.02	0.00	6.34	2.00	0.00	6.83	0.02	0.00
6.36	2.00	0.00	6.82	0.02	0.00	6.38	2.00	0.00	6.81	0.02	0.00
6.40	0.96	0.04	6.80	0.02	0.01	6.42	1.00	0.00	6.79	0.02	0.00
6.44	1.07	0.00	6.78	0.02	0.00	6.46	1.10	0.00	6.77	0.02	0.00
6.48	1.11	0.00	6.76	0.02	0.00	6.50	1.09	0.00	6.75	0.02	0.00
6.52	1.08	0.00	6.74	0.02	0.00	6.54	1.07	0.00	6.73	0.02	0.00
6.56	1.06	0.00	6.72	0.02	0.00	6.58	1.04	0.00	6.71	0.02	0.00
6.60	0.89	0.11	6.70	0.02	0.01	6.62	0.87	0.13	6.69	0.02	0.02
6.64	0.85	0.15	6.68	0.02	0.02	6.66	0.84	0.16	6.67	0.02	0.02
6.68	0.84	0.16	6.66	0.02	0.02	6.70	0.85	0.15	6.65	0.02	0.02
6.72	0.87	0.13	6.64	0.02	0.02	6.74	0.88	0.12	6.63	0.02	0.02
6.76	0.90	0.10	6.62	0.02	0.01	6.78	0.92	0.08	6.61	0.02	0.01
6.80	0.96	0.04	6.60	0.02	0.01	6.82	0.99	0.01	6.59	0.02	0.00
6.84	1.04	0.00	6.58	0.02	0.00	6.86	1.10	0.00	6.57	0.02	0.00
6.88	1.17	0.00	6.56	0.02	0.00	6.90	1.23	0.00	6.55	0.02	0.00
6.92	1.27	0.00	6.54	0.02	0.00	6.94	1.27	0.00	6.53	0.02	0.00
6.96	0.88	0.12	6.52	0.02	0.02	6.98	0.87	0.13	6.51	0.02	0.02
7.00	0.85	0.15	6.50	0.02	0.02	7.02	1.12	0.00	6.49	0.02	0.00
7.04	1.05	0.00	6.48	0.02	0.00	7.06	1.00	0.00	6.47	0.02	0.00
7.08	0.98	0.02	6.46	0.02	0.00	7.10	1.00	0.00	6.45	0.02	0.00
7.12	1.04	0.00	6.44	0.02	0.00	7.14	1.10	0.00	6.43	0.02	0.00
7.16	1.16	0.00	6.42	0.02	0.00	7.18	1.21	0.00	6.41	0.02	0.00
7.20	1.22	0.00	6.40	0.02	0.00	7.22	1.18	0.00	6.39	0.02	0.00
7.24	1.08	0.00	6.38	0.02	0.00	7.26	0.97	0.03	6.37	0.02	0.00
7.28	0.86	0.14	6.36	0.02	0.02	7.30	0.80	0.20	6.35	0.02	0.03
7.32	0.75	0.25	6.34	0.02	0.03	7.34	0.72	0.28	6.33	0.02	0.04
7.36	0.70	0.30	6.32	0.02	0.04	7.38	0.68	0.32	6.31	0.02	0.04
7.40	0.68	0.32	6.30	0.02	0.04	7.42	0.67	0.33	6.29	0.02	0.04
7.44	0.66	0.34	6.28	0.02	0.04	7.46	0.66	0.34	6.27	0.02	0.04
7.48	0.66	0.34	6.26	0.02	0.04	7.50	0.66	0.34	6.25	0.02	0.04
7.52	0.68	0.32	6.24	0.02	0.04	7.54	0.69	0.31	6.23	0.02	0.04
7.56	0.71	0.29	6.22	0.02	0.04	7.58	0.72	0.28	6.21	0.02	0.03
7.60	0.72	0.28	6.20	0.02	0.03	7.62	0.73	0.27	6.19	0.02	0.03
7.64	0.73	0.27	6.18	0.02	0.03	7.66	0.72	0.28	6.17	0.02	0.03

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
7.68	0.72	0.28	6.16	0.02	0.03	7.70	0.71	0.29	6.15	0.02	0.04
7.72	0.70	0.30	6.14	0.02	0.04	7.74	0.68	0.32	6.13	0.02	0.04
7.76	0.66	0.34	6.12	0.02	0.04	7.78	0.75	0.25	6.11	0.02	0.03
7.80	0.75	0.25	6.10	0.02	0.03	7.82	0.77	0.23	6.09	0.02	0.03
7.84	0.81	0.19	6.08	0.02	0.02	7.86	0.88	0.12	6.07	0.02	0.02
7.88	2.00	0.00	6.06	0.02	0.00	7.90	2.00	0.00	6.05	0.02	0.00
7.92	2.00	0.00	6.04	0.02	0.00	7.94	2.00	0.00	6.03	0.02	0.00
7.96	2.00	0.00	6.02	0.02	0.00	7.98	2.00	0.00	6.01	0.02	0.00
8.00	2.00	0.00	6.00	0.02	0.00	8.02	2.00	0.00	5.99	0.02	0.00
8.04	2.00	0.00	5.98	0.02	0.00	8.06	2.00	0.00	5.97	0.02	0.00
8.08	0.83	0.17	5.96	0.02	0.02	8.10	0.81	0.19	5.95	0.02	0.02
8.12	0.81	0.19	5.94	0.02	0.02	8.14	0.82	0.18	5.93	0.02	0.02
8.16	0.84	0.16	5.92	0.02	0.02	8.18	0.86	0.14	5.91	0.02	0.02
8.20	0.87	0.13	5.90	0.02	0.02	8.22	0.86	0.14	5.89	0.02	0.02
8.24	2.00	0.00	5.88	0.02	0.00	8.26	2.00	0.00	5.87	0.02	0.00
8.28	2.00	0.00	5.86	0.02	0.00	8.30	2.00	0.00	5.85	0.02	0.00
8.32	2.00	0.00	5.84	0.02	0.00	8.34	2.00	0.00	5.83	0.02	0.00
8.36	2.00	0.00	5.82	0.02	0.00	8.38	2.00	0.00	5.81	0.02	0.00
8.40	2.00	0.00	5.80	0.02	0.00	8.42	2.00	0.00	5.79	0.02	0.00
8.44	2.00	0.00	5.78	0.02	0.00	8.46	2.00	0.00	5.77	0.02	0.00
8.48	2.00	0.00	5.76	0.02	0.00	8.50	2.00	0.00	5.75	0.02	0.00
8.52	2.00	0.00	5.74	0.02	0.00	8.54	2.00	0.00	5.73	0.02	0.00
8.56	2.00	0.00	5.72	0.02	0.00	8.58	2.00	0.00	5.71	0.02	0.00
8.60	0.88	0.12	5.70	0.02	0.01	8.62	0.87	0.13	5.69	0.02	0.02
8.64	0.85	0.15	5.68	0.02	0.02	8.66	0.81	0.19	5.67	0.02	0.02
8.68	0.78	0.22	5.66	0.02	0.03	8.70	0.76	0.24	5.65	0.02	0.03
8.72	0.77	0.23	5.64	0.02	0.03	8.74	0.80	0.20	5.63	0.02	0.02
8.76	0.83	0.17	5.62	0.02	0.02	8.78	0.86	0.14	5.61	0.02	0.02
8.80	0.86	0.14	5.60	0.02	0.02	8.82	0.85	0.15	5.59	0.02	0.02
8.84	0.82	0.18	5.58	0.02	0.02	8.86	0.79	0.21	5.57	0.02	0.02
8.88	0.77	0.23	5.56	0.02	0.03	8.90	0.77	0.23	5.55	0.02	0.03
8.92	0.76	0.24	5.54	0.02	0.03	8.94	0.75	0.25	5.53	0.02	0.03
8.96	0.75	0.25	5.52	0.02	0.03	8.98	0.74	0.26	5.51	0.02	0.03
9.00	0.71	0.29	5.50	0.02	0.03	9.02	0.72	0.28	5.49	0.02	0.03
9.04	0.73	0.27	5.48	0.02	0.03	9.06	0.77	0.23	5.47	0.02	0.03
9.08	0.78	0.22	5.46	0.02	0.02	9.10	0.78	0.22	5.45	0.02	0.02
9.12	0.78	0.22	5.44	0.02	0.02	9.14	0.79	0.21	5.43	0.02	0.02
9.16	0.81	0.19	5.42	0.02	0.02	9.18	0.83	0.17	5.41	0.02	0.02
9.20	2.00	0.00	5.40	0.02	0.00	9.22	2.00	0.00	5.39	0.02	0.00
9.24	2.00	0.00	5.38	0.02	0.00	9.26	2.00	0.00	5.37	0.02	0.00
9.28	2.00	0.00	5.36	0.02	0.00	9.30	2.00	0.00	5.35	0.02	0.00
9.32	2.00	0.00	5.34	0.02	0.00	9.34	2.00	0.00	5.33	0.02	0.00
9.36	2.00	0.00	5.32	0.02	0.00	9.38	2.00	0.00	5.31	0.02	0.00
9.40	2.00	0.00	5.30	0.02	0.00	9.42	2.00	0.00	5.29	0.02	0.00
9.44	2.00	0.00	5.28	0.02	0.00	9.46	2.00	0.00	5.27	0.02	0.00
9.48	2.00	0.00	5.26	0.02	0.00	9.50	2.00	0.00	5.25	0.02	0.00
9.52	2.00	0.00	5.24	0.02	0.00	9.54	2.00	0.00	5.23	0.02	0.00
9.56	2.00	0.00	5.22	0.02	0.00	9.58	2.00	0.00	5.21	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
9.60	2.00	0.00	5.20	0.02	0.00	9.62	2.00	0.00	5.19	0.02	0.00
9.64	2.00	0.00	5.18	0.02	0.00	9.66	2.00	0.00	5.17	0.02	0.00
9.68	2.00	0.00	5.16	0.02	0.00	9.70	2.00	0.00	5.15	0.02	0.00
9.72	2.00	0.00	5.14	0.02	0.00	9.74	2.00	0.00	5.13	0.02	0.00
9.76	2.00	0.00	5.12	0.02	0.00	9.78	2.00	0.00	5.11	0.02	0.00
9.80	2.00	0.00	5.10	0.02	0.00	9.82	2.00	0.00	5.09	0.02	0.00
9.84	2.00	0.00	5.08	0.02	0.00	9.86	2.00	0.00	5.07	0.02	0.00
9.88	2.00	0.00	5.06	0.02	0.00	9.90	2.00	0.00	5.05	0.02	0.00
9.92	2.00	0.00	5.04	0.02	0.00	9.94	2.00	0.00	5.03	0.02	0.00
9.96	2.00	0.00	5.02	0.02	0.00	9.98	2.00	0.00	5.01	0.02	0.00
10.00	2.00	0.00	5.00	0.02	0.00	10.02	2.00	0.00	4.99	0.02	0.00
10.04	2.00	0.00	4.98	0.02	0.00	10.06	2.00	0.00	4.97	0.02	0.00
10.08	2.00	0.00	4.96	0.02	0.00	10.10	2.00	0.00	4.95	0.02	0.00
10.12	2.00	0.00	4.94	0.02	0.00	10.14	2.00	0.00	4.93	0.02	0.00
10.16	2.00	0.00	4.92	0.02	0.00	10.18	2.00	0.00	4.91	0.02	0.00
10.20	2.00	0.00	4.90	0.02	0.00	10.22	2.00	0.00	4.89	0.02	0.00
10.24	2.00	0.00	4.88	0.02	0.00	10.26	2.00	0.00	4.87	0.02	0.00
10.28	2.00	0.00	4.86	0.02	0.00	10.30	0.88	0.12	4.85	0.02	0.01
10.32	0.85	0.15	4.84	0.02	0.01	10.34	0.84	0.16	4.83	0.02	0.02
10.36	0.82	0.18	4.82	0.02	0.02	10.38	0.81	0.19	4.81	0.02	0.02
10.40	0.81	0.19	4.80	0.02	0.02	10.42	0.83	0.17	4.79	0.02	0.02
10.44	0.85	0.15	4.78	0.02	0.01	10.46	0.86	0.14	4.77	0.02	0.01
10.48	0.85	0.15	4.76	0.02	0.01	10.50	2.00	0.00	4.75	0.02	0.00
10.52	2.00	0.00	4.74	0.02	0.00	10.54	2.00	0.00	4.73	0.02	0.00
10.56	2.00	0.00	4.72	0.02	0.00	10.58	2.00	0.00	4.71	0.02	0.00
10.60	2.00	0.00	4.70	0.02	0.00	10.62	2.00	0.00	4.69	0.02	0.00
10.64	2.00	0.00	4.68	0.02	0.00	10.66	2.00	0.00	4.67	0.02	0.00
10.68	2.00	0.00	4.66	0.02	0.00	10.70	2.00	0.00	4.65	0.02	0.00
10.72	2.00	0.00	4.64	0.02	0.00	10.74	2.00	0.00	4.63	0.02	0.00
10.76	2.00	0.00	4.62	0.02	0.00	10.78	2.00	0.00	4.61	0.02	0.00
10.80	2.00	0.00	4.60	0.02	0.00	10.82	2.00	0.00	4.59	0.02	0.00
10.84	2.00	0.00	4.58	0.02	0.00	10.86	2.00	0.00	4.57	0.02	0.00
10.88	2.00	0.00	4.56	0.02	0.00	10.90	2.00	0.00	4.55	0.02	0.00
10.92	2.00	0.00	4.54	0.02	0.00	10.94	0.85	0.15	4.53	0.02	0.01
10.96	0.90	0.10	4.52	0.02	0.01	10.98	0.93	0.07	4.51	0.02	0.01
11.00	2.00	0.00	4.50	0.02	0.00	11.02	2.00	0.00	4.49	0.02	0.00
11.04	2.00	0.00	4.48	0.02	0.00	11.06	2.00	0.00	4.47	0.02	0.00
11.08	2.00	0.00	4.46	0.02	0.00	11.10	2.00	0.00	4.45	0.02	0.00
11.12	2.00	0.00	4.44	0.02	0.00	11.14	2.00	0.00	4.43	0.02	0.00
11.16	2.00	0.00	4.42	0.02	0.00	11.18	2.00	0.00	4.41	0.02	0.00
11.20	2.00	0.00	4.40	0.02	0.00	11.22	2.00	0.00	4.39	0.02	0.00
11.24	2.00	0.00	4.38	0.02	0.00	11.26	2.00	0.00	4.37	0.02	0.00
11.28	2.00	0.00	4.36	0.02	0.00	11.30	2.00	0.00	4.35	0.02	0.00
11.32	2.00	0.00	4.34	0.02	0.00	11.34	2.00	0.00	4.33	0.02	0.00
11.36	2.00	0.00	4.32	0.02	0.00	11.38	2.00	0.00	4.31	0.02	0.00
11.40	2.00	0.00	4.30	0.02	0.00	11.42	2.00	0.00	4.29	0.02	0.00
11.44	2.00	0.00	4.28	0.02	0.00	11.46	2.00	0.00	4.27	0.02	0.00
11.48	2.00	0.00	4.26	0.02	0.00	11.50	2.00	0.00	4.25	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
11.52	2.00	0.00	4.24	0.02	0.00	11.54	2.00	0.00	4.23	0.02	0.00
11.56	2.00	0.00	4.22	0.02	0.00	11.58	2.00	0.00	4.21	0.02	0.00
11.60	2.00	0.00	4.20	0.02	0.00	11.62	2.00	0.00	4.19	0.02	0.00
11.64	2.00	0.00	4.18	0.02	0.00	11.66	2.00	0.00	4.17	0.02	0.00
11.68	2.00	0.00	4.16	0.02	0.00	11.70	2.00	0.00	4.15	0.02	0.00
11.72	2.00	0.00	4.14	0.02	0.00	11.74	2.00	0.00	4.13	0.02	0.00
11.76	2.00	0.00	4.12	0.02	0.00	11.78	2.00	0.00	4.11	0.02	0.00
11.80	2.00	0.00	4.10	0.02	0.00	11.82	2.00	0.00	4.09	0.02	0.00
11.84	2.00	0.00	4.08	0.02	0.00	11.86	2.00	0.00	4.07	0.02	0.00
11.88	2.00	0.00	4.06	0.02	0.00	11.90	2.00	0.00	4.05	0.02	0.00
11.92	2.00	0.00	4.04	0.02	0.00	11.94	2.00	0.00	4.03	0.02	0.00
11.96	2.00	0.00	4.02	0.02	0.00	11.98	2.00	0.00	4.01	0.02	0.00
12.00	2.00	0.00	4.00	0.02	0.00	12.02	2.00	0.00	3.99	0.02	0.00
12.04	2.00	0.00	3.98	0.02	0.00	12.06	2.00	0.00	3.97	0.02	0.00
12.08	2.00	0.00	3.96	0.02	0.00	12.10	2.00	0.00	3.95	0.02	0.00
12.12	2.00	0.00	3.94	0.02	0.00	12.14	2.00	0.00	3.93	0.02	0.00
12.16	2.00	0.00	3.92	0.02	0.00	12.18	2.00	0.00	3.91	0.02	0.00
12.20	2.00	0.00	3.90	0.02	0.00	12.22	2.00	0.00	3.89	0.02	0.00
12.24	2.00	0.00	3.88	0.02	0.00	12.26	2.00	0.00	3.87	0.02	0.00
12.28	2.00	0.00	3.86	0.02	0.00	12.30	2.00	0.00	3.85	0.02	0.00
12.32	2.00	0.00	3.84	0.02	0.00	12.34	2.00	0.00	3.83	0.02	0.00
12.36	2.00	0.00	3.82	0.02	0.00	12.38	2.00	0.00	3.81	0.02	0.00
12.40	2.00	0.00	3.80	0.02	0.00	12.42	2.00	0.00	3.79	0.02	0.00
12.44	2.00	0.00	3.78	0.02	0.00	12.46	2.00	0.00	3.77	0.02	0.00
12.48	2.00	0.00	3.76	0.02	0.00	12.50	2.00	0.00	3.75	0.02	0.00
12.52	2.00	0.00	3.74	0.02	0.00	12.54	2.00	0.00	3.73	0.02	0.00
12.56	2.00	0.00	3.72	0.02	0.00	12.58	2.00	0.00	3.71	0.02	0.00
12.60	2.00	0.00	3.70	0.02	0.00	12.62	2.00	0.00	3.69	0.02	0.00
12.64	2.00	0.00	3.68	0.02	0.00	12.66	2.00	0.00	3.67	0.02	0.00
12.68	2.00	0.00	3.66	0.02	0.00	12.70	2.00	0.00	3.65	0.02	0.00
12.72	2.00	0.00	3.64	0.02	0.00	12.74	2.00	0.00	3.63	0.02	0.00
12.76	2.00	0.00	3.62	0.02	0.00	12.78	2.00	0.00	3.61	0.02	0.00
12.80	2.00	0.00	3.60	0.02	0.00	12.82	2.00	0.00	3.59	0.02	0.00
12.84	2.00	0.00	3.58	0.02	0.00	12.86	2.00	0.00	3.57	0.02	0.00
12.88	2.00	0.00	3.56	0.02	0.00	12.90	2.00	0.00	3.55	0.02	0.00
12.92	2.00	0.00	3.54	0.02	0.00	12.94	2.00	0.00	3.53	0.02	0.00
12.96	2.00	0.00	3.52	0.02	0.00	12.98	2.00	0.00	3.51	0.02	0.00
13.00	2.00	0.00	3.50	0.02	0.00	13.02	2.00	0.00	3.49	0.02	0.00
13.04	2.00	0.00	3.48	0.02	0.00	13.06	2.00	0.00	3.47	0.02	0.00
13.08	2.00	0.00	3.46	0.02	0.00	13.10	2.00	0.00	3.45	0.02	0.00
13.12	2.00	0.00	3.44	0.02	0.00	13.14	2.00	0.00	3.43	0.02	0.00
13.16	2.00	0.00	3.42	0.02	0.00	13.18	2.00	0.00	3.41	0.02	0.00
13.20	2.00	0.00	3.40	0.02	0.00	13.22	2.00	0.00	3.39	0.02	0.00
13.24	2.00	0.00	3.38	0.02	0.00	13.26	2.00	0.00	3.37	0.02	0.00
13.28	2.00	0.00	3.36	0.02	0.00	13.30	2.00	0.00	3.35	0.02	0.00
13.32	2.00	0.00	3.34	0.02	0.00	13.34	2.00	0.00	3.33	0.02	0.00
13.36	2.00	0.00	3.32	0.02	0.00	13.38	2.00	0.00	3.31	0.02	0.00
13.40	2.00	0.00	3.30	0.02	0.00	13.42	2.00	0.00	3.29	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
13.44	2.00	0.00	3.28	0.02	0.00	13.46	2.00	0.00	3.27	0.02	0.00
13.48	2.00	0.00	3.26	0.02	0.00	13.50	2.00	0.00	3.25	0.02	0.00
13.52	2.00	0.00	3.24	0.02	0.00	13.54	2.00	0.00	3.23	0.02	0.00
13.56	2.00	0.00	3.22	0.02	0.00	13.58	2.00	0.00	3.21	0.02	0.00
13.60	2.00	0.00	3.20	0.02	0.00	13.62	2.00	0.00	3.19	0.02	0.00
13.64	2.00	0.00	3.18	0.02	0.00	13.66	2.00	0.00	3.17	0.02	0.00
13.68	2.00	0.00	3.16	0.02	0.00	13.70	2.00	0.00	3.15	0.02	0.00
13.72	2.00	0.00	3.14	0.02	0.00	13.74	2.00	0.00	3.13	0.02	0.00
13.76	2.00	0.00	3.12	0.02	0.00	13.78	2.00	0.00	3.11	0.02	0.00
13.80	2.00	0.00	3.10	0.02	0.00	13.82	2.00	0.00	3.09	0.02	0.00
13.84	2.00	0.00	3.08	0.02	0.00	13.86	2.00	0.00	3.07	0.02	0.00
13.88	2.00	0.00	3.06	0.02	0.00	13.90	2.00	0.00	3.05	0.02	0.00
13.92	2.00	0.00	3.04	0.02	0.00	13.94	2.00	0.00	3.03	0.02	0.00
13.96	2.00	0.00	3.02	0.02	0.00	13.98	2.00	0.00	3.01	0.02	0.00
14.00	2.00	0.00	3.00	0.02	0.00	14.02	2.00	0.00	2.99	0.02	0.00
14.04	2.00	0.00	2.98	0.02	0.00	14.06	2.00	0.00	2.97	0.02	0.00
14.08	2.00	0.00	2.96	0.02	0.00	14.10	2.00	0.00	2.95	0.02	0.00
14.12	2.00	0.00	2.94	0.02	0.00	14.14	2.00	0.00	2.93	0.02	0.00
14.16	2.00	0.00	2.92	0.02	0.00	14.18	2.00	0.00	2.91	0.02	0.00
14.20	2.00	0.00	2.90	0.02	0.00	14.22	2.00	0.00	2.89	0.02	0.00
14.24	2.00	0.00	2.88	0.02	0.00	14.26	2.00	0.00	2.87	0.02	0.00
14.28	2.00	0.00	2.86	0.02	0.00	14.30	2.00	0.00	2.85	0.02	0.00
14.32	2.00	0.00	2.84	0.02	0.00	14.34	2.00	0.00	2.83	0.02	0.00
14.36	2.00	0.00	2.82	0.02	0.00	14.38	2.00	0.00	2.81	0.02	0.00
14.40	2.00	0.00	2.80	0.02	0.00	14.42	2.00	0.00	2.79	0.02	0.00
14.44	2.00	0.00	2.78	0.02	0.00	14.46	2.00	0.00	2.77	0.02	0.00
14.48	2.00	0.00	2.76	0.02	0.00	14.50	2.00	0.00	2.75	0.02	0.00
14.52	2.00	0.00	2.74	0.02	0.00	14.54	2.00	0.00	2.73	0.02	0.00
14.56	2.00	0.00	2.72	0.02	0.00	14.58	2.00	0.00	2.71	0.02	0.00
14.60	2.00	0.00	2.70	0.02	0.00	14.62	2.00	0.00	2.69	0.02	0.00
14.64	2.00	0.00	2.68	0.02	0.00	14.66	2.00	0.00	2.67	0.02	0.00
14.68	2.00	0.00	2.66	0.02	0.00	14.70	2.00	0.00	2.65	0.02	0.00
14.72	2.00	0.00	2.64	0.02	0.00	14.74	2.00	0.00	2.63	0.02	0.00
14.76	2.00	0.00	2.62	0.02	0.00	14.78	2.00	0.00	2.61	0.02	0.00
14.80	2.00	0.00	2.60	0.02	0.00	14.82	2.00	0.00	2.59	0.02	0.00
14.84	2.00	0.00	2.58	0.02	0.00	14.86	2.00	0.00	2.57	0.02	0.00
14.88	2.00	0.00	2.56	0.02	0.00	14.90	2.00	0.00	2.55	0.02	0.00
14.92	2.00	0.00	2.54	0.02	0.00	14.94	2.00	0.00	2.53	0.02	0.00
14.96	2.00	0.00	2.52	0.02	0.00	14.98	2.00	0.00	2.51	0.02	0.00
15.00	2.00	0.00	2.50	0.02	0.00	15.02	2.00	0.00	2.49	0.02	0.00
15.04	0.93	0.07	2.48	0.02	0.00	15.06	0.97	0.03	2.47	0.02	0.00
15.08	1.00	0.00	2.46	0.02	0.00	15.10	2.00	0.00	2.45	0.02	0.00
15.12	2.00	0.00	2.44	0.02	0.00	15.14	2.00	0.00	2.43	0.02	0.00
15.16	2.00	0.00	2.42	0.02	0.00	15.18	2.00	0.00	2.41	0.02	0.00
15.20	2.00	0.00	2.40	0.02	0.00	15.22	2.00	0.00	2.39	0.02	0.00
15.24	2.00	0.00	2.38	0.02	0.00	15.26	2.00	0.00	2.37	0.02	0.00
15.28	2.00	0.00	2.36	0.02	0.00	15.30	2.00	0.00	2.35	0.02	0.00
15.32	2.00	0.00	2.34	0.02	0.00	15.34	2.00	0.00	2.33	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
15.36	2.00	0.00	2.32	0.02	0.00	15.38	2.00	0.00	2.31	0.02	0.00
15.40	2.00	0.00	2.30	0.02	0.00	15.42	2.00	0.00	2.29	0.02	0.00
15.44	2.00	0.00	2.28	0.02	0.00	15.46	2.00	0.00	2.27	0.02	0.00
15.48	2.00	0.00	2.26	0.02	0.00	15.50	2.00	0.00	2.25	0.02	0.00
15.52	2.00	0.00	2.24	0.02	0.00	15.54	2.00	0.00	2.23	0.02	0.00
15.56	2.00	0.00	2.22	0.02	0.00	15.58	2.00	0.00	2.21	0.02	0.00
15.60	2.00	0.00	2.20	0.02	0.00	15.62	2.00	0.00	2.19	0.02	0.00
15.64	2.00	0.00	2.18	0.02	0.00	15.66	2.00	0.00	2.17	0.02	0.00
15.68	2.00	0.00	2.16	0.02	0.00	15.70	2.00	0.00	2.15	0.02	0.00
15.72	2.00	0.00	2.14	0.02	0.00	15.74	2.00	0.00	2.13	0.02	0.00
15.76	2.00	0.00	2.12	0.02	0.00	15.78	2.00	0.00	2.11	0.02	0.00
15.80	2.00	0.00	2.10	0.02	0.00	15.82	2.00	0.00	2.09	0.02	0.00
15.84	2.00	0.00	2.08	0.02	0.00	15.86	2.00	0.00	2.07	0.02	0.00
15.88	2.00	0.00	2.06	0.02	0.00	15.90	2.00	0.00	2.05	0.02	0.00
15.92	2.00	0.00	2.04	0.02	0.00	15.94	2.00	0.00	2.03	0.02	0.00
15.96	2.00	0.00	2.02	0.02	0.00	15.98	2.00	0.00	2.01	0.02	0.00
16.00	2.00	0.00	2.00	0.02	0.00	16.02	2.00	0.00	1.99	0.02	0.00
16.04	2.00	0.00	1.98	0.02	0.00	16.06	2.00	0.00	1.97	0.02	0.00
16.08	2.00	0.00	1.96	0.02	0.00	16.10	2.00	0.00	1.95	0.02	0.00
16.12	2.00	0.00	1.94	0.02	0.00	16.14	2.00	0.00	1.93	0.02	0.00
16.16	2.00	0.00	1.92	0.02	0.00	16.18	2.00	0.00	1.91	0.02	0.00
16.20	2.00	0.00	1.90	0.02	0.00	16.22	2.00	0.00	1.89	0.02	0.00
16.24	2.00	0.00	1.88	0.02	0.00	16.26	2.00	0.00	1.87	0.02	0.00
16.28	2.00	0.00	1.86	0.02	0.00	16.30	2.00	0.00	1.85	0.02	0.00
16.32	2.00	0.00	1.84	0.02	0.00	16.34	2.00	0.00	1.83	0.02	0.00
16.36	2.00	0.00	1.82	0.02	0.00	16.38	2.00	0.00	1.81	0.02	0.00
16.40	2.00	0.00	1.80	0.02	0.00	16.42	2.00	0.00	1.79	0.02	0.00
16.44	2.00	0.00	1.78	0.02	0.00	16.46	2.00	0.00	1.77	0.02	0.00
16.48	2.00	0.00	1.76	0.02	0.00	16.50	2.00	0.00	1.75	0.02	0.00
16.52	2.00	0.00	1.74	0.02	0.00	16.54	2.00	0.00	1.73	0.02	0.00
16.56	2.00	0.00	1.72	0.02	0.00	16.58	2.00	0.00	1.71	0.02	0.00
16.60	2.00	0.00	1.70	0.02	0.00	16.62	2.00	0.00	1.69	0.02	0.00
16.64	2.00	0.00	1.68	0.02	0.00	16.66	2.00	0.00	1.67	0.02	0.00
16.68	2.00	0.00	1.66	0.02	0.00	16.70	2.00	0.00	1.65	0.02	0.00
16.72	2.00	0.00	1.64	0.02	0.00	16.74	2.00	0.00	1.63	0.02	0.00
16.76	2.00	0.00	1.62	0.02	0.00	16.78	2.00	0.00	1.61	0.02	0.00
16.80	2.00	0.00	1.60	0.02	0.00	16.82	2.00	0.00	1.59	0.02	0.00
16.84	2.00	0.00	1.58	0.02	0.00	16.86	2.00	0.00	1.57	0.02	0.00
16.88	2.00	0.00	1.56	0.02	0.00	16.90	2.00	0.00	1.55	0.02	0.00
16.92	2.00	0.00	1.54	0.02	0.00	16.94	2.00	0.00	1.53	0.02	0.00
16.96	2.00	0.00	1.52	0.02	0.00	16.98	2.00	0.00	1.51	0.02	0.00
17.00	2.00	0.00	1.50	0.02	0.00	17.02	2.00	0.00	1.49	0.02	0.00
17.04	2.00	0.00	1.48	0.02	0.00	17.06	2.00	0.00	1.47	0.02	0.00
17.08	2.00	0.00	1.46	0.02	0.00	17.10	2.00	0.00	1.45	0.02	0.00
17.12	2.00	0.00	1.44	0.02	0.00	17.14	2.00	0.00	1.43	0.02	0.00
17.16	2.00	0.00	1.42	0.02	0.00	17.18	2.00	0.00	1.41	0.02	0.00
17.20	2.00	0.00	1.40	0.02	0.00	17.22	2.00	0.00	1.39	0.02	0.00
17.24	2.00	0.00	1.38	0.02	0.00	17.26	2.00	0.00	1.37	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
17.28	2.00	0.00	1.36	0.02	0.00	17.30	2.00	0.00	1.35	0.02	0.00
17.32	2.00	0.00	1.34	0.02	0.00	17.34	2.00	0.00	1.33	0.02	0.00
17.36	2.00	0.00	1.32	0.02	0.00	17.38	2.00	0.00	1.31	0.02	0.00
17.40	2.00	0.00	1.30	0.02	0.00	17.42	2.00	0.00	1.29	0.02	0.00
17.44	2.00	0.00	1.28	0.02	0.00	17.46	2.00	0.00	1.27	0.02	0.00
17.48	2.00	0.00	1.26	0.02	0.00	17.50	2.00	0.00	1.25	0.02	0.00
17.52	2.00	0.00	1.24	0.02	0.00	17.54	2.00	0.00	1.23	0.02	0.00
17.56	2.00	0.00	1.22	0.02	0.00	17.58	2.00	0.00	1.21	0.02	0.00
17.60	2.00	0.00	1.20	0.02	0.00	17.62	2.00	0.00	1.19	0.02	0.00
17.64	2.00	0.00	1.18	0.02	0.00	17.66	2.00	0.00	1.17	0.02	0.00
17.68	2.00	0.00	1.16	0.02	0.00	17.70	2.00	0.00	1.15	0.02	0.00
17.72	2.00	0.00	1.14	0.02	0.00	17.74	2.00	0.00	1.13	0.02	0.00
17.76	2.00	0.00	1.12	0.02	0.00	17.78	2.00	0.00	1.11	0.02	0.00
17.80	2.00	0.00	1.10	0.02	0.00	17.82	2.00	0.00	1.09	0.02	0.00
17.84	2.00	0.00	1.08	0.02	0.00	17.86	2.00	0.00	1.07	0.02	0.00
17.88	2.00	0.00	1.06	0.02	0.00	17.90	2.00	0.00	1.05	0.02	0.00
17.92	2.00	0.00	1.04	0.02	0.00	17.94	2.00	0.00	1.03	0.02	0.00
17.96	2.00	0.00	1.02	0.02	0.00	17.98	2.00	0.00	1.01	0.02	0.00
18.00	2.00	0.00	1.00	0.02	0.00	18.02	2.00	0.00	0.99	0.02	0.00
18.04	2.00	0.00	0.98	0.02	0.00	18.06	2.00	0.00	0.97	0.02	0.00
18.08	2.00	0.00	0.96	0.02	0.00	18.10	2.00	0.00	0.95	0.02	0.00
18.12	2.00	0.00	0.94	0.02	0.00	18.14	2.00	0.00	0.93	0.02	0.00
18.16	2.00	0.00	0.92	0.02	0.00	18.18	2.00	0.00	0.91	0.02	0.00
18.20	2.00	0.00	0.90	0.02	0.00	18.22	2.00	0.00	0.89	0.02	0.00
18.24	2.00	0.00	0.88	0.02	0.00	18.26	2.00	0.00	0.87	0.02	0.00
18.28	2.00	0.00	0.86	0.02	0.00	18.30	1.43	0.00	0.85	0.02	0.00
18.32	1.42	0.00	0.84	0.02	0.00	18.34	1.40	0.00	0.83	0.02	0.00
18.36	1.36	0.00	0.82	0.02	0.00	18.38	1.28	0.00	0.81	0.02	0.00
18.40	1.18	0.00	0.80	0.02	0.00	18.42	1.08	0.00	0.79	0.02	0.00
18.44	0.99	0.01	0.78	0.02	0.00	18.46	0.82	0.18	0.77	0.02	0.00
18.48	0.83	0.17	0.76	0.02	0.00	18.50	0.86	0.14	0.75	0.02	0.00
18.52	0.90	0.10	0.74	0.02	0.00	18.54	0.94	0.06	0.73	0.02	0.00
18.56	1.00	0.00	0.72	0.02	0.00	18.58	1.02	0.00	0.71	0.02	0.00
18.60	0.98	0.02	0.70	0.02	0.00	18.62	1.05	0.00	0.69	0.02	0.00
18.64	1.02	0.00	0.68	0.02	0.00	18.66	1.06	0.00	0.67	0.02	0.00
18.68	1.18	0.00	0.66	0.02	0.00	18.70	2.00	0.00	0.65	0.02	0.00
18.72	2.00	0.00	0.64	0.02	0.00	18.74	2.00	0.00	0.63	0.02	0.00
18.76	2.00	0.00	0.62	0.02	0.00	18.78	2.00	0.00	0.61	0.02	0.00
18.80	2.00	0.00	0.60	0.02	0.00	18.82	2.00	0.00	0.59	0.02	0.00
18.84	2.00	0.00	0.58	0.02	0.00	18.86	2.00	0.00	0.57	0.02	0.00
18.88	2.00	0.00	0.56	0.02	0.00	18.90	2.00	0.00	0.55	0.02	0.00
18.92	2.00	0.00	0.54	0.02	0.00	18.94	2.00	0.00	0.53	0.02	0.00
18.96	2.00	0.00	0.52	0.02	0.00	18.98	2.00	0.00	0.51	0.02	0.00
19.00	2.00	0.00	0.50	0.02	0.00	19.02	2.00	0.00	0.49	0.02	0.00
19.04	2.00	0.00	0.48	0.02	0.00	19.06	2.00	0.00	0.47	0.02	0.00
19.08	2.00	0.00	0.46	0.02	0.00	19.10	2.00	0.00	0.45	0.02	0.00
19.12	2.00	0.00	0.44	0.02	0.00	19.14	2.00	0.00	0.43	0.02	0.00
19.16	2.00	0.00	0.42	0.02	0.00	19.18	2.00	0.00	0.41	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
19.20	2.00	0.00	0.40	0.02	0.00	19.22	2.00	0.00	0.39	0.02	0.00
19.24	2.00	0.00	0.38	0.02	0.00	19.26	2.00	0.00	0.37	0.02	0.00
19.28	2.00	0.00	0.36	0.02	0.00	19.30	2.00	0.00	0.35	0.02	0.00
19.32	2.00	0.00	0.34	0.02	0.00	19.34	2.00	0.00	0.33	0.02	0.00
19.36	2.00	0.00	0.32	0.02	0.00	19.38	2.00	0.00	0.31	0.02	0.00
19.40	2.00	0.00	0.30	0.02	0.00	19.42	2.00	0.00	0.29	0.02	0.00
19.44	2.00	0.00	0.28	0.02	0.00	19.46	2.00	0.00	0.27	0.02	0.00
19.48	2.00	0.00	0.26	0.02	0.00	19.50	2.00	0.00	0.25	0.02	0.00
19.52	2.00	0.00	0.24	0.02	0.00	19.54	2.00	0.00	0.23	0.02	0.00
19.56	2.00	0.00	0.22	0.02	0.00	19.58	2.00	0.00	0.21	0.02	0.00
19.60	2.00	0.00	0.20	0.02	0.00	19.62	2.00	0.00	0.19	0.02	0.00
19.64	2.00	0.00	0.18	0.02	0.00	19.66	2.00	0.00	0.17	0.02	0.00
19.68	2.00	0.00	0.16	0.02	0.00	19.70	2.00	0.00	0.15	0.02	0.00
19.72	2.00	0.00	0.14	0.02	0.00	19.74	2.00	0.00	0.13	0.02	0.00
19.76	2.00	0.00	0.12	0.02	0.00	19.78	2.00	0.00	0.11	0.02	0.00
19.80	2.00	0.00	0.10	0.02	0.00	19.82	2.00	0.00	0.09	0.02	0.00
19.84	2.00	0.00	0.08	0.02	0.00	19.86	2.00	0.00	0.07	0.02	0.00
19.88	2.00	0.00	0.06	0.02	0.00	19.90	2.00	0.00	0.05	0.02	0.00
19.92	2.00	0.00	0.04	0.02	0.00	19.94	2.00	0.00	0.03	0.02	0.00
19.96	2.00	0.00	0.02	0.02	0.00	19.98	2.00	0.00	0.01	0.02	0.00
20.00	2.00	0.00	0.00	0.02	0.00	20.02	2.00	0.00	0.00	0.00	0.00
20.04	2.00	0.00	0.00	0.00	0.00	20.06	2.00	0.00	0.00	0.00	0.00
20.08	2.00	0.00	0.00	0.00	0.00	20.10	2.00	0.00	0.00	0.00	0.00
20.12	2.00	0.00	0.00	0.00	0.00	20.14	2.00	0.00	0.00	0.00	0.00
20.16	2.00	0.00	0.00	0.00	0.00	20.18	2.00	0.00	0.00	0.00	0.00
20.20	2.00	0.00	0.00	0.00	0.00	20.22	2.00	0.00	0.00	0.00	0.00
20.24	2.00	0.00	0.00	0.00	0.00	20.26	2.00	0.00	0.00	0.00	0.00
20.28	2.00	0.00	0.00	0.00	0.00	20.30	2.00	0.00	0.00	0.00	0.00
20.32	2.00	0.00	0.00	0.00	0.00	20.34	2.00	0.00	0.00	0.00	0.00
20.36	2.00	0.00	0.00	0.00	0.00	20.38	2.00	0.00	0.00	0.00	0.00
20.40	2.00	0.00	0.00	0.00	0.00	20.42	2.00	0.00	0.00	0.00	0.00
20.44	2.00	0.00	0.00	0.00	0.00	20.46	2.00	0.00	0.00	0.00	0.00
20.48	2.00	0.00	0.00	0.00	0.00	20.50	2.00	0.00	0.00	0.00	0.00
20.52	2.00	0.00	0.00	0.00	0.00	20.54	2.00	0.00	0.00	0.00	0.00
20.56	2.00	0.00	0.00	0.00	0.00	20.58	2.00	0.00	0.00	0.00	0.00
20.60	2.00	0.00	0.00	0.00	0.00	20.62	2.00	0.00	0.00	0.00	0.00
20.64	2.00	0.00	0.00	0.00	0.00	20.66	2.00	0.00	0.00	0.00	0.00
20.68	2.00	0.00	0.00	0.00	0.00	20.70	2.00	0.00	0.00	0.00	0.00
20.72	2.00	0.00	0.00	0.00	0.00	20.74	2.00	0.00	0.00	0.00	0.00
20.76	2.00	0.00	0.00	0.00	0.00	20.78	2.00	0.00	0.00	0.00	0.00
20.80	2.00	0.00	0.00	0.00	0.00	20.82	2.00	0.00	0.00	0.00	0.00
20.84	2.00	0.00	0.00	0.00	0.00	20.86	2.00	0.00	0.00	0.00	0.00
20.88	2.00	0.00	0.00	0.00	0.00	20.90	2.00	0.00	0.00	0.00	0.00
20.92	2.00	0.00	0.00	0.00	0.00	20.94	2.00	0.00	0.00	0.00	0.00
20.96	2.00	0.00	0.00	0.00	0.00	20.98	2.00	0.00	0.00	0.00	0.00
21.00	2.00	0.00	0.00	0.00	0.00	21.02	2.00	0.00	0.00	0.00	0.00
21.04	2.00	0.00	0.00	0.00	0.00	21.06	2.00	0.00	0.00	0.00	0.00
21.08	2.00	0.00	0.00	0.00	0.00	21.10	2.00	0.00	0.00	0.00	0.00

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

Depth (m)	FS	F_L	w_z	d_z	LPI	Depth (m)	FS	F_L	w_z	d_z	LPI
21.12	2.00	0.00	0.00	0.00	0.00	21.14	2.00	0.00	0.00	0.00	0.00
21.16	2.00	0.00	0.00	0.00	0.00	21.18	2.00	0.00	0.00	0.00	0.00
21.20	2.00	0.00	0.00	0.00	0.00	21.22	2.00	0.00	0.00	0.00	0.00

Overall liquefaction potential: 2.39

LPI = 0.00 - Liquefaction risk very low

LPI between 0.00 and 5.00 - Liquefaction risk low

LPI between 5.00 and 15.00 - Liquefaction risk high

LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point

 F_L : 1 - FS w_z : Function value of the extend of soil liquefaction according to depth d_z : Layer thickness (m)

LPI: Liquefaction potential index value for test point



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LIQUEFACTION ANALYSIS REPORT

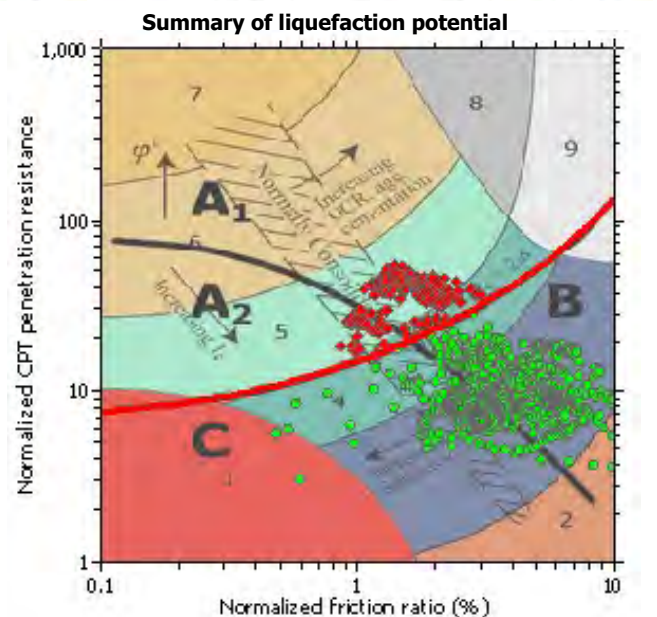
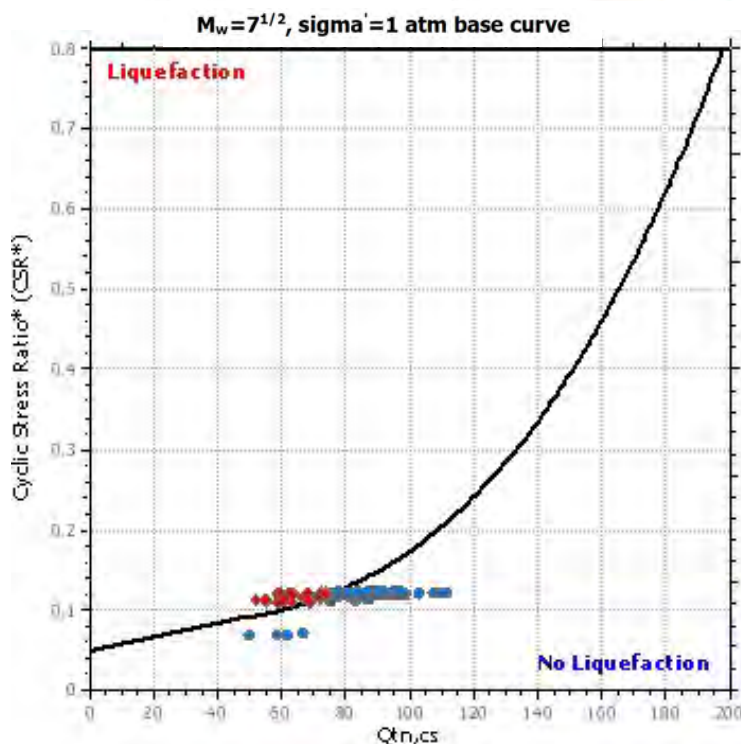
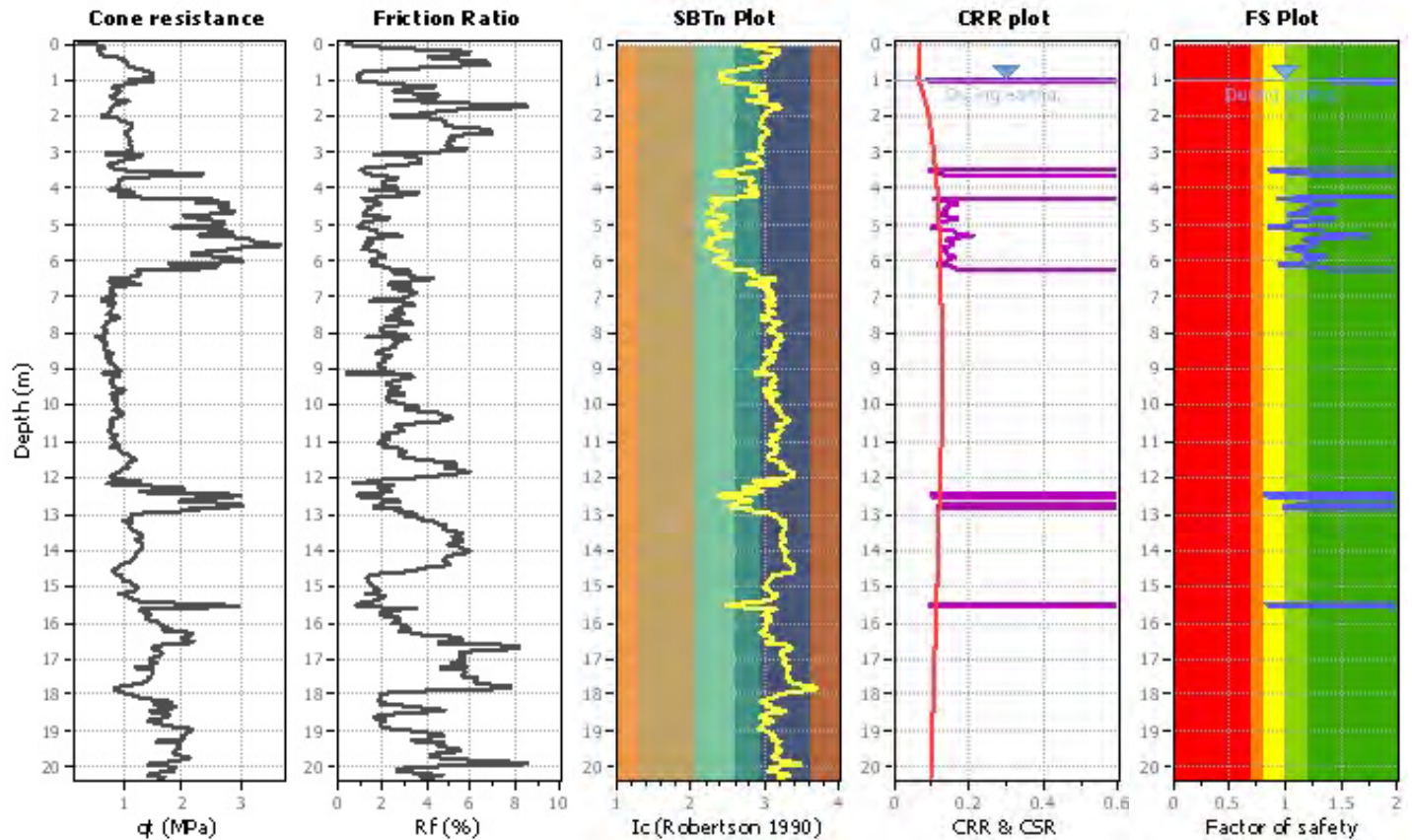
Project title : San Pietro in Casale

Location : Via Carlo Alberto Dalla Chiesa

CPT file : CPTU2

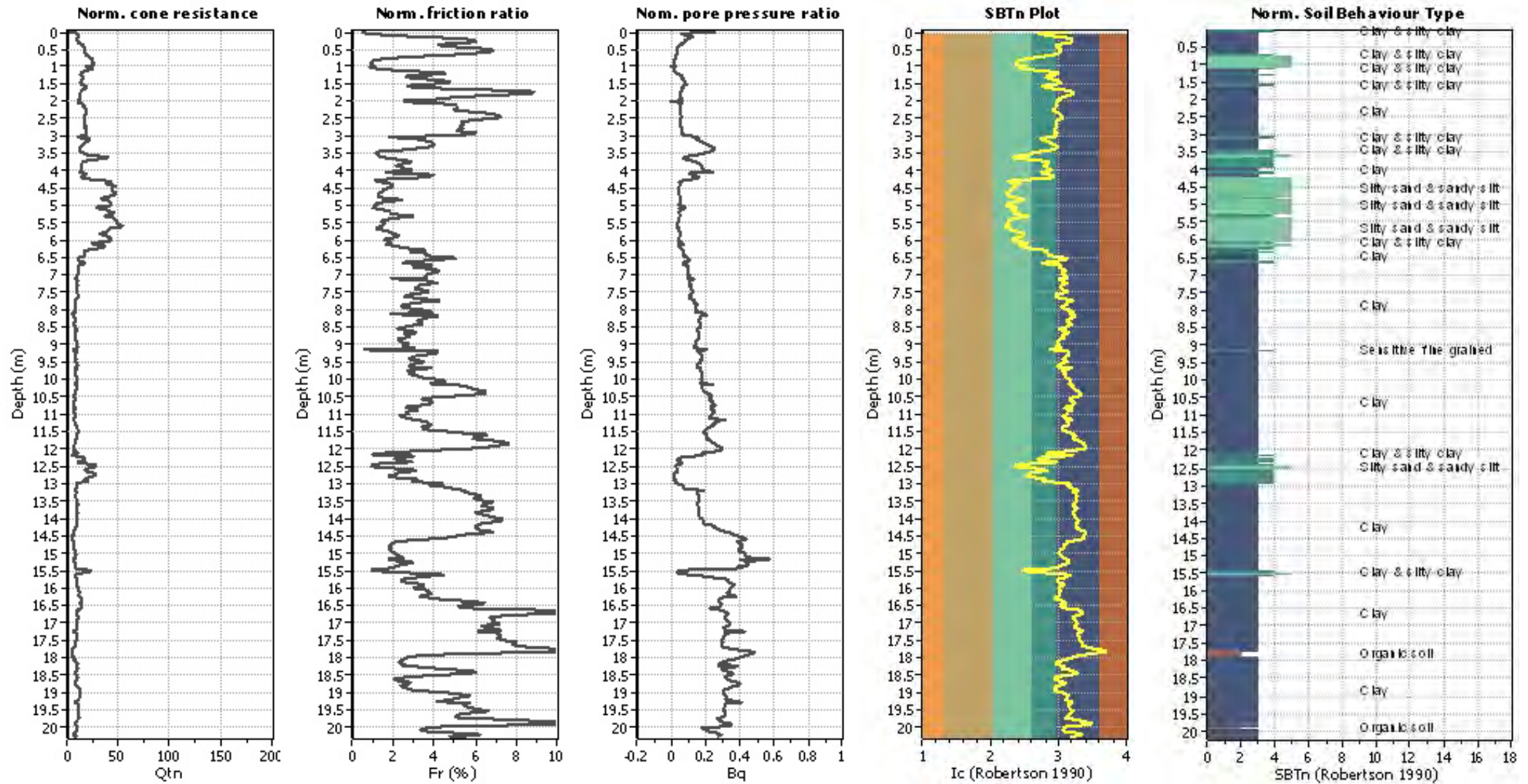
Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	1.70 m	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	1.00 m	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude M_w :	6.00	Ic cut-off value:	2.60	Trans. detect. applied:	No	Limit depth:	N/A
Peak ground acceleration:	0.18	Unit weight calculation:	Based on SBT	K_0 applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A₂: 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

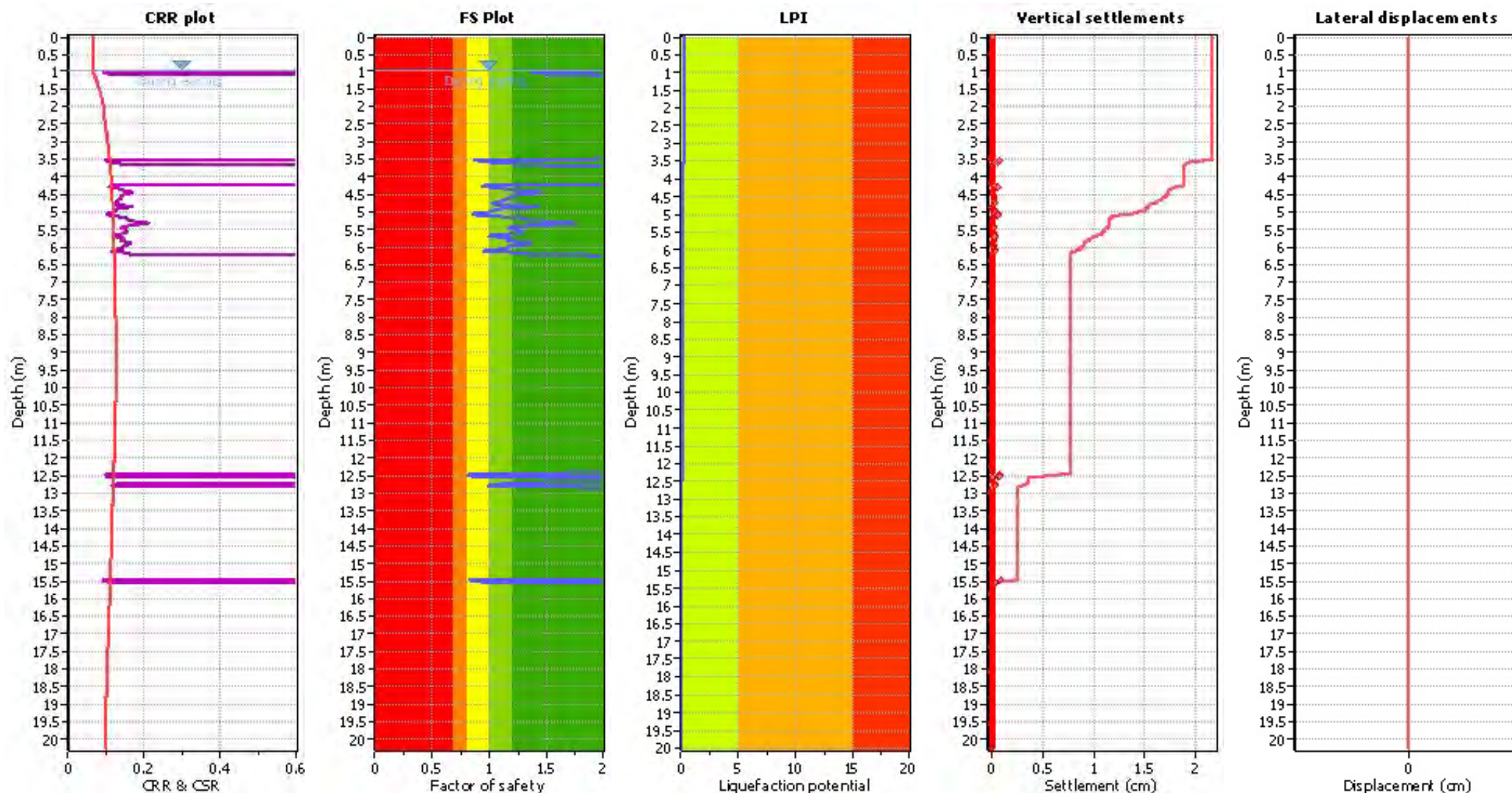
CPT basic interpretation plots (normaliz



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.18	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	1.70 m	Fill height:	N/A	Limit depth:	N/A

Liquefaction analysis overall plot



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.18	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	1.70 m	Fill height:	N/A	Limit depth:	N/A

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 Potential Index calculation data ::											
Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
0.04	2.00	0.00	9.98	0.02	0.00	0.02	2.00	0.00	9.99	0.02	0.00
0.04	2.00	0.00	9.98	0.02	0.00	0.06	2.00	0.00	9.97	0.02	0.00
0.08	2.00	0.00	9.96	0.02	0.00	0.10	2.00	0.00	9.95	0.02	0.00
0.12	2.00	0.00	9.94	0.02	0.00	0.14	2.00	0.00	9.93	0.02	0.00
0.16	2.00	0.00	9.92	0.02	0.00	0.18	2.00	0.00	9.91	0.02	0.00
0.20	2.00	0.00	9.90	0.02	0.00	0.22	2.00	0.00	9.89	0.02	0.00
0.24	2.00	0.00	9.88	0.02	0.00	0.26	2.00	0.00	9.87	0.02	0.00
0.28	2.00	0.00	9.86	0.02	0.00	0.30	2.00	0.00	9.85	0.02	0.00
0.32	2.00	0.00	9.84	0.02	0.00	0.34	2.00	0.00	9.83	0.02	0.00
0.36	2.00	0.00	9.82	0.02	0.00	0.38	2.00	0.00	9.81	0.02	0.00
0.40	2.00	0.00	9.80	0.02	0.00	0.42	2.00	0.00	9.79	0.02	0.00
0.44	2.00	0.00	9.78	0.02	0.00	0.46	2.00	0.00	9.77	0.02	0.00
0.48	2.00	0.00	9.76	0.02	0.00	0.50	2.00	0.00	9.75	0.02	0.00
0.52	2.00	0.00	9.74	0.02	0.00	0.54	2.00	0.00	9.73	0.02	0.00
0.56	2.00	0.00	9.72	0.02	0.00	0.58	2.00	0.00	9.71	0.02	0.00
0.60	2.00	0.00	9.70	0.02	0.00	0.62	2.00	0.00	9.69	0.02	0.00
0.64	2.00	0.00	9.68	0.02	0.00	0.66	2.00	0.00	9.67	0.02	0.00
0.68	2.00	0.00	9.66	0.02	0.00	0.70	2.00	0.00	9.65	0.02	0.00
0.72	2.00	0.00	9.64	0.02	0.00	0.74	2.00	0.00	9.63	0.02	0.00
0.76	2.00	0.00	9.62	0.02	0.00	0.78	2.00	0.00	9.61	0.02	0.00
0.80	2.00	0.00	9.60	0.02	0.00	0.82	2.00	0.00	9.59	0.02	0.00
0.84	2.00	0.00	9.58	0.02	0.00	0.86	2.00	0.00	9.57	0.02	0.00
0.88	2.00	0.00	9.56	0.02	0.00	0.90	2.00	0.00	9.55	0.02	0.00
0.92	2.00	0.00	9.54	0.02	0.00	0.94	2.00	0.00	9.53	0.02	0.00
0.96	2.00	0.00	9.52	0.02	0.00	0.98	2.00	0.00	9.51	0.02	0.00
1.00	2.00	0.00	9.50	0.02	0.00	1.02	1.38	0.00	9.49	0.02	0.00
1.04	1.47	0.00	9.48	0.02	0.00	1.06	1.50	0.00	9.47	0.02	0.00
1.08	1.57	0.00	9.46	0.02	0.00	1.10	2.00	0.00	9.45	0.02	0.00
1.12	2.00	0.00	9.44	0.02	0.00	1.14	2.00	0.00	9.43	0.02	0.00
1.16	2.00	0.00	9.42	0.02	0.00	1.18	2.00	0.00	9.41	0.02	0.00
1.20	2.00	0.00	9.40	0.02	0.00	1.22	2.00	0.00	9.39	0.02	0.00
1.24	2.00	0.00	9.38	0.02	0.00	1.26	2.00	0.00	9.37	0.02	0.00
1.28	2.00	0.00	9.36	0.02	0.00	1.30	2.00	0.00	9.35	0.02	0.00
1.32	2.00	0.00	9.34	0.02	0.00	1.34	2.00	0.00	9.33	0.02	0.00
1.36	2.00	0.00	9.32	0.02	0.00	1.38	2.00	0.00	9.31	0.02	0.00
1.40	2.00	0.00	9.30	0.02	0.00	1.42	2.00	0.00	9.29	0.02	0.00
1.44	2.00	0.00	9.28	0.02	0.00	1.46	2.00	0.00	9.27	0.02	0.00
1.48	2.00	0.00	9.26	0.02	0.00	1.50	2.00	0.00	9.25	0.02	0.00
1.52	2.00	0.00	9.24	0.02	0.00	1.54	2.00	0.00	9.23	0.02	0.00
1.56	2.00	0.00	9.22	0.02	0.00	1.58	2.00	0.00	9.21	0.02	0.00
1.60	2.00	0.00	9.20	0.02	0.00	1.62	2.00	0.00	9.19	0.02	0.00
1.64	2.00	0.00	9.18	0.02	0.00	1.66	2.00	0.00	9.17	0.02	0.00
1.68	2.00	0.00	9.16	0.02	0.00	1.70	2.00	0.00	9.15	0.02	0.00
1.72	2.00	0.00	9.14	0.02	0.00	1.74	2.00	0.00	9.13	0.02	0.00
1.76	2.00	0.00	9.12	0.02	0.00	1.78	2.00	0.00	9.11	0.02	0.00
1.80	2.00	0.00	9.10	0.02	0.00	1.82	2.00	0.00	9.09	0.02	0.00
1.84	2.00	0.00	9.08	0.02	0.00	1.86	2.00	0.00	9.07	0.02	0.00
1.88	2.00	0.00	9.06	0.02	0.00	1.90	2.00	0.00	9.05	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
1.92	2.00	0.00	9.04	0.02	0.00	1.94	2.00	0.00	9.03	0.02	0.00
1.96	2.00	0.00	9.02	0.02	0.00	1.98	2.00	0.00	9.01	0.02	0.00
2.00	2.00	0.00	9.00	0.02	0.00	2.02	2.00	0.00	8.99	0.02	0.00
2.04	2.00	0.00	8.98	0.02	0.00	2.06	2.00	0.00	8.97	0.02	0.00
2.08	2.00	0.00	8.96	0.02	0.00	2.10	2.00	0.00	8.95	0.02	0.00
2.12	2.00	0.00	8.94	0.02	0.00	2.14	2.00	0.00	8.93	0.02	0.00
2.16	2.00	0.00	8.92	0.02	0.00	2.18	2.00	0.00	8.91	0.02	0.00
2.20	2.00	0.00	8.90	0.02	0.00	2.22	2.00	0.00	8.89	0.02	0.00
2.24	2.00	0.00	8.88	0.02	0.00	2.26	2.00	0.00	8.87	0.02	0.00
2.28	2.00	0.00	8.86	0.02	0.00	2.30	2.00	0.00	8.85	0.02	0.00
2.32	2.00	0.00	8.84	0.02	0.00	2.34	2.00	0.00	8.83	0.02	0.00
2.36	2.00	0.00	8.82	0.02	0.00	2.38	2.00	0.00	8.81	0.02	0.00
2.40	2.00	0.00	8.80	0.02	0.00	2.42	2.00	0.00	8.79	0.02	0.00
2.44	2.00	0.00	8.78	0.02	0.00	2.46	2.00	0.00	8.77	0.02	0.00
2.48	2.00	0.00	8.76	0.02	0.00	2.50	2.00	0.00	8.75	0.02	0.00
2.52	2.00	0.00	8.74	0.02	0.00	2.54	2.00	0.00	8.73	0.02	0.00
2.56	2.00	0.00	8.72	0.02	0.00	2.58	2.00	0.00	8.71	0.02	0.00
2.60	2.00	0.00	8.70	0.02	0.00	2.62	2.00	0.00	8.69	0.02	0.00
2.64	2.00	0.00	8.68	0.02	0.00	2.66	2.00	0.00	8.67	0.02	0.00
2.68	2.00	0.00	8.66	0.02	0.00	2.70	2.00	0.00	8.65	0.02	0.00
2.72	2.00	0.00	8.64	0.02	0.00	2.74	2.00	0.00	8.63	0.02	0.00
2.76	2.00	0.00	8.62	0.02	0.00	2.78	2.00	0.00	8.61	0.02	0.00
2.80	2.00	0.00	8.60	0.02	0.00	2.82	2.00	0.00	8.59	0.02	0.00
2.84	2.00	0.00	8.58	0.02	0.00	2.86	2.00	0.00	8.57	0.02	0.00
2.88	2.00	0.00	8.56	0.02	0.00	2.90	2.00	0.00	8.55	0.02	0.00
2.92	2.00	0.00	8.54	0.02	0.00	2.94	2.00	0.00	8.53	0.02	0.00
2.96	2.00	0.00	8.52	0.02	0.00	2.98	2.00	0.00	8.51	0.02	0.00
3.00	2.00	0.00	8.50	0.02	0.00	3.02	2.00	0.00	8.49	0.02	0.00
3.04	2.00	0.00	8.48	0.02	0.00	3.06	2.00	0.00	8.47	0.02	0.00
3.08	2.00	0.00	8.46	0.02	0.00	3.10	2.00	0.00	8.45	0.02	0.00
3.12	2.00	0.00	8.44	0.02	0.00	3.14	2.00	0.00	8.43	0.02	0.00
3.16	2.00	0.00	8.42	0.02	0.00	3.18	2.00	0.00	8.41	0.02	0.00
3.20	2.00	0.00	8.40	0.02	0.00	3.22	2.00	0.00	8.39	0.02	0.00
3.24	2.00	0.00	8.38	0.02	0.00	3.26	2.00	0.00	8.37	0.02	0.00
3.28	2.00	0.00	8.36	0.02	0.00	3.30	2.00	0.00	8.35	0.02	0.00
3.32	2.00	0.00	8.34	0.02	0.00	3.34	2.00	0.00	8.33	0.02	0.00
3.36	2.00	0.00	8.32	0.02	0.00	3.38	2.00	0.00	8.31	0.02	0.00
3.40	2.00	0.00	8.30	0.02	0.00	3.42	2.00	0.00	8.29	0.02	0.00
3.44	2.00	0.00	8.28	0.02	0.00	3.46	2.00	0.00	8.27	0.02	0.00
3.48	2.00	0.00	8.26	0.02	0.00	3.50	2.00	0.00	8.25	0.02	0.00
3.52	0.87	0.13	8.24	0.02	0.02	3.54	0.90	0.10	8.23	0.02	0.02
3.56	0.94	0.06	8.22	0.02	0.01	3.58	0.99	0.01	8.21	0.02	0.00
3.60	1.09	0.00	8.20	0.02	0.00	3.62	1.20	0.00	8.19	0.02	0.00
3.64	1.27	0.00	8.18	0.02	0.00	3.66	1.28	0.00	8.17	0.02	0.00
3.68	2.00	0.00	8.16	0.02	0.00	3.70	2.00	0.00	8.15	0.02	0.00
3.72	2.00	0.00	8.14	0.02	0.00	3.74	2.00	0.00	8.13	0.02	0.00
3.76	2.00	0.00	8.12	0.02	0.00	3.78	2.00	0.00	8.11	0.02	0.00
3.80	2.00	0.00	8.10	0.02	0.00	3.82	2.00	0.00	8.09	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
3.84	2.00	0.00	8.08	0.02	0.00	3.86	2.00	0.00	8.07	0.02	0.00
3.88	2.00	0.00	8.06	0.02	0.00	3.90	2.00	0.00	8.05	0.02	0.00
3.92	2.00	0.00	8.04	0.02	0.00	3.94	2.00	0.00	8.03	0.02	0.00
3.96	2.00	0.00	8.02	0.02	0.00	3.98	2.00	0.00	8.01	0.02	0.00
4.00	2.00	0.00	8.00	0.02	0.00	4.02	2.00	0.00	7.99	0.02	0.00
4.04	2.00	0.00	7.98	0.02	0.00	4.06	2.00	0.00	7.97	0.02	0.00
4.08	2.00	0.00	7.96	0.02	0.00	4.10	2.00	0.00	7.95	0.02	0.00
4.12	2.00	0.00	7.94	0.02	0.00	4.14	2.00	0.00	7.93	0.02	0.00
4.16	2.00	0.00	7.92	0.02	0.00	4.18	2.00	0.00	7.91	0.02	0.00
4.20	2.00	0.00	7.90	0.02	0.00	4.22	2.00	0.00	7.89	0.02	0.00
4.24	0.96	0.04	7.88	0.02	0.01	4.26	0.93	0.07	7.87	0.02	0.01
4.28	0.99	0.01	7.86	0.02	0.00	4.30	1.06	0.00	7.85	0.02	0.00
4.32	1.14	0.00	7.84	0.02	0.00	4.34	1.15	0.00	7.83	0.02	0.00
4.36	1.17	0.00	7.82	0.02	0.00	4.38	1.23	0.00	7.81	0.02	0.00
4.40	1.32	0.00	7.80	0.02	0.00	4.42	1.43	0.00	7.79	0.02	0.00
4.44	1.46	0.00	7.78	0.02	0.00	4.46	1.42	0.00	7.77	0.02	0.00
4.48	1.34	0.00	7.76	0.02	0.00	4.50	1.29	0.00	7.75	0.02	0.00
4.52	1.23	0.00	7.74	0.02	0.00	4.54	1.19	0.00	7.73	0.02	0.00
4.56	1.18	0.00	7.72	0.02	0.00	4.58	1.19	0.00	7.71	0.02	0.00
4.60	1.20	0.00	7.70	0.02	0.00	4.62	1.17	0.00	7.69	0.02	0.00
4.64	1.13	0.00	7.68	0.02	0.00	4.66	1.12	0.00	7.67	0.02	0.00
4.68	1.11	0.00	7.66	0.02	0.00	4.70	1.08	0.00	7.65	0.02	0.00
4.72	1.05	0.00	7.64	0.02	0.00	4.74	1.02	0.00	7.63	0.02	0.00
4.76	1.05	0.00	7.62	0.02	0.00	4.78	1.15	0.00	7.61	0.02	0.00
4.80	1.31	0.00	7.60	0.02	0.00	4.82	1.44	0.00	7.59	0.02	0.00
4.84	1.42	0.00	7.58	0.02	0.00	4.86	1.35	0.00	7.57	0.02	0.00
4.88	1.26	0.00	7.56	0.02	0.00	4.90	1.19	0.00	7.55	0.02	0.00
4.92	1.12	0.00	7.54	0.02	0.00	4.94	1.06	0.00	7.53	0.02	0.00
4.96	1.04	0.00	7.52	0.02	0.00	4.98	1.03	0.00	7.51	0.02	0.00
5.00	1.00	0.00	7.50	0.02	0.00	5.02	0.96	0.04	7.49	0.02	0.01
5.04	0.87	0.13	7.48	0.02	0.02	5.06	0.86	0.14	7.47	0.02	0.02
5.08	0.88	0.12	7.46	0.02	0.02	5.10	0.99	0.01	7.45	0.02	0.00
5.12	1.09	0.00	7.44	0.02	0.00	5.14	1.19	0.00	7.43	0.02	0.00
5.16	1.27	0.00	7.42	0.02	0.00	5.18	1.31	0.00	7.41	0.02	0.00
5.20	1.33	0.00	7.40	0.02	0.00	5.22	1.35	0.00	7.39	0.02	0.00
5.24	1.41	0.00	7.38	0.02	0.00	5.26	1.53	0.00	7.37	0.02	0.00
5.28	1.68	0.00	7.36	0.02	0.00	5.30	1.76	0.00	7.35	0.02	0.00
5.32	1.73	0.00	7.34	0.02	0.00	5.34	1.63	0.00	7.33	0.02	0.00
5.36	1.52	0.00	7.32	0.02	0.00	5.38	1.41	0.00	7.31	0.02	0.00
5.40	1.29	0.00	7.30	0.02	0.00	5.42	1.20	0.00	7.29	0.02	0.00
5.44	1.17	0.00	7.28	0.02	0.00	5.46	1.20	0.00	7.27	0.02	0.00
5.48	1.25	0.00	7.26	0.02	0.00	5.50	1.26	0.00	7.25	0.02	0.00
5.52	1.26	0.00	7.24	0.02	0.00	5.54	1.30	0.00	7.23	0.02	0.00
5.56	1.29	0.00	7.22	0.02	0.00	5.58	1.25	0.00	7.21	0.02	0.00
5.60	1.18	0.00	7.20	0.02	0.00	5.62	1.13	0.00	7.19	0.02	0.00
5.64	1.08	0.00	7.18	0.02	0.00	5.66	1.01	0.00	7.17	0.02	0.00
5.68	1.00	0.00	7.16	0.02	0.00	5.70	1.06	0.00	7.15	0.02	0.00
5.72	1.16	0.00	7.14	0.02	0.00	5.74	1.20	0.00	7.13	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
5.76	1.19	0.00	7.12	0.02	0.00	5.78	1.16	0.00	7.11	0.02	0.00
5.80	1.16	0.00	7.10	0.02	0.00	5.82	1.18	0.00	7.09	0.02	0.00
5.84	1.22	0.00	7.08	0.02	0.00	5.86	1.30	0.00	7.07	0.02	0.00
5.88	1.36	0.00	7.06	0.02	0.00	5.90	1.37	0.00	7.05	0.02	0.00
5.92	1.33	0.00	7.04	0.02	0.00	5.94	1.25	0.00	7.03	0.02	0.00
5.96	1.20	0.00	7.02	0.02	0.00	5.98	1.16	0.00	7.01	0.02	0.00
6.00	1.16	0.00	7.00	0.02	0.00	6.02	1.17	0.00	6.99	0.02	0.00
6.04	1.16	0.00	6.98	0.02	0.00	6.06	1.02	0.00	6.97	0.02	0.00
6.08	0.97	0.03	6.96	0.02	0.00	6.10	0.95	0.05	6.95	0.02	0.01
6.12	1.11	0.00	6.94	0.02	0.00	6.14	1.23	0.00	6.93	0.02	0.00
6.16	1.31	0.00	6.92	0.02	0.00	6.18	1.35	0.00	6.91	0.02	0.00
6.20	1.37	0.00	6.90	0.02	0.00	6.22	2.00	0.00	6.89	0.02	0.00
6.24	2.00	0.00	6.88	0.02	0.00	6.26	2.00	0.00	6.87	0.02	0.00
6.28	2.00	0.00	6.86	0.02	0.00	6.30	2.00	0.00	6.85	0.02	0.00
6.32	2.00	0.00	6.84	0.02	0.00	6.34	2.00	0.00	6.83	0.02	0.00
6.36	2.00	0.00	6.82	0.02	0.00	6.38	2.00	0.00	6.81	0.02	0.00
6.40	2.00	0.00	6.80	0.02	0.00	6.42	2.00	0.00	6.79	0.02	0.00
6.44	2.00	0.00	6.78	0.02	0.00	6.46	2.00	0.00	6.77	0.02	0.00
6.48	2.00	0.00	6.76	0.02	0.00	6.50	2.00	0.00	6.75	0.02	0.00
6.52	2.00	0.00	6.74	0.02	0.00	6.54	2.00	0.00	6.73	0.02	0.00
6.56	2.00	0.00	6.72	0.02	0.00	6.58	2.00	0.00	6.71	0.02	0.00
6.60	2.00	0.00	6.70	0.02	0.00	6.62	2.00	0.00	6.69	0.02	0.00
6.64	2.00	0.00	6.68	0.02	0.00	6.66	2.00	0.00	6.67	0.02	0.00
6.68	2.00	0.00	6.66	0.02	0.00	6.70	2.00	0.00	6.65	0.02	0.00
6.72	2.00	0.00	6.64	0.02	0.00	6.74	2.00	0.00	6.63	0.02	0.00
6.76	2.00	0.00	6.62	0.02	0.00	6.78	2.00	0.00	6.61	0.02	0.00
6.80	2.00	0.00	6.60	0.02	0.00	6.82	2.00	0.00	6.59	0.02	0.00
6.84	2.00	0.00	6.58	0.02	0.00	6.86	2.00	0.00	6.57	0.02	0.00
6.88	2.00	0.00	6.56	0.02	0.00	6.90	2.00	0.00	6.55	0.02	0.00
6.92	2.00	0.00	6.54	0.02	0.00	6.94	2.00	0.00	6.53	0.02	0.00
6.96	2.00	0.00	6.52	0.02	0.00	6.98	2.00	0.00	6.51	0.02	0.00
7.00	2.00	0.00	6.50	0.02	0.00	7.02	2.00	0.00	6.49	0.02	0.00
7.04	2.00	0.00	6.48	0.02	0.00	7.06	2.00	0.00	6.47	0.02	0.00
7.08	2.00	0.00	6.46	0.02	0.00	7.10	2.00	0.00	6.45	0.02	0.00
7.12	2.00	0.00	6.44	0.02	0.00	7.14	2.00	0.00	6.43	0.02	0.00
7.16	2.00	0.00	6.42	0.02	0.00	7.18	2.00	0.00	6.41	0.02	0.00
7.20	2.00	0.00	6.40	0.02	0.00	7.22	2.00	0.00	6.39	0.02	0.00
7.24	2.00	0.00	6.38	0.02	0.00	7.26	2.00	0.00	6.37	0.02	0.00
7.28	2.00	0.00	6.36	0.02	0.00	7.30	2.00	0.00	6.35	0.02	0.00
7.32	2.00	0.00	6.34	0.02	0.00	7.34	2.00	0.00	6.33	0.02	0.00
7.36	2.00	0.00	6.32	0.02	0.00	7.38	2.00	0.00	6.31	0.02	0.00
7.40	2.00	0.00	6.30	0.02	0.00	7.42	2.00	0.00	6.29	0.02	0.00
7.44	2.00	0.00	6.28	0.02	0.00	7.46	2.00	0.00	6.27	0.02	0.00
7.48	2.00	0.00	6.26	0.02	0.00	7.50	2.00	0.00	6.25	0.02	0.00
7.52	2.00	0.00	6.24	0.02	0.00	7.54	2.00	0.00	6.23	0.02	0.00
7.56	2.00	0.00	6.22	0.02	0.00	7.58	2.00	0.00	6.21	0.02	0.00
7.60	2.00	0.00	6.20	0.02	0.00	7.62	2.00	0.00	6.19	0.02	0.00
7.64	2.00	0.00	6.18	0.02	0.00	7.66	2.00	0.00	6.17	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
7.68	2.00	0.00	6.16	0.02	0.00	7.70	2.00	0.00	6.15	0.02	0.00
7.72	2.00	0.00	6.14	0.02	0.00	7.74	2.00	0.00	6.13	0.02	0.00
7.76	2.00	0.00	6.12	0.02	0.00	7.78	2.00	0.00	6.11	0.02	0.00
7.80	2.00	0.00	6.10	0.02	0.00	7.82	2.00	0.00	6.09	0.02	0.00
7.84	2.00	0.00	6.08	0.02	0.00	7.86	2.00	0.00	6.07	0.02	0.00
7.88	2.00	0.00	6.06	0.02	0.00	7.90	2.00	0.00	6.05	0.02	0.00
7.92	2.00	0.00	6.04	0.02	0.00	7.94	2.00	0.00	6.03	0.02	0.00
7.96	2.00	0.00	6.02	0.02	0.00	7.98	2.00	0.00	6.01	0.02	0.00
8.00	2.00	0.00	6.00	0.02	0.00	8.02	2.00	0.00	5.99	0.02	0.00
8.04	2.00	0.00	5.98	0.02	0.00	8.06	2.00	0.00	5.97	0.02	0.00
8.08	2.00	0.00	5.96	0.02	0.00	8.10	2.00	0.00	5.95	0.02	0.00
8.12	2.00	0.00	5.94	0.02	0.00	8.14	2.00	0.00	5.93	0.02	0.00
8.16	2.00	0.00	5.92	0.02	0.00	8.18	2.00	0.00	5.91	0.02	0.00
8.20	2.00	0.00	5.90	0.02	0.00	8.22	2.00	0.00	5.89	0.02	0.00
8.24	2.00	0.00	5.88	0.02	0.00	8.26	2.00	0.00	5.87	0.02	0.00
8.28	2.00	0.00	5.86	0.02	0.00	8.30	2.00	0.00	5.85	0.02	0.00
8.32	2.00	0.00	5.84	0.02	0.00	8.34	2.00	0.00	5.83	0.02	0.00
8.36	2.00	0.00	5.82	0.02	0.00	8.38	2.00	0.00	5.81	0.02	0.00
8.40	2.00	0.00	5.80	0.02	0.00	8.42	2.00	0.00	5.79	0.02	0.00
8.44	2.00	0.00	5.78	0.02	0.00	8.46	2.00	0.00	5.77	0.02	0.00
8.48	2.00	0.00	5.76	0.02	0.00	8.50	2.00	0.00	5.75	0.02	0.00
8.52	2.00	0.00	5.74	0.02	0.00	8.54	2.00	0.00	5.73	0.02	0.00
8.56	2.00	0.00	5.72	0.02	0.00	8.58	2.00	0.00	5.71	0.02	0.00
8.60	2.00	0.00	5.70	0.02	0.00	8.62	2.00	0.00	5.69	0.02	0.00
8.64	2.00	0.00	5.68	0.02	0.00	8.66	2.00	0.00	5.67	0.02	0.00
8.68	2.00	0.00	5.66	0.02	0.00	8.70	2.00	0.00	5.65	0.02	0.00
8.72	2.00	0.00	5.64	0.02	0.00	8.74	2.00	0.00	5.63	0.02	0.00
8.76	2.00	0.00	5.62	0.02	0.00	8.78	2.00	0.00	5.61	0.02	0.00
8.80	2.00	0.00	5.60	0.02	0.00	8.82	2.00	0.00	5.59	0.02	0.00
8.84	2.00	0.00	5.58	0.02	0.00	8.86	2.00	0.00	5.57	0.02	0.00
8.88	2.00	0.00	5.56	0.02	0.00	8.90	2.00	0.00	5.55	0.02	0.00
8.92	2.00	0.00	5.54	0.02	0.00	8.94	2.00	0.00	5.53	0.02	0.00
8.96	2.00	0.00	5.52	0.02	0.00	8.98	2.00	0.00	5.51	0.02	0.00
9.00	2.00	0.00	5.50	0.02	0.00	9.02	2.00	0.00	5.49	0.02	0.00
9.04	2.00	0.00	5.48	0.02	0.00	9.06	2.00	0.00	5.47	0.02	0.00
9.08	2.00	0.00	5.46	0.02	0.00	9.10	2.00	0.00	5.45	0.02	0.00
9.12	2.00	0.00	5.44	0.02	0.00	9.14	2.00	0.00	5.43	0.02	0.00
9.16	2.00	0.00	5.42	0.02	0.00	9.18	2.00	0.00	5.41	0.02	0.00
9.20	2.00	0.00	5.40	0.02	0.00	9.22	2.00	0.00	5.39	0.02	0.00
9.24	2.00	0.00	5.38	0.02	0.00	9.26	2.00	0.00	5.37	0.02	0.00
9.28	2.00	0.00	5.36	0.02	0.00	9.30	2.00	0.00	5.35	0.02	0.00
9.32	2.00	0.00	5.34	0.02	0.00	9.34	2.00	0.00	5.33	0.02	0.00
9.36	2.00	0.00	5.32	0.02	0.00	9.38	2.00	0.00	5.31	0.02	0.00
9.40	2.00	0.00	5.30	0.02	0.00	9.42	2.00	0.00	5.29	0.02	0.00
9.44	2.00	0.00	5.28	0.02	0.00	9.46	2.00	0.00	5.27	0.02	0.00
9.48	2.00	0.00	5.26	0.02	0.00	9.50	2.00	0.00	5.25	0.02	0.00
9.52	2.00	0.00	5.24	0.02	0.00	9.54	2.00	0.00	5.23	0.02	0.00
9.56	2.00	0.00	5.22	0.02	0.00	9.58	2.00	0.00	5.21	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
9.60	2.00	0.00	5.20	0.02	0.00	9.62	2.00	0.00	5.19	0.02	0.00
9.64	2.00	0.00	5.18	0.02	0.00	9.66	2.00	0.00	5.17	0.02	0.00
9.68	2.00	0.00	5.16	0.02	0.00	9.70	2.00	0.00	5.15	0.02	0.00
9.72	2.00	0.00	5.14	0.02	0.00	9.74	2.00	0.00	5.13	0.02	0.00
9.76	2.00	0.00	5.12	0.02	0.00	9.78	2.00	0.00	5.11	0.02	0.00
9.80	2.00	0.00	5.10	0.02	0.00	9.82	2.00	0.00	5.09	0.02	0.00
9.84	2.00	0.00	5.08	0.02	0.00	9.86	2.00	0.00	5.07	0.02	0.00
9.88	2.00	0.00	5.06	0.02	0.00	9.90	2.00	0.00	5.05	0.02	0.00
9.92	2.00	0.00	5.04	0.02	0.00	9.94	2.00	0.00	5.03	0.02	0.00
9.96	2.00	0.00	5.02	0.02	0.00	9.98	2.00	0.00	5.01	0.02	0.00
10.00	2.00	0.00	5.00	0.02	0.00	10.02	2.00	0.00	4.99	0.02	0.00
10.04	2.00	0.00	4.98	0.02	0.00	10.06	2.00	0.00	4.97	0.02	0.00
10.08	2.00	0.00	4.96	0.02	0.00	10.10	2.00	0.00	4.95	0.02	0.00
10.12	2.00	0.00	4.94	0.02	0.00	10.14	2.00	0.00	4.93	0.02	0.00
10.16	2.00	0.00	4.92	0.02	0.00	10.18	2.00	0.00	4.91	0.02	0.00
10.20	2.00	0.00	4.90	0.02	0.00	10.22	2.00	0.00	4.89	0.02	0.00
10.24	2.00	0.00	4.88	0.02	0.00	10.26	2.00	0.00	4.87	0.02	0.00
10.28	2.00	0.00	4.86	0.02	0.00	10.30	2.00	0.00	4.85	0.02	0.00
10.32	2.00	0.00	4.84	0.02	0.00	10.34	2.00	0.00	4.83	0.02	0.00
10.36	2.00	0.00	4.82	0.02	0.00	10.38	2.00	0.00	4.81	0.02	0.00
10.40	2.00	0.00	4.80	0.02	0.00	10.42	2.00	0.00	4.79	0.02	0.00
10.44	2.00	0.00	4.78	0.02	0.00	10.46	2.00	0.00	4.77	0.02	0.00
10.48	2.00	0.00	4.76	0.02	0.00	10.50	2.00	0.00	4.75	0.02	0.00
10.52	2.00	0.00	4.74	0.02	0.00	10.54	2.00	0.00	4.73	0.02	0.00
10.56	2.00	0.00	4.72	0.02	0.00	10.58	2.00	0.00	4.71	0.02	0.00
10.60	2.00	0.00	4.70	0.02	0.00	10.62	2.00	0.00	4.69	0.02	0.00
10.64	2.00	0.00	4.68	0.02	0.00	10.66	2.00	0.00	4.67	0.02	0.00
10.68	2.00	0.00	4.66	0.02	0.00	10.70	2.00	0.00	4.65	0.02	0.00
10.72	2.00	0.00	4.64	0.02	0.00	10.74	2.00	0.00	4.63	0.02	0.00
10.76	2.00	0.00	4.62	0.02	0.00	10.78	2.00	0.00	4.61	0.02	0.00
10.80	2.00	0.00	4.60	0.02	0.00	10.82	2.00	0.00	4.59	0.02	0.00
10.84	2.00	0.00	4.58	0.02	0.00	10.86	2.00	0.00	4.57	0.02	0.00
10.88	2.00	0.00	4.56	0.02	0.00	10.90	2.00	0.00	4.55	0.02	0.00
10.92	2.00	0.00	4.54	0.02	0.00	10.94	2.00	0.00	4.53	0.02	0.00
10.96	2.00	0.00	4.52	0.02	0.00	10.98	2.00	0.00	4.51	0.02	0.00
11.00	2.00	0.00	4.50	0.02	0.00	11.02	2.00	0.00	4.49	0.02	0.00
11.04	2.00	0.00	4.48	0.02	0.00	11.06	2.00	0.00	4.47	0.02	0.00
11.08	2.00	0.00	4.46	0.02	0.00	11.10	2.00	0.00	4.45	0.02	0.00
11.12	2.00	0.00	4.44	0.02	0.00	11.14	2.00	0.00	4.43	0.02	0.00
11.16	2.00	0.00	4.42	0.02	0.00	11.18	2.00	0.00	4.41	0.02	0.00
11.20	2.00	0.00	4.40	0.02	0.00	11.22	2.00	0.00	4.39	0.02	0.00
11.24	2.00	0.00	4.38	0.02	0.00	11.26	2.00	0.00	4.37	0.02	0.00
11.28	2.00	0.00	4.36	0.02	0.00	11.30	2.00	0.00	4.35	0.02	0.00
11.32	2.00	0.00	4.34	0.02	0.00	11.34	2.00	0.00	4.33	0.02	0.00
11.36	2.00	0.00	4.32	0.02	0.00	11.38	2.00	0.00	4.31	0.02	0.00
11.40	2.00	0.00	4.30	0.02	0.00	11.42	2.00	0.00	4.29	0.02	0.00
11.44	2.00	0.00	4.28	0.02	0.00	11.46	2.00	0.00	4.27	0.02	0.00
11.48	2.00	0.00	4.26	0.02	0.00	11.50	2.00	0.00	4.25	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
11.52	2.00	0.00	4.24	0.02	0.00	11.54	2.00	0.00	4.23	0.02	0.00
11.56	2.00	0.00	4.22	0.02	0.00	11.58	2.00	0.00	4.21	0.02	0.00
11.60	2.00	0.00	4.20	0.02	0.00	11.62	2.00	0.00	4.19	0.02	0.00
11.64	2.00	0.00	4.18	0.02	0.00	11.66	2.00	0.00	4.17	0.02	0.00
11.68	2.00	0.00	4.16	0.02	0.00	11.70	2.00	0.00	4.15	0.02	0.00
11.72	2.00	0.00	4.14	0.02	0.00	11.74	2.00	0.00	4.13	0.02	0.00
11.76	2.00	0.00	4.12	0.02	0.00	11.78	2.00	0.00	4.11	0.02	0.00
11.80	2.00	0.00	4.10	0.02	0.00	11.82	2.00	0.00	4.09	0.02	0.00
11.84	2.00	0.00	4.08	0.02	0.00	11.86	2.00	0.00	4.07	0.02	0.00
11.88	2.00	0.00	4.06	0.02	0.00	11.90	2.00	0.00	4.05	0.02	0.00
11.92	2.00	0.00	4.04	0.02	0.00	11.94	2.00	0.00	4.03	0.02	0.00
11.96	2.00	0.00	4.02	0.02	0.00	11.98	2.00	0.00	4.01	0.02	0.00
12.00	2.00	0.00	4.00	0.02	0.00	12.02	2.00	0.00	3.99	0.02	0.00
12.04	2.00	0.00	3.98	0.02	0.00	12.06	2.00	0.00	3.97	0.02	0.00
12.08	2.00	0.00	3.96	0.02	0.00	12.10	2.00	0.00	3.95	0.02	0.00
12.12	2.00	0.00	3.94	0.02	0.00	12.14	2.00	0.00	3.93	0.02	0.00
12.16	2.00	0.00	3.92	0.02	0.00	12.18	2.00	0.00	3.91	0.02	0.00
12.20	2.00	0.00	3.90	0.02	0.00	12.22	2.00	0.00	3.89	0.02	0.00
12.24	2.00	0.00	3.88	0.02	0.00	12.26	2.00	0.00	3.87	0.02	0.00
12.28	2.00	0.00	3.86	0.02	0.00	12.30	2.00	0.00	3.85	0.02	0.00
12.32	2.00	0.00	3.84	0.02	0.00	12.34	2.00	0.00	3.83	0.02	0.00
12.36	2.00	0.00	3.82	0.02	0.00	12.38	2.00	0.00	3.81	0.02	0.00
12.40	2.00	0.00	3.80	0.02	0.00	12.42	2.00	0.00	3.79	0.02	0.00
12.44	0.83	0.17	3.78	0.02	0.01	12.46	0.83	0.17	3.77	0.02	0.01
12.48	0.82	0.18	3.76	0.02	0.01	12.50	0.84	0.16	3.75	0.02	0.01
12.52	0.87	0.13	3.74	0.02	0.01	12.54	0.91	0.09	3.73	0.02	0.01
12.56	2.00	0.00	3.72	0.02	0.00	12.58	2.00	0.00	3.71	0.02	0.00
12.60	2.00	0.00	3.70	0.02	0.00	12.62	2.00	0.00	3.69	0.02	0.00
12.64	2.00	0.00	3.68	0.02	0.00	12.66	2.00	0.00	3.67	0.02	0.00
12.68	2.00	0.00	3.66	0.02	0.00	12.70	1.11	0.00	3.65	0.02	0.00
12.72	1.13	0.00	3.64	0.02	0.00	12.74	1.10	0.00	3.63	0.02	0.00
12.76	1.04	0.00	3.62	0.02	0.00	12.78	0.99	0.01	3.61	0.02	0.00
12.80	0.99	0.01	3.60	0.02	0.00	12.82	2.00	0.00	3.59	0.02	0.00
12.84	2.00	0.00	3.58	0.02	0.00	12.86	2.00	0.00	3.57	0.02	0.00
12.88	2.00	0.00	3.56	0.02	0.00	12.90	2.00	0.00	3.55	0.02	0.00
12.92	2.00	0.00	3.54	0.02	0.00	12.94	2.00	0.00	3.53	0.02	0.00
12.96	2.00	0.00	3.52	0.02	0.00	12.98	2.00	0.00	3.51	0.02	0.00
13.00	2.00	0.00	3.50	0.02	0.00	13.02	2.00	0.00	3.49	0.02	0.00
13.04	2.00	0.00	3.48	0.02	0.00	13.06	2.00	0.00	3.47	0.02	0.00
13.08	2.00	0.00	3.46	0.02	0.00	13.10	2.00	0.00	3.45	0.02	0.00
13.12	2.00	0.00	3.44	0.02	0.00	13.14	2.00	0.00	3.43	0.02	0.00
13.16	2.00	0.00	3.42	0.02	0.00	13.18	2.00	0.00	3.41	0.02	0.00
13.20	2.00	0.00	3.40	0.02	0.00	13.22	2.00	0.00	3.39	0.02	0.00
13.24	2.00	0.00	3.38	0.02	0.00	13.26	2.00	0.00	3.37	0.02	0.00
13.28	2.00	0.00	3.36	0.02	0.00	13.30	2.00	0.00	3.35	0.02	0.00
13.32	2.00	0.00	3.34	0.02	0.00	13.34	2.00	0.00	3.33	0.02	0.00
13.36	2.00	0.00	3.32	0.02	0.00	13.38	2.00	0.00	3.31	0.02	0.00
13.40	2.00	0.00	3.30	0.02	0.00	13.42	2.00	0.00	3.29	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
13.44	2.00	0.00	3.28	0.02	0.00	13.46	2.00	0.00	3.27	0.02	0.00
13.48	2.00	0.00	3.26	0.02	0.00	13.50	2.00	0.00	3.25	0.02	0.00
13.52	2.00	0.00	3.24	0.02	0.00	13.54	2.00	0.00	3.23	0.02	0.00
13.56	2.00	0.00	3.22	0.02	0.00	13.58	2.00	0.00	3.21	0.02	0.00
13.60	2.00	0.00	3.20	0.02	0.00	13.62	2.00	0.00	3.19	0.02	0.00
13.64	2.00	0.00	3.18	0.02	0.00	13.66	2.00	0.00	3.17	0.02	0.00
13.68	2.00	0.00	3.16	0.02	0.00	13.70	2.00	0.00	3.15	0.02	0.00
13.72	2.00	0.00	3.14	0.02	0.00	13.74	2.00	0.00	3.13	0.02	0.00
13.76	2.00	0.00	3.12	0.02	0.00	13.78	2.00	0.00	3.11	0.02	0.00
13.80	2.00	0.00	3.10	0.02	0.00	13.82	2.00	0.00	3.09	0.02	0.00
13.84	2.00	0.00	3.08	0.02	0.00	13.86	2.00	0.00	3.07	0.02	0.00
13.88	2.00	0.00	3.06	0.02	0.00	13.90	2.00	0.00	3.05	0.02	0.00
13.92	2.00	0.00	3.04	0.02	0.00	13.94	2.00	0.00	3.03	0.02	0.00
13.96	2.00	0.00	3.02	0.02	0.00	13.98	2.00	0.00	3.01	0.02	0.00
14.00	2.00	0.00	3.00	0.02	0.00	14.02	2.00	0.00	2.99	0.02	0.00
14.04	2.00	0.00	2.98	0.02	0.00	14.06	2.00	0.00	2.97	0.02	0.00
14.08	2.00	0.00	2.96	0.02	0.00	14.10	2.00	0.00	2.95	0.02	0.00
14.12	2.00	0.00	2.94	0.02	0.00	14.14	2.00	0.00	2.93	0.02	0.00
14.16	2.00	0.00	2.92	0.02	0.00	14.18	2.00	0.00	2.91	0.02	0.00
14.20	2.00	0.00	2.90	0.02	0.00	14.22	2.00	0.00	2.89	0.02	0.00
14.24	2.00	0.00	2.88	0.02	0.00	14.26	2.00	0.00	2.87	0.02	0.00
14.28	2.00	0.00	2.86	0.02	0.00	14.30	2.00	0.00	2.85	0.02	0.00
14.32	2.00	0.00	2.84	0.02	0.00	14.34	2.00	0.00	2.83	0.02	0.00
14.36	2.00	0.00	2.82	0.02	0.00	14.38	2.00	0.00	2.81	0.02	0.00
14.40	2.00	0.00	2.80	0.02	0.00	14.42	2.00	0.00	2.79	0.02	0.00
14.44	2.00	0.00	2.78	0.02	0.00	14.46	2.00	0.00	2.77	0.02	0.00
14.48	2.00	0.00	2.76	0.02	0.00	14.50	2.00	0.00	2.75	0.02	0.00
14.52	2.00	0.00	2.74	0.02	0.00	14.54	2.00	0.00	2.73	0.02	0.00
14.56	2.00	0.00	2.72	0.02	0.00	14.58	2.00	0.00	2.71	0.02	0.00
14.60	2.00	0.00	2.70	0.02	0.00	14.62	2.00	0.00	2.69	0.02	0.00
14.64	2.00	0.00	2.68	0.02	0.00	14.66	2.00	0.00	2.67	0.02	0.00
14.68	2.00	0.00	2.66	0.02	0.00	14.70	2.00	0.00	2.65	0.02	0.00
14.72	2.00	0.00	2.64	0.02	0.00	14.74	2.00	0.00	2.63	0.02	0.00
14.76	2.00	0.00	2.62	0.02	0.00	14.78	2.00	0.00	2.61	0.02	0.00
14.80	2.00	0.00	2.60	0.02	0.00	14.82	2.00	0.00	2.59	0.02	0.00
14.84	2.00	0.00	2.58	0.02	0.00	14.86	2.00	0.00	2.57	0.02	0.00
14.88	2.00	0.00	2.56	0.02	0.00	14.90	2.00	0.00	2.55	0.02	0.00
14.92	2.00	0.00	2.54	0.02	0.00	14.94	2.00	0.00	2.53	0.02	0.00
14.96	2.00	0.00	2.52	0.02	0.00	14.98	2.00	0.00	2.51	0.02	0.00
15.00	2.00	0.00	2.50	0.02	0.00	15.02	2.00	0.00	2.49	0.02	0.00
15.04	2.00	0.00	2.48	0.02	0.00	15.06	2.00	0.00	2.47	0.02	0.00
15.08	2.00	0.00	2.46	0.02	0.00	15.10	2.00	0.00	2.45	0.02	0.00
15.12	2.00	0.00	2.44	0.02	0.00	15.14	2.00	0.00	2.43	0.02	0.00
15.16	2.00	0.00	2.42	0.02	0.00	15.18	2.00	0.00	2.41	0.02	0.00
15.20	2.00	0.00	2.40	0.02	0.00	15.22	2.00	0.00	2.39	0.02	0.00
15.24	2.00	0.00	2.38	0.02	0.00	15.26	2.00	0.00	2.37	0.02	0.00
15.28	2.00	0.00	2.36	0.02	0.00	15.30	2.00	0.00	2.35	0.02	0.00
15.32	2.00	0.00	2.34	0.02	0.00	15.34	2.00	0.00	2.33	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
15.36	2.00	0.00	2.32	0.02	0.00	15.38	2.00	0.00	2.31	0.02	0.00
15.40	2.00	0.00	2.30	0.02	0.00	15.42	2.00	0.00	2.29	0.02	0.00
15.44	2.00	0.00	2.28	0.02	0.00	15.46	2.00	0.00	2.27	0.02	0.00
15.48	0.83	0.17	2.26	0.02	0.01	15.50	0.85	0.15	2.25	0.02	0.01
15.52	0.90	0.10	2.24	0.02	0.00	15.54	0.98	0.02	2.23	0.02	0.00
15.56	2.00	0.00	2.22	0.02	0.00	15.58	2.00	0.00	2.21	0.02	0.00
15.60	2.00	0.00	2.20	0.02	0.00	15.62	2.00	0.00	2.19	0.02	0.00
15.64	2.00	0.00	2.18	0.02	0.00	15.66	2.00	0.00	2.17	0.02	0.00
15.68	2.00	0.00	2.16	0.02	0.00	15.70	2.00	0.00	2.15	0.02	0.00
15.72	2.00	0.00	2.14	0.02	0.00	15.74	2.00	0.00	2.13	0.02	0.00
15.76	2.00	0.00	2.12	0.02	0.00	15.78	2.00	0.00	2.11	0.02	0.00
15.80	2.00	0.00	2.10	0.02	0.00	15.82	2.00	0.00	2.09	0.02	0.00
15.84	2.00	0.00	2.08	0.02	0.00	15.86	2.00	0.00	2.07	0.02	0.00
15.88	2.00	0.00	2.06	0.02	0.00	15.90	2.00	0.00	2.05	0.02	0.00
15.92	2.00	0.00	2.04	0.02	0.00	15.94	2.00	0.00	2.03	0.02	0.00
15.96	2.00	0.00	2.02	0.02	0.00	15.98	2.00	0.00	2.01	0.02	0.00
16.00	2.00	0.00	2.00	0.02	0.00	16.02	2.00	0.00	1.99	0.02	0.00
16.04	2.00	0.00	1.98	0.02	0.00	16.06	2.00	0.00	1.97	0.02	0.00
16.08	2.00	0.00	1.96	0.02	0.00	16.10	2.00	0.00	1.95	0.02	0.00
16.12	2.00	0.00	1.94	0.02	0.00	16.14	2.00	0.00	1.93	0.02	0.00
16.16	2.00	0.00	1.92	0.02	0.00	16.18	2.00	0.00	1.91	0.02	0.00
16.20	2.00	0.00	1.90	0.02	0.00	16.22	2.00	0.00	1.89	0.02	0.00
16.24	2.00	0.00	1.88	0.02	0.00	16.26	2.00	0.00	1.87	0.02	0.00
16.28	2.00	0.00	1.86	0.02	0.00	16.30	2.00	0.00	1.85	0.02	0.00
16.32	2.00	0.00	1.84	0.02	0.00	16.34	2.00	0.00	1.83	0.02	0.00
16.36	2.00	0.00	1.82	0.02	0.00	16.38	2.00	0.00	1.81	0.02	0.00
16.40	2.00	0.00	1.80	0.02	0.00	16.42	2.00	0.00	1.79	0.02	0.00
16.44	2.00	0.00	1.78	0.02	0.00	16.46	2.00	0.00	1.77	0.02	0.00
16.48	2.00	0.00	1.76	0.02	0.00	16.50	2.00	0.00	1.75	0.02	0.00
16.52	2.00	0.00	1.74	0.02	0.00	16.54	2.00	0.00	1.73	0.02	0.00
16.56	2.00	0.00	1.72	0.02	0.00	16.58	2.00	0.00	1.71	0.02	0.00
16.60	2.00	0.00	1.70	0.02	0.00	16.62	2.00	0.00	1.69	0.02	0.00
16.64	2.00	0.00	1.68	0.02	0.00	16.66	2.00	0.00	1.67	0.02	0.00
16.68	2.00	0.00	1.66	0.02	0.00	16.70	2.00	0.00	1.65	0.02	0.00
16.72	2.00	0.00	1.64	0.02	0.00	16.74	2.00	0.00	1.63	0.02	0.00
16.76	2.00	0.00	1.62	0.02	0.00	16.78	2.00	0.00	1.61	0.02	0.00
16.80	2.00	0.00	1.60	0.02	0.00	16.82	2.00	0.00	1.59	0.02	0.00
16.84	2.00	0.00	1.58	0.02	0.00	16.86	2.00	0.00	1.57	0.02	0.00
16.88	2.00	0.00	1.56	0.02	0.00	16.90	2.00	0.00	1.55	0.02	0.00
16.92	2.00	0.00	1.54	0.02	0.00	16.94	2.00	0.00	1.53	0.02	0.00
16.96	2.00	0.00	1.52	0.02	0.00	16.98	2.00	0.00	1.51	0.02	0.00
17.00	2.00	0.00	1.50	0.02	0.00	17.02	2.00	0.00	1.49	0.02	0.00
17.04	2.00	0.00	1.48	0.02	0.00	17.06	2.00	0.00	1.47	0.02	0.00
17.08	2.00	0.00	1.46	0.02	0.00	17.10	2.00	0.00	1.45	0.02	0.00
17.12	2.00	0.00	1.44	0.02	0.00	17.14	2.00	0.00	1.43	0.02	0.00
17.16	2.00	0.00	1.42	0.02	0.00	17.18	2.00	0.00	1.41	0.02	0.00
17.20	2.00	0.00	1.40	0.02	0.00	17.22	2.00	0.00	1.39	0.02	0.00
17.24	2.00	0.00	1.38	0.02	0.00	17.26	2.00	0.00	1.37	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
17.28	2.00	0.00	1.36	0.02	0.00	17.30	2.00	0.00	1.35	0.02	0.00
17.32	2.00	0.00	1.34	0.02	0.00	17.34	2.00	0.00	1.33	0.02	0.00
17.36	2.00	0.00	1.32	0.02	0.00	17.38	2.00	0.00	1.31	0.02	0.00
17.40	2.00	0.00	1.30	0.02	0.00	17.42	2.00	0.00	1.29	0.02	0.00
17.44	2.00	0.00	1.28	0.02	0.00	17.46	2.00	0.00	1.27	0.02	0.00
17.48	2.00	0.00	1.26	0.02	0.00	17.50	2.00	0.00	1.25	0.02	0.00
17.52	2.00	0.00	1.24	0.02	0.00	17.54	2.00	0.00	1.23	0.02	0.00
17.56	2.00	0.00	1.22	0.02	0.00	17.58	2.00	0.00	1.21	0.02	0.00
17.60	2.00	0.00	1.20	0.02	0.00	17.62	2.00	0.00	1.19	0.02	0.00
17.64	2.00	0.00	1.18	0.02	0.00	17.66	2.00	0.00	1.17	0.02	0.00
17.68	2.00	0.00	1.16	0.02	0.00	17.70	2.00	0.00	1.15	0.02	0.00
17.72	2.00	0.00	1.14	0.02	0.00	17.74	2.00	0.00	1.13	0.02	0.00
17.76	2.00	0.00	1.12	0.02	0.00	17.78	2.00	0.00	1.11	0.02	0.00
17.80	2.00	0.00	1.10	0.02	0.00	17.82	2.00	0.00	1.09	0.02	0.00
17.84	2.00	0.00	1.08	0.02	0.00	17.86	2.00	0.00	1.07	0.02	0.00
17.88	2.00	0.00	1.06	0.02	0.00	17.90	2.00	0.00	1.05	0.02	0.00
17.92	2.00	0.00	1.04	0.02	0.00	17.94	2.00	0.00	1.03	0.02	0.00
17.96	2.00	0.00	1.02	0.02	0.00	17.98	2.00	0.00	1.01	0.02	0.00
18.00	2.00	0.00	1.00	0.02	0.00	18.02	2.00	0.00	0.99	0.02	0.00
18.04	2.00	0.00	0.98	0.02	0.00	18.06	2.00	0.00	0.97	0.02	0.00
18.08	2.00	0.00	0.96	0.02	0.00	18.10	2.00	0.00	0.95	0.02	0.00
18.12	2.00	0.00	0.94	0.02	0.00	18.14	2.00	0.00	0.93	0.02	0.00
18.16	2.00	0.00	0.92	0.02	0.00	18.18	2.00	0.00	0.91	0.02	0.00
18.20	2.00	0.00	0.90	0.02	0.00	18.22	2.00	0.00	0.89	0.02	0.00
18.24	2.00	0.00	0.88	0.02	0.00	18.26	2.00	0.00	0.87	0.02	0.00
18.28	2.00	0.00	0.86	0.02	0.00	18.30	2.00	0.00	0.85	0.02	0.00
18.32	2.00	0.00	0.84	0.02	0.00	18.34	2.00	0.00	0.83	0.02	0.00
18.36	2.00	0.00	0.82	0.02	0.00	18.38	2.00	0.00	0.81	0.02	0.00
18.40	2.00	0.00	0.80	0.02	0.00	18.42	2.00	0.00	0.79	0.02	0.00
18.44	2.00	0.00	0.78	0.02	0.00	18.46	2.00	0.00	0.77	0.02	0.00
18.48	2.00	0.00	0.76	0.02	0.00	18.50	2.00	0.00	0.75	0.02	0.00
18.52	2.00	0.00	0.74	0.02	0.00	18.54	2.00	0.00	0.73	0.02	0.00
18.56	2.00	0.00	0.72	0.02	0.00	18.58	2.00	0.00	0.71	0.02	0.00
18.60	2.00	0.00	0.70	0.02	0.00	18.62	2.00	0.00	0.69	0.02	0.00
18.64	2.00	0.00	0.68	0.02	0.00	18.66	2.00	0.00	0.67	0.02	0.00
18.68	2.00	0.00	0.66	0.02	0.00	18.70	2.00	0.00	0.65	0.02	0.00
18.72	2.00	0.00	0.64	0.02	0.00	18.74	2.00	0.00	0.63	0.02	0.00
18.76	2.00	0.00	0.62	0.02	0.00	18.78	2.00	0.00	0.61	0.02	0.00
18.80	2.00	0.00	0.60	0.02	0.00	18.82	2.00	0.00	0.59	0.02	0.00
18.84	2.00	0.00	0.58	0.02	0.00	18.86	2.00	0.00	0.57	0.02	0.00
18.88	2.00	0.00	0.56	0.02	0.00	18.90	2.00	0.00	0.55	0.02	0.00
18.92	2.00	0.00	0.54	0.02	0.00	18.94	2.00	0.00	0.53	0.02	0.00
18.96	2.00	0.00	0.52	0.02	0.00	18.98	2.00	0.00	0.51	0.02	0.00
19.00	2.00	0.00	0.50	0.02	0.00	19.02	2.00	0.00	0.49	0.02	0.00
19.04	2.00	0.00	0.48	0.02	0.00	19.06	2.00	0.00	0.47	0.02	0.00
19.08	2.00	0.00	0.46	0.02	0.00	19.10	2.00	0.00	0.45	0.02	0.00
19.12	2.00	0.00	0.44	0.02	0.00	19.14	2.00	0.00	0.43	0.02	0.00
19.16	2.00	0.00	0.42	0.02	0.00	19.18	2.00	0.00	0.41	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
19.20	2.00	0.00	0.40	0.02	0.00	19.22	2.00	0.00	0.39	0.02	0.00
19.24	2.00	0.00	0.38	0.02	0.00	19.26	2.00	0.00	0.37	0.02	0.00
19.28	2.00	0.00	0.36	0.02	0.00	19.30	2.00	0.00	0.35	0.02	0.00
19.32	2.00	0.00	0.34	0.02	0.00	19.34	2.00	0.00	0.33	0.02	0.00
19.36	2.00	0.00	0.32	0.02	0.00	19.38	2.00	0.00	0.31	0.02	0.00
19.40	2.00	0.00	0.30	0.02	0.00	19.42	2.00	0.00	0.29	0.02	0.00
19.44	2.00	0.00	0.28	0.02	0.00	19.46	2.00	0.00	0.27	0.02	0.00
19.48	2.00	0.00	0.26	0.02	0.00	19.50	2.00	0.00	0.25	0.02	0.00
19.52	2.00	0.00	0.24	0.02	0.00	19.54	2.00	0.00	0.23	0.02	0.00
19.56	2.00	0.00	0.22	0.02	0.00	19.58	2.00	0.00	0.21	0.02	0.00
19.60	2.00	0.00	0.20	0.02	0.00	19.62	2.00	0.00	0.19	0.02	0.00
19.64	2.00	0.00	0.18	0.02	0.00	19.66	2.00	0.00	0.17	0.02	0.00
19.68	2.00	0.00	0.16	0.02	0.00	19.70	2.00	0.00	0.15	0.02	0.00
19.72	2.00	0.00	0.14	0.02	0.00	19.74	2.00	0.00	0.13	0.02	0.00
19.76	2.00	0.00	0.12	0.02	0.00	19.78	2.00	0.00	0.11	0.02	0.00
19.80	2.00	0.00	0.10	0.02	0.00	19.82	2.00	0.00	0.09	0.02	0.00
19.84	2.00	0.00	0.08	0.02	0.00	19.86	2.00	0.00	0.07	0.02	0.00
19.88	2.00	0.00	0.06	0.02	0.00	19.90	2.00	0.00	0.05	0.02	0.00
19.92	2.00	0.00	0.04	0.02	0.00	19.94	2.00	0.00	0.03	0.02	0.00
19.96	2.00	0.00	0.02	0.02	0.00	19.98	2.00	0.00	0.01	0.02	0.00
20.00	2.00	0.00	0.00	0.02	0.00	20.02	2.00	0.00	0.00	0.00	0.00
20.04	2.00	0.00	0.00	0.00	0.00	20.06	2.00	0.00	0.00	0.00	0.00
20.08	2.00	0.00	0.00	0.00	0.00	20.10	2.00	0.00	0.00	0.00	0.00
20.12	2.00	0.00	0.00	0.00	0.00	20.14	2.00	0.00	0.00	0.00	0.00
20.16	2.00	0.00	0.00	0.00	0.00	20.18	2.00	0.00	0.00	0.00	0.00
20.20	2.00	0.00	0.00	0.00	0.00	20.22	2.00	0.00	0.00	0.00	0.00
20.24	2.00	0.00	0.00	0.00	0.00	20.26	2.00	0.00	0.00	0.00	0.00

Overall liquefaction potential: 0.24

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

Abbreviations

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



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LIQUEFACTION ANALYSIS REPORT

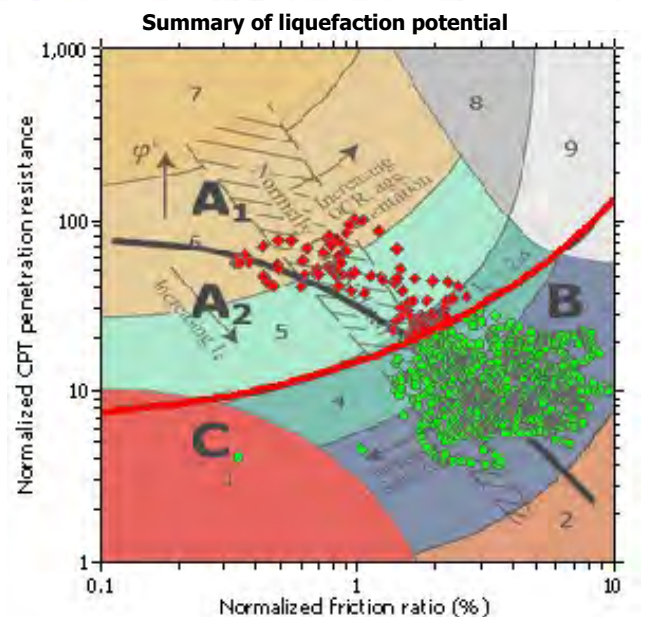
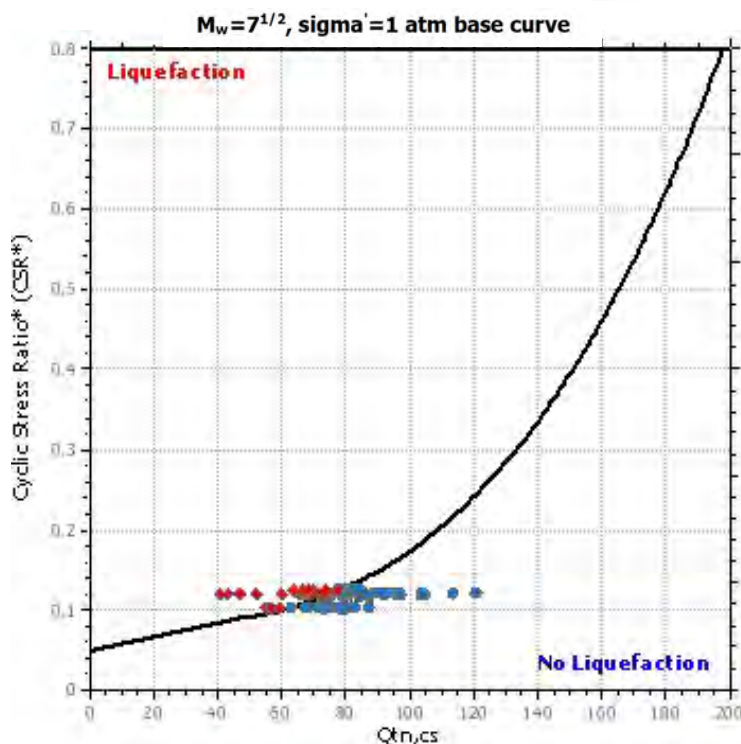
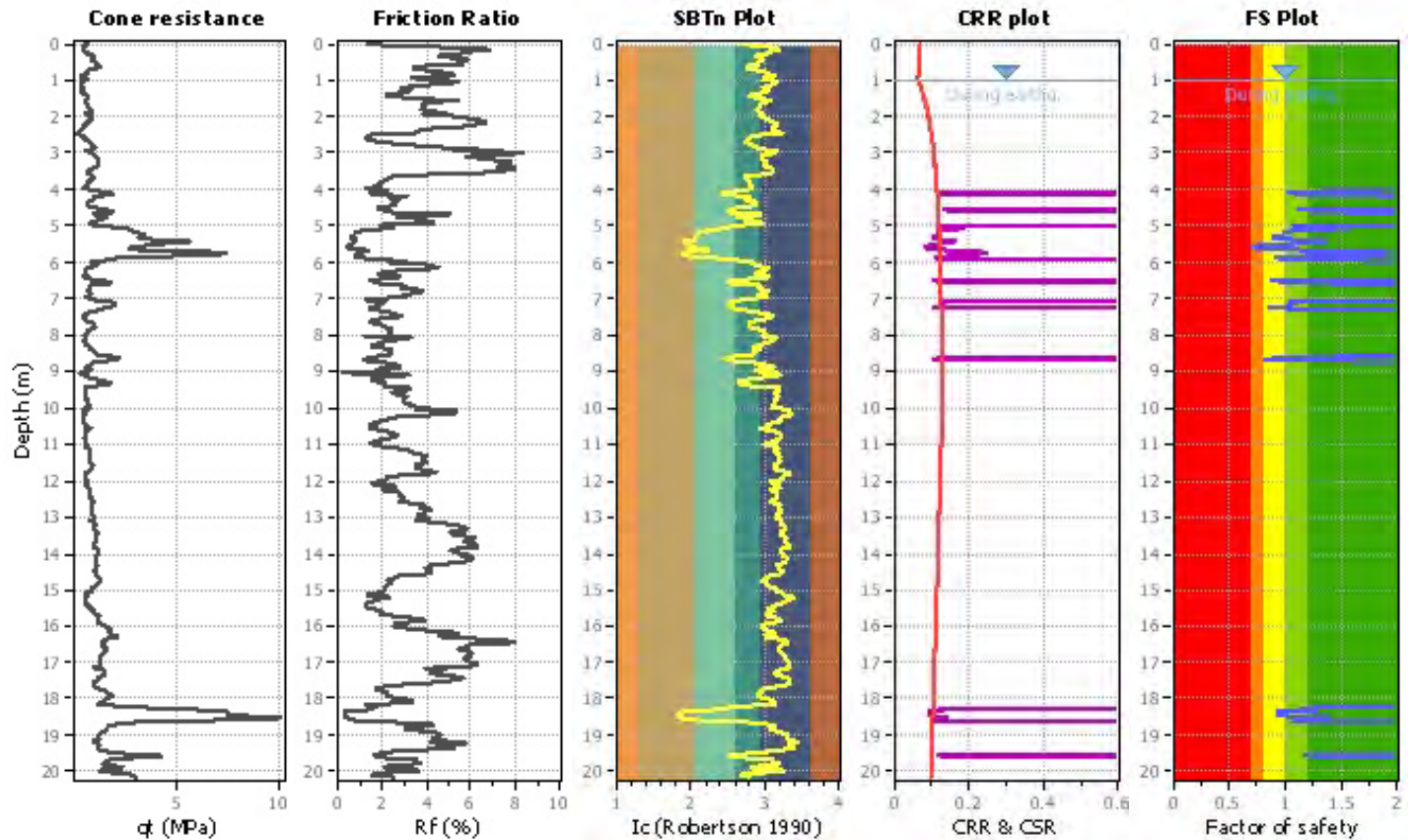
Project title : San Pietro in Casale

Location : Via Carlo Alberto Dalla Chiesa

CPT file : CPTU3

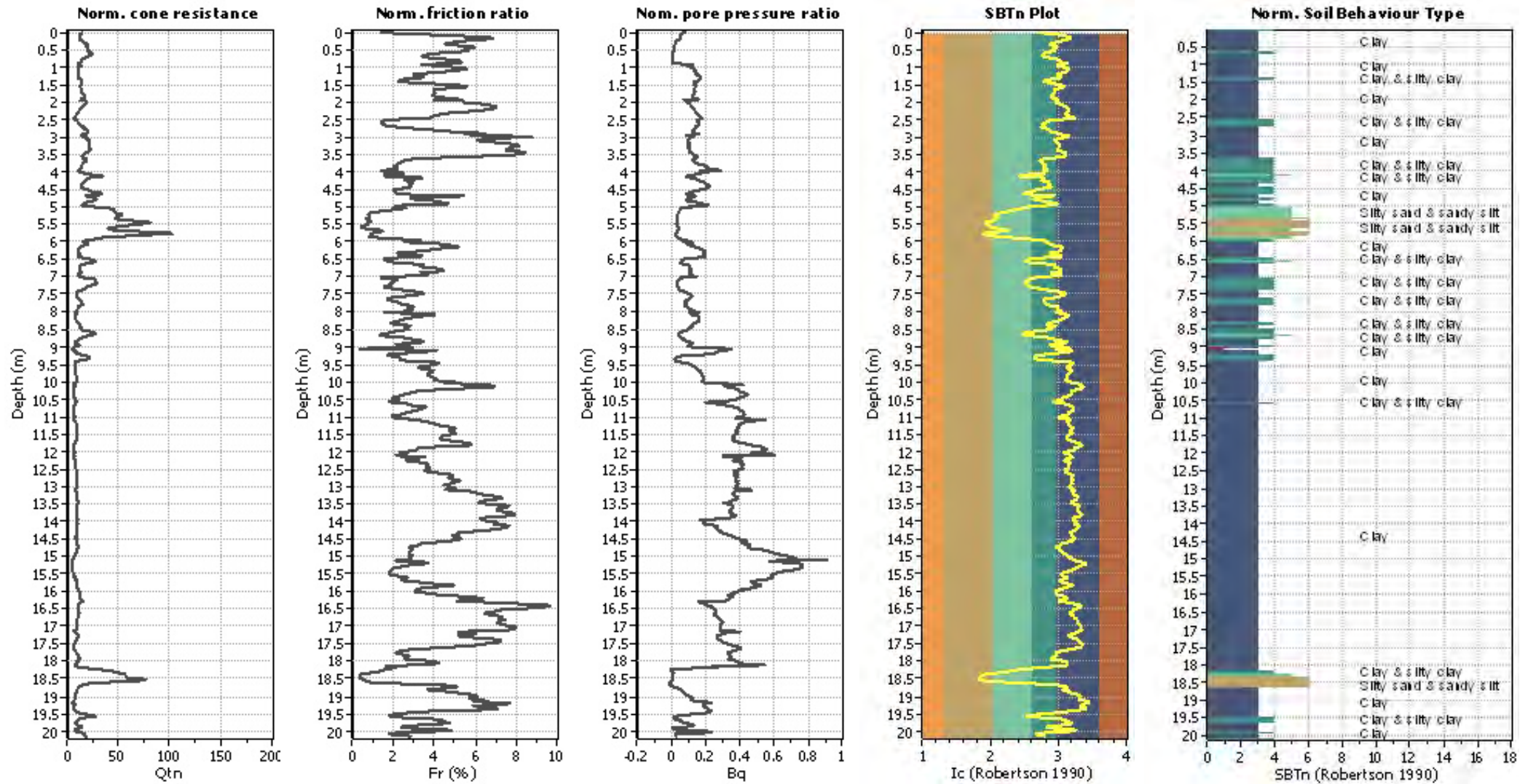
Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	1.60 m	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	1.00 m	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude M_w :	6.00	Ic cut-off value:	2.60	Trans. detect. applied:	No	Limit depth:	N/A
Peak ground acceleration:	0.18	Unit weight calculation:	Based on SBT	K_0 applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A₂: 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 (normaliz



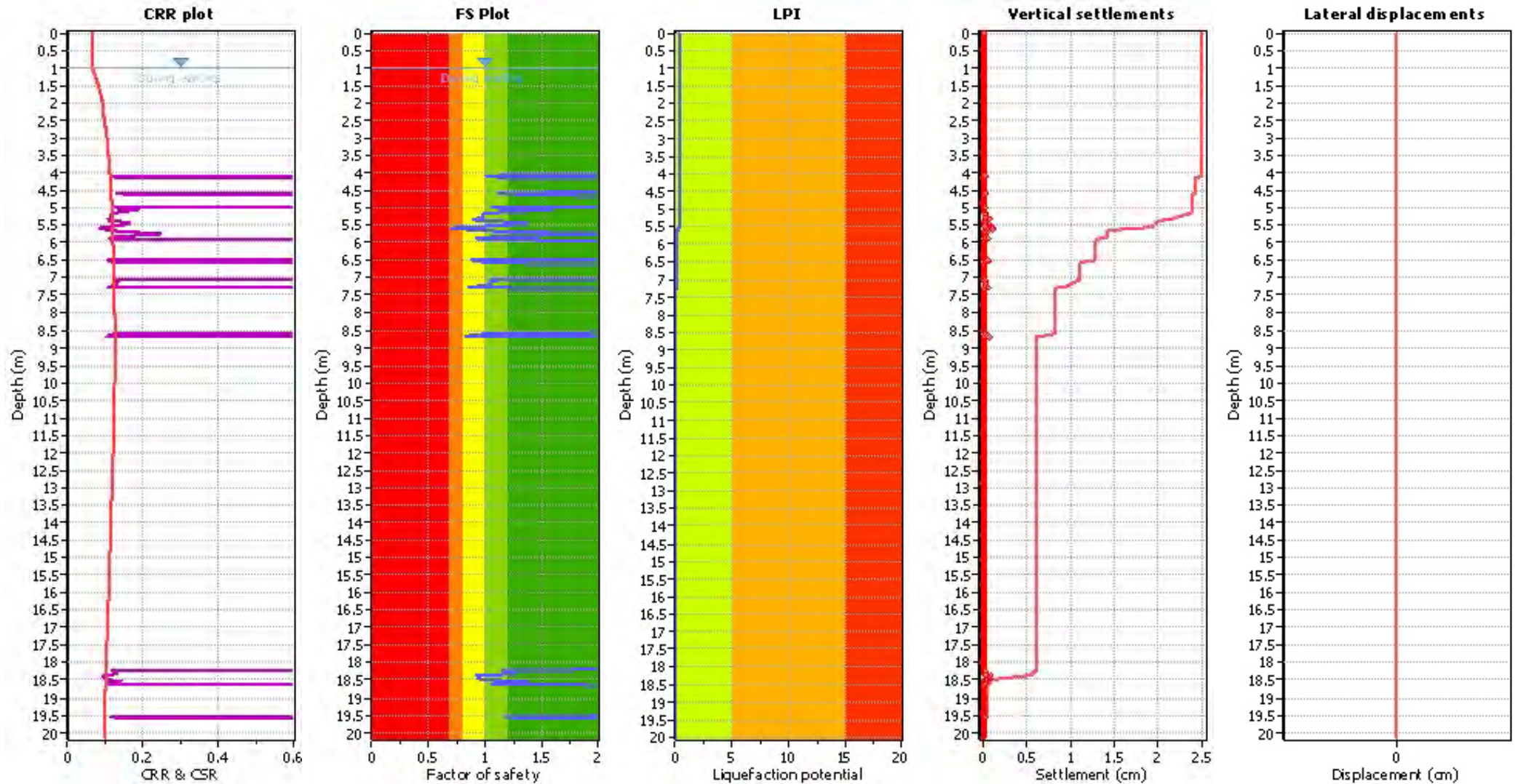
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.18	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	1.60 m	Fill height:	N/A	Limit depth:	N/A

SBTn legend

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

Liquefaction analysis overall plot



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.18	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	1.60 m	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LPI color scheme

Red	Very high risk
Orange	High risk
Yellow	Low risk

:: Liquefaction Potential Index calculation data ::											
Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
0.01	2.00	0.00	9.99	0.01	0.00	0.02	2.00	0.00	9.99	0.01	0.00
0.04	2.00	0.00	9.98	0.02	0.00	0.06	2.00	0.00	9.97	0.02	0.00
0.08	2.00	0.00	9.96	0.02	0.00	0.10	2.00	0.00	9.95	0.02	0.00
0.12	2.00	0.00	9.94	0.02	0.00	0.14	2.00	0.00	9.93	0.02	0.00
0.16	2.00	0.00	9.92	0.02	0.00	0.18	2.00	0.00	9.91	0.02	0.00
0.20	2.00	0.00	9.90	0.02	0.00	0.22	2.00	0.00	9.89	0.02	0.00
0.24	2.00	0.00	9.88	0.02	0.00	0.26	2.00	0.00	9.87	0.02	0.00
0.28	2.00	0.00	9.86	0.02	0.00	0.30	2.00	0.00	9.85	0.02	0.00
0.32	2.00	0.00	9.84	0.02	0.00	0.34	2.00	0.00	9.83	0.02	0.00
0.36	2.00	0.00	9.82	0.02	0.00	0.38	2.00	0.00	9.81	0.02	0.00
0.40	2.00	0.00	9.80	0.02	0.00	0.42	2.00	0.00	9.79	0.02	0.00
0.44	2.00	0.00	9.78	0.02	0.00	0.46	2.00	0.00	9.77	0.02	0.00
0.48	2.00	0.00	9.76	0.02	0.00	0.50	2.00	0.00	9.75	0.02	0.00
0.52	2.00	0.00	9.74	0.02	0.00	0.54	2.00	0.00	9.73	0.02	0.00
0.56	2.00	0.00	9.72	0.02	0.00	0.58	2.00	0.00	9.71	0.02	0.00
0.60	2.00	0.00	9.70	0.02	0.00	0.62	2.00	0.00	9.69	0.02	0.00
0.64	2.00	0.00	9.68	0.02	0.00	0.66	2.00	0.00	9.67	0.02	0.00
0.68	2.00	0.00	9.66	0.02	0.00	0.70	2.00	0.00	9.65	0.02	0.00
0.72	2.00	0.00	9.64	0.02	0.00	0.74	2.00	0.00	9.63	0.02	0.00
0.76	2.00	0.00	9.62	0.02	0.00	0.78	2.00	0.00	9.61	0.02	0.00
0.80	2.00	0.00	9.60	0.02	0.00	0.82	2.00	0.00	9.59	0.02	0.00
0.84	2.00	0.00	9.58	0.02	0.00	0.86	2.00	0.00	9.57	0.02	0.00
0.88	2.00	0.00	9.56	0.02	0.00	0.90	2.00	0.00	9.55	0.02	0.00
0.92	2.00	0.00	9.54	0.02	0.00	0.94	2.00	0.00	9.53	0.02	0.00
0.96	2.00	0.00	9.52	0.02	0.00	0.98	2.00	0.00	9.51	0.02	0.00
1.00	2.00	0.00	9.50	0.02	0.00	1.02	2.00	0.00	9.49	0.02	0.00
1.04	2.00	0.00	9.48	0.02	0.00	1.06	2.00	0.00	9.47	0.02	0.00
1.08	2.00	0.00	9.46	0.02	0.00	1.10	2.00	0.00	9.45	0.02	0.00
1.12	2.00	0.00	9.44	0.02	0.00	1.14	2.00	0.00	9.43	0.02	0.00
1.16	2.00	0.00	9.42	0.02	0.00	1.18	2.00	0.00	9.41	0.02	0.00
1.20	2.00	0.00	9.40	0.02	0.00	1.22	2.00	0.00	9.39	0.02	0.00
1.24	2.00	0.00	9.38	0.02	0.00	1.26	2.00	0.00	9.37	0.02	0.00
1.28	2.00	0.00	9.36	0.02	0.00	1.30	2.00	0.00	9.35	0.02	0.00
1.32	2.00	0.00	9.34	0.02	0.00	1.34	2.00	0.00	9.33	0.02	0.00
1.36	2.00	0.00	9.32	0.02	0.00	1.38	2.00	0.00	9.31	0.02	0.00
1.40	2.00	0.00	9.30	0.02	0.00	1.42	2.00	0.00	9.29	0.02	0.00
1.44	2.00	0.00	9.28	0.02	0.00	1.46	2.00	0.00	9.27	0.02	0.00
1.48	2.00	0.00	9.26	0.02	0.00	1.50	2.00	0.00	9.25	0.02	0.00
1.52	2.00	0.00	9.24	0.02	0.00	1.54	2.00	0.00	9.23	0.02	0.00
1.56	2.00	0.00	9.22	0.02	0.00	1.58	2.00	0.00	9.21	0.02	0.00
1.60	2.00	0.00	9.20	0.02	0.00	1.62	2.00	0.00	9.19	0.02	0.00
1.64	2.00	0.00	9.18	0.02	0.00	1.66	2.00	0.00	9.17	0.02	0.00
1.68	2.00	0.00	9.16	0.02	0.00	1.70	2.00	0.00	9.15	0.02	0.00
1.72	2.00	0.00	9.14	0.02	0.00	1.74	2.00	0.00	9.13	0.02	0.00
1.76	2.00	0.00	9.12	0.02	0.00	1.78	2.00	0.00	9.11	0.02	0.00
1.80	2.00	0.00	9.10	0.02	0.00	1.82	2.00	0.00	9.09	0.02	0.00
1.84	2.00	0.00	9.08	0.02	0.00	1.86	2.00	0.00	9.07	0.02	0.00
1.88	2.00	0.00	9.06	0.02	0.00	1.90	2.00	0.00	9.05	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
1.92	2.00	0.00	9.04	0.02	0.00	1.94	2.00	0.00	9.03	0.02	0.00
1.96	2.00	0.00	9.02	0.02	0.00	1.98	2.00	0.00	9.01	0.02	0.00
2.00	2.00	0.00	9.00	0.02	0.00	2.02	2.00	0.00	8.99	0.02	0.00
2.04	2.00	0.00	8.98	0.02	0.00	2.06	2.00	0.00	8.97	0.02	0.00
2.08	2.00	0.00	8.96	0.02	0.00	2.10	2.00	0.00	8.95	0.02	0.00
2.12	2.00	0.00	8.94	0.02	0.00	2.14	2.00	0.00	8.93	0.02	0.00
2.16	2.00	0.00	8.92	0.02	0.00	2.18	2.00	0.00	8.91	0.02	0.00
2.20	2.00	0.00	8.90	0.02	0.00	2.22	2.00	0.00	8.89	0.02	0.00
2.24	2.00	0.00	8.88	0.02	0.00	2.26	2.00	0.00	8.87	0.02	0.00
2.28	2.00	0.00	8.86	0.02	0.00	2.30	2.00	0.00	8.85	0.02	0.00
2.32	2.00	0.00	8.84	0.02	0.00	2.34	2.00	0.00	8.83	0.02	0.00
2.36	2.00	0.00	8.82	0.02	0.00	2.38	2.00	0.00	8.81	0.02	0.00
2.40	2.00	0.00	8.80	0.02	0.00	2.42	2.00	0.00	8.79	0.02	0.00
2.44	2.00	0.00	8.78	0.02	0.00	2.46	2.00	0.00	8.77	0.02	0.00
2.48	2.00	0.00	8.76	0.02	0.00	2.50	2.00	0.00	8.75	0.02	0.00
2.52	2.00	0.00	8.74	0.02	0.00	2.54	2.00	0.00	8.73	0.02	0.00
2.56	2.00	0.00	8.72	0.02	0.00	2.58	2.00	0.00	8.71	0.02	0.00
2.60	2.00	0.00	8.70	0.02	0.00	2.62	2.00	0.00	8.69	0.02	0.00
2.64	2.00	0.00	8.68	0.02	0.00	2.66	2.00	0.00	8.67	0.02	0.00
2.68	2.00	0.00	8.66	0.02	0.00	2.70	2.00	0.00	8.65	0.02	0.00
2.72	2.00	0.00	8.64	0.02	0.00	2.74	2.00	0.00	8.63	0.02	0.00
2.76	2.00	0.00	8.62	0.02	0.00	2.78	2.00	0.00	8.61	0.02	0.00
2.80	2.00	0.00	8.60	0.02	0.00	2.82	2.00	0.00	8.59	0.02	0.00
2.84	2.00	0.00	8.58	0.02	0.00	2.86	2.00	0.00	8.57	0.02	0.00
2.88	2.00	0.00	8.56	0.02	0.00	2.90	2.00	0.00	8.55	0.02	0.00
2.92	2.00	0.00	8.54	0.02	0.00	2.94	2.00	0.00	8.53	0.02	0.00
2.96	2.00	0.00	8.52	0.02	0.00	2.98	2.00	0.00	8.51	0.02	0.00
3.00	2.00	0.00	8.50	0.02	0.00	3.02	2.00	0.00	8.49	0.02	0.00
3.04	2.00	0.00	8.48	0.02	0.00	3.06	2.00	0.00	8.47	0.02	0.00
3.08	2.00	0.00	8.46	0.02	0.00	3.10	2.00	0.00	8.45	0.02	0.00
3.12	2.00	0.00	8.44	0.02	0.00	3.14	2.00	0.00	8.43	0.02	0.00
3.16	2.00	0.00	8.42	0.02	0.00	3.18	2.00	0.00	8.41	0.02	0.00
3.20	2.00	0.00	8.40	0.02	0.00	3.22	2.00	0.00	8.39	0.02	0.00
3.24	2.00	0.00	8.38	0.02	0.00	3.26	2.00	0.00	8.37	0.02	0.00
3.28	2.00	0.00	8.36	0.02	0.00	3.30	2.00	0.00	8.35	0.02	0.00
3.32	2.00	0.00	8.34	0.02	0.00	3.34	2.00	0.00	8.33	0.02	0.00
3.36	2.00	0.00	8.32	0.02	0.00	3.38	2.00	0.00	8.31	0.02	0.00
3.40	2.00	0.00	8.30	0.02	0.00	3.42	2.00	0.00	8.29	0.02	0.00
3.44	2.00	0.00	8.28	0.02	0.00	3.46	2.00	0.00	8.27	0.02	0.00
3.48	2.00	0.00	8.26	0.02	0.00	3.50	2.00	0.00	8.25	0.02	0.00
3.52	2.00	0.00	8.24	0.02	0.00	3.54	2.00	0.00	8.23	0.02	0.00
3.56	2.00	0.00	8.22	0.02	0.00	3.58	2.00	0.00	8.21	0.02	0.00
3.60	2.00	0.00	8.20	0.02	0.00	3.62	2.00	0.00	8.19	0.02	0.00
3.64	2.00	0.00	8.18	0.02	0.00	3.66	2.00	0.00	8.17	0.02	0.00
3.68	2.00	0.00	8.16	0.02	0.00	3.70	2.00	0.00	8.15	0.02	0.00
3.72	2.00	0.00	8.14	0.02	0.00	3.74	2.00	0.00	8.13	0.02	0.00
3.76	2.00	0.00	8.12	0.02	0.00	3.78	2.00	0.00	8.11	0.02	0.00
3.80	2.00	0.00	8.10	0.02	0.00	3.82	2.00	0.00	8.09	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
3.84	2.00	0.00	8.08	0.02	0.00	3.86	2.00	0.00	8.07	0.02	0.00
3.88	2.00	0.00	8.06	0.02	0.00	3.90	2.00	0.00	8.05	0.02	0.00
3.92	2.00	0.00	8.04	0.02	0.00	3.94	2.00	0.00	8.03	0.02	0.00
3.96	2.00	0.00	8.02	0.02	0.00	3.98	2.00	0.00	8.01	0.02	0.00
4.00	2.00	0.00	8.00	0.02	0.00	4.02	2.00	0.00	7.99	0.02	0.00
4.04	2.00	0.00	7.98	0.02	0.00	4.06	1.02	0.00	7.97	0.02	0.00
4.08	1.05	0.00	7.96	0.02	0.00	4.10	1.11	0.00	7.95	0.02	0.00
4.12	1.19	0.00	7.94	0.02	0.00	4.14	1.25	0.00	7.93	0.02	0.00
4.16	2.00	0.00	7.92	0.02	0.00	4.18	2.00	0.00	7.91	0.02	0.00
4.20	2.00	0.00	7.90	0.02	0.00	4.22	2.00	0.00	7.89	0.02	0.00
4.24	2.00	0.00	7.88	0.02	0.00	4.26	2.00	0.00	7.87	0.02	0.00
4.28	2.00	0.00	7.86	0.02	0.00	4.30	2.00	0.00	7.85	0.02	0.00
4.32	2.00	0.00	7.84	0.02	0.00	4.34	2.00	0.00	7.83	0.02	0.00
4.36	2.00	0.00	7.82	0.02	0.00	4.38	2.00	0.00	7.81	0.02	0.00
4.40	2.00	0.00	7.80	0.02	0.00	4.42	2.00	0.00	7.79	0.02	0.00
4.44	2.00	0.00	7.78	0.02	0.00	4.46	2.00	0.00	7.77	0.02	0.00
4.48	2.00	0.00	7.76	0.02	0.00	4.50	2.00	0.00	7.75	0.02	0.00
4.52	2.00	0.00	7.74	0.02	0.00	4.54	2.00	0.00	7.73	0.02	0.00
4.56	1.12	0.00	7.72	0.02	0.00	4.58	1.21	0.00	7.71	0.02	0.00
4.60	1.32	0.00	7.70	0.02	0.00	4.62	1.39	0.00	7.69	0.02	0.00
4.64	2.00	0.00	7.68	0.02	0.00	4.66	2.00	0.00	7.67	0.02	0.00
4.68	2.00	0.00	7.66	0.02	0.00	4.70	2.00	0.00	7.65	0.02	0.00
4.72	2.00	0.00	7.64	0.02	0.00	4.74	2.00	0.00	7.63	0.02	0.00
4.76	2.00	0.00	7.62	0.02	0.00	4.78	2.00	0.00	7.61	0.02	0.00
4.80	2.00	0.00	7.60	0.02	0.00	4.82	2.00	0.00	7.59	0.02	0.00
4.84	2.00	0.00	7.58	0.02	0.00	4.86	2.00	0.00	7.57	0.02	0.00
4.88	2.00	0.00	7.56	0.02	0.00	4.90	2.00	0.00	7.55	0.02	0.00
4.92	2.00	0.00	7.54	0.02	0.00	4.94	2.00	0.00	7.53	0.02	0.00
4.96	2.00	0.00	7.52	0.02	0.00	4.98	2.00	0.00	7.51	0.02	0.00
5.00	1.07	0.00	7.50	0.02	0.00	5.02	1.56	0.00	7.49	0.02	0.00
5.04	1.59	0.00	7.48	0.02	0.00	5.06	1.55	0.00	7.47	0.02	0.00
5.08	1.41	0.00	7.46	0.02	0.00	5.10	1.27	0.00	7.45	0.02	0.00
5.12	1.15	0.00	7.44	0.02	0.00	5.14	1.05	0.00	7.43	0.02	0.00
5.16	0.99	0.01	7.42	0.02	0.00	5.18	0.98	0.02	7.41	0.02	0.00
5.20	0.99	0.01	7.40	0.02	0.00	5.22	0.98	0.02	7.39	0.02	0.00
5.24	0.98	0.02	7.38	0.02	0.00	5.26	0.98	0.02	7.37	0.02	0.00
5.28	0.98	0.02	7.36	0.02	0.00	5.30	0.96	0.04	7.35	0.02	0.01
5.32	0.92	0.08	7.34	0.02	0.01	5.34	0.89	0.11	7.33	0.02	0.02
5.36	0.92	0.08	7.32	0.02	0.01	5.38	1.05	0.00	7.31	0.02	0.00
5.40	1.22	0.00	7.30	0.02	0.00	5.42	1.35	0.00	7.29	0.02	0.00
5.44	1.37	0.00	7.28	0.02	0.00	5.46	1.32	0.00	7.27	0.02	0.00
5.48	1.23	0.00	7.26	0.02	0.00	5.50	1.11	0.00	7.25	0.02	0.00
5.52	0.98	0.02	7.24	0.02	0.00	5.54	0.78	0.22	7.23	0.02	0.03
5.56	0.74	0.26	7.22	0.02	0.04	5.58	0.71	0.29	7.21	0.02	0.04
5.60	0.70	0.30	7.20	0.02	0.04	5.62	0.83	0.17	7.19	0.02	0.02
5.64	0.89	0.11	7.18	0.02	0.02	5.66	1.06	0.00	7.17	0.02	0.00
5.68	1.26	0.00	7.16	0.02	0.00	5.70	1.52	0.00	7.15	0.02	0.00
5.72	1.80	0.00	7.14	0.02	0.00	5.74	2.00	0.00	7.13	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
5.76	2.00	0.00	7.12	0.02	0.00	5.78	1.80	0.00	7.11	0.02	0.00
5.80	1.54	0.00	7.10	0.02	0.00	5.82	1.30	0.00	7.09	0.02	0.00
5.84	1.10	0.00	7.08	0.02	0.00	5.86	0.96	0.04	7.07	0.02	0.01
5.88	0.92	0.08	7.06	0.02	0.01	5.90	0.97	0.03	7.05	0.02	0.00
5.92	1.10	0.00	7.04	0.02	0.00	5.94	2.00	0.00	7.03	0.02	0.00
5.96	2.00	0.00	7.02	0.02	0.00	5.98	2.00	0.00	7.01	0.02	0.00
6.00	2.00	0.00	7.00	0.02	0.00	6.02	2.00	0.00	6.99	0.02	0.00
6.04	2.00	0.00	6.98	0.02	0.00	6.06	2.00	0.00	6.97	0.02	0.00
6.08	2.00	0.00	6.96	0.02	0.00	6.10	2.00	0.00	6.95	0.02	0.00
6.12	2.00	0.00	6.94	0.02	0.00	6.14	2.00	0.00	6.93	0.02	0.00
6.16	2.00	0.00	6.92	0.02	0.00	6.18	2.00	0.00	6.91	0.02	0.00
6.20	2.00	0.00	6.90	0.02	0.00	6.22	2.00	0.00	6.89	0.02	0.00
6.24	2.00	0.00	6.88	0.02	0.00	6.26	2.00	0.00	6.87	0.02	0.00
6.28	2.00	0.00	6.86	0.02	0.00	6.30	2.00	0.00	6.85	0.02	0.00
6.32	2.00	0.00	6.84	0.02	0.00	6.34	2.00	0.00	6.83	0.02	0.00
6.36	2.00	0.00	6.82	0.02	0.00	6.38	2.00	0.00	6.81	0.02	0.00
6.40	2.00	0.00	6.80	0.02	0.00	6.42	2.00	0.00	6.79	0.02	0.00
6.44	2.00	0.00	6.78	0.02	0.00	6.46	2.00	0.00	6.77	0.02	0.00
6.48	2.00	0.00	6.76	0.02	0.00	6.50	0.88	0.12	6.75	0.02	0.02
6.52	0.92	0.08	6.74	0.02	0.01	6.54	0.96	0.04	6.73	0.02	0.00
6.56	0.99	0.01	6.72	0.02	0.00	6.58	1.03	0.00	6.71	0.02	0.00
6.60	2.00	0.00	6.70	0.02	0.00	6.62	2.00	0.00	6.69	0.02	0.00
6.64	2.00	0.00	6.68	0.02	0.00	6.66	2.00	0.00	6.67	0.02	0.00
6.68	2.00	0.00	6.66	0.02	0.00	6.70	2.00	0.00	6.65	0.02	0.00
6.72	2.00	0.00	6.64	0.02	0.00	6.74	2.00	0.00	6.63	0.02	0.00
6.76	2.00	0.00	6.62	0.02	0.00	6.78	2.00	0.00	6.61	0.02	0.00
6.80	2.00	0.00	6.60	0.02	0.00	6.82	2.00	0.00	6.59	0.02	0.00
6.84	2.00	0.00	6.58	0.02	0.00	6.86	2.00	0.00	6.57	0.02	0.00
6.88	2.00	0.00	6.56	0.02	0.00	6.90	2.00	0.00	6.55	0.02	0.00
6.92	2.00	0.00	6.54	0.02	0.00	6.94	2.00	0.00	6.53	0.02	0.00
6.96	2.00	0.00	6.52	0.02	0.00	6.98	2.00	0.00	6.51	0.02	0.00
7.00	2.00	0.00	6.50	0.02	0.00	7.02	2.00	0.00	6.49	0.02	0.00
7.04	2.00	0.00	6.48	0.02	0.00	7.06	1.05	0.00	6.47	0.02	0.00
7.08	1.10	0.00	6.46	0.02	0.00	7.10	1.10	0.00	6.45	0.02	0.00
7.12	1.07	0.00	6.44	0.02	0.00	7.14	1.04	0.00	6.43	0.02	0.00
7.16	1.03	0.00	6.42	0.02	0.00	7.18	1.05	0.00	6.41	0.02	0.00
7.20	1.04	0.00	6.40	0.02	0.00	7.22	1.01	0.00	6.39	0.02	0.00
7.24	0.95	0.05	6.38	0.02	0.01	7.26	0.91	0.09	6.37	0.02	0.01
7.28	0.86	0.14	6.36	0.02	0.02	7.30	2.00	0.00	6.35	0.02	0.00
7.32	2.00	0.00	6.34	0.02	0.00	7.34	2.00	0.00	6.33	0.02	0.00
7.36	2.00	0.00	6.32	0.02	0.00	7.38	2.00	0.00	6.31	0.02	0.00
7.40	2.00	0.00	6.30	0.02	0.00	7.42	2.00	0.00	6.29	0.02	0.00
7.44	2.00	0.00	6.28	0.02	0.00	7.46	2.00	0.00	6.27	0.02	0.00
7.48	2.00	0.00	6.26	0.02	0.00	7.50	2.00	0.00	6.25	0.02	0.00
7.52	2.00	0.00	6.24	0.02	0.00	7.54	2.00	0.00	6.23	0.02	0.00
7.56	2.00	0.00	6.22	0.02	0.00	7.58	2.00	0.00	6.21	0.02	0.00
7.60	2.00	0.00	6.20	0.02	0.00	7.62	2.00	0.00	6.19	0.02	0.00
7.64	2.00	0.00	6.18	0.02	0.00	7.66	2.00	0.00	6.17	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
7.68	2.00	0.00	6.16	0.02	0.00	7.70	2.00	0.00	6.15	0.02	0.00
7.72	2.00	0.00	6.14	0.02	0.00	7.74	2.00	0.00	6.13	0.02	0.00
7.76	2.00	0.00	6.12	0.02	0.00	7.78	2.00	0.00	6.11	0.02	0.00
7.80	2.00	0.00	6.10	0.02	0.00	7.82	2.00	0.00	6.09	0.02	0.00
7.84	2.00	0.00	6.08	0.02	0.00	7.86	2.00	0.00	6.07	0.02	0.00
7.88	2.00	0.00	6.06	0.02	0.00	7.90	2.00	0.00	6.05	0.02	0.00
7.92	2.00	0.00	6.04	0.02	0.00	7.94	2.00	0.00	6.03	0.02	0.00
7.96	2.00	0.00	6.02	0.02	0.00	7.98	2.00	0.00	6.01	0.02	0.00
8.00	2.00	0.00	6.00	0.02	0.00	8.02	2.00	0.00	5.99	0.02	0.00
8.04	2.00	0.00	5.98	0.02	0.00	8.06	2.00	0.00	5.97	0.02	0.00
8.08	2.00	0.00	5.96	0.02	0.00	8.10	2.00	0.00	5.95	0.02	0.00
8.12	2.00	0.00	5.94	0.02	0.00	8.14	2.00	0.00	5.93	0.02	0.00
8.16	2.00	0.00	5.92	0.02	0.00	8.18	2.00	0.00	5.91	0.02	0.00
8.20	2.00	0.00	5.90	0.02	0.00	8.22	2.00	0.00	5.89	0.02	0.00
8.24	2.00	0.00	5.88	0.02	0.00	8.26	2.00	0.00	5.87	0.02	0.00
8.28	2.00	0.00	5.86	0.02	0.00	8.30	2.00	0.00	5.85	0.02	0.00
8.32	2.00	0.00	5.84	0.02	0.00	8.34	2.00	0.00	5.83	0.02	0.00
8.36	2.00	0.00	5.82	0.02	0.00	8.38	2.00	0.00	5.81	0.02	0.00
8.40	2.00	0.00	5.80	0.02	0.00	8.42	2.00	0.00	5.79	0.02	0.00
8.44	2.00	0.00	5.78	0.02	0.00	8.46	2.00	0.00	5.77	0.02	0.00
8.48	2.00	0.00	5.76	0.02	0.00	8.50	2.00	0.00	5.75	0.02	0.00
8.52	2.00	0.00	5.74	0.02	0.00	8.54	2.00	0.00	5.73	0.02	0.00
8.56	2.00	0.00	5.72	0.02	0.00	8.58	2.00	0.00	5.71	0.02	0.00
8.60	0.98	0.02	5.70	0.02	0.00	8.62	0.98	0.02	5.69	0.02	0.00
8.64	0.94	0.06	5.68	0.02	0.01	8.66	0.87	0.13	5.67	0.02	0.01
8.68	0.83	0.17	5.66	0.02	0.02	8.70	2.00	0.00	5.65	0.02	0.00
8.72	2.00	0.00	5.64	0.02	0.00	8.74	2.00	0.00	5.63	0.02	0.00
8.76	2.00	0.00	5.62	0.02	0.00	8.78	2.00	0.00	5.61	0.02	0.00
8.80	2.00	0.00	5.60	0.02	0.00	8.82	2.00	0.00	5.59	0.02	0.00
8.84	2.00	0.00	5.58	0.02	0.00	8.86	2.00	0.00	5.57	0.02	0.00
8.88	2.00	0.00	5.56	0.02	0.00	8.90	2.00	0.00	5.55	0.02	0.00
8.92	2.00	0.00	5.54	0.02	0.00	8.94	2.00	0.00	5.53	0.02	0.00
8.96	2.00	0.00	5.52	0.02	0.00	8.98	2.00	0.00	5.51	0.02	0.00
9.00	2.00	0.00	5.50	0.02	0.00	9.02	2.00	0.00	5.49	0.02	0.00
9.04	2.00	0.00	5.48	0.02	0.00	9.06	2.00	0.00	5.47	0.02	0.00
9.08	2.00	0.00	5.46	0.02	0.00	9.11	2.00	0.00	5.45	0.03	0.00
9.12	2.00	0.00	5.44	0.01	0.00	9.14	2.00	0.00	5.43	0.02	0.00
9.16	2.00	0.00	5.42	0.02	0.00	9.18	2.00	0.00	5.41	0.02	0.00
9.20	2.00	0.00	5.40	0.02	0.00	9.22	2.00	0.00	5.39	0.02	0.00
9.24	2.00	0.00	5.38	0.02	0.00	9.26	2.00	0.00	5.37	0.02	0.00
9.28	2.00	0.00	5.36	0.02	0.00	9.30	2.00	0.00	5.35	0.02	0.00
9.32	2.00	0.00	5.34	0.02	0.00	9.34	2.00	0.00	5.33	0.02	0.00
9.36	2.00	0.00	5.32	0.02	0.00	9.38	2.00	0.00	5.31	0.02	0.00
9.40	2.00	0.00	5.30	0.02	0.00	9.42	2.00	0.00	5.29	0.02	0.00
9.44	2.00	0.00	5.28	0.02	0.00	9.46	2.00	0.00	5.27	0.02	0.00
9.48	2.00	0.00	5.26	0.02	0.00	9.50	2.00	0.00	5.25	0.02	0.00
9.52	2.00	0.00	5.24	0.02	0.00	9.54	2.00	0.00	5.23	0.02	0.00
9.56	2.00	0.00	5.22	0.02	0.00	9.58	2.00	0.00	5.21	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
9.60	2.00	0.00	5.20	0.02	0.00	9.62	2.00	0.00	5.19	0.02	0.00
9.64	2.00	0.00	5.18	0.02	0.00	9.66	2.00	0.00	5.17	0.02	0.00
9.68	2.00	0.00	5.16	0.02	0.00	9.70	2.00	0.00	5.15	0.02	0.00
9.72	2.00	0.00	5.14	0.02	0.00	9.74	2.00	0.00	5.13	0.02	0.00
9.76	2.00	0.00	5.12	0.02	0.00	9.78	2.00	0.00	5.11	0.02	0.00
9.80	2.00	0.00	5.10	0.02	0.00	9.82	2.00	0.00	5.09	0.02	0.00
9.84	2.00	0.00	5.08	0.02	0.00	9.86	2.00	0.00	5.07	0.02	0.00
9.88	2.00	0.00	5.06	0.02	0.00	9.90	2.00	0.00	5.05	0.02	0.00
9.92	2.00	0.00	5.04	0.02	0.00	9.94	2.00	0.00	5.03	0.02	0.00
9.96	2.00	0.00	5.02	0.02	0.00	9.98	2.00	0.00	5.01	0.02	0.00
10.00	2.00	0.00	5.00	0.02	0.00	10.02	2.00	0.00	4.99	0.02	0.00
10.04	2.00	0.00	4.98	0.02	0.00	10.06	2.00	0.00	4.97	0.02	0.00
10.08	2.00	0.00	4.96	0.02	0.00	10.10	2.00	0.00	4.95	0.02	0.00
10.12	2.00	0.00	4.94	0.02	0.00	10.14	2.00	0.00	4.93	0.02	0.00
10.16	2.00	0.00	4.92	0.02	0.00	10.18	2.00	0.00	4.91	0.02	0.00
10.20	2.00	0.00	4.90	0.02	0.00	10.22	2.00	0.00	4.89	0.02	0.00
10.24	2.00	0.00	4.88	0.02	0.00	10.26	2.00	0.00	4.87	0.02	0.00
10.28	2.00	0.00	4.86	0.02	0.00	10.30	2.00	0.00	4.85	0.02	0.00
10.32	2.00	0.00	4.84	0.02	0.00	10.34	2.00	0.00	4.83	0.02	0.00
10.36	2.00	0.00	4.82	0.02	0.00	10.38	2.00	0.00	4.81	0.02	0.00
10.40	2.00	0.00	4.80	0.02	0.00	10.42	2.00	0.00	4.79	0.02	0.00
10.44	2.00	0.00	4.78	0.02	0.00	10.46	2.00	0.00	4.77	0.02	0.00
10.48	2.00	0.00	4.76	0.02	0.00	10.50	2.00	0.00	4.75	0.02	0.00
10.52	2.00	0.00	4.74	0.02	0.00	10.54	2.00	0.00	4.73	0.02	0.00
10.56	2.00	0.00	4.72	0.02	0.00	10.58	2.00	0.00	4.71	0.02	0.00
10.60	2.00	0.00	4.70	0.02	0.00	10.62	2.00	0.00	4.69	0.02	0.00
10.64	2.00	0.00	4.68	0.02	0.00	10.66	2.00	0.00	4.67	0.02	0.00
10.68	2.00	0.00	4.66	0.02	0.00	10.70	2.00	0.00	4.65	0.02	0.00
10.72	2.00	0.00	4.64	0.02	0.00	10.74	2.00	0.00	4.63	0.02	0.00
10.76	2.00	0.00	4.62	0.02	0.00	10.78	2.00	0.00	4.61	0.02	0.00
10.80	2.00	0.00	4.60	0.02	0.00	10.82	2.00	0.00	4.59	0.02	0.00
10.84	2.00	0.00	4.58	0.02	0.00	10.86	2.00	0.00	4.57	0.02	0.00
10.88	2.00	0.00	4.56	0.02	0.00	10.90	2.00	0.00	4.55	0.02	0.00
10.92	2.00	0.00	4.54	0.02	0.00	10.94	2.00	0.00	4.53	0.02	0.00
10.96	2.00	0.00	4.52	0.02	0.00	10.98	2.00	0.00	4.51	0.02	0.00
11.00	2.00	0.00	4.50	0.02	0.00	11.02	2.00	0.00	4.49	0.02	0.00
11.04	2.00	0.00	4.48	0.02	0.00	11.06	2.00	0.00	4.47	0.02	0.00
11.08	2.00	0.00	4.46	0.02	0.00	11.10	2.00	0.00	4.45	0.02	0.00
11.12	2.00	0.00	4.44	0.02	0.00	11.14	2.00	0.00	4.43	0.02	0.00
11.16	2.00	0.00	4.42	0.02	0.00	11.18	2.00	0.00	4.41	0.02	0.00
11.20	2.00	0.00	4.40	0.02	0.00	11.22	2.00	0.00	4.39	0.02	0.00
11.24	2.00	0.00	4.38	0.02	0.00	11.26	2.00	0.00	4.37	0.02	0.00
11.28	2.00	0.00	4.36	0.02	0.00	11.30	2.00	0.00	4.35	0.02	0.00
11.32	2.00	0.00	4.34	0.02	0.00	11.34	2.00	0.00	4.33	0.02	0.00
11.36	2.00	0.00	4.32	0.02	0.00	11.38	2.00	0.00	4.31	0.02	0.00
11.40	2.00	0.00	4.30	0.02	0.00	11.42	2.00	0.00	4.29	0.02	0.00
11.44	2.00	0.00	4.28	0.02	0.00	11.46	2.00	0.00	4.27	0.02	0.00
11.48	2.00	0.00	4.26	0.02	0.00	11.50	2.00	0.00	4.25	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
11.52	2.00	0.00	4.24	0.02	0.00	11.54	2.00	0.00	4.23	0.02	0.00
11.56	2.00	0.00	4.22	0.02	0.00	11.58	2.00	0.00	4.21	0.02	0.00
11.60	2.00	0.00	4.20	0.02	0.00	11.62	2.00	0.00	4.19	0.02	0.00
11.64	2.00	0.00	4.18	0.02	0.00	11.66	2.00	0.00	4.17	0.02	0.00
11.68	2.00	0.00	4.16	0.02	0.00	11.70	2.00	0.00	4.15	0.02	0.00
11.72	2.00	0.00	4.14	0.02	0.00	11.74	2.00	0.00	4.13	0.02	0.00
11.76	2.00	0.00	4.12	0.02	0.00	11.78	2.00	0.00	4.11	0.02	0.00
11.80	2.00	0.00	4.10	0.02	0.00	11.82	2.00	0.00	4.09	0.02	0.00
11.84	2.00	0.00	4.08	0.02	0.00	11.86	2.00	0.00	4.07	0.02	0.00
11.88	2.00	0.00	4.06	0.02	0.00	11.90	2.00	0.00	4.05	0.02	0.00
11.92	2.00	0.00	4.04	0.02	0.00	11.94	2.00	0.00	4.03	0.02	0.00
11.96	2.00	0.00	4.02	0.02	0.00	11.98	2.00	0.00	4.01	0.02	0.00
12.00	2.00	0.00	4.00	0.02	0.00	12.02	2.00	0.00	3.99	0.02	0.00
12.04	2.00	0.00	3.98	0.02	0.00	12.06	2.00	0.00	3.97	0.02	0.00
12.08	2.00	0.00	3.96	0.02	0.00	12.10	2.00	0.00	3.95	0.02	0.00
12.12	2.00	0.00	3.94	0.02	0.00	12.14	2.00	0.00	3.93	0.02	0.00
12.16	2.00	0.00	3.92	0.02	0.00	12.18	2.00	0.00	3.91	0.02	0.00
12.20	2.00	0.00	3.90	0.02	0.00	12.22	2.00	0.00	3.89	0.02	0.00
12.24	2.00	0.00	3.88	0.02	0.00	12.26	2.00	0.00	3.87	0.02	0.00
12.28	2.00	0.00	3.86	0.02	0.00	12.30	2.00	0.00	3.85	0.02	0.00
12.32	2.00	0.00	3.84	0.02	0.00	12.34	2.00	0.00	3.83	0.02	0.00
12.36	2.00	0.00	3.82	0.02	0.00	12.38	2.00	0.00	3.81	0.02	0.00
12.40	2.00	0.00	3.80	0.02	0.00	12.42	2.00	0.00	3.79	0.02	0.00
12.44	2.00	0.00	3.78	0.02	0.00	12.46	2.00	0.00	3.77	0.02	0.00
12.48	2.00	0.00	3.76	0.02	0.00	12.50	2.00	0.00	3.75	0.02	0.00
12.52	2.00	0.00	3.74	0.02	0.00	12.54	2.00	0.00	3.73	0.02	0.00
12.56	2.00	0.00	3.72	0.02	0.00	12.58	2.00	0.00	3.71	0.02	0.00
12.60	2.00	0.00	3.70	0.02	0.00	12.62	2.00	0.00	3.69	0.02	0.00
12.64	2.00	0.00	3.68	0.02	0.00	12.66	2.00	0.00	3.67	0.02	0.00
12.68	2.00	0.00	3.66	0.02	0.00	12.70	2.00	0.00	3.65	0.02	0.00
12.72	2.00	0.00	3.64	0.02	0.00	12.74	2.00	0.00	3.63	0.02	0.00
12.76	2.00	0.00	3.62	0.02	0.00	12.78	2.00	0.00	3.61	0.02	0.00
12.80	2.00	0.00	3.60	0.02	0.00	12.82	2.00	0.00	3.59	0.02	0.00
12.84	2.00	0.00	3.58	0.02	0.00	12.86	2.00	0.00	3.57	0.02	0.00
12.88	2.00	0.00	3.56	0.02	0.00	12.90	2.00	0.00	3.55	0.02	0.00
12.92	2.00	0.00	3.54	0.02	0.00	12.94	2.00	0.00	3.53	0.02	0.00
12.96	2.00	0.00	3.52	0.02	0.00	12.98	2.00	0.00	3.51	0.02	0.00
13.00	2.00	0.00	3.50	0.02	0.00	13.02	2.00	0.00	3.49	0.02	0.00
13.04	2.00	0.00	3.48	0.02	0.00	13.06	2.00	0.00	3.47	0.02	0.00
13.08	2.00	0.00	3.46	0.02	0.00	13.10	2.00	0.00	3.45	0.02	0.00
13.12	2.00	0.00	3.44	0.02	0.00	13.14	2.00	0.00	3.43	0.02	0.00
13.16	2.00	0.00	3.42	0.02	0.00	13.18	2.00	0.00	3.41	0.02	0.00
13.20	2.00	0.00	3.40	0.02	0.00	13.22	2.00	0.00	3.39	0.02	0.00
13.24	2.00	0.00	3.38	0.02	0.00	13.26	2.00	0.00	3.37	0.02	0.00
13.28	2.00	0.00	3.36	0.02	0.00	13.30	2.00	0.00	3.35	0.02	0.00
13.32	2.00	0.00	3.34	0.02	0.00	13.34	2.00	0.00	3.33	0.02	0.00
13.36	2.00	0.00	3.32	0.02	0.00	13.38	2.00	0.00	3.31	0.02	0.00
13.40	2.00	0.00	3.30	0.02	0.00	13.42	2.00	0.00	3.29	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
13.44	2.00	0.00	3.28	0.02	0.00	13.46	2.00	0.00	3.27	0.02	0.00
13.48	2.00	0.00	3.26	0.02	0.00	13.50	2.00	0.00	3.25	0.02	0.00
13.52	2.00	0.00	3.24	0.02	0.00	13.54	2.00	0.00	3.23	0.02	0.00
13.56	2.00	0.00	3.22	0.02	0.00	13.58	2.00	0.00	3.21	0.02	0.00
13.60	2.00	0.00	3.20	0.02	0.00	13.62	2.00	0.00	3.19	0.02	0.00
13.64	2.00	0.00	3.18	0.02	0.00	13.66	2.00	0.00	3.17	0.02	0.00
13.68	2.00	0.00	3.16	0.02	0.00	13.70	2.00	0.00	3.15	0.02	0.00
13.72	2.00	0.00	3.14	0.02	0.00	13.74	2.00	0.00	3.13	0.02	0.00
13.76	2.00	0.00	3.12	0.02	0.00	13.78	2.00	0.00	3.11	0.02	0.00
13.80	2.00	0.00	3.10	0.02	0.00	13.82	2.00	0.00	3.09	0.02	0.00
13.84	2.00	0.00	3.08	0.02	0.00	13.86	2.00	0.00	3.07	0.02	0.00
13.88	2.00	0.00	3.06	0.02	0.00	13.90	2.00	0.00	3.05	0.02	0.00
13.92	2.00	0.00	3.04	0.02	0.00	13.94	2.00	0.00	3.03	0.02	0.00
13.96	2.00	0.00	3.02	0.02	0.00	13.98	2.00	0.00	3.01	0.02	0.00
14.00	2.00	0.00	3.00	0.02	0.00	14.02	2.00	0.00	2.99	0.02	0.00
14.04	2.00	0.00	2.98	0.02	0.00	14.06	2.00	0.00	2.97	0.02	0.00
14.08	2.00	0.00	2.96	0.02	0.00	14.10	2.00	0.00	2.95	0.02	0.00
14.12	2.00	0.00	2.94	0.02	0.00	14.14	2.00	0.00	2.93	0.02	0.00
14.16	2.00	0.00	2.92	0.02	0.00	14.18	2.00	0.00	2.91	0.02	0.00
14.20	2.00	0.00	2.90	0.02	0.00	14.22	2.00	0.00	2.89	0.02	0.00
14.24	2.00	0.00	2.88	0.02	0.00	14.26	2.00	0.00	2.87	0.02	0.00
14.28	2.00	0.00	2.86	0.02	0.00	14.30	2.00	0.00	2.85	0.02	0.00
14.32	2.00	0.00	2.84	0.02	0.00	14.34	2.00	0.00	2.83	0.02	0.00
14.36	2.00	0.00	2.82	0.02	0.00	14.38	2.00	0.00	2.81	0.02	0.00
14.40	2.00	0.00	2.80	0.02	0.00	14.42	2.00	0.00	2.79	0.02	0.00
14.44	2.00	0.00	2.78	0.02	0.00	14.46	2.00	0.00	2.77	0.02	0.00
14.48	2.00	0.00	2.76	0.02	0.00	14.50	2.00	0.00	2.75	0.02	0.00
14.52	2.00	0.00	2.74	0.02	0.00	14.54	2.00	0.00	2.73	0.02	0.00
14.56	2.00	0.00	2.72	0.02	0.00	14.58	2.00	0.00	2.71	0.02	0.00
14.60	2.00	0.00	2.70	0.02	0.00	14.62	2.00	0.00	2.69	0.02	0.00
14.64	2.00	0.00	2.68	0.02	0.00	14.66	2.00	0.00	2.67	0.02	0.00
14.68	2.00	0.00	2.66	0.02	0.00	14.70	2.00	0.00	2.65	0.02	0.00
14.72	2.00	0.00	2.64	0.02	0.00	14.74	2.00	0.00	2.63	0.02	0.00
14.76	2.00	0.00	2.62	0.02	0.00	14.78	2.00	0.00	2.61	0.02	0.00
14.80	2.00	0.00	2.60	0.02	0.00	14.82	2.00	0.00	2.59	0.02	0.00
14.84	2.00	0.00	2.58	0.02	0.00	14.86	2.00	0.00	2.57	0.02	0.00
14.88	2.00	0.00	2.56	0.02	0.00	14.90	2.00	0.00	2.55	0.02	0.00
14.92	2.00	0.00	2.54	0.02	0.00	14.94	2.00	0.00	2.53	0.02	0.00
14.96	2.00	0.00	2.52	0.02	0.00	14.98	2.00	0.00	2.51	0.02	0.00
15.00	2.00	0.00	2.50	0.02	0.00	15.02	2.00	0.00	2.49	0.02	0.00
15.04	2.00	0.00	2.48	0.02	0.00	15.06	2.00	0.00	2.47	0.02	0.00
15.08	2.00	0.00	2.46	0.02	0.00	15.10	2.00	0.00	2.45	0.02	0.00
15.12	2.00	0.00	2.44	0.02	0.00	15.14	2.00	0.00	2.43	0.02	0.00
15.16	2.00	0.00	2.42	0.02	0.00	15.18	2.00	0.00	2.41	0.02	0.00
15.20	2.00	0.00	2.40	0.02	0.00	15.22	2.00	0.00	2.39	0.02	0.00
15.24	2.00	0.00	2.38	0.02	0.00	15.26	2.00	0.00	2.37	0.02	0.00
15.28	2.00	0.00	2.36	0.02	0.00	15.30	2.00	0.00	2.35	0.02	0.00
15.32	2.00	0.00	2.34	0.02	0.00	15.34	2.00	0.00	2.33	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
15.36	2.00	0.00	2.32	0.02	0.00	15.38	2.00	0.00	2.31	0.02	0.00
15.40	2.00	0.00	2.30	0.02	0.00	15.42	2.00	0.00	2.29	0.02	0.00
15.44	2.00	0.00	2.28	0.02	0.00	15.46	2.00	0.00	2.27	0.02	0.00
15.48	2.00	0.00	2.26	0.02	0.00	15.50	2.00	0.00	2.25	0.02	0.00
15.52	2.00	0.00	2.24	0.02	0.00	15.54	2.00	0.00	2.23	0.02	0.00
15.56	2.00	0.00	2.22	0.02	0.00	15.58	2.00	0.00	2.21	0.02	0.00
15.60	2.00	0.00	2.20	0.02	0.00	15.62	2.00	0.00	2.19	0.02	0.00
15.64	2.00	0.00	2.18	0.02	0.00	15.66	2.00	0.00	2.17	0.02	0.00
15.68	2.00	0.00	2.16	0.02	0.00	15.70	2.00	0.00	2.15	0.02	0.00
15.72	2.00	0.00	2.14	0.02	0.00	15.74	2.00	0.00	2.13	0.02	0.00
15.76	2.00	0.00	2.12	0.02	0.00	15.78	2.00	0.00	2.11	0.02	0.00
15.80	2.00	0.00	2.10	0.02	0.00	15.82	2.00	0.00	2.09	0.02	0.00
15.84	2.00	0.00	2.08	0.02	0.00	15.86	2.00	0.00	2.07	0.02	0.00
15.88	2.00	0.00	2.06	0.02	0.00	15.90	2.00	0.00	2.05	0.02	0.00
15.92	2.00	0.00	2.04	0.02	0.00	15.94	2.00	0.00	2.03	0.02	0.00
15.96	2.00	0.00	2.02	0.02	0.00	15.98	2.00	0.00	2.01	0.02	0.00
16.00	2.00	0.00	2.00	0.02	0.00	16.02	2.00	0.00	1.99	0.02	0.00
16.04	2.00	0.00	1.98	0.02	0.00	16.06	2.00	0.00	1.97	0.02	0.00
16.08	2.00	0.00	1.96	0.02	0.00	16.10	2.00	0.00	1.95	0.02	0.00
16.12	2.00	0.00	1.94	0.02	0.00	16.14	2.00	0.00	1.93	0.02	0.00
16.16	2.00	0.00	1.92	0.02	0.00	16.18	2.00	0.00	1.91	0.02	0.00
16.20	2.00	0.00	1.90	0.02	0.00	16.22	2.00	0.00	1.89	0.02	0.00
16.24	2.00	0.00	1.88	0.02	0.00	16.26	2.00	0.00	1.87	0.02	0.00
16.28	2.00	0.00	1.86	0.02	0.00	16.30	2.00	0.00	1.85	0.02	0.00
16.32	2.00	0.00	1.84	0.02	0.00	16.34	2.00	0.00	1.83	0.02	0.00
16.36	2.00	0.00	1.82	0.02	0.00	16.38	2.00	0.00	1.81	0.02	0.00
16.40	2.00	0.00	1.80	0.02	0.00	16.42	2.00	0.00	1.79	0.02	0.00
16.44	2.00	0.00	1.78	0.02	0.00	16.46	2.00	0.00	1.77	0.02	0.00
16.48	2.00	0.00	1.76	0.02	0.00	16.50	2.00	0.00	1.75	0.02	0.00
16.52	2.00	0.00	1.74	0.02	0.00	16.54	2.00	0.00	1.73	0.02	0.00
16.56	2.00	0.00	1.72	0.02	0.00	16.58	2.00	0.00	1.71	0.02	0.00
16.60	2.00	0.00	1.70	0.02	0.00	16.62	2.00	0.00	1.69	0.02	0.00
16.64	2.00	0.00	1.68	0.02	0.00	16.66	2.00	0.00	1.67	0.02	0.00
16.68	2.00	0.00	1.66	0.02	0.00	16.70	2.00	0.00	1.65	0.02	0.00
16.72	2.00	0.00	1.64	0.02	0.00	16.74	2.00	0.00	1.63	0.02	0.00
16.76	2.00	0.00	1.62	0.02	0.00	16.78	2.00	0.00	1.61	0.02	0.00
16.80	2.00	0.00	1.60	0.02	0.00	16.82	2.00	0.00	1.59	0.02	0.00
16.84	2.00	0.00	1.58	0.02	0.00	16.86	2.00	0.00	1.57	0.02	0.00
16.88	2.00	0.00	1.56	0.02	0.00	16.90	2.00	0.00	1.55	0.02	0.00
16.92	2.00	0.00	1.54	0.02	0.00	16.94	2.00	0.00	1.53	0.02	0.00
16.96	2.00	0.00	1.52	0.02	0.00	16.98	2.00	0.00	1.51	0.02	0.00
17.00	2.00	0.00	1.50	0.02	0.00	17.02	2.00	0.00	1.49	0.02	0.00
17.04	2.00	0.00	1.48	0.02	0.00	17.06	2.00	0.00	1.47	0.02	0.00
17.08	2.00	0.00	1.46	0.02	0.00	17.10	2.00	0.00	1.45	0.02	0.00
17.12	2.00	0.00	1.44	0.02	0.00	17.14	2.00	0.00	1.43	0.02	0.00
17.16	2.00	0.00	1.42	0.02	0.00	17.18	2.00	0.00	1.41	0.02	0.00
17.20	2.00	0.00	1.40	0.02	0.00	17.22	2.00	0.00	1.39	0.02	0.00
17.24	2.00	0.00	1.38	0.02	0.00	17.26	2.00	0.00	1.37	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
17.28	2.00	0.00	1.36	0.02	0.00	17.30	2.00	0.00	1.35	0.02	0.00
17.32	2.00	0.00	1.34	0.02	0.00	17.34	2.00	0.00	1.33	0.02	0.00
17.36	2.00	0.00	1.32	0.02	0.00	17.38	2.00	0.00	1.31	0.02	0.00
17.40	2.00	0.00	1.30	0.02	0.00	17.42	2.00	0.00	1.29	0.02	0.00
17.44	2.00	0.00	1.28	0.02	0.00	17.46	2.00	0.00	1.27	0.02	0.00
17.48	2.00	0.00	1.26	0.02	0.00	17.50	2.00	0.00	1.25	0.02	0.00
17.52	2.00	0.00	1.24	0.02	0.00	17.54	2.00	0.00	1.23	0.02	0.00
17.56	2.00	0.00	1.22	0.02	0.00	17.58	2.00	0.00	1.21	0.02	0.00
17.60	2.00	0.00	1.20	0.02	0.00	17.62	2.00	0.00	1.19	0.02	0.00
17.64	2.00	0.00	1.18	0.02	0.00	17.66	2.00	0.00	1.17	0.02	0.00
17.68	2.00	0.00	1.16	0.02	0.00	17.70	2.00	0.00	1.15	0.02	0.00
17.72	2.00	0.00	1.14	0.02	0.00	17.74	2.00	0.00	1.13	0.02	0.00
17.76	2.00	0.00	1.12	0.02	0.00	17.78	2.00	0.00	1.11	0.02	0.00
17.80	2.00	0.00	1.10	0.02	0.00	17.82	2.00	0.00	1.09	0.02	0.00
17.84	2.00	0.00	1.08	0.02	0.00	17.86	2.00	0.00	1.07	0.02	0.00
17.88	2.00	0.00	1.06	0.02	0.00	17.90	2.00	0.00	1.05	0.02	0.00
17.92	2.00	0.00	1.04	0.02	0.00	17.94	2.00	0.00	1.03	0.02	0.00
17.96	2.00	0.00	1.02	0.02	0.00	17.98	2.00	0.00	1.01	0.02	0.00
18.00	2.00	0.00	1.00	0.02	0.00	18.02	2.00	0.00	0.99	0.02	0.00
18.04	2.00	0.00	0.98	0.02	0.00	18.06	2.00	0.00	0.97	0.02	0.00
18.08	2.00	0.00	0.96	0.02	0.00	18.10	2.00	0.00	0.95	0.02	0.00
18.12	2.00	0.00	0.94	0.02	0.00	18.14	2.00	0.00	0.93	0.02	0.00
18.16	2.00	0.00	0.92	0.02	0.00	18.18	2.00	0.00	0.91	0.02	0.00
18.20	2.00	0.00	0.90	0.02	0.00	18.22	1.15	0.00	0.89	0.02	0.00
18.24	1.20	0.00	0.88	0.02	0.00	18.26	1.25	0.00	0.87	0.02	0.00
18.28	1.27	0.00	0.86	0.02	0.00	18.30	1.25	0.00	0.85	0.02	0.00
18.32	1.18	0.00	0.84	0.02	0.00	18.34	1.11	0.00	0.83	0.02	0.00
18.36	0.93	0.07	0.82	0.02	0.00	18.38	0.94	0.06	0.81	0.02	0.00
18.40	0.94	0.06	0.80	0.02	0.00	18.42	0.94	0.06	0.79	0.02	0.00
18.44	0.95	0.05	0.78	0.02	0.00	18.46	0.97	0.03	0.77	0.02	0.00
18.48	1.01	0.00	0.76	0.02	0.00	18.50	1.08	0.00	0.75	0.02	0.00
18.52	1.16	0.00	0.74	0.02	0.00	18.54	1.39	0.00	0.73	0.02	0.00
18.56	1.30	0.00	0.72	0.02	0.00	18.58	1.16	0.00	0.71	0.02	0.00
18.60	1.06	0.00	0.70	0.02	0.00	18.62	1.12	0.00	0.69	0.02	0.00
18.64	2.00	0.00	0.68	0.02	0.00	18.66	2.00	0.00	0.67	0.02	0.00
18.68	2.00	0.00	0.66	0.02	0.00	18.70	2.00	0.00	0.65	0.02	0.00
18.72	2.00	0.00	0.64	0.02	0.00	18.74	2.00	0.00	0.63	0.02	0.00
18.76	2.00	0.00	0.62	0.02	0.00	18.78	2.00	0.00	0.61	0.02	0.00
18.80	2.00	0.00	0.60	0.02	0.00	18.82	2.00	0.00	0.59	0.02	0.00
18.84	2.00	0.00	0.58	0.02	0.00	18.86	2.00	0.00	0.57	0.02	0.00
18.88	2.00	0.00	0.56	0.02	0.00	18.90	2.00	0.00	0.55	0.02	0.00
18.92	2.00	0.00	0.54	0.02	0.00	18.94	2.00	0.00	0.53	0.02	0.00
18.96	2.00	0.00	0.52	0.02	0.00	18.98	2.00	0.00	0.51	0.02	0.00
19.00	2.00	0.00	0.50	0.02	0.00	19.02	2.00	0.00	0.49	0.02	0.00
19.04	2.00	0.00	0.48	0.02	0.00	19.06	2.00	0.00	0.47	0.02	0.00
19.08	2.00	0.00	0.46	0.02	0.00	19.10	2.00	0.00	0.45	0.02	0.00
19.12	2.00	0.00	0.44	0.02	0.00	19.14	2.00	0.00	0.43	0.02	0.00
19.16	2.00	0.00	0.42	0.02	0.00	19.18	2.00	0.00	0.41	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
19.20	2.00	0.00	0.40	0.02	0.00	19.22	2.00	0.00	0.39	0.02	0.00
19.24	2.00	0.00	0.38	0.02	0.00	19.26	2.00	0.00	0.37	0.02	0.00
19.28	2.00	0.00	0.36	0.02	0.00	19.30	2.00	0.00	0.35	0.02	0.00
19.32	2.00	0.00	0.34	0.02	0.00	19.34	2.00	0.00	0.33	0.02	0.00
19.36	2.00	0.00	0.32	0.02	0.00	19.38	2.00	0.00	0.31	0.02	0.00
19.40	2.00	0.00	0.30	0.02	0.00	19.42	2.00	0.00	0.29	0.02	0.00
19.44	2.00	0.00	0.28	0.02	0.00	19.46	2.00	0.00	0.27	0.02	0.00
19.48	2.00	0.00	0.26	0.02	0.00	19.50	2.00	0.00	0.25	0.02	0.00
19.52	2.00	0.00	0.24	0.02	0.00	19.54	1.17	0.00	0.23	0.02	0.00
19.56	1.25	0.00	0.22	0.02	0.00	19.58	1.28	0.00	0.21	0.02	0.00
19.60	1.26	0.00	0.20	0.02	0.00	19.62	2.00	0.00	0.19	0.02	0.00
19.64	2.00	0.00	0.18	0.02	0.00	19.66	2.00	0.00	0.17	0.02	0.00
19.68	2.00	0.00	0.16	0.02	0.00	19.70	2.00	0.00	0.15	0.02	0.00
19.72	2.00	0.00	0.14	0.02	0.00	19.74	2.00	0.00	0.13	0.02	0.00
19.76	2.00	0.00	0.12	0.02	0.00	19.78	2.00	0.00	0.11	0.02	0.00
19.80	2.00	0.00	0.10	0.02	0.00	19.82	2.00	0.00	0.09	0.02	0.00
19.84	2.00	0.00	0.08	0.02	0.00	19.86	2.00	0.00	0.07	0.02	0.00
19.88	2.00	0.00	0.06	0.02	0.00	19.90	2.00	0.00	0.05	0.02	0.00
19.92	2.00	0.00	0.04	0.02	0.00	19.94	2.00	0.00	0.03	0.02	0.00
19.96	2.00	0.00	0.02	0.02	0.00	19.98	2.00	0.00	0.01	0.02	0.00
20.00	2.00	0.00	0.00	0.02	0.00	20.02	2.00	0.00	0.00	0.00	0.00
20.04	2.00	0.00	0.00	0.00	0.00	20.06	2.00	0.00	0.00	0.00	0.00
20.08	2.00	0.00	0.00	0.00	0.00	20.10	2.00	0.00	0.00	0.00	0.00
20.12	2.00	0.00	0.00	0.00	0.00	20.14	2.00	0.00	0.00	0.00	0.00

Overall liquefaction potential: 0.40

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

Abbreviations

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



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LIQUEFACTION ANALYSIS REPORT

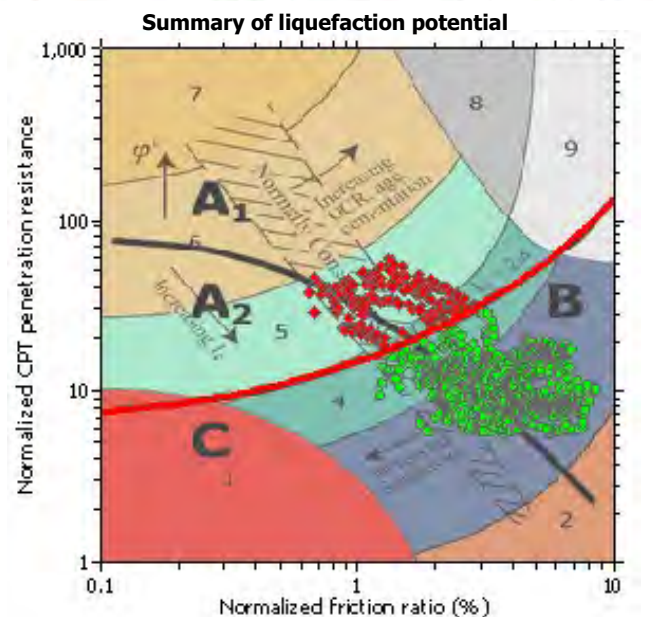
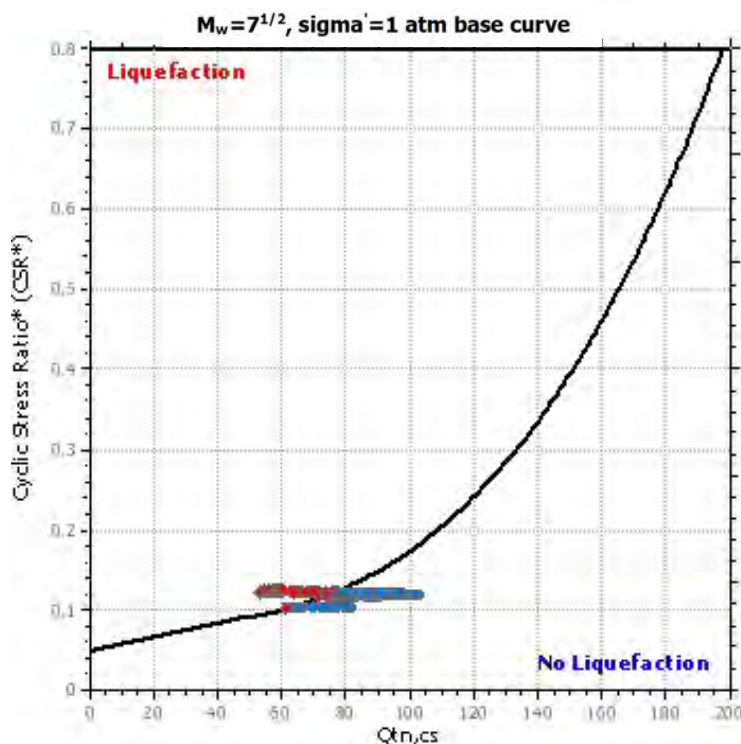
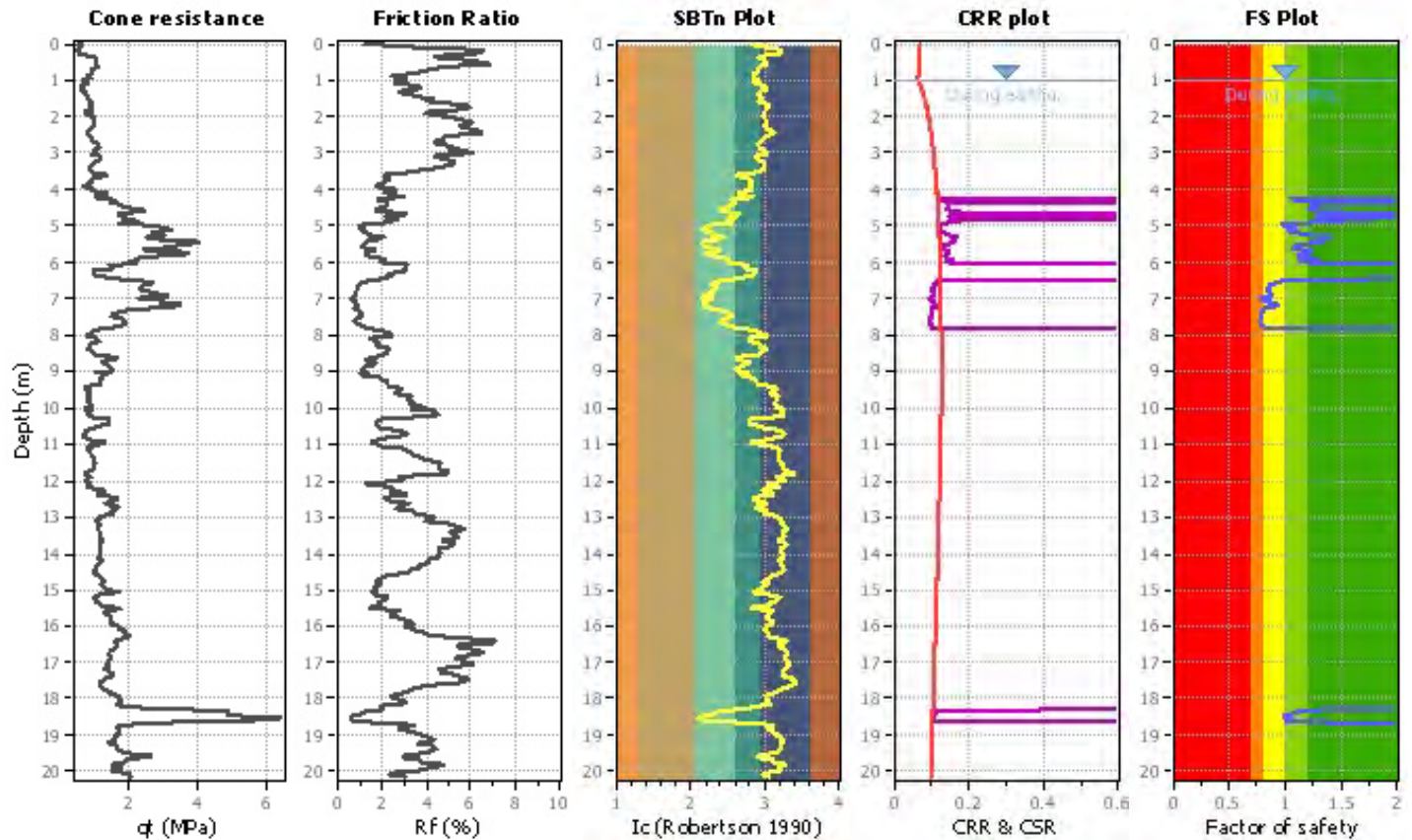
Project title : San Pietro in Casale

Location : Via Carlo Alberto Dalla Chiesa

CPT file : CPTU4

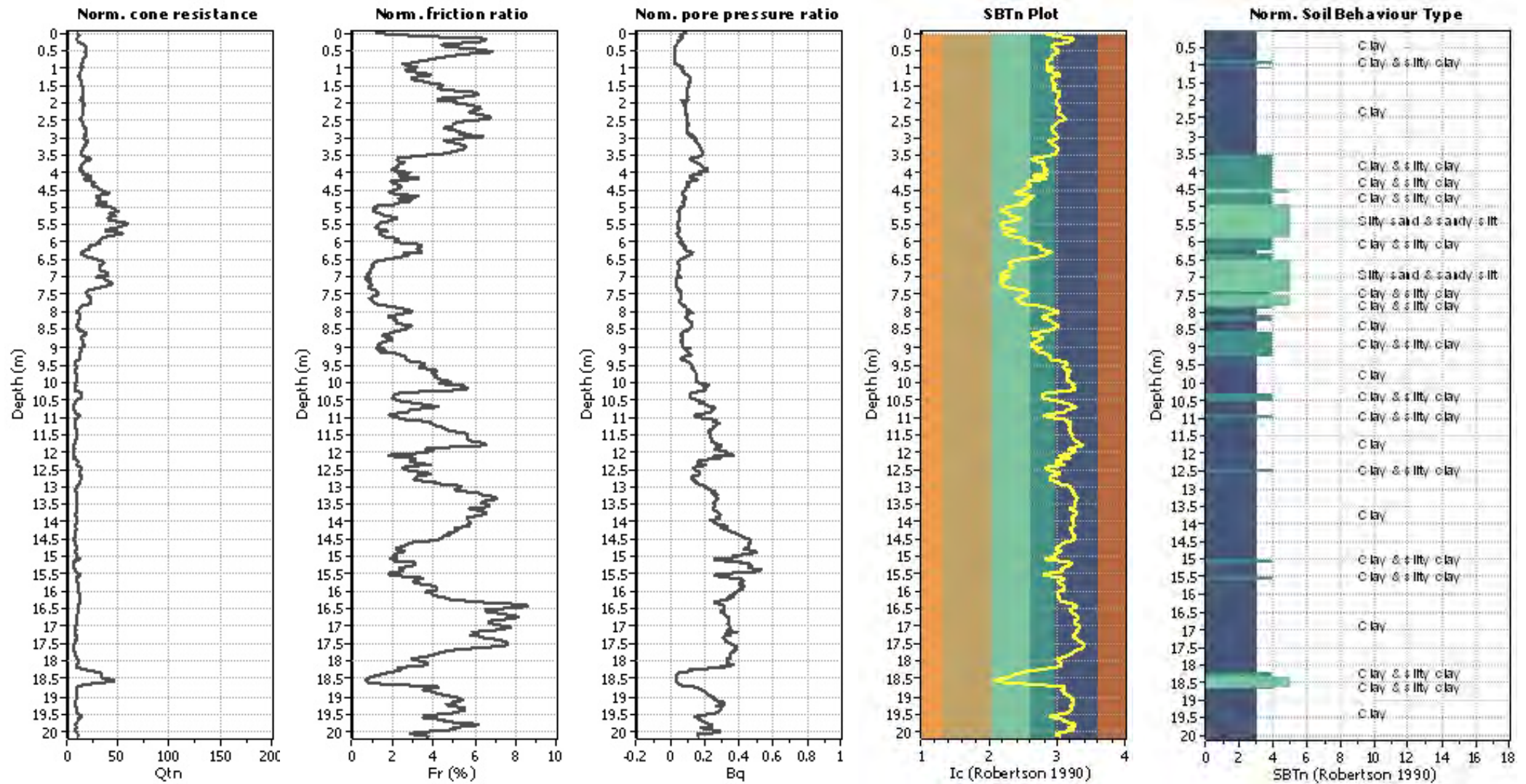
Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	1.67 m	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	1.00 m	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude M_w :	6.00	Ic cut-off value:	2.60	Trans. detect. applied:	No	Limit depth:	N/A
Peak ground acceleration:	0.18	Unit weight calculation:	Based on SBT	K_0 applied:	Yes	MSF method:	Method based



Zone A1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A2: 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 (normaliz



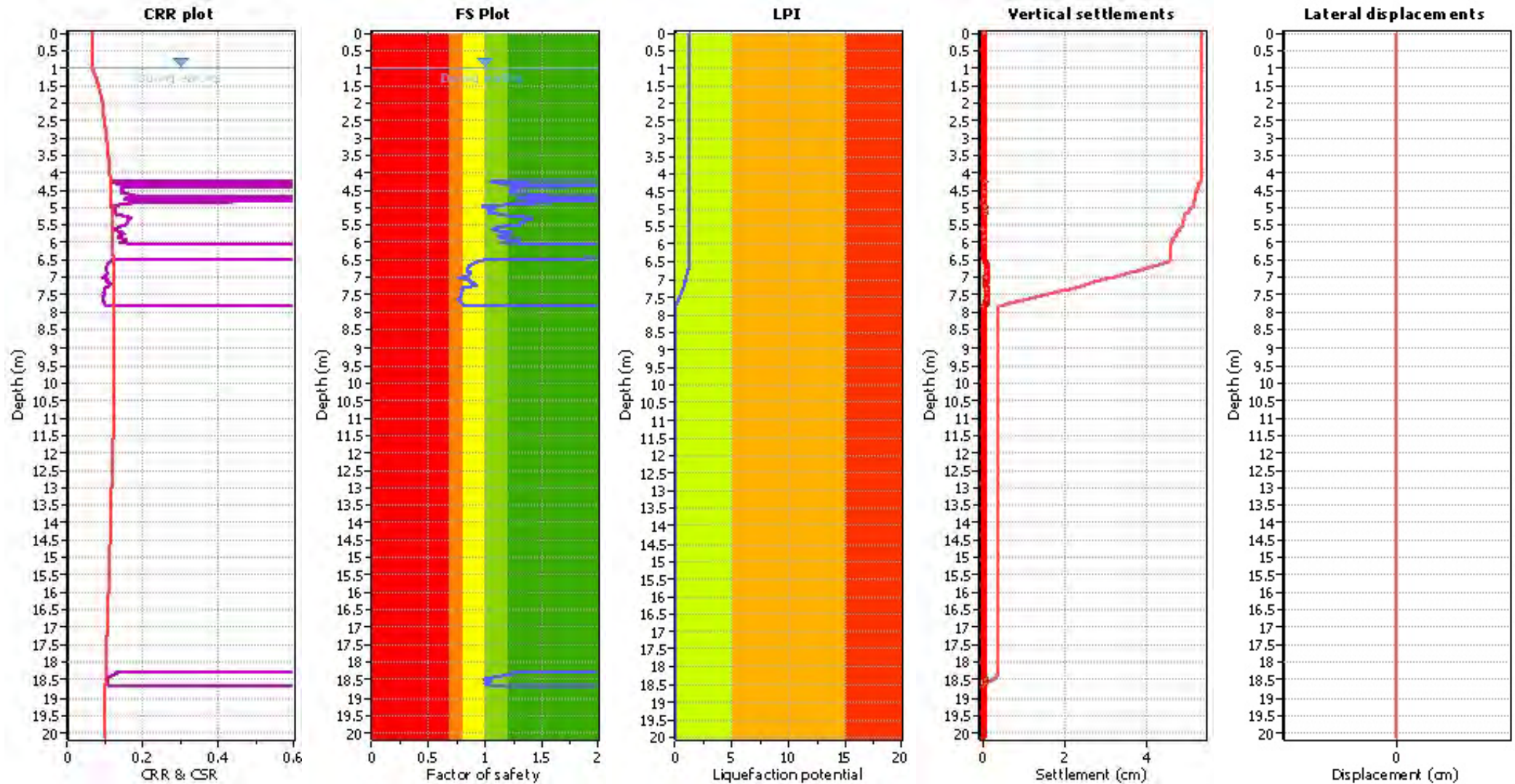
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_0 applied:	Yes
Earthquake magnitude M_w :	6.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.18	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	1.67 m	Fill height:	N/A	Limit depth:	N/A

SBTn legend

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

Liquefaction analysis overall plot



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_0 applied:	Yes
Earthquake magnitude M_w :	6.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.18	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	1.67 m	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LPI color scheme

Red	Very high risk
Orange	High risk
Yellow	Low risk

:: Liquefaction Potential Index calculation data ::											
Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
0.01	2.00	0.00	9.99	0.01	0.00	0.02	2.00	0.00	9.99	0.01	0.00
0.04	2.00	0.00	9.98	0.02	0.00	0.06	2.00	0.00	9.97	0.02	0.00
0.08	2.00	0.00	9.96	0.02	0.00	0.10	2.00	0.00	9.95	0.02	0.00
0.12	2.00	0.00	9.94	0.02	0.00	0.14	2.00	0.00	9.93	0.02	0.00
0.16	2.00	0.00	9.92	0.02	0.00	0.18	2.00	0.00	9.91	0.02	0.00
0.20	2.00	0.00	9.90	0.02	0.00	0.22	2.00	0.00	9.89	0.02	0.00
0.24	2.00	0.00	9.88	0.02	0.00	0.26	2.00	0.00	9.87	0.02	0.00
0.28	2.00	0.00	9.86	0.02	0.00	0.30	2.00	0.00	9.85	0.02	0.00
0.32	2.00	0.00	9.84	0.02	0.00	0.34	2.00	0.00	9.83	0.02	0.00
0.36	2.00	0.00	9.82	0.02	0.00	0.38	2.00	0.00	9.81	0.02	0.00
0.40	2.00	0.00	9.80	0.02	0.00	0.42	2.00	0.00	9.79	0.02	0.00
0.44	2.00	0.00	9.78	0.02	0.00	0.46	2.00	0.00	9.77	0.02	0.00
0.48	2.00	0.00	9.76	0.02	0.00	0.50	2.00	0.00	9.75	0.02	0.00
0.52	2.00	0.00	9.74	0.02	0.00	0.54	2.00	0.00	9.73	0.02	0.00
0.56	2.00	0.00	9.72	0.02	0.00	0.58	2.00	0.00	9.71	0.02	0.00
0.60	2.00	0.00	9.70	0.02	0.00	0.62	2.00	0.00	9.69	0.02	0.00
0.64	2.00	0.00	9.68	0.02	0.00	0.66	2.00	0.00	9.67	0.02	0.00
0.68	2.00	0.00	9.66	0.02	0.00	0.70	2.00	0.00	9.65	0.02	0.00
0.72	2.00	0.00	9.64	0.02	0.00	0.74	2.00	0.00	9.63	0.02	0.00
0.76	2.00	0.00	9.62	0.02	0.00	0.78	2.00	0.00	9.61	0.02	0.00
0.80	2.00	0.00	9.60	0.02	0.00	0.82	2.00	0.00	9.59	0.02	0.00
0.84	2.00	0.00	9.58	0.02	0.00	0.86	2.00	0.00	9.57	0.02	0.00
0.88	2.00	0.00	9.56	0.02	0.00	0.90	2.00	0.00	9.55	0.02	0.00
0.92	2.00	0.00	9.54	0.02	0.00	0.94	2.00	0.00	9.53	0.02	0.00
0.96	2.00	0.00	9.52	0.02	0.00	0.98	2.00	0.00	9.51	0.02	0.00
1.00	2.00	0.00	9.50	0.02	0.00	1.02	2.00	0.00	9.49	0.02	0.00
1.04	2.00	0.00	9.48	0.02	0.00	1.06	2.00	0.00	9.47	0.02	0.00
1.08	2.00	0.00	9.46	0.02	0.00	1.10	2.00	0.00	9.45	0.02	0.00
1.12	2.00	0.00	9.44	0.02	0.00	1.14	2.00	0.00	9.43	0.02	0.00
1.16	2.00	0.00	9.42	0.02	0.00	1.18	2.00	0.00	9.41	0.02	0.00
1.20	2.00	0.00	9.40	0.02	0.00	1.22	2.00	0.00	9.39	0.02	0.00
1.24	2.00	0.00	9.38	0.02	0.00	1.26	2.00	0.00	9.37	0.02	0.00
1.28	2.00	0.00	9.36	0.02	0.00	1.30	2.00	0.00	9.35	0.02	0.00
1.32	2.00	0.00	9.34	0.02	0.00	1.34	2.00	0.00	9.33	0.02	0.00
1.36	2.00	0.00	9.32	0.02	0.00	1.38	2.00	0.00	9.31	0.02	0.00
1.40	2.00	0.00	9.30	0.02	0.00	1.42	2.00	0.00	9.29	0.02	0.00
1.44	2.00	0.00	9.28	0.02	0.00	1.46	2.00	0.00	9.27	0.02	0.00
1.48	2.00	0.00	9.26	0.02	0.00	1.50	2.00	0.00	9.25	0.02	0.00
1.52	2.00	0.00	9.24	0.02	0.00	1.54	2.00	0.00	9.23	0.02	0.00
1.56	2.00	0.00	9.22	0.02	0.00	1.58	2.00	0.00	9.21	0.02	0.00
1.60	2.00	0.00	9.20	0.02	0.00	1.62	2.00	0.00	9.19	0.02	0.00
1.64	2.00	0.00	9.18	0.02	0.00	1.66	2.00	0.00	9.17	0.02	0.00
1.68	2.00	0.00	9.16	0.02	0.00	1.70	2.00	0.00	9.15	0.02	0.00
1.72	2.00	0.00	9.14	0.02	0.00	1.74	2.00	0.00	9.13	0.02	0.00
1.76	2.00	0.00	9.12	0.02	0.00	1.78	2.00	0.00	9.11	0.02	0.00
1.80	2.00	0.00	9.10	0.02	0.00	1.82	2.00	0.00	9.09	0.02	0.00
1.84	2.00	0.00	9.08	0.02	0.00	1.86	2.00	0.00	9.07	0.02	0.00
1.88	2.00	0.00	9.06	0.02	0.00	1.90	2.00	0.00	9.05	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
1.92	2.00	0.00	9.04	0.02	0.00	1.94	2.00	0.00	9.03	0.02	0.00
1.96	2.00	0.00	9.02	0.02	0.00	1.98	2.00	0.00	9.01	0.02	0.00
2.00	2.00	0.00	9.00	0.02	0.00	2.02	2.00	0.00	8.99	0.02	0.00
2.04	2.00	0.00	8.98	0.02	0.00	2.06	2.00	0.00	8.97	0.02	0.00
2.08	2.00	0.00	8.96	0.02	0.00	2.10	2.00	0.00	8.95	0.02	0.00
2.12	2.00	0.00	8.94	0.02	0.00	2.14	2.00	0.00	8.93	0.02	0.00
2.16	2.00	0.00	8.92	0.02	0.00	2.18	2.00	0.00	8.91	0.02	0.00
2.20	2.00	0.00	8.90	0.02	0.00	2.22	2.00	0.00	8.89	0.02	0.00
2.24	2.00	0.00	8.88	0.02	0.00	2.26	2.00	0.00	8.87	0.02	0.00
2.28	2.00	0.00	8.86	0.02	0.00	2.30	2.00	0.00	8.85	0.02	0.00
2.32	2.00	0.00	8.84	0.02	0.00	2.34	2.00	0.00	8.83	0.02	0.00
2.36	2.00	0.00	8.82	0.02	0.00	2.38	2.00	0.00	8.81	0.02	0.00
2.40	2.00	0.00	8.80	0.02	0.00	2.42	2.00	0.00	8.79	0.02	0.00
2.44	2.00	0.00	8.78	0.02	0.00	2.46	2.00	0.00	8.77	0.02	0.00
2.48	2.00	0.00	8.76	0.02	0.00	2.50	2.00	0.00	8.75	0.02	0.00
2.52	2.00	0.00	8.74	0.02	0.00	2.54	2.00	0.00	8.73	0.02	0.00
2.56	2.00	0.00	8.72	0.02	0.00	2.58	2.00	0.00	8.71	0.02	0.00
2.60	2.00	0.00	8.70	0.02	0.00	2.62	2.00	0.00	8.69	0.02	0.00
2.64	2.00	0.00	8.68	0.02	0.00	2.66	2.00	0.00	8.67	0.02	0.00
2.68	2.00	0.00	8.66	0.02	0.00	2.70	2.00	0.00	8.65	0.02	0.00
2.72	2.00	0.00	8.64	0.02	0.00	2.74	2.00	0.00	8.63	0.02	0.00
2.76	2.00	0.00	8.62	0.02	0.00	2.78	2.00	0.00	8.61	0.02	0.00
2.80	2.00	0.00	8.60	0.02	0.00	2.82	2.00	0.00	8.59	0.02	0.00
2.84	2.00	0.00	8.58	0.02	0.00	2.86	2.00	0.00	8.57	0.02	0.00
2.88	2.00	0.00	8.56	0.02	0.00	2.90	2.00	0.00	8.55	0.02	0.00
2.92	2.00	0.00	8.54	0.02	0.00	2.94	2.00	0.00	8.53	0.02	0.00
2.96	2.00	0.00	8.52	0.02	0.00	2.98	2.00	0.00	8.51	0.02	0.00
3.00	2.00	0.00	8.50	0.02	0.00	3.02	2.00	0.00	8.49	0.02	0.00
3.04	2.00	0.00	8.48	0.02	0.00	3.07	2.00	0.00	8.46	0.03	0.00
3.08	2.00	0.00	8.46	0.01	0.00	3.10	2.00	0.00	8.45	0.02	0.00
3.12	2.00	0.00	8.44	0.02	0.00	3.14	2.00	0.00	8.43	0.02	0.00
3.16	2.00	0.00	8.42	0.02	0.00	3.18	2.00	0.00	8.41	0.02	0.00
3.20	2.00	0.00	8.40	0.02	0.00	3.22	2.00	0.00	8.39	0.02	0.00
3.24	2.00	0.00	8.38	0.02	0.00	3.26	2.00	0.00	8.37	0.02	0.00
3.28	2.00	0.00	8.36	0.02	0.00	3.30	2.00	0.00	8.35	0.02	0.00
3.32	2.00	0.00	8.34	0.02	0.00	3.34	2.00	0.00	8.33	0.02	0.00
3.36	2.00	0.00	8.32	0.02	0.00	3.38	2.00	0.00	8.31	0.02	0.00
3.40	2.00	0.00	8.30	0.02	0.00	3.42	2.00	0.00	8.29	0.02	0.00
3.44	2.00	0.00	8.28	0.02	0.00	3.46	2.00	0.00	8.27	0.02	0.00
3.48	2.00	0.00	8.26	0.02	0.00	3.50	2.00	0.00	8.25	0.02	0.00
3.52	2.00	0.00	8.24	0.02	0.00	3.54	2.00	0.00	8.23	0.02	0.00
3.56	2.00	0.00	8.22	0.02	0.00	3.58	2.00	0.00	8.21	0.02	0.00
3.60	2.00	0.00	8.20	0.02	0.00	3.62	2.00	0.00	8.19	0.02	0.00
3.64	2.00	0.00	8.18	0.02	0.00	3.66	2.00	0.00	8.17	0.02	0.00
3.68	2.00	0.00	8.16	0.02	0.00	3.70	2.00	0.00	8.15	0.02	0.00
3.72	2.00	0.00	8.14	0.02	0.00	3.74	2.00	0.00	8.13	0.02	0.00
3.76	2.00	0.00	8.12	0.02	0.00	3.78	2.00	0.00	8.11	0.02	0.00
3.80	2.00	0.00	8.10	0.02	0.00	3.82	2.00	0.00	8.09	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
3.84	2.00	0.00	8.08	0.02	0.00	3.86	2.00	0.00	8.07	0.02	0.00
3.88	2.00	0.00	8.06	0.02	0.00	3.90	2.00	0.00	8.05	0.02	0.00
3.92	2.00	0.00	8.04	0.02	0.00	3.94	2.00	0.00	8.03	0.02	0.00
3.96	2.00	0.00	8.02	0.02	0.00	3.98	2.00	0.00	8.01	0.02	0.00
4.00	2.00	0.00	8.00	0.02	0.00	4.02	2.00	0.00	7.99	0.02	0.00
4.04	2.00	0.00	7.98	0.02	0.00	4.06	2.00	0.00	7.97	0.02	0.00
4.08	2.00	0.00	7.96	0.02	0.00	4.10	2.00	0.00	7.95	0.02	0.00
4.12	2.00	0.00	7.94	0.02	0.00	4.14	2.00	0.00	7.93	0.02	0.00
4.16	2.00	0.00	7.92	0.02	0.00	4.18	2.00	0.00	7.91	0.02	0.00
4.20	2.00	0.00	7.90	0.02	0.00	4.22	2.00	0.00	7.89	0.02	0.00
4.24	2.00	0.00	7.88	0.02	0.00	4.26	1.05	0.00	7.87	0.02	0.00
4.28	1.07	0.00	7.86	0.02	0.00	4.30	1.11	0.00	7.85	0.02	0.00
4.32	1.15	0.00	7.84	0.02	0.00	4.34	1.16	0.00	7.83	0.02	0.00
4.36	2.00	0.00	7.82	0.02	0.00	4.38	2.00	0.00	7.81	0.02	0.00
4.40	1.23	0.00	7.80	0.02	0.00	4.42	1.28	0.00	7.79	0.02	0.00
4.44	1.29	0.00	7.78	0.02	0.00	4.46	1.28	0.00	7.77	0.02	0.00
4.48	1.25	0.00	7.76	0.02	0.00	4.50	1.24	0.00	7.75	0.02	0.00
4.52	1.23	0.00	7.74	0.02	0.00	4.54	1.21	0.00	7.73	0.02	0.00
4.56	1.22	0.00	7.72	0.02	0.00	4.58	1.27	0.00	7.71	0.02	0.00
4.60	1.35	0.00	7.70	0.02	0.00	4.62	1.42	0.00	7.69	0.02	0.00
4.64	1.49	0.00	7.68	0.02	0.00	4.66	1.57	0.00	7.67	0.02	0.00
4.68	2.00	0.00	7.66	0.02	0.00	4.70	2.00	0.00	7.65	0.02	0.00
4.72	1.39	0.00	7.64	0.02	0.00	4.74	1.28	0.00	7.63	0.02	0.00
4.76	1.29	0.00	7.62	0.02	0.00	4.78	1.38	0.00	7.61	0.02	0.00
4.80	2.00	0.00	7.60	0.02	0.00	4.82	1.56	0.00	7.59	0.02	0.00
4.84	1.52	0.00	7.58	0.02	0.00	4.86	1.49	0.00	7.57	0.02	0.00
4.88	1.44	0.00	7.56	0.02	0.00	4.90	1.32	0.00	7.55	0.02	0.00
4.92	1.17	0.00	7.54	0.02	0.00	4.94	1.07	0.00	7.53	0.02	0.00
4.96	0.97	0.03	7.52	0.02	0.00	4.98	1.00	0.00	7.51	0.02	0.00
5.00	0.99	0.01	7.50	0.02	0.00	5.02	1.09	0.00	7.49	0.02	0.00
5.04	1.06	0.00	7.48	0.02	0.00	5.06	1.05	0.00	7.47	0.02	0.00
5.08	1.03	0.00	7.46	0.02	0.00	5.10	1.06	0.00	7.45	0.02	0.00
5.12	1.06	0.00	7.44	0.02	0.00	5.14	1.04	0.00	7.43	0.02	0.00
5.16	1.04	0.00	7.42	0.02	0.00	5.18	1.09	0.00	7.41	0.02	0.00
5.20	1.14	0.00	7.40	0.02	0.00	5.22	1.19	0.00	7.39	0.02	0.00
5.24	1.23	0.00	7.38	0.02	0.00	5.26	1.30	0.00	7.37	0.02	0.00
5.28	1.38	0.00	7.36	0.02	0.00	5.30	1.42	0.00	7.35	0.02	0.00
5.32	1.41	0.00	7.34	0.02	0.00	5.34	1.36	0.00	7.33	0.02	0.00
5.36	1.34	0.00	7.32	0.02	0.00	5.38	1.35	0.00	7.31	0.02	0.00
5.40	1.35	0.00	7.30	0.02	0.00	5.42	1.33	0.00	7.29	0.02	0.00
5.44	1.31	0.00	7.28	0.02	0.00	5.46	1.31	0.00	7.27	0.02	0.00
5.48	1.31	0.00	7.26	0.02	0.00	5.50	1.25	0.00	7.25	0.02	0.00
5.52	1.17	0.00	7.24	0.02	0.00	5.54	1.12	0.00	7.23	0.02	0.00
5.56	1.10	0.00	7.22	0.02	0.00	5.58	1.08	0.00	7.21	0.02	0.00
5.60	1.06	0.00	7.20	0.02	0.00	5.62	1.06	0.00	7.19	0.02	0.00
5.64	1.09	0.00	7.18	0.02	0.00	5.66	1.13	0.00	7.17	0.02	0.00
5.68	1.17	0.00	7.16	0.02	0.00	5.70	1.20	0.00	7.15	0.02	0.00
5.72	1.23	0.00	7.14	0.02	0.00	5.74	1.24	0.00	7.13	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
5.76	1.22	0.00	7.12	0.02	0.00	5.78	1.18	0.00	7.11	0.02	0.00
5.80	1.15	0.00	7.10	0.02	0.00	5.82	1.13	0.00	7.09	0.02	0.00
5.84	1.12	0.00	7.08	0.02	0.00	5.86	1.14	0.00	7.07	0.02	0.00
5.88	1.18	0.00	7.06	0.02	0.00	5.90	1.24	0.00	7.05	0.02	0.00
5.92	1.30	0.00	7.04	0.02	0.00	5.94	1.24	0.00	7.03	0.02	0.00
5.96	1.24	0.00	7.02	0.02	0.00	5.98	1.14	0.00	7.01	0.02	0.00
6.00	1.26	0.00	7.00	0.02	0.00	6.02	1.34	0.00	6.99	0.02	0.00
6.04	2.00	0.00	6.98	0.02	0.00	6.06	2.00	0.00	6.97	0.02	0.00
6.08	2.00	0.00	6.96	0.02	0.00	6.10	2.00	0.00	6.95	0.02	0.00
6.12	2.00	0.00	6.94	0.02	0.00	6.14	2.00	0.00	6.93	0.02	0.00
6.16	2.00	0.00	6.92	0.02	0.00	6.18	2.00	0.00	6.91	0.02	0.00
6.20	2.00	0.00	6.90	0.02	0.00	6.22	2.00	0.00	6.89	0.02	0.00
6.24	2.00	0.00	6.88	0.02	0.00	6.26	2.00	0.00	6.87	0.02	0.00
6.28	2.00	0.00	6.86	0.02	0.00	6.30	2.00	0.00	6.85	0.02	0.00
6.32	2.00	0.00	6.84	0.02	0.00	6.34	2.00	0.00	6.83	0.02	0.00
6.36	2.00	0.00	6.82	0.02	0.00	6.38	2.00	0.00	6.81	0.02	0.00
6.40	2.00	0.00	6.80	0.02	0.00	6.42	2.00	0.00	6.79	0.02	0.00
6.44	2.00	0.00	6.78	0.02	0.00	6.46	2.00	0.00	6.77	0.02	0.00
6.48	1.02	0.00	6.76	0.02	0.00	6.50	0.99	0.01	6.75	0.02	0.00
6.52	0.96	0.04	6.74	0.02	0.00	6.54	0.94	0.06	6.73	0.02	0.01
6.56	0.92	0.08	6.72	0.02	0.01	6.58	0.91	0.09	6.71	0.02	0.01
6.60	0.90	0.10	6.70	0.02	0.01	6.62	0.88	0.12	6.69	0.02	0.02
6.64	0.86	0.14	6.68	0.02	0.02	6.66	0.86	0.14	6.67	0.02	0.02
6.68	0.86	0.14	6.66	0.02	0.02	6.70	0.86	0.14	6.65	0.02	0.02
6.72	0.85	0.15	6.64	0.02	0.02	6.74	0.84	0.16	6.63	0.02	0.02
6.76	0.84	0.16	6.62	0.02	0.02	6.78	0.84	0.16	6.61	0.02	0.02
6.80	0.85	0.15	6.60	0.02	0.02	6.82	0.86	0.14	6.59	0.02	0.02
6.84	0.87	0.13	6.58	0.02	0.02	6.86	0.87	0.13	6.57	0.02	0.02
6.88	0.87	0.13	6.56	0.02	0.02	6.90	0.86	0.14	6.55	0.02	0.02
6.92	0.86	0.14	6.54	0.02	0.02	6.94	0.85	0.15	6.53	0.02	0.02
6.96	0.81	0.19	6.52	0.02	0.03	6.98	0.80	0.20	6.51	0.02	0.03
7.00	0.77	0.23	6.50	0.02	0.03	7.02	0.81	0.19	6.49	0.02	0.03
7.04	0.82	0.18	6.48	0.02	0.02	7.06	0.87	0.13	6.47	0.02	0.02
7.08	0.85	0.15	6.46	0.02	0.02	7.10	0.86	0.14	6.45	0.02	0.02
7.12	0.86	0.14	6.44	0.02	0.02	7.14	0.89	0.11	6.43	0.02	0.01
7.16	0.90	0.10	6.42	0.02	0.01	7.18	0.92	0.08	6.41	0.02	0.01
7.20	0.93	0.07	6.40	0.02	0.01	7.22	0.92	0.08	6.39	0.02	0.01
7.24	0.88	0.12	6.38	0.02	0.01	7.26	0.85	0.15	6.37	0.02	0.02
7.28	0.81	0.19	6.36	0.02	0.02	7.30	0.79	0.21	6.35	0.02	0.03
7.32	0.80	0.20	6.34	0.02	0.03	7.34	0.80	0.20	6.33	0.02	0.03
7.36	0.81	0.19	6.32	0.02	0.02	7.38	0.80	0.20	6.31	0.02	0.02
7.40	0.80	0.20	6.30	0.02	0.03	7.42	0.79	0.21	6.29	0.02	0.03
7.44	0.79	0.21	6.28	0.02	0.03	7.46	0.80	0.20	6.27	0.02	0.03
7.48	0.80	0.20	6.26	0.02	0.03	7.50	0.80	0.20	6.25	0.02	0.03
7.52	0.79	0.21	6.24	0.02	0.03	7.54	0.79	0.21	6.23	0.02	0.03
7.56	0.78	0.22	6.22	0.02	0.03	7.58	0.78	0.22	6.21	0.02	0.03
7.60	0.77	0.23	6.20	0.02	0.03	7.62	0.77	0.23	6.19	0.02	0.03
7.64	0.77	0.23	6.18	0.02	0.03	7.66	0.78	0.22	6.17	0.02	0.03

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
7.68	0.78	0.22	6.16	0.02	0.03	7.70	0.79	0.21	6.15	0.02	0.03
7.72	0.80	0.20	6.14	0.02	0.03	7.74	0.80	0.20	6.13	0.02	0.02
7.76	0.81	0.19	6.12	0.02	0.02	7.78	0.82	0.18	6.11	0.02	0.02
7.80	2.00	0.00	6.10	0.02	0.00	7.82	2.00	0.00	6.09	0.02	0.00
7.84	2.00	0.00	6.08	0.02	0.00	7.86	2.00	0.00	6.07	0.02	0.00
7.88	2.00	0.00	6.06	0.02	0.00	7.90	2.00	0.00	6.05	0.02	0.00
7.92	2.00	0.00	6.04	0.02	0.00	7.94	2.00	0.00	6.03	0.02	0.00
7.96	2.00	0.00	6.02	0.02	0.00	7.98	2.00	0.00	6.01	0.02	0.00
8.00	2.00	0.00	6.00	0.02	0.00	8.02	2.00	0.00	5.99	0.02	0.00
8.04	2.00	0.00	5.98	0.02	0.00	8.06	2.00	0.00	5.97	0.02	0.00
8.08	2.00	0.00	5.96	0.02	0.00	8.10	2.00	0.00	5.95	0.02	0.00
8.12	2.00	0.00	5.94	0.02	0.00	8.14	2.00	0.00	5.93	0.02	0.00
8.16	2.00	0.00	5.92	0.02	0.00	8.18	2.00	0.00	5.91	0.02	0.00
8.20	2.00	0.00	5.90	0.02	0.00	8.22	2.00	0.00	5.89	0.02	0.00
8.24	2.00	0.00	5.88	0.02	0.00	8.26	2.00	0.00	5.87	0.02	0.00
8.28	2.00	0.00	5.86	0.02	0.00	8.30	2.00	0.00	5.85	0.02	0.00
8.32	2.00	0.00	5.84	0.02	0.00	8.34	2.00	0.00	5.83	0.02	0.00
8.36	2.00	0.00	5.82	0.02	0.00	8.38	2.00	0.00	5.81	0.02	0.00
8.40	2.00	0.00	5.80	0.02	0.00	8.42	2.00	0.00	5.79	0.02	0.00
8.44	2.00	0.00	5.78	0.02	0.00	8.46	2.00	0.00	5.77	0.02	0.00
8.48	2.00	0.00	5.76	0.02	0.00	8.50	2.00	0.00	5.75	0.02	0.00
8.52	2.00	0.00	5.74	0.02	0.00	8.54	2.00	0.00	5.73	0.02	0.00
8.56	2.00	0.00	5.72	0.02	0.00	8.58	2.00	0.00	5.71	0.02	0.00
8.60	2.00	0.00	5.70	0.02	0.00	8.62	2.00	0.00	5.69	0.02	0.00
8.64	2.00	0.00	5.68	0.02	0.00	8.66	2.00	0.00	5.67	0.02	0.00
8.68	2.00	0.00	5.66	0.02	0.00	8.70	2.00	0.00	5.65	0.02	0.00
8.72	2.00	0.00	5.64	0.02	0.00	8.74	2.00	0.00	5.63	0.02	0.00
8.76	2.00	0.00	5.62	0.02	0.00	8.78	2.00	0.00	5.61	0.02	0.00
8.80	2.00	0.00	5.60	0.02	0.00	8.82	2.00	0.00	5.59	0.02	0.00
8.84	2.00	0.00	5.58	0.02	0.00	8.86	2.00	0.00	5.57	0.02	0.00
8.88	2.00	0.00	5.56	0.02	0.00	8.90	2.00	0.00	5.55	0.02	0.00
8.92	2.00	0.00	5.54	0.02	0.00	8.94	2.00	0.00	5.53	0.02	0.00
8.96	2.00	0.00	5.52	0.02	0.00	8.98	2.00	0.00	5.51	0.02	0.00
9.00	2.00	0.00	5.50	0.02	0.00	9.02	2.00	0.00	5.49	0.02	0.00
9.04	2.00	0.00	5.48	0.02	0.00	9.06	2.00	0.00	5.47	0.02	0.00
9.08	2.00	0.00	5.46	0.02	0.00	9.10	2.00	0.00	5.45	0.02	0.00
9.12	2.00	0.00	5.44	0.02	0.00	9.14	2.00	0.00	5.43	0.02	0.00
9.16	2.00	0.00	5.42	0.02	0.00	9.18	2.00	0.00	5.41	0.02	0.00
9.20	2.00	0.00	5.40	0.02	0.00	9.22	2.00	0.00	5.39	0.02	0.00
9.24	2.00	0.00	5.38	0.02	0.00	9.26	2.00	0.00	5.37	0.02	0.00
9.28	2.00	0.00	5.36	0.02	0.00	9.30	2.00	0.00	5.35	0.02	0.00
9.32	2.00	0.00	5.34	0.02	0.00	9.34	2.00	0.00	5.33	0.02	0.00
9.36	2.00	0.00	5.32	0.02	0.00	9.38	2.00	0.00	5.31	0.02	0.00
9.40	2.00	0.00	5.30	0.02	0.00	9.42	2.00	0.00	5.29	0.02	0.00
9.44	2.00	0.00	5.28	0.02	0.00	9.46	2.00	0.00	5.27	0.02	0.00
9.48	2.00	0.00	5.26	0.02	0.00	9.50	2.00	0.00	5.25	0.02	0.00
9.52	2.00	0.00	5.24	0.02	0.00	9.54	2.00	0.00	5.23	0.02	0.00
9.56	2.00	0.00	5.22	0.02	0.00	9.58	2.00	0.00	5.21	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
9.60	2.00	0.00	5.20	0.02	0.00	9.62	2.00	0.00	5.19	0.02	0.00
9.64	2.00	0.00	5.18	0.02	0.00	9.66	2.00	0.00	5.17	0.02	0.00
9.68	2.00	0.00	5.16	0.02	0.00	9.70	2.00	0.00	5.15	0.02	0.00
9.72	2.00	0.00	5.14	0.02	0.00	9.74	2.00	0.00	5.13	0.02	0.00
9.76	2.00	0.00	5.12	0.02	0.00	9.78	2.00	0.00	5.11	0.02	0.00
9.80	2.00	0.00	5.10	0.02	0.00	9.82	2.00	0.00	5.09	0.02	0.00
9.84	2.00	0.00	5.08	0.02	0.00	9.86	2.00	0.00	5.07	0.02	0.00
9.88	2.00	0.00	5.06	0.02	0.00	9.90	2.00	0.00	5.05	0.02	0.00
9.92	2.00	0.00	5.04	0.02	0.00	9.94	2.00	0.00	5.03	0.02	0.00
9.96	2.00	0.00	5.02	0.02	0.00	9.98	2.00	0.00	5.01	0.02	0.00
10.00	2.00	0.00	5.00	0.02	0.00	10.02	2.00	0.00	4.99	0.02	0.00
10.04	2.00	0.00	4.98	0.02	0.00	10.06	2.00	0.00	4.97	0.02	0.00
10.08	2.00	0.00	4.96	0.02	0.00	10.10	2.00	0.00	4.95	0.02	0.00
10.12	2.00	0.00	4.94	0.02	0.00	10.14	2.00	0.00	4.93	0.02	0.00
10.16	2.00	0.00	4.92	0.02	0.00	10.18	2.00	0.00	4.91	0.02	0.00
10.20	2.00	0.00	4.90	0.02	0.00	10.22	2.00	0.00	4.89	0.02	0.00
10.24	2.00	0.00	4.88	0.02	0.00	10.26	2.00	0.00	4.87	0.02	0.00
10.28	2.00	0.00	4.86	0.02	0.00	10.30	2.00	0.00	4.85	0.02	0.00
10.32	2.00	0.00	4.84	0.02	0.00	10.34	2.00	0.00	4.83	0.02	0.00
10.36	2.00	0.00	4.82	0.02	0.00	10.38	2.00	0.00	4.81	0.02	0.00
10.40	2.00	0.00	4.80	0.02	0.00	10.42	2.00	0.00	4.79	0.02	0.00
10.44	2.00	0.00	4.78	0.02	0.00	10.46	2.00	0.00	4.77	0.02	0.00
10.48	2.00	0.00	4.76	0.02	0.00	10.50	2.00	0.00	4.75	0.02	0.00
10.52	2.00	0.00	4.74	0.02	0.00	10.54	2.00	0.00	4.73	0.02	0.00
10.56	2.00	0.00	4.72	0.02	0.00	10.58	2.00	0.00	4.71	0.02	0.00
10.60	2.00	0.00	4.70	0.02	0.00	10.62	2.00	0.00	4.69	0.02	0.00
10.64	2.00	0.00	4.68	0.02	0.00	10.66	2.00	0.00	4.67	0.02	0.00
10.68	2.00	0.00	4.66	0.02	0.00	10.70	2.00	0.00	4.65	0.02	0.00
10.72	2.00	0.00	4.64	0.02	0.00	10.74	2.00	0.00	4.63	0.02	0.00
10.76	2.00	0.00	4.62	0.02	0.00	10.78	2.00	0.00	4.61	0.02	0.00
10.80	2.00	0.00	4.60	0.02	0.00	10.82	2.00	0.00	4.59	0.02	0.00
10.84	2.00	0.00	4.58	0.02	0.00	10.86	2.00	0.00	4.57	0.02	0.00
10.88	2.00	0.00	4.56	0.02	0.00	10.90	2.00	0.00	4.55	0.02	0.00
10.92	2.00	0.00	4.54	0.02	0.00	10.94	2.00	0.00	4.53	0.02	0.00
10.96	2.00	0.00	4.52	0.02	0.00	10.98	2.00	0.00	4.51	0.02	0.00
11.00	2.00	0.00	4.50	0.02	0.00	11.02	2.00	0.00	4.49	0.02	0.00
11.04	2.00	0.00	4.48	0.02	0.00	11.06	2.00	0.00	4.47	0.02	0.00
11.08	2.00	0.00	4.46	0.02	0.00	11.10	2.00	0.00	4.45	0.02	0.00
11.12	2.00	0.00	4.44	0.02	0.00	11.14	2.00	0.00	4.43	0.02	0.00
11.16	2.00	0.00	4.42	0.02	0.00	11.18	2.00	0.00	4.41	0.02	0.00
11.20	2.00	0.00	4.40	0.02	0.00	11.22	2.00	0.00	4.39	0.02	0.00
11.24	2.00	0.00	4.38	0.02	0.00	11.26	2.00	0.00	4.37	0.02	0.00
11.28	2.00	0.00	4.36	0.02	0.00	11.30	2.00	0.00	4.35	0.02	0.00
11.32	2.00	0.00	4.34	0.02	0.00	11.34	2.00	0.00	4.33	0.02	0.00
11.36	2.00	0.00	4.32	0.02	0.00	11.38	2.00	0.00	4.31	0.02	0.00
11.40	2.00	0.00	4.30	0.02	0.00	11.42	2.00	0.00	4.29	0.02	0.00
11.44	2.00	0.00	4.28	0.02	0.00	11.46	2.00	0.00	4.27	0.02	0.00
11.48	2.00	0.00	4.26	0.02	0.00	11.50	2.00	0.00	4.25	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
11.52	2.00	0.00	4.24	0.02	0.00	11.54	2.00	0.00	4.23	0.02	0.00
11.56	2.00	0.00	4.22	0.02	0.00	11.58	2.00	0.00	4.21	0.02	0.00
11.60	2.00	0.00	4.20	0.02	0.00	11.62	2.00	0.00	4.19	0.02	0.00
11.64	2.00	0.00	4.18	0.02	0.00	11.66	2.00	0.00	4.17	0.02	0.00
11.68	2.00	0.00	4.16	0.02	0.00	11.70	2.00	0.00	4.15	0.02	0.00
11.72	2.00	0.00	4.14	0.02	0.00	11.74	2.00	0.00	4.13	0.02	0.00
11.76	2.00	0.00	4.12	0.02	0.00	11.78	2.00	0.00	4.11	0.02	0.00
11.80	2.00	0.00	4.10	0.02	0.00	11.82	2.00	0.00	4.09	0.02	0.00
11.84	2.00	0.00	4.08	0.02	0.00	11.86	2.00	0.00	4.07	0.02	0.00
11.88	2.00	0.00	4.06	0.02	0.00	11.90	2.00	0.00	4.05	0.02	0.00
11.92	2.00	0.00	4.04	0.02	0.00	11.94	2.00	0.00	4.03	0.02	0.00
11.96	2.00	0.00	4.02	0.02	0.00	11.98	2.00	0.00	4.01	0.02	0.00
12.00	2.00	0.00	4.00	0.02	0.00	12.02	2.00	0.00	3.99	0.02	0.00
12.04	2.00	0.00	3.98	0.02	0.00	12.06	2.00	0.00	3.97	0.02	0.00
12.08	2.00	0.00	3.96	0.02	0.00	12.10	2.00	0.00	3.95	0.02	0.00
12.12	2.00	0.00	3.94	0.02	0.00	12.14	2.00	0.00	3.93	0.02	0.00
12.16	2.00	0.00	3.92	0.02	0.00	12.18	2.00	0.00	3.91	0.02	0.00
12.20	2.00	0.00	3.90	0.02	0.00	12.22	2.00	0.00	3.89	0.02	0.00
12.24	2.00	0.00	3.88	0.02	0.00	12.26	2.00	0.00	3.87	0.02	0.00
12.28	2.00	0.00	3.86	0.02	0.00	12.30	2.00	0.00	3.85	0.02	0.00
12.32	2.00	0.00	3.84	0.02	0.00	12.34	2.00	0.00	3.83	0.02	0.00
12.36	2.00	0.00	3.82	0.02	0.00	12.38	2.00	0.00	3.81	0.02	0.00
12.40	2.00	0.00	3.80	0.02	0.00	12.42	2.00	0.00	3.79	0.02	0.00
12.44	2.00	0.00	3.78	0.02	0.00	12.46	2.00	0.00	3.77	0.02	0.00
12.48	2.00	0.00	3.76	0.02	0.00	12.50	2.00	0.00	3.75	0.02	0.00
12.52	2.00	0.00	3.74	0.02	0.00	12.54	2.00	0.00	3.73	0.02	0.00
12.56	2.00	0.00	3.72	0.02	0.00	12.58	2.00	0.00	3.71	0.02	0.00
12.60	2.00	0.00	3.70	0.02	0.00	12.62	2.00	0.00	3.69	0.02	0.00
12.64	2.00	0.00	3.68	0.02	0.00	12.66	2.00	0.00	3.67	0.02	0.00
12.68	2.00	0.00	3.66	0.02	0.00	12.70	2.00	0.00	3.65	0.02	0.00
12.72	2.00	0.00	3.64	0.02	0.00	12.74	2.00	0.00	3.63	0.02	0.00
12.76	2.00	0.00	3.62	0.02	0.00	12.78	2.00	0.00	3.61	0.02	0.00
12.80	2.00	0.00	3.60	0.02	0.00	12.82	2.00	0.00	3.59	0.02	0.00
12.84	2.00	0.00	3.58	0.02	0.00	12.86	2.00	0.00	3.57	0.02	0.00
12.88	2.00	0.00	3.56	0.02	0.00	12.90	2.00	0.00	3.55	0.02	0.00
12.92	2.00	0.00	3.54	0.02	0.00	12.94	2.00	0.00	3.53	0.02	0.00
12.96	2.00	0.00	3.52	0.02	0.00	12.98	2.00	0.00	3.51	0.02	0.00
13.00	2.00	0.00	3.50	0.02	0.00	13.02	2.00	0.00	3.49	0.02	0.00
13.04	2.00	0.00	3.48	0.02	0.00	13.06	2.00	0.00	3.47	0.02	0.00
13.08	2.00	0.00	3.46	0.02	0.00	13.10	2.00	0.00	3.45	0.02	0.00
13.12	2.00	0.00	3.44	0.02	0.00	13.14	2.00	0.00	3.43	0.02	0.00
13.16	2.00	0.00	3.42	0.02	0.00	13.18	2.00	0.00	3.41	0.02	0.00
13.20	2.00	0.00	3.40	0.02	0.00	13.22	2.00	0.00	3.39	0.02	0.00
13.24	2.00	0.00	3.38	0.02	0.00	13.26	2.00	0.00	3.37	0.02	0.00
13.28	2.00	0.00	3.36	0.02	0.00	13.30	2.00	0.00	3.35	0.02	0.00
13.32	2.00	0.00	3.34	0.02	0.00	13.34	2.00	0.00	3.33	0.02	0.00
13.36	2.00	0.00	3.32	0.02	0.00	13.38	2.00	0.00	3.31	0.02	0.00
13.40	2.00	0.00	3.30	0.02	0.00	13.42	2.00	0.00	3.29	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
13.44	2.00	0.00	3.28	0.02	0.00	13.46	2.00	0.00	3.27	0.02	0.00
13.48	2.00	0.00	3.26	0.02	0.00	13.50	2.00	0.00	3.25	0.02	0.00
13.52	2.00	0.00	3.24	0.02	0.00	13.54	2.00	0.00	3.23	0.02	0.00
13.56	2.00	0.00	3.22	0.02	0.00	13.58	2.00	0.00	3.21	0.02	0.00
13.60	2.00	0.00	3.20	0.02	0.00	13.62	2.00	0.00	3.19	0.02	0.00
13.64	2.00	0.00	3.18	0.02	0.00	13.66	2.00	0.00	3.17	0.02	0.00
13.68	2.00	0.00	3.16	0.02	0.00	13.70	2.00	0.00	3.15	0.02	0.00
13.72	2.00	0.00	3.14	0.02	0.00	13.74	2.00	0.00	3.13	0.02	0.00
13.76	2.00	0.00	3.12	0.02	0.00	13.78	2.00	0.00	3.11	0.02	0.00
13.80	2.00	0.00	3.10	0.02	0.00	13.82	2.00	0.00	3.09	0.02	0.00
13.84	2.00	0.00	3.08	0.02	0.00	13.86	2.00	0.00	3.07	0.02	0.00
13.88	2.00	0.00	3.06	0.02	0.00	13.90	2.00	0.00	3.05	0.02	0.00
13.92	2.00	0.00	3.04	0.02	0.00	13.94	2.00	0.00	3.03	0.02	0.00
13.96	2.00	0.00	3.02	0.02	0.00	13.98	2.00	0.00	3.01	0.02	0.00
14.00	2.00	0.00	3.00	0.02	0.00	14.02	2.00	0.00	2.99	0.02	0.00
14.04	2.00	0.00	2.98	0.02	0.00	14.06	2.00	0.00	2.97	0.02	0.00
14.08	2.00	0.00	2.96	0.02	0.00	14.10	2.00	0.00	2.95	0.02	0.00
14.12	2.00	0.00	2.94	0.02	0.00	14.14	2.00	0.00	2.93	0.02	0.00
14.16	2.00	0.00	2.92	0.02	0.00	14.18	2.00	0.00	2.91	0.02	0.00
14.20	2.00	0.00	2.90	0.02	0.00	14.22	2.00	0.00	2.89	0.02	0.00
14.24	2.00	0.00	2.88	0.02	0.00	14.26	2.00	0.00	2.87	0.02	0.00
14.28	2.00	0.00	2.86	0.02	0.00	14.30	2.00	0.00	2.85	0.02	0.00
14.32	2.00	0.00	2.84	0.02	0.00	14.34	2.00	0.00	2.83	0.02	0.00
14.36	2.00	0.00	2.82	0.02	0.00	14.38	2.00	0.00	2.81	0.02	0.00
14.40	2.00	0.00	2.80	0.02	0.00	14.42	2.00	0.00	2.79	0.02	0.00
14.44	2.00	0.00	2.78	0.02	0.00	14.46	2.00	0.00	2.77	0.02	0.00
14.48	2.00	0.00	2.76	0.02	0.00	14.50	2.00	0.00	2.75	0.02	0.00
14.52	2.00	0.00	2.74	0.02	0.00	14.54	2.00	0.00	2.73	0.02	0.00
14.56	2.00	0.00	2.72	0.02	0.00	14.58	2.00	0.00	2.71	0.02	0.00
14.60	2.00	0.00	2.70	0.02	0.00	14.62	2.00	0.00	2.69	0.02	0.00
14.64	2.00	0.00	2.68	0.02	0.00	14.66	2.00	0.00	2.67	0.02	0.00
14.68	2.00	0.00	2.66	0.02	0.00	14.70	2.00	0.00	2.65	0.02	0.00
14.72	2.00	0.00	2.64	0.02	0.00	14.74	2.00	0.00	2.63	0.02	0.00
14.76	2.00	0.00	2.62	0.02	0.00	14.78	2.00	0.00	2.61	0.02	0.00
14.80	2.00	0.00	2.60	0.02	0.00	14.82	2.00	0.00	2.59	0.02	0.00
14.84	2.00	0.00	2.58	0.02	0.00	14.86	2.00	0.00	2.57	0.02	0.00
14.88	2.00	0.00	2.56	0.02	0.00	14.90	2.00	0.00	2.55	0.02	0.00
14.92	2.00	0.00	2.54	0.02	0.00	14.94	2.00	0.00	2.53	0.02	0.00
14.96	2.00	0.00	2.52	0.02	0.00	14.98	2.00	0.00	2.51	0.02	0.00
15.00	2.00	0.00	2.50	0.02	0.00	15.02	2.00	0.00	2.49	0.02	0.00
15.04	2.00	0.00	2.48	0.02	0.00	15.06	2.00	0.00	2.47	0.02	0.00
15.08	2.00	0.00	2.46	0.02	0.00	15.10	2.00	0.00	2.45	0.02	0.00
15.12	2.00	0.00	2.44	0.02	0.00	15.14	2.00	0.00	2.43	0.02	0.00
15.16	2.00	0.00	2.42	0.02	0.00	15.18	2.00	0.00	2.41	0.02	0.00
15.20	2.00	0.00	2.40	0.02	0.00	15.22	2.00	0.00	2.39	0.02	0.00
15.24	2.00	0.00	2.38	0.02	0.00	15.26	2.00	0.00	2.37	0.02	0.00
15.28	2.00	0.00	2.36	0.02	0.00	15.30	2.00	0.00	2.35	0.02	0.00
15.32	2.00	0.00	2.34	0.02	0.00	15.34	2.00	0.00	2.33	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
15.36	2.00	0.00	2.32	0.02	0.00	15.38	2.00	0.00	2.31	0.02	0.00
15.40	2.00	0.00	2.30	0.02	0.00	15.42	2.00	0.00	2.29	0.02	0.00
15.44	2.00	0.00	2.28	0.02	0.00	15.46	2.00	0.00	2.27	0.02	0.00
15.48	2.00	0.00	2.26	0.02	0.00	15.50	2.00	0.00	2.25	0.02	0.00
15.52	2.00	0.00	2.24	0.02	0.00	15.54	2.00	0.00	2.23	0.02	0.00
15.56	2.00	0.00	2.22	0.02	0.00	15.58	2.00	0.00	2.21	0.02	0.00
15.60	2.00	0.00	2.20	0.02	0.00	15.62	2.00	0.00	2.19	0.02	0.00
15.64	2.00	0.00	2.18	0.02	0.00	15.66	2.00	0.00	2.17	0.02	0.00
15.68	2.00	0.00	2.16	0.02	0.00	15.70	2.00	0.00	2.15	0.02	0.00
15.72	2.00	0.00	2.14	0.02	0.00	15.74	2.00	0.00	2.13	0.02	0.00
15.76	2.00	0.00	2.12	0.02	0.00	15.78	2.00	0.00	2.11	0.02	0.00
15.80	2.00	0.00	2.10	0.02	0.00	15.82	2.00	0.00	2.09	0.02	0.00
15.84	2.00	0.00	2.08	0.02	0.00	15.86	2.00	0.00	2.07	0.02	0.00
15.88	2.00	0.00	2.06	0.02	0.00	15.90	2.00	0.00	2.05	0.02	0.00
15.92	2.00	0.00	2.04	0.02	0.00	15.94	2.00	0.00	2.03	0.02	0.00
15.96	2.00	0.00	2.02	0.02	0.00	15.98	2.00	0.00	2.01	0.02	0.00
16.00	2.00	0.00	2.00	0.02	0.00	16.02	2.00	0.00	1.99	0.02	0.00
16.04	2.00	0.00	1.98	0.02	0.00	16.06	2.00	0.00	1.97	0.02	0.00
16.08	2.00	0.00	1.96	0.02	0.00	16.10	2.00	0.00	1.95	0.02	0.00
16.12	2.00	0.00	1.94	0.02	0.00	16.14	2.00	0.00	1.93	0.02	0.00
16.16	2.00	0.00	1.92	0.02	0.00	16.18	2.00	0.00	1.91	0.02	0.00
16.20	2.00	0.00	1.90	0.02	0.00	16.22	2.00	0.00	1.89	0.02	0.00
16.24	2.00	0.00	1.88	0.02	0.00	16.26	2.00	0.00	1.87	0.02	0.00
16.28	2.00	0.00	1.86	0.02	0.00	16.30	2.00	0.00	1.85	0.02	0.00
16.32	2.00	0.00	1.84	0.02	0.00	16.34	2.00	0.00	1.83	0.02	0.00
16.36	2.00	0.00	1.82	0.02	0.00	16.38	2.00	0.00	1.81	0.02	0.00
16.40	2.00	0.00	1.80	0.02	0.00	16.42	2.00	0.00	1.79	0.02	0.00
16.44	2.00	0.00	1.78	0.02	0.00	16.46	2.00	0.00	1.77	0.02	0.00
16.48	2.00	0.00	1.76	0.02	0.00	16.50	2.00	0.00	1.75	0.02	0.00
16.52	2.00	0.00	1.74	0.02	0.00	16.54	2.00	0.00	1.73	0.02	0.00
16.56	2.00	0.00	1.72	0.02	0.00	16.58	2.00	0.00	1.71	0.02	0.00
16.60	2.00	0.00	1.70	0.02	0.00	16.62	2.00	0.00	1.69	0.02	0.00
16.64	2.00	0.00	1.68	0.02	0.00	16.66	2.00	0.00	1.67	0.02	0.00
16.68	2.00	0.00	1.66	0.02	0.00	16.70	2.00	0.00	1.65	0.02	0.00
16.72	2.00	0.00	1.64	0.02	0.00	16.74	2.00	0.00	1.63	0.02	0.00
16.76	2.00	0.00	1.62	0.02	0.00	16.78	2.00	0.00	1.61	0.02	0.00
16.80	2.00	0.00	1.60	0.02	0.00	16.82	2.00	0.00	1.59	0.02	0.00
16.84	2.00	0.00	1.58	0.02	0.00	16.86	2.00	0.00	1.57	0.02	0.00
16.88	2.00	0.00	1.56	0.02	0.00	16.90	2.00	0.00	1.55	0.02	0.00
16.92	2.00	0.00	1.54	0.02	0.00	16.94	2.00	0.00	1.53	0.02	0.00
16.96	2.00	0.00	1.52	0.02	0.00	16.98	2.00	0.00	1.51	0.02	0.00
17.00	2.00	0.00	1.50	0.02	0.00	17.02	2.00	0.00	1.49	0.02	0.00
17.04	2.00	0.00	1.48	0.02	0.00	17.06	2.00	0.00	1.47	0.02	0.00
17.08	2.00	0.00	1.46	0.02	0.00	17.10	2.00	0.00	1.45	0.02	0.00
17.12	2.00	0.00	1.44	0.02	0.00	17.14	2.00	0.00	1.43	0.02	0.00
17.16	2.00	0.00	1.42	0.02	0.00	17.18	2.00	0.00	1.41	0.02	0.00
17.20	2.00	0.00	1.40	0.02	0.00	17.22	2.00	0.00	1.39	0.02	0.00
17.24	2.00	0.00	1.38	0.02	0.00	17.26	2.00	0.00	1.37	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
17.28	2.00	0.00	1.36	0.02	0.00	17.30	2.00	0.00	1.35	0.02	0.00
17.32	2.00	0.00	1.34	0.02	0.00	17.34	2.00	0.00	1.33	0.02	0.00
17.36	2.00	0.00	1.32	0.02	0.00	17.38	2.00	0.00	1.31	0.02	0.00
17.40	2.00	0.00	1.30	0.02	0.00	17.42	2.00	0.00	1.29	0.02	0.00
17.44	2.00	0.00	1.28	0.02	0.00	17.46	2.00	0.00	1.27	0.02	0.00
17.48	2.00	0.00	1.26	0.02	0.00	17.50	2.00	0.00	1.25	0.02	0.00
17.52	2.00	0.00	1.24	0.02	0.00	17.54	2.00	0.00	1.23	0.02	0.00
17.56	2.00	0.00	1.22	0.02	0.00	17.58	2.00	0.00	1.21	0.02	0.00
17.60	2.00	0.00	1.20	0.02	0.00	17.62	2.00	0.00	1.19	0.02	0.00
17.64	2.00	0.00	1.18	0.02	0.00	17.66	2.00	0.00	1.17	0.02	0.00
17.68	2.00	0.00	1.16	0.02	0.00	17.70	2.00	0.00	1.15	0.02	0.00
17.72	2.00	0.00	1.14	0.02	0.00	17.74	2.00	0.00	1.13	0.02	0.00
17.76	2.00	0.00	1.12	0.02	0.00	17.78	2.00	0.00	1.11	0.02	0.00
17.80	2.00	0.00	1.10	0.02	0.00	17.82	2.00	0.00	1.09	0.02	0.00
17.84	2.00	0.00	1.08	0.02	0.00	17.86	2.00	0.00	1.07	0.02	0.00
17.88	2.00	0.00	1.06	0.02	0.00	17.90	2.00	0.00	1.05	0.02	0.00
17.92	2.00	0.00	1.04	0.02	0.00	17.94	2.00	0.00	1.03	0.02	0.00
17.96	2.00	0.00	1.02	0.02	0.00	17.98	2.00	0.00	1.01	0.02	0.00
18.00	2.00	0.00	1.00	0.02	0.00	18.02	2.00	0.00	0.99	0.02	0.00
18.04	2.00	0.00	0.98	0.02	0.00	18.06	2.00	0.00	0.97	0.02	0.00
18.08	2.00	0.00	0.96	0.02	0.00	18.10	2.00	0.00	0.95	0.02	0.00
18.12	2.00	0.00	0.94	0.02	0.00	18.14	2.00	0.00	0.93	0.02	0.00
18.16	2.00	0.00	0.92	0.02	0.00	18.18	2.00	0.00	0.91	0.02	0.00
18.20	2.00	0.00	0.90	0.02	0.00	18.22	2.00	0.00	0.89	0.02	0.00
18.24	2.00	0.00	0.88	0.02	0.00	18.26	2.00	0.00	0.87	0.02	0.00
18.28	1.27	0.00	0.86	0.02	0.00	18.30	1.27	0.00	0.85	0.02	0.00
18.32	1.24	0.00	0.84	0.02	0.00	18.34	1.20	0.00	0.83	0.02	0.00
18.36	1.16	0.00	0.82	0.02	0.00	18.38	1.12	0.00	0.81	0.02	0.00
18.40	1.09	0.00	0.80	0.02	0.00	18.42	1.05	0.00	0.79	0.02	0.00
18.44	1.02	0.00	0.78	0.02	0.00	18.46	0.99	0.01	0.77	0.02	0.00
18.48	0.99	0.01	0.76	0.02	0.00	18.50	1.01	0.00	0.75	0.02	0.00
18.52	1.03	0.00	0.74	0.02	0.00	18.54	1.05	0.00	0.73	0.02	0.00
18.56	1.04	0.00	0.72	0.02	0.00	18.58	1.02	0.00	0.71	0.02	0.00
18.60	0.99	0.01	0.70	0.02	0.00	18.62	1.00	0.00	0.69	0.02	0.00
18.64	1.05	0.00	0.68	0.02	0.00	18.66	2.00	0.00	0.67	0.02	0.00
18.68	2.00	0.00	0.66	0.02	0.00	18.70	2.00	0.00	0.65	0.02	0.00
18.72	2.00	0.00	0.64	0.02	0.00	18.74	2.00	0.00	0.63	0.02	0.00
18.76	2.00	0.00	0.62	0.02	0.00	18.78	2.00	0.00	0.61	0.02	0.00
18.80	2.00	0.00	0.60	0.02	0.00	18.82	2.00	0.00	0.59	0.02	0.00
18.84	2.00	0.00	0.58	0.02	0.00	18.86	2.00	0.00	0.57	0.02	0.00
18.88	2.00	0.00	0.56	0.02	0.00	18.90	2.00	0.00	0.55	0.02	0.00
18.92	2.00	0.00	0.54	0.02	0.00	18.94	2.00	0.00	0.53	0.02	0.00
18.96	2.00	0.00	0.52	0.02	0.00	18.98	2.00	0.00	0.51	0.02	0.00
19.00	2.00	0.00	0.50	0.02	0.00	19.02	2.00	0.00	0.49	0.02	0.00
19.04	2.00	0.00	0.48	0.02	0.00	19.06	2.00	0.00	0.47	0.02	0.00
19.08	2.00	0.00	0.46	0.02	0.00	19.10	2.00	0.00	0.45	0.02	0.00
19.12	2.00	0.00	0.44	0.02	0.00	19.14	2.00	0.00	0.43	0.02	0.00
19.16	2.00	0.00	0.42	0.02	0.00	19.18	2.00	0.00	0.41	0.02	0.00

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

Depth (m)	FS	F _L	w _z	d _z	LPI	Depth (m)	FS	F _L	w _z	d _z	LPI
19.20	2.00	0.00	0.40	0.02	0.00	19.22	2.00	0.00	0.39	0.02	0.00
19.24	2.00	0.00	0.38	0.02	0.00	19.26	2.00	0.00	0.37	0.02	0.00
19.28	2.00	0.00	0.36	0.02	0.00	19.30	2.00	0.00	0.35	0.02	0.00
19.32	2.00	0.00	0.34	0.02	0.00	19.34	2.00	0.00	0.33	0.02	0.00
19.36	2.00	0.00	0.32	0.02	0.00	19.38	2.00	0.00	0.31	0.02	0.00
19.40	2.00	0.00	0.30	0.02	0.00	19.42	2.00	0.00	0.29	0.02	0.00
19.44	2.00	0.00	0.28	0.02	0.00	19.46	2.00	0.00	0.27	0.02	0.00
19.48	2.00	0.00	0.26	0.02	0.00	19.50	2.00	0.00	0.25	0.02	0.00
19.52	2.00	0.00	0.24	0.02	0.00	19.54	2.00	0.00	0.23	0.02	0.00
19.56	2.00	0.00	0.22	0.02	0.00	19.58	2.00	0.00	0.21	0.02	0.00
19.60	2.00	0.00	0.20	0.02	0.00	19.62	2.00	0.00	0.19	0.02	0.00
19.64	2.00	0.00	0.18	0.02	0.00	19.66	2.00	0.00	0.17	0.02	0.00
19.68	2.00	0.00	0.16	0.02	0.00	19.70	2.00	0.00	0.15	0.02	0.00
19.72	2.00	0.00	0.14	0.02	0.00	19.74	2.00	0.00	0.13	0.02	0.00
19.76	2.00	0.00	0.12	0.02	0.00	19.78	2.00	0.00	0.11	0.02	0.00
19.80	2.00	0.00	0.10	0.02	0.00	19.82	2.00	0.00	0.09	0.02	0.00
19.84	2.00	0.00	0.08	0.02	0.00	19.86	2.00	0.00	0.07	0.02	0.00
19.88	2.00	0.00	0.06	0.02	0.00	19.90	2.00	0.00	0.05	0.02	0.00
19.92	2.00	0.00	0.04	0.02	0.00	19.94	2.00	0.00	0.03	0.02	0.00
19.96	2.00	0.00	0.02	0.02	0.00	19.98	2.00	0.00	0.01	0.02	0.00
20.00	2.00	0.00	0.00	0.02	0.00	20.02	2.00	0.00	0.00	0.00	0.00
20.04	2.00	0.00	0.00	0.00	0.00	20.06	2.00	0.00	0.00	0.00	0.00
20.08	2.00	0.00	0.00	0.00	0.00	20.10	2.00	0.00	0.00	0.00	0.00
20.12	2.00	0.00	0.00	0.00	0.00	20.14	2.00	0.00	0.00	0.00	0.00

Overall liquefaction potential: 1.34

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

Abbreviations

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