# Allegato 4

# Indagini geofisiche
## eseguite per questo studio
## (1 Down-hole + 1 HVSR)

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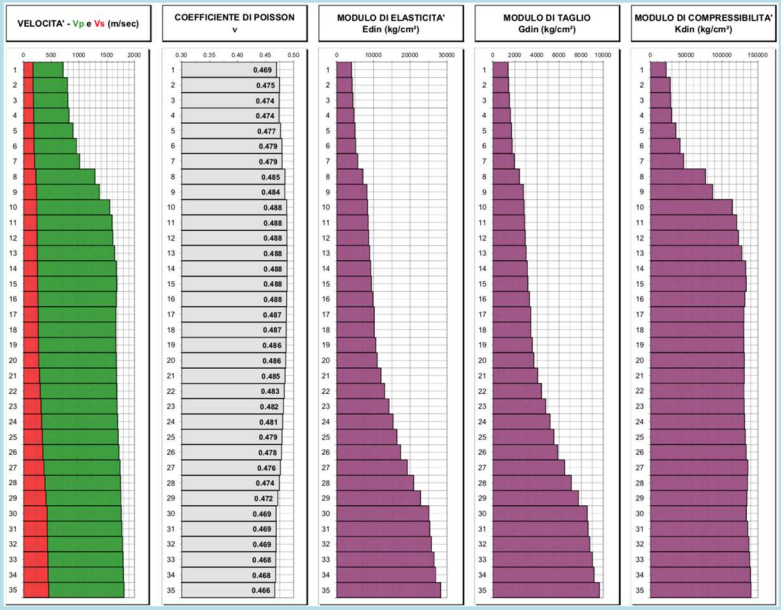
Concessione Ministero Infrastrutture e Trasporti - Settore C - Decreto n. 005754 del 05/07/2010

# COMUNE DI RICCIONE (RN)

## INDAGINE SISMICA IN FORO - DOWN HOLE
## VIA MILANO ANGOLO VIA OBERDAN (C/O EX DELFINARIO)




## RAPPORTO LAVORI

Data
25 giugno 2019

*Committente*

Dott. Geol. Franchi Valeriano

| elaborato | revisione |
|---|---|
| 1 | 1 |

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Allegato 1 – Sismogrammi DH (foglio formato A3)

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# 1 INDICAZIONI GENERALI

Per conto del Dott. Geol. Franchi Valeriano è stata eseguita, in Via Milano angolo Via Oberdan (c/o ex Delfinario) a Riccione (RN), un'indagine sismica mediante tecnica downhole (DH) nel foro di sondaggio denominato S1 (profondità complessiva di 35 metri da piano campagna) per determinare i profili verticali di velocità delle onde sismiche di compressione P e di taglio S e i parametri elastici dinamici ed il parametro Vs30 utile alla classificazione dei terreni di fondazione.

L'ubicazione delle indagini sismica in foro realizzata è riportata in Figura 1.

L'acquisizione dei dati è stata effettuata nel giorno 17 giugno 2019.

Segue una breve descrizione del metodo geofisico utilizzato e delle modalità esecutive della prospezione.

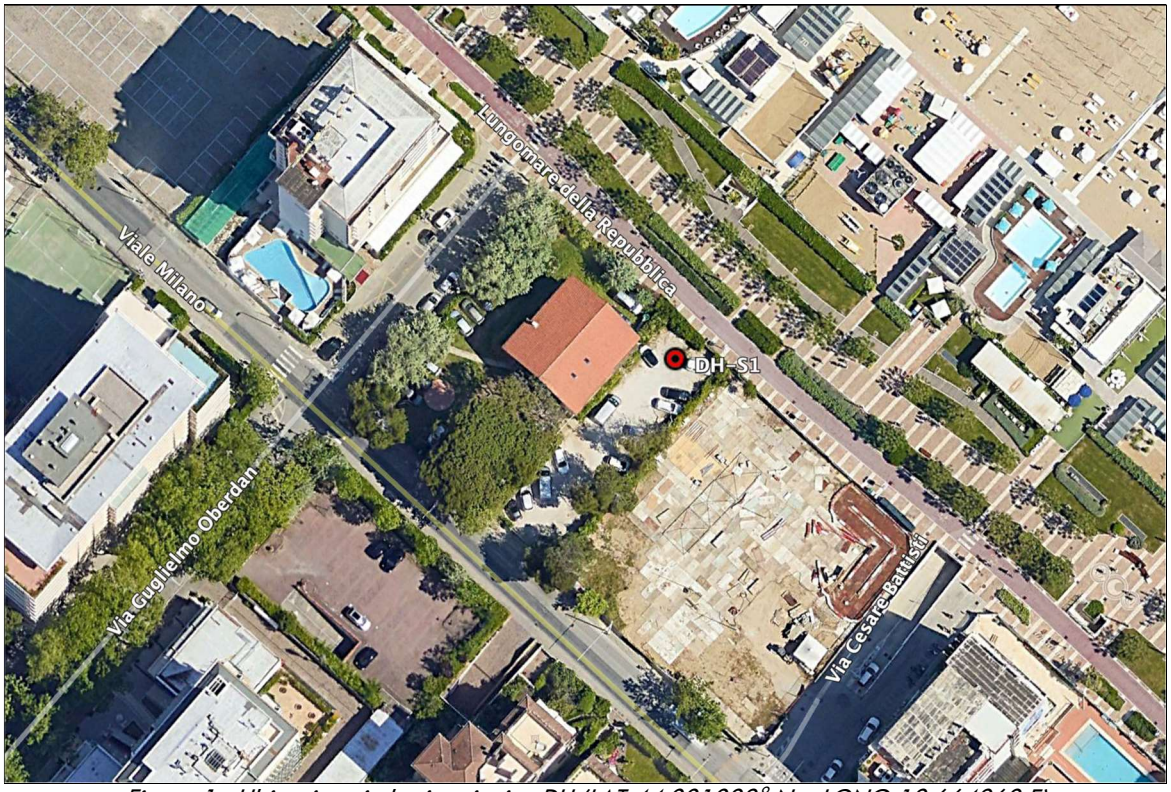



*Figura 1– Ubicazione indagine sismica DH (LAT 44.001082° N – LONG 12.664268 E)*

## 2 VELOCITÀ VS E CATEGORIE DI SOTTOSUOLO

Facendo riferimento alla nuova normativa tecnica in materia di progettazione antisismica (NTC2018), la caratterizzazione geotecnica dei terreni dal punto di vista sismico richiede come elemento indispensabile la conoscenza del profilo delle velocità delle onde di taglio Vs degli strati del terreno presenti nel sito di studio. La classificazione del sottosuolo si effettua in base alle condizioni stratigrafiche ed ai valori della velocità equivalente di propagazione delle onde di taglio, Vseq (in m/s), definita dall'espressione:

$$V_{S,eq} = \frac{H}{\sum_{i=1}^{N} \frac{h_i}{V_{S,i}}}$$

con:

| | |
|---|---|
| hi | spessore dell'i-esimo strato; |
| VS,i | velocità delle onde di taglio nell'i-esimo strato; |
| N | numero di strati; |
| H | profondità del substrato, definito come quella formazione costituita da roccia o terreno molto rigido, caratterizzata da Vs non inferiore a 800 m/s. |

Per le fondazioni superficiali, la profondità del substrato è riferita al piano di imposta delle stesse, mentre per le fondazioni su pali è riferita alla testa dei pali. Nel caso di opere di sostegno di terreni naturali, la profondità è riferita alla testa dell'opera. Per muri di sostegno di terrapieni, la profondità è riferita al piano di imposta della fondazione.

Per depositi con profondità H del substrato superiore a 30 m, la velocità equivalente delle onde di taglio $V_{S_{eq}}$ è definita dal parametro Vs30, ottenuto ponendo H=30 m nella precedente espressione e considerando le proprietà degli strati di terreno fino a tale profondità. La normativa, sulla base del suddetto profilo, fornisce una classificazione dei suoli suddivisa nelle tipologie A, B, C, D ed E (rif. Tab. 3.2.II delle NTC2018):

*A - Ammassi rocciosi affioranti o terreni molto rigidi caratterizzati da valori di velocità delle onde di taglio superiori a 800 m/s, eventualmente comprendenti in superficie terreni di caratteristiche meccaniche più scadenti con spessore massimo pari a 3 m*

*B - Rocce tenere e depositi di terreni a grana grossa molto addensati o terreni a grana fina molto consistenti caratterizzati da un miglioramento delle proprietà meccaniche con la profondità e da valori di velocità equivalente compresi tra 360 m/s e 800 m/s*

*C - Depositi di terreni a grana grossa mediamente addensati o terreni a grana fina mediamente consistenti con profondità del substrato superiori a 30 m, caratterizzati da un miglioramento delle proprietà meccaniche con la profondità e da valori di velocità equivalente compresi tra 180 m/s e 360 m/s*

*D - Depositi di terreni a grana grossa scarsamente addensati o di terreni a grana fina scarsamente consistenti, con profondità del substrato superiori a 30 m, caratterizzati da un miglioramento delle proprietà meccaniche con la profondità e da valori di velocità equivalente compresi tra 100 e 180 m/s*

*E - Terreni con caratteristiche e valori di velocità equivalente riconducibili a quelle definite per le categorie C o D, con profondità del substrato non superiore a 30 m*

Per misurare le velocità delle onde di taglio si possono eseguire rilievi in foro di sondaggio meccanico con tecnica downhole se si dispone di un foro singolo o cross-hole fra due fori oppure prospezioni sismiche mediante stendimenti superficiali utilizzando geofoni orizzontali con opportune energizzazioni del terreno o tramite geofoni verticali analizzando la dispersione delle onde di superficie.

# 3 RILIEVO SISMICO DOWNHOLE

Il metodo sismico in foro di tipo downhole (DH) permette di misurare direttamente le velocità delle onde sismiche di compressione (onde P) e di quelle di taglio (onde S) ottenute sul profilo di profondità lungo il foro. Attraverso questo metodo è quindi possibile ottenere il profilo delle velocità delle onde S ricavando il parametro denominato Vs30 nonché, attraverso le onde P ed il dato medio di densità dei materiali interessati, ricavare alcuni importanti parametri di tipo geotecnico.

## 3.1 CENNI TEORICI

L'indagine sismica in foro di tipo downhole viene effettuata mediante l'utilizzo di una sorgente energizzante in superficie ed una sonda di ricezione in configurazione triassiale calata in foro (schema in Figura 2).
La sonda di ricezione triassiale è costituita da tre geofoni (uno verticale e due orizzontali posti ortogonalmente tra di loro). Uno specifico sistema di tipo elettromeccanico permette alla sonda di ancorarsi alle pareti del foro alle profondità stabilite. Il geofono verticale registra l'arrivo delle onde P, mentre i due geofoni orizzontali registrano l'arrivo delle onde S.
Nella tecnica downhole un sismografo registra il treno d'onda generato dalla sorgente ed arrivato al ricevitore calato in foro; ne risulta un sismogramma nel quale si possono individuare i tempi di arrivo delle onde dirette (onde P) e di taglio (onde S), a seconda di come viene direzionata l'energizzazione e del ricevitore utilizzato.
Dal risultante tempo di arrivo delle onde sismiche tramite il percorso diretto tra sorgente e ricevitore si può risalire alle velocità sismiche P ed S per quanto riguarda il terreno indagato, sino alla profondità raggiunta dalla sonda triassiale (Velocità sismica [m/s] = distanza sorgente-ricevitore [m] / tempo di percorrenza [millisecondi])

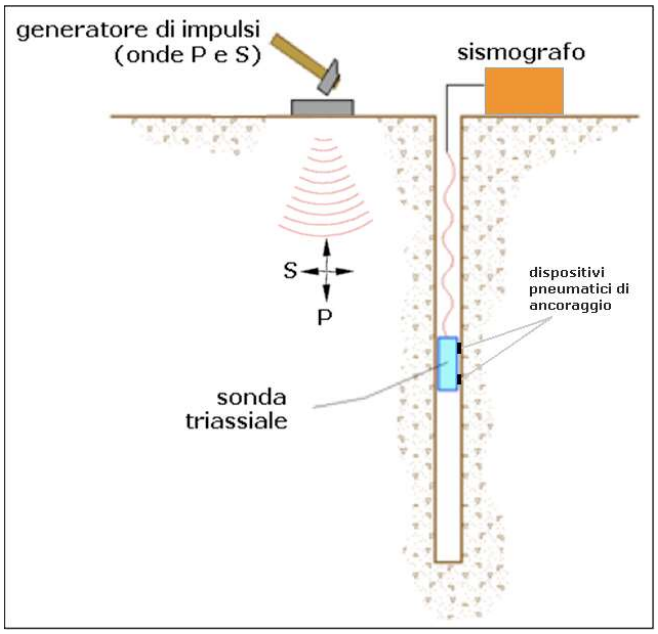



*Figura 2– Schema del rilievo sismico in foro Downhole*

La sorgente energizzante è costituita da una massa battente di 6 kg. Per la generazione delle onde P viene effettuata un'energizzazione verticale su piastra circolare mentre per la generazione delle onde S l'energizzazione è orizzontale su un lato o entrambi i lati di una particolare piastra posta sotto le ruote di un automezzo, il cui peso ha il compito di rendere la stessa più solidale col terreno in modo da trasmettere al meglio le onde di taglio generate.

## 3.2 MODALITÀ OPERATIVE

La prova sismica downhole è stata effettuata nel foro denominato S1 attrezzato con rivestimento di tubi in PVC del diametro di 80 mm.
I dati sono stati acquisiti fino ad una profondità di 35 metri da piano campagna, con intervalli di un metro, utilizzando la seguente procedura:

- Ancoraggio della sonda triassiale, energizzazione verticale ed acquisizione della traccia sismica relativa alle onde P
- Energizzazione orizzontale ed acquisizione delle tracce sismiche relative alle onde S
- Memorizzazione dei dati, sblocco dell'ancoraggio della sonda triassiale e passaggio all'acquisizione successiva.

La registrazione dei sismogrammi è stata effettuata con un'apparecchiatura Geometrics Geode a 24 canali con campionamento a 62,5 microsecondi e lunghezza di registrazione 200 millisecondi, su una banda di segnali aventi frequenze comprese fra 2 e 500 Hz (delimitata superiormente da un filtro taglia-alto).
Oltre alla sonda triassiale da foro è stato posizionato sul terreno un geofono per il controllo e la verifica del sincronismo del trigger (tempo zero dell'impulso sismico).
I dati acquisiti sono stati visualizzati su video in tempo reale per un controllo preventivo della bontà dell'acquisizione ed in seguito salvati su hard disk interno.
Ogni sismogramma è composto da n.4 tracce sismiche corrispondenti ad altrettanti canali così assegnati:

- canale n. 1: segnale acquisito dal geofono verticale (P)
- canale n. 2: segnale acquisito dal primo geofono orizzontale (S1)
- canale n. 3: segnale acquisito dal secondo geofono orizzontale (S2)
- canale n. 4: segnale relativo al geofono superficiale di controllo (boccaforo)

*Figura 3 - Fotografie acquisizione dati DH*

## 3.3 ELABORAZIONE DATI E VELOCITÀ SISMICHE

Attraverso uno specifico software per l'elaborazione dei dati sismici in foro le tracce sismiche relative alle onde P ed S di ogni sismogramma sono state separate e raggruppate in seguito in tre files distinti (uno per le onde P e due per onde S) contenenti tutte le tracce P o S alle diverse profondità. Dei due sismogrammi S è stato scelto quello col dato migliore, ovvero quello che al momento dell'acquisizione in foro era orientato nella posizione più favorevole.
In seguito si è proceduto alla lettura dei tempi di arrivo.
I due sismogrammi che raggruppano le registrazioni delle onde sismiche P ed S con le relative letture dei tempi di arrivo sono riportati in Allegato 1.
Una volta effettuata la lettura dei primi arrivi si è proceduto all'inversione dei dati con apposito software per ricavare i diagrammi relativi all'andamento delle velocità delle onde sismiche P ed S in profondità.
Un esempio della lettura dei tempi di arrivo per le onde sismiche P ed S è riportato in Figura 4 , mentre le velocità misurate ad ogni metro di profondità del foro ed i moduli elastici dinamici con i relativi grafici, sono riportati sempre in Allegato 1.

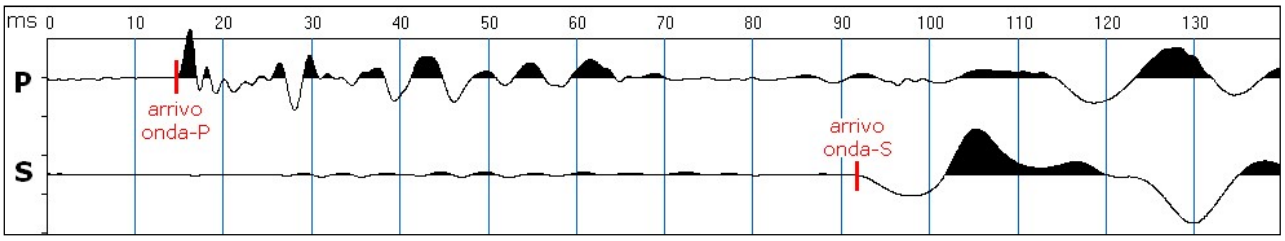



*Figura 4 - Esempio di lettura dei tempi di arrivo per le onde sismiche P ed S*

## 3.4 MODULI ELASTICI DINAMICI

Per la caratterizzazione del sito e del terreno in esame, specialmente in termini di deformabilità dei materiali in associazione ai dati geotecnici, può essere utile fornire ulteriori parametri che la prova downhole è in grado di ricavare oltre ai dati delle velocità di propagazione delle onde sismiche (Vp e Vs) nel sottosuolo.
I moduli elastici dinamici del terreno possono infatti contribuire ad una migliore definizione dei carichi e delle spinte da parte di manufatti sul terreno di fondazione.

Attraverso la determinazione sia delle velocità delle onde di compressione sia delle velocità delle onde di taglio è possibile ricavare i seguenti parametri:
- Coefficiente di Poisson (v)
- Modulo di Young (Kg/cm²)
- Modulo di Taglio dinamico (Kg/cm²)
- Modulo di Compressibilità dinamico (o Bulk modulus, in Kg/cm²)

Il Coefficiente di Poisson (v), noto come la costante che lega le deformazioni in un corpo, può essere collegato, da un punto di vista bidimensionale, ad uno sforzo di trazione, che causa nel corpo stesso un allungamento in una direzione e un raccorciamento nell'altra, o ad uno sforzo di compressione che, analogamente, determina una contrazione in una direzione e una dilatazione nella direzione opposta.

Tale parametro può presentare un range di variazione compreso tra un massimo di 0.5 ed un minimo di 0; il valore di 0.5 è caratteristico di materiali che si deformano senza cambiamenti di volume (es. acqua), valori leggermente inferiori (0.47 - 0.49) sono tipici di argille o materiali molto saturi; valori inferiori sono indicativi di materiali da poco consolidati a sovraconsolidati. Per le rocce si presentano range di variazioni molto ampi collegati in particolare sia al grado di fratturazione sia alla presenza di cavità, stratificazioni e litologie e comunque tra (0.46 e 0.20).

In funzione di Vp e di Vs il parametro è definito dalla seguente relazione:

Coefficiente di Poisson

$$\nu = \frac{Vp^2 - 2 \cdot Vs^2}{2 \cdot (Vp^2 - Vs^2)}.$$

Il Modulo di Young definisce la deformazione longitudinale di un corpo, intesa come il rapporto tra l'allungamento (o l'accorciamento) e la lunghezza originale del corpo stesso; in funzione dei valori della velocità delle onde di compressione Vp, della densità geofisica e del coefficiente di Poisson il parametro è definito dalla seguente relazione:

Modulo di Young

$$E_{din} = Vp^2 \cdot \delta_{din} \cdot \frac{(1+\nu)\cdot(1-2\nu)}{(1-\nu)}$$ ($E_{din}$ in Kg/cm²).

Il Modulo di Taglio definisce invece la deformazione tangenziale di un corpo, intesa come l'angolo di cui ruota il corpo stesso in seguito ad uno sforzo di taglio; in funzione dei valori della velocità delle onde di taglio Vs e della densità geofisica il parametro è definito dalla seguente relazione:

Modulo di Taglio

$$G_{din} = \delta_{din} \cdot Vs^2$$ ($G_{din}$ in Kg/cm²)

Il Modulo di Compressibilità o Bulk modulus è quel parametro ottenibile se lo sforzo viene applicato tridimensionalmente (lungo tutti i tre assi cartesiani) generando una pressione idrostatica uniforme con la quale si avranno componenti dello sforzo uguali e con deformazione rappresentata da una variazione di volume la quale può essere indicata numericamente dall'inverso del coefficiente di compressibilità; utilizzando i valori del modulo di elasticità e del coefficiente di Poisson il parametro è definito dalla seguente relazione:

Modulo di Compressibilità

$$K_{din} = \frac{E_{din}}{3 \cdot (1 - 2 \cdot \nu)}$$ ($K_{din}$ in Kg/cm²)

I moduli dinamici così calcolati risultano comunque sempre più elevati di quelli statici forniti da prove di carico in situ in quanto gli impulsi sismici sono di breve durata e le sollecitazioni ad essi associate sono relativamente modeste e rientrano nel campo delle deformazioni istantanee.

### 3.5 ESITO DELL'INDAGINE DOWNHOLE

Nell'area in esame è stata eseguita una prospezione sismica in foro di tipo downhole allo scopo di ottenere i profili di velocità sismica (Vp, Vs) e caratterizzare secondo normativa NTC 2018 i terreni di fondazione del sito.
La prospezione è stata effettuata mediante un sondaggio sismico di tipo downhole a 35 m di profondità da piano campagna, individuando per ogni metro di profondità in maniera diretta il valore delle velocità delle onde di taglio e di pressione. I risultati ottenuti sono riportati in Allegato 1, Allegato 2 e Allegato 3.

Vista l'elaborazione fino alla profondità adeguata (in termini di Vs30) delle onde di taglio S, l'indagine può anche soddisfare i requisiti relativi alla normativa antisismica come classificazione dei terreni di fondazione.

Dall'analisi dei dati si è ottenuto un valore di Vs30 pari a 285 m/sec, quindi una classificazione del terreno di fondazione di tipo C - *Depositi di terreni a grana grossa mediamente addensati o terreni a grana fina mediamente consistenti con profondità del substrato superiori a 30 m, caratterizzati da un miglioramento delle proprietà meccaniche con la profondità e da valori di velocità equivalente compresi tra 180 m/s e 360 m/s*

Infine, l'indagine sismica ha permesso anche di ricavare per via indiretta alcuni importanti parametri quali il coefficiente di Poisson, ed i moduli di Young, di taglio e di compressibilità riportati sempre in Allegato.

Forlì, giugno 2018

*Dott. Ing. Giuseppe Mainardi*
*Ordine degli Ingegneri Provincia di Ravenna*
*Sezione A – Settore A – N. 1826*

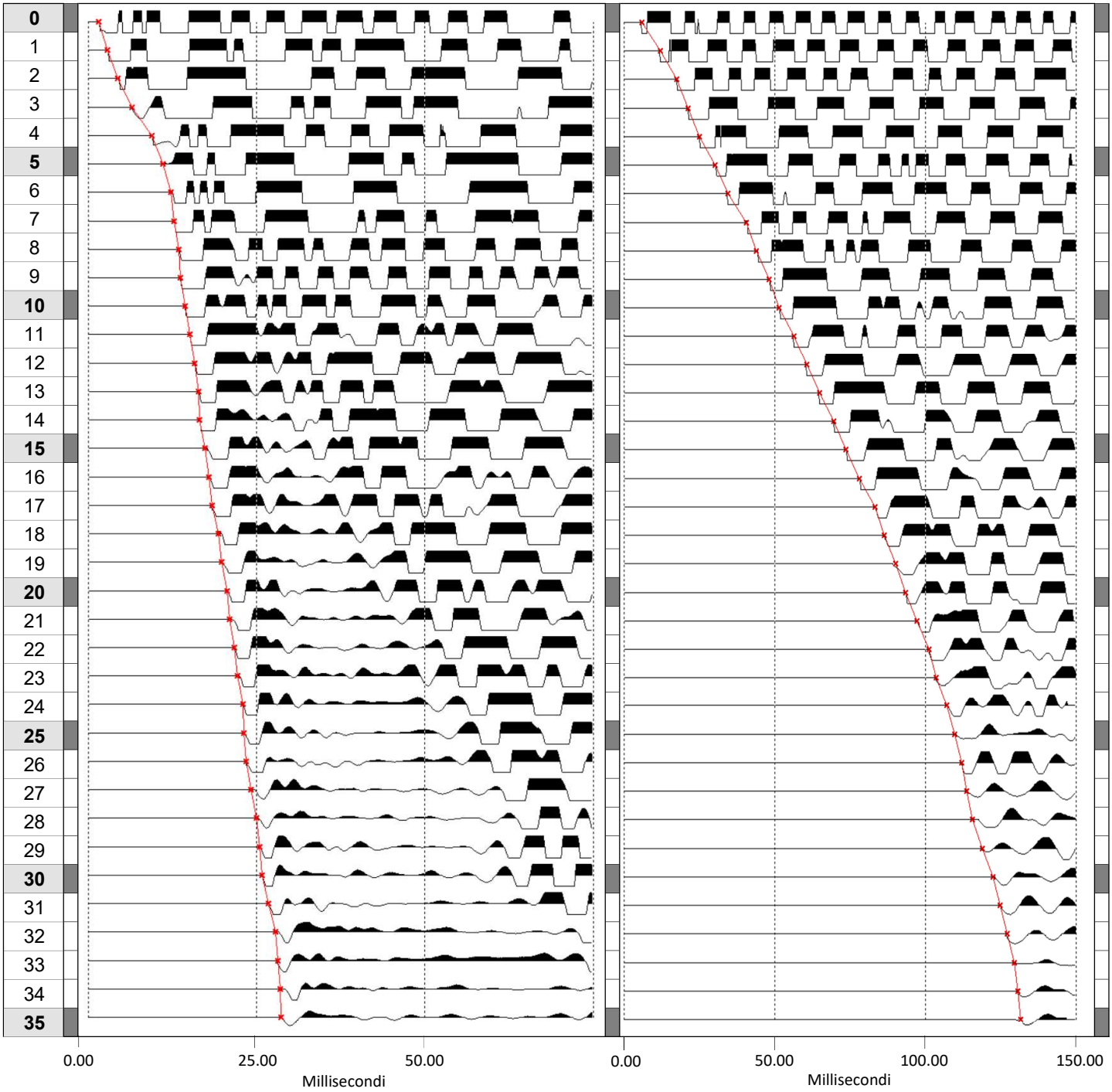
*Dott. Geol. Diego Peraccini*
*Ordine dei Geologi Regione Emilia Romagna*
*Sezione A – N. 1239*

| | | |
|---|---|---|
| COMMITTENTE | Dott. Geol. Franchi Valeriano | ALLEGATO 1 |
| DOWNHOLE | DH-S1 | SISMOGRAMMI |
| Cantiere | Riccione (FC), Via Milano c/o ex Delfinario | |
| Data | 17/06/2019 | SHOT a 1.50 m da bocca foro |

Prof.

Sismogrammi onde di compressione P

Sismogrammi onde di taglio S

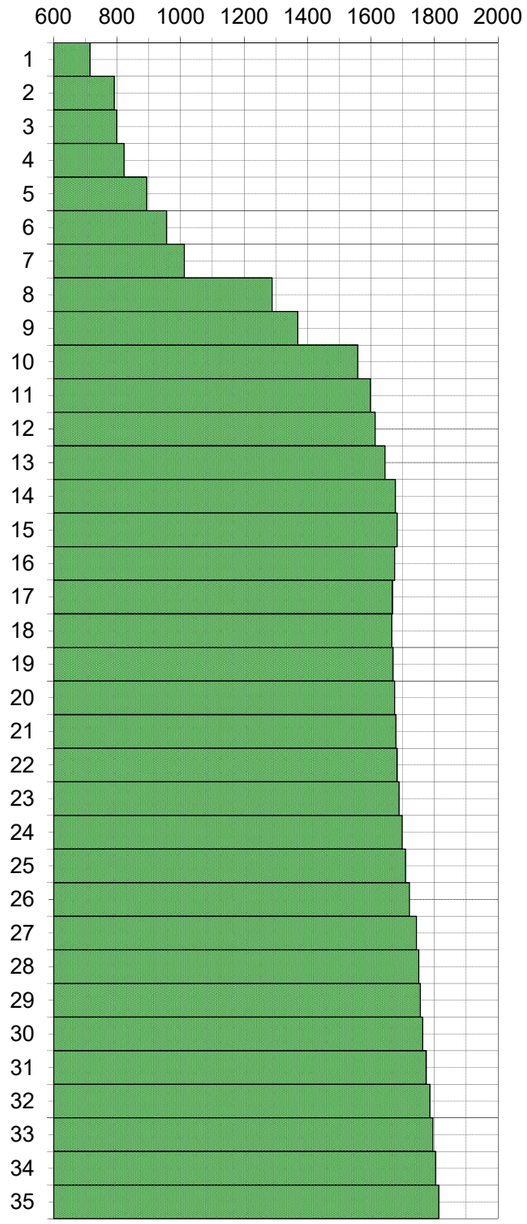


| | |
|---|---|
| **COMMITTENTE** | **Dott. Geol. Franchi Valeriano** |
| **Prova DOWNHOLE** | **DH-S1** |
| **Cantiere** | **Riccione (FC), Via Milano c/o ex Delfinario** |
| **Data acquisizione** | **17/06/2019** |

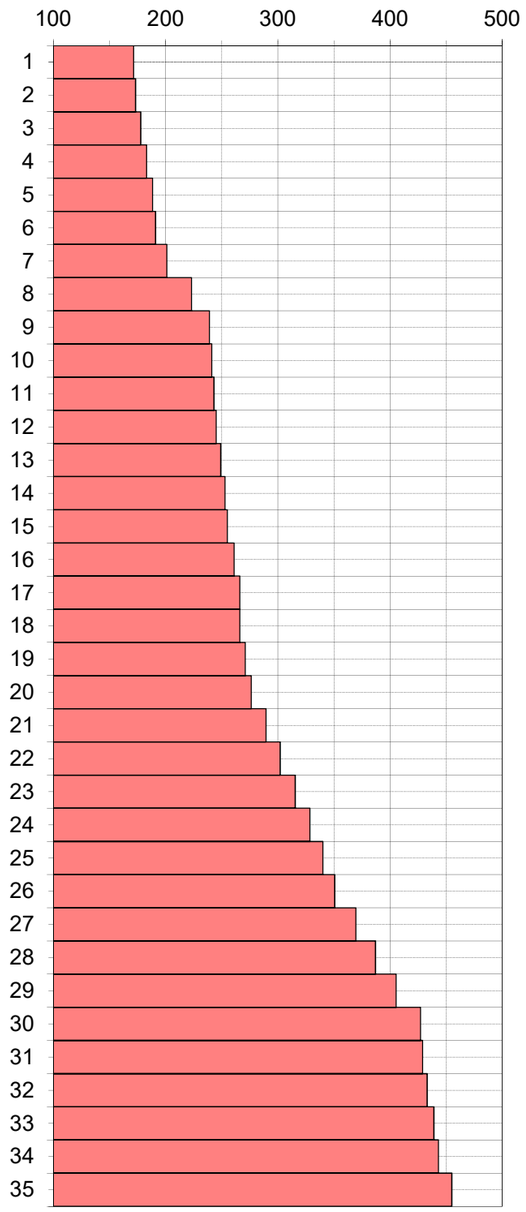
**ALLEGATO 2**

| Profondità (m) | Vp m/sec. | Vs m/sec. | γ T/m³ | ν | Edin Kg/cm² | Gdin Kg/cm² | Kdin Kg/cm² |
|---|---|---|---|---|---|---|---|
| **0** | 704 | 168 | 1.77 | 0.47 | 3887 | 1322 | 21526 |
| 1 | 715 | 171 | 1.78 | 0.47 | 4057 | 1380 | 22161 |
| 2 | 791 | 173 | 1.81 | 0.47 | 4202 | 1425 | 27809 |
| 3 | 799 | 178 | 1.82 | 0.47 | 4415 | 1498 | 28261 |
| 4 | 822 | 183 | 1.83 | 0.47 | 4680 | 1588 | 29905 |
| **5** | 893 | 188 | 1.85 | 0.48 | 4999 | 1693 | 35757 |
| 6 | 956 | 191 | 1.88 | 0.48 | 5172 | 1748 | 41495 |
| 7 | 1012 | 201 | 1.90 | 0.48 | 5732 | 1937 | 46521 |
| 8 | 1288 | 223 | 1.99 | 0.48 | 7154 | 2410 | 77171 |
| 9 | 1369 | 239 | 2.01 | 0.48 | 8212 | 2766 | 87074 |
| **10** | 1558 | 241 | 2.06 | 0.49 | 8429 | 2833 | 114616 |
| 11 | 1598 | 243 | 2.07 | 0.49 | 8579 | 2883 | 120814 |
| 12 | 1613 | 245 | 2.08 | 0.49 | 8722 | 2930 | 123109 |
| 13 | 1644 | 249 | 2.08 | 0.49 | 9011 | 3027 | 127928 |
| 14 | 1677 | 253 | 2.09 | 0.49 | 9305 | 3126 | 133174 |
| **15** | 1683 | 255 | 2.09 | 0.49 | 9450 | 3175 | 134016 |
| 16 | 1674 | 261 | 2.09 | 0.49 | 9881 | 3321 | 132247 |
| 17 | 1667 | 266 | 2.09 | 0.49 | 10246 | 3445 | 130798 |
| 18 | 1666 | 266 | 2.09 | 0.49 | 10245 | 3445 | 130489 |
| 19 | 1669 | 271 | 2.09 | 0.49 | 10621 | 3573 | 130740 |
| **20** | 1674 | 276 | 2.09 | 0.49 | 11031 | 3712 | 131283 |
| 21 | 1679 | 289 | 2.09 | 0.48 | 12051 | 4058 | 131153 |
| 22 | 1682 | 302 | 2.09 | 0.48 | 13081 | 4409 | 130897 |
| 23 | 1688 | 316 | 2.09 | 0.48 | 14219 | 4797 | 130987 |
| 24 | 1698 | 328 | 2.10 | 0.48 | 15350 | 5184 | 131639 |
| **25** | 1709 | 340 | 2.10 | 0.48 | 16400 | 5543 | 132598 |
| 26 | 1721 | 351 | 2.10 | 0.48 | 17387 | 5881 | 133886 |
| 27 | 1743 | 370 | 2.11 | 0.48 | 19211 | 6506 | 136135 |
| 28 | 1751 | 387 | 2.11 | 0.47 | 20944 | 7103 | 135894 |
| 29 | 1755 | 405 | 2.11 | 0.47 | 22828 | 7755 | 135068 |
| **30** | 1763 | 427 | 2.11 | 0.47 | 25122 | 8552 | 134282 |
| 31 | 1774 | 429 | 2.11 | 0.47 | 25355 | 8630 | 136016 |
| 32 | 1785 | 433 | 2.12 | 0.47 | 25816 | 8789 | 137694 |
| 33 | 1795 | 439 | 2.12 | 0.47 | 26494 | 9023 | 138781 |
| 34 | 1804 | 443 | 2.12 | 0.47 | 26958 | 9182 | 139968 |
| **35** | 1814 | 455 | 2.12 | 0.47 | 28320 | 9656 | 140554 |

**VELOCITA' ONDE DI COMPRESSIONE (Vp) m/sec**




**VELOCITA' ONDE DI TAGLIO (Vs) m/sec**




## Legenda parametri dinamici

| | | | | | |
|---|---|---|---|---|---|
| **Tp** | Tempi onde P | millisec. | **γ** | Peso di volume | T/m³ |
| **Ts** | Tempi onde S | millisecondi | **Edin** | Modulo di Elasticità din. | Kg/cm² |
| **Vp** | Velocità onde P | m/sec | **Gdin** | Modulo di Taglio din. | Kg/cm² |
| **Vs** | Velocità onde S | m/sec | **Kdin** | Modulo di Compressibilità dinamico | Kg/cm² |
| **ν** | Coefficiente di Poisson | - | | | |

**CLASSIFICAZIONE SISMICA DEI SUOLI (NTC 2018)**

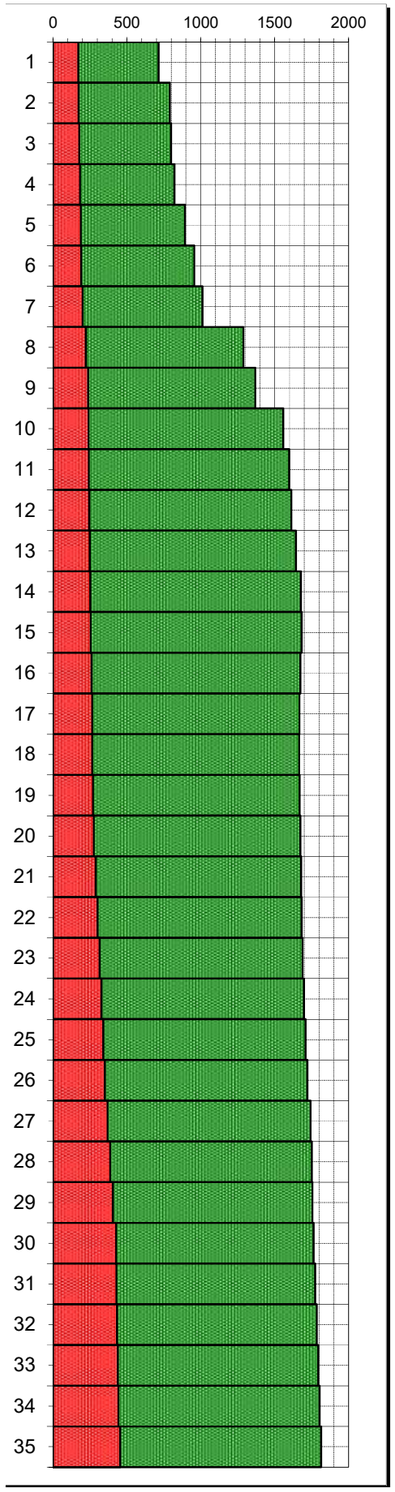
$$Vs_{30} = \frac{30}{\sum_{i=1,N} \frac{h_i}{V_i}}$$

$Vs_{30}$ = **285** m/sec

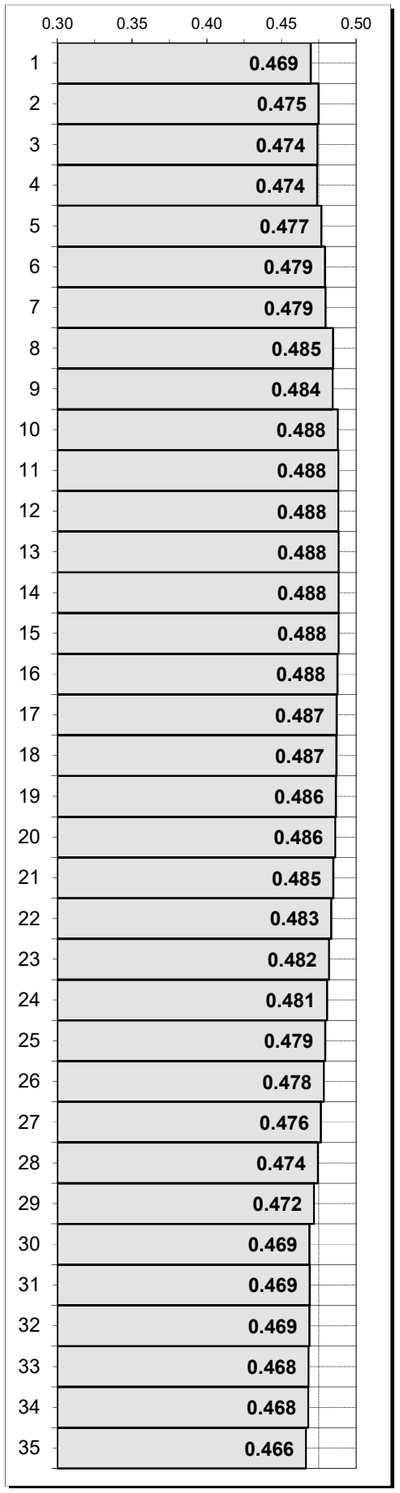
**CATEGORIA SUOLO** = **C**

# ALLEGATO 3 - GRAFICI DEI PARAMETRI ELASTICI DINAMICI

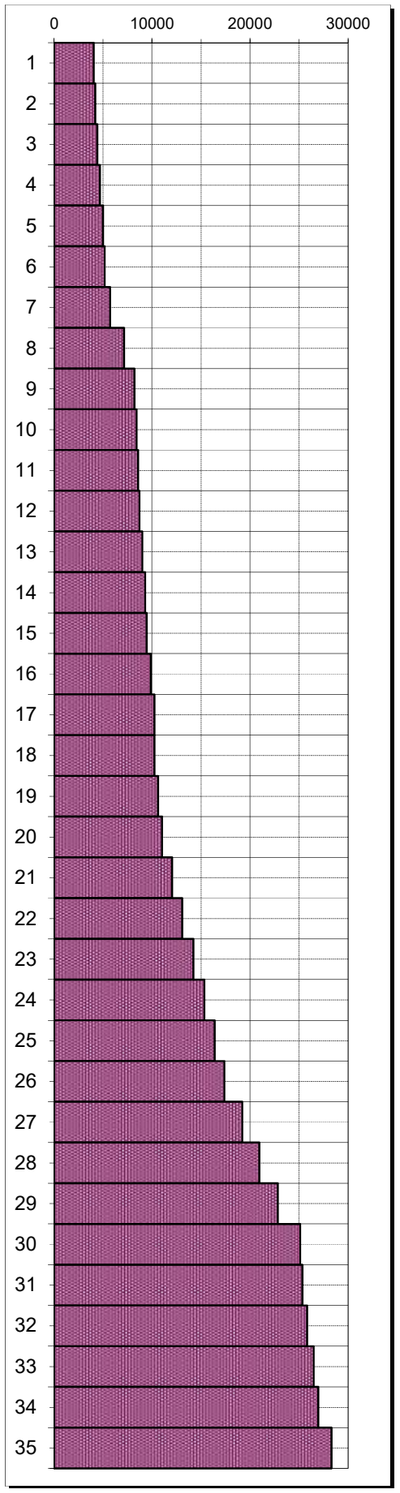
**VELOCITA' - Vp e Vs (m/sec)**



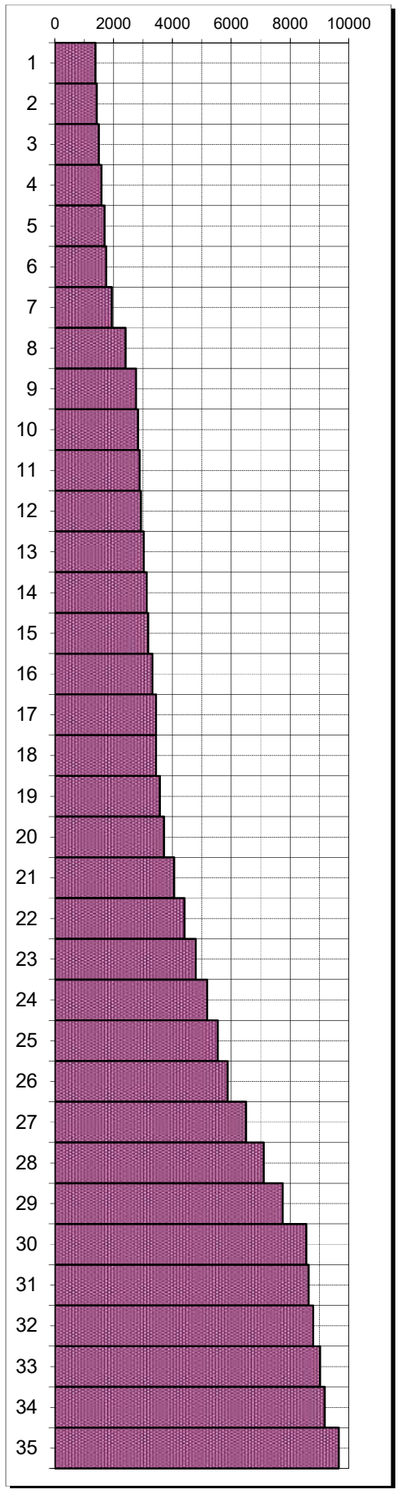

**COEFFICIENTE DI POISSON**
**ν**



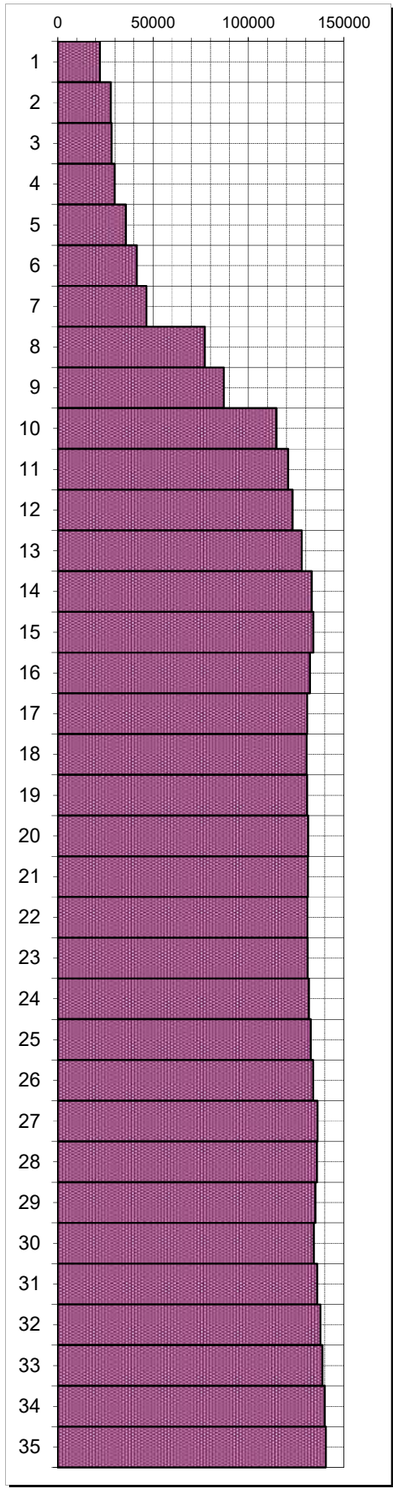

**MODULO DI ELASTICITA'**
**Edin (kg/cm²)**




**MODULO DI TAGLIO**
**Gdin (kg/cm²)**




**MODULO DI COMPRESSIBILITA'**
**Kdin (kg/cm²)**



# Indagine geofisica tramite tecnica HVSR
# RICCIONE

**Cenni sulla teoria della tecnica HVSR**

La tecnica HVSR permette in primo luogo di valutare la frequenza di vibrazione naturale di un sito. Successivamente, come ulteriore sviluppo, la stima del parametro normativo Vs30 attraverso un processo di inversione del problema iniziale. Le ipotesi alla base della tecnica sono: una concentrazione del contenuto in frequenza localizzato maggiormente in quelle basse (tipicamente al di sotto dei 20 Hz); assenza di sorgenti periodiche e/o con contenuto in alte frequenze; le sorgenti di rumore sono uniformemente distribuite intorno alla stazione di registrazione. Se queste sono soddisfatte, la tecnica può essere suddivisa nelle fasi che vengono di seguito illustrate.

Si esegue una registrazione del rumore ambientale lungo tre direzioni ortogonali tra loro (x,y,z) con una singola stazione. Tale registrazione deve essere effettuate, secondo le indicazioni del progetto SESAME, per una durata non inferiore ai 20 minuti.

Si esegue un'operazione detta di windowing, in cui le tre tracce registrate vengono suddivise in finestre temporali di prefissata durata. Secondo le indicazioni del succitato progetto SESAME tale dimensione, detta Long Period, deve essere almeno pari ai 20 secondi. Si ottiene così un insieme di finestre "long", che sono sincronizzate fra le tracce.

Queste finestre vengono filtrate in base a dei criteri che permettono di individuare l'eventuale presenza di transienti (disturbi temporanei con grandi contributi nelle frequenze alte) o di fenomeni di saturazione.

Per ciascuna delle finestre rimanenti, quindi ritenute valide, viene valutato lo spettro di Fourier. Quest'ultimo viene sottoposto a tapering e/o lisciamento secondo una delle varie tecniche note in letteratura e ritenute all'uopo idonee.

Successivamente si prendono in considerazione gli spettri delle finestre relative alle tracce orizzontali in coppia. Ovvero, ogni spettro di una finestra per esempio della direzione X, ha il suo corrispettivo per le finestre nella direzione Y, vale a dire che sono relative a finestre temporali sincrone. Per ognuna di queste coppie viene eseguita una somma tra le componenti in frequenza secondo un determinato criterio che può essere, ad esempio, una semplice media aritmetica o una somma euclidea.

Per ciascuna coppia di cui sopra, esiste lo spettro nella direzione verticale Z, ovvero relativo alla finestra temporale sincrona a quelle della coppia. Ogni componente in frequenza di questo spettro viene usato come denominatore nel rapporto con quello della suddetta coppia. Questo permette quindi di ottenere il ricercato rapporto spettrale H/V per tutti gli intervalli temporali in cui viene suddivisa la registrazione durante l'operazione di windowing.

Eseguendo per ciascuna frequenza di tali rapporti spettrali una media sulle varie finestre, si ottiene il rapporto spettrale H/V medio, la cui frequenza di picco (frequenza in cui è localizzato il massimo valore assunto dal rapporto medio stesso) rappresenta la deducibile stima della frequenza naturale di vibrazione del sito.

L'ulteriore ipotesi che questo rapporto spettrale possa ritenersi una buona approssimazione dell'ellitticità del modo fondamentale della propagazione delle onde di Rayleigh, permette di confrontare questi due al fine di ottenere una stima del profilo stratigrafico. Tale procedura, detta di inversione, consente di definire il profilo sostanzialmente in termini di spessore e velocità delle

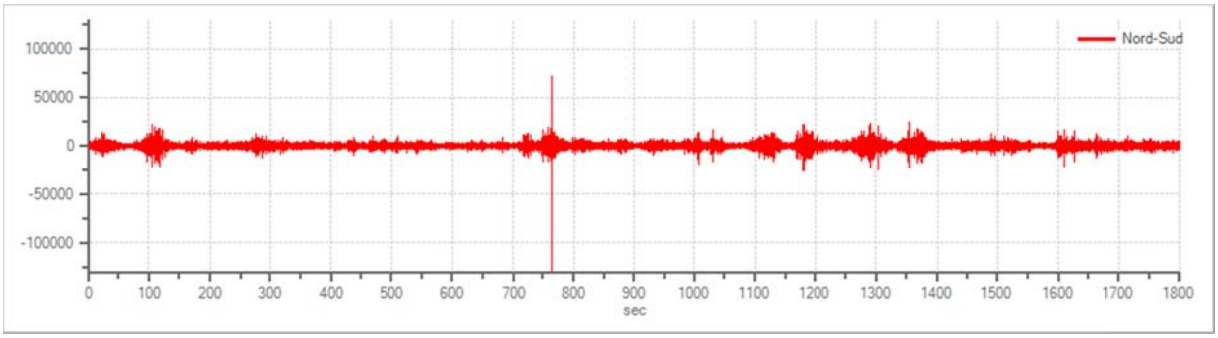
onde di taglio. Avendo quindi una stima del profilo della velocità delle onde di taglio, è possibile valutarne il parametro normativo Vs30.

**Tracce in input**

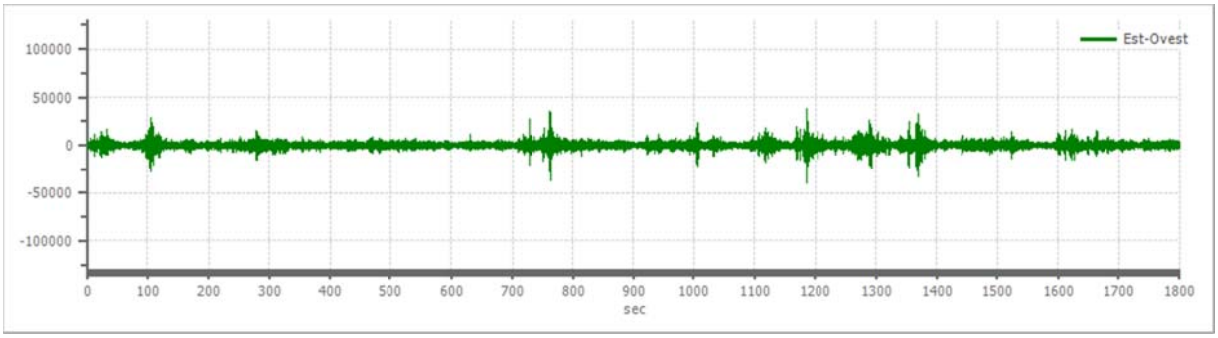
*Dati riepilogativi:*

| | |
|---|---|
| Numero tracce: | 3 |
| Durata registrazione: | 1800 s |
| Frequenza di campionamento: | 200.00 Hz |
| Numero campioni: | 360000 |
| Direzioni tracce: | Nord-Sud; Est-Ovest; Verticale. |

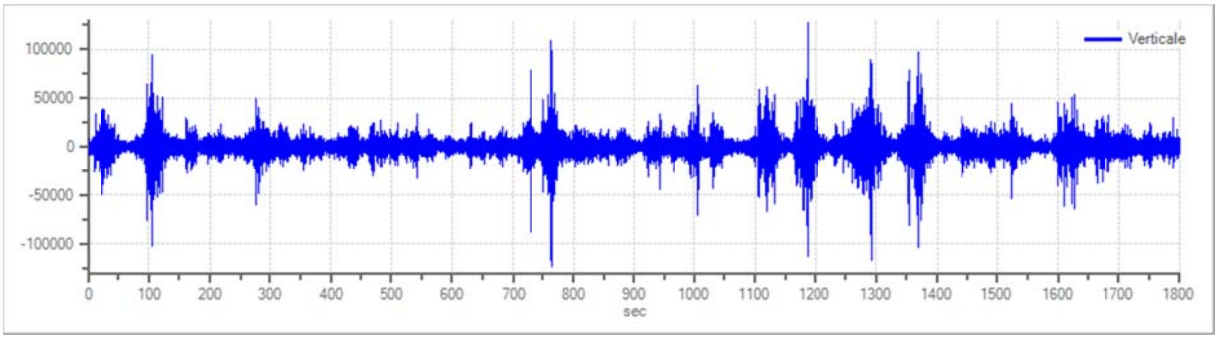
*Grafici tracce:*




Traccia in direzione Nord-Sud




Traccia in direzione Est-Ovest




Traccia in direzione Verticale

**Finestre selezionate**

*Dati riepilogativi:*

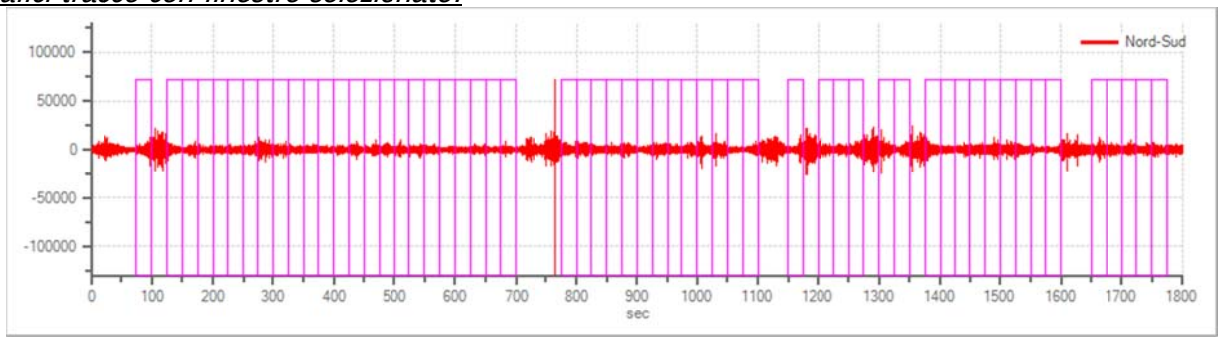
Numero totale finestre selezionate: 57
Numero finestre incluse nel calcolo: 57
Dimensione temporale finestre: 25.000 s
Tipo di lisciamento: Konno & Ohmachi
Percentuale di lisciamento: 9.00 %
Coefficiente di banda: 40.00

*Tabella finestre:*

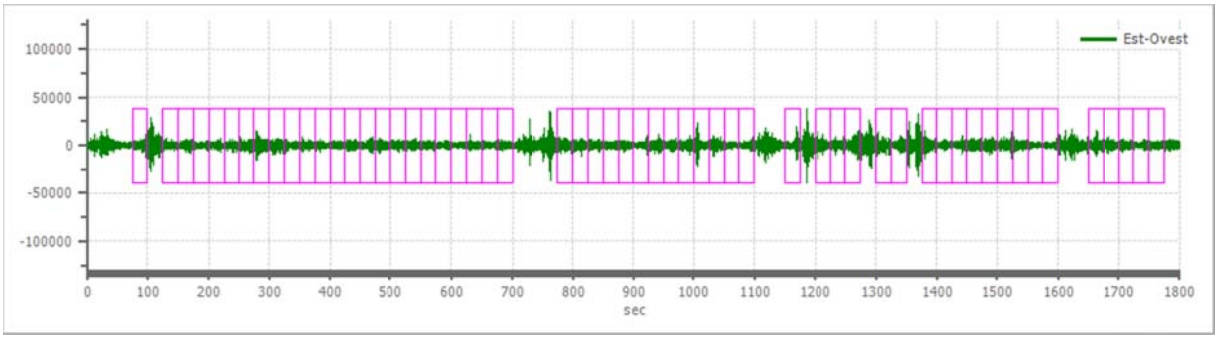
| Numero finestra | Istante iniziale | Istante finale | Selezione |
|---|---|---|---|
| 1 | 75 | 100 | Inclusa |
| 2 | 125 | 150 | Inclusa |
| 3 | 150 | 175 | Inclusa |
| 4 | 175 | 200 | Inclusa |
| 5 | 200 | 225 | Inclusa |
| 6 | 225 | 250 | Inclusa |
| 7 | 250 | 275 | Inclusa |
| 8 | 275 | 300 | Inclusa |
| 9 | 300 | 325 | Inclusa |
| 10 | 325 | 350 | Inclusa |
| 11 | 350 | 375 | Inclusa |
| 12 | 375 | 400 | Inclusa |
| 13 | 400 | 425 | Inclusa |
| 14 | 425 | 450 | Inclusa |
| 15 | 450 | 475 | Inclusa |
| 16 | 475 | 500 | Inclusa |
| 17 | 500 | 525 | Inclusa |
| 18 | 525 | 550 | Inclusa |
| 19 | 550 | 575 | Inclusa |
| 20 | 575 | 600 | Inclusa |
| 21 | 600 | 625 | Inclusa |
| 22 | 625 | 650 | Inclusa |
| 23 | 650 | 675 | Inclusa |
| 24 | 675 | 700 | Inclusa |
| 25 | 775 | 800 | Inclusa |
| 26 | 800 | 825 | Inclusa |
| 27 | 825 | 850 | Inclusa |
| 28 | 850 | 875 | Inclusa |
| 29 | 875 | 900 | Inclusa |
| 30 | 900 | 925 | Inclusa |
| 31 | 925 | 950 | Inclusa |
| 32 | 950 | 975 | Inclusa |
| 33 | 975 | 1000 | Inclusa |
| 34 | 1000 | 1025 | Inclusa |
| 35 | 1025 | 1050 | Inclusa |
| 36 | 1050 | 1075 | Inclusa |
| 37 | 1075 | 1100 | Inclusa |
| 38 | 1150 | 1175 | Inclusa |
| 39 | 1200 | 1225 | Inclusa |

| | | | |
|---|---|---|---|
| 40 | 1225 | 1250 | Inclusa |
| 41 | 1250 | 1275 | Inclusa |
| 42 | 1300 | 1325 | Inclusa |
| 43 | 1325 | 1350 | Inclusa |
| 44 | 1375 | 1400 | Inclusa |
| 45 | 1400 | 1425 | Inclusa |
| 46 | 1425 | 1450 | Inclusa |
| 47 | 1450 | 1475 | Inclusa |
| 48 | 1475 | 1500 | Inclusa |
| 49 | 1500 | 1525 | Inclusa |
| 50 | 1525 | 1550 | Inclusa |
| 51 | 1550 | 1575 | Inclusa |
| 52 | 1575 | 1600 | Inclusa |
| 53 | 1650 | 1675 | Inclusa |
| 54 | 1675 | 1700 | Inclusa |
| 55 | 1700 | 1725 | Inclusa |
| 56 | 1725 | 1750 | Inclusa |
| 57 | 1750 | 1775 | Inclusa |

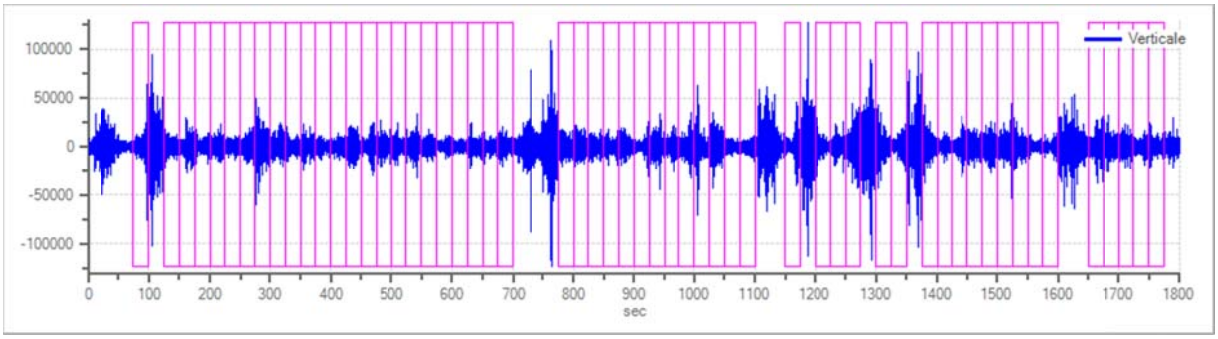
*Grafici tracce con finestre selezionate:*




Traccia e finestre selezionate in direzione Nord-Sud

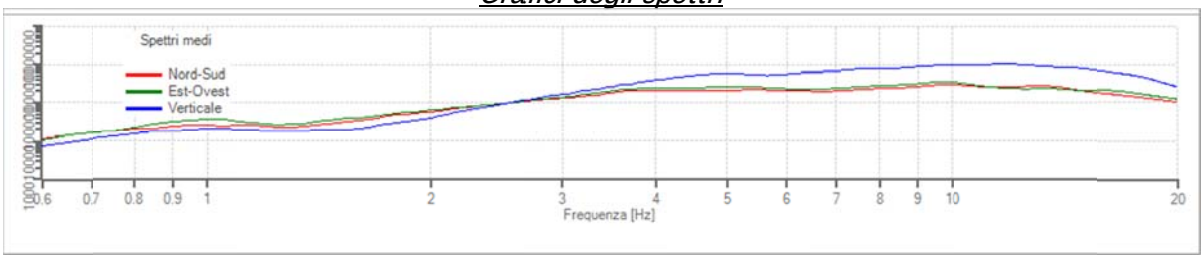



Traccia e finestre selezionate in direzione Est-Ovest

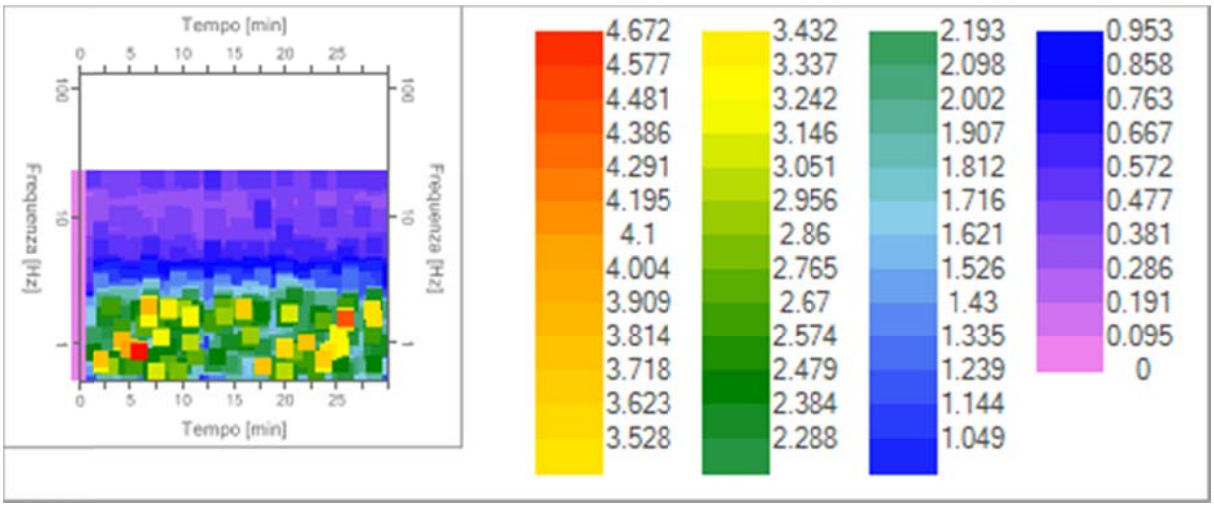



Traccia e finestre selezionate in direzione Verticale

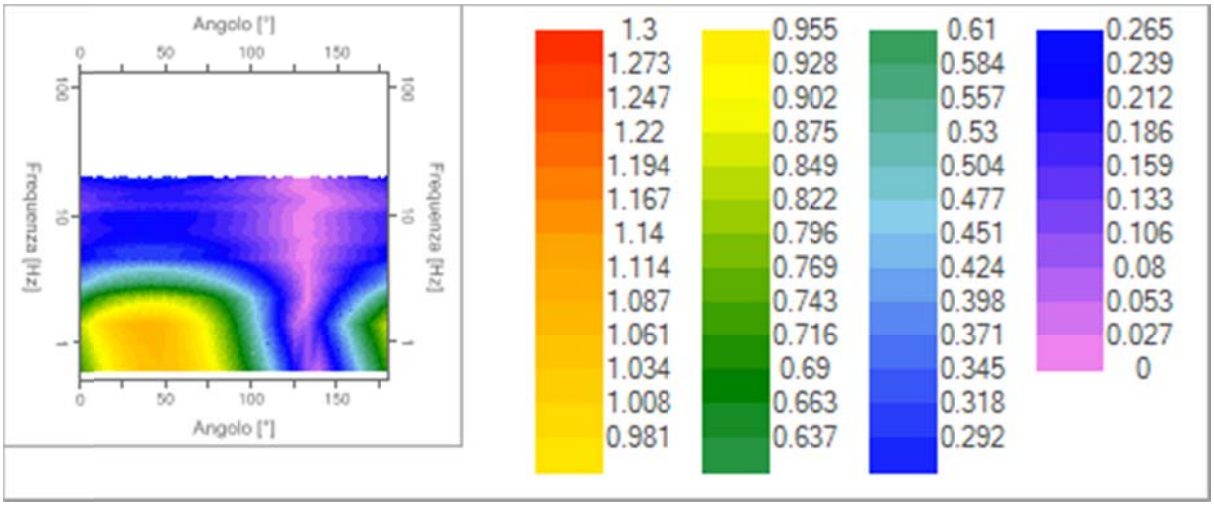
*Grafici degli spettri*




Spettri medi nelle tre direzioni




Mappa della stazionarietà degli spettri




Mappa della direzionalità degli spettri

**Rapporto spettrale H/V**

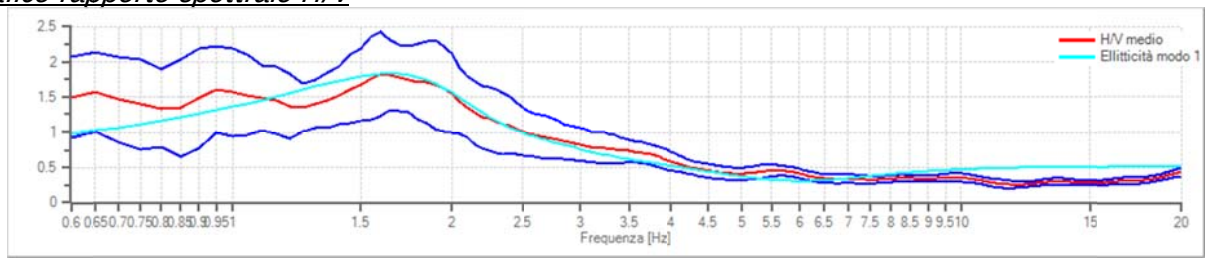
*Dati riepilogativi:*

| | |
|---|---|
| Frequenza massima: | 20.00 Hz |
| Frequenza minima: | 0.60 Hz |
| Passo frequenze: | 0.05 Hz |
| Tipo lisciamento:: | Konno & Ohmachi |
| Percentuale di lisciamento: | 9.00 % |
| Tipo di somma direzionale: | Media aritmetica |

*Risultati:*

Frequenza del picco del rapporto H/V: 1.60 Hz ±0.32 Hz

*Grafico rapporto spettrale H/V*




Rapporto spettrale H/V e suo intervallo di fiducia

*Verifiche SESAME:*

| Verifica | Esito |
|---|---|
| $f_0 > 10/l_w$ | Ok |
| $n_c(f_0) > 200$ | Ok |
| $\sigma_A(f) < 2 \quad per \quad 0.5 \cdot f_0 < f < 2 \cdot f_0 \quad se \quad f_0 > 0.5Hz$ | Ok |
| $\sigma_A(f) < 3 \quad per \quad 0.5 \cdot f_0 < f < 2 \cdot f_0 \quad se \quad f_0 < 0.5Hz$ | Ok |
| $\exists f^- \in [f_0/4, f_0] \mid A_{H/V}(f^-) < A_0/2$ | Ok |
| $\exists f^+ \in [f_0, 4 \cdot f_0] \mid A_{H/V}(f^+) < A_0/2$ | Ok |
| $A_0 > 2$ | Non superato |

$f_{picco}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$ Ok

$\sigma_f < \varepsilon(f)$ Ok

$\sigma_A(f_0) < \theta(f_0)$ Ok

**Modello stratigrafico**

*Dati riepilogativi:*

Numero strati: 6

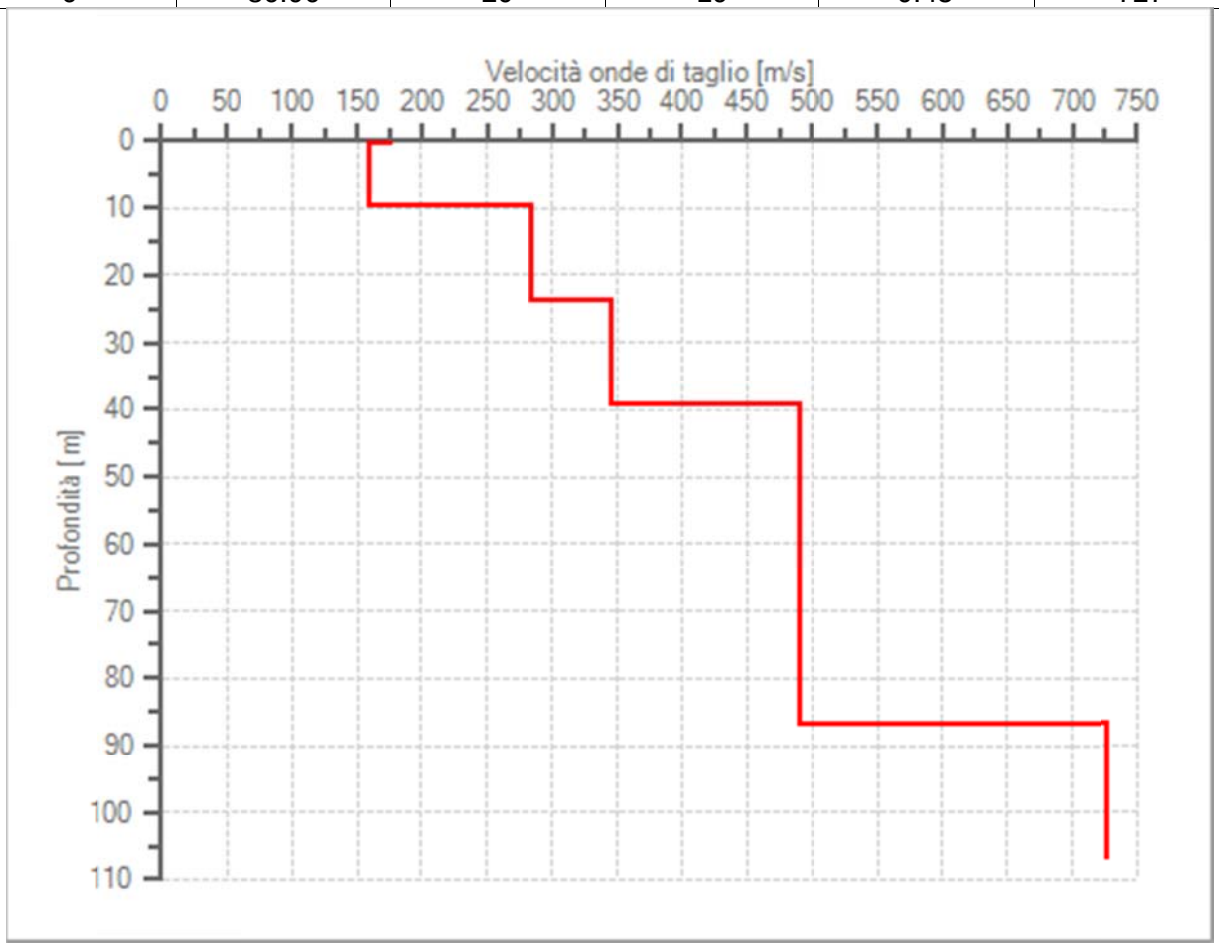
Frequenza del picco dell'ellitticità: 1.65 Hz

Valore di disadattamento: 0.29

Valore Vseq: 233.31 m/s

*Dati della stratigrafia:*

| Strato | Profondità [m] | Spessore [m] | Peso per Unità di Vol. [kN/m^3] | Coeff. di Poisson | Velocità onde di taglio [m/s] |
|---|---|---|---|---|---|
| 1 | 0 | 0.4 | 18 | 0.45 | 175 |
| 2 | 0.4 | 9.5 | 19 | 0.45 | 160 |
| 3 | 9.9 | 14 | 19 | 0.45 | 284 |
| 4 | 23.9 | 15.56 | 19 | 0.45 | 346 |
| 5 | 39.46 | 47.5 | 19 | 0.45 | 490 |
| 6 | 86.96 | 20 | 19 | 0.45 | 727 |




Profilo delle velocità delle onde di taglio.

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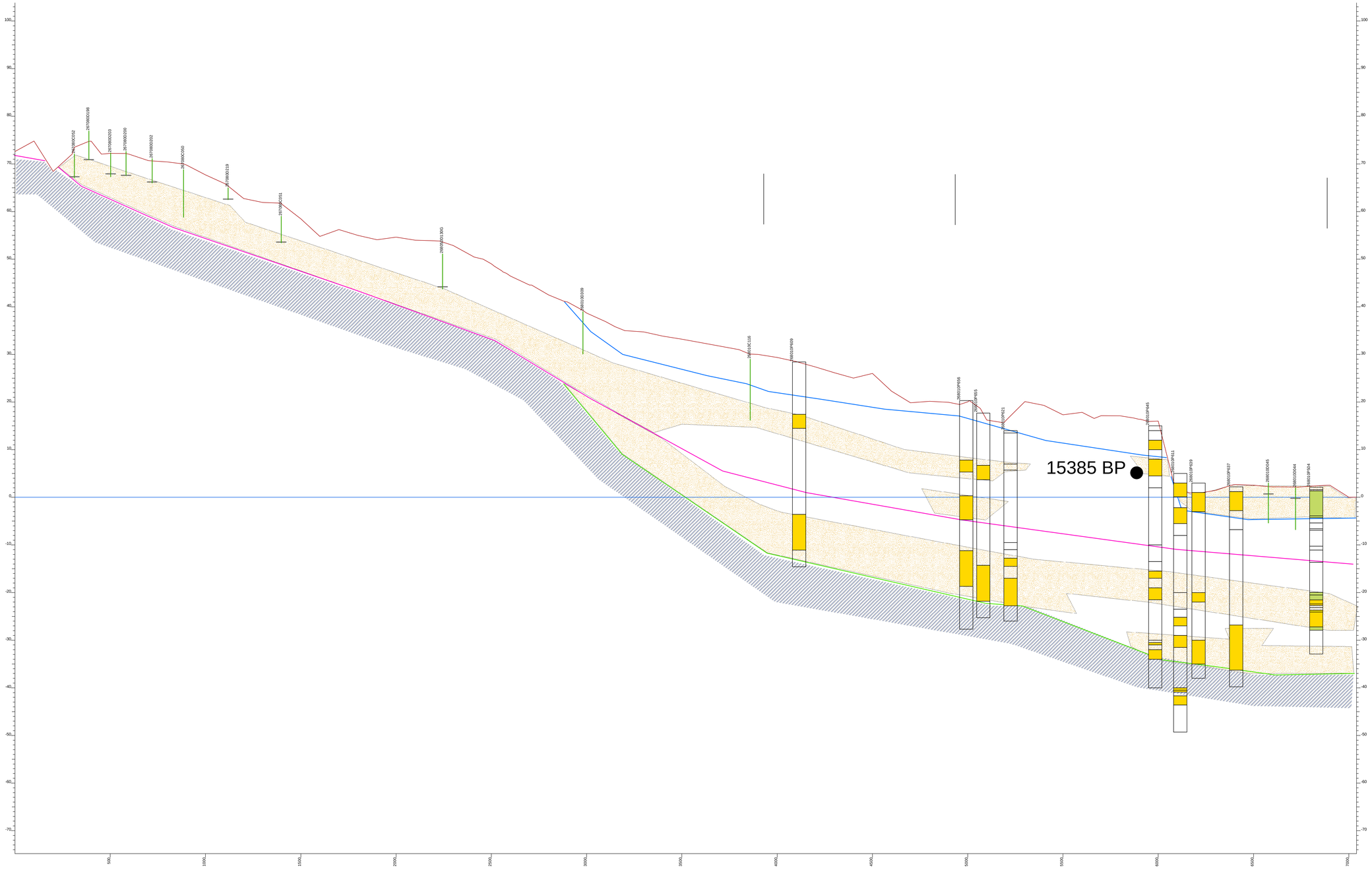
# Allegato 5

# Sezione geologica
## database Regione Emilia-Romagna
## (nr. 126)

# SEZIONE L3BIS




GHIAIA PREVALENTE

SABBIA PREVALENTE

LIMO/LIMO SABBIOSO/ARGILLA

GHIAIA

SABBIA

SOSTANZA ORGANICA

PROVA PENETROMETRICA CON EVENTUALE TETTO DELLE GHIAIE

BASE COMPLESSO/GRUPPO ACQUIFERO

A0

A1

A2

SUBSTRATO MARINO

DATAZIONE RADIOMETRICA C14

Esagerazione verticale: 1:25

# Allegato 6a

# Risposta sismica locale
## Spettri di risposta 50° perc.le
## (al piano campagna)

| Time | Acc.-50° | Norm.zzato-50° |
|---|---|---|
| 0 | 0.19 | 0.19 |
| 0.01 | 0.215258 | 0.218342 |
| 0.011037 | 0.215345 | 0.22128 |
| 0.012181 | 0.215453 | 0.224523 |
| 0.013444 | 0.215586 | 0.228102 |
| 0.014838 | 0.215746 | 0.232052 |
| 0.016376 | 0.215941 | 0.236412 |
| 0.018074 | 0.216182 | 0.241224 |
| 0.019947 | 0.216478 | 0.246534 |
| 0.022015 | 0.216832 | 0.252395 |
| 0.024298 | 0.217284 | 0.258864 |
| 0.026817 | 0.217853 | 0.266003 |
| 0.029597 | 0.218574 | 0.273883 |
| 0.032666 | 0.219509 | 0.28258 |
| 0.036052 | 0.220791 | 0.292178 |
| 0.03979 | 0.222858 | 0.302771 |
| 0.043915 | 0.227717 | 0.314462 |
| 0.048468 | 0.22607 | 0.327366 |
| 0.053493 | 0.227645 | 0.341607 |
| 0.059038 | 0.233921 | 0.357325 |
| 0.065159 | 0.238383 | 0.374672 |
| 0.071914 | 0.240612 | 0.393817 |
| 0.07937 | 0.256979 | 0.414948 |
| 0.087599 | 0.276035 | 0.438269 |
| 0.09668 | 0.285618 | 0.464008 |
| 0.106704 | 0.319772 | 0.492416 |
| 0.117766 | 0.342251 | 0.523768 |
| 0.129975 | 0.373576 | 0.5301 |
| 0.14345 | 0.444087 | 0.5301 |
| 0.158322 | 0.480744 | 0.5301 |
| 0.174736 | 0.481148 | 0.5301 |
| 0.192852 | 0.574904 | 0.5301 |
| 0.212846 | 0.497678 | 0.5301 |

| | | |
|---|---|---|
| 0.234912 | 0.575043 | 0.5301 |
| 0.259266 | 0.598533 | 0.5301 |
| 0.286146 | 0.613892 | 0.5301 |
| 0.315811 | 0.535214 | 0.5301 |
| 0.348553 | 0.515351 | 0.5301 |
| 0.384689 | 0.549271 | 0.489839 |
| 0.424571 | 0.500637 | 0.443826 |
| 0.468588 | 0.40159 | 0.402135 |
| 0.517168 | 0.319547 | 0.36436 |
| 0.570785 | 0.268519 | 0.330134 |
| 0.629961 | 0.264224 | 0.299123 |
| 0.695271 | 0.252591 | 0.271025 |
| 0.767353 | 0.208467 | 0.245566 |
| 0.846907 | 0.168539 | 0.222499 |
| 0.934709 | 0.144916 | 0.201598 |
| 1.031614 | 0.123647 | 0.182661 |
| 1.138566 | 0.115045 | 0.165503 |
| 1.256605 | 0.088038 | 0.149956 |
| 1.386883 | 0.073246 | 0.13587 |
| 1.530666 | 0.057911 | 0.123107 |
| 1.689356 | 0.038429 | 0.111543 |
| 1.864499 | 0.031567 | 0.101065 |
| 2.057799 | 0.026296 | 0.091571 |
| 2.271139 | 0.020193 | 0.08297 |
| 2.506597 | 0.016177 | 0.070779 |
| 2.766465 | 0.012762 | 0.058106 |
| 3.053276 | 0.010683 | 0.047703 |
| 3.369821 | 0.008901 | 0.039162 |
| 3.719184 | 0.006321 | 0.03215 |
| 4.104766 | 0.00514 | 0.026394 |
| 4.530323 | 0.003873 | 0.021668 |
| 5 | 0.003073 | 0.017788 |

# Allegato 6b

# Risposta sismica locale
## Spettri di risposta 50° perc.le
## (a -5 m)

| Time | Acc.-50° | Norm.zzato 50° |
|---|---|---|
| 0 | 0.19 | 0.19 |
| 0.01 | 0.217634 | 0.213823 |
| 0.011037 | 0.217722 | 0.216293 |
| 0.012181 | 0.217834 | 0.219019 |
| 0.013444 | 0.21797 | 0.222027 |
| 0.014838 | 0.218134 | 0.225348 |
| 0.016376 | 0.218335 | 0.229012 |
| 0.018074 | 0.218583 | 0.233057 |
| 0.019947 | 0.218888 | 0.237521 |
| 0.022015 | 0.219259 | 0.242447 |
| 0.024298 | 0.219723 | 0.247885 |
| 0.026817 | 0.220309 | 0.253886 |
| 0.029597 | 0.221054 | 0.260509 |
| 0.032666 | 0.222026 | 0.267819 |
| 0.036052 | 0.223362 | 0.275887 |
| 0.03979 | 0.225549 | 0.284791 |
| 0.043915 | 0.230431 | 0.294619 |
| 0.048468 | 0.230162 | 0.305465 |
| 0.053493 | 0.231783 | 0.317436 |
| 0.059038 | 0.236929 | 0.330648 |
| 0.065159 | 0.242284 | 0.345229 |
| 0.071914 | 0.24563 | 0.361322 |
| 0.07937 | 0.267463 | 0.379084 |
| 0.087599 | 0.28757 | 0.398687 |
| 0.09668 | 0.299109 | 0.420322 |
| 0.106704 | 0.346973 | 0.444201 |
| 0.117766 | 0.374445 | 0.470555 |
| 0.129975 | 0.412253 | 0.499641 |
| 0.14345 | 0.449977 | 0.4997 |
| 0.158322 | 0.447693 | 0.4997 |
| 0.174736 | 0.438826 | 0.4997 |
| 0.192852 | 0.528019 | 0.4997 |
| 0.212846 | 0.501038 | 0.4997 |

| | | |
|---|---|---|
| 0.234912 | 0.582421 | 0.4997 |
| 0.259266 | 0.586211 | 0.4997 |
| 0.286146 | 0.582524 | 0.4997 |
| 0.315811 | 0.49526 | 0.4997 |
| 0.348553 | 0.472909 | 0.4997 |
| 0.384689 | 0.506647 | 0.489453 |
| 0.424571 | 0.466537 | 0.443476 |
| 0.468588 | 0.389263 | 0.401818 |
| 0.517168 | 0.326344 | 0.364073 |
| 0.570785 | 0.302604 | 0.329874 |
| 0.629961 | 0.307803 | 0.298887 |
| 0.695271 | 0.29728 | 0.270811 |
| 0.767353 | 0.247651 | 0.245372 |
| 0.846907 | 0.200817 | 0.222323 |
| 0.934709 | 0.17087 | 0.201439 |
| 1.031614 | 0.141422 | 0.182517 |
| 1.138566 | 0.129229 | 0.165372 |
| 1.256605 | 0.098174 | 0.149838 |
| 1.386883 | 0.079747 | 0.135763 |
| 1.530666 | 0.062781 | 0.12301 |
| 1.689356 | 0.041963 | 0.111455 |
| 1.864499 | 0.034259 | 0.100985 |
| 2.057799 | 0.028293 | 0.091499 |
| 2.271139 | 0.021892 | 0.082904 |
| 2.506597 | 0.01754 | 0.070723 |
| 2.766465 | 0.013887 | 0.058061 |
| 3.053276 | 0.011673 | 0.047665 |
| 3.369821 | 0.009752 | 0.039131 |
| 3.719184 | 0.00695 | 0.032125 |
| 4.104766 | 0.00562 | 0.026373 |
| 4.530323 | 0.004296 | 0.021651 |
| 5 | 0.0034 | 0.017774 |

# Allegato 7

# Indici di Potenziale Liquefazione
## (sulle 4 CPTu eseguite per questo studio)

**Dott. Geol. Valeriano Franchi**
V.le Caduti in Guerra, 1
41121 Modena
valerianofranchi@tin.it

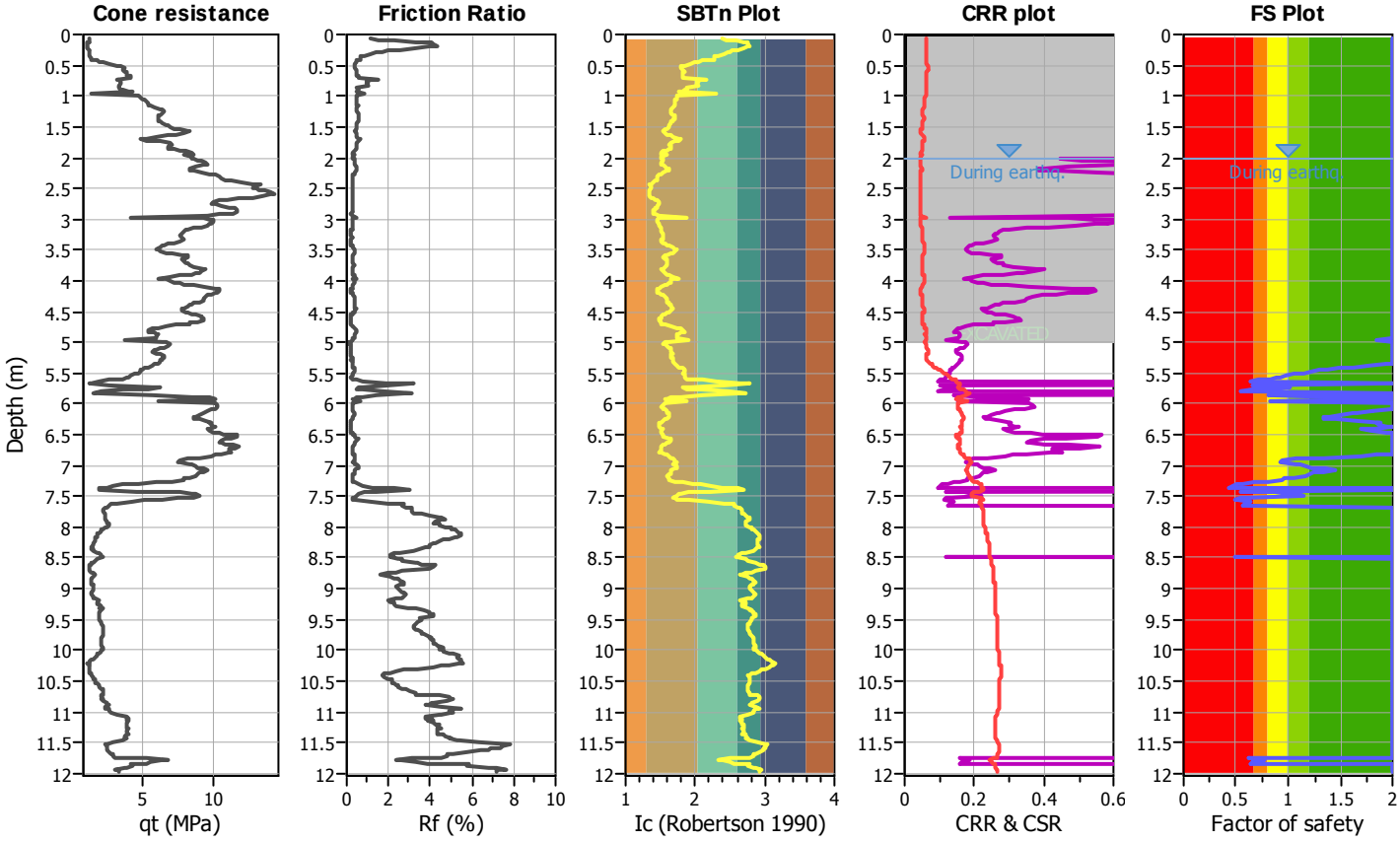
# LIQUEFACTION ANALYSIS REPORT

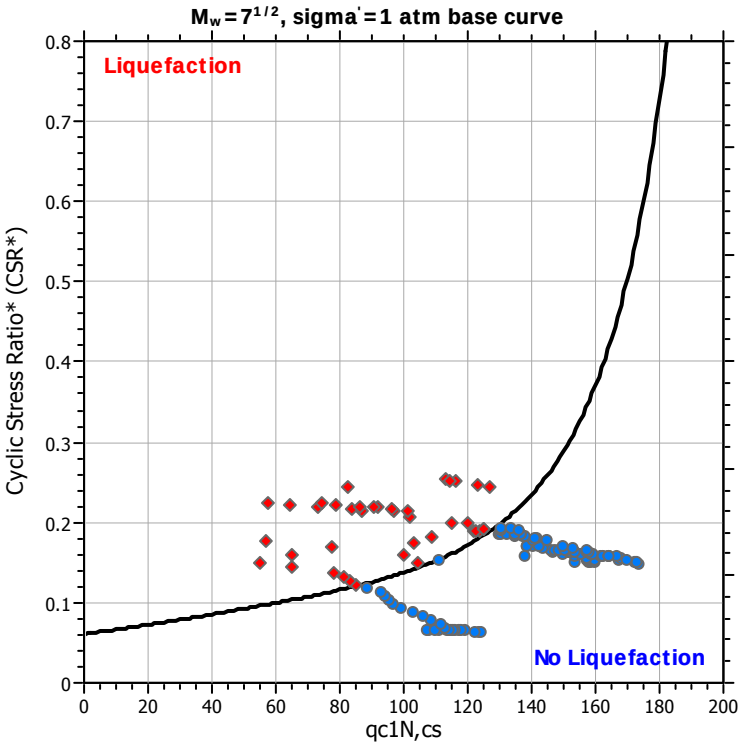
**Project title : Bosco verticale** **Location : Riccione**

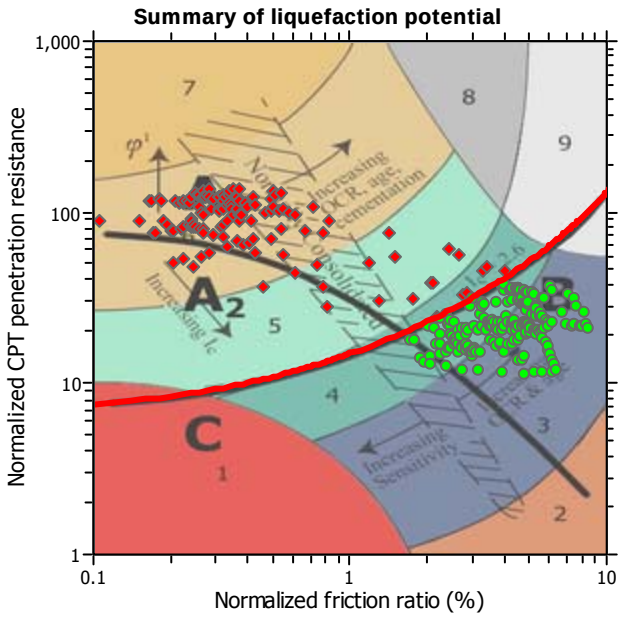
**CPT file : CPTu-1**

**Input parameters and analysis data**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 2.00 m | Excavation: | Yes | Clay like behavior applied: | Sands only |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 2.00 m | Excavation depth: | 5.00 m | Limit depth applied: | Yes |
| Points to test: | Based on Ic value | Average results interval: | 1 | Footing load: | 95.00 kPa | Limit depth: | 20.00 m |
| Earthquake magnitude $M_w$: | 6.14 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method |
| Peak ground acceleration: | 0.19 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

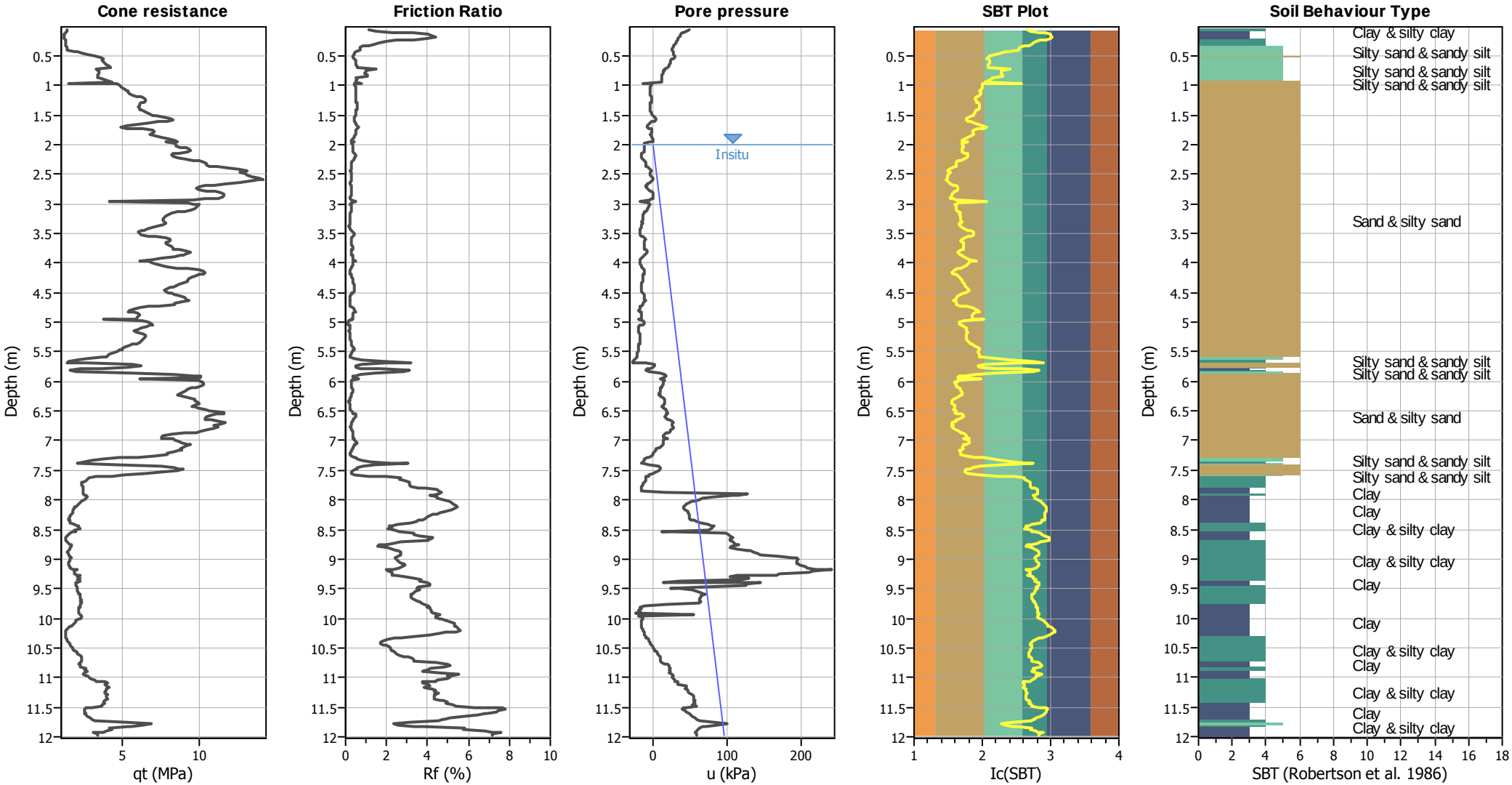



Zone $A_1$: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone $A_2$: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction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

# CPT basic interpretation plots



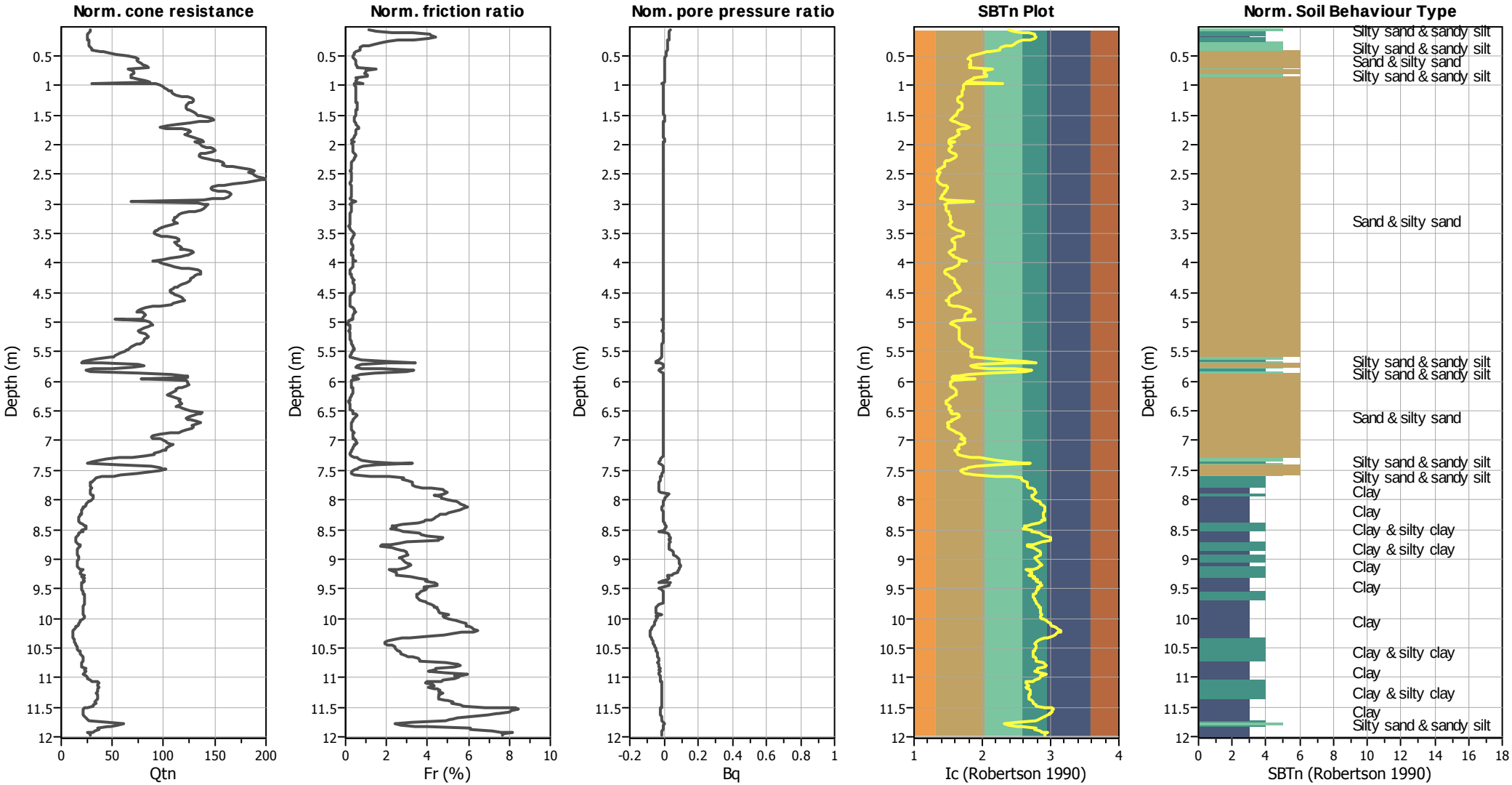

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

### SBT legend

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

# CPT basic interpretation plots (normalized)



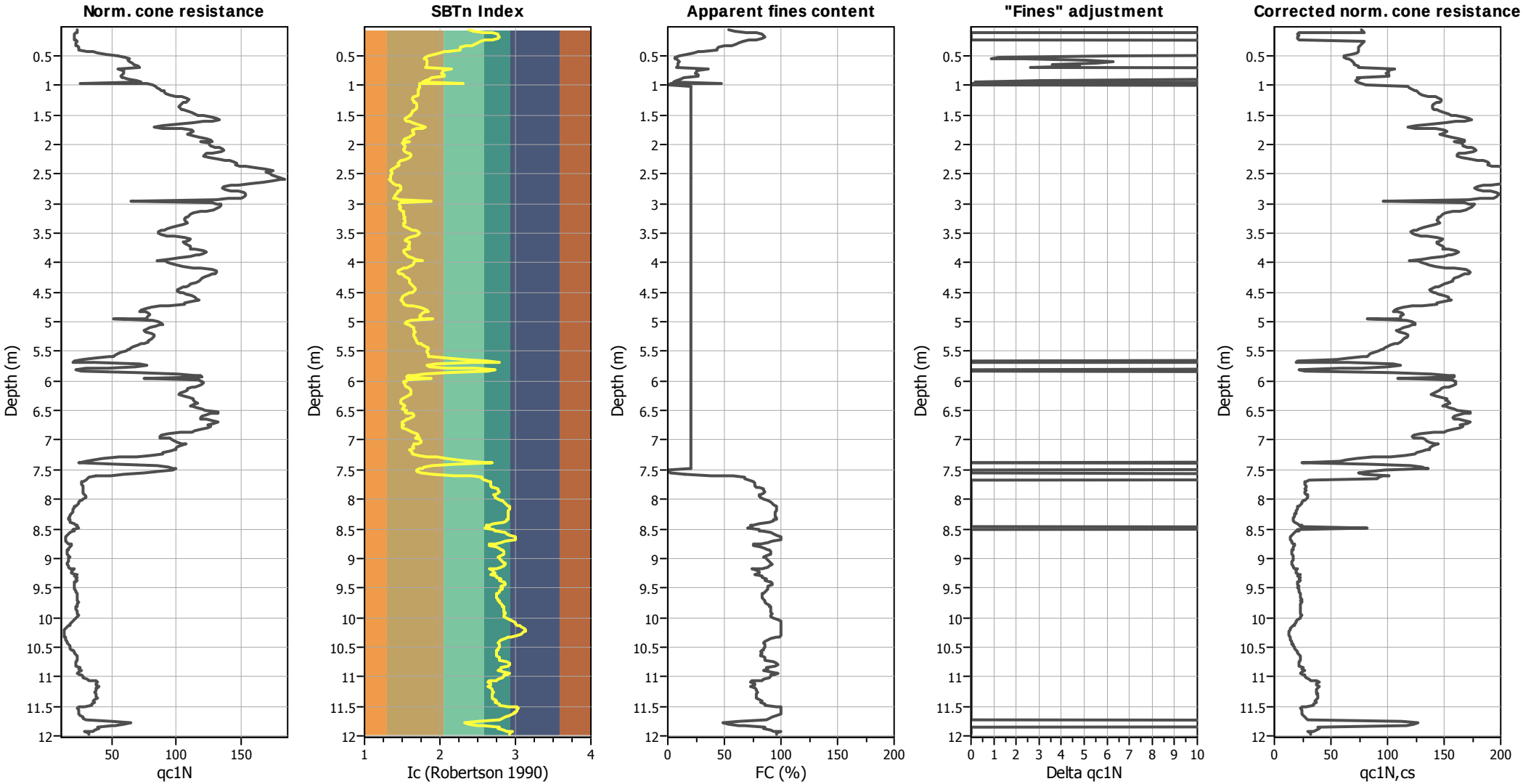

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

**SBTn legend**

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

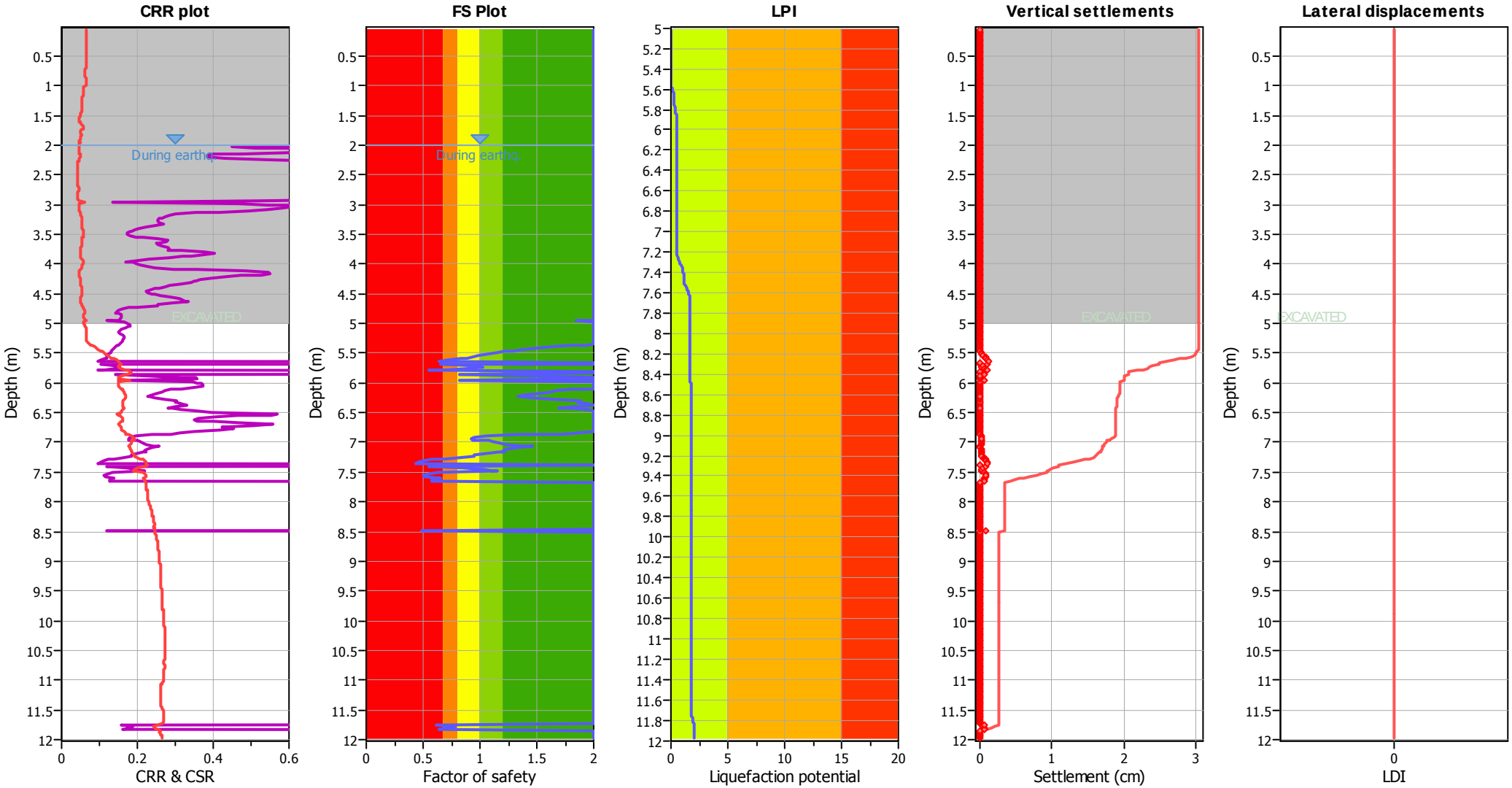
# Liquefaction analysis overall plots (intermediate results)




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

# Liquefaction analysis overall plots




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

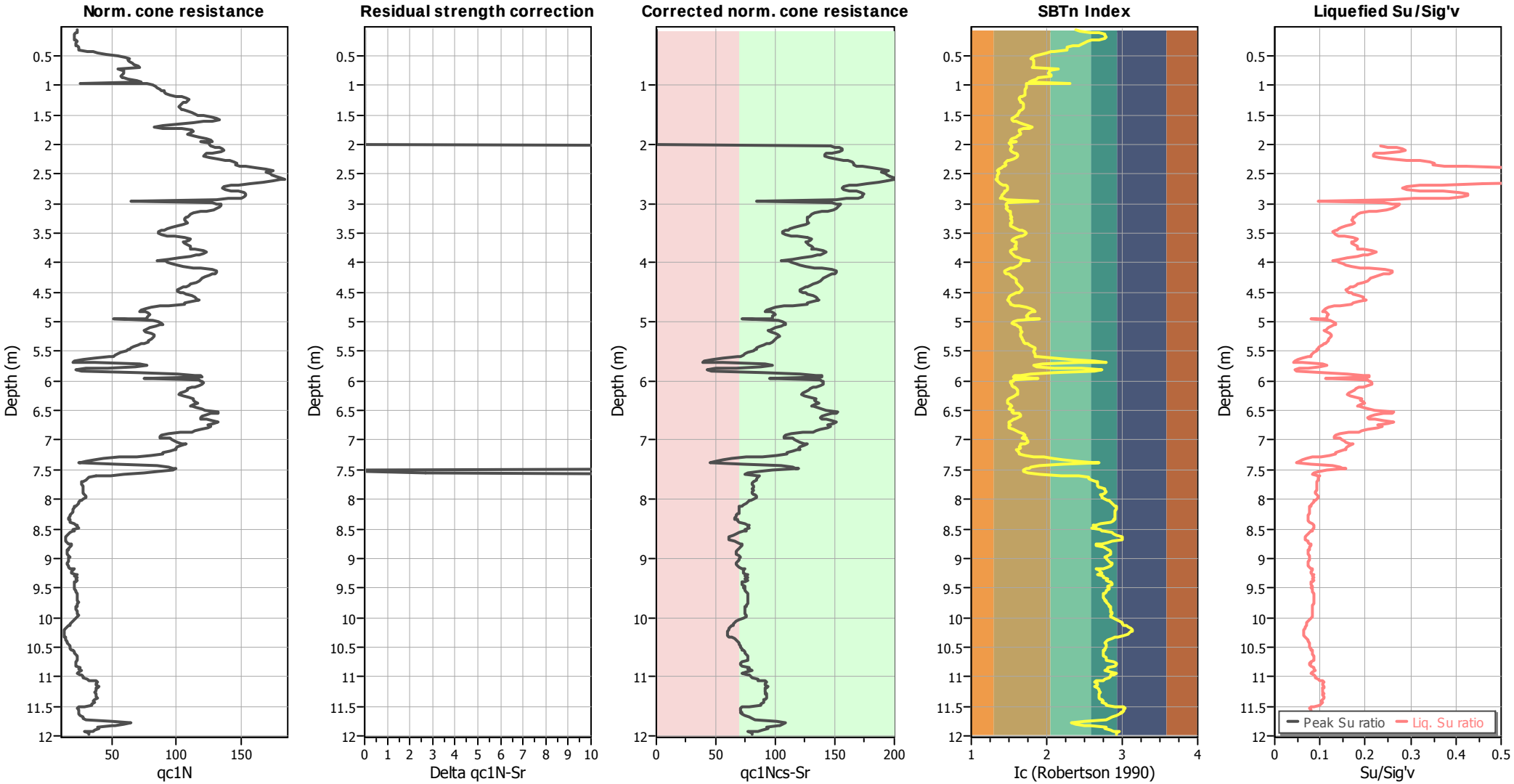
**F.S. color scheme**

- 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

## Check for strength loss plots (Idriss & Boulanger (2008))




### Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

**:: Cyclic Resistance Ratio (CRR) calculation data ::**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 249 | 0.02 | 6.95 | 20.00 | 1.54 | 0.45 | 1.29 | 88.36 | 35.43 | 123.79 | 0.180 | No | No | 2.00 |
| 250 | 0.04 | 7.00 | 20.00 | 1.57 | 0.45 | 1.29 | 88.92 | 35.50 | 124.42 | 0.182 | No | No | 2.00 |
| 251 | 0.06 | 6.86 | 20.00 | 1.60 | 0.45 | 1.29 | 87.14 | 35.26 | 122.40 | 0.177 | No | No | 2.00 |
| 252 | 0.08 | 6.61 | 20.00 | 1.62 | 0.46 | 1.29 | 84.27 | 34.88 | 119.15 | 0.170 | No | No | 2.00 |
| 253 | 0.10 | 6.22 | 20.00 | 1.66 | 0.47 | 1.30 | 79.68 | 34.26 | 113.93 | 0.159 | No | No | 2.00 |
| 254 | 0.12 | 6.03 | 20.00 | 1.66 | 0.47 | 1.30 | 77.32 | 33.94 | 111.25 | 0.154 | No | No | 2.00 |
| 255 | 0.14 | 5.81 | 20.00 | 1.66 | 0.48 | 1.30 | 74.75 | 33.59 | 108.34 | 0.149 | No | No | 2.00 |
| 256 | 0.16 | 5.78 | 20.00 | 1.66 | 0.48 | 1.30 | 74.28 | 33.53 | 107.81 | 0.149 | No | No | 2.00 |
| 257 | 0.18 | 5.97 | 20.00 | 1.67 | 0.48 | 1.30 | 76.46 | 33.82 | 110.28 | 0.153 | No | No | 2.00 |
| 258 | 0.20 | 6.33 | 20.00 | 1.66 | 0.47 | 1.29 | 80.51 | 34.37 | 114.87 | 0.161 | No | No | 2.00 |
| 259 | 0.22 | 6.52 | 20.00 | 1.65 | 0.46 | 1.28 | 82.65 | 34.66 | 117.31 | 0.166 | No | No | 2.00 |
| 260 | 0.24 | 6.57 | 20.00 | 1.66 | 0.46 | 1.28 | 83.15 | 34.72 | 117.87 | 0.167 | No | No | 2.00 |
| 261 | 0.26 | 6.44 | 20.00 | 1.67 | 0.46 | 1.28 | 81.59 | 34.51 | 116.10 | 0.163 | No | No | 2.00 |
| 262 | 0.28 | 6.41 | 20.00 | 1.67 | 0.47 | 1.28 | 81.06 | 34.44 | 115.50 | 0.162 | No | No | 2.00 |
| 263 | 0.30 | 6.34 | 20.00 | 1.67 | 0.47 | 1.28 | 80.25 | 34.33 | 114.58 | 0.160 | No | No | 2.00 |
| 264 | 0.32 | 6.22 | 20.00 | 1.69 | 0.47 | 1.28 | 78.74 | 34.13 | 112.87 | 0.157 | No | No | 2.00 |
| 265 | 0.34 | 6.13 | 20.00 | 1.70 | 0.47 | 1.28 | 77.65 | 33.98 | 111.63 | 0.155 | No | No | 2.00 |
| 266 | 0.36 | 5.92 | 20.00 | 1.71 | 0.48 | 1.28 | 75.16 | 33.64 | 108.81 | 0.150 | No | No | 1.95 |
| 267 | 0.38 | 5.72 | 20.00 | 1.74 | 0.49 | 1.29 | 72.78 | 33.32 | 106.10 | 0.146 | No | No | 1.78 |
| 268 | 0.40 | 5.49 | 20.00 | 1.77 | 0.49 | 1.29 | 69.97 | 32.94 | 102.91 | 0.141 | No | No | 1.62 |
| 269 | 0.42 | 5.23 | 20.00 | 1.81 | 0.50 | 1.29 | 66.89 | 32.53 | 99.42 | 0.137 | No | No | 1.48 |
| 270 | 0.44 | 5.05 | 20.00 | 1.84 | 0.51 | 1.30 | 64.68 | 32.23 | 96.91 | 0.134 | No | No | 1.37 |
| 271 | 0.46 | 4.98 | 20.00 | 1.85 | 0.51 | 1.30 | 63.79 | 32.11 | 95.89 | 0.132 | No | No | 1.30 |
| 272 | 0.48 | 4.87 | 20.00 | 1.85 | 0.51 | 1.30 | 62.40 | 31.92 | 94.31 | 0.130 | No | No | 1.22 |
| 273 | 0.50 | 4.77 | 20.00 | 1.83 | 0.51 | 1.30 | 61.17 | 31.75 | 92.93 | 0.129 | No | No | 1.15 |
| 274 | 0.52 | 4.45 | 20.00 | 1.84 | 0.52 | 1.30 | 57.24 | 31.22 | 88.46 | 0.124 | No | No | 1.06 |
| 275 | 0.54 | 4.20 | 20.00 | 1.85 | 0.53 | 1.31 | 54.30 | 30.83 | 85.13 | 0.121 | No | No | 0.99 |
| 276 | 0.56 | 4.08 | 20.00 | 1.84 | 0.54 | 1.31 | 52.71 | 30.61 | 83.32 | 0.119 | No | No | 0.93 |
| 277 | 0.58 | 3.95 | 20.00 | 1.84 | 0.54 | 1.31 | 51.12 | 30.39 | 81.51 | 0.117 | No | No | 0.89 |
| 278 | 0.60 | 3.71 | 20.00 | 1.89 | 0.55 | 1.31 | 48.16 | 30.00 | 78.16 | 0.114 | No | No | 0.83 |
| 279 | 0.62 | 2.75 | 20.00 | 2.10 | 0.59 | 1.34 | 36.43 | 28.41 | 64.84 | 0.103 | No | No | 0.71 |
| 280 | 0.64 | 2.05 | 20.00 | 2.32 | 0.62 | 1.36 | 27.59 | 27.21 | 54.81 | 0.096 | No | No | 0.64 |
| 281 | 0.66 | 1.51 | 20.00 | 2.63 | 0.65 | 1.37 | 20.56 | 0.00 | 20.56 | 4.000 | No | Yes | 2.00 |
| 282 | 0.68 | 1.41 | 20.00 | 2.78 | 0.66 | 1.38 | 19.33 | 0.00 | 19.33 | 4.000 | No | Yes | 2.00 |
| 283 | 0.70 | 2.78 | 20.00 | 2.43 | 0.59 | 1.33 | 36.50 | 28.42 | 64.91 | 0.103 | No | No | 0.65 |
| 284 | 0.72 | 5.72 | 20.00 | 1.94 | 0.49 | 1.26 | 71.40 | 33.14 | 104.54 | 0.144 | No | No | 0.95 |
| 285 | 0.74 | 6.24 | 20.00 | 1.83 | 0.47 | 1.25 | 77.33 | 33.94 | 111.26 | 0.154 | No | No | 1.02 |
| 286 | 0.76 | 5.40 | 20.00 | 1.87 | 0.50 | 1.27 | 67.59 | 32.62 | 100.21 | 0.138 | No | No | 0.87 |
| 287 | 0.78 | 3.69 | 20.00 | 2.09 | 0.55 | 1.30 | 47.32 | 29.88 | 77.20 | 0.113 | No | No | 0.67 |
| 288 | 0.80 | 2.25 | 20.00 | 2.46 | 0.61 | 1.34 | 29.64 | 27.49 | 57.13 | 0.098 | No | No | 0.55 |
| 289 | 0.82 | 1.67 | 20.00 | 2.72 | 0.64 | 1.35 | 22.30 | 0.00 | 22.30 | 4.000 | No | Yes | 2.00 |
| 290 | 0.84 | 1.99 | 20.00 | 2.64 | 0.63 | 1.34 | 26.38 | 0.00 | 26.38 | 4.000 | No | Yes | 2.00 |
| 291 | 0.86 | 5.68 | 20.00 | 2.10 | 0.49 | 1.26 | 70.35 | 32.99 | 103.35 | 0.142 | No | No | 0.82 |
| 292 | 0.88 | 8.42 | 20.00 | 1.80 | 0.42 | 1.22 | 100.94 | 37.13 | 138.07 | 0.226 | No | No | 1.43 |
| 293 | 0.90 | 9.68 | 20.00 | 1.66 | 0.40 | 1.20 | 114.55 | 38.97 | 153.52 | 0.314 | No | No | 2.00 |
| 294 | 0.92 | 10.09 | 20.00 | 1.58 | 0.39 | 1.19 | 118.81 | 39.55 | 158.36 | 0.355 | No | No | 2.00 |
| 295 | 0.94 | 10.13 | 20.00 | 1.56 | 0.39 | 1.19 | 119.15 | 39.59 | 158.74 | 0.359 | No | No | 2.00 |
| 296 | 0.96 | 6.14 | 20.00 | 1.89 | 0.48 | 1.24 | 75.13 | 33.64 | 108.77 | 0.150 | No | No | 0.82 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 297 | 0.98 | 10.04 | 20.00 | 1.55 | 0.39 | 1.19 | 118.01 | 39.44 | 157.44 | 0.347 | No | No | 2.00 |
| 298 | 1.00 | 10.13 | 20.00 | 1.55 | 0.39 | 1.19 | 118.91 | 39.56 | 158.47 | 0.357 | No | No | 2.00 |
| 299 | 1.02 | 10.24 | 20.00 | 1.52 | 0.39 | 1.19 | 120.00 | 39.71 | 159.71 | 0.369 | No | No | 2.00 |
| 300 | 1.04 | 10.28 | 20.00 | 1.52 | 0.39 | 1.19 | 120.31 | 39.75 | 160.06 | 0.372 | No | No | 2.00 |
| 301 | 1.06 | 10.29 | 20.00 | 1.53 | 0.39 | 1.19 | 120.26 | 39.74 | 160.00 | 0.372 | No | No | 2.00 |
| 302 | 1.08 | 10.08 | 20.00 | 1.54 | 0.39 | 1.19 | 117.96 | 39.43 | 157.39 | 0.346 | No | No | 2.00 |
| 303 | 1.10 | 9.78 | 20.00 | 1.56 | 0.40 | 1.19 | 114.64 | 38.98 | 153.62 | 0.315 | No | No | 2.00 |
| 304 | 1.12 | 9.50 | 20.00 | 1.58 | 0.40 | 1.19 | 111.61 | 38.57 | 150.18 | 0.290 | No | No | 1.81 |
| 305 | 1.14 | 9.27 | 20.00 | 1.60 | 0.41 | 1.19 | 108.97 | 38.21 | 147.19 | 0.271 | No | No | 1.67 |
| 306 | 1.16 | 9.21 | 20.00 | 1.61 | 0.41 | 1.19 | 108.19 | 38.11 | 146.29 | 0.266 | No | No | 1.63 |
| 307 | 1.18 | 8.98 | 20.00 | 1.61 | 0.41 | 1.19 | 105.67 | 37.77 | 143.44 | 0.251 | No | No | 1.51 |
| 308 | 1.20 | 8.75 | 20.00 | 1.62 | 0.42 | 1.19 | 103.03 | 37.41 | 140.44 | 0.237 | No | No | 1.40 |
| 309 | 1.22 | 8.60 | 20.00 | 1.62 | 0.42 | 1.19 | 101.38 | 37.19 | 138.56 | 0.228 | No | No | 1.34 |
| 310 | 1.24 | 8.64 | 20.00 | 1.60 | 0.42 | 1.19 | 101.70 | 37.23 | 138.93 | 0.230 | No | No | 1.35 |
| 311 | 1.26 | 8.94 | 20.00 | 1.57 | 0.42 | 1.19 | 104.79 | 37.65 | 142.44 | 0.246 | No | No | 1.46 |
| 312 | 1.28 | 9.38 | 20.00 | 1.54 | 0.41 | 1.18 | 109.49 | 38.28 | 147.78 | 0.275 | No | No | 1.67 |
| 313 | 1.30 | 9.76 | 20.00 | 1.51 | 0.40 | 1.18 | 113.49 | 38.83 | 152.31 | 0.305 | No | No | 1.89 |
| 314 | 1.31 | 9.73 | 20.00 | 1.49 | 0.40 | 1.18 | 113.02 | 38.76 | 151.78 | 0.301 | No | No | 1.86 |
| 315 | 1.33 | 9.75 | 20.00 | 1.48 | 0.40 | 1.18 | 113.21 | 38.79 | 151.99 | 0.303 | No | No | 1.86 |
| 316 | 1.35 | 9.89 | 20.00 | 1.47 | 0.40 | 1.17 | 114.61 | 38.98 | 153.58 | 0.314 | No | No | 1.95 |
| 317 | 1.37 | 10.05 | 20.00 | 1.48 | 0.40 | 1.17 | 116.21 | 39.19 | 155.40 | 0.329 | No | No | 2.00 |
| 318 | 1.39 | 9.74 | 20.00 | 1.52 | 0.40 | 1.17 | 112.75 | 38.73 | 151.47 | 0.299 | No | No | 1.83 |
| 319 | 1.41 | 9.52 | 20.00 | 1.53 | 0.41 | 1.18 | 110.32 | 38.40 | 148.71 | 0.281 | No | No | 1.69 |
| 320 | 1.43 | 9.69 | 20.00 | 1.52 | 0.40 | 1.17 | 112.05 | 38.63 | 150.68 | 0.293 | No | No | 1.78 |
| 321 | 1.45 | 9.95 | 20.00 | 1.52 | 0.40 | 1.17 | 114.79 | 39.00 | 153.79 | 0.316 | No | No | 1.95 |
| 322 | 1.47 | 10.39 | 20.00 | 1.51 | 0.39 | 1.16 | 119.24 | 39.60 | 158.84 | 0.360 | No | No | 2.00 |
| 323 | 1.49 | 10.67 | 20.00 | 1.55 | 0.38 | 1.16 | 122.15 | 40.00 | 162.15 | 0.395 | No | No | 2.00 |
| 324 | 1.51 | 11.63 | 20.00 | 1.54 | 0.37 | 1.15 | 132.11 | 41.34 | 173.45 | 0.568 | No | No | 2.00 |
| 325 | 1.53 | 11.58 | 20.00 | 1.55 | 0.37 | 1.15 | 131.51 | 41.26 | 172.77 | 0.554 | No | No | 2.00 |
| 326 | 1.55 | 11.16 | 20.00 | 1.63 | 0.38 | 1.15 | 126.95 | 40.64 | 167.59 | 0.466 | No | No | 2.00 |
| 327 | 1.57 | 10.76 | 20.00 | 1.66 | 0.38 | 1.16 | 122.73 | 40.07 | 162.80 | 0.402 | No | No | 2.00 |
| 328 | 1.59 | 10.46 | 20.00 | 1.66 | 0.39 | 1.16 | 119.45 | 39.63 | 159.09 | 0.362 | No | No | 2.00 |
| 329 | 1.61 | 10.35 | 20.00 | 1.62 | 0.39 | 1.16 | 118.21 | 39.46 | 157.68 | 0.349 | No | No | 2.00 |
| 330 | 1.63 | 10.43 | 20.00 | 1.58 | 0.39 | 1.16 | 118.87 | 39.55 | 158.43 | 0.356 | No | No | 2.00 |
| 331 | 1.65 | 10.79 | 20.00 | 1.56 | 0.38 | 1.15 | 122.61 | 40.06 | 162.66 | 0.401 | No | No | 2.00 |
| 332 | 1.67 | 11.24 | 20.00 | 1.55 | 0.37 | 1.15 | 127.22 | 40.68 | 167.90 | 0.471 | No | No | 2.00 |
| 333 | 1.69 | 11.69 | 20.00 | 1.50 | 0.37 | 1.14 | 131.74 | 41.29 | 173.03 | 0.559 | No | No | 2.00 |
| 334 | 1.71 | 11.43 | 20.00 | 1.50 | 0.37 | 1.14 | 128.97 | 40.92 | 169.89 | 0.502 | No | No | 2.00 |
| 335 | 1.73 | 10.98 | 20.00 | 1.52 | 0.38 | 1.15 | 124.17 | 40.27 | 164.44 | 0.423 | No | No | 2.00 |
| 336 | 1.75 | 11.01 | 20.00 | 1.50 | 0.38 | 1.15 | 124.34 | 40.29 | 164.64 | 0.425 | No | No | 2.00 |
| 337 | 1.77 | 11.20 | 20.00 | 1.49 | 0.38 | 1.14 | 126.21 | 40.54 | 166.75 | 0.454 | No | No | 2.00 |
| 338 | 1.79 | 10.99 | 20.00 | 1.51 | 0.38 | 1.14 | 123.97 | 40.24 | 164.22 | 0.420 | No | No | 2.00 |
| 339 | 1.81 | 10.45 | 20.00 | 1.56 | 0.39 | 1.15 | 118.16 | 39.46 | 157.62 | 0.348 | No | No | 2.00 |
| 340 | 1.83 | 10.07 | 20.00 | 1.60 | 0.40 | 1.15 | 114.15 | 38.91 | 153.06 | 0.310 | No | No | 1.86 |
| 341 | 1.85 | 9.83 | 20.00 | 1.63 | 0.40 | 1.15 | 111.44 | 38.55 | 149.98 | 0.289 | No | No | 1.70 |
| 342 | 1.87 | 9.05 | 20.00 | 1.64 | 0.42 | 1.16 | 103.06 | 37.42 | 140.48 | 0.237 | No | No | 1.34 |
| 343 | 1.89 | 8.19 | 20.00 | 1.69 | 0.44 | 1.16 | 93.78 | 36.16 | 129.95 | 0.197 | No | No | 1.07 |
| 344 | 1.91 | 7.67 | 20.00 | 1.71 | 0.45 | 1.17 | 88.10 | 35.39 | 123.49 | 0.180 | No | No | 0.95 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 345 | 1.93 | 7.55 | 20.00 | 1.70 | 0.45 | 1.17 | 86.78 | 35.21 | 121.99 | 0.176 | No | No | 0.92 |
| 346 | 1.95 | 7.61 | 20.00 | 1.74 | 0.45 | 1.16 | 87.31 | 35.29 | 122.60 | 0.177 | No | No | 0.93 |
| 347 | 1.97 | 8.30 | 20.00 | 1.67 | 0.44 | 1.16 | 94.61 | 36.27 | 130.89 | 0.200 | No | No | 1.08 |
| 348 | 1.99 | 8.46 | 20.00 | 1.72 | 0.43 | 1.15 | 96.29 | 36.50 | 132.79 | 0.207 | No | No | 1.12 |
| 349 | 2.01 | 8.67 | 20.00 | 1.74 | 0.43 | 1.15 | 98.44 | 36.79 | 135.23 | 0.215 | No | No | 1.18 |
| 350 | 2.03 | 8.86 | 20.00 | 1.74 | 0.42 | 1.15 | 100.38 | 37.05 | 137.44 | 0.224 | No | No | 1.23 |
| 351 | 2.05 | 9.22 | 20.00 | 1.71 | 0.42 | 1.14 | 104.14 | 37.56 | 141.70 | 0.242 | No | No | 1.36 |
| 352 | 2.07 | 9.49 | 20.00 | 1.66 | 0.41 | 1.14 | 106.86 | 37.93 | 144.78 | 0.258 | No | No | 1.46 |
| 353 | 2.09 | 9.20 | 20.00 | 1.66 | 0.42 | 1.14 | 103.74 | 37.51 | 141.25 | 0.240 | No | No | 1.34 |
| 354 | 2.11 | 8.96 | 20.00 | 1.64 | 0.42 | 1.14 | 101.06 | 37.15 | 138.21 | 0.227 | No | No | 1.25 |
| 355 | 2.13 | 8.83 | 20.00 | 1.66 | 0.43 | 1.14 | 99.66 | 36.96 | 136.62 | 0.221 | No | No | 1.20 |
| 356 | 2.15 | 8.88 | 20.00 | 1.62 | 0.43 | 1.14 | 100.06 | 37.01 | 137.07 | 0.222 | No | No | 1.21 |
| 357 | 2.17 | 8.72 | 20.00 | 1.61 | 0.43 | 1.14 | 98.33 | 36.78 | 135.11 | 0.215 | No | No | 1.16 |
| 358 | 2.19 | 8.38 | 20.00 | 1.62 | 0.44 | 1.14 | 94.60 | 36.27 | 130.87 | 0.200 | No | No | 1.06 |
| 359 | 2.21 | 7.90 | 20.00 | 1.63 | 0.45 | 1.15 | 89.46 | 35.58 | 125.04 | 0.184 | No | No | 0.95 |
| 360 | 2.23 | 7.90 | 20.00 | 1.63 | 0.45 | 1.15 | 89.39 | 35.57 | 124.95 | 0.183 | No | No | 0.95 |
| 361 | 2.25 | 7.10 | 20.00 | 1.72 | 0.47 | 1.15 | 80.67 | 34.39 | 115.06 | 0.161 | No | No | 0.81 |
| 362 | 2.27 | 6.04 | 20.00 | 1.83 | 0.49 | 1.16 | 69.18 | 32.84 | 102.01 | 0.140 | No | No | 0.68 |
| 363 | 2.29 | 4.83 | 20.00 | 1.97 | 0.53 | 1.17 | 55.89 | 31.04 | 86.93 | 0.123 | No | No | 0.57 |
| 364 | 2.31 | 3.75 | 20.00 | 2.09 | 0.56 | 1.18 | 43.85 | 29.41 | 73.26 | 0.110 | No | No | 0.50 |
| 365 | 2.33 | 3.07 | 20.00 | 2.21 | 0.59 | 1.19 | 36.15 | 28.37 | 64.52 | 0.103 | No | No | 0.47 |
| 366 | 2.35 | 2.54 | 20.00 | 2.40 | 0.61 | 1.20 | 30.04 | 27.55 | 57.58 | 0.098 | No | No | 0.44 |
| 367 | 2.37 | 2.12 | 20.00 | 2.61 | 0.63 | 1.20 | 25.20 | 0.00 | 25.20 | 4.000 | No | Yes | 2.00 |
| 368 | 2.39 | 2.07 | 20.00 | 2.70 | 0.63 | 1.20 | 24.57 | 0.00 | 24.57 | 4.000 | No | Yes | 2.00 |
| 369 | 2.41 | 4.63 | 20.00 | 2.22 | 0.54 | 1.17 | 53.26 | 30.68 | 83.95 | 0.120 | No | No | 0.55 |
| 370 | 2.43 | 7.58 | 20.00 | 1.90 | 0.46 | 1.14 | 85.14 | 34.99 | 120.13 | 0.172 | No | No | 0.86 |
| 371 | 2.45 | 8.45 | 20.00 | 1.79 | 0.44 | 1.13 | 94.29 | 36.23 | 130.52 | 0.199 | No | No | 1.03 |
| 372 | 2.47 | 8.72 | 20.00 | 1.77 | 0.43 | 1.13 | 97.05 | 36.60 | 133.66 | 0.210 | No | No | 1.10 |
| 373 | 2.49 | 8.95 | 20.00 | 1.72 | 0.43 | 1.13 | 99.43 | 36.92 | 136.35 | 0.220 | No | No | 1.16 |
| 374 | 2.51 | 8.57 | 0.00 | 1.68 | 0.50 | 1.15 | 97.14 | 0.00 | 97.14 | 0.134 | No | No | 0.62 |
| 375 | 2.53 | 7.54 | 0.00 | 1.70 | 0.53 | 1.16 | 85.99 | 0.00 | 85.99 | 0.122 | No | No | 0.55 |
| 376 | 2.55 | 6.48 | 2.68 | 1.75 | 0.56 | 1.16 | 74.49 | 0.00 | 74.49 | 0.111 | No | No | 0.50 |
| 377 | 2.57 | 5.14 | 15.17 | 1.90 | 0.55 | 1.16 | 58.87 | 20.02 | 78.90 | 0.115 | No | No | 0.52 |
| 378 | 2.59 | 4.32 | 38.21 | 2.19 | 0.50 | 1.14 | 48.73 | 52.46 | 101.19 | 0.139 | No | No | 0.65 |
| 379 | 2.61 | 3.32 | 57.31 | 2.43 | 0.51 | 1.14 | 37.54 | 58.47 | 96.02 | 0.132 | No | No | 0.61 |
| 380 | 2.63 | 2.85 | 68.22 | 2.57 | 0.52 | 1.15 | 32.25 | 59.66 | 91.91 | 0.128 | No | No | 0.58 |
| 381 | 2.65 | 2.78 | 68.16 | 2.56 | 0.52 | 1.15 | 31.44 | 59.41 | 90.85 | 0.127 | No | No | 0.57 |
| 382 | 2.67 | 2.67 | 71.37 | 2.60 | 0.52 | 1.14 | 30.14 | 0.00 | 30.14 | 4.000 | No | Yes | 2.00 |
| 383 | 2.69 | 2.49 | 75.15 | 2.65 | 0.53 | 1.14 | 28.14 | 0.00 | 28.14 | 4.000 | No | Yes | 2.00 |
| 384 | 2.71 | 2.39 | 76.14 | 2.66 | 0.53 | 1.14 | 27.09 | 0.00 | 27.09 | 4.000 | No | Yes | 2.00 |
| 385 | 2.73 | 2.38 | 76.47 | 2.67 | 0.53 | 1.14 | 26.88 | 0.00 | 26.88 | 4.000 | No | Yes | 2.00 |
| 386 | 2.75 | 2.38 | 76.53 | 2.67 | 0.53 | 1.14 | 26.85 | 0.00 | 26.85 | 4.000 | No | Yes | 2.00 |
| 387 | 2.77 | 2.45 | 76.29 | 2.67 | 0.53 | 1.14 | 27.60 | 0.00 | 27.60 | 4.000 | No | Yes | 2.00 |
| 388 | 2.79 | 2.50 | 78.26 | 2.69 | 0.53 | 1.14 | 28.09 | 0.00 | 28.09 | 4.000 | No | Yes | 2.00 |
| 389 | 2.81 | 2.50 | 80.56 | 2.72 | 0.52 | 1.14 | 28.08 | 0.00 | 28.08 | 4.000 | No | Yes | 2.00 |
| 390 | 2.83 | 2.43 | 84.27 | 2.77 | 0.53 | 1.14 | 27.34 | 0.00 | 27.34 | 4.000 | No | Yes | 2.00 |
| 391 | 2.85 | 2.46 | 84.54 | 2.77 | 0.52 | 1.13 | 27.60 | 0.00 | 27.60 | 4.000 | No | Yes | 2.00 |
| 392 | 2.87 | 2.44 | 85.56 | 2.78 | 0.53 | 1.13 | 27.26 | 0.00 | 27.26 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 393 | 2.89 | 2.48 | 84.54 | 2.77 | 0.53 | 1.13 | 27.19 | 0.00 | 27.19 | 4.000 | No | Yes | 2.00 |
| 394 | 2.91 | 2.58 | 81.87 | 2.74 | 0.52 | 1.13 | 28.32 | 0.00 | 28.32 | 4.000 | No | Yes | 2.00 |
| 395 | 2.93 | 2.65 | 80.28 | 2.72 | 0.52 | 1.13 | 29.12 | 0.00 | 29.12 | 4.000 | No | Yes | 2.00 |
| 396 | 2.95 | 2.74 | 81.30 | 2.73 | 0.52 | 1.13 | 30.10 | 0.00 | 30.10 | 4.000 | No | Yes | 2.00 |
| 397 | 2.97 | 2.70 | 81.80 | 2.74 | 0.52 | 1.12 | 29.70 | 0.00 | 29.70 | 4.000 | No | Yes | 2.00 |
| 398 | 2.99 | 2.56 | 84.70 | 2.77 | 0.52 | 1.12 | 28.17 | 0.00 | 28.17 | 4.000 | No | Yes | 2.00 |
| 399 | 3.01 | 2.41 | 87.86 | 2.81 | 0.53 | 1.12 | 26.50 | 0.00 | 26.50 | 4.000 | No | Yes | 2.00 |
| 400 | 3.03 | 2.35 | 88.70 | 2.82 | 0.53 | 1.12 | 25.80 | 0.00 | 25.80 | 4.000 | No | Yes | 2.00 |
| 401 | 3.05 | 2.24 | 90.71 | 2.85 | 0.53 | 1.12 | 24.65 | 0.00 | 24.65 | 4.000 | No | Yes | 2.00 |
| 402 | 3.07 | 2.18 | 91.87 | 2.86 | 0.53 | 1.12 | 23.91 | 0.00 | 23.91 | 4.000 | No | Yes | 2.00 |
| 403 | 3.09 | 2.07 | 94.08 | 2.89 | 0.54 | 1.12 | 22.74 | 0.00 | 22.74 | 4.000 | No | Yes | 2.00 |
| 404 | 3.11 | 1.99 | 95.58 | 2.91 | 0.54 | 1.12 | 21.83 | 0.00 | 21.83 | 4.000 | No | Yes | 2.00 |
| 405 | 3.13 | 1.91 | 96.77 | 2.92 | 0.54 | 1.12 | 21.01 | 0.00 | 21.01 | 4.000 | No | Yes | 2.00 |
| 406 | 3.15 | 1.87 | 96.70 | 2.92 | 0.54 | 1.12 | 20.50 | 0.00 | 20.50 | 4.000 | No | Yes | 2.00 |
| 407 | 3.17 | 1.84 | 96.74 | 2.92 | 0.55 | 1.12 | 20.09 | 0.00 | 20.09 | 4.000 | No | Yes | 2.00 |
| 408 | 3.19 | 1.81 | 95.85 | 2.91 | 0.55 | 1.12 | 19.80 | 0.00 | 19.80 | 4.000 | No | Yes | 2.00 |
| 409 | 3.21 | 1.79 | 95.07 | 2.90 | 0.55 | 1.12 | 19.54 | 0.00 | 19.54 | 4.000 | No | Yes | 2.00 |
| 410 | 3.23 | 1.74 | 95.09 | 2.90 | 0.55 | 1.12 | 19.00 | 0.00 | 19.00 | 4.000 | No | Yes | 2.00 |
| 411 | 3.25 | 1.70 | 94.71 | 2.90 | 0.55 | 1.11 | 18.48 | 0.00 | 18.48 | 4.000 | No | Yes | 2.00 |
| 412 | 3.27 | 1.64 | 95.28 | 2.90 | 0.55 | 1.11 | 17.82 | 0.00 | 17.82 | 4.000 | No | Yes | 2.00 |
| 413 | 3.29 | 1.62 | 95.00 | 2.90 | 0.56 | 1.11 | 17.58 | 0.00 | 17.58 | 4.000 | No | Yes | 2.00 |
| 414 | 3.31 | 1.56 | 95.86 | 2.91 | 0.56 | 1.11 | 16.92 | 0.00 | 16.92 | 4.000 | No | Yes | 2.00 |
| 415 | 3.33 | 1.54 | 95.59 | 2.91 | 0.56 | 1.11 | 16.71 | 0.00 | 16.71 | 4.000 | No | Yes | 2.00 |
| 416 | 3.35 | 1.59 | 93.04 | 2.88 | 0.56 | 1.11 | 17.24 | 0.00 | 17.24 | 4.000 | No | Yes | 2.00 |
| 417 | 3.37 | 1.58 | 93.15 | 2.88 | 0.56 | 1.11 | 17.05 | 0.00 | 17.05 | 4.000 | No | Yes | 2.00 |
| 418 | 3.39 | 1.65 | 89.99 | 2.84 | 0.56 | 1.11 | 17.82 | 0.00 | 17.82 | 4.000 | No | Yes | 2.00 |
| 419 | 3.41 | 1.92 | 80.37 | 2.72 | 0.55 | 1.10 | 20.68 | 0.00 | 20.68 | 4.000 | No | Yes | 2.00 |
| 420 | 3.43 | 2.07 | 75.85 | 2.66 | 0.55 | 1.10 | 22.19 | 0.00 | 22.19 | 4.000 | No | Yes | 2.00 |
| 421 | 3.45 | 2.21 | 72.52 | 2.62 | 0.54 | 1.10 | 23.75 | 0.00 | 23.75 | 4.000 | No | Yes | 2.00 |
| 422 | 3.47 | 2.18 | 74.75 | 2.65 | 0.54 | 1.10 | 23.34 | 0.00 | 23.34 | 4.000 | No | Yes | 2.00 |
| 423 | 3.49 | 2.30 | 70.85 | 2.60 | 0.54 | 1.10 | 24.61 | 57.94 | 82.55 | 0.118 | No | No | 0.48 |
| 424 | 3.51 | 1.90 | 80.36 | 2.72 | 0.55 | 1.10 | 20.29 | 0.00 | 20.29 | 4.000 | No | Yes | 2.00 |
| 425 | 3.53 | 1.97 | 80.90 | 2.72 | 0.55 | 1.10 | 21.27 | 0.00 | 21.27 | 4.000 | No | Yes | 2.00 |
| 426 | 3.55 | 1.83 | 83.19 | 2.75 | 0.55 | 1.10 | 19.73 | 0.00 | 19.73 | 4.000 | No | Yes | 2.00 |
| 427 | 3.57 | 1.64 | 91.49 | 2.86 | 0.56 | 1.10 | 17.36 | 0.00 | 17.36 | 4.000 | No | Yes | 2.00 |
| 428 | 3.59 | 1.57 | 93.18 | 2.88 | 0.56 | 1.10 | 16.63 | 0.00 | 16.63 | 4.000 | No | Yes | 2.00 |
| 429 | 3.61 | 1.47 | 96.79 | 2.92 | 0.56 | 1.10 | 15.50 | 0.00 | 15.50 | 4.000 | No | Yes | 2.00 |
| 430 | 3.63 | 1.38 | 100.00 | 2.99 | 0.57 | 1.10 | 14.56 | 0.00 | 14.56 | 4.000 | No | Yes | 2.00 |
| 431 | 3.65 | 1.34 | 100.00 | 3.00 | 0.57 | 1.09 | 14.05 | 0.00 | 14.05 | 4.000 | No | Yes | 2.00 |
| 432 | 3.67 | 1.33 | 100.00 | 3.00 | 0.57 | 1.09 | 13.93 | 0.00 | 13.93 | 4.000 | No | Yes | 2.00 |
| 433 | 3.69 | 1.33 | 100.00 | 3.00 | 0.57 | 1.09 | 13.91 | 0.00 | 13.91 | 4.000 | No | Yes | 2.00 |
| 434 | 3.71 | 1.41 | 92.32 | 2.87 | 0.57 | 1.09 | 14.76 | 0.00 | 14.76 | 4.000 | No | Yes | 2.00 |
| 435 | 3.73 | 1.49 | 88.16 | 2.81 | 0.56 | 1.09 | 15.57 | 0.00 | 15.57 | 4.000 | No | Yes | 2.00 |
| 436 | 3.75 | 1.62 | 81.78 | 2.73 | 0.56 | 1.09 | 16.94 | 0.00 | 16.94 | 4.000 | No | Yes | 2.00 |
| 437 | 3.77 | 1.74 | 75.96 | 2.66 | 0.56 | 1.09 | 18.22 | 0.00 | 18.22 | 4.000 | No | Yes | 2.00 |
| 438 | 3.79 | 1.74 | 75.30 | 2.65 | 0.56 | 1.09 | 18.29 | 0.00 | 18.29 | 4.000 | No | Yes | 2.00 |
| 439 | 3.81 | 1.63 | 82.51 | 2.74 | 0.56 | 1.08 | 17.08 | 0.00 | 17.08 | 4.000 | No | Yes | 2.00 |
| 440 | 3.83 | 1.58 | 85.43 | 2.78 | 0.56 | 1.08 | 16.47 | 0.00 | 16.47 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 441 | 3.85 | 1.54 | 88.23 | 2.82 | 0.56 | 1.08 | 16.04 | 0.00 | 16.04 | 4.000 | No | Yes | 2.00 |
| 442 | 3.87 | 1.51 | 89.74 | 2.83 | 0.56 | 1.08 | 15.66 | 0.00 | 15.66 | 4.000 | No | Yes | 2.00 |
| 443 | 3.89 | 1.48 | 91.33 | 2.85 | 0.56 | 1.08 | 15.32 | 0.00 | 15.32 | 4.000 | No | Yes | 2.00 |
| 444 | 3.91 | 1.49 | 91.03 | 2.85 | 0.56 | 1.08 | 15.35 | 0.00 | 15.35 | 4.000 | No | Yes | 2.00 |
| 445 | 3.93 | 1.50 | 91.23 | 2.85 | 0.56 | 1.08 | 15.44 | 0.00 | 15.44 | 4.000 | No | Yes | 2.00 |
| 446 | 3.95 | 1.65 | 86.98 | 2.80 | 0.56 | 1.08 | 16.97 | 0.00 | 16.97 | 4.000 | No | Yes | 2.00 |
| 447 | 3.97 | 1.69 | 84.85 | 2.77 | 0.56 | 1.08 | 17.22 | 0.00 | 17.22 | 4.000 | No | Yes | 2.00 |
| 448 | 3.99 | 1.66 | 85.69 | 2.78 | 0.56 | 1.08 | 16.90 | 0.00 | 16.90 | 4.000 | No | Yes | 2.00 |
| 449 | 4.01 | 1.64 | 86.64 | 2.80 | 0.56 | 1.07 | 16.67 | 0.00 | 16.67 | 4.000 | No | Yes | 2.00 |
| 450 | 4.03 | 1.61 | 88.05 | 2.81 | 0.56 | 1.07 | 16.31 | 0.00 | 16.31 | 4.000 | No | Yes | 2.00 |
| 451 | 4.05 | 1.57 | 89.23 | 2.83 | 0.56 | 1.07 | 15.94 | 0.00 | 15.94 | 4.000 | No | Yes | 2.00 |
| 452 | 4.07 | 1.54 | 91.05 | 2.85 | 0.56 | 1.07 | 15.57 | 0.00 | 15.57 | 4.000 | No | Yes | 2.00 |
| 453 | 4.09 | 1.54 | 91.59 | 2.86 | 0.56 | 1.07 | 15.52 | 0.00 | 15.52 | 4.000 | No | Yes | 2.00 |
| 454 | 4.11 | 1.53 | 92.30 | 2.87 | 0.56 | 1.07 | 15.42 | 0.00 | 15.42 | 4.000 | No | Yes | 2.00 |
| 455 | 4.13 | 1.59 | 90.13 | 2.84 | 0.56 | 1.07 | 16.06 | 0.00 | 16.06 | 4.000 | No | Yes | 2.00 |
| 456 | 4.15 | 1.65 | 88.09 | 2.81 | 0.56 | 1.07 | 16.62 | 0.00 | 16.62 | 4.000 | No | Yes | 2.00 |
| 457 | 4.17 | 1.79 | 83.22 | 2.75 | 0.56 | 1.07 | 18.04 | 0.00 | 18.04 | 4.000 | No | Yes | 2.00 |
| 458 | 4.19 | 2.08 | 74.83 | 2.65 | 0.55 | 1.06 | 21.00 | 0.00 | 21.00 | 4.000 | No | Yes | 2.00 |
| 459 | 4.21 | 1.93 | 78.17 | 2.69 | 0.55 | 1.06 | 19.51 | 0.00 | 19.51 | 4.000 | No | Yes | 2.00 |
| 460 | 4.23 | 1.91 | 80.61 | 2.72 | 0.55 | 1.06 | 19.24 | 0.00 | 19.24 | 4.000 | No | Yes | 2.00 |
| 461 | 4.25 | 1.90 | 81.03 | 2.73 | 0.55 | 1.06 | 19.27 | 0.00 | 19.27 | 4.000 | No | Yes | 2.00 |
| 462 | 4.27 | 2.12 | 77.30 | 2.68 | 0.55 | 1.06 | 21.61 | 0.00 | 21.61 | 4.000 | No | Yes | 2.00 |
| 463 | 4.29 | 2.24 | 76.69 | 2.67 | 0.54 | 1.06 | 22.99 | 0.00 | 22.99 | 4.000 | No | Yes | 2.00 |
| 464 | 4.31 | 2.05 | 83.70 | 2.76 | 0.55 | 1.06 | 21.05 | 0.00 | 21.05 | 4.000 | No | Yes | 2.00 |
| 465 | 4.33 | 2.29 | 83.24 | 2.75 | 0.54 | 1.06 | 23.42 | 0.00 | 23.42 | 4.000 | No | Yes | 2.00 |
| 466 | 4.35 | 2.14 | 87.75 | 2.81 | 0.54 | 1.06 | 21.81 | 0.00 | 21.81 | 4.000 | No | Yes | 2.00 |
| 467 | 4.37 | 2.24 | 86.07 | 2.79 | 0.54 | 1.05 | 23.21 | 0.00 | 23.21 | 4.000 | No | Yes | 2.00 |
| 468 | 4.39 | 2.11 | 89.78 | 2.83 | 0.54 | 1.05 | 21.83 | 0.00 | 21.83 | 4.000 | No | Yes | 2.00 |
| 469 | 4.41 | 2.04 | 91.06 | 2.85 | 0.55 | 1.05 | 20.70 | 0.00 | 20.70 | 4.000 | No | Yes | 2.00 |
| 470 | 4.42 | 2.04 | 91.91 | 2.86 | 0.55 | 1.05 | 20.68 | 0.00 | 20.68 | 4.000 | No | Yes | 2.00 |
| 471 | 4.44 | 2.04 | 91.96 | 2.86 | 0.55 | 1.05 | 20.65 | 0.00 | 20.65 | 4.000 | No | Yes | 2.00 |
| 472 | 4.46 | 2.07 | 87.97 | 2.81 | 0.54 | 1.05 | 21.23 | 0.00 | 21.23 | 4.000 | No | Yes | 2.00 |
| 473 | 4.48 | 2.05 | 88.23 | 2.82 | 0.54 | 1.05 | 21.14 | 0.00 | 21.14 | 4.000 | No | Yes | 2.00 |
| 474 | 4.50 | 2.05 | 88.98 | 2.82 | 0.54 | 1.05 | 21.09 | 0.00 | 21.09 | 4.000 | No | Yes | 2.00 |
| 475 | 4.52 | 2.09 | 88.48 | 2.82 | 0.54 | 1.05 | 21.34 | 0.00 | 21.34 | 4.000 | No | Yes | 2.00 |
| 476 | 4.54 | 2.14 | 86.64 | 2.80 | 0.54 | 1.04 | 21.84 | 0.00 | 21.84 | 4.000 | No | Yes | 2.00 |
| 477 | 4.56 | 2.18 | 85.54 | 2.78 | 0.54 | 1.04 | 22.25 | 0.00 | 22.25 | 4.000 | No | Yes | 2.00 |
| 478 | 4.58 | 2.23 | 84.41 | 2.77 | 0.54 | 1.04 | 22.71 | 0.00 | 22.71 | 4.000 | No | Yes | 2.00 |
| 479 | 4.60 | 2.28 | 83.27 | 2.75 | 0.54 | 1.04 | 23.20 | 0.00 | 23.20 | 4.000 | No | Yes | 2.00 |
| 480 | 4.62 | 2.29 | 83.40 | 2.75 | 0.54 | 1.04 | 23.23 | 0.00 | 23.23 | 4.000 | No | Yes | 2.00 |
| 481 | 4.64 | 2.30 | 83.12 | 2.75 | 0.54 | 1.04 | 23.38 | 0.00 | 23.38 | 4.000 | No | Yes | 2.00 |
| 482 | 4.66 | 2.33 | 83.47 | 2.76 | 0.54 | 1.04 | 23.64 | 0.00 | 23.64 | 4.000 | No | Yes | 2.00 |
| 483 | 4.68 | 2.34 | 84.02 | 2.76 | 0.54 | 1.04 | 23.73 | 0.00 | 23.73 | 4.000 | No | Yes | 2.00 |
| 484 | 4.70 | 2.32 | 85.29 | 2.78 | 0.54 | 1.04 | 23.54 | 0.00 | 23.54 | 4.000 | No | Yes | 2.00 |
| 485 | 4.72 | 2.35 | 85.57 | 2.78 | 0.54 | 1.04 | 23.77 | 0.00 | 23.77 | 4.000 | No | Yes | 2.00 |
| 486 | 4.74 | 2.35 | 85.84 | 2.79 | 0.54 | 1.03 | 23.80 | 0.00 | 23.80 | 4.000 | No | Yes | 2.00 |
| 487 | 4.76 | 2.31 | 87.49 | 2.81 | 0.54 | 1.03 | 23.54 | 0.00 | 23.54 | 4.000 | No | Yes | 2.00 |
| 488 | 4.78 | 2.26 | 89.15 | 2.83 | 0.54 | 1.03 | 23.11 | 0.00 | 23.11 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 489 | 4.80 | 2.25 | 89.19 | 2.83 | 0.54 | 1.03 | 22.98 | 0.00 | 22.98 | 4.000 | No | Yes | 2.00 |
| 490 | 4.82 | 2.20 | 90.45 | 2.84 | 0.54 | 1.03 | 22.46 | 0.00 | 22.46 | 4.000 | No | Yes | 2.00 |
| 491 | 4.84 | 2.21 | 90.56 | 2.84 | 0.54 | 1.03 | 22.47 | 0.00 | 22.47 | 4.000 | No | Yes | 2.00 |
| 492 | 4.86 | 2.21 | 90.98 | 2.85 | 0.54 | 1.03 | 22.54 | 0.00 | 22.54 | 4.000 | No | Yes | 2.00 |
| 493 | 4.88 | 2.23 | 90.73 | 2.85 | 0.54 | 1.03 | 22.69 | 0.00 | 22.69 | 4.000 | No | Yes | 2.00 |
| 494 | 4.90 | 2.23 | 91.04 | 2.85 | 0.54 | 1.03 | 22.66 | 0.00 | 22.66 | 4.000 | No | Yes | 2.00 |
| 495 | 4.92 | 2.23 | 91.60 | 2.86 | 0.54 | 1.03 | 22.69 | 0.00 | 22.69 | 4.000 | No | Yes | 2.00 |
| 496 | 4.94 | 2.28 | 92.50 | 2.87 | 0.54 | 1.02 | 22.90 | 0.00 | 22.90 | 4.000 | No | Yes | 2.00 |
| 497 | 4.96 | 2.36 | 90.56 | 2.84 | 0.54 | 1.02 | 23.87 | 0.00 | 23.87 | 4.000 | No | Yes | 2.00 |
| 498 | 4.98 | 2.33 | 91.03 | 2.85 | 0.54 | 1.02 | 23.57 | 0.00 | 23.57 | 4.000 | No | Yes | 2.00 |
| 499 | 5.00 | 2.24 | 93.42 | 2.88 | 0.54 | 1.02 | 22.59 | 0.00 | 22.59 | 4.000 | No | Yes | 2.00 |
| 500 | 5.02 | 2.23 | 93.72 | 2.88 | 0.54 | 1.02 | 22.47 | 0.00 | 22.47 | 4.000 | No | Yes | 2.00 |
| 501 | 5.04 | 2.05 | 97.57 | 2.93 | 0.54 | 1.02 | 20.63 | 0.00 | 20.63 | 4.000 | No | Yes | 2.00 |
| 502 | 5.06 | 1.96 | 99.87 | 2.96 | 0.55 | 1.02 | 19.72 | 0.00 | 19.72 | 4.000 | No | Yes | 2.00 |
| 503 | 5.08 | 1.87 | 100.00 | 2.99 | 0.55 | 1.02 | 18.85 | 0.00 | 18.85 | 4.000 | No | Yes | 2.00 |
| 504 | 5.10 | 1.80 | 100.00 | 3.01 | 0.55 | 1.02 | 18.09 | 0.00 | 18.09 | 4.000 | No | Yes | 2.00 |
| 505 | 5.12 | 1.73 | 100.00 | 3.02 | 0.56 | 1.02 | 17.36 | 0.00 | 17.36 | 4.000 | No | Yes | 2.00 |
| 506 | 5.14 | 1.63 | 100.00 | 3.05 | 0.56 | 1.02 | 16.37 | 0.00 | 16.37 | 4.000 | No | Yes | 2.00 |
| 507 | 5.16 | 1.53 | 100.00 | 3.08 | 0.56 | 1.01 | 15.39 | 0.00 | 15.39 | 4.000 | No | Yes | 2.00 |
| 508 | 5.18 | 1.44 | 100.00 | 3.11 | 0.57 | 1.01 | 14.49 | 0.00 | 14.49 | 4.000 | No | Yes | 2.00 |
| 509 | 5.20 | 1.36 | 100.00 | 3.14 | 0.57 | 1.01 | 13.59 | 0.00 | 13.59 | 4.000 | No | Yes | 2.00 |
| 510 | 5.22 | 1.31 | 100.00 | 3.14 | 0.57 | 1.01 | 13.16 | 0.00 | 13.16 | 4.000 | No | Yes | 2.00 |
| 511 | 5.24 | 1.32 | 100.00 | 3.12 | 0.57 | 1.01 | 13.17 | 0.00 | 13.17 | 4.000 | No | Yes | 2.00 |
| 512 | 5.26 | 1.32 | 100.00 | 3.10 | 0.57 | 1.01 | 13.16 | 0.00 | 13.16 | 4.000 | No | Yes | 2.00 |
| 513 | 5.28 | 1.31 | 100.00 | 3.07 | 0.57 | 1.01 | 13.12 | 0.00 | 13.12 | 4.000 | No | Yes | 2.00 |
| 514 | 5.30 | 1.33 | 100.00 | 3.02 | 0.57 | 1.01 | 13.30 | 0.00 | 13.30 | 4.000 | No | Yes | 2.00 |
| 515 | 5.32 | 1.36 | 99.06 | 2.95 | 0.57 | 1.01 | 13.55 | 0.00 | 13.55 | 4.000 | No | Yes | 2.00 |
| 516 | 5.34 | 1.38 | 95.93 | 2.91 | 0.57 | 1.01 | 13.75 | 0.00 | 13.75 | 4.000 | No | Yes | 2.00 |
| 517 | 5.36 | 1.45 | 91.53 | 2.86 | 0.57 | 1.01 | 14.39 | 0.00 | 14.39 | 4.000 | No | Yes | 2.00 |
| 518 | 5.38 | 1.48 | 88.27 | 2.82 | 0.57 | 1.00 | 14.69 | 0.00 | 14.69 | 4.000 | No | Yes | 2.00 |
| 519 | 5.40 | 1.52 | 86.17 | 2.79 | 0.57 | 1.00 | 15.08 | 0.00 | 15.08 | 4.000 | No | Yes | 2.00 |
| 520 | 5.42 | 1.58 | 84.42 | 2.77 | 0.57 | 1.00 | 15.63 | 0.00 | 15.63 | 4.000 | No | Yes | 2.00 |
| 521 | 5.44 | 1.61 | 85.45 | 2.78 | 0.56 | 1.00 | 15.97 | 0.00 | 15.97 | 4.000 | No | Yes | 2.00 |
| 522 | 5.46 | 1.66 | 86.21 | 2.79 | 0.56 | 1.00 | 16.42 | 0.00 | 16.42 | 4.000 | No | Yes | 2.00 |
| 523 | 5.48 | 1.73 | 86.13 | 2.79 | 0.56 | 1.00 | 17.06 | 0.00 | 17.06 | 4.000 | No | Yes | 2.00 |
| 524 | 5.50 | 1.79 | 85.57 | 2.78 | 0.56 | 1.00 | 17.61 | 0.00 | 17.61 | 4.000 | No | Yes | 2.00 |
| 525 | 5.52 | 1.84 | 84.91 | 2.77 | 0.56 | 1.00 | 18.12 | 0.00 | 18.12 | 4.000 | No | Yes | 2.00 |
| 526 | 5.54 | 1.91 | 84.53 | 2.77 | 0.55 | 1.00 | 18.77 | 0.00 | 18.77 | 4.000 | No | Yes | 2.00 |
| 527 | 5.56 | 2.02 | 83.23 | 2.75 | 0.55 | 1.00 | 19.83 | 0.00 | 19.83 | 4.000 | No | Yes | 2.00 |
| 528 | 5.58 | 2.11 | 82.58 | 2.74 | 0.55 | 1.00 | 20.71 | 0.00 | 20.71 | 4.000 | No | Yes | 2.00 |
| 529 | 5.60 | 2.11 | 82.77 | 2.75 | 0.55 | 1.00 | 20.71 | 0.00 | 20.71 | 4.000 | No | Yes | 2.00 |
| 530 | 5.62 | 2.25 | 82.33 | 2.74 | 0.54 | 0.99 | 22.06 | 0.00 | 22.06 | 4.000 | No | Yes | 2.00 |
| 531 | 5.64 | 2.36 | 82.25 | 2.74 | 0.54 | 0.99 | 23.06 | 0.00 | 23.06 | 4.000 | No | Yes | 2.00 |
| 532 | 5.66 | 2.37 | 83.73 | 2.76 | 0.54 | 0.99 | 23.14 | 0.00 | 23.14 | 4.000 | No | Yes | 2.00 |
| 533 | 5.68 | 2.38 | 85.31 | 2.78 | 0.54 | 0.99 | 23.29 | 0.00 | 23.29 | 4.000 | No | Yes | 2.00 |
| 534 | 5.70 | 2.40 | 85.38 | 2.78 | 0.54 | 0.99 | 23.42 | 0.00 | 23.42 | 4.000 | No | Yes | 2.00 |
| 535 | 5.72 | 2.40 | 85.44 | 2.78 | 0.54 | 0.99 | 23.40 | 0.00 | 23.40 | 4.000 | No | Yes | 2.00 |
| 536 | 5.74 | 2.26 | 94.13 | 2.89 | 0.54 | 0.99 | 22.00 | 0.00 | 22.00 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 537 | 5.76 | 2.22 | 96.79 | 2.92 | 0.54 | 0.99 | 21.63 | 0.00 | 21.63 | 4.000 | No | Yes | 2.00 |
| 538 | 5.78 | 2.27 | 96.64 | 2.92 | 0.54 | 0.99 | 22.05 | 0.00 | 22.05 | 4.000 | No | Yes | 2.00 |
| 539 | 5.80 | 2.27 | 97.23 | 2.93 | 0.54 | 0.99 | 21.98 | 0.00 | 21.98 | 4.000 | No | Yes | 2.00 |
| 540 | 5.82 | 2.31 | 95.49 | 2.91 | 0.54 | 0.99 | 22.41 | 0.00 | 22.41 | 4.000 | No | Yes | 2.00 |
| 541 | 5.84 | 2.64 | 87.70 | 2.81 | 0.53 | 0.98 | 25.54 | 0.00 | 25.54 | 4.000 | No | Yes | 2.00 |
| 542 | 5.86 | 2.56 | 88.32 | 2.82 | 0.53 | 0.98 | 24.77 | 0.00 | 24.77 | 4.000 | No | Yes | 2.00 |
| 543 | 5.88 | 2.56 | 87.97 | 2.81 | 0.53 | 0.98 | 24.79 | 0.00 | 24.79 | 4.000 | No | Yes | 2.00 |
| 544 | 5.90 | 2.74 | 84.73 | 2.77 | 0.53 | 0.98 | 26.52 | 0.00 | 26.52 | 4.000 | No | Yes | 2.00 |
| 545 | 5.92 | 2.53 | 91.45 | 2.86 | 0.53 | 0.98 | 24.42 | 0.00 | 24.42 | 4.000 | No | Yes | 2.00 |
| 546 | 5.94 | 2.44 | 97.18 | 2.93 | 0.53 | 0.98 | 23.49 | 0.00 | 23.49 | 4.000 | No | Yes | 2.00 |
| 547 | 5.96 | 2.68 | 93.06 | 2.88 | 0.53 | 0.98 | 25.84 | 0.00 | 25.84 | 4.000 | No | Yes | 2.00 |
| 548 | 5.98 | 2.76 | 91.05 | 2.85 | 0.53 | 0.98 | 26.61 | 0.00 | 26.61 | 4.000 | No | Yes | 2.00 |
| 549 | 6.00 | 2.84 | 91.21 | 2.85 | 0.52 | 0.98 | 27.29 | 0.00 | 27.29 | 4.000 | No | Yes | 2.00 |
| 550 | 6.02 | 2.93 | 89.46 | 2.83 | 0.52 | 0.98 | 28.20 | 0.00 | 28.20 | 4.000 | No | Yes | 2.00 |
| 551 | 6.04 | 3.25 | 84.18 | 2.76 | 0.51 | 0.98 | 31.23 | 0.00 | 31.23 | 4.000 | No | Yes | 2.00 |
| 552 | 6.06 | 3.33 | 83.06 | 2.75 | 0.51 | 0.98 | 31.94 | 0.00 | 31.94 | 4.000 | No | Yes | 2.00 |
| 553 | 6.08 | 3.92 | 74.85 | 2.65 | 0.50 | 0.98 | 37.60 | 0.00 | 37.60 | 4.000 | No | Yes | 2.00 |
| 554 | 6.10 | 4.08 | 73.56 | 2.63 | 0.49 | 0.98 | 39.14 | 0.00 | 39.14 | 4.000 | No | Yes | 2.00 |
| 555 | 6.12 | 3.93 | 76.36 | 2.67 | 0.50 | 0.97 | 37.66 | 0.00 | 37.66 | 4.000 | No | Yes | 2.00 |
| 556 | 6.14 | 3.94 | 76.85 | 2.67 | 0.50 | 0.97 | 37.67 | 0.00 | 37.67 | 4.000 | No | Yes | 2.00 |
| 557 | 6.16 | 4.16 | 73.66 | 2.63 | 0.49 | 0.97 | 39.80 | 0.00 | 39.80 | 4.000 | No | Yes | 2.00 |
| 558 | 6.18 | 4.03 | 76.49 | 2.67 | 0.49 | 0.97 | 38.46 | 0.00 | 38.46 | 4.000 | No | Yes | 2.00 |
| 559 | 6.20 | 3.98 | 77.39 | 2.68 | 0.50 | 0.97 | 37.94 | 0.00 | 37.94 | 4.000 | No | Yes | 2.00 |
| 560 | 6.22 | 3.94 | 78.69 | 2.70 | 0.50 | 0.97 | 37.57 | 0.00 | 37.57 | 4.000 | No | Yes | 2.00 |
| 561 | 6.24 | 3.93 | 78.33 | 2.69 | 0.50 | 0.97 | 37.45 | 0.00 | 37.45 | 4.000 | No | Yes | 2.00 |
| 562 | 6.26 | 3.91 | 79.71 | 2.71 | 0.50 | 0.97 | 37.16 | 0.00 | 37.16 | 4.000 | No | Yes | 2.00 |
| 563 | 6.28 | 4.03 | 77.67 | 2.68 | 0.49 | 0.97 | 38.33 | 0.00 | 38.33 | 4.000 | No | Yes | 2.00 |
| 564 | 6.30 | 3.97 | 78.51 | 2.69 | 0.50 | 0.97 | 37.70 | 0.00 | 37.70 | 4.000 | No | Yes | 2.00 |
| 565 | 6.32 | 4.01 | 77.87 | 2.69 | 0.50 | 0.97 | 38.03 | 0.00 | 38.03 | 4.000 | No | Yes | 2.00 |
| 566 | 6.34 | 4.03 | 77.82 | 2.69 | 0.50 | 0.96 | 38.15 | 0.00 | 38.15 | 4.000 | No | Yes | 2.00 |
| 567 | 6.36 | 4.05 | 77.71 | 2.68 | 0.49 | 0.96 | 38.37 | 0.00 | 38.37 | 4.000 | No | Yes | 2.00 |
| 568 | 6.38 | 3.92 | 80.47 | 2.72 | 0.50 | 0.96 | 37.06 | 0.00 | 37.06 | 4.000 | No | Yes | 2.00 |
| 569 | 6.40 | 3.89 | 81.21 | 2.73 | 0.50 | 0.96 | 36.79 | 0.00 | 36.79 | 4.000 | No | Yes | 2.00 |
| 570 | 6.42 | 3.80 | 83.18 | 2.75 | 0.50 | 0.96 | 35.90 | 0.00 | 35.90 | 4.000 | No | Yes | 2.00 |
| 571 | 6.44 | 3.91 | 82.04 | 2.74 | 0.50 | 0.96 | 36.90 | 0.00 | 36.90 | 4.000 | No | Yes | 2.00 |
| 572 | 6.46 | 3.67 | 85.77 | 2.78 | 0.50 | 0.96 | 34.53 | 0.00 | 34.53 | 4.000 | No | Yes | 2.00 |
| 573 | 6.48 | 3.65 | 86.52 | 2.79 | 0.50 | 0.96 | 34.37 | 0.00 | 34.37 | 4.000 | No | Yes | 2.00 |
| 574 | 6.50 | 3.03 | 95.72 | 2.91 | 0.52 | 0.96 | 28.47 | 0.00 | 28.47 | 4.000 | No | Yes | 2.00 |
| 575 | 6.52 | 2.65 | 100.00 | 3.02 | 0.53 | 0.95 | 24.84 | 0.00 | 24.84 | 4.000 | No | Yes | 2.00 |
| 576 | 6.54 | 2.53 | 100.00 | 3.04 | 0.53 | 0.95 | 23.68 | 0.00 | 23.68 | 4.000 | No | Yes | 2.00 |
| 577 | 6.56 | 2.58 | 100.00 | 3.02 | 0.53 | 0.95 | 24.10 | 0.00 | 24.10 | 4.000 | No | Yes | 2.00 |
| 578 | 6.58 | 2.59 | 100.00 | 3.01 | 0.53 | 0.95 | 24.18 | 0.00 | 24.18 | 4.000 | No | Yes | 2.00 |
| 579 | 6.60 | 2.64 | 100.00 | 2.99 | 0.53 | 0.95 | 24.57 | 0.00 | 24.57 | 4.000 | No | Yes | 2.00 |
| 580 | 6.62 | 2.58 | 100.00 | 2.99 | 0.53 | 0.95 | 24.02 | 0.00 | 24.02 | 4.000 | No | Yes | 2.00 |
| 581 | 6.64 | 2.64 | 100.00 | 2.97 | 0.53 | 0.95 | 24.59 | 0.00 | 24.59 | 4.000 | No | Yes | 2.00 |
| 582 | 6.66 | 2.73 | 96.73 | 2.92 | 0.53 | 0.95 | 25.36 | 0.00 | 25.36 | 4.000 | No | Yes | 2.00 |
| 583 | 6.68 | 2.92 | 91.99 | 2.86 | 0.52 | 0.95 | 27.16 | 0.00 | 27.16 | 4.000 | No | Yes | 2.00 |
| 584 | 6.70 | 3.03 | 89.65 | 2.83 | 0.52 | 0.95 | 28.16 | 0.00 | 28.16 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 585 | 6.72 | 3.03 | 89.34 | 2.83 | 0.52 | 0.95 | 28.15 | 0.00 | 28.15 | 4.000 | No | Yes | 2.00 |
| 586 | 6.74 | 3.22 | 86.58 | 2.79 | 0.52 | 0.95 | 29.84 | 0.00 | 29.84 | 4.000 | No | Yes | 2.00 |
| 587 | 6.76 | 5.32 | 63.36 | 2.50 | 0.47 | 0.95 | 49.60 | 63.53 | 113.13 | 0.158 | No | No | 0.62 |
| 588 | 6.78 | 6.88 | 49.28 | 2.33 | 0.44 | 0.95 | 64.34 | 62.72 | 127.07 | 0.189 | No | No | 0.78 |
| 589 | 6.80 | 6.38 | 53.66 | 2.38 | 0.45 | 0.95 | 59.59 | 63.28 | 122.87 | 0.178 | No | No | 0.72 |
| 590 | 6.82 | 5.60 | 63.30 | 2.50 | 0.46 | 0.95 | 52.21 | 64.26 | 116.48 | 0.164 | No | No | 0.65 |
| 591 | 6.84 | 5.35 | 68.39 | 2.57 | 0.47 | 0.95 | 49.83 | 64.79 | 114.62 | 0.160 | No | No | 0.63 |
| 592 | 6.86 | 4.19 | 85.45 | 2.78 | 0.49 | 0.94 | 38.84 | 0.00 | 38.84 | 4.000 | No | Yes | 2.00 |
| 593 | 6.88 | 4.35 | 84.32 | 2.77 | 0.49 | 0.94 | 40.32 | 0.00 | 40.32 | 4.000 | No | Yes | 2.00 |
| 594 | 6.90 | 3.98 | 90.94 | 2.85 | 0.50 | 0.94 | 36.81 | 0.00 | 36.81 | 4.000 | No | Yes | 2.00 |
| 595 | 6.92 | 3.81 | 93.43 | 2.88 | 0.50 | 0.94 | 35.20 | 0.00 | 35.20 | 4.000 | No | Yes | 2.00 |
| 596 | 6.94 | 3.18 | 100.00 | 2.96 | 0.52 | 0.94 | 29.21 | 0.00 | 29.21 | 4.000 | No | Yes | 2.00 |
| 597 | 6.96 | 3.45 | 96.31 | 2.92 | 0.51 | 0.94 | 31.78 | 0.00 | 31.78 | 4.000 | No | Yes | 2.00 |
| 598 | 6.98 | 3.45 | 96.36 | 2.92 | 0.51 | 0.94 | 31.75 | 0.00 | 31.75 | 4.000 | No | Yes | 2.00 |

**Abbreviations**

Depth: Depth from free surface, at which CPT was performed (m)
$q_t$: Total cone resistance
FC: Fines content (%)
$I_c$: Soil behavior type index
m: Stress exponent
$C_N$: Overburden correction factor
$q_{c1N}$: Normalized and adjusted cone resistance
$\Delta q_{c1N}$: Cone resistance correction factor due to fines
$q_{c1N,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for $M_w$=7.5
FS: Factor of safety against soil liquefaction

**:: 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.02 | 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 | 1.95 | 0.00 | 9.82 | 0.02 | 0.00 |
| 0.38 | 1.78 | 0.00 | 9.81 | 0.02 | 0.00 | 0.40 | 1.62 | 0.00 | 9.80 | 0.02 | 0.00 |
| 0.42 | 1.48 | 0.00 | 9.79 | 0.02 | 0.00 | 0.44 | 1.37 | 0.00 | 9.78 | 0.02 | 0.00 |
| 0.46 | 1.30 | 0.00 | 9.77 | 0.02 | 0.00 | 0.48 | 1.22 | 0.00 | 9.76 | 0.02 | 0.00 |
| 0.50 | 1.15 | 0.00 | 9.75 | 0.02 | 0.00 | 0.52 | 1.06 | 0.00 | 9.74 | 0.02 | 0.00 |
| 0.54 | 0.99 | 0.01 | 9.73 | 0.02 | 0.00 | 0.56 | 0.93 | 0.07 | 9.72 | 0.02 | 0.01 |
| 0.58 | 0.89 | 0.11 | 9.71 | 0.02 | 0.02 | 0.60 | 0.83 | 0.17 | 9.70 | 0.02 | 0.03 |
| 0.62 | 0.71 | 0.29 | 9.69 | 0.02 | 0.06 | 0.64 | 0.64 | 0.36 | 9.68 | 0.02 | 0.07 |
| 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 | 0.65 | 0.35 | 9.65 | 0.02 | 0.07 | 0.72 | 0.95 | 0.05 | 9.64 | 0.02 | 0.01 |
| 0.74 | 1.02 | 0.00 | 9.63 | 0.02 | 0.00 | 0.76 | 0.87 | 0.13 | 9.62 | 0.02 | 0.03 |
| 0.78 | 0.67 | 0.33 | 9.61 | 0.02 | 0.06 | 0.80 | 0.55 | 0.45 | 9.60 | 0.02 | 0.09 |
| 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 | 0.82 | 0.18 | 9.57 | 0.02 | 0.04 | 0.88 | 1.43 | 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 | 0.82 | 0.18 | 9.52 | 0.02 | 0.03 |
| 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 | 1.81 | 0.00 | 9.44 | 0.02 | 0.00 |
| 1.14 | 1.67 | 0.00 | 9.43 | 0.02 | 0.00 | 1.16 | 1.63 | 0.00 | 9.42 | 0.02 | 0.00 |
| 1.18 | 1.51 | 0.00 | 9.41 | 0.02 | 0.00 | 1.20 | 1.40 | 0.00 | 9.40 | 0.02 | 0.00 |
| 1.22 | 1.34 | 0.00 | 9.39 | 0.02 | 0.00 | 1.24 | 1.35 | 0.00 | 9.38 | 0.02 | 0.00 |
| 1.26 | 1.46 | 0.00 | 9.37 | 0.02 | 0.00 | 1.28 | 1.67 | 0.00 | 9.36 | 0.02 | 0.00 |
| 1.30 | 1.89 | 0.00 | 9.35 | 0.02 | 0.00 | 1.31 | 1.86 | 0.00 | 9.34 | 0.02 | 0.00 |
| 1.33 | 1.86 | 0.00 | 9.33 | 0.02 | 0.00 | 1.35 | 1.95 | 0.00 | 9.32 | 0.02 | 0.00 |
| 1.37 | 2.00 | 0.00 | 9.31 | 0.02 | 0.00 | 1.39 | 1.83 | 0.00 | 9.30 | 0.02 | 0.00 |
| 1.41 | 1.69 | 0.00 | 9.29 | 0.02 | 0.00 | 1.43 | 1.78 | 0.00 | 9.28 | 0.02 | 0.00 |
| 1.45 | 1.95 | 0.00 | 9.27 | 0.02 | 0.00 | 1.47 | 2.00 | 0.00 | 9.26 | 0.02 | 0.00 |
| 1.49 | 2.00 | 0.00 | 9.25 | 0.02 | 0.00 | 1.51 | 2.00 | 0.00 | 9.24 | 0.02 | 0.00 |
| 1.53 | 2.00 | 0.00 | 9.23 | 0.02 | 0.00 | 1.55 | 2.00 | 0.00 | 9.22 | 0.02 | 0.00 |
| 1.57 | 2.00 | 0.00 | 9.21 | 0.02 | 0.00 | 1.59 | 2.00 | 0.00 | 9.20 | 0.02 | 0.00 |
| 1.61 | 2.00 | 0.00 | 9.19 | 0.02 | 0.00 | 1.63 | 2.00 | 0.00 | 9.18 | 0.02 | 0.00 |
| 1.65 | 2.00 | 0.00 | 9.17 | 0.02 | 0.00 | 1.67 | 2.00 | 0.00 | 9.16 | 0.02 | 0.00 |
| 1.69 | 2.00 | 0.00 | 9.15 | 0.02 | 0.00 | 1.71 | 2.00 | 0.00 | 9.14 | 0.02 | 0.00 |
| 1.73 | 2.00 | 0.00 | 9.13 | 0.02 | 0.00 | 1.75 | 2.00 | 0.00 | 9.12 | 0.02 | 0.00 |
| 1.77 | 2.00 | 0.00 | 9.11 | 0.02 | 0.00 | 1.79 | 2.00 | 0.00 | 9.10 | 0.02 | 0.00 |
| 1.81 | 2.00 | 0.00 | 9.09 | 0.02 | 0.00 | 1.83 | 1.86 | 0.00 | 9.08 | 0.02 | 0.00 |
| 1.85 | 1.70 | 0.00 | 9.07 | 0.02 | 0.00 | 1.87 | 1.34 | 0.00 | 9.06 | 0.02 | 0.00 |
| 1.89 | 1.07 | 0.00 | 9.05 | 0.02 | 0.00 | 1.91 | 0.95 | 0.05 | 9.04 | 0.02 | 0.01 |

**:: 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.93 | 0.92 | 0.08 | 9.03 | 0.02 | 0.01 | 1.95 | 0.93 | 0.07 | 9.02 | 0.02 | 0.01 |
| 1.97 | 1.08 | 0.00 | 9.01 | 0.02 | 0.00 | 1.99 | 1.12 | 0.00 | 9.00 | 0.02 | 0.00 |
| 2.01 | 1.18 | 0.00 | 8.99 | 0.02 | 0.00 | 2.03 | 1.23 | 0.00 | 8.98 | 0.02 | 0.00 |
| 2.05 | 1.36 | 0.00 | 8.97 | 0.02 | 0.00 | 2.07 | 1.46 | 0.00 | 8.96 | 0.02 | 0.00 |
| 2.09 | 1.34 | 0.00 | 8.95 | 0.02 | 0.00 | 2.11 | 1.25 | 0.00 | 8.94 | 0.02 | 0.00 |
| 2.13 | 1.20 | 0.00 | 8.93 | 0.02 | 0.00 | 2.15 | 1.21 | 0.00 | 8.92 | 0.02 | 0.00 |
| 2.17 | 1.16 | 0.00 | 8.91 | 0.02 | 0.00 | 2.19 | 1.06 | 0.00 | 8.90 | 0.02 | 0.00 |
| 2.21 | 0.95 | 0.05 | 8.89 | 0.02 | 0.01 | 2.23 | 0.95 | 0.05 | 8.88 | 0.02 | 0.01 |
| 2.25 | 0.81 | 0.19 | 8.87 | 0.02 | 0.03 | 2.27 | 0.68 | 0.32 | 8.86 | 0.02 | 0.06 |
| 2.29 | 0.57 | 0.43 | 8.85 | 0.02 | 0.08 | 2.31 | 0.50 | 0.50 | 8.84 | 0.02 | 0.09 |
| 2.33 | 0.47 | 0.53 | 8.83 | 0.02 | 0.09 | 2.35 | 0.44 | 0.56 | 8.82 | 0.02 | 0.10 |
| 2.37 | 2.00 | 0.00 | 8.81 | 0.02 | 0.00 | 2.39 | 2.00 | 0.00 | 8.80 | 0.02 | 0.00 |
| 2.41 | 0.55 | 0.45 | 8.79 | 0.02 | 0.08 | 2.43 | 0.86 | 0.14 | 8.78 | 0.02 | 0.02 |
| 2.45 | 1.03 | 0.00 | 8.77 | 0.02 | 0.00 | 2.47 | 1.10 | 0.00 | 8.76 | 0.02 | 0.00 |
| 2.49 | 1.16 | 0.00 | 8.75 | 0.02 | 0.00 | 2.51 | 0.62 | 0.38 | 8.74 | 0.02 | 0.07 |
| 2.53 | 0.55 | 0.45 | 8.73 | 0.02 | 0.08 | 2.55 | 0.50 | 0.50 | 8.72 | 0.02 | 0.09 |
| 2.57 | 0.52 | 0.48 | 8.71 | 0.02 | 0.08 | 2.59 | 0.65 | 0.35 | 8.70 | 0.02 | 0.06 |
| 2.61 | 0.61 | 0.39 | 8.69 | 0.02 | 0.07 | 2.63 | 0.58 | 0.42 | 8.68 | 0.02 | 0.07 |
| 2.65 | 0.57 | 0.43 | 8.67 | 0.02 | 0.07 | 2.67 | 2.00 | 0.00 | 8.66 | 0.02 | 0.00 |
| 2.69 | 2.00 | 0.00 | 8.65 | 0.02 | 0.00 | 2.71 | 2.00 | 0.00 | 8.64 | 0.02 | 0.00 |
| 2.73 | 2.00 | 0.00 | 8.63 | 0.02 | 0.00 | 2.75 | 2.00 | 0.00 | 8.62 | 0.02 | 0.00 |
| 2.77 | 2.00 | 0.00 | 8.61 | 0.02 | 0.00 | 2.79 | 2.00 | 0.00 | 8.60 | 0.02 | 0.00 |
| 2.81 | 2.00 | 0.00 | 8.59 | 0.02 | 0.00 | 2.83 | 2.00 | 0.00 | 8.58 | 0.02 | 0.00 |
| 2.85 | 2.00 | 0.00 | 8.57 | 0.02 | 0.00 | 2.87 | 2.00 | 0.00 | 8.56 | 0.02 | 0.00 |
| 2.89 | 2.00 | 0.00 | 8.55 | 0.02 | 0.00 | 2.91 | 2.00 | 0.00 | 8.54 | 0.02 | 0.00 |
| 2.93 | 2.00 | 0.00 | 8.53 | 0.02 | 0.00 | 2.95 | 2.00 | 0.00 | 8.52 | 0.02 | 0.00 |
| 2.97 | 2.00 | 0.00 | 8.51 | 0.02 | 0.00 | 2.99 | 2.00 | 0.00 | 8.50 | 0.02 | 0.00 |
| 3.01 | 2.00 | 0.00 | 8.49 | 0.02 | 0.00 | 3.03 | 2.00 | 0.00 | 8.48 | 0.02 | 0.00 |
| 3.05 | 2.00 | 0.00 | 8.47 | 0.02 | 0.00 | 3.07 | 2.00 | 0.00 | 8.46 | 0.02 | 0.00 |
| 3.09 | 2.00 | 0.00 | 8.45 | 0.02 | 0.00 | 3.11 | 2.00 | 0.00 | 8.44 | 0.02 | 0.00 |
| 3.13 | 2.00 | 0.00 | 8.44 | 0.02 | 0.00 | 3.15 | 2.00 | 0.00 | 8.43 | 0.02 | 0.00 |
| 3.17 | 2.00 | 0.00 | 8.42 | 0.02 | 0.00 | 3.19 | 2.00 | 0.00 | 8.41 | 0.02 | 0.00 |
| 3.21 | 2.00 | 0.00 | 8.40 | 0.02 | 0.00 | 3.23 | 2.00 | 0.00 | 8.39 | 0.02 | 0.00 |
| 3.25 | 2.00 | 0.00 | 8.38 | 0.02 | 0.00 | 3.27 | 2.00 | 0.00 | 8.37 | 0.02 | 0.00 |
| 3.29 | 2.00 | 0.00 | 8.36 | 0.02 | 0.00 | 3.31 | 2.00 | 0.00 | 8.35 | 0.02 | 0.00 |
| 3.33 | 2.00 | 0.00 | 8.34 | 0.02 | 0.00 | 3.35 | 2.00 | 0.00 | 8.33 | 0.02 | 0.00 |
| 3.37 | 2.00 | 0.00 | 8.32 | 0.02 | 0.00 | 3.39 | 2.00 | 0.00 | 8.31 | 0.02 | 0.00 |
| 3.41 | 2.00 | 0.00 | 8.30 | 0.02 | 0.00 | 3.43 | 2.00 | 0.00 | 8.29 | 0.02 | 0.00 |
| 3.45 | 2.00 | 0.00 | 8.28 | 0.02 | 0.00 | 3.47 | 2.00 | 0.00 | 8.27 | 0.02 | 0.00 |
| 3.49 | 0.48 | 0.52 | 8.26 | 0.02 | 0.09 | 3.51 | 2.00 | 0.00 | 8.25 | 0.02 | 0.00 |
| 3.53 | 2.00 | 0.00 | 8.24 | 0.02 | 0.00 | 3.55 | 2.00 | 0.00 | 8.23 | 0.02 | 0.00 |
| 3.57 | 2.00 | 0.00 | 8.22 | 0.02 | 0.00 | 3.59 | 2.00 | 0.00 | 8.21 | 0.02 | 0.00 |
| 3.61 | 2.00 | 0.00 | 8.20 | 0.02 | 0.00 | 3.63 | 2.00 | 0.00 | 8.19 | 0.02 | 0.00 |
| 3.65 | 2.00 | 0.00 | 8.18 | 0.02 | 0.00 | 3.67 | 2.00 | 0.00 | 8.17 | 0.02 | 0.00 |
| 3.69 | 2.00 | 0.00 | 8.16 | 0.02 | 0.00 | 3.71 | 2.00 | 0.00 | 8.15 | 0.02 | 0.00 |
| 3.73 | 2.00 | 0.00 | 8.14 | 0.02 | 0.00 | 3.75 | 2.00 | 0.00 | 8.13 | 0.02 | 0.00 |
| 3.77 | 2.00 | 0.00 | 8.12 | 0.02 | 0.00 | 3.79 | 2.00 | 0.00 | 8.11 | 0.02 | 0.00 |
| 3.81 | 2.00 | 0.00 | 8.10 | 0.02 | 0.00 | 3.83 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.85 | 2.00 | 0.00 | 8.08 | 0.02 | 0.00 | 3.87 | 2.00 | 0.00 | 8.07 | 0.02 | 0.00 |
| 3.89 | 2.00 | 0.00 | 8.06 | 0.02 | 0.00 | 3.91 | 2.00 | 0.00 | 8.05 | 0.02 | 0.00 |
| 3.93 | 2.00 | 0.00 | 8.04 | 0.02 | 0.00 | 3.95 | 2.00 | 0.00 | 8.03 | 0.02 | 0.00 |
| 3.97 | 2.00 | 0.00 | 8.02 | 0.02 | 0.00 | 3.99 | 2.00 | 0.00 | 8.01 | 0.02 | 0.00 |
| 4.01 | 2.00 | 0.00 | 8.00 | 0.02 | 0.00 | 4.03 | 2.00 | 0.00 | 7.99 | 0.02 | 0.00 |
| 4.05 | 2.00 | 0.00 | 7.98 | 0.02 | 0.00 | 4.07 | 2.00 | 0.00 | 7.97 | 0.02 | 0.00 |
| 4.09 | 2.00 | 0.00 | 7.96 | 0.02 | 0.00 | 4.11 | 2.00 | 0.00 | 7.95 | 0.02 | 0.00 |
| 4.13 | 2.00 | 0.00 | 7.94 | 0.02 | 0.00 | 4.15 | 2.00 | 0.00 | 7.93 | 0.02 | 0.00 |
| 4.17 | 2.00 | 0.00 | 7.92 | 0.02 | 0.00 | 4.19 | 2.00 | 0.00 | 7.91 | 0.02 | 0.00 |
| 4.21 | 2.00 | 0.00 | 7.90 | 0.02 | 0.00 | 4.23 | 2.00 | 0.00 | 7.89 | 0.02 | 0.00 |
| 4.25 | 2.00 | 0.00 | 7.88 | 0.02 | 0.00 | 4.27 | 2.00 | 0.00 | 7.87 | 0.02 | 0.00 |
| 4.29 | 2.00 | 0.00 | 7.86 | 0.02 | 0.00 | 4.31 | 2.00 | 0.00 | 7.85 | 0.02 | 0.00 |
| 4.33 | 2.00 | 0.00 | 7.84 | 0.02 | 0.00 | 4.35 | 2.00 | 0.00 | 7.83 | 0.02 | 0.00 |
| 4.37 | 2.00 | 0.00 | 7.82 | 0.02 | 0.00 | 4.39 | 2.00 | 0.00 | 7.81 | 0.02 | 0.00 |
| 4.41 | 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 | 2.00 | 0.00 | 7.72 | 0.02 | 0.00 | 4.58 | 2.00 | 0.00 | 7.71 | 0.02 | 0.00 |
| 4.60 | 2.00 | 0.00 | 7.70 | 0.02 | 0.00 | 4.62 | 2.00 | 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 | 2.00 | 0.00 | 7.50 | 0.02 | 0.00 | 5.02 | 2.00 | 0.00 | 7.49 | 0.02 | 0.00 |
| 5.04 | 2.00 | 0.00 | 7.48 | 0.02 | 0.00 | 5.06 | 2.00 | 0.00 | 7.47 | 0.02 | 0.00 |
| 5.08 | 2.00 | 0.00 | 7.46 | 0.02 | 0.00 | 5.10 | 2.00 | 0.00 | 7.45 | 0.02 | 0.00 |
| 5.12 | 2.00 | 0.00 | 7.44 | 0.02 | 0.00 | 5.14 | 2.00 | 0.00 | 7.43 | 0.02 | 0.00 |
| 5.16 | 2.00 | 0.00 | 7.42 | 0.02 | 0.00 | 5.18 | 2.00 | 0.00 | 7.41 | 0.02 | 0.00 |
| 5.20 | 2.00 | 0.00 | 7.40 | 0.02 | 0.00 | 5.22 | 2.00 | 0.00 | 7.39 | 0.02 | 0.00 |
| 5.24 | 2.00 | 0.00 | 7.38 | 0.02 | 0.00 | 5.26 | 2.00 | 0.00 | 7.37 | 0.02 | 0.00 |
| 5.28 | 2.00 | 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 | 2.00 | 0.00 | 7.29 | 0.02 | 0.00 |
| 5.44 | 2.00 | 0.00 | 7.28 | 0.02 | 0.00 | 5.46 | 2.00 | 0.00 | 7.27 | 0.02 | 0.00 |
| 5.48 | 2.00 | 0.00 | 7.26 | 0.02 | 0.00 | 5.50 | 2.00 | 0.00 | 7.25 | 0.02 | 0.00 |
| 5.52 | 2.00 | 0.00 | 7.24 | 0.02 | 0.00 | 5.54 | 2.00 | 0.00 | 7.23 | 0.02 | 0.00 |
| 5.56 | 2.00 | 0.00 | 7.22 | 0.02 | 0.00 | 5.58 | 2.00 | 0.00 | 7.21 | 0.02 | 0.00 |
| 5.60 | 2.00 | 0.00 | 7.20 | 0.02 | 0.00 | 5.62 | 2.00 | 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 | 2.00 | 0.00 | 7.05 | 0.02 | 0.00 |
| 5.92 | 2.00 | 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 | 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 | 0.62 | 0.38 | 6.62 | 0.02 | 0.05 | 6.78 | 0.78 | 0.22 | 6.61 | 0.02 | 0.03 |
| 6.80 | 0.72 | 0.28 | 6.60 | 0.02 | 0.04 | 6.82 | 0.65 | 0.35 | 6.59 | 0.02 | 0.05 |
| 6.84 | 0.63 | 0.37 | 6.58 | 0.02 | 0.05 | 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 |

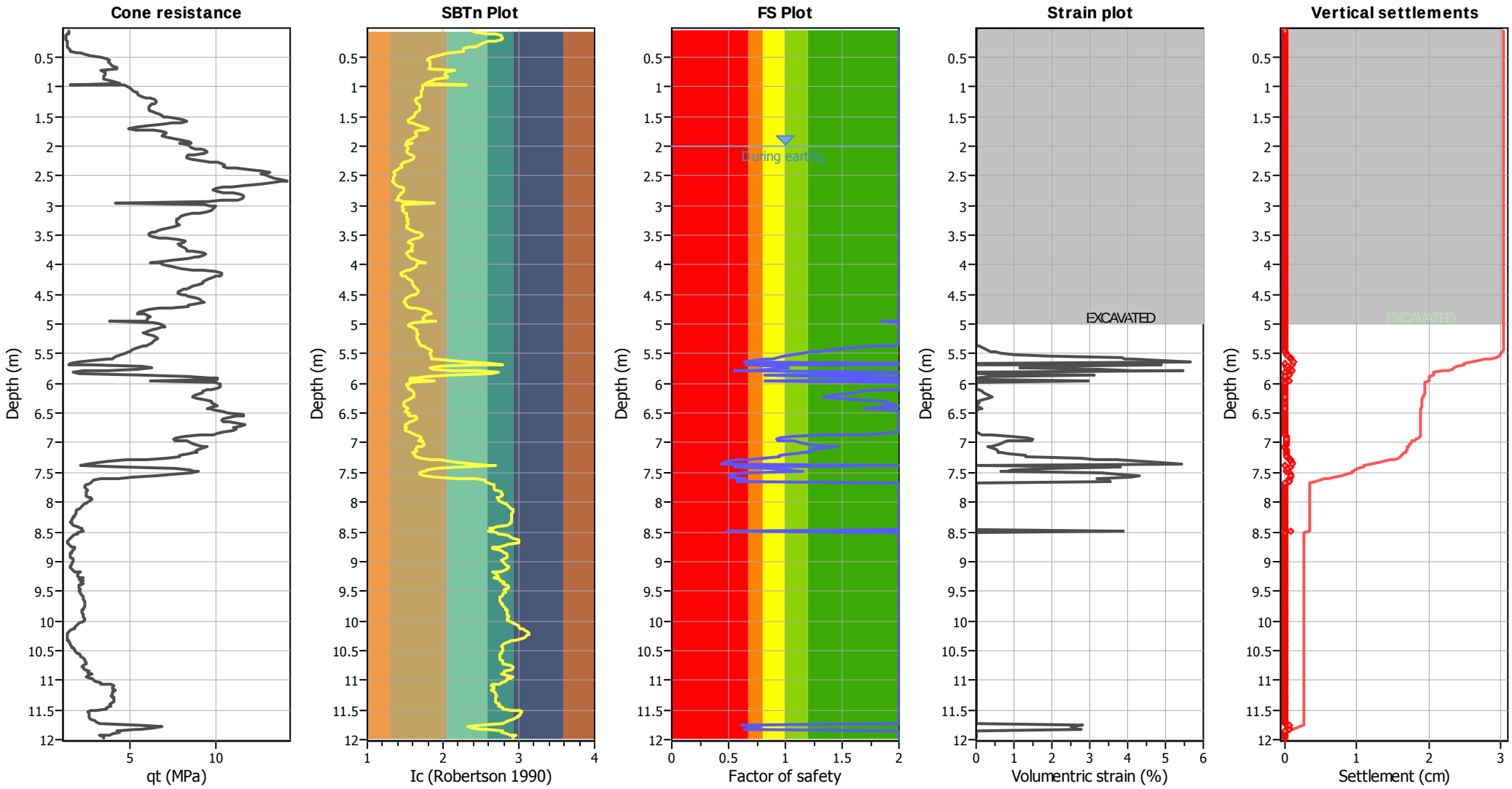
**Overall liquefaction potential: 2.00**

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

# Estimation of post-earthquake settlements




**Abbreviations**

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

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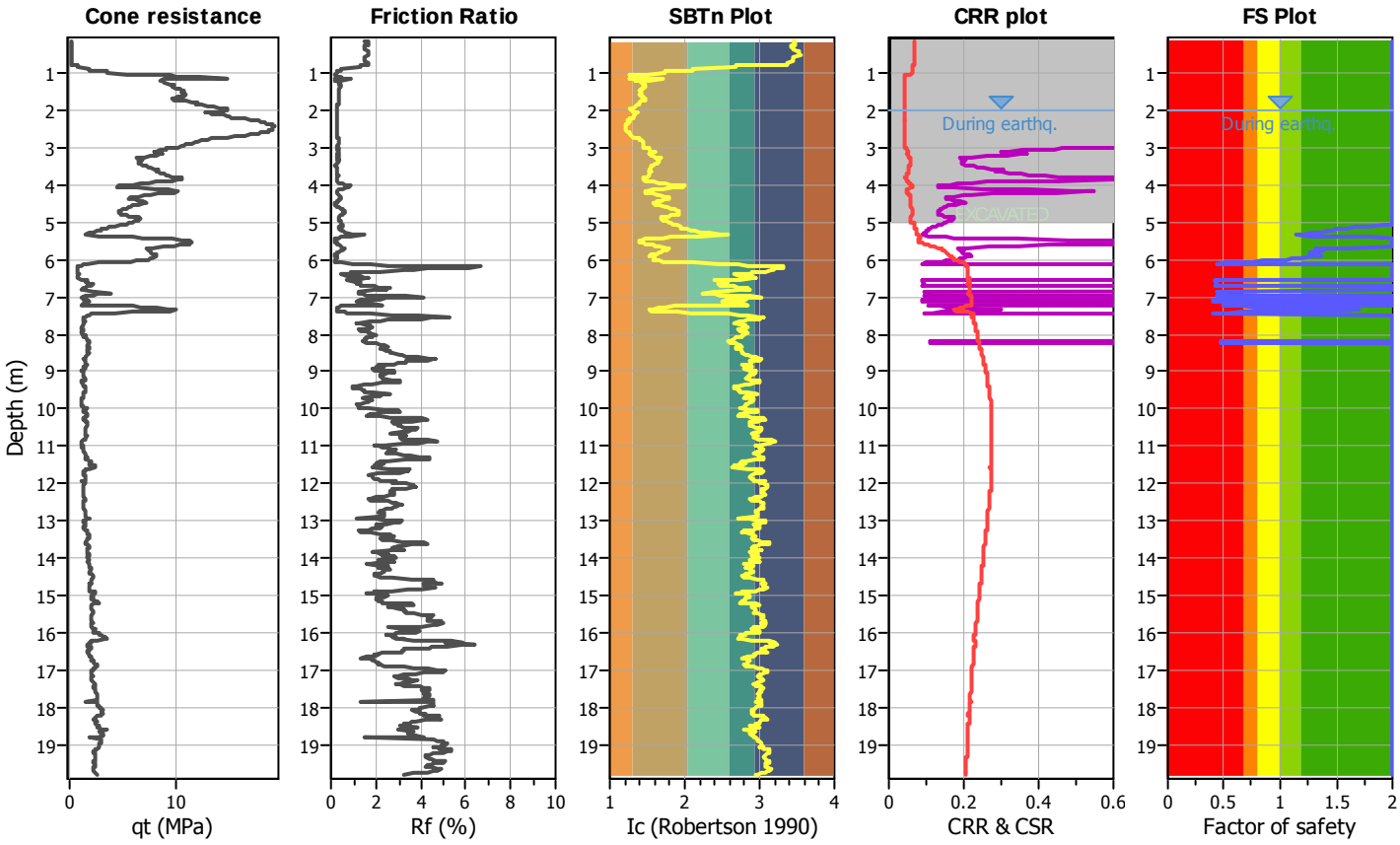
# LIQUEFACTION ANALYSIS REPORT

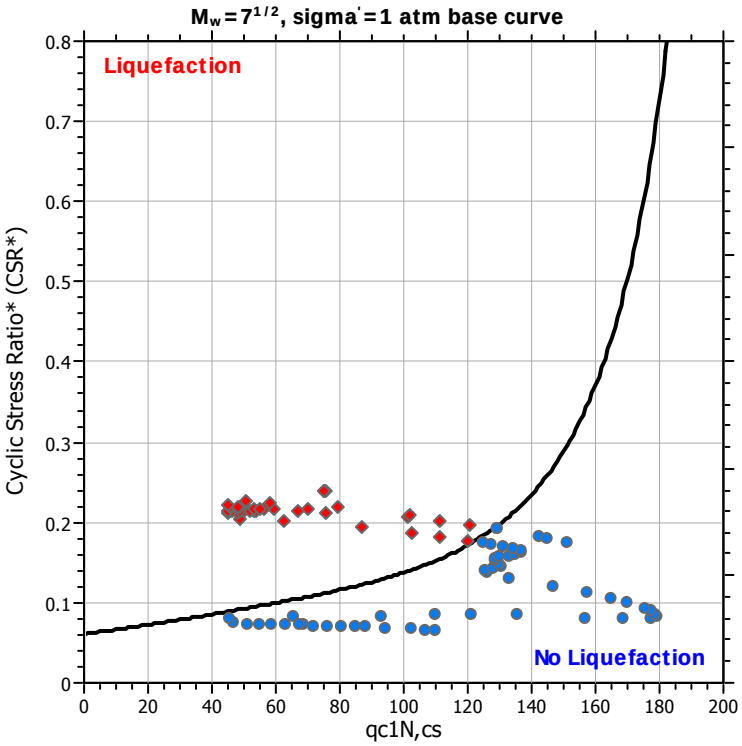
**Project title : Bosco verticale** **Location : Riccione**

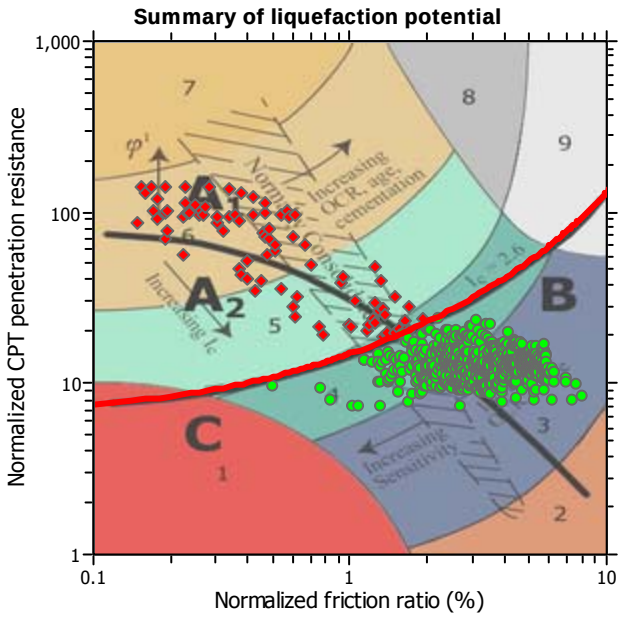
**CPT file : CPTu-2**

**Input parameters and analysis data**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 2.00 m | Excavation: | Yes | Clay like behavior applied: | Sands only |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 2.00 m | Excavation depth: | 5.00 m | Limit depth applied: | Yes |
| Points to test: | Based on Ic value | Average results interval: | 1 | Footing load: | 95.00 kPa | Limit depth: | 20.00 m |
| Earthquake magnitude $M_w$: | 6.14 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method |
| Peak ground acceleration: | 0.19 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

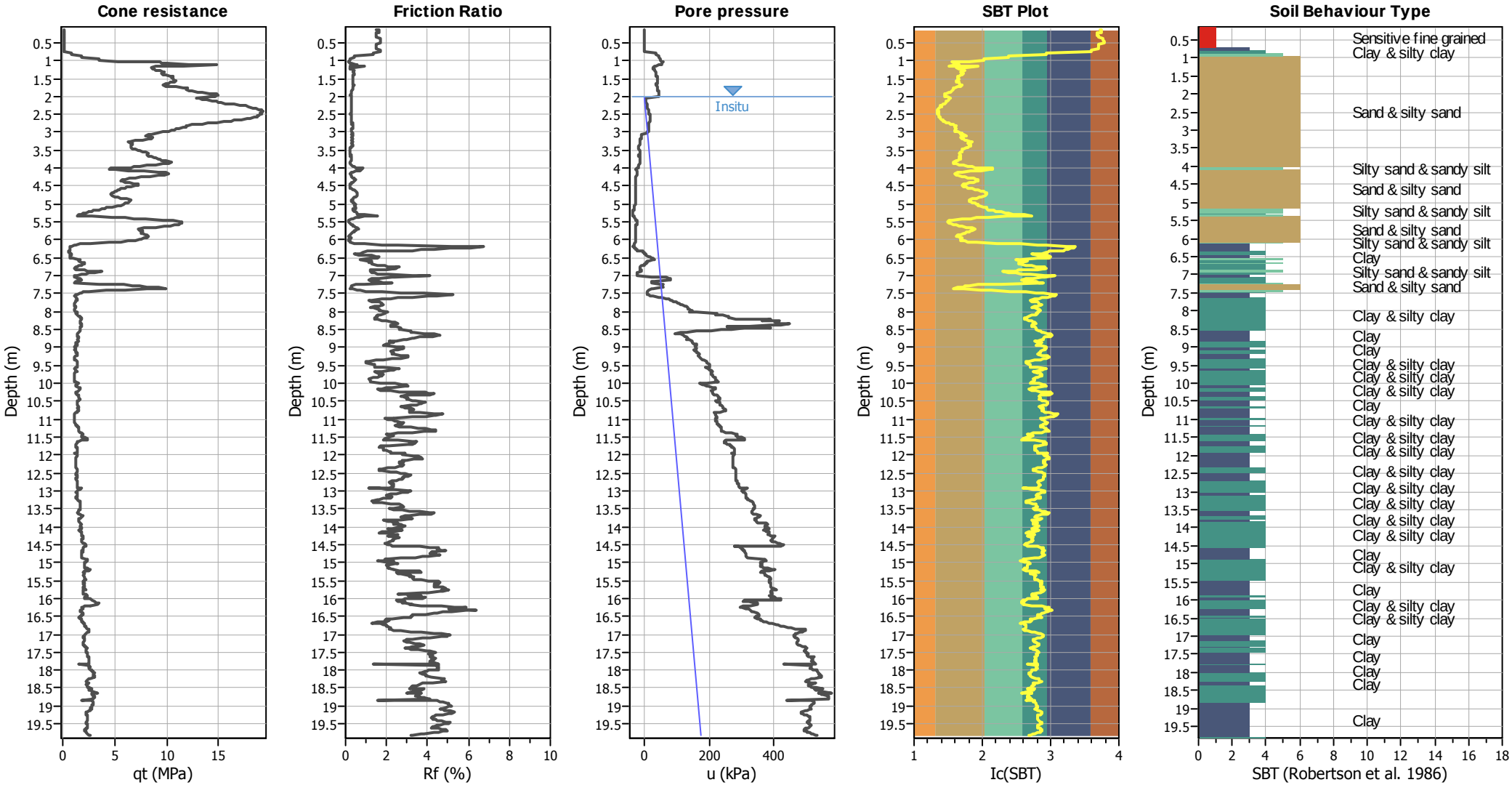



Zone $A_1$: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone $A_2$: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction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

# CPT basic interpretation plots



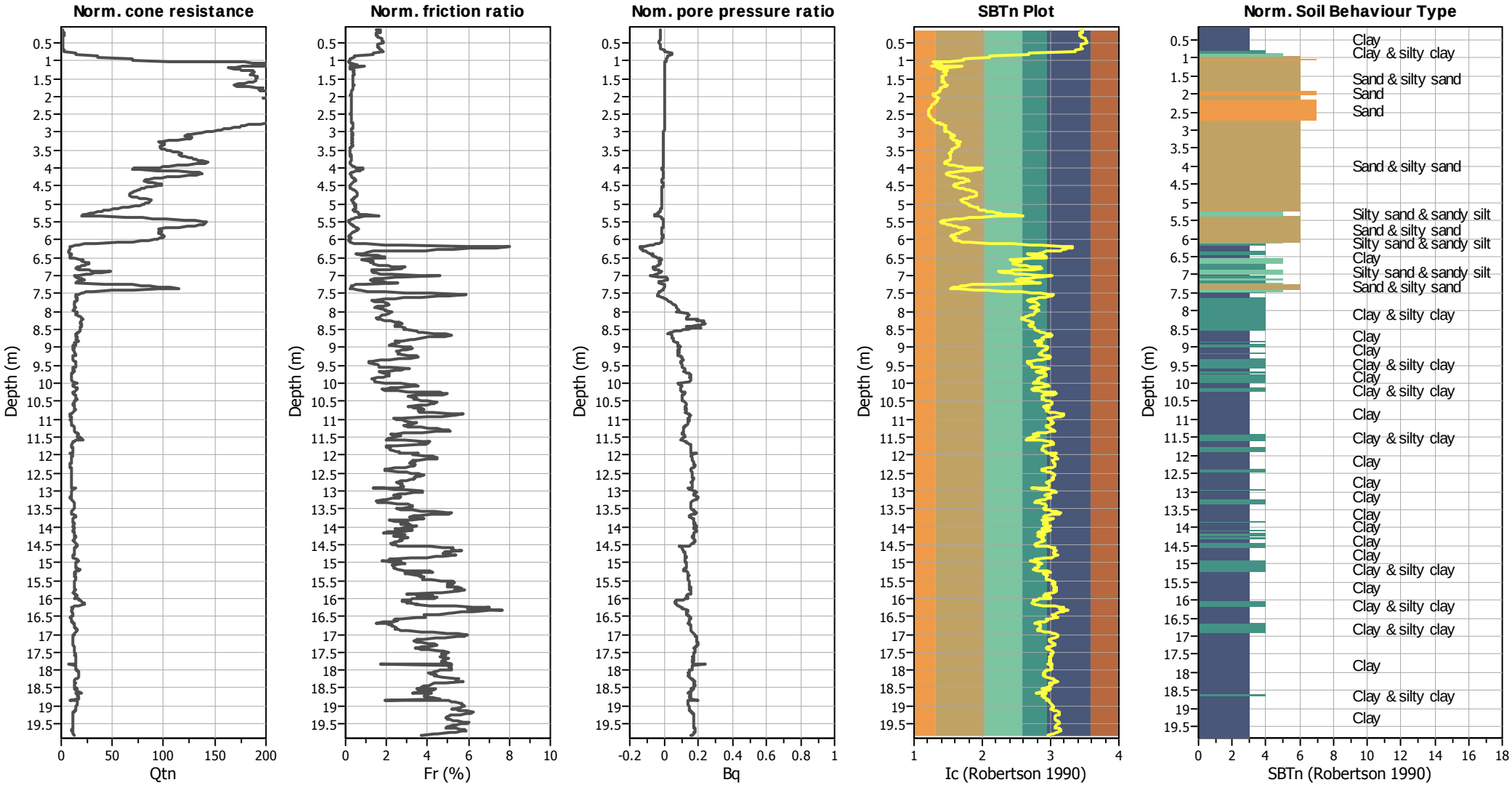

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

### SBT legend

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

# CPT basic interpretation plots (normalized)



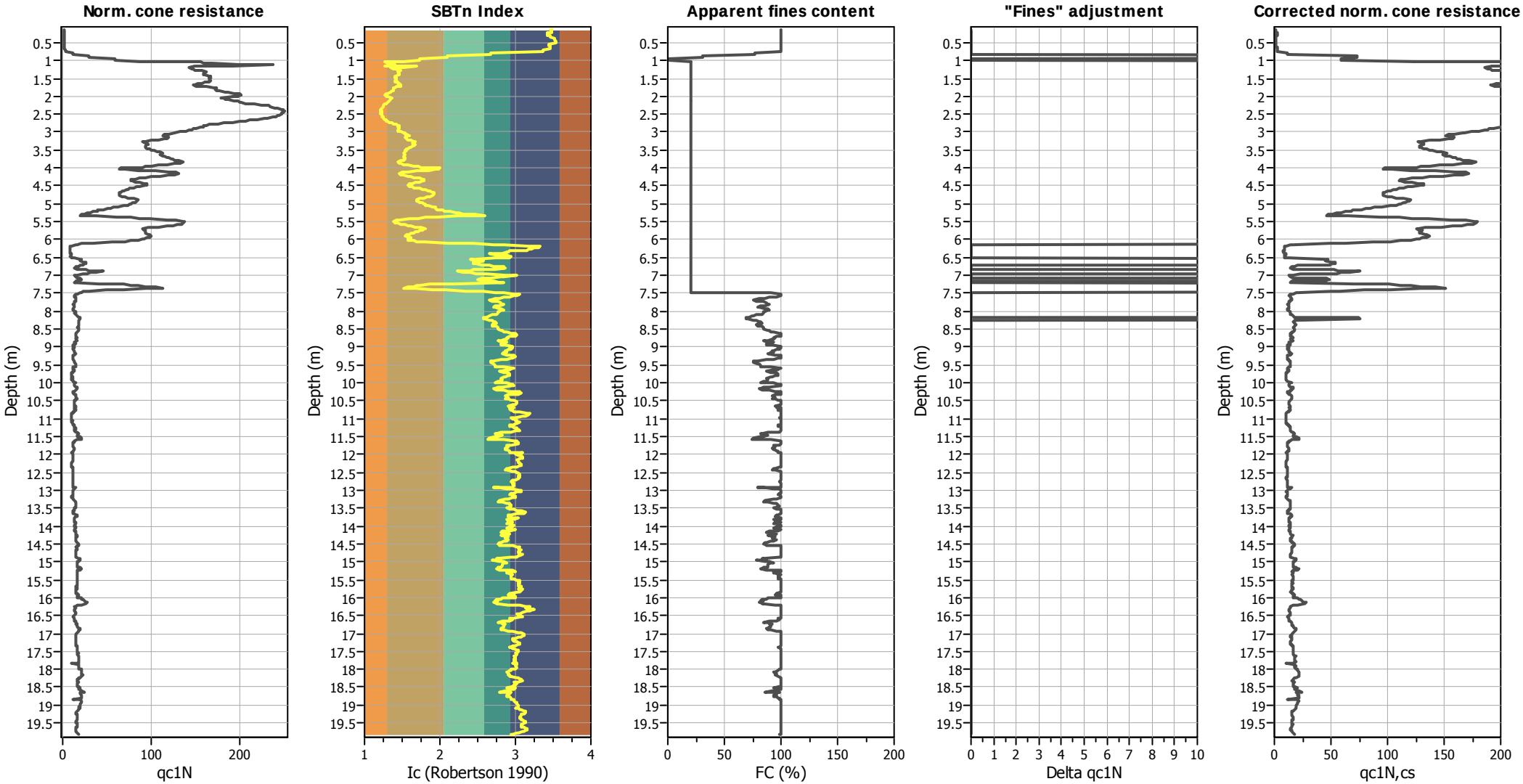

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

**SBTn legend**

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

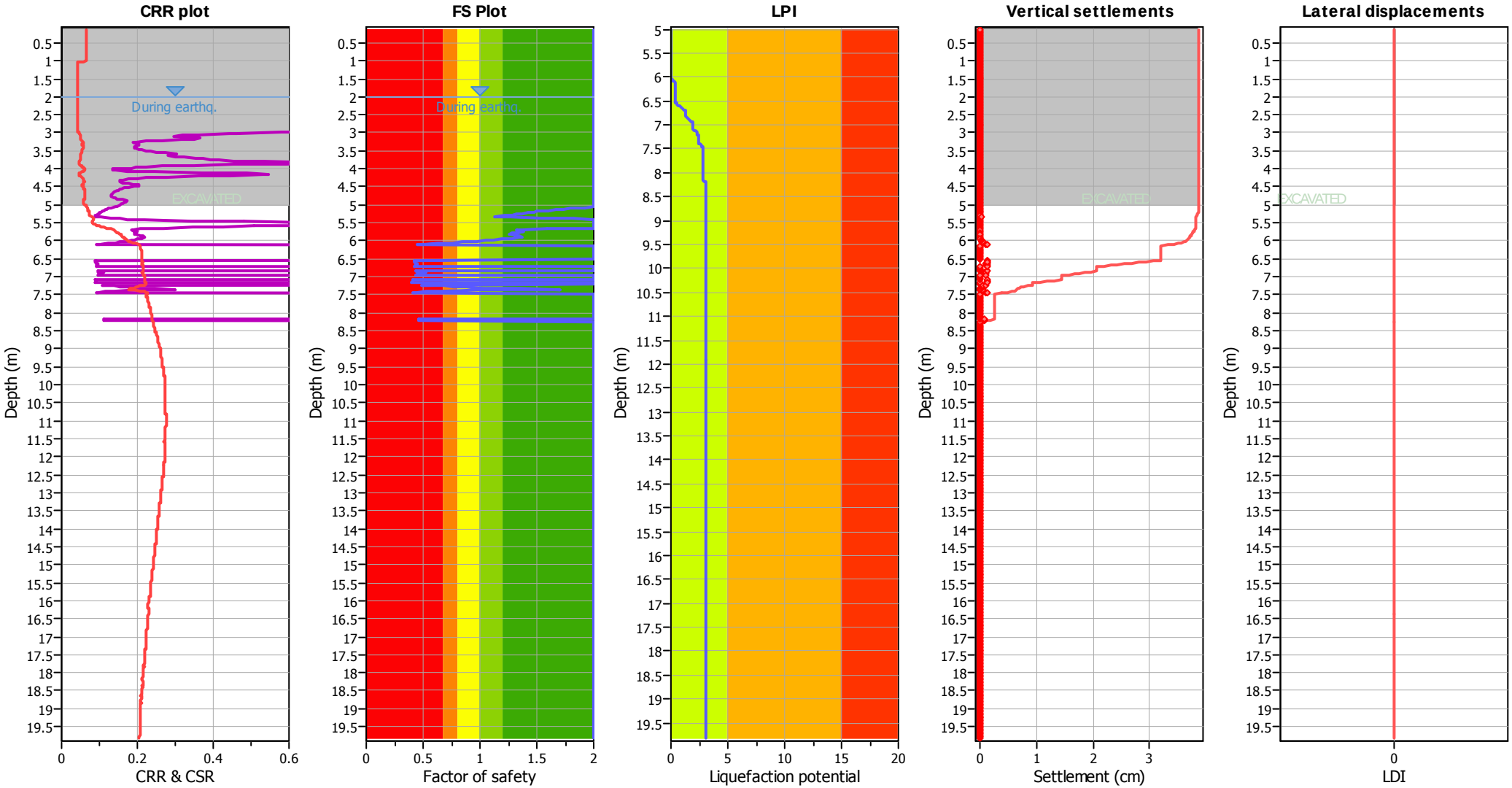
# Liquefaction analysis overall plots (intermediate results)




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

# Liquefaction analysis overall plots




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

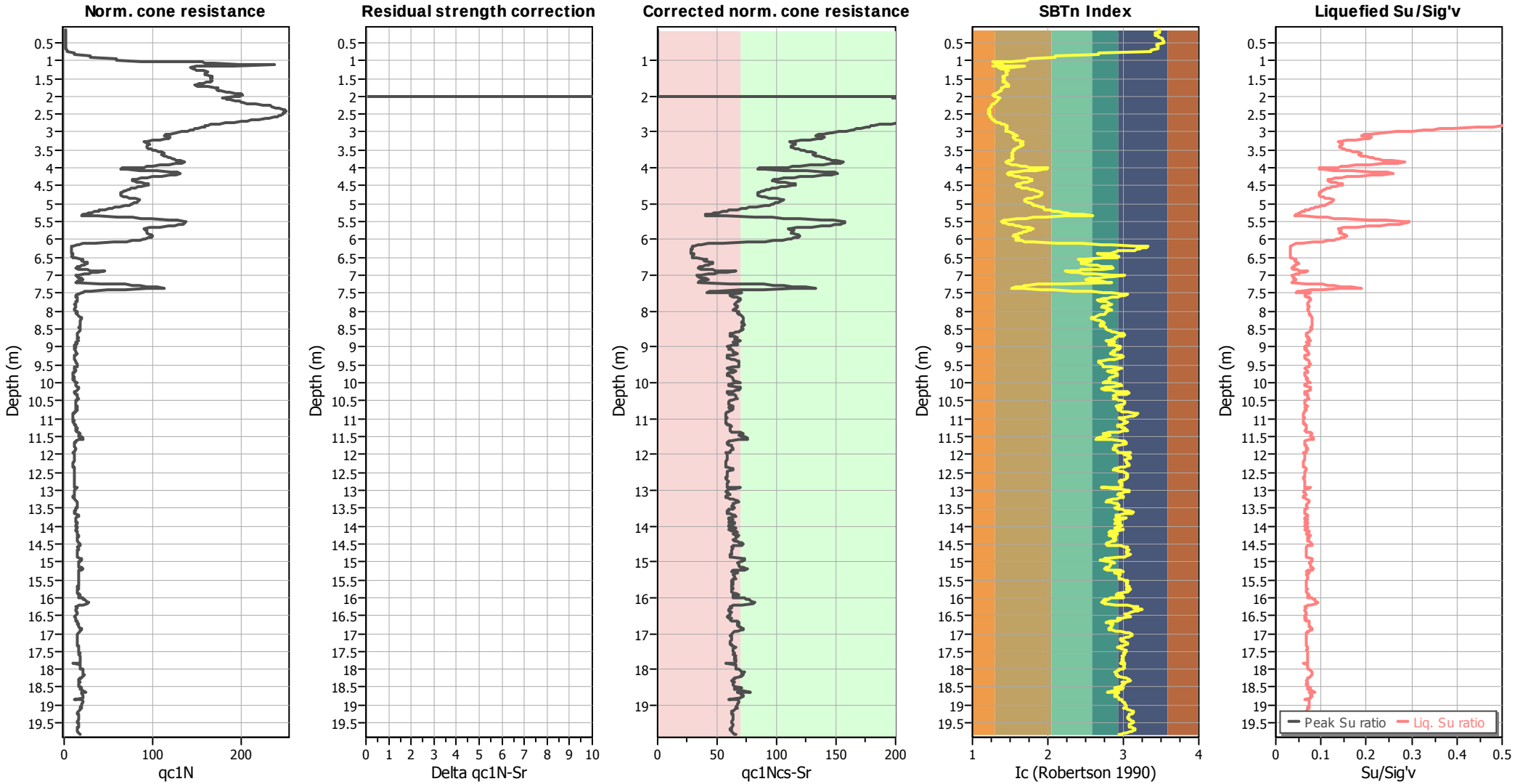
**F.S. color scheme**

- 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

# Check for strength loss plots (Idriss & Boulanger (2008))




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

**:: Cyclic Resistance Ratio (CRR) calculation data ::**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 245 | 0.01 | 5.79 | 20.00 | 1.81 | 0.48 | 1.33 | 76.09 | 33.77 | 109.85 | 0.152 | No | No | 2.00 |
| 246 | 0.03 | 5.60 | 20.00 | 1.82 | 0.48 | 1.33 | 73.65 | 33.44 | 107.10 | 0.148 | No | No | 2.00 |
| 247 | 0.05 | 5.27 | 20.00 | 1.84 | 0.49 | 1.34 | 69.60 | 32.89 | 102.50 | 0.141 | No | No | 2.00 |
| 248 | 0.07 | 4.70 | 20.00 | 1.90 | 0.51 | 1.35 | 62.68 | 31.96 | 94.64 | 0.131 | No | No | 1.92 |
| 249 | 0.09 | 4.23 | 20.00 | 1.94 | 0.53 | 1.36 | 56.91 | 31.18 | 88.09 | 0.124 | No | No | 1.79 |
| 250 | 0.11 | 4.00 | 20.00 | 1.94 | 0.53 | 1.36 | 53.99 | 30.78 | 84.78 | 0.120 | No | No | 1.73 |
| 251 | 0.13 | 3.72 | 20.00 | 1.94 | 0.54 | 1.37 | 50.42 | 30.30 | 80.71 | 0.117 | No | No | 1.67 |
| 252 | 0.15 | 3.41 | 20.00 | 1.96 | 0.56 | 1.38 | 46.59 | 29.78 | 76.37 | 0.113 | No | No | 1.60 |
| 253 | 0.17 | 3.12 | 20.00 | 2.00 | 0.57 | 1.39 | 42.80 | 29.27 | 72.07 | 0.109 | No | No | 1.54 |
| 254 | 0.19 | 2.91 | 20.00 | 2.03 | 0.58 | 1.39 | 40.07 | 28.90 | 68.98 | 0.107 | No | No | 1.50 |
| 255 | 0.21 | 2.82 | 20.00 | 2.07 | 0.58 | 1.39 | 38.93 | 28.75 | 67.68 | 0.106 | No | No | 1.48 |
| 256 | 0.23 | 2.50 | 20.00 | 2.14 | 0.59 | 1.40 | 34.77 | 28.19 | 62.96 | 0.102 | No | No | 1.42 |
| 257 | 0.25 | 2.23 | 20.00 | 2.21 | 0.61 | 1.41 | 31.22 | 27.71 | 58.93 | 0.099 | No | No | 1.37 |
| 258 | 0.27 | 1.96 | 20.00 | 2.26 | 0.62 | 1.42 | 27.63 | 27.22 | 54.85 | 0.096 | No | No | 1.33 |
| 259 | 0.29 | 1.72 | 20.00 | 2.31 | 0.63 | 1.43 | 24.46 | 26.79 | 51.25 | 0.093 | No | No | 1.29 |
| 260 | 0.31 | 1.44 | 20.00 | 2.47 | 0.65 | 1.44 | 20.64 | 26.27 | 46.91 | 0.090 | No | No | 1.22 |
| 261 | 0.33 | 1.37 | 20.00 | 2.59 | 0.65 | 1.44 | 19.63 | 26.14 | 45.76 | 0.089 | No | No | 1.13 |
| 262 | 0.35 | 2.72 | 20.00 | 2.22 | 0.59 | 1.38 | 37.31 | 28.53 | 65.84 | 0.104 | No | No | 1.26 |
| 263 | 0.37 | 4.66 | 20.00 | 1.97 | 0.51 | 1.33 | 61.24 | 31.76 | 93.00 | 0.129 | No | No | 1.55 |
| 264 | 0.39 | 5.95 | 20.00 | 1.81 | 0.48 | 1.30 | 76.45 | 33.82 | 110.26 | 0.153 | No | No | 1.82 |
| 265 | 0.41 | 6.79 | 20.00 | 1.71 | 0.45 | 1.28 | 86.07 | 35.12 | 121.19 | 0.174 | No | No | 2.00 |
| 266 | 0.43 | 7.93 | 20.00 | 1.60 | 0.43 | 1.26 | 98.94 | 36.86 | 135.80 | 0.217 | No | No | 2.00 |
| 267 | 0.45 | 9.62 | 20.00 | 1.47 | 0.39 | 1.24 | 117.54 | 39.37 | 156.91 | 0.342 | No | No | 2.00 |
| 268 | 0.47 | 10.58 | 20.00 | 1.42 | 0.37 | 1.22 | 127.83 | 40.76 | 168.60 | 0.481 | No | No | 2.00 |
| 269 | 0.49 | 11.30 | 20.00 | 1.39 | 0.36 | 1.21 | 135.49 | 41.80 | 177.29 | 0.654 | No | No | 2.00 |
| 270 | 0.51 | 11.50 | 20.00 | 1.39 | 0.36 | 1.21 | 137.50 | 42.07 | 179.57 | 0.715 | No | No | 2.00 |
| 271 | 0.53 | 11.44 | 20.00 | 1.41 | 0.36 | 1.21 | 136.80 | 41.98 | 178.77 | 0.692 | No | No | 2.00 |
| 272 | 0.55 | 11.37 | 20.00 | 1.44 | 0.36 | 1.21 | 135.83 | 41.85 | 177.68 | 0.664 | No | No | 2.00 |
| 273 | 0.57 | 11.20 | 20.00 | 1.48 | 0.36 | 1.21 | 133.96 | 41.59 | 175.55 | 0.613 | No | No | 2.00 |
| 274 | 0.59 | 10.78 | 20.00 | 1.53 | 0.37 | 1.21 | 129.30 | 40.96 | 170.27 | 0.509 | No | No | 2.00 |
| 275 | 0.61 | 10.34 | 20.00 | 1.57 | 0.38 | 1.22 | 124.47 | 40.31 | 164.78 | 0.427 | No | No | 2.00 |
| 276 | 0.63 | 9.73 | 20.00 | 1.61 | 0.39 | 1.22 | 117.80 | 39.41 | 157.21 | 0.345 | No | No | 2.00 |
| 277 | 0.65 | 8.93 | 20.00 | 1.67 | 0.41 | 1.23 | 108.91 | 38.21 | 147.12 | 0.271 | No | No | 2.00 |
| 278 | 0.67 | 7.83 | 20.00 | 1.76 | 0.43 | 1.25 | 96.64 | 36.55 | 133.19 | 0.208 | No | No | 1.59 |
| 279 | 0.69 | 7.32 | 20.00 | 1.80 | 0.44 | 1.25 | 90.74 | 35.75 | 126.49 | 0.187 | No | No | 1.37 |
| 280 | 0.71 | 7.27 | 20.00 | 1.79 | 0.45 | 1.25 | 90.14 | 35.67 | 125.81 | 0.186 | No | No | 1.32 |
| 281 | 0.73 | 7.46 | 20.00 | 1.76 | 0.44 | 1.25 | 92.11 | 35.94 | 128.04 | 0.192 | No | No | 1.35 |
| 282 | 0.75 | 7.64 | 20.00 | 1.72 | 0.44 | 1.25 | 94.11 | 36.21 | 130.32 | 0.199 | No | No | 1.38 |
| 283 | 0.77 | 7.61 | 20.00 | 1.70 | 0.44 | 1.25 | 93.68 | 36.15 | 129.83 | 0.197 | No | No | 1.34 |
| 284 | 0.79 | 7.54 | 20.00 | 1.68 | 0.44 | 1.24 | 92.74 | 36.02 | 128.76 | 0.194 | No | No | 1.29 |
| 285 | 0.81 | 7.54 | 20.00 | 1.65 | 0.44 | 1.24 | 92.66 | 36.01 | 128.67 | 0.194 | No | No | 1.26 |
| 286 | 0.83 | 7.66 | 20.00 | 1.62 | 0.44 | 1.24 | 93.92 | 36.18 | 130.10 | 0.198 | No | No | 1.27 |
| 287 | 0.85 | 7.89 | 20.00 | 1.59 | 0.43 | 1.24 | 96.43 | 36.52 | 132.95 | 0.207 | No | No | 1.32 |
| 288 | 0.87 | 8.07 | 20.00 | 1.55 | 0.43 | 1.23 | 98.32 | 36.78 | 135.10 | 0.215 | No | No | 1.35 |
| 289 | 0.89 | 8.20 | 20.00 | 1.53 | 0.43 | 1.23 | 99.62 | 36.95 | 136.57 | 0.220 | No | No | 1.37 |
| 290 | 0.91 | 8.21 | 20.00 | 1.55 | 0.43 | 1.23 | 99.66 | 36.96 | 136.61 | 0.221 | No | No | 1.35 |
| 291 | 0.93 | 8.05 | 20.00 | 1.58 | 0.43 | 1.23 | 97.85 | 36.71 | 134.56 | 0.213 | No | No | 1.28 |
| 292 | 0.95 | 7.78 | 20.00 | 1.61 | 0.44 | 1.23 | 94.74 | 36.29 | 131.04 | 0.201 | No | No | 1.19 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 293 | 0.97 | 7.52 | 20.00 | 1.61 | 0.44 | 1.23 | 91.80 | 35.89 | 127.69 | 0.191 | No | No | 1.11 |
| 294 | 0.99 | 7.32 | 20.00 | 1.58 | 0.45 | 1.24 | 89.44 | 35.57 | 125.01 | 0.183 | No | No | 1.06 |
| 295 | 1.01 | 6.95 | 20.00 | 1.59 | 0.46 | 1.24 | 85.26 | 35.01 | 120.27 | 0.172 | No | No | 0.97 |
| 296 | 1.03 | 6.28 | 20.00 | 1.66 | 0.47 | 1.25 | 77.52 | 33.96 | 111.49 | 0.155 | No | No | 0.85 |
| 297 | 1.05 | 5.60 | 20.00 | 1.70 | 0.49 | 1.26 | 69.67 | 32.90 | 102.57 | 0.141 | No | No | 0.75 |
| 298 | 1.07 | 4.42 | 20.00 | 1.81 | 0.53 | 1.28 | 55.90 | 31.04 | 86.94 | 0.123 | No | No | 0.63 |
| 299 | 1.09 | 2.63 | 20.00 | 2.11 | 0.60 | 1.32 | 34.39 | 28.13 | 62.52 | 0.102 | No | No | 0.50 |
| 300 | 1.11 | 1.65 | 20.00 | 2.45 | 0.64 | 1.35 | 22.04 | 26.46 | 48.50 | 0.091 | No | No | 0.45 |
| 301 | 1.13 | 1.22 | 20.00 | 2.70 | 0.67 | 1.36 | 16.56 | 0.00 | 16.56 | 4.000 | No | Yes | 2.00 |
| 302 | 1.15 | 1.05 | 20.00 | 2.85 | 0.68 | 1.36 | 14.29 | 0.00 | 14.29 | 4.000 | No | Yes | 2.00 |
| 303 | 1.17 | 0.76 | 20.00 | 3.17 | 0.70 | 1.37 | 10.54 | 0.00 | 10.54 | 4.000 | No | Yes | 2.00 |
| 304 | 1.19 | 0.64 | 20.00 | 3.32 | 0.71 | 1.38 | 8.83 | 0.00 | 8.83 | 4.000 | No | Yes | 2.00 |
| 305 | 1.21 | 0.62 | 20.00 | 3.31 | 0.71 | 1.38 | 8.60 | 0.00 | 8.60 | 4.000 | No | Yes | 2.00 |
| 306 | 1.23 | 0.62 | 20.00 | 3.26 | 0.71 | 1.37 | 8.61 | 0.00 | 8.61 | 4.000 | No | Yes | 2.00 |
| 307 | 1.25 | 0.62 | 20.00 | 3.22 | 0.71 | 1.37 | 8.53 | 0.00 | 8.53 | 4.000 | No | Yes | 2.00 |
| 308 | 1.27 | 0.63 | 20.00 | 3.17 | 0.71 | 1.37 | 8.65 | 0.00 | 8.65 | 4.000 | No | Yes | 2.00 |
| 309 | 1.29 | 0.61 | 20.00 | 3.15 | 0.71 | 1.37 | 8.40 | 0.00 | 8.40 | 4.000 | No | Yes | 2.00 |
| 310 | 1.31 | 0.59 | 20.00 | 3.08 | 0.71 | 1.37 | 8.02 | 0.00 | 8.02 | 4.000 | No | Yes | 2.00 |
| 311 | 1.33 | 0.58 | 20.00 | 2.93 | 0.71 | 1.37 | 7.93 | 0.00 | 7.93 | 4.000 | No | Yes | 2.00 |
| 312 | 1.35 | 0.58 | 20.00 | 2.90 | 0.71 | 1.37 | 7.89 | 0.00 | 7.89 | 4.000 | No | Yes | 2.00 |
| 313 | 1.37 | 0.59 | 20.00 | 2.88 | 0.71 | 1.37 | 7.96 | 0.00 | 7.96 | 4.000 | No | Yes | 2.00 |
| 314 | 1.39 | 0.64 | 20.00 | 2.82 | 0.71 | 1.36 | 8.55 | 0.00 | 8.55 | 4.000 | No | Yes | 2.00 |
| 315 | 1.41 | 0.76 | 20.00 | 2.66 | 0.70 | 1.36 | 10.13 | 0.00 | 10.13 | 4.000 | No | Yes | 2.00 |
| 316 | 1.43 | 0.74 | 20.00 | 2.73 | 0.70 | 1.35 | 9.95 | 0.00 | 9.95 | 4.000 | No | Yes | 2.00 |
| 317 | 1.45 | 0.70 | 20.00 | 2.89 | 0.71 | 1.35 | 9.32 | 0.00 | 9.32 | 4.000 | No | Yes | 2.00 |
| 318 | 1.47 | 0.67 | 20.00 | 2.93 | 0.71 | 1.35 | 8.91 | 0.00 | 8.91 | 4.000 | No | Yes | 2.00 |
| 319 | 1.49 | 0.69 | 20.00 | 2.94 | 0.71 | 1.35 | 9.11 | 0.00 | 9.11 | 4.000 | No | Yes | 2.00 |
| 320 | 1.51 | 0.70 | 20.00 | 2.93 | 0.71 | 1.35 | 9.28 | 0.00 | 9.28 | 4.000 | No | Yes | 2.00 |
| 321 | 1.53 | 0.97 | 20.00 | 2.73 | 0.69 | 1.34 | 12.69 | 0.00 | 12.69 | 4.000 | No | Yes | 2.00 |
| 322 | 1.55 | 1.48 | 20.00 | 2.46 | 0.66 | 1.32 | 19.09 | 26.07 | 45.16 | 0.089 | No | No | 0.42 |
| 323 | 1.57 | 1.67 | 20.00 | 2.40 | 0.65 | 1.31 | 21.50 | 26.39 | 47.89 | 0.091 | No | No | 0.43 |
| 324 | 1.59 | 1.54 | 20.00 | 2.52 | 0.65 | 1.31 | 19.97 | 26.18 | 46.15 | 0.090 | No | No | 0.42 |
| 325 | 1.61 | 1.48 | 20.00 | 2.57 | 0.66 | 1.31 | 19.09 | 26.07 | 45.16 | 0.089 | No | No | 0.42 |
| 326 | 1.63 | 1.82 | 20.00 | 2.47 | 0.64 | 1.30 | 23.31 | 26.64 | 49.94 | 0.092 | No | No | 0.43 |
| 327 | 1.65 | 2.06 | 20.00 | 2.44 | 0.63 | 1.29 | 26.27 | 27.04 | 53.30 | 0.095 | No | No | 0.44 |
| 328 | 1.67 | 2.10 | 20.00 | 2.44 | 0.62 | 1.29 | 26.72 | 27.10 | 53.81 | 0.095 | No | No | 0.45 |
| 329 | 1.69 | 1.94 | 20.00 | 2.47 | 0.63 | 1.29 | 24.80 | 26.84 | 51.63 | 0.094 | No | No | 0.44 |
| 330 | 1.71 | 1.76 | 20.00 | 2.55 | 0.64 | 1.30 | 22.53 | 26.53 | 49.06 | 0.092 | No | No | 0.43 |
| 331 | 1.73 | 1.56 | 20.00 | 2.65 | 0.65 | 1.30 | 20.09 | 0.00 | 20.09 | 4.000 | No | Yes | 2.00 |
| 332 | 1.75 | 1.40 | 20.00 | 2.71 | 0.66 | 1.30 | 18.10 | 0.00 | 18.10 | 4.000 | No | Yes | 2.00 |
| 333 | 1.77 | 1.16 | 20.00 | 2.84 | 0.68 | 1.31 | 15.12 | 0.00 | 15.12 | 4.000 | No | Yes | 2.00 |
| 334 | 1.79 | 1.07 | 20.00 | 2.82 | 0.68 | 1.31 | 13.94 | 0.00 | 13.94 | 4.000 | No | Yes | 2.00 |
| 335 | 1.81 | 1.07 | 20.00 | 2.86 | 0.68 | 1.31 | 13.91 | 0.00 | 13.91 | 4.000 | No | Yes | 2.00 |
| 336 | 1.83 | 1.27 | 20.00 | 2.74 | 0.67 | 1.30 | 16.41 | 0.00 | 16.41 | 4.000 | No | Yes | 2.00 |
| 337 | 1.85 | 2.06 | 20.00 | 2.44 | 0.63 | 1.28 | 26.07 | 27.01 | 53.08 | 0.095 | No | No | 0.44 |
| 338 | 1.87 | 2.29 | 20.00 | 2.40 | 0.62 | 1.27 | 28.73 | 27.37 | 56.10 | 0.097 | No | No | 0.45 |
| 339 | 1.88 | 3.74 | 20.00 | 2.23 | 0.56 | 1.24 | 45.84 | 29.68 | 75.52 | 0.112 | No | No | 0.53 |
| 340 | 1.90 | 3.09 | 20.00 | 2.30 | 0.58 | 1.25 | 38.28 | 28.66 | 66.94 | 0.105 | No | No | 0.49 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 341 | 1.92 | 2.53 | 20.00 | 2.40 | 0.61 | 1.26 | 31.54 | 27.75 | 59.29 | 0.099 | No | No | 0.46 |
| 342 | 1.94 | 2.20 | 20.00 | 2.48 | 0.62 | 1.27 | 27.55 | 27.21 | 54.75 | 0.096 | No | No | 0.44 |
| 343 | 1.96 | 1.83 | 20.00 | 2.62 | 0.64 | 1.27 | 23.14 | 0.00 | 23.14 | 4.000 | No | Yes | 2.00 |
| 344 | 1.98 | 1.33 | 20.00 | 2.86 | 0.67 | 1.28 | 16.95 | 0.00 | 16.95 | 4.000 | No | Yes | 2.00 |
| 345 | 2.00 | 1.03 | 20.00 | 3.02 | 0.69 | 1.29 | 13.24 | 0.00 | 13.24 | 4.000 | No | Yes | 2.00 |
| 346 | 2.02 | 1.12 | 20.00 | 2.85 | 0.68 | 1.29 | 14.19 | 0.00 | 14.19 | 4.000 | No | Yes | 2.00 |
| 347 | 2.04 | 1.16 | 20.00 | 2.81 | 0.68 | 1.28 | 14.46 | 0.00 | 14.46 | 4.000 | No | Yes | 2.00 |
| 348 | 2.06 | 1.36 | 20.00 | 2.68 | 0.67 | 1.28 | 16.87 | 0.00 | 16.87 | 4.000 | No | Yes | 2.00 |
| 349 | 2.08 | 1.59 | 20.00 | 2.56 | 0.65 | 1.27 | 19.62 | 26.14 | 45.75 | 0.089 | No | No | 0.41 |
| 350 | 2.10 | 1.80 | 20.00 | 2.49 | 0.64 | 1.26 | 22.05 | 26.47 | 48.52 | 0.091 | No | No | 0.42 |
| 351 | 2.12 | 1.76 | 20.00 | 2.49 | 0.65 | 1.26 | 21.57 | 26.40 | 47.97 | 0.091 | No | No | 0.41 |
| 352 | 2.14 | 1.50 | 20.00 | 2.58 | 0.66 | 1.27 | 18.68 | 26.01 | 44.69 | 0.089 | No | No | 0.40 |
| 353 | 2.16 | 1.24 | 20.00 | 2.72 | 0.67 | 1.27 | 15.53 | 0.00 | 15.53 | 4.000 | No | Yes | 2.00 |
| 354 | 2.18 | 1.14 | 20.00 | 2.78 | 0.68 | 1.27 | 14.25 | 0.00 | 14.25 | 4.000 | No | Yes | 2.00 |
| 355 | 2.20 | 1.11 | 20.00 | 2.84 | 0.68 | 1.27 | 13.84 | 0.00 | 13.84 | 4.000 | No | Yes | 2.00 |
| 356 | 2.22 | 3.41 | 20.00 | 2.20 | 0.57 | 1.22 | 40.92 | 29.02 | 69.94 | 0.107 | No | No | 0.49 |
| 357 | 2.24 | 5.87 | 20.00 | 1.86 | 0.49 | 1.19 | 68.61 | 32.76 | 101.37 | 0.139 | No | No | 0.67 |
| 358 | 2.26 | 6.65 | 20.00 | 1.74 | 0.47 | 1.18 | 77.16 | 33.92 | 111.08 | 0.154 | No | No | 0.76 |
| 359 | 2.28 | 7.44 | 20.00 | 1.68 | 0.46 | 1.17 | 85.67 | 35.07 | 120.74 | 0.173 | No | No | 0.88 |
| 360 | 2.30 | 8.16 | 20.00 | 1.65 | 0.44 | 1.16 | 93.37 | 36.11 | 129.47 | 0.196 | No | No | 1.03 |
| 361 | 2.32 | 9.24 | 20.00 | 1.58 | 0.42 | 1.15 | 104.86 | 37.66 | 142.52 | 0.246 | No | No | 1.36 |
| 362 | 2.34 | 9.98 | 20.00 | 1.52 | 0.40 | 1.15 | 112.71 | 38.72 | 151.43 | 0.299 | No | No | 1.71 |
| 363 | 2.36 | 9.45 | 20.00 | 1.56 | 0.41 | 1.15 | 107.02 | 37.95 | 144.97 | 0.259 | No | No | 1.43 |
| 364 | 2.38 | 8.15 | 20.00 | 1.67 | 0.44 | 1.16 | 93.06 | 36.06 | 129.12 | 0.195 | No | No | 1.01 |
| 365 | 2.40 | 5.97 | 20.00 | 1.90 | 0.49 | 1.18 | 69.30 | 32.85 | 102.15 | 0.140 | No | No | 0.67 |
| 366 | 2.42 | 4.15 | 20.00 | 2.07 | 0.55 | 1.20 | 49.08 | 30.12 | 79.20 | 0.115 | No | No | 0.53 |
| 367 | 2.44 | 2.52 | 20.00 | 2.34 | 0.61 | 1.22 | 30.31 | 27.58 | 57.90 | 0.098 | No | No | 0.44 |
| 368 | 2.46 | 1.96 | 20.00 | 2.57 | 0.64 | 1.23 | 23.75 | 26.70 | 50.45 | 0.093 | No | No | 0.41 |
| 369 | 2.48 | 1.74 | 20.00 | 2.72 | 0.65 | 1.23 | 21.11 | 0.00 | 21.11 | 4.000 | No | Yes | 2.00 |
| 370 | 2.50 | 1.61 | 90.67 | 2.85 | 0.55 | 1.19 | 18.93 | 0.00 | 18.93 | 4.000 | No | Yes | 2.00 |
| 371 | 2.52 | 1.38 | 100.00 | 2.99 | 0.56 | 1.20 | 16.24 | 0.00 | 16.24 | 4.000 | No | Yes | 2.00 |
| 372 | 2.54 | 1.18 | 100.00 | 3.05 | 0.57 | 1.20 | 13.96 | 0.00 | 13.96 | 4.000 | No | Yes | 2.00 |
| 373 | 2.56 | 1.14 | 100.00 | 3.02 | 0.57 | 1.20 | 13.41 | 0.00 | 13.41 | 4.000 | No | Yes | 2.00 |
| 374 | 2.58 | 1.16 | 100.00 | 2.99 | 0.57 | 1.20 | 13.53 | 0.00 | 13.53 | 4.000 | No | Yes | 2.00 |
| 375 | 2.60 | 1.19 | 96.68 | 2.92 | 0.57 | 1.19 | 13.89 | 0.00 | 13.89 | 4.000 | No | Yes | 2.00 |
| 376 | 2.62 | 1.26 | 89.97 | 2.84 | 0.57 | 1.19 | 14.59 | 0.00 | 14.59 | 4.000 | No | Yes | 2.00 |
| 377 | 2.64 | 1.31 | 85.84 | 2.79 | 0.57 | 1.19 | 15.12 | 0.00 | 15.12 | 4.000 | No | Yes | 2.00 |
| 378 | 2.66 | 1.32 | 81.33 | 2.73 | 0.57 | 1.19 | 15.23 | 0.00 | 15.23 | 4.000 | No | Yes | 2.00 |
| 379 | 2.68 | 1.31 | 76.12 | 2.66 | 0.57 | 1.19 | 15.02 | 0.00 | 15.02 | 4.000 | No | Yes | 2.00 |
| 380 | 2.70 | 1.28 | 75.39 | 2.65 | 0.57 | 1.19 | 14.64 | 0.00 | 14.64 | 4.000 | No | Yes | 2.00 |
| 381 | 2.72 | 1.23 | 78.52 | 2.69 | 0.57 | 1.19 | 14.11 | 0.00 | 14.11 | 4.000 | No | Yes | 2.00 |
| 382 | 2.74 | 1.15 | 84.83 | 2.77 | 0.57 | 1.19 | 13.09 | 0.00 | 13.09 | 4.000 | No | Yes | 2.00 |
| 383 | 2.76 | 1.12 | 87.28 | 2.80 | 0.58 | 1.19 | 12.75 | 0.00 | 12.75 | 4.000 | No | Yes | 2.00 |
| 384 | 2.78 | 1.12 | 87.60 | 2.81 | 0.58 | 1.19 | 12.71 | 0.00 | 12.71 | 4.000 | No | Yes | 2.00 |
| 385 | 2.80 | 1.11 | 87.92 | 2.81 | 0.58 | 1.18 | 12.47 | 0.00 | 12.47 | 4.000 | No | Yes | 2.00 |
| 386 | 2.82 | 1.08 | 90.00 | 2.84 | 0.58 | 1.18 | 12.12 | 0.00 | 12.12 | 4.000 | No | Yes | 2.00 |
| 387 | 2.84 | 1.12 | 86.19 | 2.79 | 0.58 | 1.18 | 12.58 | 0.00 | 12.58 | 4.000 | No | Yes | 2.00 |
| 388 | 2.86 | 1.17 | 81.94 | 2.74 | 0.58 | 1.18 | 13.13 | 0.00 | 13.13 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 389 | 2.88 | 1.20 | 79.31 | 2.70 | 0.58 | 1.18 | 13.39 | 0.00 | 13.39 | 4.000 | No | Yes | 2.00 |
| 390 | 2.90 | 1.18 | 81.32 | 2.73 | 0.58 | 1.18 | 13.20 | 0.00 | 13.20 | 4.000 | No | Yes | 2.00 |
| 391 | 2.92 | 1.10 | 86.20 | 2.79 | 0.58 | 1.18 | 12.28 | 0.00 | 12.28 | 4.000 | No | Yes | 2.00 |
| 392 | 2.94 | 1.07 | 88.04 | 2.81 | 0.58 | 1.18 | 11.88 | 0.00 | 11.88 | 4.000 | No | Yes | 2.00 |
| 393 | 2.96 | 1.04 | 90.12 | 2.84 | 0.58 | 1.18 | 11.55 | 0.00 | 11.55 | 4.000 | No | Yes | 2.00 |
| 394 | 2.98 | 1.08 | 88.23 | 2.82 | 0.58 | 1.17 | 11.93 | 0.00 | 11.93 | 4.000 | No | Yes | 2.00 |
| 395 | 3.00 | 1.28 | 86.33 | 2.79 | 0.57 | 1.17 | 14.26 | 0.00 | 14.26 | 4.000 | No | Yes | 2.00 |
| 396 | 3.02 | 1.32 | 84.59 | 2.77 | 0.57 | 1.17 | 14.58 | 0.00 | 14.58 | 4.000 | No | Yes | 2.00 |
| 397 | 3.04 | 1.31 | 84.24 | 2.77 | 0.57 | 1.17 | 14.21 | 0.00 | 14.21 | 4.000 | No | Yes | 2.00 |
| 398 | 3.06 | 1.28 | 85.04 | 2.78 | 0.57 | 1.17 | 13.86 | 0.00 | 13.86 | 4.000 | No | Yes | 2.00 |
| 399 | 3.08 | 1.29 | 83.24 | 2.75 | 0.57 | 1.17 | 14.00 | 0.00 | 14.00 | 4.000 | No | Yes | 2.00 |
| 400 | 3.10 | 1.41 | 78.62 | 2.70 | 0.57 | 1.16 | 15.24 | 0.00 | 15.24 | 4.000 | No | Yes | 2.00 |
| 401 | 3.12 | 1.51 | 75.62 | 2.66 | 0.57 | 1.16 | 16.38 | 0.00 | 16.38 | 4.000 | No | Yes | 2.00 |
| 402 | 3.14 | 1.58 | 74.78 | 2.65 | 0.56 | 1.16 | 17.05 | 0.00 | 17.05 | 4.000 | No | Yes | 2.00 |
| 403 | 3.16 | 1.68 | 71.91 | 2.61 | 0.56 | 1.16 | 18.18 | 0.00 | 18.18 | 4.000 | No | Yes | 2.00 |
| 404 | 3.18 | 1.75 | 69.42 | 2.58 | 0.56 | 1.16 | 18.96 | 56.03 | 74.99 | 0.112 | No | No | 0.47 |
| 405 | 3.20 | 1.80 | 69.06 | 2.58 | 0.56 | 1.16 | 19.47 | 56.12 | 75.58 | 0.112 | No | No | 0.47 |
| 406 | 3.22 | 1.79 | 70.86 | 2.60 | 0.56 | 1.15 | 18.91 | 56.28 | 75.19 | 0.112 | No | No | 0.47 |
| 407 | 3.24 | 1.70 | 75.14 | 2.65 | 0.56 | 1.15 | 17.89 | 0.00 | 17.89 | 4.000 | No | Yes | 2.00 |
| 408 | 3.26 | 1.69 | 77.77 | 2.68 | 0.56 | 1.15 | 17.58 | 0.00 | 17.58 | 4.000 | No | Yes | 2.00 |
| 409 | 3.28 | 1.67 | 80.36 | 2.72 | 0.56 | 1.15 | 17.34 | 0.00 | 17.34 | 4.000 | No | Yes | 2.00 |
| 410 | 3.30 | 1.66 | 81.98 | 2.74 | 0.56 | 1.15 | 17.23 | 0.00 | 17.23 | 4.000 | No | Yes | 2.00 |
| 411 | 3.32 | 1.68 | 83.03 | 2.75 | 0.56 | 1.15 | 17.41 | 0.00 | 17.41 | 4.000 | No | Yes | 2.00 |
| 412 | 3.34 | 1.76 | 80.14 | 2.71 | 0.56 | 1.15 | 18.24 | 0.00 | 18.24 | 4.000 | No | Yes | 2.00 |
| 413 | 3.36 | 1.80 | 78.48 | 2.69 | 0.56 | 1.15 | 18.66 | 0.00 | 18.66 | 4.000 | No | Yes | 2.00 |
| 414 | 3.38 | 1.80 | 78.12 | 2.69 | 0.56 | 1.14 | 18.77 | 0.00 | 18.77 | 4.000 | No | Yes | 2.00 |
| 415 | 3.40 | 1.74 | 78.94 | 2.70 | 0.56 | 1.14 | 18.39 | 0.00 | 18.39 | 4.000 | No | Yes | 2.00 |
| 416 | 3.42 | 1.67 | 81.45 | 2.73 | 0.56 | 1.14 | 17.80 | 0.00 | 17.80 | 4.000 | No | Yes | 2.00 |
| 417 | 3.44 | 1.65 | 83.22 | 2.75 | 0.56 | 1.14 | 17.36 | 0.00 | 17.36 | 4.000 | No | Yes | 2.00 |
| 418 | 3.46 | 1.65 | 84.84 | 2.77 | 0.56 | 1.14 | 17.07 | 0.00 | 17.07 | 4.000 | No | Yes | 2.00 |
| 419 | 3.48 | 1.64 | 85.04 | 2.78 | 0.56 | 1.14 | 17.29 | 0.00 | 17.29 | 4.000 | No | Yes | 2.00 |
| 420 | 3.50 | 1.66 | 84.30 | 2.77 | 0.56 | 1.14 | 17.63 | 0.00 | 17.63 | 4.000 | No | Yes | 2.00 |
| 421 | 3.52 | 1.69 | 84.77 | 2.77 | 0.56 | 1.14 | 18.00 | 0.00 | 18.00 | 4.000 | No | Yes | 2.00 |
| 422 | 3.54 | 1.66 | 87.95 | 2.81 | 0.56 | 1.13 | 17.76 | 0.00 | 17.76 | 4.000 | No | Yes | 2.00 |
| 423 | 3.56 | 1.62 | 89.33 | 2.83 | 0.56 | 1.13 | 17.47 | 0.00 | 17.47 | 4.000 | No | Yes | 2.00 |
| 424 | 3.58 | 1.54 | 91.05 | 2.85 | 0.56 | 1.13 | 16.76 | 0.00 | 16.76 | 4.000 | No | Yes | 2.00 |
| 425 | 3.60 | 1.46 | 93.95 | 2.89 | 0.56 | 1.13 | 15.84 | 0.00 | 15.84 | 4.000 | No | Yes | 2.00 |
| 426 | 3.62 | 1.38 | 98.71 | 2.95 | 0.56 | 1.13 | 15.02 | 0.00 | 15.02 | 4.000 | No | Yes | 2.00 |
| 427 | 3.64 | 1.34 | 100.00 | 2.99 | 0.57 | 1.13 | 14.50 | 0.00 | 14.50 | 4.000 | No | Yes | 2.00 |
| 428 | 3.66 | 1.30 | 100.00 | 3.02 | 0.57 | 1.13 | 14.03 | 0.00 | 14.03 | 4.000 | No | Yes | 2.00 |
| 429 | 3.68 | 1.30 | 100.00 | 3.02 | 0.57 | 1.13 | 13.99 | 0.00 | 13.99 | 4.000 | No | Yes | 2.00 |
| 430 | 3.70 | 1.32 | 100.00 | 3.00 | 0.57 | 1.13 | 14.18 | 0.00 | 14.18 | 4.000 | No | Yes | 2.00 |
| 431 | 3.72 | 1.44 | 96.17 | 2.91 | 0.56 | 1.12 | 15.54 | 0.00 | 15.54 | 4.000 | No | Yes | 2.00 |
| 432 | 3.74 | 1.49 | 93.32 | 2.88 | 0.56 | 1.12 | 16.06 | 0.00 | 16.06 | 4.000 | No | Yes | 2.00 |
| 433 | 3.76 | 1.43 | 94.57 | 2.89 | 0.56 | 1.12 | 15.37 | 0.00 | 15.37 | 4.000 | No | Yes | 2.00 |
| 434 | 3.78 | 1.37 | 93.94 | 2.89 | 0.57 | 1.12 | 14.66 | 0.00 | 14.66 | 4.000 | No | Yes | 2.00 |
| 435 | 3.80 | 1.39 | 92.47 | 2.87 | 0.57 | 1.12 | 14.88 | 0.00 | 14.88 | 4.000 | No | Yes | 2.00 |
| 436 | 3.82 | 1.49 | 87.87 | 2.81 | 0.56 | 1.12 | 15.93 | 0.00 | 15.93 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 437 | 3.84 | 1.52 | 84.12 | 2.76 | 0.56 | 1.12 | 16.26 | 0.00 | 16.26 | 4.000 | No | Yes | 2.00 |
| 438 | 3.85 | 1.31 | 90.82 | 2.85 | 0.57 | 1.12 | 13.90 | 0.00 | 13.90 | 4.000 | No | Yes | 2.00 |
| 439 | 3.87 | 1.18 | 93.53 | 2.88 | 0.57 | 1.12 | 12.43 | 0.00 | 12.43 | 4.000 | No | Yes | 2.00 |
| 440 | 3.89 | 1.24 | 90.36 | 2.84 | 0.57 | 1.12 | 13.13 | 0.00 | 13.13 | 4.000 | No | Yes | 2.00 |
| 441 | 3.91 | 1.33 | 87.41 | 2.81 | 0.57 | 1.12 | 14.05 | 0.00 | 14.05 | 4.000 | No | Yes | 2.00 |
| 442 | 3.93 | 1.30 | 87.02 | 2.80 | 0.57 | 1.11 | 13.68 | 0.00 | 13.68 | 4.000 | No | Yes | 2.00 |
| 443 | 3.95 | 1.15 | 91.91 | 2.86 | 0.58 | 1.11 | 12.09 | 0.00 | 12.09 | 4.000 | No | Yes | 2.00 |
| 444 | 3.97 | 1.06 | 99.84 | 2.96 | 0.58 | 1.11 | 11.02 | 0.00 | 11.02 | 4.000 | No | Yes | 2.00 |
| 445 | 3.99 | 1.22 | 97.45 | 2.93 | 0.57 | 1.11 | 12.78 | 0.00 | 12.78 | 4.000 | No | Yes | 2.00 |
| 446 | 4.01 | 1.20 | 97.06 | 2.93 | 0.57 | 1.11 | 12.60 | 0.00 | 12.60 | 4.000 | No | Yes | 2.00 |
| 447 | 4.03 | 1.16 | 99.45 | 2.96 | 0.57 | 1.11 | 12.07 | 0.00 | 12.07 | 4.000 | No | Yes | 2.00 |
| 448 | 4.05 | 1.14 | 98.23 | 2.94 | 0.58 | 1.11 | 11.89 | 0.00 | 11.89 | 4.000 | No | Yes | 2.00 |
| 449 | 4.07 | 1.17 | 95.98 | 2.91 | 0.57 | 1.11 | 12.23 | 0.00 | 12.23 | 4.000 | No | Yes | 2.00 |
| 450 | 4.09 | 1.20 | 93.50 | 2.88 | 0.57 | 1.11 | 12.49 | 0.00 | 12.49 | 4.000 | No | Yes | 2.00 |
| 451 | 4.11 | 1.23 | 92.53 | 2.87 | 0.57 | 1.11 | 12.78 | 0.00 | 12.78 | 4.000 | No | Yes | 2.00 |
| 452 | 4.13 | 1.24 | 93.43 | 2.88 | 0.57 | 1.10 | 12.89 | 0.00 | 12.89 | 4.000 | No | Yes | 2.00 |
| 453 | 4.15 | 1.31 | 91.41 | 2.86 | 0.57 | 1.10 | 13.62 | 0.00 | 13.62 | 4.000 | No | Yes | 2.00 |
| 454 | 4.17 | 1.39 | 89.60 | 2.83 | 0.57 | 1.10 | 14.43 | 0.00 | 14.43 | 4.000 | No | Yes | 2.00 |
| 455 | 4.19 | 1.43 | 88.82 | 2.82 | 0.57 | 1.10 | 14.86 | 0.00 | 14.86 | 4.000 | No | Yes | 2.00 |
| 456 | 4.21 | 1.33 | 94.53 | 2.89 | 0.57 | 1.10 | 13.76 | 0.00 | 13.76 | 4.000 | No | Yes | 2.00 |
| 457 | 4.23 | 1.17 | 100.00 | 2.98 | 0.57 | 1.10 | 12.10 | 0.00 | 12.10 | 4.000 | No | Yes | 2.00 |
| 458 | 4.25 | 1.12 | 100.00 | 3.00 | 0.58 | 1.10 | 11.50 | 0.00 | 11.50 | 4.000 | No | Yes | 2.00 |
| 459 | 4.27 | 1.10 | 100.00 | 3.01 | 0.58 | 1.10 | 11.32 | 0.00 | 11.32 | 4.000 | No | Yes | 2.00 |
| 460 | 4.29 | 1.11 | 100.00 | 2.97 | 0.58 | 1.10 | 11.39 | 0.00 | 11.39 | 4.000 | No | Yes | 2.00 |
| 461 | 4.31 | 1.10 | 97.83 | 2.94 | 0.58 | 1.10 | 11.29 | 0.00 | 11.29 | 4.000 | No | Yes | 2.00 |
| 462 | 4.33 | 1.12 | 93.13 | 2.88 | 0.58 | 1.09 | 11.47 | 0.00 | 11.47 | 4.000 | No | Yes | 2.00 |
| 463 | 4.35 | 1.19 | 87.35 | 2.80 | 0.58 | 1.09 | 12.20 | 0.00 | 12.20 | 4.000 | No | Yes | 2.00 |
| 464 | 4.37 | 1.31 | 79.48 | 2.71 | 0.58 | 1.09 | 13.41 | 0.00 | 13.41 | 4.000 | No | Yes | 2.00 |
| 465 | 4.39 | 1.31 | 78.50 | 2.69 | 0.58 | 1.09 | 13.40 | 0.00 | 13.40 | 4.000 | No | Yes | 2.00 |
| 466 | 4.41 | 1.35 | 76.13 | 2.66 | 0.58 | 1.09 | 13.85 | 0.00 | 13.85 | 4.000 | No | Yes | 2.00 |
| 467 | 4.43 | 1.35 | 76.18 | 2.66 | 0.58 | 1.09 | 13.84 | 0.00 | 13.84 | 4.000 | No | Yes | 2.00 |
| 468 | 4.45 | 1.36 | 76.24 | 2.67 | 0.57 | 1.09 | 13.89 | 0.00 | 13.89 | 4.000 | No | Yes | 2.00 |
| 469 | 4.47 | 1.40 | 79.88 | 2.71 | 0.57 | 1.09 | 14.31 | 0.00 | 14.31 | 4.000 | No | Yes | 2.00 |
| 470 | 4.49 | 1.43 | 80.20 | 2.72 | 0.57 | 1.09 | 14.55 | 0.00 | 14.55 | 4.000 | No | Yes | 2.00 |
| 471 | 4.51 | 1.40 | 81.58 | 2.73 | 0.57 | 1.09 | 14.22 | 0.00 | 14.22 | 4.000 | No | Yes | 2.00 |
| 472 | 4.53 | 1.40 | 81.64 | 2.73 | 0.57 | 1.08 | 14.21 | 0.00 | 14.21 | 4.000 | No | Yes | 2.00 |
| 473 | 4.55 | 1.40 | 81.69 | 2.73 | 0.57 | 1.08 | 14.20 | 0.00 | 14.20 | 4.000 | No | Yes | 2.00 |
| 474 | 4.57 | 1.21 | 91.09 | 2.85 | 0.58 | 1.08 | 12.20 | 0.00 | 12.20 | 4.000 | No | Yes | 2.00 |
| 475 | 4.59 | 1.13 | 100.00 | 2.97 | 0.58 | 1.08 | 11.34 | 0.00 | 11.34 | 4.000 | No | Yes | 2.00 |
| 476 | 4.61 | 1.14 | 99.19 | 2.95 | 0.58 | 1.08 | 11.43 | 0.00 | 11.43 | 4.000 | No | Yes | 2.00 |
| 477 | 4.63 | 1.17 | 96.91 | 2.92 | 0.58 | 1.08 | 11.78 | 0.00 | 11.78 | 4.000 | No | Yes | 2.00 |
| 478 | 4.65 | 1.25 | 93.38 | 2.88 | 0.57 | 1.08 | 12.56 | 0.00 | 12.56 | 4.000 | No | Yes | 2.00 |
| 479 | 4.67 | 1.31 | 87.75 | 2.81 | 0.57 | 1.08 | 13.15 | 0.00 | 13.15 | 4.000 | No | Yes | 2.00 |
| 480 | 4.69 | 1.21 | 86.57 | 2.79 | 0.58 | 1.08 | 12.13 | 0.00 | 12.13 | 4.000 | No | Yes | 2.00 |
| 481 | 4.71 | 1.15 | 90.56 | 2.84 | 0.58 | 1.08 | 11.45 | 0.00 | 11.45 | 4.000 | No | Yes | 2.00 |
| 482 | 4.73 | 1.06 | 95.80 | 2.91 | 0.58 | 1.08 | 10.55 | 0.00 | 10.55 | 4.000 | No | Yes | 2.00 |
| 483 | 4.75 | 1.03 | 97.46 | 2.93 | 0.58 | 1.08 | 10.19 | 0.00 | 10.19 | 4.000 | No | Yes | 2.00 |
| 484 | 4.77 | 1.03 | 95.70 | 2.91 | 0.58 | 1.07 | 10.16 | 0.00 | 10.16 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 485 | 4.79 | 1.03 | 97.10 | 2.93 | 0.58 | 1.07 | 10.14 | 0.00 | 10.14 | 4.000 | No | Yes | 2.00 |
| 486 | 4.81 | 1.05 | 95.47 | 2.91 | 0.58 | 1.07 | 10.37 | 0.00 | 10.37 | 4.000 | No | Yes | 2.00 |
| 487 | 4.83 | 1.09 | 92.77 | 2.87 | 0.58 | 1.07 | 10.72 | 0.00 | 10.72 | 4.000 | No | Yes | 2.00 |
| 488 | 4.85 | 1.08 | 90.64 | 2.85 | 0.58 | 1.07 | 10.59 | 0.00 | 10.59 | 4.000 | No | Yes | 2.00 |
| 489 | 4.87 | 1.08 | 87.24 | 2.80 | 0.58 | 1.07 | 10.66 | 0.00 | 10.66 | 4.000 | No | Yes | 2.00 |
| 490 | 4.89 | 1.07 | 88.01 | 2.81 | 0.58 | 1.07 | 10.51 | 0.00 | 10.51 | 4.000 | No | Yes | 2.00 |
| 491 | 4.91 | 1.08 | 88.90 | 2.82 | 0.58 | 1.07 | 10.55 | 0.00 | 10.55 | 4.000 | No | Yes | 2.00 |
| 492 | 4.93 | 1.10 | 88.16 | 2.81 | 0.58 | 1.07 | 10.81 | 0.00 | 10.81 | 4.000 | No | Yes | 2.00 |
| 493 | 4.95 | 1.14 | 87.28 | 2.80 | 0.58 | 1.07 | 11.21 | 0.00 | 11.21 | 4.000 | No | Yes | 2.00 |
| 494 | 4.97 | 1.20 | 84.96 | 2.77 | 0.58 | 1.07 | 11.80 | 0.00 | 11.80 | 4.000 | No | Yes | 2.00 |
| 495 | 4.99 | 1.54 | 82.13 | 2.74 | 0.57 | 1.06 | 15.43 | 0.00 | 15.43 | 4.000 | No | Yes | 2.00 |
| 496 | 5.01 | 1.36 | 93.28 | 2.88 | 0.57 | 1.06 | 13.65 | 0.00 | 13.65 | 4.000 | No | Yes | 2.00 |
| 497 | 5.03 | 1.30 | 98.00 | 2.94 | 0.57 | 1.06 | 12.94 | 0.00 | 12.94 | 4.000 | No | Yes | 2.00 |
| 498 | 5.05 | 1.26 | 100.00 | 2.97 | 0.57 | 1.06 | 12.54 | 0.00 | 12.54 | 4.000 | No | Yes | 2.00 |
| 499 | 5.07 | 1.25 | 100.00 | 2.98 | 0.57 | 1.06 | 12.37 | 0.00 | 12.37 | 4.000 | No | Yes | 2.00 |
| 500 | 5.09 | 1.26 | 100.00 | 2.97 | 0.57 | 1.06 | 12.41 | 0.00 | 12.41 | 4.000 | No | Yes | 2.00 |
| 501 | 5.11 | 1.46 | 89.82 | 2.84 | 0.57 | 1.06 | 14.48 | 0.00 | 14.48 | 4.000 | No | Yes | 2.00 |
| 502 | 5.13 | 1.61 | 84.11 | 2.76 | 0.56 | 1.06 | 16.03 | 0.00 | 16.03 | 4.000 | No | Yes | 2.00 |
| 503 | 5.15 | 1.62 | 82.02 | 2.74 | 0.56 | 1.06 | 16.06 | 0.00 | 16.06 | 4.000 | No | Yes | 2.00 |
| 504 | 5.17 | 1.57 | 80.51 | 2.72 | 0.57 | 1.05 | 15.58 | 0.00 | 15.58 | 4.000 | No | Yes | 2.00 |
| 505 | 5.19 | 1.52 | 83.37 | 2.75 | 0.57 | 1.05 | 15.02 | 0.00 | 15.02 | 4.000 | No | Yes | 2.00 |
| 506 | 5.21 | 1.45 | 90.17 | 2.84 | 0.57 | 1.05 | 14.33 | 0.00 | 14.33 | 4.000 | No | Yes | 2.00 |
| 507 | 5.23 | 1.39 | 95.17 | 2.90 | 0.57 | 1.05 | 13.73 | 0.00 | 13.73 | 4.000 | No | Yes | 2.00 |
| 508 | 5.25 | 1.24 | 100.00 | 3.06 | 0.57 | 1.05 | 12.11 | 0.00 | 12.11 | 4.000 | No | Yes | 2.00 |
| 509 | 5.27 | 1.24 | 100.00 | 3.07 | 0.57 | 1.05 | 12.12 | 0.00 | 12.12 | 4.000 | No | Yes | 2.00 |
| 510 | 5.29 | 1.25 | 100.00 | 3.08 | 0.57 | 1.05 | 12.24 | 0.00 | 12.24 | 4.000 | No | Yes | 2.00 |
| 511 | 5.31 | 1.34 | 100.00 | 3.04 | 0.57 | 1.05 | 13.06 | 0.00 | 13.06 | 4.000 | No | Yes | 2.00 |
| 512 | 5.32 | 1.41 | 100.00 | 2.98 | 0.57 | 1.05 | 13.77 | 0.00 | 13.77 | 4.000 | No | Yes | 2.00 |
| 513 | 5.34 | 1.50 | 95.28 | 2.90 | 0.57 | 1.05 | 14.74 | 0.00 | 14.74 | 4.000 | No | Yes | 2.00 |
| 514 | 5.36 | 1.51 | 92.94 | 2.87 | 0.57 | 1.04 | 14.82 | 0.00 | 14.82 | 4.000 | No | Yes | 2.00 |
| 515 | 5.38 | 1.53 | 93.28 | 2.88 | 0.57 | 1.04 | 15.00 | 0.00 | 15.00 | 4.000 | No | Yes | 2.00 |
| 516 | 5.40 | 1.54 | 94.30 | 2.89 | 0.56 | 1.04 | 15.08 | 0.00 | 15.08 | 4.000 | No | Yes | 2.00 |
| 517 | 5.42 | 1.57 | 94.71 | 2.90 | 0.56 | 1.04 | 15.29 | 0.00 | 15.29 | 4.000 | No | Yes | 2.00 |
| 518 | 5.44 | 1.63 | 92.87 | 2.87 | 0.56 | 1.04 | 15.87 | 0.00 | 15.87 | 4.000 | No | Yes | 2.00 |
| 519 | 5.46 | 1.57 | 94.71 | 2.90 | 0.56 | 1.04 | 15.31 | 0.00 | 15.31 | 4.000 | No | Yes | 2.00 |
| 520 | 5.48 | 1.48 | 97.99 | 2.94 | 0.57 | 1.04 | 14.39 | 0.00 | 14.39 | 4.000 | No | Yes | 2.00 |
| 521 | 5.50 | 1.41 | 100.00 | 2.98 | 0.57 | 1.04 | 13.64 | 0.00 | 13.64 | 4.000 | No | Yes | 2.00 |
| 522 | 5.52 | 1.36 | 100.00 | 3.02 | 0.57 | 1.04 | 13.14 | 0.00 | 13.14 | 4.000 | No | Yes | 2.00 |
| 523 | 5.54 | 1.37 | 100.00 | 3.02 | 0.57 | 1.04 | 13.16 | 0.00 | 13.16 | 4.000 | No | Yes | 2.00 |
| 524 | 5.56 | 1.32 | 100.00 | 3.02 | 0.57 | 1.04 | 12.72 | 0.00 | 12.72 | 4.000 | No | Yes | 2.00 |
| 525 | 5.58 | 1.34 | 100.00 | 3.02 | 0.57 | 1.03 | 12.85 | 0.00 | 12.85 | 4.000 | No | Yes | 2.00 |
| 526 | 5.60 | 1.33 | 100.00 | 3.01 | 0.57 | 1.03 | 12.70 | 0.00 | 12.70 | 4.000 | No | Yes | 2.00 |
| 527 | 5.62 | 1.37 | 100.00 | 2.97 | 0.57 | 1.03 | 13.19 | 0.00 | 13.19 | 4.000 | No | Yes | 2.00 |
| 528 | 5.64 | 1.45 | 95.12 | 2.90 | 0.57 | 1.03 | 13.93 | 0.00 | 13.93 | 4.000 | No | Yes | 2.00 |
| 529 | 5.66 | 1.46 | 95.84 | 2.91 | 0.57 | 1.03 | 14.01 | 0.00 | 14.01 | 4.000 | No | Yes | 2.00 |
| 530 | 5.68 | 1.47 | 96.51 | 2.92 | 0.57 | 1.03 | 14.06 | 0.00 | 14.06 | 4.000 | No | Yes | 2.00 |
| 531 | 5.70 | 1.39 | 100.00 | 2.97 | 0.57 | 1.03 | 13.23 | 0.00 | 13.23 | 4.000 | No | Yes | 2.00 |
| 532 | 5.72 | 1.45 | 100.00 | 2.96 | 0.57 | 1.03 | 13.83 | 0.00 | 13.83 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 533 | 5.74 | 1.52 | 97.26 | 2.93 | 0.57 | 1.03 | 14.50 | 0.00 | 14.50 | 4.000 | No | Yes | 2.00 |
| 534 | 5.76 | 1.49 | 97.72 | 2.93 | 0.57 | 1.03 | 14.19 | 0.00 | 14.19 | 4.000 | No | Yes | 2.00 |
| 535 | 5.78 | 1.40 | 99.72 | 2.96 | 0.57 | 1.03 | 13.36 | 0.00 | 13.36 | 4.000 | No | Yes | 2.00 |
| 536 | 5.80 | 1.34 | 100.00 | 2.98 | 0.57 | 1.02 | 12.75 | 0.00 | 12.75 | 4.000 | No | Yes | 2.00 |
| 537 | 5.82 | 1.23 | 100.00 | 3.06 | 0.58 | 1.02 | 11.67 | 0.00 | 11.67 | 4.000 | No | Yes | 2.00 |
| 538 | 5.84 | 1.13 | 100.00 | 3.15 | 0.58 | 1.02 | 10.67 | 0.00 | 10.67 | 4.000 | No | Yes | 2.00 |
| 539 | 5.86 | 1.07 | 100.00 | 3.20 | 0.58 | 1.02 | 9.99 | 0.00 | 9.99 | 4.000 | No | Yes | 2.00 |
| 540 | 5.88 | 1.07 | 100.00 | 3.18 | 0.58 | 1.02 | 10.06 | 0.00 | 10.06 | 4.000 | No | Yes | 2.00 |
| 541 | 5.90 | 1.05 | 100.00 | 3.18 | 0.58 | 1.02 | 9.85 | 0.00 | 9.85 | 4.000 | No | Yes | 2.00 |
| 542 | 5.92 | 1.08 | 100.00 | 3.14 | 0.58 | 1.02 | 10.12 | 0.00 | 10.12 | 4.000 | No | Yes | 2.00 |
| 543 | 5.94 | 1.09 | 100.00 | 3.09 | 0.58 | 1.02 | 10.22 | 0.00 | 10.22 | 4.000 | No | Yes | 2.00 |
| 544 | 5.96 | 1.11 | 100.00 | 3.00 | 0.58 | 1.02 | 10.39 | 0.00 | 10.39 | 4.000 | No | Yes | 2.00 |
| 545 | 5.98 | 1.14 | 98.81 | 2.95 | 0.58 | 1.02 | 10.64 | 0.00 | 10.64 | 4.000 | No | Yes | 2.00 |
| 546 | 6.00 | 1.12 | 100.00 | 2.97 | 0.58 | 1.02 | 10.51 | 0.00 | 10.51 | 4.000 | No | Yes | 2.00 |
| 547 | 6.02 | 1.09 | 100.00 | 3.01 | 0.58 | 1.01 | 10.19 | 0.00 | 10.19 | 4.000 | No | Yes | 2.00 |
| 548 | 6.04 | 1.11 | 100.00 | 3.01 | 0.58 | 1.01 | 10.34 | 0.00 | 10.34 | 4.000 | No | Yes | 2.00 |
| 549 | 6.06 | 1.14 | 100.00 | 3.01 | 0.58 | 1.01 | 10.67 | 0.00 | 10.67 | 4.000 | No | Yes | 2.00 |
| 550 | 6.08 | 1.13 | 100.00 | 3.03 | 0.58 | 1.01 | 10.56 | 0.00 | 10.56 | 4.000 | No | Yes | 2.00 |
| 551 | 6.10 | 1.13 | 100.00 | 3.05 | 0.58 | 1.01 | 10.49 | 0.00 | 10.49 | 4.000 | No | Yes | 2.00 |
| 552 | 6.12 | 1.16 | 100.00 | 3.03 | 0.58 | 1.01 | 10.84 | 0.00 | 10.84 | 4.000 | No | Yes | 2.00 |
| 553 | 6.14 | 1.19 | 100.00 | 3.00 | 0.58 | 1.01 | 11.10 | 0.00 | 11.10 | 4.000 | No | Yes | 2.00 |
| 554 | 6.16 | 1.25 | 100.00 | 2.97 | 0.58 | 1.01 | 11.66 | 0.00 | 11.66 | 4.000 | No | Yes | 2.00 |
| 555 | 6.18 | 1.34 | 97.57 | 2.93 | 0.57 | 1.01 | 12.56 | 0.00 | 12.56 | 4.000 | No | Yes | 2.00 |
| 556 | 6.20 | 1.41 | 97.37 | 2.93 | 0.57 | 1.01 | 13.21 | 0.00 | 13.21 | 4.000 | No | Yes | 2.00 |
| 557 | 6.22 | 1.43 | 98.56 | 2.94 | 0.57 | 1.01 | 13.43 | 0.00 | 13.43 | 4.000 | No | Yes | 2.00 |
| 558 | 6.24 | 1.46 | 100.00 | 2.97 | 0.57 | 1.01 | 13.69 | 0.00 | 13.69 | 4.000 | No | Yes | 2.00 |
| 559 | 6.26 | 1.47 | 100.00 | 2.99 | 0.57 | 1.00 | 13.82 | 0.00 | 13.82 | 4.000 | No | Yes | 2.00 |
| 560 | 6.28 | 1.50 | 100.00 | 3.01 | 0.57 | 1.00 | 14.06 | 0.00 | 14.06 | 4.000 | No | Yes | 2.00 |
| 561 | 6.30 | 1.50 | 100.00 | 3.03 | 0.57 | 1.00 | 14.05 | 0.00 | 14.05 | 4.000 | No | Yes | 2.00 |
| 562 | 6.32 | 1.48 | 100.00 | 3.05 | 0.57 | 1.00 | 13.80 | 0.00 | 13.80 | 4.000 | No | Yes | 2.00 |
| 563 | 6.34 | 1.45 | 100.00 | 3.06 | 0.57 | 1.00 | 13.56 | 0.00 | 13.56 | 4.000 | No | Yes | 2.00 |
| 564 | 6.36 | 1.49 | 100.00 | 3.01 | 0.57 | 1.00 | 13.91 | 0.00 | 13.91 | 4.000 | No | Yes | 2.00 |
| 565 | 6.38 | 1.58 | 98.50 | 2.94 | 0.56 | 1.00 | 14.76 | 0.00 | 14.76 | 4.000 | No | Yes | 2.00 |
| 566 | 6.40 | 1.82 | 88.28 | 2.82 | 0.56 | 1.00 | 16.98 | 0.00 | 16.98 | 4.000 | No | Yes | 2.00 |
| 567 | 6.42 | 1.93 | 83.66 | 2.76 | 0.56 | 1.00 | 18.04 | 0.00 | 18.04 | 4.000 | No | Yes | 2.00 |
| 568 | 6.44 | 1.92 | 81.86 | 2.74 | 0.56 | 1.00 | 17.92 | 0.00 | 17.92 | 4.000 | No | Yes | 2.00 |
| 569 | 6.46 | 1.79 | 87.21 | 2.80 | 0.56 | 1.00 | 16.63 | 0.00 | 16.63 | 4.000 | No | Yes | 2.00 |
| 570 | 6.48 | 1.74 | 88.72 | 2.82 | 0.56 | 0.99 | 16.13 | 0.00 | 16.13 | 4.000 | No | Yes | 2.00 |
| 571 | 6.50 | 1.83 | 85.04 | 2.78 | 0.56 | 0.99 | 17.01 | 0.00 | 17.01 | 4.000 | No | Yes | 2.00 |
| 572 | 6.52 | 2.03 | 81.53 | 2.73 | 0.55 | 0.99 | 18.94 | 0.00 | 18.94 | 4.000 | No | Yes | 2.00 |
| 573 | 6.53 | 2.28 | 75.27 | 2.65 | 0.55 | 0.99 | 21.30 | 0.00 | 21.30 | 4.000 | No | Yes | 2.00 |
| 574 | 6.55 | 2.28 | 75.32 | 2.65 | 0.55 | 0.99 | 21.28 | 0.00 | 21.28 | 4.000 | No | Yes | 2.00 |
| 575 | 6.57 | 2.34 | 73.74 | 2.63 | 0.55 | 0.99 | 21.88 | 0.00 | 21.88 | 4.000 | No | Yes | 2.00 |
| 576 | 6.59 | 1.73 | 90.88 | 2.85 | 0.56 | 0.99 | 16.02 | 0.00 | 16.02 | 4.000 | No | Yes | 2.00 |
| 577 | 6.61 | 1.48 | 100.00 | 2.98 | 0.57 | 0.99 | 13.61 | 0.00 | 13.61 | 4.000 | No | Yes | 2.00 |
| 578 | 6.63 | 1.40 | 100.00 | 3.02 | 0.57 | 0.99 | 12.80 | 0.00 | 12.80 | 4.000 | No | Yes | 2.00 |
| 579 | 6.65 | 1.35 | 100.00 | 3.01 | 0.57 | 0.99 | 12.35 | 0.00 | 12.35 | 4.000 | No | Yes | 2.00 |
| 580 | 6.67 | 1.32 | 100.00 | 3.04 | 0.57 | 0.99 | 11.97 | 0.00 | 11.97 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 581 | 6.69 | 1.29 | 100.00 | 3.05 | 0.58 | 0.99 | 11.66 | 0.00 | 11.66 | 4.000 | No | Yes | 2.00 |
| 582 | 6.71 | 1.27 | 100.00 | 3.03 | 0.58 | 0.98 | 11.49 | 0.00 | 11.49 | 4.000 | No | Yes | 2.00 |
| 583 | 6.73 | 1.26 | 98.66 | 2.95 | 0.58 | 0.98 | 11.40 | 0.00 | 11.40 | 4.000 | No | Yes | 2.00 |
| 584 | 6.75 | 1.27 | 94.12 | 2.89 | 0.58 | 0.98 | 11.47 | 0.00 | 11.47 | 4.000 | No | Yes | 2.00 |
| 585 | 6.77 | 1.28 | 93.93 | 2.89 | 0.58 | 0.98 | 11.48 | 0.00 | 11.48 | 4.000 | No | Yes | 2.00 |
| 586 | 6.79 | 1.31 | 94.73 | 2.90 | 0.58 | 0.98 | 11.83 | 0.00 | 11.83 | 4.000 | No | Yes | 2.00 |
| 587 | 6.81 | 1.37 | 93.09 | 2.88 | 0.58 | 0.98 | 12.31 | 0.00 | 12.31 | 4.000 | No | Yes | 2.00 |
| 588 | 6.83 | 1.38 | 92.63 | 2.87 | 0.57 | 0.98 | 12.47 | 0.00 | 12.47 | 4.000 | No | Yes | 2.00 |
| 589 | 6.85 | 1.39 | 92.97 | 2.87 | 0.57 | 0.98 | 12.54 | 0.00 | 12.54 | 4.000 | No | Yes | 2.00 |
| 590 | 6.87 | 1.38 | 94.35 | 2.89 | 0.57 | 0.98 | 12.40 | 0.00 | 12.40 | 4.000 | No | Yes | 2.00 |
| 591 | 6.89 | 1.36 | 96.19 | 2.91 | 0.57 | 0.98 | 12.23 | 0.00 | 12.23 | 4.000 | No | Yes | 2.00 |
| 592 | 6.91 | 1.36 | 97.29 | 2.93 | 0.57 | 0.98 | 12.17 | 0.00 | 12.17 | 4.000 | No | Yes | 2.00 |
| 593 | 6.93 | 1.35 | 97.51 | 2.93 | 0.57 | 0.98 | 12.14 | 0.00 | 12.14 | 4.000 | No | Yes | 2.00 |
| 594 | 6.95 | 1.12 | 100.00 | 3.09 | 0.58 | 0.98 | 9.92 | 0.00 | 9.92 | 4.000 | No | Yes | 2.00 |
| 595 | 6.97 | 1.31 | 100.00 | 3.00 | 0.58 | 0.97 | 11.74 | 0.00 | 11.74 | 4.000 | No | Yes | 2.00 |
| 596 | 6.99 | 1.31 | 100.00 | 3.00 | 0.58 | 0.97 | 11.73 | 0.00 | 11.73 | 4.000 | No | Yes | 2.00 |
| 597 | 7.01 | 1.34 | 100.00 | 3.04 | 0.57 | 0.97 | 11.98 | 0.00 | 11.98 | 4.000 | No | Yes | 2.00 |
| 598 | 7.03 | 1.30 | 100.00 | 3.07 | 0.58 | 0.97 | 11.59 | 0.00 | 11.59 | 4.000 | No | Yes | 2.00 |
| 599 | 7.05 | 1.27 | 100.00 | 3.10 | 0.58 | 0.97 | 11.28 | 0.00 | 11.28 | 4.000 | No | Yes | 2.00 |
| 600 | 7.07 | 1.28 | 100.00 | 3.10 | 0.58 | 0.97 | 11.33 | 0.00 | 11.33 | 4.000 | No | Yes | 2.00 |
| 601 | 7.09 | 1.28 | 100.00 | 3.10 | 0.58 | 0.97 | 11.35 | 0.00 | 11.35 | 4.000 | No | Yes | 2.00 |
| 602 | 7.11 | 1.27 | 100.00 | 3.09 | 0.58 | 0.97 | 11.24 | 0.00 | 11.24 | 4.000 | No | Yes | 2.00 |
| 603 | 7.13 | 1.28 | 100.00 | 3.07 | 0.58 | 0.97 | 11.36 | 0.00 | 11.36 | 4.000 | No | Yes | 2.00 |
| 604 | 7.15 | 1.29 | 100.00 | 3.04 | 0.58 | 0.97 | 11.39 | 0.00 | 11.39 | 4.000 | No | Yes | 2.00 |
| 605 | 7.17 | 1.28 | 100.00 | 3.02 | 0.58 | 0.97 | 11.28 | 0.00 | 11.28 | 4.000 | No | Yes | 2.00 |
| 606 | 7.19 | 1.23 | 100.00 | 3.04 | 0.58 | 0.97 | 10.88 | 0.00 | 10.88 | 4.000 | No | Yes | 2.00 |
| 607 | 7.21 | 1.22 | 100.00 | 3.03 | 0.58 | 0.97 | 10.74 | 0.00 | 10.74 | 4.000 | No | Yes | 2.00 |
| 608 | 7.23 | 1.21 | 100.00 | 3.03 | 0.58 | 0.96 | 10.65 | 0.00 | 10.65 | 4.000 | No | Yes | 2.00 |
| 609 | 7.25 | 1.19 | 100.00 | 3.06 | 0.58 | 0.96 | 10.42 | 0.00 | 10.42 | 4.000 | No | Yes | 2.00 |
| 610 | 7.27 | 1.19 | 100.00 | 3.06 | 0.58 | 0.96 | 10.46 | 0.00 | 10.46 | 4.000 | No | Yes | 2.00 |
| 611 | 7.29 | 1.18 | 100.00 | 3.07 | 0.58 | 0.96 | 10.28 | 0.00 | 10.28 | 4.000 | No | Yes | 2.00 |
| 612 | 7.31 | 1.17 | 100.00 | 3.07 | 0.58 | 0.96 | 10.24 | 0.00 | 10.24 | 4.000 | No | Yes | 2.00 |
| 613 | 7.33 | 1.18 | 100.00 | 3.05 | 0.58 | 0.96 | 10.30 | 0.00 | 10.30 | 4.000 | No | Yes | 2.00 |
| 614 | 7.35 | 1.20 | 100.00 | 3.02 | 0.58 | 0.96 | 10.46 | 0.00 | 10.46 | 4.000 | No | Yes | 2.00 |
| 615 | 7.37 | 1.28 | 99.23 | 2.95 | 0.58 | 0.96 | 11.20 | 0.00 | 11.20 | 4.000 | No | Yes | 2.00 |
| 616 | 7.39 | 1.34 | 94.76 | 2.90 | 0.58 | 0.96 | 11.74 | 0.00 | 11.74 | 4.000 | No | Yes | 2.00 |
| 617 | 7.41 | 1.36 | 93.04 | 2.88 | 0.58 | 0.96 | 11.94 | 0.00 | 11.94 | 4.000 | No | Yes | 2.00 |
| 618 | 7.43 | 1.36 | 92.93 | 2.87 | 0.58 | 0.96 | 11.95 | 0.00 | 11.95 | 4.000 | No | Yes | 2.00 |
| 619 | 7.45 | 1.36 | 94.25 | 2.89 | 0.58 | 0.96 | 11.92 | 0.00 | 11.92 | 4.000 | No | Yes | 2.00 |
| 620 | 7.47 | 1.31 | 99.87 | 2.96 | 0.58 | 0.96 | 11.47 | 0.00 | 11.47 | 4.000 | No | Yes | 2.00 |
| 621 | 7.49 | 1.29 | 100.00 | 3.00 | 0.58 | 0.96 | 11.29 | 0.00 | 11.29 | 4.000 | No | Yes | 2.00 |
| 622 | 7.51 | 1.29 | 100.00 | 3.02 | 0.58 | 0.95 | 11.23 | 0.00 | 11.23 | 4.000 | No | Yes | 2.00 |
| 623 | 7.53 | 1.29 | 100.00 | 3.05 | 0.58 | 0.95 | 11.20 | 0.00 | 11.20 | 4.000 | No | Yes | 2.00 |
| 624 | 7.55 | 1.28 | 100.00 | 3.06 | 0.58 | 0.95 | 11.18 | 0.00 | 11.18 | 4.000 | No | Yes | 2.00 |
| 625 | 7.57 | 1.29 | 100.00 | 3.06 | 0.58 | 0.95 | 11.26 | 0.00 | 11.26 | 4.000 | No | Yes | 2.00 |
| 626 | 7.59 | 1.30 | 100.00 | 3.05 | 0.58 | 0.95 | 11.29 | 0.00 | 11.29 | 4.000 | No | Yes | 2.00 |
| 627 | 7.61 | 1.30 | 100.00 | 3.04 | 0.58 | 0.95 | 11.30 | 0.00 | 11.30 | 4.000 | No | Yes | 2.00 |
| 628 | 7.62 | 1.29 | 100.00 | 3.03 | 0.58 | 0.95 | 11.23 | 0.00 | 11.23 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 629 | 7.64 | 1.26 | 100.00 | 3.05 | 0.58 | 0.95 | 10.89 | 0.00 | 10.89 | 4.000 | No | Yes | 2.00 |
| 630 | 7.66 | 1.25 | 100.00 | 3.04 | 0.58 | 0.95 | 10.85 | 0.00 | 10.85 | 4.000 | No | Yes | 2.00 |
| 631 | 7.68 | 1.25 | 100.00 | 3.04 | 0.58 | 0.95 | 10.82 | 0.00 | 10.82 | 4.000 | No | Yes | 2.00 |
| 632 | 7.70 | 1.29 | 100.00 | 3.00 | 0.58 | 0.95 | 11.20 | 0.00 | 11.20 | 4.000 | No | Yes | 2.00 |
| 633 | 7.72 | 1.34 | 100.00 | 2.97 | 0.58 | 0.95 | 11.59 | 0.00 | 11.59 | 4.000 | No | Yes | 2.00 |
| 634 | 7.74 | 1.35 | 99.11 | 2.95 | 0.58 | 0.95 | 11.73 | 0.00 | 11.73 | 4.000 | No | Yes | 2.00 |
| 635 | 7.76 | 1.37 | 98.30 | 2.94 | 0.58 | 0.95 | 11.90 | 0.00 | 11.90 | 4.000 | No | Yes | 2.00 |
| 636 | 7.78 | 1.34 | 100.00 | 2.96 | 0.58 | 0.94 | 11.60 | 0.00 | 11.60 | 4.000 | No | Yes | 2.00 |
| 637 | 7.80 | 1.33 | 100.00 | 2.98 | 0.58 | 0.94 | 11.42 | 0.00 | 11.42 | 4.000 | No | Yes | 2.00 |
| 638 | 7.82 | 1.32 | 100.00 | 2.99 | 0.58 | 0.94 | 11.36 | 0.00 | 11.36 | 4.000 | No | Yes | 2.00 |
| 639 | 7.84 | 1.34 | 100.00 | 2.97 | 0.58 | 0.94 | 11.57 | 0.00 | 11.57 | 4.000 | No | Yes | 2.00 |
| 640 | 7.86 | 1.35 | 100.00 | 2.97 | 0.58 | 0.94 | 11.58 | 0.00 | 11.58 | 4.000 | No | Yes | 2.00 |
| 641 | 7.88 | 1.34 | 100.00 | 2.99 | 0.58 | 0.94 | 11.48 | 0.00 | 11.48 | 4.000 | No | Yes | 2.00 |
| 642 | 7.90 | 1.35 | 99.73 | 2.96 | 0.58 | 0.94 | 11.60 | 0.00 | 11.60 | 4.000 | No | Yes | 2.00 |
| 643 | 7.92 | 1.68 | 80.04 | 2.71 | 0.57 | 0.94 | 14.59 | 0.00 | 14.59 | 4.000 | No | Yes | 2.00 |
| 644 | 7.94 | 1.76 | 84.34 | 2.77 | 0.57 | 0.94 | 15.36 | 0.00 | 15.36 | 4.000 | No | Yes | 2.00 |
| 645 | 7.96 | 1.57 | 93.08 | 2.88 | 0.57 | 0.94 | 13.60 | 0.00 | 13.60 | 4.000 | No | Yes | 2.00 |
| 646 | 7.98 | 1.46 | 98.59 | 2.94 | 0.57 | 0.94 | 12.56 | 0.00 | 12.56 | 4.000 | No | Yes | 2.00 |
| 647 | 8.00 | 1.32 | 100.00 | 3.07 | 0.58 | 0.94 | 11.26 | 0.00 | 11.26 | 4.000 | No | Yes | 2.00 |
| 648 | 8.02 | 1.30 | 100.00 | 3.07 | 0.58 | 0.94 | 11.01 | 0.00 | 11.01 | 4.000 | No | Yes | 2.00 |
| 649 | 8.04 | 1.28 | 100.00 | 3.07 | 0.58 | 0.94 | 10.89 | 0.00 | 10.89 | 4.000 | No | Yes | 2.00 |
| 650 | 8.06 | 1.35 | 100.00 | 3.03 | 0.58 | 0.93 | 11.45 | 0.00 | 11.45 | 4.000 | No | Yes | 2.00 |
| 651 | 8.08 | 1.37 | 100.00 | 2.99 | 0.58 | 0.93 | 11.66 | 0.00 | 11.66 | 4.000 | No | Yes | 2.00 |
| 652 | 8.10 | 1.41 | 99.07 | 2.95 | 0.57 | 0.93 | 12.04 | 0.00 | 12.04 | 4.000 | No | Yes | 2.00 |
| 653 | 8.12 | 1.42 | 96.89 | 2.92 | 0.58 | 0.93 | 12.09 | 0.00 | 12.09 | 4.000 | No | Yes | 2.00 |
| 654 | 8.14 | 1.34 | 99.00 | 2.95 | 0.58 | 0.93 | 11.35 | 0.00 | 11.35 | 4.000 | No | Yes | 2.00 |
| 655 | 8.16 | 1.30 | 100.00 | 2.98 | 0.58 | 0.93 | 11.00 | 0.00 | 11.00 | 4.000 | No | Yes | 2.00 |
| 656 | 8.18 | 1.26 | 100.00 | 3.01 | 0.58 | 0.93 | 10.63 | 0.00 | 10.63 | 4.000 | No | Yes | 2.00 |
| 657 | 8.20 | 1.26 | 100.00 | 3.00 | 0.58 | 0.93 | 10.60 | 0.00 | 10.60 | 4.000 | No | Yes | 2.00 |
| 658 | 8.22 | 1.29 | 99.50 | 2.96 | 0.58 | 0.93 | 10.87 | 0.00 | 10.87 | 4.000 | No | Yes | 2.00 |
| 659 | 8.24 | 1.34 | 96.02 | 2.91 | 0.58 | 0.93 | 11.29 | 0.00 | 11.29 | 4.000 | No | Yes | 2.00 |
| 660 | 8.26 | 1.41 | 92.96 | 2.87 | 0.58 | 0.93 | 11.87 | 0.00 | 11.87 | 4.000 | No | Yes | 2.00 |
| 661 | 8.28 | 1.53 | 85.89 | 2.79 | 0.57 | 0.93 | 12.98 | 0.00 | 12.98 | 4.000 | No | Yes | 2.00 |
| 662 | 8.30 | 1.59 | 85.48 | 2.78 | 0.57 | 0.93 | 13.48 | 0.00 | 13.48 | 4.000 | No | Yes | 2.00 |
| 663 | 8.32 | 1.67 | 84.09 | 2.76 | 0.57 | 0.93 | 14.22 | 0.00 | 14.22 | 4.000 | No | Yes | 2.00 |
| 664 | 8.34 | 1.67 | 88.80 | 2.82 | 0.57 | 0.93 | 14.24 | 0.00 | 14.24 | 4.000 | No | Yes | 2.00 |
| 665 | 8.36 | 1.66 | 93.67 | 2.88 | 0.57 | 0.93 | 14.15 | 0.00 | 14.15 | 4.000 | No | Yes | 2.00 |
| 666 | 8.38 | 1.69 | 96.65 | 2.92 | 0.57 | 0.93 | 14.40 | 0.00 | 14.40 | 4.000 | No | Yes | 2.00 |
| 667 | 8.40 | 1.70 | 97.28 | 2.93 | 0.57 | 0.93 | 14.44 | 0.00 | 14.44 | 4.000 | No | Yes | 2.00 |
| 668 | 8.42 | 1.70 | 97.65 | 2.93 | 0.57 | 0.92 | 14.43 | 0.00 | 14.43 | 4.000 | No | Yes | 2.00 |
| 669 | 8.44 | 1.69 | 98.17 | 2.94 | 0.57 | 0.92 | 14.36 | 0.00 | 14.36 | 4.000 | No | Yes | 2.00 |
| 670 | 8.46 | 1.68 | 97.62 | 2.93 | 0.57 | 0.92 | 14.28 | 0.00 | 14.28 | 4.000 | No | Yes | 2.00 |
| 671 | 8.48 | 1.67 | 94.86 | 2.90 | 0.57 | 0.92 | 14.17 | 0.00 | 14.17 | 4.000 | No | Yes | 2.00 |
| 672 | 8.50 | 1.65 | 93.79 | 2.88 | 0.57 | 0.92 | 13.91 | 0.00 | 13.91 | 4.000 | No | Yes | 2.00 |
| 673 | 8.52 | 1.61 | 96.08 | 2.91 | 0.57 | 0.92 | 13.56 | 0.00 | 13.56 | 4.000 | No | Yes | 2.00 |
| 674 | 8.54 | 1.54 | 100.00 | 2.98 | 0.57 | 0.92 | 12.90 | 0.00 | 12.90 | 4.000 | No | Yes | 2.00 |
| 675 | 8.56 | 1.48 | 100.00 | 3.03 | 0.57 | 0.92 | 12.37 | 0.00 | 12.37 | 4.000 | No | Yes | 2.00 |
| 676 | 8.58 | 1.44 | 100.00 | 3.08 | 0.57 | 0.92 | 12.02 | 0.00 | 12.02 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 677 | 8.60 | 1.40 | 100.00 | 3.13 | 0.58 | 0.92 | 11.65 | 0.00 | 11.65 | 4.000 | No | Yes | 2.00 |
| 678 | 8.61 | 1.39 | 100.00 | 3.14 | 0.58 | 0.92 | 11.56 | 0.00 | 11.56 | 4.000 | No | Yes | 2.00 |
| 679 | 8.63 | 1.44 | 100.00 | 3.12 | 0.57 | 0.92 | 12.00 | 0.00 | 12.00 | 4.000 | No | Yes | 2.00 |
| 680 | 8.65 | 1.63 | 100.00 | 3.02 | 0.57 | 0.92 | 13.68 | 0.00 | 13.68 | 4.000 | No | Yes | 2.00 |
| 681 | 8.67 | 1.84 | 97.75 | 2.93 | 0.56 | 0.92 | 15.54 | 0.00 | 15.54 | 4.000 | No | Yes | 2.00 |
| 682 | 8.69 | 1.87 | 96.03 | 2.91 | 0.56 | 0.92 | 15.75 | 0.00 | 15.75 | 4.000 | No | Yes | 2.00 |
| 683 | 8.71 | 1.85 | 94.77 | 2.90 | 0.56 | 0.91 | 15.59 | 0.00 | 15.59 | 4.000 | No | Yes | 2.00 |
| 684 | 8.73 | 1.75 | 97.79 | 2.93 | 0.57 | 0.91 | 14.69 | 0.00 | 14.69 | 4.000 | No | Yes | 2.00 |
| 685 | 8.75 | 1.66 | 99.14 | 2.95 | 0.57 | 0.91 | 13.84 | 0.00 | 13.84 | 4.000 | No | Yes | 2.00 |
| 686 | 8.77 | 1.59 | 100.00 | 2.99 | 0.57 | 0.91 | 13.28 | 0.00 | 13.28 | 4.000 | No | Yes | 2.00 |
| 687 | 8.79 | 1.52 | 100.00 | 3.03 | 0.57 | 0.91 | 12.63 | 0.00 | 12.63 | 4.000 | No | Yes | 2.00 |
| 688 | 8.81 | 1.52 | 100.00 | 2.99 | 0.57 | 0.91 | 12.58 | 0.00 | 12.58 | 4.000 | No | Yes | 2.00 |
| 689 | 8.83 | 1.56 | 93.37 | 2.88 | 0.57 | 0.91 | 12.95 | 0.00 | 12.95 | 4.000 | No | Yes | 2.00 |
| 690 | 8.85 | 1.56 | 95.53 | 2.91 | 0.57 | 0.91 | 12.91 | 0.00 | 12.91 | 4.000 | No | Yes | 2.00 |
| 691 | 8.87 | 1.57 | 96.97 | 2.92 | 0.57 | 0.91 | 12.98 | 0.00 | 12.98 | 4.000 | No | Yes | 2.00 |
| 692 | 8.89 | 1.57 | 99.88 | 2.96 | 0.57 | 0.91 | 13.03 | 0.00 | 13.03 | 4.000 | No | Yes | 2.00 |
| 693 | 8.91 | 1.70 | 94.93 | 2.90 | 0.57 | 0.91 | 14.08 | 0.00 | 14.08 | 4.000 | No | Yes | 2.00 |
| 694 | 8.93 | 1.75 | 94.12 | 2.89 | 0.57 | 0.91 | 14.46 | 0.00 | 14.46 | 4.000 | No | Yes | 2.00 |
| 695 | 8.95 | 1.71 | 97.87 | 2.94 | 0.57 | 0.91 | 14.13 | 0.00 | 14.13 | 4.000 | No | Yes | 2.00 |
| 696 | 8.97 | 1.67 | 99.71 | 2.96 | 0.57 | 0.91 | 13.74 | 0.00 | 13.74 | 4.000 | No | Yes | 2.00 |
| 697 | 8.99 | 1.60 | 100.00 | 2.99 | 0.57 | 0.90 | 13.14 | 0.00 | 13.14 | 4.000 | No | Yes | 2.00 |
| 698 | 9.01 | 1.62 | 100.00 | 2.97 | 0.57 | 0.90 | 13.27 | 0.00 | 13.27 | 4.000 | No | Yes | 2.00 |
| 699 | 9.03 | 1.73 | 96.39 | 2.92 | 0.57 | 0.90 | 14.28 | 0.00 | 14.28 | 4.000 | No | Yes | 2.00 |
| 700 | 9.05 | 1.79 | 93.25 | 2.88 | 0.57 | 0.90 | 14.74 | 0.00 | 14.74 | 4.000 | No | Yes | 2.00 |
| 701 | 9.07 | 1.71 | 93.04 | 2.88 | 0.57 | 0.90 | 14.04 | 0.00 | 14.04 | 4.000 | No | Yes | 2.00 |
| 702 | 9.09 | 1.57 | 98.53 | 2.94 | 0.57 | 0.90 | 12.85 | 0.00 | 12.85 | 4.000 | No | Yes | 2.00 |
| 703 | 9.11 | 1.54 | 100.00 | 3.00 | 0.57 | 0.90 | 12.54 | 0.00 | 12.54 | 4.000 | No | Yes | 2.00 |
| 704 | 9.13 | 1.63 | 97.47 | 2.93 | 0.57 | 0.90 | 13.33 | 0.00 | 13.33 | 4.000 | No | Yes | 2.00 |
| 705 | 9.15 | 1.72 | 89.53 | 2.83 | 0.57 | 0.90 | 14.14 | 0.00 | 14.14 | 4.000 | No | Yes | 2.00 |
| 706 | 9.17 | 1.78 | 86.97 | 2.80 | 0.57 | 0.90 | 14.59 | 0.00 | 14.59 | 4.000 | No | Yes | 2.00 |
| 707 | 9.19 | 1.77 | 92.16 | 2.86 | 0.57 | 0.90 | 14.51 | 0.00 | 14.51 | 4.000 | No | Yes | 2.00 |
| 708 | 9.21 | 1.73 | 95.25 | 2.90 | 0.57 | 0.90 | 14.13 | 0.00 | 14.13 | 4.000 | No | Yes | 2.00 |
| 709 | 9.23 | 1.74 | 96.69 | 2.92 | 0.57 | 0.90 | 14.22 | 0.00 | 14.22 | 4.000 | No | Yes | 2.00 |
| 710 | 9.25 | 1.83 | 93.30 | 2.88 | 0.57 | 0.90 | 15.02 | 0.00 | 15.02 | 4.000 | No | Yes | 2.00 |
| 711 | 9.27 | 1.97 | 88.28 | 2.82 | 0.56 | 0.90 | 16.21 | 0.00 | 16.21 | 4.000 | No | Yes | 2.00 |
| 712 | 9.29 | 1.92 | 93.39 | 2.88 | 0.56 | 0.90 | 15.81 | 0.00 | 15.81 | 4.000 | No | Yes | 2.00 |
| 713 | 9.31 | 1.89 | 94.70 | 2.90 | 0.56 | 0.90 | 15.47 | 0.00 | 15.47 | 4.000 | No | Yes | 2.00 |
| 714 | 9.33 | 1.87 | 92.79 | 2.87 | 0.56 | 0.89 | 15.33 | 0.00 | 15.33 | 4.000 | No | Yes | 2.00 |
| 715 | 9.35 | 1.80 | 93.84 | 2.89 | 0.57 | 0.89 | 14.70 | 0.00 | 14.70 | 4.000 | No | Yes | 2.00 |
| 716 | 9.37 | 1.76 | 94.23 | 2.89 | 0.57 | 0.89 | 14.34 | 0.00 | 14.34 | 4.000 | No | Yes | 2.00 |
| 717 | 9.39 | 1.72 | 96.01 | 2.91 | 0.57 | 0.89 | 13.95 | 0.00 | 13.95 | 4.000 | No | Yes | 2.00 |
| 718 | 9.41 | 1.77 | 93.33 | 2.88 | 0.57 | 0.89 | 14.35 | 0.00 | 14.35 | 4.000 | No | Yes | 2.00 |
| 719 | 9.43 | 1.85 | 91.25 | 2.85 | 0.57 | 0.89 | 15.04 | 0.00 | 15.04 | 4.000 | No | Yes | 2.00 |
| 720 | 9.45 | 1.96 | 87.81 | 2.81 | 0.56 | 0.89 | 16.00 | 0.00 | 16.00 | 4.000 | No | Yes | 2.00 |
| 721 | 9.47 | 2.07 | 85.59 | 2.78 | 0.56 | 0.89 | 16.92 | 0.00 | 16.92 | 4.000 | No | Yes | 2.00 |
| 722 | 9.48 | 2.19 | 84.55 | 2.77 | 0.56 | 0.89 | 18.00 | 0.00 | 18.00 | 4.000 | No | Yes | 2.00 |
| 723 | 9.50 | 2.23 | 85.47 | 2.78 | 0.56 | 0.89 | 18.32 | 0.00 | 18.32 | 4.000 | No | Yes | 2.00 |
| 724 | 9.52 | 2.21 | 86.80 | 2.80 | 0.56 | 0.89 | 18.17 | 0.00 | 18.17 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 725 | 9.54 | 2.06 | 93.15 | 2.88 | 0.56 | 0.89 | 17.27 | 0.00 | 17.27 | 4.000 | No | Yes | 2.00 |
| 726 | 9.56 | 1.99 | 100.00 | 2.96 | 0.56 | 0.89 | 16.62 | 0.00 | 16.62 | 4.000 | No | Yes | 2.00 |
| 727 | 9.58 | 1.94 | 100.00 | 3.01 | 0.56 | 0.89 | 16.13 | 0.00 | 16.13 | 4.000 | No | Yes | 2.00 |
| 728 | 9.60 | 1.88 | 100.00 | 3.05 | 0.56 | 0.89 | 15.51 | 0.00 | 15.51 | 4.000 | No | Yes | 2.00 |
| 729 | 9.62 | 1.91 | 100.00 | 3.04 | 0.56 | 0.89 | 15.79 | 0.00 | 15.79 | 4.000 | No | Yes | 2.00 |
| 730 | 9.64 | 1.94 | 100.00 | 3.04 | 0.56 | 0.89 | 16.01 | 0.00 | 16.01 | 4.000 | No | Yes | 2.00 |
| 731 | 9.66 | 1.90 | 100.00 | 3.06 | 0.56 | 0.88 | 15.71 | 0.00 | 15.71 | 4.000 | No | Yes | 2.00 |
| 732 | 9.68 | 1.84 | 100.00 | 3.09 | 0.56 | 0.88 | 15.07 | 0.00 | 15.07 | 4.000 | No | Yes | 2.00 |
| 733 | 9.70 | 1.87 | 100.00 | 3.03 | 0.56 | 0.88 | 15.38 | 0.00 | 15.38 | 4.000 | No | Yes | 2.00 |
| 734 | 9.72 | 1.82 | 100.00 | 3.05 | 0.56 | 0.88 | 14.93 | 0.00 | 14.93 | 4.000 | No | Yes | 2.00 |
| 735 | 9.74 | 1.81 | 100.00 | 3.06 | 0.56 | 0.88 | 14.80 | 0.00 | 14.80 | 4.000 | No | Yes | 2.00 |
| 736 | 9.76 | 1.82 | 100.00 | 3.04 | 0.56 | 0.88 | 14.87 | 0.00 | 14.87 | 4.000 | No | Yes | 2.00 |
| 737 | 9.78 | 1.80 | 100.00 | 3.06 | 0.56 | 0.88 | 14.67 | 0.00 | 14.67 | 4.000 | No | Yes | 2.00 |
| 738 | 9.80 | 1.73 | 100.00 | 3.10 | 0.57 | 0.88 | 14.12 | 0.00 | 14.12 | 4.000 | No | Yes | 2.00 |
| 739 | 9.82 | 1.78 | 100.00 | 3.05 | 0.57 | 0.88 | 14.46 | 0.00 | 14.46 | 4.000 | No | Yes | 2.00 |
| 740 | 9.84 | 1.75 | 100.00 | 3.04 | 0.57 | 0.88 | 14.20 | 0.00 | 14.20 | 4.000 | No | Yes | 2.00 |
| 741 | 9.86 | 1.75 | 100.00 | 3.01 | 0.57 | 0.88 | 14.20 | 0.00 | 14.20 | 4.000 | No | Yes | 2.00 |
| 742 | 9.88 | 1.79 | 98.67 | 2.95 | 0.57 | 0.88 | 14.57 | 0.00 | 14.57 | 4.000 | No | Yes | 2.00 |
| 743 | 9.90 | 2.22 | 83.77 | 2.76 | 0.56 | 0.88 | 18.17 | 0.00 | 18.17 | 4.000 | No | Yes | 2.00 |
| 744 | 9.92 | 2.33 | 84.19 | 2.76 | 0.55 | 0.88 | 19.05 | 0.00 | 19.05 | 4.000 | No | Yes | 2.00 |
| 745 | 9.94 | 2.31 | 86.89 | 2.80 | 0.55 | 0.88 | 18.87 | 0.00 | 18.87 | 4.000 | No | Yes | 2.00 |
| 746 | 9.96 | 2.33 | 78.61 | 2.70 | 0.56 | 0.88 | 19.00 | 0.00 | 19.00 | 4.000 | No | Yes | 2.00 |
| 747 | 9.98 | 2.18 | 85.40 | 2.78 | 0.56 | 0.88 | 17.73 | 0.00 | 17.73 | 4.000 | No | Yes | 2.00 |
| 748 | 10.00 | 2.08 | 89.97 | 2.84 | 0.56 | 0.87 | 16.91 | 0.00 | 16.91 | 4.000 | No | Yes | 2.00 |
| 749 | 10.02 | 2.02 | 93.14 | 2.88 | 0.56 | 0.87 | 16.34 | 0.00 | 16.34 | 4.000 | No | Yes | 2.00 |
| 750 | 10.04 | 2.06 | 91.45 | 2.86 | 0.56 | 0.87 | 16.67 | 0.00 | 16.67 | 4.000 | No | Yes | 2.00 |
| 751 | 10.06 | 2.02 | 88.90 | 2.82 | 0.56 | 0.87 | 16.29 | 0.00 | 16.29 | 4.000 | No | Yes | 2.00 |
| 752 | 10.08 | 2.02 | 88.51 | 2.82 | 0.56 | 0.87 | 16.28 | 0.00 | 16.28 | 4.000 | No | Yes | 2.00 |
| 753 | 10.10 | 2.03 | 89.04 | 2.83 | 0.56 | 0.87 | 16.42 | 0.00 | 16.42 | 4.000 | No | Yes | 2.00 |
| 754 | 10.12 | 2.02 | 89.07 | 2.83 | 0.56 | 0.87 | 16.32 | 0.00 | 16.32 | 4.000 | No | Yes | 2.00 |
| 755 | 10.14 | 2.12 | 88.23 | 2.82 | 0.56 | 0.87 | 17.11 | 0.00 | 17.11 | 4.000 | No | Yes | 2.00 |
| 756 | 10.16 | 2.33 | 84.34 | 2.77 | 0.55 | 0.87 | 18.87 | 0.00 | 18.87 | 4.000 | No | Yes | 2.00 |
| 757 | 10.18 | 2.52 | 83.79 | 2.76 | 0.55 | 0.87 | 20.54 | 0.00 | 20.54 | 4.000 | No | Yes | 2.00 |
| 758 | 10.20 | 2.63 | 82.43 | 2.74 | 0.55 | 0.87 | 21.46 | 0.00 | 21.46 | 4.000 | No | Yes | 2.00 |
| 759 | 10.22 | 2.49 | 86.83 | 2.80 | 0.55 | 0.87 | 20.22 | 0.00 | 20.22 | 4.000 | No | Yes | 2.00 |
| 760 | 10.24 | 2.09 | 99.77 | 2.96 | 0.56 | 0.87 | 16.84 | 0.00 | 16.84 | 4.000 | No | Yes | 2.00 |
| 761 | 10.26 | 1.96 | 100.00 | 3.00 | 0.56 | 0.87 | 15.70 | 0.00 | 15.70 | 4.000 | No | Yes | 2.00 |
| 762 | 10.28 | 2.01 | 95.01 | 2.90 | 0.56 | 0.87 | 16.11 | 0.00 | 16.11 | 4.000 | No | Yes | 2.00 |
| 763 | 10.29 | 2.01 | 93.83 | 2.89 | 0.56 | 0.86 | 16.08 | 0.00 | 16.08 | 4.000 | No | Yes | 2.00 |
| 764 | 10.31 | 2.02 | 93.91 | 2.89 | 0.56 | 0.86 | 16.15 | 0.00 | 16.15 | 4.000 | No | Yes | 2.00 |
| 765 | 10.33 | 2.04 | 94.82 | 2.90 | 0.56 | 0.86 | 16.27 | 0.00 | 16.27 | 4.000 | No | Yes | 2.00 |
| 766 | 10.35 | 1.97 | 98.58 | 2.94 | 0.56 | 0.86 | 15.69 | 0.00 | 15.69 | 4.000 | No | Yes | 2.00 |
| 767 | 10.37 | 1.97 | 99.80 | 2.96 | 0.56 | 0.86 | 15.67 | 0.00 | 15.67 | 4.000 | No | Yes | 2.00 |
| 768 | 10.39 | 2.04 | 98.02 | 2.94 | 0.56 | 0.86 | 16.25 | 0.00 | 16.25 | 4.000 | No | Yes | 2.00 |
| 769 | 10.41 | 2.09 | 98.52 | 2.94 | 0.56 | 0.86 | 16.68 | 0.00 | 16.68 | 4.000 | No | Yes | 2.00 |
| 770 | 10.43 | 2.11 | 98.04 | 2.94 | 0.56 | 0.86 | 16.81 | 0.00 | 16.81 | 4.000 | No | Yes | 2.00 |
| 771 | 10.45 | 2.10 | 98.09 | 2.94 | 0.56 | 0.86 | 16.71 | 0.00 | 16.71 | 4.000 | No | Yes | 2.00 |
| 772 | 10.47 | 2.15 | 97.73 | 2.93 | 0.56 | 0.86 | 17.10 | 0.00 | 17.10 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 773 | 10.49 | 2.07 | 100.00 | 2.98 | 0.56 | 0.86 | 16.43 | 0.00 | 16.43 | 4.000 | No | Yes | 2.00 |
| 774 | 10.51 | 2.03 | 100.00 | 3.01 | 0.56 | 0.86 | 16.11 | 0.00 | 16.11 | 4.000 | No | Yes | 2.00 |
| 775 | 10.53 | 1.99 | 100.00 | 3.05 | 0.56 | 0.86 | 15.69 | 0.00 | 15.69 | 4.000 | No | Yes | 2.00 |
| 776 | 10.55 | 1.98 | 100.00 | 3.06 | 0.56 | 0.86 | 15.61 | 0.00 | 15.61 | 4.000 | No | Yes | 2.00 |
| 777 | 10.57 | 2.02 | 100.00 | 3.04 | 0.56 | 0.86 | 15.98 | 0.00 | 15.98 | 4.000 | No | Yes | 2.00 |
| 778 | 10.59 | 2.04 | 100.00 | 3.03 | 0.56 | 0.86 | 16.13 | 0.00 | 16.13 | 4.000 | No | Yes | 2.00 |
| 779 | 10.61 | 1.98 | 100.00 | 3.06 | 0.56 | 0.86 | 15.61 | 0.00 | 15.61 | 4.000 | No | Yes | 2.00 |
| 780 | 10.63 | 2.01 | 100.00 | 3.04 | 0.56 | 0.85 | 15.81 | 0.00 | 15.81 | 4.000 | No | Yes | 2.00 |
| 781 | 10.65 | 1.99 | 100.00 | 3.04 | 0.56 | 0.85 | 15.65 | 0.00 | 15.65 | 4.000 | No | Yes | 2.00 |
| 782 | 10.67 | 1.99 | 100.00 | 3.04 | 0.56 | 0.85 | 15.64 | 0.00 | 15.64 | 4.000 | No | Yes | 2.00 |
| 783 | 10.69 | 1.96 | 100.00 | 3.08 | 0.56 | 0.85 | 15.33 | 0.00 | 15.33 | 4.000 | No | Yes | 2.00 |
| 784 | 10.71 | 1.97 | 100.00 | 3.08 | 0.56 | 0.85 | 15.44 | 0.00 | 15.44 | 4.000 | No | Yes | 2.00 |
| 785 | 10.73 | 2.06 | 100.00 | 3.07 | 0.56 | 0.85 | 16.13 | 0.00 | 16.13 | 4.000 | No | Yes | 2.00 |
| 786 | 10.75 | 2.15 | 100.00 | 3.03 | 0.56 | 0.85 | 16.92 | 0.00 | 16.92 | 4.000 | No | Yes | 2.00 |
| 787 | 10.77 | 1.98 | 100.00 | 3.09 | 0.56 | 0.85 | 15.44 | 0.00 | 15.44 | 4.000 | No | Yes | 2.00 |
| 788 | 10.79 | 1.95 | 100.00 | 3.08 | 0.56 | 0.85 | 15.26 | 0.00 | 15.26 | 4.000 | No | Yes | 2.00 |
| 789 | 10.81 | 1.91 | 100.00 | 3.08 | 0.56 | 0.85 | 14.86 | 0.00 | 14.86 | 4.000 | No | Yes | 2.00 |
| 790 | 10.83 | 1.88 | 100.00 | 3.05 | 0.56 | 0.85 | 14.65 | 0.00 | 14.65 | 4.000 | No | Yes | 2.00 |
| 791 | 10.85 | 1.91 | 100.00 | 3.03 | 0.56 | 0.85 | 14.87 | 0.00 | 14.87 | 4.000 | No | Yes | 2.00 |
| 792 | 10.87 | 1.97 | 96.33 | 2.92 | 0.56 | 0.85 | 15.33 | 0.00 | 15.33 | 4.000 | No | Yes | 2.00 |
| 793 | 10.89 | 2.16 | 97.40 | 2.93 | 0.56 | 0.85 | 16.97 | 0.00 | 16.97 | 4.000 | No | Yes | 2.00 |
| 794 | 10.91 | 2.31 | 94.62 | 2.90 | 0.55 | 0.85 | 18.17 | 0.00 | 18.17 | 4.000 | No | Yes | 2.00 |
| 795 | 10.93 | 2.13 | 100.00 | 2.98 | 0.56 | 0.85 | 16.70 | 0.00 | 16.70 | 4.000 | No | Yes | 2.00 |
| 796 | 10.95 | 2.31 | 98.24 | 2.94 | 0.55 | 0.85 | 18.13 | 0.00 | 18.13 | 4.000 | No | Yes | 2.00 |
| 797 | 10.97 | 2.12 | 100.00 | 3.00 | 0.56 | 0.85 | 16.59 | 0.00 | 16.59 | 4.000 | No | Yes | 2.00 |
| 798 | 10.99 | 2.10 | 100.00 | 2.99 | 0.56 | 0.84 | 16.38 | 0.00 | 16.38 | 4.000 | No | Yes | 2.00 |
| 799 | 11.01 | 2.36 | 95.57 | 2.91 | 0.55 | 0.85 | 18.50 | 0.00 | 18.50 | 4.000 | No | Yes | 2.00 |
| 800 | 11.02 | 2.64 | 89.02 | 2.83 | 0.55 | 0.85 | 20.86 | 0.00 | 20.86 | 4.000 | No | Yes | 2.00 |
| 801 | 11.04 | 2.70 | 87.43 | 2.81 | 0.54 | 0.85 | 21.39 | 0.00 | 21.39 | 4.000 | No | Yes | 2.00 |
| 802 | 11.06 | 2.83 | 83.38 | 2.75 | 0.54 | 0.85 | 22.76 | 0.00 | 22.76 | 4.000 | No | Yes | 2.00 |
| 803 | 11.08 | 2.98 | 81.97 | 2.74 | 0.54 | 0.85 | 24.07 | 0.00 | 24.07 | 4.000 | No | Yes | 2.00 |
| 804 | 11.10 | 3.04 | 84.42 | 2.77 | 0.53 | 0.85 | 24.50 | 0.00 | 24.50 | 4.000 | No | Yes | 2.00 |
| 805 | 11.12 | 3.22 | 81.37 | 2.73 | 0.53 | 0.85 | 25.96 | 0.00 | 25.96 | 4.000 | No | Yes | 2.00 |
| 806 | 11.14 | 3.43 | 80.32 | 2.72 | 0.53 | 0.85 | 27.74 | 0.00 | 27.74 | 4.000 | No | Yes | 2.00 |
| 807 | 11.16 | 3.32 | 84.13 | 2.76 | 0.53 | 0.85 | 26.76 | 0.00 | 26.76 | 4.000 | No | Yes | 2.00 |
| 808 | 11.18 | 3.27 | 83.68 | 2.76 | 0.53 | 0.85 | 26.30 | 0.00 | 26.30 | 4.000 | No | Yes | 2.00 |
| 809 | 11.20 | 2.59 | 95.21 | 2.90 | 0.54 | 0.84 | 20.60 | 0.00 | 20.60 | 4.000 | No | Yes | 2.00 |
| 810 | 11.22 | 2.11 | 100.00 | 3.05 | 0.56 | 0.84 | 16.59 | 0.00 | 16.59 | 4.000 | No | Yes | 2.00 |
| 811 | 11.24 | 1.88 | 100.00 | 3.14 | 0.56 | 0.84 | 14.70 | 0.00 | 14.70 | 4.000 | No | Yes | 2.00 |
| 812 | 11.26 | 1.76 | 100.00 | 3.20 | 0.57 | 0.83 | 13.65 | 0.00 | 13.65 | 4.000 | No | Yes | 2.00 |
| 813 | 11.28 | 1.89 | 100.00 | 3.13 | 0.56 | 0.83 | 14.67 | 0.00 | 14.67 | 4.000 | No | Yes | 2.00 |
| 814 | 11.30 | 1.88 | 100.00 | 3.13 | 0.57 | 0.83 | 14.52 | 0.00 | 14.52 | 4.000 | No | Yes | 2.00 |
| 815 | 11.32 | 1.67 | 100.00 | 3.25 | 0.57 | 0.83 | 12.76 | 0.00 | 12.76 | 4.000 | No | Yes | 2.00 |
| 816 | 11.34 | 1.68 | 100.00 | 3.22 | 0.57 | 0.83 | 12.84 | 0.00 | 12.84 | 4.000 | No | Yes | 2.00 |
| 817 | 11.36 | 1.68 | 100.00 | 3.19 | 0.57 | 0.83 | 12.84 | 0.00 | 12.84 | 4.000 | No | Yes | 2.00 |
| 818 | 11.38 | 1.76 | 100.00 | 3.15 | 0.57 | 0.83 | 13.45 | 0.00 | 13.45 | 4.000 | No | Yes | 2.00 |
| 819 | 11.40 | 1.90 | 100.00 | 3.09 | 0.56 | 0.83 | 14.58 | 0.00 | 14.58 | 4.000 | No | Yes | 2.00 |
| 820 | 11.42 | 1.88 | 100.00 | 3.09 | 0.57 | 0.83 | 14.42 | 0.00 | 14.42 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 821 | 11.44 | 1.90 | 100.00 | 3.06 | 0.57 | 0.83 | 14.54 | 0.00 | 14.54 | 4.000 | No | Yes | 2.00 |
| 822 | 11.46 | 1.85 | 100.00 | 3.02 | 0.57 | 0.83 | 14.10 | 0.00 | 14.10 | 4.000 | No | Yes | 2.00 |
| 823 | 11.48 | 1.81 | 100.00 | 3.03 | 0.57 | 0.83 | 13.82 | 0.00 | 13.82 | 4.000 | No | Yes | 2.00 |
| 824 | 11.50 | 1.68 | 100.00 | 3.06 | 0.57 | 0.83 | 12.70 | 0.00 | 12.70 | 4.000 | No | Yes | 2.00 |
| 825 | 11.52 | 1.55 | 100.00 | 3.10 | 0.58 | 0.82 | 11.65 | 0.00 | 11.65 | 4.000 | No | Yes | 2.00 |
| 826 | 11.54 | 1.54 | 100.00 | 3.08 | 0.58 | 0.82 | 11.61 | 0.00 | 11.61 | 4.000 | No | Yes | 2.00 |
| 827 | 11.56 | 1.65 | 100.00 | 2.98 | 0.57 | 0.82 | 12.48 | 0.00 | 12.48 | 4.000 | No | Yes | 2.00 |
| 828 | 11.58 | 1.75 | 97.50 | 2.93 | 0.57 | 0.82 | 13.23 | 0.00 | 13.23 | 4.000 | No | Yes | 2.00 |
| 829 | 11.60 | 1.72 | 97.59 | 2.93 | 0.57 | 0.82 | 13.00 | 0.00 | 13.00 | 4.000 | No | Yes | 2.00 |
| 830 | 11.62 | 1.73 | 99.24 | 2.95 | 0.57 | 0.82 | 13.09 | 0.00 | 13.09 | 4.000 | No | Yes | 2.00 |
| 831 | 11.64 | 1.78 | 96.78 | 2.92 | 0.57 | 0.82 | 13.40 | 0.00 | 13.40 | 4.000 | No | Yes | 2.00 |
| 832 | 11.66 | 1.89 | 89.84 | 2.84 | 0.57 | 0.82 | 14.32 | 0.00 | 14.32 | 4.000 | No | Yes | 2.00 |
| 833 | 11.68 | 1.98 | 84.68 | 2.77 | 0.57 | 0.82 | 14.99 | 0.00 | 14.99 | 4.000 | No | Yes | 2.00 |
| 834 | 11.70 | 1.98 | 88.98 | 2.82 | 0.57 | 0.82 | 15.01 | 0.00 | 15.01 | 4.000 | No | Yes | 2.00 |
| 835 | 11.72 | 2.03 | 89.31 | 2.83 | 0.56 | 0.82 | 15.37 | 0.00 | 15.37 | 4.000 | No | Yes | 2.00 |
| 836 | 11.73 | 2.08 | 89.40 | 2.83 | 0.56 | 0.82 | 15.75 | 0.00 | 15.75 | 4.000 | No | Yes | 2.00 |
| 837 | 11.75 | 2.04 | 91.68 | 2.86 | 0.56 | 0.82 | 15.43 | 0.00 | 15.43 | 4.000 | No | Yes | 2.00 |
| 838 | 11.77 | 2.09 | 90.89 | 2.85 | 0.56 | 0.82 | 15.77 | 0.00 | 15.77 | 4.000 | No | Yes | 2.00 |
| 839 | 11.79 | 2.14 | 90.80 | 2.85 | 0.56 | 0.82 | 16.17 | 0.00 | 16.17 | 4.000 | No | Yes | 2.00 |
| 840 | 11.81 | 2.20 | 90.74 | 2.85 | 0.56 | 0.82 | 16.64 | 0.00 | 16.64 | 4.000 | No | Yes | 2.00 |
| 841 | 11.83 | 2.25 | 90.28 | 2.84 | 0.56 | 0.82 | 17.00 | 0.00 | 17.00 | 4.000 | No | Yes | 2.00 |
| 842 | 11.85 | 2.35 | 87.98 | 2.81 | 0.56 | 0.82 | 17.77 | 0.00 | 17.77 | 4.000 | No | Yes | 2.00 |
| 843 | 11.87 | 2.49 | 87.20 | 2.80 | 0.55 | 0.82 | 18.85 | 0.00 | 18.85 | 4.000 | No | Yes | 2.00 |
| 844 | 11.89 | 2.52 | 88.01 | 2.81 | 0.55 | 0.82 | 19.09 | 0.00 | 19.09 | 4.000 | No | Yes | 2.00 |
| 845 | 11.91 | 2.49 | 91.38 | 2.85 | 0.55 | 0.82 | 18.82 | 0.00 | 18.82 | 4.000 | No | Yes | 2.00 |
| 846 | 11.93 | 2.42 | 96.05 | 2.91 | 0.55 | 0.82 | 18.21 | 0.00 | 18.21 | 4.000 | No | Yes | 2.00 |
| 847 | 11.95 | 2.31 | 100.00 | 2.97 | 0.56 | 0.82 | 17.33 | 0.00 | 17.33 | 4.000 | No | Yes | 2.00 |
| 848 | 11.97 | 2.21 | 100.00 | 3.03 | 0.56 | 0.82 | 16.53 | 0.00 | 16.53 | 4.000 | No | Yes | 2.00 |
| 849 | 11.99 | 2.15 | 100.00 | 3.07 | 0.56 | 0.82 | 16.05 | 0.00 | 16.05 | 4.000 | No | Yes | 2.00 |
| 850 | 12.01 | 2.07 | 100.00 | 3.11 | 0.56 | 0.82 | 15.40 | 0.00 | 15.40 | 4.000 | No | Yes | 2.00 |
| 851 | 12.03 | 2.04 | 100.00 | 3.11 | 0.56 | 0.81 | 15.13 | 0.00 | 15.13 | 4.000 | No | Yes | 2.00 |
| 852 | 12.05 | 2.00 | 100.00 | 3.12 | 0.56 | 0.81 | 14.76 | 0.00 | 14.76 | 4.000 | No | Yes | 2.00 |
| 853 | 12.07 | 1.97 | 100.00 | 3.11 | 0.57 | 0.81 | 14.55 | 0.00 | 14.55 | 4.000 | No | Yes | 2.00 |
| 854 | 12.09 | 1.98 | 100.00 | 3.07 | 0.56 | 0.81 | 14.59 | 0.00 | 14.59 | 4.000 | No | Yes | 2.00 |
| 855 | 12.11 | 2.02 | 100.00 | 3.04 | 0.56 | 0.81 | 14.91 | 0.00 | 14.91 | 4.000 | No | Yes | 2.00 |
| 856 | 12.13 | 2.05 | 100.00 | 2.99 | 0.56 | 0.81 | 15.11 | 0.00 | 15.11 | 4.000 | No | Yes | 2.00 |
| 857 | 12.15 | 2.06 | 100.00 | 2.97 | 0.56 | 0.81 | 15.22 | 0.00 | 15.22 | 4.000 | No | Yes | 2.00 |
| 858 | 12.17 | 2.03 | 100.00 | 2.97 | 0.56 | 0.81 | 14.98 | 0.00 | 14.98 | 4.000 | No | Yes | 2.00 |
| 859 | 12.19 | 2.01 | 100.00 | 2.97 | 0.56 | 0.81 | 14.78 | 0.00 | 14.78 | 4.000 | No | Yes | 2.00 |
| 860 | 12.21 | 1.97 | 100.00 | 2.99 | 0.57 | 0.81 | 14.43 | 0.00 | 14.43 | 4.000 | No | Yes | 2.00 |
| 861 | 12.23 | 1.93 | 100.00 | 3.01 | 0.57 | 0.81 | 14.16 | 0.00 | 14.16 | 4.000 | No | Yes | 2.00 |
| 862 | 12.25 | 1.92 | 100.00 | 3.04 | 0.57 | 0.81 | 14.03 | 0.00 | 14.03 | 4.000 | No | Yes | 2.00 |
| 863 | 12.27 | 1.92 | 100.00 | 3.06 | 0.57 | 0.81 | 14.02 | 0.00 | 14.02 | 4.000 | No | Yes | 2.00 |
| 864 | 12.29 | 1.94 | 100.00 | 3.06 | 0.57 | 0.81 | 14.19 | 0.00 | 14.19 | 4.000 | No | Yes | 2.00 |
| 865 | 12.31 | 2.02 | 100.00 | 3.05 | 0.56 | 0.81 | 14.80 | 0.00 | 14.80 | 4.000 | No | Yes | 2.00 |
| 866 | 12.33 | 2.11 | 100.00 | 3.01 | 0.56 | 0.81 | 15.49 | 0.00 | 15.49 | 4.000 | No | Yes | 2.00 |
| 867 | 12.35 | 2.20 | 100.00 | 2.97 | 0.56 | 0.81 | 16.19 | 0.00 | 16.19 | 4.000 | No | Yes | 2.00 |
| 868 | 12.36 | 2.25 | 98.14 | 2.94 | 0.56 | 0.81 | 16.58 | 0.00 | 16.58 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 869 | 12.38 | 2.28 | 97.11 | 2.93 | 0.56 | 0.81 | 16.77 | 0.00 | 16.77 | 4.000 | No | Yes | 2.00 |
| 870 | 12.40 | 2.28 | 97.75 | 2.93 | 0.56 | 0.81 | 16.82 | 0.00 | 16.82 | 4.000 | No | Yes | 2.00 |
| 871 | 12.42 | 2.26 | 99.41 | 2.96 | 0.56 | 0.81 | 16.61 | 0.00 | 16.61 | 4.000 | No | Yes | 2.00 |
| 872 | 12.44 | 2.23 | 100.00 | 2.98 | 0.56 | 0.81 | 16.39 | 0.00 | 16.39 | 4.000 | No | Yes | 2.00 |
| 873 | 12.46 | 2.20 | 100.00 | 3.02 | 0.56 | 0.80 | 16.09 | 0.00 | 16.09 | 4.000 | No | Yes | 2.00 |
| 874 | 12.48 | 2.22 | 100.00 | 3.03 | 0.56 | 0.80 | 16.32 | 0.00 | 16.32 | 4.000 | No | Yes | 2.00 |
| 875 | 12.50 | 2.26 | 100.00 | 3.04 | 0.56 | 0.80 | 16.56 | 0.00 | 16.56 | 4.000 | No | Yes | 2.00 |
| 876 | 12.52 | 2.29 | 100.00 | 3.04 | 0.56 | 0.80 | 16.83 | 0.00 | 16.83 | 4.000 | No | Yes | 2.00 |
| 877 | 12.54 | 2.33 | 100.00 | 3.01 | 0.56 | 0.80 | 17.15 | 0.00 | 17.15 | 4.000 | No | Yes | 2.00 |
| 878 | 12.56 | 2.35 | 100.00 | 3.00 | 0.56 | 0.80 | 17.29 | 0.00 | 17.29 | 4.000 | No | Yes | 2.00 |
| 879 | 12.58 | 2.32 | 100.00 | 3.02 | 0.56 | 0.80 | 17.01 | 0.00 | 17.01 | 4.000 | No | Yes | 2.00 |
| 880 | 12.60 | 2.34 | 100.00 | 3.02 | 0.56 | 0.80 | 17.13 | 0.00 | 17.13 | 4.000 | No | Yes | 2.00 |
| 881 | 12.62 | 2.39 | 100.00 | 3.01 | 0.55 | 0.80 | 17.56 | 0.00 | 17.56 | 4.000 | No | Yes | 2.00 |
| 882 | 12.64 | 2.54 | 100.00 | 2.97 | 0.55 | 0.80 | 18.74 | 0.00 | 18.74 | 4.000 | No | Yes | 2.00 |
| 883 | 12.66 | 2.46 | 100.00 | 3.01 | 0.55 | 0.80 | 18.10 | 0.00 | 18.10 | 4.000 | No | Yes | 2.00 |
| 884 | 12.68 | 2.48 | 100.00 | 3.01 | 0.55 | 0.80 | 18.19 | 0.00 | 18.19 | 4.000 | No | Yes | 2.00 |
| 885 | 12.70 | 2.52 | 100.00 | 2.99 | 0.55 | 0.80 | 18.51 | 0.00 | 18.51 | 4.000 | No | Yes | 2.00 |
| 886 | 12.72 | 2.46 | 100.00 | 3.01 | 0.55 | 0.80 | 18.00 | 0.00 | 18.00 | 4.000 | No | Yes | 2.00 |
| 887 | 12.74 | 2.45 | 100.00 | 3.00 | 0.55 | 0.80 | 17.93 | 0.00 | 17.93 | 4.000 | No | Yes | 2.00 |
| 888 | 12.76 | 2.50 | 100.00 | 2.99 | 0.55 | 0.80 | 18.30 | 0.00 | 18.30 | 4.000 | No | Yes | 2.00 |
| 889 | 12.78 | 2.54 | 100.00 | 2.98 | 0.55 | 0.80 | 18.63 | 0.00 | 18.63 | 4.000 | No | Yes | 2.00 |
| 890 | 12.80 | 2.50 | 100.00 | 3.00 | 0.55 | 0.80 | 18.28 | 0.00 | 18.28 | 4.000 | No | Yes | 2.00 |
| 891 | 12.82 | 2.50 | 100.00 | 3.01 | 0.55 | 0.80 | 18.23 | 0.00 | 18.23 | 4.000 | No | Yes | 2.00 |
| 892 | 12.84 | 1.48 | 99.84 | 2.96 | 0.58 | 0.79 | 10.40 | 0.00 | 10.40 | 4.000 | No | Yes | 2.00 |
| 893 | 12.86 | 2.49 | 100.00 | 3.01 | 0.55 | 0.80 | 18.17 | 0.00 | 18.17 | 4.000 | No | Yes | 2.00 |
| 894 | 12.88 | 2.52 | 100.00 | 3.01 | 0.55 | 0.80 | 18.42 | 0.00 | 18.42 | 4.000 | No | Yes | 2.00 |
| 895 | 12.90 | 2.55 | 100.00 | 3.00 | 0.55 | 0.80 | 18.67 | 0.00 | 18.67 | 4.000 | No | Yes | 2.00 |
| 896 | 12.92 | 2.54 | 100.00 | 3.01 | 0.55 | 0.80 | 18.56 | 0.00 | 18.56 | 4.000 | No | Yes | 2.00 |
| 897 | 12.94 | 2.51 | 100.00 | 3.01 | 0.55 | 0.80 | 18.33 | 0.00 | 18.33 | 4.000 | No | Yes | 2.00 |
| 898 | 12.95 | 2.51 | 100.00 | 3.01 | 0.55 | 0.79 | 18.31 | 0.00 | 18.31 | 4.000 | No | Yes | 2.00 |
| 899 | 12.97 | 2.55 | 100.00 | 3.01 | 0.55 | 0.79 | 18.64 | 0.00 | 18.64 | 4.000 | No | Yes | 2.00 |
| 900 | 12.99 | 2.64 | 100.00 | 2.99 | 0.55 | 0.79 | 19.33 | 0.00 | 19.33 | 4.000 | No | Yes | 2.00 |
| 901 | 13.01 | 2.79 | 98.49 | 2.94 | 0.54 | 0.80 | 20.49 | 0.00 | 20.49 | 4.000 | No | Yes | 2.00 |
| 902 | 13.03 | 2.81 | 97.78 | 2.93 | 0.54 | 0.80 | 20.64 | 0.00 | 20.64 | 4.000 | No | Yes | 2.00 |
| 903 | 13.05 | 2.85 | 96.90 | 2.92 | 0.54 | 0.80 | 20.96 | 0.00 | 20.96 | 4.000 | No | Yes | 2.00 |
| 904 | 13.07 | 2.91 | 95.11 | 2.90 | 0.54 | 0.79 | 21.41 | 0.00 | 21.41 | 4.000 | No | Yes | 2.00 |
| 905 | 13.09 | 2.99 | 93.65 | 2.88 | 0.54 | 0.79 | 22.00 | 0.00 | 22.00 | 4.000 | No | Yes | 2.00 |
| 906 | 13.11 | 2.94 | 95.04 | 2.90 | 0.54 | 0.79 | 21.63 | 0.00 | 21.63 | 4.000 | No | Yes | 2.00 |
| 907 | 13.13 | 2.97 | 95.82 | 2.91 | 0.54 | 0.79 | 21.78 | 0.00 | 21.78 | 4.000 | No | Yes | 2.00 |
| 908 | 13.15 | 2.96 | 96.16 | 2.91 | 0.54 | 0.79 | 21.76 | 0.00 | 21.76 | 4.000 | No | Yes | 2.00 |
| 909 | 13.17 | 3.05 | 95.00 | 2.90 | 0.54 | 0.79 | 22.38 | 0.00 | 22.38 | 4.000 | No | Yes | 2.00 |
| 910 | 13.19 | 2.94 | 97.73 | 2.93 | 0.54 | 0.79 | 21.55 | 0.00 | 21.55 | 4.000 | No | Yes | 2.00 |
| 911 | 13.21 | 2.98 | 97.25 | 2.93 | 0.54 | 0.79 | 21.80 | 0.00 | 21.80 | 4.000 | No | Yes | 2.00 |
| 912 | 13.23 | 2.64 | 100.00 | 3.01 | 0.55 | 0.79 | 19.16 | 0.00 | 19.16 | 4.000 | No | Yes | 2.00 |
| 913 | 13.25 | 2.48 | 100.00 | 3.05 | 0.55 | 0.79 | 17.86 | 0.00 | 17.86 | 4.000 | No | Yes | 2.00 |
| 914 | 13.27 | 2.40 | 100.00 | 3.05 | 0.56 | 0.79 | 17.28 | 0.00 | 17.28 | 4.000 | No | Yes | 2.00 |
| 915 | 13.29 | 2.31 | 100.00 | 3.07 | 0.56 | 0.78 | 16.54 | 0.00 | 16.54 | 4.000 | No | Yes | 2.00 |
| 916 | 13.31 | 2.27 | 100.00 | 3.08 | 0.56 | 0.78 | 16.21 | 0.00 | 16.21 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 917 | 13.33 | 2.21 | 100.00 | 3.10 | 0.56 | 0.78 | 15.76 | 0.00 | 15.76 | 4.000 | No | Yes | 2.00 |
| 918 | 13.35 | 2.35 | 100.00 | 3.03 | 0.56 | 0.78 | 16.78 | 0.00 | 16.78 | 4.000 | No | Yes | 2.00 |
| 919 | 13.37 | 2.44 | 100.00 | 2.99 | 0.55 | 0.78 | 17.45 | 0.00 | 17.45 | 4.000 | No | Yes | 2.00 |
| 920 | 13.39 | 2.37 | 100.00 | 2.99 | 0.56 | 0.78 | 16.97 | 0.00 | 16.97 | 4.000 | No | Yes | 2.00 |
| 921 | 13.41 | 2.26 | 100.00 | 3.01 | 0.56 | 0.78 | 16.07 | 0.00 | 16.07 | 4.000 | No | Yes | 2.00 |
| 922 | 13.43 | 2.28 | 100.00 | 3.00 | 0.56 | 0.78 | 16.22 | 0.00 | 16.22 | 4.000 | No | Yes | 2.00 |
| 923 | 13.45 | 2.33 | 100.00 | 2.97 | 0.56 | 0.78 | 16.61 | 0.00 | 16.61 | 4.000 | No | Yes | 2.00 |
| 924 | 13.47 | 2.38 | 99.63 | 2.96 | 0.56 | 0.78 | 16.99 | 0.00 | 16.99 | 4.000 | No | Yes | 2.00 |
| 925 | 13.49 | 2.48 | 99.28 | 2.95 | 0.55 | 0.78 | 17.69 | 0.00 | 17.69 | 4.000 | No | Yes | 2.00 |
| 926 | 13.51 | 2.80 | 93.47 | 2.88 | 0.55 | 0.78 | 20.14 | 0.00 | 20.14 | 4.000 | No | Yes | 2.00 |
| 927 | 13.52 | 2.45 | 100.00 | 2.99 | 0.55 | 0.78 | 17.44 | 0.00 | 17.44 | 4.000 | No | Yes | 2.00 |
| 928 | 13.54 | 2.51 | 100.00 | 2.97 | 0.55 | 0.78 | 17.92 | 0.00 | 17.92 | 4.000 | No | Yes | 2.00 |
| 929 | 13.56 | 2.65 | 97.59 | 2.93 | 0.55 | 0.78 | 19.02 | 0.00 | 19.02 | 4.000 | No | Yes | 2.00 |
| 930 | 13.58 | 2.86 | 93.95 | 2.89 | 0.55 | 0.78 | 20.63 | 0.00 | 20.63 | 4.000 | No | Yes | 2.00 |
| 931 | 13.60 | 2.94 | 92.84 | 2.87 | 0.54 | 0.78 | 21.19 | 0.00 | 21.19 | 4.000 | No | Yes | 2.00 |
| 932 | 13.62 | 3.37 | 86.47 | 2.79 | 0.53 | 0.78 | 24.60 | 0.00 | 24.60 | 4.000 | No | Yes | 2.00 |
| 933 | 13.64 | 2.69 | 98.63 | 2.95 | 0.55 | 0.78 | 19.29 | 0.00 | 19.29 | 4.000 | No | Yes | 2.00 |
| 934 | 13.66 | 2.69 | 97.73 | 2.93 | 0.55 | 0.78 | 19.25 | 0.00 | 19.25 | 4.000 | No | Yes | 2.00 |
| 935 | 13.68 | 2.78 | 96.24 | 2.92 | 0.55 | 0.78 | 19.96 | 0.00 | 19.96 | 4.000 | No | Yes | 2.00 |
| 936 | 13.70 | 2.82 | 96.12 | 2.91 | 0.55 | 0.78 | 20.21 | 0.00 | 20.21 | 4.000 | No | Yes | 2.00 |
| 937 | 13.72 | 3.02 | 93.38 | 2.88 | 0.54 | 0.78 | 21.77 | 0.00 | 21.77 | 4.000 | No | Yes | 2.00 |
| 938 | 13.74 | 2.93 | 95.53 | 2.91 | 0.54 | 0.78 | 21.03 | 0.00 | 21.03 | 4.000 | No | Yes | 2.00 |
| 939 | 13.76 | 3.03 | 93.93 | 2.89 | 0.54 | 0.78 | 21.76 | 0.00 | 21.76 | 4.000 | No | Yes | 2.00 |
| 940 | 13.78 | 2.95 | 96.59 | 2.92 | 0.54 | 0.78 | 21.17 | 0.00 | 21.17 | 4.000 | No | Yes | 2.00 |
| 941 | 13.80 | 2.97 | 97.67 | 2.93 | 0.54 | 0.78 | 21.28 | 0.00 | 21.28 | 4.000 | No | Yes | 2.00 |
| 942 | 13.82 | 2.91 | 98.79 | 2.95 | 0.54 | 0.78 | 20.78 | 0.00 | 20.78 | 4.000 | No | Yes | 2.00 |
| 943 | 13.84 | 1.73 | 98.20 | 2.94 | 0.58 | 0.76 | 11.90 | 0.00 | 11.90 | 4.000 | No | Yes | 2.00 |
| 944 | 13.86 | 2.82 | 100.00 | 2.98 | 0.55 | 0.78 | 20.21 | 0.00 | 20.21 | 4.000 | No | Yes | 2.00 |
| 945 | 13.88 | 2.97 | 100.00 | 2.97 | 0.54 | 0.78 | 21.34 | 0.00 | 21.34 | 4.000 | No | Yes | 2.00 |
| 946 | 13.90 | 2.97 | 100.00 | 2.98 | 0.54 | 0.78 | 21.35 | 0.00 | 21.35 | 4.000 | No | Yes | 2.00 |
| 947 | 13.92 | 2.92 | 100.00 | 3.00 | 0.54 | 0.77 | 20.92 | 0.00 | 20.92 | 4.000 | No | Yes | 2.00 |
| 948 | 13.94 | 2.89 | 100.00 | 3.01 | 0.54 | 0.77 | 20.71 | 0.00 | 20.71 | 4.000 | No | Yes | 2.00 |
| 949 | 13.96 | 2.85 | 100.00 | 3.02 | 0.54 | 0.77 | 20.43 | 0.00 | 20.43 | 4.000 | No | Yes | 2.00 |
| 950 | 13.98 | 2.82 | 100.00 | 3.02 | 0.55 | 0.77 | 20.17 | 0.00 | 20.17 | 4.000 | No | Yes | 2.00 |
| 951 | 14.00 | 2.75 | 100.00 | 3.04 | 0.55 | 0.77 | 19.62 | 0.00 | 19.62 | 4.000 | No | Yes | 2.00 |
| 952 | 14.02 | 2.74 | 100.00 | 3.03 | 0.55 | 0.77 | 19.50 | 0.00 | 19.50 | 4.000 | No | Yes | 2.00 |
| 953 | 14.04 | 2.72 | 100.00 | 3.03 | 0.55 | 0.77 | 19.31 | 0.00 | 19.31 | 4.000 | No | Yes | 2.00 |
| 954 | 14.05 | 2.64 | 100.00 | 3.04 | 0.55 | 0.77 | 18.67 | 0.00 | 18.67 | 4.000 | No | Yes | 2.00 |
| 955 | 14.07 | 2.76 | 100.00 | 3.01 | 0.55 | 0.77 | 19.60 | 0.00 | 19.60 | 4.000 | No | Yes | 2.00 |
| 956 | 14.09 | 2.66 | 100.00 | 3.03 | 0.55 | 0.77 | 18.82 | 0.00 | 18.82 | 4.000 | No | Yes | 2.00 |
| 957 | 14.11 | 2.58 | 100.00 | 3.05 | 0.55 | 0.77 | 18.20 | 0.00 | 18.20 | 4.000 | No | Yes | 2.00 |
| 958 | 14.13 | 2.48 | 100.00 | 3.08 | 0.55 | 0.77 | 17.40 | 0.00 | 17.40 | 4.000 | No | Yes | 2.00 |
| 959 | 14.15 | 2.33 | 100.00 | 3.12 | 0.56 | 0.76 | 16.27 | 0.00 | 16.27 | 4.000 | No | Yes | 2.00 |
| 960 | 14.17 | 2.26 | 100.00 | 3.14 | 0.56 | 0.76 | 15.73 | 0.00 | 15.73 | 4.000 | No | Yes | 2.00 |
| 961 | 14.19 | 2.22 | 100.00 | 3.14 | 0.56 | 0.76 | 15.40 | 0.00 | 15.40 | 4.000 | No | Yes | 2.00 |
| 962 | 14.21 | 2.21 | 100.00 | 3.13 | 0.56 | 0.76 | 15.34 | 0.00 | 15.34 | 4.000 | No | Yes | 2.00 |
| 963 | 14.23 | 2.20 | 100.00 | 3.12 | 0.56 | 0.76 | 15.24 | 0.00 | 15.24 | 4.000 | No | Yes | 2.00 |
| 964 | 14.25 | 2.24 | 100.00 | 3.10 | 0.56 | 0.76 | 15.54 | 0.00 | 15.54 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 965 | 14.27 | 2.29 | 100.00 | 3.08 | 0.56 | 0.76 | 15.84 | 0.00 | 15.84 | 4.000 | No | Yes | 2.00 |
| 966 | 14.29 | 2.29 | 100.00 | 3.07 | 0.56 | 0.76 | 15.84 | 0.00 | 15.84 | 4.000 | No | Yes | 2.00 |
| 967 | 14.31 | 2.29 | 100.00 | 3.07 | 0.56 | 0.76 | 15.86 | 0.00 | 15.86 | 4.000 | No | Yes | 2.00 |
| 968 | 14.33 | 2.32 | 100.00 | 3.06 | 0.56 | 0.76 | 16.07 | 0.00 | 16.07 | 4.000 | No | Yes | 2.00 |
| 969 | 14.35 | 2.33 | 100.00 | 3.06 | 0.56 | 0.76 | 16.10 | 0.00 | 16.10 | 4.000 | No | Yes | 2.00 |
| 970 | 14.37 | 2.34 | 100.00 | 3.06 | 0.56 | 0.76 | 16.16 | 0.00 | 16.16 | 4.000 | No | Yes | 2.00 |
| 971 | 14.39 | 2.33 | 100.00 | 3.07 | 0.56 | 0.76 | 16.12 | 0.00 | 16.12 | 4.000 | No | Yes | 2.00 |
| 972 | 14.41 | 2.33 | 100.00 | 3.08 | 0.56 | 0.76 | 16.12 | 0.00 | 16.12 | 4.000 | No | Yes | 2.00 |
| 973 | 14.43 | 2.30 | 100.00 | 3.10 | 0.56 | 0.76 | 15.85 | 0.00 | 15.85 | 4.000 | No | Yes | 2.00 |
| 974 | 14.45 | 2.25 | 100.00 | 3.12 | 0.56 | 0.76 | 15.52 | 0.00 | 15.52 | 4.000 | No | Yes | 2.00 |
| 975 | 14.47 | 2.23 | 100.00 | 3.14 | 0.56 | 0.75 | 15.34 | 0.00 | 15.34 | 4.000 | No | Yes | 2.00 |
| 976 | 14.49 | 2.24 | 100.00 | 3.13 | 0.56 | 0.75 | 15.35 | 0.00 | 15.35 | 4.000 | No | Yes | 2.00 |
| 977 | 14.51 | 2.29 | 100.00 | 3.11 | 0.56 | 0.75 | 15.72 | 0.00 | 15.72 | 4.000 | No | Yes | 2.00 |
| 978 | 14.53 | 2.32 | 100.00 | 3.09 | 0.56 | 0.75 | 15.97 | 0.00 | 15.97 | 4.000 | No | Yes | 2.00 |
| 979 | 14.55 | 2.35 | 100.00 | 3.08 | 0.56 | 0.75 | 16.19 | 0.00 | 16.19 | 4.000 | No | Yes | 2.00 |
| 980 | 14.56 | 2.33 | 100.00 | 3.07 | 0.56 | 0.75 | 16.02 | 0.00 | 16.02 | 4.000 | No | Yes | 2.00 |
| 981 | 14.58 | 2.30 | 100.00 | 3.07 | 0.56 | 0.75 | 15.82 | 0.00 | 15.82 | 4.000 | No | Yes | 2.00 |
| 982 | 14.60 | 2.29 | 100.00 | 3.07 | 0.56 | 0.75 | 15.69 | 0.00 | 15.69 | 4.000 | No | Yes | 2.00 |
| 983 | 14.62 | 2.18 | 100.00 | 3.12 | 0.56 | 0.75 | 14.86 | 0.00 | 14.86 | 4.000 | No | Yes | 2.00 |
| 984 | 14.64 | 2.14 | 100.00 | 3.14 | 0.56 | 0.75 | 14.58 | 0.00 | 14.58 | 4.000 | No | Yes | 2.00 |
| 985 | 14.66 | 2.12 | 100.00 | 3.15 | 0.57 | 0.75 | 14.39 | 0.00 | 14.39 | 4.000 | No | Yes | 2.00 |
| 986 | 14.68 | 2.12 | 100.00 | 3.15 | 0.57 | 0.75 | 14.43 | 0.00 | 14.43 | 4.000 | No | Yes | 2.00 |
| 987 | 14.70 | 2.17 | 100.00 | 3.13 | 0.56 | 0.75 | 14.79 | 0.00 | 14.79 | 4.000 | No | Yes | 2.00 |
| 988 | 14.72 | 2.21 | 100.00 | 3.12 | 0.56 | 0.75 | 15.05 | 0.00 | 15.05 | 4.000 | No | Yes | 2.00 |
| 989 | 14.74 | 2.27 | 100.00 | 3.09 | 0.56 | 0.75 | 15.47 | 0.00 | 15.47 | 4.000 | No | Yes | 2.00 |
| 990 | 14.76 | 2.36 | 100.00 | 3.04 | 0.56 | 0.75 | 16.12 | 0.00 | 16.12 | 4.000 | No | Yes | 2.00 |
| 991 | 14.78 | 2.39 | 100.00 | 3.02 | 0.56 | 0.75 | 16.36 | 0.00 | 16.36 | 4.000 | No | Yes | 2.00 |
| 992 | 14.80 | 2.53 | 100.00 | 2.97 | 0.55 | 0.75 | 17.41 | 0.00 | 17.41 | 4.000 | No | Yes | 2.00 |
| 993 | 14.82 | 2.61 | 98.97 | 2.95 | 0.55 | 0.75 | 17.97 | 0.00 | 17.97 | 4.000 | No | Yes | 2.00 |

**Abbreviations**

Depth: Depth from free surface, at which CPT was performed (m)
$q_t$: Total cone resistance
FC: Fines content (%)
$I_c$: Soil behavior type index
m: Stress exponent
$C_N$: Overburden correction factor
$q_{c1N}$: Normalized and adjusted cone resistance
$\Delta q_{c1N}$: Cone resistance correction factor due to fines
$q_{c1N,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for $M_w$=7.5
FS: Factor of safety against soil liquefaction

**:: 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 | 0.02 | 0.00 | 0.03 | 2.00 | 0.00 | 9.98 | 0.02 | 0.00 |
| 0.05 | 2.00 | 0.00 | 9.97 | 0.02 | 0.00 | 0.07 | 1.92 | 0.00 | 9.96 | 0.02 | 0.00 |
| 0.09 | 1.79 | 0.00 | 9.95 | 0.02 | 0.00 | 0.11 | 1.73 | 0.00 | 9.94 | 0.02 | 0.00 |
| 0.13 | 1.67 | 0.00 | 9.93 | 0.02 | 0.00 | 0.15 | 1.60 | 0.00 | 9.92 | 0.02 | 0.00 |
| 0.17 | 1.54 | 0.00 | 9.91 | 0.02 | 0.00 | 0.19 | 1.50 | 0.00 | 9.90 | 0.02 | 0.00 |
| 0.21 | 1.48 | 0.00 | 9.89 | 0.02 | 0.00 | 0.23 | 1.42 | 0.00 | 9.88 | 0.02 | 0.00 |
| 0.25 | 1.37 | 0.00 | 9.87 | 0.02 | 0.00 | 0.27 | 1.33 | 0.00 | 9.86 | 0.02 | 0.00 |
| 0.29 | 1.29 | 0.00 | 9.85 | 0.02 | 0.00 | 0.31 | 1.22 | 0.00 | 9.84 | 0.02 | 0.00 |
| 0.33 | 1.13 | 0.00 | 9.83 | 0.02 | 0.00 | 0.35 | 1.26 | 0.00 | 9.82 | 0.02 | 0.00 |
| 0.37 | 1.55 | 0.00 | 9.81 | 0.02 | 0.00 | 0.39 | 1.82 | 0.00 | 9.80 | 0.02 | 0.00 |
| 0.41 | 2.00 | 0.00 | 9.79 | 0.02 | 0.00 | 0.43 | 2.00 | 0.00 | 9.78 | 0.02 | 0.00 |
| 0.45 | 2.00 | 0.00 | 9.77 | 0.02 | 0.00 | 0.47 | 2.00 | 0.00 | 9.76 | 0.02 | 0.00 |
| 0.49 | 2.00 | 0.00 | 9.75 | 0.02 | 0.00 | 0.51 | 2.00 | 0.00 | 9.74 | 0.02 | 0.00 |
| 0.53 | 2.00 | 0.00 | 9.73 | 0.02 | 0.00 | 0.55 | 2.00 | 0.00 | 9.72 | 0.02 | 0.00 |
| 0.57 | 2.00 | 0.00 | 9.71 | 0.02 | 0.00 | 0.59 | 2.00 | 0.00 | 9.70 | 0.02 | 0.00 |
| 0.61 | 2.00 | 0.00 | 9.69 | 0.02 | 0.00 | 0.63 | 2.00 | 0.00 | 9.69 | 0.02 | 0.00 |
| 0.65 | 2.00 | 0.00 | 9.68 | 0.02 | 0.00 | 0.67 | 1.59 | 0.00 | 9.67 | 0.02 | 0.00 |
| 0.69 | 1.37 | 0.00 | 9.66 | 0.02 | 0.00 | 0.71 | 1.32 | 0.00 | 9.65 | 0.02 | 0.00 |
| 0.73 | 1.35 | 0.00 | 9.64 | 0.02 | 0.00 | 0.75 | 1.38 | 0.00 | 9.63 | 0.02 | 0.00 |
| 0.77 | 1.34 | 0.00 | 9.62 | 0.02 | 0.00 | 0.79 | 1.29 | 0.00 | 9.61 | 0.02 | 0.00 |
| 0.81 | 1.26 | 0.00 | 9.60 | 0.02 | 0.00 | 0.83 | 1.27 | 0.00 | 9.59 | 0.02 | 0.00 |
| 0.85 | 1.32 | 0.00 | 9.58 | 0.02 | 0.00 | 0.87 | 1.35 | 0.00 | 9.57 | 0.02 | 0.00 |
| 0.89 | 1.37 | 0.00 | 9.56 | 0.02 | 0.00 | 0.91 | 1.35 | 0.00 | 9.55 | 0.02 | 0.00 |
| 0.93 | 1.28 | 0.00 | 9.54 | 0.02 | 0.00 | 0.95 | 1.19 | 0.00 | 9.53 | 0.02 | 0.00 |
| 0.97 | 1.11 | 0.00 | 9.52 | 0.02 | 0.00 | 0.99 | 1.06 | 0.00 | 9.51 | 0.02 | 0.00 |
| 1.01 | 0.97 | 0.03 | 9.50 | 0.02 | 0.01 | 1.03 | 0.85 | 0.15 | 9.49 | 0.02 | 0.03 |
| 1.05 | 0.75 | 0.25 | 9.48 | 0.02 | 0.05 | 1.07 | 0.63 | 0.37 | 9.47 | 0.02 | 0.07 |
| 1.09 | 0.50 | 0.50 | 9.46 | 0.02 | 0.09 | 1.11 | 0.45 | 0.55 | 9.45 | 0.02 | 0.10 |
| 1.13 | 2.00 | 0.00 | 9.44 | 0.02 | 0.00 | 1.15 | 2.00 | 0.00 | 9.43 | 0.02 | 0.00 |
| 1.17 | 2.00 | 0.00 | 9.42 | 0.02 | 0.00 | 1.19 | 2.00 | 0.00 | 9.41 | 0.02 | 0.00 |
| 1.21 | 2.00 | 0.00 | 9.40 | 0.02 | 0.00 | 1.23 | 2.00 | 0.00 | 9.39 | 0.02 | 0.00 |
| 1.25 | 2.00 | 0.00 | 9.38 | 0.02 | 0.00 | 1.27 | 2.00 | 0.00 | 9.37 | 0.02 | 0.00 |
| 1.29 | 2.00 | 0.00 | 9.36 | 0.02 | 0.00 | 1.31 | 2.00 | 0.00 | 9.35 | 0.02 | 0.00 |
| 1.33 | 2.00 | 0.00 | 9.34 | 0.02 | 0.00 | 1.35 | 2.00 | 0.00 | 9.33 | 0.02 | 0.00 |
| 1.37 | 2.00 | 0.00 | 9.32 | 0.02 | 0.00 | 1.39 | 2.00 | 0.00 | 9.31 | 0.02 | 0.00 |
| 1.41 | 2.00 | 0.00 | 9.30 | 0.02 | 0.00 | 1.43 | 2.00 | 0.00 | 9.29 | 0.02 | 0.00 |
| 1.45 | 2.00 | 0.00 | 9.28 | 0.02 | 0.00 | 1.47 | 2.00 | 0.00 | 9.27 | 0.02 | 0.00 |
| 1.49 | 2.00 | 0.00 | 9.26 | 0.02 | 0.00 | 1.51 | 2.00 | 0.00 | 9.25 | 0.02 | 0.00 |
| 1.53 | 2.00 | 0.00 | 9.24 | 0.02 | 0.00 | 1.55 | 0.42 | 0.58 | 9.23 | 0.02 | 0.11 |
| 1.57 | 0.43 | 0.57 | 9.22 | 0.02 | 0.11 | 1.59 | 0.42 | 0.58 | 9.21 | 0.02 | 0.11 |
| 1.61 | 0.42 | 0.58 | 9.20 | 0.02 | 0.11 | 1.63 | 0.43 | 0.57 | 9.19 | 0.02 | 0.10 |
| 1.65 | 0.44 | 0.56 | 9.18 | 0.02 | 0.10 | 1.67 | 0.45 | 0.55 | 9.17 | 0.02 | 0.10 |
| 1.69 | 0.44 | 0.56 | 9.16 | 0.02 | 0.10 | 1.71 | 0.43 | 0.57 | 9.15 | 0.02 | 0.10 |
| 1.73 | 2.00 | 0.00 | 9.14 | 0.02 | 0.00 | 1.75 | 2.00 | 0.00 | 9.13 | 0.02 | 0.00 |
| 1.77 | 2.00 | 0.00 | 9.12 | 0.02 | 0.00 | 1.79 | 2.00 | 0.00 | 9.11 | 0.02 | 0.00 |
| 1.81 | 2.00 | 0.00 | 9.10 | 0.02 | 0.00 | 1.83 | 2.00 | 0.00 | 9.09 | 0.02 | 0.00 |
| 1.85 | 0.44 | 0.56 | 9.08 | 0.02 | 0.10 | 1.87 | 0.45 | 0.55 | 9.07 | 0.02 | 0.10 |
| 1.88 | 0.53 | 0.47 | 9.06 | 0.02 | 0.08 | 1.90 | 0.49 | 0.51 | 9.05 | 0.02 | 0.09 |

**:: 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 | 0.46 | 0.54 | 9.04 | 0.02 | 0.10 | 1.94 | 0.44 | 0.56 | 9.03 | 0.02 | 0.10 |
| 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 | 0.41 | 0.59 | 8.96 | 0.02 | 0.11 | 2.10 | 0.42 | 0.58 | 8.95 | 0.02 | 0.10 |
| 2.12 | 0.41 | 0.59 | 8.94 | 0.02 | 0.10 | 2.14 | 0.40 | 0.60 | 8.93 | 0.02 | 0.11 |
| 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 | 0.49 | 0.51 | 8.89 | 0.02 | 0.09 |
| 2.24 | 0.67 | 0.33 | 8.88 | 0.02 | 0.06 | 2.26 | 0.76 | 0.24 | 8.87 | 0.02 | 0.04 |
| 2.28 | 0.88 | 0.12 | 8.86 | 0.02 | 0.02 | 2.30 | 1.03 | 0.00 | 8.85 | 0.02 | 0.00 |
| 2.32 | 1.36 | 0.00 | 8.84 | 0.02 | 0.00 | 2.34 | 1.71 | 0.00 | 8.83 | 0.02 | 0.00 |
| 2.36 | 1.43 | 0.00 | 8.82 | 0.02 | 0.00 | 2.38 | 1.01 | 0.00 | 8.81 | 0.02 | 0.00 |
| 2.40 | 0.67 | 0.33 | 8.80 | 0.02 | 0.06 | 2.42 | 0.53 | 0.47 | 8.79 | 0.02 | 0.08 |
| 2.44 | 0.44 | 0.56 | 8.78 | 0.02 | 0.10 | 2.46 | 0.41 | 0.59 | 8.77 | 0.02 | 0.10 |
| 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 | 0.47 | 0.53 | 8.41 | 0.02 | 0.09 |
| 3.20 | 0.47 | 0.53 | 8.40 | 0.02 | 0.09 | 3.22 | 0.47 | 0.53 | 8.39 | 0.02 | 0.09 |
| 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 | 3.85 | 2.00 | 0.00 | 8.07 | 0.02 | 0.00 |
| 3.87 | 2.00 | 0.00 | 8.06 | 0.02 | 0.00 | 3.89 | 2.00 | 0.00 | 8.05 | 0.02 | 0.00 |
| 3.91 | 2.00 | 0.00 | 8.04 | 0.02 | 0.00 | 3.93 | 2.00 | 0.00 | 8.03 | 0.02 | 0.00 |
| 3.95 | 2.00 | 0.00 | 8.02 | 0.02 | 0.00 | 3.97 | 2.00 | 0.00 | 8.01 | 0.02 | 0.00 |
| 3.99 | 2.00 | 0.00 | 8.00 | 0.02 | 0.00 | 4.01 | 2.00 | 0.00 | 7.99 | 0.02 | 0.00 |
| 4.03 | 2.00 | 0.00 | 7.98 | 0.02 | 0.00 | 4.05 | 2.00 | 0.00 | 7.97 | 0.02 | 0.00 |
| 4.07 | 2.00 | 0.00 | 7.96 | 0.02 | 0.00 | 4.09 | 2.00 | 0.00 | 7.95 | 0.02 | 0.00 |
| 4.11 | 2.00 | 0.00 | 7.94 | 0.02 | 0.00 | 4.13 | 2.00 | 0.00 | 7.93 | 0.02 | 0.00 |
| 4.15 | 2.00 | 0.00 | 7.92 | 0.02 | 0.00 | 4.17 | 2.00 | 0.00 | 7.91 | 0.02 | 0.00 |
| 4.19 | 2.00 | 0.00 | 7.90 | 0.02 | 0.00 | 4.21 | 2.00 | 0.00 | 7.89 | 0.02 | 0.00 |
| 4.23 | 2.00 | 0.00 | 7.88 | 0.02 | 0.00 | 4.25 | 2.00 | 0.00 | 7.87 | 0.02 | 0.00 |
| 4.27 | 2.00 | 0.00 | 7.86 | 0.02 | 0.00 | 4.29 | 2.00 | 0.00 | 7.85 | 0.02 | 0.00 |
| 4.31 | 2.00 | 0.00 | 7.84 | 0.02 | 0.00 | 4.33 | 2.00 | 0.00 | 7.83 | 0.02 | 0.00 |
| 4.35 | 2.00 | 0.00 | 7.82 | 0.02 | 0.00 | 4.37 | 2.00 | 0.00 | 7.81 | 0.02 | 0.00 |
| 4.39 | 2.00 | 0.00 | 7.80 | 0.02 | 0.00 | 4.41 | 2.00 | 0.00 | 7.79 | 0.02 | 0.00 |
| 4.43 | 2.00 | 0.00 | 7.78 | 0.02 | 0.00 | 4.45 | 2.00 | 0.00 | 7.77 | 0.02 | 0.00 |
| 4.47 | 2.00 | 0.00 | 7.76 | 0.02 | 0.00 | 4.49 | 2.00 | 0.00 | 7.75 | 0.02 | 0.00 |
| 4.51 | 2.00 | 0.00 | 7.74 | 0.02 | 0.00 | 4.53 | 2.00 | 0.00 | 7.73 | 0.02 | 0.00 |
| 4.55 | 2.00 | 0.00 | 7.72 | 0.02 | 0.00 | 4.57 | 2.00 | 0.00 | 7.71 | 0.02 | 0.00 |
| 4.59 | 2.00 | 0.00 | 7.70 | 0.02 | 0.00 | 4.61 | 2.00 | 0.00 | 7.69 | 0.02 | 0.00 |
| 4.63 | 2.00 | 0.00 | 7.69 | 0.02 | 0.00 | 4.65 | 2.00 | 0.00 | 7.68 | 0.02 | 0.00 |
| 4.67 | 2.00 | 0.00 | 7.67 | 0.02 | 0.00 | 4.69 | 2.00 | 0.00 | 7.66 | 0.02 | 0.00 |
| 4.71 | 2.00 | 0.00 | 7.65 | 0.02 | 0.00 | 4.73 | 2.00 | 0.00 | 7.64 | 0.02 | 0.00 |
| 4.75 | 2.00 | 0.00 | 7.63 | 0.02 | 0.00 | 4.77 | 2.00 | 0.00 | 7.62 | 0.02 | 0.00 |
| 4.79 | 2.00 | 0.00 | 7.61 | 0.02 | 0.00 | 4.81 | 2.00 | 0.00 | 7.60 | 0.02 | 0.00 |
| 4.83 | 2.00 | 0.00 | 7.59 | 0.02 | 0.00 | 4.85 | 2.00 | 0.00 | 7.58 | 0.02 | 0.00 |
| 4.87 | 2.00 | 0.00 | 7.57 | 0.02 | 0.00 | 4.89 | 2.00 | 0.00 | 7.56 | 0.02 | 0.00 |
| 4.91 | 2.00 | 0.00 | 7.55 | 0.02 | 0.00 | 4.93 | 2.00 | 0.00 | 7.54 | 0.02 | 0.00 |
| 4.95 | 2.00 | 0.00 | 7.53 | 0.02 | 0.00 | 4.97 | 2.00 | 0.00 | 7.52 | 0.02 | 0.00 |
| 4.99 | 2.00 | 0.00 | 7.51 | 0.02 | 0.00 | 5.01 | 2.00 | 0.00 | 7.50 | 0.02 | 0.00 |
| 5.03 | 2.00 | 0.00 | 7.49 | 0.02 | 0.00 | 5.05 | 2.00 | 0.00 | 7.48 | 0.02 | 0.00 |
| 5.07 | 2.00 | 0.00 | 7.47 | 0.02 | 0.00 | 5.09 | 2.00 | 0.00 | 7.46 | 0.02 | 0.00 |
| 5.11 | 2.00 | 0.00 | 7.45 | 0.02 | 0.00 | 5.13 | 2.00 | 0.00 | 7.44 | 0.02 | 0.00 |
| 5.15 | 2.00 | 0.00 | 7.43 | 0.02 | 0.00 | 5.17 | 2.00 | 0.00 | 7.42 | 0.02 | 0.00 |
| 5.19 | 2.00 | 0.00 | 7.41 | 0.02 | 0.00 | 5.21 | 2.00 | 0.00 | 7.40 | 0.02 | 0.00 |
| 5.23 | 2.00 | 0.00 | 7.39 | 0.02 | 0.00 | 5.25 | 2.00 | 0.00 | 7.38 | 0.02 | 0.00 |
| 5.27 | 2.00 | 0.00 | 7.37 | 0.02 | 0.00 | 5.29 | 2.00 | 0.00 | 7.36 | 0.02 | 0.00 |
| 5.31 | 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 | 2.00 | 0.00 | 7.29 | 0.02 | 0.00 | 5.44 | 2.00 | 0.00 | 7.28 | 0.02 | 0.00 |
| 5.46 | 2.00 | 0.00 | 7.27 | 0.02 | 0.00 | 5.48 | 2.00 | 0.00 | 7.26 | 0.02 | 0.00 |
| 5.50 | 2.00 | 0.00 | 7.25 | 0.02 | 0.00 | 5.52 | 2.00 | 0.00 | 7.24 | 0.02 | 0.00 |
| 5.54 | 2.00 | 0.00 | 7.23 | 0.02 | 0.00 | 5.56 | 2.00 | 0.00 | 7.22 | 0.02 | 0.00 |
| 5.58 | 2.00 | 0.00 | 7.21 | 0.02 | 0.00 | 5.60 | 2.00 | 0.00 | 7.20 | 0.02 | 0.00 |
| 5.62 | 2.00 | 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 |

**:: 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5.74 | 2.00 | 0.00 | 7.13 | 0.02 | 0.00 | 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 | 2.00 | 0.00 | 7.05 | 0.02 | 0.00 | 5.92 | 2.00 | 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 | 2.00 | 0.00 | 6.75 | 0.02 | 0.00 | 6.52 | 2.00 | 0.00 | 6.74 | 0.02 | 0.00 |
| 6.53 | 2.00 | 0.00 | 6.73 | 0.02 | 0.00 | 6.55 | 2.00 | 0.00 | 6.72 | 0.02 | 0.00 |
| 6.57 | 2.00 | 0.00 | 6.71 | 0.02 | 0.00 | 6.59 | 2.00 | 0.00 | 6.70 | 0.02 | 0.00 |
| 6.61 | 2.00 | 0.00 | 6.69 | 0.02 | 0.00 | 6.63 | 2.00 | 0.00 | 6.68 | 0.02 | 0.00 |
| 6.65 | 2.00 | 0.00 | 6.67 | 0.02 | 0.00 | 6.67 | 2.00 | 0.00 | 6.66 | 0.02 | 0.00 |
| 6.69 | 2.00 | 0.00 | 6.65 | 0.02 | 0.00 | 6.71 | 2.00 | 0.00 | 6.64 | 0.02 | 0.00 |
| 6.73 | 2.00 | 0.00 | 6.63 | 0.02 | 0.00 | 6.75 | 2.00 | 0.00 | 6.62 | 0.02 | 0.00 |
| 6.77 | 2.00 | 0.00 | 6.61 | 0.02 | 0.00 | 6.79 | 2.00 | 0.00 | 6.60 | 0.02 | 0.00 |
| 6.81 | 2.00 | 0.00 | 6.59 | 0.02 | 0.00 | 6.83 | 2.00 | 0.00 | 6.58 | 0.02 | 0.00 |
| 6.85 | 2.00 | 0.00 | 6.57 | 0.02 | 0.00 | 6.87 | 2.00 | 0.00 | 6.56 | 0.02 | 0.00 |
| 6.89 | 2.00 | 0.00 | 6.55 | 0.02 | 0.00 | 6.91 | 2.00 | 0.00 | 6.54 | 0.02 | 0.00 |
| 6.93 | 2.00 | 0.00 | 6.53 | 0.02 | 0.00 | 6.95 | 2.00 | 0.00 | 6.52 | 0.02 | 0.00 |
| 6.97 | 2.00 | 0.00 | 6.51 | 0.02 | 0.00 | 6.99 | 2.00 | 0.00 | 6.50 | 0.02 | 0.00 |
| 7.01 | 2.00 | 0.00 | 6.49 | 0.02 | 0.00 | 7.03 | 2.00 | 0.00 | 6.48 | 0.02 | 0.00 |
| 7.05 | 2.00 | 0.00 | 6.47 | 0.02 | 0.00 | 7.07 | 2.00 | 0.00 | 6.46 | 0.02 | 0.00 |
| 7.09 | 2.00 | 0.00 | 6.46 | 0.02 | 0.00 | 7.11 | 2.00 | 0.00 | 6.45 | 0.02 | 0.00 |
| 7.13 | 2.00 | 0.00 | 6.44 | 0.02 | 0.00 | 7.15 | 2.00 | 0.00 | 6.43 | 0.02 | 0.00 |
| 7.17 | 2.00 | 0.00 | 6.42 | 0.02 | 0.00 | 7.19 | 2.00 | 0.00 | 6.41 | 0.02 | 0.00 |
| 7.21 | 2.00 | 0.00 | 6.40 | 0.02 | 0.00 | 7.23 | 2.00 | 0.00 | 6.39 | 0.02 | 0.00 |
| 7.25 | 2.00 | 0.00 | 6.38 | 0.02 | 0.00 | 7.27 | 2.00 | 0.00 | 6.37 | 0.02 | 0.00 |
| 7.29 | 2.00 | 0.00 | 6.36 | 0.02 | 0.00 | 7.31 | 2.00 | 0.00 | 6.35 | 0.02 | 0.00 |
| 7.33 | 2.00 | 0.00 | 6.34 | 0.02 | 0.00 | 7.35 | 2.00 | 0.00 | 6.33 | 0.02 | 0.00 |
| 7.37 | 2.00 | 0.00 | 6.32 | 0.02 | 0.00 | 7.39 | 2.00 | 0.00 | 6.31 | 0.02 | 0.00 |
| 7.41 | 2.00 | 0.00 | 6.30 | 0.02 | 0.00 | 7.43 | 2.00 | 0.00 | 6.29 | 0.02 | 0.00 |
| 7.45 | 2.00 | 0.00 | 6.28 | 0.02 | 0.00 | 7.47 | 2.00 | 0.00 | 6.27 | 0.02 | 0.00 |
| 7.49 | 2.00 | 0.00 | 6.26 | 0.02 | 0.00 | 7.51 | 2.00 | 0.00 | 6.25 | 0.02 | 0.00 |
| 7.53 | 2.00 | 0.00 | 6.24 | 0.02 | 0.00 | 7.55 | 2.00 | 0.00 | 6.23 | 0.02 | 0.00 |
| 7.57 | 2.00 | 0.00 | 6.22 | 0.02 | 0.00 | 7.59 | 2.00 | 0.00 | 6.21 | 0.02 | 0.00 |
| 7.61 | 2.00 | 0.00 | 6.20 | 0.02 | 0.00 | 7.62 | 2.00 | 0.00 | 6.19 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.64 | 2.00 | 0.00 | 6.18 | 0.02 | 0.00 | 7.66 | 2.00 | 0.00 | 6.17 | 0.02 | 0.00 |
| 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 | 8.61 | 2.00 | 0.00 | 5.69 | 0.02 | 0.00 |
| 8.63 | 2.00 | 0.00 | 5.68 | 0.02 | 0.00 | 8.65 | 2.00 | 0.00 | 5.67 | 0.02 | 0.00 |
| 8.67 | 2.00 | 0.00 | 5.66 | 0.02 | 0.00 | 8.69 | 2.00 | 0.00 | 5.65 | 0.02 | 0.00 |
| 8.71 | 2.00 | 0.00 | 5.64 | 0.02 | 0.00 | 8.73 | 2.00 | 0.00 | 5.63 | 0.02 | 0.00 |
| 8.75 | 2.00 | 0.00 | 5.62 | 0.02 | 0.00 | 8.77 | 2.00 | 0.00 | 5.61 | 0.02 | 0.00 |
| 8.79 | 2.00 | 0.00 | 5.60 | 0.02 | 0.00 | 8.81 | 2.00 | 0.00 | 5.59 | 0.02 | 0.00 |
| 8.83 | 2.00 | 0.00 | 5.58 | 0.02 | 0.00 | 8.85 | 2.00 | 0.00 | 5.57 | 0.02 | 0.00 |
| 8.87 | 2.00 | 0.00 | 5.56 | 0.02 | 0.00 | 8.89 | 2.00 | 0.00 | 5.55 | 0.02 | 0.00 |
| 8.91 | 2.00 | 0.00 | 5.54 | 0.02 | 0.00 | 8.93 | 2.00 | 0.00 | 5.53 | 0.02 | 0.00 |
| 8.95 | 2.00 | 0.00 | 5.52 | 0.02 | 0.00 | 8.97 | 2.00 | 0.00 | 5.51 | 0.02 | 0.00 |
| 8.99 | 2.00 | 0.00 | 5.50 | 0.02 | 0.00 | 9.01 | 2.00 | 0.00 | 5.49 | 0.02 | 0.00 |
| 9.03 | 2.00 | 0.00 | 5.48 | 0.02 | 0.00 | 9.05 | 2.00 | 0.00 | 5.47 | 0.02 | 0.00 |
| 9.07 | 2.00 | 0.00 | 5.47 | 0.02 | 0.00 | 9.09 | 2.00 | 0.00 | 5.46 | 0.02 | 0.00 |
| 9.11 | 2.00 | 0.00 | 5.45 | 0.02 | 0.00 | 9.13 | 2.00 | 0.00 | 5.44 | 0.02 | 0.00 |
| 9.15 | 2.00 | 0.00 | 5.43 | 0.02 | 0.00 | 9.17 | 2.00 | 0.00 | 5.42 | 0.02 | 0.00 |
| 9.19 | 2.00 | 0.00 | 5.41 | 0.02 | 0.00 | 9.21 | 2.00 | 0.00 | 5.40 | 0.02 | 0.00 |
| 9.23 | 2.00 | 0.00 | 5.39 | 0.02 | 0.00 | 9.25 | 2.00 | 0.00 | 5.38 | 0.02 | 0.00 |
| 9.27 | 2.00 | 0.00 | 5.37 | 0.02 | 0.00 | 9.29 | 2.00 | 0.00 | 5.36 | 0.02 | 0.00 |
| 9.31 | 2.00 | 0.00 | 5.35 | 0.02 | 0.00 | 9.33 | 2.00 | 0.00 | 5.34 | 0.02 | 0.00 |
| 9.35 | 2.00 | 0.00 | 5.33 | 0.02 | 0.00 | 9.37 | 2.00 | 0.00 | 5.32 | 0.02 | 0.00 |
| 9.39 | 2.00 | 0.00 | 5.31 | 0.02 | 0.00 | 9.41 | 2.00 | 0.00 | 5.30 | 0.02 | 0.00 |
| 9.43 | 2.00 | 0.00 | 5.29 | 0.02 | 0.00 | 9.45 | 2.00 | 0.00 | 5.28 | 0.02 | 0.00 |
| 9.47 | 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 |

**:: 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9.54 | 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 | 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 |
| 10.29 | 2.00 | 0.00 | 4.85 | 0.02 | 0.00 | 10.31 | 2.00 | 0.00 | 4.84 | 0.02 | 0.00 |
| 10.33 | 2.00 | 0.00 | 4.83 | 0.02 | 0.00 | 10.35 | 2.00 | 0.00 | 4.82 | 0.02 | 0.00 |
| 10.37 | 2.00 | 0.00 | 4.81 | 0.02 | 0.00 | 10.39 | 2.00 | 0.00 | 4.80 | 0.02 | 0.00 |
| 10.41 | 2.00 | 0.00 | 4.79 | 0.02 | 0.00 | 10.43 | 2.00 | 0.00 | 4.78 | 0.02 | 0.00 |
| 10.45 | 2.00 | 0.00 | 4.77 | 0.02 | 0.00 | 10.47 | 2.00 | 0.00 | 4.76 | 0.02 | 0.00 |
| 10.49 | 2.00 | 0.00 | 4.75 | 0.02 | 0.00 | 10.51 | 2.00 | 0.00 | 4.74 | 0.02 | 0.00 |
| 10.53 | 2.00 | 0.00 | 4.73 | 0.02 | 0.00 | 10.55 | 2.00 | 0.00 | 4.72 | 0.02 | 0.00 |
| 10.57 | 2.00 | 0.00 | 4.71 | 0.02 | 0.00 | 10.59 | 2.00 | 0.00 | 4.70 | 0.02 | 0.00 |
| 10.61 | 2.00 | 0.00 | 4.69 | 0.02 | 0.00 | 10.63 | 2.00 | 0.00 | 4.68 | 0.02 | 0.00 |
| 10.65 | 2.00 | 0.00 | 4.67 | 0.02 | 0.00 | 10.67 | 2.00 | 0.00 | 4.67 | 0.02 | 0.00 |
| 10.69 | 2.00 | 0.00 | 4.66 | 0.02 | 0.00 | 10.71 | 2.00 | 0.00 | 4.65 | 0.02 | 0.00 |
| 10.73 | 2.00 | 0.00 | 4.64 | 0.02 | 0.00 | 10.75 | 2.00 | 0.00 | 4.63 | 0.02 | 0.00 |
| 10.77 | 2.00 | 0.00 | 4.62 | 0.02 | 0.00 | 10.79 | 2.00 | 0.00 | 4.61 | 0.02 | 0.00 |
| 10.81 | 2.00 | 0.00 | 4.60 | 0.02 | 0.00 | 10.83 | 2.00 | 0.00 | 4.59 | 0.02 | 0.00 |
| 10.85 | 2.00 | 0.00 | 4.58 | 0.02 | 0.00 | 10.87 | 2.00 | 0.00 | 4.57 | 0.02 | 0.00 |
| 10.89 | 2.00 | 0.00 | 4.56 | 0.02 | 0.00 | 10.91 | 2.00 | 0.00 | 4.55 | 0.02 | 0.00 |
| 10.93 | 2.00 | 0.00 | 4.54 | 0.02 | 0.00 | 10.95 | 2.00 | 0.00 | 4.53 | 0.02 | 0.00 |
| 10.97 | 2.00 | 0.00 | 4.52 | 0.02 | 0.00 | 10.99 | 2.00 | 0.00 | 4.51 | 0.02 | 0.00 |
| 11.01 | 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 |

**:: 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11.44 | 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 |
| 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 | 11.73 | 2.00 | 0.00 | 4.13 | 0.02 | 0.00 |
| 11.75 | 2.00 | 0.00 | 4.12 | 0.02 | 0.00 | 11.77 | 2.00 | 0.00 | 4.11 | 0.02 | 0.00 |
| 11.79 | 2.00 | 0.00 | 4.10 | 0.02 | 0.00 | 11.81 | 2.00 | 0.00 | 4.09 | 0.02 | 0.00 |
| 11.83 | 2.00 | 0.00 | 4.08 | 0.02 | 0.00 | 11.85 | 2.00 | 0.00 | 4.07 | 0.02 | 0.00 |
| 11.87 | 2.00 | 0.00 | 4.06 | 0.02 | 0.00 | 11.89 | 2.00 | 0.00 | 4.05 | 0.02 | 0.00 |
| 11.91 | 2.00 | 0.00 | 4.04 | 0.02 | 0.00 | 11.93 | 2.00 | 0.00 | 4.03 | 0.02 | 0.00 |
| 11.95 | 2.00 | 0.00 | 4.02 | 0.02 | 0.00 | 11.97 | 2.00 | 0.00 | 4.01 | 0.02 | 0.00 |
| 11.99 | 2.00 | 0.00 | 4.00 | 0.02 | 0.00 | 12.01 | 2.00 | 0.00 | 3.99 | 0.02 | 0.00 |
| 12.03 | 2.00 | 0.00 | 3.98 | 0.02 | 0.00 | 12.05 | 2.00 | 0.00 | 3.98 | 0.02 | 0.00 |
| 12.07 | 2.00 | 0.00 | 3.97 | 0.02 | 0.00 | 12.09 | 2.00 | 0.00 | 3.96 | 0.02 | 0.00 |
| 12.11 | 2.00 | 0.00 | 3.95 | 0.02 | 0.00 | 12.13 | 2.00 | 0.00 | 3.94 | 0.02 | 0.00 |
| 12.15 | 2.00 | 0.00 | 3.93 | 0.02 | 0.00 | 12.17 | 2.00 | 0.00 | 3.92 | 0.02 | 0.00 |
| 12.19 | 2.00 | 0.00 | 3.91 | 0.02 | 0.00 | 12.21 | 2.00 | 0.00 | 3.90 | 0.02 | 0.00 |
| 12.23 | 2.00 | 0.00 | 3.89 | 0.02 | 0.00 | 12.25 | 2.00 | 0.00 | 3.88 | 0.02 | 0.00 |
| 12.27 | 2.00 | 0.00 | 3.87 | 0.02 | 0.00 | 12.29 | 2.00 | 0.00 | 3.86 | 0.02 | 0.00 |
| 12.31 | 2.00 | 0.00 | 3.85 | 0.02 | 0.00 | 12.33 | 2.00 | 0.00 | 3.84 | 0.02 | 0.00 |
| 12.35 | 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 | 12.95 | 2.00 | 0.00 | 3.52 | 0.02 | 0.00 |
| 12.97 | 2.00 | 0.00 | 3.51 | 0.02 | 0.00 | 12.99 | 2.00 | 0.00 | 3.50 | 0.02 | 0.00 |
| 13.01 | 2.00 | 0.00 | 3.49 | 0.02 | 0.00 | 13.03 | 2.00 | 0.00 | 3.48 | 0.02 | 0.00 |
| 13.05 | 2.00 | 0.00 | 3.47 | 0.02 | 0.00 | 13.07 | 2.00 | 0.00 | 3.46 | 0.02 | 0.00 |
| 13.09 | 2.00 | 0.00 | 3.45 | 0.02 | 0.00 | 13.11 | 2.00 | 0.00 | 3.44 | 0.02 | 0.00 |
| 13.13 | 2.00 | 0.00 | 3.43 | 0.02 | 0.00 | 13.15 | 2.00 | 0.00 | 3.42 | 0.02 | 0.00 |
| 13.17 | 2.00 | 0.00 | 3.41 | 0.02 | 0.00 | 13.19 | 2.00 | 0.00 | 3.40 | 0.02 | 0.00 |
| 13.21 | 2.00 | 0.00 | 3.39 | 0.02 | 0.00 | 13.23 | 2.00 | 0.00 | 3.39 | 0.02 | 0.00 |
| 13.25 | 2.00 | 0.00 | 3.38 | 0.02 | 0.00 | 13.27 | 2.00 | 0.00 | 3.37 | 0.02 | 0.00 |
| 13.29 | 2.00 | 0.00 | 3.36 | 0.02 | 0.00 | 13.31 | 2.00 | 0.00 | 3.35 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13.33 | 2.00 | 0.00 | 3.34 | 0.02 | 0.00 | 13.35 | 2.00 | 0.00 | 3.33 | 0.02 | 0.00 |
| 13.37 | 2.00 | 0.00 | 3.32 | 0.02 | 0.00 | 13.39 | 2.00 | 0.00 | 3.31 | 0.02 | 0.00 |
| 13.41 | 2.00 | 0.00 | 3.30 | 0.02 | 0.00 | 13.43 | 2.00 | 0.00 | 3.29 | 0.02 | 0.00 |
| 13.45 | 2.00 | 0.00 | 3.28 | 0.02 | 0.00 | 13.47 | 2.00 | 0.00 | 3.27 | 0.02 | 0.00 |
| 13.49 | 2.00 | 0.00 | 3.26 | 0.02 | 0.00 | 13.51 | 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 | 14.05 | 2.00 | 0.00 | 2.97 | 0.02 | 0.00 |
| 14.07 | 2.00 | 0.00 | 2.96 | 0.02 | 0.00 | 14.09 | 2.00 | 0.00 | 2.95 | 0.02 | 0.00 |
| 14.11 | 2.00 | 0.00 | 2.94 | 0.02 | 0.00 | 14.13 | 2.00 | 0.00 | 2.93 | 0.02 | 0.00 |
| 14.15 | 2.00 | 0.00 | 2.92 | 0.02 | 0.00 | 14.17 | 2.00 | 0.00 | 2.91 | 0.02 | 0.00 |
| 14.19 | 2.00 | 0.00 | 2.90 | 0.02 | 0.00 | 14.21 | 2.00 | 0.00 | 2.89 | 0.02 | 0.00 |
| 14.23 | 2.00 | 0.00 | 2.88 | 0.02 | 0.00 | 14.25 | 2.00 | 0.00 | 2.87 | 0.02 | 0.00 |
| 14.27 | 2.00 | 0.00 | 2.86 | 0.02 | 0.00 | 14.29 | 2.00 | 0.00 | 2.85 | 0.02 | 0.00 |
| 14.31 | 2.00 | 0.00 | 2.85 | 0.02 | 0.00 | 14.33 | 2.00 | 0.00 | 2.84 | 0.02 | 0.00 |
| 14.35 | 2.00 | 0.00 | 2.83 | 0.02 | 0.00 | 14.37 | 2.00 | 0.00 | 2.82 | 0.02 | 0.00 |
| 14.39 | 2.00 | 0.00 | 2.81 | 0.02 | 0.00 | 14.41 | 2.00 | 0.00 | 2.80 | 0.02 | 0.00 |
| 14.43 | 2.00 | 0.00 | 2.79 | 0.02 | 0.00 | 14.45 | 2.00 | 0.00 | 2.78 | 0.02 | 0.00 |
| 14.47 | 2.00 | 0.00 | 2.77 | 0.02 | 0.00 | 14.49 | 2.00 | 0.00 | 2.76 | 0.02 | 0.00 |
| 14.51 | 2.00 | 0.00 | 2.75 | 0.02 | 0.00 | 14.53 | 2.00 | 0.00 | 2.74 | 0.02 | 0.00 |
| 14.55 | 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 | | | | | | |

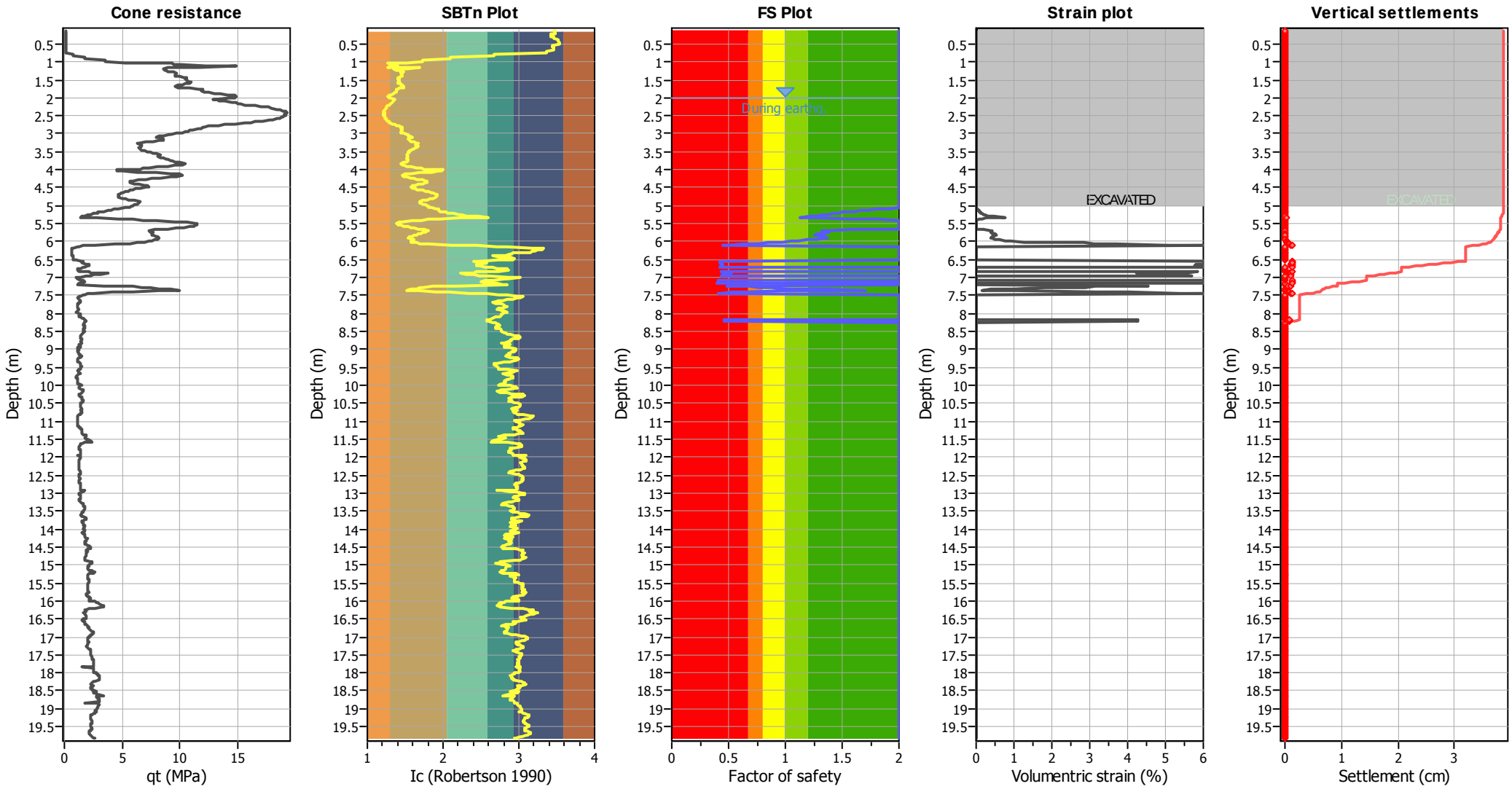
**Overall liquefaction potential: 3.10**

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

# Estimation of post-earthquake settlements




**Abbreviations**

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

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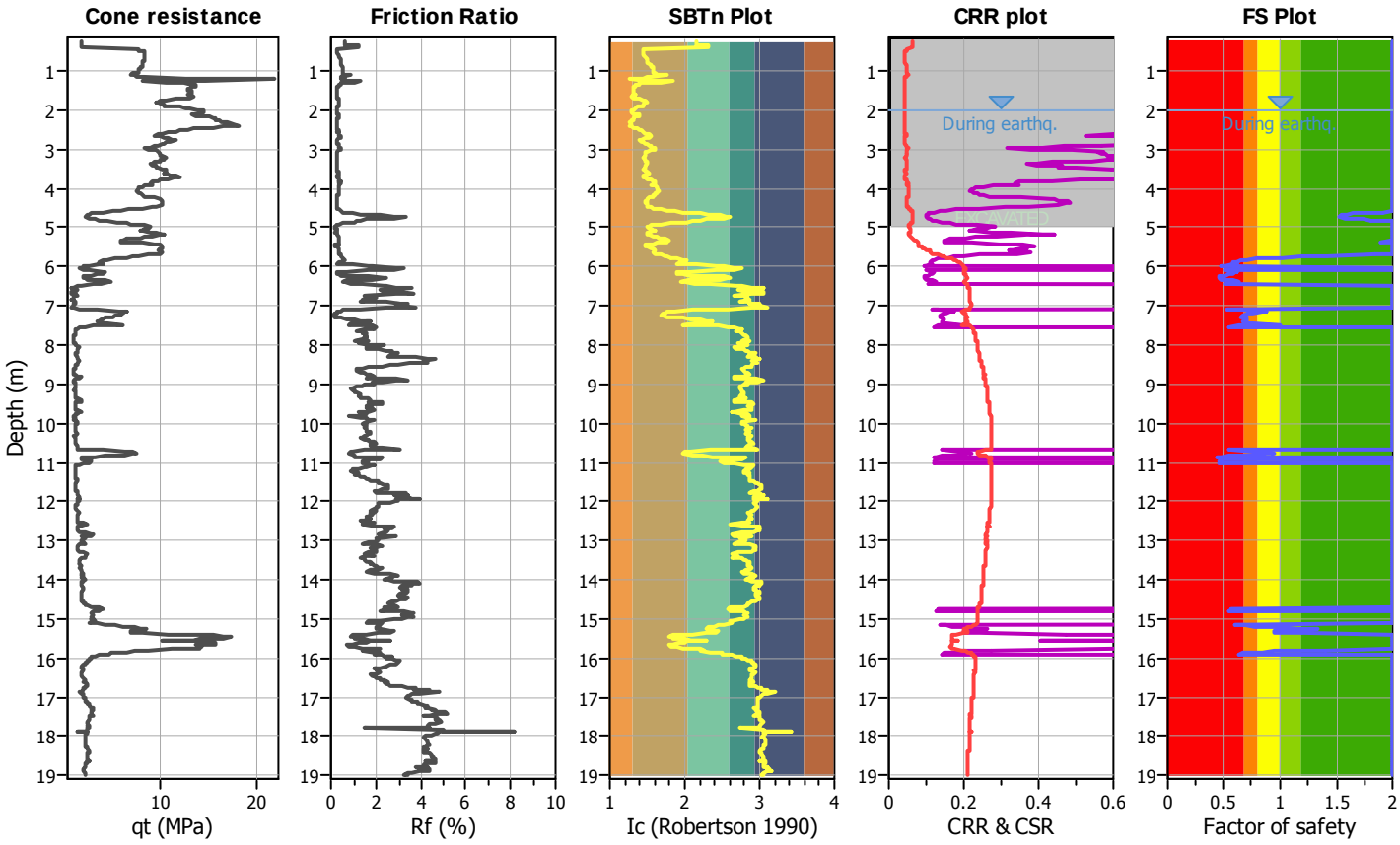
# LIQUEFACTION ANALYSIS REPORT

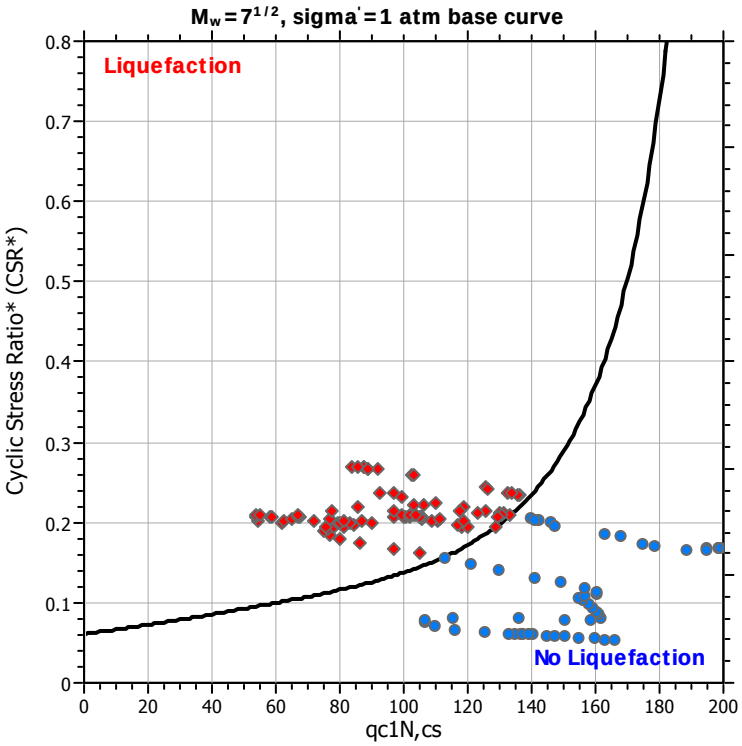
**Project title : Bosco verticale** **Location : Riccione**

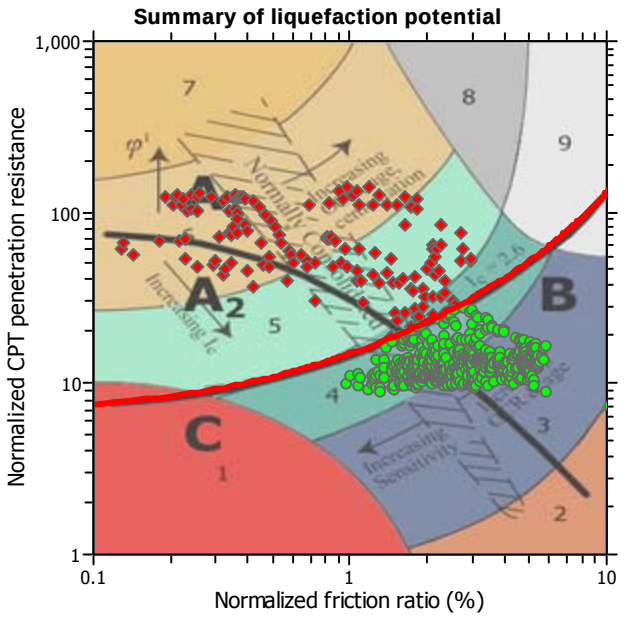
**CPT file : CPTu-3**

**Input parameters and analysis data**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 2.00 m | Excavation: | Yes | Clay like behavior applied: | Sands only |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 2.00 m | Excavation depth: | 5.00 m | Limit depth applied: | Yes |
| Points to test: | Based on Ic value | Average results interval: | 1 | Footing load: | 95.00 kPa | Limit depth: | 20.00 m |
| Earthquake magnitude $M_w$: | 6.14 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method |
| Peak ground acceleration: | 0.19 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

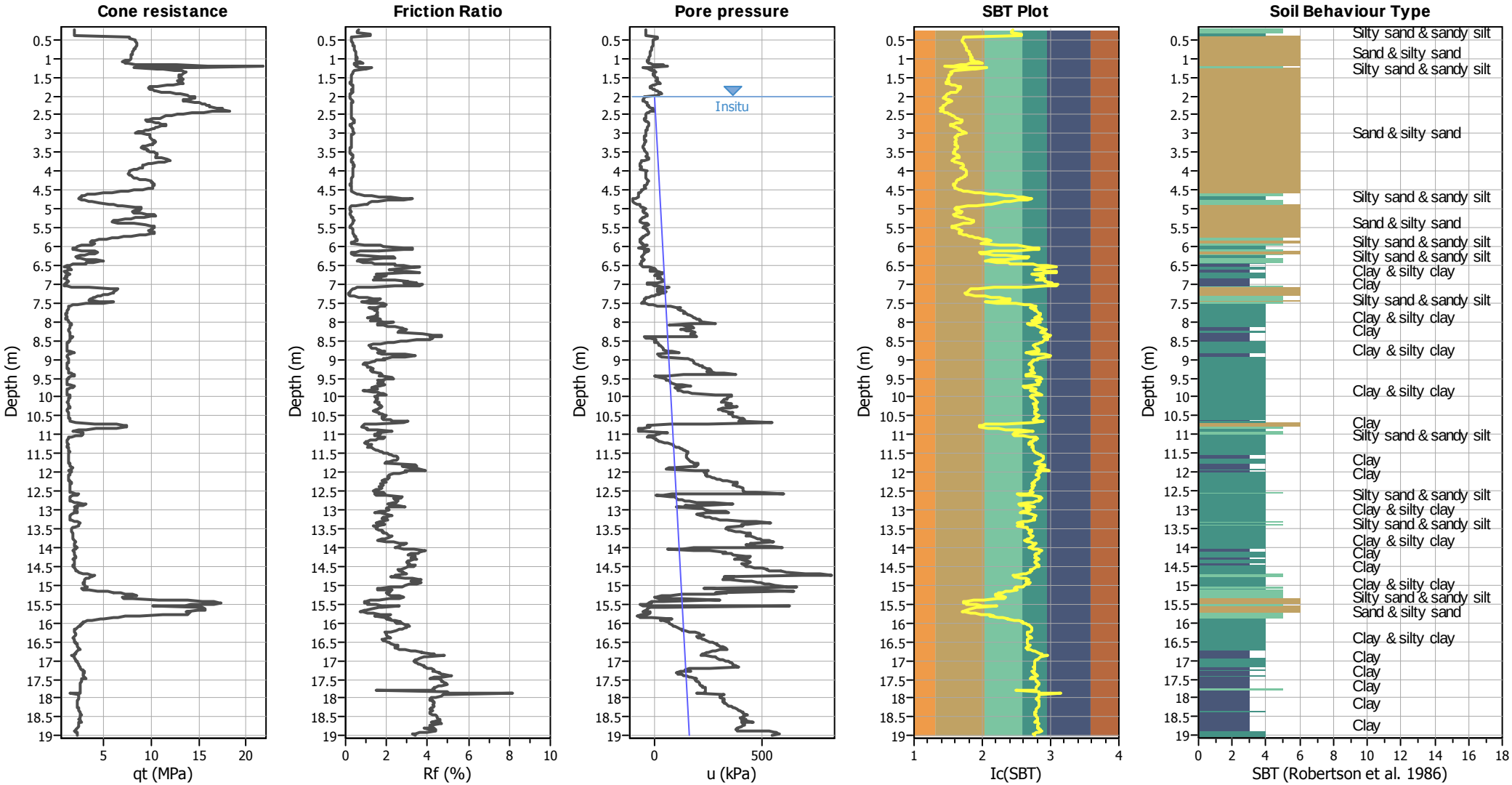



Zone $A_1$: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone $A_2$: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction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

# CPT basic interpretation plots



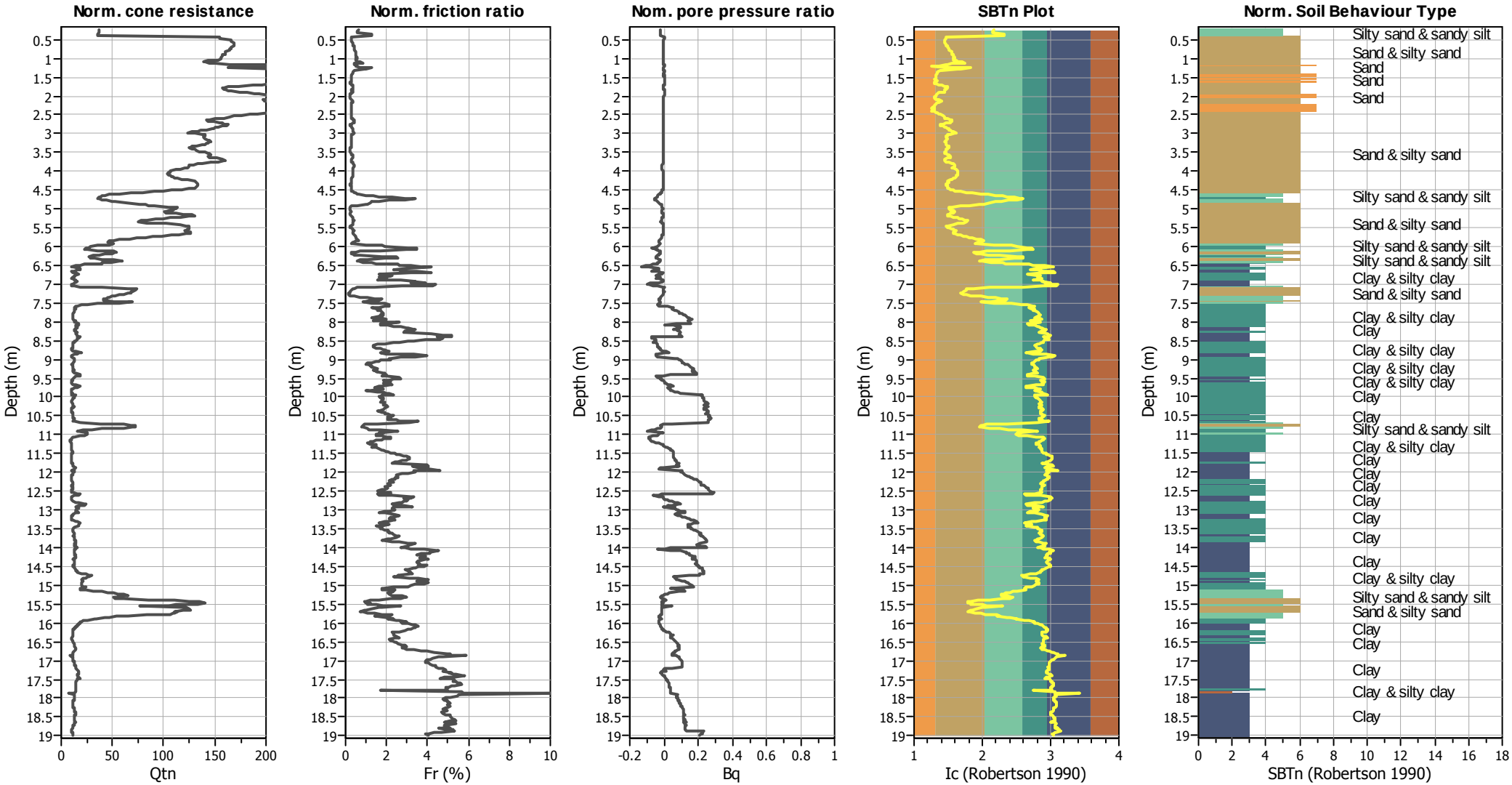

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

### SBT legend

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

# CPT basic interpretation plots (normalized)



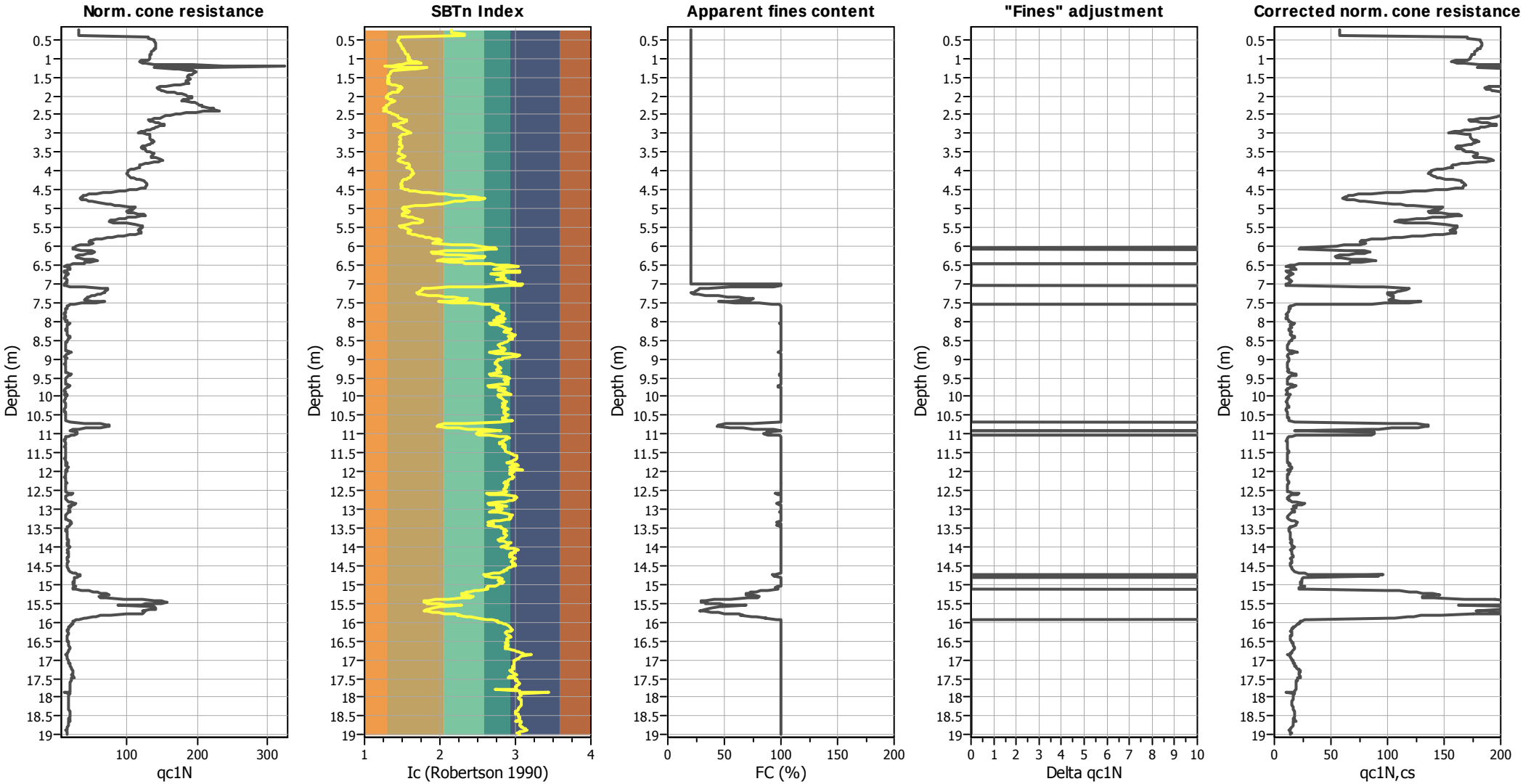

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

**SBTn legend**

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

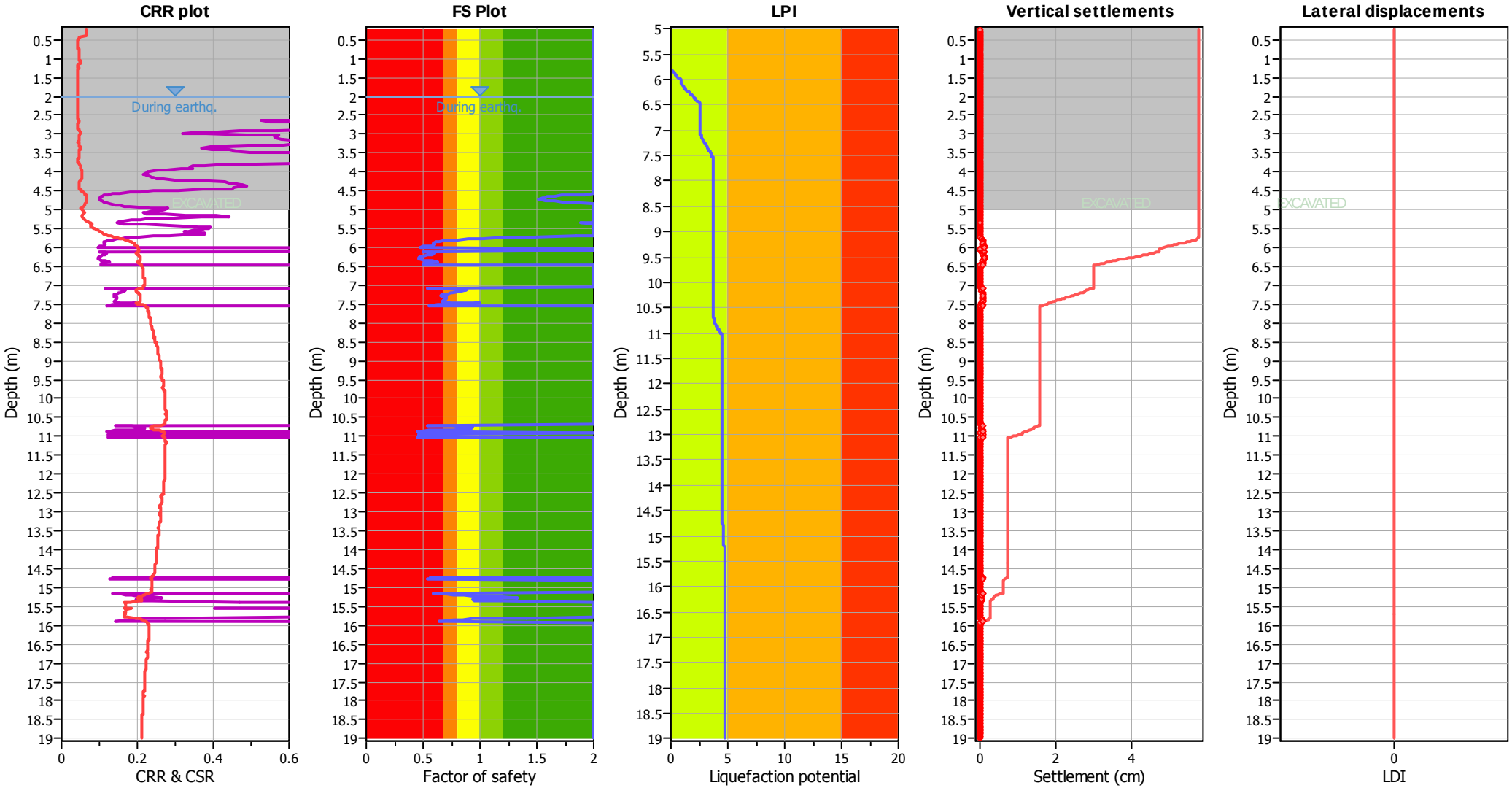
# Liquefaction analysis overall plots (intermediate results)




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

# Liquefaction analysis overall plots




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

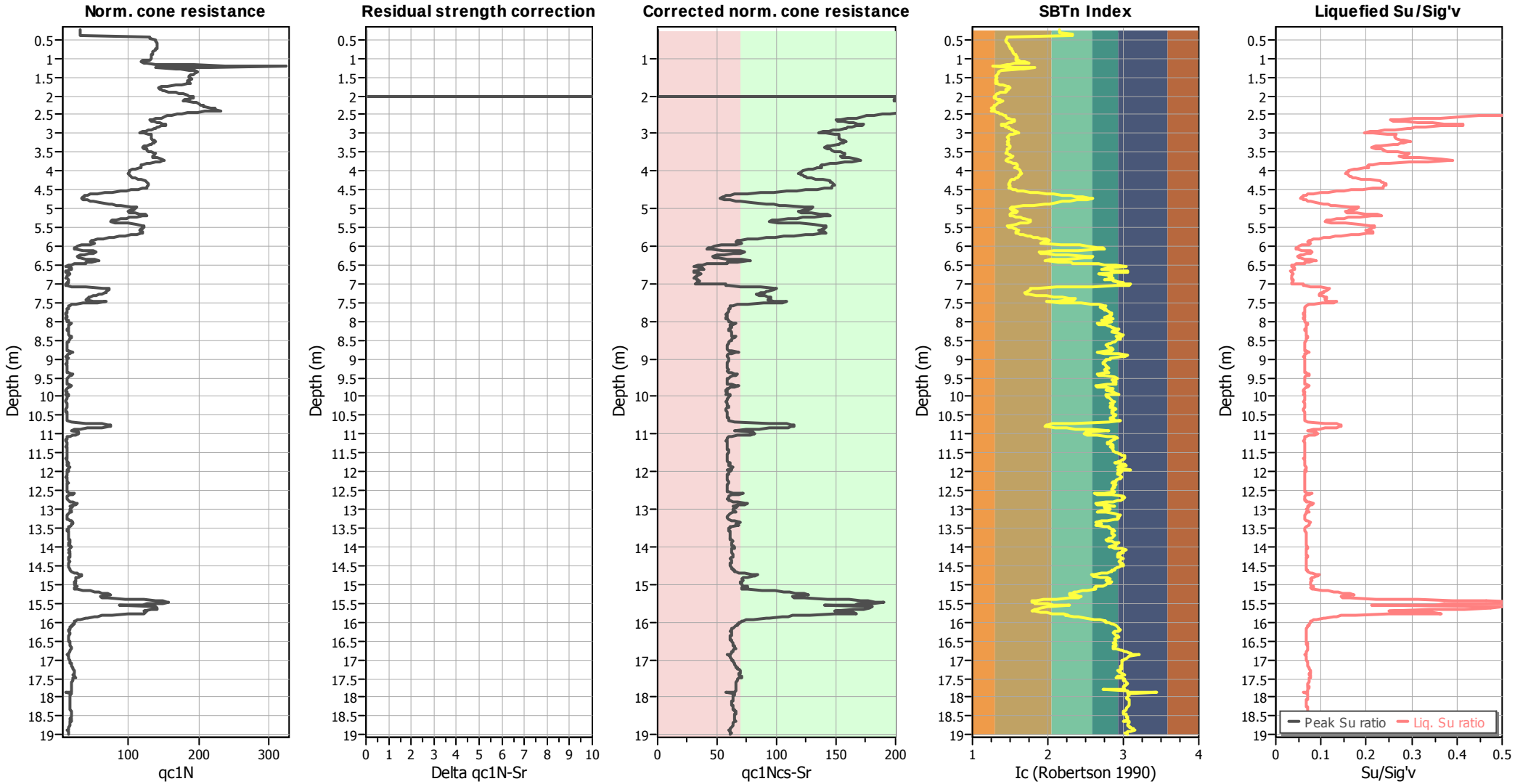
**F.S. color scheme**

- 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

# Check for strength loss plots (Idriss & Boulanger (2008))




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

**:: Cyclic Resistance Ratio (CRR) calculation data ::**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 240 | 0.02 | 8.70 | 20.00 | 1.53 | 0.41 | 1.24 | 107.02 | 37.95 | 144.98 | 0.259 | No | No | 2.00 |
| 241 | 0.04 | 8.36 | 20.00 | 1.56 | 0.42 | 1.25 | 103.28 | 37.45 | 140.73 | 0.238 | No | No | 2.00 |
| 242 | 0.06 | 8.08 | 20.00 | 1.59 | 0.43 | 1.25 | 100.03 | 37.01 | 137.03 | 0.222 | No | No | 2.00 |
| 243 | 0.08 | 7.95 | 20.00 | 1.59 | 0.43 | 1.25 | 98.49 | 36.80 | 135.29 | 0.216 | No | No | 2.00 |
| 244 | 0.10 | 8.13 | 20.00 | 1.57 | 0.43 | 1.25 | 100.37 | 37.05 | 137.42 | 0.224 | No | No | 2.00 |
| 245 | 0.12 | 8.94 | 20.00 | 1.53 | 0.41 | 1.24 | 109.18 | 38.24 | 147.43 | 0.273 | No | No | 2.00 |
| 246 | 0.14 | 9.57 | 20.00 | 1.51 | 0.39 | 1.23 | 115.94 | 39.16 | 155.09 | 0.326 | No | No | 2.00 |
| 247 | 0.16 | 10.24 | 20.00 | 1.49 | 0.38 | 1.22 | 123.14 | 40.13 | 163.27 | 0.408 | No | No | 2.00 |
| 248 | 0.18 | 10.47 | 20.00 | 1.50 | 0.38 | 1.21 | 125.50 | 40.45 | 165.95 | 0.442 | No | No | 2.00 |
| 249 | 0.20 | 9.98 | 20.00 | 1.53 | 0.39 | 1.22 | 120.13 | 39.72 | 159.86 | 0.370 | No | No | 2.00 |
| 250 | 0.22 | 9.23 | 20.00 | 1.58 | 0.40 | 1.23 | 111.87 | 38.61 | 150.47 | 0.292 | No | No | 2.00 |
| 251 | 0.24 | 8.35 | 20.00 | 1.64 | 0.42 | 1.24 | 102.18 | 37.30 | 139.47 | 0.232 | No | No | 2.00 |
| 252 | 0.26 | 7.85 | 20.00 | 1.66 | 0.43 | 1.24 | 96.47 | 36.53 | 133.00 | 0.207 | No | No | 2.00 |
| 253 | 0.28 | 7.25 | 20.00 | 1.70 | 0.45 | 1.25 | 89.73 | 35.61 | 125.35 | 0.184 | No | No | 2.00 |
| 254 | 0.30 | 6.54 | 20.00 | 1.74 | 0.46 | 1.26 | 81.53 | 34.51 | 116.04 | 0.163 | No | No | 2.00 |
| 255 | 0.32 | 6.07 | 20.00 | 1.78 | 0.48 | 1.27 | 76.10 | 33.77 | 109.88 | 0.152 | No | No | 2.00 |
| 256 | 0.34 | 5.83 | 20.00 | 1.78 | 0.48 | 1.27 | 73.24 | 33.38 | 106.62 | 0.147 | No | No | 1.99 |
| 257 | 0.36 | 5.88 | 20.00 | 1.76 | 0.48 | 1.27 | 73.71 | 33.45 | 107.16 | 0.148 | No | No | 1.89 |
| 258 | 0.38 | 6.53 | 20.00 | 1.73 | 0.47 | 1.25 | 81.08 | 34.44 | 115.53 | 0.162 | No | No | 2.00 |
| 259 | 0.40 | 8.17 | 20.00 | 1.64 | 0.43 | 1.23 | 99.33 | 36.91 | 136.25 | 0.219 | No | No | 2.00 |
| 260 | 0.42 | 9.34 | 20.00 | 1.58 | 0.40 | 1.21 | 112.02 | 38.63 | 150.64 | 0.293 | No | No | 2.00 |
| 261 | 0.44 | 10.01 | 20.00 | 1.48 | 0.39 | 1.20 | 119.21 | 39.60 | 158.81 | 0.360 | No | No | 2.00 |
| 262 | 0.46 | 10.26 | 20.00 | 1.46 | 0.38 | 1.20 | 121.81 | 39.95 | 161.76 | 0.391 | No | No | 2.00 |
| 263 | 0.48 | 10.25 | 20.00 | 1.48 | 0.38 | 1.20 | 121.57 | 39.92 | 161.49 | 0.388 | No | No | 2.00 |
| 264 | 0.50 | 10.17 | 20.00 | 1.51 | 0.39 | 1.20 | 120.63 | 39.79 | 160.42 | 0.376 | No | No | 2.00 |
| 265 | 0.52 | 10.12 | 20.00 | 1.56 | 0.39 | 1.20 | 119.94 | 39.70 | 159.64 | 0.368 | No | No | 2.00 |
| 266 | 0.54 | 9.99 | 20.00 | 1.58 | 0.39 | 1.20 | 118.45 | 39.50 | 157.94 | 0.352 | No | No | 2.00 |
| 267 | 0.56 | 9.84 | 20.00 | 1.60 | 0.39 | 1.20 | 116.72 | 39.26 | 155.99 | 0.334 | No | No | 2.00 |
| 268 | 0.58 | 9.75 | 20.00 | 1.61 | 0.40 | 1.20 | 115.60 | 39.11 | 154.71 | 0.323 | No | No | 2.00 |
| 269 | 0.60 | 9.92 | 20.00 | 1.59 | 0.39 | 1.20 | 117.38 | 39.35 | 156.74 | 0.340 | No | No | 2.00 |
| 270 | 0.62 | 10.25 | 20.00 | 1.57 | 0.39 | 1.19 | 120.77 | 39.81 | 160.58 | 0.378 | No | No | 2.00 |
| 271 | 0.64 | 10.27 | 20.00 | 1.57 | 0.39 | 1.19 | 120.81 | 39.82 | 160.63 | 0.378 | No | No | 2.00 |
| 272 | 0.66 | 9.95 | 20.00 | 1.60 | 0.39 | 1.19 | 117.38 | 39.35 | 156.73 | 0.340 | No | No | 2.00 |
| 273 | 0.68 | 9.34 | 20.00 | 1.64 | 0.41 | 1.20 | 110.75 | 38.46 | 149.20 | 0.284 | No | No | 2.00 |
| 274 | 0.70 | 8.73 | 20.00 | 1.68 | 0.42 | 1.21 | 103.96 | 37.54 | 141.50 | 0.241 | No | No | 1.85 |
| 275 | 0.72 | 7.82 | 20.00 | 1.73 | 0.44 | 1.21 | 93.99 | 36.19 | 130.18 | 0.198 | No | No | 1.42 |
| 276 | 0.74 | 7.14 | 20.00 | 1.77 | 0.45 | 1.22 | 86.33 | 35.15 | 121.49 | 0.175 | No | No | 1.19 |
| 277 | 0.76 | 6.49 | 20.00 | 1.82 | 0.47 | 1.23 | 79.02 | 34.17 | 113.19 | 0.158 | No | No | 1.02 |
| 278 | 0.78 | 5.87 | 20.00 | 1.86 | 0.49 | 1.24 | 71.94 | 33.21 | 105.15 | 0.145 | No | No | 0.90 |
| 279 | 0.80 | 5.22 | 20.00 | 1.90 | 0.51 | 1.25 | 64.39 | 32.19 | 96.58 | 0.133 | No | No | 0.79 |
| 280 | 0.82 | 4.43 | 20.00 | 1.98 | 0.53 | 1.26 | 55.29 | 30.96 | 86.25 | 0.122 | No | No | 0.70 |
| 281 | 0.84 | 3.98 | 20.00 | 2.03 | 0.55 | 1.26 | 49.99 | 30.24 | 80.23 | 0.116 | No | No | 0.65 |
| 282 | 0.86 | 3.72 | 20.00 | 2.01 | 0.55 | 1.27 | 46.85 | 29.82 | 76.66 | 0.113 | No | No | 0.61 |
| 283 | 0.88 | 3.62 | 20.00 | 1.98 | 0.56 | 1.27 | 45.64 | 29.65 | 75.29 | 0.112 | No | No | 0.59 |
| 284 | 0.90 | 3.69 | 20.00 | 1.95 | 0.56 | 1.27 | 46.33 | 29.75 | 76.08 | 0.112 | No | No | 0.59 |
| 285 | 0.92 | 3.87 | 20.00 | 1.89 | 0.55 | 1.26 | 48.39 | 30.03 | 78.42 | 0.114 | No | No | 0.59 |
| 286 | 0.94 | 4.08 | 20.00 | 1.92 | 0.54 | 1.26 | 50.79 | 30.35 | 81.14 | 0.117 | No | No | 0.61 |
| 287 | 0.96 | 3.67 | 20.00 | 2.16 | 0.56 | 1.26 | 45.98 | 29.70 | 75.68 | 0.112 | No | No | 0.57 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 288 | 0.98 | 2.65 | 20.00 | 2.42 | 0.60 | 1.28 | 33.60 | 28.03 | 61.63 | 0.101 | No | No | 0.51 |
| 289 | 1.00 | 2.13 | 20.00 | 2.52 | 0.62 | 1.29 | 27.32 | 27.18 | 54.50 | 0.096 | No | No | 0.48 |
| 290 | 1.02 | 1.97 | 20.00 | 2.66 | 0.63 | 1.29 | 25.46 | 0.00 | 25.46 | 4.000 | No | Yes | 2.00 |
| 291 | 1.04 | 1.76 | 20.00 | 2.73 | 0.64 | 1.30 | 22.90 | 0.00 | 22.90 | 4.000 | No | Yes | 2.00 |
| 292 | 1.06 | 1.70 | 20.00 | 2.75 | 0.64 | 1.30 | 21.85 | 0.00 | 21.85 | 4.000 | No | Yes | 2.00 |
| 293 | 1.08 | 1.94 | 20.00 | 2.66 | 0.63 | 1.29 | 24.87 | 0.00 | 24.87 | 4.000 | No | Yes | 2.00 |
| 294 | 1.10 | 2.72 | 20.00 | 2.41 | 0.60 | 1.27 | 34.25 | 28.11 | 62.36 | 0.101 | No | No | 0.50 |
| 295 | 1.12 | 4.00 | 20.00 | 2.07 | 0.55 | 1.24 | 49.21 | 30.14 | 79.35 | 0.115 | No | No | 0.58 |
| 296 | 1.14 | 4.37 | 20.00 | 1.96 | 0.54 | 1.24 | 53.48 | 30.71 | 84.19 | 0.120 | No | No | 0.61 |
| 297 | 1.16 | 4.29 | 20.00 | 1.88 | 0.54 | 1.24 | 52.51 | 30.58 | 83.09 | 0.119 | No | No | 0.60 |
| 298 | 1.18 | 4.04 | 20.00 | 1.90 | 0.55 | 1.24 | 49.61 | 30.19 | 79.80 | 0.116 | No | No | 0.58 |
| 299 | 1.20 | 3.46 | 20.00 | 1.98 | 0.57 | 1.25 | 42.83 | 29.27 | 72.10 | 0.109 | No | No | 0.54 |
| 300 | 1.22 | 2.93 | 20.00 | 2.09 | 0.59 | 1.26 | 36.55 | 28.43 | 64.98 | 0.103 | No | No | 0.50 |
| 301 | 1.24 | 2.42 | 20.00 | 2.26 | 0.61 | 1.27 | 30.46 | 27.60 | 58.06 | 0.098 | No | No | 0.47 |
| 302 | 1.26 | 2.09 | 20.00 | 2.51 | 0.63 | 1.27 | 26.52 | 27.07 | 53.59 | 0.095 | No | No | 0.46 |
| 303 | 1.28 | 2.12 | 20.00 | 2.59 | 0.62 | 1.27 | 26.86 | 27.11 | 53.97 | 0.095 | No | No | 0.46 |
| 304 | 1.30 | 2.21 | 20.00 | 2.59 | 0.62 | 1.27 | 27.83 | 27.25 | 55.07 | 0.096 | No | No | 0.46 |
| 305 | 1.32 | 2.50 | 20.00 | 2.47 | 0.61 | 1.26 | 31.26 | 27.71 | 58.97 | 0.099 | No | No | 0.48 |
| 306 | 1.34 | 3.14 | 20.00 | 2.26 | 0.58 | 1.24 | 38.80 | 28.73 | 67.53 | 0.105 | No | No | 0.51 |
| 307 | 1.36 | 4.19 | 20.00 | 2.05 | 0.54 | 1.22 | 50.80 | 30.35 | 81.15 | 0.117 | No | No | 0.58 |
| 308 | 1.38 | 4.87 | 20.00 | 1.96 | 0.52 | 1.21 | 58.50 | 31.39 | 89.89 | 0.126 | No | No | 0.63 |
| 309 | 1.40 | 4.62 | 20.00 | 2.00 | 0.53 | 1.22 | 55.64 | 31.01 | 86.65 | 0.122 | No | No | 0.61 |
| 310 | 1.42 | 3.87 | 20.00 | 2.13 | 0.55 | 1.23 | 47.10 | 29.85 | 76.95 | 0.113 | No | No | 0.55 |
| 311 | 1.44 | 3.10 | 20.00 | 2.30 | 0.58 | 1.24 | 38.13 | 28.64 | 66.77 | 0.105 | No | No | 0.50 |
| 312 | 1.46 | 3.10 | 20.00 | 2.33 | 0.58 | 1.24 | 38.08 | 28.63 | 66.72 | 0.105 | No | No | 0.50 |
| 313 | 1.48 | 1.75 | 20.00 | 2.67 | 0.64 | 1.26 | 21.99 | 0.00 | 21.99 | 4.000 | No | Yes | 2.00 |
| 314 | 1.50 | 1.45 | 20.00 | 2.75 | 0.66 | 1.27 | 18.34 | 0.00 | 18.34 | 4.000 | No | Yes | 2.00 |
| 315 | 1.52 | 1.07 | 20.00 | 2.91 | 0.68 | 1.28 | 13.77 | 0.00 | 13.77 | 4.000 | No | Yes | 2.00 |
| 316 | 1.54 | 0.83 | 20.00 | 3.05 | 0.70 | 1.28 | 10.71 | 0.00 | 10.71 | 4.000 | No | Yes | 2.00 |
| 317 | 1.56 | 0.93 | 20.00 | 3.03 | 0.69 | 1.28 | 11.88 | 0.00 | 11.88 | 4.000 | No | Yes | 2.00 |
| 318 | 1.58 | 1.41 | 20.00 | 2.79 | 0.66 | 1.26 | 17.50 | 0.00 | 17.50 | 4.000 | No | Yes | 2.00 |
| 319 | 1.60 | 1.51 | 20.00 | 2.71 | 0.66 | 1.26 | 18.73 | 0.00 | 18.73 | 4.000 | No | Yes | 2.00 |
| 320 | 1.62 | 1.22 | 20.00 | 2.82 | 0.67 | 1.26 | 15.31 | 0.00 | 15.31 | 4.000 | No | Yes | 2.00 |
| 321 | 1.64 | 1.02 | 20.00 | 2.89 | 0.69 | 1.27 | 12.83 | 0.00 | 12.83 | 4.000 | No | Yes | 2.00 |
| 322 | 1.66 | 0.80 | 20.00 | 3.05 | 0.70 | 1.27 | 10.00 | 0.00 | 10.00 | 4.000 | No | Yes | 2.00 |
| 323 | 1.68 | 0.89 | 20.00 | 3.06 | 0.70 | 1.27 | 11.02 | 0.00 | 11.02 | 4.000 | No | Yes | 2.00 |
| 324 | 1.70 | 1.11 | 20.00 | 2.90 | 0.68 | 1.26 | 13.61 | 0.00 | 13.61 | 4.000 | No | Yes | 2.00 |
| 325 | 1.72 | 1.36 | 20.00 | 2.67 | 0.67 | 1.25 | 16.71 | 0.00 | 16.71 | 4.000 | No | Yes | 2.00 |
| 326 | 1.74 | 1.35 | 20.00 | 2.67 | 0.67 | 1.25 | 16.60 | 0.00 | 16.60 | 4.000 | No | Yes | 2.00 |
| 327 | 1.76 | 1.11 | 20.00 | 2.81 | 0.68 | 1.25 | 13.72 | 0.00 | 13.72 | 4.000 | No | Yes | 2.00 |
| 328 | 1.78 | 1.02 | 20.00 | 2.85 | 0.69 | 1.26 | 12.66 | 0.00 | 12.66 | 4.000 | No | Yes | 2.00 |
| 329 | 1.80 | 1.04 | 20.00 | 2.81 | 0.69 | 1.25 | 12.79 | 0.00 | 12.79 | 4.000 | No | Yes | 2.00 |
| 330 | 1.82 | 0.97 | 20.00 | 2.81 | 0.69 | 1.25 | 11.89 | 0.00 | 11.89 | 4.000 | No | Yes | 2.00 |
| 331 | 1.84 | 0.87 | 20.00 | 2.87 | 0.70 | 1.26 | 10.76 | 0.00 | 10.76 | 4.000 | No | Yes | 2.00 |
| 332 | 1.86 | 0.91 | 20.00 | 2.87 | 0.70 | 1.25 | 11.11 | 0.00 | 11.11 | 4.000 | No | Yes | 2.00 |
| 333 | 1.88 | 1.09 | 20.00 | 2.74 | 0.68 | 1.25 | 13.28 | 0.00 | 13.28 | 4.000 | No | Yes | 2.00 |
| 334 | 1.90 | 1.17 | 20.00 | 2.85 | 0.68 | 1.24 | 14.25 | 0.00 | 14.25 | 4.000 | No | Yes | 2.00 |
| 335 | 1.92 | 1.19 | 20.00 | 2.90 | 0.68 | 1.24 | 14.42 | 0.00 | 14.42 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 336 | 1.94 | 1.24 | 20.00 | 2.87 | 0.68 | 1.24 | 15.01 | 0.00 | 15.01 | 4.000 | No | Yes | 2.00 |
| 337 | 1.96 | 1.02 | 20.00 | 3.00 | 0.69 | 1.24 | 12.44 | 0.00 | 12.44 | 4.000 | No | Yes | 2.00 |
| 338 | 1.98 | 1.11 | 20.00 | 2.91 | 0.68 | 1.24 | 13.67 | 0.00 | 13.67 | 4.000 | No | Yes | 2.00 |
| 339 | 2.00 | 0.98 | 20.00 | 2.99 | 0.69 | 1.24 | 12.10 | 0.00 | 12.10 | 4.000 | No | Yes | 2.00 |
| 340 | 2.02 | 0.86 | 100.00 | 3.10 | 0.58 | 1.20 | 10.16 | 0.00 | 10.16 | 4.000 | No | Yes | 2.00 |
| 341 | 2.04 | 0.88 | 100.00 | 3.08 | 0.58 | 1.20 | 10.35 | 0.00 | 10.35 | 4.000 | No | Yes | 2.00 |
| 342 | 2.06 | 1.06 | 100.00 | 2.90 | 0.57 | 1.19 | 12.34 | 0.00 | 12.34 | 4.000 | No | Yes | 2.00 |
| 343 | 2.08 | 1.59 | 93.33 | 2.59 | 0.55 | 1.18 | 18.44 | 59.06 | 77.51 | 0.114 | No | No | 0.53 |
| 344 | 2.10 | 3.40 | 54.74 | 2.11 | 0.51 | 1.16 | 38.79 | 58.01 | 96.79 | 0.133 | No | No | 0.65 |
| 345 | 2.12 | 5.66 | 35.68 | 1.87 | 0.46 | 1.15 | 63.98 | 54.00 | 117.98 | 0.167 | No | No | 0.86 |
| 346 | 2.14 | 6.45 | 27.73 | 1.77 | 0.46 | 1.15 | 72.81 | 47.06 | 119.87 | 0.171 | No | No | 0.88 |
| 347 | 2.16 | 6.29 | 27.04 | 1.76 | 0.46 | 1.15 | 71.14 | 45.77 | 116.91 | 0.165 | No | No | 0.84 |
| 348 | 2.18 | 6.07 | 24.57 | 1.73 | 0.48 | 1.15 | 68.86 | 41.52 | 110.38 | 0.153 | No | No | 0.76 |
| 349 | 2.20 | 5.96 | 24.56 | 1.73 | 0.48 | 1.15 | 67.42 | 41.25 | 108.67 | 0.150 | No | No | 0.74 |
| 350 | 2.22 | 5.95 | 22.90 | 1.71 | 0.49 | 1.15 | 67.43 | 38.38 | 105.80 | 0.146 | No | No | 0.71 |
| 351 | 2.24 | 5.82 | 20.95 | 1.68 | 0.50 | 1.15 | 66.19 | 34.43 | 100.62 | 0.138 | No | No | 0.67 |
| 352 | 2.26 | 5.36 | 23.67 | 1.72 | 0.50 | 1.15 | 61.00 | 38.69 | 99.69 | 0.137 | No | No | 0.66 |
| 353 | 2.28 | 5.00 | 26.76 | 1.76 | 0.50 | 1.15 | 56.87 | 42.71 | 99.58 | 0.137 | No | No | 0.66 |
| 354 | 2.30 | 4.65 | 33.36 | 1.84 | 0.49 | 1.15 | 52.75 | 49.41 | 102.16 | 0.140 | No | No | 0.68 |
| 355 | 2.32 | 4.31 | 44.58 | 1.98 | 0.49 | 1.15 | 48.85 | 56.40 | 105.25 | 0.145 | No | No | 0.70 |
| 356 | 2.34 | 4.08 | 52.71 | 2.08 | 0.49 | 1.15 | 46.24 | 59.32 | 105.56 | 0.145 | No | No | 0.70 |
| 357 | 2.36 | 3.88 | 62.31 | 2.20 | 0.49 | 1.14 | 43.96 | 61.66 | 105.62 | 0.145 | No | No | 0.70 |
| 358 | 2.38 | 3.73 | 68.77 | 2.28 | 0.49 | 1.14 | 42.24 | 62.67 | 104.92 | 0.144 | No | No | 0.70 |
| 359 | 2.40 | 3.54 | 75.18 | 2.36 | 0.49 | 1.14 | 40.07 | 63.24 | 103.31 | 0.142 | No | No | 0.68 |
| 360 | 2.42 | 3.45 | 73.70 | 2.34 | 0.49 | 1.14 | 39.13 | 62.71 | 101.84 | 0.140 | No | No | 0.67 |
| 361 | 2.44 | 3.67 | 66.75 | 2.26 | 0.49 | 1.14 | 41.55 | 62.04 | 103.59 | 0.142 | No | No | 0.68 |
| 362 | 2.46 | 4.41 | 56.20 | 2.12 | 0.47 | 1.14 | 49.59 | 61.45 | 111.04 | 0.154 | No | No | 0.75 |
| 363 | 2.48 | 6.08 | 44.82 | 1.98 | 0.44 | 1.12 | 67.66 | 61.30 | 128.96 | 0.194 | No | No | 1.00 |
| 364 | 2.50 | 4.93 | 59.08 | 2.16 | 0.46 | 1.13 | 55.14 | 63.90 | 119.04 | 0.169 | No | No | 0.84 |
| 365 | 2.52 | 3.05 | 80.96 | 2.43 | 0.51 | 1.14 | 34.50 | 62.48 | 96.98 | 0.134 | No | No | 0.62 |
| 366 | 2.54 | 2.16 | 92.92 | 2.58 | 0.53 | 1.15 | 24.50 | 60.88 | 85.38 | 0.121 | No | No | 0.55 |
| 367 | 2.56 | 1.67 | 99.29 | 2.66 | 0.55 | 1.15 | 19.04 | 0.00 | 19.04 | 4.000 | No | Yes | 2.00 |
| 368 | 2.58 | 1.41 | 100.00 | 2.75 | 0.56 | 1.15 | 15.98 | 0.00 | 15.98 | 4.000 | No | Yes | 2.00 |
| 369 | 2.60 | 1.23 | 100.00 | 2.78 | 0.57 | 1.15 | 13.78 | 0.00 | 13.78 | 4.000 | No | Yes | 2.00 |
| 370 | 2.62 | 1.21 | 100.00 | 2.75 | 0.57 | 1.15 | 13.37 | 0.00 | 13.37 | 4.000 | No | Yes | 2.00 |
| 371 | 2.64 | 1.24 | 100.00 | 2.68 | 0.57 | 1.15 | 13.62 | 0.00 | 13.62 | 4.000 | No | Yes | 2.00 |
| 372 | 2.66 | 1.23 | 100.00 | 2.73 | 0.57 | 1.15 | 13.53 | 0.00 | 13.53 | 4.000 | No | Yes | 2.00 |
| 373 | 2.68 | 1.19 | 100.00 | 2.77 | 0.57 | 1.15 | 13.07 | 0.00 | 13.07 | 4.000 | No | Yes | 2.00 |
| 374 | 2.70 | 1.18 | 100.00 | 2.75 | 0.57 | 1.15 | 12.91 | 0.00 | 12.91 | 4.000 | No | Yes | 2.00 |
| 375 | 2.72 | 1.18 | 100.00 | 2.77 | 0.57 | 1.15 | 12.84 | 0.00 | 12.84 | 4.000 | No | Yes | 2.00 |
| 376 | 2.74 | 1.12 | 100.00 | 2.80 | 0.57 | 1.15 | 12.19 | 0.00 | 12.19 | 4.000 | No | Yes | 2.00 |
| 377 | 2.76 | 1.06 | 100.00 | 2.83 | 0.58 | 1.15 | 11.51 | 0.00 | 11.51 | 4.000 | No | Yes | 2.00 |
| 378 | 2.78 | 1.02 | 100.00 | 2.84 | 0.58 | 1.15 | 10.97 | 0.00 | 10.97 | 4.000 | No | Yes | 2.00 |
| 379 | 2.80 | 1.01 | 100.00 | 2.83 | 0.58 | 1.15 | 10.84 | 0.00 | 10.84 | 4.000 | No | Yes | 2.00 |
| 380 | 2.82 | 1.03 | 100.00 | 2.84 | 0.58 | 1.15 | 11.02 | 0.00 | 11.02 | 4.000 | No | Yes | 2.00 |
| 381 | 2.84 | 1.05 | 100.00 | 2.83 | 0.58 | 1.14 | 11.16 | 0.00 | 11.16 | 4.000 | No | Yes | 2.00 |
| 382 | 2.86 | 1.04 | 100.00 | 2.81 | 0.58 | 1.14 | 11.06 | 0.00 | 11.06 | 4.000 | No | Yes | 2.00 |
| 383 | 2.88 | 1.05 | 100.00 | 2.76 | 0.58 | 1.14 | 11.09 | 0.00 | 11.09 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 384 | 2.90 | 1.02 | 100.00 | 2.83 | 0.58 | 1.14 | 10.77 | 0.00 | 10.77 | 4.000 | No | Yes | 2.00 |
| 385 | 2.92 | 1.02 | 100.00 | 2.87 | 0.58 | 1.14 | 10.71 | 0.00 | 10.71 | 4.000 | No | Yes | 2.00 |
| 386 | 2.94 | 1.05 | 100.00 | 2.83 | 0.58 | 1.14 | 11.03 | 0.00 | 11.03 | 4.000 | No | Yes | 2.00 |
| 387 | 2.96 | 1.24 | 100.00 | 2.71 | 0.57 | 1.14 | 13.10 | 0.00 | 13.10 | 4.000 | No | Yes | 2.00 |
| 388 | 2.98 | 1.25 | 100.00 | 2.77 | 0.57 | 1.14 | 13.22 | 0.00 | 13.22 | 4.000 | No | Yes | 2.00 |
| 389 | 3.00 | 1.22 | 100.00 | 2.80 | 0.57 | 1.13 | 12.86 | 0.00 | 12.86 | 4.000 | No | Yes | 2.00 |
| 390 | 3.02 | 1.29 | 100.00 | 2.84 | 0.57 | 1.13 | 13.56 | 0.00 | 13.56 | 4.000 | No | Yes | 2.00 |
| 391 | 3.04 | 1.54 | 100.00 | 2.71 | 0.56 | 1.13 | 16.10 | 0.00 | 16.10 | 4.000 | No | Yes | 2.00 |
| 392 | 3.06 | 1.62 | 98.33 | 2.65 | 0.56 | 1.13 | 17.36 | 0.00 | 17.36 | 4.000 | No | Yes | 2.00 |
| 393 | 3.08 | 1.51 | 100.00 | 2.68 | 0.56 | 1.13 | 16.57 | 0.00 | 16.57 | 4.000 | No | Yes | 2.00 |
| 394 | 3.10 | 1.35 | 100.00 | 2.77 | 0.57 | 1.13 | 14.57 | 0.00 | 14.57 | 4.000 | No | Yes | 2.00 |
| 395 | 3.12 | 1.34 | 100.00 | 2.80 | 0.57 | 1.13 | 14.30 | 0.00 | 14.30 | 4.000 | No | Yes | 2.00 |
| 396 | 3.14 | 1.39 | 100.00 | 2.83 | 0.56 | 1.13 | 14.71 | 0.00 | 14.71 | 4.000 | No | Yes | 2.00 |
| 397 | 3.16 | 1.41 | 100.00 | 2.84 | 0.56 | 1.12 | 14.95 | 0.00 | 14.95 | 4.000 | No | Yes | 2.00 |
| 398 | 3.18 | 1.36 | 100.00 | 2.86 | 0.57 | 1.12 | 14.47 | 0.00 | 14.47 | 4.000 | No | Yes | 2.00 |
| 399 | 3.20 | 1.28 | 100.00 | 2.91 | 0.57 | 1.12 | 13.70 | 0.00 | 13.70 | 4.000 | No | Yes | 2.00 |
| 400 | 3.22 | 1.21 | 100.00 | 2.94 | 0.57 | 1.12 | 12.87 | 0.00 | 12.87 | 4.000 | No | Yes | 2.00 |
| 401 | 3.24 | 1.21 | 100.00 | 2.92 | 0.57 | 1.12 | 12.81 | 0.00 | 12.81 | 4.000 | No | Yes | 2.00 |
| 402 | 3.26 | 1.31 | 100.00 | 2.87 | 0.57 | 1.12 | 13.80 | 0.00 | 13.80 | 4.000 | No | Yes | 2.00 |
| 403 | 3.28 | 1.39 | 100.00 | 2.84 | 0.56 | 1.12 | 14.62 | 0.00 | 14.62 | 4.000 | No | Yes | 2.00 |
| 404 | 3.30 | 1.43 | 100.00 | 2.84 | 0.56 | 1.12 | 15.03 | 0.00 | 15.03 | 4.000 | No | Yes | 2.00 |
| 405 | 3.32 | 1.39 | 100.00 | 2.95 | 0.56 | 1.11 | 14.63 | 0.00 | 14.63 | 4.000 | No | Yes | 2.00 |
| 406 | 3.34 | 1.40 | 100.00 | 2.98 | 0.56 | 1.11 | 14.72 | 0.00 | 14.72 | 4.000 | No | Yes | 2.00 |
| 407 | 3.36 | 1.44 | 100.00 | 2.99 | 0.56 | 1.11 | 15.10 | 0.00 | 15.10 | 4.000 | No | Yes | 2.00 |
| 408 | 3.38 | 1.47 | 100.00 | 2.98 | 0.56 | 1.11 | 15.34 | 0.00 | 15.34 | 4.000 | No | Yes | 2.00 |
| 409 | 3.40 | 1.68 | 100.00 | 2.90 | 0.55 | 1.11 | 18.57 | 0.00 | 18.57 | 4.000 | No | Yes | 2.00 |
| 410 | 3.42 | 1.59 | 100.00 | 2.93 | 0.55 | 1.11 | 17.49 | 0.00 | 17.49 | 4.000 | No | Yes | 2.00 |
| 411 | 3.44 | 1.47 | 100.00 | 2.96 | 0.56 | 1.11 | 16.14 | 0.00 | 16.14 | 4.000 | No | Yes | 2.00 |
| 412 | 3.46 | 1.42 | 100.00 | 2.97 | 0.56 | 1.11 | 15.49 | 0.00 | 15.49 | 4.000 | No | Yes | 2.00 |
| 413 | 3.48 | 1.42 | 100.00 | 2.92 | 0.56 | 1.10 | 15.43 | 0.00 | 15.43 | 4.000 | No | Yes | 2.00 |
| 414 | 3.50 | 1.37 | 100.00 | 2.90 | 0.56 | 1.10 | 14.90 | 0.00 | 14.90 | 4.000 | No | Yes | 2.00 |
| 415 | 3.52 | 1.26 | 100.00 | 2.90 | 0.57 | 1.10 | 13.76 | 0.00 | 13.76 | 4.000 | No | Yes | 2.00 |
| 416 | 3.54 | 1.22 | 100.00 | 2.89 | 0.57 | 1.10 | 13.24 | 0.00 | 13.24 | 4.000 | No | Yes | 2.00 |
| 417 | 3.56 | 1.17 | 100.00 | 2.87 | 0.57 | 1.10 | 12.73 | 0.00 | 12.73 | 4.000 | No | Yes | 2.00 |
| 418 | 3.58 | 1.18 | 100.00 | 2.83 | 0.57 | 1.10 | 12.77 | 0.00 | 12.77 | 4.000 | No | Yes | 2.00 |
| 419 | 3.60 | 1.13 | 100.00 | 2.80 | 0.57 | 1.10 | 12.19 | 0.00 | 12.19 | 4.000 | No | Yes | 2.00 |
| 420 | 3.62 | 1.11 | 100.00 | 2.77 | 0.57 | 1.10 | 11.92 | 0.00 | 11.92 | 4.000 | No | Yes | 2.00 |
| 421 | 3.64 | 1.08 | 100.00 | 2.79 | 0.58 | 1.10 | 11.60 | 0.00 | 11.60 | 4.000 | No | Yes | 2.00 |
| 422 | 3.66 | 1.08 | 100.00 | 2.79 | 0.58 | 1.10 | 11.57 | 0.00 | 11.57 | 4.000 | No | Yes | 2.00 |
| 423 | 3.68 | 1.08 | 100.00 | 2.79 | 0.58 | 1.10 | 11.57 | 0.00 | 11.57 | 4.000 | No | Yes | 2.00 |
| 424 | 3.70 | 1.09 | 100.00 | 2.81 | 0.58 | 1.10 | 11.64 | 0.00 | 11.64 | 4.000 | No | Yes | 2.00 |
| 425 | 3.72 | 1.07 | 100.00 | 2.84 | 0.58 | 1.10 | 11.42 | 0.00 | 11.42 | 4.000 | No | Yes | 2.00 |
| 426 | 3.74 | 1.06 | 100.00 | 2.86 | 0.58 | 1.09 | 11.35 | 0.00 | 11.35 | 4.000 | No | Yes | 2.00 |
| 427 | 3.76 | 1.06 | 100.00 | 2.87 | 0.58 | 1.09 | 11.34 | 0.00 | 11.34 | 4.000 | No | Yes | 2.00 |
| 428 | 3.78 | 1.18 | 100.00 | 2.85 | 0.57 | 1.09 | 12.47 | 0.00 | 12.47 | 4.000 | No | Yes | 2.00 |
| 429 | 3.80 | 1.42 | 100.00 | 2.78 | 0.56 | 1.09 | 14.93 | 0.00 | 14.93 | 4.000 | No | Yes | 2.00 |
| 430 | 3.82 | 1.90 | 97.92 | 2.65 | 0.55 | 1.09 | 19.91 | 0.00 | 19.91 | 4.000 | No | Yes | 2.00 |
| 431 | 3.84 | 1.70 | 99.18 | 2.66 | 0.55 | 1.09 | 17.96 | 0.00 | 17.96 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 432 | 3.86 | 1.48 | 100.00 | 2.75 | 0.56 | 1.09 | 15.76 | 0.00 | 15.76 | 4.000 | No | Yes | 2.00 |
| 433 | 3.88 | 1.25 | 100.00 | 2.94 | 0.57 | 1.09 | 13.29 | 0.00 | 13.29 | 4.000 | No | Yes | 2.00 |
| 434 | 3.90 | 1.07 | 100.00 | 3.05 | 0.58 | 1.09 | 11.36 | 0.00 | 11.36 | 4.000 | No | Yes | 2.00 |
| 435 | 3.92 | 1.05 | 100.00 | 3.02 | 0.58 | 1.09 | 11.09 | 0.00 | 11.09 | 4.000 | No | Yes | 2.00 |
| 436 | 3.94 | 1.03 | 100.00 | 2.97 | 0.58 | 1.09 | 10.94 | 0.00 | 10.94 | 4.000 | No | Yes | 2.00 |
| 437 | 3.96 | 1.29 | 100.00 | 2.84 | 0.57 | 1.08 | 13.25 | 0.00 | 13.25 | 4.000 | No | Yes | 2.00 |
| 438 | 3.98 | 1.27 | 100.00 | 2.83 | 0.57 | 1.08 | 13.03 | 0.00 | 13.03 | 4.000 | No | Yes | 2.00 |
| 439 | 4.00 | 1.27 | 100.00 | 2.84 | 0.57 | 1.08 | 12.97 | 0.00 | 12.97 | 4.000 | No | Yes | 2.00 |
| 440 | 4.02 | 1.28 | 100.00 | 2.78 | 0.57 | 1.08 | 13.05 | 0.00 | 13.05 | 4.000 | No | Yes | 2.00 |
| 441 | 4.04 | 1.26 | 100.00 | 2.77 | 0.57 | 1.08 | 12.81 | 0.00 | 12.81 | 4.000 | No | Yes | 2.00 |
| 442 | 4.06 | 1.26 | 100.00 | 2.76 | 0.57 | 1.08 | 12.77 | 0.00 | 12.77 | 4.000 | No | Yes | 2.00 |
| 443 | 4.08 | 1.19 | 100.00 | 2.75 | 0.57 | 1.08 | 12.04 | 0.00 | 12.04 | 4.000 | No | Yes | 2.00 |
| 444 | 4.10 | 1.16 | 100.00 | 2.73 | 0.58 | 1.08 | 11.61 | 0.00 | 11.61 | 4.000 | No | Yes | 2.00 |
| 445 | 4.12 | 1.13 | 100.00 | 2.73 | 0.58 | 1.08 | 11.33 | 0.00 | 11.33 | 4.000 | No | Yes | 2.00 |
| 446 | 4.14 | 1.11 | 100.00 | 2.75 | 0.58 | 1.08 | 11.01 | 0.00 | 11.01 | 4.000 | No | Yes | 2.00 |
| 447 | 4.16 | 1.13 | 100.00 | 2.77 | 0.58 | 1.07 | 11.21 | 0.00 | 11.21 | 4.000 | No | Yes | 2.00 |
| 448 | 4.18 | 1.15 | 100.00 | 2.76 | 0.58 | 1.07 | 11.38 | 0.00 | 11.38 | 4.000 | No | Yes | 2.00 |
| 449 | 4.20 | 1.14 | 100.00 | 2.77 | 0.58 | 1.07 | 11.31 | 0.00 | 11.31 | 4.000 | No | Yes | 2.00 |
| 450 | 4.22 | 1.14 | 100.00 | 2.79 | 0.58 | 1.07 | 11.26 | 0.00 | 11.26 | 4.000 | No | Yes | 2.00 |
| 451 | 4.24 | 1.18 | 100.00 | 2.80 | 0.58 | 1.07 | 11.58 | 0.00 | 11.58 | 4.000 | No | Yes | 2.00 |
| 452 | 4.26 | 1.23 | 100.00 | 2.78 | 0.57 | 1.07 | 12.10 | 0.00 | 12.10 | 4.000 | No | Yes | 2.00 |
| 453 | 4.28 | 1.27 | 100.00 | 2.75 | 0.57 | 1.07 | 12.50 | 0.00 | 12.50 | 4.000 | No | Yes | 2.00 |
| 454 | 4.30 | 1.25 | 100.00 | 2.75 | 0.57 | 1.07 | 12.33 | 0.00 | 12.33 | 4.000 | No | Yes | 2.00 |
| 455 | 4.32 | 1.21 | 100.00 | 2.79 | 0.58 | 1.07 | 11.83 | 0.00 | 11.83 | 4.000 | No | Yes | 2.00 |
| 456 | 4.34 | 1.22 | 100.00 | 2.78 | 0.57 | 1.07 | 11.90 | 0.00 | 11.90 | 4.000 | No | Yes | 2.00 |
| 457 | 4.36 | 1.30 | 100.00 | 2.80 | 0.57 | 1.07 | 12.61 | 0.00 | 12.61 | 4.000 | No | Yes | 2.00 |
| 458 | 4.38 | 1.50 | 100.00 | 2.75 | 0.57 | 1.06 | 14.58 | 0.00 | 14.58 | 4.000 | No | Yes | 2.00 |
| 459 | 4.40 | 1.80 | 100.00 | 2.68 | 0.55 | 1.06 | 17.46 | 0.00 | 17.46 | 4.000 | No | Yes | 2.00 |
| 460 | 4.42 | 1.91 | 99.18 | 2.66 | 0.55 | 1.06 | 19.46 | 0.00 | 19.46 | 4.000 | No | Yes | 2.00 |
| 461 | 4.44 | 1.81 | 99.29 | 2.66 | 0.55 | 1.06 | 18.67 | 0.00 | 18.67 | 4.000 | No | Yes | 2.00 |
| 462 | 4.46 | 1.53 | 100.00 | 2.76 | 0.56 | 1.06 | 15.93 | 0.00 | 15.93 | 4.000 | No | Yes | 2.00 |
| 463 | 4.48 | 1.30 | 100.00 | 2.89 | 0.57 | 1.06 | 13.45 | 0.00 | 13.45 | 4.000 | No | Yes | 2.00 |
| 464 | 4.50 | 1.21 | 100.00 | 2.92 | 0.57 | 1.06 | 12.42 | 0.00 | 12.42 | 4.000 | No | Yes | 2.00 |
| 465 | 4.52 | 1.15 | 100.00 | 2.91 | 0.58 | 1.06 | 11.84 | 0.00 | 11.84 | 4.000 | No | Yes | 2.00 |
| 466 | 4.54 | 1.13 | 100.00 | 2.90 | 0.58 | 1.06 | 11.56 | 0.00 | 11.56 | 4.000 | No | Yes | 2.00 |
| 467 | 4.56 | 1.17 | 100.00 | 2.85 | 0.57 | 1.06 | 11.95 | 0.00 | 11.95 | 4.000 | No | Yes | 2.00 |
| 468 | 4.58 | 1.14 | 100.00 | 2.89 | 0.58 | 1.06 | 11.64 | 0.00 | 11.64 | 4.000 | No | Yes | 2.00 |
| 469 | 4.60 | 1.13 | 100.00 | 2.91 | 0.58 | 1.05 | 11.46 | 0.00 | 11.46 | 4.000 | No | Yes | 2.00 |
| 470 | 4.62 | 1.11 | 100.00 | 2.90 | 0.58 | 1.05 | 11.31 | 0.00 | 11.31 | 4.000 | No | Yes | 2.00 |
| 471 | 4.64 | 1.12 | 100.00 | 2.87 | 0.58 | 1.05 | 11.29 | 0.00 | 11.29 | 4.000 | No | Yes | 2.00 |
| 472 | 4.66 | 1.18 | 100.00 | 2.90 | 0.57 | 1.05 | 11.93 | 0.00 | 11.93 | 4.000 | No | Yes | 2.00 |
| 473 | 4.68 | 1.48 | 100.00 | 2.80 | 0.56 | 1.05 | 14.89 | 0.00 | 14.89 | 4.000 | No | Yes | 2.00 |
| 474 | 4.70 | 1.84 | 99.21 | 2.66 | 0.55 | 1.05 | 18.48 | 0.00 | 18.48 | 4.000 | No | Yes | 2.00 |
| 475 | 4.72 | 1.88 | 96.98 | 2.63 | 0.55 | 1.05 | 18.93 | 0.00 | 18.93 | 4.000 | No | Yes | 2.00 |
| 476 | 4.74 | 1.66 | 97.98 | 2.65 | 0.56 | 1.05 | 16.78 | 0.00 | 16.78 | 4.000 | No | Yes | 2.00 |
| 477 | 4.76 | 1.40 | 100.00 | 2.76 | 0.57 | 1.05 | 14.11 | 0.00 | 14.11 | 4.000 | No | Yes | 2.00 |
| 478 | 4.78 | 1.23 | 100.00 | 2.84 | 0.57 | 1.05 | 12.32 | 0.00 | 12.32 | 4.000 | No | Yes | 2.00 |
| 479 | 4.80 | 1.13 | 100.00 | 2.86 | 0.58 | 1.05 | 11.32 | 0.00 | 11.32 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 480 | 4.82 | 1.10 | 100.00 | 2.80 | 0.58 | 1.05 | 10.93 | 0.00 | 10.93 | 4.000 | No | Yes | 2.00 |
| 481 | 4.84 | 1.09 | 100.00 | 2.76 | 0.58 | 1.04 | 10.76 | 0.00 | 10.76 | 4.000 | No | Yes | 2.00 |
| 482 | 4.86 | 1.11 | 100.00 | 2.85 | 0.58 | 1.04 | 10.91 | 0.00 | 10.91 | 4.000 | No | Yes | 2.00 |
| 483 | 4.88 | 1.15 | 100.00 | 2.87 | 0.58 | 1.04 | 11.26 | 0.00 | 11.26 | 4.000 | No | Yes | 2.00 |
| 484 | 4.90 | 1.17 | 100.00 | 2.88 | 0.58 | 1.04 | 11.45 | 0.00 | 11.45 | 4.000 | No | Yes | 2.00 |
| 485 | 4.92 | 1.18 | 100.00 | 2.89 | 0.58 | 1.04 | 11.52 | 0.00 | 11.52 | 4.000 | No | Yes | 2.00 |
| 486 | 4.94 | 1.09 | 100.00 | 2.95 | 0.58 | 1.04 | 10.18 | 0.00 | 10.18 | 4.000 | No | Yes | 2.00 |
| 487 | 4.96 | 1.45 | 100.00 | 2.77 | 0.57 | 1.04 | 13.65 | 0.00 | 13.65 | 4.000 | No | Yes | 2.00 |
| 488 | 4.98 | 1.44 | 100.00 | 2.77 | 0.57 | 1.04 | 13.46 | 0.00 | 13.46 | 4.000 | No | Yes | 2.00 |
| 489 | 5.00 | 1.39 | 100.00 | 2.76 | 0.57 | 1.04 | 13.01 | 0.00 | 13.01 | 4.000 | No | Yes | 2.00 |
| 490 | 5.02 | 1.35 | 100.00 | 2.79 | 0.57 | 1.04 | 12.60 | 0.00 | 12.60 | 4.000 | No | Yes | 2.00 |
| 491 | 5.04 | 1.31 | 100.00 | 2.81 | 0.57 | 1.04 | 12.21 | 0.00 | 12.21 | 4.000 | No | Yes | 2.00 |
| 492 | 5.06 | 1.28 | 100.00 | 2.83 | 0.57 | 1.03 | 11.92 | 0.00 | 11.92 | 4.000 | No | Yes | 2.00 |
| 493 | 5.08 | 1.24 | 100.00 | 2.83 | 0.58 | 1.03 | 11.51 | 0.00 | 11.51 | 4.000 | No | Yes | 2.00 |
| 494 | 5.10 | 1.19 | 100.00 | 2.85 | 0.58 | 1.03 | 11.02 | 0.00 | 11.02 | 4.000 | No | Yes | 2.00 |
| 495 | 5.12 | 1.15 | 100.00 | 2.86 | 0.58 | 1.03 | 10.61 | 0.00 | 10.61 | 4.000 | No | Yes | 2.00 |
| 496 | 5.14 | 1.16 | 100.00 | 2.88 | 0.58 | 1.03 | 10.64 | 0.00 | 10.64 | 4.000 | No | Yes | 2.00 |
| 497 | 5.16 | 1.24 | 100.00 | 2.85 | 0.58 | 1.03 | 11.35 | 0.00 | 11.35 | 4.000 | No | Yes | 2.00 |
| 498 | 5.18 | 1.29 | 100.00 | 2.82 | 0.58 | 1.03 | 11.89 | 0.00 | 11.89 | 4.000 | No | Yes | 2.00 |
| 499 | 5.20 | 1.24 | 100.00 | 2.85 | 0.58 | 1.03 | 11.43 | 0.00 | 11.43 | 4.000 | No | Yes | 2.00 |
| 500 | 5.22 | 1.23 | 100.00 | 2.87 | 0.58 | 1.03 | 11.30 | 0.00 | 11.30 | 4.000 | No | Yes | 2.00 |
| 501 | 5.24 | 1.31 | 100.00 | 2.85 | 0.57 | 1.03 | 11.96 | 0.00 | 11.96 | 4.000 | No | Yes | 2.00 |
| 502 | 5.26 | 1.38 | 100.00 | 2.82 | 0.57 | 1.03 | 12.66 | 0.00 | 12.66 | 4.000 | No | Yes | 2.00 |
| 503 | 5.28 | 1.34 | 100.00 | 2.83 | 0.57 | 1.03 | 12.40 | 0.00 | 12.40 | 4.000 | No | Yes | 2.00 |
| 504 | 5.30 | 1.21 | 100.00 | 2.87 | 0.58 | 1.03 | 11.10 | 0.00 | 11.10 | 4.000 | No | Yes | 2.00 |
| 505 | 5.32 | 1.11 | 100.00 | 2.90 | 0.58 | 1.02 | 10.20 | 0.00 | 10.20 | 4.000 | No | Yes | 2.00 |
| 506 | 5.34 | 1.10 | 100.00 | 2.90 | 0.58 | 1.02 | 10.01 | 0.00 | 10.01 | 4.000 | No | Yes | 2.00 |
| 507 | 5.36 | 1.12 | 100.00 | 2.87 | 0.58 | 1.02 | 10.24 | 0.00 | 10.24 | 4.000 | No | Yes | 2.00 |
| 508 | 5.38 | 1.14 | 100.00 | 2.85 | 0.58 | 1.02 | 10.39 | 0.00 | 10.39 | 4.000 | No | Yes | 2.00 |
| 509 | 5.40 | 1.21 | 100.00 | 2.86 | 0.58 | 1.02 | 10.99 | 0.00 | 10.99 | 4.000 | No | Yes | 2.00 |
| 510 | 5.42 | 1.28 | 100.00 | 2.84 | 0.58 | 1.02 | 11.67 | 0.00 | 11.67 | 4.000 | No | Yes | 2.00 |
| 511 | 5.44 | 1.27 | 100.00 | 2.85 | 0.58 | 1.02 | 11.54 | 0.00 | 11.54 | 4.000 | No | Yes | 2.00 |
| 512 | 5.46 | 1.26 | 100.00 | 2.87 | 0.58 | 1.02 | 11.49 | 0.00 | 11.49 | 4.000 | No | Yes | 2.00 |
| 513 | 5.48 | 1.26 | 100.00 | 2.89 | 0.58 | 1.02 | 11.38 | 0.00 | 11.38 | 4.000 | No | Yes | 2.00 |
| 514 | 5.50 | 1.24 | 100.00 | 2.91 | 0.58 | 1.02 | 11.20 | 0.00 | 11.20 | 4.000 | No | Yes | 2.00 |
| 515 | 5.52 | 1.26 | 100.00 | 2.89 | 0.58 | 1.02 | 11.44 | 0.00 | 11.44 | 4.000 | No | Yes | 2.00 |
| 516 | 5.54 | 1.28 | 100.00 | 2.87 | 0.58 | 1.02 | 11.51 | 0.00 | 11.51 | 4.000 | No | Yes | 2.00 |
| 517 | 5.56 | 1.32 | 100.00 | 2.87 | 0.57 | 1.01 | 11.91 | 0.00 | 11.91 | 4.000 | No | Yes | 2.00 |
| 518 | 5.58 | 1.39 | 100.00 | 2.84 | 0.57 | 1.01 | 12.45 | 0.00 | 12.45 | 4.000 | No | Yes | 2.00 |
| 519 | 5.60 | 1.45 | 100.00 | 2.82 | 0.57 | 1.01 | 13.04 | 0.00 | 13.04 | 4.000 | No | Yes | 2.00 |
| 520 | 5.62 | 1.43 | 100.00 | 2.87 | 0.57 | 1.01 | 12.88 | 0.00 | 12.88 | 4.000 | No | Yes | 2.00 |
| 521 | 5.64 | 1.37 | 100.00 | 2.90 | 0.57 | 1.01 | 12.40 | 0.00 | 12.40 | 4.000 | No | Yes | 2.00 |
| 522 | 5.66 | 1.40 | 100.00 | 2.97 | 0.57 | 1.01 | 12.58 | 0.00 | 12.58 | 4.000 | No | Yes | 2.00 |
| 523 | 5.68 | 1.99 | 100.00 | 2.80 | 0.55 | 1.01 | 17.93 | 0.00 | 17.93 | 4.000 | No | Yes | 2.00 |
| 524 | 5.70 | 4.06 | 74.50 | 2.35 | 0.49 | 1.01 | 39.50 | 62.96 | 102.45 | 0.141 | No | No | 0.54 |
| 525 | 5.72 | 6.32 | 51.47 | 2.07 | 0.45 | 1.01 | 62.49 | 63.19 | 125.68 | 0.185 | No | No | 0.76 |
| 526 | 5.74 | 7.04 | 46.68 | 2.01 | 0.43 | 1.00 | 69.90 | 62.89 | 132.80 | 0.207 | No | No | 0.87 |
| 527 | 5.76 | 7.46 | 44.23 | 1.98 | 0.43 | 1.00 | 73.96 | 62.56 | 136.52 | 0.220 | No | No | 0.94 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 528 | 5.78 | 7.44 | 43.52 | 1.97 | 0.43 | 1.00 | 73.72 | 62.07 | 135.78 | 0.217 | No | No | 0.92 |
| 529 | 5.80 | 7.22 | 44.66 | 1.98 | 0.43 | 1.00 | 71.47 | 62.18 | 133.64 | 0.210 | No | No | 0.88 |
| 530 | 5.82 | 6.27 | 54.51 | 2.10 | 0.44 | 1.00 | 62.17 | 64.30 | 126.48 | 0.187 | No | No | 0.77 |
| 531 | 5.84 | 4.18 | 66.14 | 2.25 | 0.49 | 1.00 | 41.51 | 61.89 | 103.40 | 0.142 | No | No | 0.55 |
| 532 | 5.86 | 3.15 | 75.99 | 2.37 | 0.52 | 1.00 | 31.38 | 60.80 | 92.18 | 0.128 | No | No | 0.48 |
| 533 | 5.88 | 2.35 | 93.31 | 2.59 | 0.54 | 1.00 | 23.38 | 60.58 | 83.96 | 0.120 | No | No | 0.44 |
| 534 | 5.90 | 1.74 | 100.00 | 2.81 | 0.55 | 1.00 | 17.36 | 0.00 | 17.36 | 4.000 | No | Yes | 2.00 |
| 535 | 5.92 | 1.88 | 100.00 | 2.77 | 0.55 | 1.00 | 18.70 | 0.00 | 18.70 | 4.000 | No | Yes | 2.00 |
| 536 | 5.94 | 2.84 | 86.69 | 2.51 | 0.52 | 1.00 | 27.72 | 61.18 | 88.90 | 0.125 | No | No | 0.47 |
| 537 | 5.96 | 2.68 | 90.68 | 2.56 | 0.53 | 1.00 | 26.29 | 61.20 | 87.48 | 0.123 | No | No | 0.46 |
| 538 | 5.98 | 2.70 | 90.23 | 2.55 | 0.53 | 1.00 | 26.42 | 61.19 | 87.60 | 0.123 | No | No | 0.46 |
| 539 | 6.00 | 2.85 | 84.90 | 2.48 | 0.52 | 1.00 | 27.95 | 61.03 | 88.98 | 0.125 | No | No | 0.47 |
| 540 | 6.02 | 2.58 | 88.25 | 2.53 | 0.53 | 0.99 | 25.27 | 60.62 | 85.88 | 0.121 | No | No | 0.45 |
| 541 | 6.04 | 2.01 | 99.06 | 2.66 | 0.55 | 0.99 | 19.76 | 0.00 | 19.76 | 4.000 | No | Yes | 2.00 |
| 542 | 6.06 | 1.56 | 100.00 | 2.79 | 0.56 | 0.99 | 15.34 | 0.00 | 15.34 | 4.000 | No | Yes | 2.00 |
| 543 | 6.08 | 1.32 | 100.00 | 2.89 | 0.57 | 0.99 | 12.97 | 0.00 | 12.97 | 4.000 | No | Yes | 2.00 |
| 544 | 6.10 | 1.23 | 100.00 | 2.92 | 0.57 | 0.99 | 12.00 | 0.00 | 12.00 | 4.000 | No | Yes | 2.00 |
| 545 | 6.12 | 1.22 | 100.00 | 2.89 | 0.58 | 0.99 | 11.88 | 0.00 | 11.88 | 4.000 | No | Yes | 2.00 |
| 546 | 6.14 | 1.17 | 100.00 | 2.89 | 0.58 | 0.99 | 11.41 | 0.00 | 11.41 | 4.000 | No | Yes | 2.00 |
| 547 | 6.16 | 1.14 | 100.00 | 2.87 | 0.58 | 0.99 | 11.03 | 0.00 | 11.03 | 4.000 | No | Yes | 2.00 |
| 548 | 6.18 | 1.12 | 100.00 | 2.85 | 0.58 | 0.99 | 10.81 | 0.00 | 10.81 | 4.000 | No | Yes | 2.00 |
| 549 | 6.20 | 1.14 | 100.00 | 2.82 | 0.58 | 0.99 | 10.97 | 0.00 | 10.97 | 4.000 | No | Yes | 2.00 |
| 550 | 6.22 | 1.16 | 100.00 | 2.83 | 0.58 | 0.99 | 11.13 | 0.00 | 11.13 | 4.000 | No | Yes | 2.00 |
| 551 | 6.24 | 1.19 | 100.00 | 2.79 | 0.58 | 0.99 | 11.32 | 0.00 | 11.32 | 4.000 | No | Yes | 2.00 |
| 552 | 6.26 | 1.25 | 100.00 | 2.79 | 0.58 | 0.99 | 11.84 | 0.00 | 11.84 | 4.000 | No | Yes | 2.00 |
| 553 | 6.28 | 1.22 | 100.00 | 2.84 | 0.58 | 0.98 | 11.58 | 0.00 | 11.58 | 4.000 | No | Yes | 2.00 |
| 554 | 6.30 | 1.17 | 100.00 | 2.86 | 0.58 | 0.98 | 11.10 | 0.00 | 11.10 | 4.000 | No | Yes | 2.00 |
| 555 | 6.32 | 1.17 | 100.00 | 2.84 | 0.58 | 0.98 | 10.99 | 0.00 | 10.99 | 4.000 | No | Yes | 2.00 |
| 556 | 6.34 | 1.19 | 100.00 | 2.86 | 0.58 | 0.98 | 11.14 | 0.00 | 11.14 | 4.000 | No | Yes | 2.00 |
| 557 | 6.36 | 1.20 | 100.00 | 2.87 | 0.58 | 0.98 | 11.22 | 0.00 | 11.22 | 4.000 | No | Yes | 2.00 |
| 558 | 6.38 | 1.25 | 100.00 | 2.86 | 0.58 | 0.98 | 11.63 | 0.00 | 11.63 | 4.000 | No | Yes | 2.00 |
| 559 | 6.40 | 1.27 | 100.00 | 2.87 | 0.58 | 0.98 | 11.87 | 0.00 | 11.87 | 4.000 | No | Yes | 2.00 |
| 560 | 6.42 | 1.31 | 100.00 | 2.86 | 0.57 | 0.98 | 12.17 | 0.00 | 12.17 | 4.000 | No | Yes | 2.00 |
| 561 | 6.44 | 1.34 | 100.00 | 2.87 | 0.57 | 0.98 | 12.40 | 0.00 | 12.40 | 4.000 | No | Yes | 2.00 |
| 562 | 6.46 | 1.36 | 100.00 | 2.87 | 0.57 | 0.98 | 12.62 | 0.00 | 12.62 | 4.000 | No | Yes | 2.00 |
| 563 | 6.48 | 1.34 | 100.00 | 2.90 | 0.57 | 0.98 | 12.37 | 0.00 | 12.37 | 4.000 | No | Yes | 2.00 |
| 564 | 6.50 | 1.31 | 100.00 | 2.93 | 0.57 | 0.98 | 12.15 | 0.00 | 12.15 | 4.000 | No | Yes | 2.00 |
| 565 | 6.52 | 1.29 | 100.00 | 2.94 | 0.57 | 0.98 | 11.94 | 0.00 | 11.94 | 4.000 | No | Yes | 2.00 |
| 566 | 6.54 | 1.25 | 100.00 | 2.97 | 0.58 | 0.97 | 11.53 | 0.00 | 11.53 | 4.000 | No | Yes | 2.00 |
| 567 | 6.56 | 1.24 | 100.00 | 2.99 | 0.58 | 0.97 | 11.39 | 0.00 | 11.39 | 4.000 | No | Yes | 2.00 |
| 568 | 6.58 | 1.22 | 100.00 | 3.01 | 0.58 | 0.97 | 11.22 | 0.00 | 11.22 | 4.000 | No | Yes | 2.00 |
| 569 | 6.60 | 1.22 | 100.00 | 3.02 | 0.58 | 0.97 | 11.21 | 0.00 | 11.21 | 4.000 | No | Yes | 2.00 |
| 570 | 6.62 | 1.22 | 100.00 | 3.02 | 0.58 | 0.97 | 11.22 | 0.00 | 11.22 | 4.000 | No | Yes | 2.00 |
| 571 | 6.64 | 1.21 | 100.00 | 3.02 | 0.58 | 0.97 | 11.08 | 0.00 | 11.08 | 4.000 | No | Yes | 2.00 |
| 572 | 6.65 | 1.20 | 100.00 | 3.03 | 0.58 | 0.97 | 10.98 | 0.00 | 10.98 | 4.000 | No | Yes | 2.00 |
| 573 | 6.67 | 1.22 | 100.00 | 3.01 | 0.58 | 0.97 | 11.18 | 0.00 | 11.18 | 4.000 | No | Yes | 2.00 |
| 574 | 6.69 | 1.24 | 100.00 | 2.99 | 0.58 | 0.97 | 11.28 | 0.00 | 11.28 | 4.000 | No | Yes | 2.00 |
| 575 | 6.71 | 1.25 | 100.00 | 2.97 | 0.58 | 0.97 | 11.37 | 0.00 | 11.37 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 576 | 6.73 | 1.27 | 100.00 | 2.94 | 0.58 | 0.97 | 11.60 | 0.00 | 11.60 | 4.000 | No | Yes | 2.00 |
| 577 | 6.75 | 1.33 | 100.00 | 2.91 | 0.57 | 0.97 | 12.14 | 0.00 | 12.14 | 4.000 | No | Yes | 2.00 |
| 578 | 6.77 | 1.48 | 100.00 | 2.88 | 0.57 | 0.97 | 13.46 | 0.00 | 13.46 | 4.000 | No | Yes | 2.00 |
| 579 | 6.79 | 1.49 | 100.00 | 3.00 | 0.57 | 0.97 | 13.56 | 0.00 | 13.56 | 4.000 | No | Yes | 2.00 |
| 580 | 6.81 | 1.41 | 100.00 | 3.03 | 0.57 | 0.96 | 12.80 | 0.00 | 12.80 | 4.000 | No | Yes | 2.00 |
| 581 | 6.83 | 1.39 | 100.00 | 3.04 | 0.57 | 0.96 | 12.64 | 0.00 | 12.64 | 4.000 | No | Yes | 2.00 |
| 582 | 6.85 | 1.39 | 100.00 | 2.99 | 0.57 | 0.96 | 12.55 | 0.00 | 12.55 | 4.000 | No | Yes | 2.00 |
| 583 | 6.87 | 1.70 | 100.00 | 2.93 | 0.56 | 0.96 | 15.87 | 0.00 | 15.87 | 4.000 | No | Yes | 2.00 |
| 584 | 6.89 | 1.71 | 100.00 | 2.95 | 0.56 | 0.96 | 16.00 | 0.00 | 16.00 | 4.000 | No | Yes | 2.00 |
| 585 | 6.91 | 1.60 | 100.00 | 2.99 | 0.56 | 0.96 | 15.02 | 0.00 | 15.02 | 4.000 | No | Yes | 2.00 |
| 586 | 6.93 | 1.33 | 100.00 | 3.10 | 0.57 | 0.96 | 11.94 | 0.00 | 11.94 | 4.000 | No | Yes | 2.00 |
| 587 | 6.95 | 1.64 | 100.00 | 2.93 | 0.56 | 0.96 | 14.70 | 0.00 | 14.70 | 4.000 | No | Yes | 2.00 |
| 588 | 6.97 | 1.53 | 100.00 | 2.96 | 0.57 | 0.96 | 13.74 | 0.00 | 13.74 | 4.000 | No | Yes | 2.00 |
| 589 | 6.99 | 1.46 | 100.00 | 2.98 | 0.57 | 0.96 | 13.06 | 0.00 | 13.06 | 4.000 | No | Yes | 2.00 |
| 590 | 7.01 | 1.46 | 100.00 | 2.95 | 0.57 | 0.96 | 13.00 | 0.00 | 13.00 | 4.000 | No | Yes | 2.00 |
| 591 | 7.03 | 1.46 | 100.00 | 2.93 | 0.57 | 0.96 | 13.02 | 0.00 | 13.02 | 4.000 | No | Yes | 2.00 |
| 592 | 7.05 | 1.42 | 100.00 | 2.92 | 0.57 | 0.96 | 12.58 | 0.00 | 12.58 | 4.000 | No | Yes | 2.00 |
| 593 | 7.07 | 1.33 | 100.00 | 2.94 | 0.58 | 0.95 | 11.79 | 0.00 | 11.79 | 4.000 | No | Yes | 2.00 |
| 594 | 7.09 | 1.29 | 100.00 | 2.96 | 0.58 | 0.95 | 11.35 | 0.00 | 11.35 | 4.000 | No | Yes | 2.00 |
| 595 | 7.11 | 1.27 | 100.00 | 2.97 | 0.58 | 0.95 | 11.12 | 0.00 | 11.12 | 4.000 | No | Yes | 2.00 |
| 596 | 7.13 | 1.26 | 100.00 | 2.97 | 0.58 | 0.95 | 11.01 | 0.00 | 11.01 | 4.000 | No | Yes | 2.00 |
| 597 | 7.15 | 1.27 | 100.00 | 2.96 | 0.58 | 0.95 | 11.05 | 0.00 | 11.05 | 4.000 | No | Yes | 2.00 |
| 598 | 7.17 | 1.29 | 100.00 | 2.95 | 0.58 | 0.95 | 11.18 | 0.00 | 11.18 | 4.000 | No | Yes | 2.00 |
| 599 | 7.19 | 1.30 | 100.00 | 2.94 | 0.58 | 0.95 | 11.24 | 0.00 | 11.24 | 4.000 | No | Yes | 2.00 |
| 600 | 7.21 | 1.32 | 100.00 | 2.91 | 0.58 | 0.95 | 11.36 | 0.00 | 11.36 | 4.000 | No | Yes | 2.00 |
| 601 | 7.23 | 1.39 | 100.00 | 2.90 | 0.57 | 0.95 | 11.94 | 0.00 | 11.94 | 4.000 | No | Yes | 2.00 |
| 602 | 7.25 | 1.45 | 100.00 | 2.90 | 0.57 | 0.95 | 12.42 | 0.00 | 12.42 | 4.000 | No | Yes | 2.00 |
| 603 | 7.27 | 1.53 | 100.00 | 2.87 | 0.57 | 0.95 | 13.08 | 0.00 | 13.08 | 4.000 | No | Yes | 2.00 |
| 604 | 7.29 | 1.55 | 100.00 | 2.84 | 0.57 | 0.95 | 13.21 | 0.00 | 13.21 | 4.000 | No | Yes | 2.00 |
| 605 | 7.31 | 1.47 | 100.00 | 2.86 | 0.57 | 0.95 | 12.56 | 0.00 | 12.56 | 4.000 | No | Yes | 2.00 |
| 606 | 7.33 | 1.42 | 100.00 | 2.88 | 0.57 | 0.95 | 12.05 | 0.00 | 12.05 | 4.000 | No | Yes | 2.00 |
| 607 | 7.35 | 1.39 | 100.00 | 2.90 | 0.58 | 0.94 | 11.79 | 0.00 | 11.79 | 4.000 | No | Yes | 2.00 |
| 608 | 7.37 | 1.39 | 100.00 | 2.88 | 0.58 | 0.94 | 11.76 | 0.00 | 11.76 | 4.000 | No | Yes | 2.00 |
| 609 | 7.39 | 1.42 | 100.00 | 2.86 | 0.57 | 0.94 | 11.93 | 0.00 | 11.93 | 4.000 | No | Yes | 2.00 |
| 610 | 7.41 | 1.43 | 100.00 | 2.87 | 0.57 | 0.94 | 12.03 | 0.00 | 12.03 | 4.000 | No | Yes | 2.00 |
| 611 | 7.43 | 1.42 | 100.00 | 2.88 | 0.58 | 0.94 | 11.88 | 0.00 | 11.88 | 4.000 | No | Yes | 2.00 |
| 612 | 7.45 | 1.42 | 100.00 | 2.86 | 0.57 | 0.94 | 11.92 | 0.00 | 11.92 | 4.000 | No | Yes | 2.00 |
| 613 | 7.47 | 1.41 | 100.00 | 2.85 | 0.58 | 0.94 | 11.80 | 0.00 | 11.80 | 4.000 | No | Yes | 2.00 |
| 614 | 7.49 | 1.37 | 100.00 | 2.84 | 0.58 | 0.94 | 11.37 | 0.00 | 11.37 | 4.000 | No | Yes | 2.00 |
| 615 | 7.51 | 1.36 | 100.00 | 2.87 | 0.58 | 0.94 | 11.29 | 0.00 | 11.29 | 4.000 | No | Yes | 2.00 |
| 616 | 7.53 | 1.49 | 100.00 | 2.88 | 0.57 | 0.94 | 12.35 | 0.00 | 12.35 | 4.000 | No | Yes | 2.00 |
| 617 | 7.55 | 1.97 | 100.00 | 2.76 | 0.56 | 0.94 | 16.40 | 0.00 | 16.40 | 4.000 | No | Yes | 2.00 |
| 618 | 7.57 | 2.34 | 95.21 | 2.61 | 0.54 | 0.94 | 21.49 | 0.00 | 21.49 | 4.000 | No | Yes | 2.00 |
| 619 | 7.59 | 2.20 | 98.07 | 2.65 | 0.55 | 0.94 | 20.22 | 0.00 | 20.22 | 4.000 | No | Yes | 2.00 |
| 620 | 7.61 | 1.67 | 100.00 | 2.84 | 0.56 | 0.94 | 15.41 | 0.00 | 15.41 | 4.000 | No | Yes | 2.00 |
| 621 | 7.63 | 1.41 | 100.00 | 2.99 | 0.57 | 0.94 | 12.83 | 0.00 | 12.83 | 4.000 | No | Yes | 2.00 |
| 622 | 7.65 | 1.43 | 100.00 | 3.00 | 0.57 | 0.93 | 12.89 | 0.00 | 12.89 | 4.000 | No | Yes | 2.00 |
| 623 | 7.67 | 1.37 | 100.00 | 3.01 | 0.57 | 0.93 | 12.33 | 0.00 | 12.33 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 624 | 7.69 | 1.36 | 100.00 | 2.98 | 0.57 | 0.93 | 12.16 | 0.00 | 12.16 | 4.000 | No | Yes | 2.00 |
| 625 | 7.71 | 1.35 | 100.00 | 3.00 | 0.57 | 0.93 | 12.05 | 0.00 | 12.05 | 4.000 | No | Yes | 2.00 |
| 626 | 7.73 | 1.39 | 100.00 | 2.99 | 0.57 | 0.93 | 12.40 | 0.00 | 12.40 | 4.000 | No | Yes | 2.00 |
| 627 | 7.75 | 1.48 | 100.00 | 2.96 | 0.57 | 0.93 | 13.15 | 0.00 | 13.15 | 4.000 | No | Yes | 2.00 |
| 628 | 7.77 | 1.60 | 100.00 | 2.92 | 0.57 | 0.93 | 14.20 | 0.00 | 14.20 | 4.000 | No | Yes | 2.00 |
| 629 | 7.79 | 1.80 | 100.00 | 2.87 | 0.56 | 0.93 | 15.91 | 0.00 | 15.91 | 4.000 | No | Yes | 2.00 |
| 630 | 7.81 | 2.24 | 100.00 | 2.76 | 0.55 | 0.93 | 19.70 | 0.00 | 19.70 | 4.000 | No | Yes | 2.00 |
| 631 | 7.83 | 2.84 | 96.49 | 2.63 | 0.53 | 0.93 | 25.06 | 0.00 | 25.06 | 4.000 | No | Yes | 2.00 |
| 632 | 7.85 | 3.03 | 96.51 | 2.63 | 0.52 | 0.93 | 26.77 | 0.00 | 26.77 | 4.000 | No | Yes | 2.00 |
| 633 | 7.87 | 2.76 | 98.50 | 2.65 | 0.53 | 0.93 | 24.70 | 0.00 | 24.70 | 4.000 | No | Yes | 2.00 |
| 634 | 7.89 | 2.25 | 100.00 | 2.79 | 0.55 | 0.93 | 20.21 | 0.00 | 20.21 | 4.000 | No | Yes | 2.00 |
| 635 | 7.91 | 1.92 | 100.00 | 2.89 | 0.56 | 0.93 | 16.88 | 0.00 | 16.88 | 4.000 | No | Yes | 2.00 |
| 636 | 7.93 | 2.17 | 100.00 | 2.75 | 0.55 | 0.93 | 19.52 | 0.00 | 19.52 | 4.000 | No | Yes | 2.00 |
| 637 | 7.95 | 2.12 | 100.00 | 2.75 | 0.55 | 0.93 | 18.71 | 0.00 | 18.71 | 4.000 | No | Yes | 2.00 |
| 638 | 7.97 | 2.05 | 100.00 | 2.77 | 0.55 | 0.93 | 18.03 | 0.00 | 18.03 | 4.000 | No | Yes | 2.00 |
| 639 | 7.99 | 1.93 | 100.00 | 2.80 | 0.56 | 0.92 | 16.86 | 0.00 | 16.86 | 4.000 | No | Yes | 2.00 |
| 640 | 8.01 | 1.83 | 100.00 | 2.83 | 0.56 | 0.92 | 15.93 | 0.00 | 15.93 | 4.000 | No | Yes | 2.00 |
| 641 | 8.03 | 1.89 | 100.00 | 2.79 | 0.56 | 0.92 | 16.40 | 0.00 | 16.40 | 4.000 | No | Yes | 2.00 |
| 642 | 8.05 | 2.11 | 100.00 | 2.71 | 0.55 | 0.92 | 18.22 | 0.00 | 18.22 | 4.000 | No | Yes | 2.00 |
| 643 | 8.07 | 2.16 | 99.03 | 2.66 | 0.55 | 0.92 | 18.58 | 0.00 | 18.58 | 4.000 | No | Yes | 2.00 |
| 644 | 8.09 | 1.84 | 100.00 | 2.77 | 0.56 | 0.92 | 15.98 | 0.00 | 15.98 | 4.000 | No | Yes | 2.00 |
| 645 | 8.11 | 1.60 | 100.00 | 2.88 | 0.57 | 0.92 | 13.94 | 0.00 | 13.94 | 4.000 | No | Yes | 2.00 |
| 646 | 8.13 | 1.49 | 100.00 | 2.94 | 0.57 | 0.92 | 12.79 | 0.00 | 12.79 | 4.000 | No | Yes | 2.00 |
| 647 | 8.15 | 1.45 | 100.00 | 2.95 | 0.57 | 0.92 | 12.39 | 0.00 | 12.39 | 4.000 | No | Yes | 2.00 |
| 648 | 8.17 | 1.41 | 100.00 | 2.94 | 0.57 | 0.92 | 12.05 | 0.00 | 12.05 | 4.000 | No | Yes | 2.00 |
| 649 | 8.19 | 1.41 | 100.00 | 2.92 | 0.57 | 0.92 | 11.96 | 0.00 | 11.96 | 4.000 | No | Yes | 2.00 |
| 650 | 8.21 | 1.41 | 100.00 | 2.92 | 0.58 | 0.91 | 11.85 | 0.00 | 11.85 | 4.000 | No | Yes | 2.00 |
| 651 | 8.23 | 1.42 | 100.00 | 2.94 | 0.57 | 0.91 | 11.91 | 0.00 | 11.91 | 4.000 | No | Yes | 2.00 |
| 652 | 8.25 | 1.47 | 100.00 | 2.93 | 0.57 | 0.91 | 12.33 | 0.00 | 12.33 | 4.000 | No | Yes | 2.00 |
| 653 | 8.27 | 1.59 | 100.00 | 2.89 | 0.57 | 0.91 | 13.26 | 0.00 | 13.26 | 4.000 | No | Yes | 2.00 |
| 654 | 8.29 | 1.86 | 100.00 | 2.79 | 0.56 | 0.91 | 15.53 | 0.00 | 15.53 | 4.000 | No | Yes | 2.00 |
| 655 | 8.31 | 2.13 | 100.00 | 2.72 | 0.55 | 0.91 | 17.73 | 0.00 | 17.73 | 4.000 | No | Yes | 2.00 |
| 656 | 8.33 | 2.43 | 96.31 | 2.63 | 0.55 | 0.92 | 20.25 | 0.00 | 20.25 | 4.000 | No | Yes | 2.00 |
| 657 | 8.35 | 2.42 | 96.58 | 2.63 | 0.55 | 0.91 | 20.38 | 0.00 | 20.38 | 4.000 | No | Yes | 2.00 |
| 658 | 8.37 | 2.31 | 100.00 | 2.71 | 0.55 | 0.91 | 19.53 | 0.00 | 19.53 | 4.000 | No | Yes | 2.00 |
| 659 | 8.39 | 2.27 | 100.00 | 2.71 | 0.55 | 0.91 | 19.19 | 0.00 | 19.19 | 4.000 | No | Yes | 2.00 |
| 660 | 8.41 | 2.27 | 100.00 | 2.67 | 0.55 | 0.91 | 19.18 | 0.00 | 19.18 | 4.000 | No | Yes | 2.00 |
| 661 | 8.43 | 2.27 | 96.64 | 2.63 | 0.55 | 0.91 | 19.14 | 0.00 | 19.14 | 4.000 | No | Yes | 2.00 |
| 662 | 8.45 | 1.82 | 100.00 | 2.76 | 0.56 | 0.91 | 15.28 | 0.00 | 15.28 | 4.000 | No | Yes | 2.00 |
| 663 | 8.47 | 1.69 | 100.00 | 2.80 | 0.57 | 0.91 | 14.15 | 0.00 | 14.15 | 4.000 | No | Yes | 2.00 |
| 664 | 8.49 | 1.62 | 100.00 | 2.81 | 0.57 | 0.91 | 13.53 | 0.00 | 13.53 | 4.000 | No | Yes | 2.00 |
| 665 | 8.51 | 1.60 | 100.00 | 2.82 | 0.57 | 0.91 | 13.33 | 0.00 | 13.33 | 4.000 | No | Yes | 2.00 |
| 666 | 8.53 | 1.59 | 100.00 | 2.85 | 0.57 | 0.91 | 13.14 | 0.00 | 13.14 | 4.000 | No | Yes | 2.00 |
| 667 | 8.55 | 1.56 | 100.00 | 2.87 | 0.57 | 0.90 | 12.83 | 0.00 | 12.83 | 4.000 | No | Yes | 2.00 |
| 668 | 8.57 | 1.58 | 100.00 | 2.88 | 0.57 | 0.90 | 12.97 | 0.00 | 12.97 | 4.000 | No | Yes | 2.00 |
| 669 | 8.59 | 1.64 | 100.00 | 2.85 | 0.57 | 0.90 | 13.46 | 0.00 | 13.46 | 4.000 | No | Yes | 2.00 |
| 670 | 8.61 | 1.71 | 100.00 | 2.84 | 0.57 | 0.90 | 13.99 | 0.00 | 13.99 | 4.000 | No | Yes | 2.00 |
| 671 | 8.63 | 1.77 | 100.00 | 2.84 | 0.57 | 0.90 | 14.42 | 0.00 | 14.42 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 672 | 8.65 | 1.78 | 100.00 | 2.85 | 0.57 | 0.90 | 14.50 | 0.00 | 14.50 | 4.000 | No | Yes | 2.00 |
| 673 | 8.67 | 1.73 | 100.00 | 2.86 | 0.57 | 0.90 | 14.08 | 0.00 | 14.08 | 4.000 | No | Yes | 2.00 |
| 674 | 8.69 | 1.69 | 100.00 | 2.88 | 0.57 | 0.90 | 13.76 | 0.00 | 13.76 | 4.000 | No | Yes | 2.00 |
| 675 | 8.71 | 1.72 | 100.00 | 2.89 | 0.57 | 0.90 | 13.90 | 0.00 | 13.90 | 4.000 | No | Yes | 2.00 |
| 676 | 8.73 | 1.75 | 100.00 | 2.87 | 0.57 | 0.90 | 14.14 | 0.00 | 14.14 | 4.000 | No | Yes | 2.00 |
| 677 | 8.75 | 1.77 | 100.00 | 2.84 | 0.57 | 0.90 | 14.22 | 0.00 | 14.22 | 4.000 | No | Yes | 2.00 |
| 678 | 8.77 | 1.79 | 100.00 | 2.82 | 0.57 | 0.90 | 14.38 | 0.00 | 14.38 | 4.000 | No | Yes | 2.00 |
| 679 | 8.79 | 1.80 | 100.00 | 2.78 | 0.57 | 0.90 | 14.44 | 0.00 | 14.44 | 4.000 | No | Yes | 2.00 |
| 680 | 8.81 | 1.90 | 100.00 | 2.76 | 0.56 | 0.90 | 15.27 | 0.00 | 15.27 | 4.000 | No | Yes | 2.00 |
| 681 | 8.83 | 1.98 | 100.00 | 2.80 | 0.56 | 0.90 | 15.91 | 0.00 | 15.91 | 4.000 | No | Yes | 2.00 |
| 682 | 8.85 | 2.00 | 100.00 | 2.84 | 0.56 | 0.90 | 16.00 | 0.00 | 16.00 | 4.000 | No | Yes | 2.00 |
| 683 | 8.87 | 1.92 | 100.00 | 2.89 | 0.56 | 0.90 | 15.62 | 0.00 | 15.62 | 4.000 | No | Yes | 2.00 |
| 684 | 8.89 | 1.82 | 100.00 | 2.94 | 0.56 | 0.90 | 14.71 | 0.00 | 14.71 | 4.000 | No | Yes | 2.00 |
| 685 | 8.91 | 1.92 | 100.00 | 2.90 | 0.56 | 0.90 | 15.63 | 0.00 | 15.63 | 4.000 | No | Yes | 2.00 |
| 686 | 8.93 | 1.85 | 100.00 | 2.91 | 0.56 | 0.89 | 15.06 | 0.00 | 15.06 | 4.000 | No | Yes | 2.00 |
| 687 | 8.95 | 1.85 | 100.00 | 2.91 | 0.56 | 0.89 | 14.89 | 0.00 | 14.89 | 4.000 | No | Yes | 2.00 |
| 688 | 8.97 | 1.99 | 100.00 | 2.87 | 0.56 | 0.89 | 15.89 | 0.00 | 15.89 | 4.000 | No | Yes | 2.00 |
| 689 | 8.99 | 2.17 | 100.00 | 2.81 | 0.56 | 0.89 | 17.33 | 0.00 | 17.33 | 4.000 | No | Yes | 2.00 |
| 690 | 9.01 | 2.04 | 100.00 | 2.85 | 0.55 | 0.89 | 17.45 | 0.00 | 17.45 | 4.000 | No | Yes | 2.00 |
| 691 | 9.03 | 1.98 | 100.00 | 2.89 | 0.56 | 0.89 | 17.07 | 0.00 | 17.07 | 4.000 | No | Yes | 2.00 |
| 692 | 9.05 | 1.81 | 100.00 | 2.98 | 0.56 | 0.89 | 15.75 | 0.00 | 15.75 | 4.000 | No | Yes | 2.00 |
| 693 | 9.07 | 1.75 | 100.00 | 3.03 | 0.56 | 0.89 | 14.85 | 0.00 | 14.85 | 4.000 | No | Yes | 2.00 |
| 694 | 9.09 | 1.76 | 100.00 | 3.03 | 0.56 | 0.89 | 14.70 | 0.00 | 14.70 | 4.000 | No | Yes | 2.00 |
| 695 | 9.11 | 1.88 | 100.00 | 2.99 | 0.56 | 0.89 | 15.57 | 0.00 | 15.57 | 4.000 | No | Yes | 2.00 |
| 696 | 9.13 | 1.89 | 100.00 | 2.98 | 0.56 | 0.89 | 15.59 | 0.00 | 15.59 | 4.000 | No | Yes | 2.00 |
| 697 | 9.15 | 1.81 | 100.00 | 3.00 | 0.56 | 0.89 | 14.86 | 0.00 | 14.86 | 4.000 | No | Yes | 2.00 |
| 698 | 9.17 | 1.92 | 100.00 | 2.95 | 0.56 | 0.89 | 15.69 | 0.00 | 15.69 | 4.000 | No | Yes | 2.00 |
| 699 | 9.19 | 1.94 | 100.00 | 2.93 | 0.56 | 0.89 | 15.87 | 0.00 | 15.87 | 4.000 | No | Yes | 2.00 |
| 700 | 9.21 | 1.94 | 100.00 | 2.95 | 0.56 | 0.89 | 15.86 | 0.00 | 15.86 | 4.000 | No | Yes | 2.00 |
| 701 | 9.23 | 2.01 | 100.00 | 2.95 | 0.56 | 0.89 | 16.27 | 0.00 | 16.27 | 4.000 | No | Yes | 2.00 |
| 702 | 9.25 | 2.04 | 100.00 | 2.93 | 0.56 | 0.88 | 16.50 | 0.00 | 16.50 | 4.000 | No | Yes | 2.00 |
| 703 | 9.27 | 2.02 | 100.00 | 2.92 | 0.56 | 0.88 | 16.34 | 0.00 | 16.34 | 4.000 | No | Yes | 2.00 |
| 704 | 9.29 | 1.86 | 100.00 | 2.97 | 0.56 | 0.88 | 15.06 | 0.00 | 15.06 | 4.000 | No | Yes | 2.00 |
| 705 | 9.31 | 1.77 | 100.00 | 3.01 | 0.57 | 0.88 | 14.27 | 0.00 | 14.27 | 4.000 | No | Yes | 2.00 |
| 706 | 9.33 | 1.80 | 100.00 | 2.99 | 0.57 | 0.88 | 14.50 | 0.00 | 14.50 | 4.000 | No | Yes | 2.00 |
| 707 | 9.35 | 1.84 | 100.00 | 2.96 | 0.56 | 0.88 | 14.76 | 0.00 | 14.76 | 4.000 | No | Yes | 2.00 |
| 708 | 9.37 | 1.85 | 100.00 | 2.96 | 0.56 | 0.88 | 14.81 | 0.00 | 14.81 | 4.000 | No | Yes | 2.00 |
| 709 | 9.39 | 1.92 | 100.00 | 2.94 | 0.56 | 0.88 | 15.37 | 0.00 | 15.37 | 4.000 | No | Yes | 2.00 |
| 710 | 9.41 | 1.86 | 100.00 | 2.96 | 0.56 | 0.88 | 14.85 | 0.00 | 14.85 | 4.000 | No | Yes | 2.00 |
| 711 | 9.43 | 1.80 | 100.00 | 2.98 | 0.57 | 0.88 | 14.39 | 0.00 | 14.39 | 4.000 | No | Yes | 2.00 |
| 712 | 9.45 | 1.81 | 100.00 | 2.97 | 0.57 | 0.88 | 14.41 | 0.00 | 14.41 | 4.000 | No | Yes | 2.00 |
| 713 | 9.47 | 1.78 | 100.00 | 3.01 | 0.57 | 0.88 | 14.12 | 0.00 | 14.12 | 4.000 | No | Yes | 2.00 |
| 714 | 9.49 | 1.77 | 100.00 | 3.00 | 0.57 | 0.88 | 14.02 | 0.00 | 14.02 | 4.000 | No | Yes | 2.00 |
| 715 | 9.51 | 1.82 | 100.00 | 2.97 | 0.57 | 0.87 | 14.37 | 0.00 | 14.37 | 4.000 | No | Yes | 2.00 |
| 716 | 9.53 | 1.89 | 100.00 | 2.94 | 0.56 | 0.87 | 14.91 | 0.00 | 14.91 | 4.000 | No | Yes | 2.00 |
| 717 | 9.55 | 1.93 | 100.00 | 2.93 | 0.56 | 0.87 | 15.17 | 0.00 | 15.17 | 4.000 | No | Yes | 2.00 |
| 718 | 9.57 | 2.00 | 100.00 | 2.89 | 0.56 | 0.87 | 15.74 | 0.00 | 15.74 | 4.000 | No | Yes | 2.00 |
| 719 | 9.59 | 2.03 | 100.00 | 2.88 | 0.56 | 0.87 | 16.00 | 0.00 | 16.00 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 720 | 9.61 | 2.07 | 100.00 | 2.88 | 0.56 | 0.87 | 16.31 | 0.00 | 16.31 | 4.000 | No | Yes | 2.00 |
| 721 | 9.63 | 2.19 | 100.00 | 2.85 | 0.56 | 0.87 | 17.19 | 0.00 | 17.19 | 4.000 | No | Yes | 2.00 |
| 722 | 9.65 | 2.31 | 100.00 | 2.85 | 0.55 | 0.87 | 18.13 | 0.00 | 18.13 | 4.000 | No | Yes | 2.00 |
| 723 | 9.67 | 2.36 | 100.00 | 2.83 | 0.55 | 0.87 | 18.50 | 0.00 | 18.50 | 4.000 | No | Yes | 2.00 |
| 724 | 9.69 | 2.76 | 100.00 | 2.78 | 0.54 | 0.87 | 21.79 | 0.00 | 21.79 | 4.000 | No | Yes | 2.00 |
| 725 | 9.71 | 3.31 | 100.00 | 2.71 | 0.52 | 0.88 | 26.39 | 0.00 | 26.39 | 4.000 | No | Yes | 2.00 |
| 726 | 9.73 | 3.67 | 95.27 | 2.61 | 0.52 | 0.88 | 29.38 | 0.00 | 29.38 | 4.000 | No | Yes | 2.00 |
| 727 | 9.75 | 4.07 | 91.83 | 2.57 | 0.51 | 0.88 | 33.30 | 63.47 | 96.77 | 0.133 | No | No | 0.57 |
| 728 | 9.77 | 3.77 | 96.25 | 2.63 | 0.51 | 0.88 | 31.79 | 0.00 | 31.79 | 4.000 | No | Yes | 2.00 |
| 729 | 9.79 | 3.57 | 94.10 | 2.60 | 0.52 | 0.88 | 29.84 | 62.64 | 92.49 | 0.128 | No | No | 0.54 |
| 730 | 9.81 | 3.38 | 100.00 | 2.70 | 0.52 | 0.88 | 28.27 | 0.00 | 28.27 | 4.000 | No | Yes | 2.00 |
| 731 | 9.83 | 3.04 | 100.00 | 2.78 | 0.53 | 0.87 | 25.23 | 0.00 | 25.23 | 4.000 | No | Yes | 2.00 |
| 732 | 9.85 | 2.91 | 100.00 | 2.83 | 0.53 | 0.87 | 24.06 | 0.00 | 24.06 | 4.000 | No | Yes | 2.00 |
| 733 | 9.87 | 2.91 | 100.00 | 2.83 | 0.53 | 0.87 | 24.01 | 0.00 | 24.01 | 4.000 | No | Yes | 2.00 |
| 734 | 9.89 | 3.01 | 100.00 | 2.78 | 0.53 | 0.87 | 24.67 | 0.00 | 24.67 | 4.000 | No | Yes | 2.00 |
| 735 | 9.91 | 3.00 | 100.00 | 2.78 | 0.53 | 0.87 | 24.42 | 0.00 | 24.42 | 4.000 | No | Yes | 2.00 |
| 736 | 9.93 | 2.96 | 100.00 | 2.81 | 0.53 | 0.87 | 24.00 | 0.00 | 24.00 | 4.000 | No | Yes | 2.00 |
| 737 | 9.95 | 2.86 | 100.00 | 2.84 | 0.54 | 0.87 | 23.02 | 0.00 | 23.02 | 4.000 | No | Yes | 2.00 |
| 738 | 9.97 | 2.87 | 100.00 | 2.82 | 0.54 | 0.87 | 23.03 | 0.00 | 23.03 | 4.000 | No | Yes | 2.00 |
| 739 | 9.99 | 2.96 | 100.00 | 2.78 | 0.53 | 0.87 | 23.81 | 0.00 | 23.81 | 4.000 | No | Yes | 2.00 |
| 740 | 10.01 | 2.93 | 100.00 | 2.77 | 0.53 | 0.87 | 23.42 | 0.00 | 23.42 | 4.000 | No | Yes | 2.00 |
| 741 | 10.03 | 3.13 | 100.00 | 2.72 | 0.53 | 0.87 | 24.99 | 0.00 | 24.99 | 4.000 | No | Yes | 2.00 |
| 742 | 10.05 | 3.32 | 96.99 | 2.63 | 0.53 | 0.87 | 26.51 | 0.00 | 26.51 | 4.000 | No | Yes | 2.00 |
| 743 | 10.07 | 3.01 | 95.02 | 2.61 | 0.53 | 0.87 | 25.07 | 0.00 | 25.07 | 4.000 | No | Yes | 2.00 |
| 744 | 10.09 | 2.69 | 97.59 | 2.64 | 0.54 | 0.86 | 22.11 | 0.00 | 22.11 | 4.000 | No | Yes | 2.00 |
| 745 | 10.11 | 2.74 | 96.90 | 2.63 | 0.54 | 0.86 | 22.22 | 0.00 | 22.22 | 4.000 | No | Yes | 2.00 |
| 746 | 10.13 | 3.35 | 97.48 | 2.64 | 0.52 | 0.87 | 27.27 | 0.00 | 27.27 | 4.000 | No | Yes | 2.00 |
| 747 | 10.15 | 4.36 | 87.89 | 2.52 | 0.50 | 0.87 | 35.54 | 63.70 | 99.25 | 0.136 | No | No | 0.59 |
| 748 | 10.17 | 5.34 | 82.59 | 2.45 | 0.48 | 0.88 | 44.43 | 65.70 | 110.13 | 0.152 | No | No | 0.68 |
| 749 | 10.19 | 6.07 | 77.73 | 2.39 | 0.46 | 0.88 | 51.80 | 67.16 | 118.95 | 0.169 | No | No | 0.77 |
| 750 | 10.21 | 6.72 | 73.21 | 2.34 | 0.45 | 0.88 | 57.45 | 68.01 | 125.46 | 0.185 | No | No | 0.86 |
| 751 | 10.23 | 7.23 | 71.89 | 2.32 | 0.44 | 0.88 | 62.24 | 69.15 | 131.39 | 0.202 | No | No | 0.96 |
| 752 | 10.25 | 7.99 | 69.06 | 2.29 | 0.42 | 0.89 | 69.54 | 70.66 | 140.19 | 0.235 | No | No | 1.15 |
| 753 | 10.27 | 8.46 | 69.17 | 2.29 | 0.41 | 0.89 | 74.03 | 71.99 | 146.02 | 0.265 | No | No | 1.33 |
| 754 | 10.29 | 8.05 | 75.41 | 2.37 | 0.42 | 0.89 | 70.39 | 72.26 | 142.65 | 0.247 | No | No | 1.22 |
| 755 | 10.31 | 7.16 | 80.41 | 2.43 | 0.43 | 0.88 | 62.27 | 70.73 | 133.00 | 0.207 | No | No | 0.99 |
| 756 | 10.33 | 6.90 | 81.25 | 2.44 | 0.44 | 0.88 | 59.97 | 70.18 | 130.15 | 0.198 | No | No | 0.94 |
| 757 | 10.35 | 7.01 | 78.87 | 2.41 | 0.44 | 0.88 | 60.88 | 70.06 | 130.94 | 0.201 | No | No | 0.96 |
| 758 | 10.37 | 8.08 | 69.89 | 2.30 | 0.42 | 0.88 | 70.14 | 71.02 | 141.16 | 0.240 | No | No | 1.19 |
| 759 | 10.39 | 10.82 | 54.78 | 2.11 | 0.38 | 0.90 | 94.67 | 73.27 | 167.94 | 0.471 | No | No | 2.00 |
| 760 | 10.41 | 13.80 | 41.01 | 1.94 | 0.34 | 0.90 | 122.39 | 72.31 | 194.70 | 1.422 | No | No | 2.00 |
| 761 | 10.43 | 15.42 | 33.26 | 1.84 | 0.32 | 0.91 | 138.15 | 67.92 | 206.07 | 2.711 | No | No | 2.00 |
| 762 | 10.44 | 16.54 | 28.89 | 1.78 | 0.31 | 0.91 | 148.59 | 63.58 | 212.17 | 4.000 | No | No | 2.00 |
| 763 | 10.46 | 17.16 | 29.42 | 1.79 | 0.30 | 0.91 | 154.63 | 65.68 | 220.31 | 4.000 | No | No | 2.00 |
| 764 | 10.48 | 17.39 | 34.14 | 1.85 | 0.29 | 0.92 | 157.15 | 73.24 | 230.39 | 4.000 | No | No | 2.00 |
| 765 | 10.50 | 16.52 | 32.74 | 1.83 | 0.31 | 0.91 | 148.65 | 69.50 | 218.15 | 4.000 | No | No | 2.00 |
| 766 | 10.52 | 14.10 | 45.92 | 2.00 | 0.33 | 0.91 | 126.20 | 76.92 | 203.12 | 2.265 | No | No | 2.00 |
| 767 | 10.54 | 13.45 | 51.91 | 2.07 | 0.33 | 0.90 | 120.05 | 78.82 | 198.87 | 1.776 | No | No | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 768 | 10.56 | 10.15 | 69.51 | 2.29 | 0.38 | 0.89 | 87.11 | 75.88 | 162.99 | 0.405 | No | No | 2.00 |
| 769 | 10.58 | 15.08 | 48.85 | 2.03 | 0.31 | 0.91 | 135.11 | 81.10 | 216.21 | 4.000 | No | No | 2.00 |
| 770 | 10.60 | 15.40 | 45.56 | 1.99 | 0.31 | 0.91 | 138.21 | 79.75 | 217.96 | 4.000 | No | No | 2.00 |
| 771 | 10.62 | 15.72 | 39.07 | 1.91 | 0.31 | 0.91 | 140.96 | 75.06 | 216.03 | 4.000 | No | No | 2.00 |
| 772 | 10.64 | 15.71 | 33.48 | 1.84 | 0.32 | 0.90 | 140.40 | 68.69 | 209.09 | 3.286 | No | No | 2.00 |
| 773 | 10.66 | 14.86 | 33.10 | 1.84 | 0.33 | 0.90 | 132.18 | 66.42 | 198.60 | 1.749 | No | No | 2.00 |
| 774 | 10.68 | 13.73 | 28.52 | 1.78 | 0.36 | 0.89 | 121.03 | 57.55 | 178.58 | 0.687 | No | No | 2.00 |
| 775 | 10.70 | 14.19 | 31.59 | 1.82 | 0.35 | 0.90 | 125.51 | 63.00 | 188.51 | 1.049 | No | No | 2.00 |
| 776 | 10.72 | 14.05 | 38.01 | 1.90 | 0.34 | 0.90 | 124.62 | 70.17 | 194.78 | 1.427 | No | No | 2.00 |
| 777 | 10.74 | 13.99 | 44.39 | 1.98 | 0.33 | 0.90 | 124.24 | 75.36 | 199.60 | 1.850 | No | No | 2.00 |
| 778 | 10.76 | 13.81 | 50.35 | 2.05 | 0.33 | 0.90 | 122.68 | 78.69 | 201.37 | 2.045 | No | No | 2.00 |
| 779 | 10.78 | 11.18 | 62.46 | 2.20 | 0.36 | 0.89 | 98.22 | 77.08 | 175.30 | 0.607 | No | No | 2.00 |
| 780 | 10.80 | 8.72 | 67.24 | 2.26 | 0.41 | 0.88 | 75.55 | 71.96 | 147.51 | 0.273 | No | No | 1.41 |
| 781 | 10.82 | 7.23 | 63.94 | 2.22 | 0.44 | 0.87 | 62.02 | 67.22 | 129.24 | 0.195 | No | No | 0.94 |
| 782 | 10.84 | 6.47 | 74.61 | 2.36 | 0.45 | 0.86 | 55.27 | 67.63 | 122.90 | 0.178 | No | No | 0.84 |
| 783 | 10.86 | 5.95 | 78.72 | 2.41 | 0.46 | 0.86 | 50.45 | 66.92 | 117.37 | 0.166 | No | No | 0.77 |
| 784 | 10.88 | 4.89 | 86.73 | 2.51 | 0.49 | 0.85 | 40.83 | 65.17 | 105.99 | 0.146 | No | No | 0.66 |
| 785 | 10.90 | 4.62 | 85.75 | 2.49 | 0.49 | 0.85 | 38.61 | 64.37 | 102.99 | 0.141 | No | No | 0.64 |
| 786 | 10.92 | 3.73 | 96.11 | 2.62 | 0.51 | 0.84 | 30.91 | 0.00 | 30.91 | 4.000 | No | Yes | 2.00 |
| 787 | 10.94 | 3.28 | 100.00 | 2.69 | 0.52 | 0.84 | 27.04 | 0.00 | 27.04 | 4.000 | No | Yes | 2.00 |
| 788 | 10.96 | 3.00 | 100.00 | 2.76 | 0.53 | 0.84 | 24.61 | 0.00 | 24.61 | 4.000 | No | Yes | 2.00 |
| 789 | 10.98 | 2.87 | 100.00 | 2.75 | 0.53 | 0.83 | 23.46 | 0.00 | 23.46 | 4.000 | No | Yes | 2.00 |
| 790 | 11.00 | 2.79 | 100.00 | 2.77 | 0.54 | 0.83 | 22.75 | 0.00 | 22.75 | 4.000 | No | Yes | 2.00 |
| 791 | 11.02 | 2.69 | 100.00 | 2.82 | 0.54 | 0.83 | 21.89 | 0.00 | 21.89 | 4.000 | No | Yes | 2.00 |
| 792 | 11.04 | 2.64 | 100.00 | 2.84 | 0.54 | 0.83 | 21.41 | 0.00 | 21.41 | 4.000 | No | Yes | 2.00 |
| 793 | 11.06 | 2.52 | 100.00 | 2.87 | 0.54 | 0.83 | 20.42 | 0.00 | 20.42 | 4.000 | No | Yes | 2.00 |
| 794 | 11.08 | 2.42 | 100.00 | 2.90 | 0.55 | 0.83 | 19.53 | 0.00 | 19.53 | 4.000 | No | Yes | 2.00 |
| 795 | 11.10 | 2.35 | 100.00 | 2.90 | 0.55 | 0.83 | 18.90 | 0.00 | 18.90 | 4.000 | No | Yes | 2.00 |
| 796 | 11.12 | 2.22 | 100.00 | 2.92 | 0.55 | 0.83 | 17.83 | 0.00 | 17.83 | 4.000 | No | Yes | 2.00 |
| 797 | 11.14 | 2.13 | 100.00 | 2.93 | 0.56 | 0.82 | 17.03 | 0.00 | 17.03 | 4.000 | No | Yes | 2.00 |
| 798 | 11.16 | 2.04 | 100.00 | 2.94 | 0.56 | 0.82 | 16.22 | 0.00 | 16.22 | 4.000 | No | Yes | 2.00 |
| 799 | 11.18 | 1.95 | 100.00 | 2.95 | 0.56 | 0.82 | 15.47 | 0.00 | 15.47 | 4.000 | No | Yes | 2.00 |
| 800 | 11.20 | 1.92 | 100.00 | 2.94 | 0.56 | 0.82 | 15.19 | 0.00 | 15.19 | 4.000 | No | Yes | 2.00 |
| 801 | 11.22 | 1.88 | 100.00 | 2.96 | 0.56 | 0.82 | 14.78 | 0.00 | 14.78 | 4.000 | No | Yes | 2.00 |
| 802 | 11.24 | 1.84 | 100.00 | 2.93 | 0.57 | 0.82 | 14.43 | 0.00 | 14.43 | 4.000 | No | Yes | 2.00 |
| 803 | 11.26 | 1.93 | 100.00 | 2.88 | 0.56 | 0.82 | 15.10 | 0.00 | 15.10 | 4.000 | No | Yes | 2.00 |
| 804 | 11.28 | 2.00 | 100.00 | 2.87 | 0.56 | 0.82 | 15.62 | 0.00 | 15.62 | 4.000 | No | Yes | 2.00 |
| 805 | 11.30 | 1.99 | 100.00 | 2.88 | 0.56 | 0.82 | 15.55 | 0.00 | 15.55 | 4.000 | No | Yes | 2.00 |
| 806 | 11.32 | 1.98 | 100.00 | 2.88 | 0.56 | 0.82 | 15.38 | 0.00 | 15.38 | 4.000 | No | Yes | 2.00 |
| 807 | 11.34 | 1.93 | 100.00 | 2.90 | 0.56 | 0.82 | 15.03 | 0.00 | 15.03 | 4.000 | No | Yes | 2.00 |
| 808 | 11.36 | 1.84 | 100.00 | 2.93 | 0.57 | 0.82 | 14.27 | 0.00 | 14.27 | 4.000 | No | Yes | 2.00 |
| 809 | 11.38 | 1.79 | 100.00 | 2.95 | 0.57 | 0.82 | 13.83 | 0.00 | 13.83 | 4.000 | No | Yes | 2.00 |
| 810 | 11.40 | 1.79 | 100.00 | 2.93 | 0.57 | 0.81 | 13.84 | 0.00 | 13.84 | 4.000 | No | Yes | 2.00 |
| 811 | 11.42 | 1.82 | 100.00 | 2.90 | 0.57 | 0.81 | 14.01 | 0.00 | 14.01 | 4.000 | No | Yes | 2.00 |
| 812 | 11.44 | 1.83 | 100.00 | 2.89 | 0.57 | 0.81 | 14.10 | 0.00 | 14.10 | 4.000 | No | Yes | 2.00 |
| 813 | 11.46 | 1.86 | 100.00 | 2.89 | 0.57 | 0.81 | 14.25 | 0.00 | 14.25 | 4.000 | No | Yes | 2.00 |
| 814 | 11.48 | 1.91 | 100.00 | 2.89 | 0.56 | 0.81 | 14.64 | 0.00 | 14.64 | 4.000 | No | Yes | 2.00 |
| 815 | 11.50 | 1.95 | 100.00 | 2.89 | 0.56 | 0.81 | 14.94 | 0.00 | 14.94 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 816 | 11.52 | 2.02 | 100.00 | 2.89 | 0.56 | 0.81 | 15.51 | 0.00 | 15.51 | 4.000 | No | Yes | 2.00 |
| 817 | 11.54 | 2.09 | 100.00 | 2.88 | 0.56 | 0.81 | 15.99 | 0.00 | 15.99 | 4.000 | No | Yes | 2.00 |
| 818 | 11.56 | 2.15 | 100.00 | 2.87 | 0.56 | 0.81 | 16.50 | 0.00 | 16.50 | 4.000 | No | Yes | 2.00 |
| 819 | 11.58 | 2.14 | 100.00 | 2.90 | 0.56 | 0.81 | 16.40 | 0.00 | 16.40 | 4.000 | No | Yes | 2.00 |
| 820 | 11.60 | 2.11 | 100.00 | 2.91 | 0.56 | 0.81 | 16.12 | 0.00 | 16.12 | 4.000 | No | Yes | 2.00 |
| 821 | 11.62 | 2.17 | 100.00 | 2.91 | 0.56 | 0.81 | 16.59 | 0.00 | 16.59 | 4.000 | No | Yes | 2.00 |
| 822 | 11.64 | 2.26 | 100.00 | 2.87 | 0.56 | 0.81 | 17.23 | 0.00 | 17.23 | 4.000 | No | Yes | 2.00 |
| 823 | 11.66 | 2.35 | 100.00 | 2.86 | 0.55 | 0.81 | 17.98 | 0.00 | 17.98 | 4.000 | No | Yes | 2.00 |
| 824 | 11.68 | 2.37 | 100.00 | 2.86 | 0.55 | 0.81 | 18.07 | 0.00 | 18.07 | 4.000 | No | Yes | 2.00 |
| 825 | 11.70 | 2.42 | 100.00 | 2.87 | 0.55 | 0.81 | 18.52 | 0.00 | 18.52 | 4.000 | No | Yes | 2.00 |
| 826 | 11.72 | 2.33 | 100.00 | 2.91 | 0.55 | 0.81 | 17.78 | 0.00 | 17.78 | 4.000 | No | Yes | 2.00 |
| 827 | 11.74 | 2.21 | 100.00 | 2.96 | 0.56 | 0.81 | 16.89 | 0.00 | 16.89 | 4.000 | No | Yes | 2.00 |
| 828 | 11.76 | 2.17 | 100.00 | 2.99 | 0.56 | 0.81 | 16.55 | 0.00 | 16.55 | 4.000 | No | Yes | 2.00 |
| 829 | 11.78 | 2.08 | 100.00 | 3.03 | 0.56 | 0.81 | 15.87 | 0.00 | 15.87 | 4.000 | No | Yes | 2.00 |
| 830 | 11.80 | 2.02 | 100.00 | 3.04 | 0.56 | 0.81 | 15.42 | 0.00 | 15.42 | 4.000 | No | Yes | 2.00 |
| 831 | 11.82 | 1.98 | 100.00 | 3.08 | 0.56 | 0.81 | 15.11 | 0.00 | 15.11 | 4.000 | No | Yes | 2.00 |
| 832 | 11.84 | 1.93 | 100.00 | 3.10 | 0.56 | 0.80 | 14.71 | 0.00 | 14.71 | 4.000 | No | Yes | 2.00 |
| 833 | 11.86 | 1.89 | 100.00 | 3.11 | 0.57 | 0.80 | 14.41 | 0.00 | 14.41 | 4.000 | No | Yes | 2.00 |
| 834 | 11.88 | 1.61 | 100.00 | 3.21 | 0.57 | 0.80 | 12.12 | 0.00 | 12.12 | 4.000 | No | Yes | 2.00 |
| 835 | 11.90 | 1.87 | 100.00 | 3.10 | 0.57 | 0.80 | 14.05 | 0.00 | 14.05 | 4.000 | No | Yes | 2.00 |
| 836 | 11.92 | 1.89 | 100.00 | 3.08 | 0.57 | 0.80 | 14.20 | 0.00 | 14.20 | 4.000 | No | Yes | 2.00 |
| 837 | 11.94 | 1.93 | 100.00 | 3.05 | 0.57 | 0.80 | 14.46 | 0.00 | 14.46 | 4.000 | No | Yes | 2.00 |
| 838 | 11.96 | 1.97 | 100.00 | 3.04 | 0.56 | 0.80 | 14.75 | 0.00 | 14.75 | 4.000 | No | Yes | 2.00 |
| 839 | 11.98 | 2.01 | 100.00 | 3.02 | 0.56 | 0.80 | 15.05 | 0.00 | 15.05 | 4.000 | No | Yes | 2.00 |
| 840 | 12.00 | 2.08 | 100.00 | 3.01 | 0.56 | 0.80 | 15.55 | 0.00 | 15.55 | 4.000 | No | Yes | 2.00 |
| 841 | 12.02 | 2.15 | 100.00 | 2.99 | 0.56 | 0.80 | 16.09 | 0.00 | 16.09 | 4.000 | No | Yes | 2.00 |
| 842 | 12.04 | 2.21 | 100.00 | 2.98 | 0.56 | 0.80 | 16.53 | 0.00 | 16.53 | 4.000 | No | Yes | 2.00 |
| 843 | 12.06 | 2.24 | 100.00 | 2.98 | 0.56 | 0.80 | 16.77 | 0.00 | 16.77 | 4.000 | No | Yes | 2.00 |
| 844 | 12.08 | 2.28 | 100.00 | 2.98 | 0.56 | 0.80 | 17.07 | 0.00 | 17.07 | 4.000 | No | Yes | 2.00 |
| 845 | 12.10 | 2.32 | 100.00 | 2.98 | 0.56 | 0.80 | 17.34 | 0.00 | 17.34 | 4.000 | No | Yes | 2.00 |
| 846 | 12.12 | 2.32 | 100.00 | 2.99 | 0.55 | 0.80 | 17.37 | 0.00 | 17.37 | 4.000 | No | Yes | 2.00 |
| 847 | 12.14 | 2.37 | 100.00 | 2.98 | 0.55 | 0.80 | 17.75 | 0.00 | 17.75 | 4.000 | No | Yes | 2.00 |
| 848 | 12.16 | 2.45 | 100.00 | 2.97 | 0.55 | 0.80 | 18.33 | 0.00 | 18.33 | 4.000 | No | Yes | 2.00 |
| 849 | 12.18 | 2.50 | 100.00 | 2.97 | 0.55 | 0.80 | 18.74 | 0.00 | 18.74 | 4.000 | No | Yes | 2.00 |
| 850 | 12.20 | 2.54 | 100.00 | 2.97 | 0.55 | 0.80 | 19.36 | 0.00 | 19.36 | 4.000 | No | Yes | 2.00 |
| 851 | 12.22 | 2.54 | 100.00 | 2.98 | 0.55 | 0.80 | 19.60 | 0.00 | 19.60 | 4.000 | No | Yes | 2.00 |
| 852 | 12.24 | 2.61 | 100.00 | 2.98 | 0.55 | 0.80 | 20.22 | 0.00 | 20.22 | 4.000 | No | Yes | 2.00 |
| 853 | 12.26 | 2.74 | 100.00 | 2.96 | 0.54 | 0.80 | 21.27 | 0.00 | 21.27 | 4.000 | No | Yes | 2.00 |
| 854 | 12.28 | 2.87 | 100.00 | 2.94 | 0.54 | 0.80 | 22.22 | 0.00 | 22.22 | 4.000 | No | Yes | 2.00 |
| 855 | 12.30 | 2.95 | 100.00 | 2.93 | 0.54 | 0.80 | 23.04 | 0.00 | 23.04 | 4.000 | No | Yes | 2.00 |
| 856 | 12.32 | 2.83 | 100.00 | 2.97 | 0.54 | 0.80 | 22.13 | 0.00 | 22.13 | 4.000 | No | Yes | 2.00 |
| 857 | 12.34 | 2.95 | 100.00 | 2.95 | 0.54 | 0.80 | 23.05 | 0.00 | 23.05 | 4.000 | No | Yes | 2.00 |
| 858 | 12.36 | 2.83 | 100.00 | 2.98 | 0.54 | 0.80 | 22.01 | 0.00 | 22.01 | 4.000 | No | Yes | 2.00 |
| 859 | 12.38 | 2.76 | 100.00 | 2.99 | 0.54 | 0.80 | 21.45 | 0.00 | 21.45 | 4.000 | No | Yes | 2.00 |
| 860 | 12.40 | 2.74 | 100.00 | 3.01 | 0.54 | 0.80 | 21.23 | 0.00 | 21.23 | 4.000 | No | Yes | 2.00 |
| 861 | 12.42 | 2.81 | 100.00 | 3.01 | 0.54 | 0.80 | 21.75 | 0.00 | 21.75 | 4.000 | No | Yes | 2.00 |
| 862 | 12.44 | 2.91 | 100.00 | 2.97 | 0.54 | 0.80 | 22.47 | 0.00 | 22.47 | 4.000 | No | Yes | 2.00 |
| 863 | 12.46 | 3.01 | 100.00 | 2.93 | 0.53 | 0.80 | 23.27 | 0.00 | 23.27 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 864 | 12.48 | 3.06 | 100.00 | 2.91 | 0.53 | 0.80 | 23.54 | 0.00 | 23.54 | 4.000 | No | Yes | 2.00 |
| 865 | 12.50 | 2.71 | 100.00 | 2.99 | 0.54 | 0.79 | 20.75 | 0.00 | 20.75 | 4.000 | No | Yes | 2.00 |
| 866 | 12.52 | 2.62 | 100.00 | 3.01 | 0.55 | 0.79 | 20.02 | 0.00 | 20.02 | 4.000 | No | Yes | 2.00 |
| 867 | 12.54 | 2.63 | 100.00 | 3.01 | 0.55 | 0.79 | 20.04 | 0.00 | 20.04 | 4.000 | No | Yes | 2.00 |
| 868 | 12.56 | 2.62 | 100.00 | 3.01 | 0.55 | 0.79 | 19.94 | 0.00 | 19.94 | 4.000 | No | Yes | 2.00 |
| 869 | 12.58 | 2.59 | 100.00 | 3.02 | 0.55 | 0.79 | 19.70 | 0.00 | 19.70 | 4.000 | No | Yes | 2.00 |
| 870 | 12.60 | 2.55 | 100.00 | 3.03 | 0.55 | 0.79 | 19.33 | 0.00 | 19.33 | 4.000 | No | Yes | 2.00 |
| 871 | 12.62 | 2.51 | 100.00 | 3.04 | 0.55 | 0.79 | 19.01 | 0.00 | 19.01 | 4.000 | No | Yes | 2.00 |
| 872 | 12.64 | 2.46 | 100.00 | 3.05 | 0.55 | 0.79 | 18.60 | 0.00 | 18.60 | 4.000 | No | Yes | 2.00 |
| 873 | 12.66 | 2.48 | 100.00 | 3.03 | 0.55 | 0.79 | 18.75 | 0.00 | 18.75 | 4.000 | No | Yes | 2.00 |
| 874 | 12.68 | 2.49 | 100.00 | 3.03 | 0.55 | 0.79 | 18.76 | 0.00 | 18.76 | 4.000 | No | Yes | 2.00 |
| 875 | 12.69 | 2.48 | 100.00 | 3.02 | 0.55 | 0.79 | 18.69 | 0.00 | 18.69 | 4.000 | No | Yes | 2.00 |
| 876 | 12.71 | 2.54 | 100.00 | 3.00 | 0.55 | 0.79 | 19.11 | 0.00 | 19.11 | 4.000 | No | Yes | 2.00 |
| 877 | 12.73 | 2.52 | 100.00 | 3.01 | 0.55 | 0.79 | 18.92 | 0.00 | 18.92 | 4.000 | No | Yes | 2.00 |
| 878 | 12.75 | 2.54 | 100.00 | 3.00 | 0.55 | 0.79 | 19.05 | 0.00 | 19.05 | 4.000 | No | Yes | 2.00 |
| 879 | 12.77 | 2.52 | 100.00 | 3.01 | 0.55 | 0.79 | 18.91 | 0.00 | 18.91 | 4.000 | No | Yes | 2.00 |
| 880 | 12.79 | 2.49 | 100.00 | 2.74 | 0.55 | 0.78 | 18.70 | 0.00 | 18.70 | 4.000 | No | Yes | 2.00 |
| 881 | 12.81 | 2.46 | 100.00 | 3.04 | 0.55 | 0.78 | 18.41 | 0.00 | 18.41 | 4.000 | No | Yes | 2.00 |
| 882 | 12.83 | 2.47 | 100.00 | 3.06 | 0.55 | 0.78 | 18.45 | 0.00 | 18.45 | 4.000 | No | Yes | 2.00 |
| 883 | 12.85 | 2.44 | 100.00 | 3.07 | 0.55 | 0.78 | 18.21 | 0.00 | 18.21 | 4.000 | No | Yes | 2.00 |
| 884 | 12.87 | 1.47 | 100.00 | 3.43 | 0.58 | 0.77 | 10.73 | 0.00 | 10.73 | 4.000 | No | Yes | 2.00 |
| 885 | 12.89 | 2.41 | 100.00 | 3.06 | 0.55 | 0.78 | 17.74 | 0.00 | 17.74 | 4.000 | No | Yes | 2.00 |
| 886 | 12.91 | 2.38 | 100.00 | 3.06 | 0.55 | 0.78 | 17.49 | 0.00 | 17.49 | 4.000 | No | Yes | 2.00 |
| 887 | 12.93 | 2.34 | 100.00 | 3.07 | 0.56 | 0.78 | 17.17 | 0.00 | 17.17 | 4.000 | No | Yes | 2.00 |
| 888 | 12.95 | 2.29 | 100.00 | 3.08 | 0.56 | 0.78 | 16.80 | 0.00 | 16.80 | 4.000 | No | Yes | 2.00 |
| 889 | 12.97 | 2.30 | 100.00 | 3.06 | 0.56 | 0.78 | 16.85 | 0.00 | 16.85 | 4.000 | No | Yes | 2.00 |
| 890 | 12.99 | 2.29 | 100.00 | 3.05 | 0.56 | 0.78 | 16.76 | 0.00 | 16.76 | 4.000 | No | Yes | 2.00 |
| 891 | 13.01 | 2.32 | 100.00 | 3.04 | 0.56 | 0.78 | 16.96 | 0.00 | 16.96 | 4.000 | No | Yes | 2.00 |
| 892 | 13.03 | 2.27 | 100.00 | 3.05 | 0.56 | 0.78 | 16.53 | 0.00 | 16.53 | 4.000 | No | Yes | 2.00 |
| 893 | 13.05 | 2.25 | 100.00 | 3.05 | 0.56 | 0.78 | 16.37 | 0.00 | 16.37 | 4.000 | No | Yes | 2.00 |
| 894 | 13.07 | 2.21 | 100.00 | 3.07 | 0.56 | 0.77 | 16.06 | 0.00 | 16.06 | 4.000 | No | Yes | 2.00 |
| 895 | 13.09 | 2.19 | 100.00 | 3.07 | 0.56 | 0.77 | 15.88 | 0.00 | 15.88 | 4.000 | No | Yes | 2.00 |
| 896 | 13.11 | 2.18 | 100.00 | 3.08 | 0.56 | 0.77 | 15.79 | 0.00 | 15.79 | 4.000 | No | Yes | 2.00 |
| 897 | 13.13 | 2.17 | 100.00 | 3.08 | 0.56 | 0.77 | 15.68 | 0.00 | 15.68 | 4.000 | No | Yes | 2.00 |
| 898 | 13.15 | 2.16 | 100.00 | 3.09 | 0.56 | 0.77 | 15.57 | 0.00 | 15.57 | 4.000 | No | Yes | 2.00 |
| 899 | 13.17 | 2.17 | 100.00 | 3.08 | 0.56 | 0.77 | 15.65 | 0.00 | 15.65 | 4.000 | No | Yes | 2.00 |
| 900 | 13.19 | 2.18 | 100.00 | 3.08 | 0.56 | 0.77 | 15.71 | 0.00 | 15.71 | 4.000 | No | Yes | 2.00 |
| 901 | 13.21 | 2.17 | 100.00 | 3.09 | 0.56 | 0.77 | 15.62 | 0.00 | 15.62 | 4.000 | No | Yes | 2.00 |
| 902 | 13.23 | 2.21 | 100.00 | 3.08 | 0.56 | 0.77 | 15.90 | 0.00 | 15.90 | 4.000 | No | Yes | 2.00 |
| 903 | 13.25 | 2.26 | 100.00 | 3.07 | 0.56 | 0.77 | 16.23 | 0.00 | 16.23 | 4.000 | No | Yes | 2.00 |
| 904 | 13.27 | 2.30 | 100.00 | 3.05 | 0.56 | 0.77 | 16.52 | 0.00 | 16.52 | 4.000 | No | Yes | 2.00 |
| 905 | 13.29 | 2.33 | 100.00 | 3.04 | 0.56 | 0.77 | 16.76 | 0.00 | 16.76 | 4.000 | No | Yes | 2.00 |
| 906 | 13.31 | 2.36 | 100.00 | 3.04 | 0.56 | 0.77 | 16.94 | 0.00 | 16.94 | 4.000 | No | Yes | 2.00 |
| 907 | 13.33 | 2.39 | 100.00 | 3.04 | 0.56 | 0.77 | 17.12 | 0.00 | 17.12 | 4.000 | No | Yes | 2.00 |
| 908 | 13.35 | 2.45 | 100.00 | 3.02 | 0.55 | 0.77 | 17.60 | 0.00 | 17.60 | 4.000 | No | Yes | 2.00 |
| 909 | 13.37 | 2.55 | 100.00 | 3.00 | 0.55 | 0.77 | 18.32 | 0.00 | 18.32 | 4.000 | No | Yes | 2.00 |
| 910 | 13.39 | 2.56 | 100.00 | 3.00 | 0.55 | 0.77 | 18.40 | 0.00 | 18.40 | 4.000 | No | Yes | 2.00 |
| 911 | 13.41 | 2.55 | 100.00 | 3.01 | 0.55 | 0.77 | 18.29 | 0.00 | 18.29 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 912 | 13.43 | 2.59 | 100.00 | 3.01 | 0.55 | 0.77 | 18.57 | 0.00 | 18.57 | 4.000 | No | Yes | 2.00 |
| 913 | 13.45 | 2.52 | 100.00 | 3.03 | 0.55 | 0.77 | 18.03 | 0.00 | 18.03 | 4.000 | No | Yes | 2.00 |
| 914 | 13.47 | 2.52 | 100.00 | 3.03 | 0.55 | 0.77 | 18.01 | 0.00 | 18.01 | 4.000 | No | Yes | 2.00 |
| 915 | 13.49 | 2.52 | 100.00 | 3.03 | 0.55 | 0.77 | 18.00 | 0.00 | 18.00 | 4.000 | No | Yes | 2.00 |
| 916 | 13.51 | 2.47 | 100.00 | 3.05 | 0.55 | 0.77 | 17.65 | 0.00 | 17.65 | 4.000 | No | Yes | 2.00 |
| 917 | 13.53 | 2.43 | 100.00 | 3.05 | 0.56 | 0.77 | 17.33 | 0.00 | 17.33 | 4.000 | No | Yes | 2.00 |
| 918 | 13.55 | 2.41 | 100.00 | 3.06 | 0.56 | 0.77 | 17.15 | 0.00 | 17.15 | 4.000 | No | Yes | 2.00 |
| 919 | 13.57 | 2.47 | 100.00 | 3.05 | 0.55 | 0.77 | 17.54 | 0.00 | 17.54 | 4.000 | No | Yes | 2.00 |
| 920 | 13.59 | 2.42 | 100.00 | 3.07 | 0.56 | 0.76 | 17.20 | 0.00 | 17.20 | 4.000 | No | Yes | 2.00 |
| 921 | 13.61 | 2.49 | 100.00 | 3.04 | 0.55 | 0.76 | 17.73 | 0.00 | 17.73 | 4.000 | No | Yes | 2.00 |
| 922 | 13.63 | 2.62 | 100.00 | 3.01 | 0.55 | 0.77 | 18.64 | 0.00 | 18.64 | 4.000 | No | Yes | 2.00 |
| 923 | 13.65 | 2.40 | 100.00 | 3.07 | 0.56 | 0.76 | 17.04 | 0.00 | 17.04 | 4.000 | No | Yes | 2.00 |
| 924 | 13.67 | 2.36 | 100.00 | 3.08 | 0.56 | 0.76 | 16.68 | 0.00 | 16.68 | 4.000 | No | Yes | 2.00 |
| 925 | 13.69 | 2.36 | 100.00 | 3.08 | 0.56 | 0.76 | 16.69 | 0.00 | 16.69 | 4.000 | No | Yes | 2.00 |
| 926 | 13.71 | 2.33 | 100.00 | 3.06 | 0.56 | 0.76 | 16.42 | 0.00 | 16.42 | 4.000 | No | Yes | 2.00 |
| 927 | 13.73 | 2.29 | 100.00 | 3.06 | 0.56 | 0.76 | 16.14 | 0.00 | 16.14 | 4.000 | No | Yes | 2.00 |
| 928 | 13.75 | 2.28 | 100.00 | 3.06 | 0.56 | 0.76 | 16.06 | 0.00 | 16.06 | 4.000 | No | Yes | 2.00 |
| 929 | 13.77 | 2.28 | 100.00 | 3.06 | 0.56 | 0.76 | 16.06 | 0.00 | 16.06 | 4.000 | No | Yes | 2.00 |
| 930 | 13.79 | 2.16 | 100.00 | 3.10 | 0.56 | 0.76 | 15.14 | 0.00 | 15.14 | 4.000 | No | Yes | 2.00 |
| 931 | 13.81 | 2.13 | 100.00 | 3.07 | 0.56 | 0.76 | 14.93 | 0.00 | 14.93 | 4.000 | No | Yes | 2.00 |
| 932 | 13.83 | 2.08 | 100.00 | 3.11 | 0.57 | 0.76 | 14.54 | 0.00 | 14.54 | 4.000 | No | Yes | 2.00 |
| 933 | 13.85 | 2.06 | 100.00 | 3.13 | 0.57 | 0.75 | 14.34 | 0.00 | 14.34 | 4.000 | No | Yes | 2.00 |
| 934 | 13.87 | 2.03 | 100.00 | 3.14 | 0.57 | 0.75 | 14.13 | 0.00 | 14.13 | 4.000 | No | Yes | 2.00 |
| 935 | 13.89 | 1.94 | 100.00 | 3.16 | 0.57 | 0.75 | 13.06 | 0.00 | 13.06 | 4.000 | No | Yes | 2.00 |
| 936 | 13.91 | 2.08 | 100.00 | 3.10 | 0.57 | 0.75 | 14.07 | 0.00 | 14.07 | 4.000 | No | Yes | 2.00 |
| 937 | 13.93 | 2.13 | 100.00 | 3.06 | 0.57 | 0.75 | 14.40 | 0.00 | 14.40 | 4.000 | No | Yes | 2.00 |
| 938 | 13.95 | 2.15 | 100.00 | 3.05 | 0.57 | 0.75 | 14.52 | 0.00 | 14.52 | 4.000 | No | Yes | 2.00 |
| 939 | 13.97 | 2.21 | 100.00 | 3.02 | 0.56 | 0.75 | 14.95 | 0.00 | 14.95 | 4.000 | No | Yes | 2.00 |
| 940 | 13.99 | 2.13 | 100.00 | 3.05 | 0.57 | 0.75 | 14.45 | 0.00 | 14.45 | 4.000 | No | Yes | 2.00 |

**Abbreviations**

Depth: Depth from free surface, at which CPT was performed (m)
$q_t$: Total cone resistance
FC: Fines content (%)
$I_c$: Soil behavior type index
m: Stress exponent
$C_N$: Overburden correction factor
$q_{c1N}$: Normalized and adjusted cone resistance
$\Delta q_{c1N}$: Cone resistance correction factor due to fines
$q_{c1N,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for $M_w$=7.5
FS: Factor of safety against soil liquefaction

**:: 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.02 | 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 | 1.99 | 0.00 | 9.83 | 0.02 | 0.00 | 0.36 | 1.89 | 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 | 1.85 | 0.00 | 9.65 | 0.02 | 0.00 | 0.72 | 1.42 | 0.00 | 9.64 | 0.02 | 0.00 |
| 0.74 | 1.19 | 0.00 | 9.63 | 0.02 | 0.00 | 0.76 | 1.02 | 0.00 | 9.62 | 0.02 | 0.00 |
| 0.78 | 0.90 | 0.10 | 9.61 | 0.02 | 0.02 | 0.80 | 0.79 | 0.21 | 9.60 | 0.02 | 0.04 |
| 0.82 | 0.70 | 0.30 | 9.59 | 0.02 | 0.06 | 0.84 | 0.65 | 0.35 | 9.58 | 0.02 | 0.07 |
| 0.86 | 0.61 | 0.39 | 9.57 | 0.02 | 0.07 | 0.88 | 0.59 | 0.41 | 9.56 | 0.02 | 0.08 |
| 0.90 | 0.59 | 0.41 | 9.55 | 0.02 | 0.08 | 0.92 | 0.59 | 0.41 | 9.54 | 0.02 | 0.08 |
| 0.94 | 0.61 | 0.39 | 9.53 | 0.02 | 0.08 | 0.96 | 0.57 | 0.43 | 9.52 | 0.02 | 0.08 |
| 0.98 | 0.51 | 0.49 | 9.51 | 0.02 | 0.09 | 1.00 | 0.48 | 0.52 | 9.50 | 0.02 | 0.10 |
| 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 | 0.50 | 0.50 | 9.45 | 0.02 | 0.09 | 1.12 | 0.58 | 0.42 | 9.44 | 0.02 | 0.08 |
| 1.14 | 0.61 | 0.39 | 9.43 | 0.02 | 0.07 | 1.16 | 0.60 | 0.40 | 9.42 | 0.02 | 0.08 |
| 1.18 | 0.58 | 0.42 | 9.41 | 0.02 | 0.08 | 1.20 | 0.54 | 0.46 | 9.40 | 0.02 | 0.09 |
| 1.22 | 0.50 | 0.50 | 9.39 | 0.02 | 0.09 | 1.24 | 0.47 | 0.53 | 9.38 | 0.02 | 0.10 |
| 1.26 | 0.46 | 0.54 | 9.37 | 0.02 | 0.10 | 1.28 | 0.46 | 0.54 | 9.36 | 0.02 | 0.10 |
| 1.30 | 0.46 | 0.54 | 9.35 | 0.02 | 0.10 | 1.32 | 0.48 | 0.52 | 9.34 | 0.02 | 0.10 |
| 1.34 | 0.51 | 0.49 | 9.33 | 0.02 | 0.09 | 1.36 | 0.58 | 0.42 | 9.32 | 0.02 | 0.08 |
| 1.38 | 0.63 | 0.37 | 9.31 | 0.02 | 0.07 | 1.40 | 0.61 | 0.39 | 9.30 | 0.02 | 0.07 |
| 1.42 | 0.55 | 0.45 | 9.29 | 0.02 | 0.08 | 1.44 | 0.50 | 0.50 | 9.28 | 0.02 | 0.09 |
| 1.46 | 0.50 | 0.50 | 9.27 | 0.02 | 0.09 | 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 | 1.92 | 2.00 | 0.00 | 9.04 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.94 | 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 | 0.53 | 0.47 | 8.96 | 0.02 | 0.08 |
| 2.10 | 0.65 | 0.35 | 8.95 | 0.02 | 0.06 | 2.12 | 0.86 | 0.14 | 8.94 | 0.02 | 0.03 |
| 2.14 | 0.88 | 0.12 | 8.93 | 0.02 | 0.02 | 2.16 | 0.84 | 0.16 | 8.92 | 0.02 | 0.03 |
| 2.18 | 0.76 | 0.24 | 8.91 | 0.02 | 0.04 | 2.20 | 0.74 | 0.26 | 8.90 | 0.02 | 0.05 |
| 2.22 | 0.71 | 0.29 | 8.89 | 0.02 | 0.05 | 2.24 | 0.67 | 0.33 | 8.88 | 0.02 | 0.06 |
| 2.26 | 0.66 | 0.34 | 8.87 | 0.02 | 0.06 | 2.28 | 0.66 | 0.34 | 8.86 | 0.02 | 0.06 |
| 2.30 | 0.68 | 0.32 | 8.85 | 0.02 | 0.06 | 2.32 | 0.70 | 0.30 | 8.84 | 0.02 | 0.05 |
| 2.34 | 0.70 | 0.30 | 8.83 | 0.02 | 0.05 | 2.36 | 0.70 | 0.30 | 8.82 | 0.02 | 0.05 |
| 2.38 | 0.70 | 0.30 | 8.81 | 0.02 | 0.05 | 2.40 | 0.68 | 0.32 | 8.80 | 0.02 | 0.06 |
| 2.42 | 0.67 | 0.33 | 8.79 | 0.02 | 0.06 | 2.44 | 0.68 | 0.32 | 8.78 | 0.02 | 0.06 |
| 2.46 | 0.75 | 0.25 | 8.77 | 0.02 | 0.04 | 2.48 | 1.00 | 0.00 | 8.76 | 0.02 | 0.00 |
| 2.50 | 0.84 | 0.16 | 8.75 | 0.02 | 0.03 | 2.52 | 0.62 | 0.38 | 8.74 | 0.02 | 0.07 |
| 2.54 | 0.55 | 0.45 | 8.73 | 0.02 | 0.08 | 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 | 3.84 | 2.00 | 0.00 | 8.08 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.86 | 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 | 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 | 2.00 | 0.00 | 7.72 | 0.02 | 0.00 |
| 4.58 | 2.00 | 0.00 | 7.71 | 0.02 | 0.00 | 4.60 | 2.00 | 0.00 | 7.70 | 0.02 | 0.00 |
| 4.62 | 2.00 | 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 | 2.00 | 0.00 | 7.50 | 0.02 | 0.00 |
| 5.02 | 2.00 | 0.00 | 7.49 | 0.02 | 0.00 | 5.04 | 2.00 | 0.00 | 7.48 | 0.02 | 0.00 |
| 5.06 | 2.00 | 0.00 | 7.47 | 0.02 | 0.00 | 5.08 | 2.00 | 0.00 | 7.46 | 0.02 | 0.00 |
| 5.10 | 2.00 | 0.00 | 7.45 | 0.02 | 0.00 | 5.12 | 2.00 | 0.00 | 7.44 | 0.02 | 0.00 |
| 5.14 | 2.00 | 0.00 | 7.43 | 0.02 | 0.00 | 5.16 | 2.00 | 0.00 | 7.42 | 0.02 | 0.00 |
| 5.18 | 2.00 | 0.00 | 7.41 | 0.02 | 0.00 | 5.20 | 2.00 | 0.00 | 7.40 | 0.02 | 0.00 |
| 5.22 | 2.00 | 0.00 | 7.39 | 0.02 | 0.00 | 5.24 | 2.00 | 0.00 | 7.38 | 0.02 | 0.00 |
| 5.26 | 2.00 | 0.00 | 7.37 | 0.02 | 0.00 | 5.28 | 2.00 | 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 | 2.00 | 0.00 | 7.29 | 0.02 | 0.00 | 5.44 | 2.00 | 0.00 | 7.28 | 0.02 | 0.00 |
| 5.46 | 2.00 | 0.00 | 7.27 | 0.02 | 0.00 | 5.48 | 2.00 | 0.00 | 7.26 | 0.02 | 0.00 |
| 5.50 | 2.00 | 0.00 | 7.25 | 0.02 | 0.00 | 5.52 | 2.00 | 0.00 | 7.24 | 0.02 | 0.00 |
| 5.54 | 2.00 | 0.00 | 7.23 | 0.02 | 0.00 | 5.56 | 2.00 | 0.00 | 7.22 | 0.02 | 0.00 |
| 5.58 | 2.00 | 0.00 | 7.21 | 0.02 | 0.00 | 5.60 | 2.00 | 0.00 | 7.20 | 0.02 | 0.00 |
| 5.62 | 2.00 | 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 | 0.54 | 0.46 | 7.15 | 0.02 | 0.07 | 5.72 | 0.76 | 0.24 | 7.14 | 0.02 | 0.03 |
| 5.74 | 0.87 | 0.13 | 7.13 | 0.02 | 0.02 | 5.76 | 0.94 | 0.06 | 7.12 | 0.02 | 0.01 |

**:: 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5.78 | 0.92 | 0.08 | 7.11 | 0.02 | 0.01 | 5.80 | 0.88 | 0.12 | 7.10 | 0.02 | 0.02 |
| 5.82 | 0.77 | 0.23 | 7.09 | 0.02 | 0.03 | 5.84 | 0.55 | 0.45 | 7.08 | 0.02 | 0.06 |
| 5.86 | 0.48 | 0.52 | 7.07 | 0.02 | 0.07 | 5.88 | 0.44 | 0.56 | 7.06 | 0.02 | 0.08 |
| 5.90 | 2.00 | 0.00 | 7.05 | 0.02 | 0.00 | 5.92 | 2.00 | 0.00 | 7.04 | 0.02 | 0.00 |
| 5.94 | 0.47 | 0.53 | 7.03 | 0.02 | 0.08 | 5.96 | 0.46 | 0.54 | 7.02 | 0.02 | 0.08 |
| 5.98 | 0.46 | 0.54 | 7.01 | 0.02 | 0.08 | 6.00 | 0.47 | 0.53 | 7.00 | 0.02 | 0.07 |
| 6.02 | 0.45 | 0.55 | 6.99 | 0.02 | 0.08 | 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 | 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 |
| 6.65 | 2.00 | 0.00 | 6.67 | 0.02 | 0.00 | 6.67 | 2.00 | 0.00 | 6.66 | 0.02 | 0.00 |
| 6.69 | 2.00 | 0.00 | 6.65 | 0.02 | 0.00 | 6.71 | 2.00 | 0.00 | 6.64 | 0.02 | 0.00 |
| 6.73 | 2.00 | 0.00 | 6.63 | 0.02 | 0.00 | 6.75 | 2.00 | 0.00 | 6.62 | 0.02 | 0.00 |
| 6.77 | 2.00 | 0.00 | 6.61 | 0.02 | 0.00 | 6.79 | 2.00 | 0.00 | 6.60 | 0.02 | 0.00 |
| 6.81 | 2.00 | 0.00 | 6.59 | 0.02 | 0.00 | 6.83 | 2.00 | 0.00 | 6.58 | 0.02 | 0.00 |
| 6.85 | 2.00 | 0.00 | 6.57 | 0.02 | 0.00 | 6.87 | 2.00 | 0.00 | 6.56 | 0.02 | 0.00 |
| 6.89 | 2.00 | 0.00 | 6.55 | 0.02 | 0.00 | 6.91 | 2.00 | 0.00 | 6.54 | 0.02 | 0.00 |
| 6.93 | 2.00 | 0.00 | 6.53 | 0.02 | 0.00 | 6.95 | 2.00 | 0.00 | 6.52 | 0.02 | 0.00 |
| 6.97 | 2.00 | 0.00 | 6.51 | 0.02 | 0.00 | 6.99 | 2.00 | 0.00 | 6.50 | 0.02 | 0.00 |
| 7.01 | 2.00 | 0.00 | 6.49 | 0.02 | 0.00 | 7.03 | 2.00 | 0.00 | 6.48 | 0.02 | 0.00 |
| 7.05 | 2.00 | 0.00 | 6.47 | 0.02 | 0.00 | 7.07 | 2.00 | 0.00 | 6.46 | 0.02 | 0.00 |
| 7.09 | 2.00 | 0.00 | 6.45 | 0.02 | 0.00 | 7.11 | 2.00 | 0.00 | 6.44 | 0.02 | 0.00 |
| 7.13 | 2.00 | 0.00 | 6.43 | 0.02 | 0.00 | 7.15 | 2.00 | 0.00 | 6.42 | 0.02 | 0.00 |
| 7.17 | 2.00 | 0.00 | 6.41 | 0.02 | 0.00 | 7.19 | 2.00 | 0.00 | 6.40 | 0.02 | 0.00 |
| 7.21 | 2.00 | 0.00 | 6.39 | 0.02 | 0.00 | 7.23 | 2.00 | 0.00 | 6.38 | 0.02 | 0.00 |
| 7.25 | 2.00 | 0.00 | 6.37 | 0.02 | 0.00 | 7.27 | 2.00 | 0.00 | 6.36 | 0.02 | 0.00 |
| 7.29 | 2.00 | 0.00 | 6.35 | 0.02 | 0.00 | 7.31 | 2.00 | 0.00 | 6.34 | 0.02 | 0.00 |
| 7.33 | 2.00 | 0.00 | 6.33 | 0.02 | 0.00 | 7.35 | 2.00 | 0.00 | 6.32 | 0.02 | 0.00 |
| 7.37 | 2.00 | 0.00 | 6.31 | 0.02 | 0.00 | 7.39 | 2.00 | 0.00 | 6.30 | 0.02 | 0.00 |
| 7.41 | 2.00 | 0.00 | 6.29 | 0.02 | 0.00 | 7.43 | 2.00 | 0.00 | 6.28 | 0.02 | 0.00 |
| 7.45 | 2.00 | 0.00 | 6.27 | 0.02 | 0.00 | 7.47 | 2.00 | 0.00 | 6.26 | 0.02 | 0.00 |
| 7.49 | 2.00 | 0.00 | 6.25 | 0.02 | 0.00 | 7.51 | 2.00 | 0.00 | 6.24 | 0.02 | 0.00 |
| 7.53 | 2.00 | 0.00 | 6.23 | 0.02 | 0.00 | 7.55 | 2.00 | 0.00 | 6.22 | 0.02 | 0.00 |
| 7.57 | 2.00 | 0.00 | 6.21 | 0.02 | 0.00 | 7.59 | 2.00 | 0.00 | 6.20 | 0.02 | 0.00 |
| 7.61 | 2.00 | 0.00 | 6.19 | 0.02 | 0.00 | 7.63 | 2.00 | 0.00 | 6.18 | 0.02 | 0.00 |
| 7.65 | 2.00 | 0.00 | 6.17 | 0.02 | 0.00 | 7.67 | 2.00 | 0.00 | 6.16 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.69 | 2.00 | 0.00 | 6.15 | 0.02 | 0.00 | 7.71 | 2.00 | 0.00 | 6.14 | 0.02 | 0.00 |
| 7.73 | 2.00 | 0.00 | 6.13 | 0.02 | 0.00 | 7.75 | 2.00 | 0.00 | 6.12 | 0.02 | 0.00 |
| 7.77 | 2.00 | 0.00 | 6.11 | 0.02 | 0.00 | 7.79 | 2.00 | 0.00 | 6.10 | 0.02 | 0.00 |
| 7.81 | 2.00 | 0.00 | 6.09 | 0.02 | 0.00 | 7.83 | 2.00 | 0.00 | 6.08 | 0.02 | 0.00 |
| 7.85 | 2.00 | 0.00 | 6.07 | 0.02 | 0.00 | 7.87 | 2.00 | 0.00 | 6.06 | 0.02 | 0.00 |
| 7.89 | 2.00 | 0.00 | 6.05 | 0.02 | 0.00 | 7.91 | 2.00 | 0.00 | 6.04 | 0.02 | 0.00 |
| 7.93 | 2.00 | 0.00 | 6.03 | 0.02 | 0.00 | 7.95 | 2.00 | 0.00 | 6.02 | 0.02 | 0.00 |
| 7.97 | 2.00 | 0.00 | 6.01 | 0.02 | 0.00 | 7.99 | 2.00 | 0.00 | 6.00 | 0.02 | 0.00 |
| 8.01 | 2.00 | 0.00 | 5.99 | 0.02 | 0.00 | 8.03 | 2.00 | 0.00 | 5.98 | 0.02 | 0.00 |
| 8.05 | 2.00 | 0.00 | 5.97 | 0.02 | 0.00 | 8.07 | 2.00 | 0.00 | 5.96 | 0.02 | 0.00 |
| 8.09 | 2.00 | 0.00 | 5.95 | 0.02 | 0.00 | 8.11 | 2.00 | 0.00 | 5.94 | 0.02 | 0.00 |
| 8.13 | 2.00 | 0.00 | 5.93 | 0.02 | 0.00 | 8.15 | 2.00 | 0.00 | 5.92 | 0.02 | 0.00 |
| 8.17 | 2.00 | 0.00 | 5.91 | 0.02 | 0.00 | 8.19 | 2.00 | 0.00 | 5.90 | 0.02 | 0.00 |
| 8.21 | 2.00 | 0.00 | 5.89 | 0.02 | 0.00 | 8.23 | 2.00 | 0.00 | 5.88 | 0.02 | 0.00 |
| 8.25 | 2.00 | 0.00 | 5.87 | 0.02 | 0.00 | 8.27 | 2.00 | 0.00 | 5.86 | 0.02 | 0.00 |
| 8.29 | 2.00 | 0.00 | 5.85 | 0.02 | 0.00 | 8.31 | 2.00 | 0.00 | 5.84 | 0.02 | 0.00 |
| 8.33 | 2.00 | 0.00 | 5.83 | 0.02 | 0.00 | 8.35 | 2.00 | 0.00 | 5.82 | 0.02 | 0.00 |
| 8.37 | 2.00 | 0.00 | 5.81 | 0.02 | 0.00 | 8.39 | 2.00 | 0.00 | 5.80 | 0.02 | 0.00 |
| 8.41 | 2.00 | 0.00 | 5.79 | 0.02 | 0.00 | 8.43 | 2.00 | 0.00 | 5.78 | 0.02 | 0.00 |
| 8.45 | 2.00 | 0.00 | 5.77 | 0.02 | 0.00 | 8.47 | 2.00 | 0.00 | 5.76 | 0.02 | 0.00 |
| 8.49 | 2.00 | 0.00 | 5.75 | 0.02 | 0.00 | 8.51 | 2.00 | 0.00 | 5.74 | 0.02 | 0.00 |
| 8.53 | 2.00 | 0.00 | 5.73 | 0.02 | 0.00 | 8.55 | 2.00 | 0.00 | 5.72 | 0.02 | 0.00 |
| 8.57 | 2.00 | 0.00 | 5.71 | 0.02 | 0.00 | 8.59 | 2.00 | 0.00 | 5.70 | 0.02 | 0.00 |
| 8.61 | 2.00 | 0.00 | 5.69 | 0.02 | 0.00 | 8.63 | 2.00 | 0.00 | 5.68 | 0.02 | 0.00 |
| 8.65 | 2.00 | 0.00 | 5.67 | 0.02 | 0.00 | 8.67 | 2.00 | 0.00 | 5.66 | 0.02 | 0.00 |
| 8.69 | 2.00 | 0.00 | 5.65 | 0.02 | 0.00 | 8.71 | 2.00 | 0.00 | 5.64 | 0.02 | 0.00 |
| 8.73 | 2.00 | 0.00 | 5.63 | 0.02 | 0.00 | 8.75 | 2.00 | 0.00 | 5.62 | 0.02 | 0.00 |
| 8.77 | 2.00 | 0.00 | 5.62 | 0.02 | 0.00 | 8.79 | 2.00 | 0.00 | 5.61 | 0.02 | 0.00 |
| 8.81 | 2.00 | 0.00 | 5.60 | 0.02 | 0.00 | 8.83 | 2.00 | 0.00 | 5.59 | 0.02 | 0.00 |
| 8.85 | 2.00 | 0.00 | 5.58 | 0.02 | 0.00 | 8.87 | 2.00 | 0.00 | 5.57 | 0.02 | 0.00 |
| 8.89 | 2.00 | 0.00 | 5.56 | 0.02 | 0.00 | 8.91 | 2.00 | 0.00 | 5.55 | 0.02 | 0.00 |
| 8.93 | 2.00 | 0.00 | 5.54 | 0.02 | 0.00 | 8.95 | 2.00 | 0.00 | 5.53 | 0.02 | 0.00 |
| 8.97 | 2.00 | 0.00 | 5.52 | 0.02 | 0.00 | 8.99 | 2.00 | 0.00 | 5.51 | 0.02 | 0.00 |
| 9.01 | 2.00 | 0.00 | 5.50 | 0.02 | 0.00 | 9.03 | 2.00 | 0.00 | 5.49 | 0.02 | 0.00 |
| 9.05 | 2.00 | 0.00 | 5.48 | 0.02 | 0.00 | 9.07 | 2.00 | 0.00 | 5.47 | 0.02 | 0.00 |
| 9.09 | 2.00 | 0.00 | 5.46 | 0.02 | 0.00 | 9.11 | 2.00 | 0.00 | 5.45 | 0.02 | 0.00 |
| 9.13 | 2.00 | 0.00 | 5.44 | 0.02 | 0.00 | 9.15 | 2.00 | 0.00 | 5.43 | 0.02 | 0.00 |
| 9.17 | 2.00 | 0.00 | 5.42 | 0.02 | 0.00 | 9.19 | 2.00 | 0.00 | 5.41 | 0.02 | 0.00 |
| 9.21 | 2.00 | 0.00 | 5.40 | 0.02 | 0.00 | 9.23 | 2.00 | 0.00 | 5.39 | 0.02 | 0.00 |
| 9.25 | 2.00 | 0.00 | 5.38 | 0.02 | 0.00 | 9.27 | 2.00 | 0.00 | 5.37 | 0.02 | 0.00 |
| 9.29 | 2.00 | 0.00 | 5.36 | 0.02 | 0.00 | 9.31 | 2.00 | 0.00 | 5.35 | 0.02 | 0.00 |
| 9.33 | 2.00 | 0.00 | 5.34 | 0.02 | 0.00 | 9.35 | 2.00 | 0.00 | 5.33 | 0.02 | 0.00 |
| 9.37 | 2.00 | 0.00 | 5.32 | 0.02 | 0.00 | 9.39 | 2.00 | 0.00 | 5.31 | 0.02 | 0.00 |
| 9.41 | 2.00 | 0.00 | 5.30 | 0.02 | 0.00 | 9.43 | 2.00 | 0.00 | 5.29 | 0.02 | 0.00 |
| 9.45 | 2.00 | 0.00 | 5.28 | 0.02 | 0.00 | 9.47 | 2.00 | 0.00 | 5.27 | 0.02 | 0.00 |
| 9.49 | 2.00 | 0.00 | 5.26 | 0.02 | 0.00 | 9.51 | 2.00 | 0.00 | 5.25 | 0.02 | 0.00 |
| 9.53 | 2.00 | 0.00 | 5.24 | 0.02 | 0.00 | 9.55 | 2.00 | 0.00 | 5.23 | 0.02 | 0.00 |
| 9.57 | 2.00 | 0.00 | 5.22 | 0.02 | 0.00 | 9.59 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9.61 | 2.00 | 0.00 | 5.20 | 0.02 | 0.00 | 9.63 | 2.00 | 0.00 | 5.19 | 0.02 | 0.00 |
| 9.65 | 2.00 | 0.00 | 5.18 | 0.02 | 0.00 | 9.67 | 2.00 | 0.00 | 5.17 | 0.02 | 0.00 |
| 9.69 | 2.00 | 0.00 | 5.16 | 0.02 | 0.00 | 9.71 | 2.00 | 0.00 | 5.15 | 0.02 | 0.00 |
| 9.73 | 2.00 | 0.00 | 5.14 | 0.02 | 0.00 | 9.75 | 0.57 | 0.43 | 5.13 | 0.02 | 0.04 |
| 9.77 | 2.00 | 0.00 | 5.12 | 0.02 | 0.00 | 9.79 | 0.54 | 0.46 | 5.11 | 0.02 | 0.05 |
| 9.81 | 2.00 | 0.00 | 5.10 | 0.02 | 0.00 | 9.83 | 2.00 | 0.00 | 5.09 | 0.02 | 0.00 |
| 9.85 | 2.00 | 0.00 | 5.08 | 0.02 | 0.00 | 9.87 | 2.00 | 0.00 | 5.07 | 0.02 | 0.00 |
| 9.89 | 2.00 | 0.00 | 5.06 | 0.02 | 0.00 | 9.91 | 2.00 | 0.00 | 5.05 | 0.02 | 0.00 |
| 9.93 | 2.00 | 0.00 | 5.04 | 0.02 | 0.00 | 9.95 | 2.00 | 0.00 | 5.03 | 0.02 | 0.00 |
| 9.97 | 2.00 | 0.00 | 5.02 | 0.02 | 0.00 | 9.99 | 2.00 | 0.00 | 5.01 | 0.02 | 0.00 |
| 10.01 | 2.00 | 0.00 | 5.00 | 0.02 | 0.00 | 10.03 | 2.00 | 0.00 | 4.99 | 0.02 | 0.00 |
| 10.05 | 2.00 | 0.00 | 4.98 | 0.02 | 0.00 | 10.07 | 2.00 | 0.00 | 4.97 | 0.02 | 0.00 |
| 10.09 | 2.00 | 0.00 | 4.96 | 0.02 | 0.00 | 10.11 | 2.00 | 0.00 | 4.95 | 0.02 | 0.00 |
| 10.13 | 2.00 | 0.00 | 4.94 | 0.02 | 0.00 | 10.15 | 0.59 | 0.41 | 4.93 | 0.02 | 0.04 |
| 10.17 | 0.68 | 0.32 | 4.92 | 0.02 | 0.03 | 10.19 | 0.77 | 0.23 | 4.91 | 0.02 | 0.02 |
| 10.21 | 0.86 | 0.14 | 4.90 | 0.02 | 0.01 | 10.23 | 0.96 | 0.04 | 4.89 | 0.02 | 0.00 |
| 10.25 | 1.15 | 0.00 | 4.88 | 0.02 | 0.00 | 10.27 | 1.33 | 0.00 | 4.87 | 0.02 | 0.00 |
| 10.29 | 1.22 | 0.00 | 4.86 | 0.02 | 0.00 | 10.31 | 0.99 | 0.01 | 4.85 | 0.02 | 0.00 |
| 10.33 | 0.94 | 0.06 | 4.84 | 0.02 | 0.01 | 10.35 | 0.96 | 0.04 | 4.83 | 0.02 | 0.00 |
| 10.37 | 1.19 | 0.00 | 4.82 | 0.02 | 0.00 | 10.39 | 2.00 | 0.00 | 4.81 | 0.02 | 0.00 |
| 10.41 | 2.00 | 0.00 | 4.80 | 0.02 | 0.00 | 10.43 | 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 | 1.41 | 0.00 | 4.60 | 0.02 | 0.00 | 10.82 | 0.94 | 0.06 | 4.59 | 0.02 | 0.01 |
| 10.84 | 0.84 | 0.16 | 4.58 | 0.02 | 0.01 | 10.86 | 0.77 | 0.23 | 4.57 | 0.02 | 0.02 |
| 10.88 | 0.66 | 0.34 | 4.56 | 0.02 | 0.03 | 10.90 | 0.64 | 0.36 | 4.55 | 0.02 | 0.03 |
| 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 | 12.69 | 2.00 | 0.00 | 3.65 | 0.02 | 0.00 |
| 12.71 | 2.00 | 0.00 | 3.64 | 0.02 | 0.00 | 12.73 | 2.00 | 0.00 | 3.63 | 0.02 | 0.00 |
| 12.75 | 2.00 | 0.00 | 3.62 | 0.02 | 0.00 | 12.77 | 2.00 | 0.00 | 3.61 | 0.02 | 0.00 |
| 12.79 | 2.00 | 0.00 | 3.60 | 0.02 | 0.00 | 12.81 | 2.00 | 0.00 | 3.59 | 0.02 | 0.00 |
| 12.83 | 2.00 | 0.00 | 3.58 | 0.02 | 0.00 | 12.85 | 2.00 | 0.00 | 3.57 | 0.02 | 0.00 |
| 12.87 | 2.00 | 0.00 | 3.56 | 0.02 | 0.00 | 12.89 | 2.00 | 0.00 | 3.55 | 0.02 | 0.00 |
| 12.91 | 2.00 | 0.00 | 3.54 | 0.02 | 0.00 | 12.93 | 2.00 | 0.00 | 3.53 | 0.02 | 0.00 |
| 12.95 | 2.00 | 0.00 | 3.52 | 0.02 | 0.00 | 12.97 | 2.00 | 0.00 | 3.51 | 0.02 | 0.00 |
| 12.99 | 2.00 | 0.00 | 3.50 | 0.02 | 0.00 | 13.01 | 2.00 | 0.00 | 3.49 | 0.02 | 0.00 |
| 13.03 | 2.00 | 0.00 | 3.48 | 0.02 | 0.00 | 13.05 | 2.00 | 0.00 | 3.47 | 0.02 | 0.00 |
| 13.07 | 2.00 | 0.00 | 3.46 | 0.02 | 0.00 | 13.09 | 2.00 | 0.00 | 3.45 | 0.02 | 0.00 |
| 13.11 | 2.00 | 0.00 | 3.44 | 0.02 | 0.00 | 13.13 | 2.00 | 0.00 | 3.43 | 0.02 | 0.00 |
| 13.15 | 2.00 | 0.00 | 3.42 | 0.02 | 0.00 | 13.17 | 2.00 | 0.00 | 3.41 | 0.02 | 0.00 |
| 13.19 | 2.00 | 0.00 | 3.40 | 0.02 | 0.00 | 13.21 | 2.00 | 0.00 | 3.39 | 0.02 | 0.00 |
| 13.23 | 2.00 | 0.00 | 3.38 | 0.02 | 0.00 | 13.25 | 2.00 | 0.00 | 3.37 | 0.02 | 0.00 |
| 13.27 | 2.00 | 0.00 | 3.36 | 0.02 | 0.00 | 13.29 | 2.00 | 0.00 | 3.35 | 0.02 | 0.00 |
| 13.31 | 2.00 | 0.00 | 3.34 | 0.02 | 0.00 | 13.33 | 2.00 | 0.00 | 3.33 | 0.02 | 0.00 |
| 13.35 | 2.00 | 0.00 | 3.32 | 0.02 | 0.00 | 13.37 | 2.00 | 0.00 | 3.31 | 0.02 | 0.00 |
| 13.39 | 2.00 | 0.00 | 3.30 | 0.02 | 0.00 | 13.41 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13.43 | 2.00 | 0.00 | 3.28 | 0.02 | 0.00 | 13.45 | 2.00 | 0.00 | 3.27 | 0.02 | 0.00 |
| 13.47 | 2.00 | 0.00 | 3.26 | 0.02 | 0.00 | 13.49 | 2.00 | 0.00 | 3.25 | 0.02 | 0.00 |
| 13.51 | 2.00 | 0.00 | 3.24 | 0.02 | 0.00 | 13.53 | 2.00 | 0.00 | 3.23 | 0.02 | 0.00 |
| 13.55 | 2.00 | 0.00 | 3.22 | 0.02 | 0.00 | 13.57 | 2.00 | 0.00 | 3.21 | 0.02 | 0.00 |
| 13.59 | 2.00 | 0.00 | 3.20 | 0.02 | 0.00 | 13.61 | 2.00 | 0.00 | 3.20 | 0.02 | 0.00 |
| 13.63 | 2.00 | 0.00 | 3.19 | 0.02 | 0.00 | 13.65 | 2.00 | 0.00 | 3.18 | 0.02 | 0.00 |
| 13.67 | 2.00 | 0.00 | 3.17 | 0.02 | 0.00 | 13.69 | 2.00 | 0.00 | 3.16 | 0.02 | 0.00 |
| 13.71 | 2.00 | 0.00 | 3.15 | 0.02 | 0.00 | 13.73 | 2.00 | 0.00 | 3.14 | 0.02 | 0.00 |
| 13.75 | 2.00 | 0.00 | 3.13 | 0.02 | 0.00 | 13.77 | 2.00 | 0.00 | 3.12 | 0.02 | 0.00 |
| 13.79 | 2.00 | 0.00 | 3.11 | 0.02 | 0.00 | 13.81 | 2.00 | 0.00 | 3.10 | 0.02 | 0.00 |
| 13.83 | 2.00 | 0.00 | 3.09 | 0.02 | 0.00 | 13.85 | 2.00 | 0.00 | 3.08 | 0.02 | 0.00 |
| 13.87 | 2.00 | 0.00 | 3.07 | 0.02 | 0.00 | 13.89 | 2.00 | 0.00 | 3.06 | 0.02 | 0.00 |
| 13.91 | 2.00 | 0.00 | 3.05 | 0.02 | 0.00 | 13.93 | 2.00 | 0.00 | 3.04 | 0.02 | 0.00 |
| 13.95 | 2.00 | 0.00 | 3.03 | 0.02 | 0.00 | 13.97 | 2.00 | 0.00 | 3.02 | 0.02 | 0.00 |
| 13.99 | 2.00 | 0.00 | 3.01 | 0.02 | 0.00 | | | | | | |

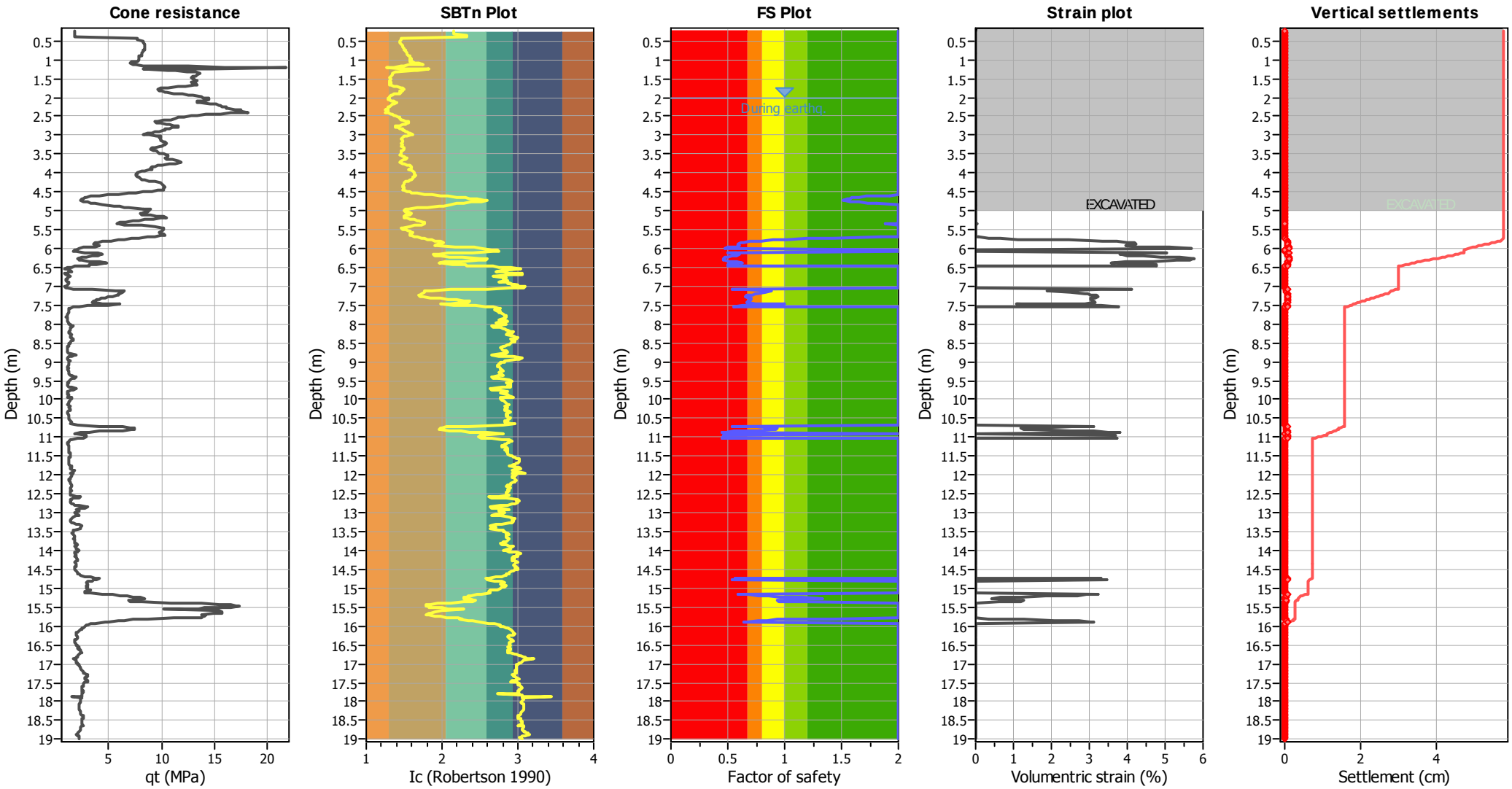
**Overall liquefaction potential: 4.80**

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

# Estimation of post-earthquake settlements




**Abbreviations**

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

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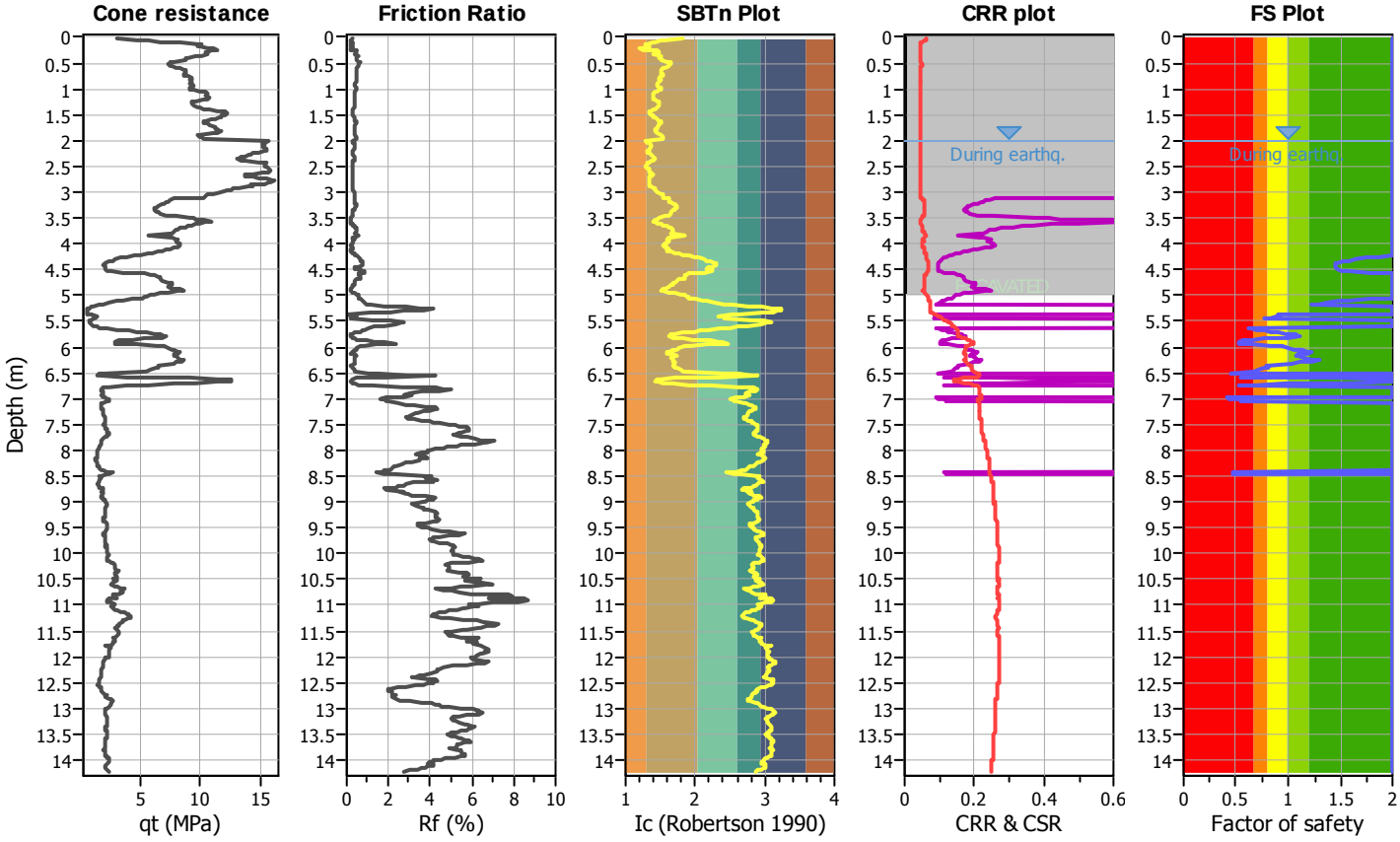
# LIQUEFACTION ANALYSIS REPORT

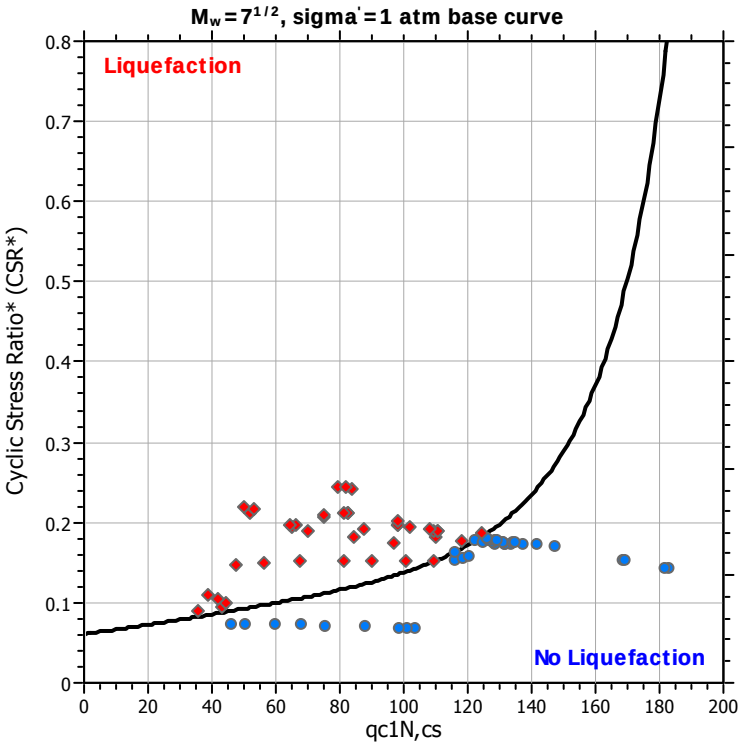
**Project title : Bosco verticale** **Location : Riccione**

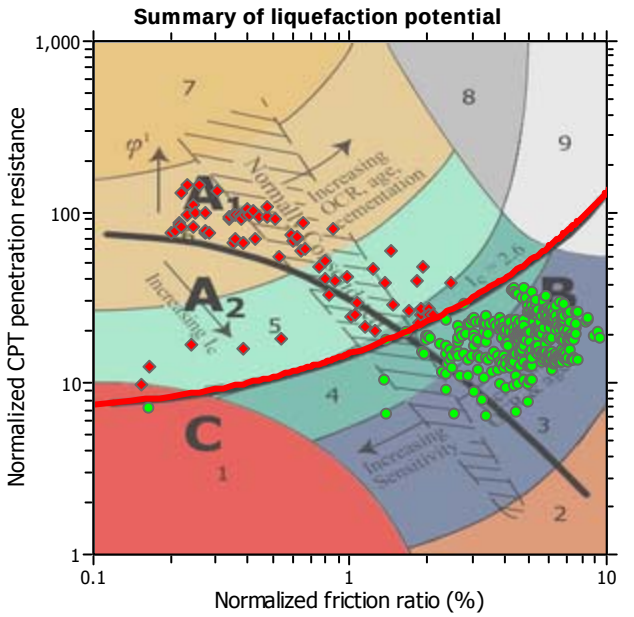
**CPT file : CPTu-4**

**Input parameters and analysis data**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 2.00 m | Excavation: | Yes | Clay like behavior applied: | Sands only |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 2.00 m | Excavation depth: | 5.00 m | Limit depth applied: | Yes |
| Points to test: | Based on Ic value | Average results interval: | 1 | Footing load: | 95.00 kPa | Limit depth: | 20.00 m |
| Earthquake magnitude $M_w$: | 6.14 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method |
| Peak ground acceleration: | 0.19 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

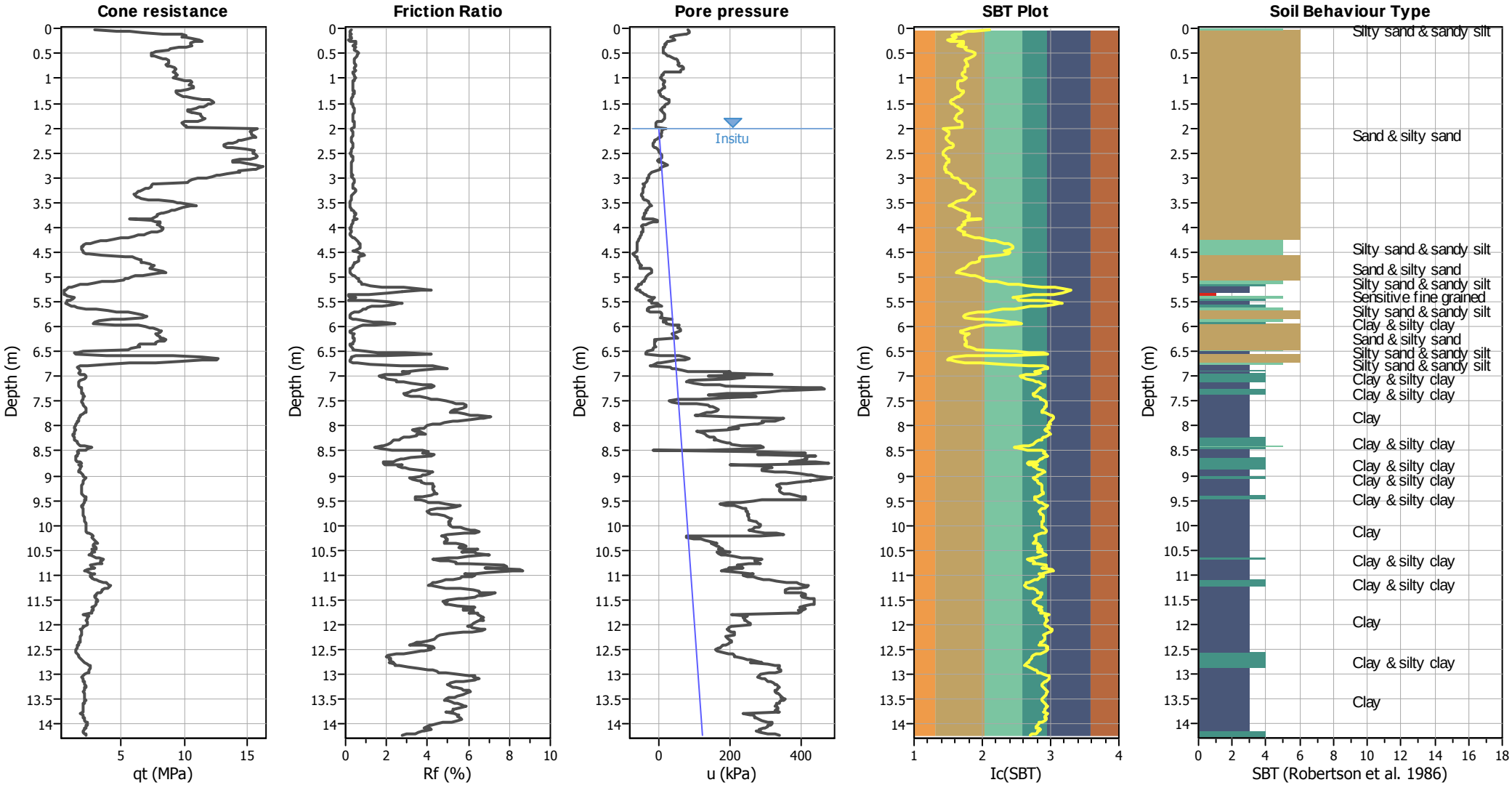



Zone $A_1$: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone $A_2$: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction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

# CPT basic interpretation plots



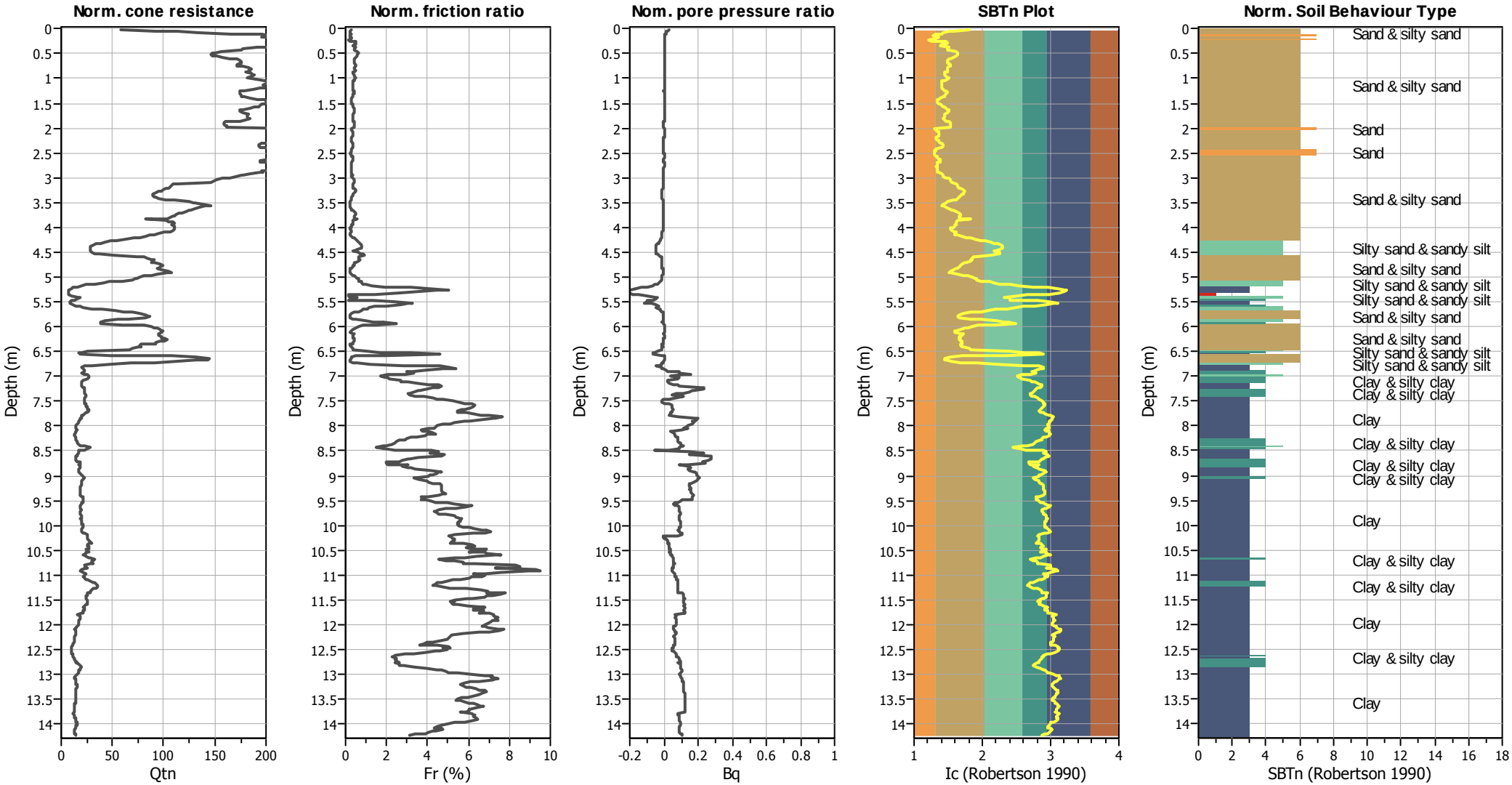

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

### SBT legend

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

# CPT basic interpretation plots (normalized)



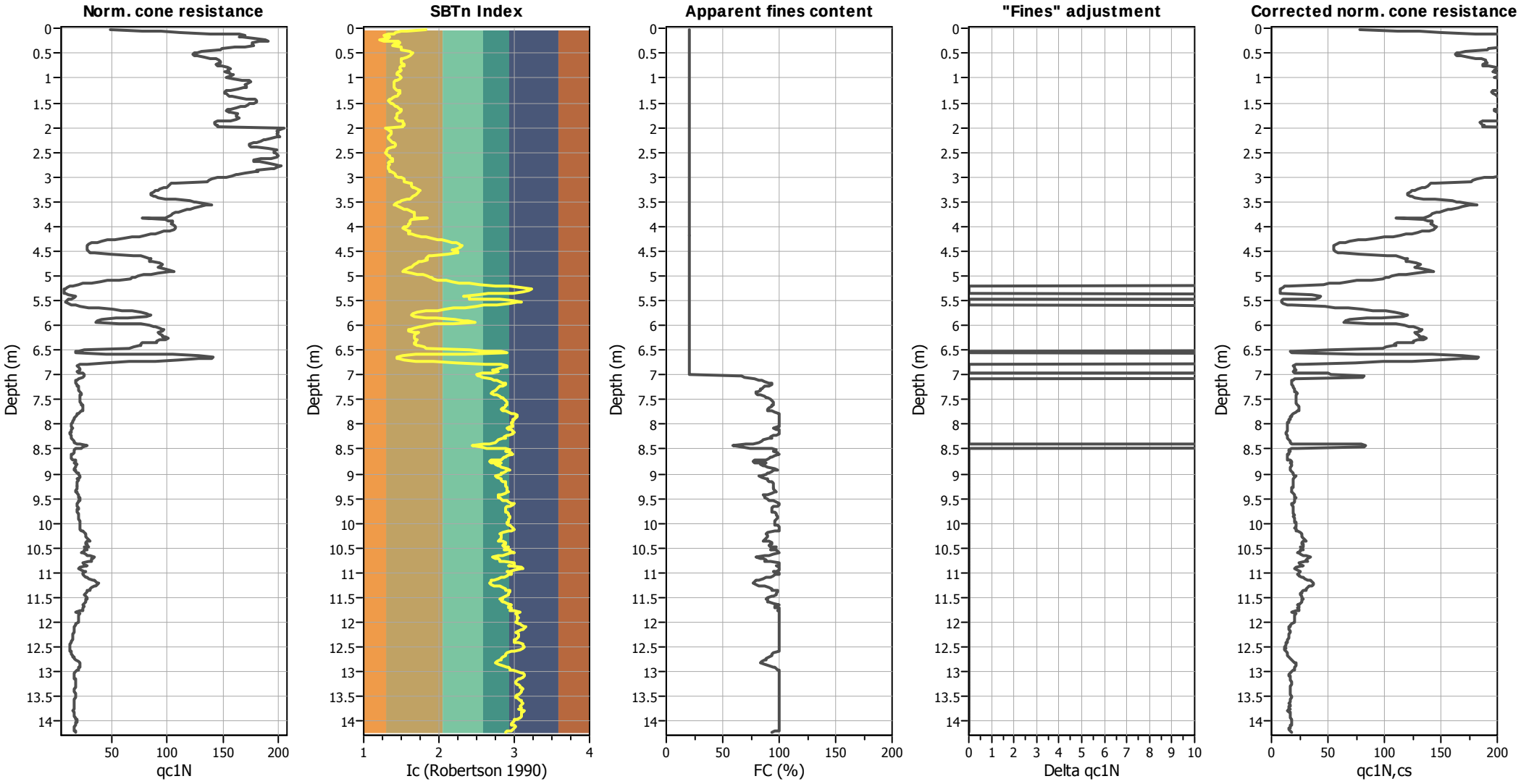

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

**SBTn legend**

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

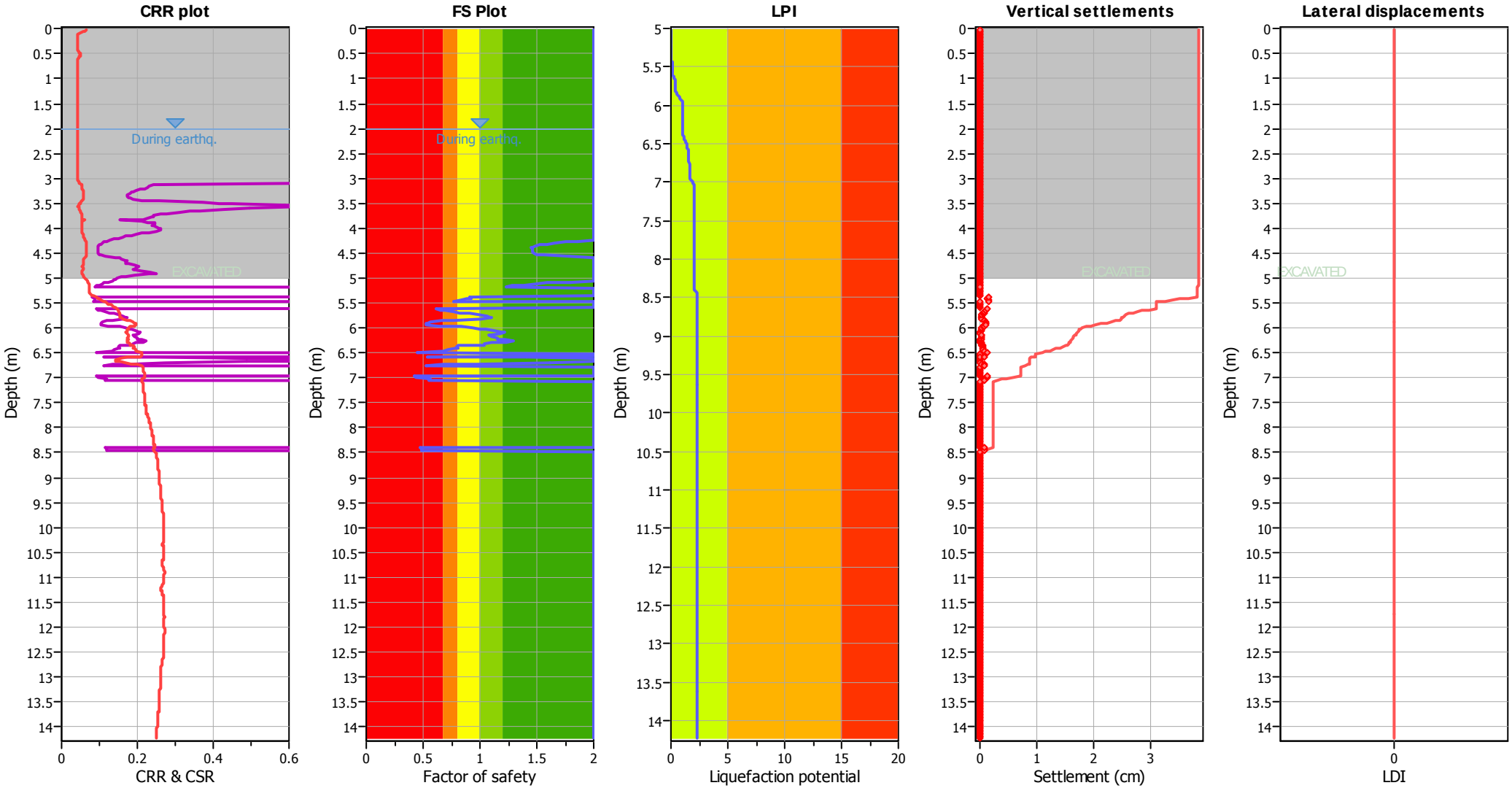
# Liquefaction analysis overall plots (intermediate results)




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

# Liquefaction analysis overall plots




## Input parameters and analysis data

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| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

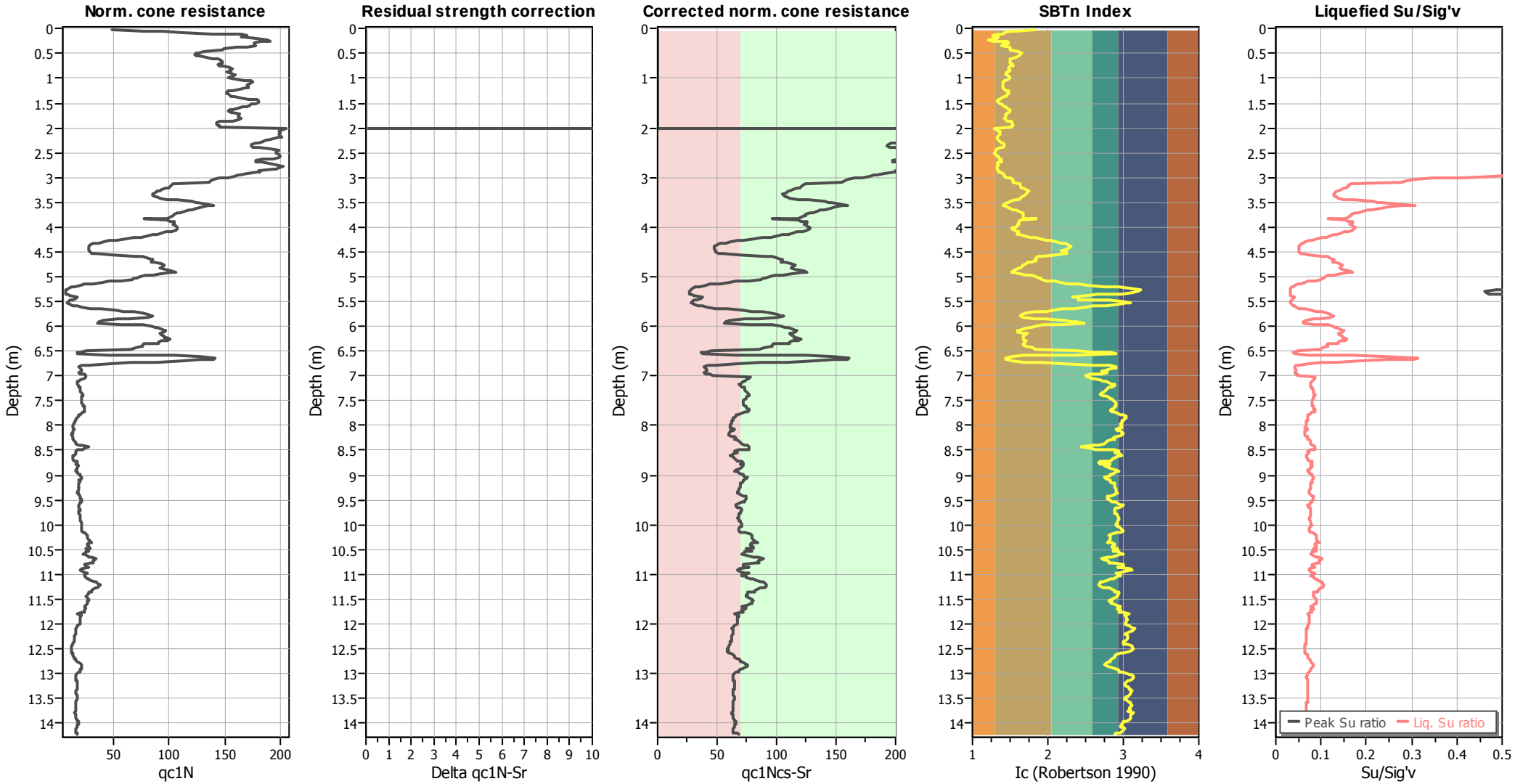
**F.S. color scheme**

- 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

## Check for strength loss plots (Idriss & Boulanger (2008))




### Input parameters and analysis data

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|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 2.00 m | Footing load: | 95.00 kPa |
| Fines correction method: | B&I (2014) | Average results interval: | 1 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.14 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.19 | Excavation: | Yes | Limit depth applied: | Yes |
| Depth to water table (insitu): | 2.00 m | Excavation depth: | 5.00 m | Limit depth: | 20.00 m |

**:: Cyclic Resistance Ratio (CRR) calculation data ::**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 251 | 0.02 | 5.50 | 20.00 | 1.89 | 0.49 | 1.30 | 70.54 | 33.02 | 103.56 | 0.142 | No | No | 2.00 |
| 252 | 0.04 | 5.34 | 20.00 | 1.91 | 0.49 | 1.30 | 68.56 | 32.75 | 101.32 | 0.139 | No | No | 2.00 |
| 253 | 0.06 | 5.15 | 20.00 | 1.92 | 0.50 | 1.30 | 66.27 | 32.44 | 98.71 | 0.136 | No | No | 2.00 |
| 254 | 0.08 | 4.37 | 20.00 | 1.99 | 0.53 | 1.32 | 56.87 | 31.17 | 88.04 | 0.124 | No | No | 1.79 |
| 255 | 0.10 | 3.45 | 20.00 | 2.10 | 0.56 | 1.34 | 45.75 | 29.67 | 75.41 | 0.112 | No | No | 1.59 |
| 256 | 0.12 | 2.94 | 20.00 | 2.17 | 0.58 | 1.35 | 39.28 | 28.79 | 68.08 | 0.106 | No | No | 1.48 |
| 257 | 0.14 | 2.36 | 20.00 | 2.26 | 0.60 | 1.36 | 31.95 | 27.80 | 59.75 | 0.099 | No | No | 1.38 |
| 258 | 0.16 | 1.74 | 20.00 | 2.41 | 0.64 | 1.38 | 24.04 | 26.73 | 50.77 | 0.093 | No | No | 1.28 |
| 259 | 0.18 | 1.44 | 20.00 | 2.53 | 0.65 | 1.39 | 20.13 | 26.21 | 46.34 | 0.090 | No | No | 1.24 |
| 260 | 0.20 | 1.04 | 20.00 | 2.74 | 0.68 | 1.41 | 14.77 | 0.00 | 14.77 | 4.000 | No | Yes | 2.00 |
| 261 | 0.22 | 0.82 | 20.00 | 2.95 | 0.69 | 1.42 | 11.75 | 0.00 | 11.75 | 4.000 | No | Yes | 2.00 |
| 262 | 0.24 | 0.67 | 20.00 | 3.10 | 0.70 | 1.42 | 9.68 | 0.00 | 9.68 | 4.000 | No | Yes | 2.00 |
| 263 | 0.26 | 0.56 | 20.00 | 3.22 | 0.71 | 1.43 | 8.21 | 0.00 | 8.21 | 4.000 | No | Yes | 2.00 |
| 264 | 0.28 | 0.51 | 20.00 | 3.23 | 0.72 | 1.43 | 7.49 | 0.00 | 7.49 | 4.000 | No | Yes | 2.00 |
| 265 | 0.30 | 0.49 | 20.00 | 3.19 | 0.72 | 1.43 | 7.18 | 0.00 | 7.18 | 4.000 | No | Yes | 2.00 |
| 266 | 0.32 | 0.50 | 20.00 | 3.12 | 0.72 | 1.43 | 7.22 | 0.00 | 7.22 | 4.000 | No | Yes | 2.00 |
| 267 | 0.34 | 0.50 | 20.00 | 2.98 | 0.72 | 1.43 | 7.26 | 0.00 | 7.26 | 4.000 | No | Yes | 2.00 |
| 268 | 0.36 | 0.56 | 20.00 | 2.65 | 0.71 | 1.42 | 8.03 | 0.00 | 8.03 | 4.000 | No | Yes | 2.00 |
| 269 | 0.38 | 0.75 | 20.00 | 2.51 | 0.70 | 1.41 | 10.56 | 24.91 | 35.48 | 0.082 | No | No | 0.91 |
| 270 | 0.40 | 1.27 | 20.00 | 2.32 | 0.66 | 1.38 | 17.48 | 25.85 | 43.33 | 0.088 | No | No | 0.92 |
| 271 | 0.42 | 1.33 | 20.00 | 2.41 | 0.66 | 1.38 | 18.19 | 25.94 | 44.14 | 0.088 | No | No | 0.88 |
| 272 | 0.44 | 1.19 | 20.00 | 2.41 | 0.67 | 1.38 | 16.33 | 25.69 | 42.02 | 0.087 | No | No | 0.83 |
| 273 | 0.46 | 0.96 | 20.00 | 2.41 | 0.68 | 1.39 | 13.26 | 25.28 | 38.54 | 0.085 | No | No | 0.77 |
| 274 | 0.48 | 0.76 | 20.00 | 2.80 | 0.70 | 1.40 | 10.63 | 0.00 | 10.63 | 4.000 | No | Yes | 2.00 |
| 275 | 0.50 | 0.67 | 20.00 | 2.98 | 0.71 | 1.40 | 9.35 | 0.00 | 9.35 | 4.000 | No | Yes | 2.00 |
| 276 | 0.52 | 0.60 | 20.00 | 3.10 | 0.71 | 1.41 | 8.42 | 0.00 | 8.42 | 4.000 | No | Yes | 2.00 |
| 277 | 0.54 | 0.66 | 20.00 | 3.05 | 0.71 | 1.40 | 9.08 | 0.00 | 9.08 | 4.000 | No | Yes | 2.00 |
| 278 | 0.56 | 0.78 | 20.00 | 2.94 | 0.70 | 1.39 | 10.73 | 0.00 | 10.73 | 4.000 | No | Yes | 2.00 |
| 279 | 0.58 | 1.04 | 20.00 | 2.76 | 0.68 | 1.38 | 14.18 | 0.00 | 14.18 | 4.000 | No | Yes | 2.00 |
| 280 | 0.60 | 1.29 | 20.00 | 2.60 | 0.66 | 1.37 | 17.50 | 0.00 | 17.50 | 4.000 | No | Yes | 2.00 |
| 281 | 0.62 | 1.56 | 20.00 | 2.49 | 0.65 | 1.36 | 20.99 | 26.32 | 47.32 | 0.091 | No | No | 0.62 |
| 282 | 0.64 | 2.18 | 20.00 | 2.35 | 0.62 | 1.33 | 28.83 | 27.38 | 56.21 | 0.097 | No | No | 0.65 |
| 283 | 0.66 | 2.98 | 20.00 | 2.20 | 0.58 | 1.31 | 38.62 | 28.71 | 67.32 | 0.105 | No | No | 0.70 |
| 284 | 0.68 | 3.99 | 20.00 | 2.08 | 0.54 | 1.29 | 50.73 | 30.34 | 81.07 | 0.117 | No | No | 0.77 |
| 285 | 0.70 | 4.68 | 20.00 | 1.99 | 0.52 | 1.27 | 58.74 | 31.42 | 90.16 | 0.126 | No | No | 0.82 |
| 286 | 0.72 | 5.50 | 20.00 | 1.83 | 0.50 | 1.25 | 68.12 | 32.69 | 100.81 | 0.139 | No | No | 0.91 |
| 287 | 0.74 | 6.15 | 20.00 | 1.72 | 0.48 | 1.24 | 75.40 | 33.68 | 109.08 | 0.151 | No | No | 0.99 |
| 288 | 0.76 | 6.69 | 20.00 | 1.65 | 0.46 | 1.23 | 81.50 | 34.50 | 116.01 | 0.163 | No | No | 1.07 |
| 289 | 0.78 | 6.91 | 20.00 | 1.64 | 0.46 | 1.23 | 83.87 | 34.82 | 118.69 | 0.169 | No | No | 1.09 |
| 290 | 0.80 | 7.07 | 20.00 | 1.63 | 0.46 | 1.23 | 85.56 | 35.05 | 120.61 | 0.173 | No | No | 1.11 |
| 291 | 0.82 | 6.72 | 20.00 | 1.67 | 0.46 | 1.23 | 81.56 | 34.51 | 116.07 | 0.163 | No | No | 1.01 |
| 292 | 0.84 | 5.25 | 20.00 | 1.82 | 0.51 | 1.25 | 64.68 | 32.23 | 96.91 | 0.134 | No | No | 0.77 |
| 293 | 0.86 | 4.30 | 20.00 | 1.97 | 0.53 | 1.27 | 53.65 | 30.74 | 84.39 | 0.120 | No | No | 0.66 |
| 294 | 0.88 | 3.22 | 20.00 | 2.20 | 0.57 | 1.29 | 40.82 | 29.00 | 69.82 | 0.107 | No | No | 0.57 |
| 295 | 0.90 | 2.88 | 20.00 | 2.32 | 0.59 | 1.29 | 36.66 | 28.44 | 65.10 | 0.104 | No | No | 0.53 |
| 296 | 0.92 | 2.95 | 20.00 | 2.39 | 0.58 | 1.29 | 37.50 | 28.55 | 66.05 | 0.104 | No | No | 0.53 |
| 297 | 0.94 | 2.83 | 20.00 | 2.48 | 0.59 | 1.29 | 35.94 | 28.34 | 64.28 | 0.103 | No | No | 0.52 |
| 298 | 0.96 | 4.57 | 20.00 | 2.18 | 0.53 | 1.25 | 56.37 | 31.10 | 87.48 | 0.123 | No | No | 0.64 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 299 | 0.98 | 6.34 | 20.00 | 1.94 | 0.48 | 1.23 | 76.45 | 33.82 | 110.27 | 0.153 | No | No | 0.84 |
| 300 | 1.00 | 6.97 | 20.00 | 1.85 | 0.46 | 1.22 | 83.46 | 34.77 | 118.23 | 0.168 | No | No | 0.94 |
| 301 | 1.02 | 7.31 | 20.00 | 1.78 | 0.45 | 1.21 | 87.09 | 35.26 | 122.35 | 0.177 | No | No | 1.00 |
| 302 | 1.04 | 7.54 | 20.00 | 1.75 | 0.45 | 1.21 | 89.53 | 35.59 | 125.12 | 0.184 | No | No | 1.05 |
| 303 | 1.06 | 7.86 | 20.00 | 1.68 | 0.44 | 1.20 | 92.97 | 36.05 | 129.02 | 0.195 | No | No | 1.13 |
| 304 | 1.08 | 8.11 | 20.00 | 1.62 | 0.43 | 1.20 | 95.63 | 36.41 | 132.04 | 0.204 | No | No | 1.19 |
| 305 | 1.10 | 8.23 | 20.00 | 1.60 | 0.43 | 1.20 | 96.88 | 36.58 | 133.46 | 0.209 | No | No | 1.22 |
| 306 | 1.12 | 8.11 | 20.00 | 1.59 | 0.44 | 1.20 | 95.47 | 36.39 | 131.86 | 0.204 | No | No | 1.18 |
| 307 | 1.14 | 7.81 | 20.00 | 1.67 | 0.44 | 1.20 | 92.20 | 35.95 | 128.15 | 0.192 | No | No | 1.09 |
| 308 | 1.16 | 7.74 | 20.00 | 1.73 | 0.44 | 1.20 | 91.31 | 35.83 | 127.13 | 0.189 | No | No | 1.07 |
| 309 | 1.18 | 7.88 | 20.00 | 1.70 | 0.44 | 1.19 | 92.69 | 36.01 | 128.71 | 0.194 | No | No | 1.10 |
| 310 | 1.20 | 8.09 | 20.00 | 1.66 | 0.44 | 1.19 | 94.87 | 36.31 | 131.18 | 0.201 | No | No | 1.15 |
| 311 | 1.22 | 8.10 | 20.00 | 1.67 | 0.44 | 1.19 | 94.94 | 36.32 | 131.26 | 0.202 | No | No | 1.15 |
| 312 | 1.24 | 8.35 | 20.00 | 1.68 | 0.43 | 1.19 | 97.58 | 36.68 | 134.26 | 0.212 | No | No | 1.22 |
| 313 | 1.26 | 8.59 | 20.00 | 1.67 | 0.43 | 1.18 | 100.26 | 37.04 | 137.30 | 0.223 | No | No | 1.30 |
| 314 | 1.28 | 8.41 | 20.00 | 1.69 | 0.43 | 1.18 | 98.25 | 36.77 | 135.01 | 0.214 | No | No | 1.24 |
| 315 | 1.30 | 7.98 | 20.00 | 1.70 | 0.44 | 1.19 | 93.50 | 36.12 | 129.63 | 0.196 | No | No | 1.11 |
| 316 | 1.32 | 7.71 | 20.00 | 1.70 | 0.45 | 1.19 | 90.49 | 35.72 | 126.21 | 0.187 | No | No | 1.04 |
| 317 | 1.34 | 7.71 | 20.00 | 1.70 | 0.45 | 1.19 | 90.40 | 35.70 | 126.11 | 0.186 | No | No | 1.03 |
| 318 | 1.36 | 6.50 | 20.00 | 1.67 | 0.47 | 1.20 | 77.03 | 33.90 | 110.92 | 0.154 | No | No | 0.81 |
| 319 | 1.38 | 6.38 | 20.00 | 1.67 | 0.48 | 1.20 | 75.67 | 33.71 | 109.38 | 0.151 | No | No | 0.79 |
| 320 | 1.40 | 6.47 | 20.00 | 1.71 | 0.48 | 1.20 | 76.58 | 33.84 | 110.42 | 0.153 | No | No | 0.80 |
| 321 | 1.42 | 6.30 | 20.00 | 1.73 | 0.48 | 1.20 | 74.63 | 33.57 | 108.20 | 0.149 | No | No | 0.78 |
| 322 | 1.44 | 5.80 | 20.00 | 1.80 | 0.49 | 1.20 | 68.97 | 32.81 | 101.78 | 0.140 | No | No | 0.72 |
| 323 | 1.46 | 5.52 | 20.00 | 1.83 | 0.50 | 1.21 | 65.76 | 32.37 | 98.13 | 0.135 | No | No | 0.68 |
| 324 | 1.48 | 5.52 | 20.00 | 1.83 | 0.50 | 1.20 | 65.69 | 32.36 | 98.06 | 0.135 | No | No | 0.68 |
| 325 | 1.50 | 2.02 | 20.00 | 2.41 | 0.63 | 1.26 | 25.27 | 26.90 | 52.18 | 0.094 | No | No | 0.44 |
| 326 | 1.52 | 1.55 | 20.00 | 2.61 | 0.65 | 1.27 | 19.61 | 0.00 | 19.61 | 4.000 | No | Yes | 2.00 |
| 327 | 1.54 | 1.34 | 20.00 | 2.82 | 0.67 | 1.28 | 17.03 | 0.00 | 17.03 | 4.000 | No | Yes | 2.00 |
| 328 | 1.56 | 1.42 | 20.00 | 2.90 | 0.66 | 1.27 | 18.00 | 0.00 | 18.00 | 4.000 | No | Yes | 2.00 |
| 329 | 1.58 | 3.77 | 20.00 | 2.34 | 0.56 | 1.22 | 45.47 | 29.63 | 75.10 | 0.112 | No | No | 0.54 |
| 330 | 1.60 | 9.14 | 20.00 | 1.69 | 0.42 | 1.16 | 104.45 | 37.60 | 142.05 | 0.244 | No | No | 1.41 |
| 331 | 1.62 | 11.38 | 20.00 | 1.52 | 0.37 | 1.14 | 128.02 | 40.79 | 168.80 | 0.485 | No | No | 2.00 |
| 332 | 1.64 | 12.62 | 20.00 | 1.45 | 0.35 | 1.13 | 140.78 | 42.51 | 183.30 | 0.833 | No | No | 2.00 |
| 333 | 1.66 | 12.50 | 20.00 | 1.44 | 0.35 | 1.13 | 139.47 | 42.34 | 181.81 | 0.782 | No | No | 2.00 |
| 334 | 1.68 | 11.43 | 20.00 | 1.47 | 0.37 | 1.14 | 128.33 | 40.83 | 169.16 | 0.490 | No | No | 2.00 |
| 335 | 1.70 | 9.62 | 20.00 | 1.55 | 0.41 | 1.15 | 109.25 | 38.25 | 147.50 | 0.273 | No | No | 1.61 |
| 336 | 1.72 | 7.73 | 20.00 | 1.69 | 0.45 | 1.17 | 89.06 | 35.52 | 124.58 | 0.182 | No | No | 0.98 |
| 337 | 1.74 | 5.63 | 20.00 | 1.92 | 0.50 | 1.19 | 65.96 | 32.40 | 98.36 | 0.135 | No | No | 0.67 |
| 338 | 1.76 | 3.77 | 20.00 | 2.23 | 0.56 | 1.21 | 45.13 | 29.58 | 74.71 | 0.111 | No | No | 0.53 |
| 339 | 1.78 | 2.31 | 20.00 | 2.61 | 0.62 | 1.23 | 28.18 | 0.00 | 28.18 | 4.000 | No | Yes | 2.00 |
| 340 | 1.80 | 1.79 | 20.00 | 2.83 | 0.64 | 1.24 | 22.06 | 0.00 | 22.06 | 4.000 | No | Yes | 2.00 |
| 341 | 1.82 | 1.57 | 20.00 | 2.90 | 0.66 | 1.24 | 19.21 | 0.00 | 19.21 | 4.000 | No | Yes | 2.00 |
| 342 | 1.84 | 1.64 | 20.00 | 2.90 | 0.65 | 1.24 | 19.97 | 0.00 | 19.97 | 4.000 | No | Yes | 2.00 |
| 343 | 1.86 | 1.69 | 20.00 | 2.86 | 0.65 | 1.24 | 20.46 | 0.00 | 20.46 | 4.000 | No | Yes | 2.00 |
| 344 | 1.88 | 1.76 | 20.00 | 2.79 | 0.65 | 1.24 | 21.15 | 0.00 | 21.15 | 4.000 | No | Yes | 2.00 |
| 345 | 1.90 | 1.80 | 20.00 | 2.74 | 0.65 | 1.23 | 21.56 | 0.00 | 21.56 | 4.000 | No | Yes | 2.00 |
| 346 | 1.92 | 1.80 | 20.00 | 2.71 | 0.65 | 1.23 | 21.02 | 0.00 | 21.02 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 347 | 1.94 | 1.61 | 20.00 | 2.79 | 0.66 | 1.23 | 18.86 | 0.00 | 18.86 | 4.000 | No | Yes | 2.00 |
| 348 | 1.96 | 1.80 | 20.00 | 2.71 | 0.65 | 1.23 | 20.50 | 0.00 | 20.50 | 4.000 | No | Yes | 2.00 |
| 349 | 1.98 | 2.04 | 20.00 | 2.58 | 0.64 | 1.22 | 23.59 | 26.67 | 50.27 | 0.093 | No | No | 0.42 |
| 350 | 2.00 | 2.21 | 20.00 | 2.50 | 0.63 | 1.22 | 26.00 | 27.00 | 53.00 | 0.095 | No | No | 0.43 |
| 351 | 2.02 | 2.27 | 64.71 | 2.52 | 0.54 | 1.18 | 25.56 | 57.00 | 82.56 | 0.118 | No | No | 0.56 |
| 352 | 2.04 | 2.25 | 66.50 | 2.54 | 0.54 | 1.18 | 25.30 | 57.30 | 82.60 | 0.118 | No | No | 0.56 |
| 353 | 2.06 | 2.09 | 69.41 | 2.58 | 0.54 | 1.18 | 23.59 | 57.38 | 80.97 | 0.117 | No | No | 0.55 |
| 354 | 2.08 | 1.78 | 78.71 | 2.70 | 0.55 | 1.18 | 20.40 | 0.00 | 20.40 | 4.000 | No | Yes | 2.00 |
| 355 | 2.10 | 1.63 | 81.52 | 2.73 | 0.56 | 1.18 | 18.75 | 0.00 | 18.75 | 4.000 | No | Yes | 2.00 |
| 356 | 2.12 | 1.59 | 84.80 | 2.77 | 0.56 | 1.18 | 18.18 | 0.00 | 18.18 | 4.000 | No | Yes | 2.00 |
| 357 | 2.14 | 1.59 | 87.54 | 2.81 | 0.56 | 1.18 | 18.16 | 0.00 | 18.16 | 4.000 | No | Yes | 2.00 |
| 358 | 2.16 | 1.59 | 90.85 | 2.85 | 0.55 | 1.18 | 18.04 | 0.00 | 18.04 | 4.000 | No | Yes | 2.00 |
| 359 | 2.18 | 1.61 | 93.16 | 2.88 | 0.55 | 1.18 | 18.02 | 0.00 | 18.02 | 4.000 | No | Yes | 2.00 |
| 360 | 2.20 | 1.65 | 93.17 | 2.88 | 0.55 | 1.18 | 18.38 | 0.00 | 18.38 | 4.000 | No | Yes | 2.00 |
| 361 | 2.22 | 1.76 | 90.84 | 2.85 | 0.55 | 1.17 | 18.72 | 0.00 | 18.72 | 4.000 | No | Yes | 2.00 |
| 362 | 2.24 | 1.87 | 87.67 | 2.81 | 0.55 | 1.17 | 19.83 | 0.00 | 19.83 | 4.000 | No | Yes | 2.00 |
| 363 | 2.26 | 1.88 | 86.16 | 2.79 | 0.55 | 1.17 | 19.86 | 0.00 | 19.86 | 4.000 | No | Yes | 2.00 |
| 364 | 2.28 | 1.86 | 84.48 | 2.77 | 0.55 | 1.17 | 20.10 | 0.00 | 20.10 | 4.000 | No | Yes | 2.00 |
| 365 | 2.30 | 1.85 | 83.97 | 2.76 | 0.55 | 1.17 | 20.00 | 0.00 | 20.00 | 4.000 | No | Yes | 2.00 |
| 366 | 2.32 | 1.86 | 83.01 | 2.75 | 0.55 | 1.17 | 20.16 | 0.00 | 20.16 | 4.000 | No | Yes | 2.00 |
| 367 | 2.34 | 1.91 | 80.58 | 2.72 | 0.55 | 1.16 | 20.97 | 0.00 | 20.97 | 4.000 | No | Yes | 2.00 |
| 368 | 2.36 | 1.96 | 79.38 | 2.70 | 0.55 | 1.16 | 21.77 | 0.00 | 21.77 | 4.000 | No | Yes | 2.00 |
| 369 | 2.38 | 2.02 | 79.07 | 2.70 | 0.54 | 1.16 | 22.53 | 0.00 | 22.53 | 4.000 | No | Yes | 2.00 |
| 370 | 2.40 | 2.05 | 80.95 | 2.72 | 0.54 | 1.16 | 22.43 | 0.00 | 22.43 | 4.000 | No | Yes | 2.00 |
| 371 | 2.42 | 2.02 | 83.81 | 2.76 | 0.54 | 1.16 | 22.03 | 0.00 | 22.03 | 4.000 | No | Yes | 2.00 |
| 372 | 2.44 | 1.95 | 86.90 | 2.80 | 0.54 | 1.16 | 21.58 | 0.00 | 21.58 | 4.000 | No | Yes | 2.00 |
| 373 | 2.46 | 1.93 | 88.64 | 2.82 | 0.54 | 1.15 | 21.57 | 0.00 | 21.57 | 4.000 | No | Yes | 2.00 |
| 374 | 2.48 | 1.93 | 90.07 | 2.84 | 0.54 | 1.15 | 21.78 | 0.00 | 21.78 | 4.000 | No | Yes | 2.00 |
| 375 | 2.50 | 1.89 | 92.72 | 2.87 | 0.54 | 1.15 | 21.42 | 0.00 | 21.42 | 4.000 | No | Yes | 2.00 |
| 376 | 2.52 | 1.91 | 94.01 | 2.89 | 0.54 | 1.15 | 21.52 | 0.00 | 21.52 | 4.000 | No | Yes | 2.00 |
| 377 | 2.54 | 1.94 | 94.57 | 2.89 | 0.54 | 1.15 | 21.77 | 0.00 | 21.77 | 4.000 | No | Yes | 2.00 |
| 378 | 2.56 | 1.98 | 95.45 | 2.91 | 0.54 | 1.15 | 21.98 | 0.00 | 21.98 | 4.000 | No | Yes | 2.00 |
| 379 | 2.58 | 2.03 | 95.46 | 2.91 | 0.54 | 1.14 | 22.38 | 0.00 | 22.38 | 4.000 | No | Yes | 2.00 |
| 380 | 2.60 | 2.09 | 94.54 | 2.89 | 0.54 | 1.14 | 23.04 | 0.00 | 23.04 | 4.000 | No | Yes | 2.00 |
| 381 | 2.61 | 2.14 | 94.01 | 2.89 | 0.54 | 1.14 | 23.53 | 0.00 | 23.53 | 4.000 | No | Yes | 2.00 |
| 382 | 2.63 | 2.18 | 93.08 | 2.88 | 0.53 | 1.14 | 23.94 | 0.00 | 23.94 | 4.000 | No | Yes | 2.00 |
| 383 | 2.65 | 2.22 | 91.46 | 2.86 | 0.53 | 1.14 | 24.34 | 0.00 | 24.34 | 4.000 | No | Yes | 2.00 |
| 384 | 2.67 | 2.24 | 90.79 | 2.85 | 0.53 | 1.14 | 24.48 | 0.00 | 24.48 | 4.000 | No | Yes | 2.00 |
| 385 | 2.69 | 2.25 | 89.90 | 2.84 | 0.53 | 1.14 | 24.55 | 0.00 | 24.55 | 4.000 | No | Yes | 2.00 |
| 386 | 2.71 | 2.20 | 90.33 | 2.84 | 0.53 | 1.13 | 24.10 | 0.00 | 24.10 | 4.000 | No | Yes | 2.00 |
| 387 | 2.73 | 2.07 | 93.70 | 2.88 | 0.54 | 1.13 | 22.70 | 0.00 | 22.70 | 4.000 | No | Yes | 2.00 |
| 388 | 2.75 | 1.96 | 96.66 | 2.92 | 0.54 | 1.13 | 21.41 | 0.00 | 21.41 | 4.000 | No | Yes | 2.00 |
| 389 | 2.77 | 1.80 | 100.00 | 2.97 | 0.55 | 1.13 | 19.73 | 0.00 | 19.73 | 4.000 | No | Yes | 2.00 |
| 390 | 2.79 | 1.71 | 100.00 | 3.00 | 0.55 | 1.13 | 18.69 | 0.00 | 18.69 | 4.000 | No | Yes | 2.00 |
| 391 | 2.81 | 1.70 | 100.00 | 3.03 | 0.55 | 1.13 | 18.33 | 0.00 | 18.33 | 4.000 | No | Yes | 2.00 |
| 392 | 2.83 | 1.69 | 100.00 | 3.02 | 0.55 | 1.13 | 17.62 | 0.00 | 17.62 | 4.000 | No | Yes | 2.00 |
| 393 | 2.85 | 1.64 | 100.00 | 3.03 | 0.56 | 1.13 | 16.93 | 0.00 | 16.93 | 4.000 | No | Yes | 2.00 |
| 394 | 2.87 | 1.60 | 100.00 | 3.01 | 0.56 | 1.13 | 16.61 | 0.00 | 16.61 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 395 | 2.89 | 1.59 | 100.00 | 2.99 | 0.56 | 1.13 | 16.43 | 0.00 | 16.43 | 4.000 | No | Yes | 2.00 |
| 396 | 2.91 | 1.51 | 100.00 | 3.00 | 0.56 | 1.13 | 15.70 | 0.00 | 15.70 | 4.000 | No | Yes | 2.00 |
| 397 | 2.93 | 1.48 | 100.00 | 2.98 | 0.56 | 1.13 | 15.36 | 0.00 | 15.36 | 4.000 | No | Yes | 2.00 |
| 398 | 2.95 | 1.43 | 100.00 | 2.98 | 0.56 | 1.13 | 14.83 | 0.00 | 14.83 | 4.000 | No | Yes | 2.00 |
| 399 | 2.97 | 1.41 | 100.00 | 2.97 | 0.56 | 1.12 | 14.62 | 0.00 | 14.62 | 4.000 | No | Yes | 2.00 |
| 400 | 2.99 | 1.37 | 99.94 | 2.96 | 0.57 | 1.12 | 14.29 | 0.00 | 14.29 | 4.000 | No | Yes | 2.00 |
| 401 | 3.01 | 1.31 | 100.00 | 2.97 | 0.57 | 1.12 | 13.76 | 0.00 | 13.76 | 4.000 | No | Yes | 2.00 |
| 402 | 3.03 | 1.30 | 100.00 | 2.97 | 0.57 | 1.12 | 13.65 | 0.00 | 13.65 | 4.000 | No | Yes | 2.00 |
| 403 | 3.05 | 1.34 | 98.69 | 2.95 | 0.57 | 1.12 | 13.93 | 0.00 | 13.93 | 4.000 | No | Yes | 2.00 |
| 404 | 3.07 | 1.39 | 95.50 | 2.91 | 0.57 | 1.12 | 14.63 | 0.00 | 14.63 | 4.000 | No | Yes | 2.00 |
| 405 | 3.09 | 1.33 | 97.53 | 2.93 | 0.57 | 1.12 | 14.25 | 0.00 | 14.25 | 4.000 | No | Yes | 2.00 |
| 406 | 3.11 | 1.27 | 100.00 | 2.97 | 0.57 | 1.12 | 13.65 | 0.00 | 13.65 | 4.000 | No | Yes | 2.00 |
| 407 | 3.13 | 1.28 | 100.00 | 2.98 | 0.57 | 1.12 | 13.62 | 0.00 | 13.62 | 4.000 | No | Yes | 2.00 |
| 408 | 3.15 | 1.24 | 100.00 | 3.00 | 0.57 | 1.12 | 13.20 | 0.00 | 13.20 | 4.000 | No | Yes | 2.00 |
| 409 | 3.17 | 1.21 | 100.00 | 2.98 | 0.57 | 1.11 | 12.83 | 0.00 | 12.83 | 4.000 | No | Yes | 2.00 |
| 410 | 3.19 | 1.22 | 100.00 | 2.98 | 0.57 | 1.11 | 12.88 | 0.00 | 12.88 | 4.000 | No | Yes | 2.00 |
| 411 | 3.21 | 1.28 | 97.28 | 2.93 | 0.57 | 1.11 | 13.53 | 0.00 | 13.53 | 4.000 | No | Yes | 2.00 |
| 412 | 3.23 | 1.33 | 94.62 | 2.90 | 0.57 | 1.11 | 13.95 | 0.00 | 13.95 | 4.000 | No | Yes | 2.00 |
| 413 | 3.25 | 1.35 | 92.69 | 2.87 | 0.57 | 1.11 | 14.20 | 0.00 | 14.20 | 4.000 | No | Yes | 2.00 |
| 414 | 3.27 | 1.31 | 93.24 | 2.88 | 0.57 | 1.11 | 13.76 | 0.00 | 13.76 | 4.000 | No | Yes | 2.00 |
| 415 | 3.29 | 1.35 | 90.40 | 2.84 | 0.57 | 1.11 | 14.18 | 0.00 | 14.18 | 4.000 | No | Yes | 2.00 |
| 416 | 3.31 | 1.47 | 86.44 | 2.79 | 0.57 | 1.11 | 15.45 | 0.00 | 15.45 | 4.000 | No | Yes | 2.00 |
| 417 | 3.33 | 1.54 | 84.39 | 2.77 | 0.56 | 1.10 | 16.10 | 0.00 | 16.10 | 4.000 | No | Yes | 2.00 |
| 418 | 3.35 | 1.55 | 84.42 | 2.77 | 0.56 | 1.10 | 16.11 | 0.00 | 16.11 | 4.000 | No | Yes | 2.00 |
| 419 | 3.37 | 1.59 | 82.23 | 2.74 | 0.56 | 1.10 | 16.55 | 0.00 | 16.55 | 4.000 | No | Yes | 2.00 |
| 420 | 3.39 | 1.79 | 76.32 | 2.67 | 0.56 | 1.10 | 18.58 | 0.00 | 18.58 | 4.000 | No | Yes | 2.00 |
| 421 | 3.41 | 2.13 | 69.92 | 2.59 | 0.55 | 1.10 | 22.04 | 57.02 | 79.07 | 0.115 | No | No | 0.47 |
| 422 | 3.43 | 2.66 | 58.73 | 2.45 | 0.54 | 1.09 | 27.64 | 56.13 | 83.77 | 0.119 | No | No | 0.49 |
| 423 | 3.45 | 2.36 | 67.28 | 2.55 | 0.54 | 1.09 | 24.46 | 57.22 | 81.67 | 0.117 | No | No | 0.48 |
| 424 | 3.47 | 2.18 | 74.49 | 2.64 | 0.54 | 1.09 | 23.01 | 0.00 | 23.01 | 4.000 | No | Yes | 2.00 |
| 425 | 3.49 | 1.67 | 93.89 | 2.89 | 0.55 | 1.09 | 18.09 | 0.00 | 18.09 | 4.000 | No | Yes | 2.00 |
| 426 | 3.51 | 1.56 | 97.62 | 2.93 | 0.56 | 1.09 | 15.92 | 0.00 | 15.92 | 4.000 | No | Yes | 2.00 |
| 427 | 3.53 | 1.60 | 94.95 | 2.90 | 0.56 | 1.09 | 15.80 | 0.00 | 15.80 | 4.000 | No | Yes | 2.00 |
| 428 | 3.55 | 1.66 | 94.27 | 2.89 | 0.56 | 1.09 | 16.41 | 0.00 | 16.41 | 4.000 | No | Yes | 2.00 |
| 429 | 3.57 | 1.57 | 99.23 | 2.95 | 0.56 | 1.09 | 15.83 | 0.00 | 15.83 | 4.000 | No | Yes | 2.00 |
| 430 | 3.59 | 1.54 | 99.01 | 2.95 | 0.56 | 1.09 | 14.94 | 0.00 | 14.94 | 4.000 | No | Yes | 2.00 |
| 431 | 3.61 | 1.44 | 100.00 | 2.97 | 0.57 | 1.09 | 13.89 | 0.00 | 13.89 | 4.000 | No | Yes | 2.00 |
| 432 | 3.63 | 1.41 | 95.98 | 2.91 | 0.57 | 1.09 | 13.68 | 0.00 | 13.68 | 4.000 | No | Yes | 2.00 |
| 433 | 3.65 | 1.40 | 93.74 | 2.88 | 0.57 | 1.09 | 13.54 | 0.00 | 13.54 | 4.000 | No | Yes | 2.00 |
| 434 | 3.67 | 1.40 | 92.89 | 2.87 | 0.57 | 1.09 | 13.55 | 0.00 | 13.55 | 4.000 | No | Yes | 2.00 |
| 435 | 3.69 | 1.43 | 90.68 | 2.85 | 0.57 | 1.08 | 13.87 | 0.00 | 13.87 | 4.000 | No | Yes | 2.00 |
| 436 | 3.71 | 1.48 | 88.67 | 2.82 | 0.57 | 1.08 | 14.50 | 0.00 | 14.50 | 4.000 | No | Yes | 2.00 |
| 437 | 3.73 | 1.75 | 77.97 | 2.69 | 0.56 | 1.08 | 17.14 | 0.00 | 17.14 | 4.000 | No | Yes | 2.00 |
| 438 | 3.75 | 1.83 | 76.93 | 2.67 | 0.56 | 1.08 | 17.78 | 0.00 | 17.78 | 4.000 | No | Yes | 2.00 |
| 439 | 3.77 | 1.77 | 78.54 | 2.69 | 0.56 | 1.08 | 17.83 | 0.00 | 17.83 | 4.000 | No | Yes | 2.00 |
| 440 | 3.79 | 1.62 | 88.90 | 2.82 | 0.56 | 1.08 | 16.57 | 0.00 | 16.57 | 4.000 | No | Yes | 2.00 |
| 441 | 3.81 | 1.82 | 83.39 | 2.75 | 0.56 | 1.08 | 18.27 | 0.00 | 18.27 | 4.000 | No | Yes | 2.00 |
| 442 | 3.83 | 1.79 | 86.15 | 2.79 | 0.56 | 1.08 | 17.88 | 0.00 | 17.88 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 443 | 3.85 | 1.76 | 87.67 | 2.81 | 0.56 | 1.07 | 17.53 | 0.00 | 17.53 | 4.000 | No | Yes | 2.00 |
| 444 | 3.87 | 1.72 | 89.67 | 2.83 | 0.56 | 1.07 | 17.18 | 0.00 | 17.18 | 4.000 | No | Yes | 2.00 |
| 445 | 3.89 | 1.62 | 95.98 | 2.91 | 0.56 | 1.07 | 16.11 | 0.00 | 16.11 | 4.000 | No | Yes | 2.00 |
| 446 | 3.91 | 1.64 | 98.18 | 2.94 | 0.56 | 1.07 | 16.14 | 0.00 | 16.14 | 4.000 | No | Yes | 2.00 |
| 447 | 3.93 | 1.73 | 95.43 | 2.91 | 0.56 | 1.07 | 17.04 | 0.00 | 17.04 | 4.000 | No | Yes | 2.00 |
| 448 | 3.95 | 1.84 | 94.04 | 2.89 | 0.55 | 1.07 | 17.99 | 0.00 | 17.99 | 4.000 | No | Yes | 2.00 |
| 449 | 3.97 | 1.96 | 90.95 | 2.85 | 0.55 | 1.07 | 19.17 | 0.00 | 19.17 | 4.000 | No | Yes | 2.00 |
| 450 | 3.99 | 2.01 | 89.41 | 2.83 | 0.55 | 1.07 | 19.66 | 0.00 | 19.66 | 4.000 | No | Yes | 2.00 |
| 451 | 4.01 | 2.03 | 88.91 | 2.82 | 0.55 | 1.06 | 19.72 | 0.00 | 19.72 | 4.000 | No | Yes | 2.00 |
| 452 | 4.03 | 2.18 | 83.35 | 2.75 | 0.55 | 1.06 | 21.13 | 0.00 | 21.13 | 4.000 | No | Yes | 2.00 |
| 453 | 4.05 | 2.20 | 82.67 | 2.75 | 0.55 | 1.06 | 21.31 | 0.00 | 21.31 | 4.000 | No | Yes | 2.00 |
| 454 | 4.07 | 2.15 | 84.52 | 2.77 | 0.55 | 1.06 | 20.90 | 0.00 | 20.90 | 4.000 | No | Yes | 2.00 |
| 455 | 4.09 | 2.01 | 88.62 | 2.82 | 0.55 | 1.06 | 19.50 | 0.00 | 19.50 | 4.000 | No | Yes | 2.00 |
| 456 | 4.11 | 2.01 | 89.22 | 2.83 | 0.55 | 1.06 | 19.51 | 0.00 | 19.51 | 4.000 | No | Yes | 2.00 |
| 457 | 4.13 | 2.01 | 89.69 | 2.83 | 0.55 | 1.06 | 19.59 | 0.00 | 19.59 | 4.000 | No | Yes | 2.00 |
| 458 | 4.15 | 1.99 | 90.95 | 2.85 | 0.55 | 1.06 | 19.48 | 0.00 | 19.48 | 4.000 | No | Yes | 2.00 |
| 459 | 4.17 | 1.95 | 93.49 | 2.88 | 0.55 | 1.06 | 19.14 | 0.00 | 19.14 | 4.000 | No | Yes | 2.00 |
| 460 | 4.19 | 1.92 | 94.24 | 2.89 | 0.55 | 1.06 | 18.87 | 0.00 | 18.87 | 4.000 | No | Yes | 2.00 |
| 461 | 4.21 | 1.92 | 94.38 | 2.89 | 0.55 | 1.05 | 18.84 | 0.00 | 18.84 | 4.000 | No | Yes | 2.00 |
| 462 | 4.23 | 1.92 | 94.26 | 2.89 | 0.55 | 1.05 | 18.80 | 0.00 | 18.80 | 4.000 | No | Yes | 2.00 |
| 463 | 4.25 | 1.92 | 94.48 | 2.89 | 0.55 | 1.05 | 18.77 | 0.00 | 18.77 | 4.000 | No | Yes | 2.00 |
| 464 | 4.27 | 1.91 | 94.75 | 2.90 | 0.55 | 1.05 | 18.63 | 0.00 | 18.63 | 4.000 | No | Yes | 2.00 |
| 465 | 4.29 | 1.90 | 94.72 | 2.90 | 0.55 | 1.05 | 18.54 | 0.00 | 18.54 | 4.000 | No | Yes | 2.00 |
| 466 | 4.31 | 1.88 | 95.42 | 2.91 | 0.55 | 1.05 | 18.27 | 0.00 | 18.27 | 4.000 | No | Yes | 2.00 |
| 467 | 4.33 | 1.86 | 95.99 | 2.91 | 0.55 | 1.05 | 18.08 | 0.00 | 18.08 | 4.000 | No | Yes | 2.00 |
| 468 | 4.35 | 1.85 | 96.95 | 2.92 | 0.55 | 1.05 | 17.88 | 0.00 | 17.88 | 4.000 | No | Yes | 2.00 |
| 469 | 4.37 | 1.90 | 95.54 | 2.91 | 0.55 | 1.05 | 18.32 | 0.00 | 18.32 | 4.000 | No | Yes | 2.00 |
| 470 | 4.39 | 1.95 | 93.84 | 2.89 | 0.55 | 1.04 | 18.77 | 0.00 | 18.77 | 4.000 | No | Yes | 2.00 |
| 471 | 4.41 | 2.07 | 89.58 | 2.83 | 0.55 | 1.04 | 19.95 | 0.00 | 19.95 | 4.000 | No | Yes | 2.00 |
| 472 | 4.43 | 2.16 | 86.50 | 2.79 | 0.55 | 1.04 | 20.79 | 0.00 | 20.79 | 4.000 | No | Yes | 2.00 |
| 473 | 4.45 | 2.16 | 86.55 | 2.79 | 0.55 | 1.04 | 20.77 | 0.00 | 20.77 | 4.000 | No | Yes | 2.00 |
| 474 | 4.47 | 2.16 | 86.60 | 2.79 | 0.55 | 1.04 | 20.71 | 0.00 | 20.71 | 4.000 | No | Yes | 2.00 |
| 475 | 4.49 | 2.16 | 87.72 | 2.81 | 0.54 | 1.04 | 21.17 | 0.00 | 21.17 | 4.000 | No | Yes | 2.00 |
| 476 | 4.51 | 2.14 | 89.69 | 2.83 | 0.55 | 1.04 | 20.97 | 0.00 | 20.97 | 4.000 | No | Yes | 2.00 |
| 477 | 4.53 | 2.12 | 90.94 | 2.85 | 0.54 | 1.04 | 20.96 | 0.00 | 20.96 | 4.000 | No | Yes | 2.00 |
| 478 | 4.55 | 2.06 | 94.56 | 2.89 | 0.55 | 1.04 | 20.36 | 0.00 | 20.36 | 4.000 | No | Yes | 2.00 |
| 479 | 4.57 | 2.01 | 97.03 | 2.93 | 0.55 | 1.04 | 19.95 | 0.00 | 19.95 | 4.000 | No | Yes | 2.00 |
| 480 | 4.59 | 1.93 | 100.00 | 2.97 | 0.55 | 1.03 | 19.03 | 0.00 | 19.03 | 4.000 | No | Yes | 2.00 |
| 481 | 4.61 | 1.89 | 100.00 | 2.99 | 0.55 | 1.03 | 18.53 | 0.00 | 18.53 | 4.000 | No | Yes | 2.00 |
| 482 | 4.63 | 1.90 | 100.00 | 2.98 | 0.55 | 1.03 | 18.55 | 0.00 | 18.55 | 4.000 | No | Yes | 2.00 |
| 483 | 4.65 | 1.93 | 98.63 | 2.95 | 0.55 | 1.03 | 18.86 | 0.00 | 18.86 | 4.000 | No | Yes | 2.00 |
| 484 | 4.67 | 2.00 | 95.41 | 2.91 | 0.55 | 1.03 | 19.47 | 0.00 | 19.47 | 4.000 | No | Yes | 2.00 |
| 485 | 4.69 | 2.02 | 93.39 | 2.88 | 0.55 | 1.03 | 19.72 | 0.00 | 19.72 | 4.000 | No | Yes | 2.00 |
| 486 | 4.71 | 2.01 | 93.19 | 2.88 | 0.55 | 1.03 | 19.52 | 0.00 | 19.52 | 4.000 | No | Yes | 2.00 |
| 487 | 4.73 | 1.99 | 93.14 | 2.88 | 0.55 | 1.03 | 19.33 | 0.00 | 19.33 | 4.000 | No | Yes | 2.00 |
| 488 | 4.75 | 1.98 | 93.66 | 2.88 | 0.55 | 1.03 | 19.23 | 0.00 | 19.23 | 4.000 | No | Yes | 2.00 |
| 489 | 4.77 | 2.00 | 94.10 | 2.89 | 0.55 | 1.03 | 19.38 | 0.00 | 19.38 | 4.000 | No | Yes | 2.00 |
| 490 | 4.79 | 1.99 | 95.92 | 2.91 | 0.55 | 1.02 | 19.22 | 0.00 | 19.22 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 491 | 4.81 | 2.04 | 97.09 | 2.93 | 0.55 | 1.02 | 19.76 | 0.00 | 19.76 | 4.000 | No | Yes | 2.00 |
| 492 | 4.83 | 2.08 | 97.16 | 2.93 | 0.55 | 1.02 | 20.07 | 0.00 | 20.07 | 4.000 | No | Yes | 2.00 |
| 493 | 4.85 | 2.05 | 98.25 | 2.94 | 0.55 | 1.02 | 19.82 | 0.00 | 19.82 | 4.000 | No | Yes | 2.00 |
| 494 | 4.87 | 2.04 | 98.75 | 2.95 | 0.55 | 1.02 | 19.70 | 0.00 | 19.70 | 4.000 | No | Yes | 2.00 |
| 495 | 4.89 | 2.07 | 98.24 | 2.94 | 0.55 | 1.02 | 19.91 | 0.00 | 19.91 | 4.000 | No | Yes | 2.00 |
| 496 | 4.91 | 2.11 | 97.61 | 2.93 | 0.55 | 1.02 | 20.24 | 0.00 | 20.24 | 4.000 | No | Yes | 2.00 |
| 497 | 4.93 | 2.14 | 96.94 | 2.92 | 0.54 | 1.02 | 20.53 | 0.00 | 20.53 | 4.000 | No | Yes | 2.00 |
| 498 | 4.95 | 2.17 | 96.53 | 2.92 | 0.54 | 1.02 | 20.81 | 0.00 | 20.81 | 4.000 | No | Yes | 2.00 |
| 499 | 4.97 | 2.19 | 96.50 | 2.92 | 0.54 | 1.02 | 20.98 | 0.00 | 20.98 | 4.000 | No | Yes | 2.00 |
| 500 | 4.99 | 2.23 | 95.87 | 2.91 | 0.54 | 1.01 | 21.33 | 0.00 | 21.33 | 4.000 | No | Yes | 2.00 |
| 501 | 5.01 | 2.26 | 95.79 | 2.91 | 0.54 | 1.01 | 21.58 | 0.00 | 21.58 | 4.000 | No | Yes | 2.00 |
| 502 | 5.03 | 2.26 | 96.56 | 2.92 | 0.54 | 1.01 | 21.59 | 0.00 | 21.59 | 4.000 | No | Yes | 2.00 |
| 503 | 5.05 | 2.23 | 98.36 | 2.94 | 0.54 | 1.01 | 21.30 | 0.00 | 21.30 | 4.000 | No | Yes | 2.00 |
| 504 | 5.07 | 2.21 | 99.70 | 2.96 | 0.54 | 1.01 | 21.16 | 0.00 | 21.16 | 4.000 | No | Yes | 2.00 |
| 505 | 5.09 | 2.21 | 100.00 | 2.97 | 0.54 | 1.01 | 21.13 | 0.00 | 21.13 | 4.000 | No | Yes | 2.00 |
| 506 | 5.11 | 2.22 | 100.00 | 2.98 | 0.54 | 1.01 | 21.19 | 0.00 | 21.19 | 4.000 | No | Yes | 2.00 |
| 507 | 5.13 | 2.23 | 100.00 | 2.99 | 0.54 | 1.01 | 21.22 | 0.00 | 21.22 | 4.000 | No | Yes | 2.00 |
| 508 | 5.15 | 2.33 | 100.00 | 2.96 | 0.54 | 1.01 | 22.14 | 0.00 | 22.14 | 4.000 | No | Yes | 2.00 |
| 509 | 5.17 | 2.48 | 96.49 | 2.92 | 0.53 | 1.00 | 23.49 | 0.00 | 23.49 | 4.000 | No | Yes | 2.00 |
| 510 | 5.19 | 2.72 | 90.10 | 2.84 | 0.53 | 1.00 | 25.78 | 0.00 | 25.78 | 4.000 | No | Yes | 2.00 |
| 511 | 5.21 | 2.79 | 88.09 | 2.81 | 0.53 | 1.00 | 26.68 | 0.00 | 26.68 | 4.000 | No | Yes | 2.00 |
| 512 | 5.23 | 2.75 | 89.01 | 2.83 | 0.53 | 1.00 | 26.97 | 0.00 | 26.97 | 4.000 | No | Yes | 2.00 |
| 513 | 5.25 | 2.73 | 89.70 | 2.83 | 0.53 | 1.00 | 26.72 | 0.00 | 26.72 | 4.000 | No | Yes | 2.00 |
| 514 | 5.27 | 2.75 | 89.68 | 2.83 | 0.53 | 1.00 | 26.77 | 0.00 | 26.77 | 4.000 | No | Yes | 2.00 |
| 515 | 5.29 | 2.77 | 89.78 | 2.83 | 0.53 | 1.00 | 26.88 | 0.00 | 26.88 | 4.000 | No | Yes | 2.00 |
| 516 | 5.31 | 2.87 | 88.81 | 2.82 | 0.52 | 1.00 | 27.87 | 0.00 | 27.87 | 4.000 | No | Yes | 2.00 |
| 517 | 5.33 | 3.01 | 87.05 | 2.80 | 0.52 | 1.00 | 29.09 | 0.00 | 29.09 | 4.000 | No | Yes | 2.00 |
| 518 | 5.35 | 3.19 | 85.34 | 2.78 | 0.51 | 1.00 | 30.79 | 0.00 | 30.79 | 4.000 | No | Yes | 2.00 |
| 519 | 5.37 | 2.89 | 90.91 | 2.85 | 0.52 | 1.00 | 27.94 | 0.00 | 27.94 | 4.000 | No | Yes | 2.00 |
| 520 | 5.39 | 2.82 | 93.10 | 2.88 | 0.52 | 0.99 | 27.19 | 0.00 | 27.19 | 4.000 | No | Yes | 2.00 |
| 521 | 5.41 | 2.81 | 93.94 | 2.89 | 0.52 | 0.99 | 26.98 | 0.00 | 26.98 | 4.000 | No | Yes | 2.00 |
| 522 | 5.43 | 2.89 | 92.08 | 2.86 | 0.52 | 0.99 | 27.77 | 0.00 | 27.77 | 4.000 | No | Yes | 2.00 |
| 523 | 5.45 | 2.98 | 90.93 | 2.85 | 0.52 | 0.99 | 28.57 | 0.00 | 28.57 | 4.000 | No | Yes | 2.00 |
| 524 | 5.47 | 2.99 | 91.95 | 2.86 | 0.52 | 0.99 | 28.68 | 0.00 | 28.68 | 4.000 | No | Yes | 2.00 |
| 525 | 5.49 | 2.71 | 97.23 | 2.93 | 0.53 | 0.99 | 25.96 | 0.00 | 25.96 | 4.000 | No | Yes | 2.00 |
| 526 | 5.51 | 2.77 | 95.99 | 2.91 | 0.53 | 0.99 | 26.49 | 0.00 | 26.49 | 4.000 | No | Yes | 2.00 |
| 527 | 5.53 | 2.95 | 91.90 | 2.86 | 0.52 | 0.99 | 28.12 | 0.00 | 28.12 | 4.000 | No | Yes | 2.00 |
| 528 | 5.55 | 2.63 | 97.79 | 2.93 | 0.53 | 0.99 | 25.05 | 0.00 | 25.05 | 4.000 | No | Yes | 2.00 |
| 529 | 5.57 | 2.63 | 98.15 | 2.94 | 0.53 | 0.99 | 25.01 | 0.00 | 25.01 | 4.000 | No | Yes | 2.00 |
| 530 | 5.59 | 2.45 | 100.00 | 2.99 | 0.53 | 0.98 | 23.25 | 0.00 | 23.25 | 4.000 | No | Yes | 2.00 |
| 531 | 5.61 | 2.56 | 100.00 | 2.97 | 0.53 | 0.98 | 24.20 | 0.00 | 24.20 | 4.000 | No | Yes | 2.00 |
| 532 | 5.63 | 2.76 | 95.25 | 2.90 | 0.53 | 0.98 | 26.12 | 0.00 | 26.12 | 4.000 | No | Yes | 2.00 |
| 533 | 5.65 | 2.99 | 90.84 | 2.85 | 0.52 | 0.98 | 28.24 | 0.00 | 28.24 | 4.000 | No | Yes | 2.00 |
| 534 | 5.67 | 3.23 | 86.73 | 2.80 | 0.52 | 0.98 | 30.45 | 0.00 | 30.45 | 4.000 | No | Yes | 2.00 |
| 535 | 5.69 | 3.65 | 79.54 | 2.71 | 0.51 | 0.98 | 34.35 | 0.00 | 34.35 | 4.000 | No | Yes | 2.00 |
| 536 | 5.71 | 3.45 | 82.99 | 2.75 | 0.51 | 0.98 | 32.50 | 0.00 | 32.50 | 4.000 | No | Yes | 2.00 |
| 537 | 5.73 | 3.37 | 85.73 | 2.78 | 0.51 | 0.98 | 31.70 | 0.00 | 31.70 | 4.000 | No | Yes | 2.00 |
| 538 | 5.75 | 3.34 | 87.90 | 2.81 | 0.51 | 0.98 | 31.35 | 0.00 | 31.35 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 539 | 5.77 | 3.46 | 86.85 | 2.80 | 0.51 | 0.98 | 32.43 | 0.00 | 32.43 | 4.000 | No | Yes | 2.00 |
| 540 | 5.79 | 3.18 | 91.72 | 2.86 | 0.52 | 0.98 | 29.77 | 0.00 | 29.77 | 4.000 | No | Yes | 2.00 |
| 541 | 5.81 | 2.61 | 100.00 | 3.01 | 0.53 | 0.97 | 24.40 | 0.00 | 24.40 | 4.000 | No | Yes | 2.00 |
| 542 | 5.83 | 2.72 | 100.00 | 3.00 | 0.53 | 0.97 | 25.35 | 0.00 | 25.35 | 4.000 | No | Yes | 2.00 |
| 543 | 5.85 | 2.68 | 100.00 | 3.01 | 0.53 | 0.97 | 25.09 | 0.00 | 25.09 | 4.000 | No | Yes | 2.00 |
| 544 | 5.87 | 2.96 | 97.15 | 2.93 | 0.52 | 0.97 | 27.62 | 0.00 | 27.62 | 4.000 | No | Yes | 2.00 |
| 545 | 5.89 | 2.29 | 100.00 | 3.09 | 0.54 | 0.97 | 21.31 | 0.00 | 21.31 | 4.000 | No | Yes | 2.00 |
| 546 | 5.91 | 2.15 | 100.00 | 3.12 | 0.55 | 0.97 | 20.04 | 0.00 | 20.04 | 4.000 | No | Yes | 2.00 |
| 547 | 5.93 | 2.18 | 100.00 | 3.09 | 0.54 | 0.97 | 20.27 | 0.00 | 20.27 | 4.000 | No | Yes | 2.00 |
| 548 | 5.95 | 2.46 | 100.00 | 3.00 | 0.54 | 0.97 | 22.79 | 0.00 | 22.79 | 4.000 | No | Yes | 2.00 |
| 549 | 5.97 | 2.73 | 97.82 | 2.94 | 0.53 | 0.97 | 25.24 | 0.00 | 25.24 | 4.000 | No | Yes | 2.00 |
| 550 | 5.99 | 2.85 | 94.72 | 2.90 | 0.53 | 0.97 | 26.28 | 0.00 | 26.28 | 4.000 | No | Yes | 2.00 |
| 551 | 6.01 | 2.59 | 99.44 | 2.96 | 0.53 | 0.97 | 23.89 | 0.00 | 23.89 | 4.000 | No | Yes | 2.00 |
| 552 | 6.03 | 2.55 | 99.48 | 2.96 | 0.53 | 0.96 | 23.48 | 0.00 | 23.48 | 4.000 | No | Yes | 2.00 |
| 553 | 6.05 | 2.68 | 96.13 | 2.91 | 0.53 | 0.96 | 24.61 | 0.00 | 24.61 | 4.000 | No | Yes | 2.00 |
| 554 | 6.07 | 2.72 | 95.36 | 2.90 | 0.53 | 0.96 | 24.92 | 0.00 | 24.92 | 4.000 | No | Yes | 2.00 |
| 555 | 6.09 | 2.88 | 92.19 | 2.86 | 0.53 | 0.96 | 26.40 | 0.00 | 26.40 | 4.000 | No | Yes | 2.00 |
| 556 | 6.11 | 3.05 | 88.83 | 2.82 | 0.52 | 0.96 | 27.96 | 0.00 | 27.96 | 4.000 | No | Yes | 2.00 |
| 557 | 6.13 | 3.23 | 86.16 | 2.79 | 0.52 | 0.96 | 29.61 | 0.00 | 29.61 | 4.000 | No | Yes | 2.00 |
| 558 | 6.15 | 3.56 | 82.06 | 2.74 | 0.51 | 0.96 | 32.60 | 0.00 | 32.60 | 4.000 | No | Yes | 2.00 |
| 559 | 6.17 | 3.81 | 79.08 | 2.70 | 0.50 | 0.96 | 34.91 | 0.00 | 34.91 | 4.000 | No | Yes | 2.00 |
| 560 | 6.19 | 3.92 | 78.05 | 2.69 | 0.50 | 0.96 | 35.83 | 0.00 | 35.83 | 4.000 | No | Yes | 2.00 |
| 561 | 6.21 | 4.05 | 76.58 | 2.67 | 0.50 | 0.96 | 37.02 | 0.00 | 37.02 | 4.000 | No | Yes | 2.00 |
| 562 | 6.23 | 4.13 | 76.75 | 2.67 | 0.50 | 0.96 | 37.70 | 0.00 | 37.70 | 4.000 | No | Yes | 2.00 |
| 563 | 6.24 | 4.08 | 79.05 | 2.70 | 0.50 | 0.96 | 37.23 | 0.00 | 37.23 | 4.000 | No | Yes | 2.00 |
| 564 | 6.26 | 3.96 | 81.80 | 2.74 | 0.50 | 0.96 | 36.08 | 0.00 | 36.08 | 4.000 | No | Yes | 2.00 |
| 565 | 6.28 | 3.72 | 86.92 | 2.80 | 0.51 | 0.96 | 33.85 | 0.00 | 33.85 | 4.000 | No | Yes | 2.00 |
| 566 | 6.30 | 3.52 | 91.20 | 2.85 | 0.51 | 0.95 | 32.02 | 0.00 | 32.02 | 4.000 | No | Yes | 2.00 |
| 567 | 6.32 | 3.43 | 93.14 | 2.88 | 0.51 | 0.95 | 31.12 | 0.00 | 31.12 | 4.000 | No | Yes | 2.00 |
| 568 | 6.34 | 3.39 | 93.43 | 2.88 | 0.51 | 0.95 | 30.74 | 0.00 | 30.74 | 4.000 | No | Yes | 2.00 |
| 569 | 6.36 | 3.10 | 98.78 | 2.95 | 0.52 | 0.95 | 27.82 | 0.00 | 27.82 | 4.000 | No | Yes | 2.00 |
| 570 | 6.38 | 3.07 | 98.43 | 2.94 | 0.52 | 0.95 | 27.43 | 0.00 | 27.43 | 4.000 | No | Yes | 2.00 |
| 571 | 6.40 | 3.04 | 97.28 | 2.93 | 0.52 | 0.95 | 27.11 | 0.00 | 27.11 | 4.000 | No | Yes | 2.00 |
| 572 | 6.42 | 2.93 | 97.41 | 2.93 | 0.53 | 0.95 | 26.16 | 0.00 | 26.16 | 4.000 | No | Yes | 2.00 |
| 573 | 6.44 | 2.88 | 97.60 | 2.93 | 0.53 | 0.95 | 25.58 | 0.00 | 25.58 | 4.000 | No | Yes | 2.00 |
| 574 | 6.46 | 2.98 | 94.50 | 2.89 | 0.53 | 0.95 | 26.43 | 0.00 | 26.43 | 4.000 | No | Yes | 2.00 |
| 575 | 6.48 | 2.99 | 93.52 | 2.88 | 0.53 | 0.94 | 26.51 | 0.00 | 26.51 | 4.000 | No | Yes | 2.00 |
| 576 | 6.50 | 3.08 | 89.96 | 2.84 | 0.52 | 0.94 | 27.36 | 0.00 | 27.36 | 4.000 | No | Yes | 2.00 |
| 577 | 6.52 | 3.14 | 88.32 | 2.82 | 0.52 | 0.94 | 27.87 | 0.00 | 27.87 | 4.000 | No | Yes | 2.00 |
| 578 | 6.54 | 3.06 | 90.28 | 2.84 | 0.52 | 0.94 | 27.12 | 0.00 | 27.12 | 4.000 | No | Yes | 2.00 |
| 579 | 6.56 | 3.07 | 89.62 | 2.83 | 0.52 | 0.94 | 27.12 | 0.00 | 27.12 | 4.000 | No | Yes | 2.00 |
| 580 | 6.58 | 3.05 | 89.97 | 2.84 | 0.53 | 0.94 | 26.95 | 0.00 | 26.95 | 4.000 | No | Yes | 2.00 |
| 581 | 6.60 | 2.98 | 91.59 | 2.86 | 0.53 | 0.94 | 26.33 | 0.00 | 26.33 | 4.000 | No | Yes | 2.00 |
| 582 | 6.62 | 2.88 | 94.65 | 2.90 | 0.53 | 0.94 | 25.40 | 0.00 | 25.40 | 4.000 | No | Yes | 2.00 |
| 583 | 6.64 | 2.68 | 100.00 | 2.96 | 0.53 | 0.94 | 23.58 | 0.00 | 23.58 | 4.000 | No | Yes | 2.00 |
| 584 | 6.66 | 2.77 | 97.99 | 2.94 | 0.53 | 0.94 | 24.33 | 0.00 | 24.33 | 4.000 | No | Yes | 2.00 |
| 585 | 6.68 | 2.83 | 96.40 | 2.92 | 0.53 | 0.94 | 24.84 | 0.00 | 24.84 | 4.000 | No | Yes | 2.00 |
| 586 | 6.70 | 2.81 | 96.76 | 2.92 | 0.53 | 0.94 | 24.65 | 0.00 | 24.65 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 587 | 6.72 | 2.70 | 99.72 | 2.96 | 0.53 | 0.93 | 23.66 | 0.00 | 23.66 | 4.000 | No | Yes | 2.00 |
| 588 | 6.74 | 2.72 | 99.67 | 2.96 | 0.53 | 0.93 | 23.78 | 0.00 | 23.78 | 4.000 | No | Yes | 2.00 |
| 589 | 6.76 | 2.71 | 98.90 | 2.95 | 0.53 | 0.93 | 23.76 | 0.00 | 23.76 | 4.000 | No | Yes | 2.00 |
| 590 | 6.78 | 2.51 | 100.00 | 3.00 | 0.54 | 0.93 | 21.92 | 0.00 | 21.92 | 4.000 | No | Yes | 2.00 |
| 591 | 6.80 | 2.03 | 100.00 | 3.08 | 0.55 | 0.93 | 17.95 | 0.00 | 17.95 | 4.000 | No | Yes | 2.00 |
| 592 | 6.82 | 2.41 | 100.00 | 3.02 | 0.54 | 0.93 | 21.35 | 0.00 | 21.35 | 4.000 | No | Yes | 2.00 |
| 593 | 6.84 | 2.34 | 100.00 | 3.04 | 0.54 | 0.93 | 20.69 | 0.00 | 20.69 | 4.000 | No | Yes | 2.00 |
| 594 | 6.86 | 2.31 | 100.00 | 3.04 | 0.54 | 0.93 | 20.38 | 0.00 | 20.38 | 4.000 | No | Yes | 2.00 |
| 595 | 6.88 | 2.29 | 100.00 | 3.04 | 0.55 | 0.93 | 20.16 | 0.00 | 20.16 | 4.000 | No | Yes | 2.00 |
| 596 | 6.90 | 2.26 | 100.00 | 3.06 | 0.55 | 0.93 | 19.89 | 0.00 | 19.89 | 4.000 | No | Yes | 2.00 |
| 597 | 6.92 | 2.26 | 100.00 | 3.04 | 0.55 | 0.92 | 19.90 | 0.00 | 19.90 | 4.000 | No | Yes | 2.00 |
| 598 | 6.94 | 2.27 | 100.00 | 3.04 | 0.55 | 0.92 | 19.96 | 0.00 | 19.96 | 4.000 | No | Yes | 2.00 |
| 599 | 6.96 | 2.29 | 100.00 | 3.03 | 0.55 | 0.92 | 20.10 | 0.00 | 20.10 | 4.000 | No | Yes | 2.00 |
| 600 | 6.98 | 2.29 | 100.00 | 3.03 | 0.55 | 0.92 | 20.09 | 0.00 | 20.09 | 4.000 | No | Yes | 2.00 |
| 601 | 7.00 | 2.29 | 100.00 | 3.03 | 0.55 | 0.92 | 20.02 | 0.00 | 20.02 | 4.000 | No | Yes | 2.00 |
| 602 | 7.02 | 2.05 | 100.00 | 3.06 | 0.55 | 0.92 | 18.01 | 0.00 | 18.01 | 4.000 | No | Yes | 2.00 |
| 603 | 7.04 | 2.00 | 100.00 | 3.08 | 0.55 | 0.92 | 17.50 | 0.00 | 17.50 | 4.000 | No | Yes | 2.00 |
| 604 | 7.06 | 1.94 | 100.00 | 3.09 | 0.56 | 0.92 | 16.99 | 0.00 | 16.99 | 4.000 | No | Yes | 2.00 |
| 605 | 7.08 | 1.88 | 100.00 | 3.13 | 0.56 | 0.92 | 16.37 | 0.00 | 16.37 | 4.000 | No | Yes | 2.00 |
| 606 | 7.10 | 1.81 | 100.00 | 3.15 | 0.56 | 0.92 | 15.76 | 0.00 | 15.76 | 4.000 | No | Yes | 2.00 |
| 607 | 7.12 | 1.82 | 100.00 | 3.14 | 0.56 | 0.91 | 15.85 | 0.00 | 15.85 | 4.000 | No | Yes | 2.00 |
| 608 | 7.14 | 1.84 | 100.00 | 3.12 | 0.56 | 0.91 | 15.99 | 0.00 | 15.99 | 4.000 | No | Yes | 2.00 |
| 609 | 7.16 | 1.83 | 100.00 | 3.10 | 0.56 | 0.91 | 15.86 | 0.00 | 15.86 | 4.000 | No | Yes | 2.00 |
| 610 | 7.18 | 1.85 | 100.00 | 3.06 | 0.56 | 0.91 | 16.05 | 0.00 | 16.05 | 4.000 | No | Yes | 2.00 |
| 611 | 7.20 | 1.87 | 100.00 | 3.03 | 0.56 | 0.91 | 16.20 | 0.00 | 16.20 | 4.000 | No | Yes | 2.00 |
| 612 | 7.22 | 1.87 | 100.00 | 3.03 | 0.56 | 0.91 | 16.19 | 0.00 | 16.19 | 4.000 | No | Yes | 2.00 |
| 613 | 7.24 | 1.72 | 100.00 | 3.06 | 0.56 | 0.91 | 14.87 | 0.00 | 14.87 | 4.000 | No | Yes | 2.00 |
| 614 | 7.26 | 1.73 | 100.00 | 3.05 | 0.56 | 0.91 | 14.90 | 0.00 | 14.90 | 4.000 | No | Yes | 2.00 |
| 615 | 7.28 | 1.73 | 100.00 | 3.05 | 0.56 | 0.91 | 14.89 | 0.00 | 14.89 | 4.000 | No | Yes | 2.00 |
| 616 | 7.30 | 1.73 | 100.00 | 3.05 | 0.56 | 0.91 | 14.92 | 0.00 | 14.92 | 4.000 | No | Yes | 2.00 |
| 617 | 7.32 | 1.72 | 100.00 | 3.03 | 0.56 | 0.91 | 14.78 | 0.00 | 14.78 | 4.000 | No | Yes | 2.00 |
| 618 | 7.34 | 1.70 | 100.00 | 3.01 | 0.56 | 0.91 | 14.61 | 0.00 | 14.61 | 4.000 | No | Yes | 2.00 |
| 619 | 7.36 | 1.69 | 100.00 | 3.00 | 0.57 | 0.91 | 14.48 | 0.00 | 14.48 | 4.000 | No | Yes | 2.00 |
| 620 | 7.38 | 1.65 | 100.00 | 3.00 | 0.57 | 0.90 | 14.11 | 0.00 | 14.11 | 4.000 | No | Yes | 2.00 |
| 621 | 7.40 | 1.63 | 100.00 | 2.99 | 0.57 | 0.90 | 14.02 | 0.00 | 14.02 | 4.000 | No | Yes | 2.00 |
| 622 | 7.42 | 1.56 | 100.00 | 3.06 | 0.57 | 0.90 | 13.36 | 0.00 | 13.36 | 4.000 | No | Yes | 2.00 |
| 623 | 7.44 | 1.50 | 100.00 | 3.11 | 0.57 | 0.90 | 12.81 | 0.00 | 12.81 | 4.000 | No | Yes | 2.00 |
| 624 | 7.46 | 1.48 | 100.00 | 3.12 | 0.57 | 0.90 | 12.66 | 0.00 | 12.66 | 4.000 | No | Yes | 2.00 |
| 625 | 7.48 | 1.47 | 100.00 | 3.11 | 0.57 | 0.90 | 12.57 | 0.00 | 12.57 | 4.000 | No | Yes | 2.00 |
| 626 | 7.50 | 1.42 | 100.00 | 3.13 | 0.57 | 0.90 | 12.11 | 0.00 | 12.11 | 4.000 | No | Yes | 2.00 |
| 627 | 7.52 | 1.43 | 100.00 | 3.11 | 0.57 | 0.90 | 12.22 | 0.00 | 12.22 | 4.000 | No | Yes | 2.00 |
| 628 | 7.54 | 1.40 | 100.00 | 3.11 | 0.58 | 0.90 | 11.89 | 0.00 | 11.89 | 4.000 | No | Yes | 2.00 |
| 629 | 7.56 | 1.43 | 100.00 | 3.07 | 0.57 | 0.90 | 12.13 | 0.00 | 12.13 | 4.000 | No | Yes | 2.00 |
| 630 | 7.58 | 1.51 | 100.00 | 3.01 | 0.57 | 0.90 | 12.83 | 0.00 | 12.83 | 4.000 | No | Yes | 2.00 |
| 631 | 7.60 | 1.57 | 99.46 | 2.96 | 0.57 | 0.90 | 13.27 | 0.00 | 13.27 | 4.000 | No | Yes | 2.00 |
| 632 | 7.62 | 1.62 | 94.70 | 2.90 | 0.57 | 0.90 | 13.67 | 0.00 | 13.67 | 4.000 | No | Yes | 2.00 |
| 633 | 7.64 | 1.64 | 93.65 | 2.88 | 0.57 | 0.90 | 13.89 | 0.00 | 13.89 | 4.000 | No | Yes | 2.00 |
| 634 | 7.66 | 1.66 | 93.17 | 2.88 | 0.57 | 0.90 | 14.01 | 0.00 | 14.01 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 635 | 7.68 | 1.72 | 93.61 | 2.88 | 0.57 | 0.89 | 14.52 | 0.00 | 14.52 | 4.000 | No | Yes | 2.00 |
| 636 | 7.70 | 1.82 | 91.40 | 2.86 | 0.56 | 0.89 | 15.35 | 0.00 | 15.35 | 4.000 | No | Yes | 2.00 |
| 637 | 7.72 | 1.88 | 90.70 | 2.85 | 0.56 | 0.89 | 15.87 | 0.00 | 15.87 | 4.000 | No | Yes | 2.00 |
| 638 | 7.74 | 1.99 | 88.96 | 2.82 | 0.56 | 0.89 | 16.74 | 0.00 | 16.74 | 4.000 | No | Yes | 2.00 |
| 639 | 7.76 | 2.08 | 88.62 | 2.82 | 0.56 | 0.89 | 17.48 | 0.00 | 17.48 | 4.000 | No | Yes | 2.00 |
| 640 | 7.78 | 2.05 | 87.20 | 2.80 | 0.56 | 0.89 | 17.32 | 0.00 | 17.32 | 4.000 | No | Yes | 2.00 |
| 641 | 7.80 | 2.34 | 84.96 | 2.77 | 0.55 | 0.89 | 19.74 | 0.00 | 19.74 | 4.000 | No | Yes | 2.00 |
| 642 | 7.82 | 2.47 | 83.39 | 2.75 | 0.55 | 0.89 | 20.81 | 0.00 | 20.81 | 4.000 | No | Yes | 2.00 |
| 643 | 7.84 | 2.59 | 83.41 | 2.76 | 0.54 | 0.89 | 21.86 | 0.00 | 21.86 | 4.000 | No | Yes | 2.00 |
| 644 | 7.86 | 2.61 | 86.69 | 2.80 | 0.54 | 0.89 | 22.01 | 0.00 | 22.01 | 4.000 | No | Yes | 2.00 |
| 645 | 7.88 | 2.53 | 91.45 | 2.86 | 0.54 | 0.89 | 21.32 | 0.00 | 21.32 | 4.000 | No | Yes | 2.00 |
| 646 | 7.90 | 2.48 | 94.85 | 2.90 | 0.54 | 0.89 | 20.84 | 0.00 | 20.84 | 4.000 | No | Yes | 2.00 |
| 647 | 7.92 | 2.44 | 96.45 | 2.92 | 0.55 | 0.89 | 20.41 | 0.00 | 20.41 | 4.000 | No | Yes | 2.00 |
| 648 | 7.94 | 2.44 | 97.71 | 2.93 | 0.54 | 0.89 | 20.39 | 0.00 | 20.39 | 4.000 | No | Yes | 2.00 |
| 649 | 7.96 | 2.39 | 98.94 | 2.95 | 0.55 | 0.89 | 19.98 | 0.00 | 19.98 | 4.000 | No | Yes | 2.00 |
| 650 | 7.98 | 2.31 | 100.00 | 2.98 | 0.55 | 0.89 | 19.30 | 0.00 | 19.30 | 4.000 | No | Yes | 2.00 |
| 651 | 8.00 | 2.14 | 100.00 | 3.04 | 0.55 | 0.89 | 17.88 | 0.00 | 17.88 | 4.000 | No | Yes | 2.00 |
| 652 | 8.02 | 2.03 | 100.00 | 3.10 | 0.56 | 0.89 | 16.90 | 0.00 | 16.90 | 4.000 | No | Yes | 2.00 |
| 653 | 8.04 | 1.97 | 100.00 | 3.12 | 0.56 | 0.88 | 16.38 | 0.00 | 16.38 | 4.000 | No | Yes | 2.00 |
| 654 | 8.06 | 1.92 | 100.00 | 3.13 | 0.56 | 0.88 | 15.90 | 0.00 | 15.90 | 4.000 | No | Yes | 2.00 |
| 655 | 8.08 | 1.94 | 100.00 | 3.14 | 0.56 | 0.88 | 16.02 | 0.00 | 16.02 | 4.000 | No | Yes | 2.00 |
| 656 | 8.10 | 1.98 | 100.00 | 3.13 | 0.56 | 0.88 | 16.33 | 0.00 | 16.33 | 4.000 | No | Yes | 2.00 |
| 657 | 8.12 | 2.00 | 100.00 | 3.12 | 0.56 | 0.88 | 16.51 | 0.00 | 16.51 | 4.000 | No | Yes | 2.00 |
| 658 | 8.14 | 2.03 | 100.00 | 3.09 | 0.56 | 0.88 | 16.73 | 0.00 | 16.73 | 4.000 | No | Yes | 2.00 |
| 659 | 8.16 | 2.08 | 100.00 | 3.06 | 0.56 | 0.88 | 17.15 | 0.00 | 17.15 | 4.000 | No | Yes | 2.00 |
| 660 | 8.18 | 2.10 | 100.00 | 3.04 | 0.56 | 0.88 | 17.29 | 0.00 | 17.29 | 4.000 | No | Yes | 2.00 |
| 661 | 8.20 | 2.13 | 100.00 | 3.03 | 0.55 | 0.88 | 17.54 | 0.00 | 17.54 | 4.000 | No | Yes | 2.00 |
| 662 | 8.22 | 2.15 | 100.00 | 3.02 | 0.55 | 0.88 | 17.72 | 0.00 | 17.72 | 4.000 | No | Yes | 2.00 |
| 663 | 8.24 | 2.16 | 100.00 | 3.03 | 0.55 | 0.88 | 17.77 | 0.00 | 17.77 | 4.000 | No | Yes | 2.00 |
| 664 | 8.26 | 2.18 | 100.00 | 3.03 | 0.55 | 0.88 | 17.87 | 0.00 | 17.87 | 4.000 | No | Yes | 2.00 |
| 665 | 8.28 | 2.16 | 100.00 | 3.05 | 0.55 | 0.88 | 17.67 | 0.00 | 17.67 | 4.000 | No | Yes | 2.00 |
| 666 | 8.29 | 2.11 | 100.00 | 3.07 | 0.56 | 0.88 | 17.25 | 0.00 | 17.25 | 4.000 | No | Yes | 2.00 |
| 667 | 8.31 | 2.10 | 100.00 | 3.08 | 0.56 | 0.88 | 17.20 | 0.00 | 17.20 | 4.000 | No | Yes | 2.00 |
| 668 | 8.33 | 2.07 | 100.00 | 3.10 | 0.56 | 0.87 | 16.92 | 0.00 | 16.92 | 4.000 | No | Yes | 2.00 |
| 669 | 8.35 | 2.04 | 100.00 | 3.11 | 0.56 | 0.87 | 16.62 | 0.00 | 16.62 | 4.000 | No | Yes | 2.00 |
| 670 | 8.37 | 2.05 | 100.00 | 3.10 | 0.56 | 0.87 | 16.70 | 0.00 | 16.70 | 4.000 | No | Yes | 2.00 |
| 671 | 8.39 | 2.05 | 100.00 | 3.10 | 0.56 | 0.87 | 16.68 | 0.00 | 16.68 | 4.000 | No | Yes | 2.00 |
| 672 | 8.41 | 2.05 | 100.00 | 3.09 | 0.56 | 0.87 | 16.67 | 0.00 | 16.67 | 4.000 | No | Yes | 2.00 |
| 673 | 8.43 | 2.09 | 100.00 | 3.07 | 0.56 | 0.87 | 16.96 | 0.00 | 16.96 | 4.000 | No | Yes | 2.00 |
| 674 | 8.45 | 2.12 | 100.00 | 3.05 | 0.56 | 0.87 | 17.17 | 0.00 | 17.17 | 4.000 | No | Yes | 2.00 |
| 675 | 8.47 | 2.10 | 100.00 | 3.04 | 0.56 | 0.87 | 17.07 | 0.00 | 17.07 | 4.000 | No | Yes | 2.00 |
| 676 | 8.49 | 2.15 | 100.00 | 3.03 | 0.55 | 0.87 | 17.41 | 0.00 | 17.41 | 4.000 | No | Yes | 2.00 |
| 677 | 8.51 | 2.16 | 100.00 | 3.02 | 0.55 | 0.87 | 17.47 | 0.00 | 17.47 | 4.000 | No | Yes | 2.00 |
| 678 | 8.53 | 2.14 | 100.00 | 3.03 | 0.56 | 0.87 | 17.33 | 0.00 | 17.33 | 4.000 | No | Yes | 2.00 |
| 679 | 8.55 | 2.08 | 100.00 | 3.06 | 0.56 | 0.87 | 16.84 | 0.00 | 16.84 | 4.000 | No | Yes | 2.00 |
| 680 | 8.57 | 2.07 | 100.00 | 3.07 | 0.56 | 0.87 | 16.72 | 0.00 | 16.72 | 4.000 | No | Yes | 2.00 |
| 681 | 8.59 | 2.01 | 100.00 | 3.09 | 0.56 | 0.87 | 16.24 | 0.00 | 16.24 | 4.000 | No | Yes | 2.00 |
| 682 | 8.61 | 2.00 | 100.00 | 3.10 | 0.56 | 0.86 | 16.14 | 0.00 | 16.14 | 4.000 | No | Yes | 2.00 |

**:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)**

| Point ID | Depth (m) | $q_t$ (MPa) | FC (%) | Ic | m | $C_N$ | $q_{c1N}$ | $\Delta q_{c1N}$ | $q_{c1N,cs}$ | $CRR_{7.5}$ | Belongs to trans. layer | Clay-like behaviour | FS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 683 | 8.63 | 1.98 | 100.00 | 3.11 | 0.56 | 0.86 | 15.97 | 0.00 | 15.97 | 4.000 | No | Yes | 2.00 |
| 684 | 8.65 | 1.98 | 100.00 | 3.12 | 0.56 | 0.86 | 15.94 | 0.00 | 15.94 | 4.000 | No | Yes | 2.00 |
| 685 | 8.67 | 2.00 | 100.00 | 3.10 | 0.56 | 0.86 | 16.09 | 0.00 | 16.09 | 4.000 | No | Yes | 2.00 |
| 686 | 8.69 | 2.02 | 100.00 | 3.08 | 0.56 | 0.86 | 16.23 | 0.00 | 16.23 | 4.000 | No | Yes | 2.00 |
| 687 | 8.71 | 1.98 | 100.00 | 3.09 | 0.56 | 0.86 | 15.91 | 0.00 | 15.91 | 4.000 | No | Yes | 2.00 |
| 688 | 8.73 | 1.97 | 100.00 | 3.09 | 0.56 | 0.86 | 15.82 | 0.00 | 15.82 | 4.000 | No | Yes | 2.00 |
| 689 | 8.75 | 1.99 | 100.00 | 3.08 | 0.56 | 0.86 | 15.95 | 0.00 | 15.95 | 4.000 | No | Yes | 2.00 |
| 690 | 8.77 | 2.02 | 100.00 | 3.06 | 0.56 | 0.86 | 16.14 | 0.00 | 16.14 | 4.000 | No | Yes | 2.00 |
| 691 | 8.79 | 1.81 | 100.00 | 3.13 | 0.56 | 0.86 | 14.63 | 0.00 | 14.63 | 4.000 | No | Yes | 2.00 |
| 692 | 8.81 | 1.95 | 100.00 | 3.11 | 0.56 | 0.86 | 15.75 | 0.00 | 15.75 | 4.000 | No | Yes | 2.00 |
| 693 | 8.83 | 1.99 | 100.00 | 3.10 | 0.56 | 0.86 | 16.06 | 0.00 | 16.06 | 4.000 | No | Yes | 2.00 |
| 694 | 8.85 | 2.02 | 100.00 | 3.09 | 0.56 | 0.86 | 16.30 | 0.00 | 16.30 | 4.000 | No | Yes | 2.00 |
| 695 | 8.87 | 2.02 | 100.00 | 3.10 | 0.56 | 0.86 | 16.29 | 0.00 | 16.29 | 4.000 | No | Yes | 2.00 |
| 696 | 8.89 | 2.06 | 100.00 | 3.09 | 0.56 | 0.86 | 16.64 | 0.00 | 16.64 | 4.000 | No | Yes | 2.00 |
| 697 | 8.91 | 2.06 | 100.00 | 3.10 | 0.56 | 0.86 | 16.57 | 0.00 | 16.57 | 4.000 | No | Yes | 2.00 |
| 698 | 8.93 | 2.12 | 100.00 | 3.07 | 0.56 | 0.86 | 17.09 | 0.00 | 17.09 | 4.000 | No | Yes | 2.00 |
| 699 | 8.95 | 2.21 | 100.00 | 3.04 | 0.55 | 0.86 | 17.82 | 0.00 | 17.82 | 4.000 | No | Yes | 2.00 |
| 700 | 8.97 | 2.30 | 100.00 | 3.00 | 0.55 | 0.86 | 18.50 | 0.00 | 18.50 | 4.000 | No | Yes | 2.00 |
| 701 | 8.99 | 2.29 | 100.00 | 2.99 | 0.55 | 0.85 | 18.40 | 0.00 | 18.40 | 4.000 | No | Yes | 2.00 |
| 702 | 9.01 | 2.28 | 100.00 | 2.97 | 0.55 | 0.85 | 18.34 | 0.00 | 18.34 | 4.000 | No | Yes | 2.00 |
| 703 | 9.03 | 2.23 | 100.00 | 2.98 | 0.55 | 0.85 | 17.92 | 0.00 | 17.92 | 4.000 | No | Yes | 2.00 |
| 704 | 9.05 | 2.25 | 100.00 | 2.97 | 0.55 | 0.85 | 18.09 | 0.00 | 18.09 | 4.000 | No | Yes | 2.00 |
| 705 | 9.07 | 2.23 | 99.96 | 2.96 | 0.55 | 0.85 | 17.90 | 0.00 | 17.90 | 4.000 | No | Yes | 2.00 |
| 706 | 9.09 | 2.16 | 100.00 | 3.00 | 0.56 | 0.85 | 17.26 | 0.00 | 17.26 | 4.000 | No | Yes | 2.00 |
| 707 | 9.11 | 2.06 | 100.00 | 3.02 | 0.56 | 0.85 | 16.44 | 0.00 | 16.44 | 4.000 | No | Yes | 2.00 |
| 708 | 9.13 | 2.04 | 100.00 | 3.00 | 0.56 | 0.85 | 16.26 | 0.00 | 16.26 | 4.000 | No | Yes | 2.00 |
| 709 | 9.15 | 2.00 | 100.00 | 3.00 | 0.56 | 0.85 | 15.98 | 0.00 | 15.98 | 4.000 | No | Yes | 2.00 |
| 710 | 9.17 | 2.01 | 100.00 | 2.99 | 0.56 | 0.85 | 16.00 | 0.00 | 16.00 | 4.000 | No | Yes | 2.00 |
| 711 | 9.19 | 2.07 | 100.00 | 2.96 | 0.56 | 0.85 | 16.42 | 0.00 | 16.42 | 4.000 | No | Yes | 2.00 |
| 712 | 9.21 | 2.18 | 95.78 | 2.91 | 0.56 | 0.85 | 17.27 | 0.00 | 17.27 | 4.000 | No | Yes | 2.00 |
| 713 | 9.23 | 2.23 | 93.21 | 2.88 | 0.56 | 0.85 | 17.70 | 0.00 | 17.70 | 4.000 | No | Yes | 2.00 |

**Abbreviations**

Depth: Depth from free surface, at which CPT was performed (m)
$q_t$: Total cone resistance
FC: Fines content (%)
$I_c$: Soil behavior type index
m: Stress exponent
$C_N$: Overburden correction factor
$q_{c1N}$: Normalized and adjusted cone resistance
$\Delta q_{c1N}$: Cone resistance correction factor due to fines
$q_{c1N,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for $M_w$=7.5
FS: Factor of safety against soil liquefaction

**:: 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.02 | 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 | 1.79 | 0.00 | 9.96 | 0.02 | 0.00 |
| 0.10 | 1.59 | 0.00 | 9.95 | 0.02 | 0.00 | 0.12 | 1.48 | 0.00 | 9.94 | 0.02 | 0.00 |
| 0.14 | 1.38 | 0.00 | 9.93 | 0.02 | 0.00 | 0.16 | 1.28 | 0.00 | 9.92 | 0.02 | 0.00 |
| 0.18 | 1.24 | 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 | 0.91 | 0.09 | 9.81 | 0.02 | 0.02 | 0.40 | 0.92 | 0.08 | 9.80 | 0.02 | 0.02 |
| 0.42 | 0.88 | 0.12 | 9.79 | 0.02 | 0.02 | 0.44 | 0.83 | 0.17 | 9.78 | 0.02 | 0.03 |
| 0.46 | 0.77 | 0.23 | 9.77 | 0.02 | 0.04 | 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 | 0.62 | 0.38 | 9.69 | 0.02 | 0.07 | 0.64 | 0.65 | 0.35 | 9.68 | 0.02 | 0.07 |
| 0.66 | 0.70 | 0.30 | 9.67 | 0.02 | 0.06 | 0.68 | 0.77 | 0.23 | 9.66 | 0.02 | 0.04 |
| 0.70 | 0.82 | 0.18 | 9.65 | 0.02 | 0.03 | 0.72 | 0.91 | 0.09 | 9.64 | 0.02 | 0.02 |
| 0.74 | 0.99 | 0.01 | 9.63 | 0.02 | 0.00 | 0.76 | 1.07 | 0.00 | 9.62 | 0.02 | 0.00 |
| 0.78 | 1.09 | 0.00 | 9.61 | 0.02 | 0.00 | 0.80 | 1.11 | 0.00 | 9.60 | 0.02 | 0.00 |
| 0.82 | 1.01 | 0.00 | 9.59 | 0.02 | 0.00 | 0.84 | 0.77 | 0.23 | 9.58 | 0.02 | 0.04 |
| 0.86 | 0.66 | 0.34 | 9.57 | 0.02 | 0.06 | 0.88 | 0.57 | 0.43 | 9.56 | 0.02 | 0.08 |
| 0.90 | 0.53 | 0.47 | 9.55 | 0.02 | 0.09 | 0.92 | 0.53 | 0.47 | 9.54 | 0.02 | 0.09 |
| 0.94 | 0.52 | 0.48 | 9.53 | 0.02 | 0.09 | 0.96 | 0.64 | 0.36 | 9.52 | 0.02 | 0.07 |
| 0.98 | 0.84 | 0.16 | 9.51 | 0.02 | 0.03 | 1.00 | 0.94 | 0.06 | 9.50 | 0.02 | 0.01 |
| 1.02 | 1.00 | 0.00 | 9.49 | 0.02 | 0.00 | 1.04 | 1.05 | 0.00 | 9.48 | 0.02 | 0.00 |
| 1.06 | 1.13 | 0.00 | 9.47 | 0.02 | 0.00 | 1.08 | 1.19 | 0.00 | 9.46 | 0.02 | 0.00 |
| 1.10 | 1.22 | 0.00 | 9.45 | 0.02 | 0.00 | 1.12 | 1.18 | 0.00 | 9.44 | 0.02 | 0.00 |
| 1.14 | 1.09 | 0.00 | 9.43 | 0.02 | 0.00 | 1.16 | 1.07 | 0.00 | 9.42 | 0.02 | 0.00 |
| 1.18 | 1.10 | 0.00 | 9.41 | 0.02 | 0.00 | 1.20 | 1.15 | 0.00 | 9.40 | 0.02 | 0.00 |
| 1.22 | 1.15 | 0.00 | 9.39 | 0.02 | 0.00 | 1.24 | 1.22 | 0.00 | 9.38 | 0.02 | 0.00 |
| 1.26 | 1.30 | 0.00 | 9.37 | 0.02 | 0.00 | 1.28 | 1.24 | 0.00 | 9.36 | 0.02 | 0.00 |
| 1.30 | 1.11 | 0.00 | 9.35 | 0.02 | 0.00 | 1.32 | 1.04 | 0.00 | 9.34 | 0.02 | 0.00 |
| 1.34 | 1.03 | 0.00 | 9.33 | 0.02 | 0.00 | 1.36 | 0.81 | 0.19 | 9.32 | 0.02 | 0.04 |
| 1.38 | 0.79 | 0.21 | 9.31 | 0.02 | 0.04 | 1.40 | 0.80 | 0.20 | 9.30 | 0.02 | 0.04 |
| 1.42 | 0.78 | 0.22 | 9.29 | 0.02 | 0.04 | 1.44 | 0.72 | 0.28 | 9.28 | 0.02 | 0.05 |
| 1.46 | 0.68 | 0.32 | 9.27 | 0.02 | 0.06 | 1.48 | 0.68 | 0.32 | 9.26 | 0.02 | 0.06 |
| 1.50 | 0.44 | 0.56 | 9.25 | 0.02 | 0.10 | 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 | 0.54 | 0.46 | 9.21 | 0.02 | 0.08 | 1.60 | 1.41 | 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 | 1.61 | 0.00 | 9.15 | 0.02 | 0.00 | 1.72 | 0.98 | 0.02 | 9.14 | 0.02 | 0.00 |
| 1.74 | 0.67 | 0.33 | 9.13 | 0.02 | 0.06 | 1.76 | 0.53 | 0.47 | 9.12 | 0.02 | 0.09 |
| 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 | 1.92 | 2.00 | 0.00 | 9.04 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.94 | 2.00 | 0.00 | 9.03 | 0.02 | 0.00 | 1.96 | 2.00 | 0.00 | 9.02 | 0.02 | 0.00 |
| 1.98 | 0.42 | 0.58 | 9.01 | 0.02 | 0.10 | 2.00 | 0.43 | 0.57 | 9.00 | 0.02 | 0.10 |
| 2.02 | 0.56 | 0.44 | 8.99 | 0.02 | 0.08 | 2.04 | 0.56 | 0.44 | 8.98 | 0.02 | 0.08 |
| 2.06 | 0.55 | 0.45 | 8.97 | 0.02 | 0.08 | 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 |
| 2.61 | 2.00 | 0.00 | 8.69 | 0.02 | 0.00 | 2.63 | 2.00 | 0.00 | 8.68 | 0.02 | 0.00 |
| 2.65 | 2.00 | 0.00 | 8.67 | 0.02 | 0.00 | 2.67 | 2.00 | 0.00 | 8.66 | 0.02 | 0.00 |
| 2.69 | 2.00 | 0.00 | 8.65 | 0.02 | 0.00 | 2.71 | 2.00 | 0.00 | 8.64 | 0.02 | 0.00 |
| 2.73 | 2.00 | 0.00 | 8.63 | 0.02 | 0.00 | 2.75 | 2.00 | 0.00 | 8.62 | 0.02 | 0.00 |
| 2.77 | 2.00 | 0.00 | 8.61 | 0.02 | 0.00 | 2.79 | 2.00 | 0.00 | 8.60 | 0.02 | 0.00 |
| 2.81 | 2.00 | 0.00 | 8.59 | 0.02 | 0.00 | 2.83 | 2.00 | 0.00 | 8.58 | 0.02 | 0.00 |
| 2.85 | 2.00 | 0.00 | 8.57 | 0.02 | 0.00 | 2.87 | 2.00 | 0.00 | 8.56 | 0.02 | 0.00 |
| 2.89 | 2.00 | 0.00 | 8.55 | 0.02 | 0.00 | 2.91 | 2.00 | 0.00 | 8.54 | 0.02 | 0.00 |
| 2.93 | 2.00 | 0.00 | 8.53 | 0.02 | 0.00 | 2.95 | 2.00 | 0.00 | 8.52 | 0.02 | 0.00 |
| 2.97 | 2.00 | 0.00 | 8.51 | 0.02 | 0.00 | 2.99 | 2.00 | 0.00 | 8.50 | 0.02 | 0.00 |
| 3.01 | 2.00 | 0.00 | 8.49 | 0.02 | 0.00 | 3.03 | 2.00 | 0.00 | 8.48 | 0.02 | 0.00 |
| 3.05 | 2.00 | 0.00 | 8.47 | 0.02 | 0.00 | 3.07 | 2.00 | 0.00 | 8.46 | 0.02 | 0.00 |
| 3.09 | 2.00 | 0.00 | 8.45 | 0.02 | 0.00 | 3.11 | 2.00 | 0.00 | 8.44 | 0.02 | 0.00 |
| 3.13 | 2.00 | 0.00 | 8.43 | 0.02 | 0.00 | 3.15 | 2.00 | 0.00 | 8.42 | 0.02 | 0.00 |
| 3.17 | 2.00 | 0.00 | 8.41 | 0.02 | 0.00 | 3.19 | 2.00 | 0.00 | 8.40 | 0.02 | 0.00 |
| 3.21 | 2.00 | 0.00 | 8.39 | 0.02 | 0.00 | 3.23 | 2.00 | 0.00 | 8.38 | 0.02 | 0.00 |
| 3.25 | 2.00 | 0.00 | 8.37 | 0.02 | 0.00 | 3.27 | 2.00 | 0.00 | 8.36 | 0.02 | 0.00 |
| 3.29 | 2.00 | 0.00 | 8.35 | 0.02 | 0.00 | 3.31 | 2.00 | 0.00 | 8.34 | 0.02 | 0.00 |
| 3.33 | 2.00 | 0.00 | 8.33 | 0.02 | 0.00 | 3.35 | 2.00 | 0.00 | 8.32 | 0.02 | 0.00 |
| 3.37 | 2.00 | 0.00 | 8.31 | 0.02 | 0.00 | 3.39 | 2.00 | 0.00 | 8.30 | 0.02 | 0.00 |
| 3.41 | 0.47 | 0.53 | 8.29 | 0.02 | 0.09 | 3.43 | 0.49 | 0.51 | 8.28 | 0.02 | 0.08 |
| 3.45 | 0.48 | 0.52 | 8.27 | 0.02 | 0.09 | 3.47 | 2.00 | 0.00 | 8.26 | 0.02 | 0.00 |
| 3.49 | 2.00 | 0.00 | 8.25 | 0.02 | 0.00 | 3.51 | 2.00 | 0.00 | 8.24 | 0.02 | 0.00 |
| 3.53 | 2.00 | 0.00 | 8.23 | 0.02 | 0.00 | 3.55 | 2.00 | 0.00 | 8.22 | 0.02 | 0.00 |
| 3.57 | 2.00 | 0.00 | 8.21 | 0.02 | 0.00 | 3.59 | 2.00 | 0.00 | 8.20 | 0.02 | 0.00 |
| 3.61 | 2.00 | 0.00 | 8.19 | 0.02 | 0.00 | 3.63 | 2.00 | 0.00 | 8.18 | 0.02 | 0.00 |
| 3.65 | 2.00 | 0.00 | 8.17 | 0.02 | 0.00 | 3.67 | 2.00 | 0.00 | 8.16 | 0.02 | 0.00 |
| 3.69 | 2.00 | 0.00 | 8.15 | 0.02 | 0.00 | 3.71 | 2.00 | 0.00 | 8.14 | 0.02 | 0.00 |
| 3.73 | 2.00 | 0.00 | 8.13 | 0.02 | 0.00 | 3.75 | 2.00 | 0.00 | 8.12 | 0.02 | 0.00 |
| 3.77 | 2.00 | 0.00 | 8.11 | 0.02 | 0.00 | 3.79 | 2.00 | 0.00 | 8.10 | 0.02 | 0.00 |
| 3.81 | 2.00 | 0.00 | 8.09 | 0.02 | 0.00 | 3.83 | 2.00 | 0.00 | 8.08 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.85 | 2.00 | 0.00 | 8.07 | 0.02 | 0.00 | 3.87 | 2.00 | 0.00 | 8.06 | 0.02 | 0.00 |
| 3.89 | 2.00 | 0.00 | 8.05 | 0.02 | 0.00 | 3.91 | 2.00 | 0.00 | 8.04 | 0.02 | 0.00 |
| 3.93 | 2.00 | 0.00 | 8.03 | 0.02 | 0.00 | 3.95 | 2.00 | 0.00 | 8.02 | 0.02 | 0.00 |
| 3.97 | 2.00 | 0.00 | 8.01 | 0.02 | 0.00 | 3.99 | 2.00 | 0.00 | 8.00 | 0.02 | 0.00 |
| 4.01 | 2.00 | 0.00 | 7.99 | 0.02 | 0.00 | 4.03 | 2.00 | 0.00 | 7.98 | 0.02 | 0.00 |
| 4.05 | 2.00 | 0.00 | 7.97 | 0.02 | 0.00 | 4.07 | 2.00 | 0.00 | 7.96 | 0.02 | 0.00 |
| 4.09 | 2.00 | 0.00 | 7.95 | 0.02 | 0.00 | 4.11 | 2.00 | 0.00 | 7.94 | 0.02 | 0.00 |
| 4.13 | 2.00 | 0.00 | 7.93 | 0.02 | 0.00 | 4.15 | 2.00 | 0.00 | 7.92 | 0.02 | 0.00 |
| 4.17 | 2.00 | 0.00 | 7.91 | 0.02 | 0.00 | 4.19 | 2.00 | 0.00 | 7.90 | 0.02 | 0.00 |
| 4.21 | 2.00 | 0.00 | 7.89 | 0.02 | 0.00 | 4.23 | 2.00 | 0.00 | 7.88 | 0.02 | 0.00 |
| 4.25 | 2.00 | 0.00 | 7.87 | 0.02 | 0.00 | 4.27 | 2.00 | 0.00 | 7.86 | 0.02 | 0.00 |
| 4.29 | 2.00 | 0.00 | 7.85 | 0.02 | 0.00 | 4.31 | 2.00 | 0.00 | 7.84 | 0.02 | 0.00 |
| 4.33 | 2.00 | 0.00 | 7.83 | 0.02 | 0.00 | 4.35 | 2.00 | 0.00 | 7.82 | 0.02 | 0.00 |
| 4.37 | 2.00 | 0.00 | 7.81 | 0.02 | 0.00 | 4.39 | 2.00 | 0.00 | 7.80 | 0.02 | 0.00 |
| 4.41 | 2.00 | 0.00 | 7.79 | 0.02 | 0.00 | 4.43 | 2.00 | 0.00 | 7.78 | 0.02 | 0.00 |
| 4.45 | 2.00 | 0.00 | 7.77 | 0.02 | 0.00 | 4.47 | 2.00 | 0.00 | 7.76 | 0.02 | 0.00 |
| 4.49 | 2.00 | 0.00 | 7.75 | 0.02 | 0.00 | 4.51 | 2.00 | 0.00 | 7.74 | 0.02 | 0.00 |
| 4.53 | 2.00 | 0.00 | 7.73 | 0.02 | 0.00 | 4.55 | 2.00 | 0.00 | 7.72 | 0.02 | 0.00 |
| 4.57 | 2.00 | 0.00 | 7.71 | 0.02 | 0.00 | 4.59 | 2.00 | 0.00 | 7.70 | 0.02 | 0.00 |
| 4.61 | 2.00 | 0.00 | 7.69 | 0.02 | 0.00 | 4.63 | 2.00 | 0.00 | 7.68 | 0.02 | 0.00 |
| 4.65 | 2.00 | 0.00 | 7.67 | 0.02 | 0.00 | 4.67 | 2.00 | 0.00 | 7.66 | 0.02 | 0.00 |
| 4.69 | 2.00 | 0.00 | 7.65 | 0.02 | 0.00 | 4.71 | 2.00 | 0.00 | 7.64 | 0.02 | 0.00 |
| 4.73 | 2.00 | 0.00 | 7.63 | 0.02 | 0.00 | 4.75 | 2.00 | 0.00 | 7.62 | 0.02 | 0.00 |
| 4.77 | 2.00 | 0.00 | 7.61 | 0.02 | 0.00 | 4.79 | 2.00 | 0.00 | 7.60 | 0.02 | 0.00 |
| 4.81 | 2.00 | 0.00 | 7.59 | 0.02 | 0.00 | 4.83 | 2.00 | 0.00 | 7.58 | 0.02 | 0.00 |
| 4.85 | 2.00 | 0.00 | 7.57 | 0.02 | 0.00 | 4.87 | 2.00 | 0.00 | 7.56 | 0.02 | 0.00 |
| 4.89 | 2.00 | 0.00 | 7.56 | 0.02 | 0.00 | 4.91 | 2.00 | 0.00 | 7.55 | 0.02 | 0.00 |
| 4.93 | 2.00 | 0.00 | 7.54 | 0.02 | 0.00 | 4.95 | 2.00 | 0.00 | 7.53 | 0.02 | 0.00 |
| 4.97 | 2.00 | 0.00 | 7.52 | 0.02 | 0.00 | 4.99 | 2.00 | 0.00 | 7.51 | 0.02 | 0.00 |
| 5.01 | 2.00 | 0.00 | 7.50 | 0.02 | 0.00 | 5.03 | 2.00 | 0.00 | 7.49 | 0.02 | 0.00 |
| 5.05 | 2.00 | 0.00 | 7.48 | 0.02 | 0.00 | 5.07 | 2.00 | 0.00 | 7.47 | 0.02 | 0.00 |
| 5.09 | 2.00 | 0.00 | 7.46 | 0.02 | 0.00 | 5.11 | 2.00 | 0.00 | 7.45 | 0.02 | 0.00 |
| 5.13 | 2.00 | 0.00 | 7.44 | 0.02 | 0.00 | 5.15 | 2.00 | 0.00 | 7.43 | 0.02 | 0.00 |
| 5.17 | 2.00 | 0.00 | 7.42 | 0.02 | 0.00 | 5.19 | 2.00 | 0.00 | 7.41 | 0.02 | 0.00 |
| 5.21 | 2.00 | 0.00 | 7.40 | 0.02 | 0.00 | 5.23 | 2.00 | 0.00 | 7.39 | 0.02 | 0.00 |
| 5.25 | 2.00 | 0.00 | 7.38 | 0.02 | 0.00 | 5.27 | 2.00 | 0.00 | 7.37 | 0.02 | 0.00 |
| 5.29 | 2.00 | 0.00 | 7.36 | 0.02 | 0.00 | 5.31 | 2.00 | 0.00 | 7.35 | 0.02 | 0.00 |
| 5.33 | 2.00 | 0.00 | 7.34 | 0.02 | 0.00 | 5.35 | 2.00 | 0.00 | 7.33 | 0.02 | 0.00 |
| 5.37 | 2.00 | 0.00 | 7.32 | 0.02 | 0.00 | 5.39 | 2.00 | 0.00 | 7.31 | 0.02 | 0.00 |
| 5.41 | 2.00 | 0.00 | 7.30 | 0.02 | 0.00 | 5.43 | 2.00 | 0.00 | 7.29 | 0.02 | 0.00 |
| 5.45 | 2.00 | 0.00 | 7.28 | 0.02 | 0.00 | 5.47 | 2.00 | 0.00 | 7.27 | 0.02 | 0.00 |
| 5.49 | 2.00 | 0.00 | 7.26 | 0.02 | 0.00 | 5.51 | 2.00 | 0.00 | 7.25 | 0.02 | 0.00 |
| 5.53 | 2.00 | 0.00 | 7.24 | 0.02 | 0.00 | 5.55 | 2.00 | 0.00 | 7.23 | 0.02 | 0.00 |
| 5.57 | 2.00 | 0.00 | 7.22 | 0.02 | 0.00 | 5.59 | 2.00 | 0.00 | 7.21 | 0.02 | 0.00 |
| 5.61 | 2.00 | 0.00 | 7.20 | 0.02 | 0.00 | 5.63 | 2.00 | 0.00 | 7.19 | 0.02 | 0.00 |
| 5.65 | 2.00 | 0.00 | 7.18 | 0.02 | 0.00 | 5.67 | 2.00 | 0.00 | 7.17 | 0.02 | 0.00 |
| 5.69 | 2.00 | 0.00 | 7.16 | 0.02 | 0.00 | 5.71 | 2.00 | 0.00 | 7.15 | 0.02 | 0.00 |
| 5.73 | 2.00 | 0.00 | 7.14 | 0.02 | 0.00 | 5.75 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5.77 | 2.00 | 0.00 | 7.12 | 0.02 | 0.00 | 5.79 | 2.00 | 0.00 | 7.11 | 0.02 | 0.00 |
| 5.81 | 2.00 | 0.00 | 7.10 | 0.02 | 0.00 | 5.83 | 2.00 | 0.00 | 7.09 | 0.02 | 0.00 |
| 5.85 | 2.00 | 0.00 | 7.08 | 0.02 | 0.00 | 5.87 | 2.00 | 0.00 | 7.07 | 0.02 | 0.00 |
| 5.89 | 2.00 | 0.00 | 7.06 | 0.02 | 0.00 | 5.91 | 2.00 | 0.00 | 7.05 | 0.02 | 0.00 |
| 5.93 | 2.00 | 0.00 | 7.04 | 0.02 | 0.00 | 5.95 | 2.00 | 0.00 | 7.03 | 0.02 | 0.00 |
| 5.97 | 2.00 | 0.00 | 7.02 | 0.02 | 0.00 | 5.99 | 2.00 | 0.00 | 7.01 | 0.02 | 0.00 |
| 6.01 | 2.00 | 0.00 | 7.00 | 0.02 | 0.00 | 6.03 | 2.00 | 0.00 | 6.99 | 0.02 | 0.00 |
| 6.05 | 2.00 | 0.00 | 6.98 | 0.02 | 0.00 | 6.07 | 2.00 | 0.00 | 6.97 | 0.02 | 0.00 |
| 6.09 | 2.00 | 0.00 | 6.96 | 0.02 | 0.00 | 6.11 | 2.00 | 0.00 | 6.95 | 0.02 | 0.00 |
| 6.13 | 2.00 | 0.00 | 6.94 | 0.02 | 0.00 | 6.15 | 2.00 | 0.00 | 6.93 | 0.02 | 0.00 |
| 6.17 | 2.00 | 0.00 | 6.92 | 0.02 | 0.00 | 6.19 | 2.00 | 0.00 | 6.91 | 0.02 | 0.00 |
| 6.21 | 2.00 | 0.00 | 6.90 | 0.02 | 0.00 | 6.23 | 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 | 8.29 | 2.00 | 0.00 | 5.85 | 0.02 | 0.00 |
| 8.31 | 2.00 | 0.00 | 5.84 | 0.02 | 0.00 | 8.33 | 2.00 | 0.00 | 5.83 | 0.02 | 0.00 |
| 8.35 | 2.00 | 0.00 | 5.82 | 0.02 | 0.00 | 8.37 | 2.00 | 0.00 | 5.81 | 0.02 | 0.00 |
| 8.39 | 2.00 | 0.00 | 5.80 | 0.02 | 0.00 | 8.41 | 2.00 | 0.00 | 5.79 | 0.02 | 0.00 |
| 8.43 | 2.00 | 0.00 | 5.78 | 0.02 | 0.00 | 8.45 | 2.00 | 0.00 | 5.77 | 0.02 | 0.00 |
| 8.47 | 2.00 | 0.00 | 5.76 | 0.02 | 0.00 | 8.49 | 2.00 | 0.00 | 5.75 | 0.02 | 0.00 |
| 8.51 | 2.00 | 0.00 | 5.74 | 0.02 | 0.00 | 8.53 | 2.00 | 0.00 | 5.73 | 0.02 | 0.00 |
| 8.55 | 2.00 | 0.00 | 5.72 | 0.02 | 0.00 | 8.57 | 2.00 | 0.00 | 5.71 | 0.02 | 0.00 |
| 8.59 | 2.00 | 0.00 | 5.70 | 0.02 | 0.00 | 8.61 | 2.00 | 0.00 | 5.69 | 0.02 | 0.00 |
| 8.63 | 2.00 | 0.00 | 5.68 | 0.02 | 0.00 | 8.65 | 2.00 | 0.00 | 5.67 | 0.02 | 0.00 |
| 8.67 | 2.00 | 0.00 | 5.66 | 0.02 | 0.00 | 8.69 | 2.00 | 0.00 | 5.65 | 0.02 | 0.00 |
| 8.71 | 2.00 | 0.00 | 5.64 | 0.02 | 0.00 | 8.73 | 2.00 | 0.00 | 5.63 | 0.02 | 0.00 |
| 8.75 | 2.00 | 0.00 | 5.62 | 0.02 | 0.00 | 8.77 | 2.00 | 0.00 | 5.61 | 0.02 | 0.00 |
| 8.79 | 2.00 | 0.00 | 5.60 | 0.02 | 0.00 | 8.81 | 2.00 | 0.00 | 5.59 | 0.02 | 0.00 |
| 8.83 | 2.00 | 0.00 | 5.58 | 0.02 | 0.00 | 8.85 | 2.00 | 0.00 | 5.57 | 0.02 | 0.00 |
| 8.87 | 2.00 | 0.00 | 5.56 | 0.02 | 0.00 | 8.89 | 2.00 | 0.00 | 5.55 | 0.02 | 0.00 |
| 8.91 | 2.00 | 0.00 | 5.54 | 0.02 | 0.00 | 8.93 | 2.00 | 0.00 | 5.53 | 0.02 | 0.00 |
| 8.95 | 2.00 | 0.00 | 5.52 | 0.02 | 0.00 | 8.97 | 2.00 | 0.00 | 5.51 | 0.02 | 0.00 |
| 8.99 | 2.00 | 0.00 | 5.50 | 0.02 | 0.00 | 9.01 | 2.00 | 0.00 | 5.49 | 0.02 | 0.00 |
| 9.03 | 2.00 | 0.00 | 5.48 | 0.02 | 0.00 | 9.05 | 2.00 | 0.00 | 5.47 | 0.02 | 0.00 |
| 9.07 | 2.00 | 0.00 | 5.46 | 0.02 | 0.00 | 9.09 | 2.00 | 0.00 | 5.45 | 0.02 | 0.00 |
| 9.11 | 2.00 | 0.00 | 5.44 | 0.02 | 0.00 | 9.13 | 2.00 | 0.00 | 5.43 | 0.02 | 0.00 |
| 9.15 | 2.00 | 0.00 | 5.43 | 0.02 | 0.00 | 9.17 | 2.00 | 0.00 | 5.42 | 0.02 | 0.00 |
| 9.19 | 2.00 | 0.00 | 5.41 | 0.02 | 0.00 | 9.21 | 2.00 | 0.00 | 5.40 | 0.02 | 0.00 |
| 9.23 | 2.00 | 0.00 | 5.39 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|

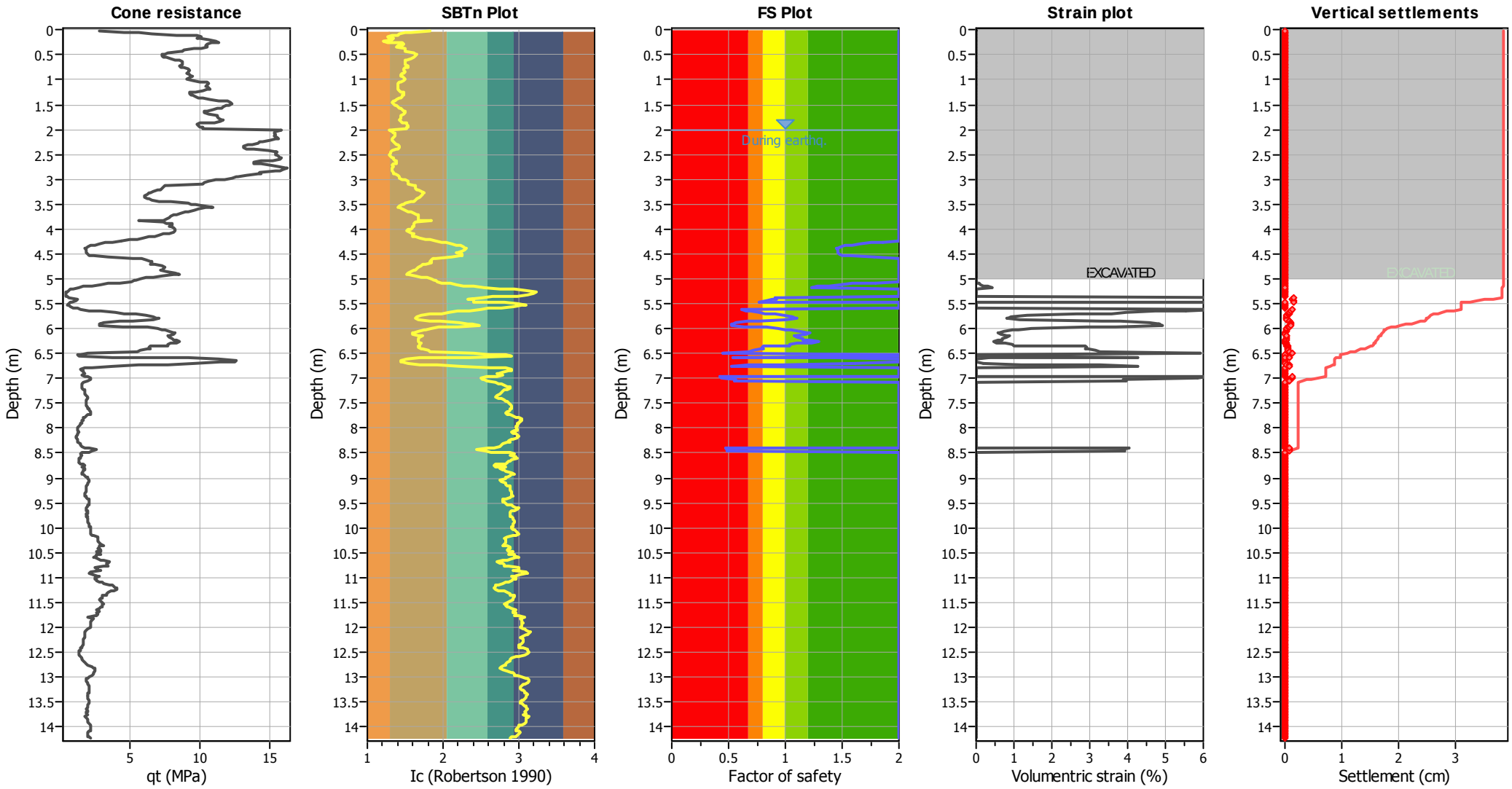
**Overall liquefaction potential: 2.36**

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

# Estimation of post-earthquake settlements

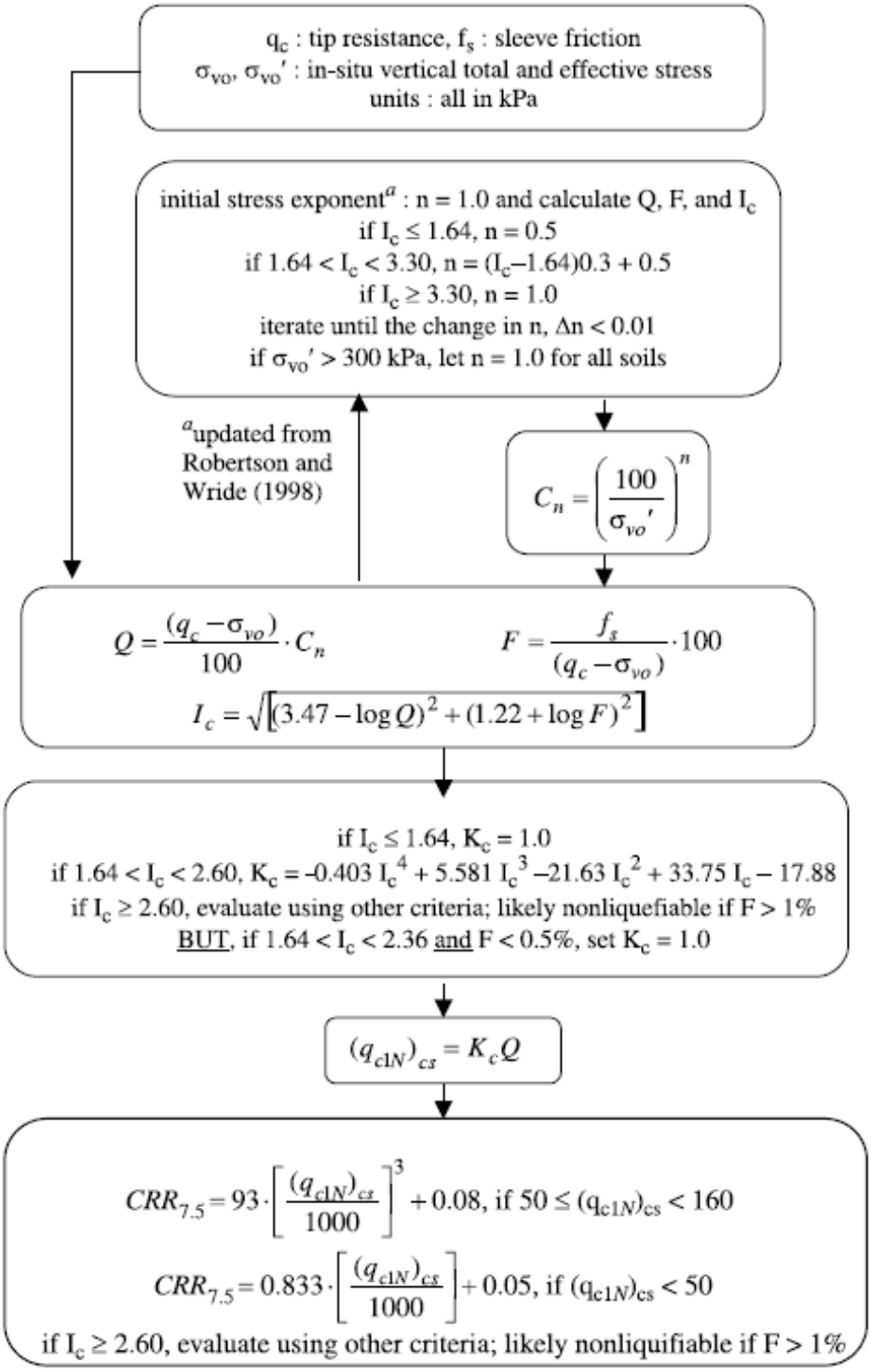



**Abbreviations**

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

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

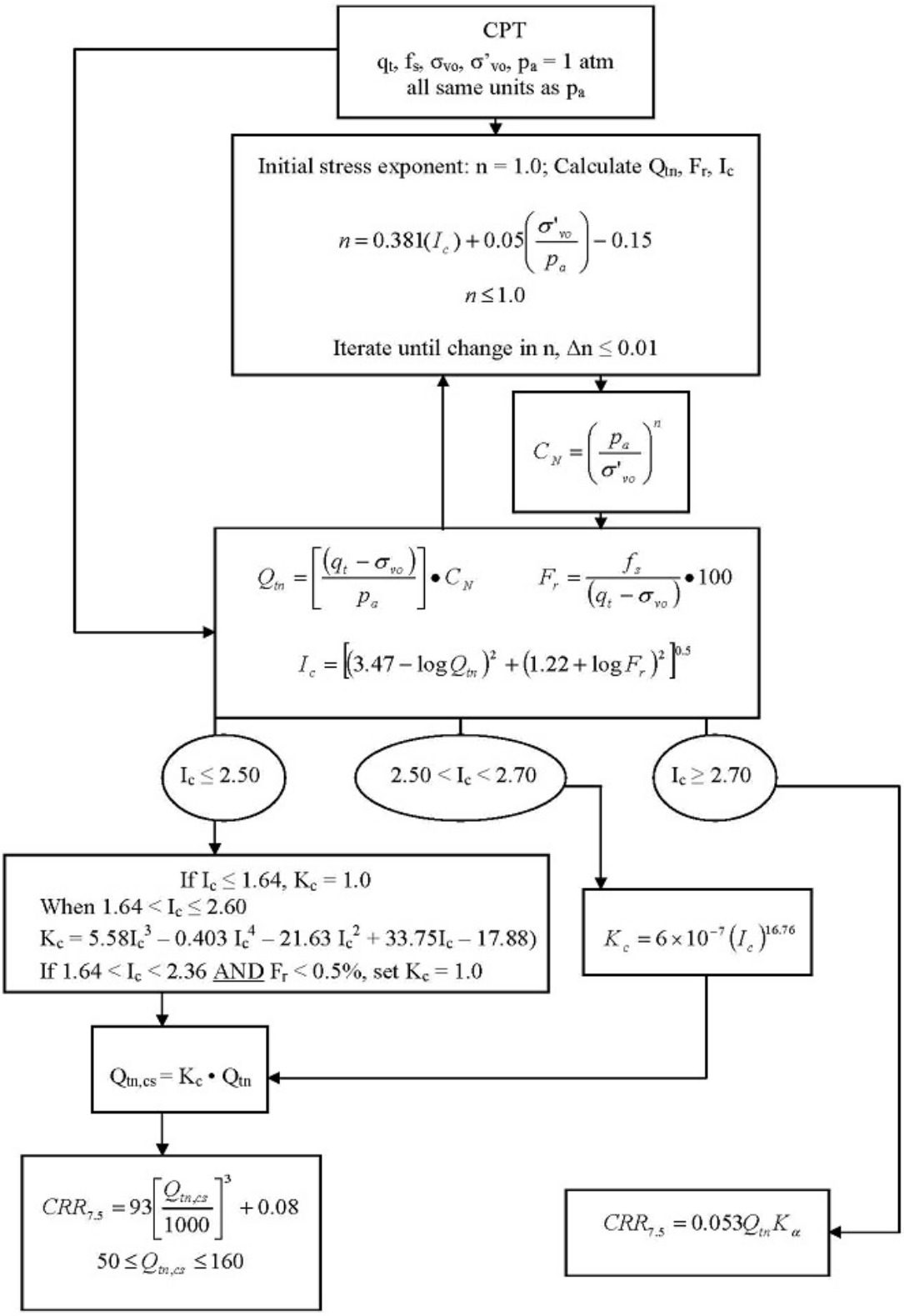
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of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




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

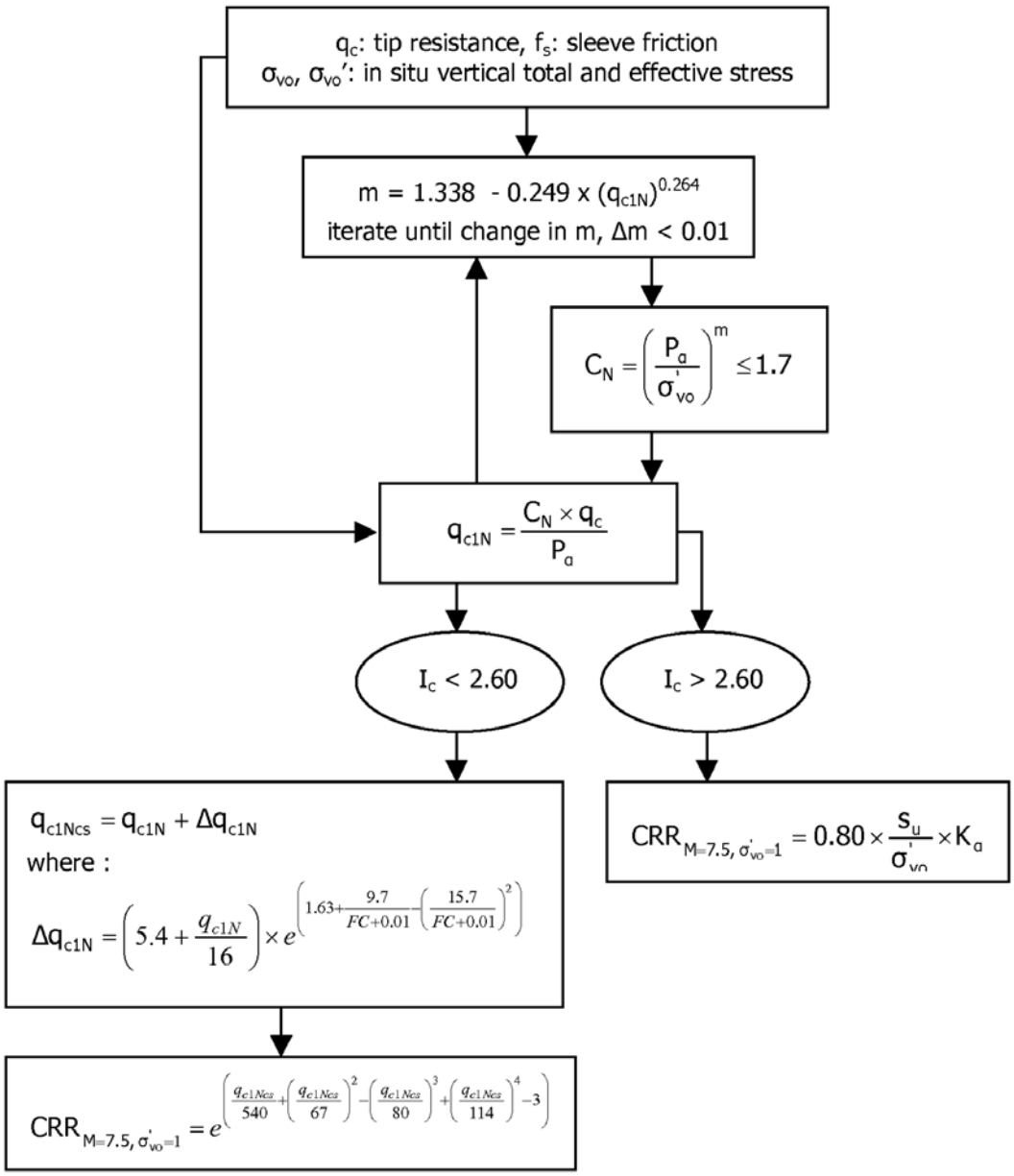
## Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

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

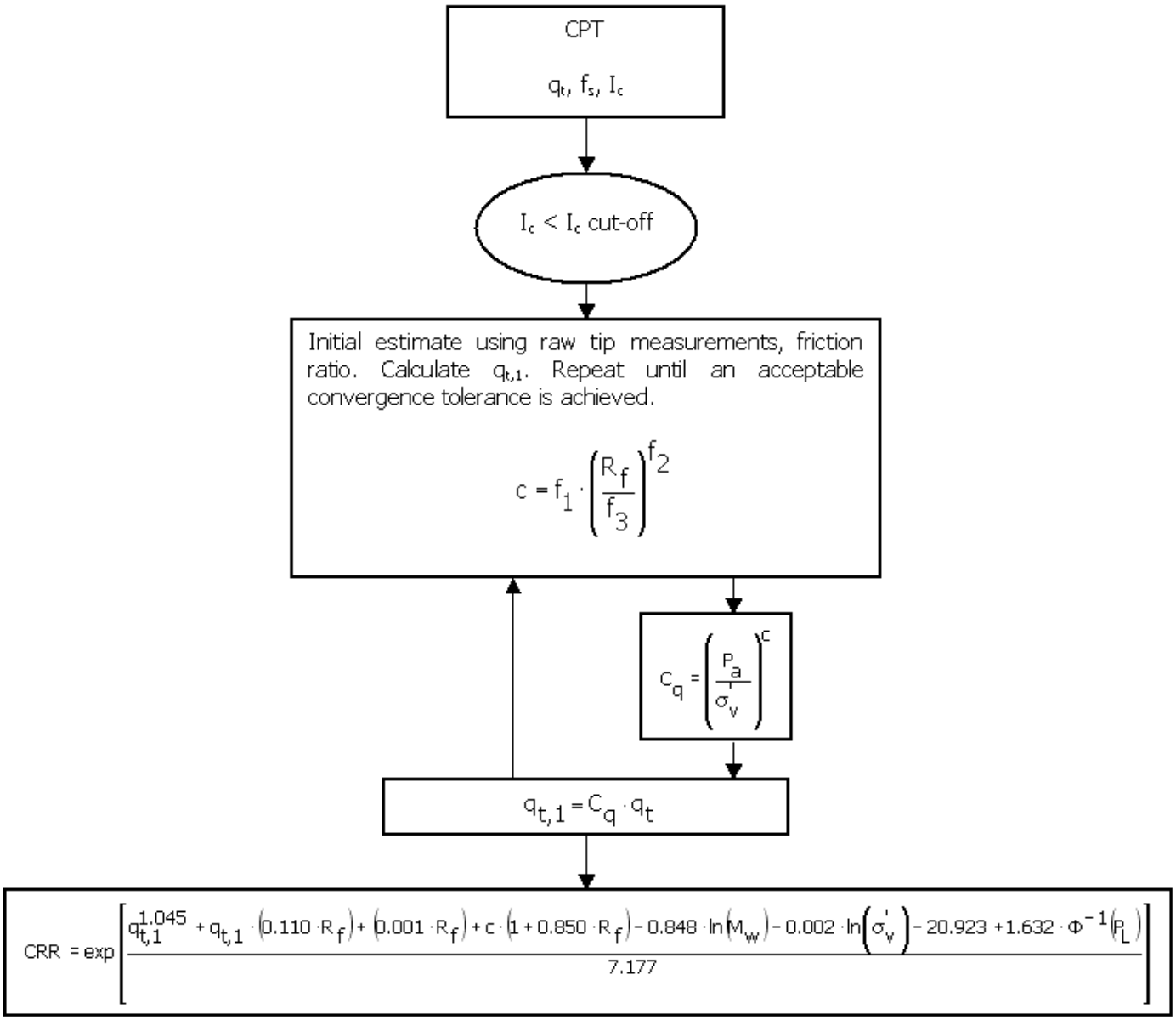



[1] P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

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



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



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

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

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

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

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

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

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

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

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

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

$\sigma'_v$ *and* $\sigma_v$ *at start of earthquake shaking*

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

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

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

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

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

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

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

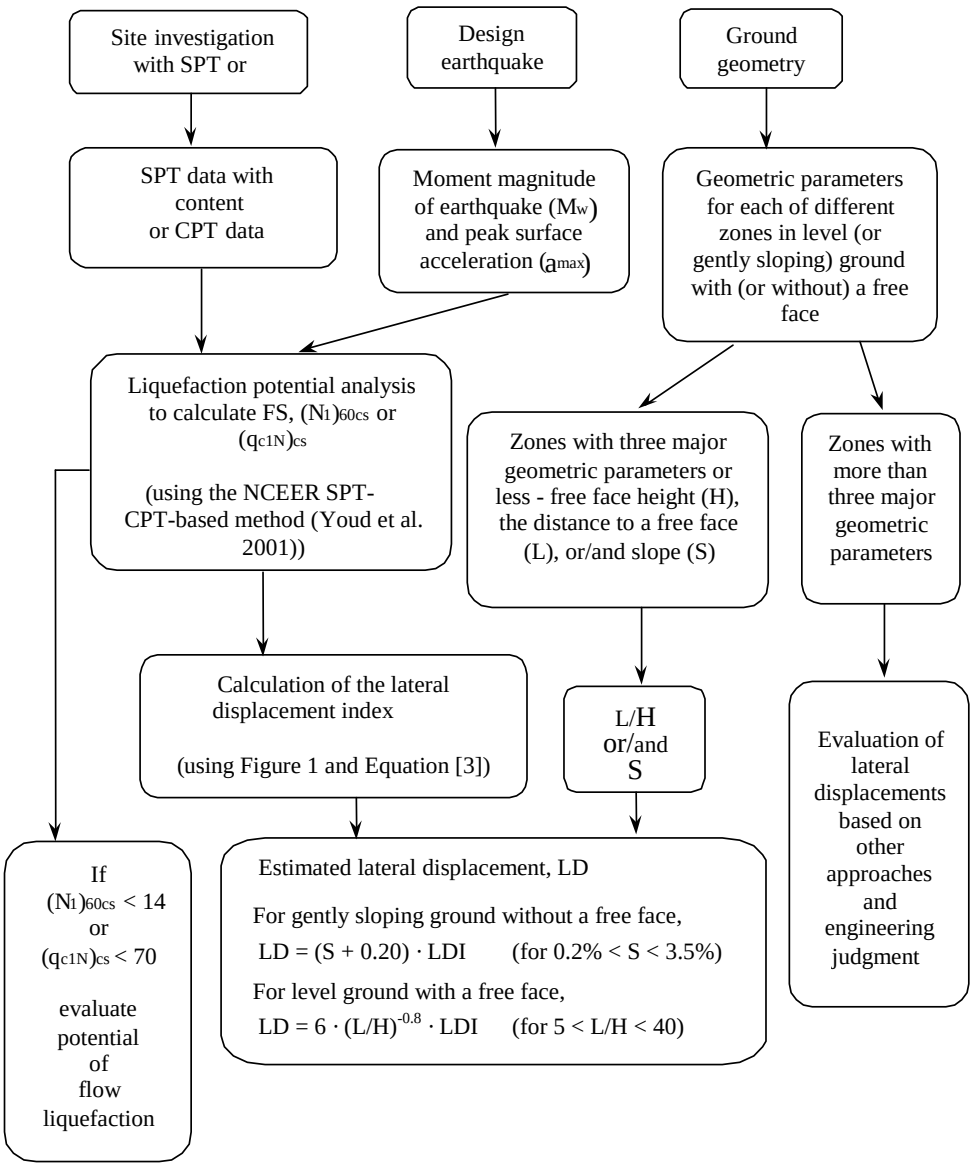
$$I_c = \left[\left(3.47-\log(Q)\right)^2+\left(1.22+\log(F)\right)^2\right]^{0.5}$$

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

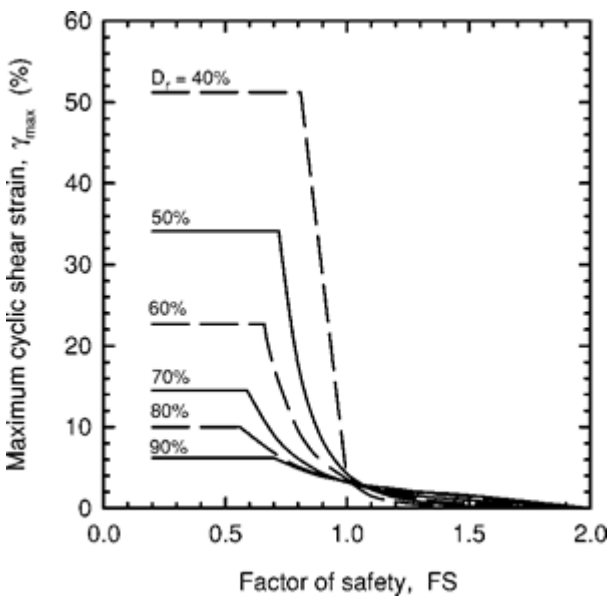
$$F = \left(\frac{f_s}{q_c-\sigma_{vc}}\right)\cdot 100\%$$

$\sigma'_v$ *at time of CPT sounding*

## Procedure for the evaluation of liquefaction-induced lateral spreading displacements




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




[1] **Figure 1**

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

[1] **Equation [3]**

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

**Procedure for the estimation of seismic induced settlements in dry sands**

**Average shear stress, $\tau_{av}$**

$$\tau_{av} = CSR^{*} \cdot \sigma_{v0}' = 0.65 \cdot \frac{a_{max}}{g} \cdot \sigma_{v0} \cdot r_a$$

**Estimate small shear strain modulus, $G_0$**

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

**Estimate shear strain amplitude, $\gamma$**

**(based on Pradel (1998))**

$$\gamma = \left[\frac{1 + \alpha \cdot e^{bR}}{1 + \alpha}\right] \cdot R \cdot 100 \ (\%)$$

$$R = \frac{\tau_{av}}{G_0} \text{ (Note } \tau_{av} \text{ and } G_0 \text{ same units)}$$

$$\alpha = 0.0389 \cdot \left(\frac{\sigma_v}{p_a}\right) + 0.124$$

$$b = 6400 \cdot \left(\frac{\sigma_v}{p_a}\right)$$

**Estimate volumetric strain in 15 cycles**

$$\varepsilon_{vol(15)} = \gamma \cdot \left[\frac{(N_1)_{60,cs}}{20}\right]^{-1.20}$$

$$(N_1)_{60,cs} = \frac{Q_{tn,cs}}{8.5 \cdot \left[1 - \frac{I_c}{4.6}\right]}$$

**Volumetric strain in design earthquake**

$$\Sigma_{vol} = \varepsilon_{vol(15)} \cdot \left[\frac{N_c}{15}\right]^{0.45}$$

$$N_c = (M - 4)^{2.17}$$

**Seismic settlement, s**

$$s = 2 \cdot \int_0^{GWT} \Sigma_{vol} \cdot dz$$

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

## Liquefaction Potential Index (LPI) calculation procedure

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

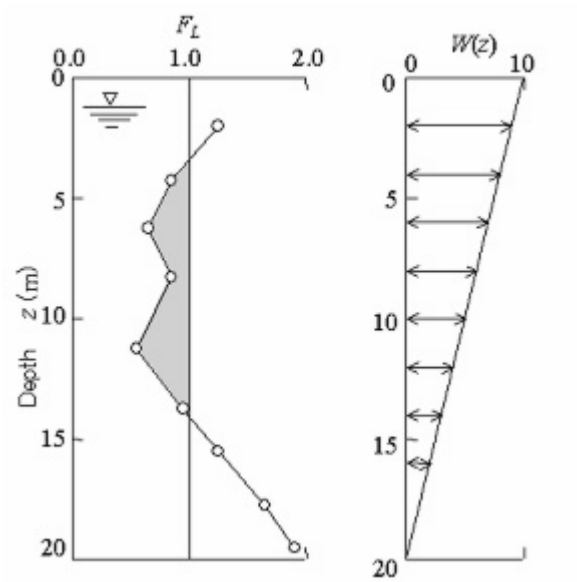
To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$\textbf{LPI} = \int_0^{20} (10 - 0{,}5_Z) \times F_L \times d_z$$

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

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

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




**Graphical presentation of the LPI calculation procedure**

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