APPENDIX A: Post-event Aerial Photographs and Summary of CPT-Based Liquefaction Triggering Analysis

This appendix section contains the following materials:

- Aerial photographs for each liquefaction field case history and coordinate of the site taken after each Canterbury earthquake. The radius of white inner and outer circles on each page are 20 m and 50 m, respectively, which is measured from a CPT points as the center point.
- Summary of CPT-based liquefaction triggering calculation results of 176 well-documented liquefaction field case histories.

APPENDIX A

Note:

1. The aerial photographs for some cases are not available. For those cases, the reported observed severity in this appendix is obtained from ground investigation at the site which was performed by Tonkin + Taylor engineers.

2. The background color for each q_{c1Ncs} *vs.* depth plot represents the Robertson (2016) Modified SBT classification as described below:

    1. **SBT Legend:**



: CCS Clay-like - Contractive-Sensitive
: CC Clay-like - Contractive
: CD Clay-like - Dilative
: TC Transitional-Contractive
: TD Transitional-Dilative
: SC Sand-like - Contractive
: SD Sand-like - Dilative

3. The CPT-based liquefaction triggering calculations for each case are performed using the Boulanger and Idriss (2016) with $P_L = 50\%$, $C_{FC} = 0.13$ and $I_{c\text{-}cut} = 2.6$.

4. The Liquefaction Severity Number (LSN) criteria used in each plot are based on Tonkin + Taylor (2013).

5. The Liquefaction Potential Index (LPI) and Ishihara-inspired Liquefaction Potential Index criteria used in each plot are based on Maurer et al. (2014).

Table A. 1 Summary of 176 well-documented liquefaction field case histories

Case #	Site	Severity	Event	PGA (g)	GWL (m)	H_1 (m)	LSN	LPI	LPI_{ISH}
1	Avondale Park	None	DAR	0.18	1.7	2.0	9	0	0
2	Avondale Park	Severe	CHC	0.37	1.8	2.0	36	16	12
3	Avondale Park	Moderate	JUN	0.25	1.2	2.0	29	7	4
4	Avondale Park	Moderate	DEC	0.30	1.6	2.0	31	10	6
5	Avondale PG	None	DAR	0.18	2.0	2.0	4	0	0
6	Avondale PG	Moderate	CHC	0.40	2.0	2.0	29	11	8
7	Avondale PG	Moderate	JUN	0.26	2.0	2.0	11	1	0
8	Avondale PG	Moderate	DEC	0.30	2.6	2.6	11	1	0
9	Barbadoes	None	DAR	0.21	1.2	2.5	17	4	1
10	Barbadoes	Minor	CHC	0.39	1.2	2.5	29	18	13
11	Barbadoes	None	JUN	0.22	0.8	2.5	22	4	3
12	Barbadoes	None	DEC	0.24	0.7	2.5	28	7	5
13	Bower	None	DAR	0.18	2.1	2.1	5	0	0
14	Bower	Severe	CHC	0.42	2.0	2.0	26	15	10
15	Bower	Severe	JUN	0.24	2.2	2.2	10	2	0
16	Bower	Severe	DEC	0.35	1.3	1.3	28	13	9
17	Brighton	None	DAR	0.20	2.4	2.4	0	0	0
18	Brighton	None	CHC	0.64	2.4	2.4	5	2	0
19	Brighton	None	JUN	0.23	2.2	2.2	0	0	0
20	Brighton	None	DEC	0.38	1.9	1.9	1	0	0
21	Carisbrooke	None	DAR	0.18	2.9	2.9	0	0	0
22	Carisbrooke	Minor	CHC	0.46	2.6	2.6	7	3	0
23	Carisbrooke	None	JUN	0.28	3.0	3.0	1	0	0
24	Carisbrooke	None	DEC	0.31	2.0	2.0	2	0	0
25	CMHS	None	CHC	0.45	2.0	2.0	12	6	4
26	Cashmere SW	Extreme	CHC	0.45	2.6	2.6	29	25	14
27	Charles	None	DAR	0.22	1.2	2.0	16	3	2
28	Charles	Severe	CHC	0.52	1.8	2.0	23	15	10
29	Charles	Moderate	JUN	0.30	1.6	2.0	14	4	3
30	Charles	Minor	DEC	0.21	1.1	2.0	12	1	0
31	Corhampton	None	DAR	0.18	2.9	2.9	0	0	0
32	Corhampton	Minor	CHC	0.48	2.8	2.0	13	5	1
33	Corhampton	None	JUN	0.28	3.0	3.0	2	0	0
34	Corhampton	None	DEC	0.35	2.2	2.2	10	1	1
35	Cresselly	None	DAR	0.23	1.2	2.0	28	8	4

36	Cresselly	Severe	CHC	0.55	1.8	2.0	43	34	25
37	Cresselly	Moderate	JUN	0.29	1.4	2.0	30	10	5
38	Cresselly	Minor	DEC	0.20	1.1	2.0	12	1	0
39	Eureka	None	DAR	0.18	2.9	2.9	1	0	0
40	Eureka	Moderate	CHC	0.43	2.9	2.9	7	3	2
41	Eureka	None	JUN	0.27	2.8	2.8	4	0	0
42	Eureka	None	DEC	0.33	2.2	2.2	9	2	1
43	Heaton	Severe	DAR	0.21	1.8	2.8	10	2	0
44	Heaton	Severe	CHC	0.33	1.9	2.8	20	9	4
45	Heaton	Severe	JUN	0.17	1.5	2.8	3	0	0
46	Heaton	Minor	DEC	0.19	1.5	2.8	5	0	0
47	Hillsborough	None	DAR	0.25	0.8	1.8	24	6	5
48	Hillsborough	None	CHC	0.63	0.8	1.8	42	23	27
49	Hillsborough	None	JUN	0.36	0.4	1.8	59	16	25
50	Hillsborough	None	DEC	0.24	1.1	1.8	12	2	0
51	Niven	None	DAR	0.18	1.6	1.6	13	1	0
52	Niven	Minor	CHC	0.40	1.6	1.6	34	15	14
53	Niven	Minor	JUN	0.27	1.1	1.1	38	10	10
54	Niven	None	DEC	0.30	1.5	1.5	33	9	8
55	Normans	None	DAR	0.21	2.8	3.8	4	0	0
56	Normans	Moderate	CHC	0.30	2.9	3.8	8	2	0
57	Normans	Moderate	JUN	0.16	2.3	3.8	1	0	0
58	Normans	None	DEC	0.18	2.6	3.8	1	0	0
59	Osborne	None	DAR	0.23	2.1	2.1	20	4	1
60	Osborne	Severe	CHC	0.54	2.0	2.0	41	30	23
61	Osborne	Minor	JUN	0.31	1.7	1.7	37	13	8
62	Osborne	Moderate	DEC	0.22	1.8	1.8	14	2	0
63	Pages	Minor	DAR	0.18	2.7	2.7	1	0	0
64	Pages	Severe	CHC	0.49	2.6	2.6	18	11	6
65	Pages	Severe	JUN	0.28	2.9	2.9	4	0	0
66	Pages	Minor	DEC	0.35	2.0	2.0	13	4	1
67	Palinurus_1	None	DAR	0.24	1.3	1.3	16	4	2
68	Palinurus_1	None	CHC	0.68	1.4	1.4	40	32	25
69	Palinurus_1	None	JUN	0.42	1.4	1.4	29	14	10
70	Palinurus_1	None	DEC	0.28	1.7	1.7	12	3	1
71	Palinurus_2	Severe	CHC	0.68	1.4	1.5	45	38	29
72	Palinurus_2	Severe	JUN	0.42	1.4	1.5	35	18	13
73	Palmers	None	DAR	0.18	1.7	1.7	3	0	0

74	Palmers	Moderate	CHC	0.48	1.6	1.6	23	11	9
75	Palmers	Minor	JUN	0.24	1.0	1.0	10	2	1
76	Palmers	Severe	DEC	0.36	1.0	1.0	20	6	6
77	Rawhiti	None	DAR	0.18	1.2	1.2	0	0	0
78	Rawhiti	None	CHC	0.52	1.2	1.2	1	0	0
79	Rawhiti	None	JUN	0.25	0.8	0.8	0	0	0
80	Rawhiti	None	DEC	0.38	0.8	0.8	0	0	0
81	Rydal	Minor	DAR	0.25	1.6	1.6	11	3	1
82	Rydal	Severe	CHC	0.44	1.6	1.6	22	10	9
83	Rydal	None	JUN	0.19	1.5	1.5	3	0	0
84	Rydal	None	DEC	0.14	1.4	1.4	1	0	0
85	Sabina	None	DAR	0.18	1.2	1.2	0	0	0
86	Sabina	Moderate	CHC	0.34	1.0	1.2	3	0	0
87	Sabina	Moderate	JUN	0.22	1.0	1.2	0	0	0
88	Sabina	None	DEC	0.26	0.7	1.2	6	0	0
89	Shirley	None	DAR	0.19	2.8	3.2	2	0	0
90	Shirley	Extreme	CHC	0.38	2.6	3.2	14	6	2
91	Shirley	Severe	JUN	0.24	2.2	3.2	5	0	0
92	Shirley	None	DEC	0.26	2.0	3.2	7	1	0
93	Ti Rakau	None	DAR	0.23	1.0	1.0	10	1	0
94	Ti Rakau	Severe	CHC	0.68	1.6	1.6	31	19	15
95	Ti Rakau	Severe	JUN	0.43	1.2	1.2	25	7	7
96	Ti Rakau	Moderate	DEC	0.32	1.1	1.1	16	2	2
97	Barrington	None	DAR	0.21	1.6	3.0	12	3	1
98	Barrington	Moderate	CHC	0.42	1.6	3.0	24	14	11
99	Barrington	None	JUN	0.20	1.6	3.0	7	1	0
100	Barrington	None	DEC	0.16	1.6	3.0	3	0	0
101	Brougham	None	DAR	0.22	1.6	2.0	17	4	1
102	Brougham	Minor	CHC	0.46	1.4	2.0	38	24	20
103	Brougham	None	JUN	0.24	1.1	2.0	26	5	3
104	Brougham	None	DEC	0.19	1.1	2.0	11	1	0
105	Cashmere	None	DAR	0.25	0.8	0.8	27	9	7
106	Cashmere	None	CHC	0.46	0.8	0.8	35	17	18
107	Cashmere	None	JUN	0.19	0.8	0.8	16	3	2
108	Cashmere	None	DEC	0.13	0.8	0.8	3	0	0
109	Caulfield	None	DAR	0.31	0.2	0.2	64	18	29
110	Caulfield	None	CHC	0.32	0.2	0.2	63	17	27
111	Caulfield	None	JUN	0.13	0.6	0.2	6	0	0

112	Caulfield	None	DEC	0.12	0.2	0.2	10	0	0
113	Cobra	None	DAR	0.28	1.0	1.8	33	10	11
114	Cobra	None	CHC	0.35	1.4	1.8	25	10	10
115	Cobra	None	JUN	0.15	1.2	1.8	5	0	0
116	Cobra	None	DEC	0.13	1.4	1.8	2	0	0
117	Gainsborough	None	DAR	0.25	0.6	4.6	57	23	20
118	Gainsborough	None	CHC	0.43	1.2	4.6	31	26	18
119	Gainsborough	None	JUN	0.18	1.0	4.6	18	3	0
120	Gainsborough	None	DEC	0.14	0.9	4.6	7	0	0
121	Harrington	None	DAR	0.22	1.7	2.0	14	4	2
122	Harrington	None	CHC	0.34	1.7	2.0	24	11	7
123	Harrington	None	JUN	0.17	1.9	2.0	4	0	0
124	Harrington	None	DEC	0.16	1.8	2.0	3	0	0
125	Hillmorton	None	DAR	0.24	2.6	2.6	24	9	3
126	Hillmorton	Moderate	CHC	0.39	2.8	2.8	26	18	11
127	Hillmorton	None	JUN	0.18	2.7	2.7	6	0	0
128	Hillmorton	None	DEC	0.14	2.8	2.8	2	0	0
129	Kaiwara	None	DAR	0.25	1.6	4.8	28	11	6
130	Kaiwara	Minor	CHC	0.46	1.8	4.8	25	19	13
131	Kaiwara	None	JUN	0.19	1.6	4.8	11	2	0
132	Kaiwara	None	DEC	0.13	1.6	4.8	2	0	0
133	Langdons	None	DAR	0.22	1.5	1.5	14	4	2
134	Langdons	None	CHC	0.22	1.7	1.7	9	2	0
135	Langdons	None	JUN	0.13	1.6	1.6	1	0	0
136	Langdons	None	DEC	0.15	1.6	1.6	2	0	0
137	Marblewood	None	DAR	0.22	1.5	1.5	23	8	4
138	Marblewood	None	CHC	0.24	1.7	1.7	19	6	3
139	Marblewood	None	JUN	0.13	1.5	1.5	3	0	0
140	Marblewood	None	DEC	0.15	1.5	1.5	5	0	0
141	Meadow	None	DAR	0.21	1.1	1.5	28	9	5
142	Meadow	None	CHC	0.25	0.9	1.5	33	12	9
143	Meadow	None	JUN	0.14	0.8	1.5	7	0	0
144	Meadow	None	DEC	0.18	0.7	1.5	25	4	2
145	Paeroa	None	DAR	0.22	1.0	1.0	28	11	8
146	Paeroa	None	CHC	0.34	1.0	1.0	34	19	14
147	Paeroa	None	JUN	0.17	1.0	1.0	14	2	0
148	Paeroa	None	DEC	0.16	1.0	1.0	10	1	0
149	Papanui	None	DAR	0.21	1.4	2.0	16	5	1

150	Papanui	None	CHC	0.27	1.5	2.0	19	7	4
151	Papanui	None	JUN	0.15	1.3	2.0	3	0	0
152	Papanui	None	DEC	0.17	1.5	2.0	4	0	0
153	Riccarton	None	DAR	0.21	0.6	1.8	44	14	11
154	Riccarton	None	CHC	0.37	0.6	1.8	53	28	26
155	Riccarton	None	JUN	0.18	0.5	1.8	33	6	3
156	Riccarton	None	DEC	0.18	0.3	1.8	45	8	6
157	Royds	None	DAR	0.21	1.6	3.0	11	2	1
158	Royds	None	CHC	0.34	1.7	3.0	16	8	6
159	Royds	None	JUN	0.17	1.3	3.0	6	1	0
160	Royds	None	DEC	0.18	1.4	3.0	6	1	0
161	Somerfield	None	DAR	0.23	2.0	2.0	38	15	8
162	Somerfield	Minor	CHC	0.45	1.9	1.9	44	32	23
163	Somerfield	None	JUN	0.22	1.9	1.9	34	10	4
164	Somerfield	None	DEC	0.17	2.0	2.0	16	2	0
165	St. Albans	None	DAR	0.21	1.3	2.0	19	6	2
166	St. Albans	Minor	CHC	0.34	1.3	2.0	31	16	11
167	St. Albans	None	JUN	0.18	0.7	2.0	14	2	0
168	St. Albans	None	DEC	0.21	1.0	2.0	17	4	1
169	St. Teresa	None	DAR	0.22	1.0	2.5	34	13	8
170	St. Teresa	None	CHC	0.34	1.0	2.5	45	24	18
171	St. Teresa	None	JUN	0.17	1.0	2.5	14	2	0
172	St. Teresa	None	DEC	0.16	1.0	2.5	10	1	0
173	Wharenui	None	DAR	0.22	2.3	3.3	9	2	1
174	Wharenui	None	CHC	0.36	2.3	3.3	16	8	4
175	Wharenui	None	JUN	0.18	2.3	3.3	3	0	0
176	Wharenui	None	DEC	0.17	2.3	3.3	2	0	0

Note: The FS_L to compute all indices are computed using the BI-16 CPT-based liquefaction triggering procedure with P_{Liq} = 50%, C_{FC} = 0.13, $I_{c\text{-}cut}$ = 2.6, and best-estimate PGA calculated based on Bradley (2013). The E_D is calculated using Eq. 6.6-6.7 by using α = 1.0, β = -0.2, γ_w = 9.81 kN/m^3 and the Robertson and Cabal (2015) CPT correlation to calculate k_v and k_{cs} value where k_{cs} is estimated using I_c = 1.8. The C_R is calculated using Eq. 6.10 by using ϕ_{cs} = 33 deg, and N_{kt} = 20. The detail of the site information including Longitude, Latitude, aerial photographs, and CPT-based liquefaction triggering analysis results are given in appendix A

AVONDALE PARK

Lat: -43.505496°; Long: 172.690763°



Case #1: Avondale Park-DAR (taken on 5/SEP/2010) - NONE



Case #2: Avondale Park-CHC (taken on 24/FEB/2011) - SEVERE

AVONDALE PARK

Lat: -43.505496°; Long: 172.690763°



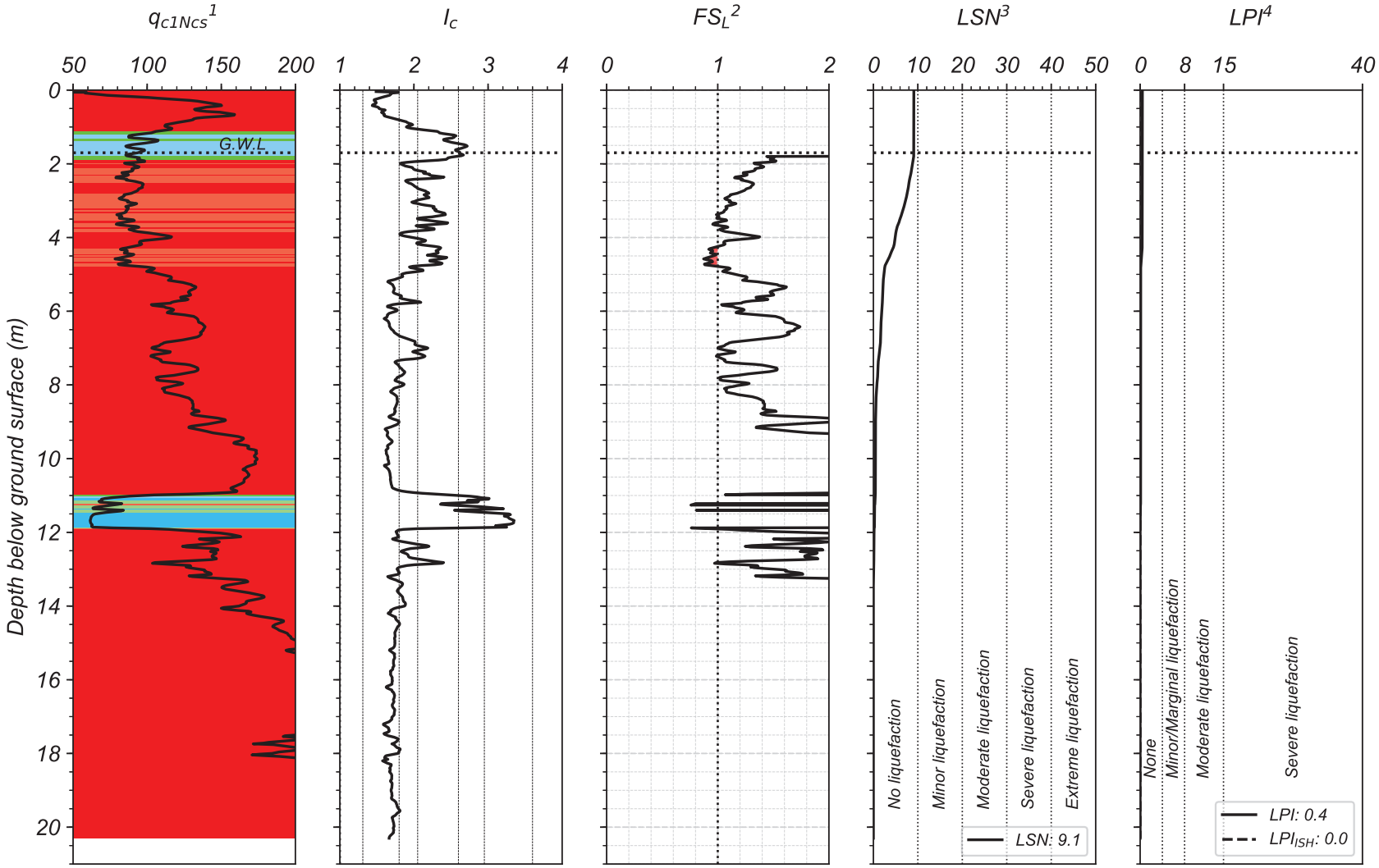
Case #3: Avondale Park-JUN (taken on 15/JUN/2011) - MODERATE



Case #4: Avondale Park-DEC (taken on 24/DEC/2011) - MODERATE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 1 ; Event = Darfield ; M_W = 7.1 ; Surface PGA_{max} = 0.18 g
Site = Avondale Park ; CPT# = 57342 ; GWL = 1.7 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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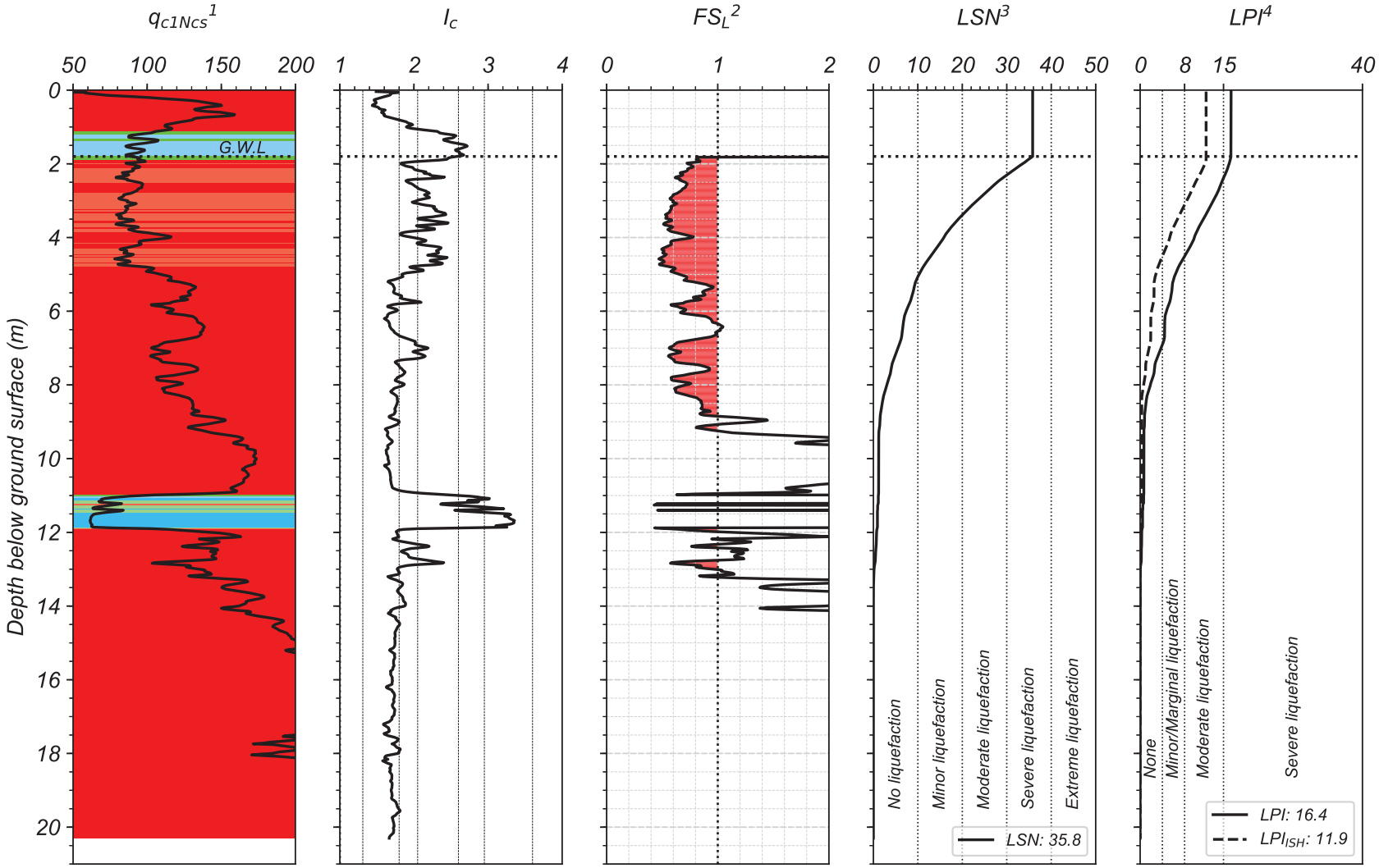
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 2 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.37 g
Site = Avondale Park ; CPT# = 57342 ; GWL = 1.8 m
Observed Ejecta Severity = Severe ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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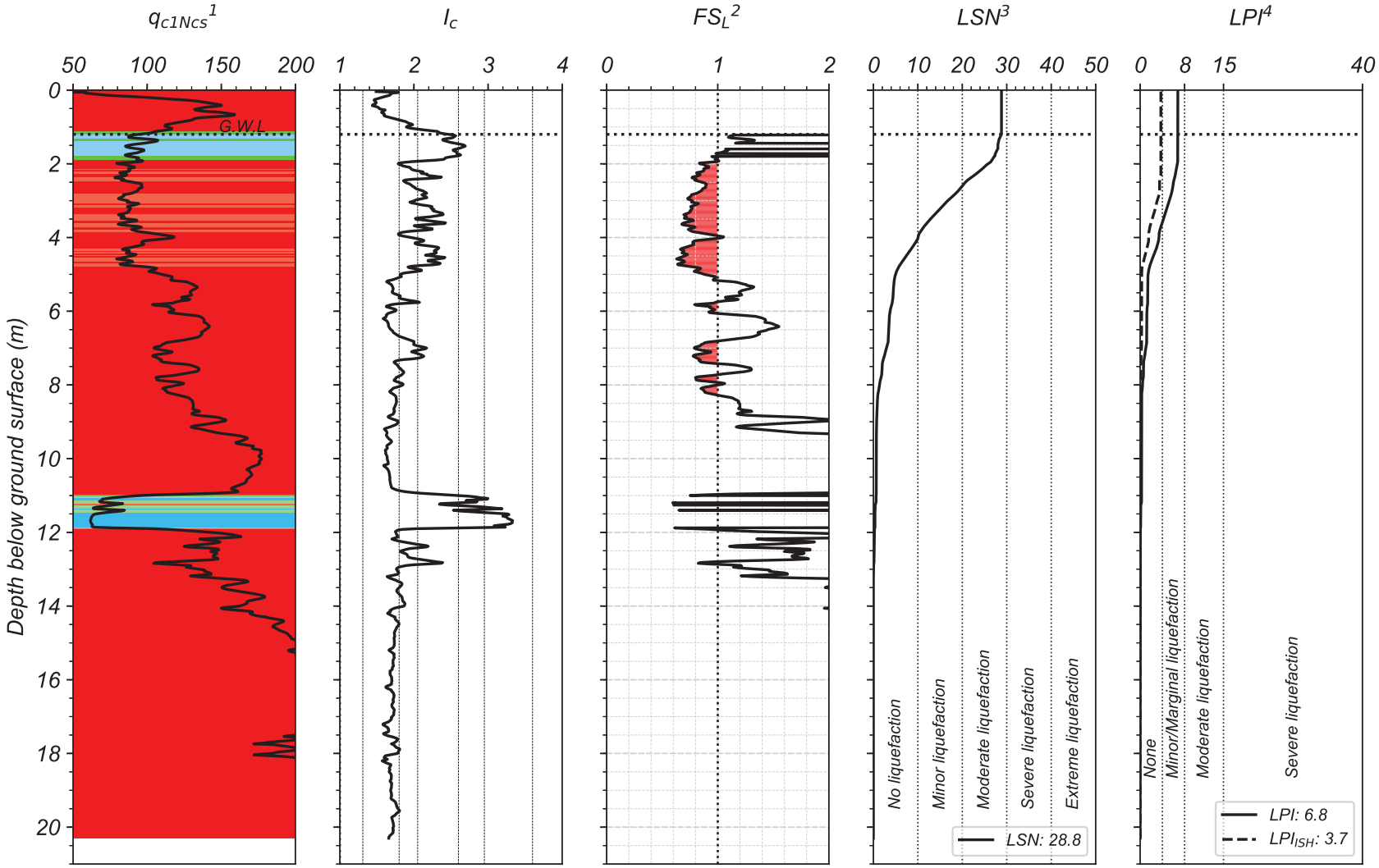
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 3 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.25 g
Site = Avondale Park ; CPT# = 57342 ; GWL = 1.2 m
Observed Ejecta Severity = Moderate ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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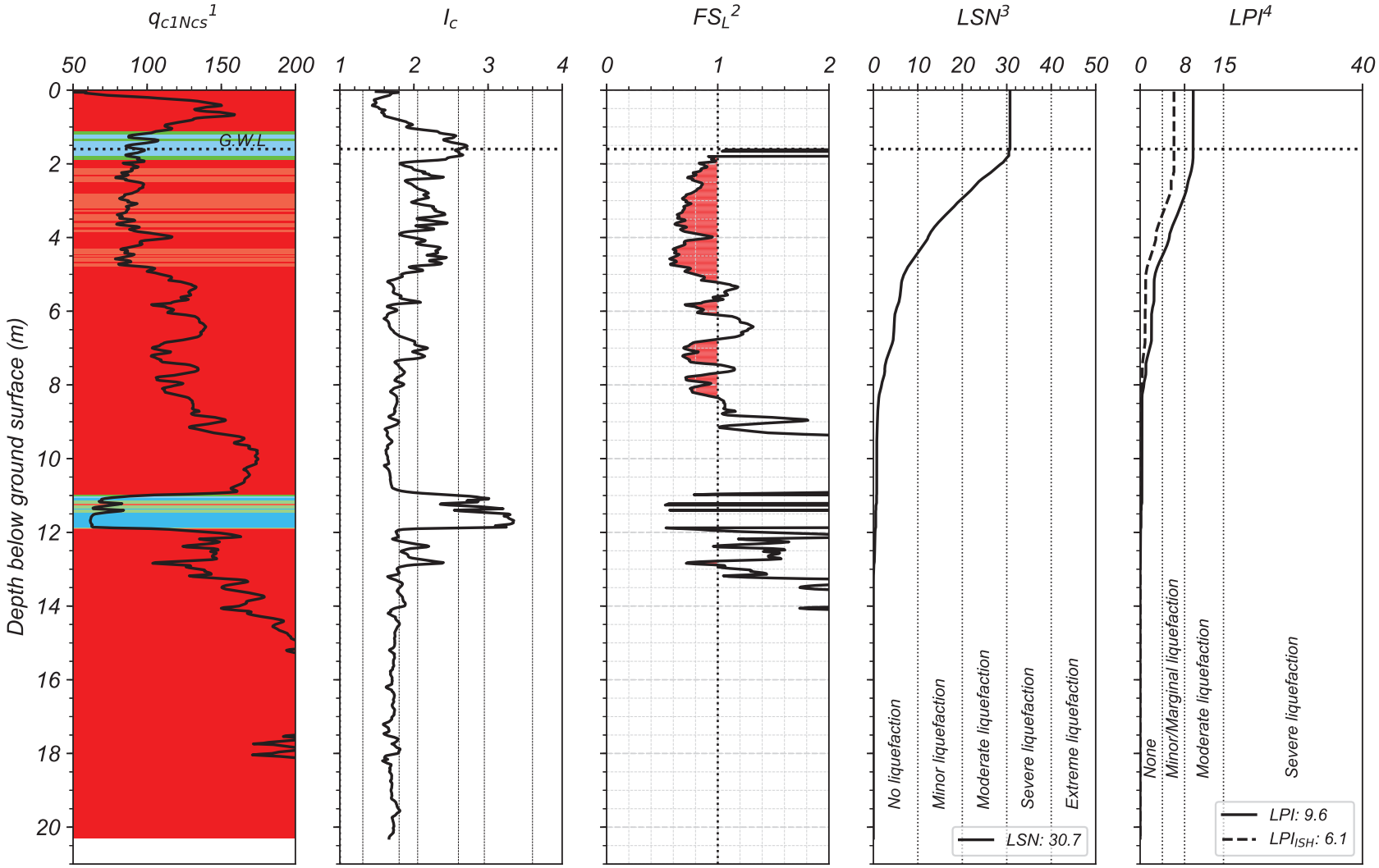
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 4 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.30 g
Site = Avondale Park ; CPT# = 57342 ; GWL = 1.6 m
Observed Ejecta Severity = Moderate ; Site Condition = Free-field flat



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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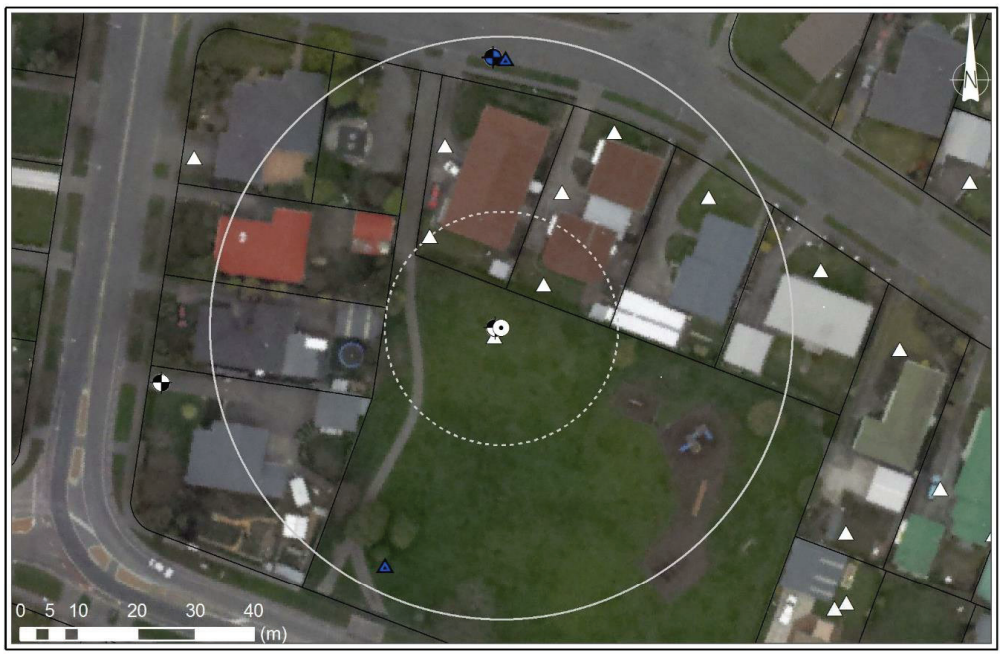
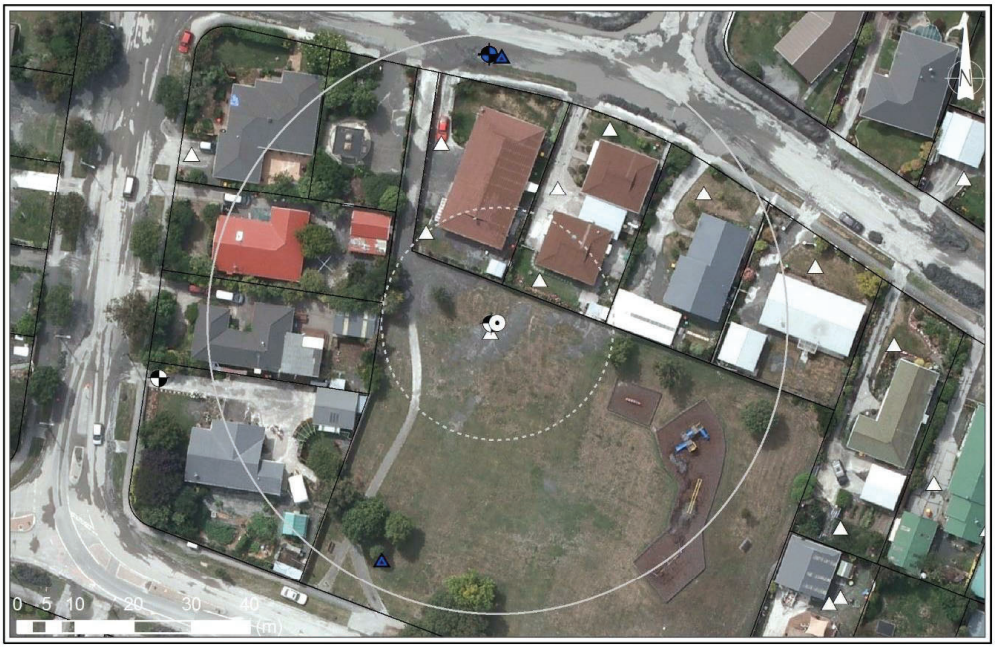
UC Berkeley, 2020

AVONDALE PG

Lat: -43.508108°; Long: 172.687194°



Case #5: Avondale PG-DAR (taken on 5/SEP/2010) - NONE



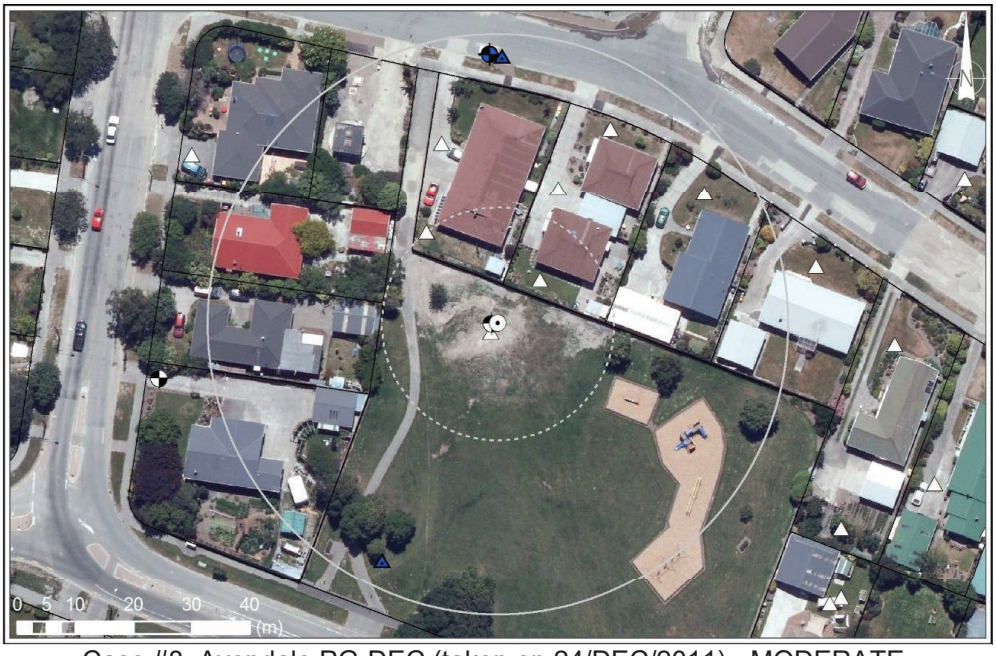
Case #6: Avondale PG-CHC (taken on 24/FEB/2011) - MODERATE

AVONDALE PG

Lat: -43.508108°; Long: 172.687194°



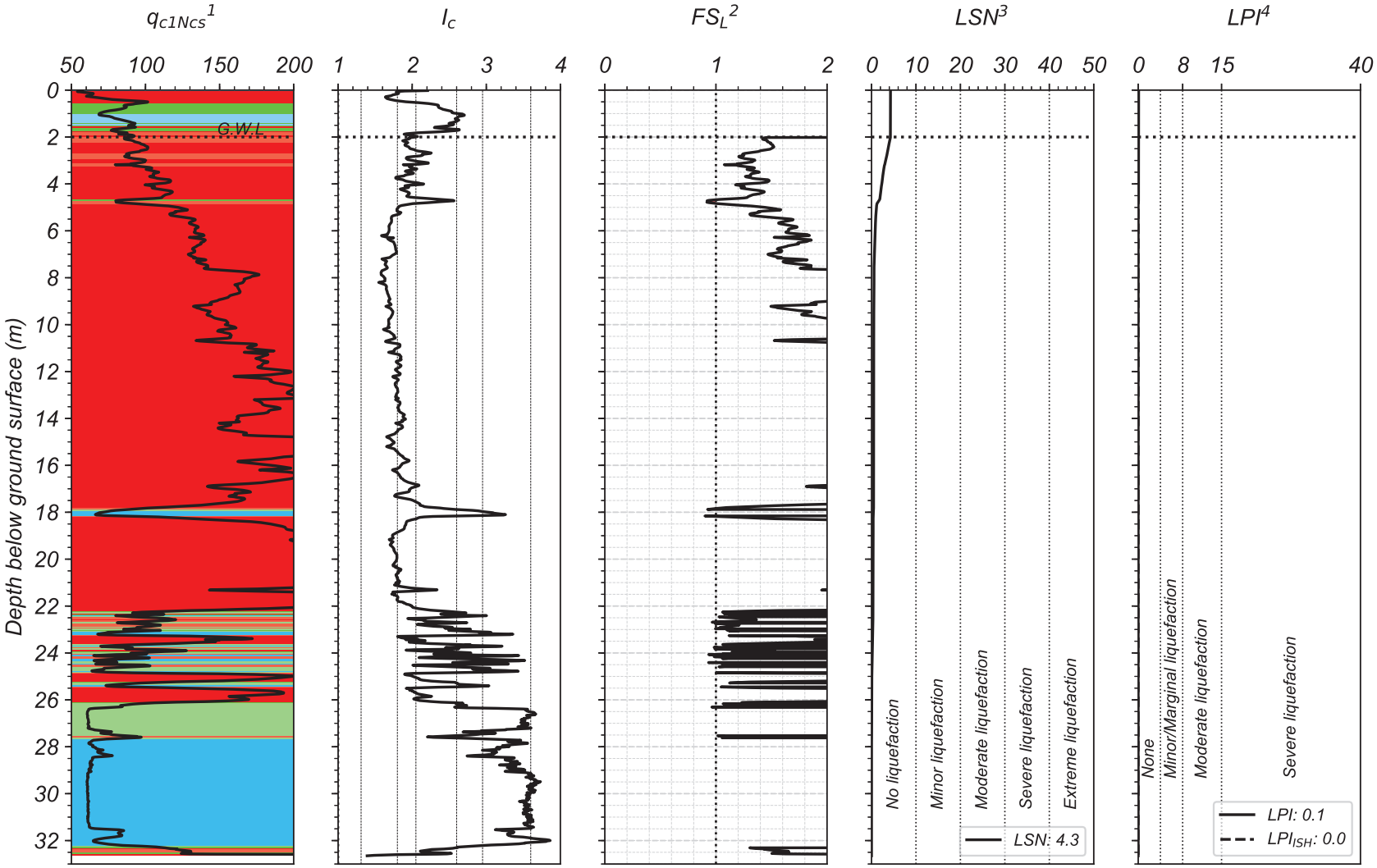
Case #7: Avondale PG-JUN (taken on 15/JUN/2011) - MODERATE



Case #8: Avondale PG-DEC (taken on 24/DEC/2011) - MODERATE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 5 ; Event = Darfield ; M_W = 7.1 ; Surface PGA_{max} = 0.18 g
Site = Avondale PG ; CPT# = 57354 ; GWL = 2.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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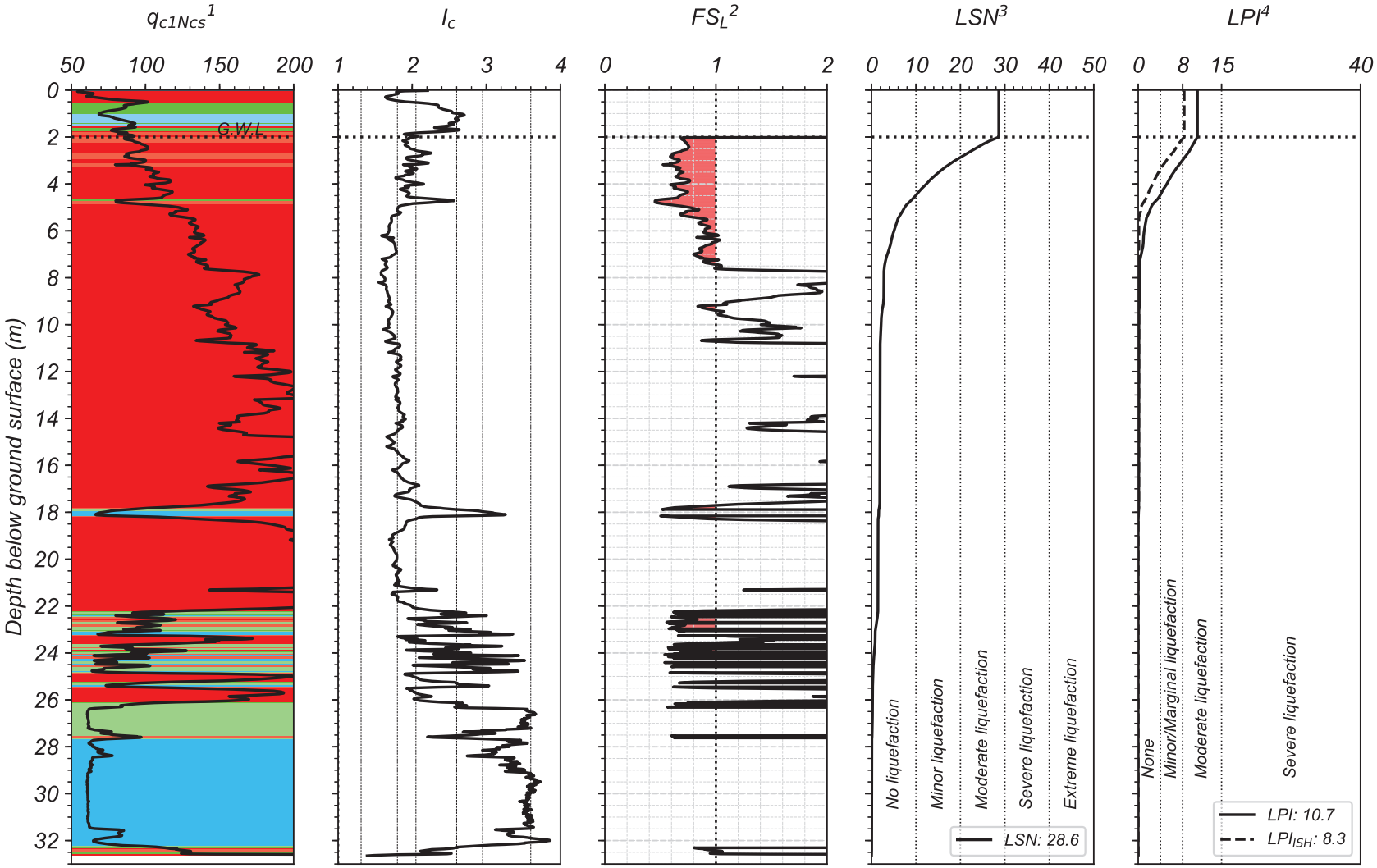
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 6 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.40 g
Site = Avondale PG ; CPT# = 57354 ; GWL = 2.0 m
Observed Ejecta Severity = Moderate ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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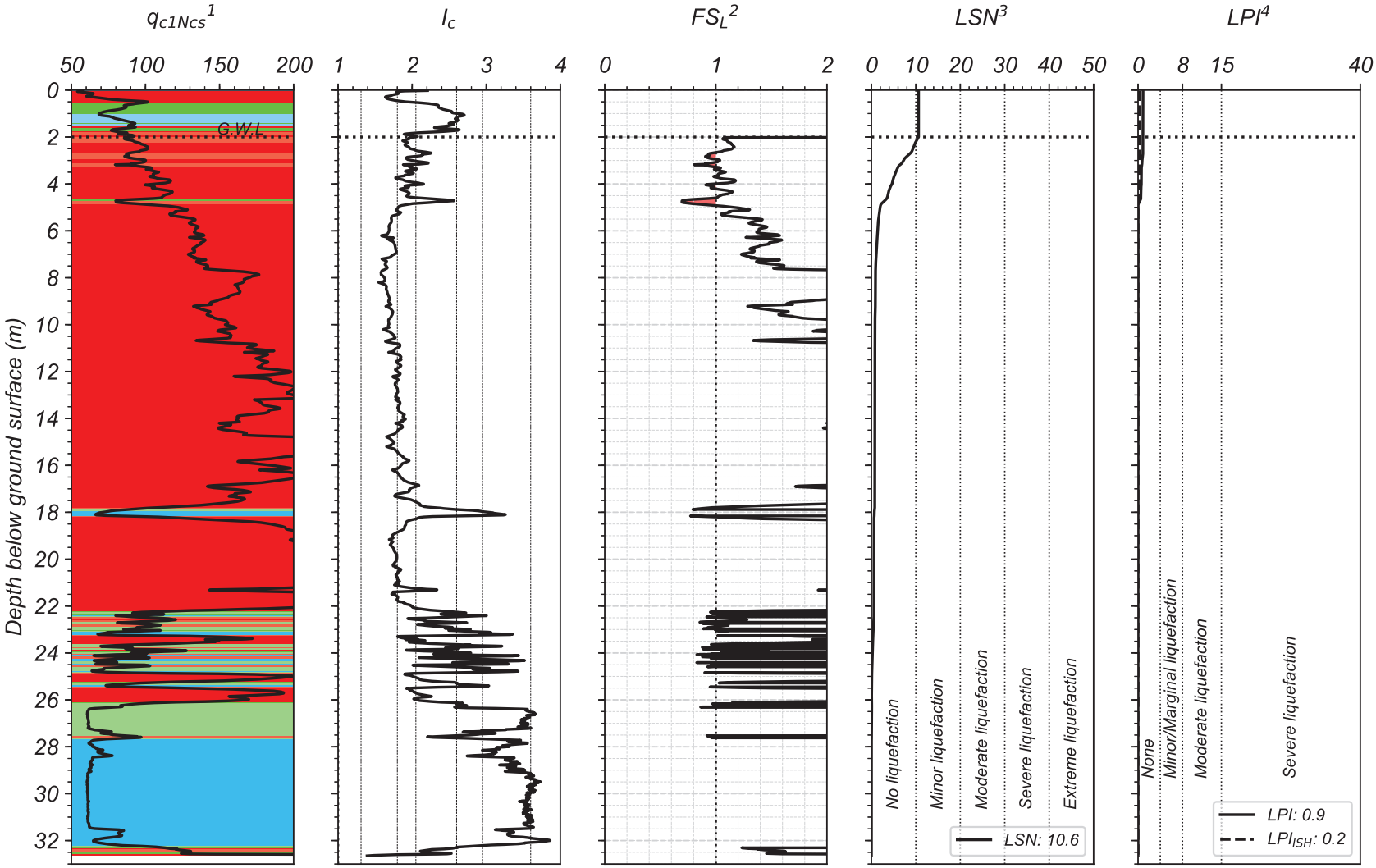
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 7 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.26 g
Site = Avondale PG ; CPT# = 57354 ; GWL = 2.0 m
Observed Ejecta Severity = Moderate ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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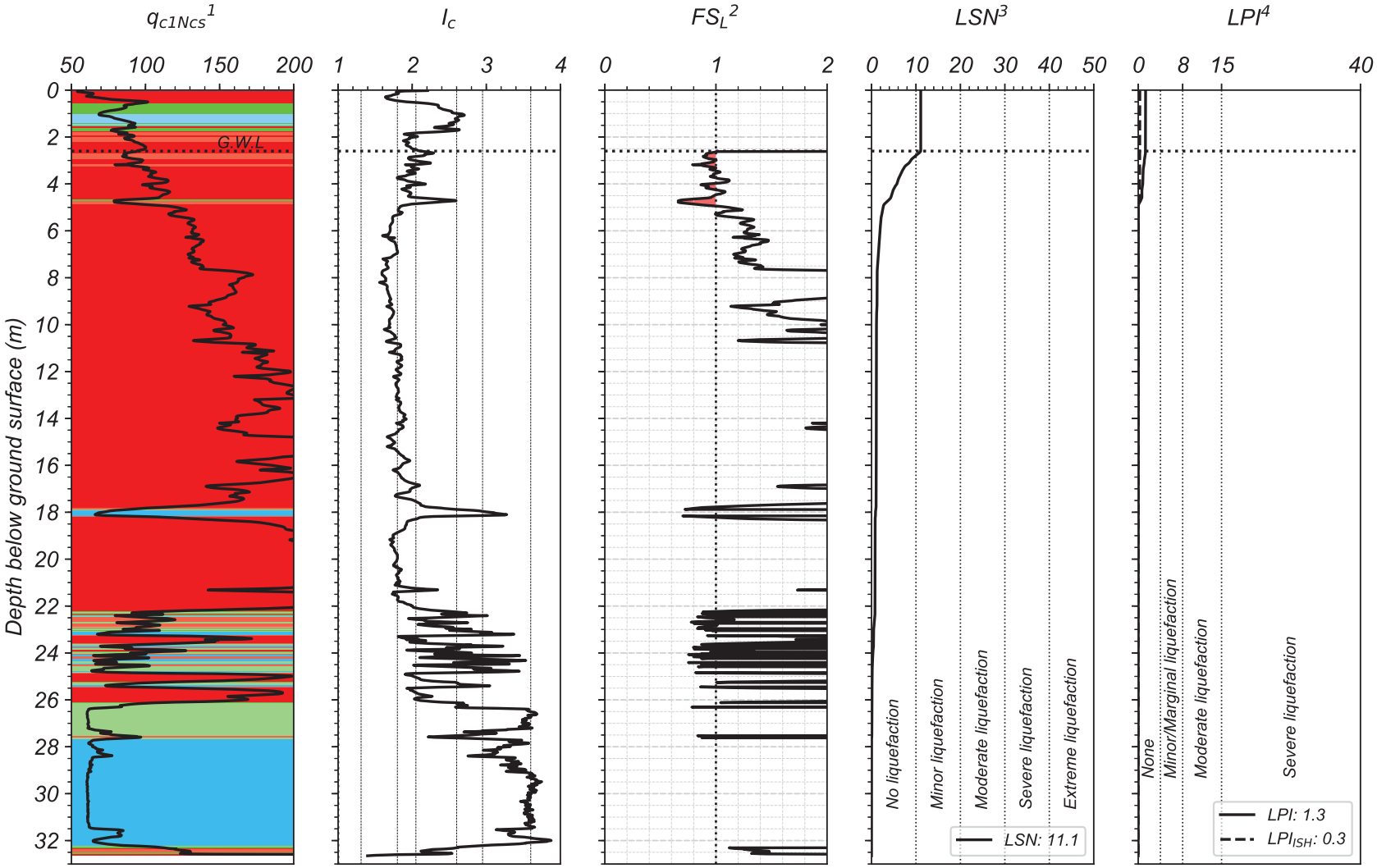
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 8 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.30 g
Site = Avondale PG ; CPT# = 57354 ; GWL = 2.6 m
Observed Ejecta Severity = Moderate ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
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BARBADOES

Lat: -43.512998°; Long: 172.646135°



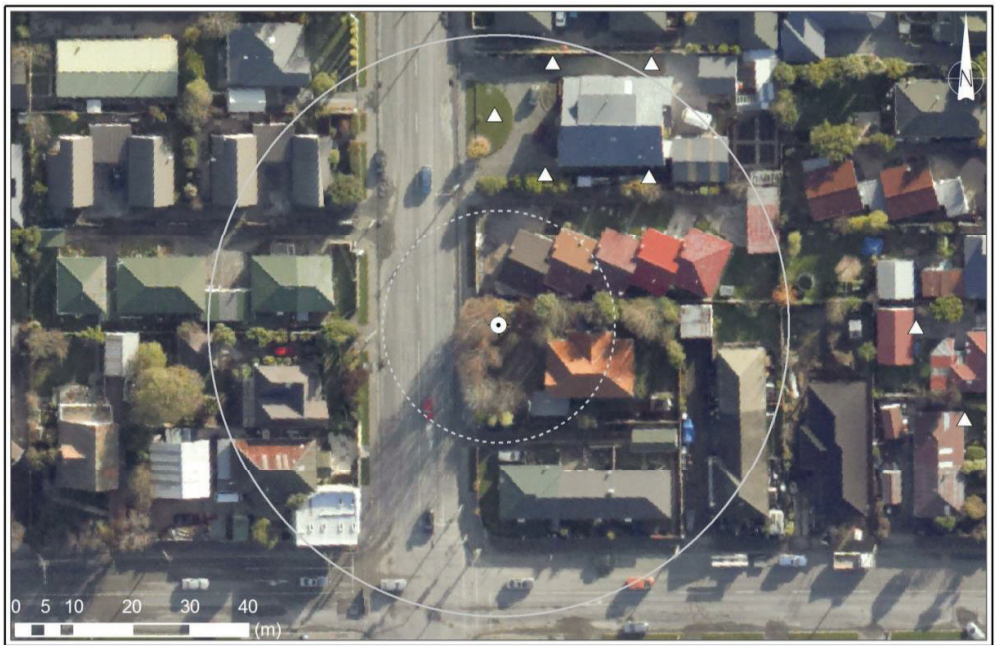
Case #9: Barbadoes-DAR (taken on 5/SEP/2010) - NONE



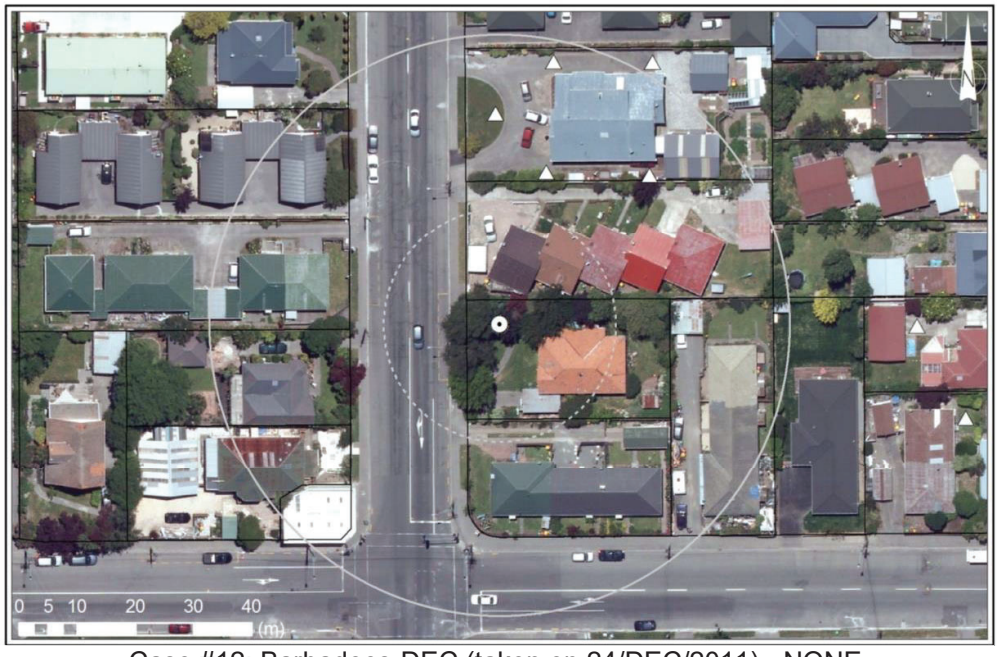
Case #10: Barbadoes-CHC (taken on 24/FEB/2011) - MINOR

BARBADOES

Lat: -43.512998°; Long: 172.646135°



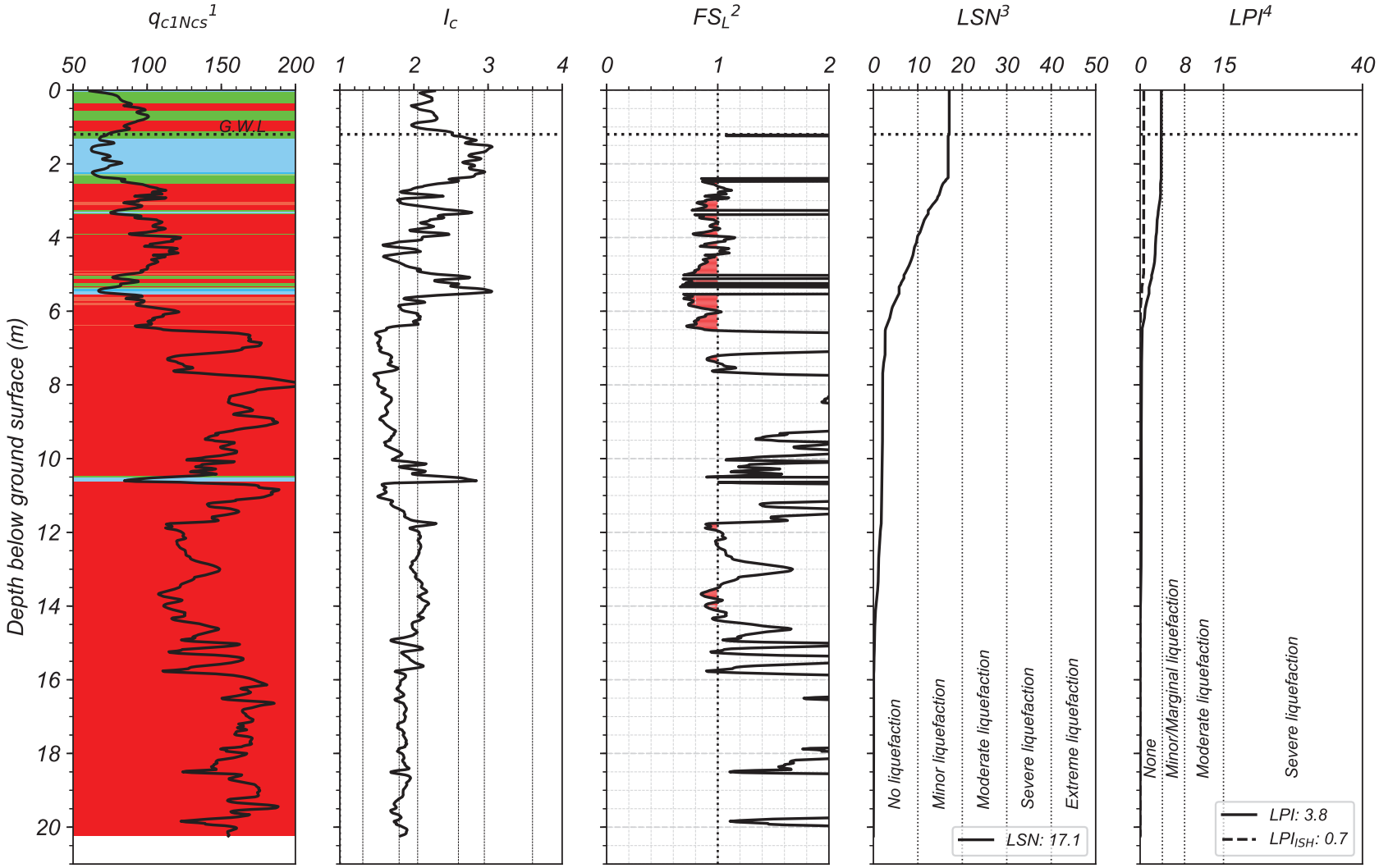
Case #11: Barbadoes-JUN (taken on 15/JUN/2011) - NONE



Case #12: Barbadoes-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 9 ; Event = Darfield ; M_W = 7.1 ; Surface PGA_{max} = 0.21 g
Site = Barbadoes ; CPT# = 57362 ; GWL = 1.2 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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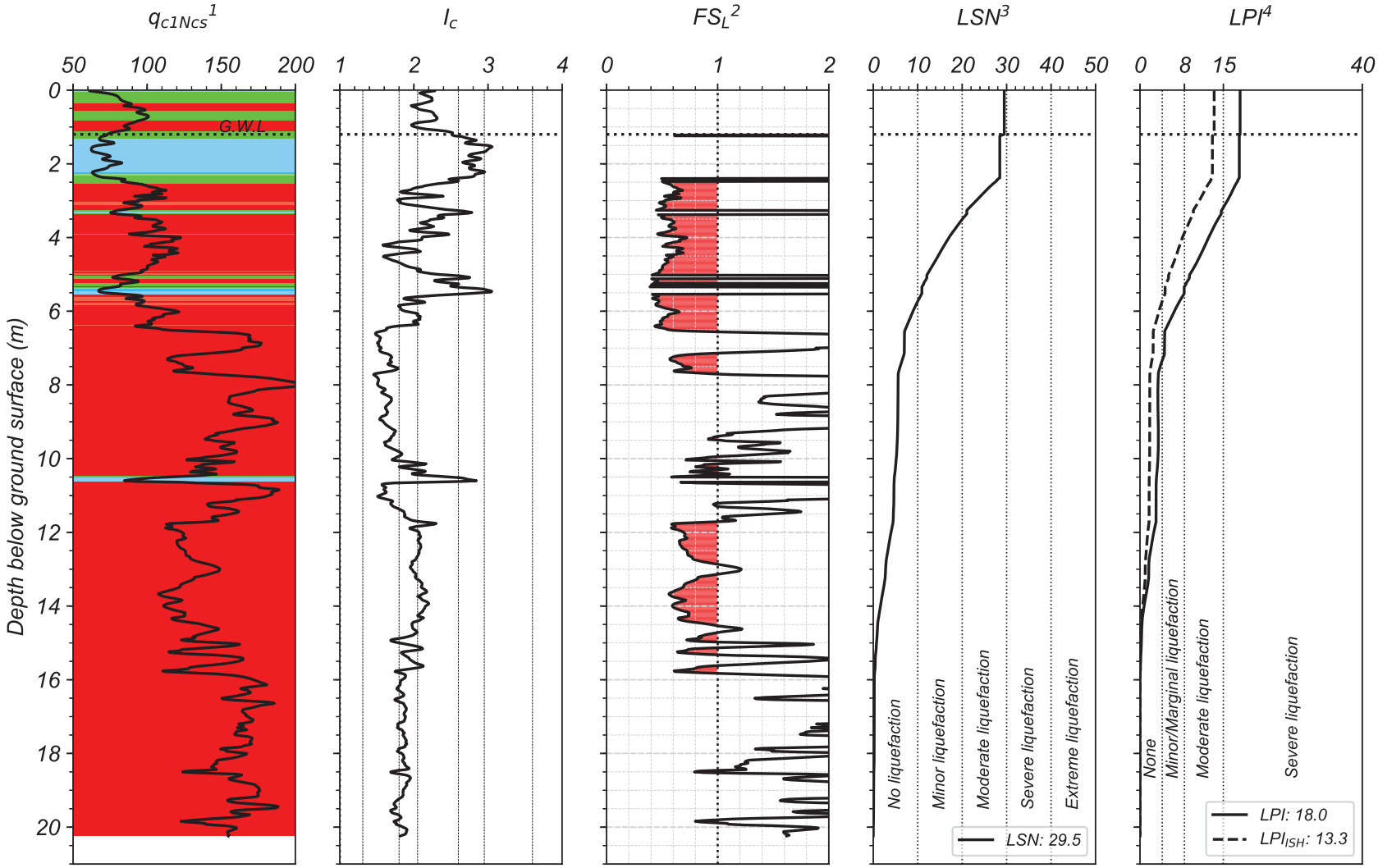
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 10 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.39 g
Site = Barbadoes ; CPT# = 57362 ; GWL = 1.2 m
Observed Ejecta Severity = Minor ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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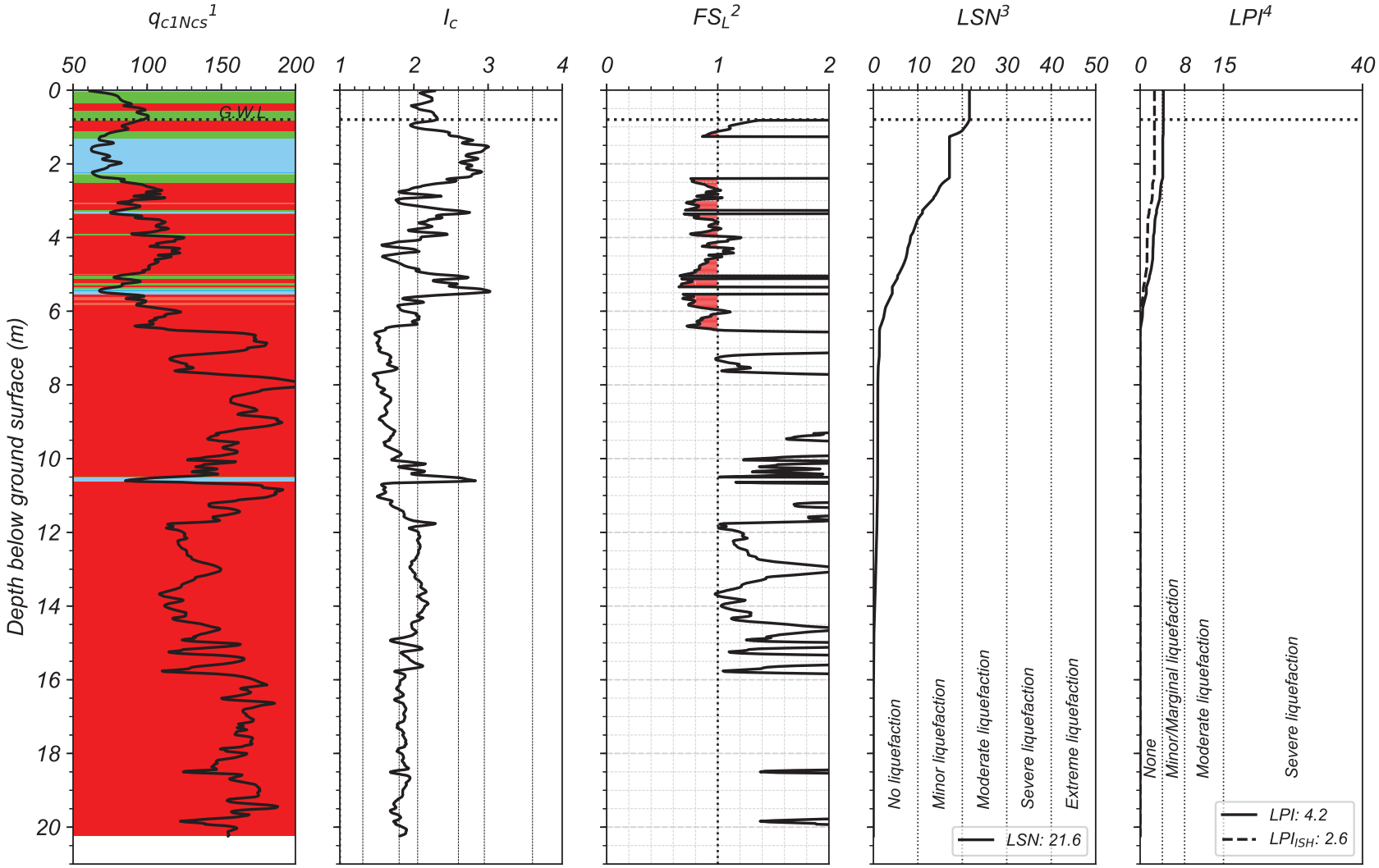
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 11 ; Event = 13-Jun ; M_W = 6.2 ; Surface PGA_{max} = 0.22 g
Site = Barbadoes ; CPT# = 57362 ; GWL = 0.8 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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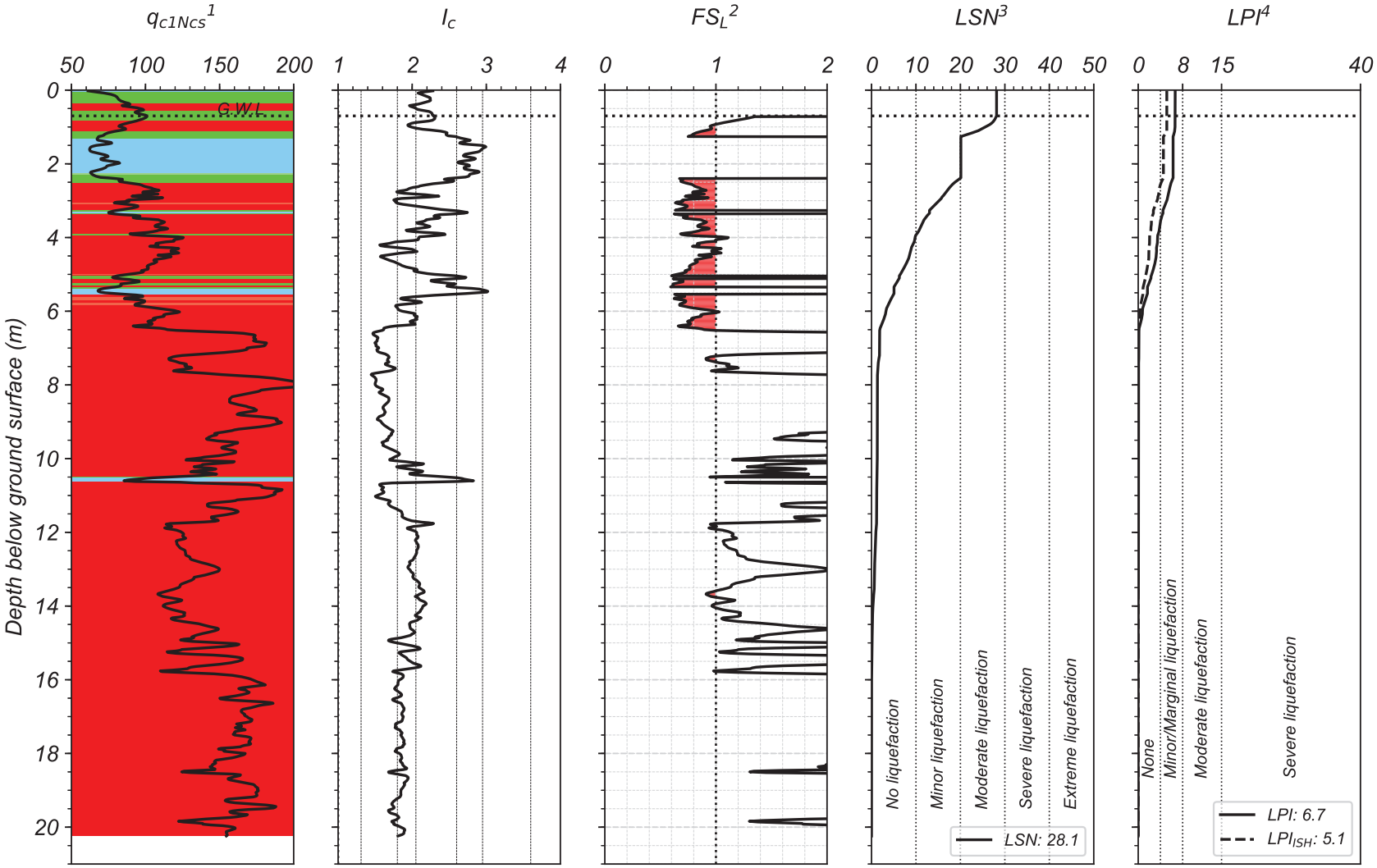
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 12 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.24 g
Site = Barbadoes ; CPT# = 57362 ; GWL = 0.7 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

By: DH
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BOWER

Lat: -43.498952°; Long: 172.709793°



Case #13: Bower-DAR (taken on 5/SEP/2010) - NONE



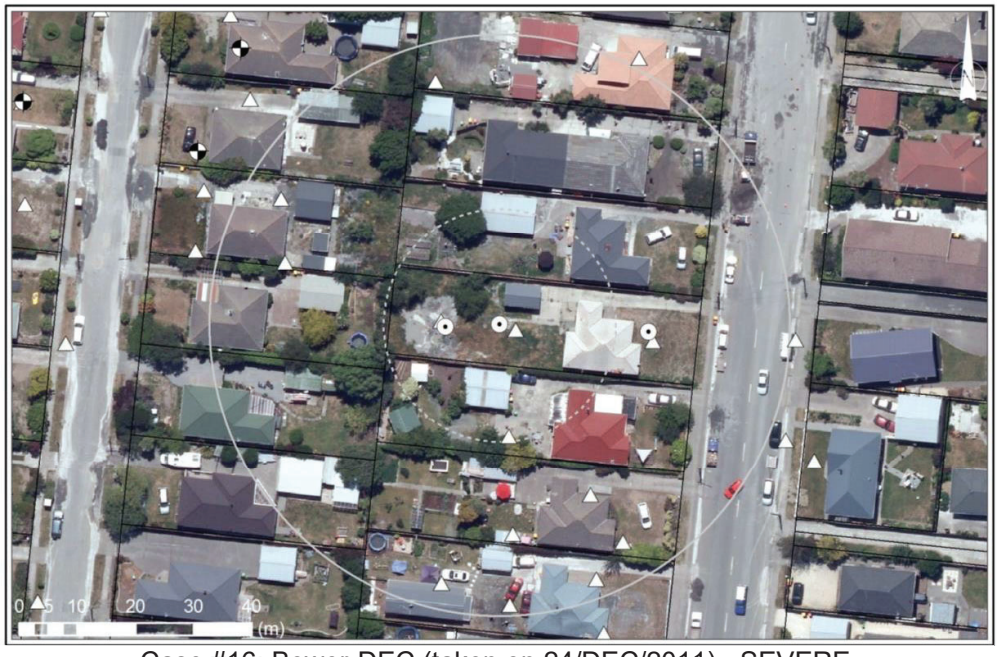
Case #14: Bower-CHC (taken on 24/FEB/2011) - SEVERE

BOWER

Lat: -43.498952°; Long: 172.709793°



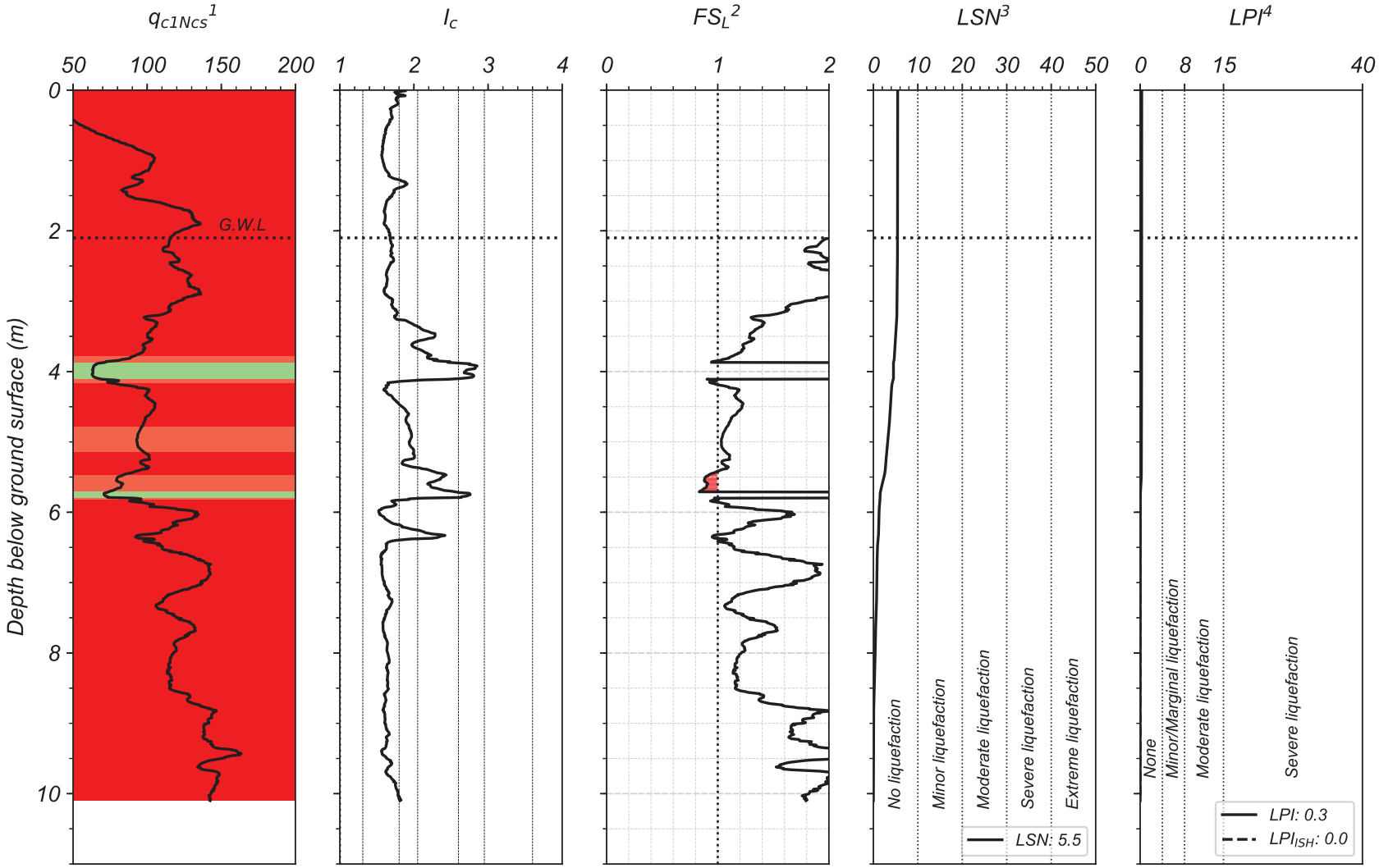
Case #15: Bower-JUN (taken on 15/JUN/2011) - SEVERE



Case #16: Bower-DEC (taken on 24/DEC/2011) - SEVERE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 13 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.18 g
Site = Bower ; CPT# = 34431 ; GWL = 2.1 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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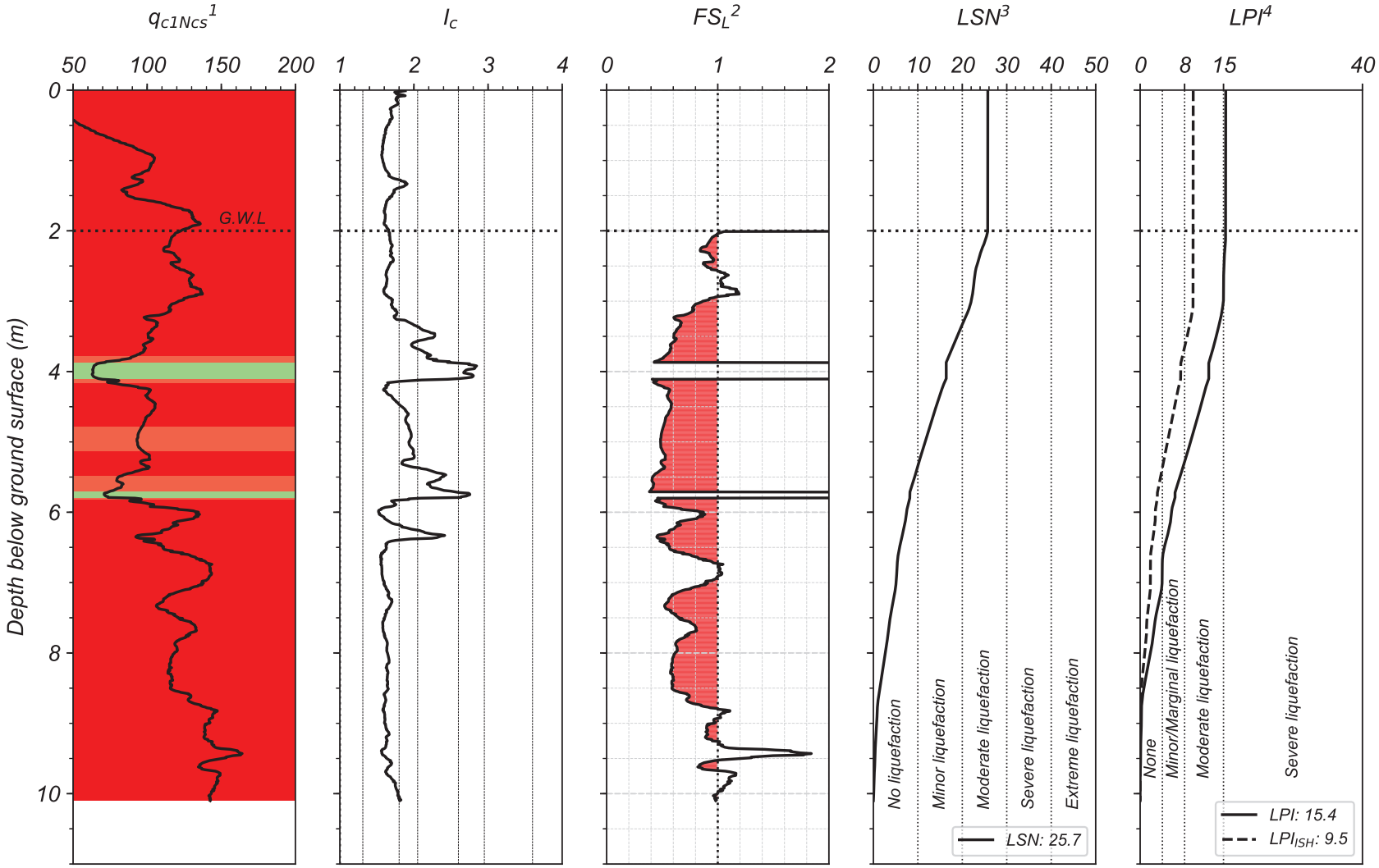
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 14 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.42 g
Site = Bower ; CPT# = 34431 ; GWL = 2.0 m
Observed Ejecta Severity = Severe ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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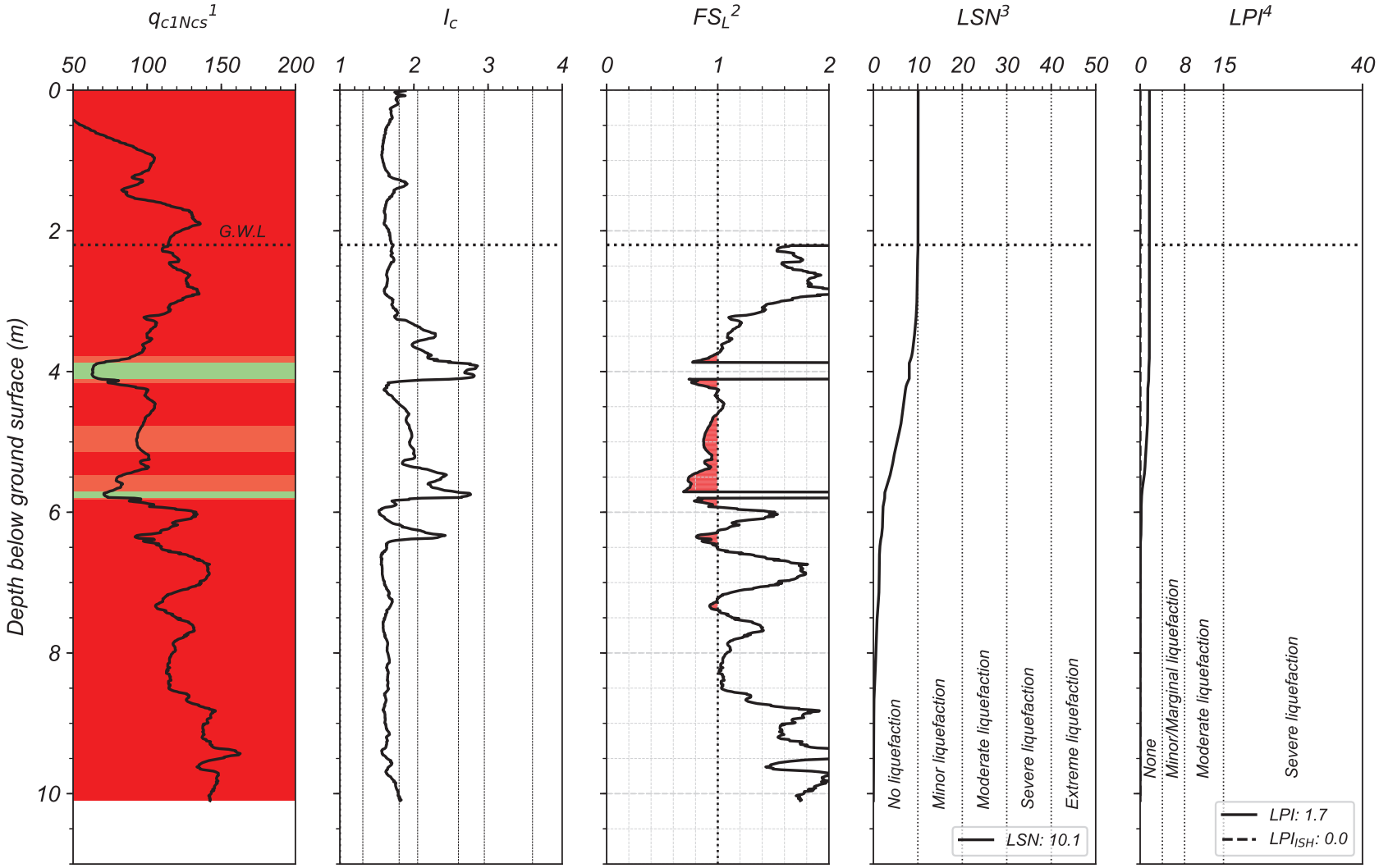
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 15 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.24 g
Site = Bower ; CPT# = 34431 ; GWL = 2.2 m
Observed Ejecta Severity = Severe ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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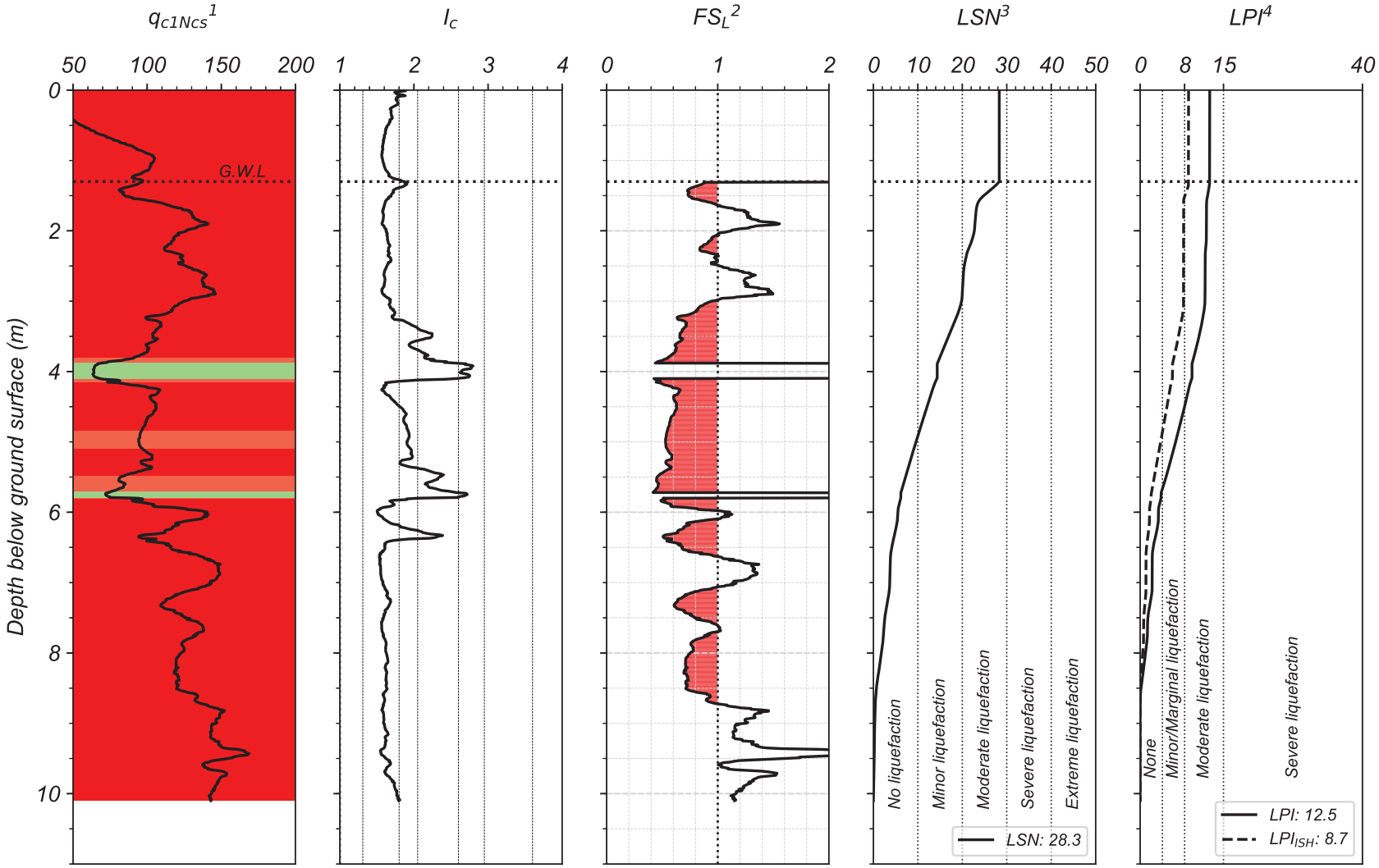
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 16 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.35 g
Site = Bower ; CPT# = 34431 ; GWL = 1.3 m
Observed Ejecta Severity = Severe ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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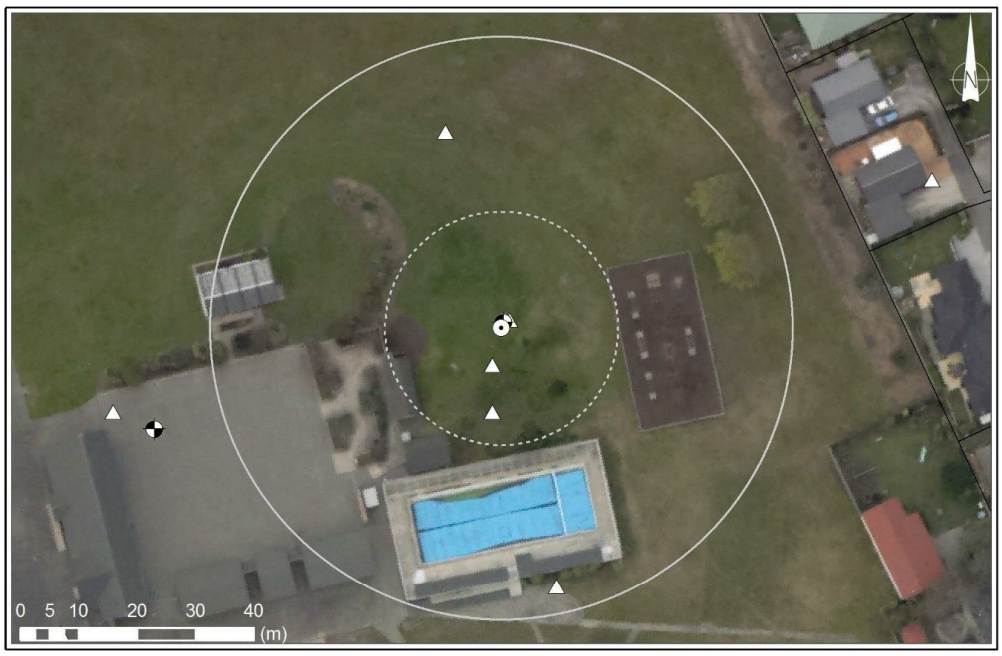
BRIGHTON

Lat: -43.495225°; Long: 172.718104°



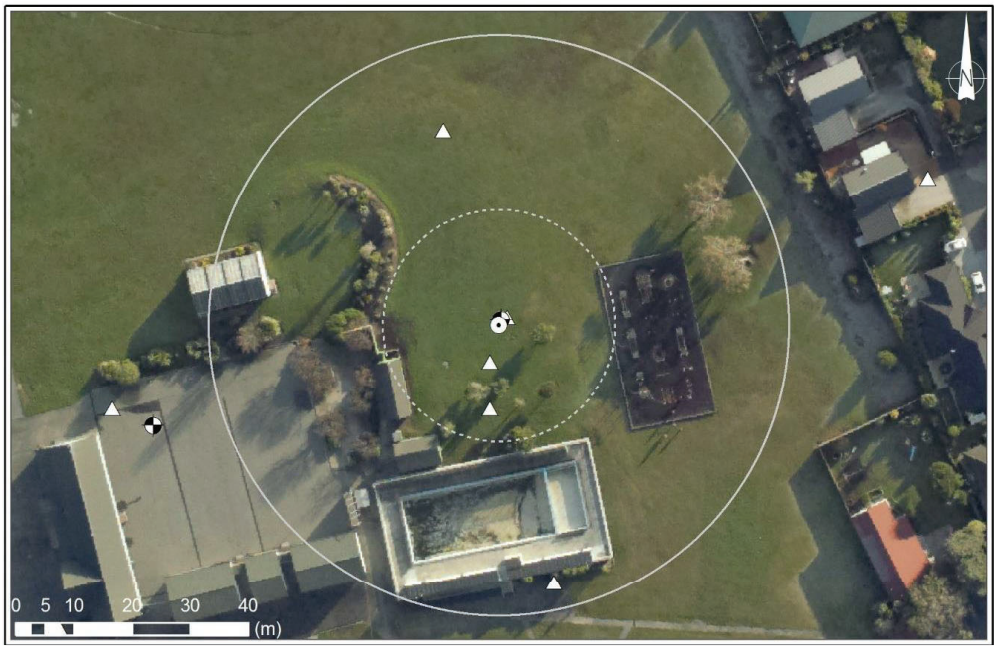
Case #17: Brighton-DAR (taken on 5/SEP/2010) - NONE



Case #18: Brighton-CHC (taken on 24/FEB/2011) - NONE

BRIGHTON

Lat: -43.495225°; Long: 172.718104°



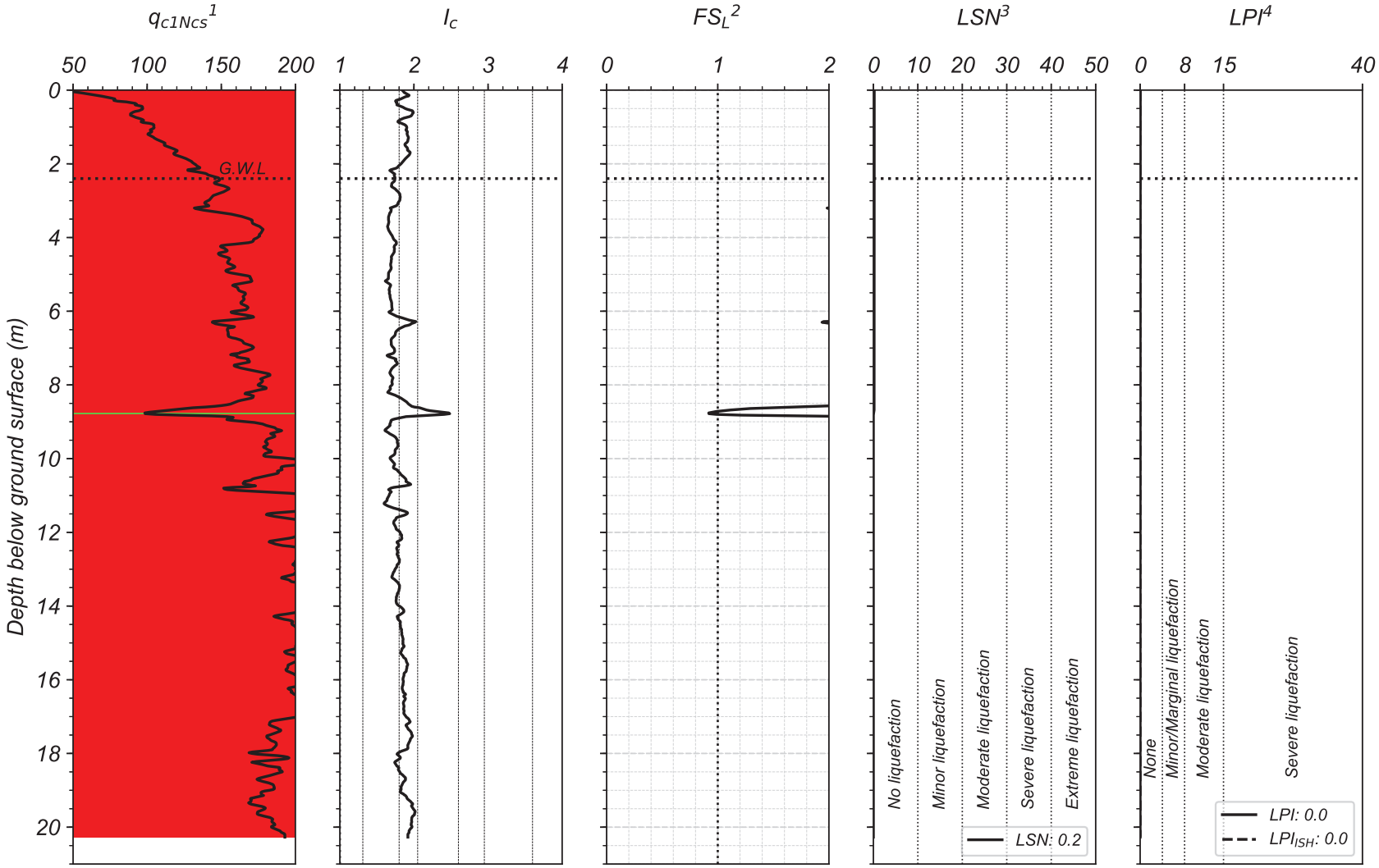
Case #19: Brighton-JUN (taken on 15/JUN/2011) - NONE



Case #20: Brighton-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 17 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.20 g
Site = Brighton ; CPT# = 57350 ; GWL = 2.4 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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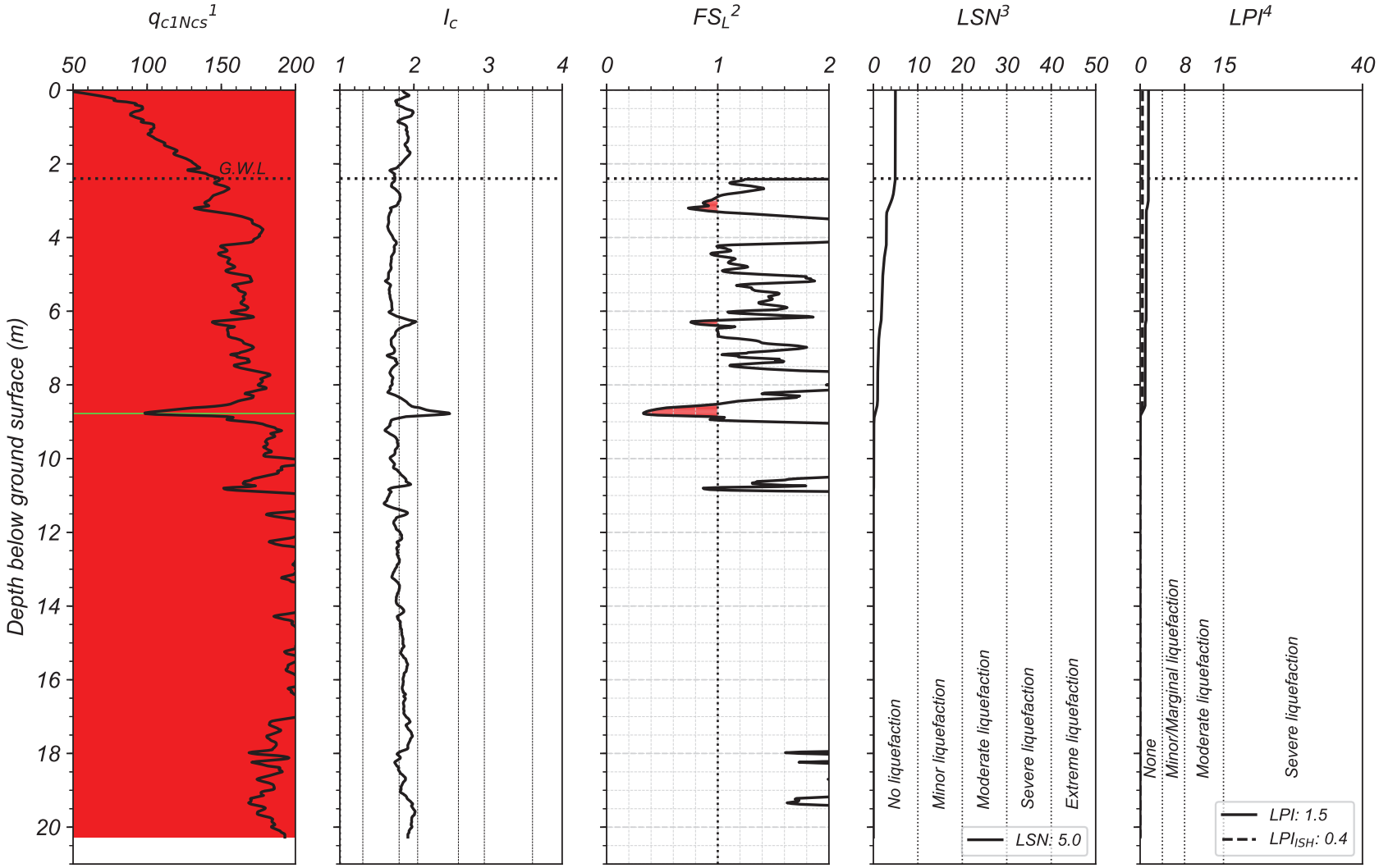
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 18 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.64 g
Site = Brighton ; CPT# = 57350 ; GWL = 2.4 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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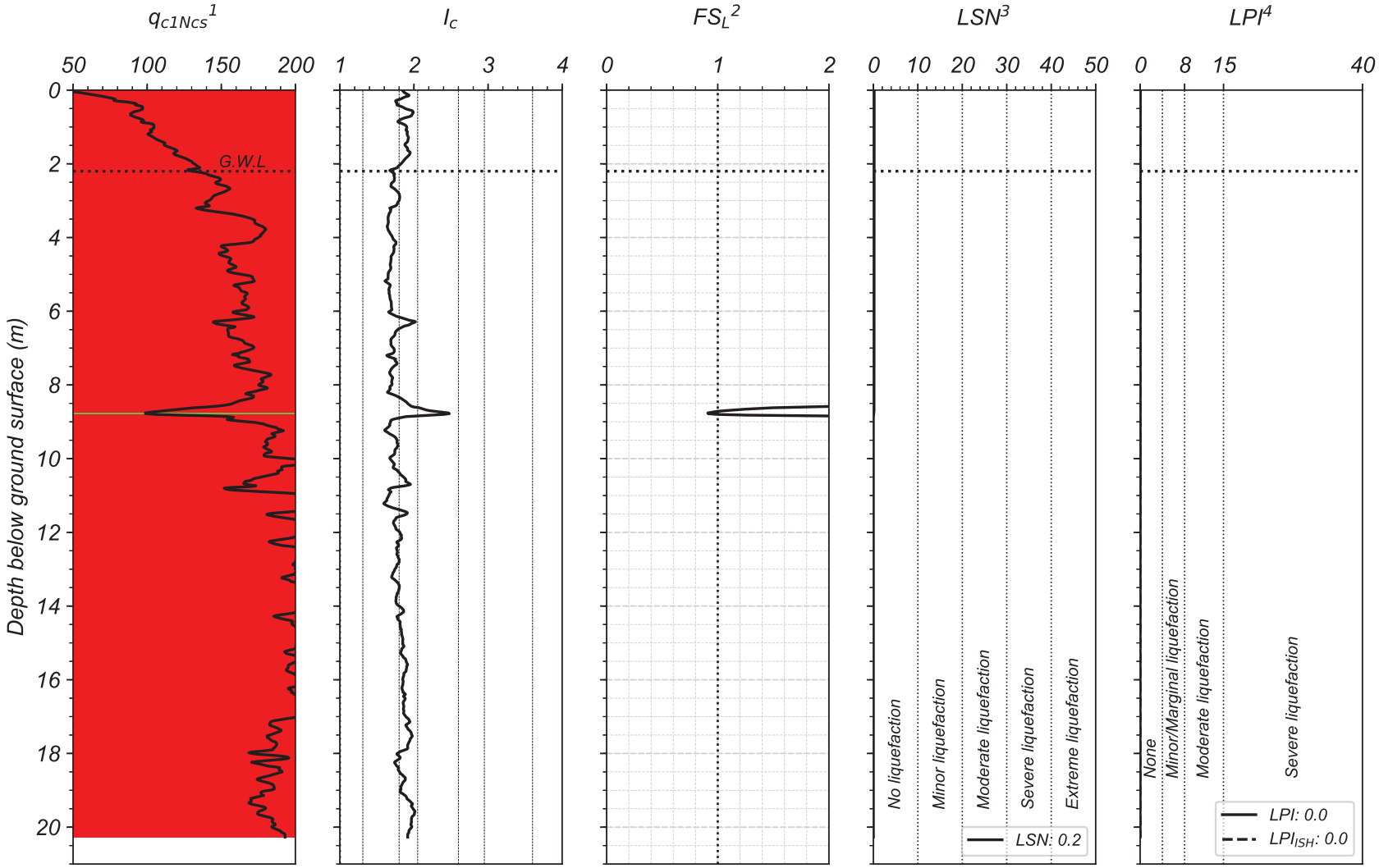
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 19 ; Event = 13-Jun ; M_W = 6.2 ; Surface PGA_{max} = 0.23 g
Site = Brighton ; CPT# = 57350 ; GWL = 2.2 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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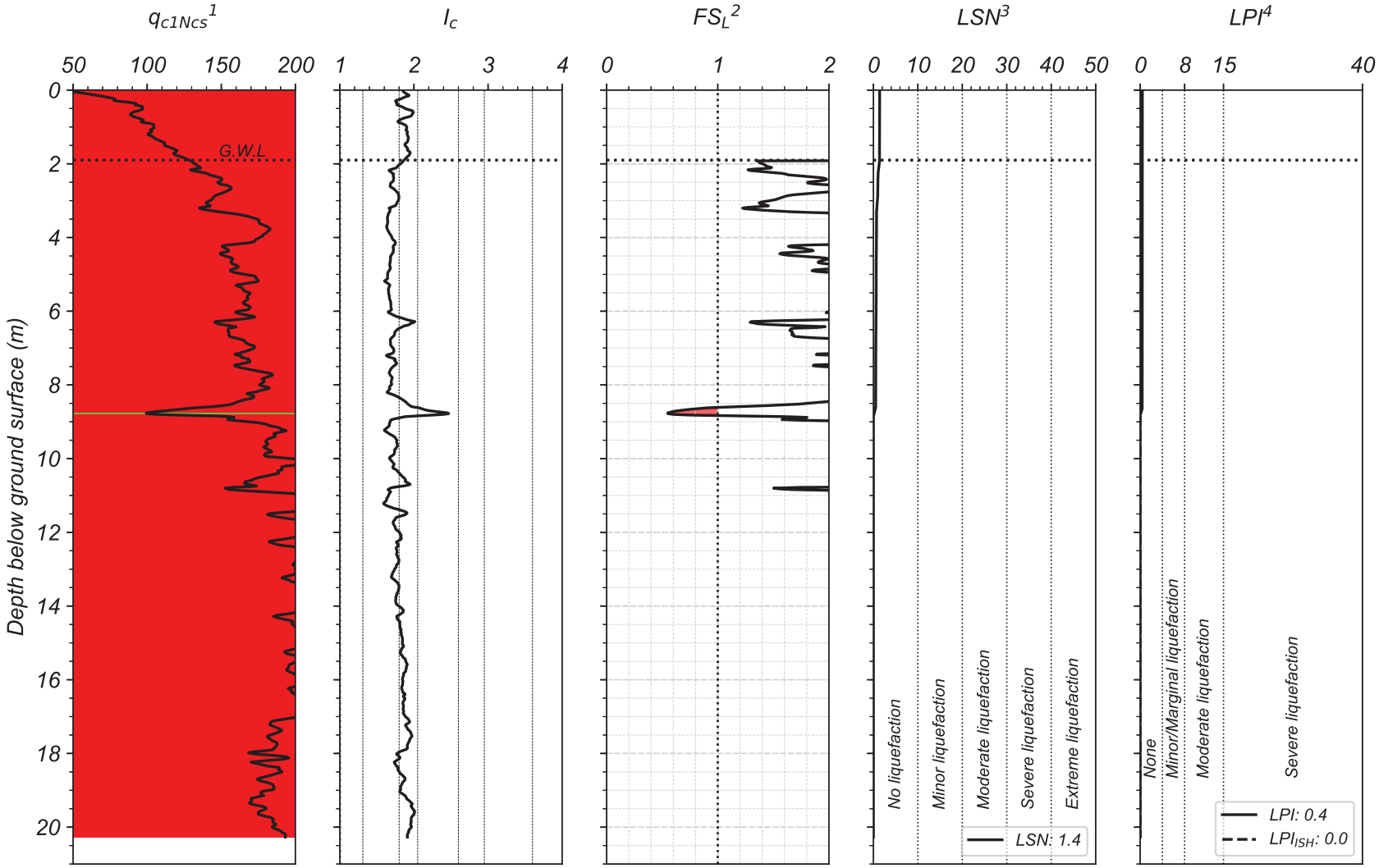
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 20 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.38 g
Site = Brighton ; CPT# = 57350 ; GWL = 1.9 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CARISBROOKE

Lat: -43.510815°; Long: 172.709944°



Case #21: Carisbrooke-DAR (taken on 5/SEP/2010) - NONE



Case #22: Carisbrooke-CHC (taken on 24/FEB/2011) - MINOR

CARISBROOKE

Lat: -43.510815°; Long: 172.709944°



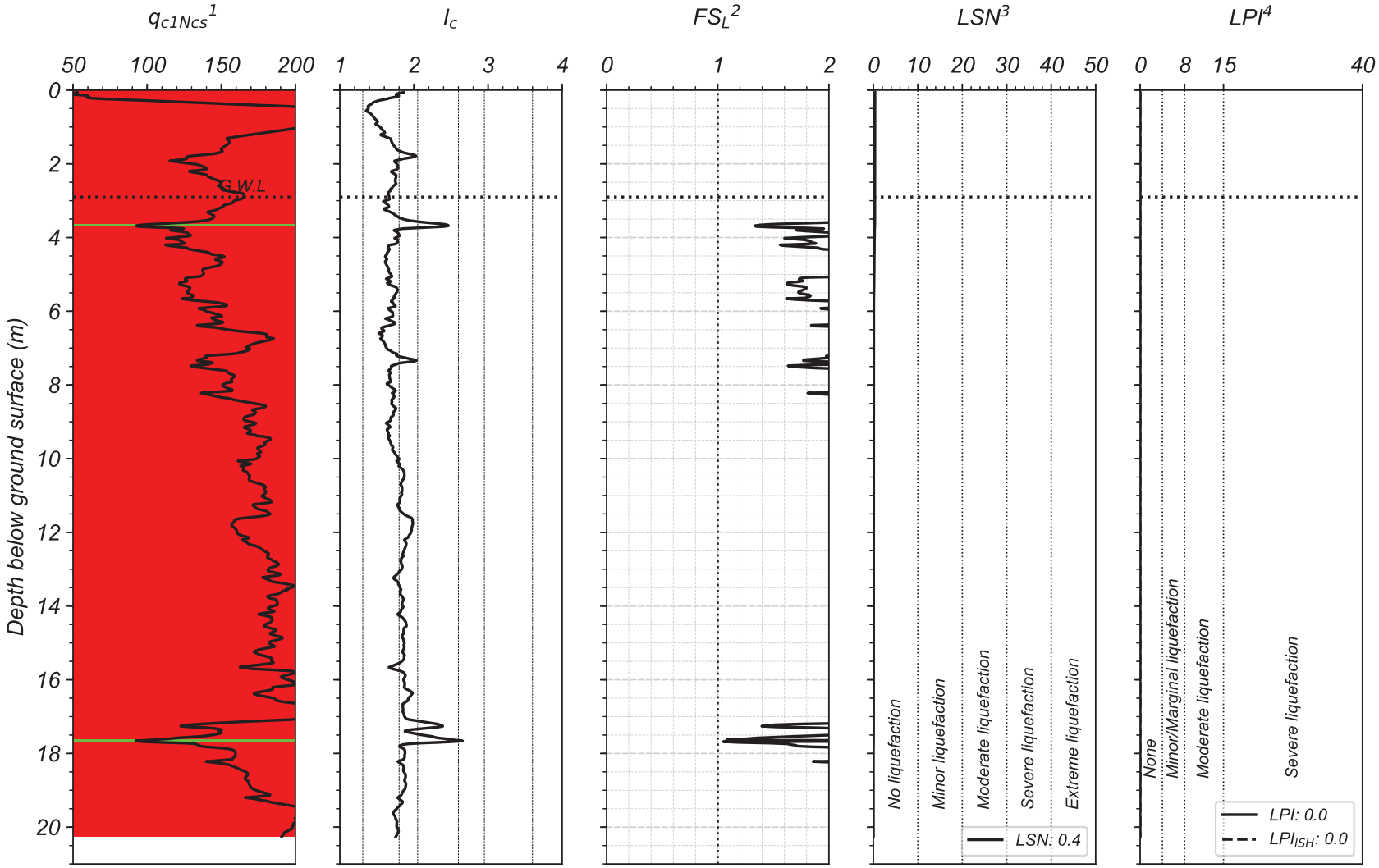
Case #23: Carisbrooke-JUN (taken on 15/JUN/2011) - NONE



Case #24: Carisbrooke-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 21 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.18 g
Site = Carisbrooke ; CPT# = 57347 ; GWL = 2.9 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

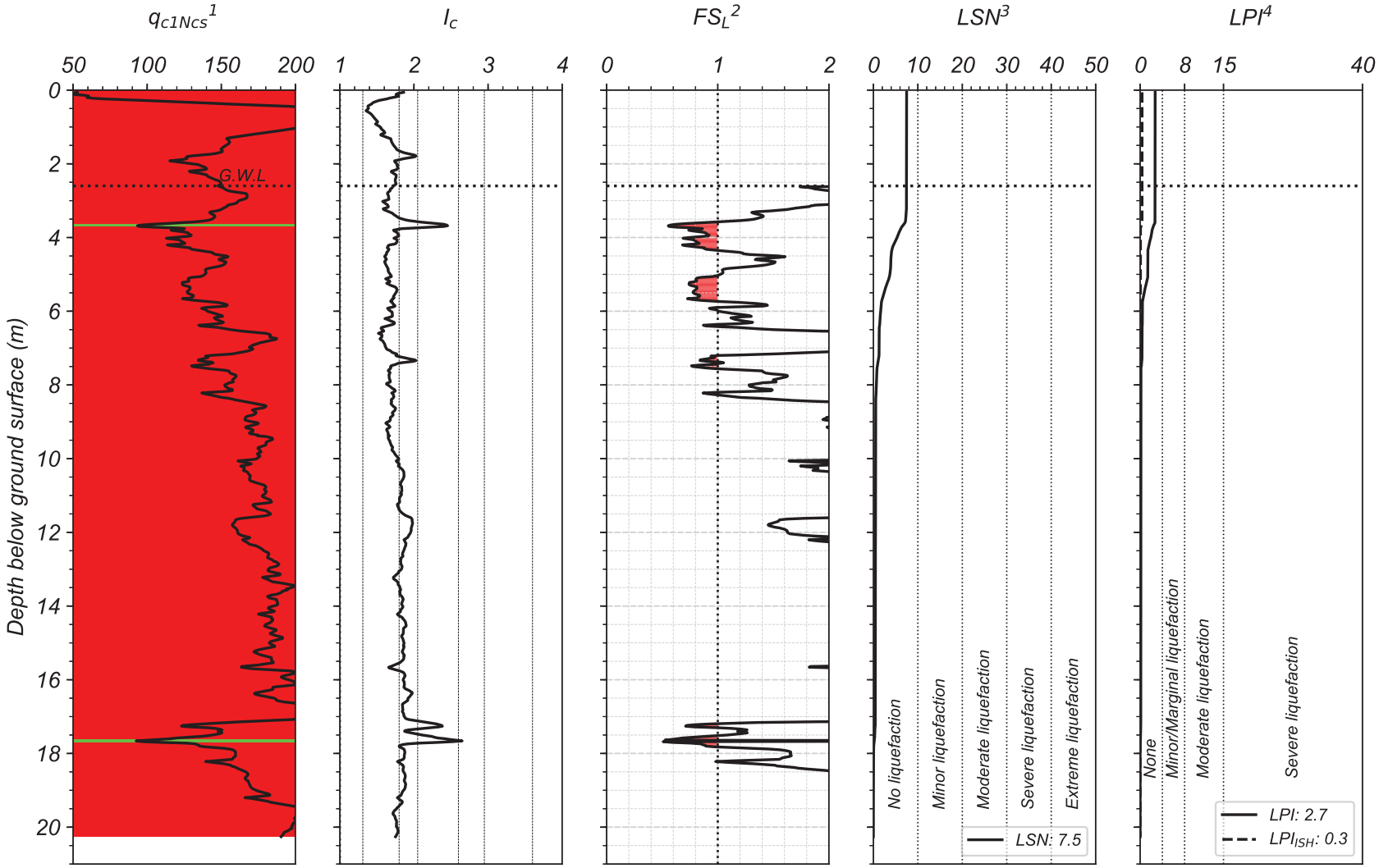


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 22 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.46 g
Site = Carisbrooke ; CPT# = 57347 ; GWL = 2.6 m
Observed Ejecta Severity = Minor ; Site Condition = Free-field flat



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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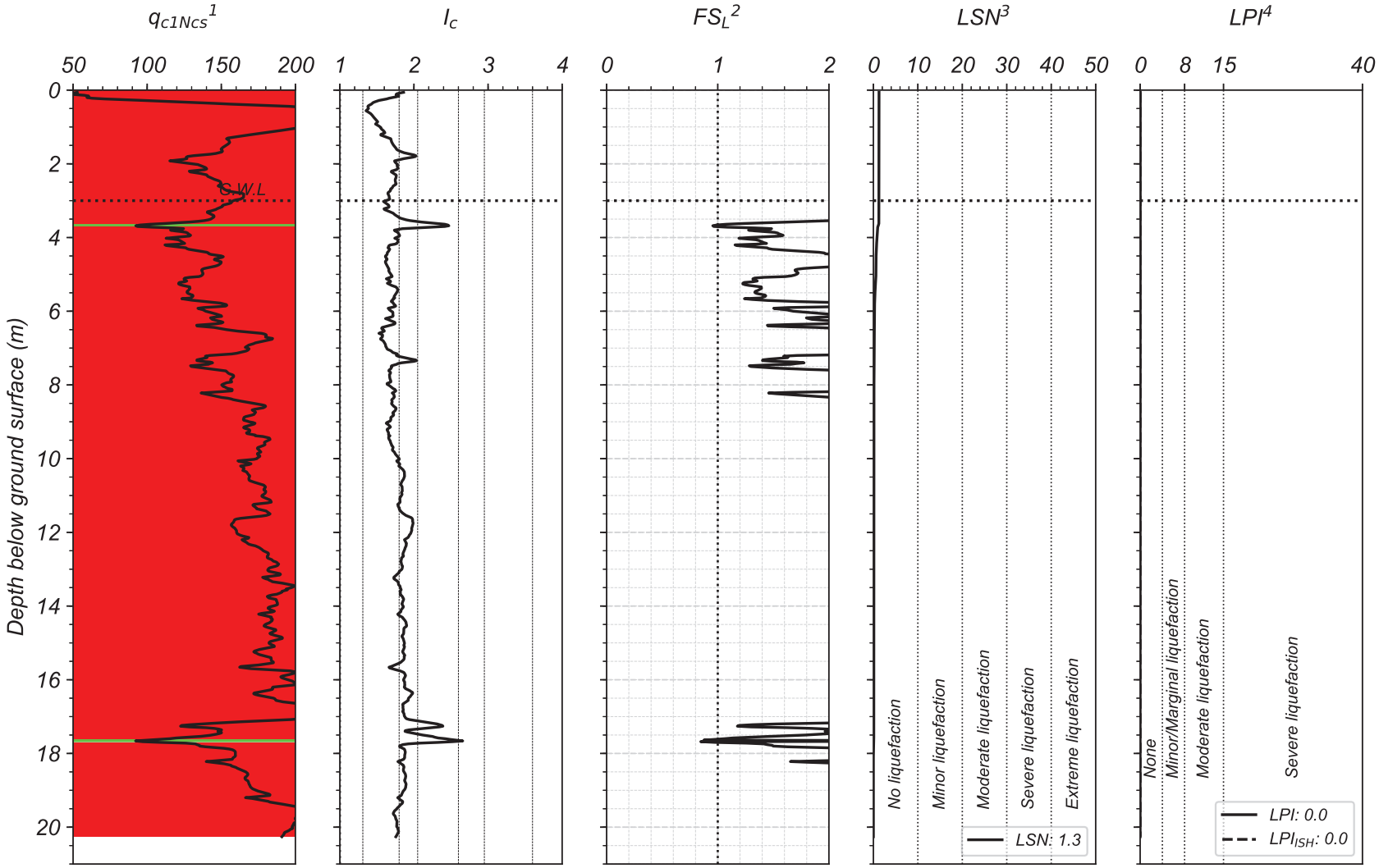
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 23 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.28 g
Site = Carisbrooke ; CPT# = 57347 ; GWL = 3.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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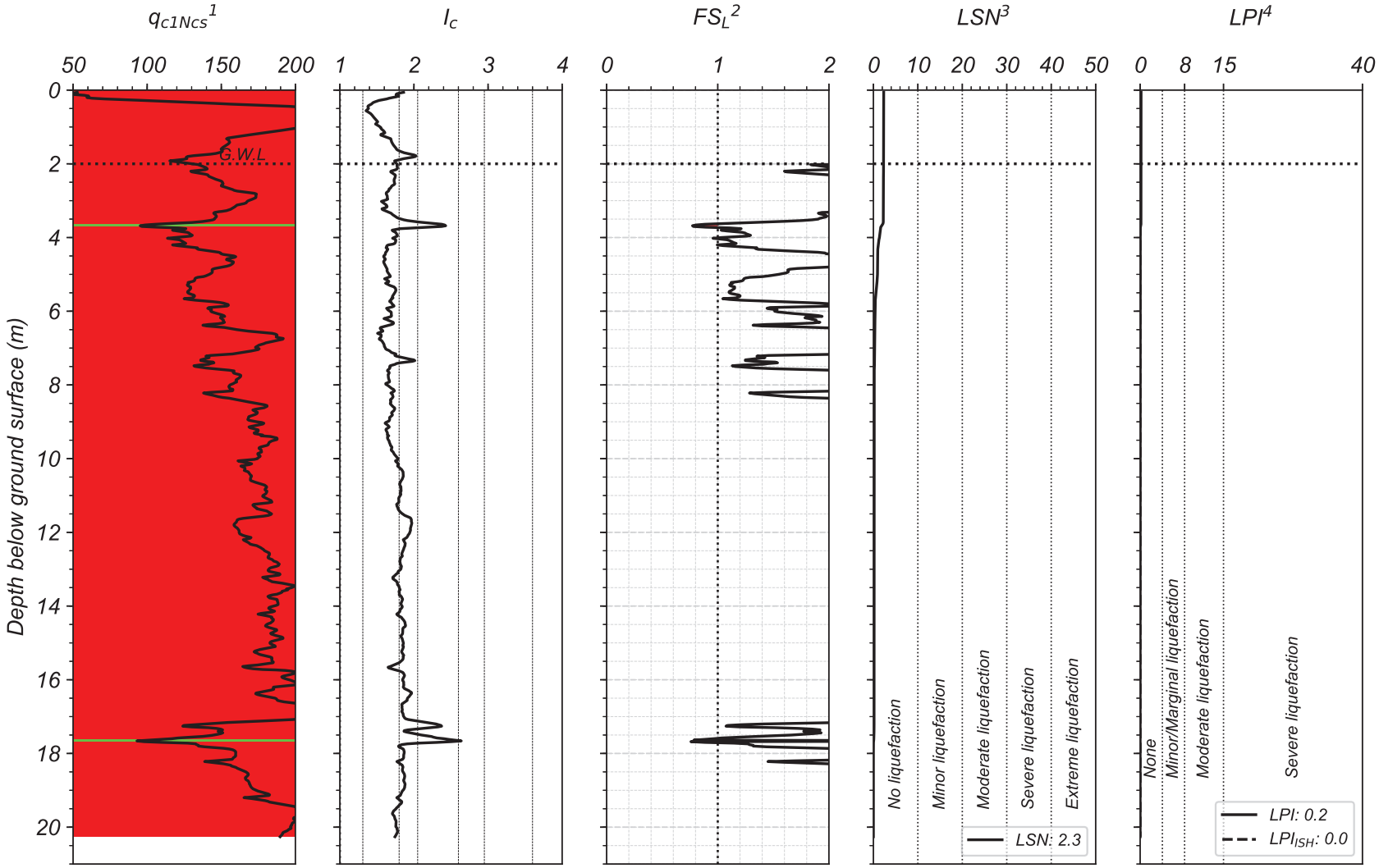
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 24 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.31 g
Site = Carisbrooke ; CPT# = 57347 ; GWL = 2.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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CASHMERE HIGH SCHOOL (CMHS) and CASHMERE-SW



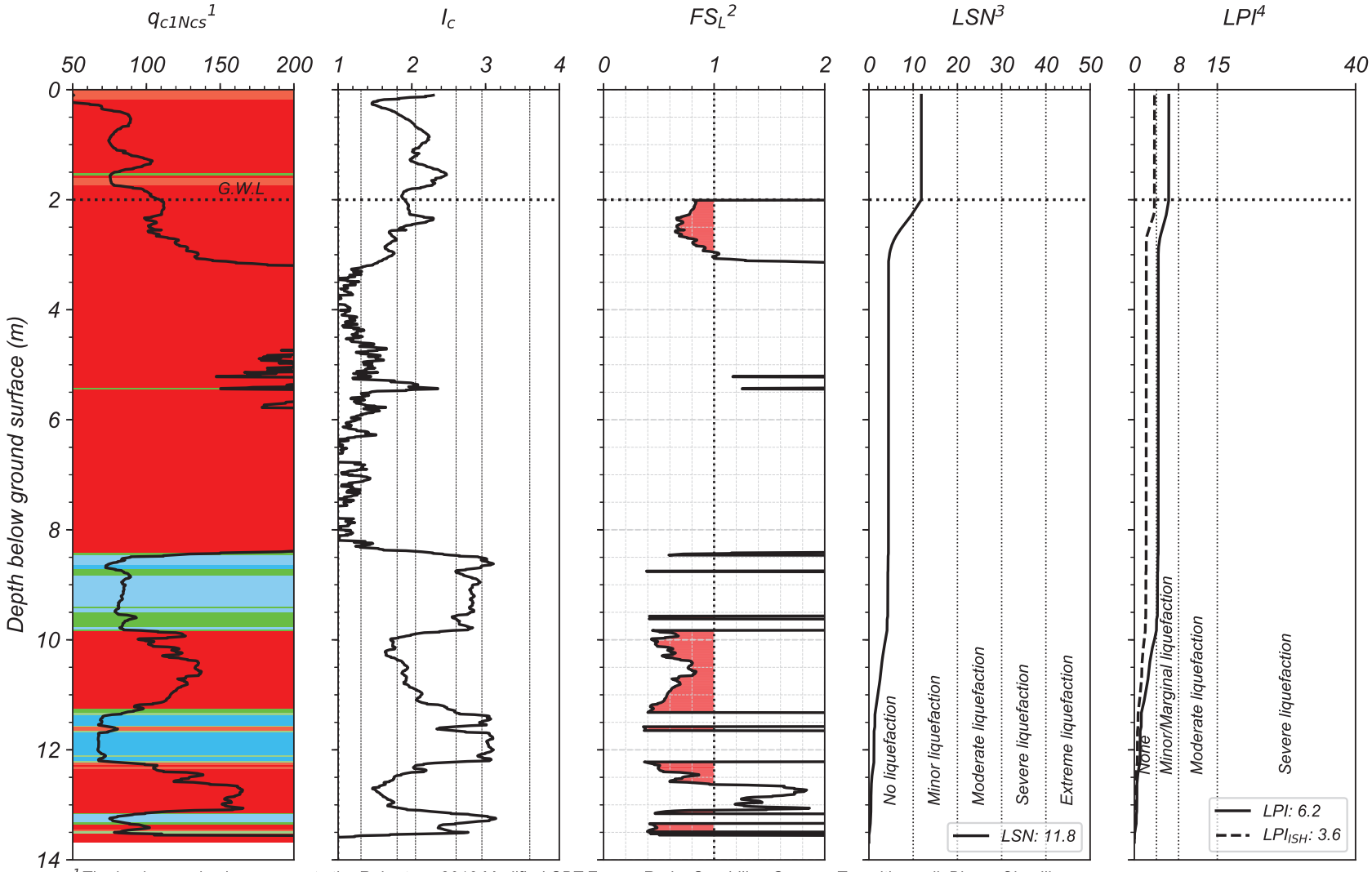
Case #25: CMHS (Blue Circle) and Case #26 (Red Circle). (taken on 24/Feb/2011)

CMHS-Case#25 (None)
Latitude: -43.565618°
Longitude: 172.624176°

Cashmere SW-Case#26 (Extreme)
Latitude: -43.566770°
Longitude: 172.622490°

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 25 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.45 g
Site = Cashmere HS ; CPT# = 72541 ; GWL = 2.0 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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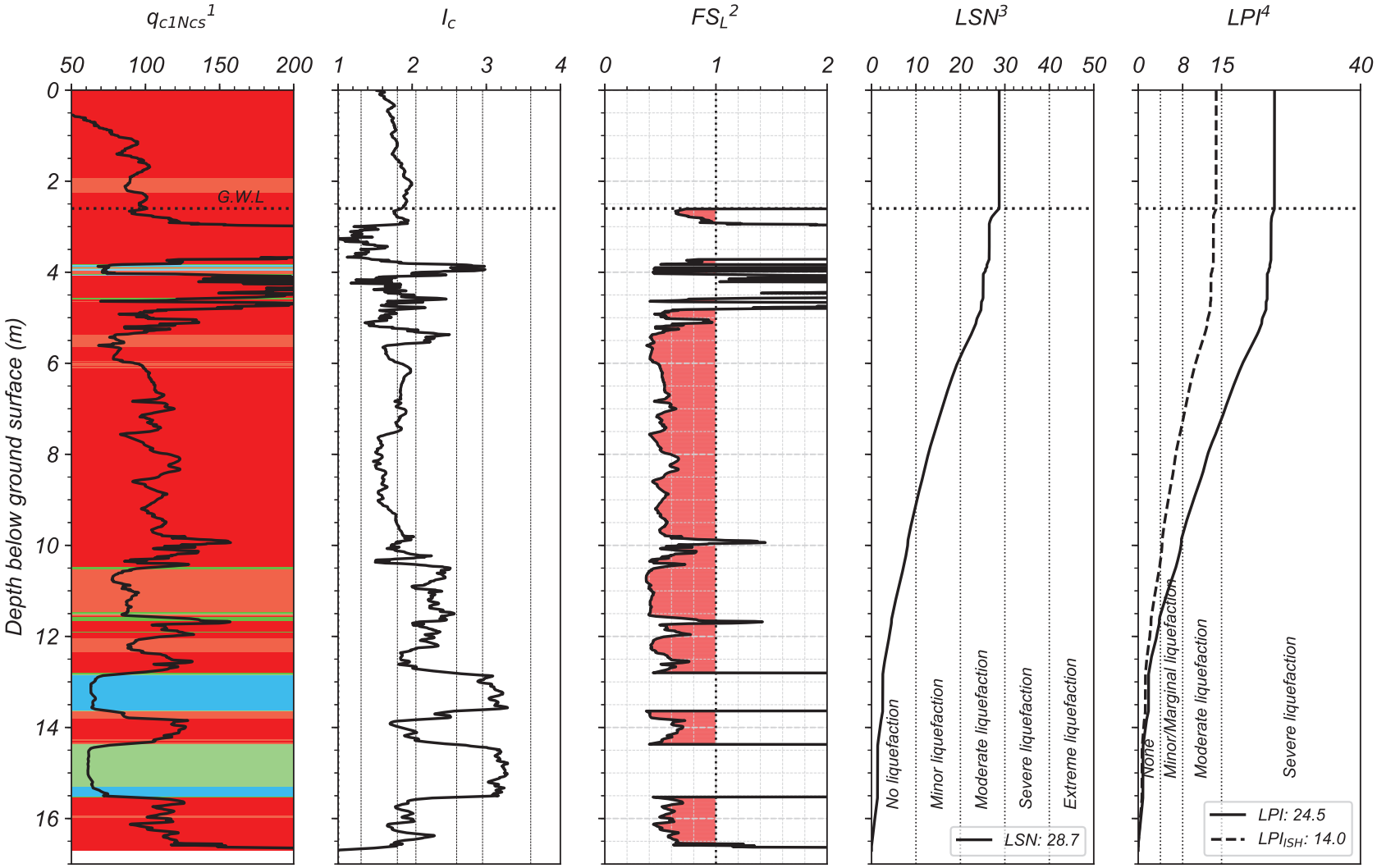
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 26 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.45 g
Site = Cashmere SW ; CPT# = 33758 ; GWL = 2.6 m
Observed Ejecta Severity = Extreme ; Site Condition = Near Building



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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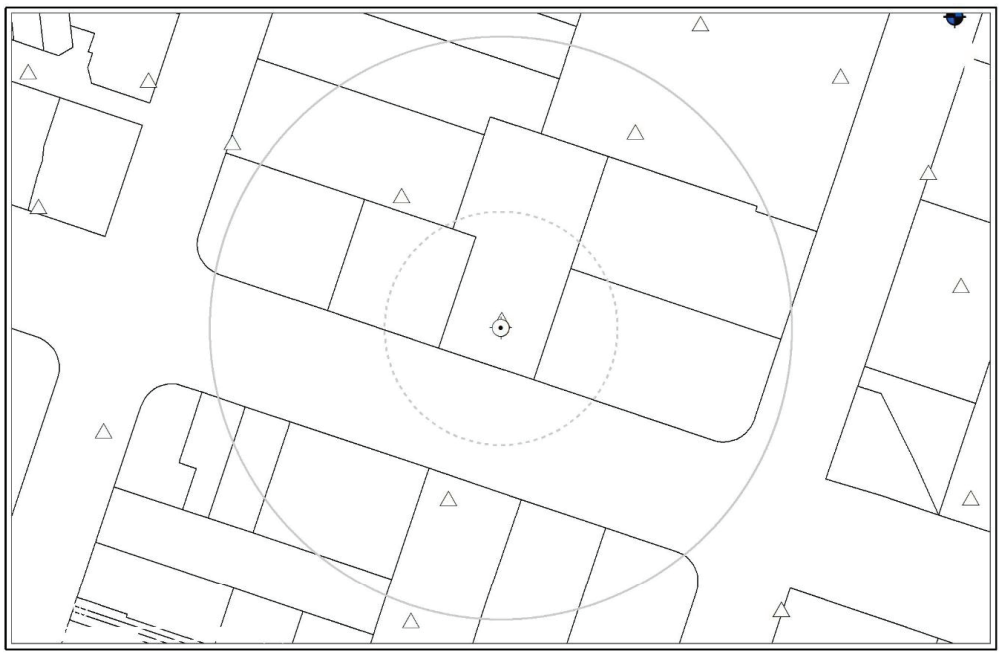
CHARLES

Lat: -43.543210°; Long: 172.657613°



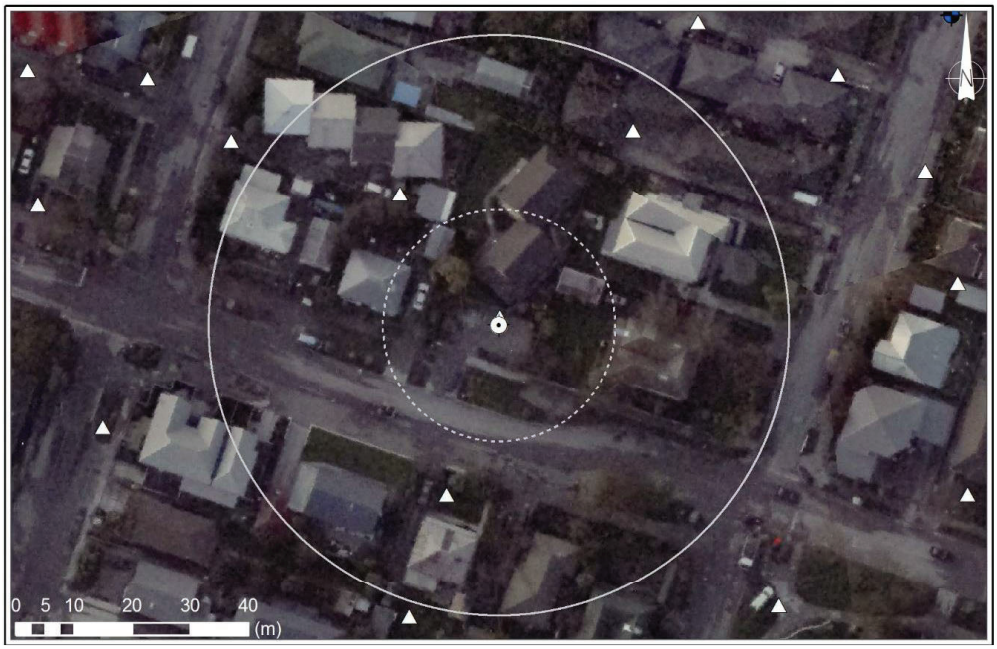
Case #27: Charles-DAR (Aerial photograph is not available) - NONE



Case #28: Charles-CHC (taken on 24/FEB/2011) - SEVERE

CHARLES

Lat: -43.543210°; Long: 172.657613°



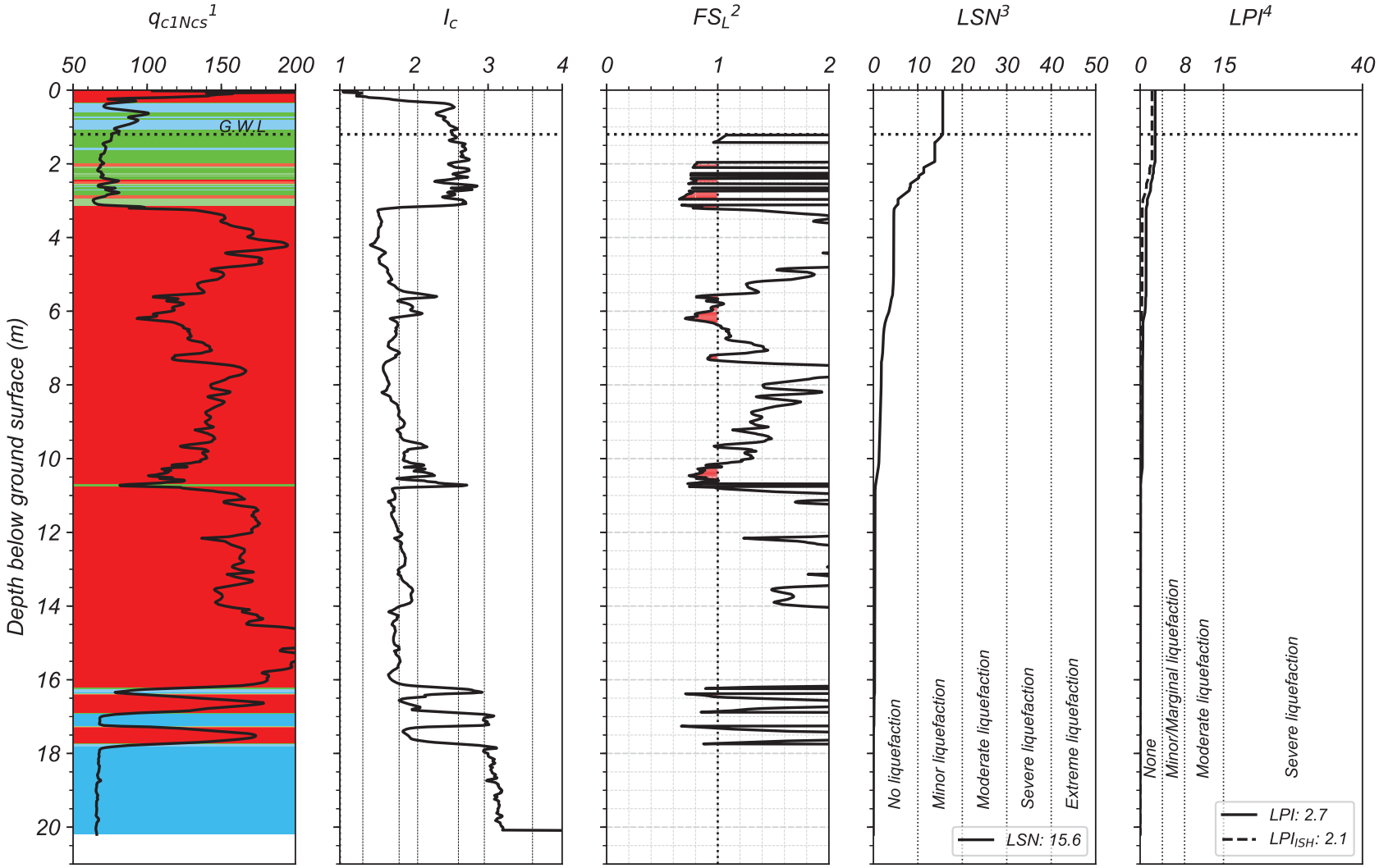
Case #29: Charles-JUN (taken on 15/JUN/2011) - MODERATE



Case #30: Charles-DEC (taken on 24/DEC/2011) - MINOR

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 27 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.22 g
Site = Charles ; CPT# = 57356 ; GWL = 1.2 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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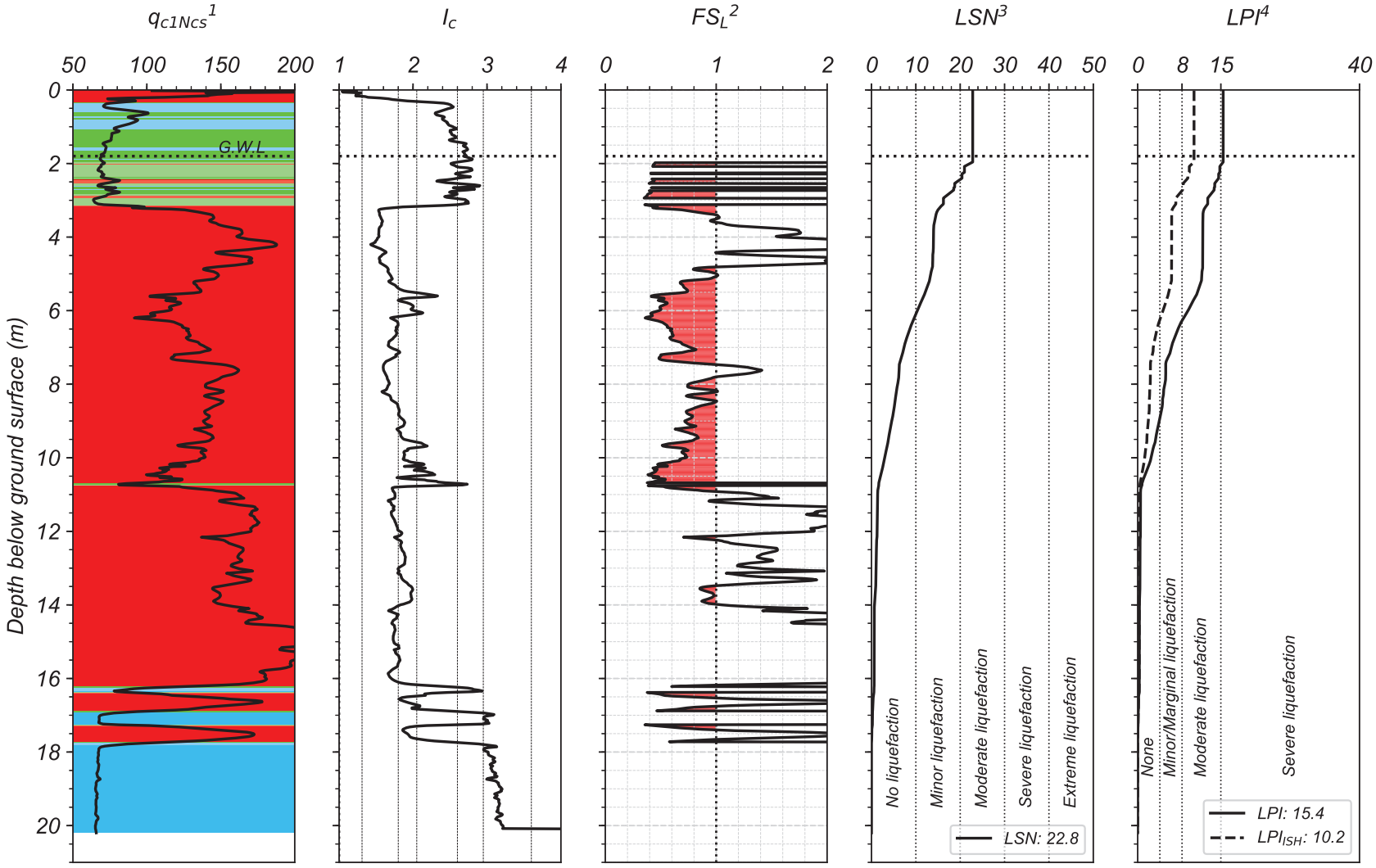
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 28 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.52 g
Site = Charles ; CPT# = 57356 ; GWL = 1.8 m
Observed Ejecta Severity = Severe ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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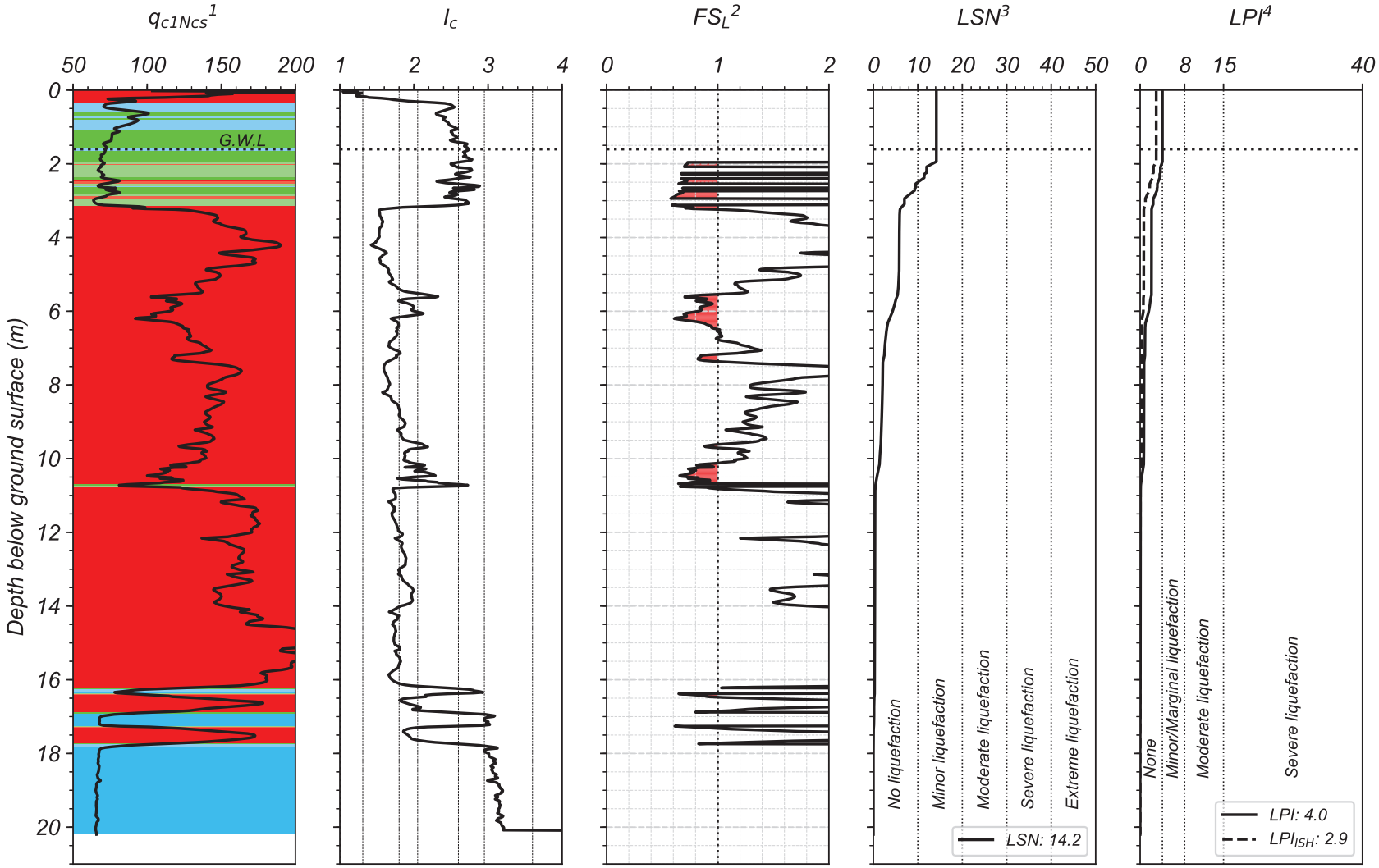
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 29 ; Event = 13-Jun ; M_W = 6.2 ; Surface PGA_{max} = 0.30 g
Site = Charles ; CPT# = 57356 ; GWL = 1.6 m
Observed Ejecta Severity = Moderate ; Site Condition = Near Building



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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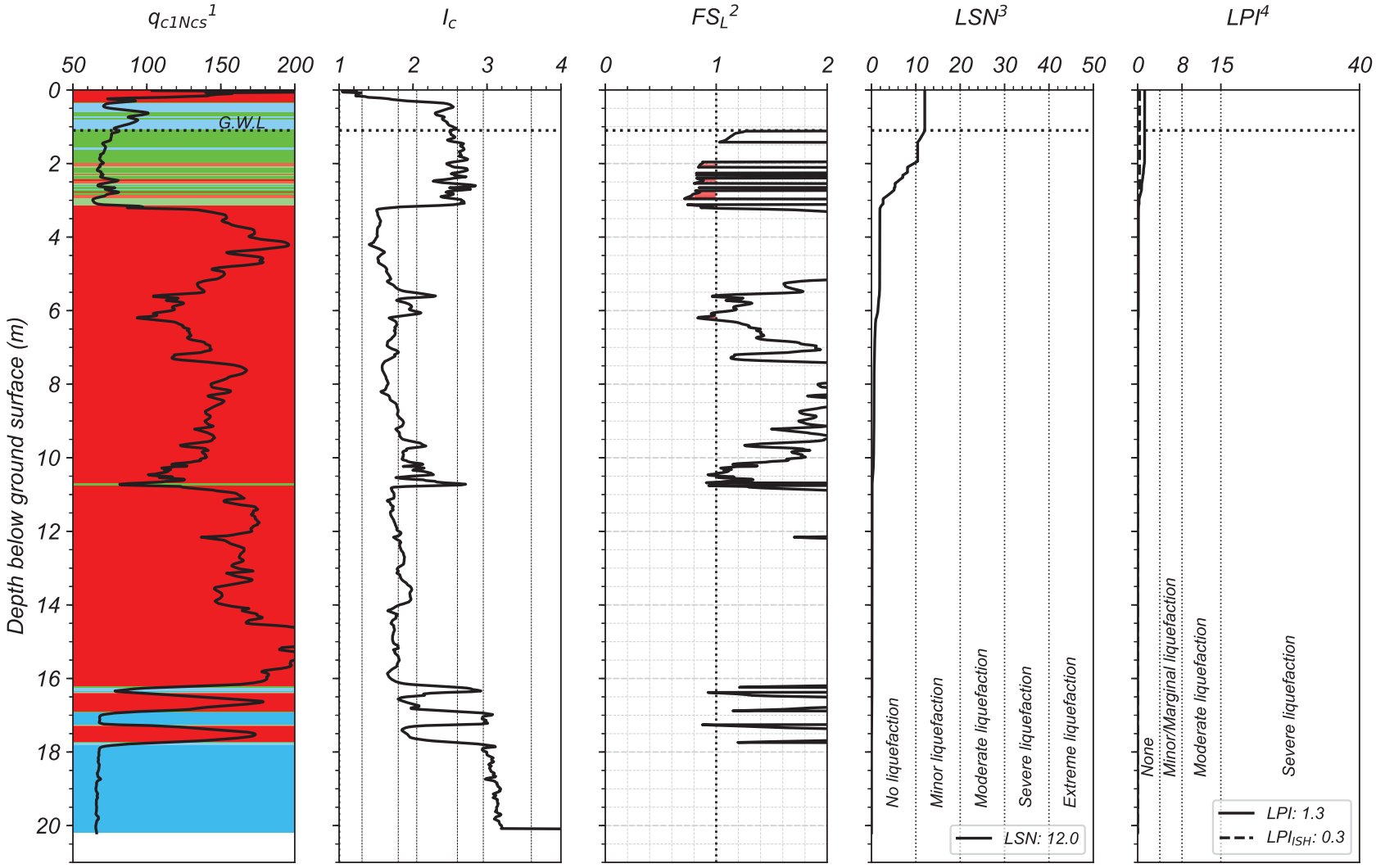
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 30 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.21 g
Site = Charles ; CPT# = 57356 ; GWL = 1.1 m
Observed Ejecta Severity = Minor ; Site Condition = Near Building



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

By: DH
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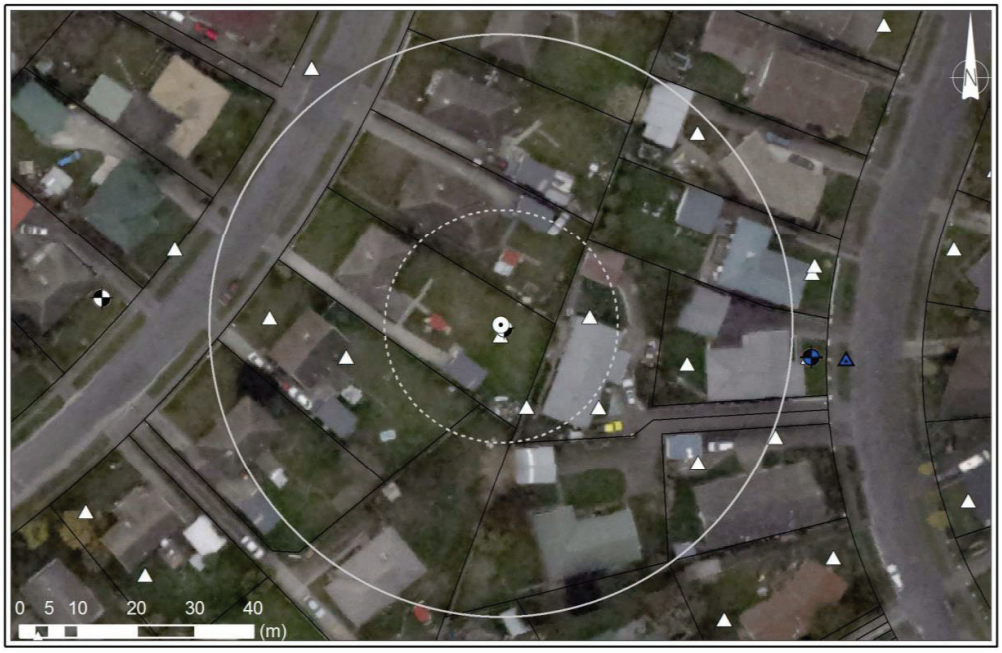
CORHAMPTON

Lat: -43.511579°; Long: 172.711428°



Case #31: Corhampton-DAR (taken on 5/SEP/2010) - NONE



Case #32: Corhampton-CHC (taken on 24/FEB/2011) - MINOR

CORHAMPTON

Lat: -43.511579°; Long: 172.711428°



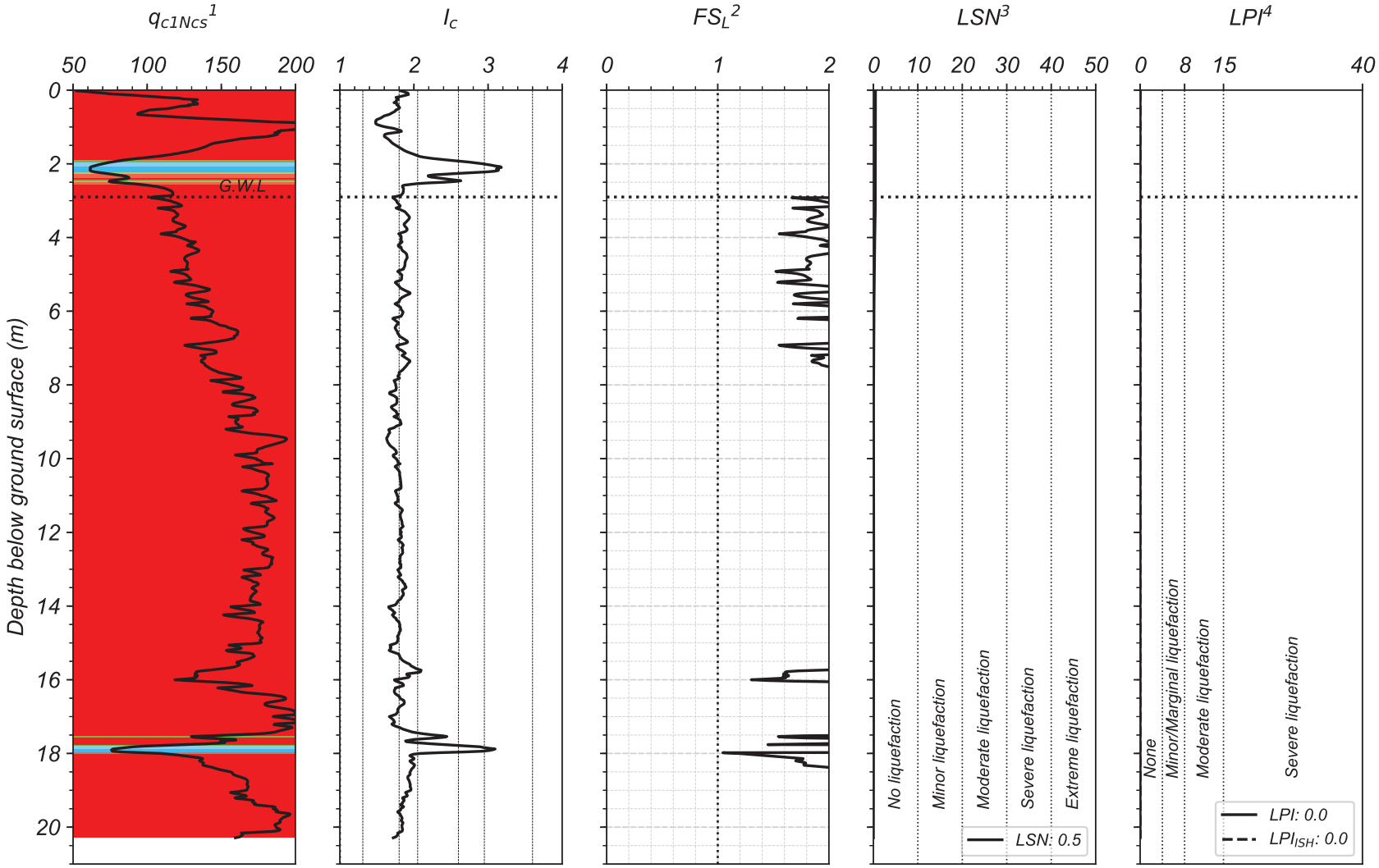
Case #33: Corhampton-JUN (taken on 15/JUN/2011) - NONE



Case #34: Corhampton-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 31 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.18 g
Site = Corhampton ; CPT# = 57348 ; GWL = 2.9 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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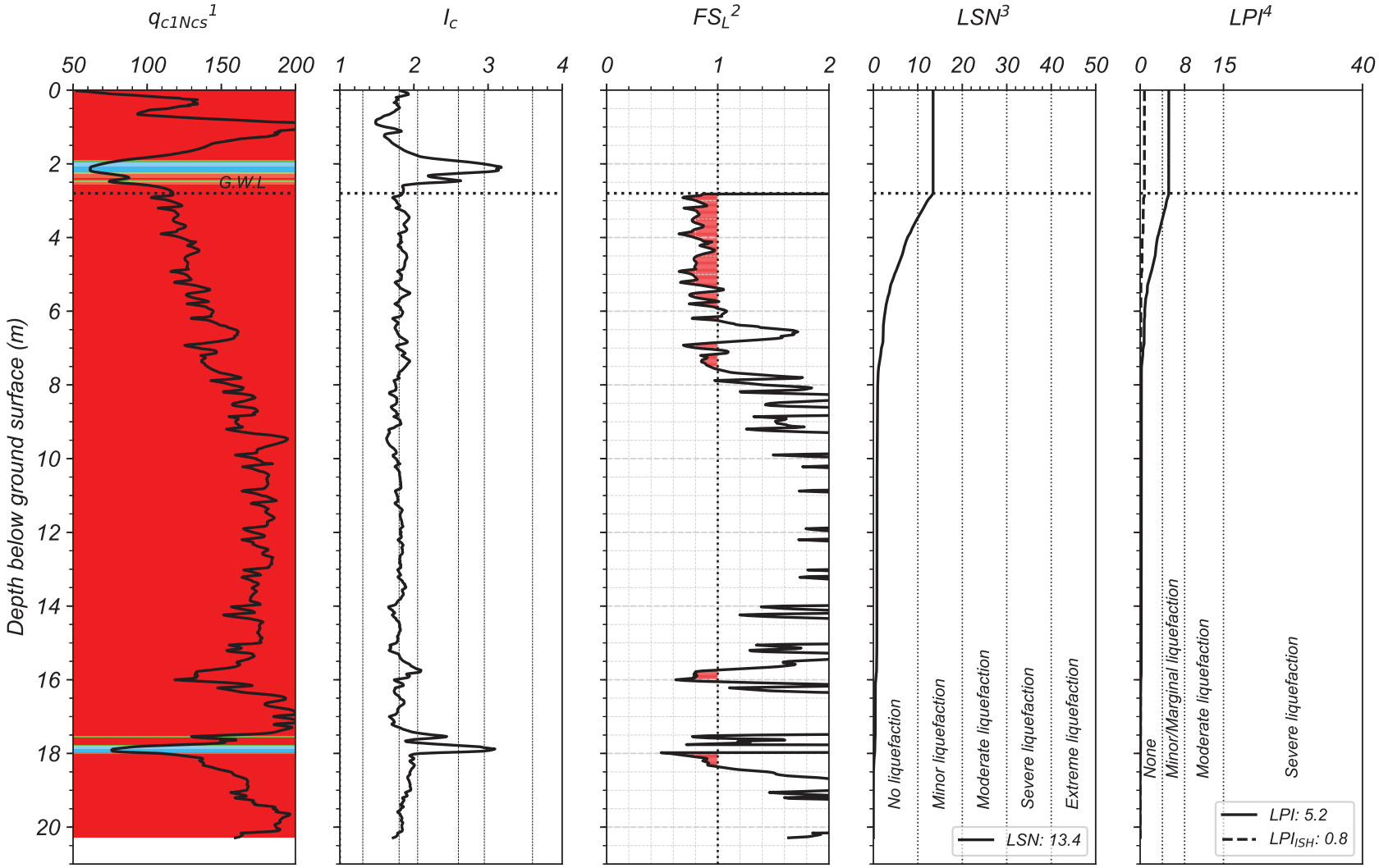
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 32 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.48 g
Site = Corhampton ; CPT# = 57348 ; GWL = 2.8 m
Observed Ejecta Severity = Minor ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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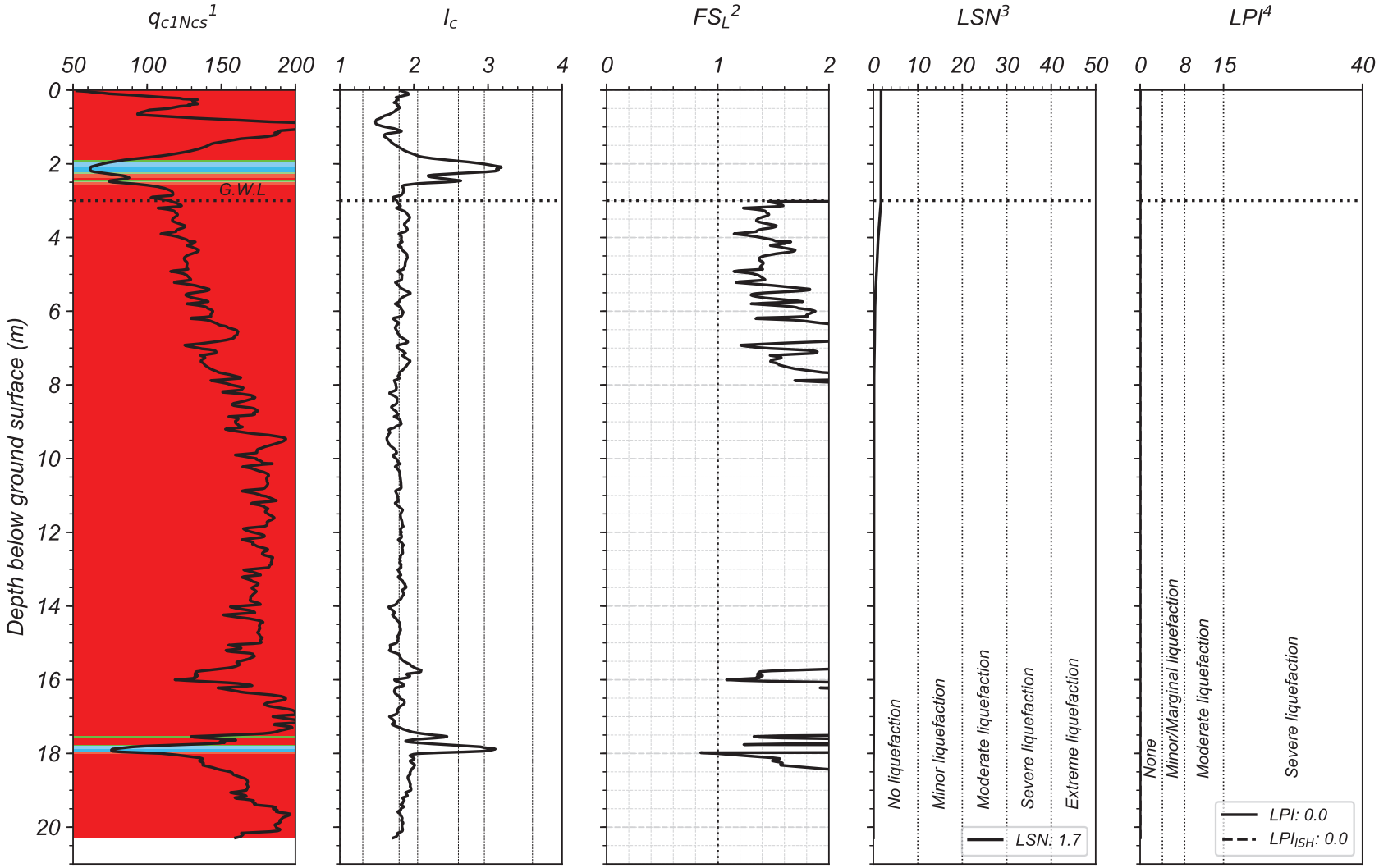
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 33 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.28 g
Site = Corhampton ; CPT# = 57348 ; GWL = 3.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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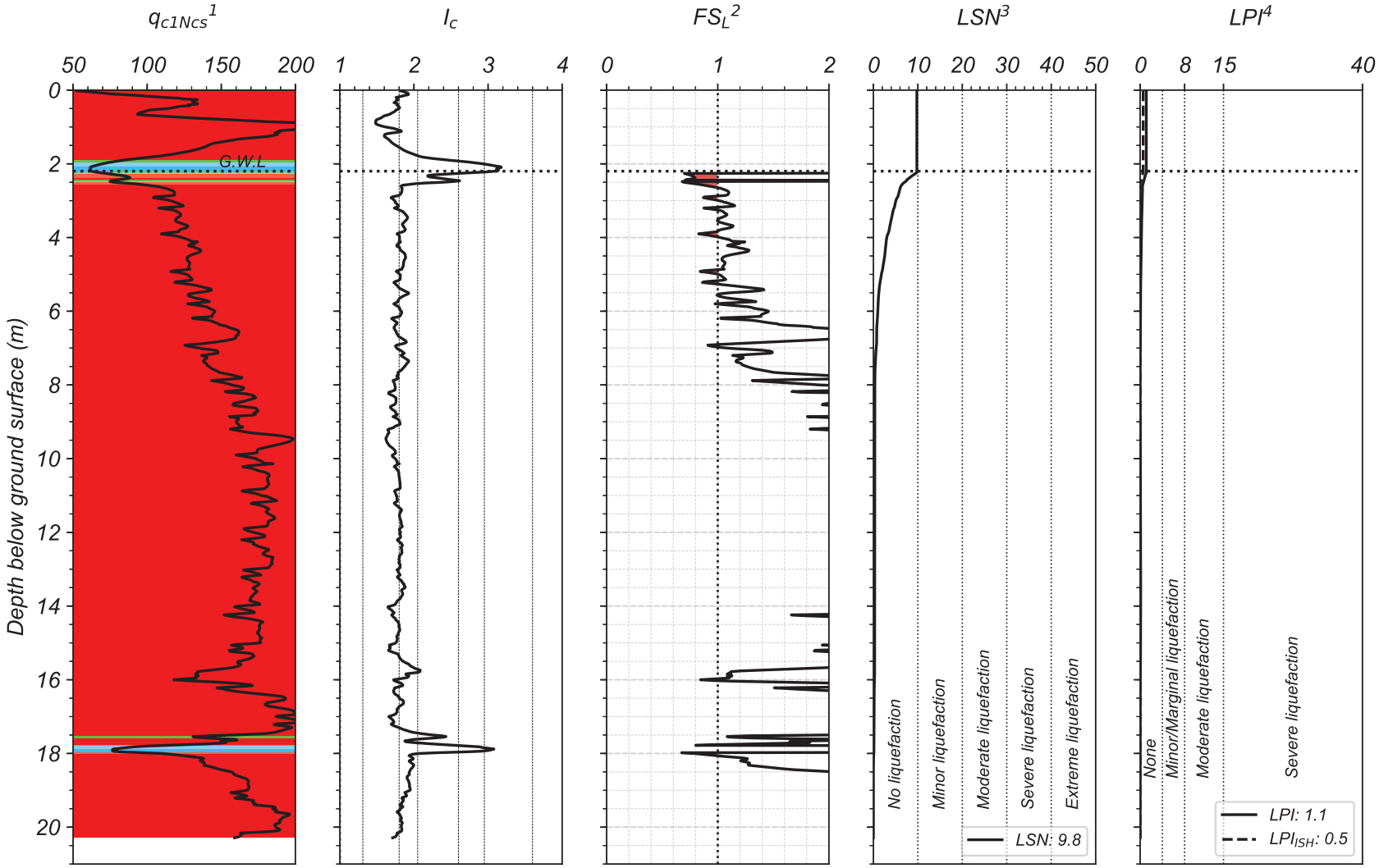
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 34 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.35 g
Site = Corhampton ; CPT# = 57348 ; GWL = 2.2 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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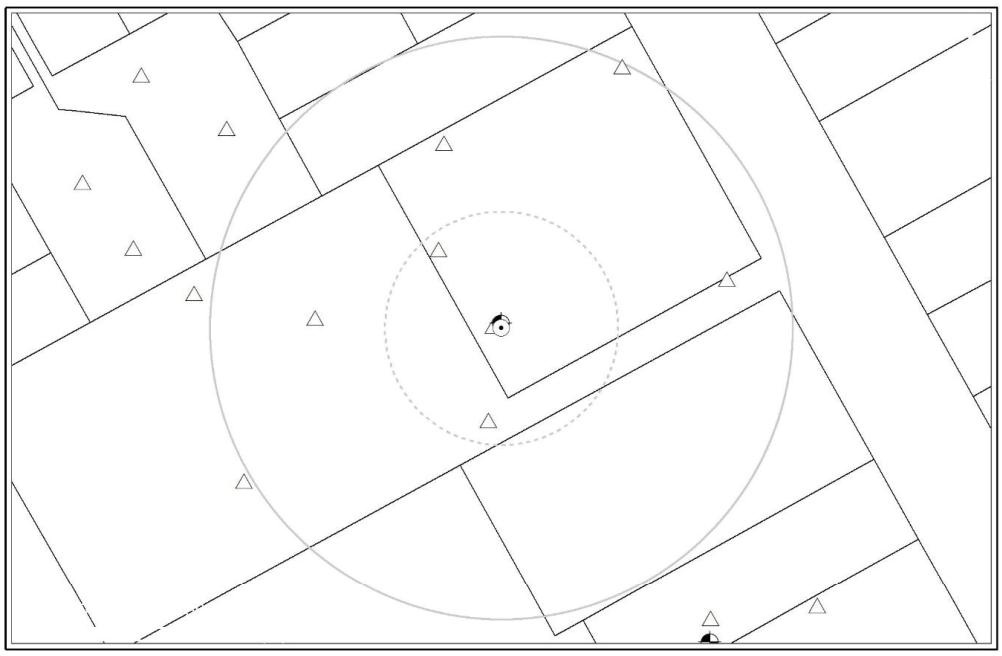
CRESSELLY

Lat: -43.556769°; Long: 172.652207°



Case #35: Cresselly-DAR (Aerial photograph is not available) - NONE



Case #36: Cresselly-CHC (taken on 24/FEB/2011) - SEVERE

CRESSELLY

Lat: -43.556769°; Long: 172.652207°



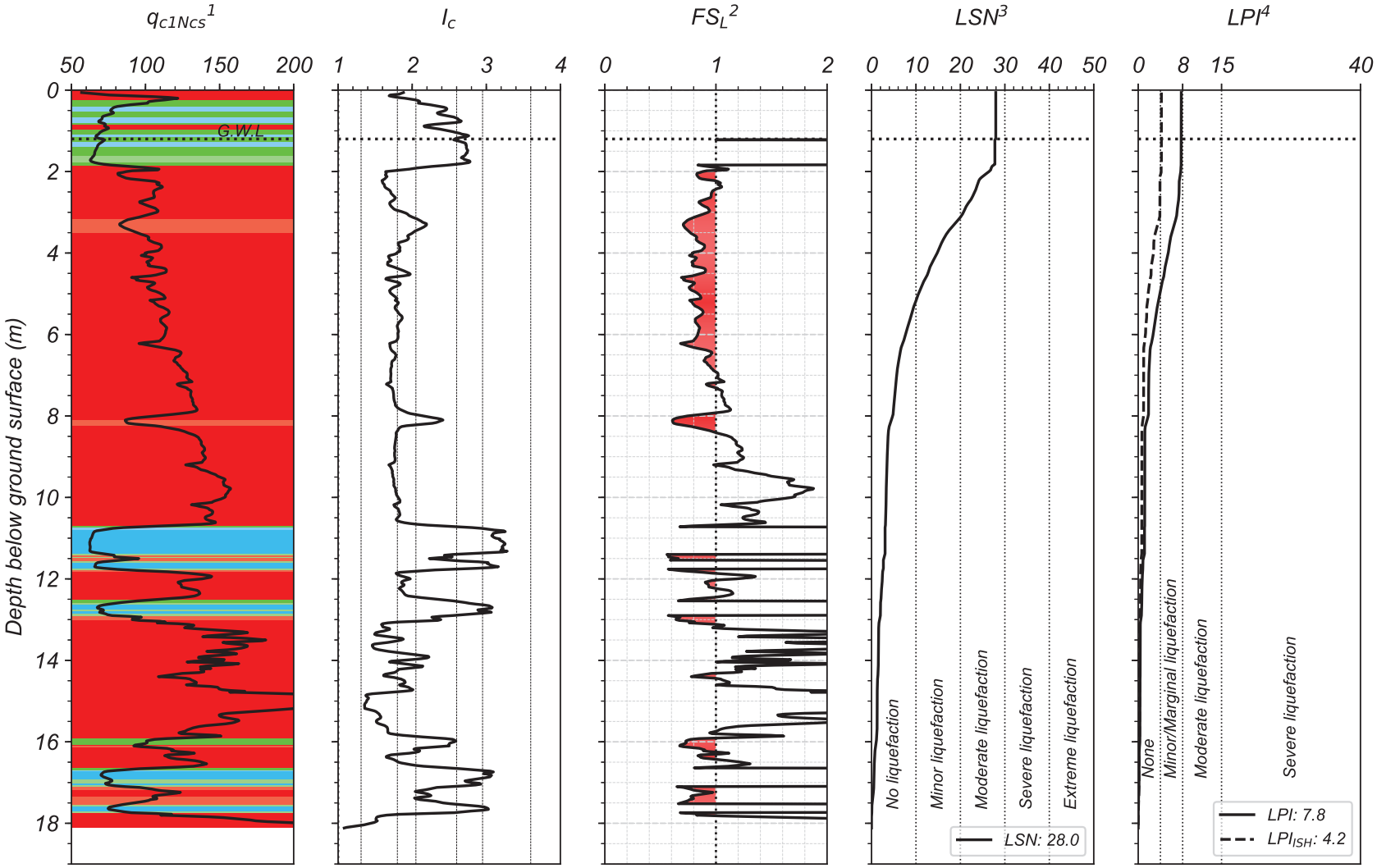
Case #37: Cresselly-JUN (taken on 15/JUN/2011) - MODERATE



Case #38: Cresselly-DEC (taken on 24/DEC/2011) - MINOR

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 35 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.23 g
Site = Cresselly ; CPT# = 57353 ; GWL = 1.2 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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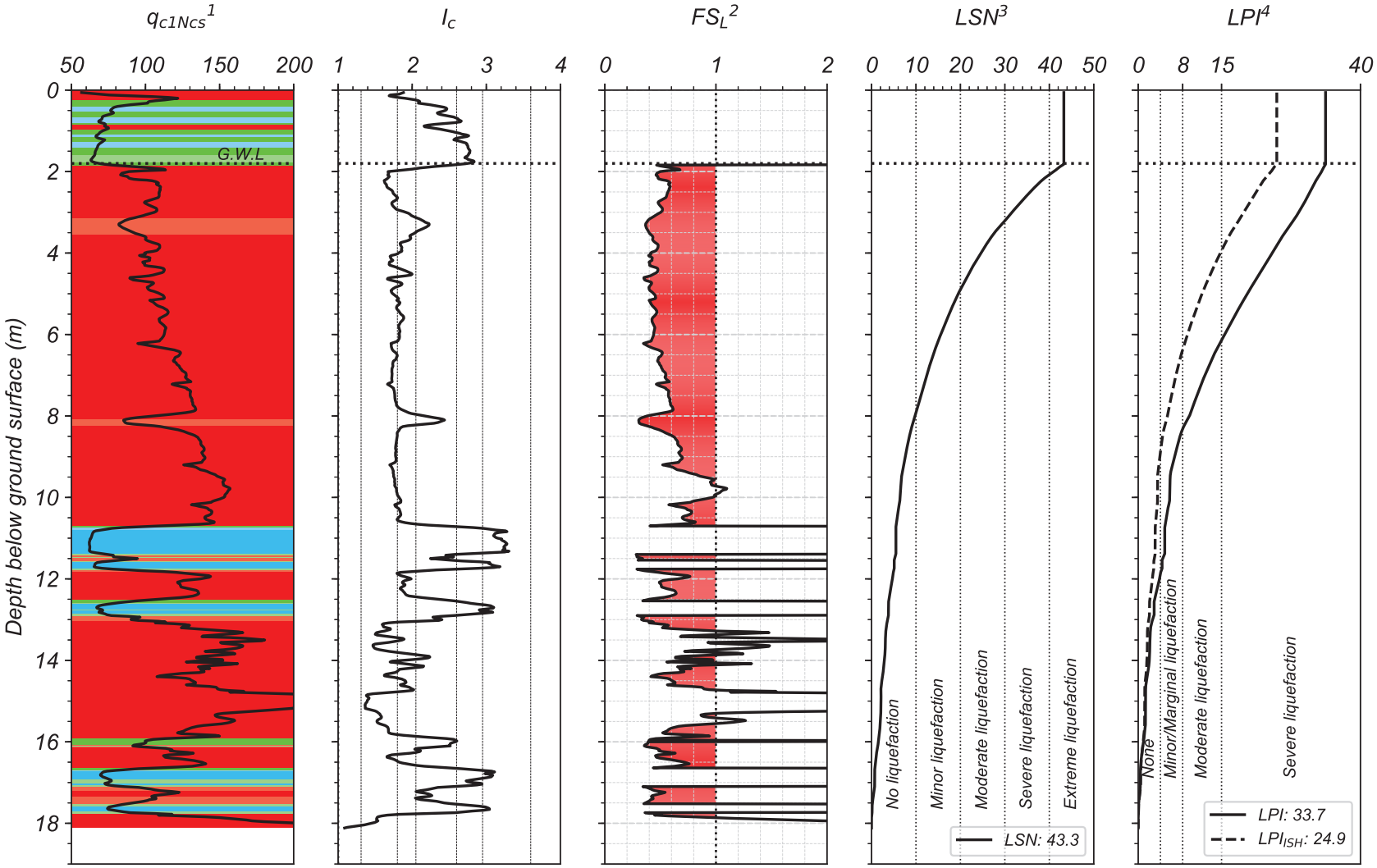
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 36 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.55 g
Site = Cresselly ; CPT# = 57353 ; GWL = 1.8 m
Observed Ejecta Severity = Severe ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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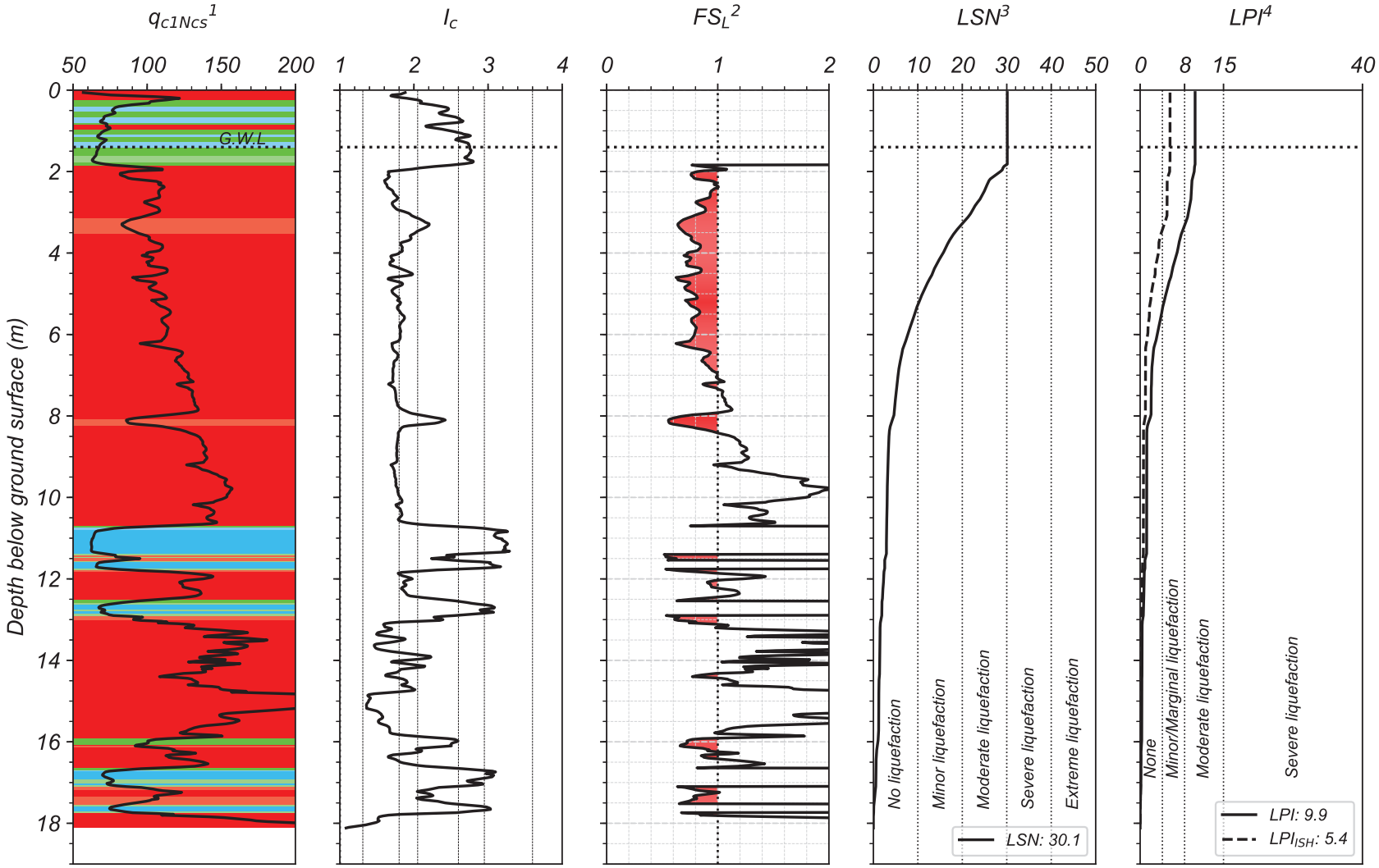
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 37 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.29 g
Site = Cresselly ; CPT# = 57353 ; GWL = 1.4 m
Observed Ejecta Severity = Moderate ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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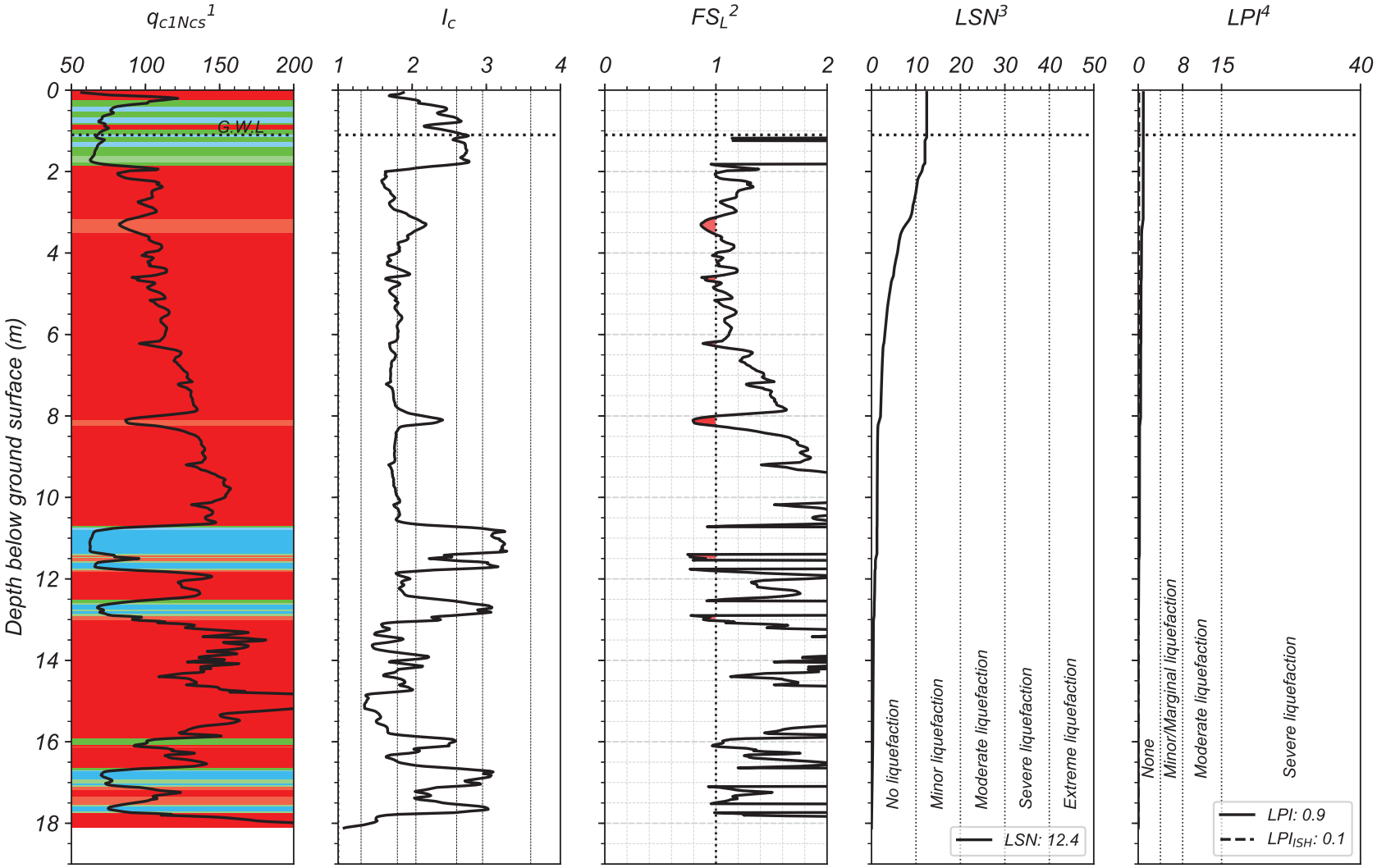
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 38 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.20 g
Site = Cresselly ; CPT# = 57353 ; GWL = 1.1 m
Observed Ejecta Severity = Minor ; Site Condition = Near Building

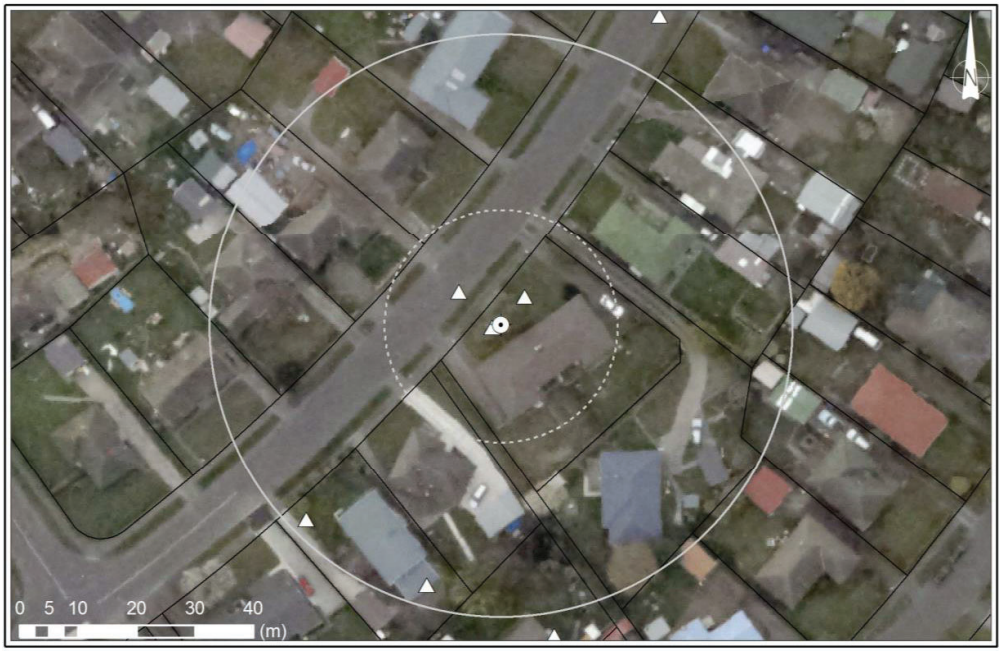


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

EUREKA

Lat: -43.509273°; Long: 172.706500°



Case #39: Eureka-DAR (taken on 5/SEP/2010) - NONE



Case #40: Eureka-CHC (taken on 24/FEB/2011) - MODERATE

EUREKA

Lat: -43.509273°; Long: 172.706500°



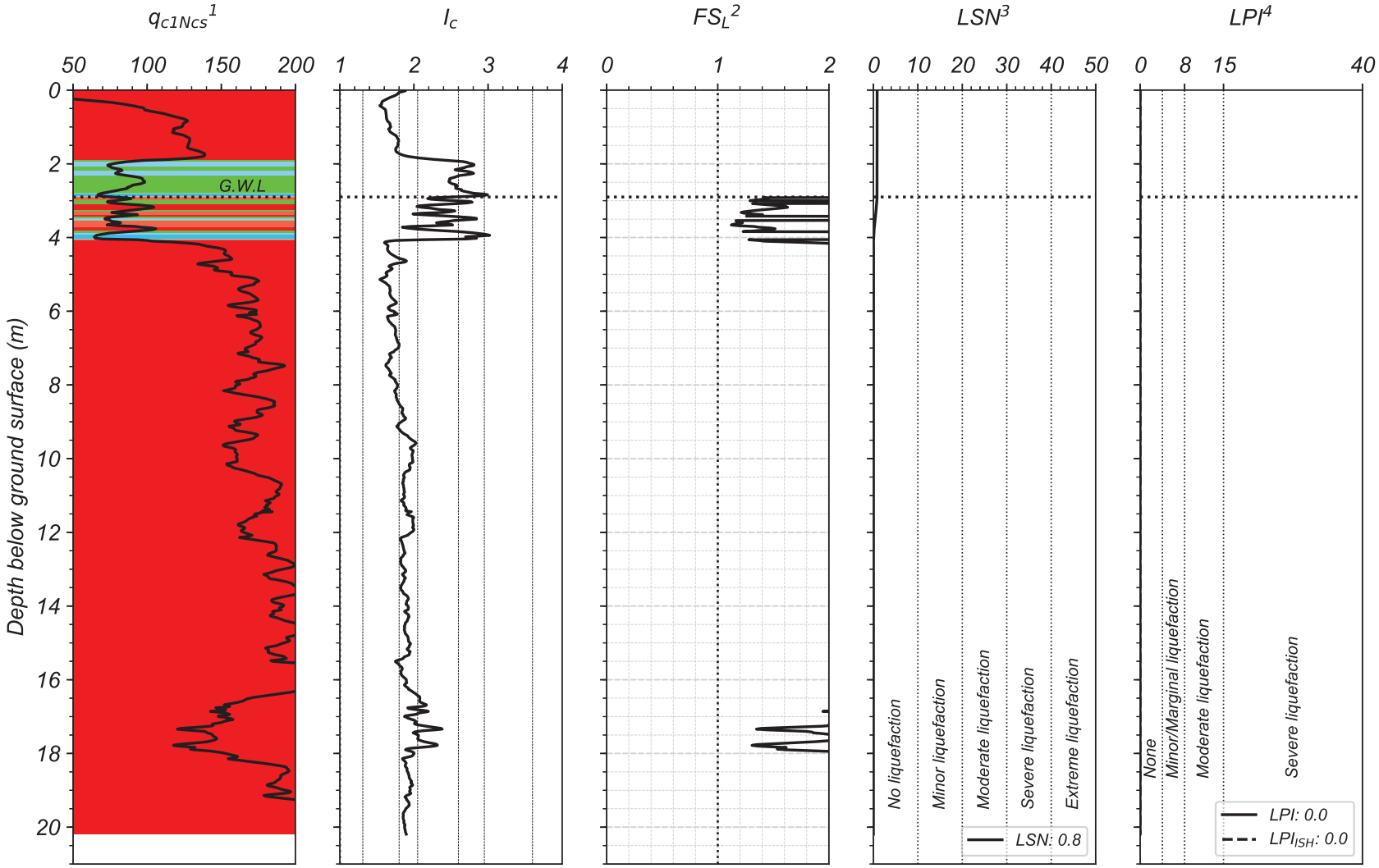
Case #41: Eureka-JUN (taken on 15/JUN/2011) - NONE



Case #42: Eureka-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 39 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.18 g
Site = Eureka ; CPT# = 57349 ; GWL = 2.9 m
Observed Ejecta Severity = None ; Site Condition = Near Building

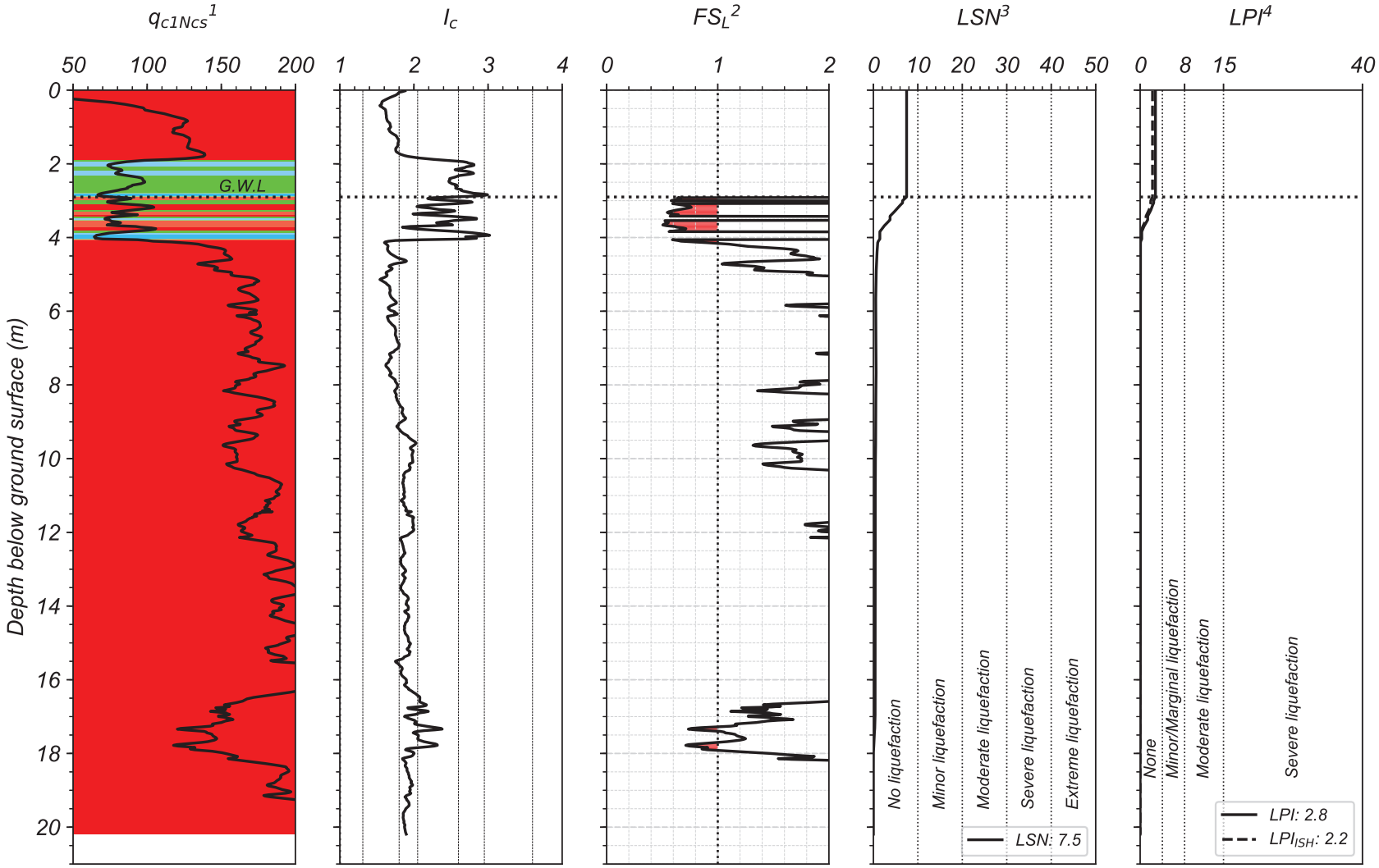


[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 40 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.43 g
Site = Eureka ; CPT# = 57349 ; GWL = 2.9 m
Observed Ejecta Severity = Moderate ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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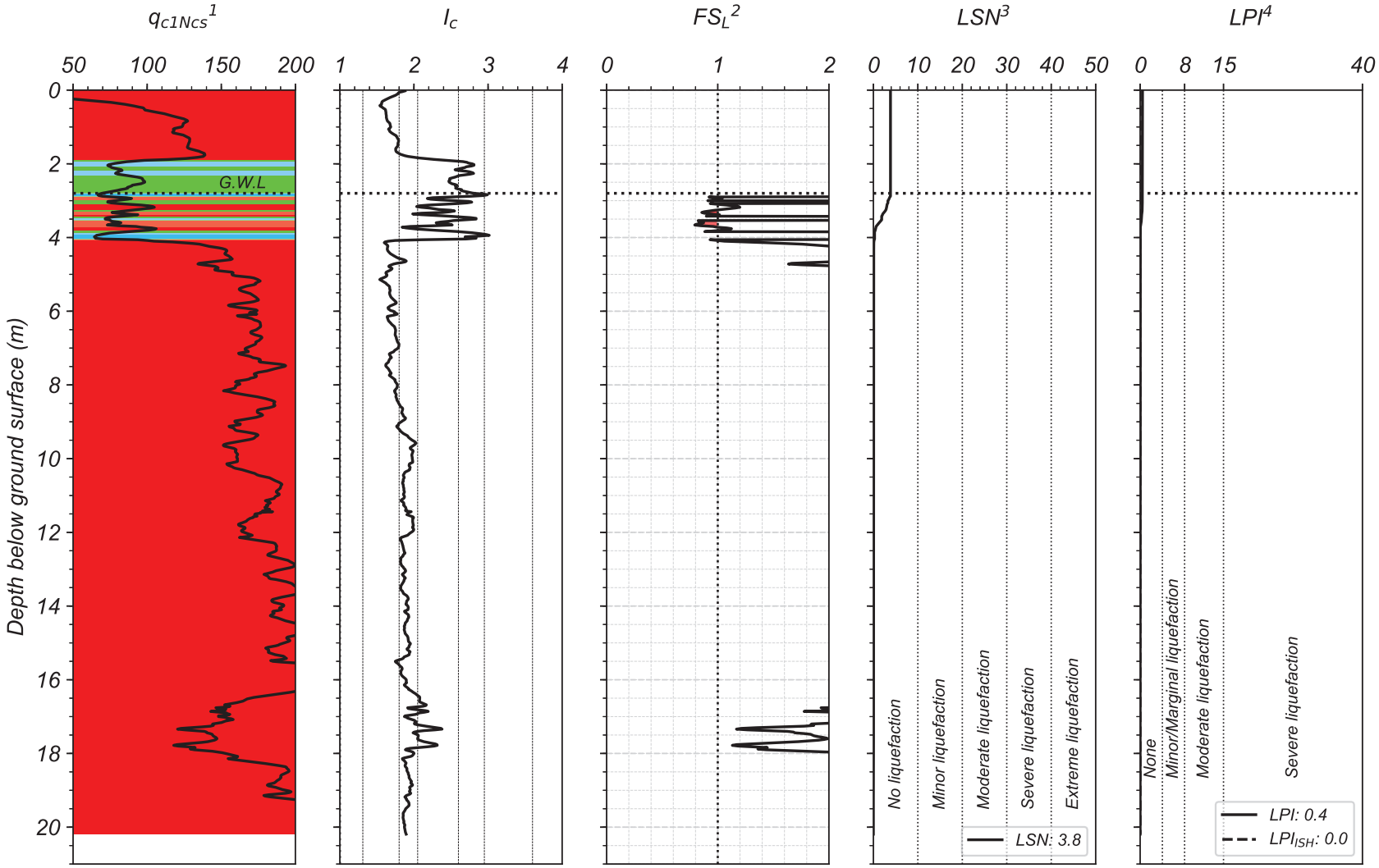
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 41 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.27 g
Site = Eureka ; CPT# = 57349 ; GWL = 2.8 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
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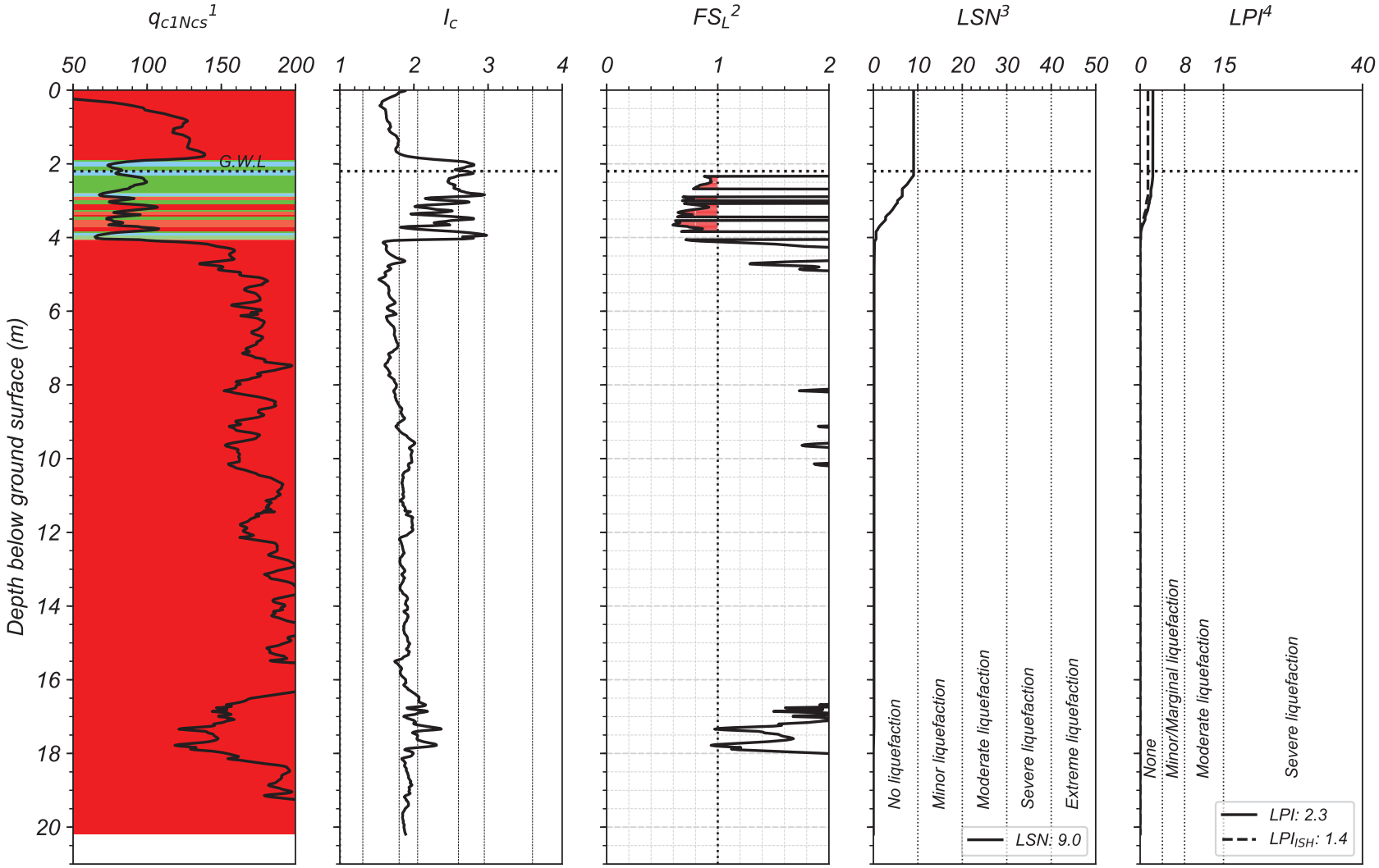
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 42 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.33 g
Site = Eureka ; CPT# = 57349 ; GWL = 2.2 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
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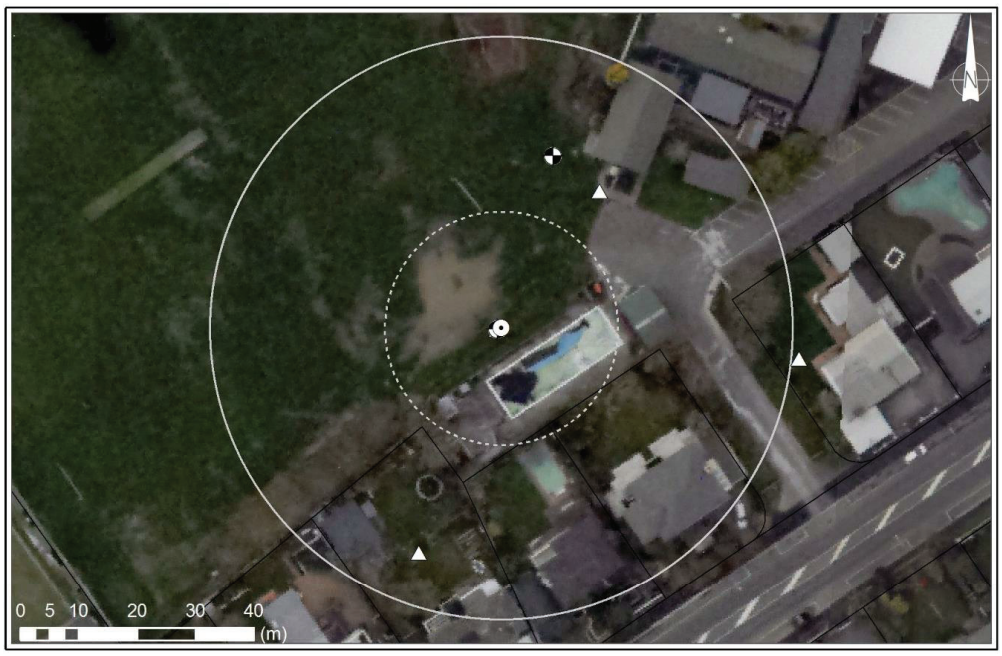
HEATON

Lat: -43.510572°; Long: 172.614886°



Case #43: Heaton-DAR (taken on 5/SEP/2010) - SEVERE



Case #44: Heaton-CHC (taken on 24/FEB/2011) - SEVERE

HEATON

Lat: -43.510572°; Long: 172.614886°



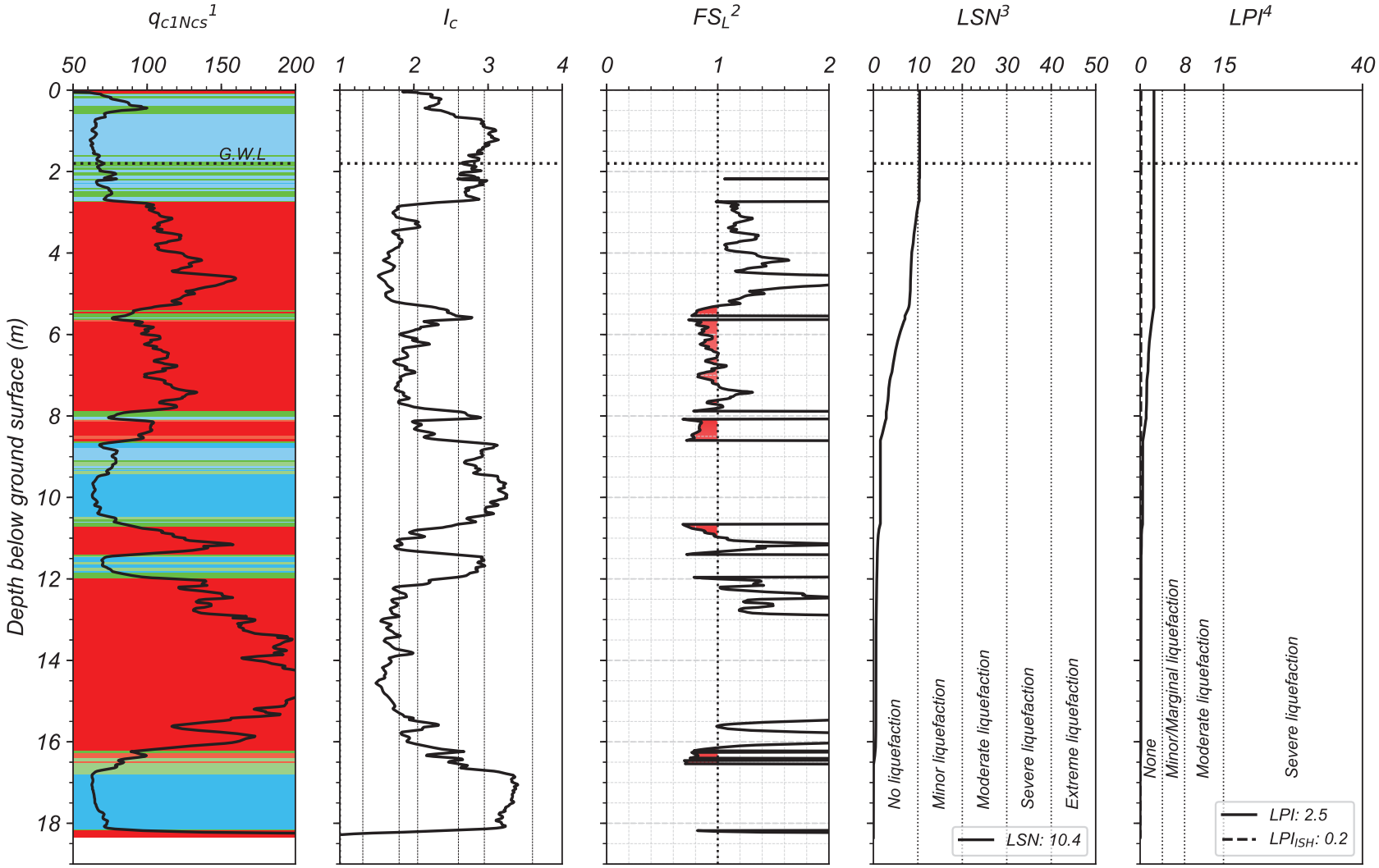
Case #45: Heaton-JUN (taken on 15/JUN/2011) - SEVERE



Case #46: Heaton-DEC (taken on 24/DEC/2011) - MINOR

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 43 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.21 g
Site = Heaton ; CPT# = 57359 ; GWL = 1.8 m
Observed Ejecta Severity = Severe ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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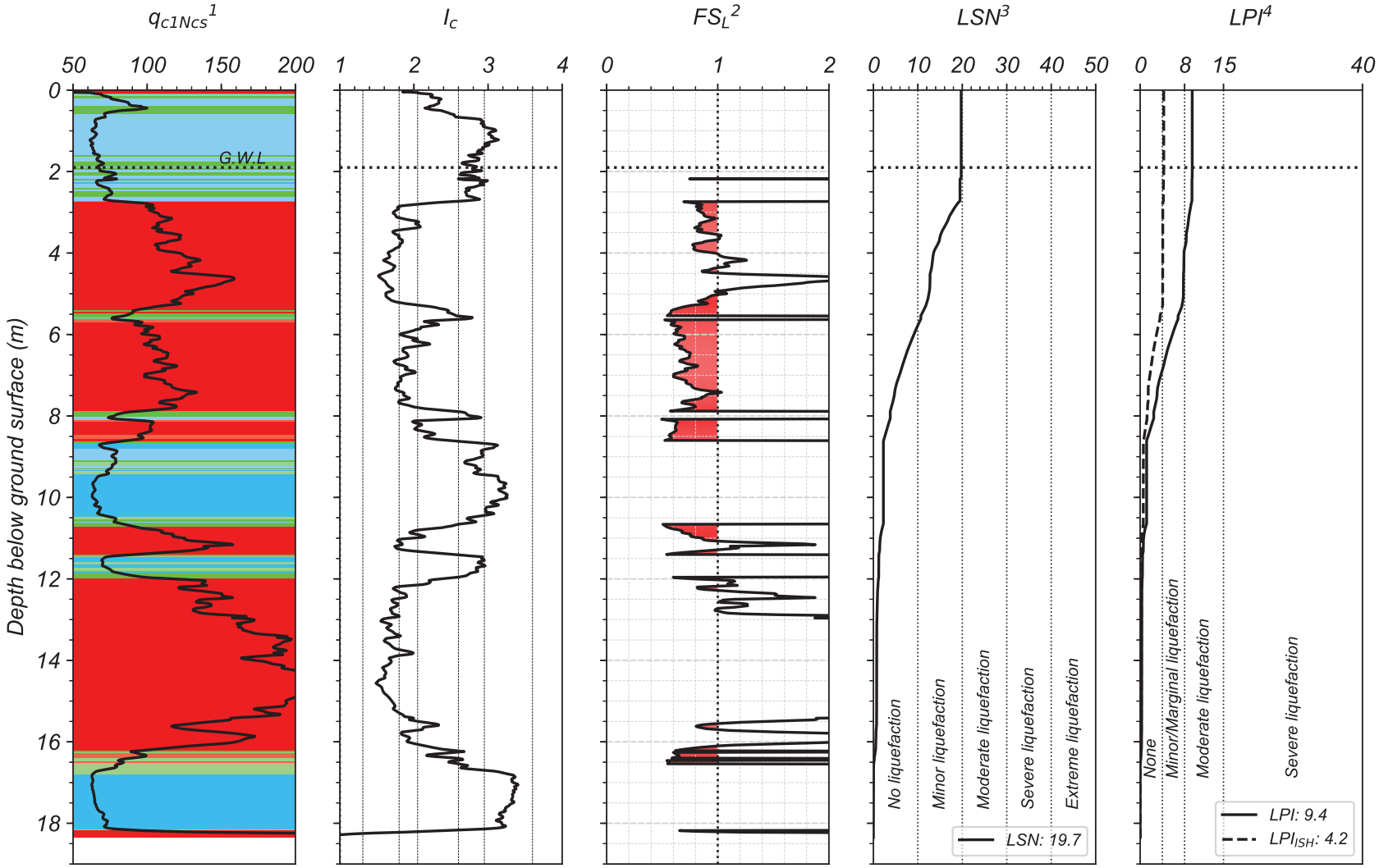
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 44 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.33 g
Site = Heaton ; CPT# = 57359 ; GWL = 1.9 m
Observed Ejecta Severity = Severe ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
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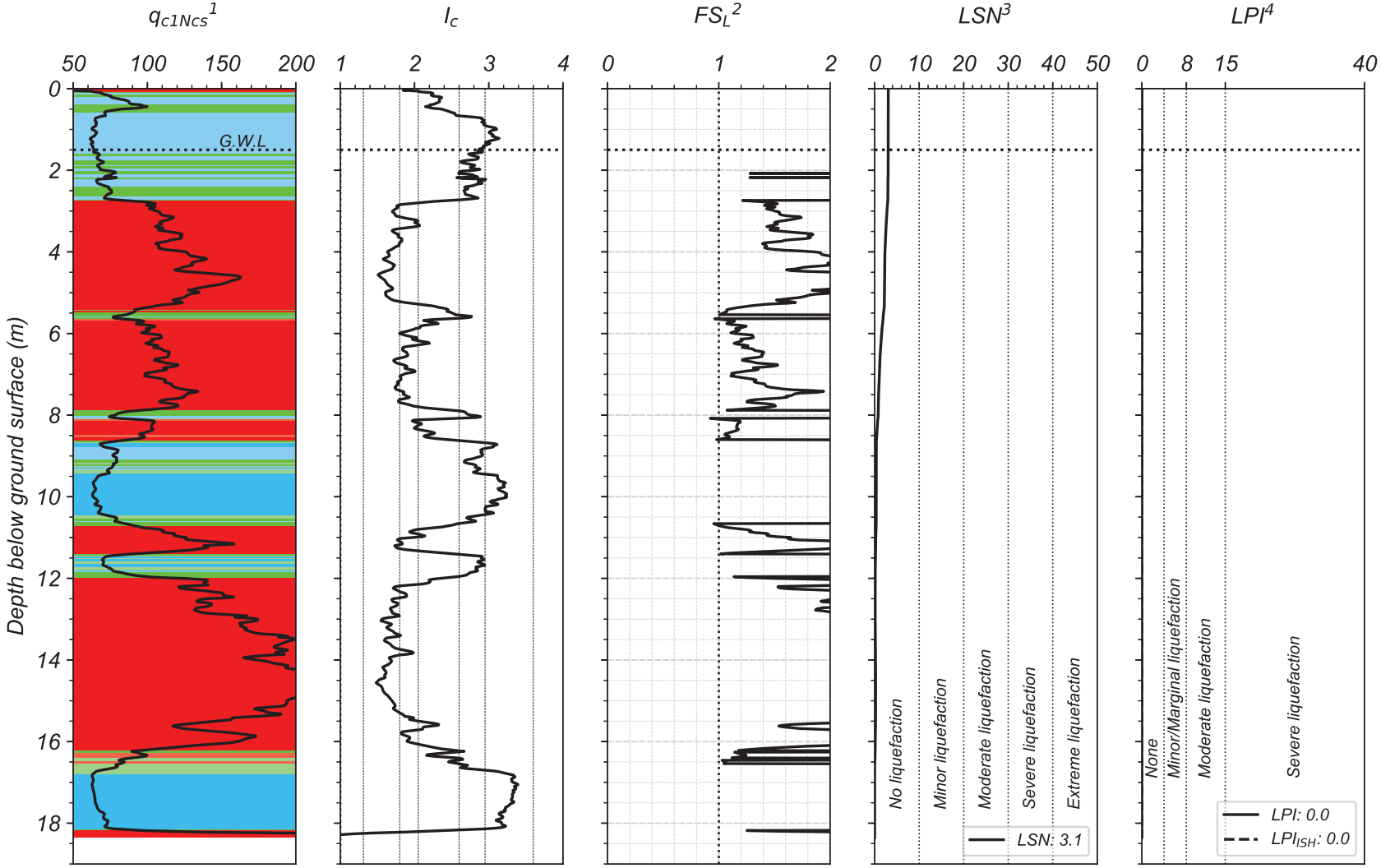
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 45 ; Event = 13-Jun ; M_W = 6.2 ; Surface PGA_{max} = 0.17 g
Site = Heaton ; CPT# = 57359 ; GWL = 1.5 m
Observed Ejecta Severity = Severe ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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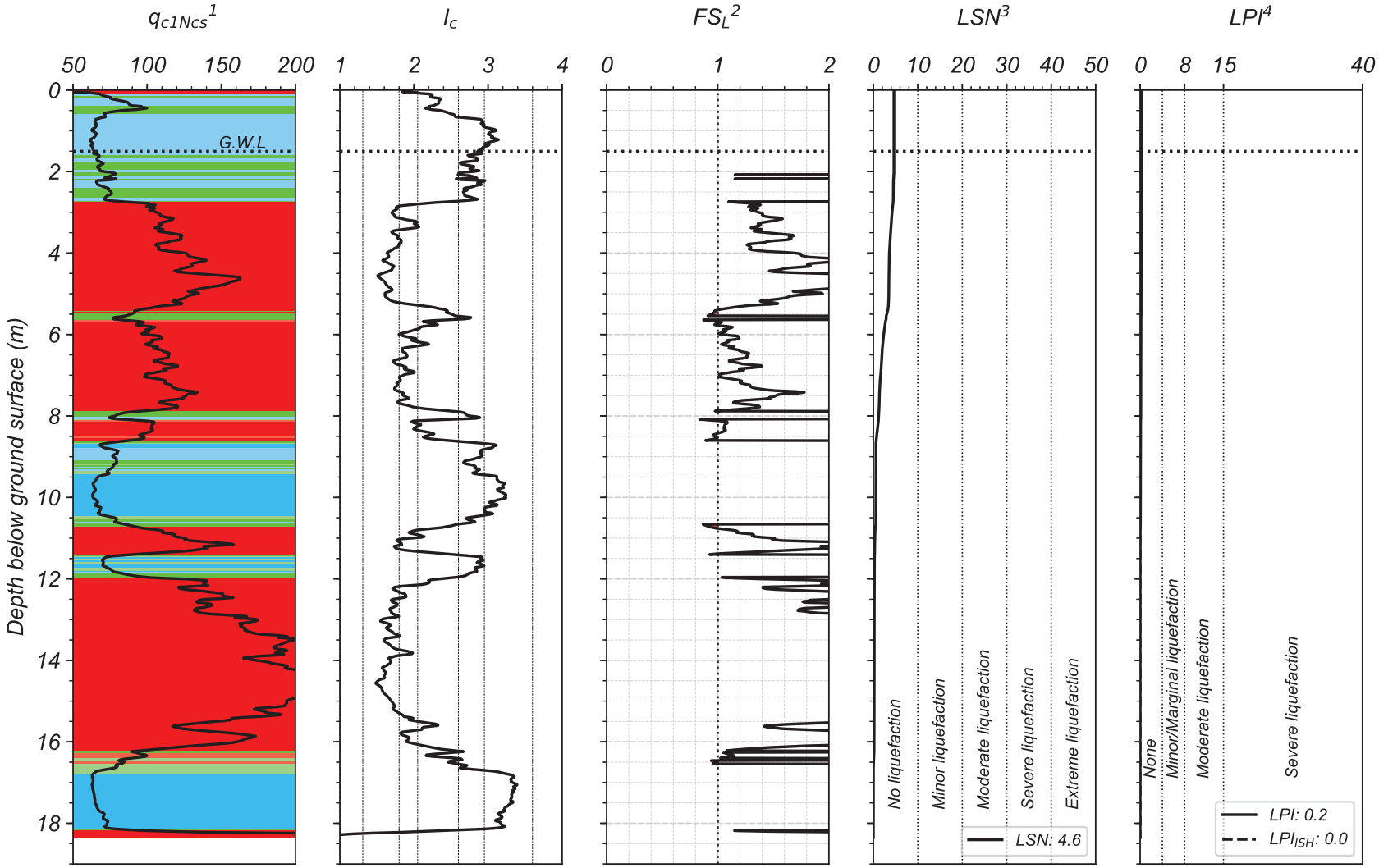
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 46 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.19 g
Site = Heaton ; CPT# = 57359 ; GWL = 1.5 m
Observed Ejecta Severity = Minor ; Site Condition = Free-field flat

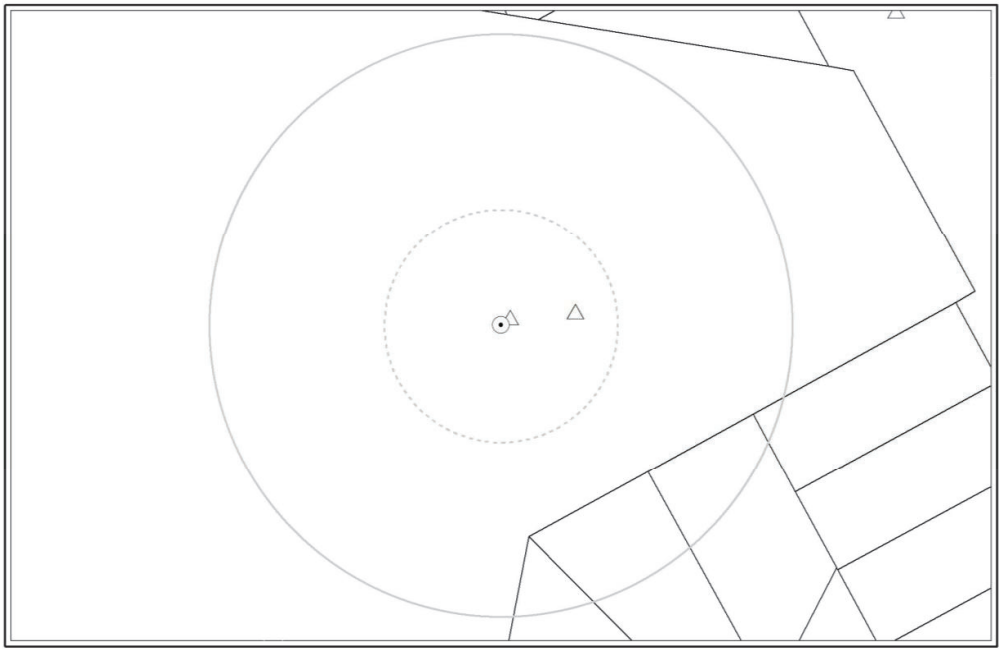


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

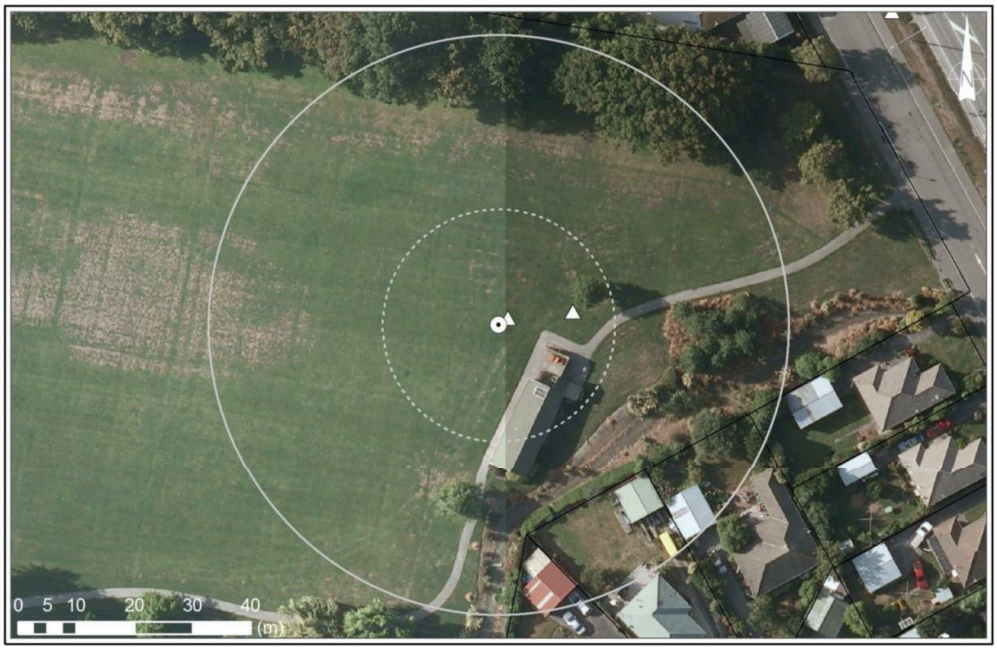
By: DH
UC Berkeley, 2020

HILLSBOROUGH

Lat: -43.560647°; Long: 172.673104°



Case #47: Hillsborough-DAR (Aerial photograph is not available) - NONE



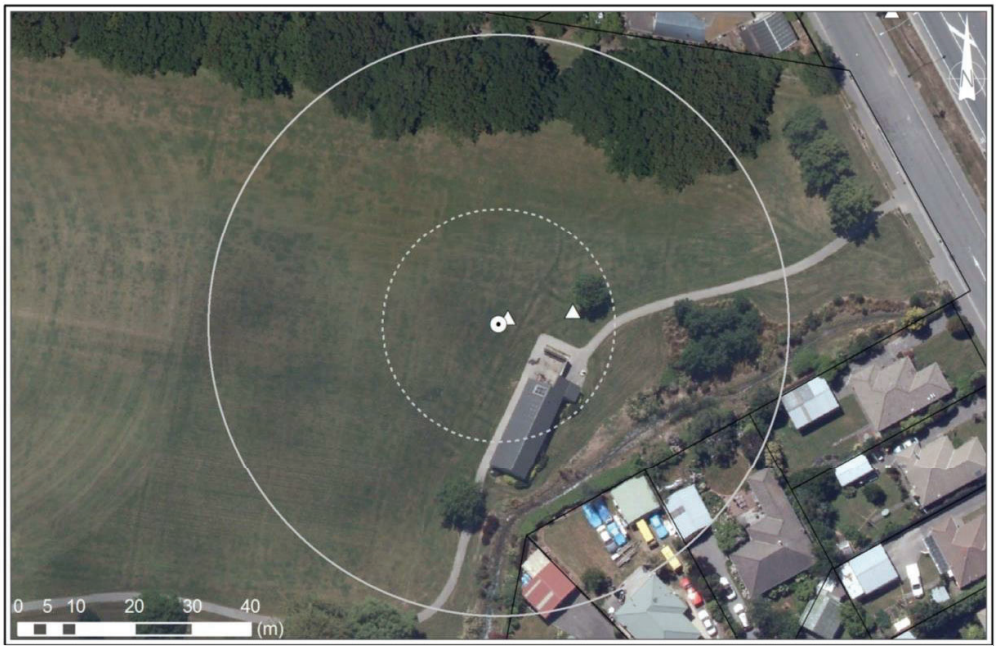
Case #48: Hillsborough-CHC (taken on 24/FEB/2011) - NONE

HILLSBOROUGH

Lat: -43.560647°; Long: 172.673104°



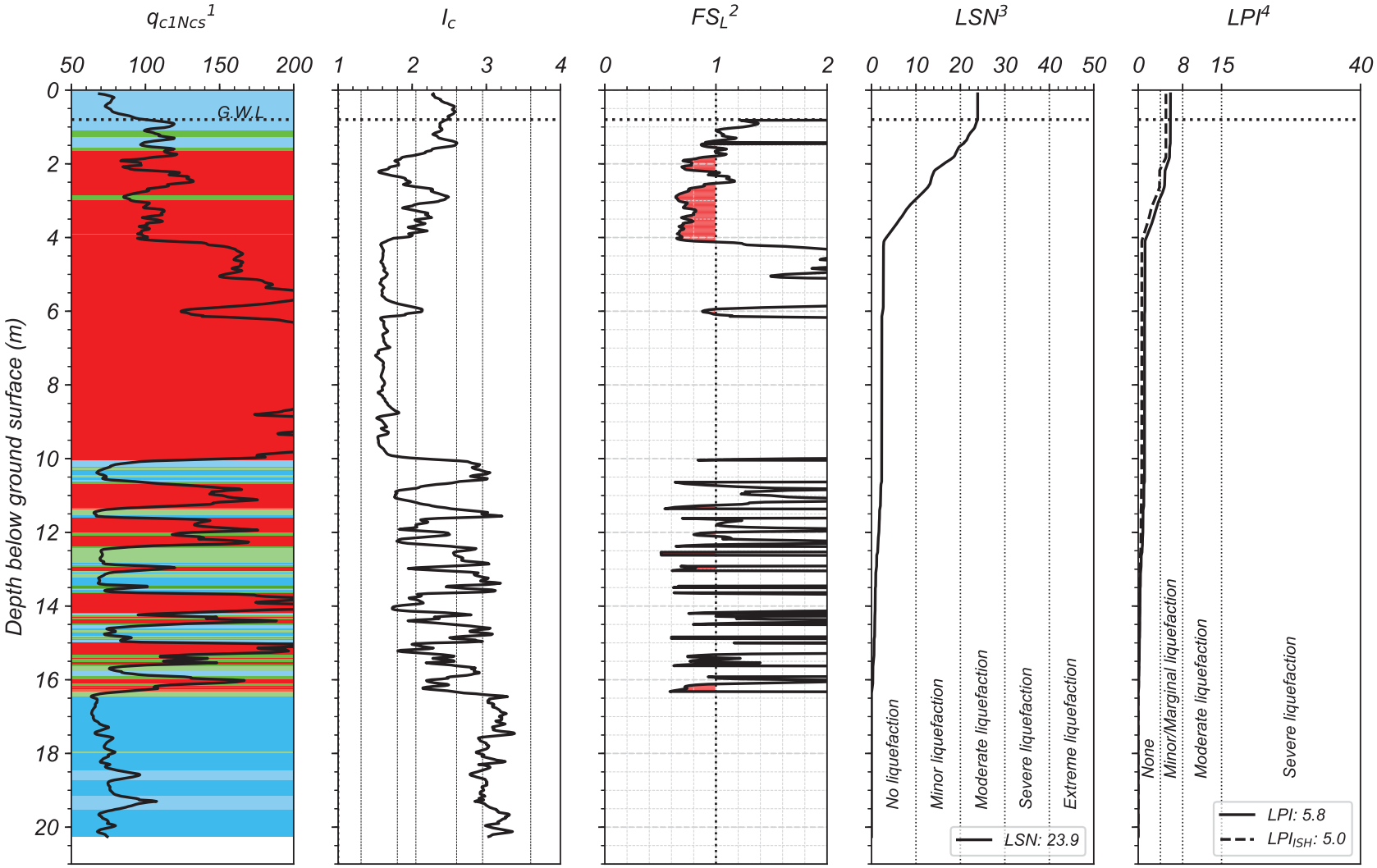
Case #49: Hillsborough-JUN (taken on 15/JUN/2011) - NONE



Case #50: Hillsborough-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 47 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.25 g
Site = Hillsborough ; CPT# = 57365 ; GWL = 0.8 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

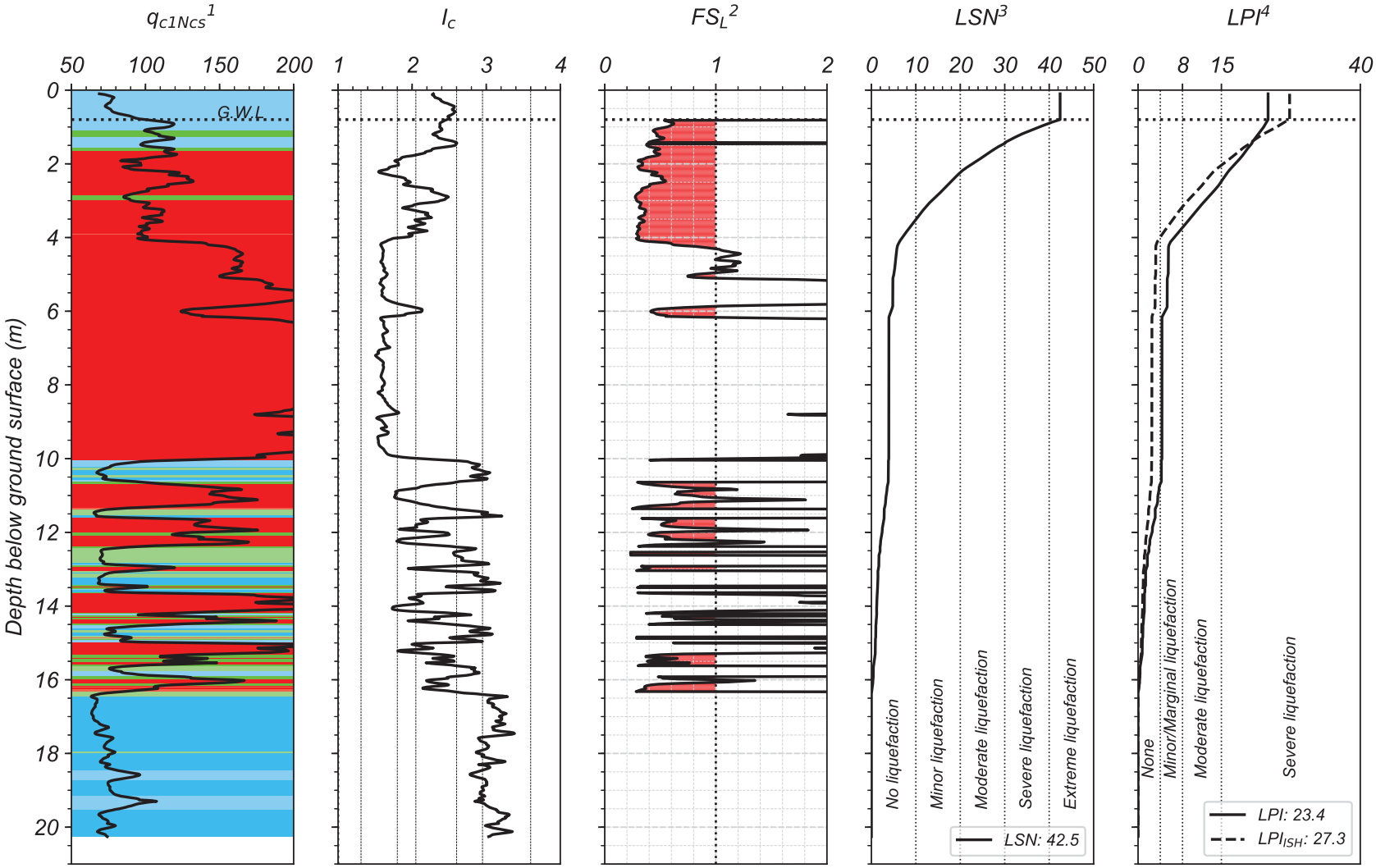


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 48 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.63 g
Site = Hillsborough ; CPT# = 57365 ; GWL = 0.8 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

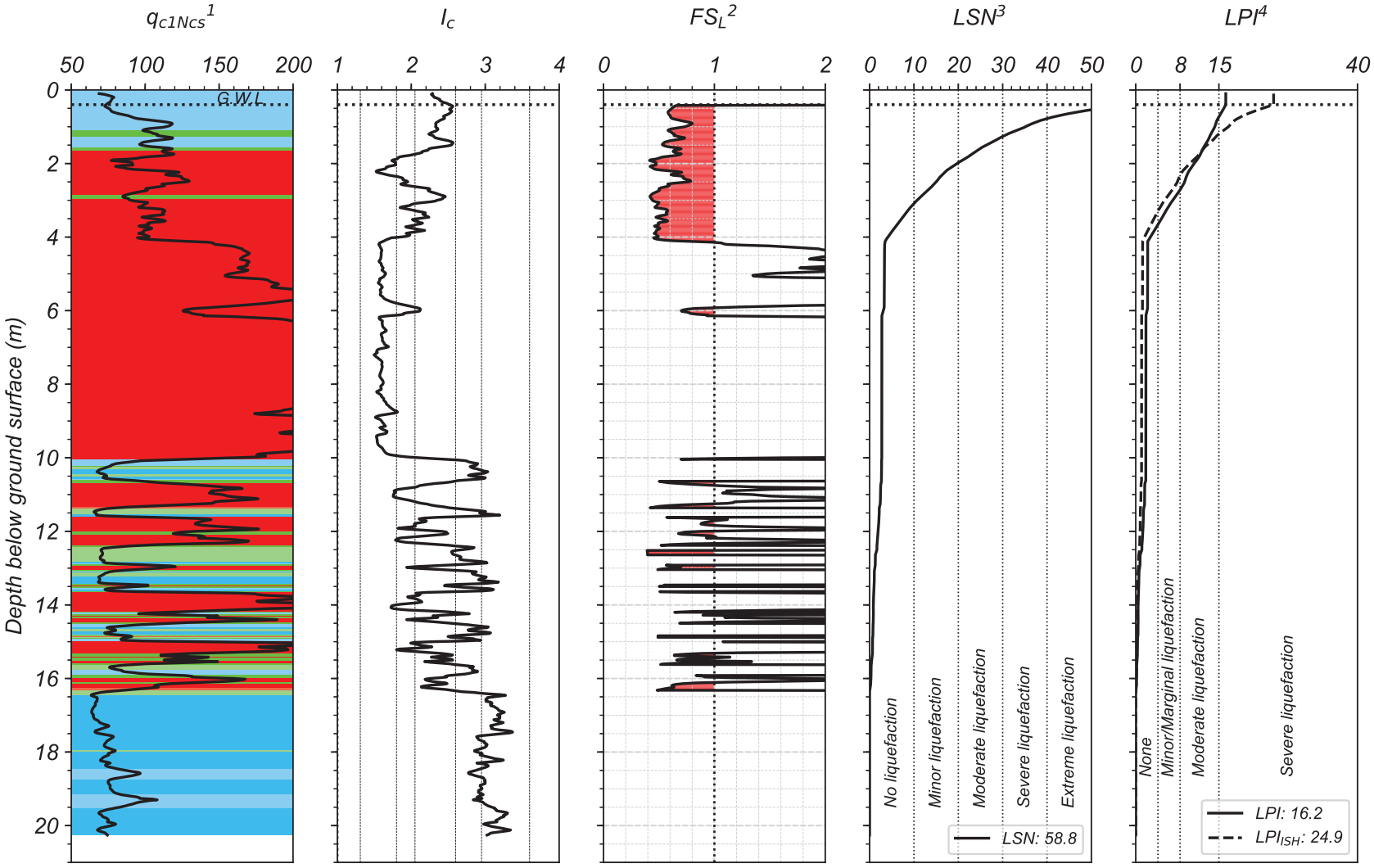


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 49 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.36 g
Site = Hillsborough ; CPT# = 57365 ; GWL = 0.4 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

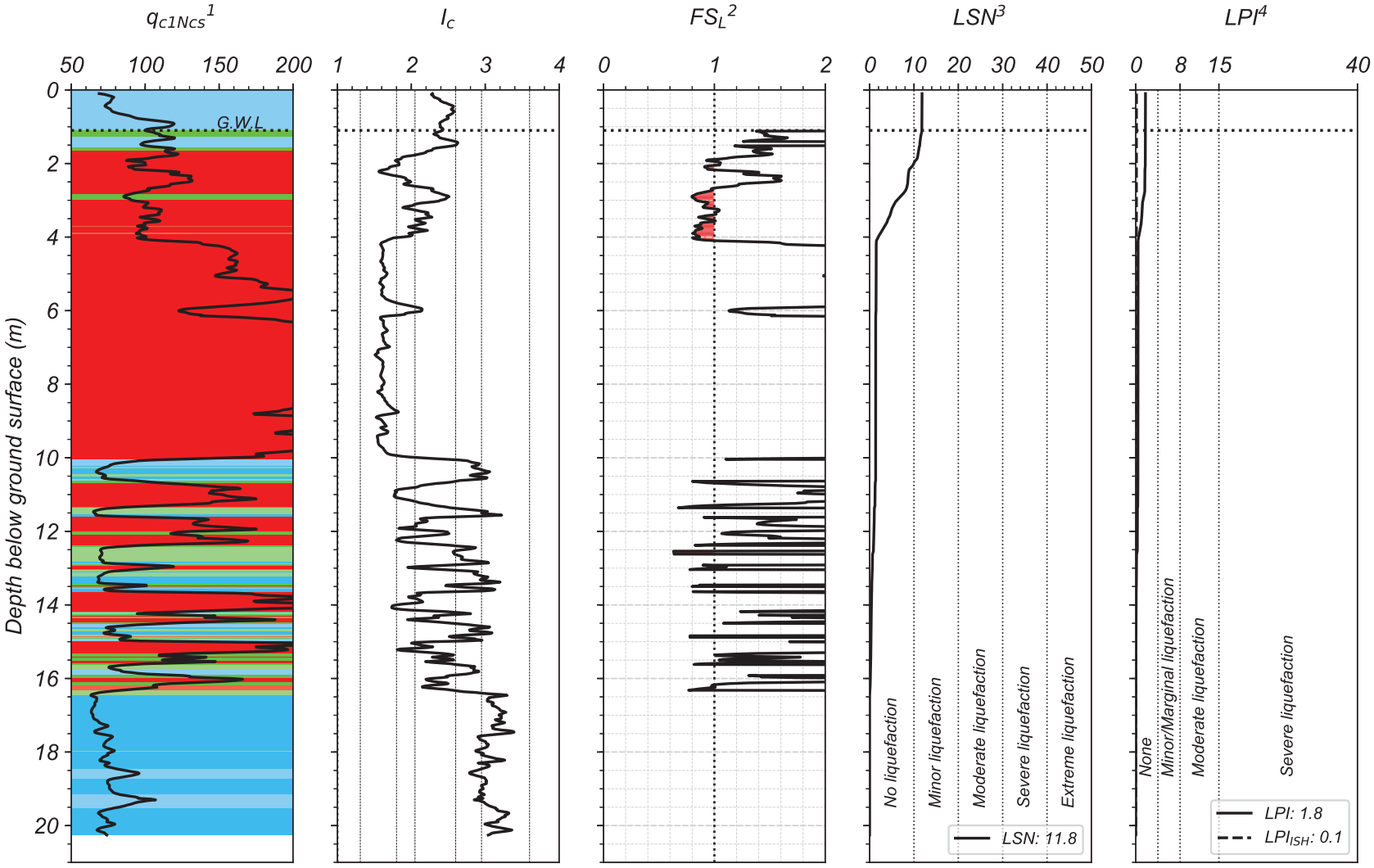


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 50 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.24 g
Site = Hillsborough ; CPT# = 57365 ; GWL = 1.1 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

By: DH
UC Berkeley, 2020

NIVEN

Lat: -43.509255°; Long: 172.691142°



Case #51: Niven-DAR (taken on 5/SEP/2010) - NONE



Case #52: Niven-CHC (taken on 24/FEB/2011) - MINOR

NIVEN

Lat: -43.509255°; Long: 172.691142°



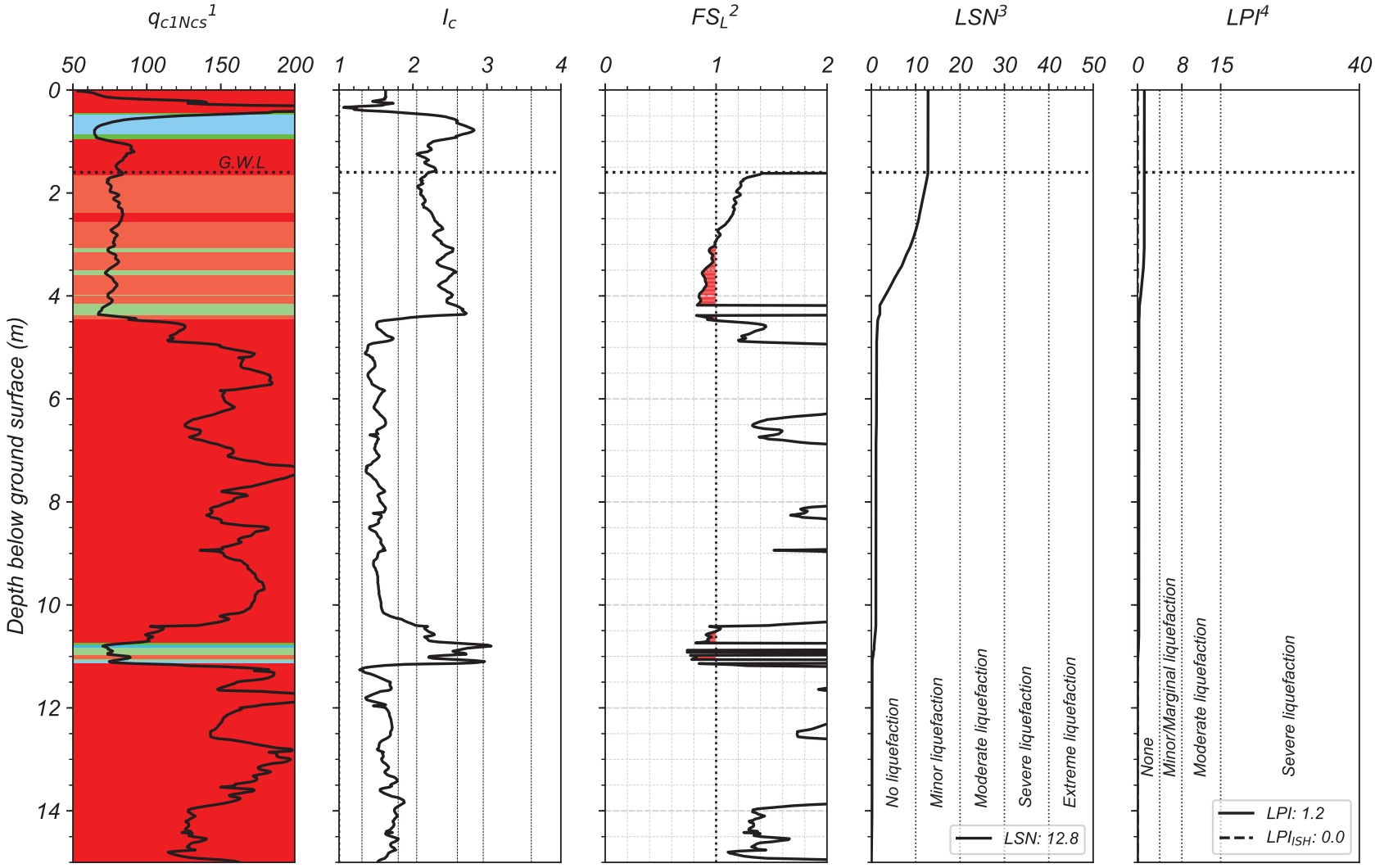
Case #53: Niven-JUN (taken on 15/JUN/2011) - MINOR



Case #54: Niven-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 51 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.18 g
Site = Niven ; CPT# = 38758 ; GWL = 1.6 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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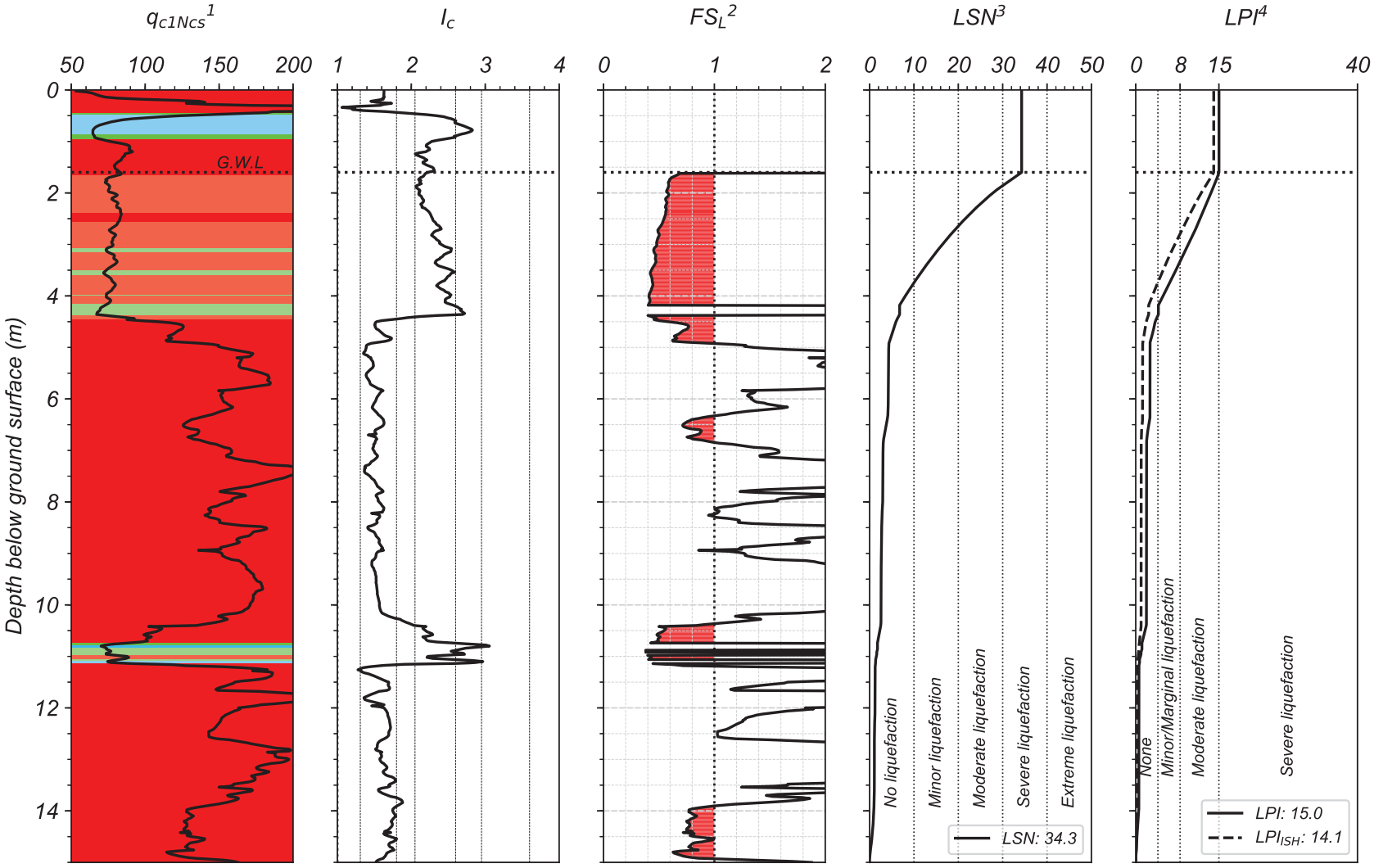
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 52 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.40 g
Site = Niven ; CPT# = 38758 ; GWL = 1.6 m
Observed Ejecta Severity = Minor ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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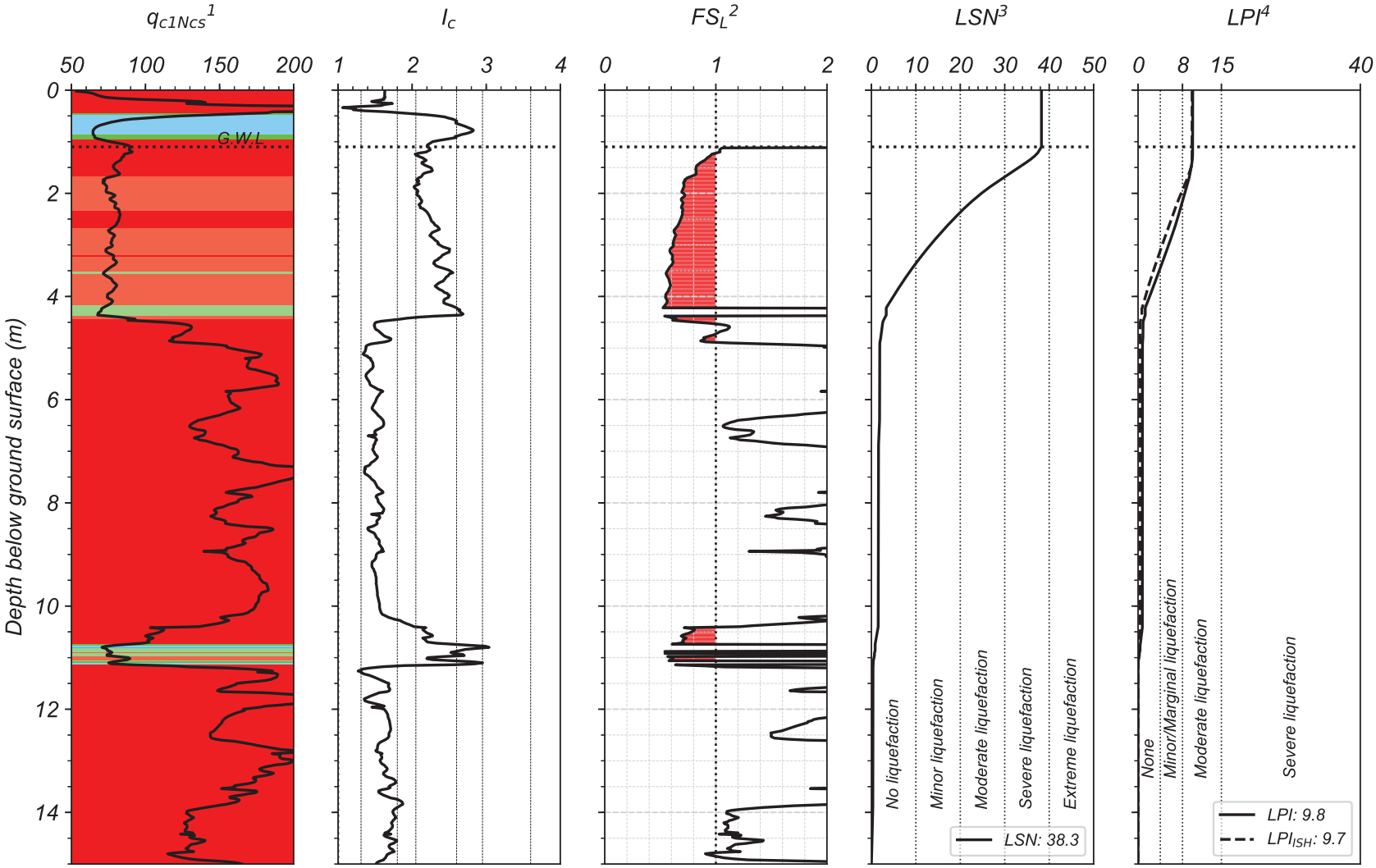
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 53 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.27 g
Site = Niven ; CPT# = 38758 ; GWL = 1.1 m
Observed Ejecta Severity = Minor ; Site Condition = Near Building

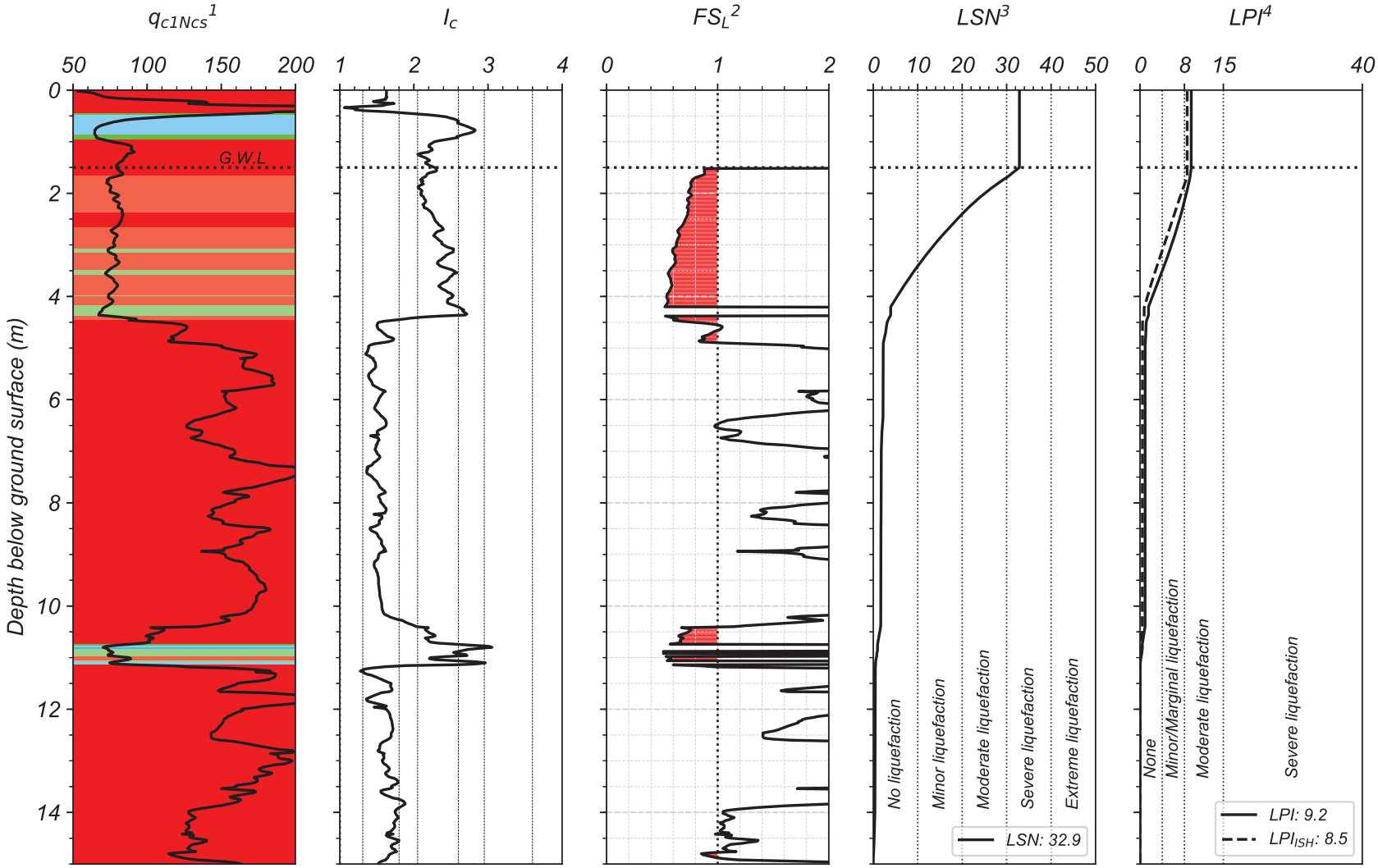


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 54 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.30 g
Site = Niven ; CPT# = 38758 ; GWL = 1.5 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

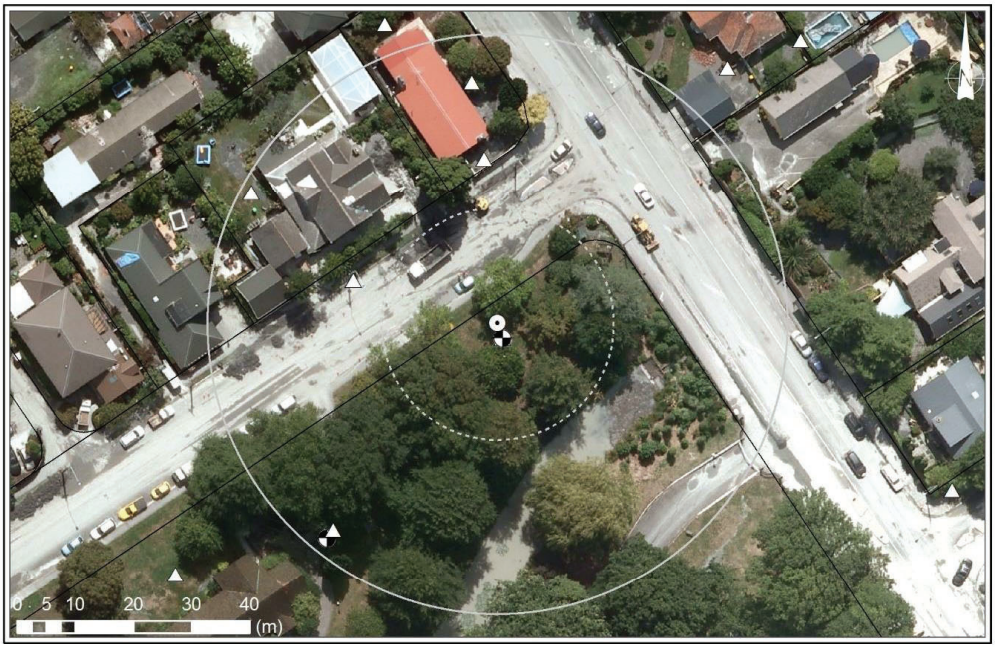
By: DH
UC Berkeley, 2020

NORMANS

Lat: -43.506100°; Long: 172.615699°



Case #55: Normans-DAR (taken on 5/SEP/2010) - NONE



Case #56: Normans-CHC (taken on 24/FEB/2011) - MODERATE

NORMANS

Lat: -43.506100°; Long: 172.615699°



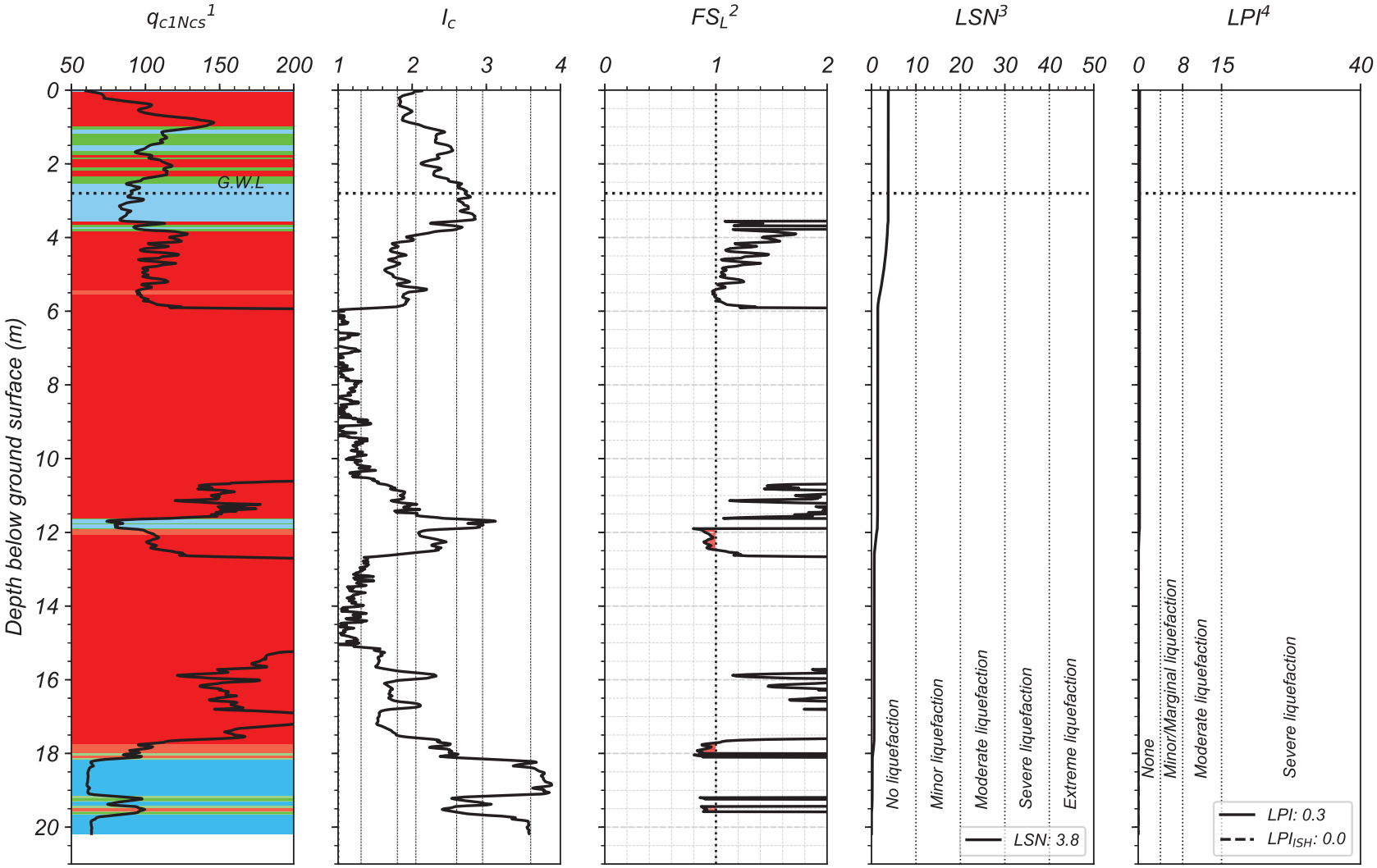
Case #57: Normans-JUN (taken on 15/JUN/2011) - MODERATE



Case #58: Normans-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 55 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.21 g
Site = Normans ; CPT# = 57363 ; GWL = 2.8 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

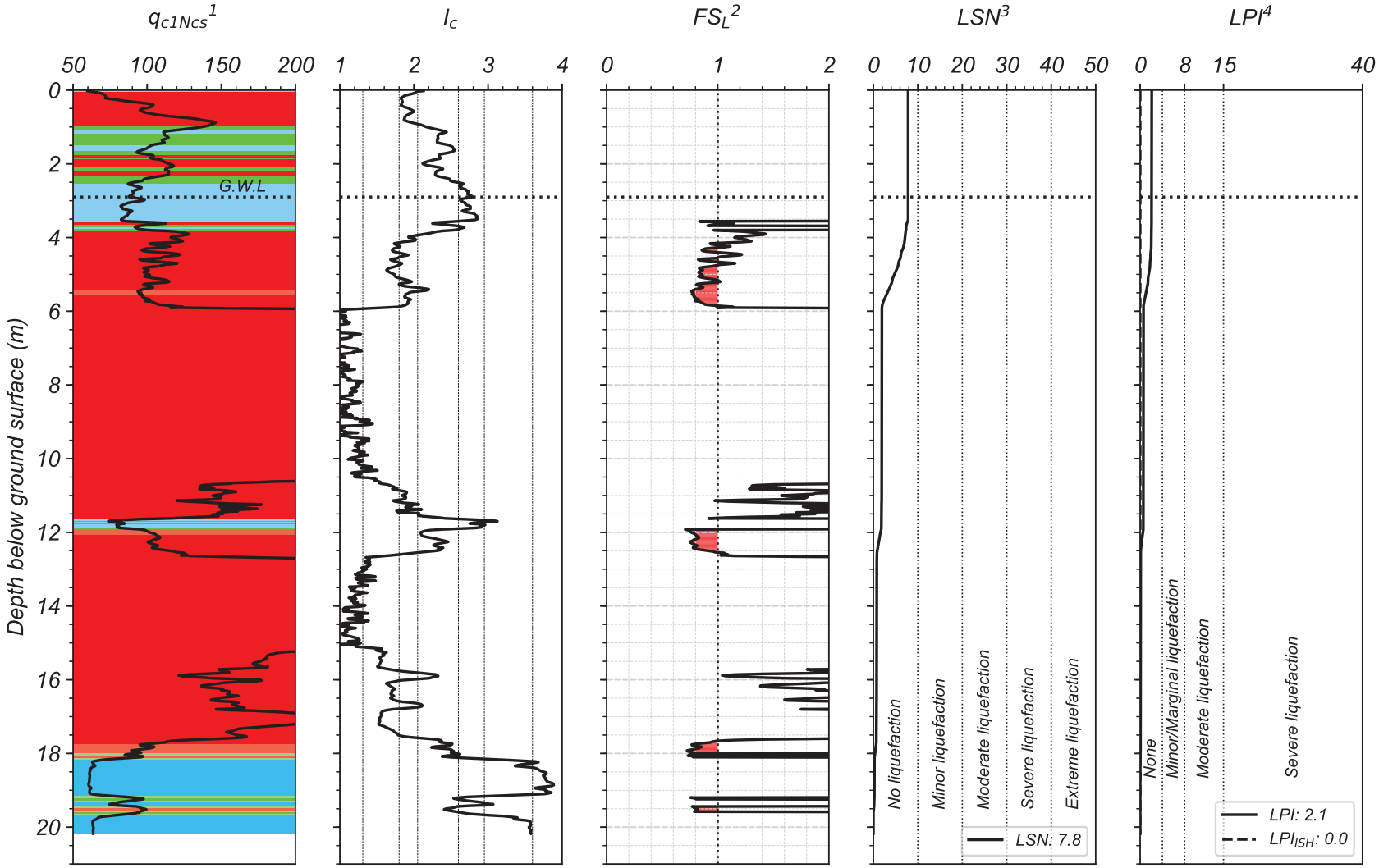


[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 56 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.30 g
Site = Normans ; CPT# = 57363 ; GWL = 2.9 m
Observed Ejecta Severity = Moderate ; Site Condition = Free-field flat

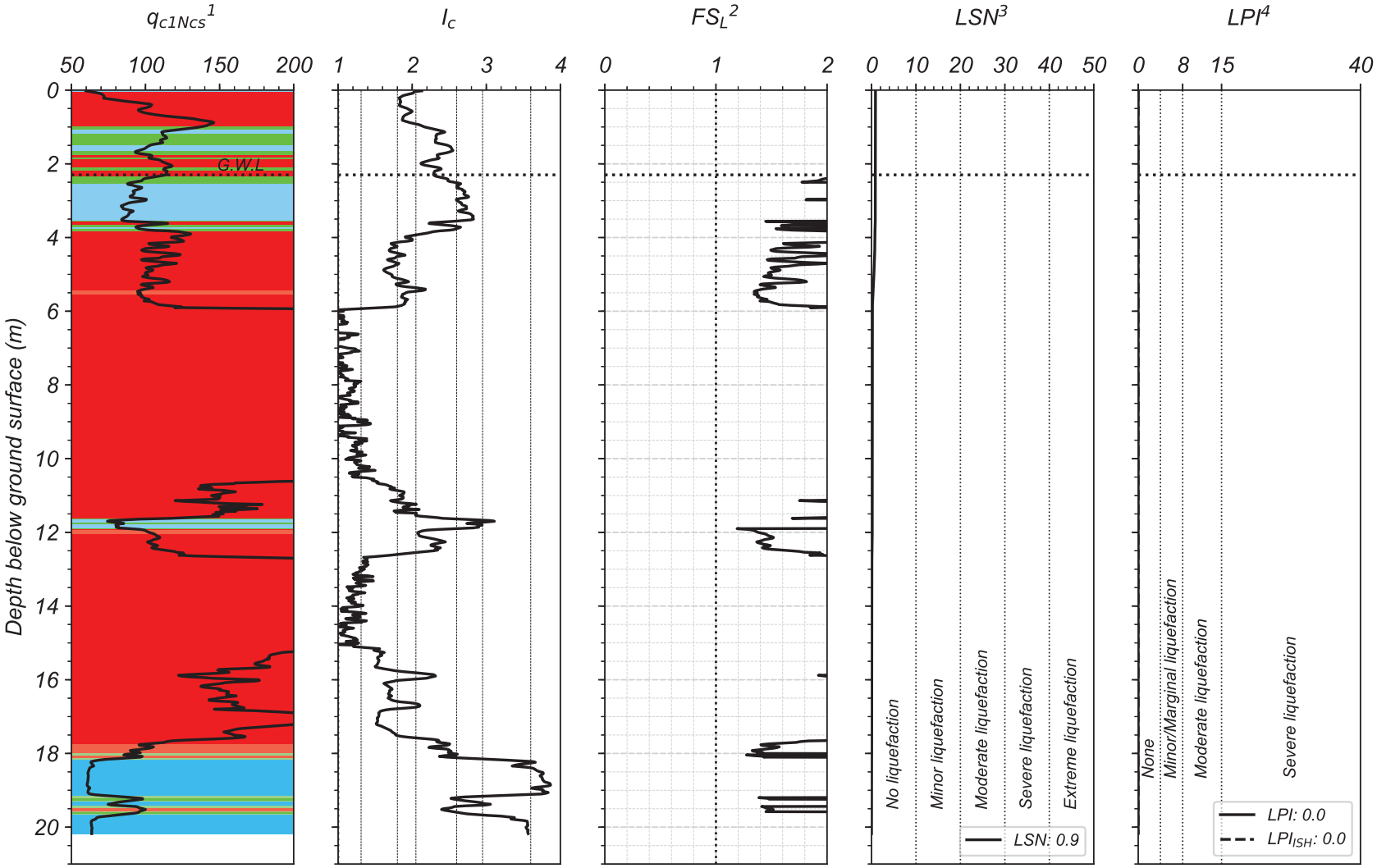


[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 57 ; Event = 13-Jun ; M_W = 6.2 ; Surface PGA_{max} = 0.16 g
Site = Normans ; CPT# = 57363 ; GWL = 2.3 m
Observed Ejecta Severity = Moderate ; Site Condition = Free-field flat

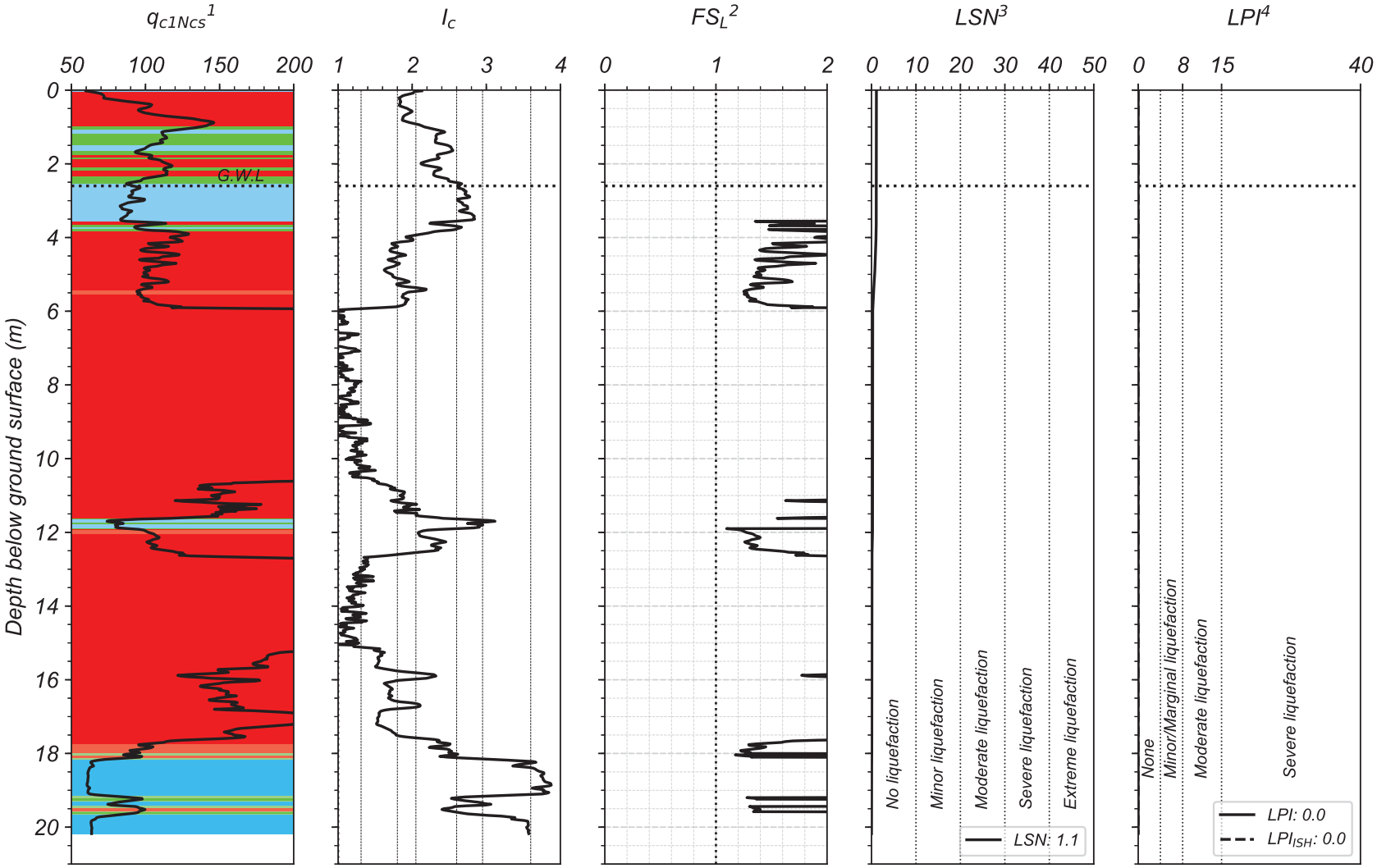


[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 58 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.18 g
Site = Normans ; CPT# = 57363 ; GWL = 2.6 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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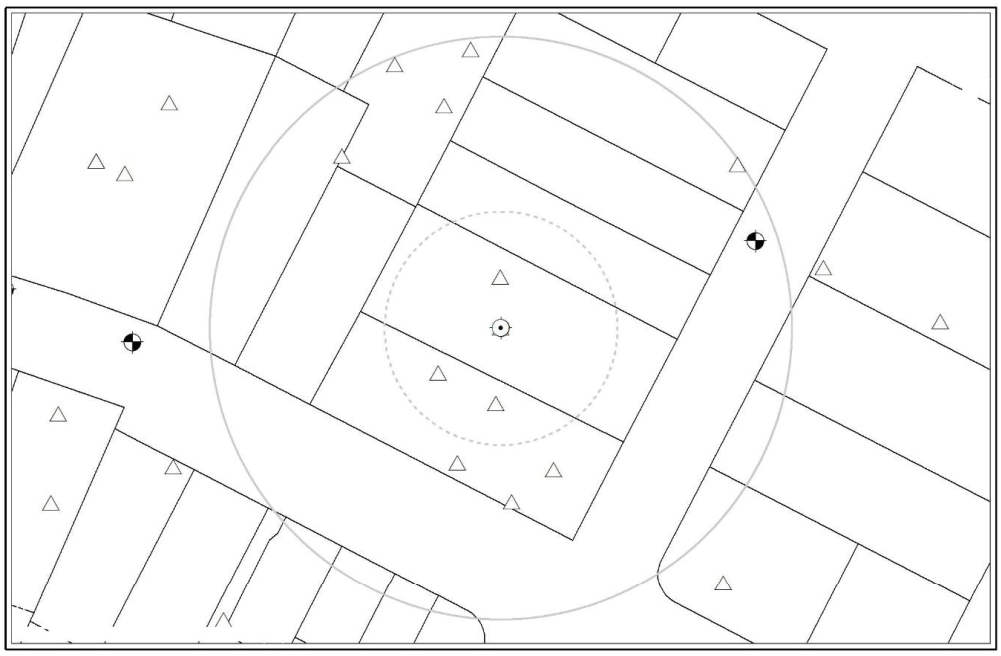
OSBORNE

Lat: -43.544643°; Long: 172.659454°



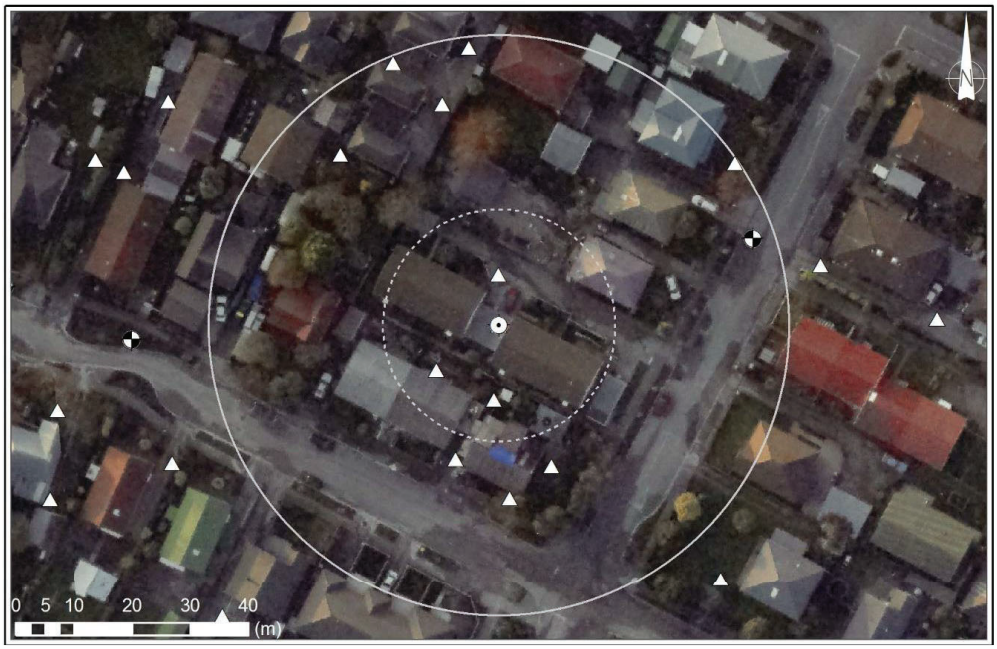
Case #59: Osborne-DAR (Aerial photograph is not available) - NONE



Case #60: Osborne-CHC (taken on 24/FEB/2011) - SEVERE

OSBORNE

Lat: -43.544643°; Long: 172.659454°



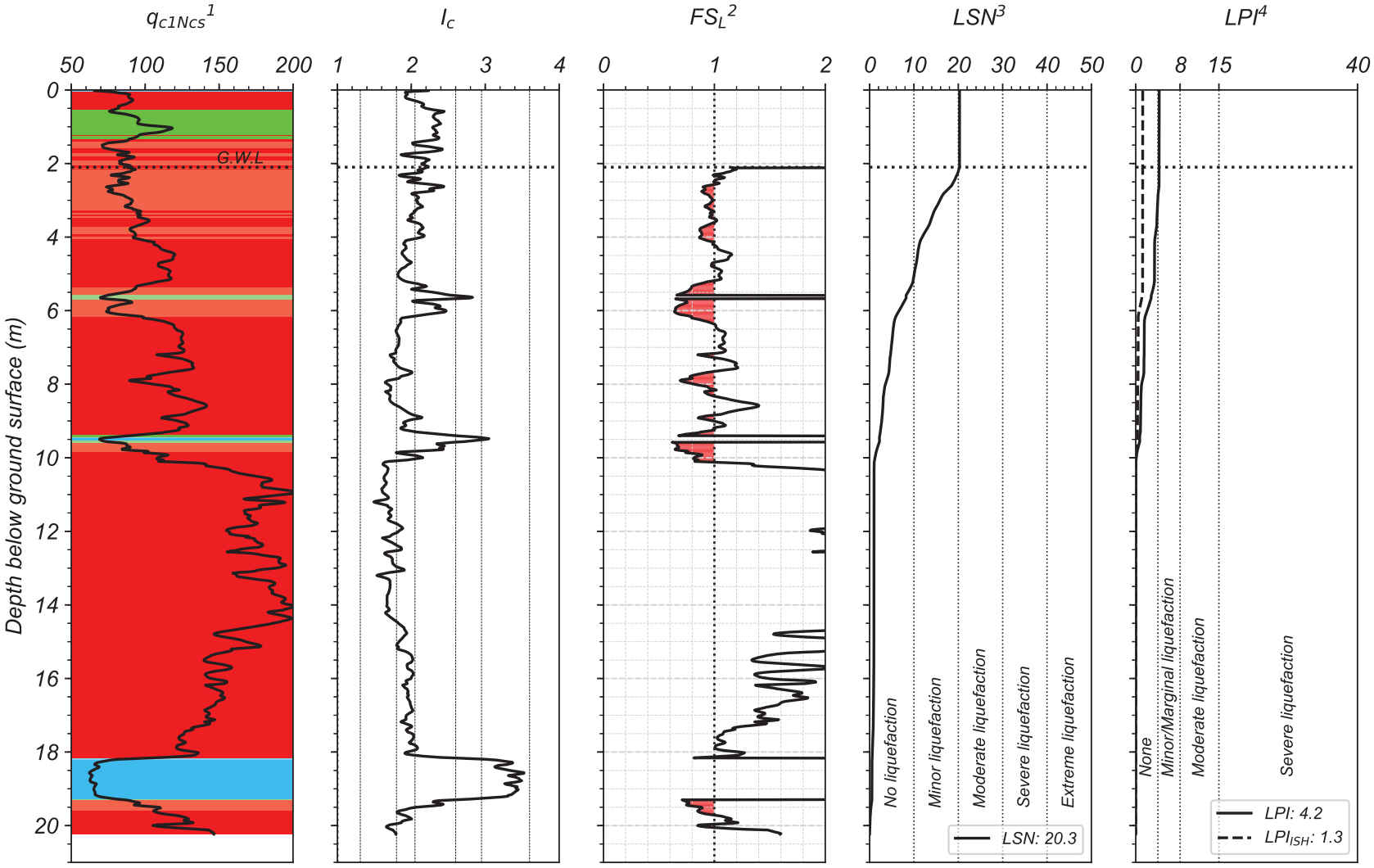
Case #61: Osborne-JUN (taken on 15/JUN/2011) - MINOR



Case #62: Osborne-DEC (taken on 24/DEC/2011) - MODERATE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 59 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.23 g
Site = Osborne ; CPT# = 57357 ; GWL = 2.1 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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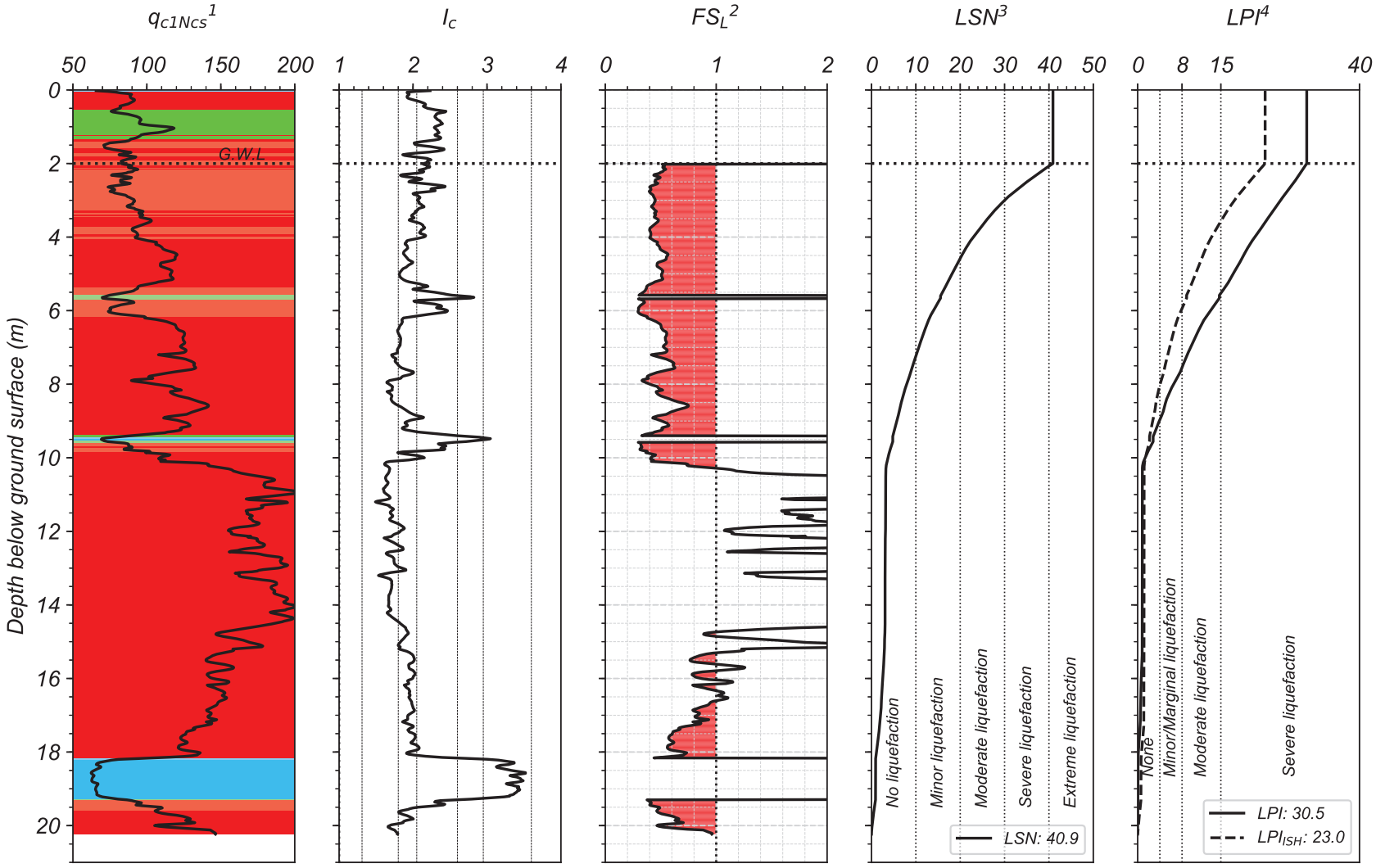
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 60 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.54 g
Site = Osborne ; CPT# = 57357 ; GWL = 2.0 m
Observed Ejecta Severity = Severe ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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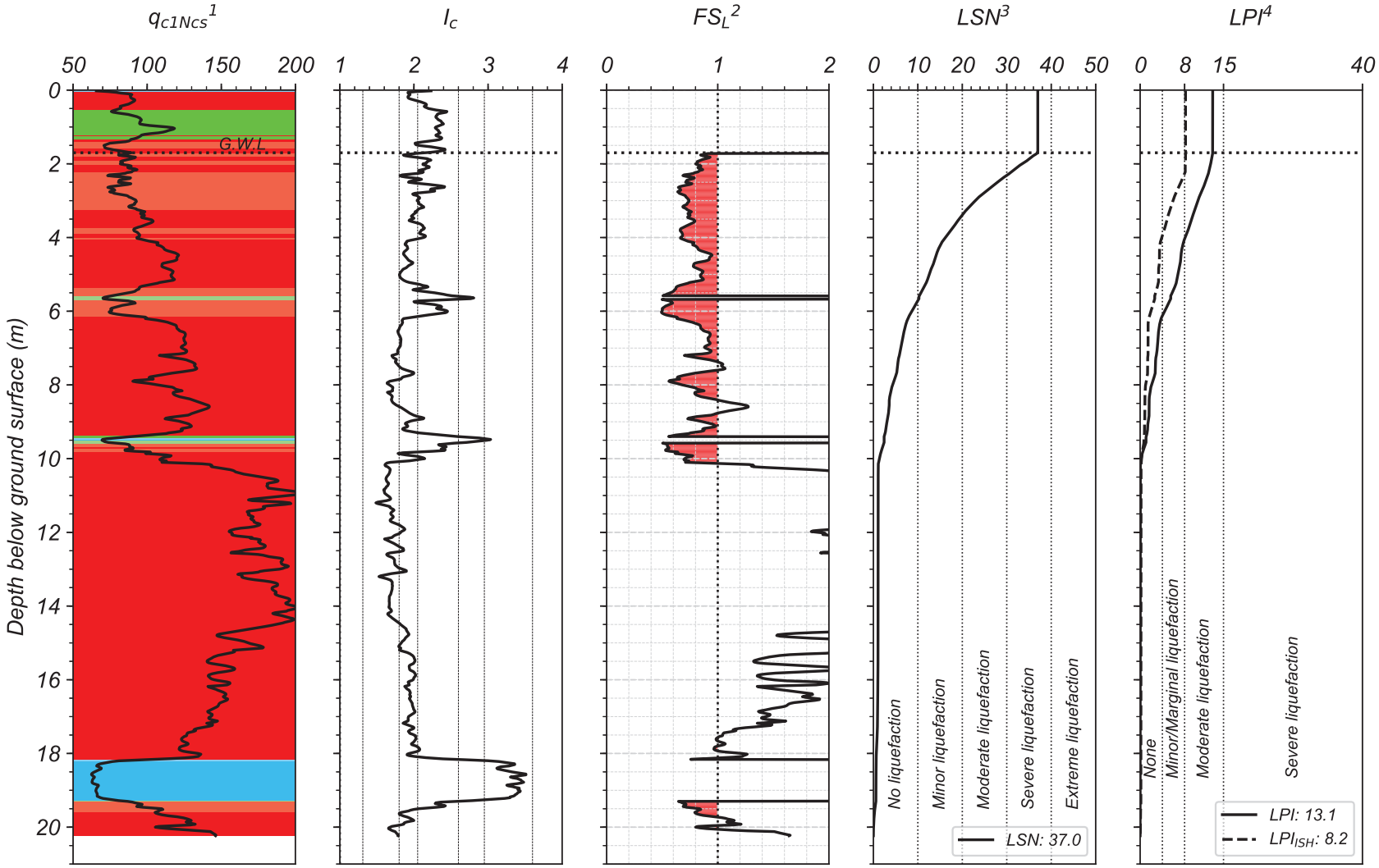
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 61 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.31 g
Site = Osborne ; CPT# = 57357 ; GWL = 1.7 m
Observed Ejecta Severity = Minor ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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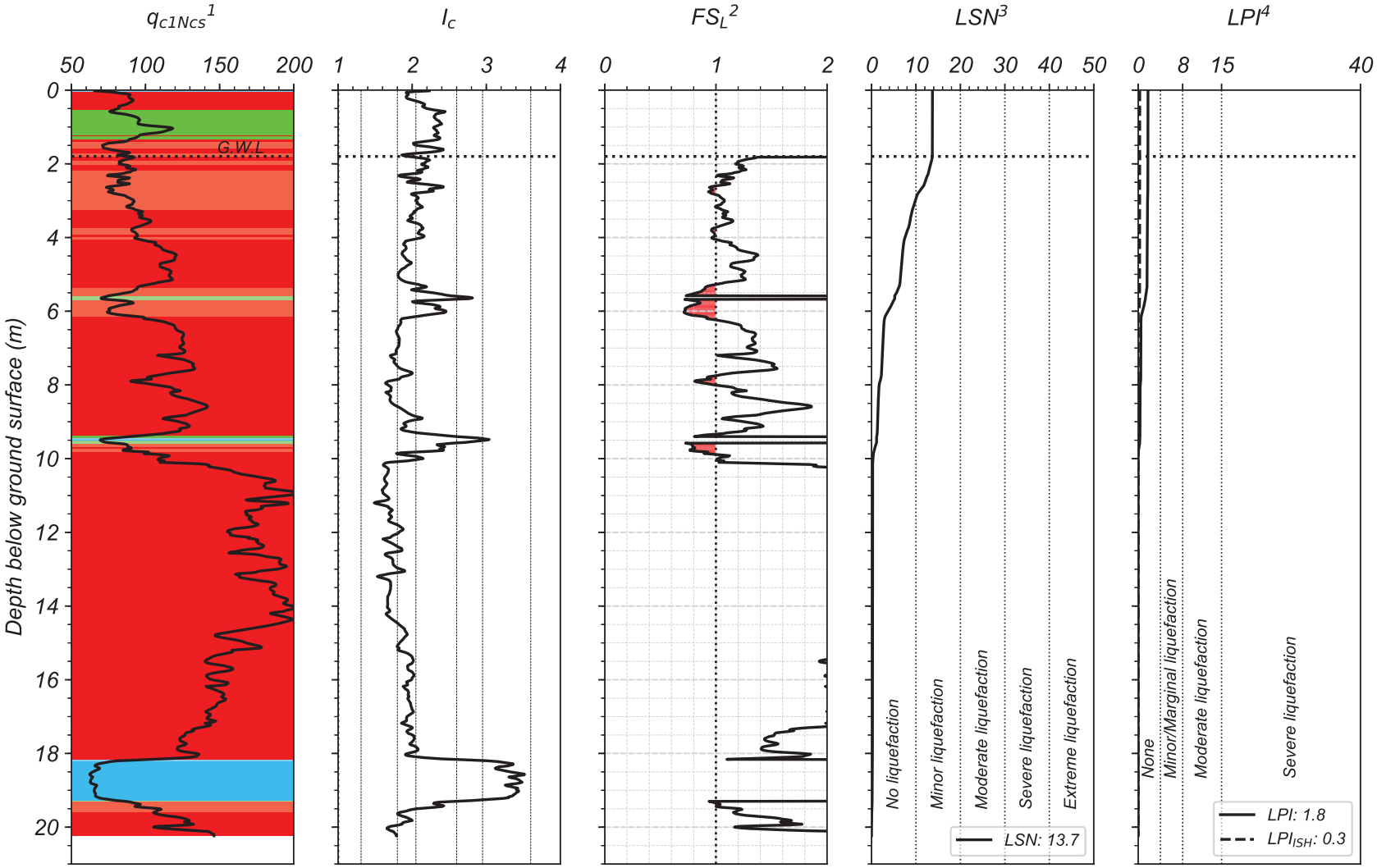
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 62 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.22 g
Site = Osborne ; CPT# = 57357 ; GWL = 1.8 m
Observed Ejecta Severity = Moderate ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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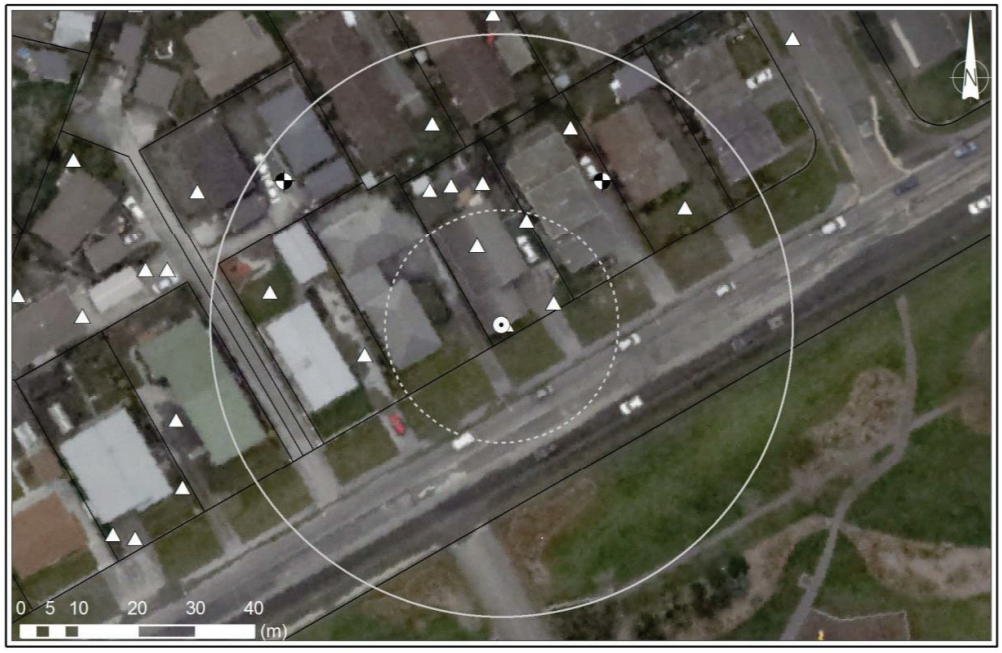
PAGES

Lat: -43.512844°; Long: 172.711974°



Case #63: Pages-DAR (taken on 5/SEP/2010) - MINOR



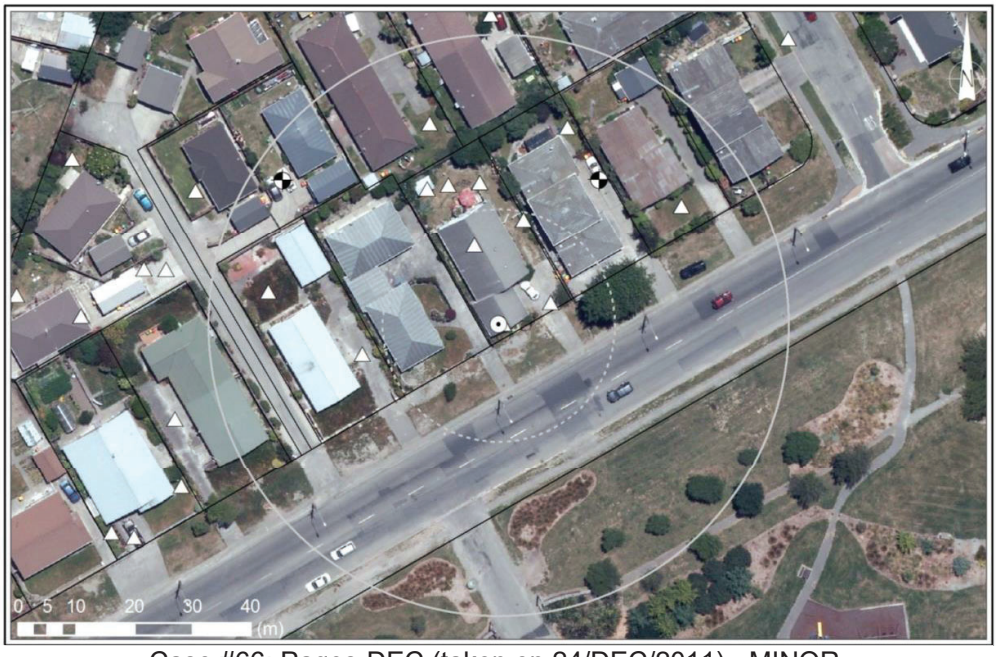
Case #64: Pages-CHC (taken on 24/FEB/2011) - SEVERE

PAGES

Lat: -43.512844°; Long: 172.711974°



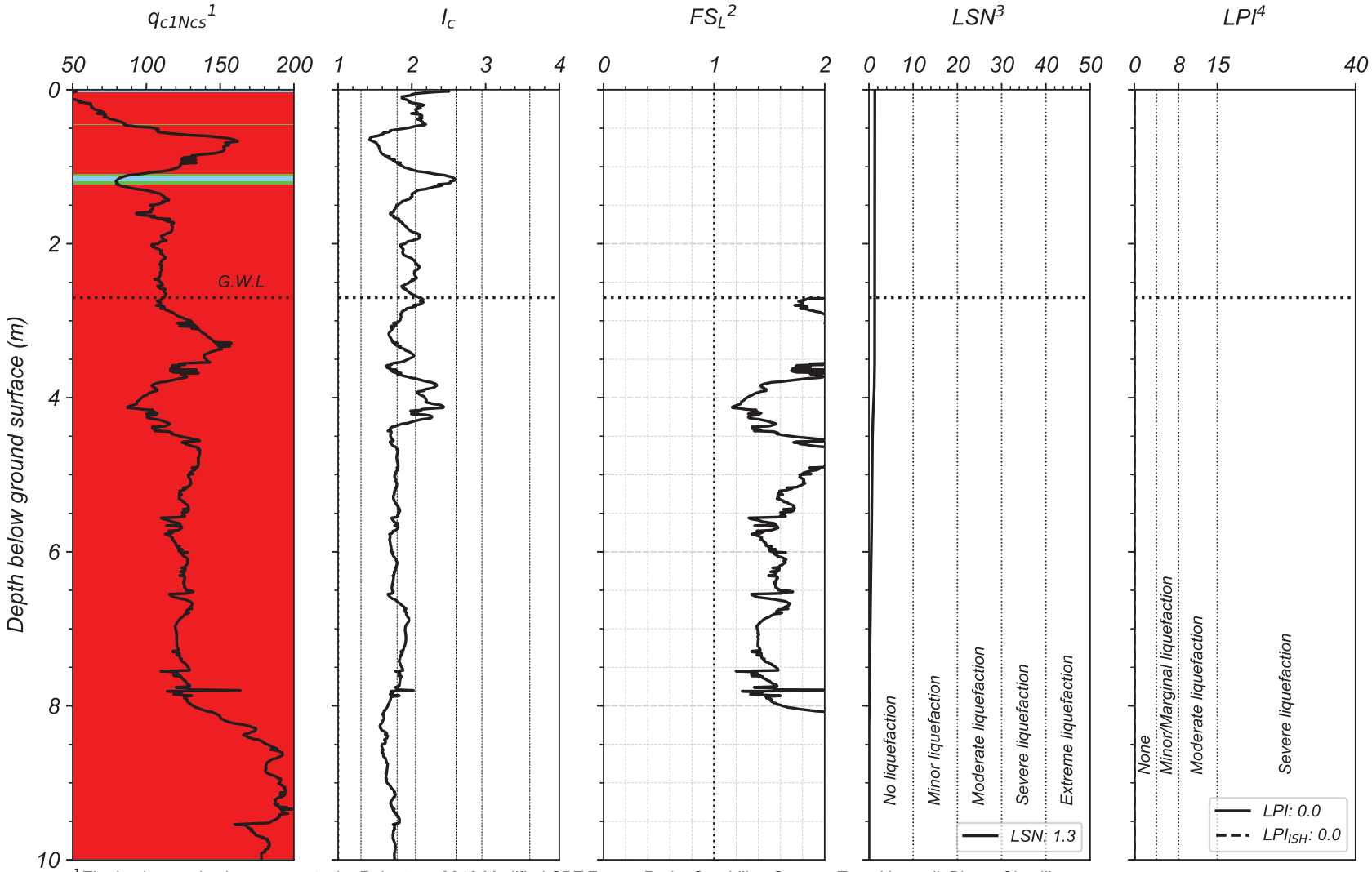
Case #65: Pages-JUN (taken on 15/JUN/2011) - SEVERE



Case #66: Pages-DEC (taken on 24/DEC/2011) - MINOR

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 63 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.18 g
Site = Pages ; CPT# = 38797 ; GWL = 2.7 m
Observed Ejecta Severity = Minor ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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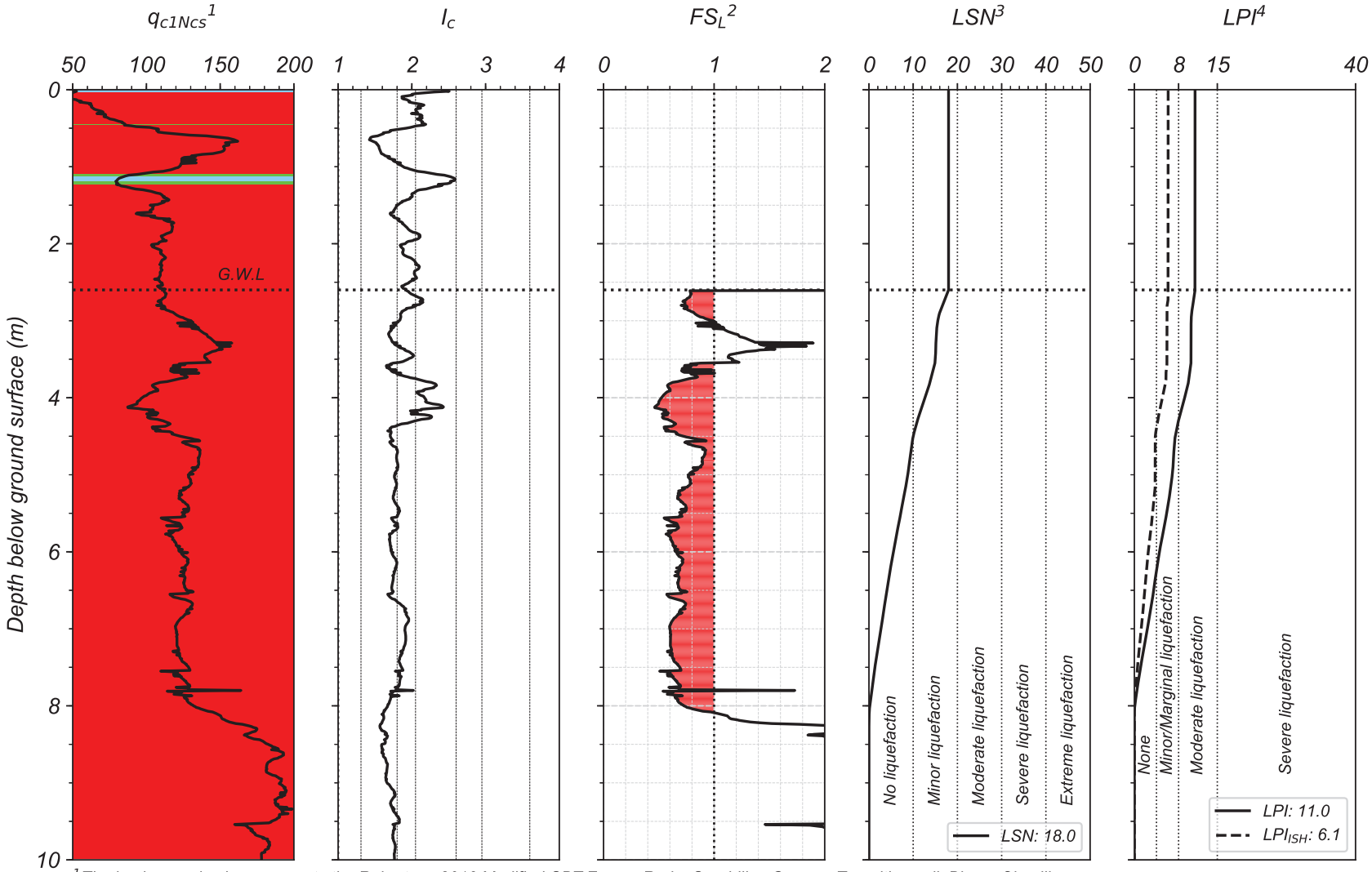
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 64 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.49 g
Site = Pages ; CPT# = 38797 ; GWL = 2.6 m
Observed Ejecta Severity = Severe ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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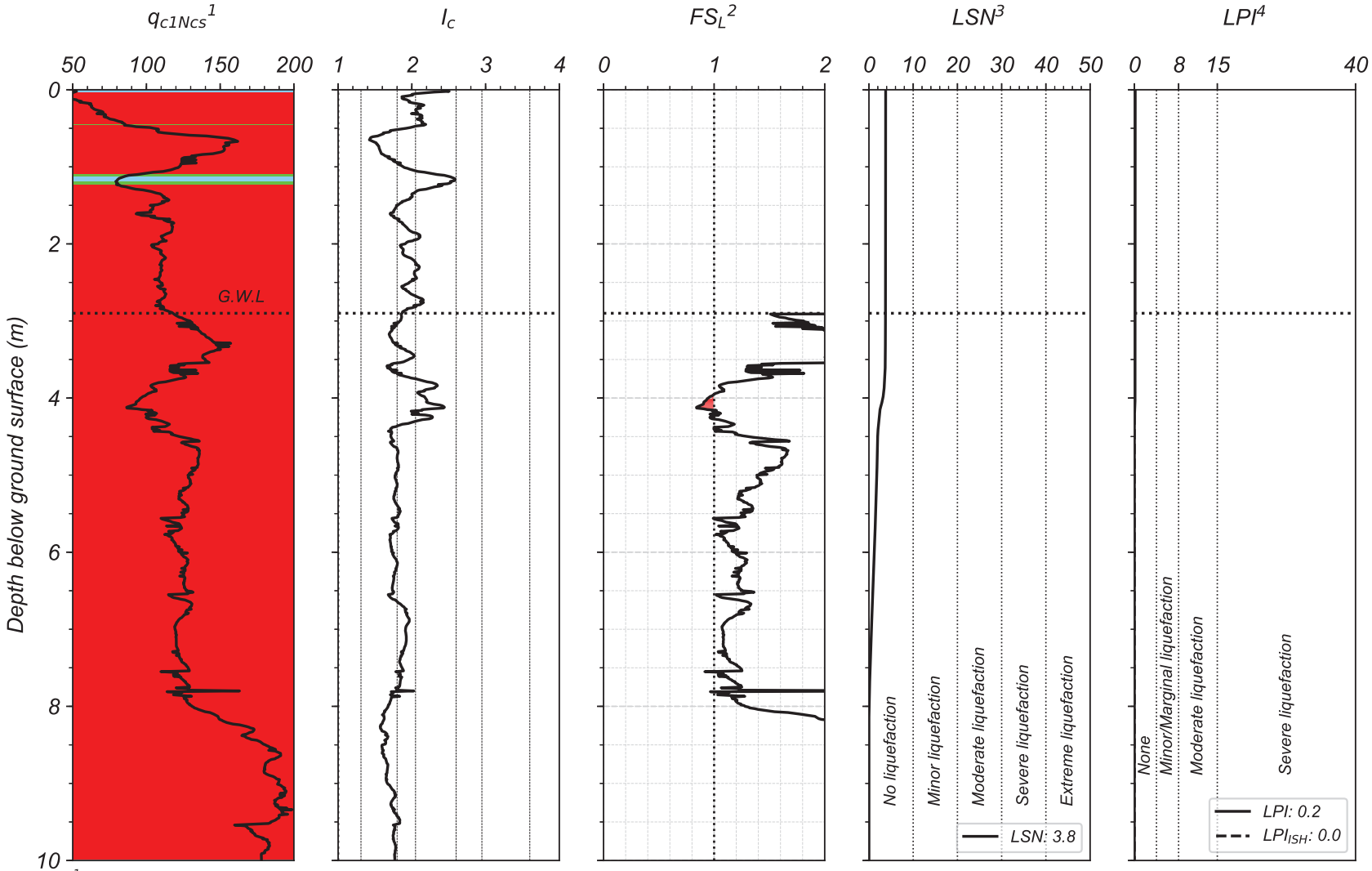
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 65 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.28 g
Site = Pages ; CPT# = 38797 ; GWL = 2.9 m
Observed Ejecta Severity = Severe ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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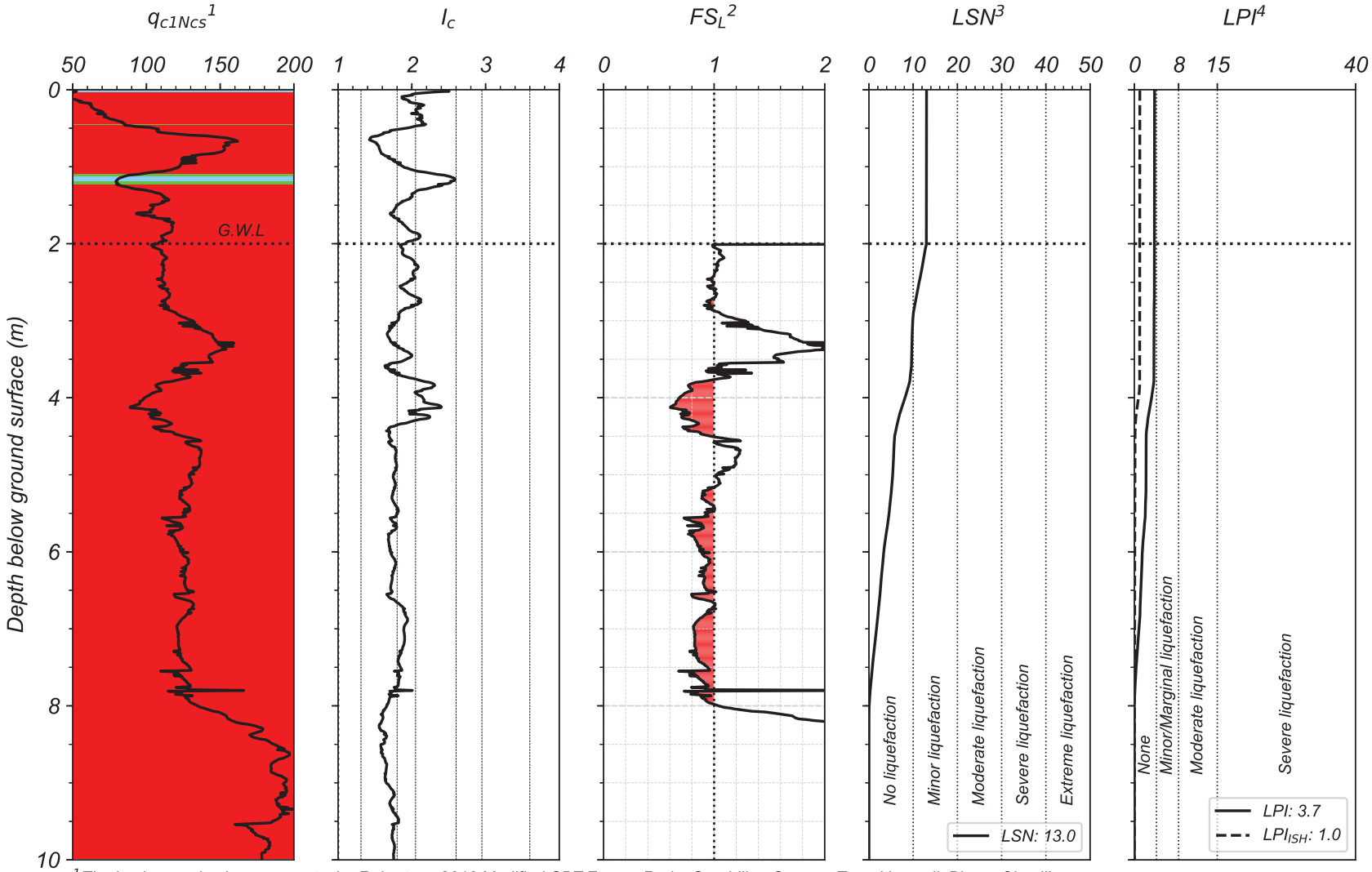
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 66 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.35 g
Site = Pages ; CPT# = 38797 ; GWL = 2.0 m
Observed Ejecta Severity = Minor ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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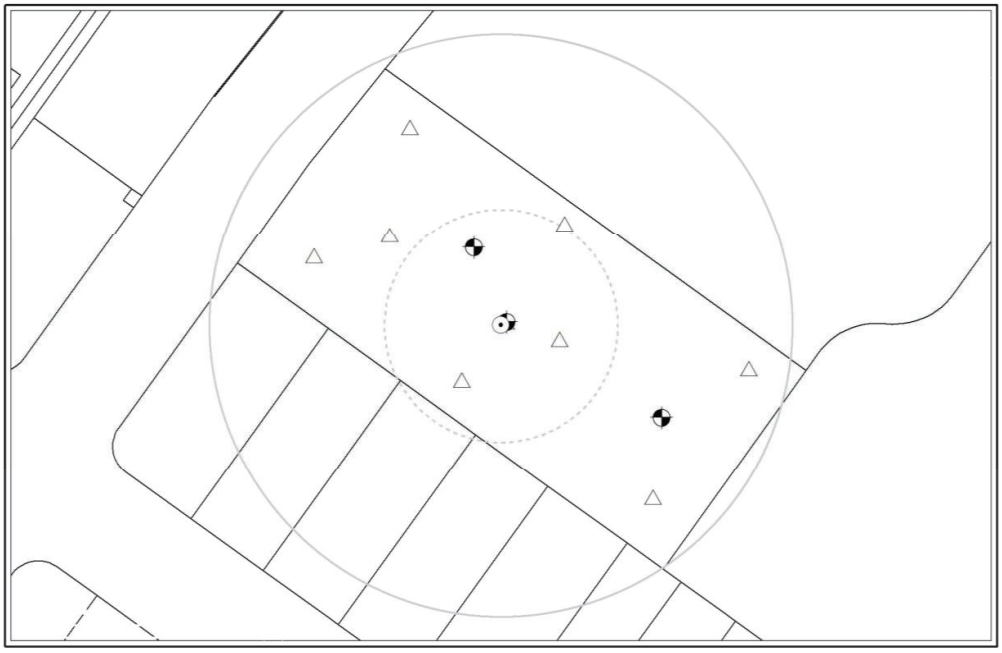
PALINURUS-1

Lat: -43.551331°; Long: 172.688215°



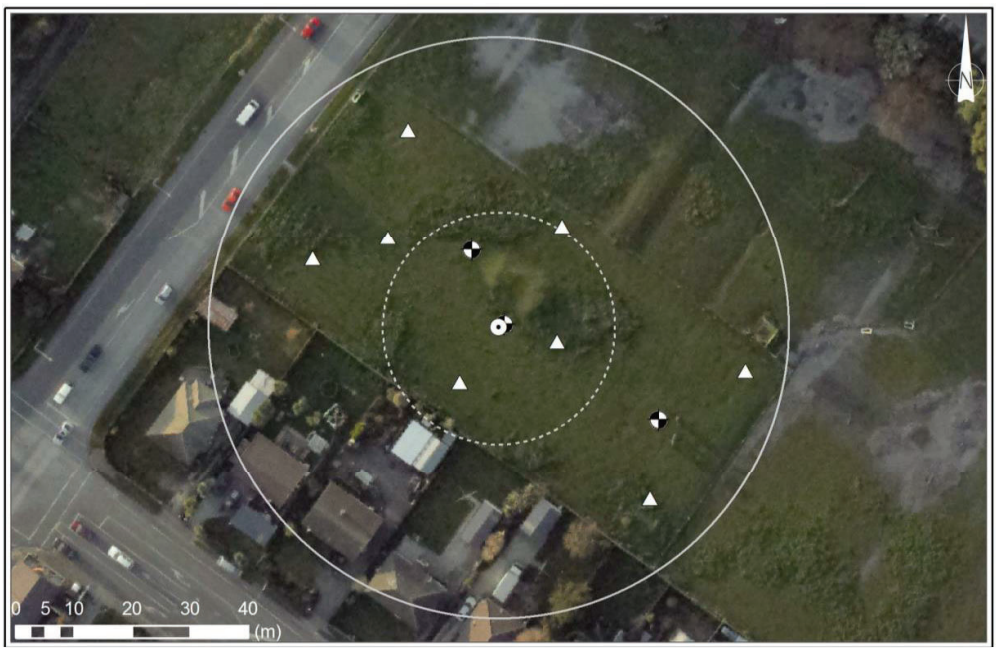
Case #67: Palinurus-1-DAR (Aerial photograph is not available) - NONE



Case #68: Palinurus-1-CHC (taken on 24/FEB/2011) - NONE

PALINURUS-1

Lat: -43.551331°; Long: 172.688215°



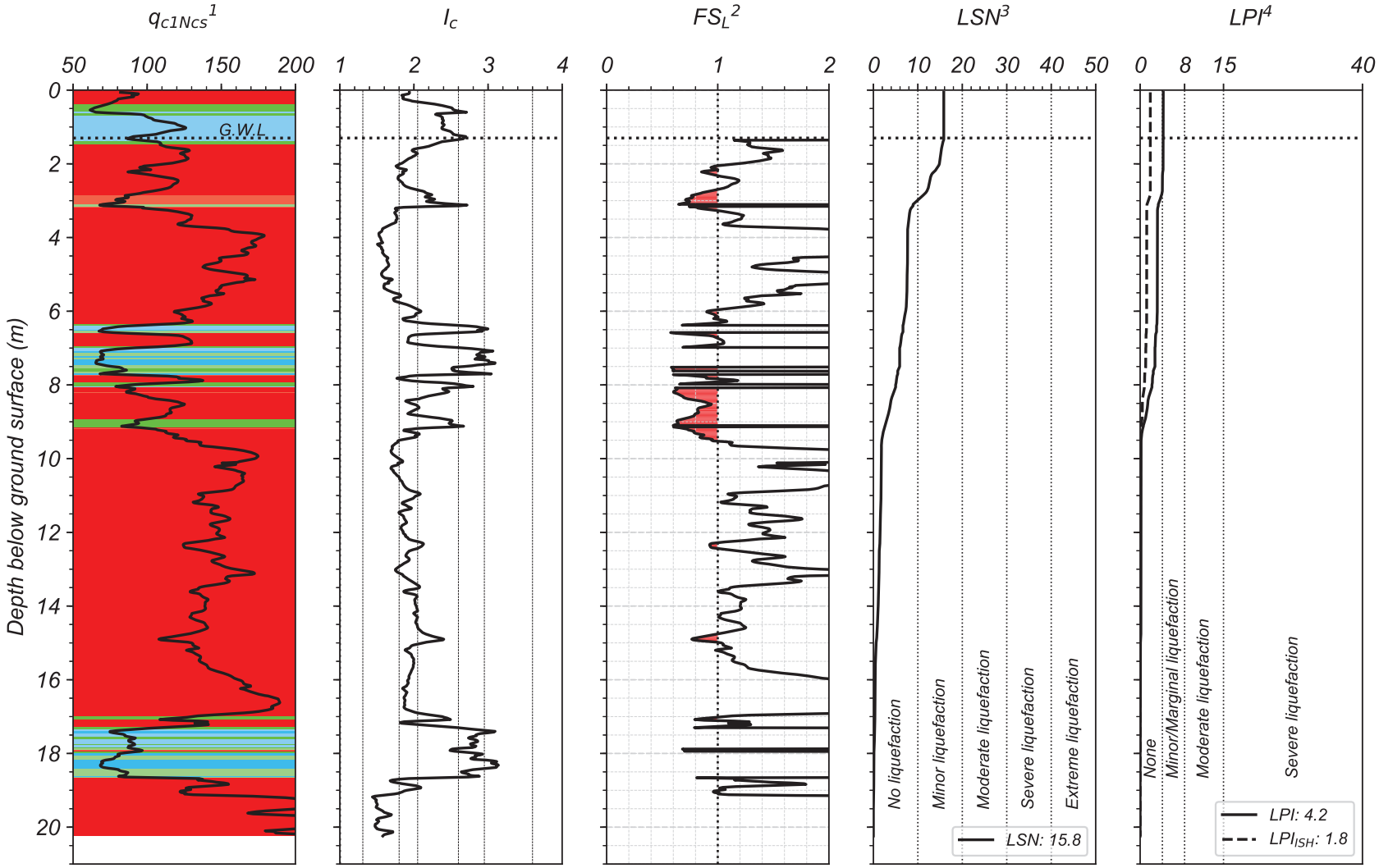
Case #69: Palinurus-1-JUN (taken on 15/JUN/2011) - NONE



Case #70: Palinurus-1-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 67 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.24 g
Site = Palinurus_1 ; CPT# = 57360 ; GWL = 1.3 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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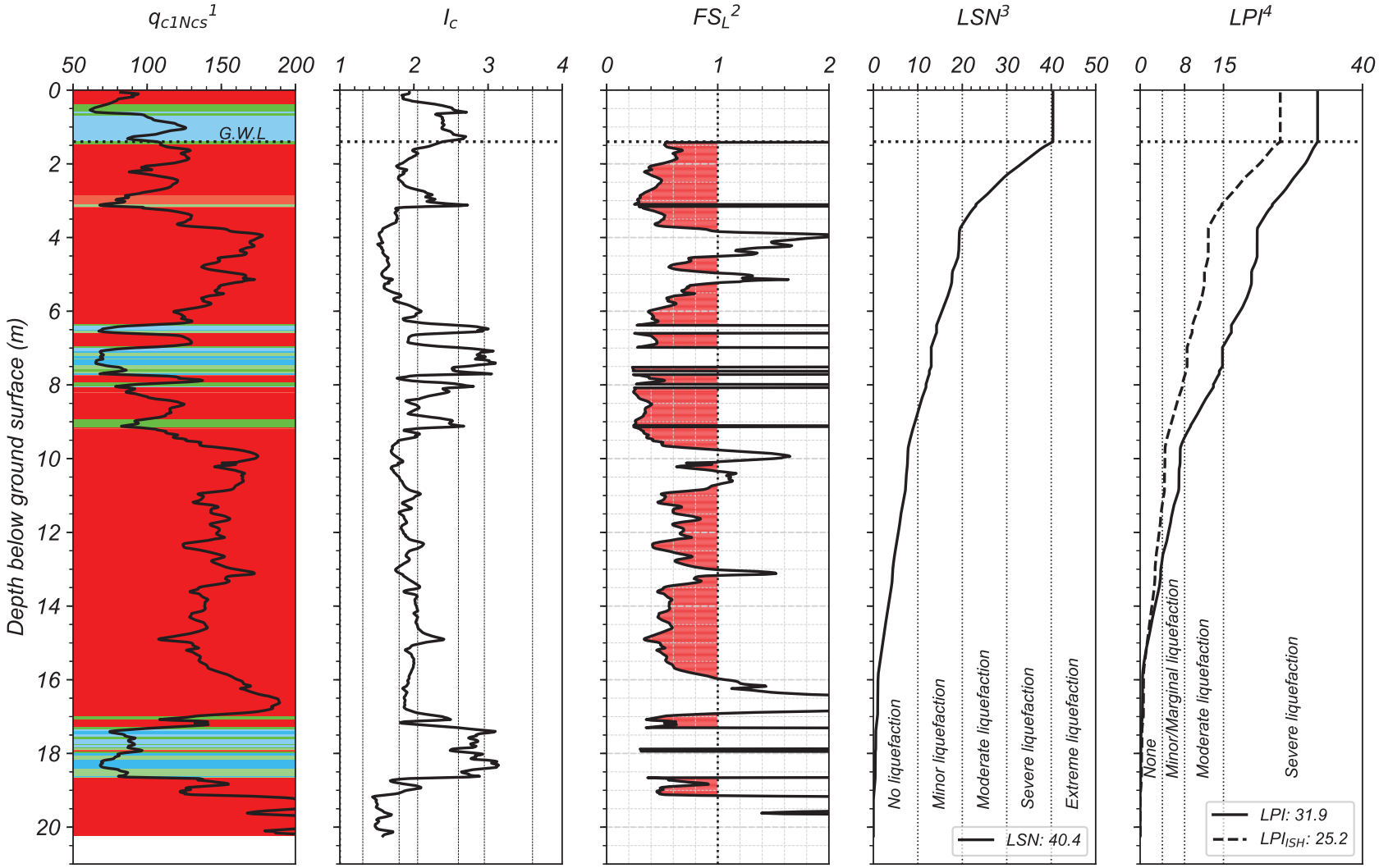
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 68 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.68 g
Site = Palinurus_1 ; CPT# = 57360 ; GWL = 1.4 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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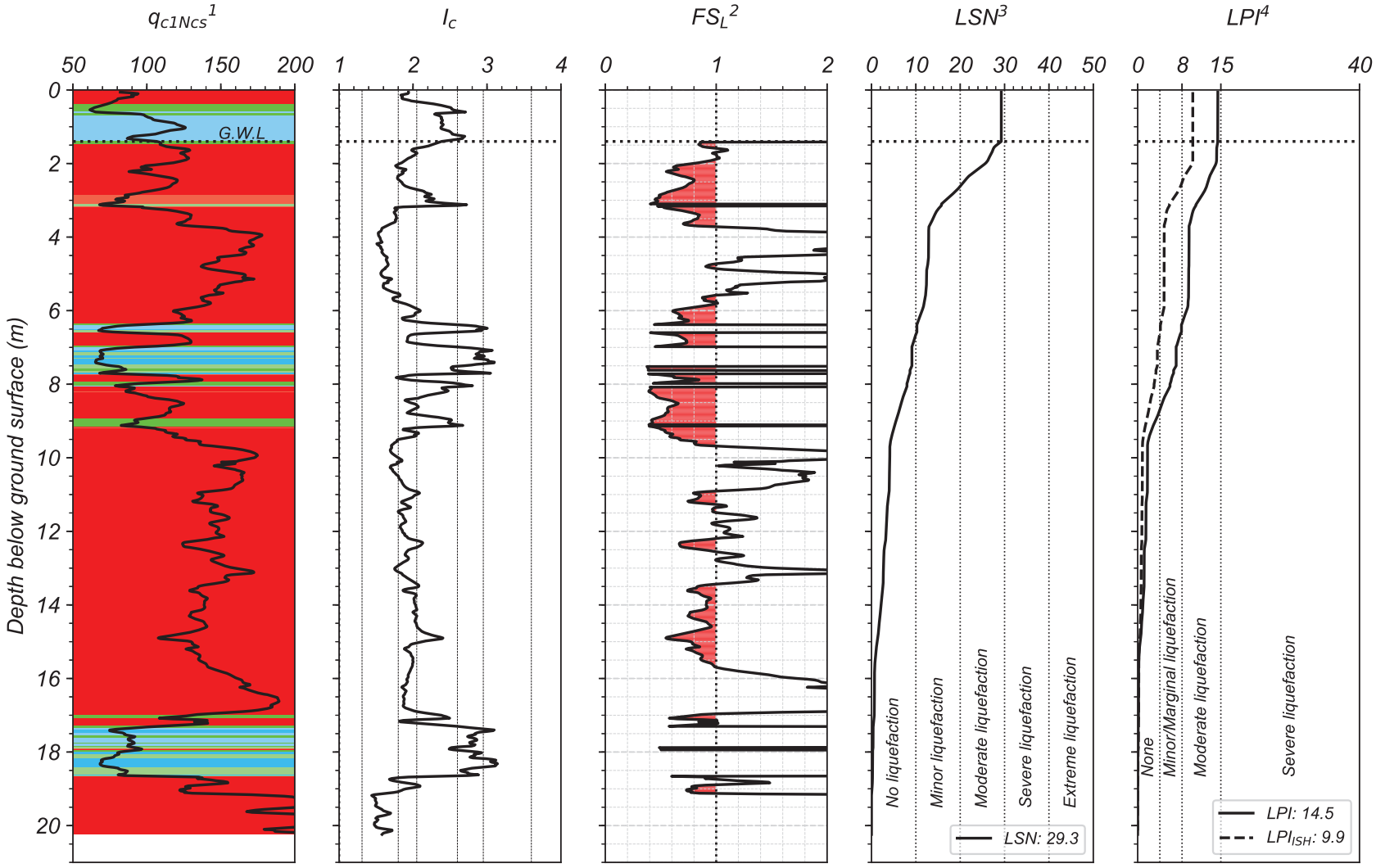
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 69 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.42 g
Site = Palinurus_1 ; CPT# = 57360 ; GWL = 1.4 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

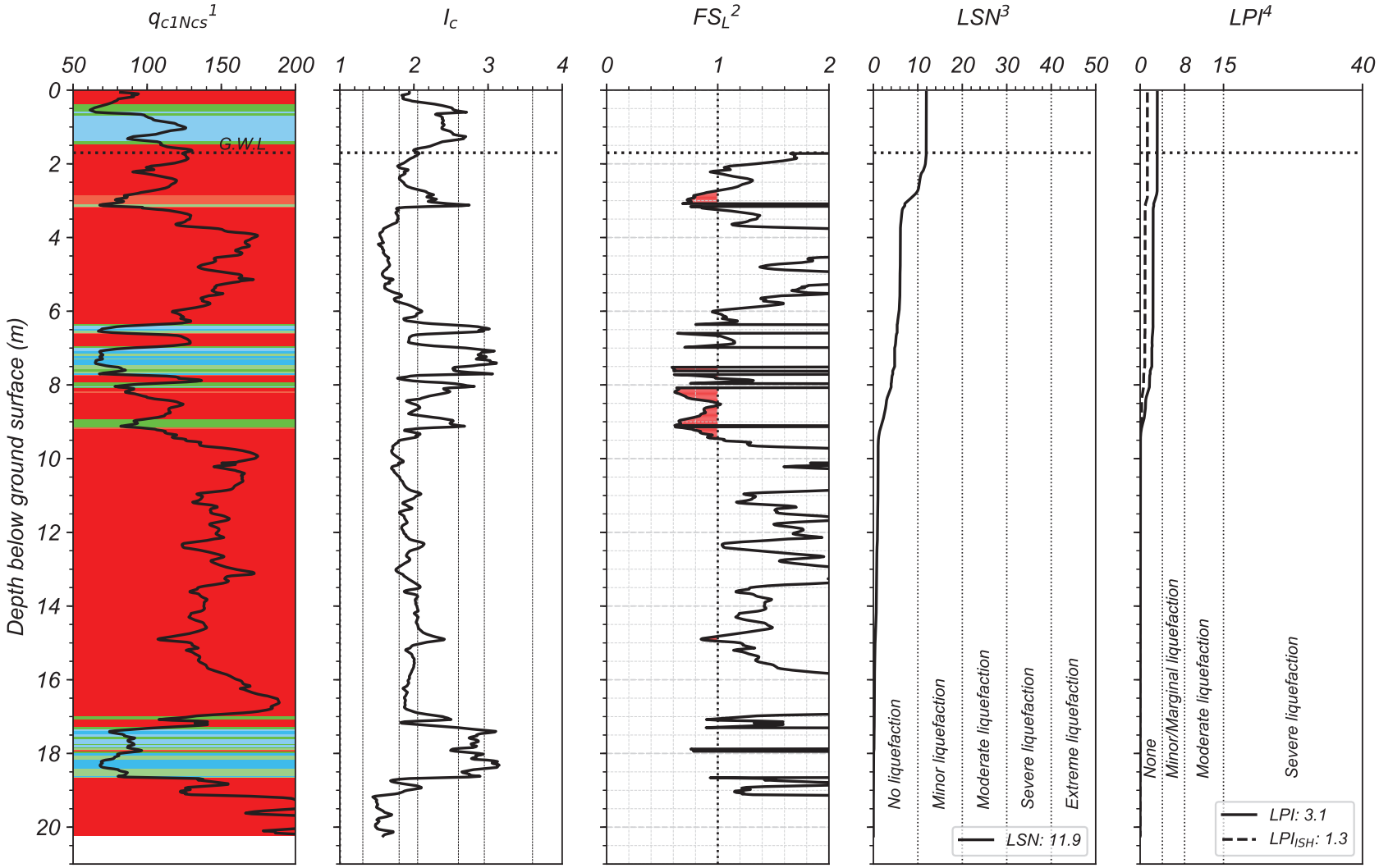


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 70 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.28 g
Site = Palinurus_1 ; CPT# = 57360 ; GWL = 1.7 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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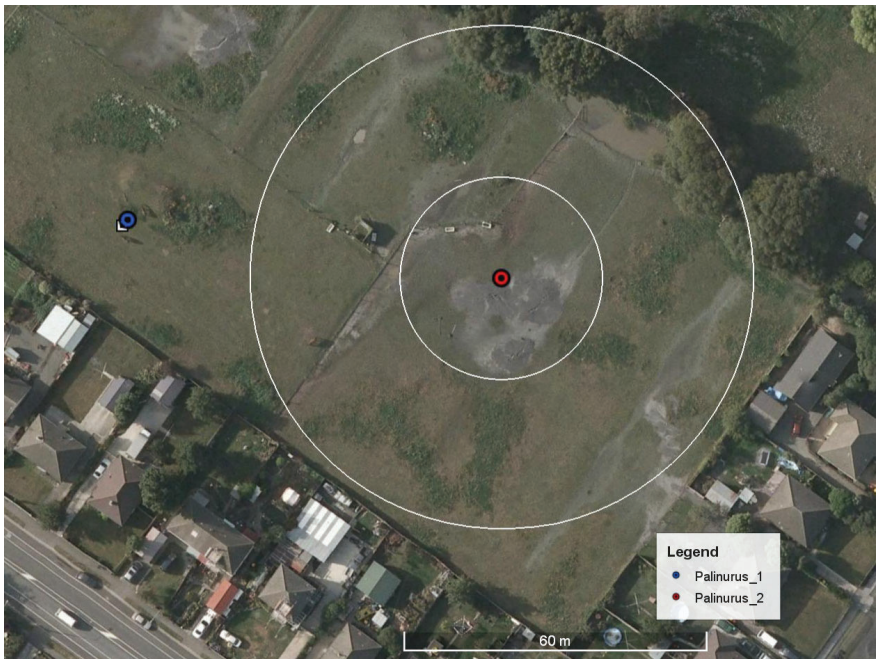
PALINURUS-2

Lat: -43.551424°; Long: 172.689147°



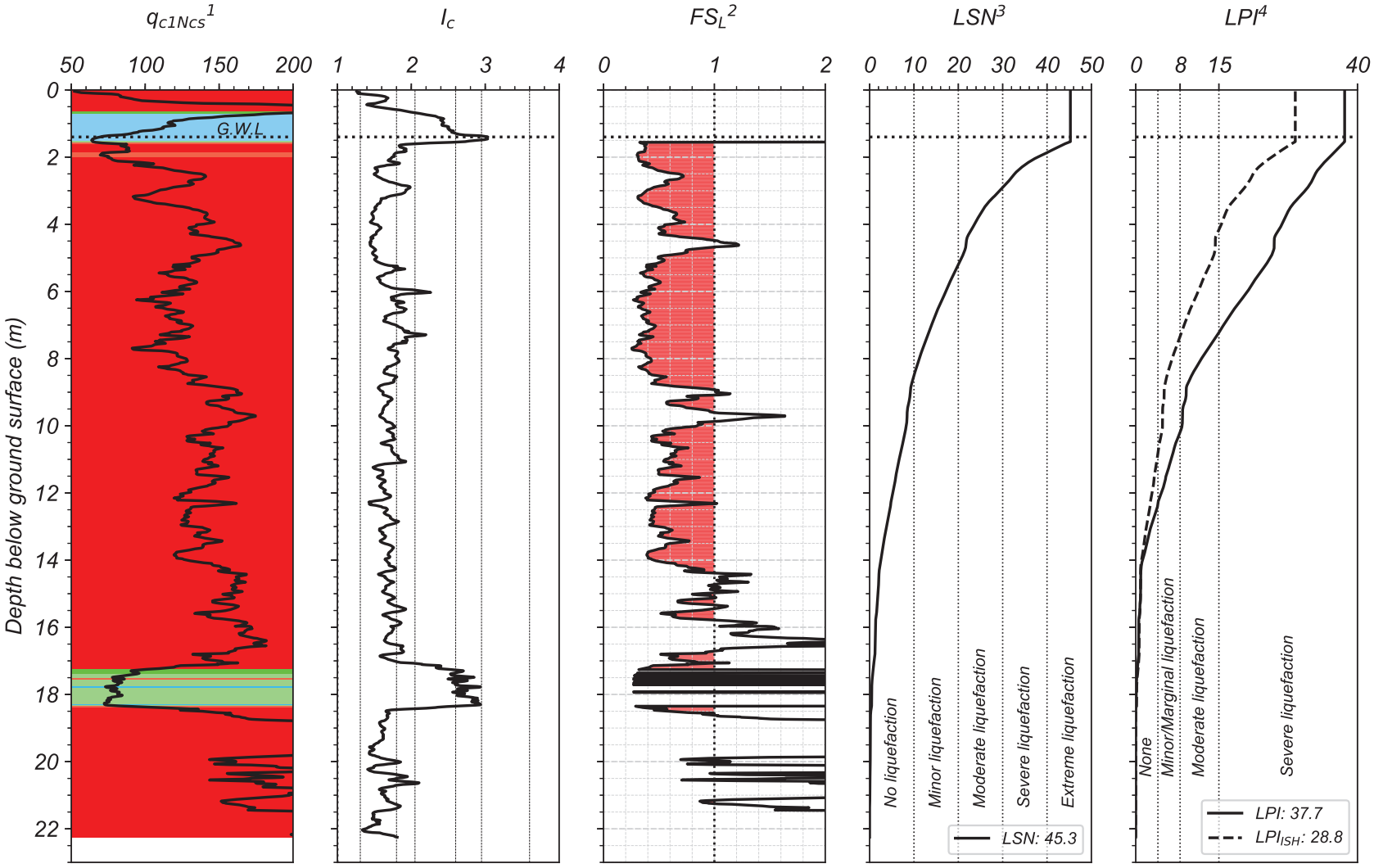
Case#71: Palinurus-2 (taken on 24/Feb/2011) – Severe
Lat: -43.551424° ; Long: 172.689147°



Case#72: Palinurus-2 (taken on 15/Jun/2011) – Severe
Lat: -43.551424° ; Long: 172.689147°

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 71 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.68 g
Site = Palinurus_2 ; CPT# = 62761 ; GWL = 1.4 m
Observed Ejecta Severity = Severe ; Site Condition = Free-field flat



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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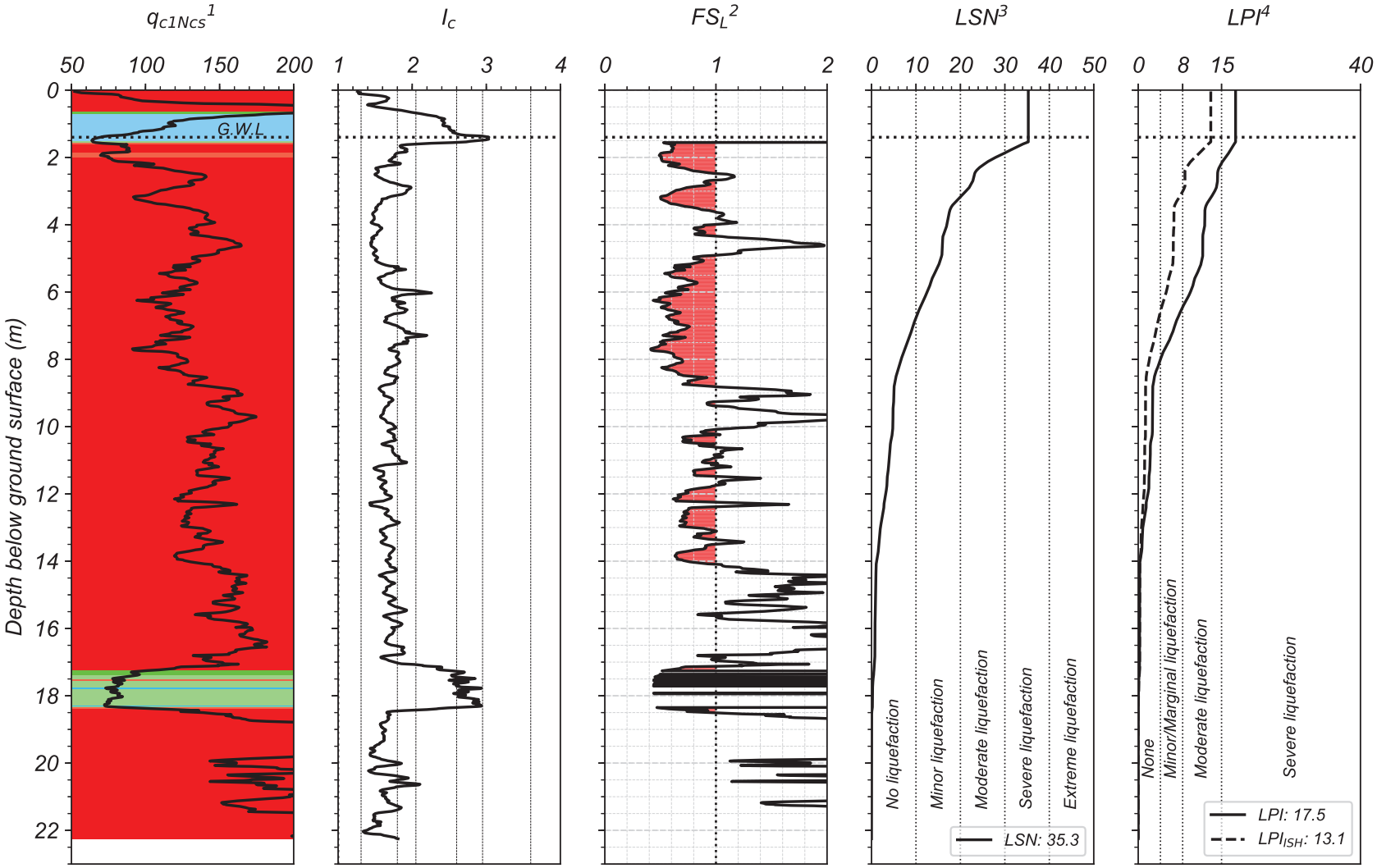
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 72 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.42 g
Site = Palinurus_2 ; CPT# = 62761 ; GWL = 1.4 m
Observed Ejecta Severity = Severe ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

PALMERS

Lat: -43.502055°; Long: 172.714393°



Case #73: Palmers-DAR (taken on 5/SEP/2010) - NONE



Case #74: Palmers-CHC (taken on 24/FEB/2011) - MODERATE

PALMERS

Lat: -43.502055°; Long: 172.714393°



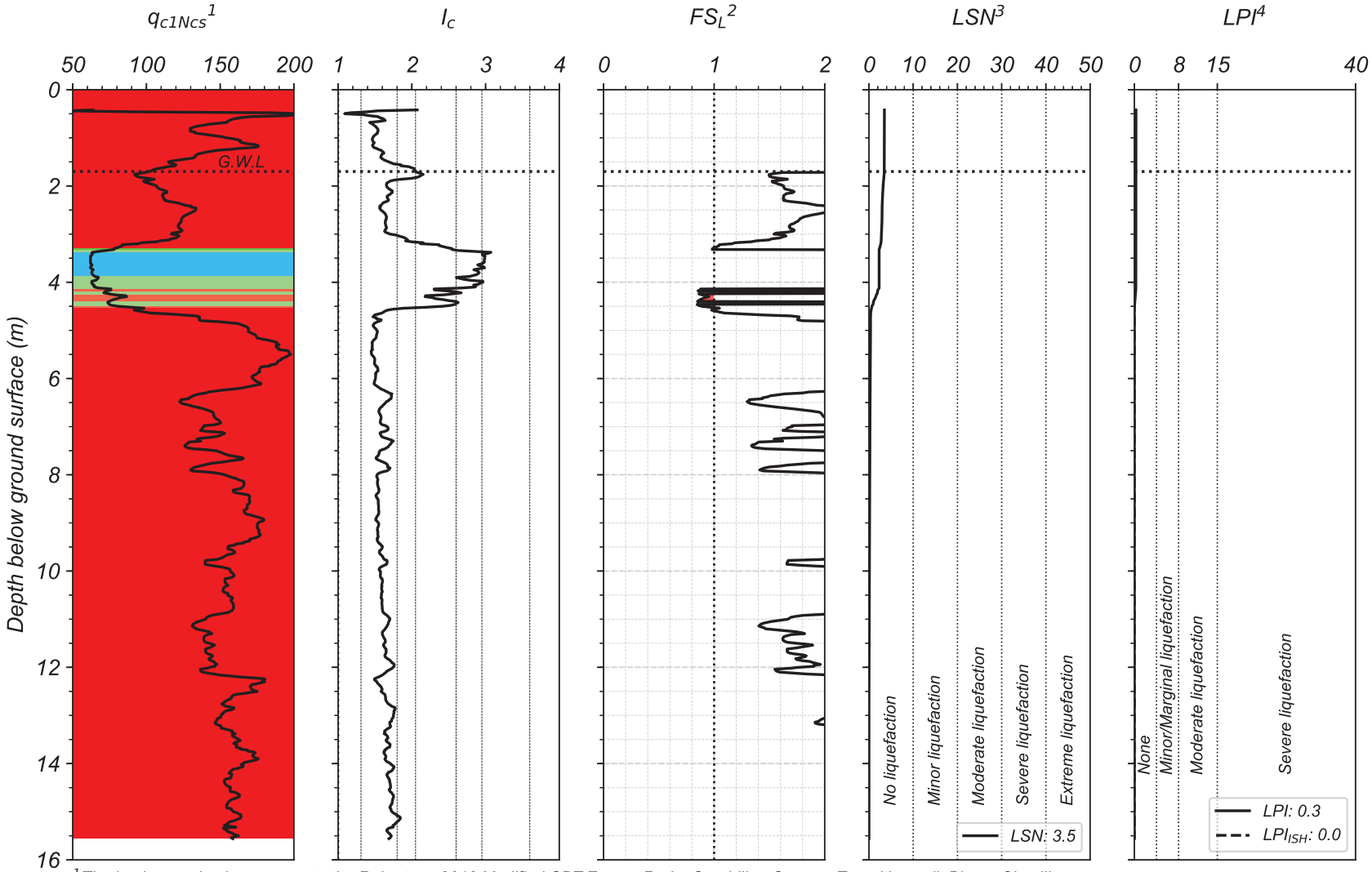
Case #75: Palmers-JUN (taken on 15/JUN/2011) - MINOR



Case #76: Palmers-DEC (taken on 24/DEC/2011) - SEVERE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 73 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.18 g
Site = Palmers ; CPT# = 38742 ; GWL = 1.7 m
Observed Ejecta Severity = None ; Site Condition = Near Building

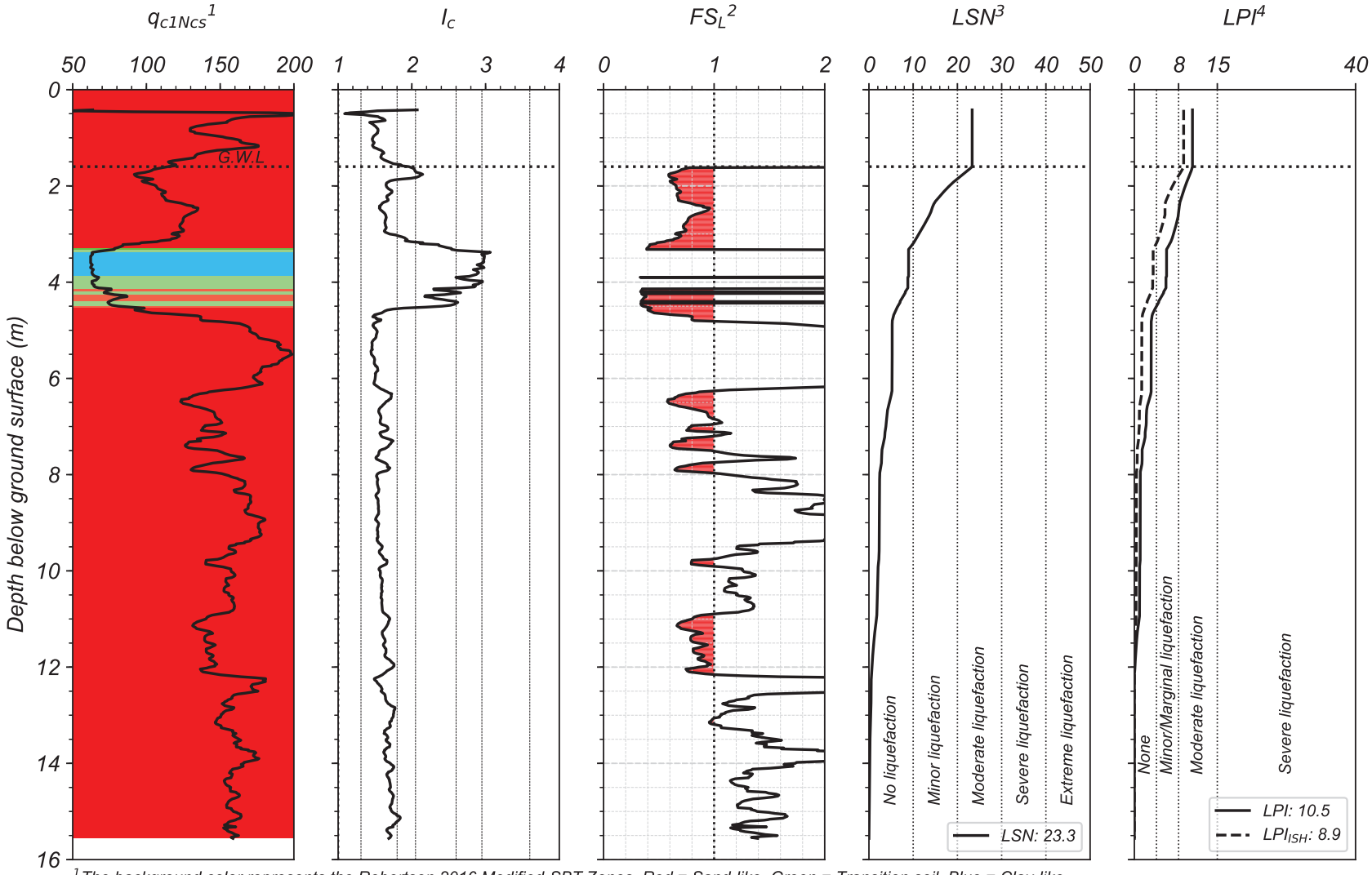


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 74 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.48 g
Site = Palmers ; CPT# = 38742 ; GWL = 1.6 m
Observed Ejecta Severity = Moderate ; Site Condition = Near Building

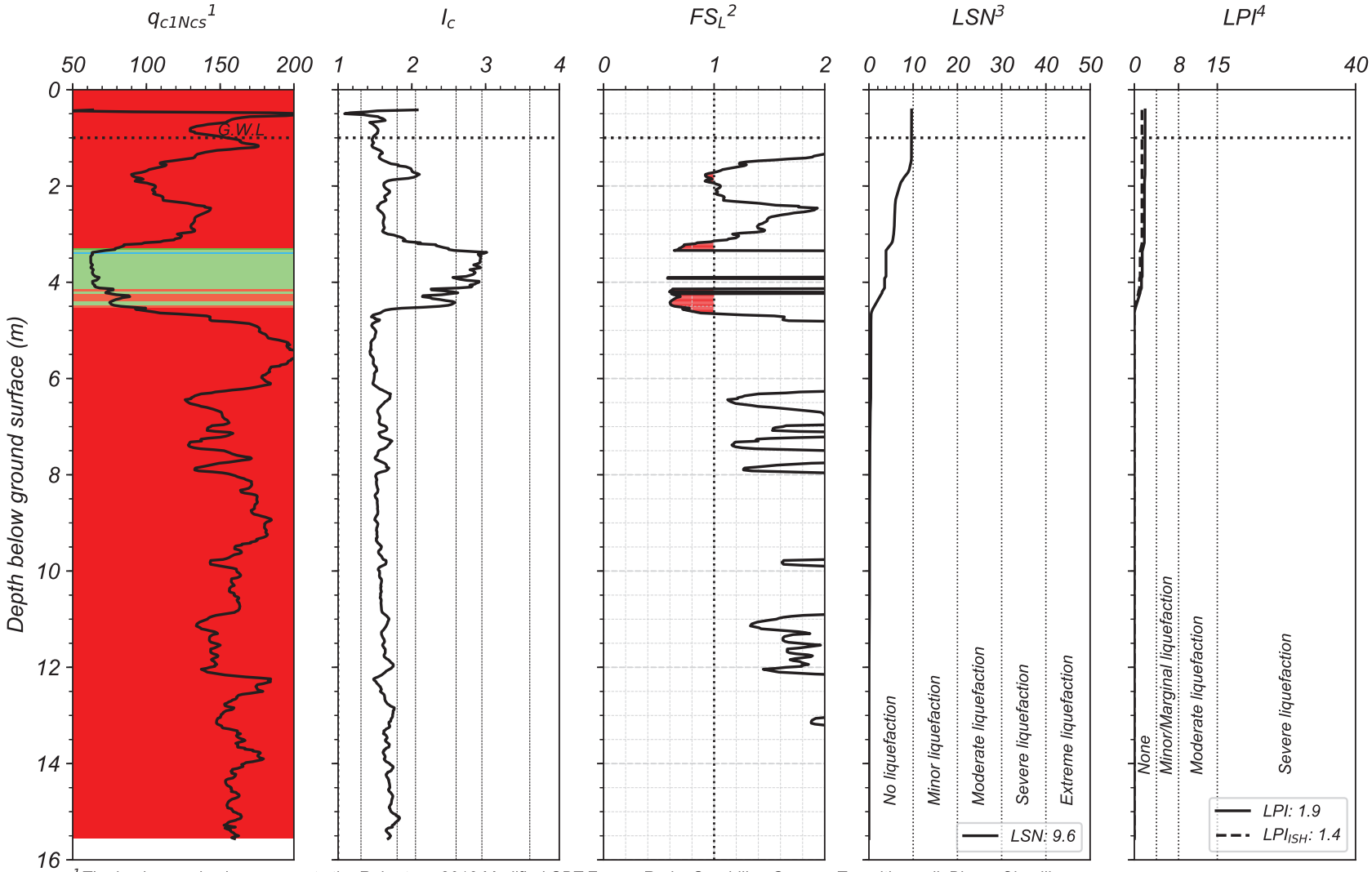


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 75 ; Event = 13-Jun ; M_W = 6.2 ; Surface PGA_{max} = 0.24 g
Site = Palmers ; CPT# = 38742 ; GWL = 1.0 m
Observed Ejecta Severity = Minor ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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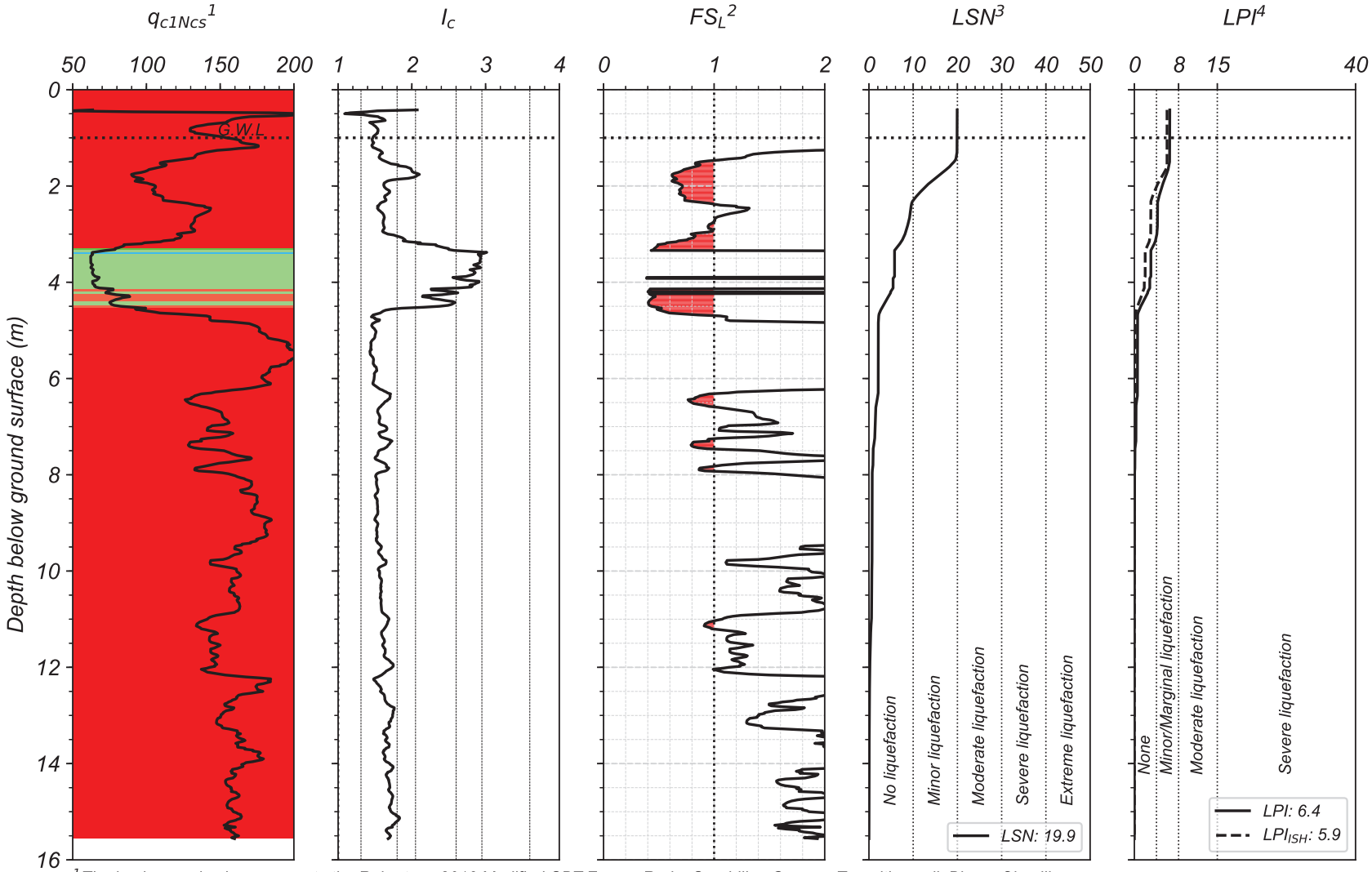
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 76 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.36 g
Site = Palmers ; CPT# = 38742 ; GWL = 1.0 m
Observed Ejecta Severity = Severe ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
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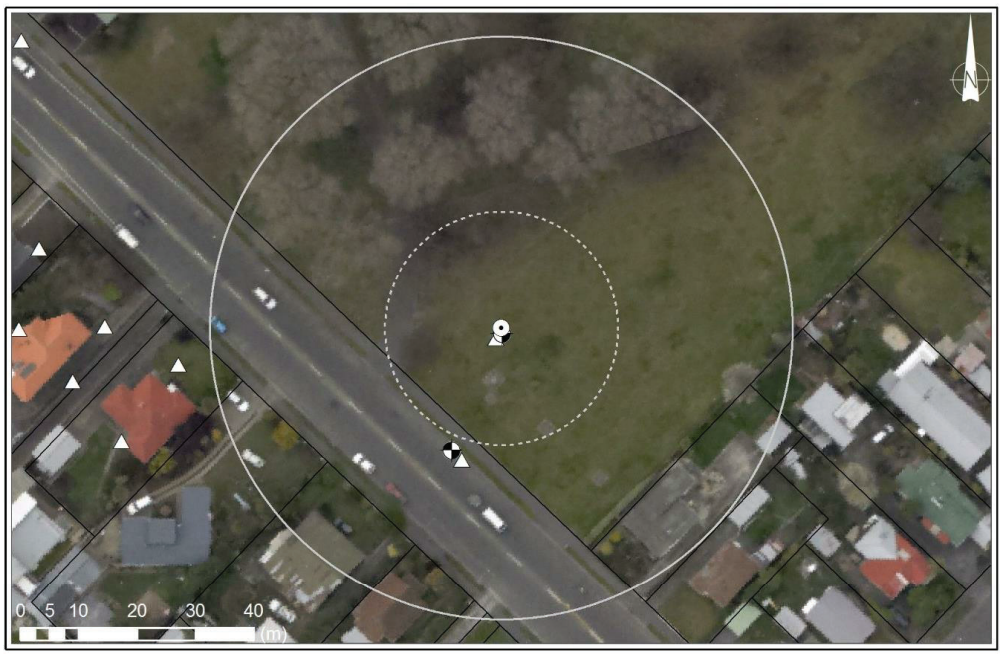
RAWHITI

Lat: -43.506685°; Long: 172.721404°



Case #77: Rawhiti-DAR (taken on 5/SEP/2010) - NONE



Case #78: Rawhiti-CHC (taken on 24/FEB/2011) - NONE

RAWHITI

Lat: -43.506685°; Long: 172.721404°



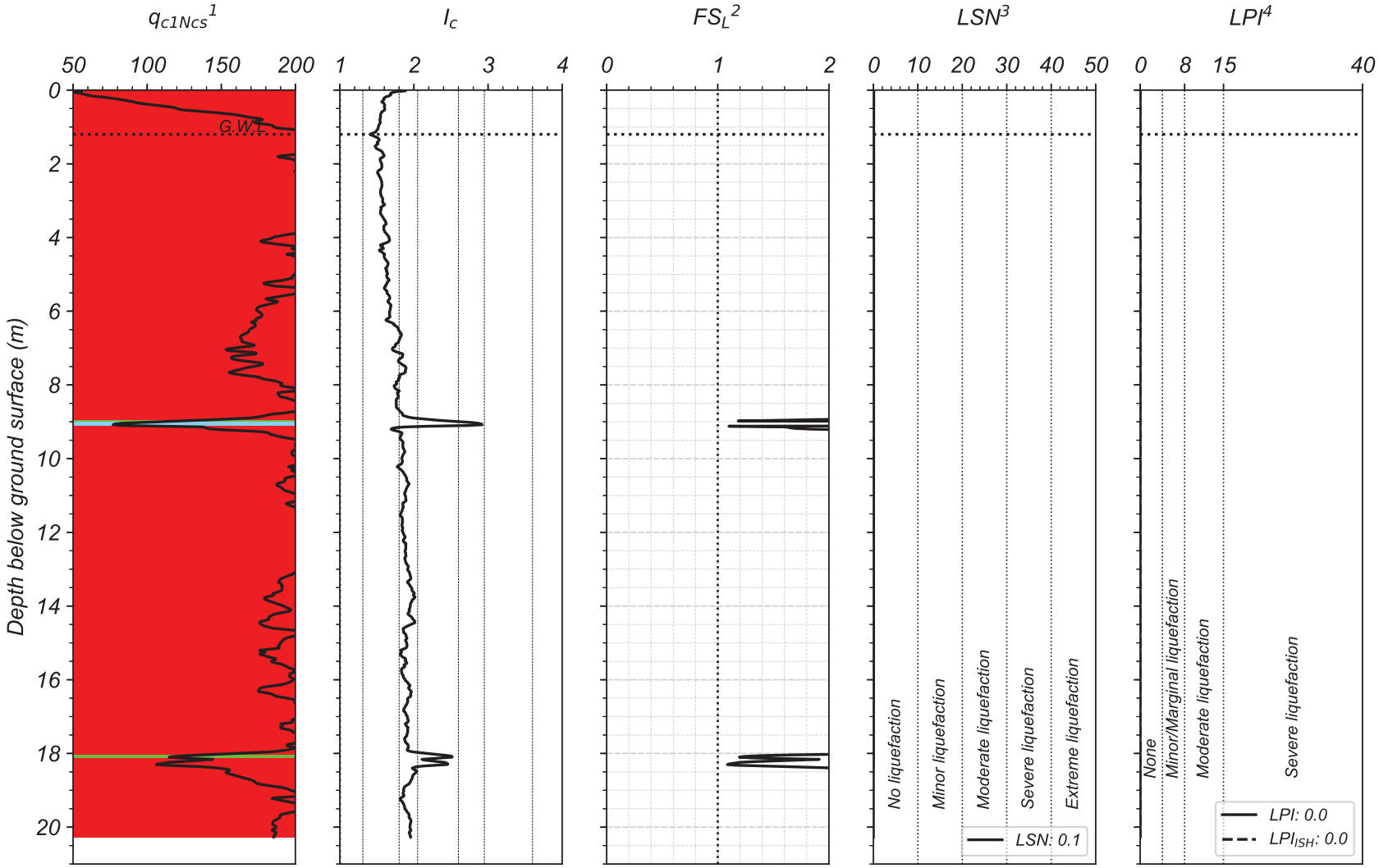
Case #79: Rawhiti-JUN (taken on 15/JUN/2011) - NONE



Case #80: Rawhiti-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 77 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.18 g
Site = Rawhiti ; CPT# = 57343 ; GWL = 1.2 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

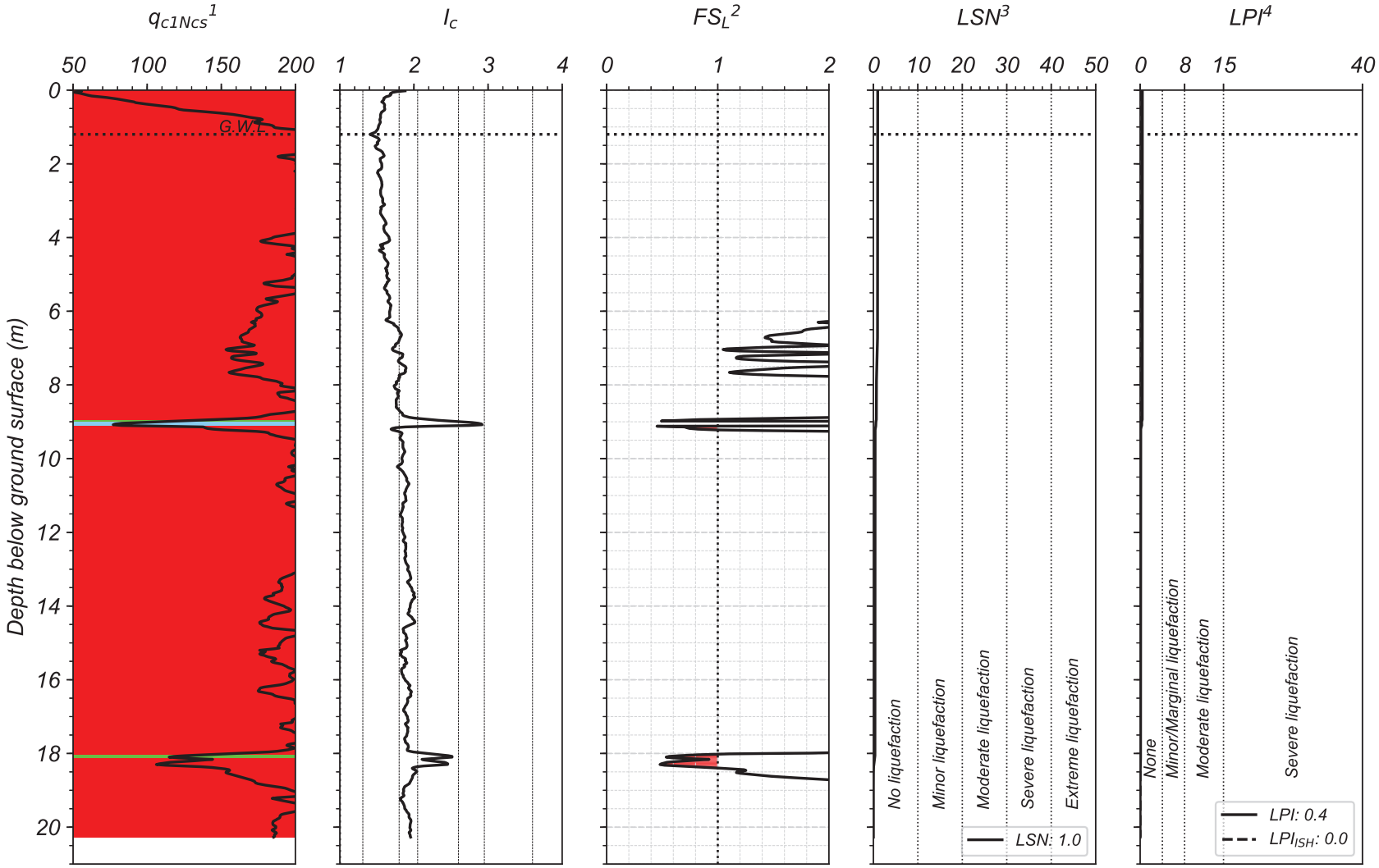


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 78 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.52 g
Site = Rawhiti ; CPT# = 57343 ; GWL = 1.2 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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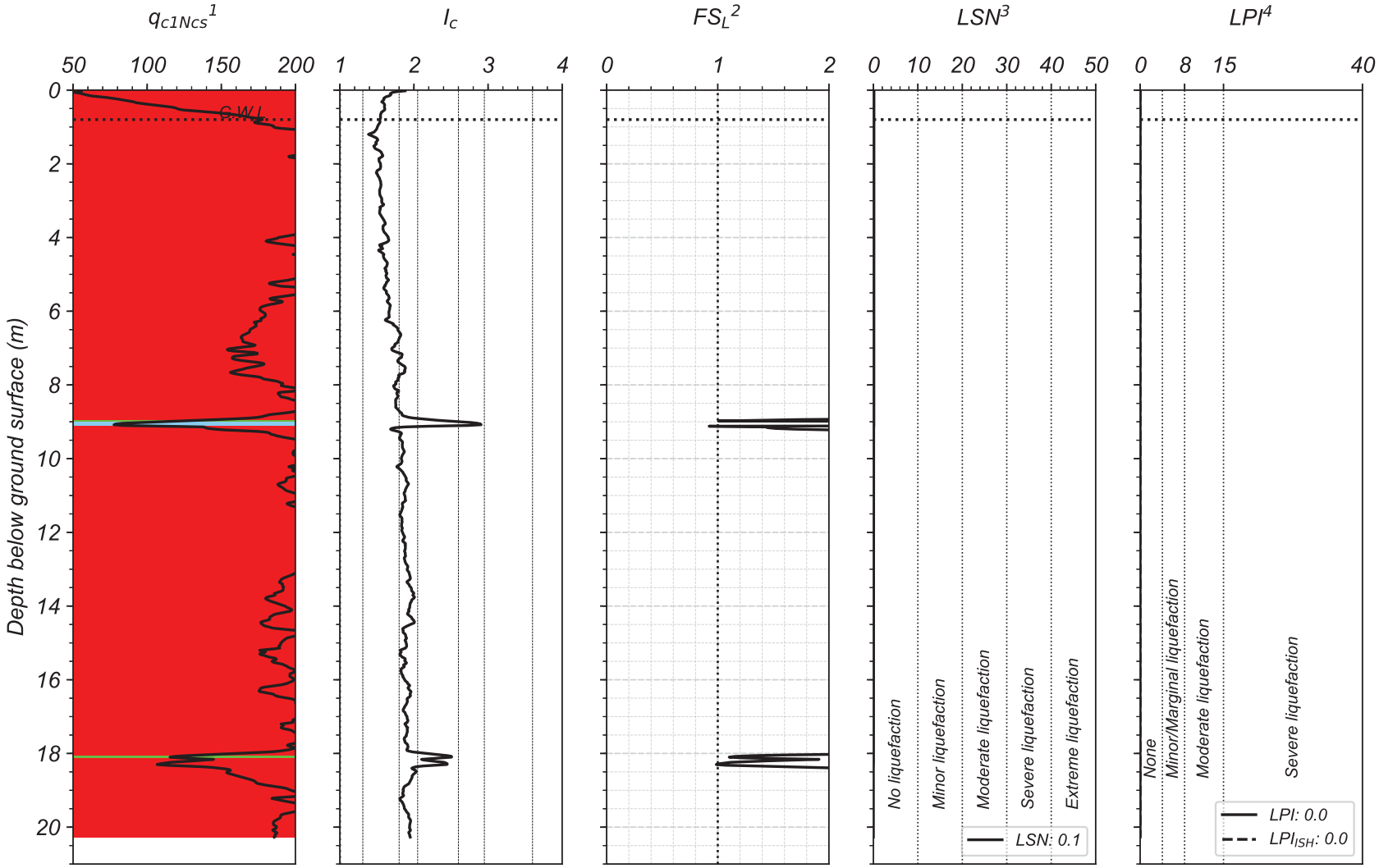
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 79 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.25 g
Site = Rawhiti ; CPT# = 57343 ; GWL = 0.8 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

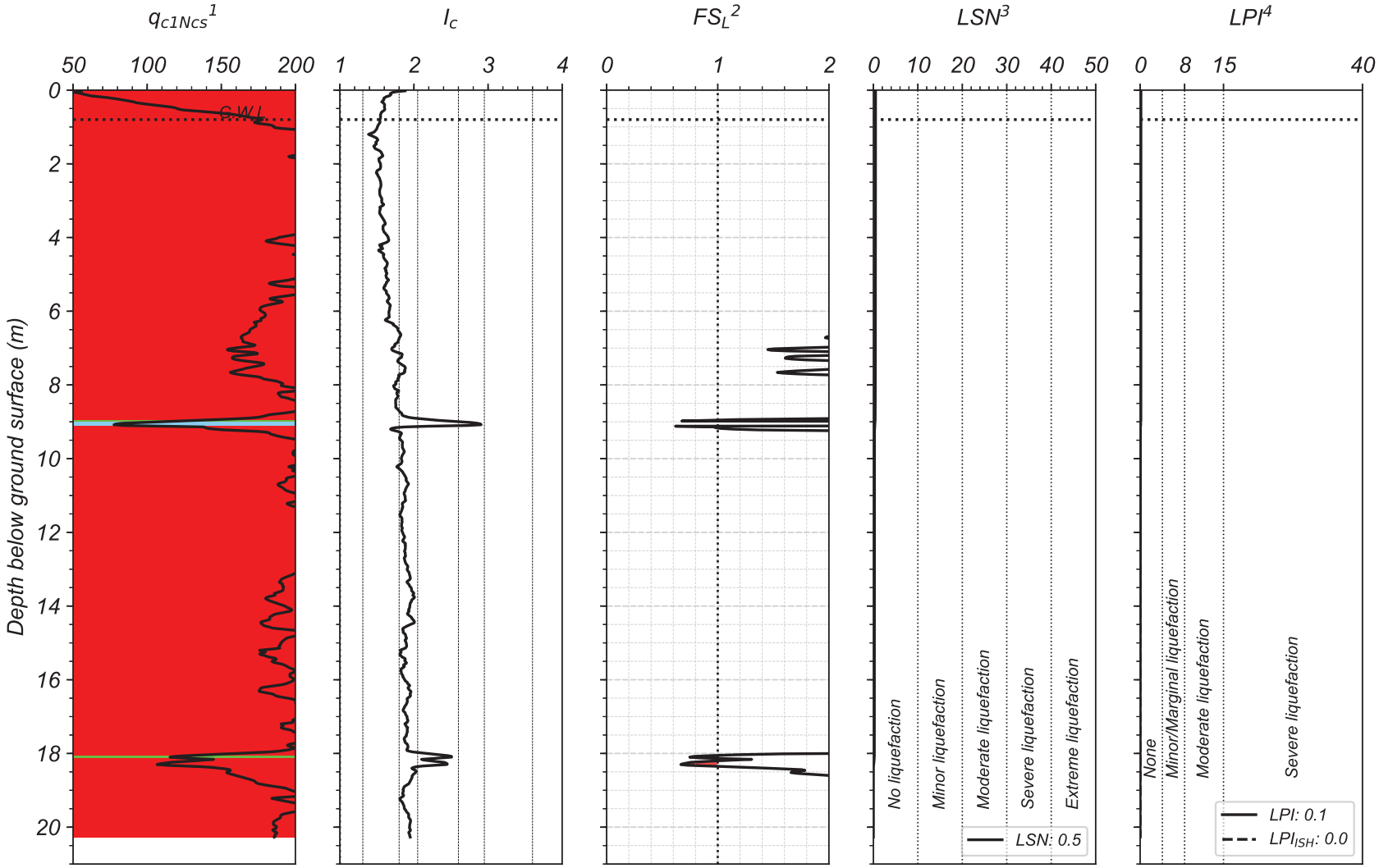


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 80 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.38 g
Site = Rawhiti ; CPT# = 57343 ; GWL = 0.8 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

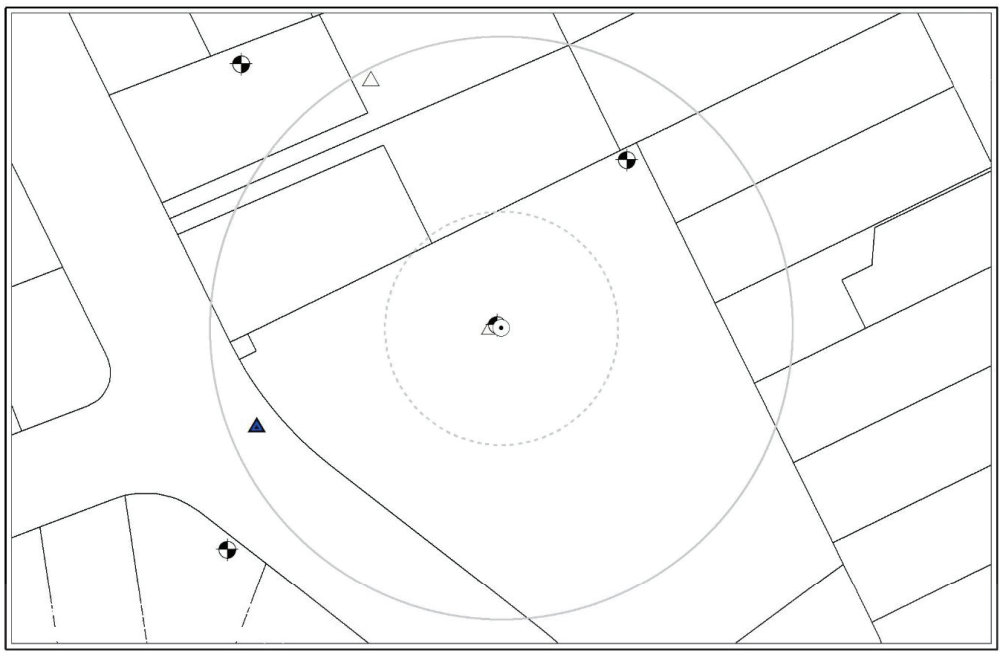


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

RYDAL

Lat: -43.565806°; Long: 172.608493°



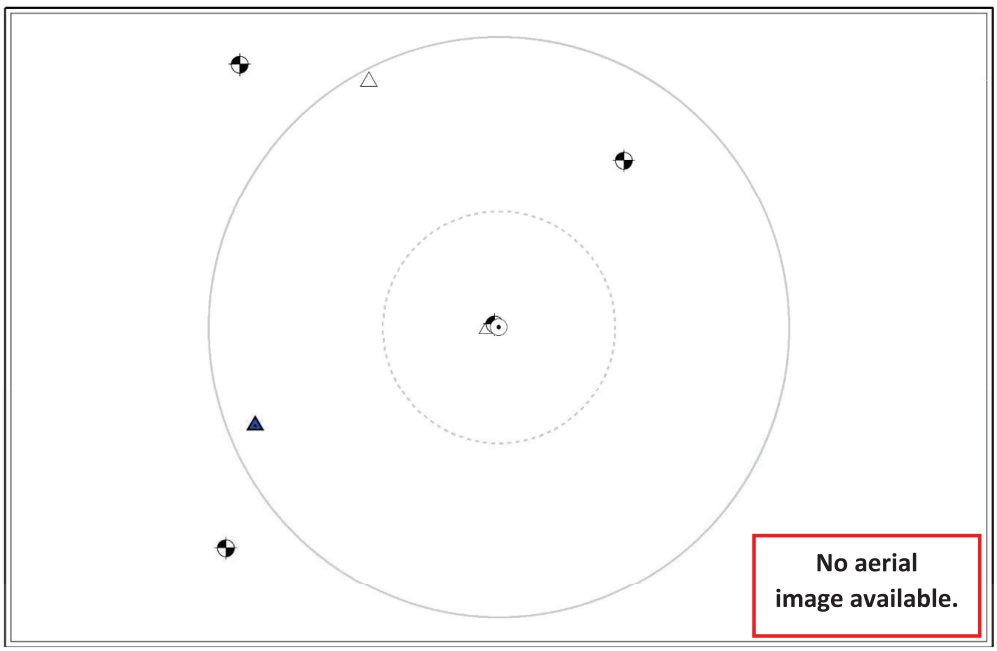
Case #81: Rydal-DAR (Aerial photograph is not available) - MINOR



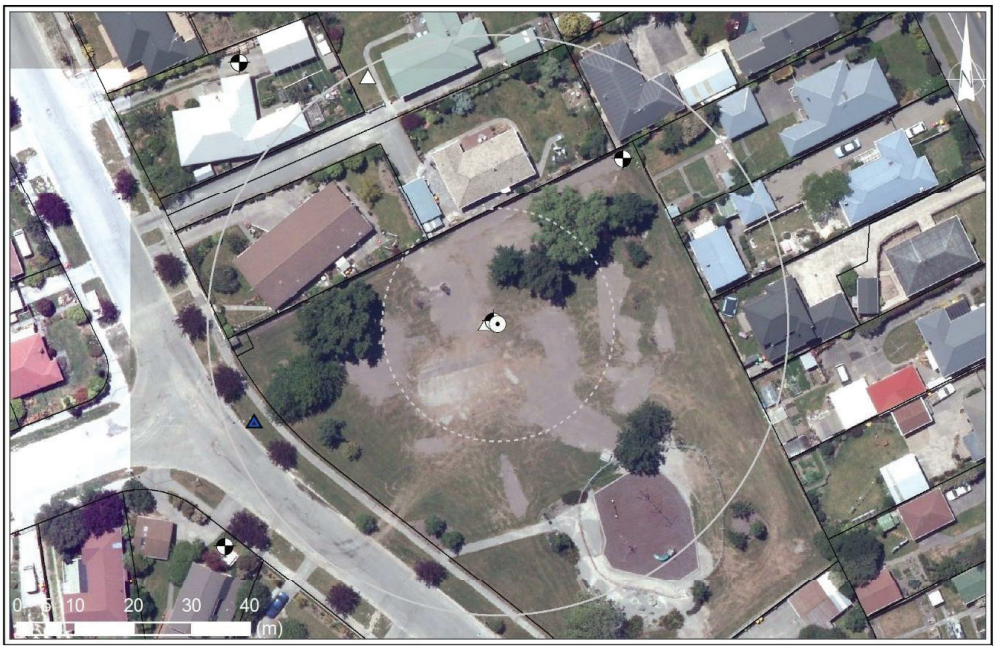
Case #82: Rydal-CHC (taken on 24/FEB/2011) - SEVERE

RYDAL

Lat: -43.565806°; Long: 172.608493°



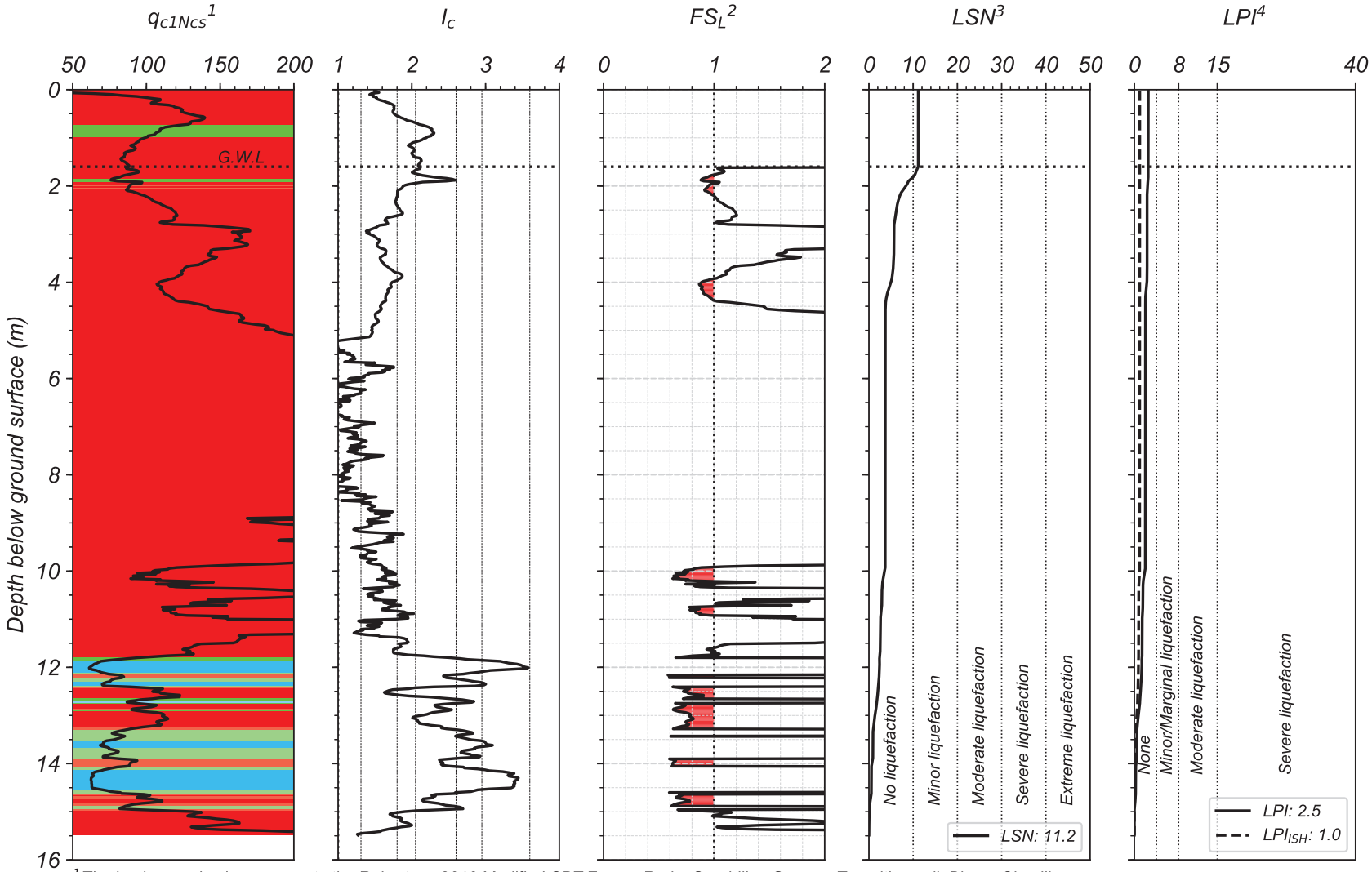
Case #83: Rydal-JUN (Aerial photograph is not available) - NONE



Case #84: Rydal-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 81 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.25 g
Site = Rydal ; CPT# = 57344 ; GWL = 1.6 m
Observed Ejecta Severity = Minor ; Site Condition = Free-field flat

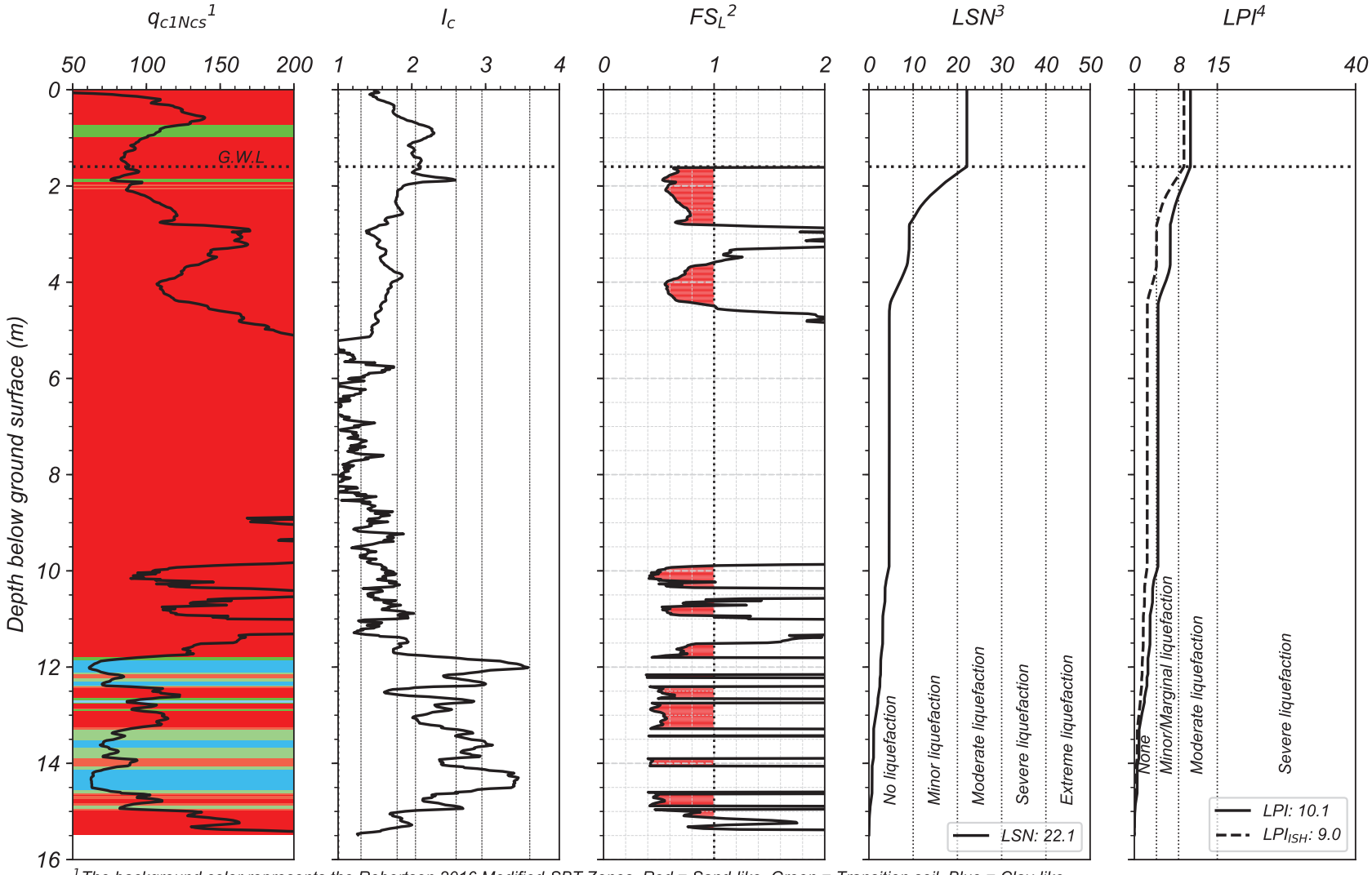


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 82 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.44 g
Site = Rydal ; CPT# = 57344 ; GWL = 1.6 m
Observed Ejecta Severity = Severe ; Site Condition = Free-field flat

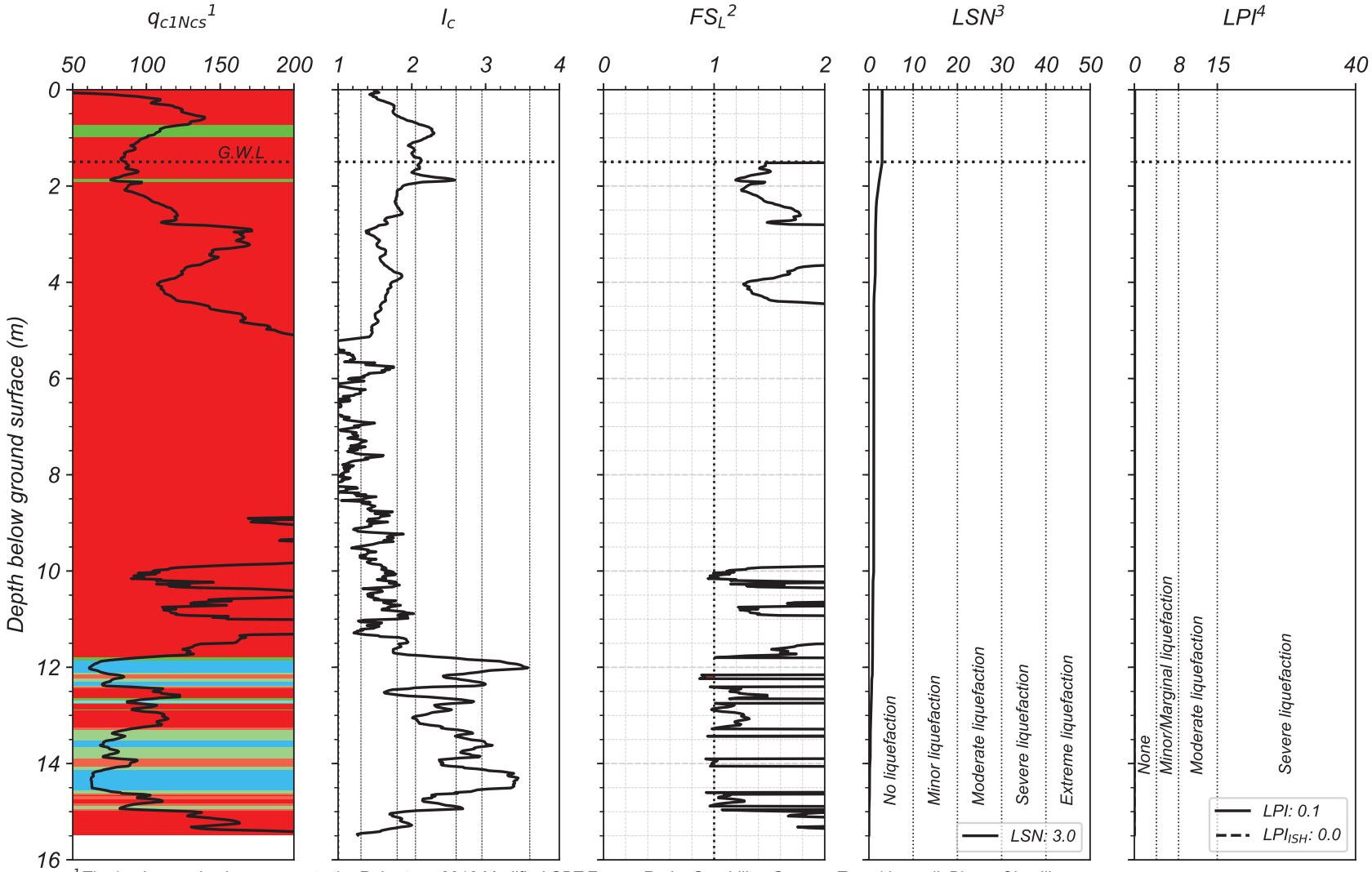


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 83 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.19 g
Site = Rydal ; CPT# = 57344 ; GWL = 1.5 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

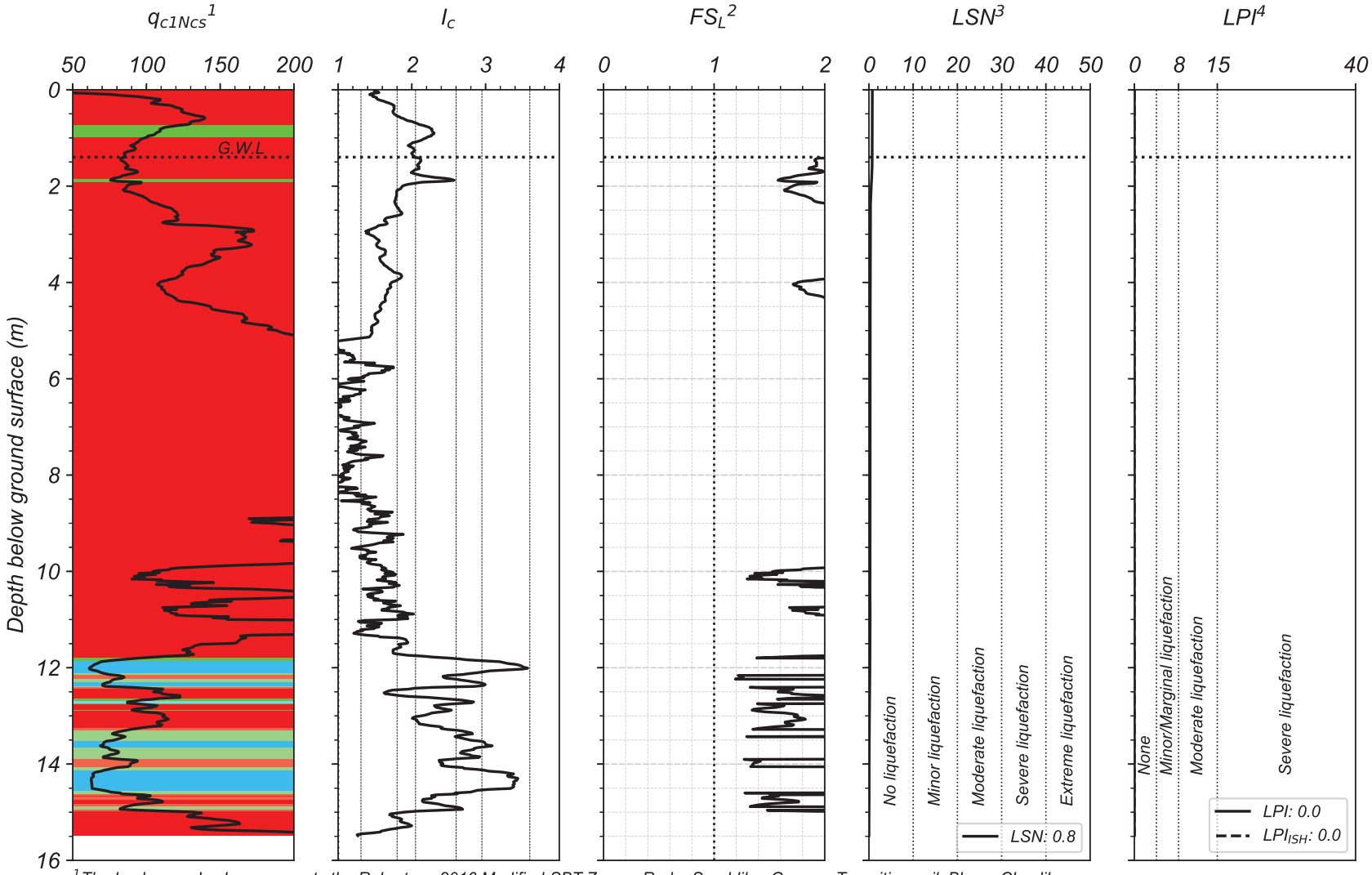


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 84 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.14 g
Site = Rydal ; CPT# = 57344 ; GWL = 1.4 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

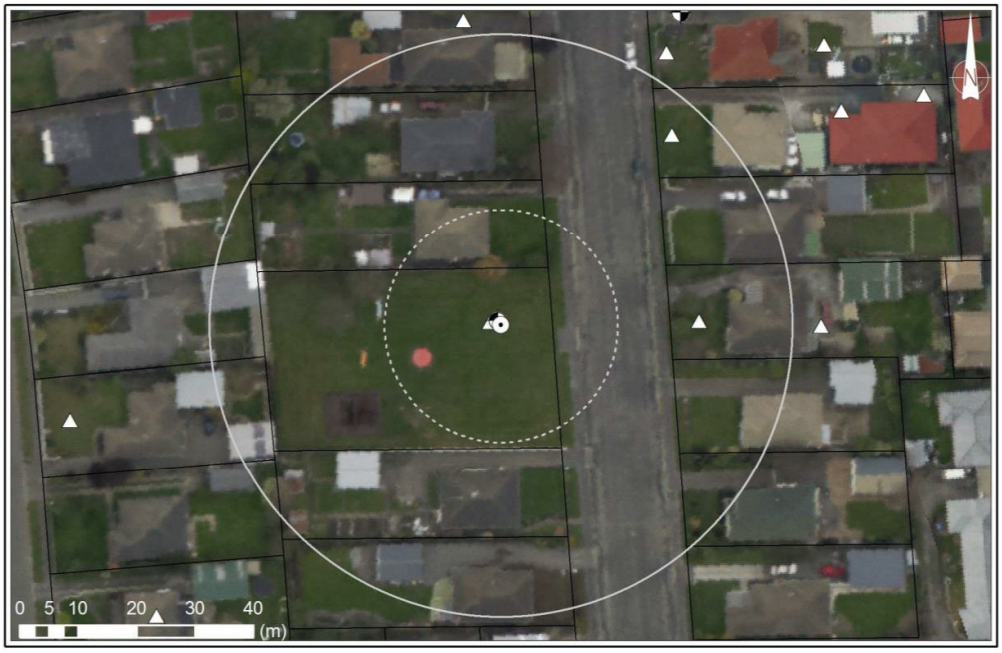


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

SABINA

Lat: -43.504340°; Long: 172.660660°



Case #85: Sabina-DAR (taken on 5/SEP/2010) - NONE



Case #86: Sabina-CHC (taken on 24/FEB/2011) - MODERATE

SABINA

Lat: -43.504340°; Long: 172.660660°



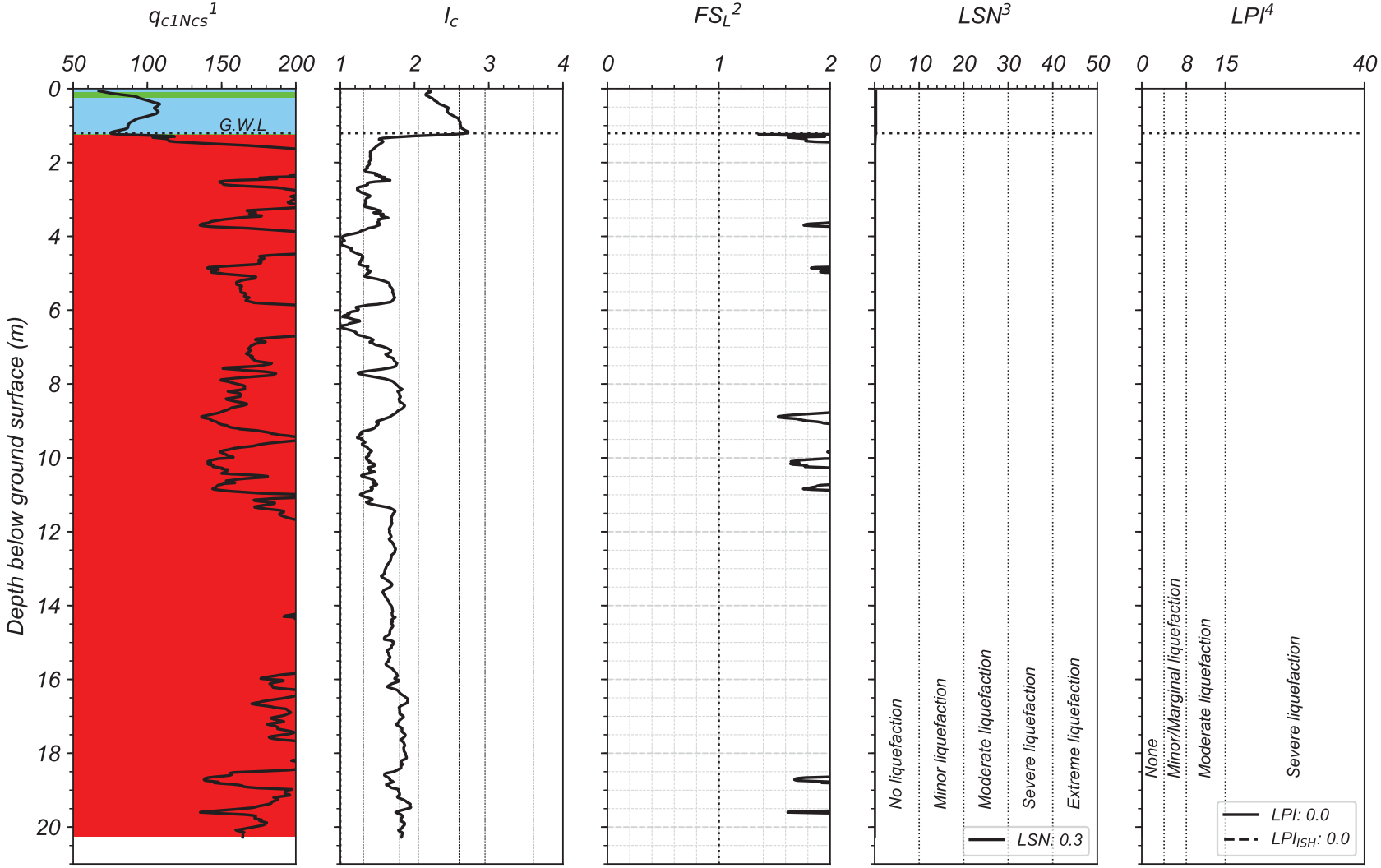
Case #87: Sabina-JUN (taken on 15/JUN/2011) - MODERATE



Case #88: Sabina-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 85 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.18 g
Site = Sabina ; CPT# = 57346 ; GWL = 1.2 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

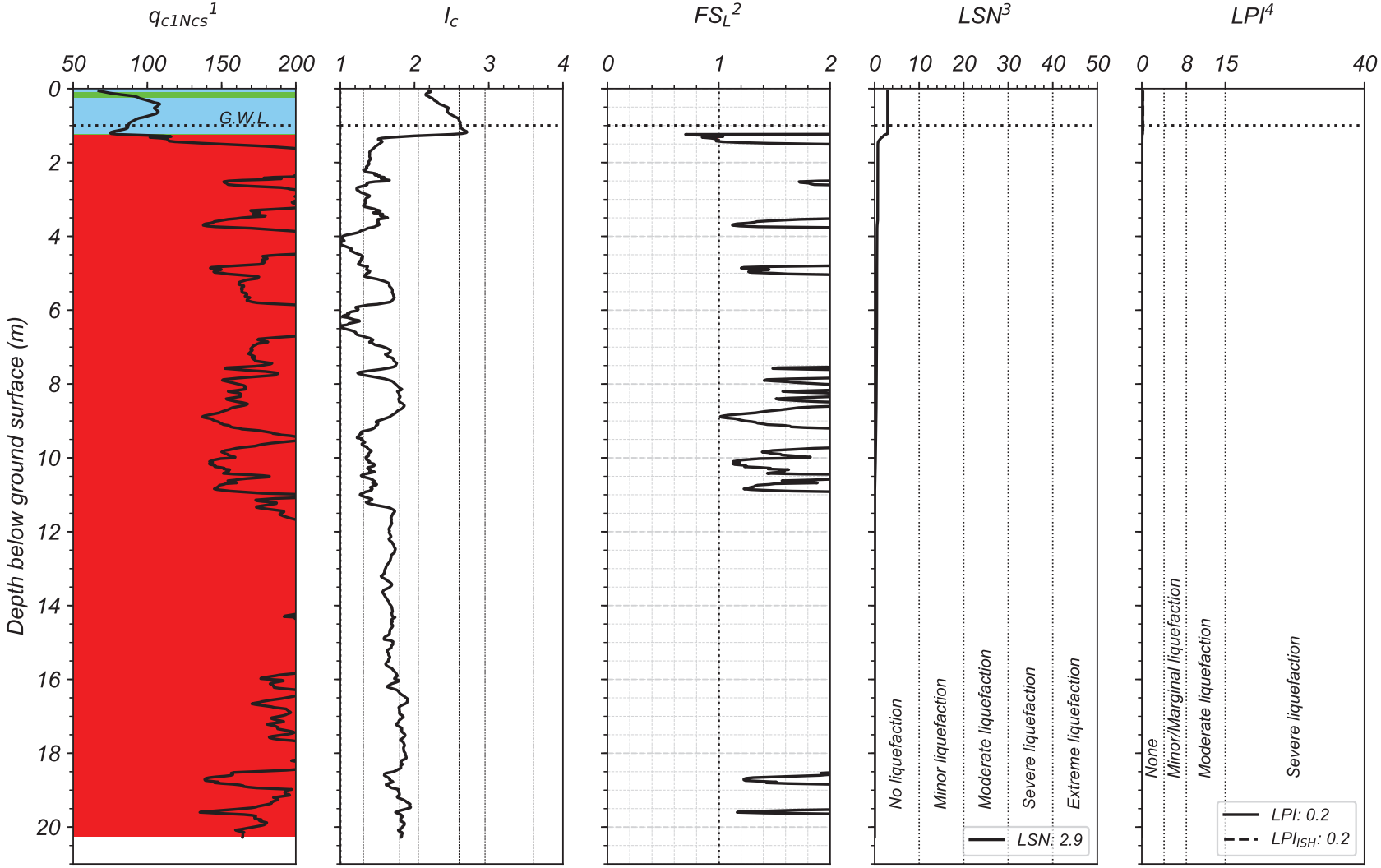


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 86 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.34 g
Site = Sabina ; CPT# = 57346 ; GWL = 1.0 m
Observed Ejecta Severity = Moderate ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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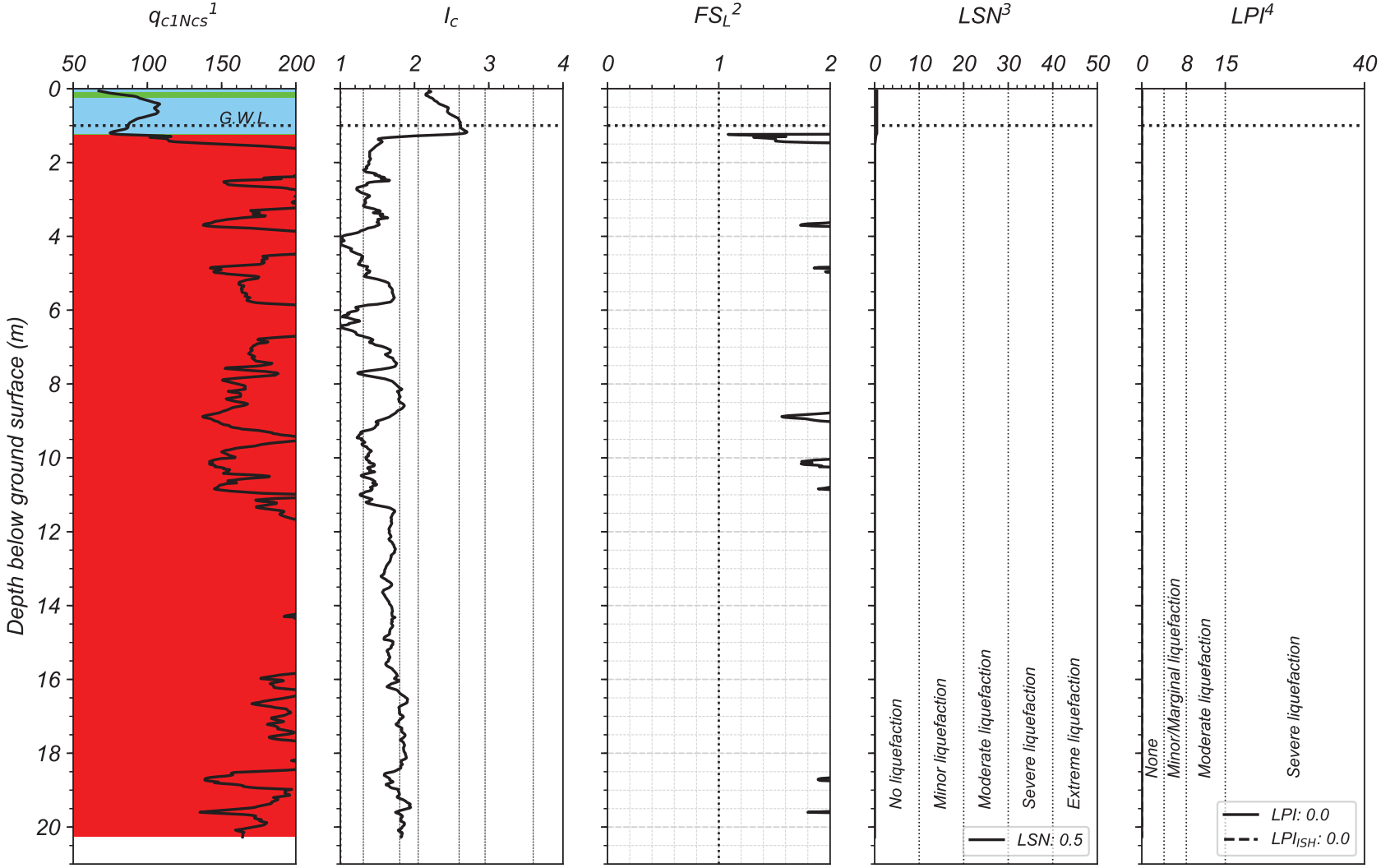
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 87 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.22 g
Site = Sabina ; CPT# = 57346 ; GWL = 1.0 m
Observed Ejecta Severity = Moderate ; Site Condition = Free-field flat

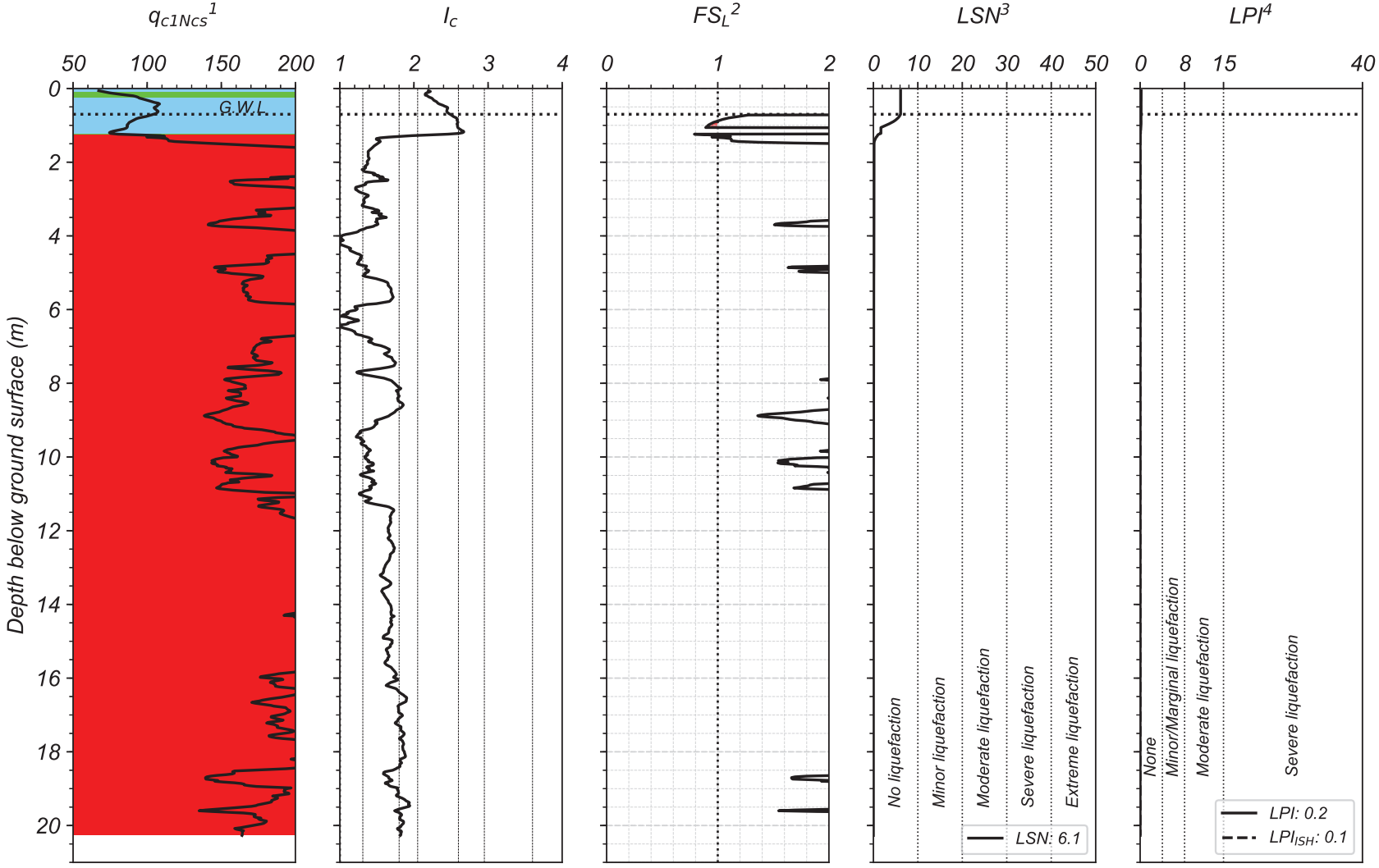


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 88 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.26 g
Site = Sabina ; CPT# = 57346 ; GWL = 0.7 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

SHIRLEY

Lat: -43.510408°; Long: 172.661995°



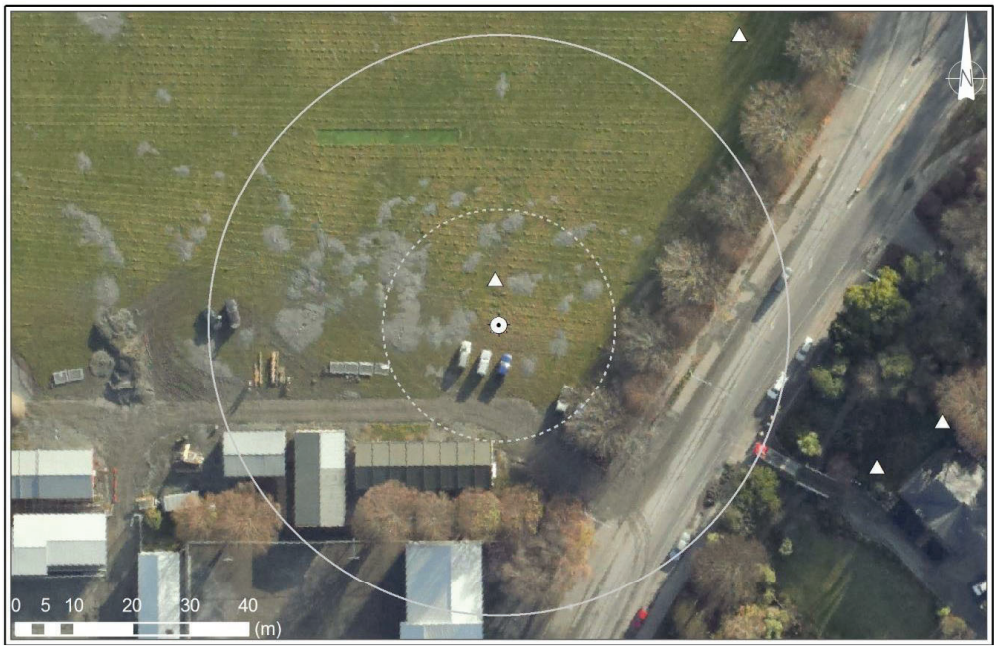
Case #89: Shirley-DAR (taken on 5/SEP/2010) - NONE



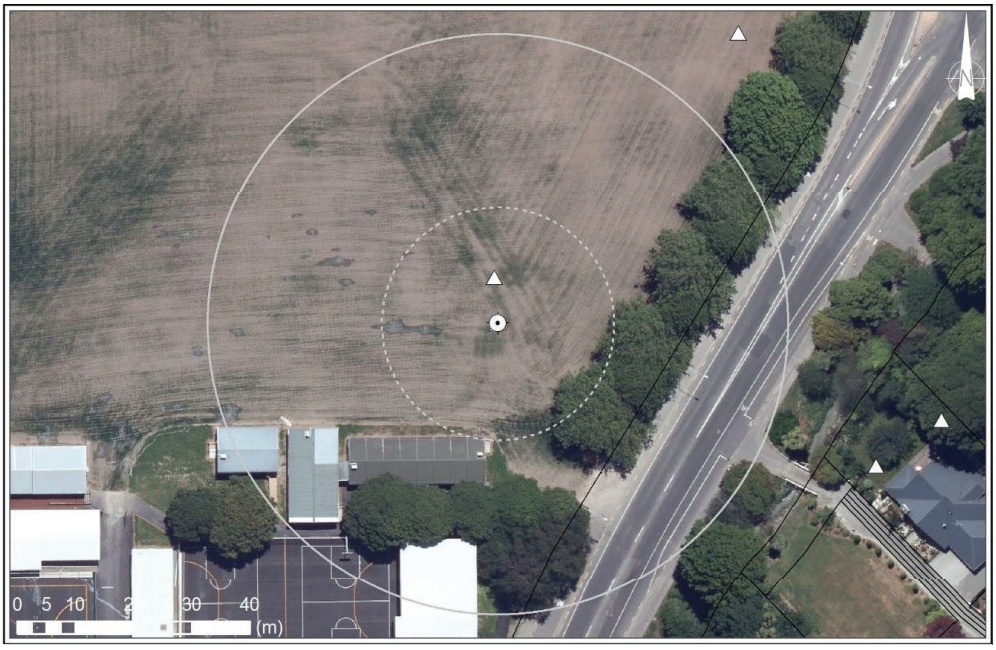
Case #90: Shirley-CHC (taken on 24/FEB/2011) - EXTREME

SHIRLEY

Lat: -43.510408°; Long: 172.661995°



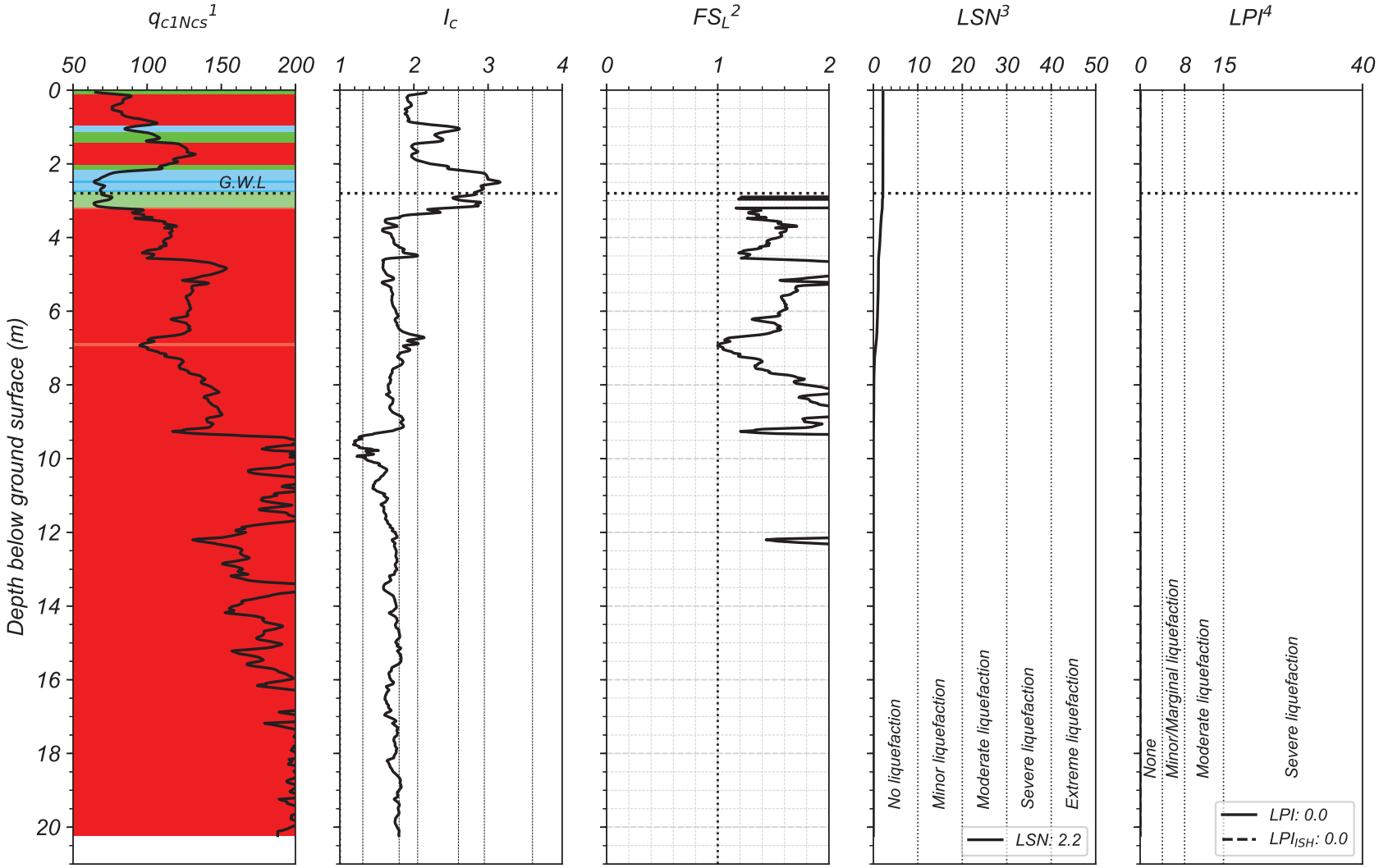
Case #91: Shirley-JUN (taken on 15/JUN/2011) - SEVERE



Case #92: Shirley-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 89 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.19 g
Site = Shirley ; CPT# = 57366 ; GWL = 2.8 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

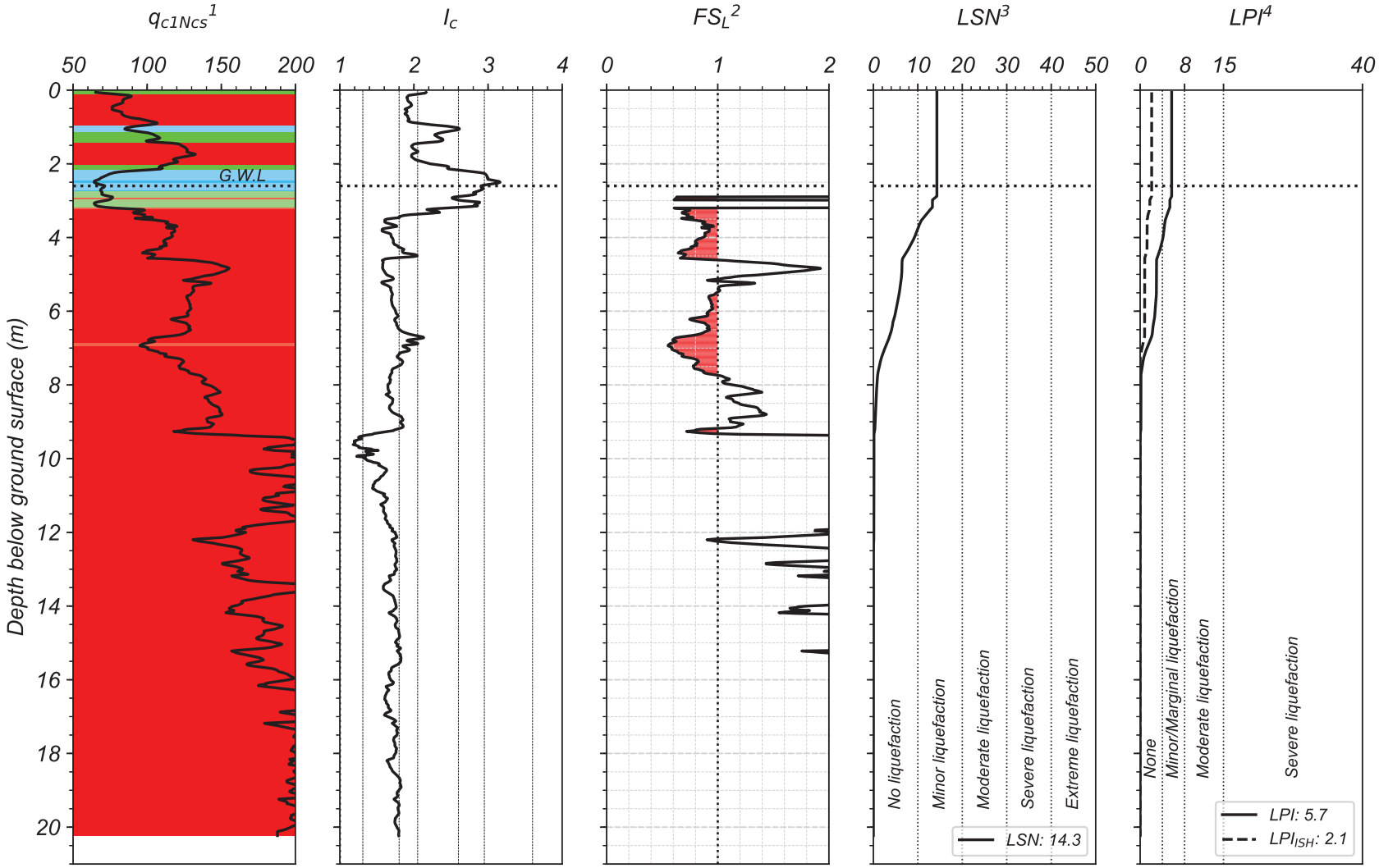


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 90 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.38 g
Site = Shirley ; CPT# = 57366 ; GWL = 2.6 m
Observed Ejecta Severity = Extreme ; Site Condition = Free-field flat

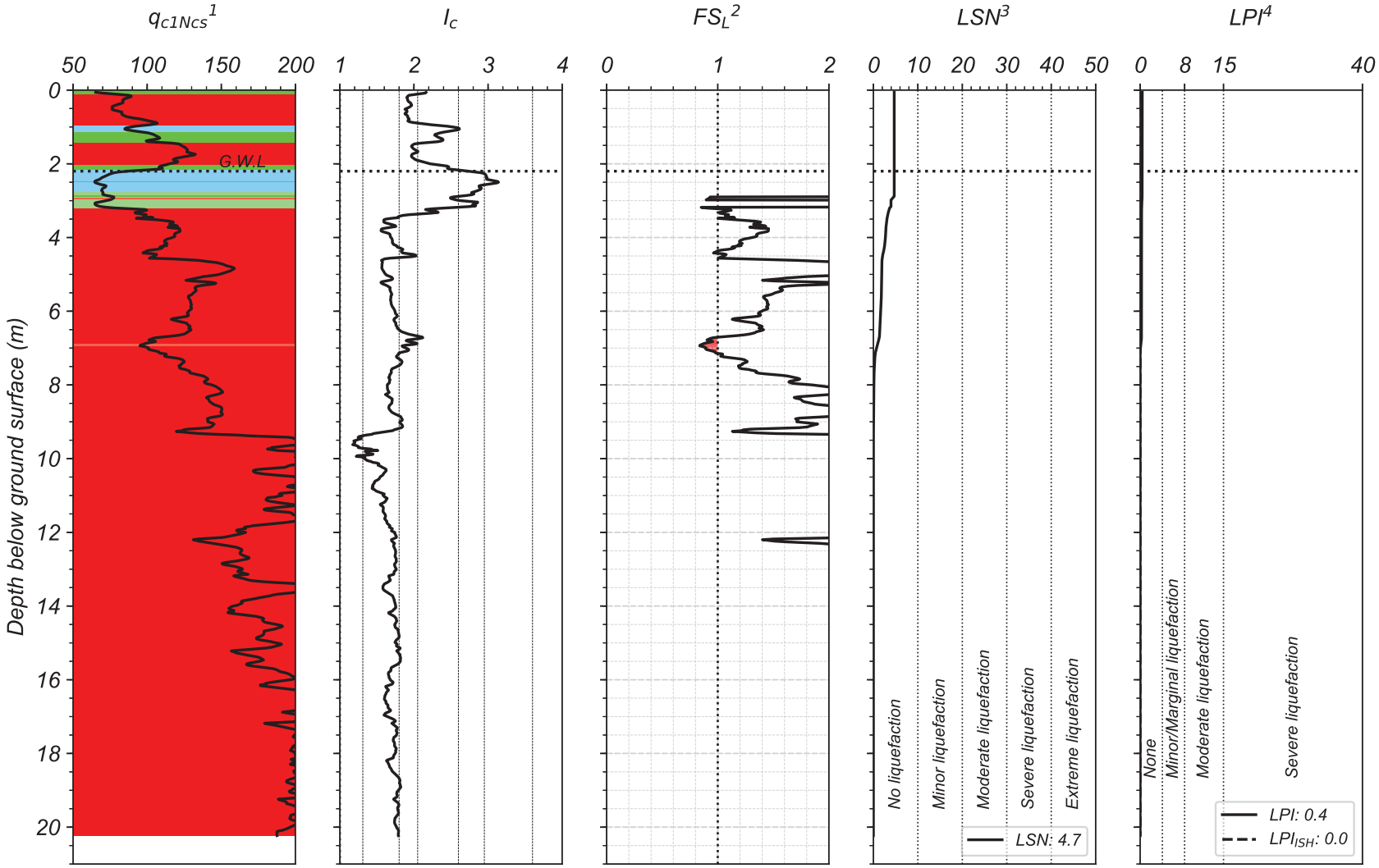


[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 91 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.24 g
Site = Shirley ; CPT# = 57366 ; GWL = 2.2 m
Observed Ejecta Severity = Severe ; Site Condition = Free-field flat

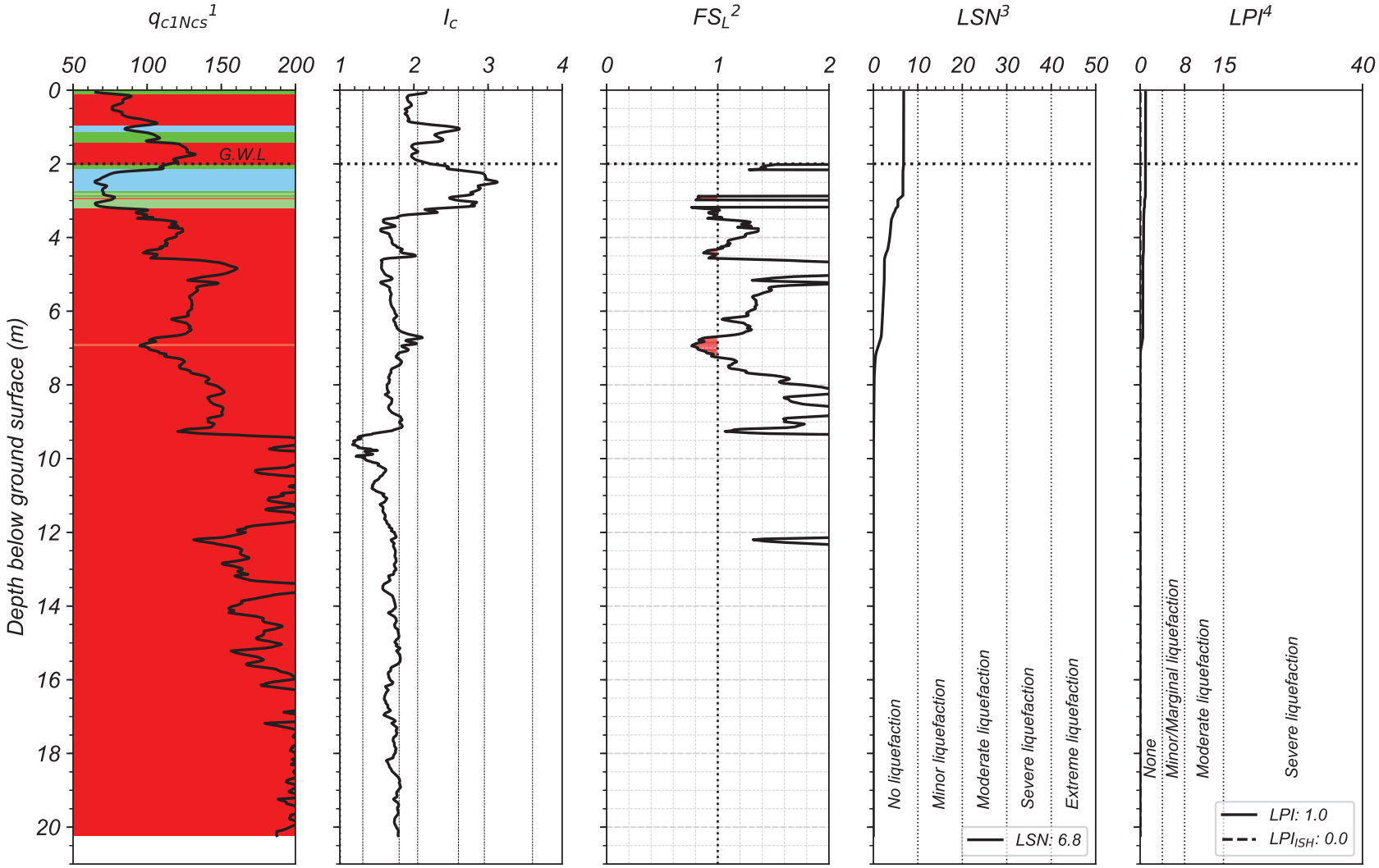


[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 92 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.26 g
Site = Shirley ; CPT# = 57366 ; GWL = 2.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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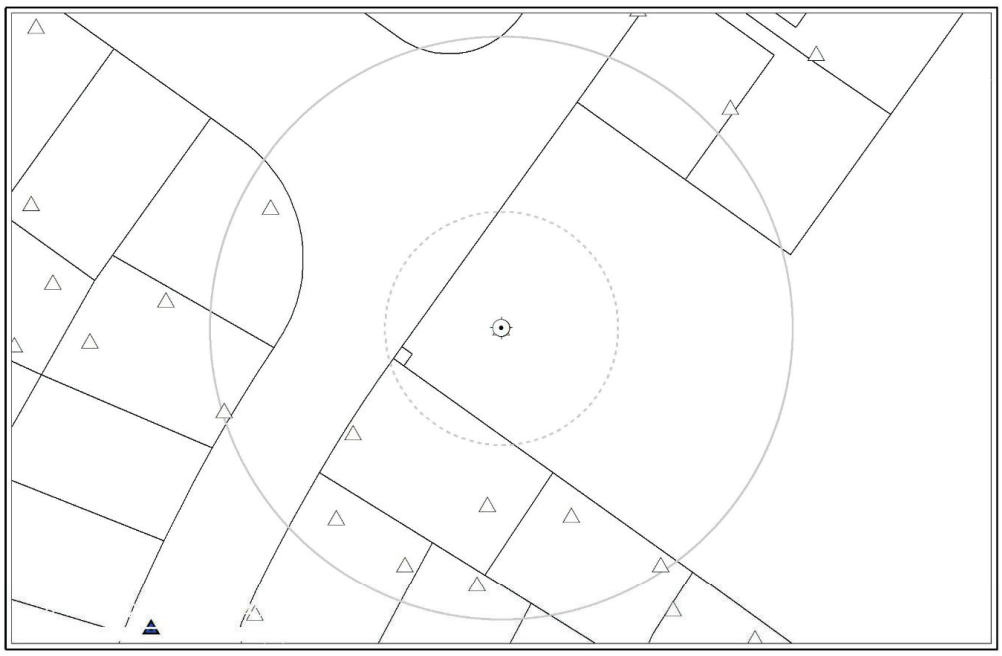
UC Berkeley, 2020

TI RAKAU

Lat: -43.548825°; Long: 172.695373°



Case #93: Ti Rakau-DAR (Aerial photograph is not available) - NONE



Case #94: Ti Rakau-CHC (taken on 24/FEB/2011) - SEVERE

TI RAKAU

Lat: -43.548825°; Long: 172.695373°



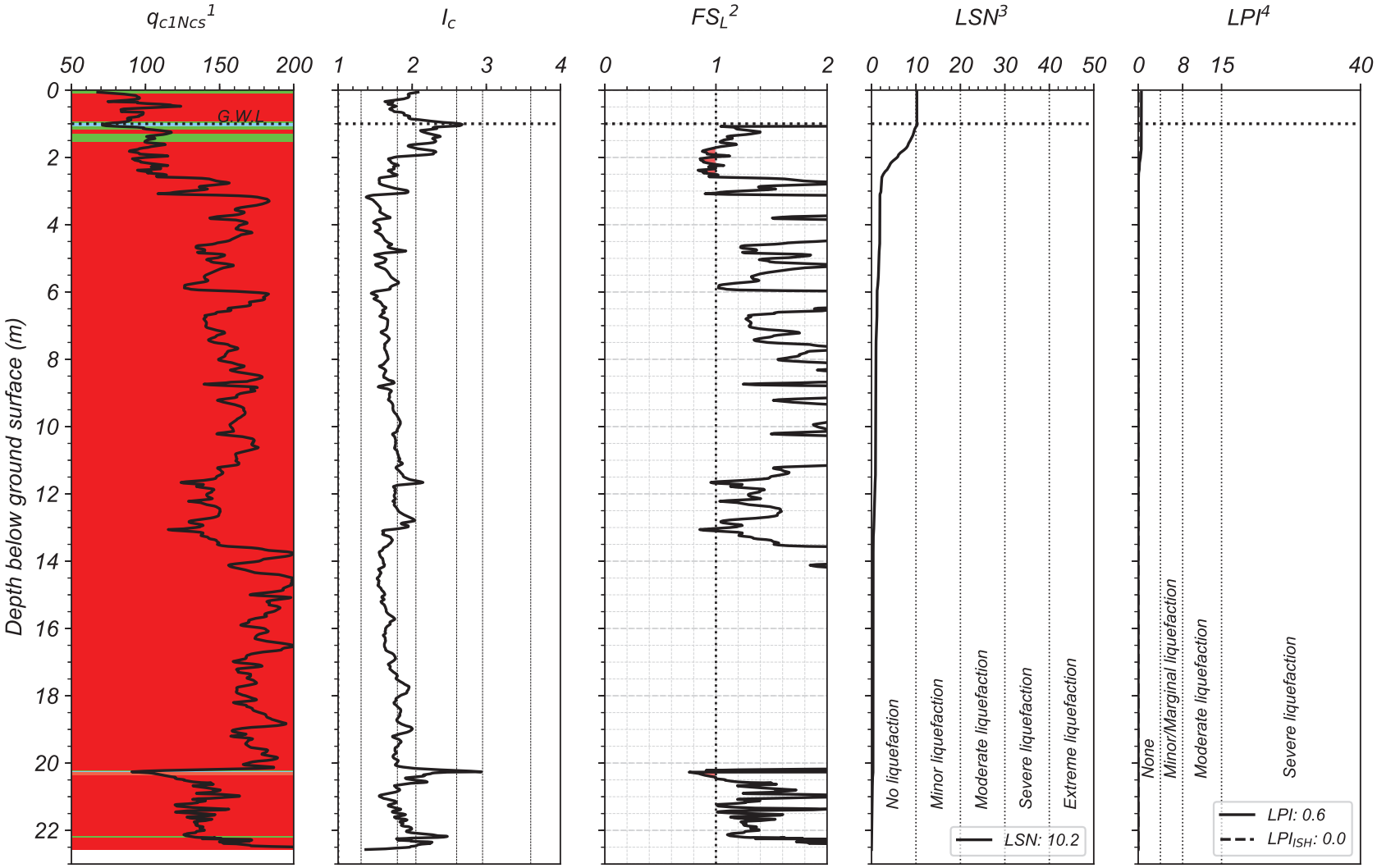
Case #95: Ti Rakau-JUN (taken on 15/JUN/2011) - SEVERE



Case #96: Ti Rakau-DEC (taken on 24/DEC/2011) - MODERATE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 93 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.23 g
Site = Ti Rakau ; CPT# = 57341 ; GWL = 1.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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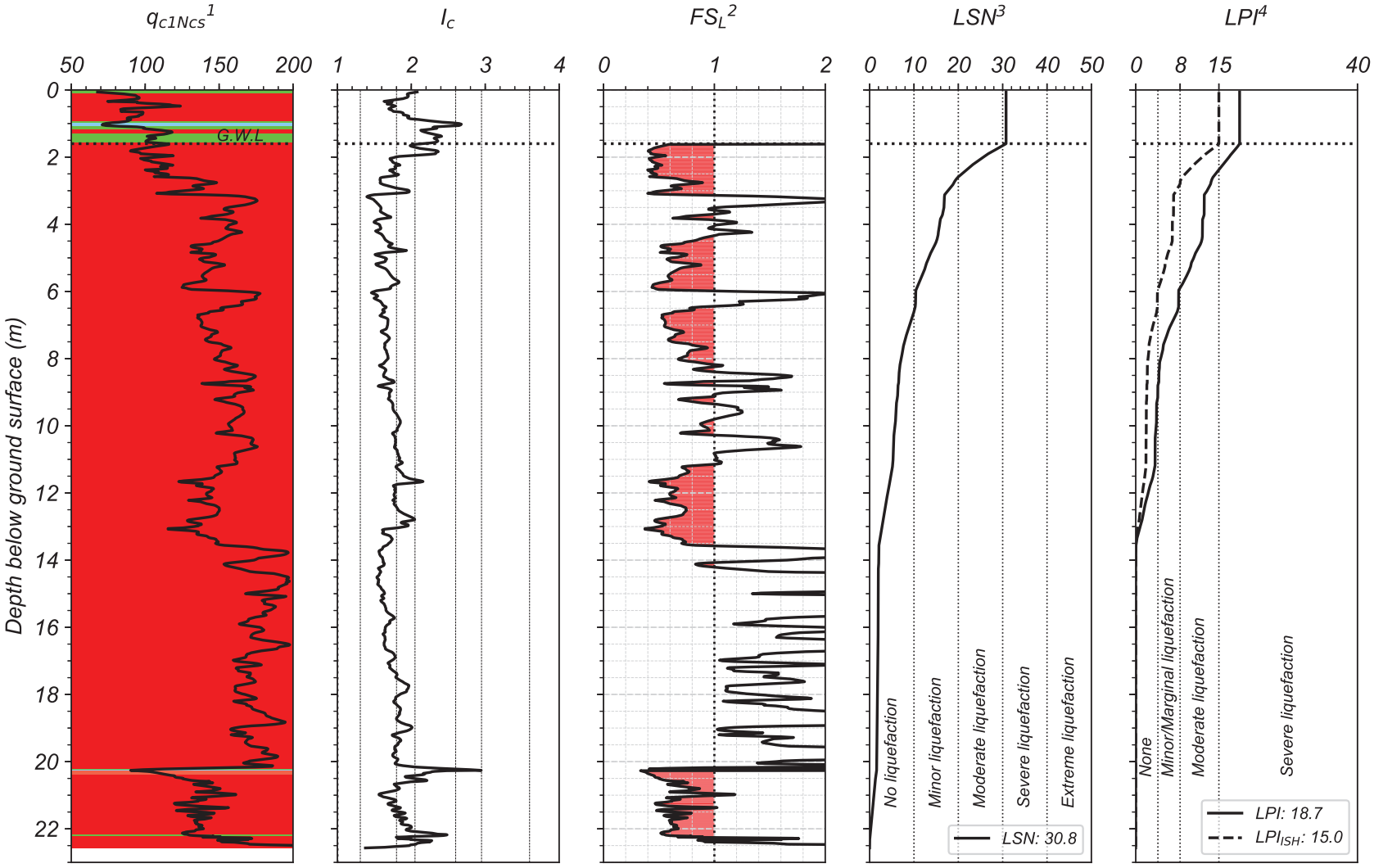
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 94 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.68 g
Site = Ti Rakau ; CPT# = 57341 ; GWL = 1.6 m
Observed Ejecta Severity = Severe ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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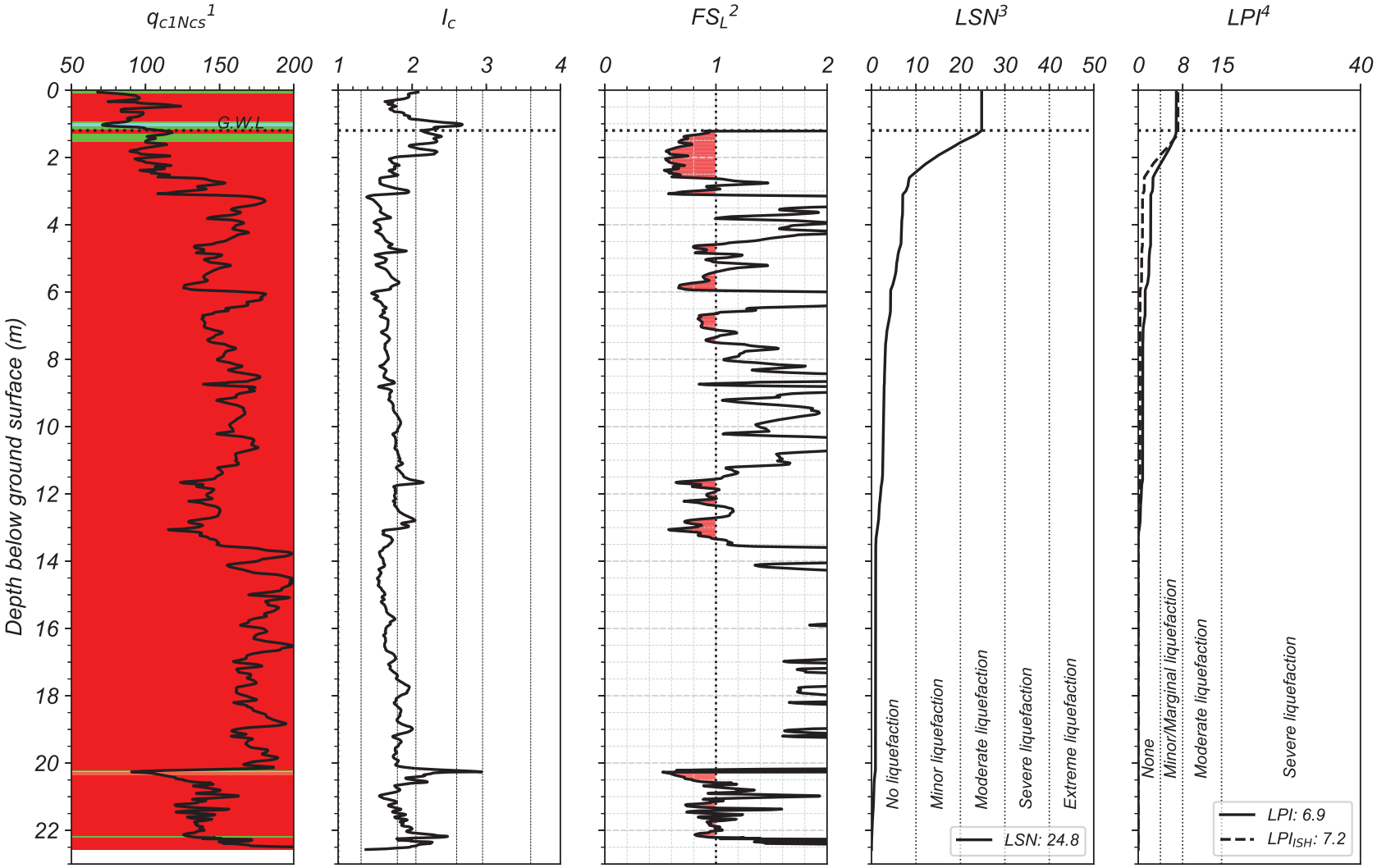
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 95 ; Event = 13-Jun ; M_W = 6.2 ; Surface PGA_{max} = 0.43 g
Site = Ti Rakau ; CPT# = 57341 ; GWL = 1.2 m
Observed Ejecta Severity = Severe ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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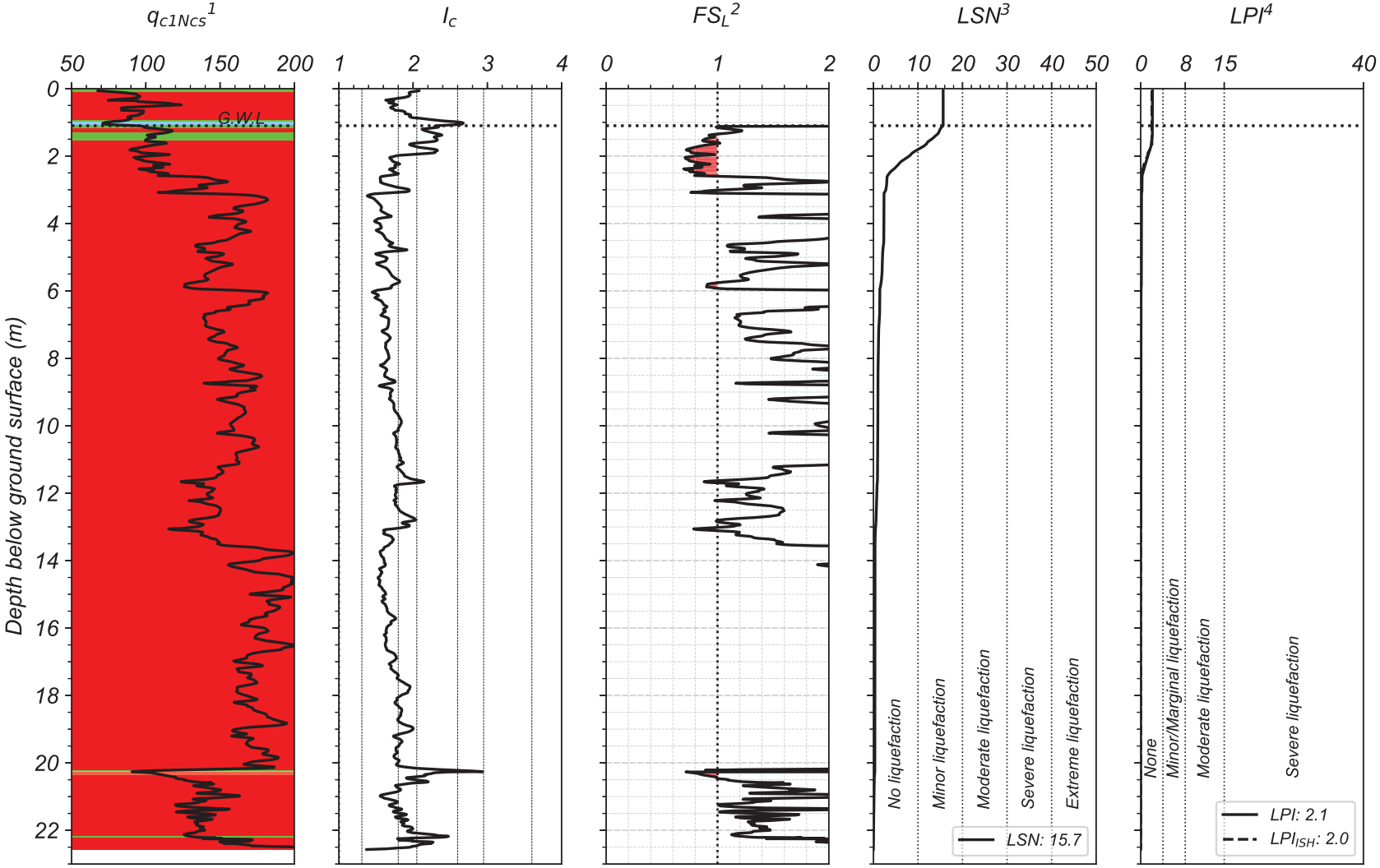
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 96 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.32 g
Site = Ti Rakau ; CPT# = 57341 ; GWL = 1.1 m
Observed Ejecta Severity = Moderate ; Site Condition = Free-field flat



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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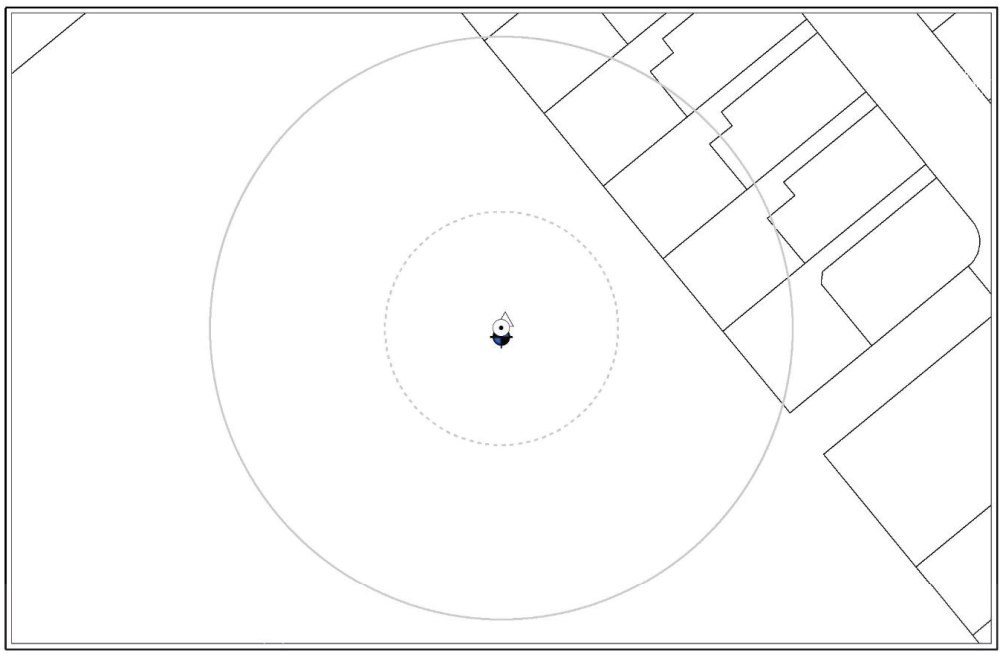
UC Berkeley, 2020

BARRINGTON

Lat: -43.554035°; Long: 172.617541°



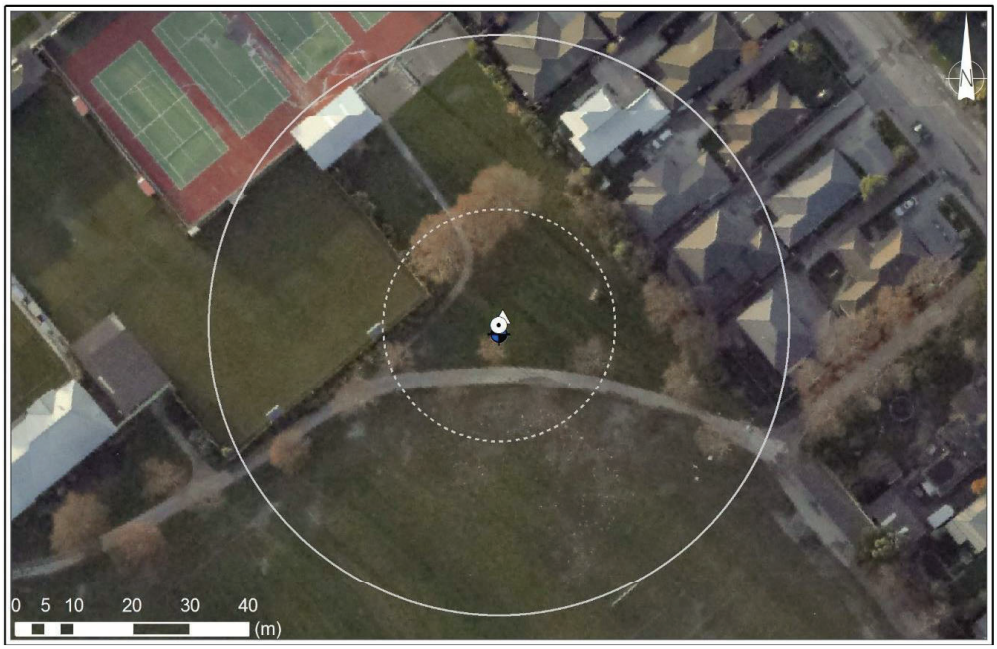
Case #97: Barrington-DAR (Aerial photograph is not available) - NONE



Case #98: Barrington-CHC (taken on 24/FEB/2011) - MODERATE

BARRINGTON

Lat: -43.554035°; Long: 172.617541°



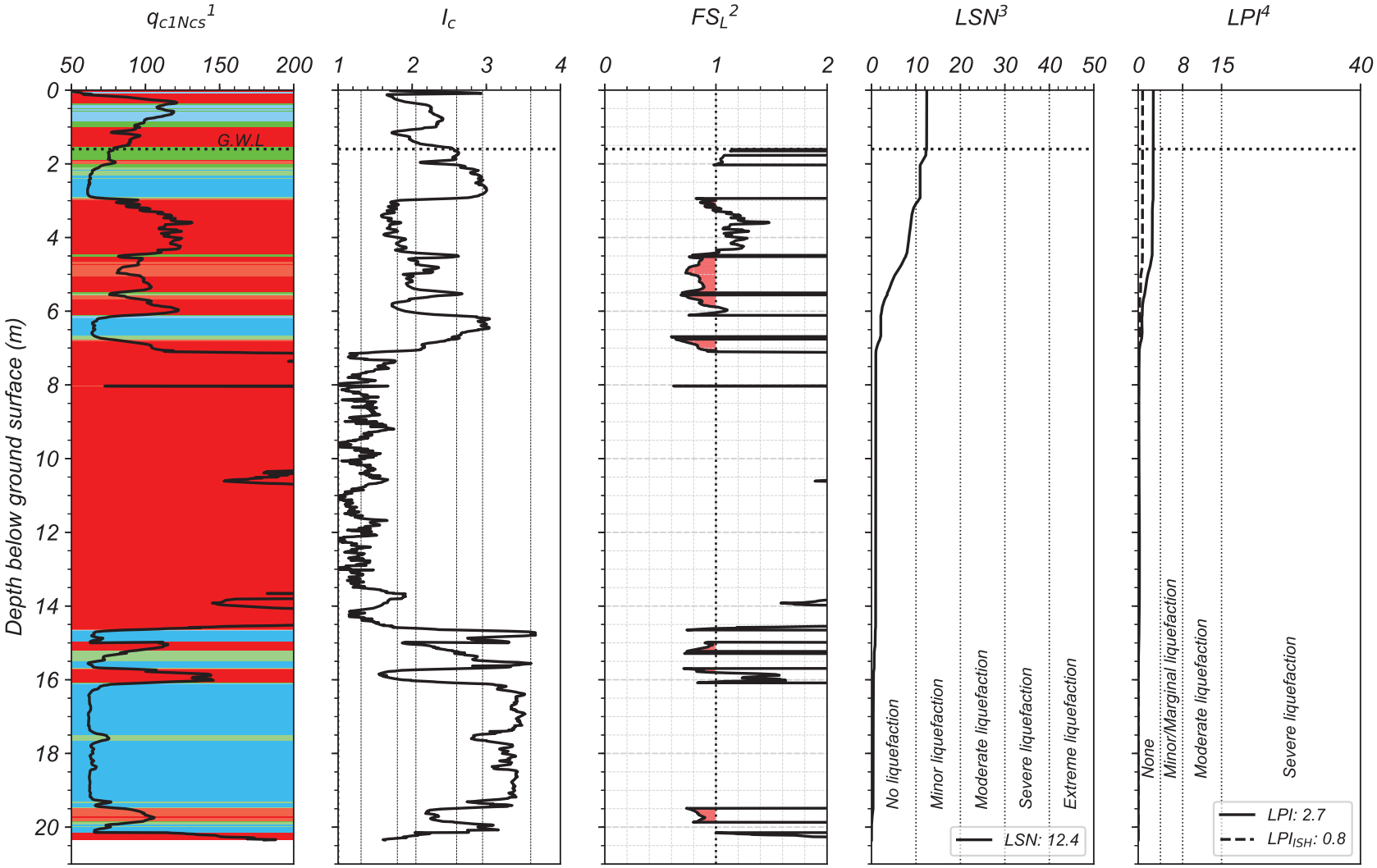
Case #99: Barrington-JUN (taken on 15/JUN/2011) - NONE



Case #100: Barrington-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 97 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.21 g
Site = Barrington ; CPT# = 37818 ; GWL = 1.6 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

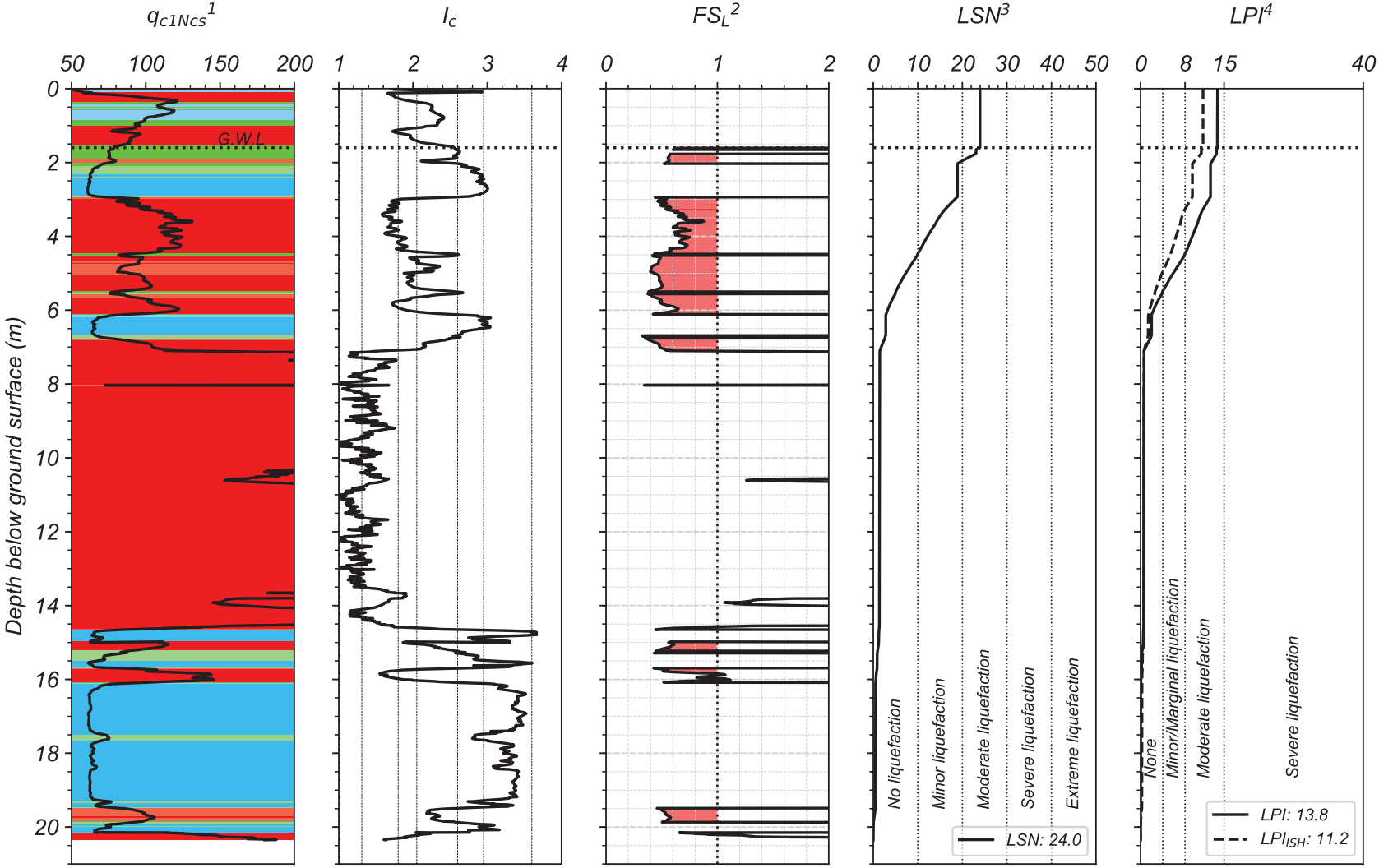


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 98 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.42 g
Site = Barrington ; CPT# = 37818 ; GWL = 1.6 m
Observed Ejecta Severity = Moderate ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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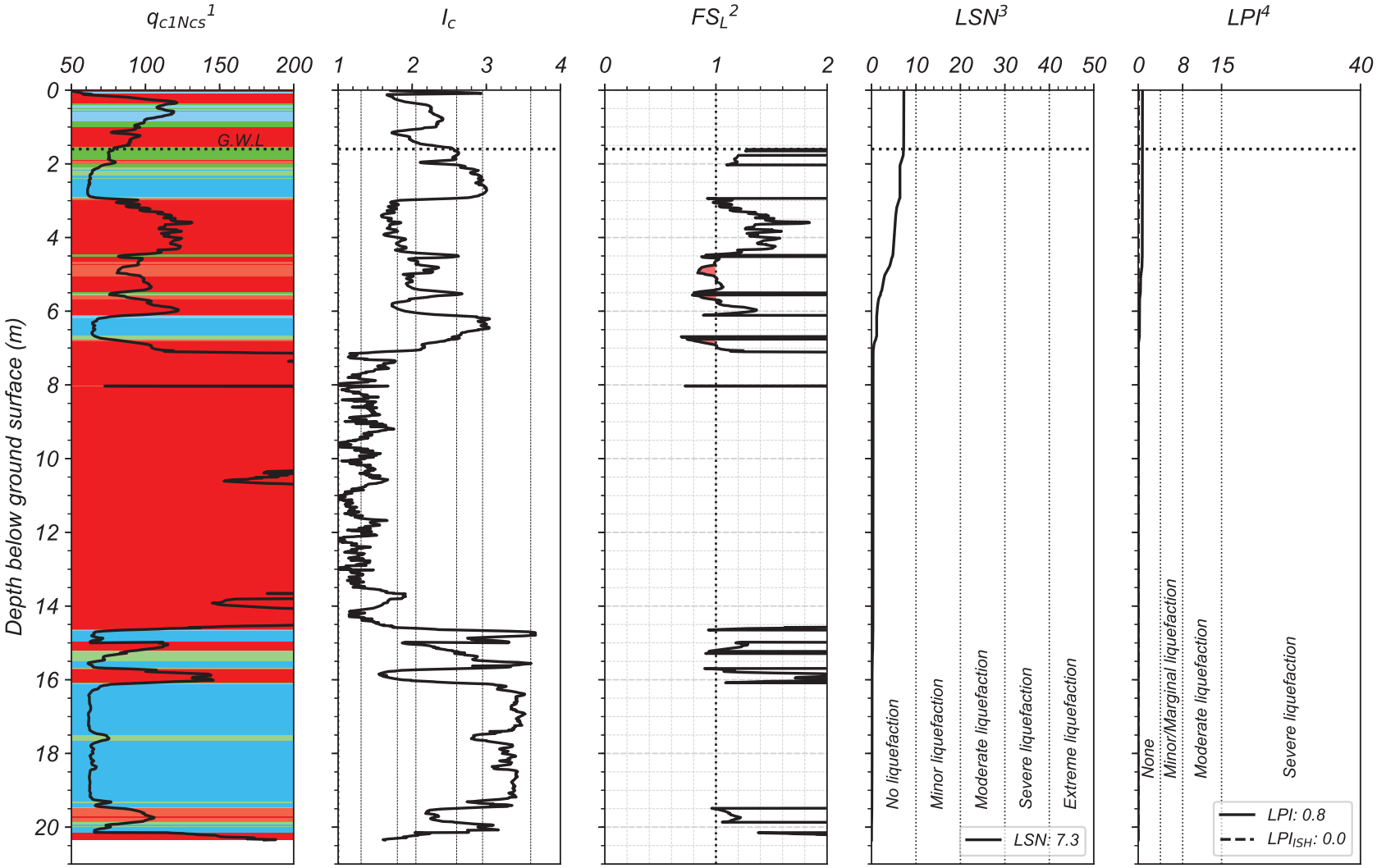
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 99 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.20 g
Site = Barrington ; CPT# = 37818 ; GWL = 1.6 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

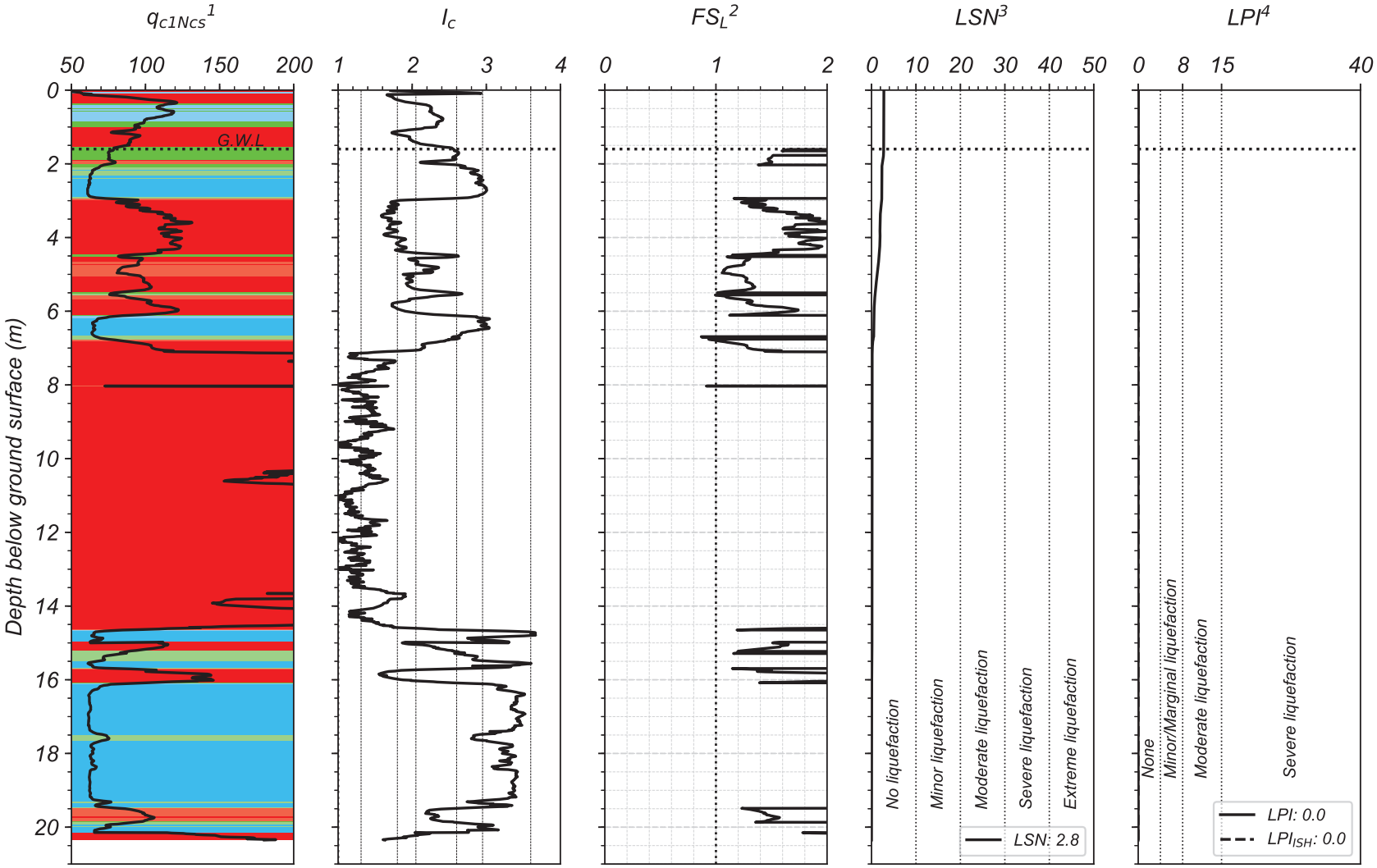


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 100 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.16 g
Site = Barrington ; CPT# = 37818 ; GWL = 1.6 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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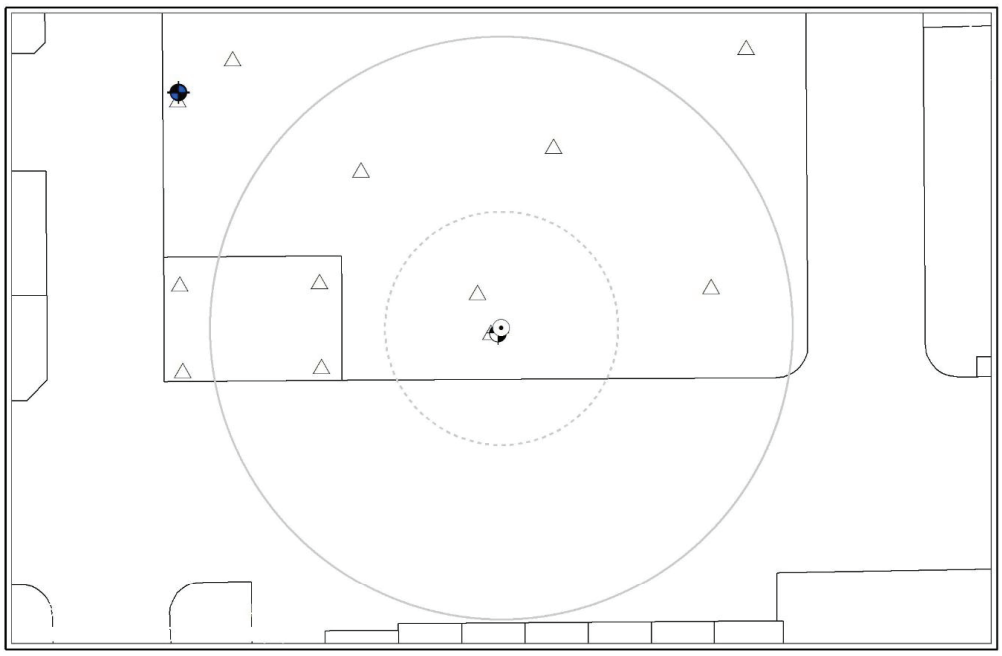
BROUGHAM

Lat: -43.547245°; Long: 172.637516°



Case #101: Brougham-DAR (Aerial photograph is not available) - NONE



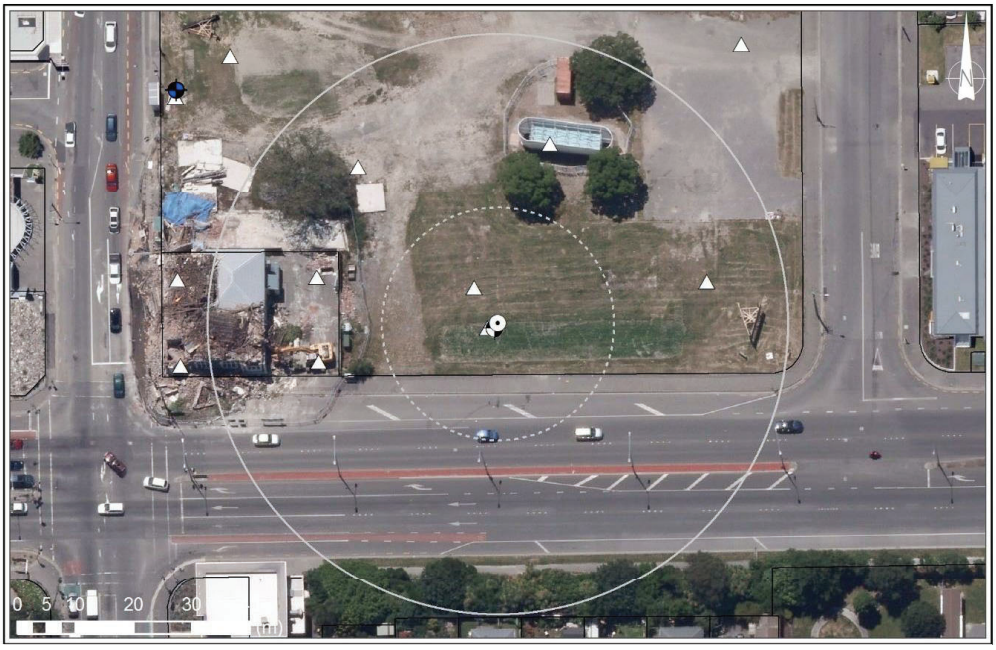
Case #102: Brougham-CHC (taken on 24/FEB/2011) - MINOR

BROUGHAM

Lat: -43.547245°; Long: 172.637516°



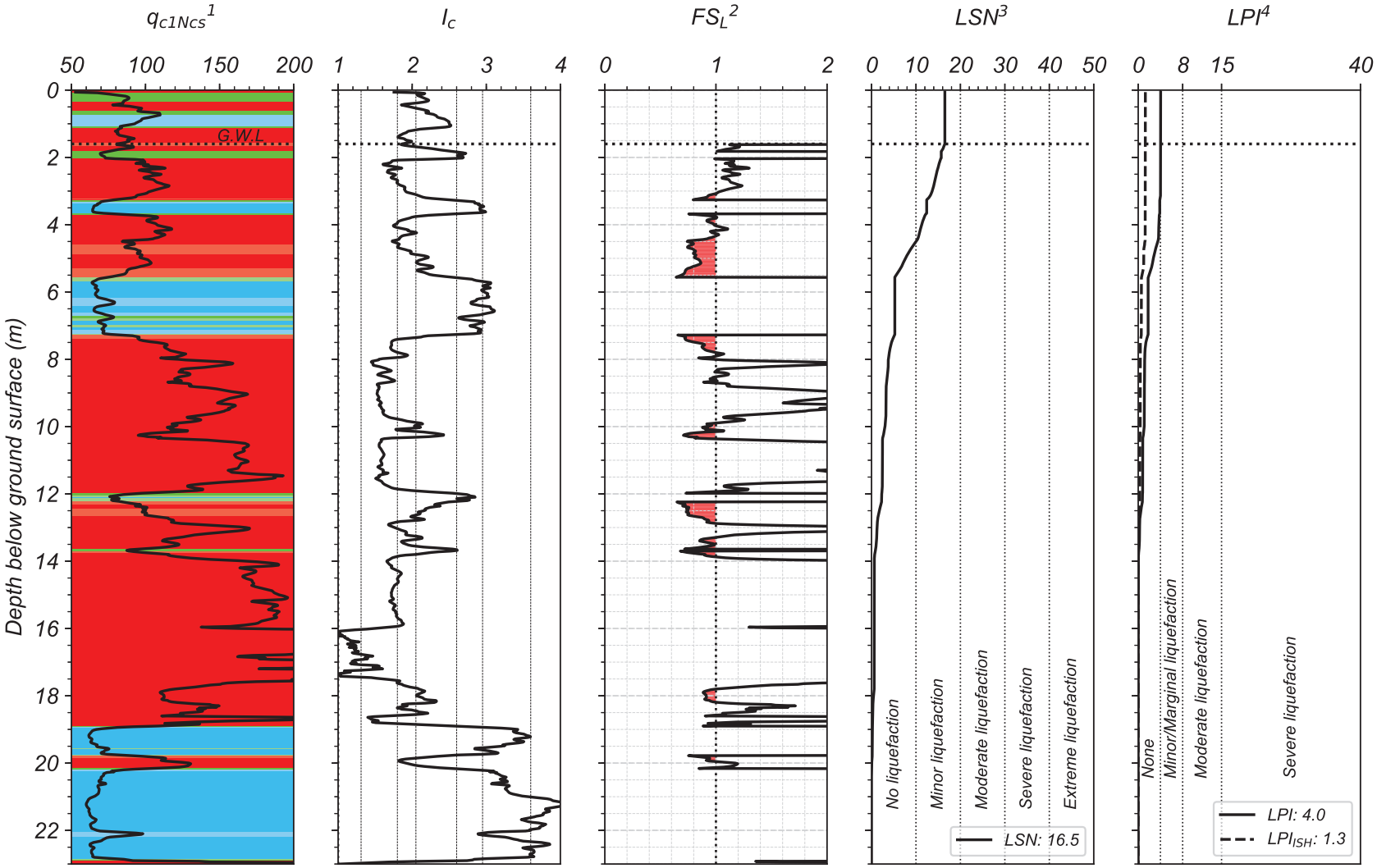
Case #103: Brougham-JUN (taken on 15/JUN/2011) - NONE



Case #104: Brougham-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 101 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.22 g
Site = Brougham ; CPT# = 57355 ; GWL = 1.6 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

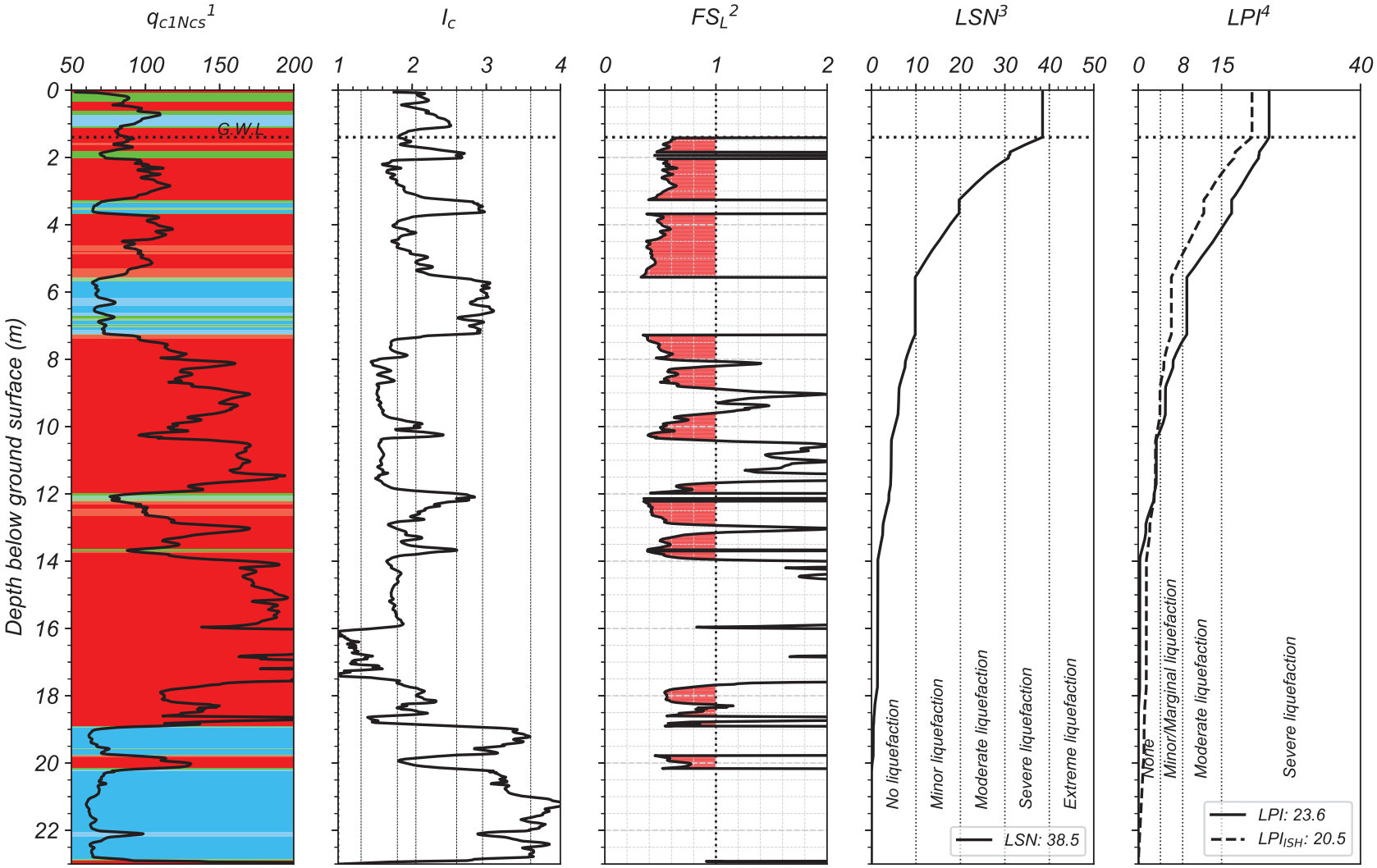


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 102 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.46 g
Site = Brougham ; CPT# = 57355 ; GWL = 1.4 m
Observed Ejecta Severity = Minor ; Site Condition = Free-field flat

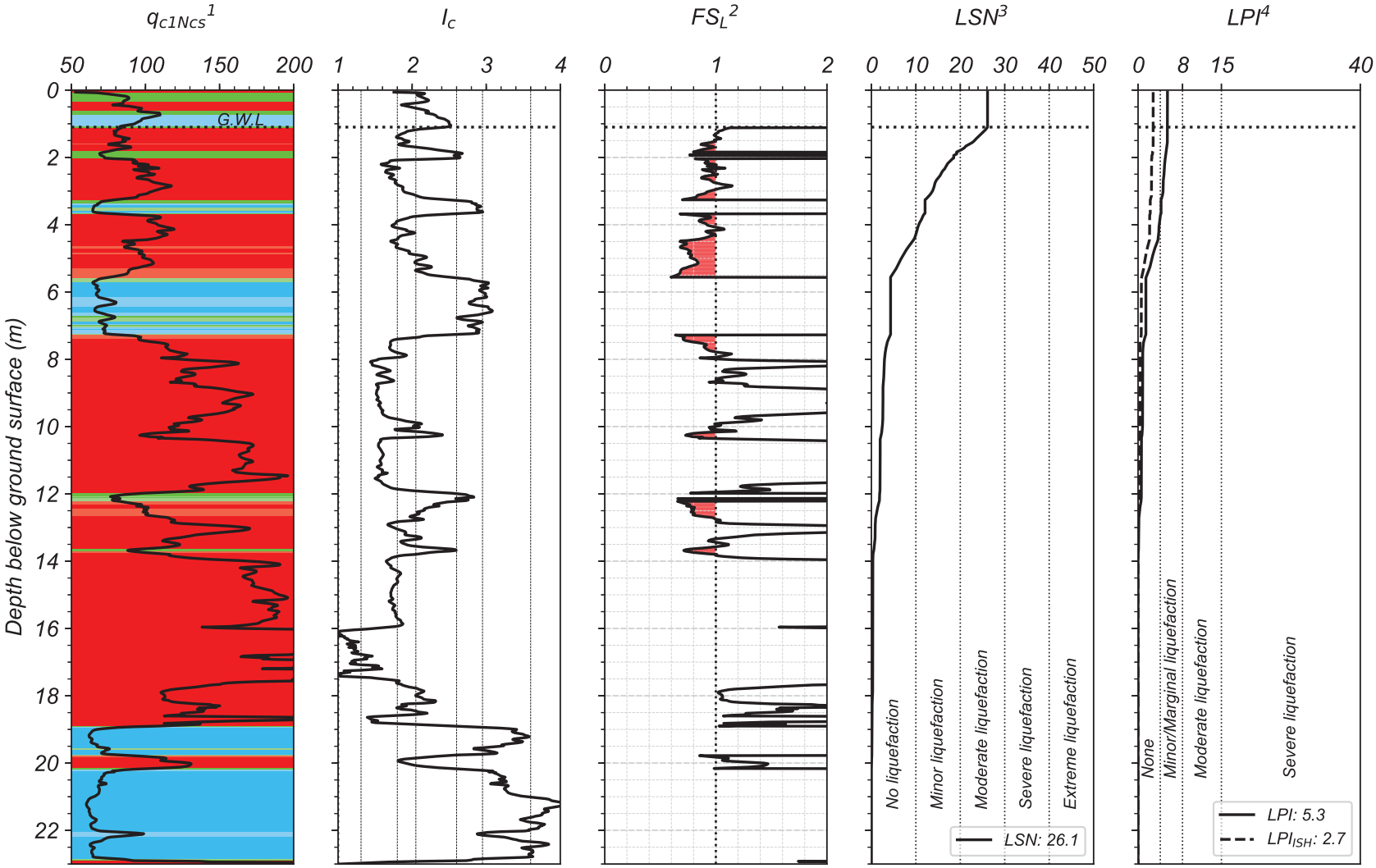


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 103 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.24 g
Site = Brougham ; CPT# = 57355 ; GWL = 1.1 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

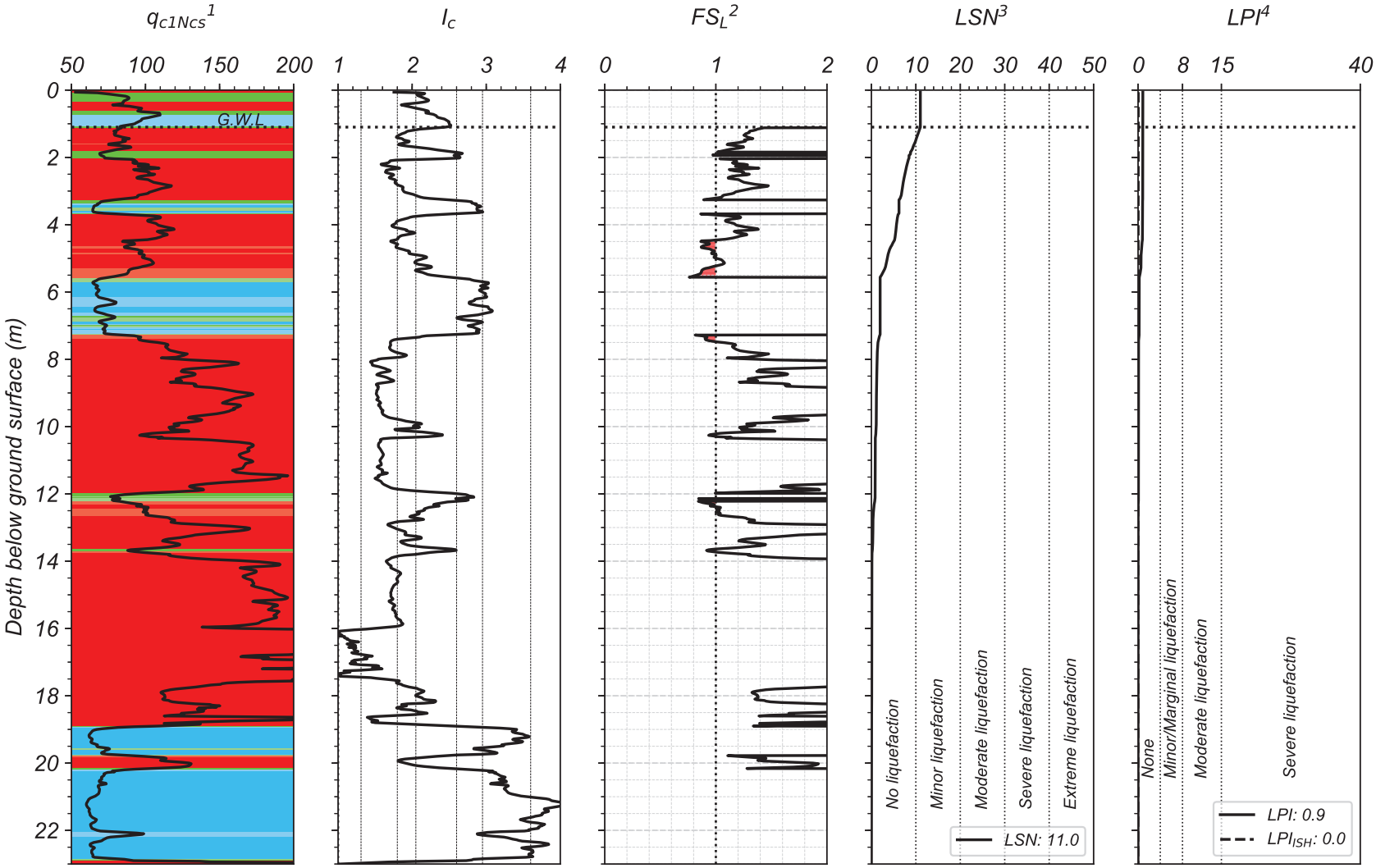


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 104 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.19 g
Site = Brougham ; CPT# = 57355 ; GWL = 1.1 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

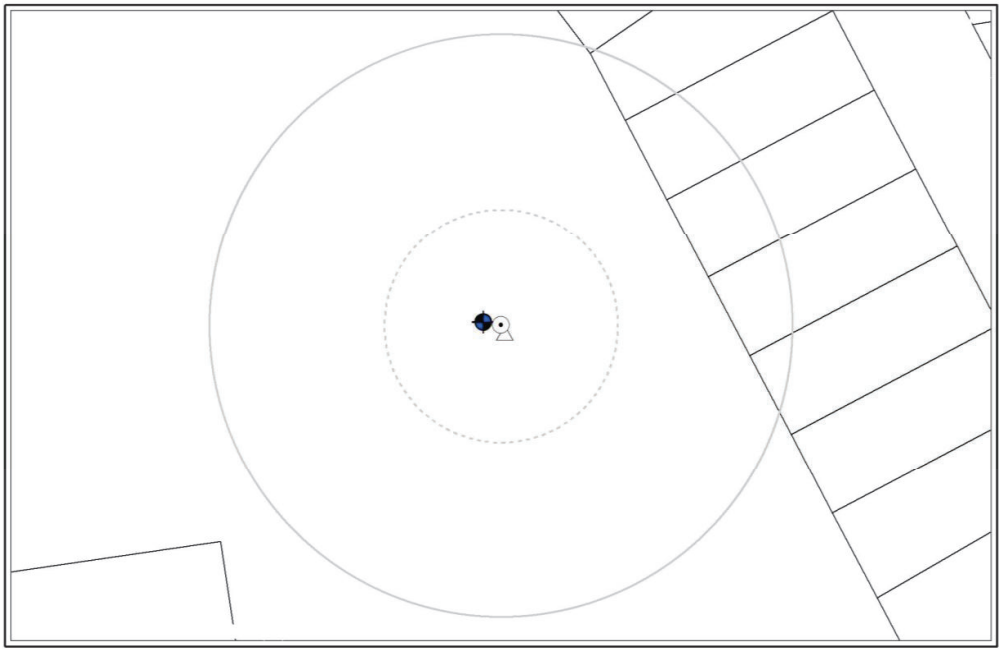


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

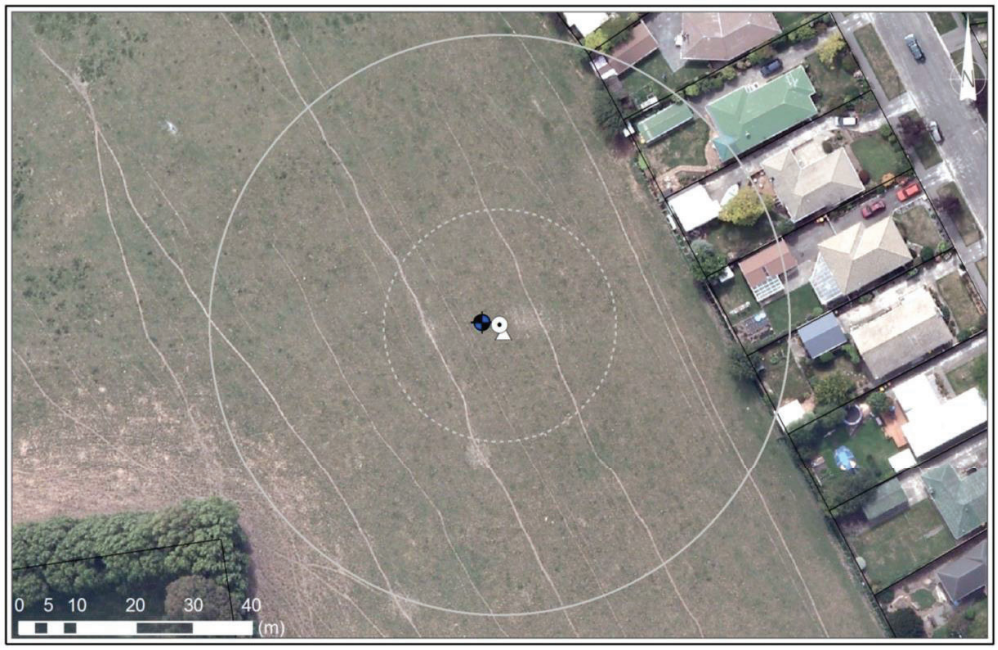
By: DH
UC Berkeley, 2020

200 CASHMERE

Lat: -43.572615°; Long: 172.608100°



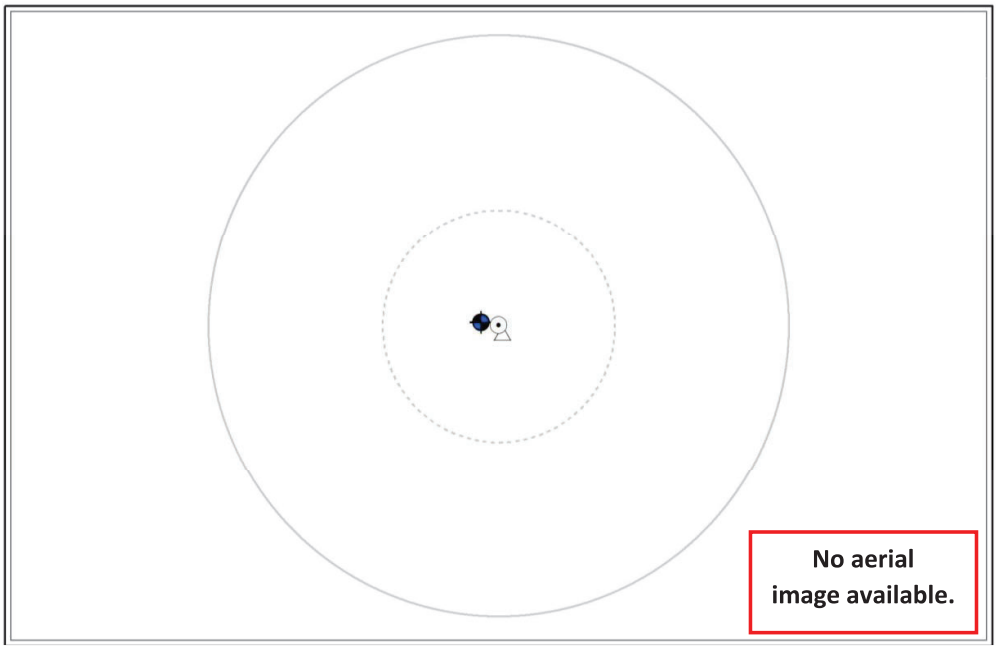
Case #105: Cashmere-DAR (Aerial photograph is not available) - NONE



Case #106: Cashmere-CHC (taken on 24/FEB/2011) - NONE

200 CASHMERE

Lat: -43.572615°; Long: 172.608100°



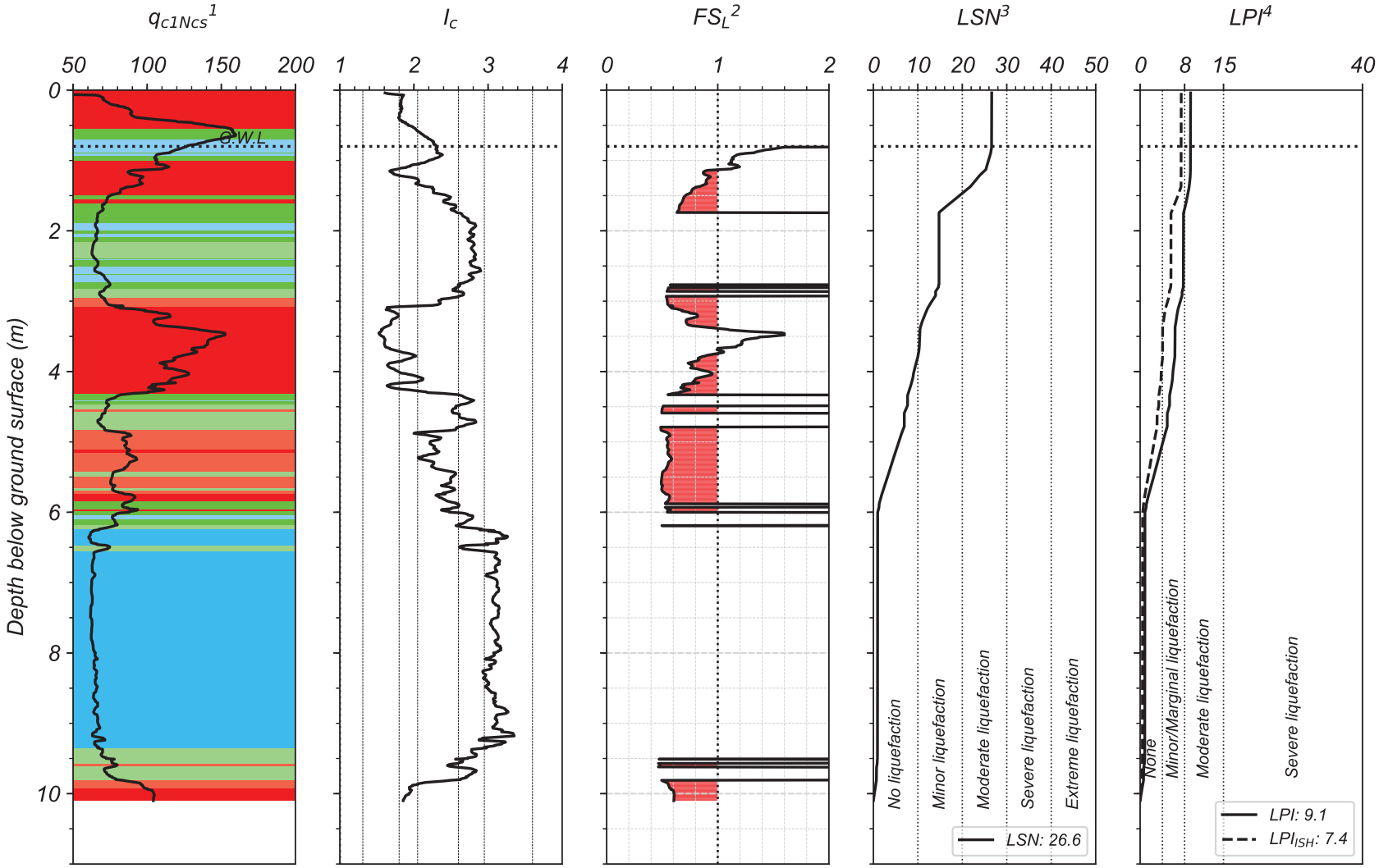
Case #107: Cashmere-JUN (Aerial photograph is not available) - NONE



Case #108: Cashmere-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 105 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.25 g
Site = Cashmere ; CPT# = 36421 ; GWL = 0.8 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

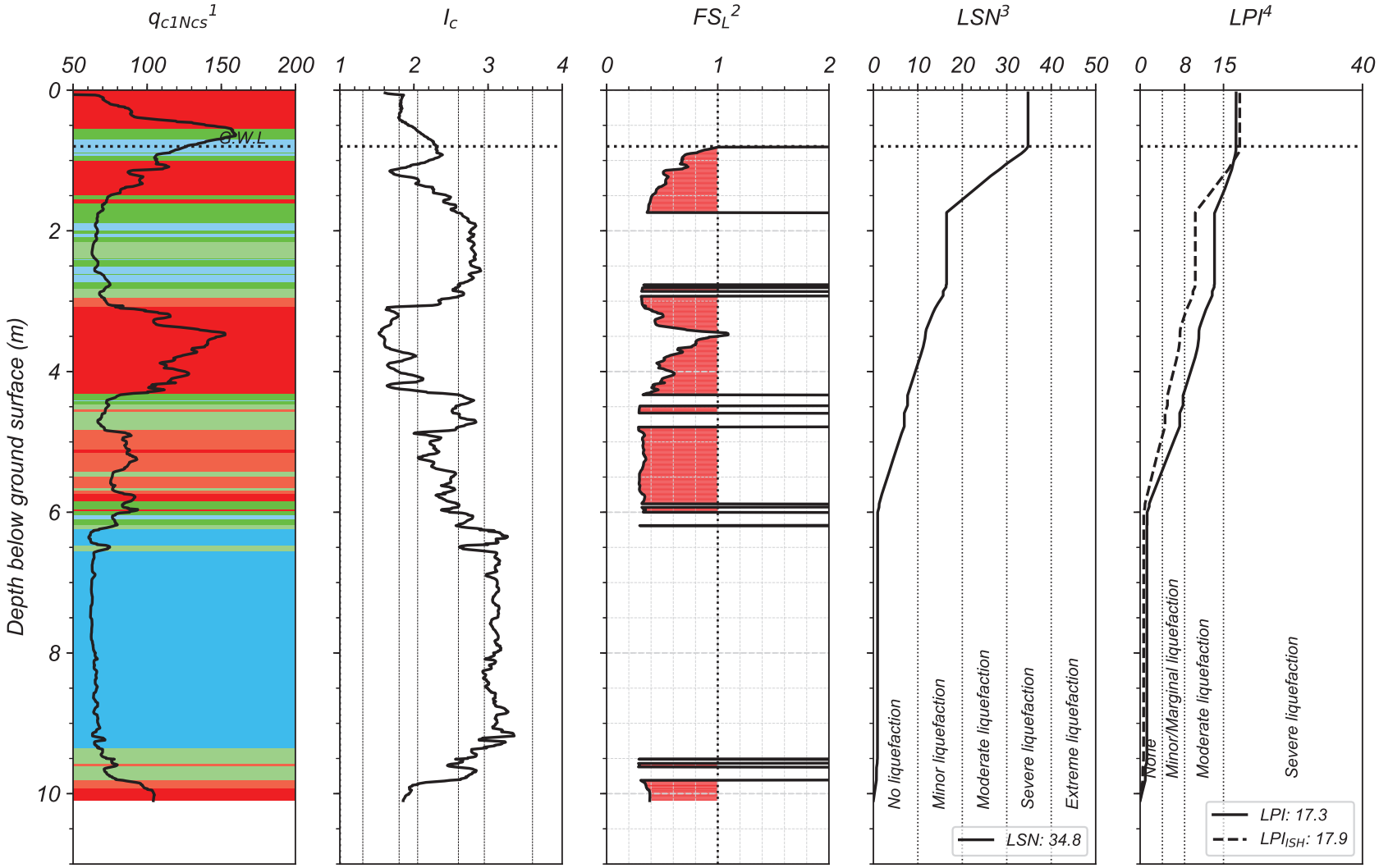


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 106 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.46 g
Site = Cashmere ; CPT# = 36421 ; GWL = 0.8 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

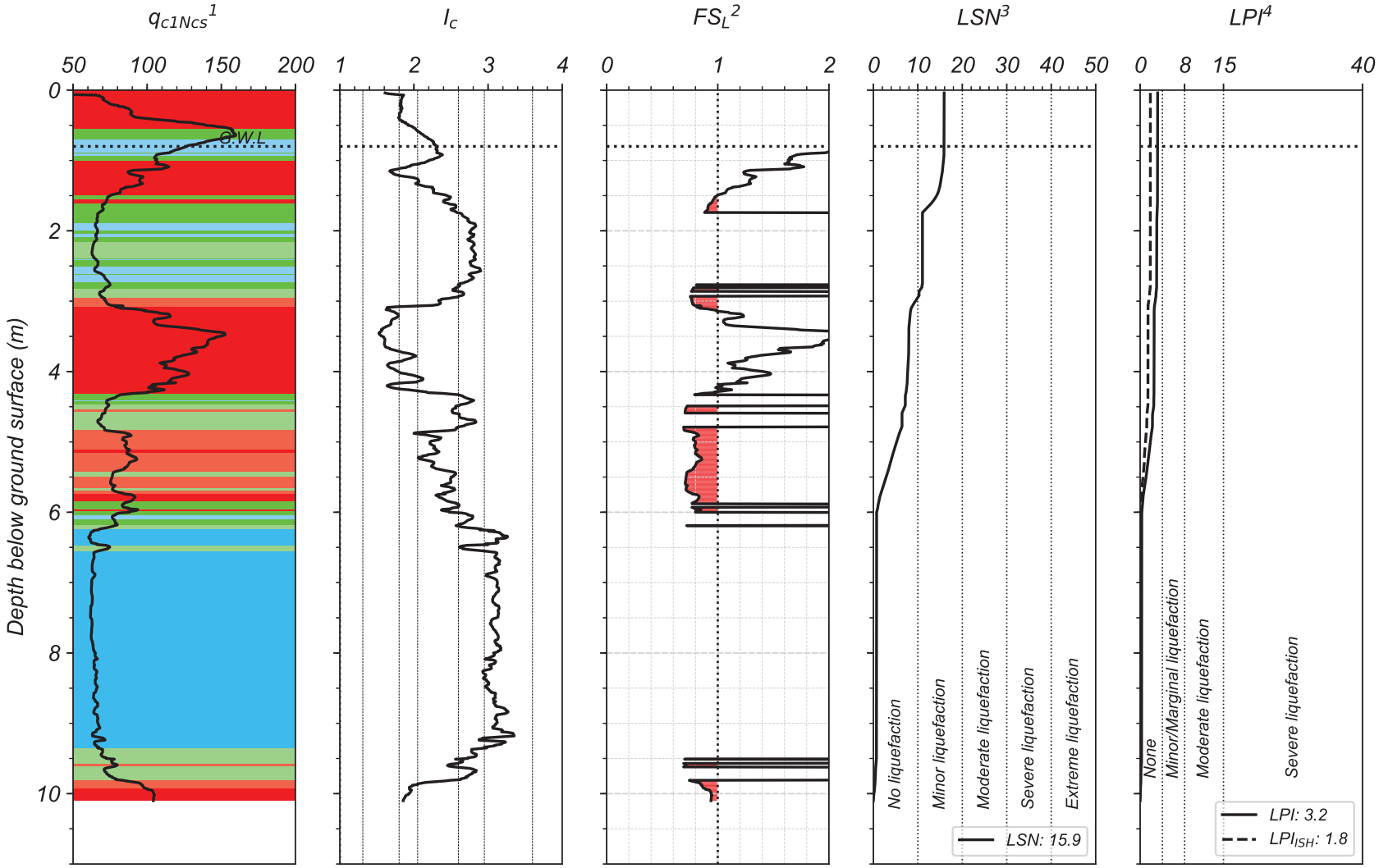


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 107 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.19 g
Site = Cashmere ; CPT# = 36421 ; GWL = 0.8 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

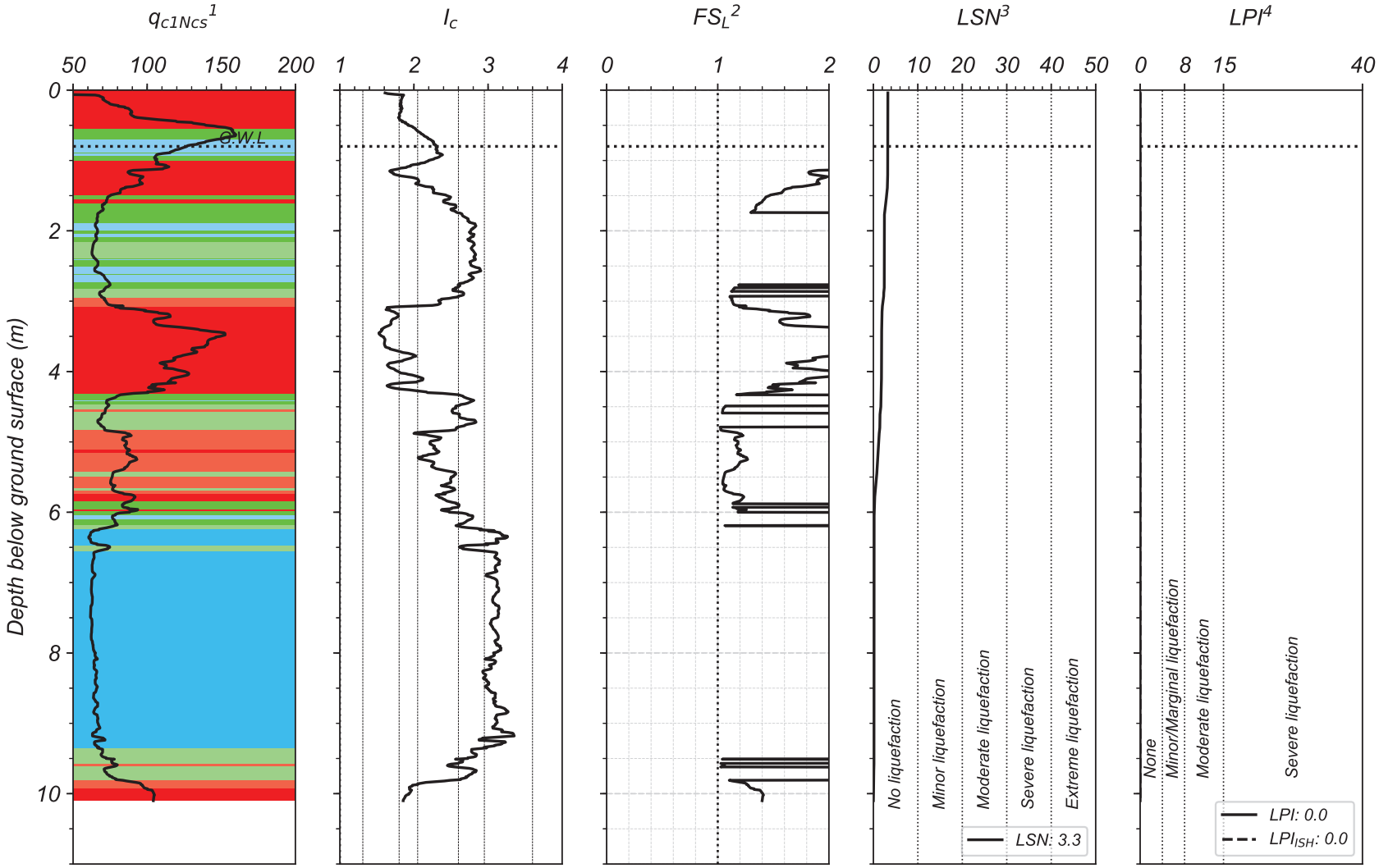


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 108 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.13 g
Site = Cashmere ; CPT# = 36421 ; GWL = 0.8 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

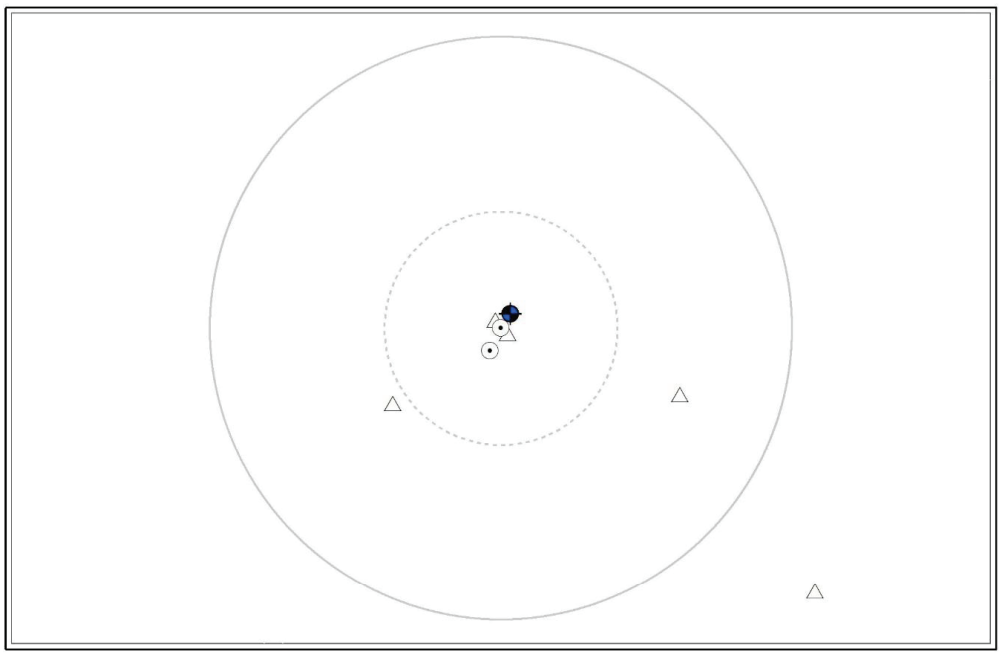


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

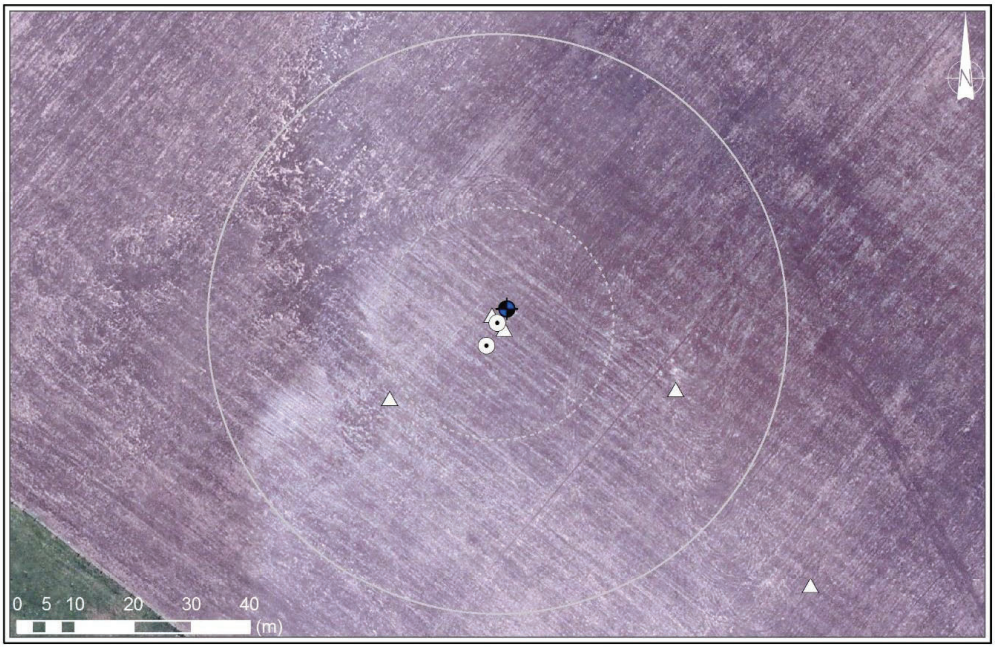
By: DH
UC Berkeley, 2020

CAULFIELD

Lat: -43.579706°; Long: 172.548658°



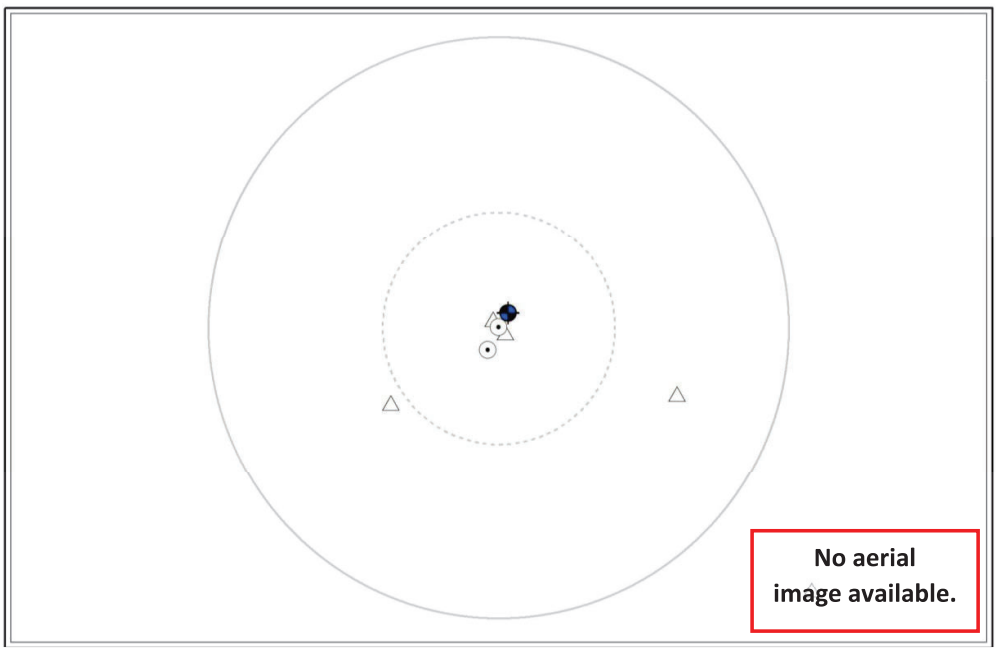
Case #109: Caulfield-DAR (Aerial photograph is not available) - NONE



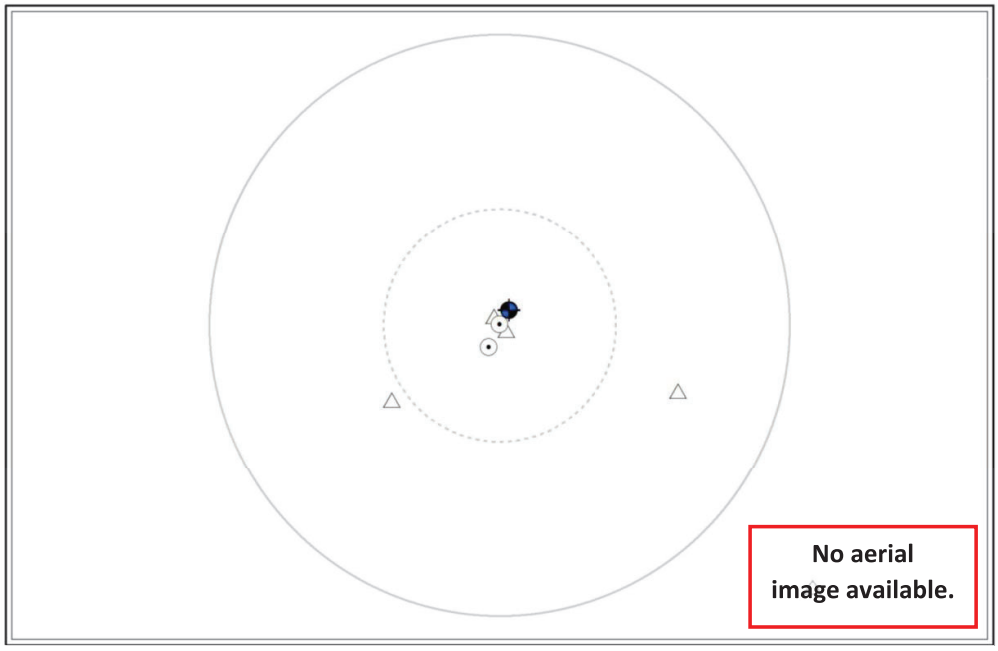
Case #110: Caulfield-CHC (taken on 24/FEB/2011) - NONE

CAULFIELD

Lat: -43.579706°; Long: 172.548658°



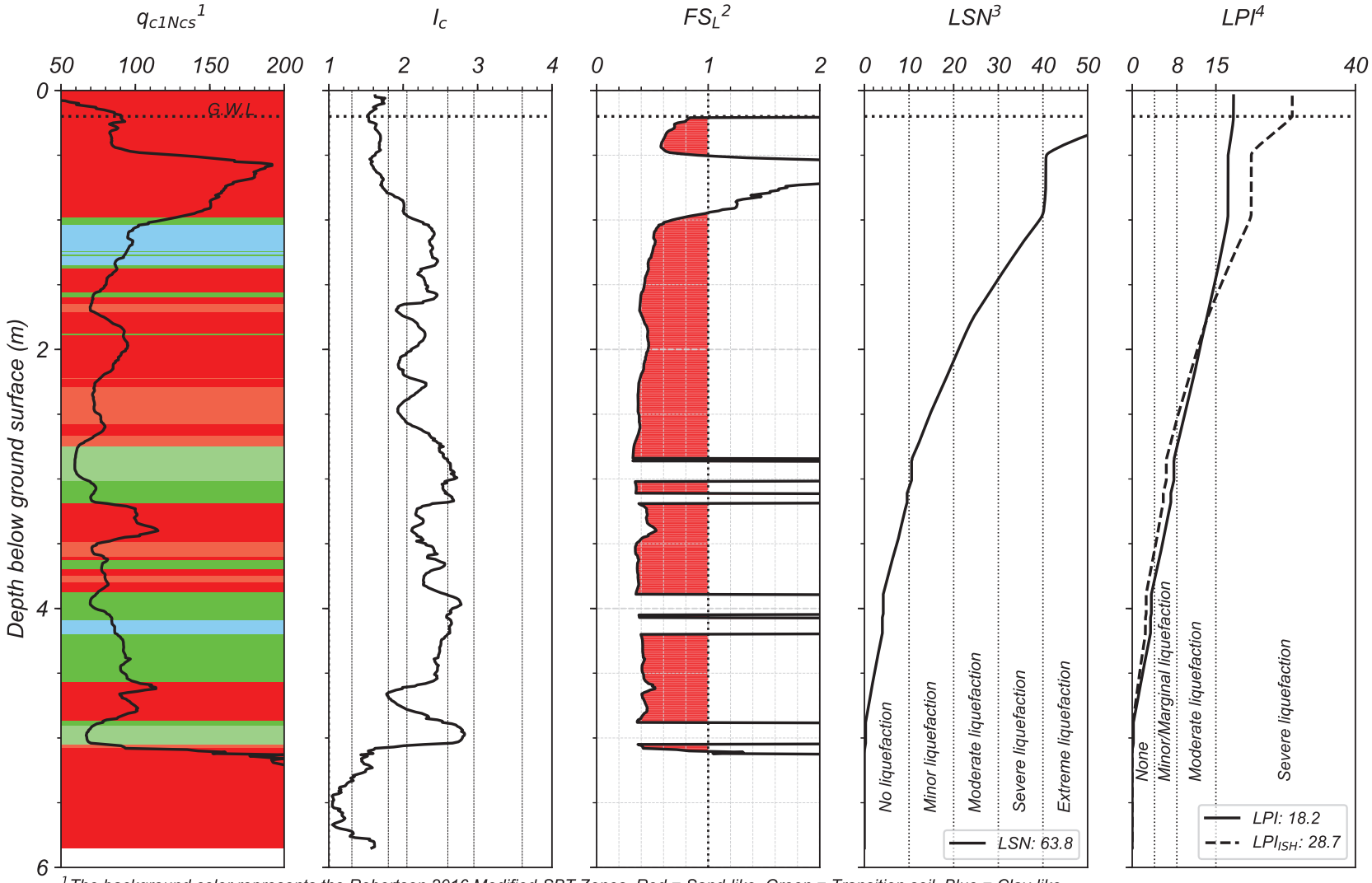
Case #111: Caulfield-JUN (Aerial photograph is not available) - NONE



Case #112: Caulfield-DEC (Aerial photograph is not available) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 109 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.31 g
Site = Caulfield ; CPT# = 36419 ; GWL = 0.2 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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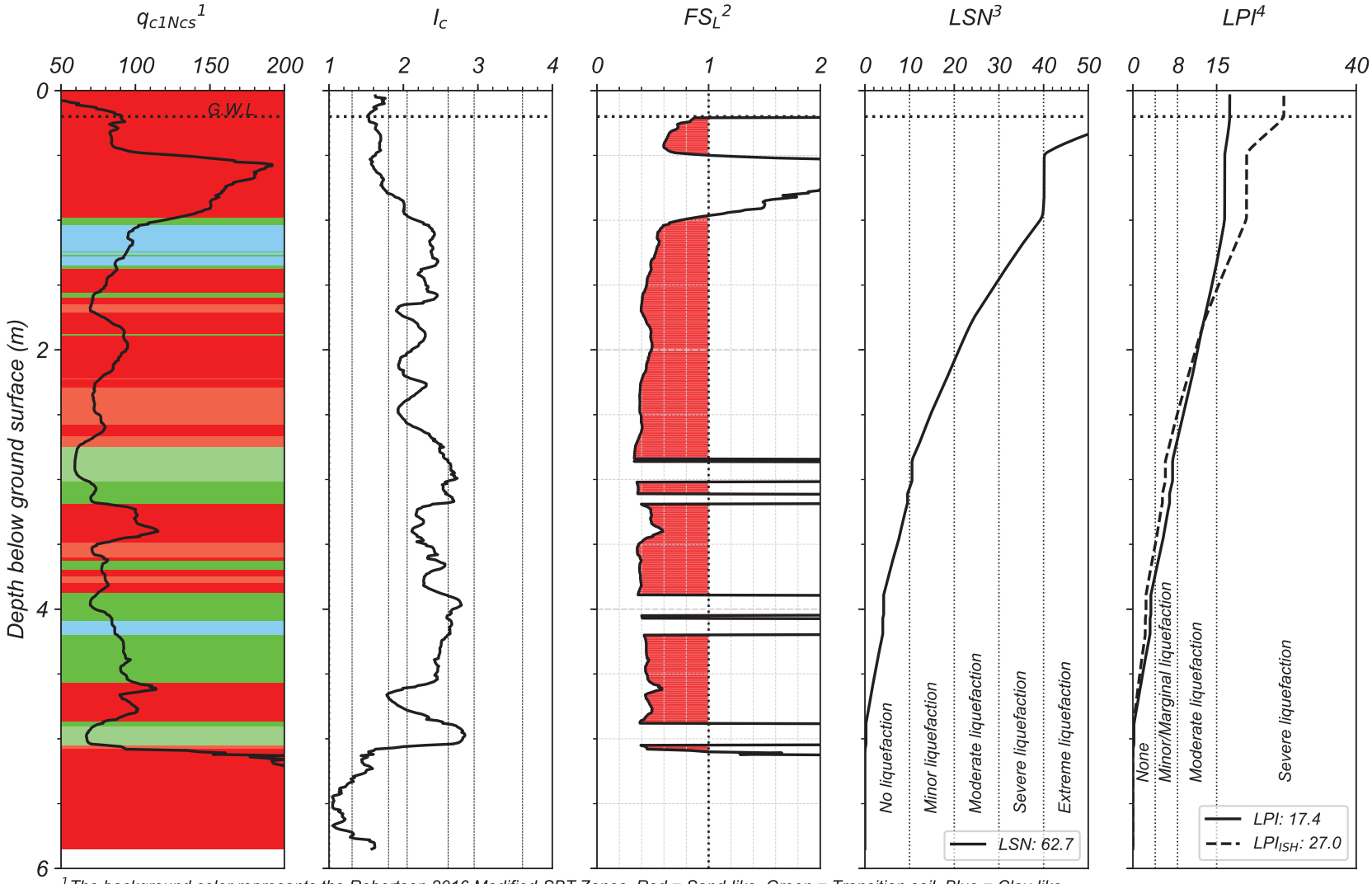
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 110 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.32 g
Site = Caulfield ; CPT# = 36419 ; GWL = 0.2 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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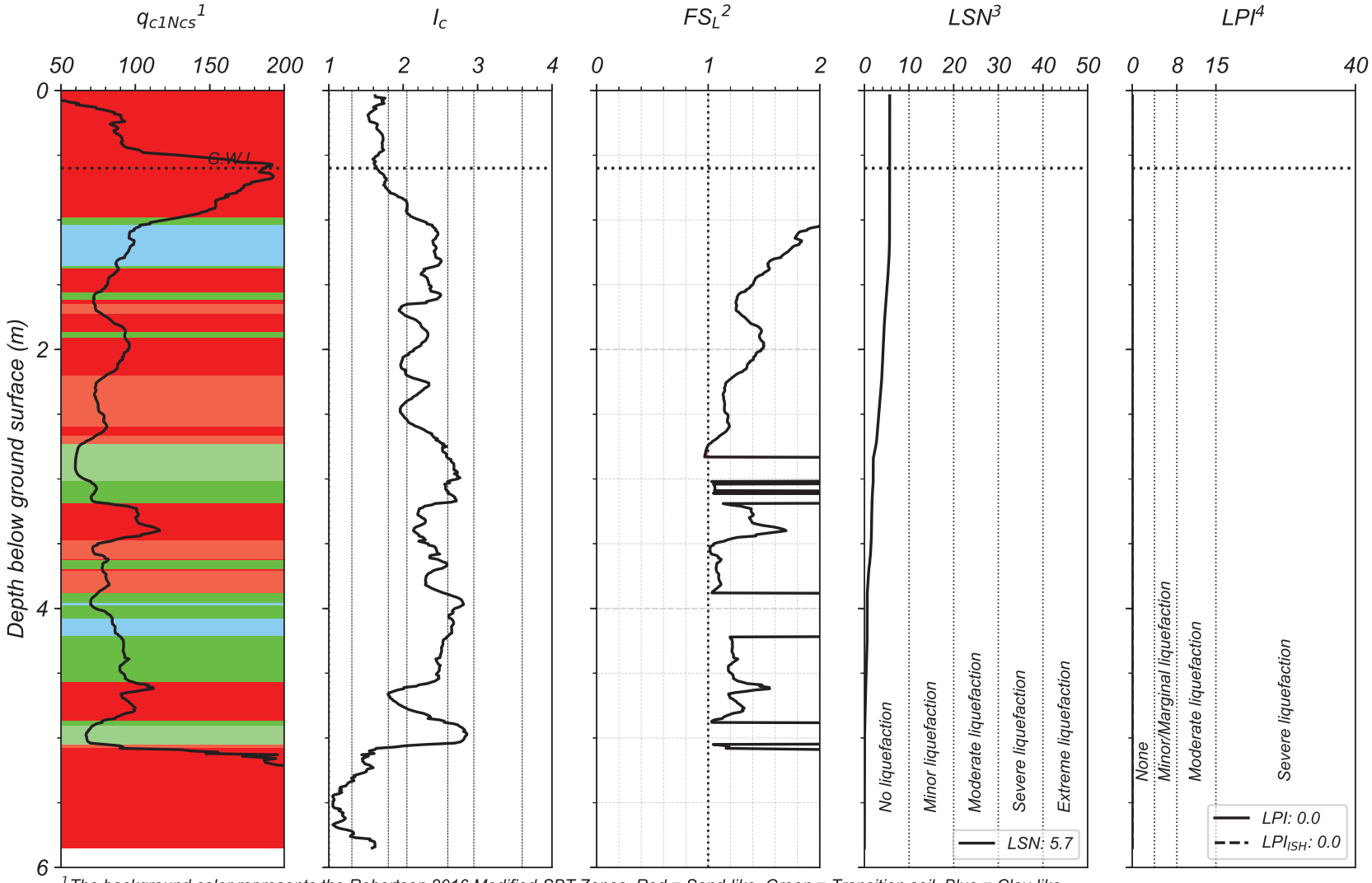
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 111 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.13 g
Site = Caulfield ; CPT# = 36419 ; GWL = 0.6 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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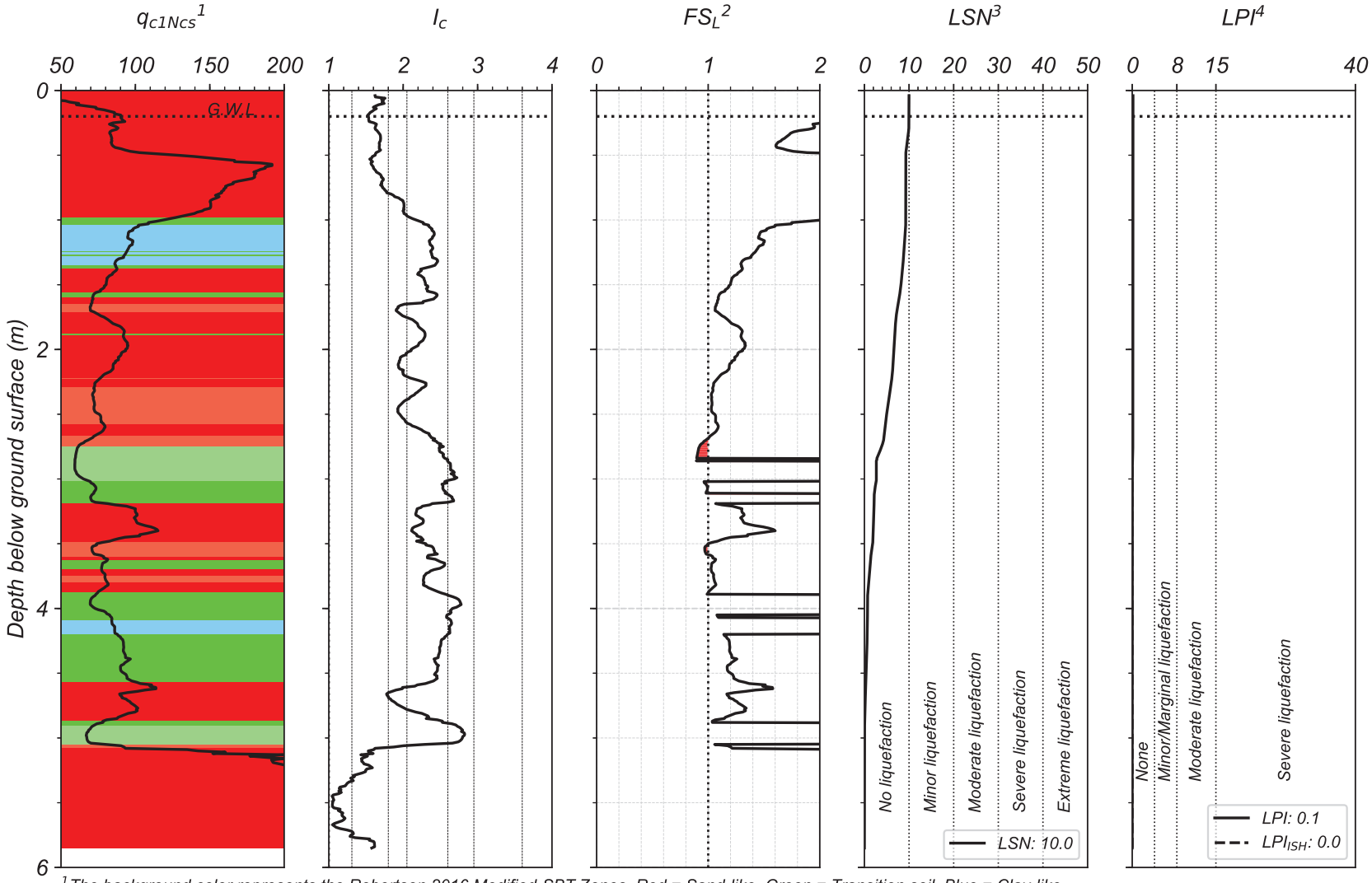
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 112 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.12 g
Site = Caulfield ; CPT# = 36419 ; GWL = 0.2 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

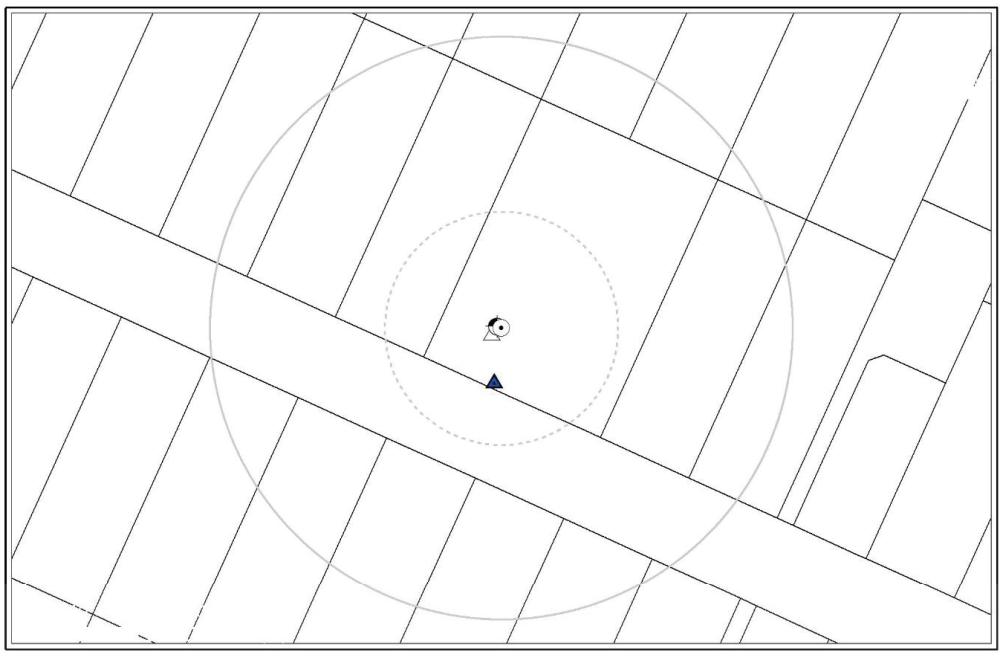


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

COBRA

Lat: -43.570140°; Long: 172.563875°



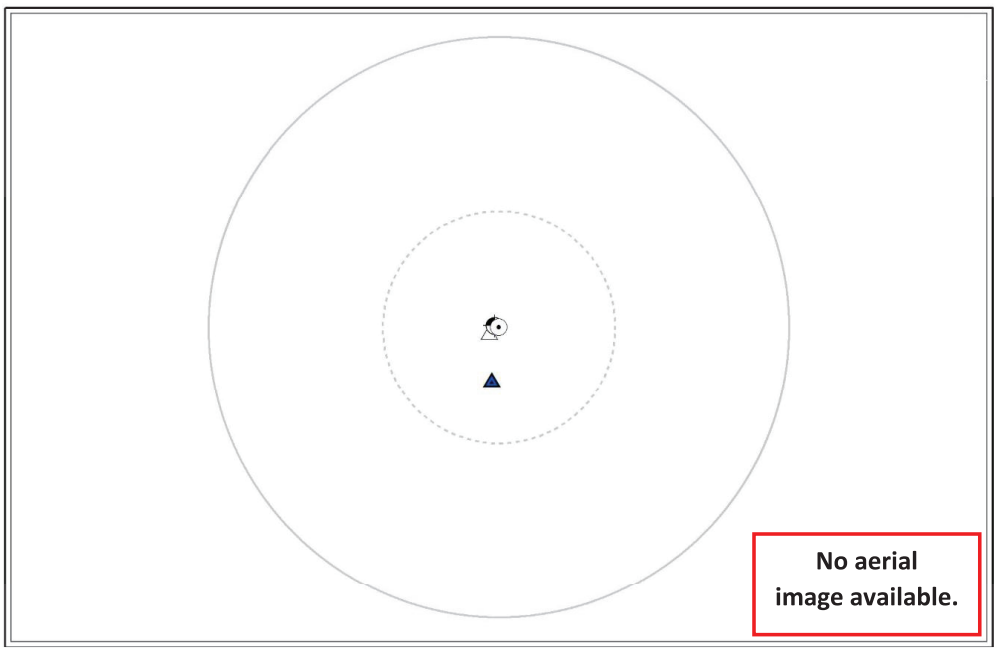
Case #113: Cobra-DAR (Aerial photograph is not available) - NONE



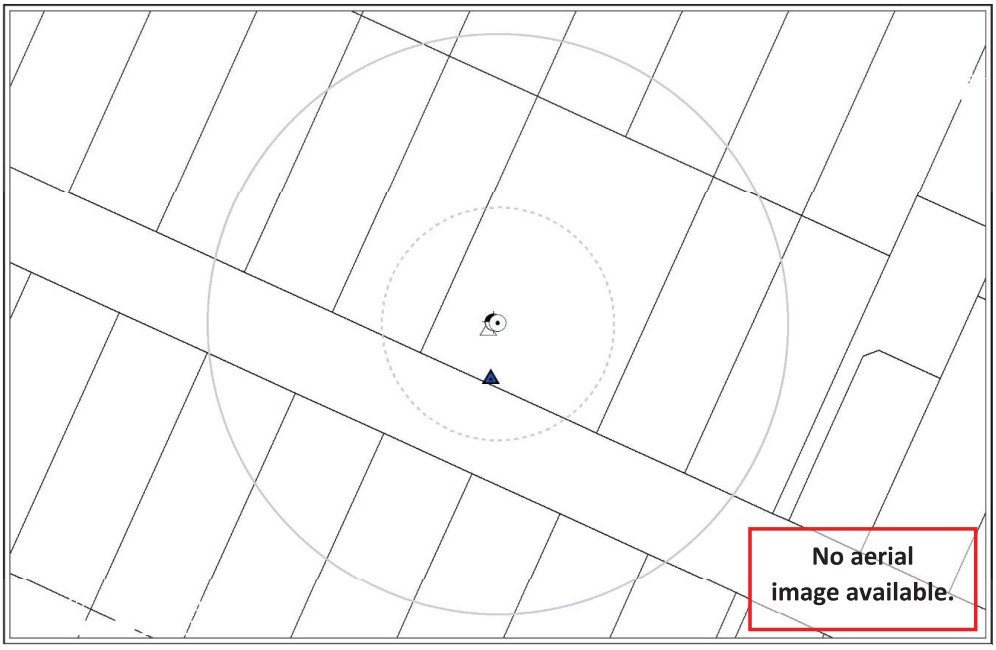
Case #114: Cobra-CHC (taken on 24/FEB/2011) - NONE

COBRA

Lat: -43.570140°; Long: 172.563875°



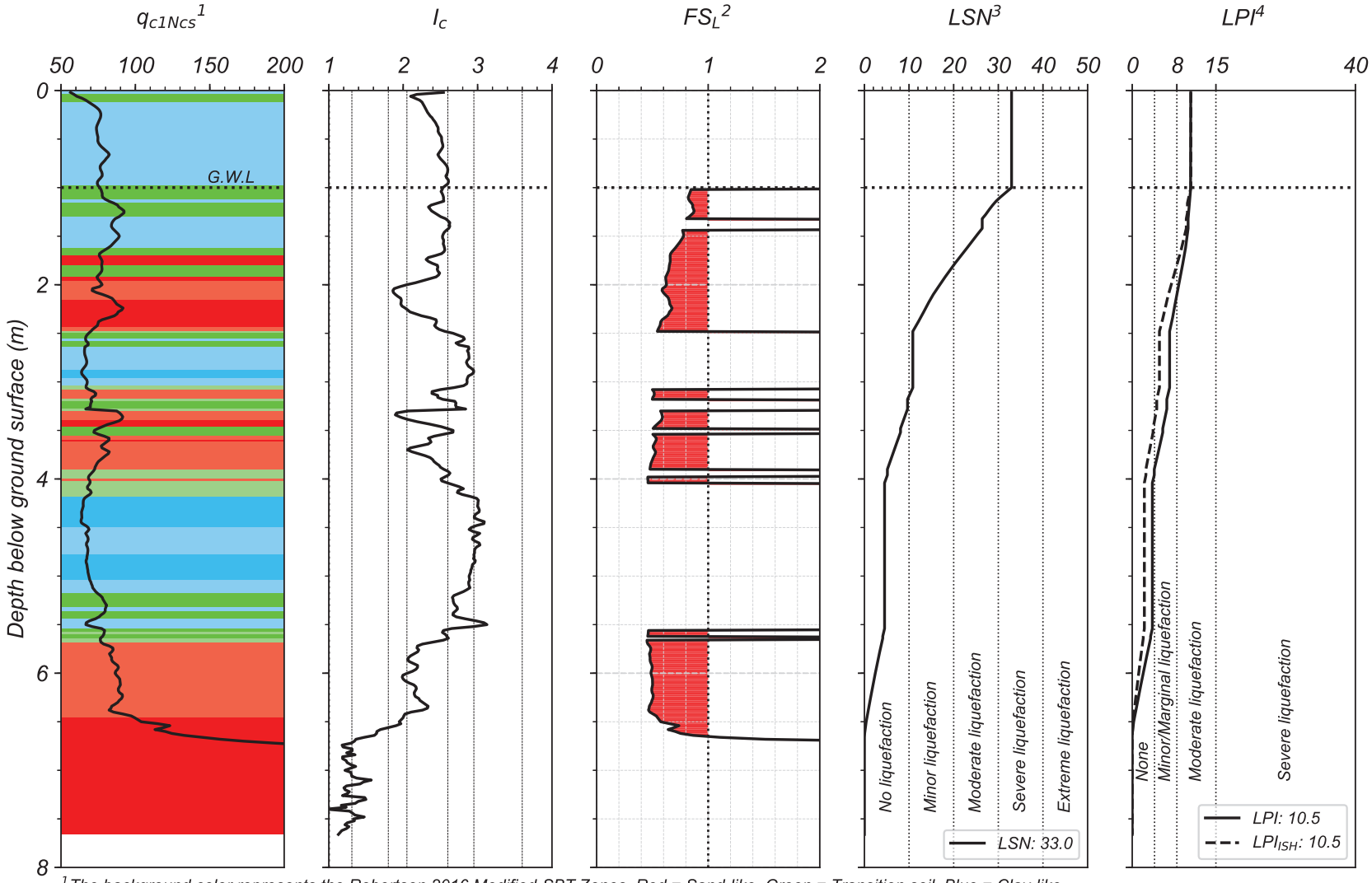
Case #115: Cobra-JUN (Aerial photograph is not available) - NONE



Case #116: Cobra-DEC (Aerial photograph is not available) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 113 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.28 g
Site = Cobra ; CPT# = 57352 ; GWL = 1.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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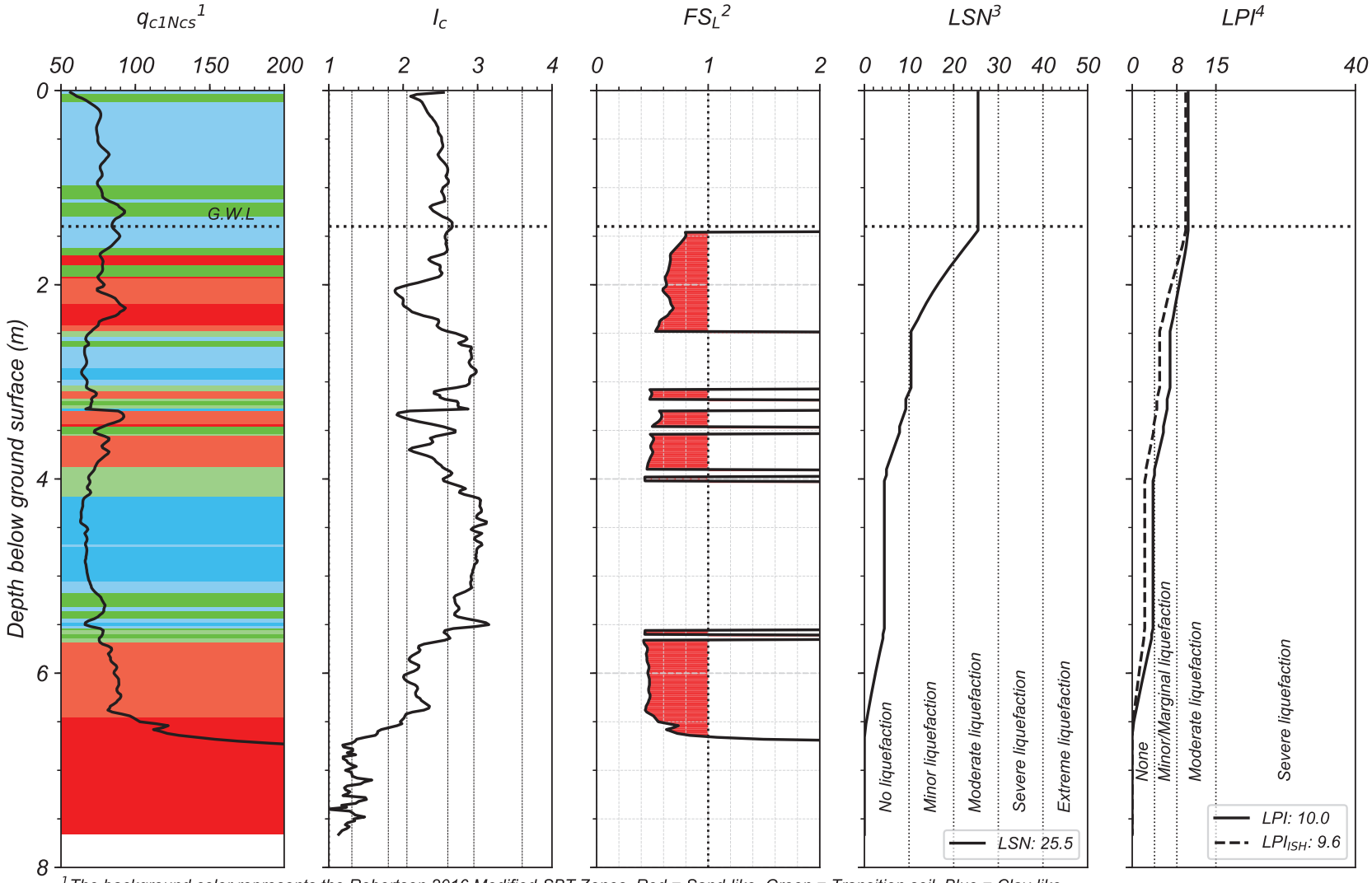
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 114 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.35 g
Site = Cobra ; CPT# = 57352 ; GWL = 1.4 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

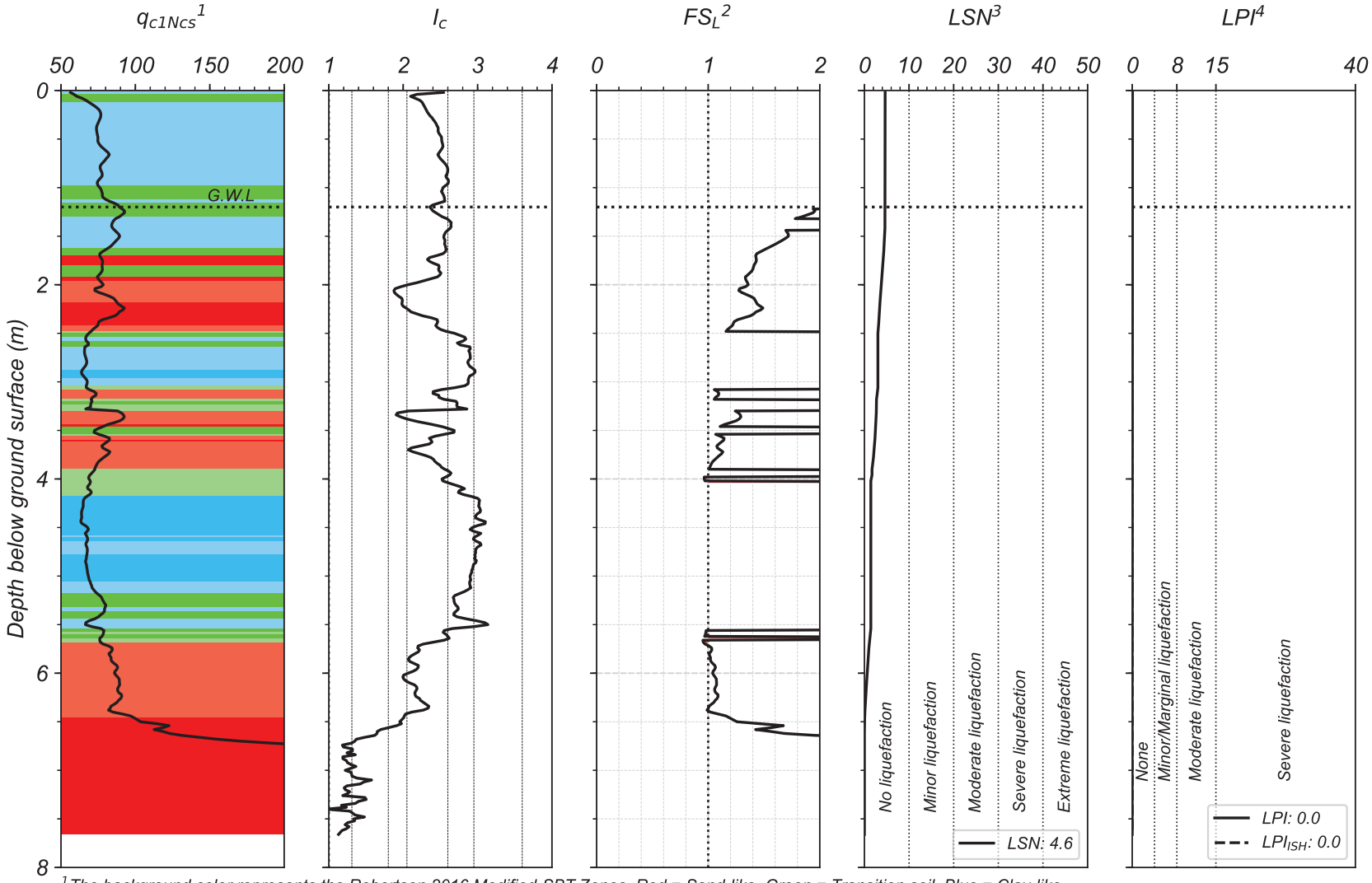


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 115 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.15 g
Site = Cobra ; CPT# = 57352 ; GWL = 1.2 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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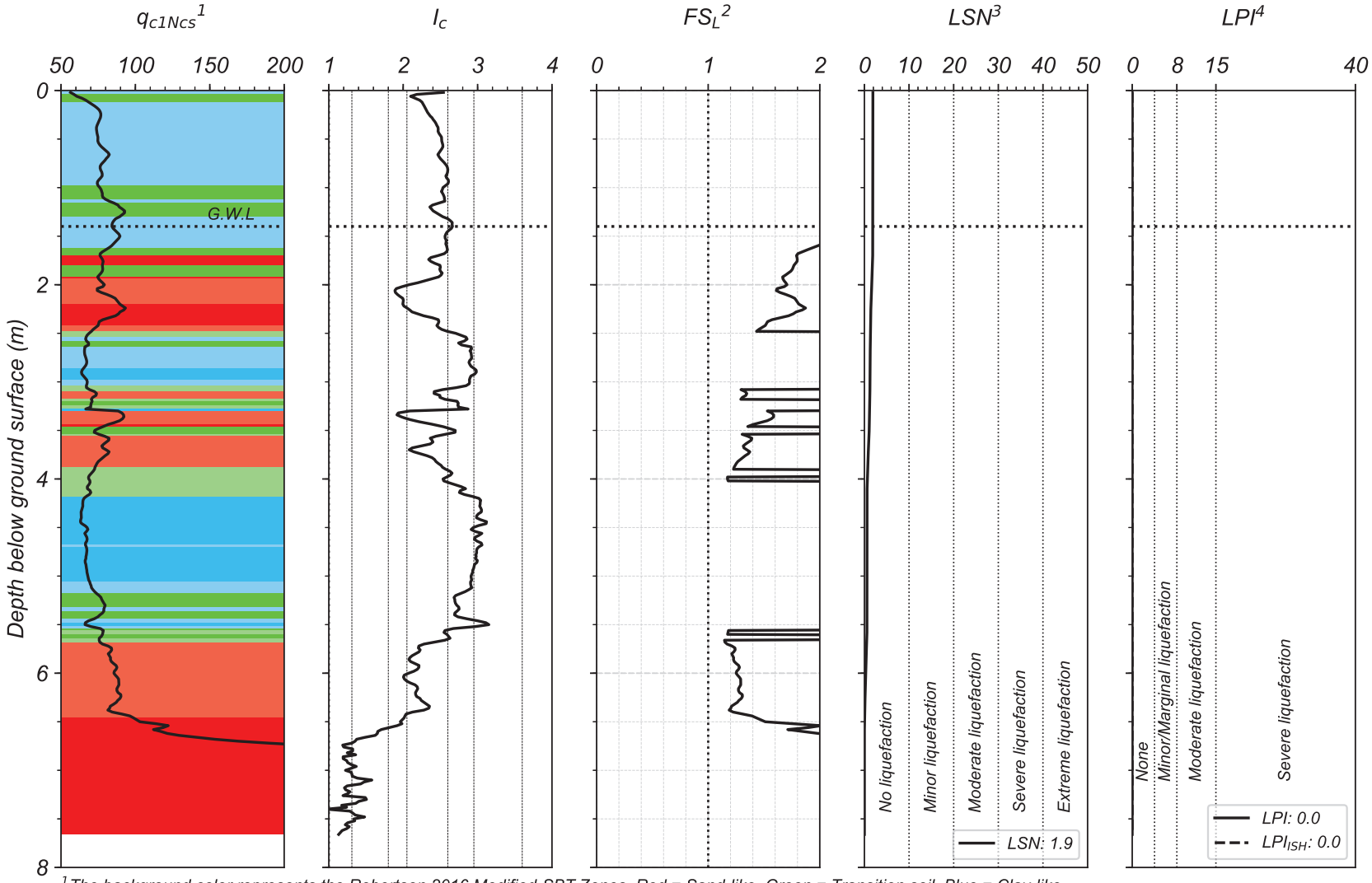
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 116 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.13 g
Site = Cobra ; CPT# = 57352 ; GWL = 1.4 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

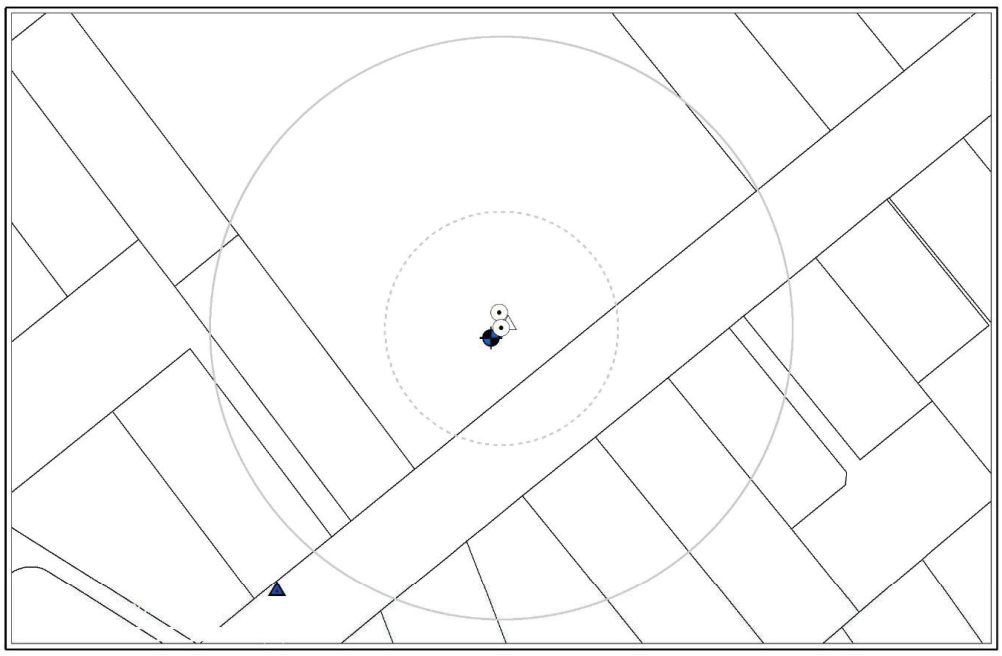


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

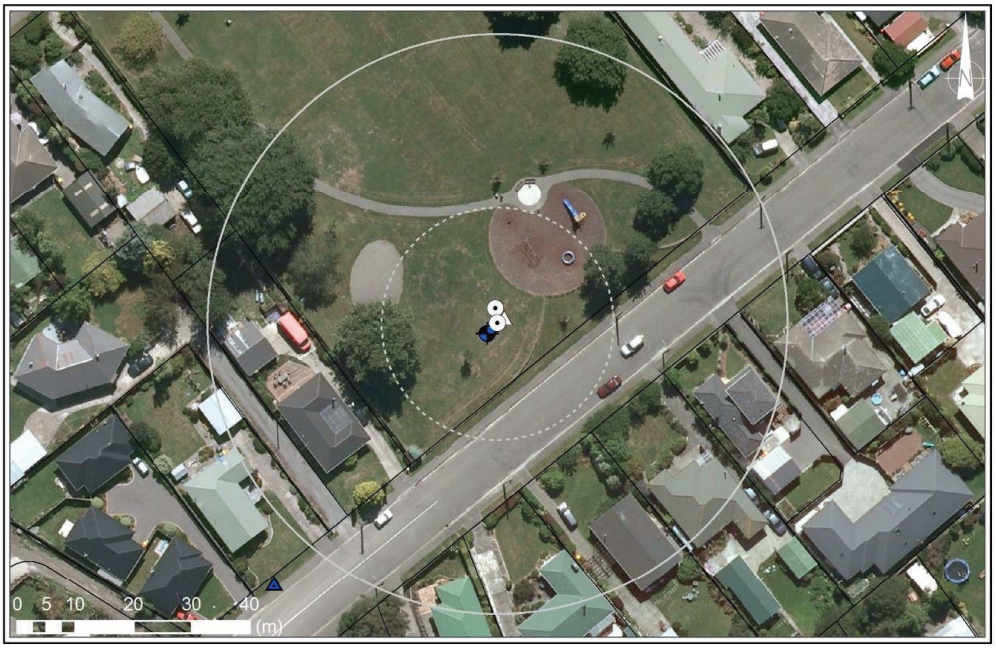
By: DH
UC Berkeley, 2020

GAINSBOROUGH

Lat: -43.563623°; Long: 172.601913°



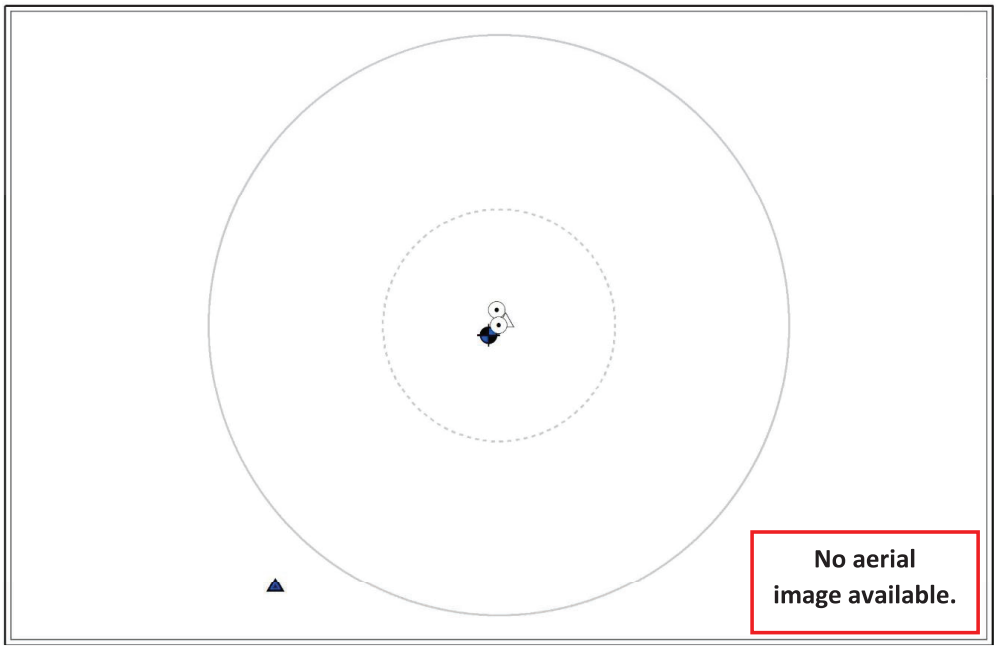
Case #117: Gainsborough-DAR (Aerial photograph is not available) - NONE



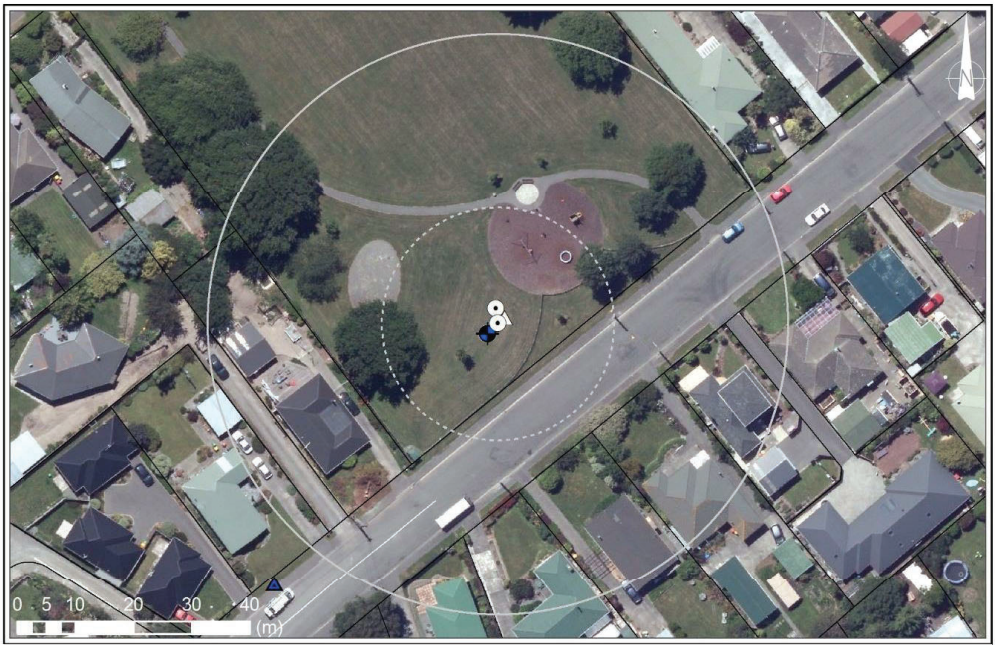
Case #118: Gainsborough-CHC (taken on 24/FEB/2011) - NONE

GAINSBOROUGH

Lat: -43.563623°; Long: 172.601913°



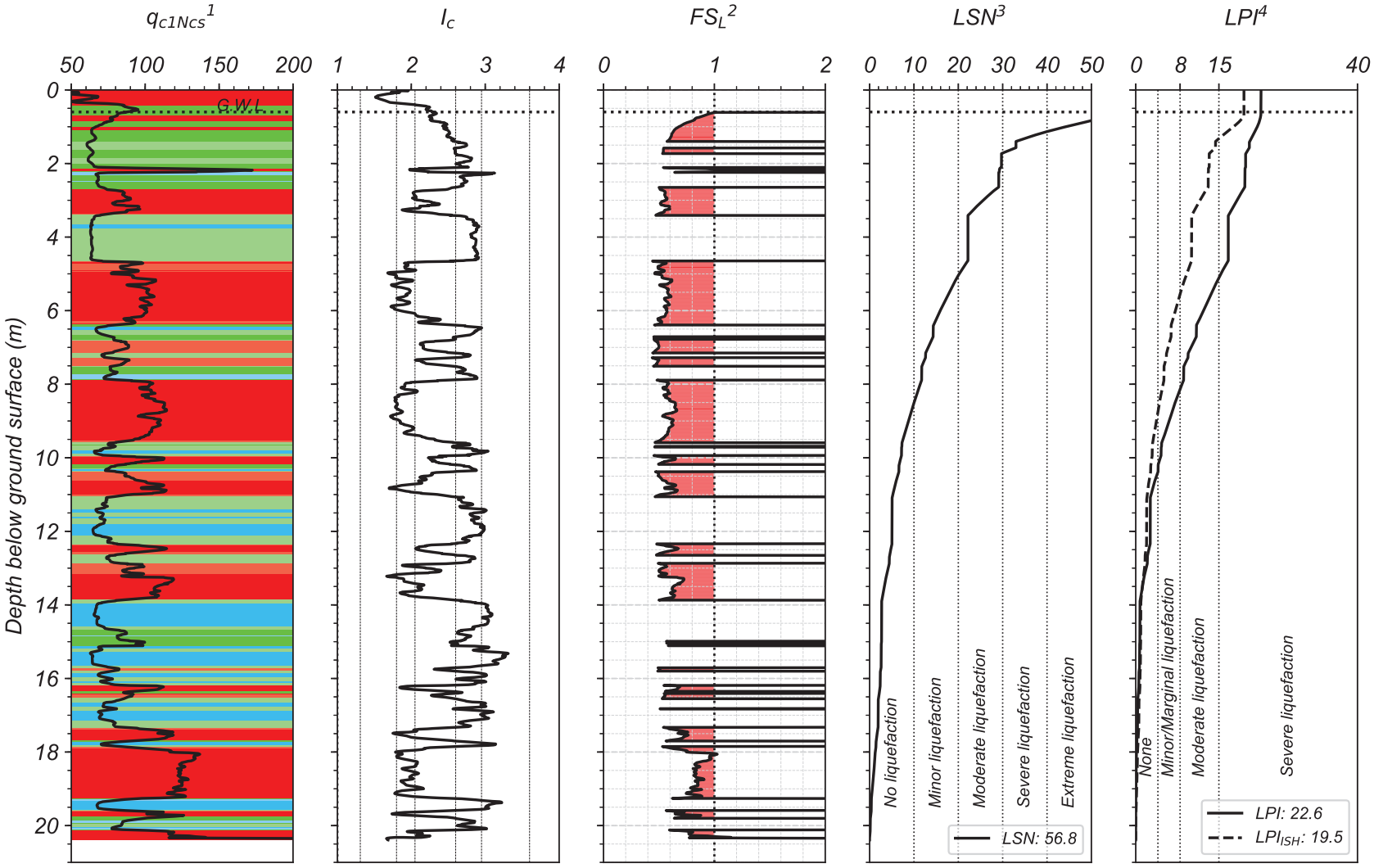
Case #119: Gainsborough-JUN (Aerial photograph is not available) - NONE



Case #120: Gainsborough-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 117 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.25 g
Site = Gainsborough ; CPT# = 36417 ; GWL = 0.6 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

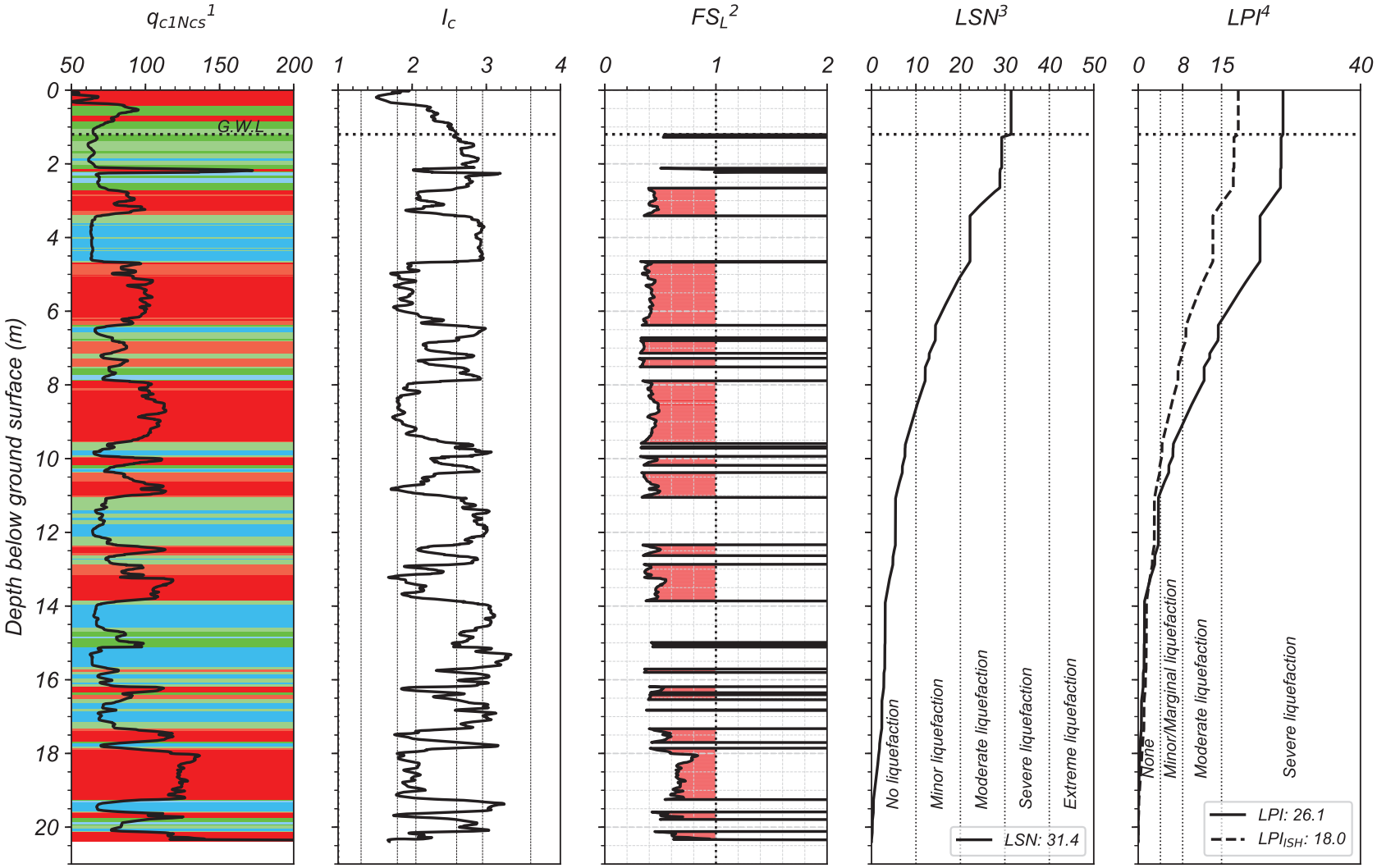


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 118 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.43 g
Site = Gainsborough ; CPT# = 36417 ; GWL = 1.2 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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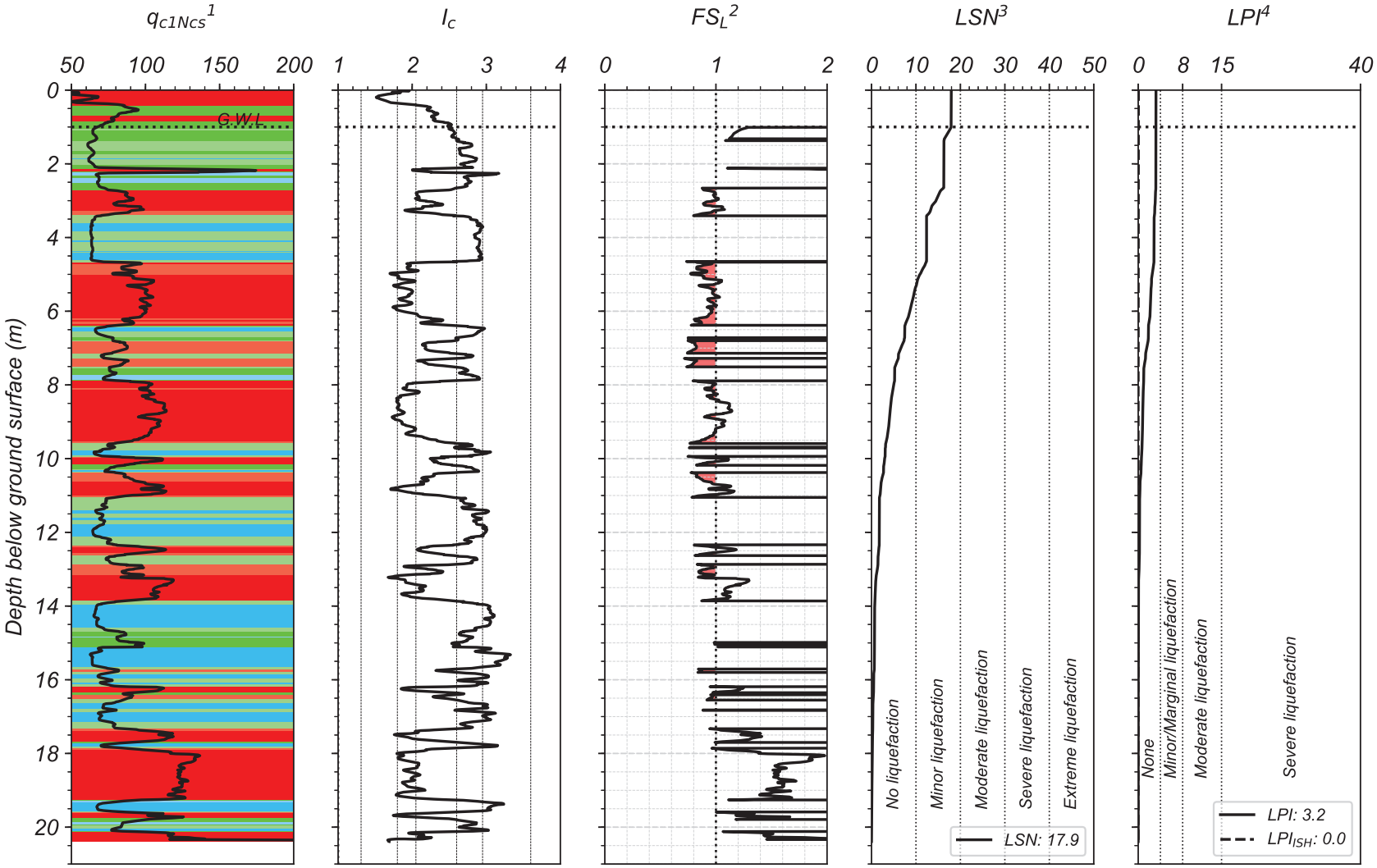
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 119 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.18 g
Site = Gainsborough ; CPT# = 36417 ; GWL = 1.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

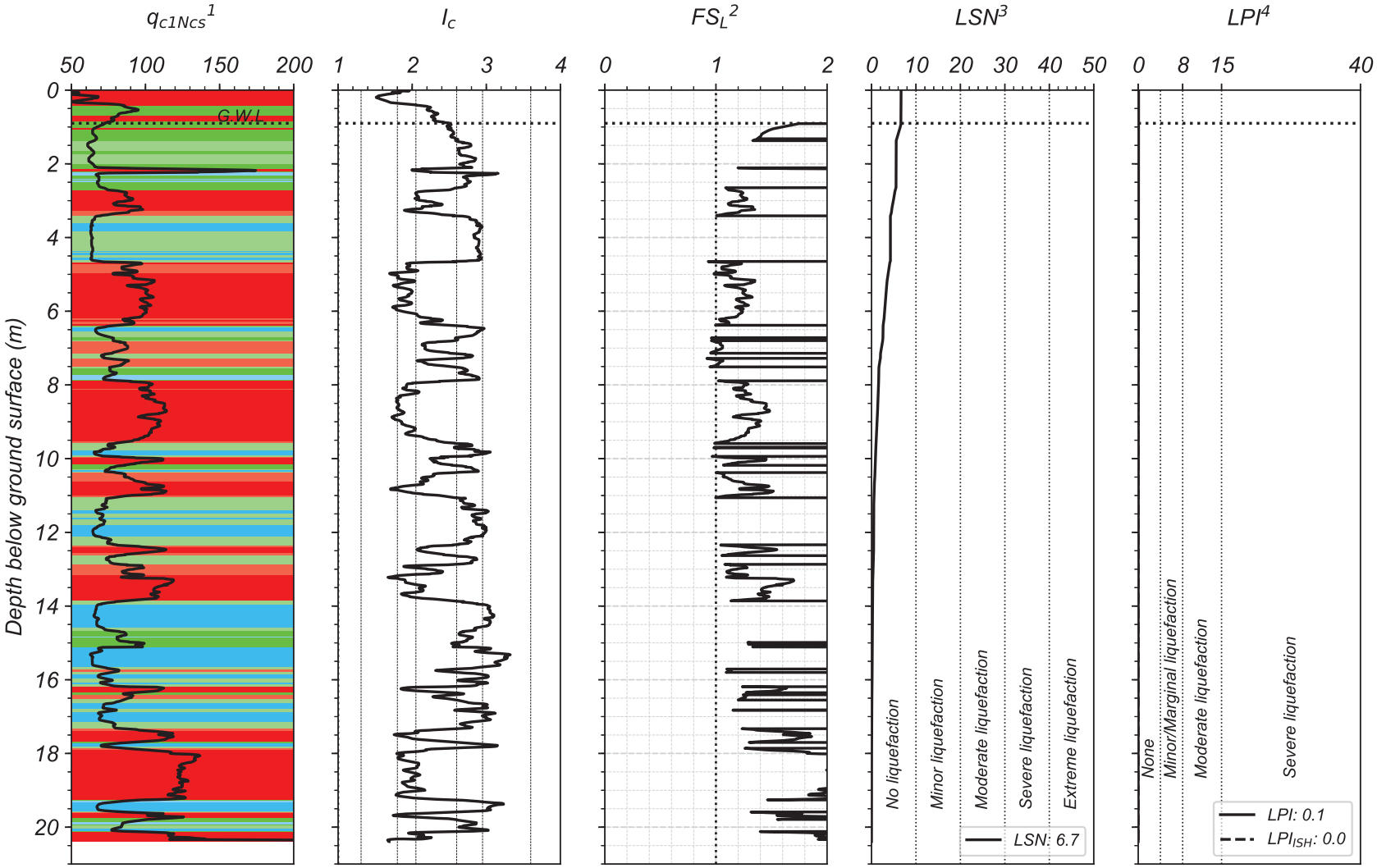


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 120 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.14 g
Site = Gainsborough ; CPT# = 36417 ; GWL = 0.9 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

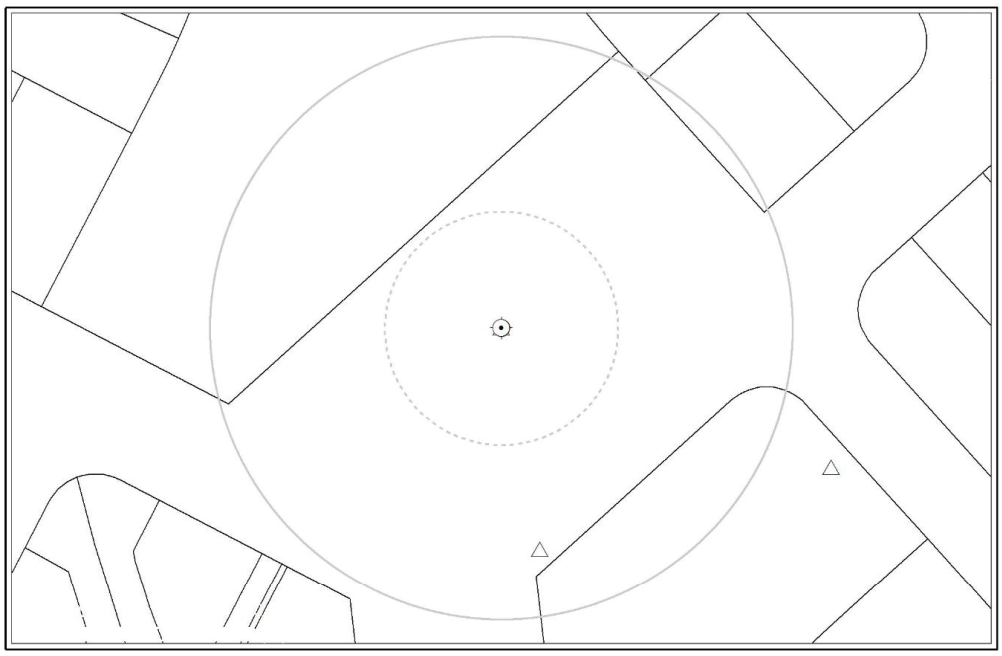


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

HARRINGTON

Lat: -43.534441°; Long: 172.590282°



Case #121: Harrington-DAR (Aerial photograph is not available) - NONE



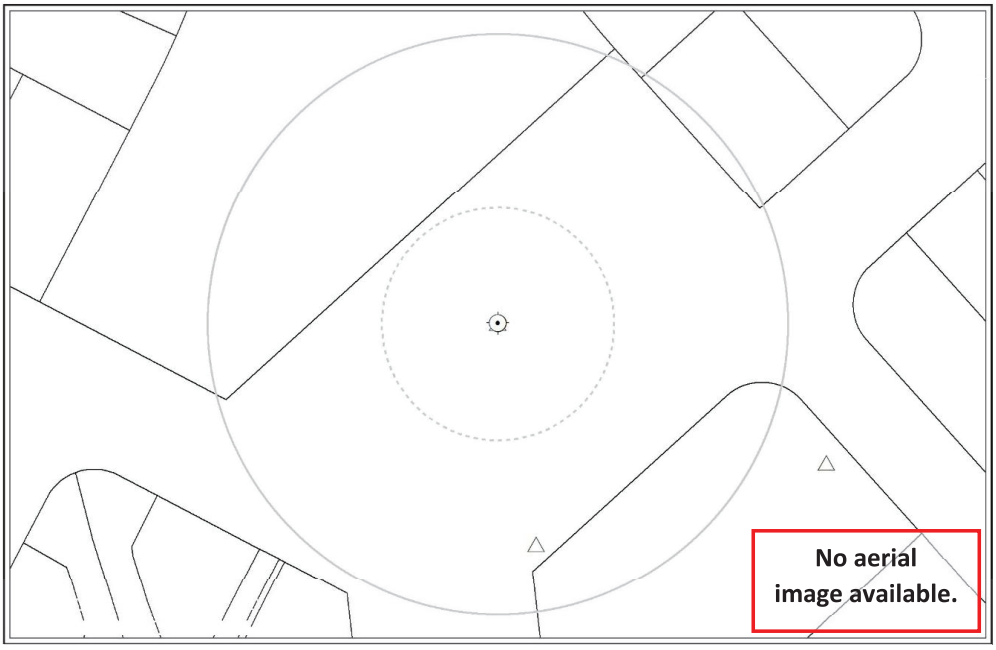
Case #122: Harrington-CHC (taken on 24/FEB/2011) - NONE

HARRINGTON

Lat: -43.534441°; Long: 172.590282°



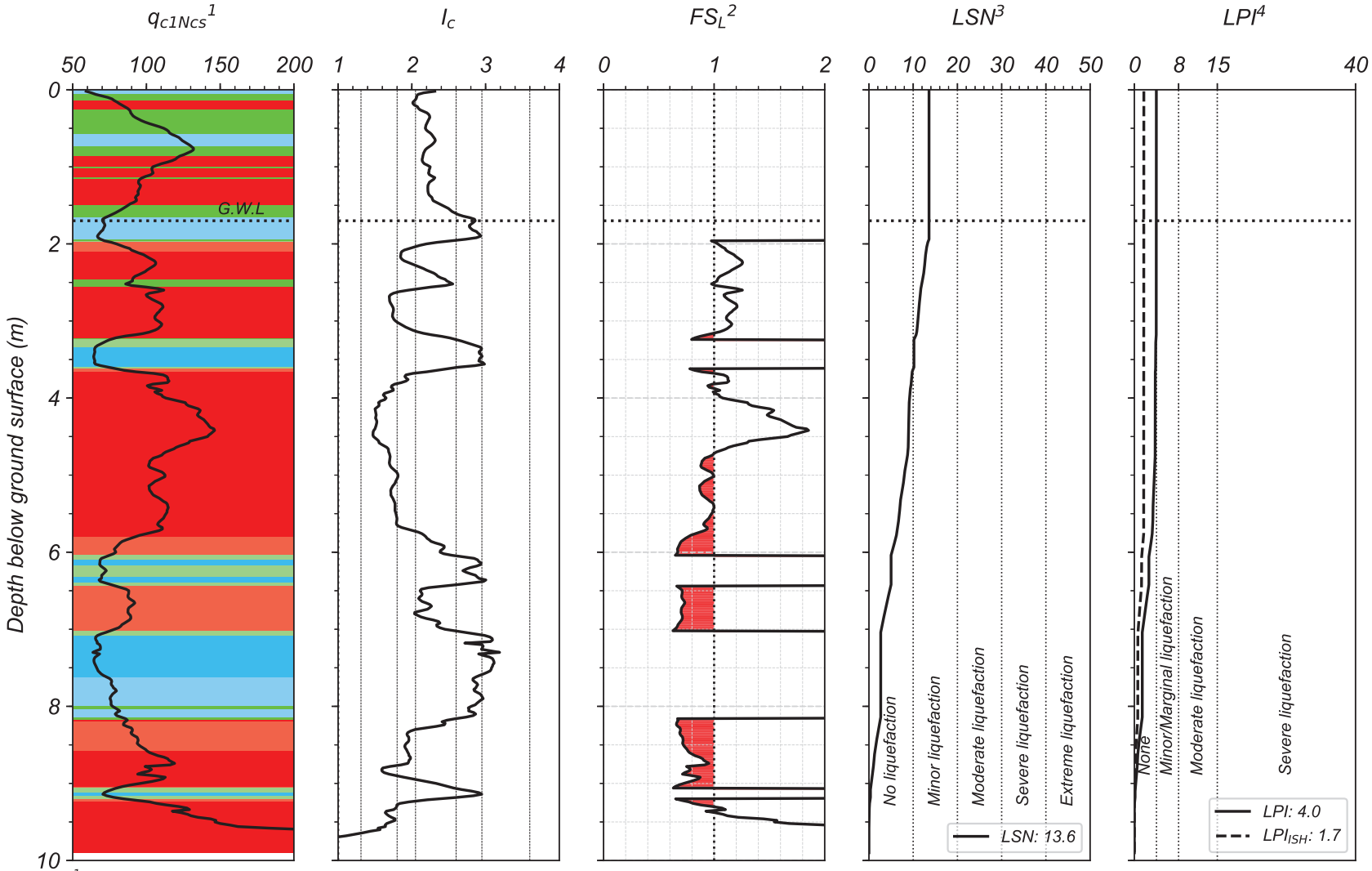
Case #123: Harrington-JUN (taken on 15/JUN/2011) - NONE



Case #124: Harrington-DEC (Aerial photograph is not available) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 121 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.22 g
Site = Harrington ; CPT# = 57337 ; GWL = 1.7 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

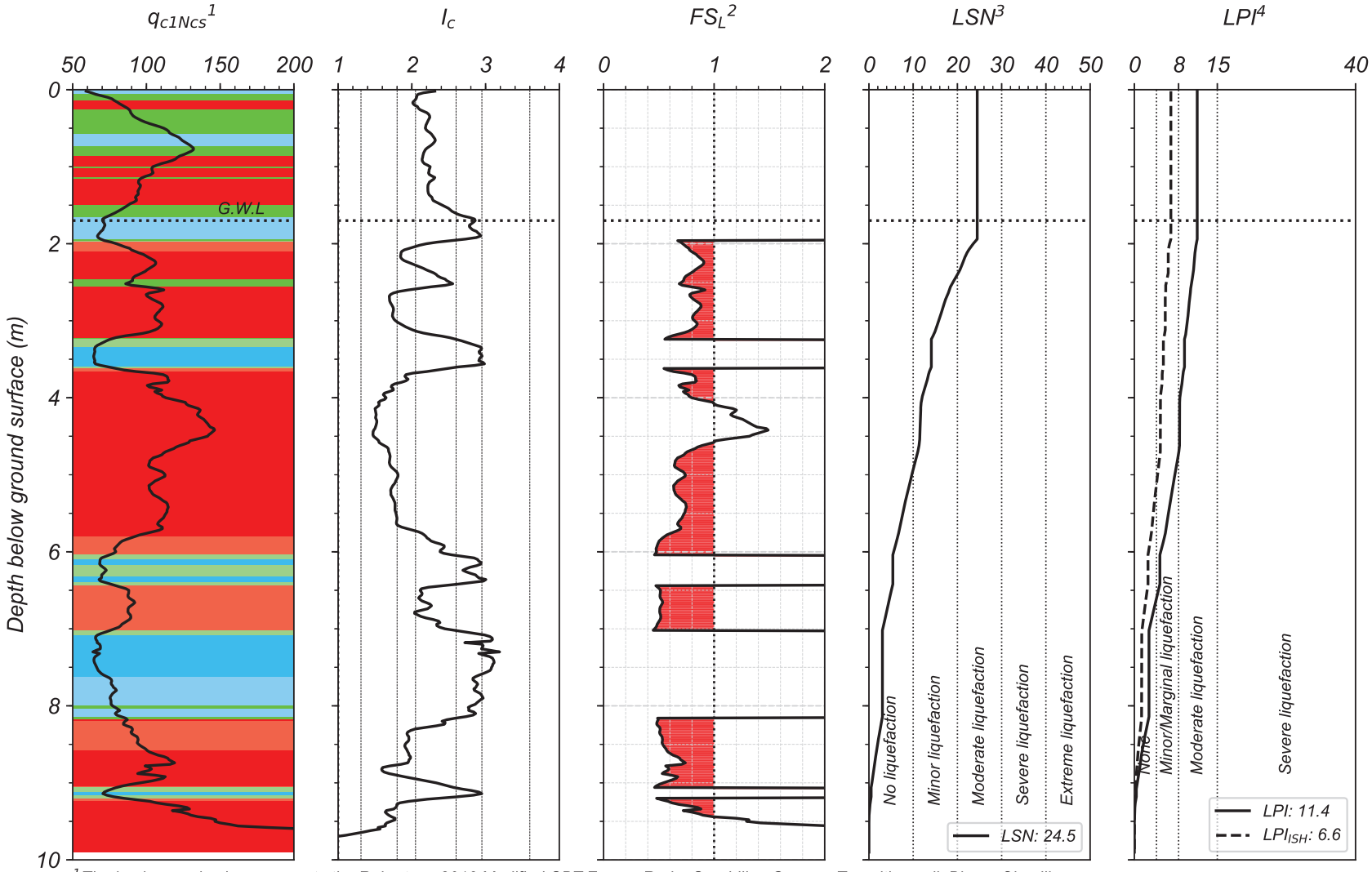


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 122 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.34 g
Site = Harrington ; CPT# = 57337 ; GWL = 1.7 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

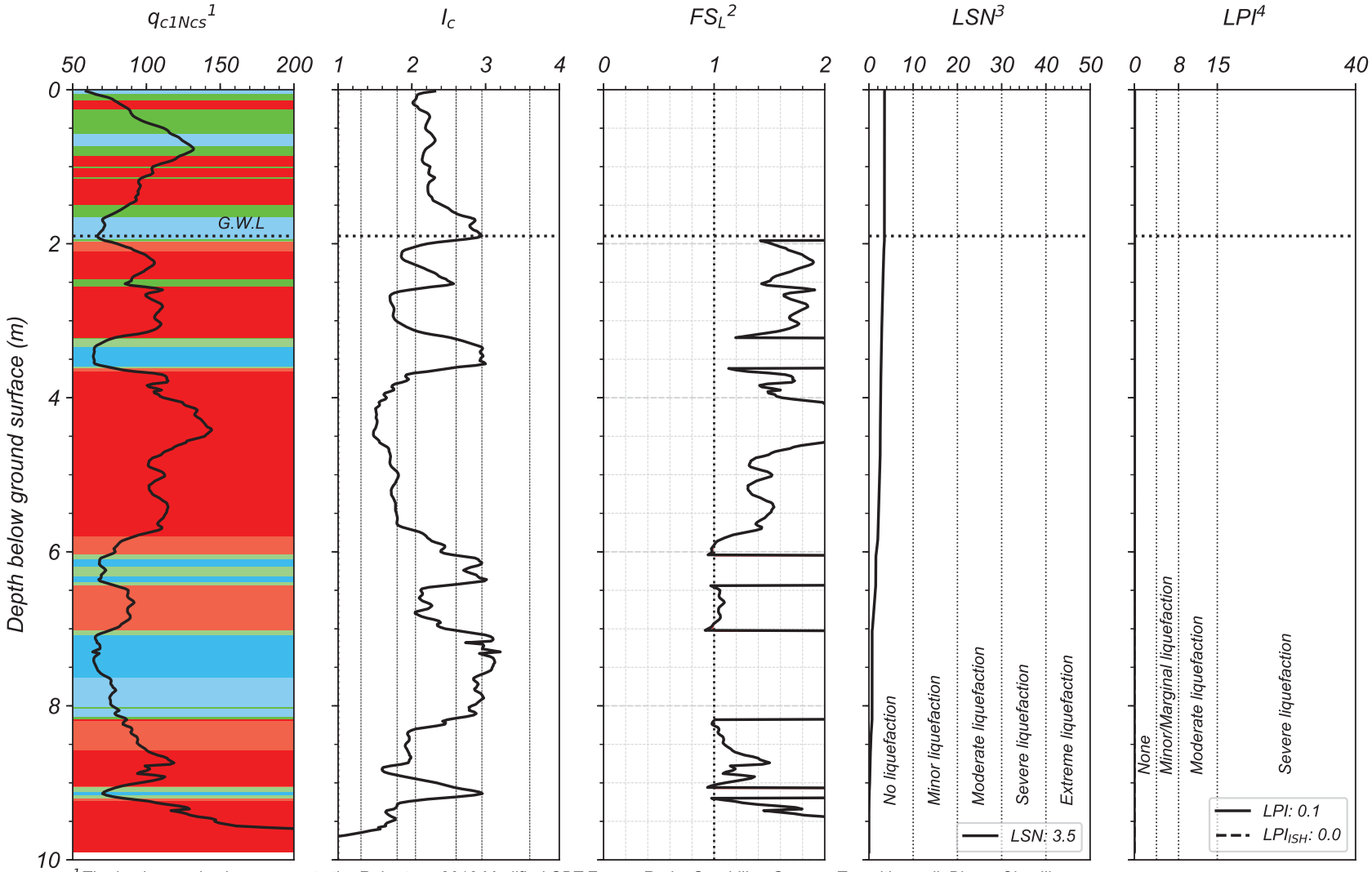


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 123 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.17 g
Site = Harrington ; CPT# = 57337 ; GWL = 1.9 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

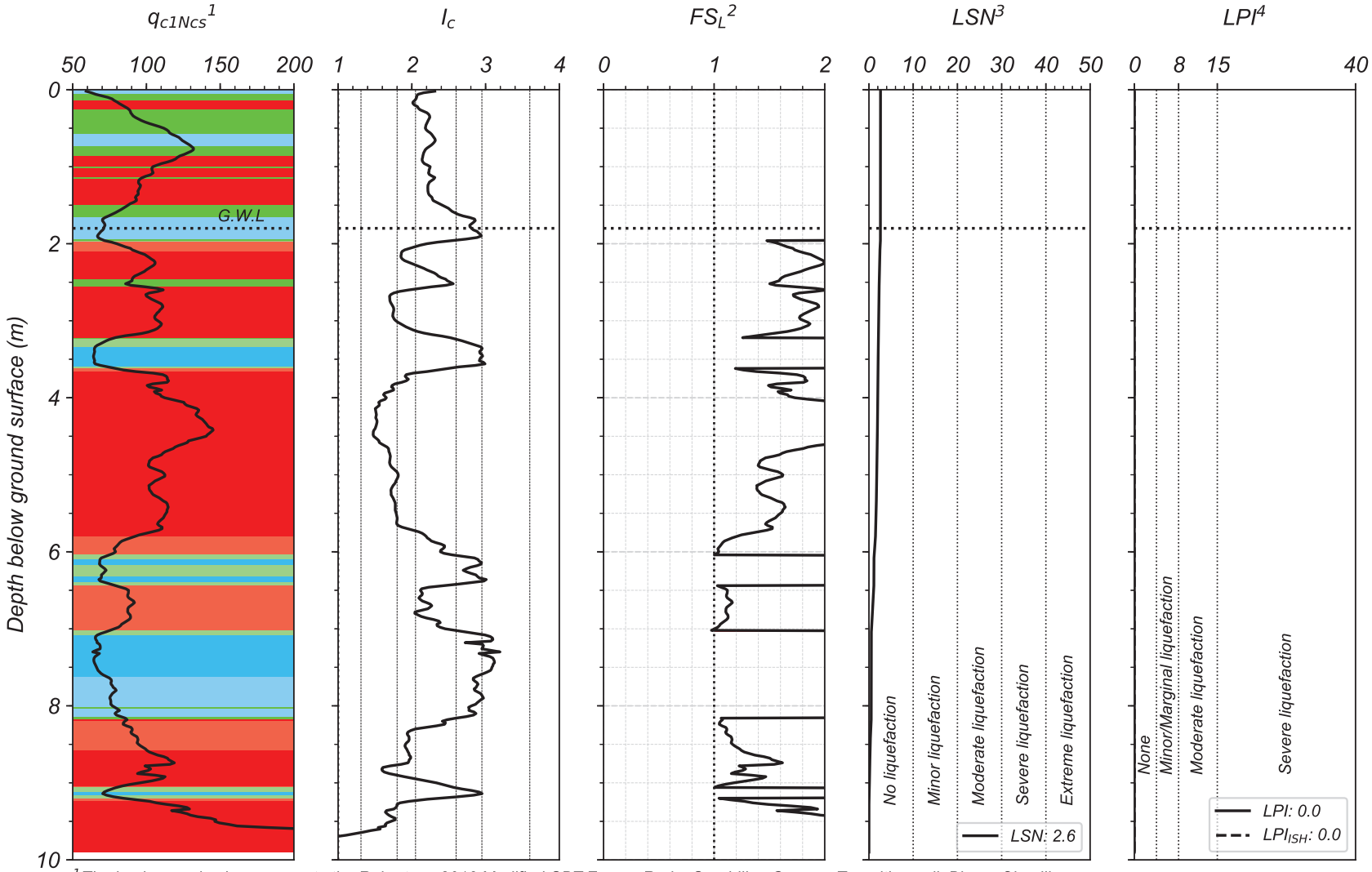


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 124 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.16 g
Site = Harrington ; CPT# = 57337 ; GWL = 1.8 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

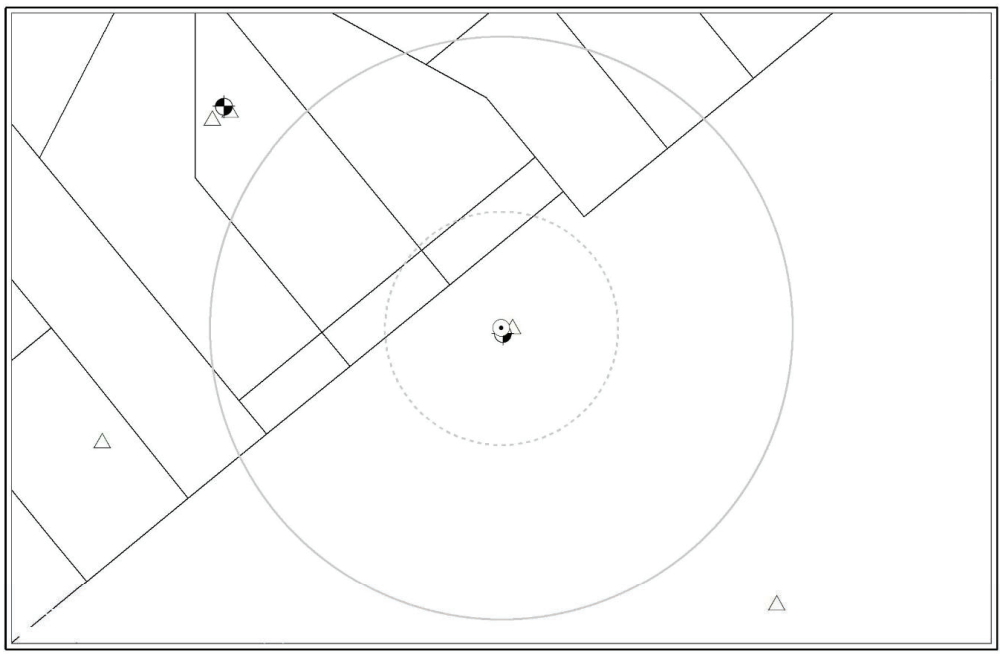


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

HILLMORTON

Lat: -43.556187°; Long: 172.593252°



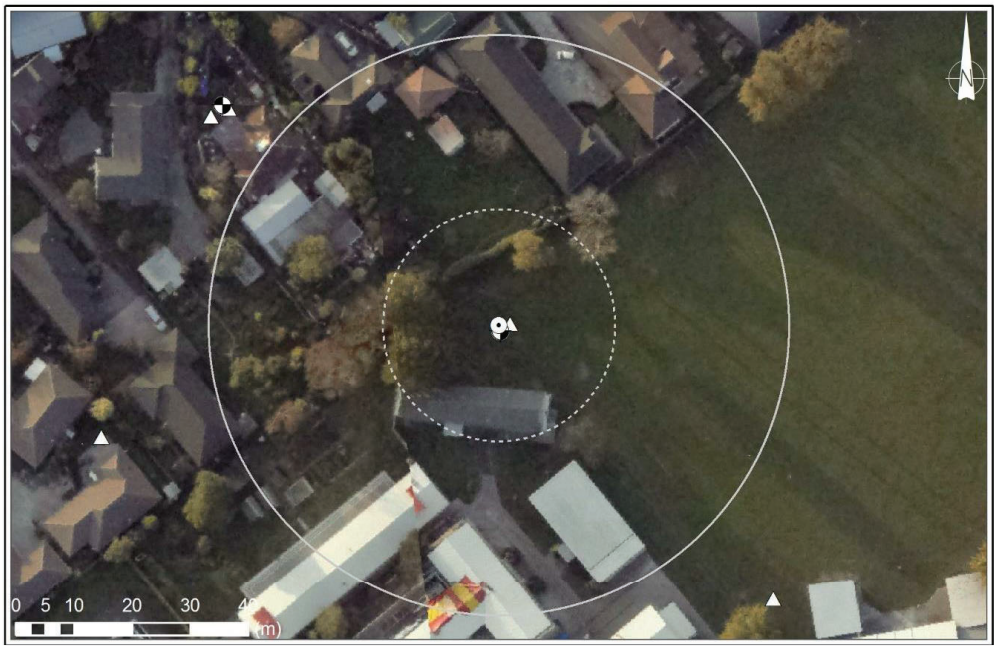
Case #125: Hillmorton-DAR (Aerial photograph is not available) - NONE



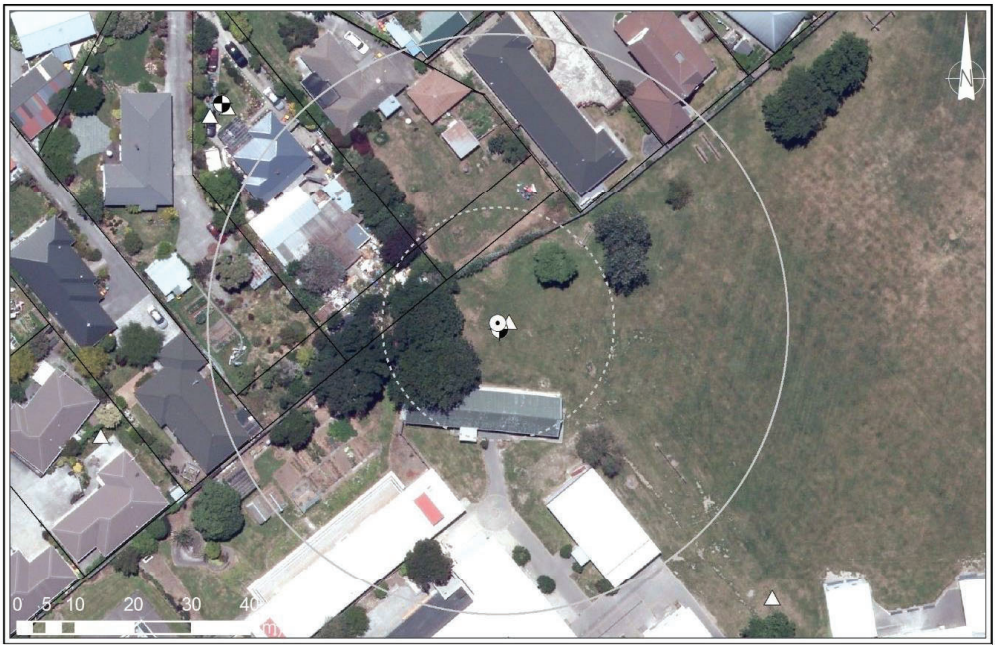
Case #126: Hillmorton-CHC (taken on 24/FEB/2011) - MODERATE

HILLMORTON

Lat: -43.556187°; Long: 172.593252°



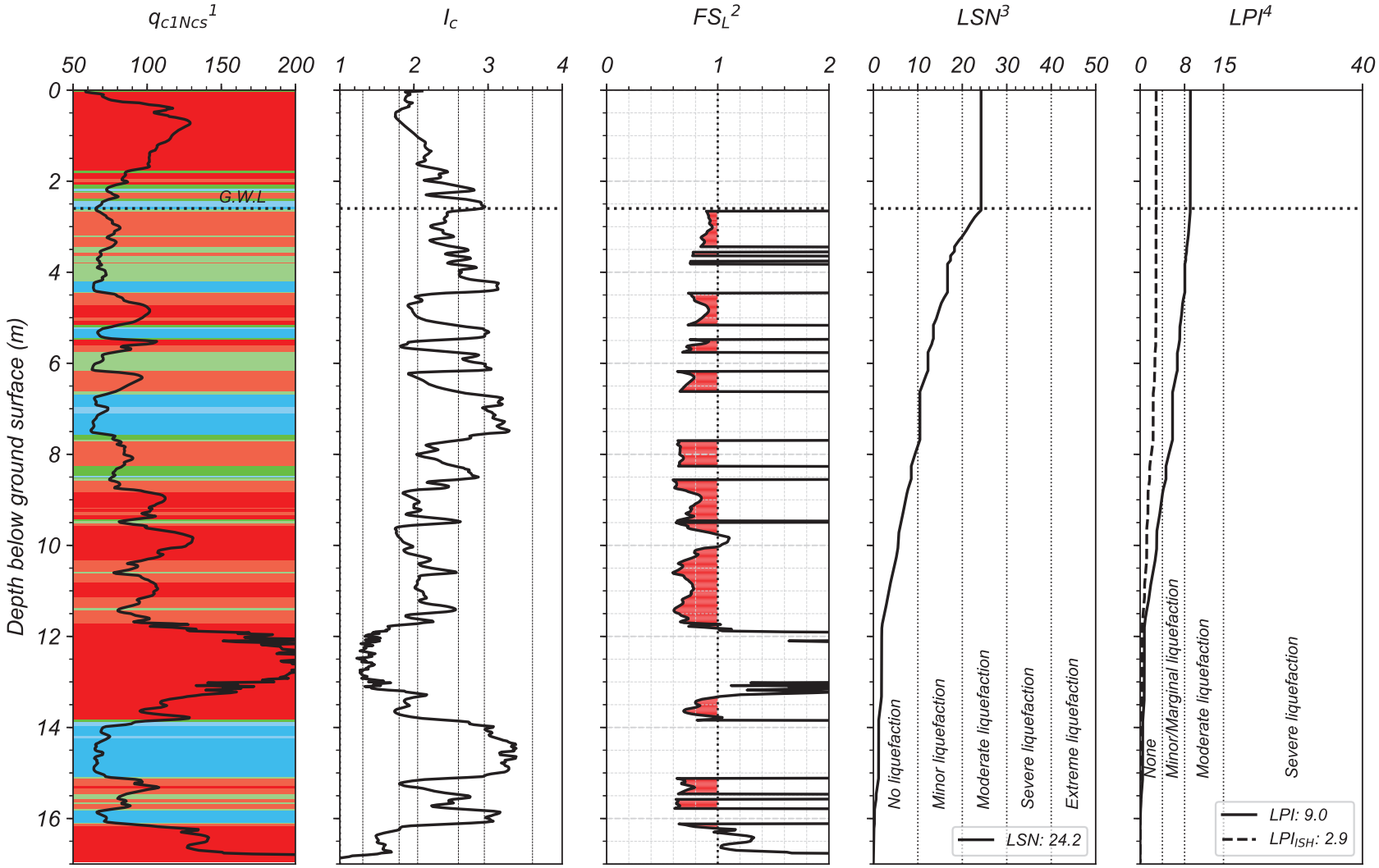
Case #127: Hillmorton-JUN (taken on 15/JUN/2011) - NONE



Case #128: Hillmorton-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 125 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.24 g
Site = Hillmorton ; CPT# = 57364 ; GWL = 2.6 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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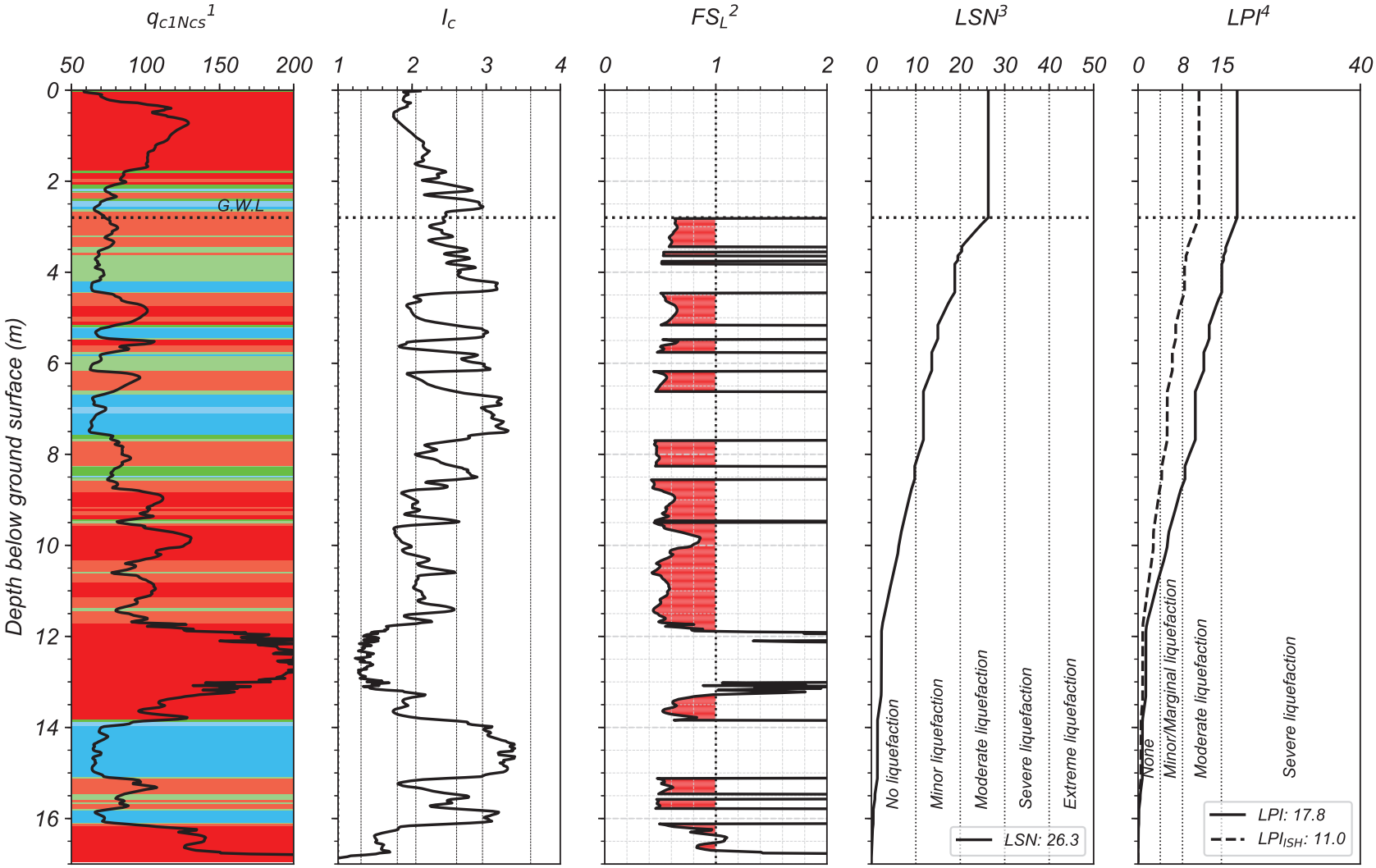
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 126 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.39 g
Site = Hillmorton ; CPT# = 57364 ; GWL = 2.8 m
Observed Ejecta Severity = Moderate ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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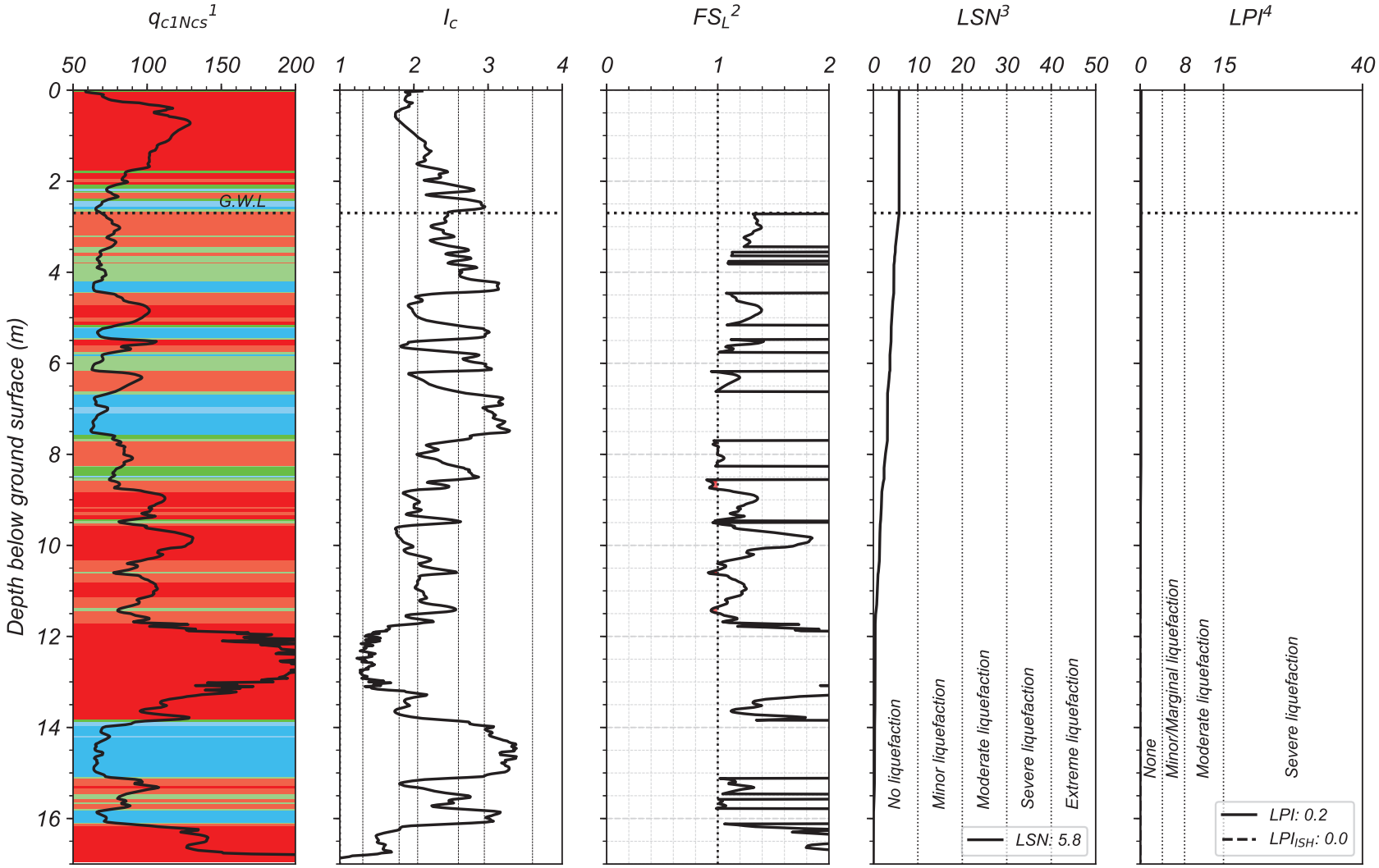
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 127 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.18 g
Site = Hillmorton ; CPT# = 57364 ; GWL = 2.7 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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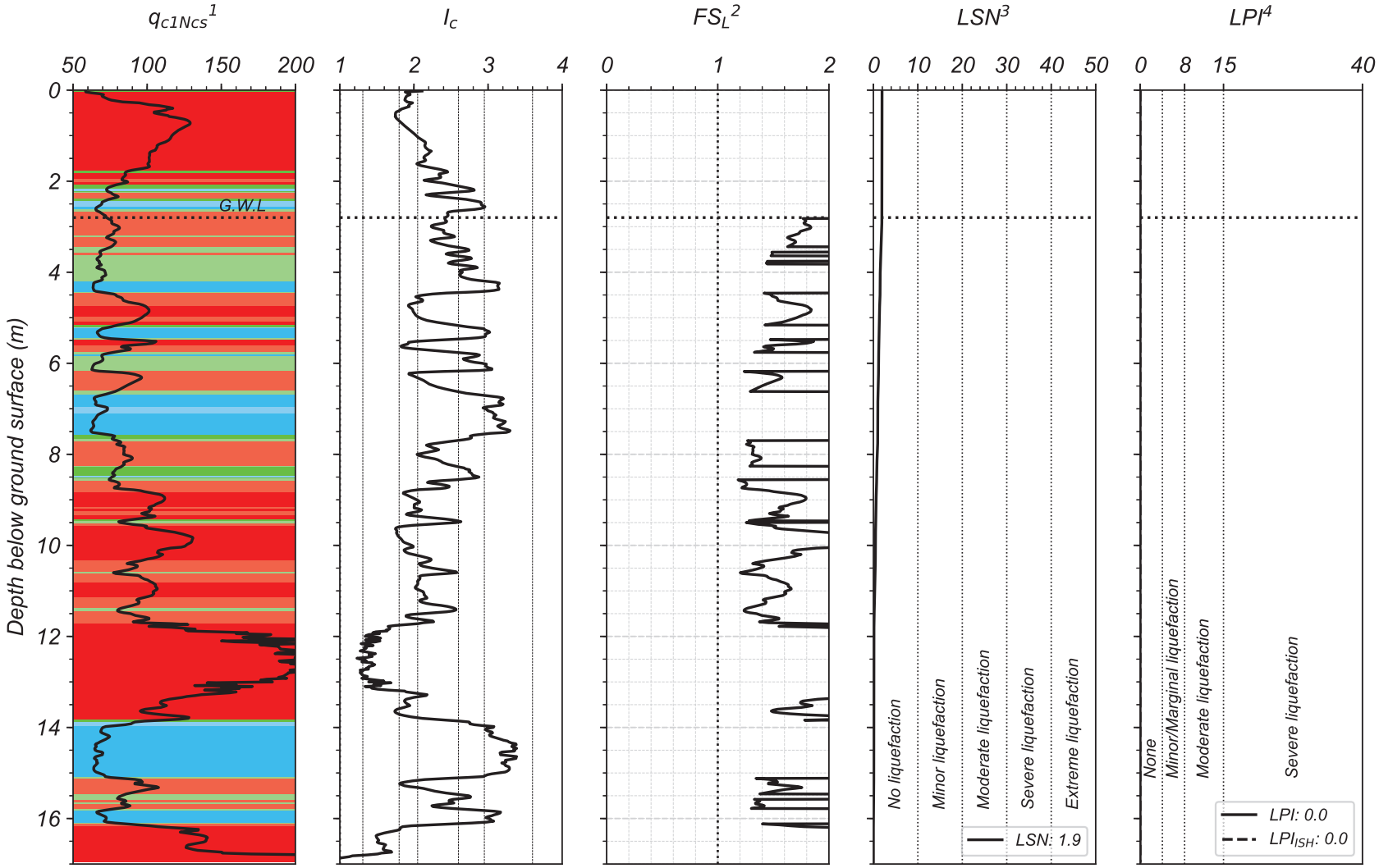
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 128 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.14 g
Site = Hillmorton ; CPT# = 57364 ; GWL = 2.8 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
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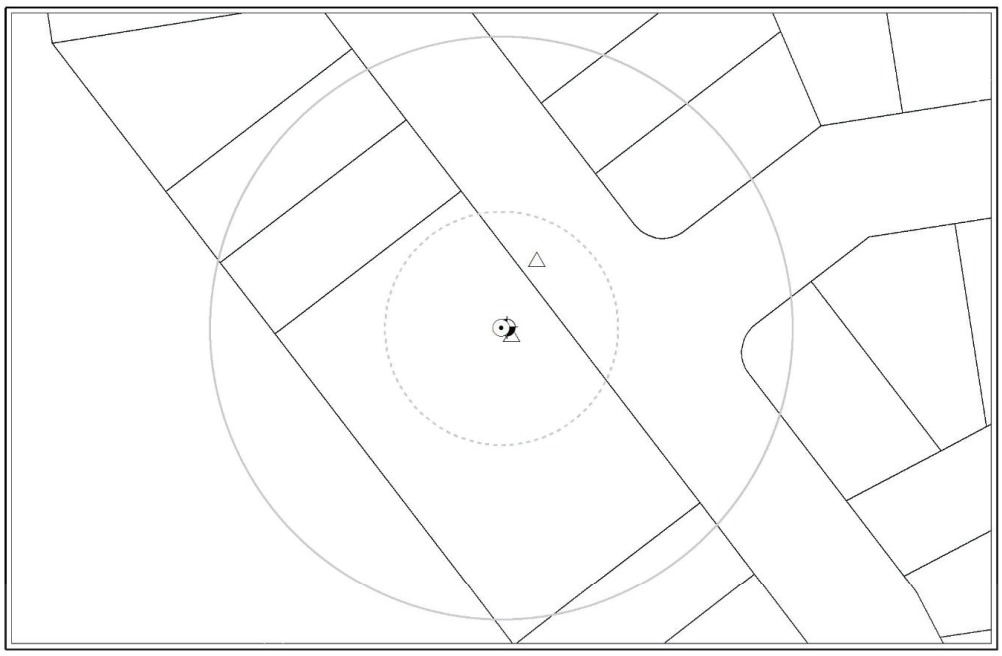
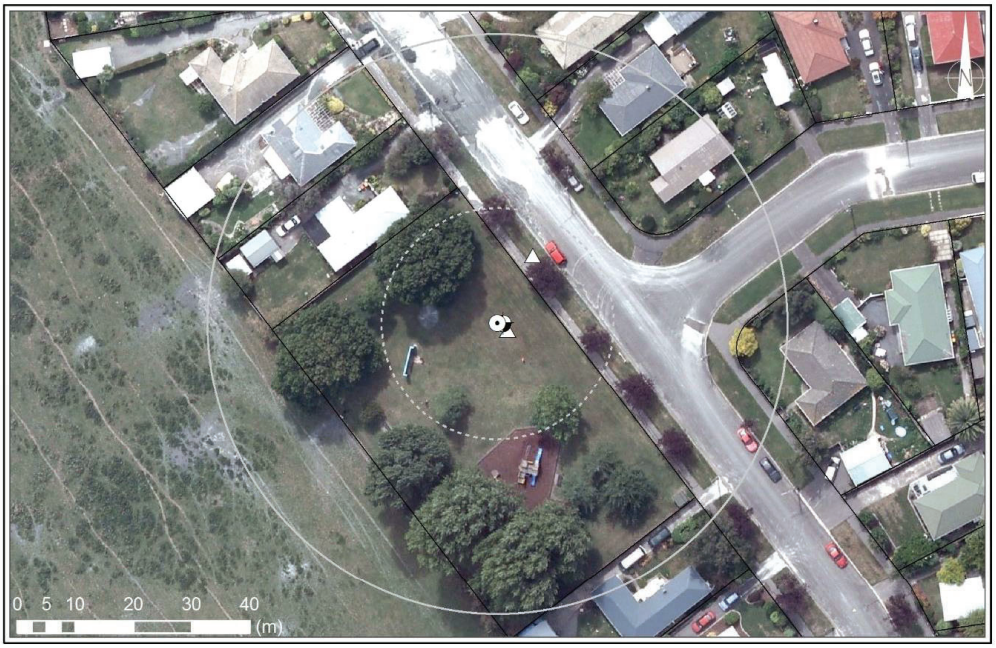
KAIWARA

Lat: -43.571492°; Long: 172.608046°



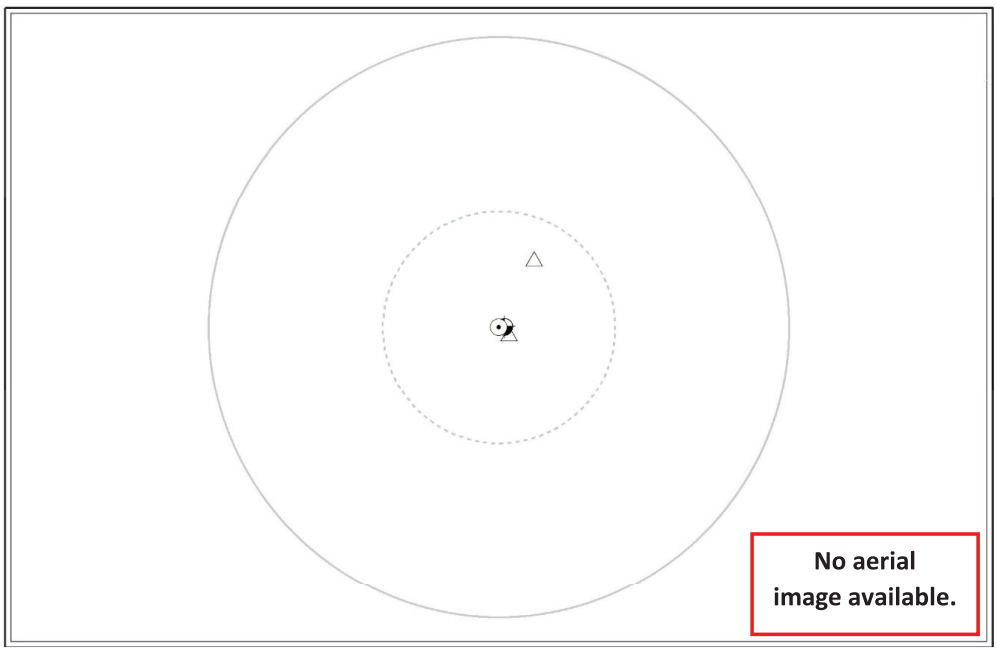
Case #129: Kaiwara-DAR (Aerial photograph is not available) - NONE



Case #130: Kaiwara-CHC (taken on 24/FEB/2011) - MINOR

KAIWARA

Lat: -43.571492°; Long: 172.608046°



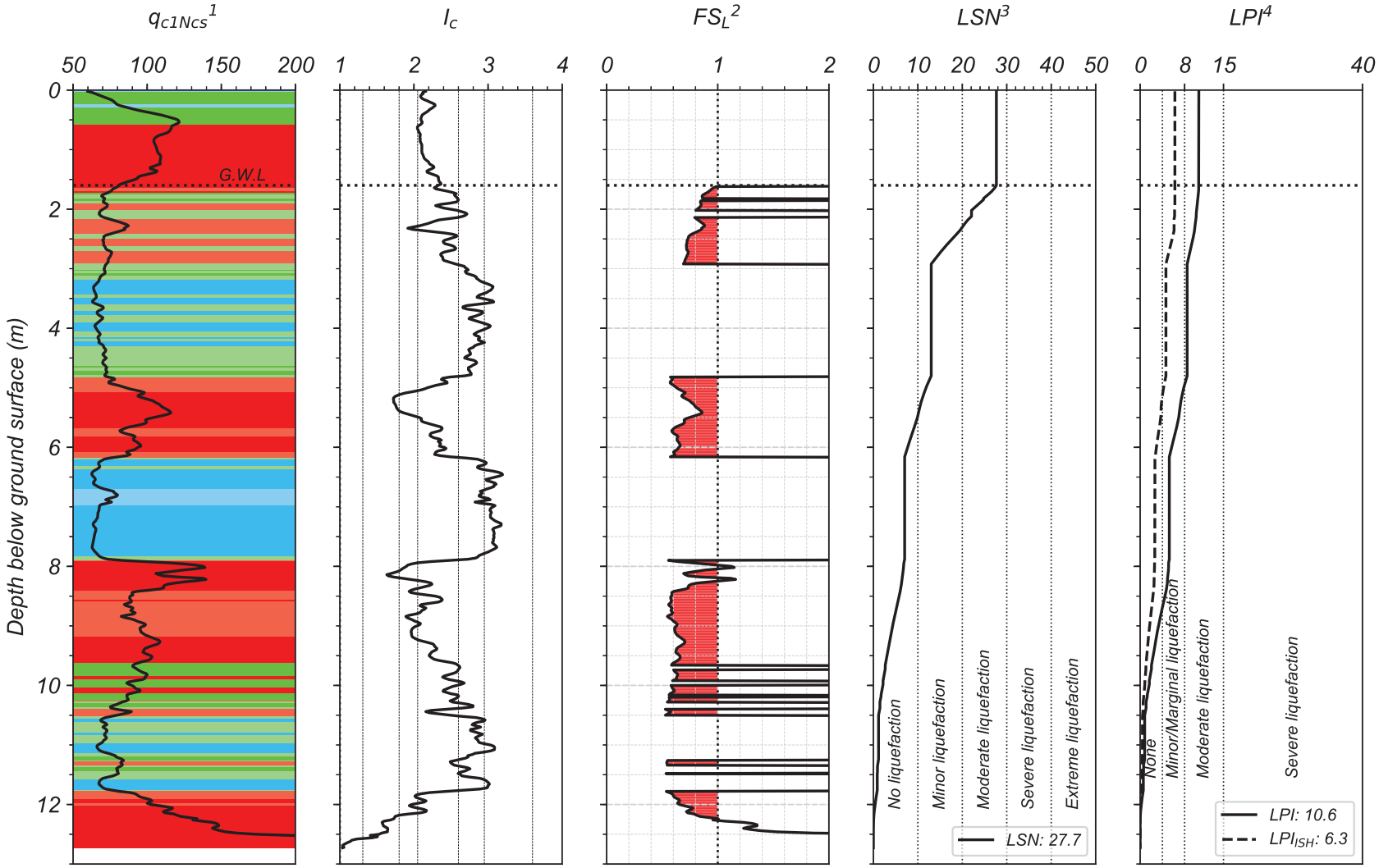
Case #131: Kaiwara-JUN (Aerial photograph is not available) - NONE



Case #132: Kaiwara-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 129 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.25 g
Site = Kaiwara ; CPT# = 57340 ; GWL = 1.6 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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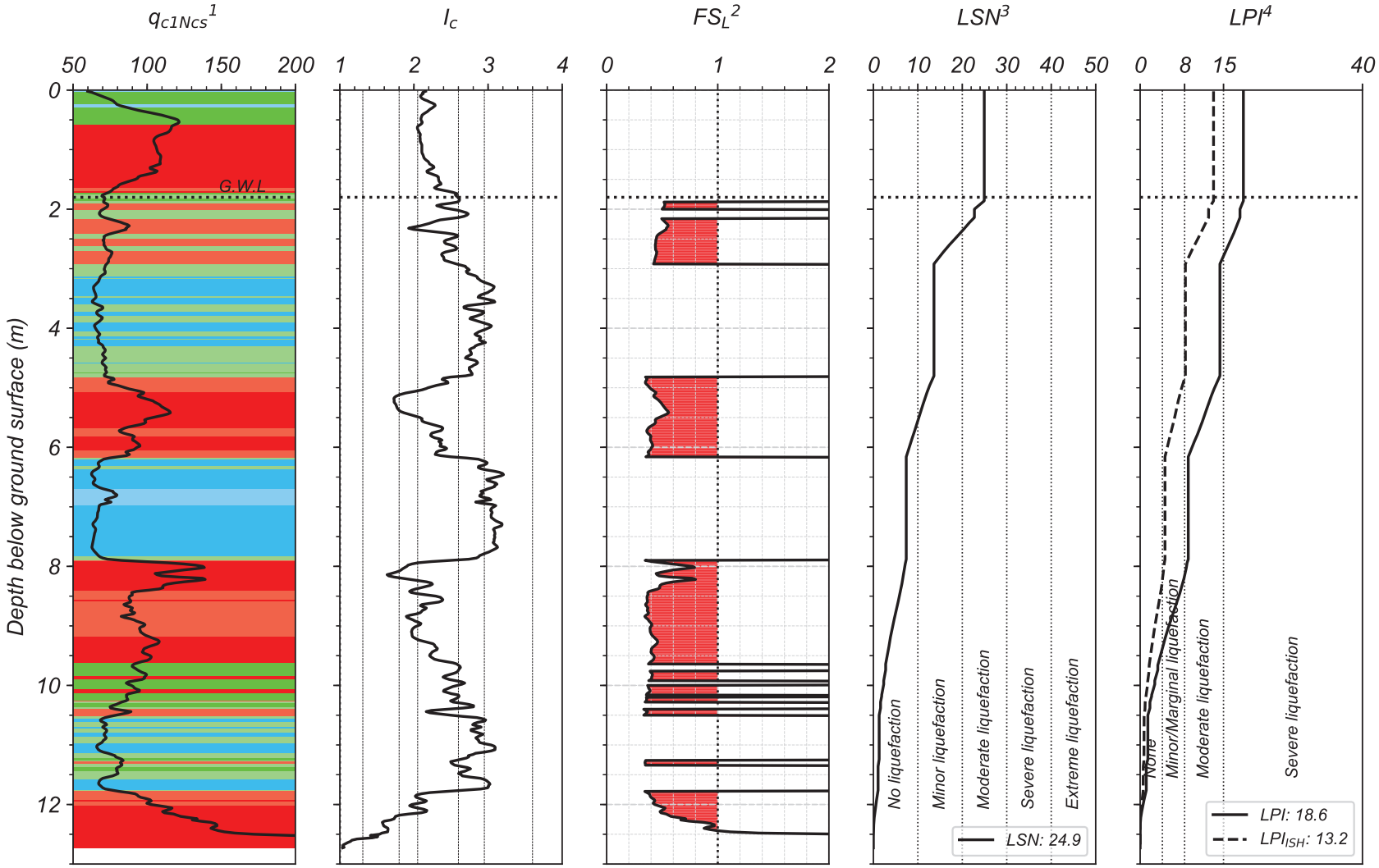
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 130 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.46 g
Site = Kaiwara ; CPT# = 57340 ; GWL = 1.8 m
Observed Ejecta Severity = Minor ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
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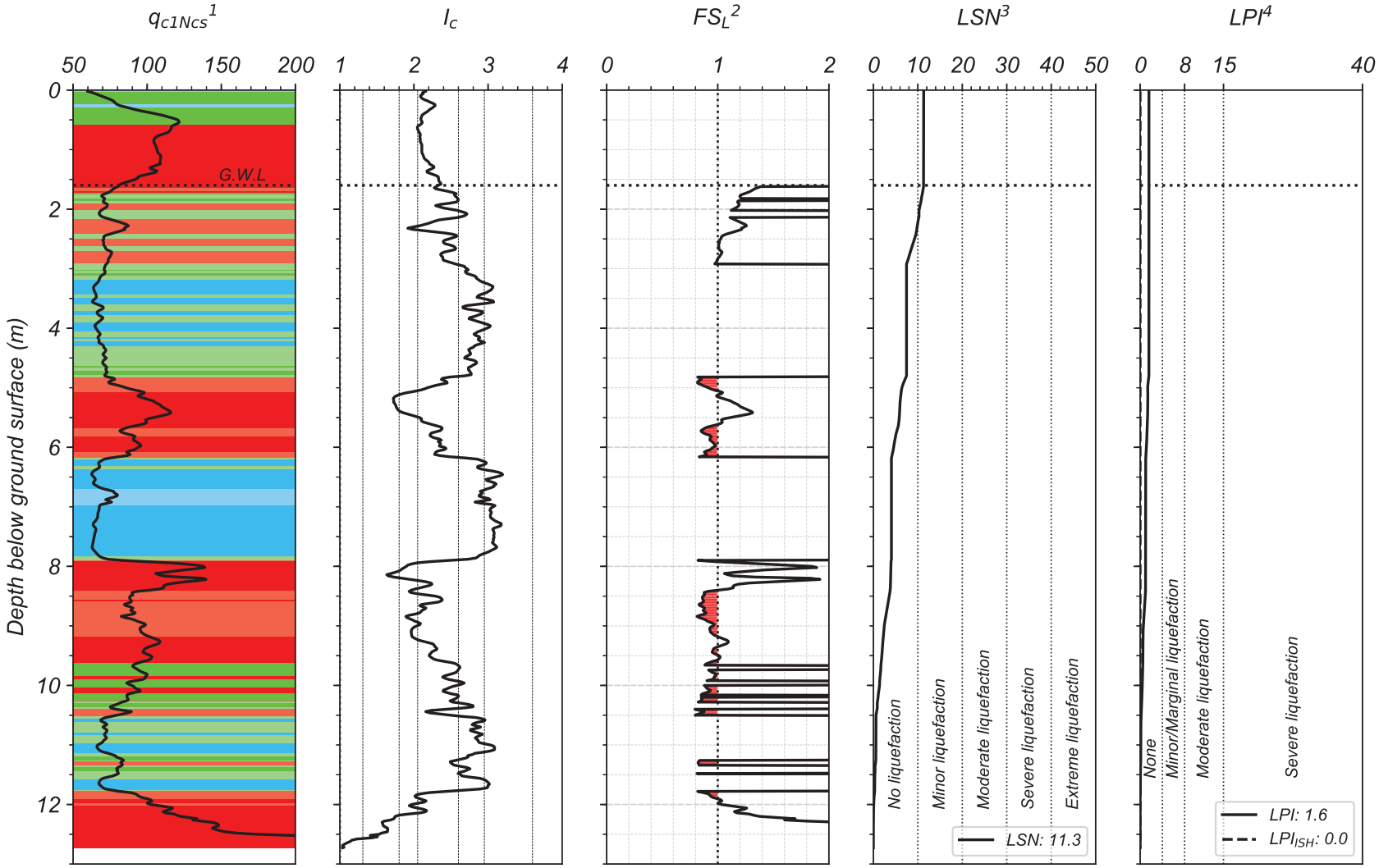
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 131 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.19 g
Site = Kaiwara ; CPT# = 57340 ; GWL = 1.6 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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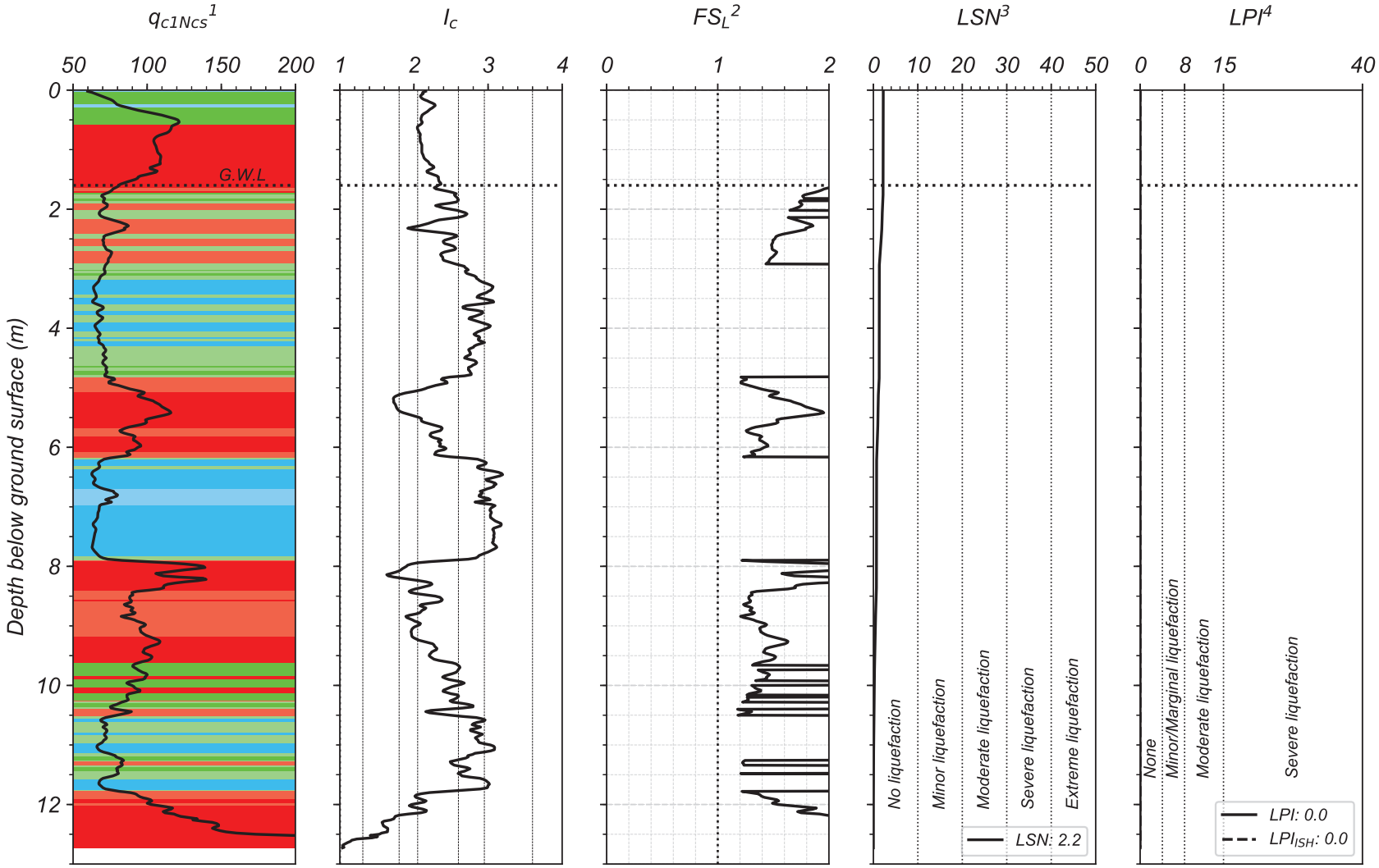
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 132 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.13 g
Site = Kaiwara ; CPT# = 57340 ; GWL = 1.6 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

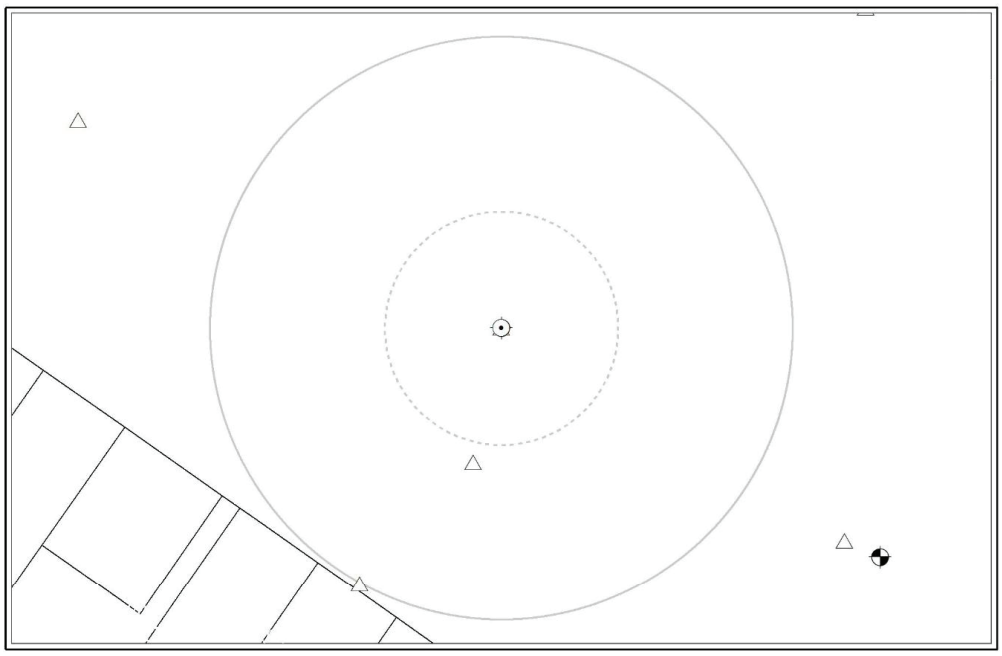


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

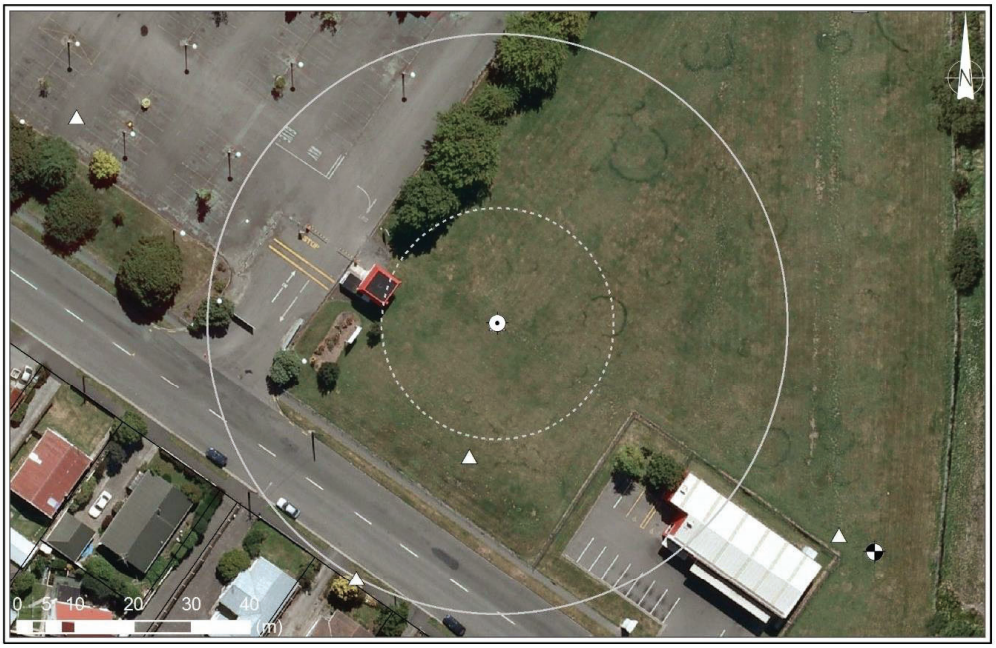
By: DH
UC Berkeley, 2020

LANGDONS

Lat: -43.492195°; Long: 172.604872°



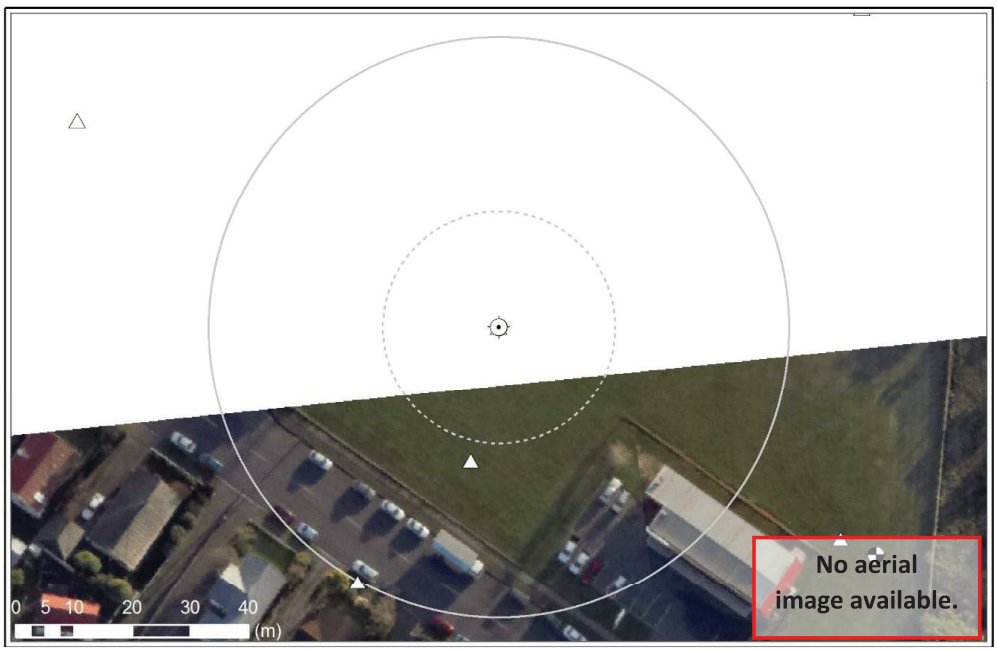
Case #133: Langdons-DAR (Aerial photograph is not available) - NONE



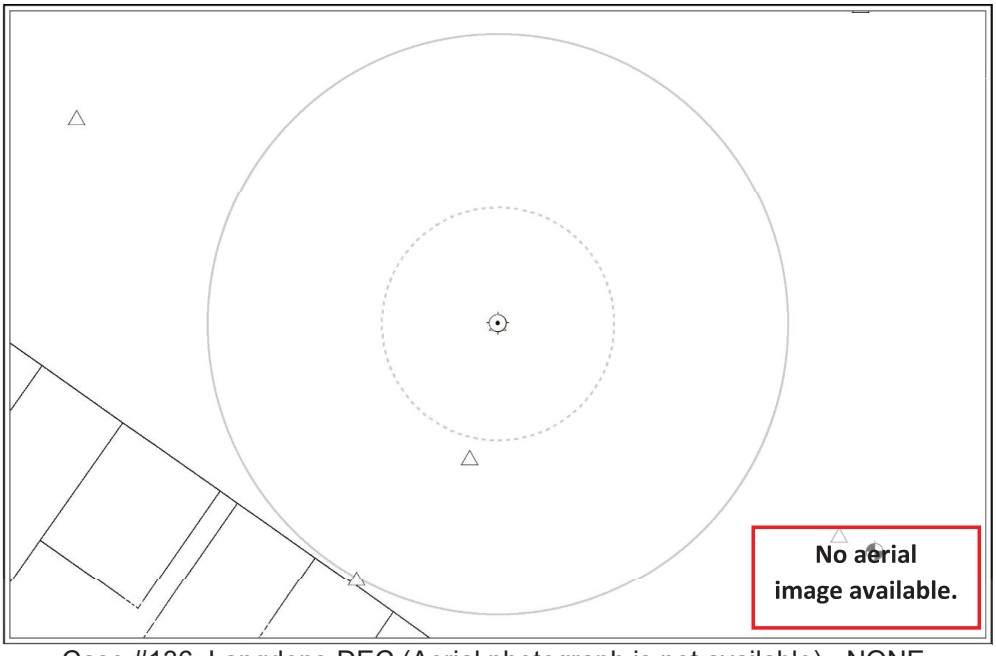
Case #134: Langdons-CHC (taken on 24/FEB/2011) - NONE

LANGDONS

Lat: -43.492195°; Long: 172.604872°



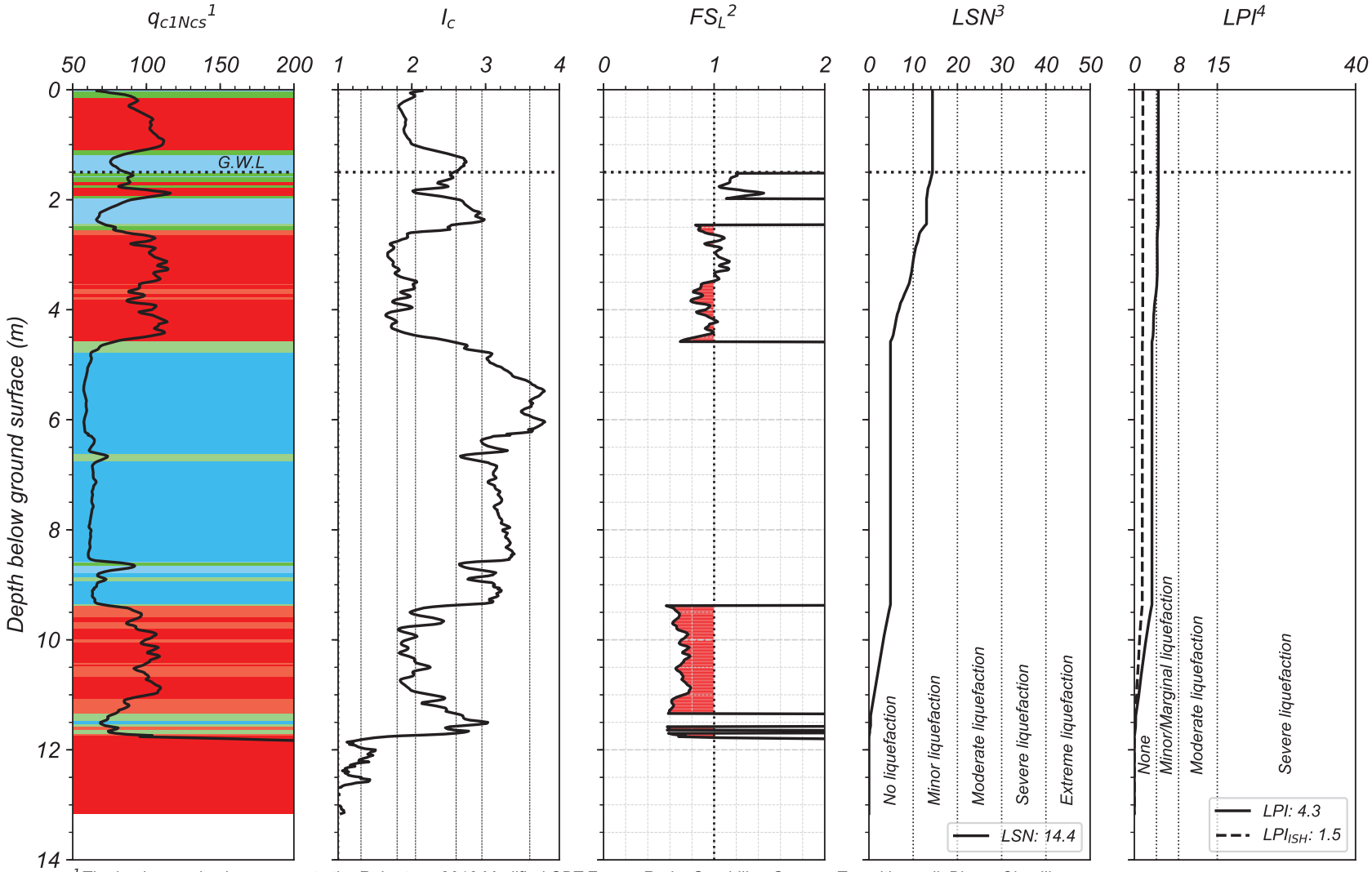
Case #135: Langdons-JUN (Aerial photograph is not available) - NONE



Case #136: Langdons-DEC (Aerial photograph is not available) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 133 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.22 g
Site = Langdons ; CPT# = 57338 ; GWL = 1.5 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

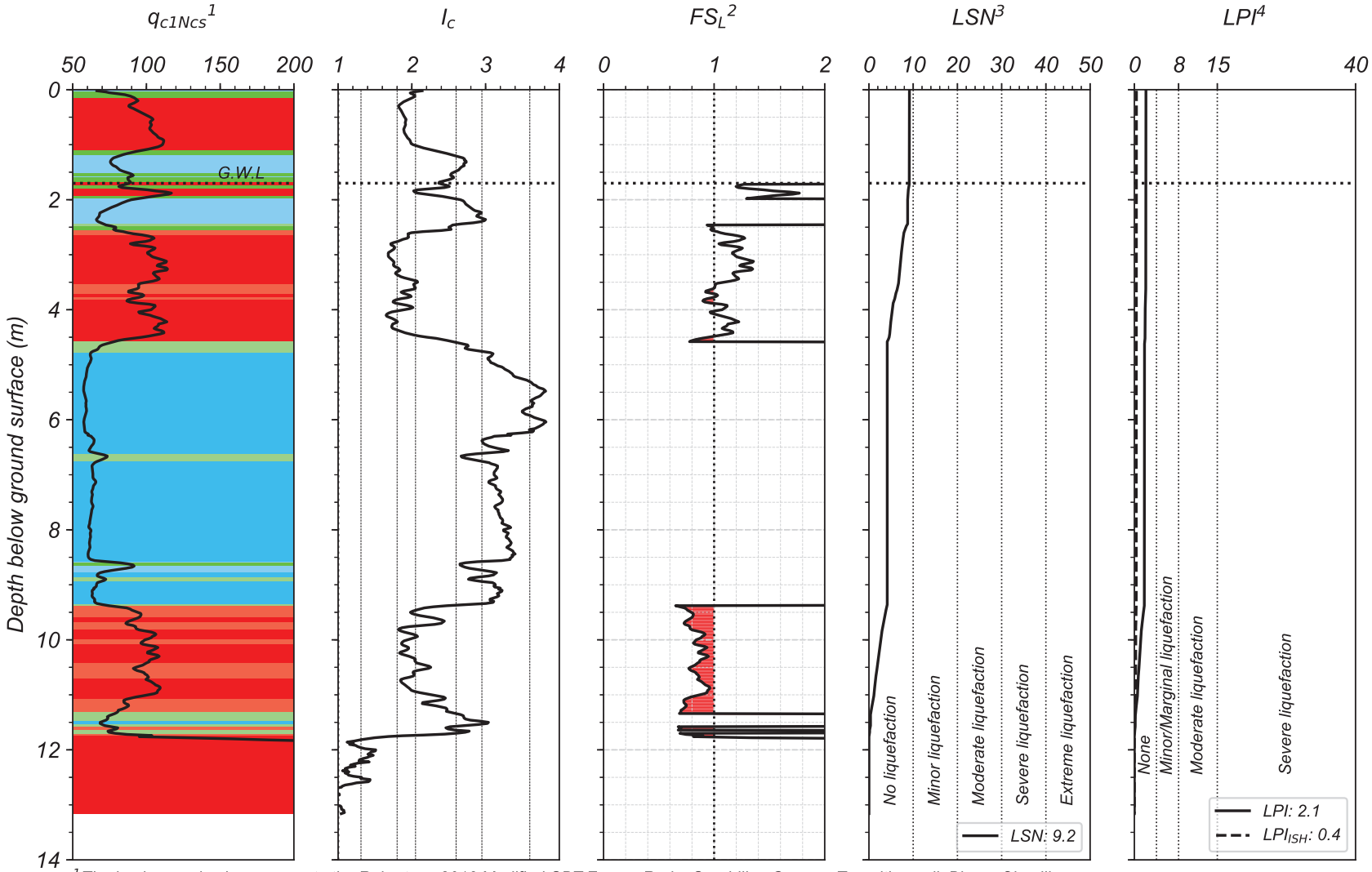


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 134 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.22 g
Site = Langdons ; CPT# = 57338 ; GWL = 1.7 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

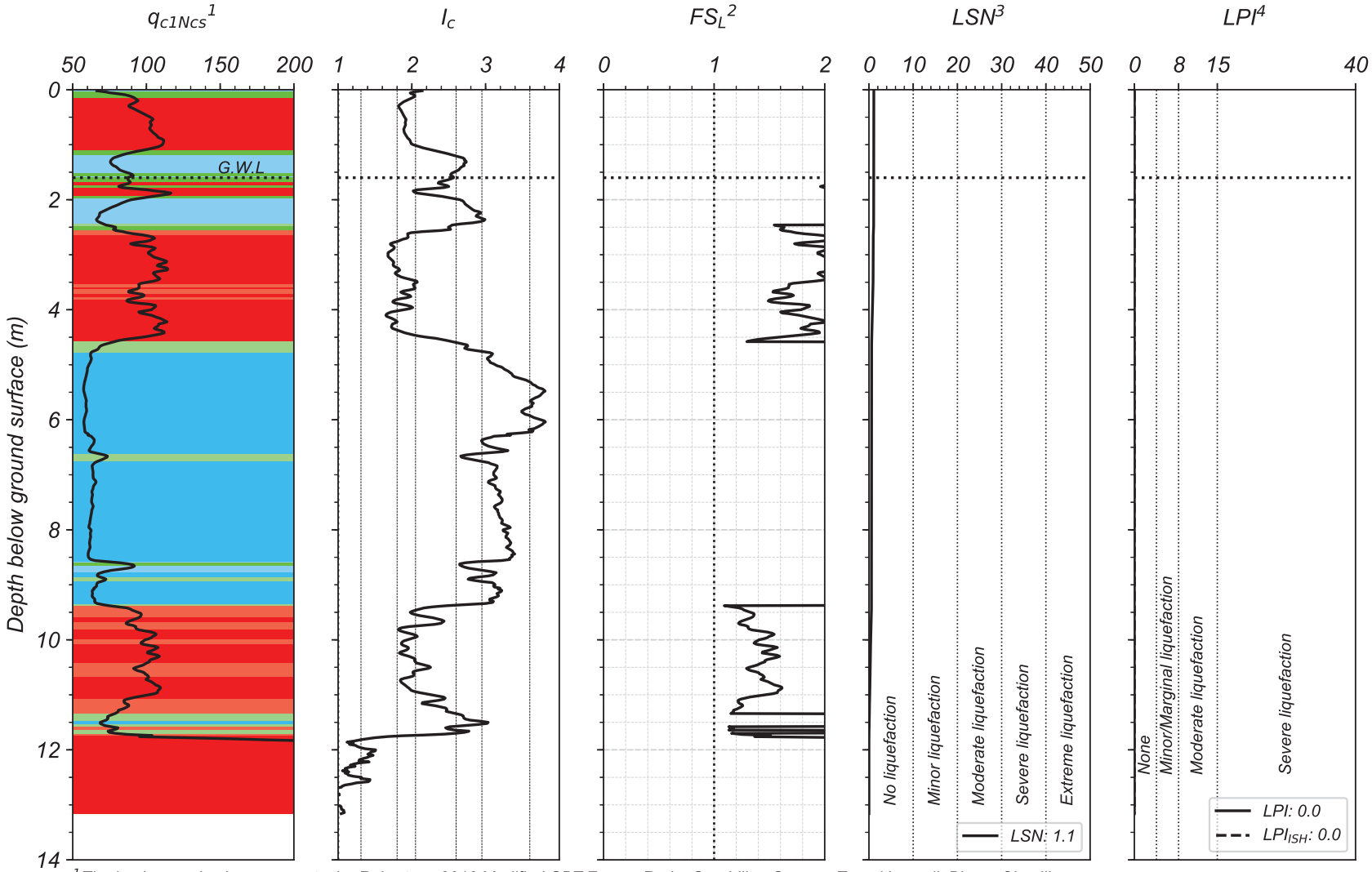


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 135 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.13 g
Site = Langdons ; CPT# = 57338 ; GWL = 1.6 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

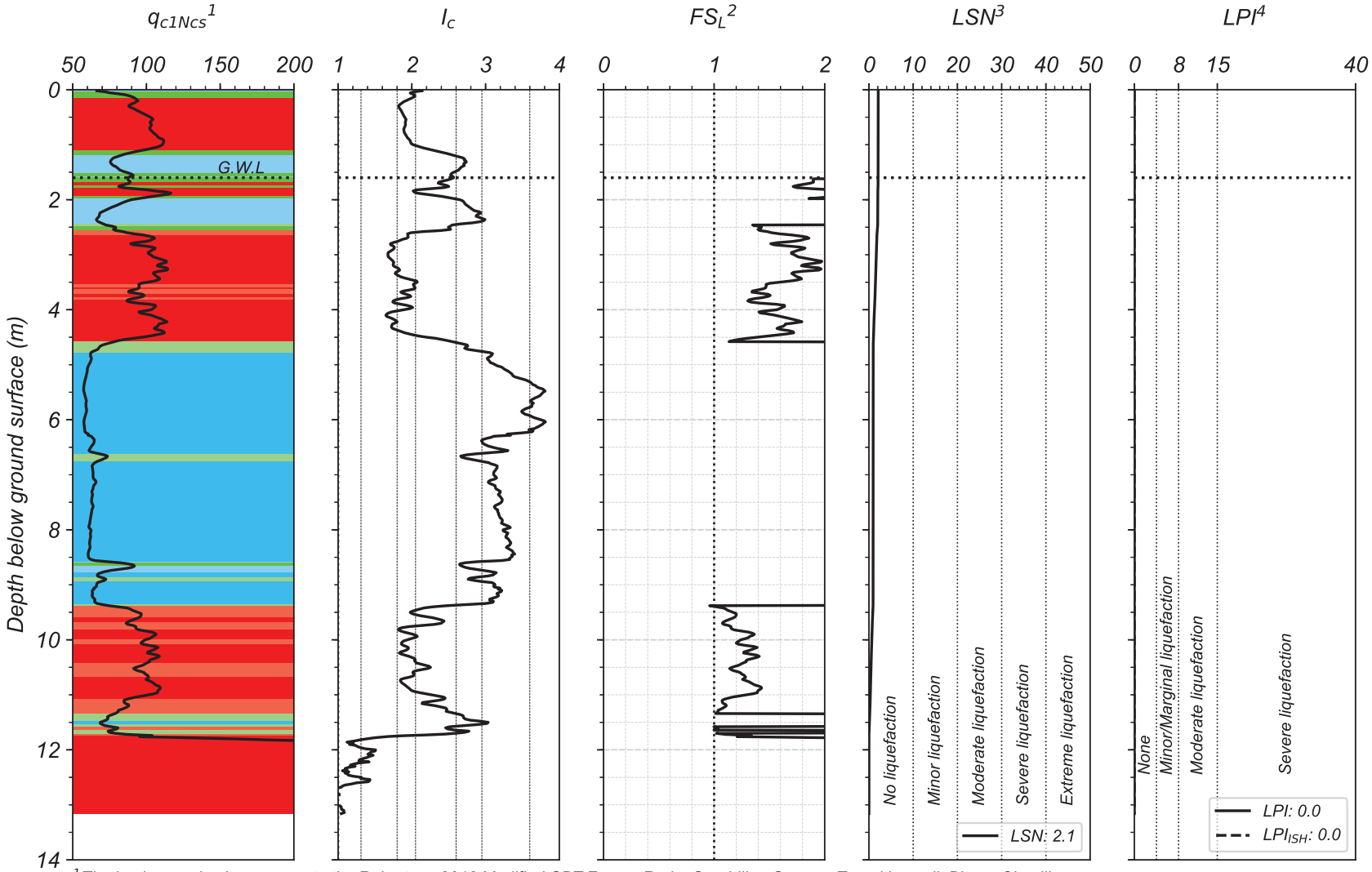


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 136 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.15 g
Site = Langdons ; CPT# = 57338 ; GWL = 1.6 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

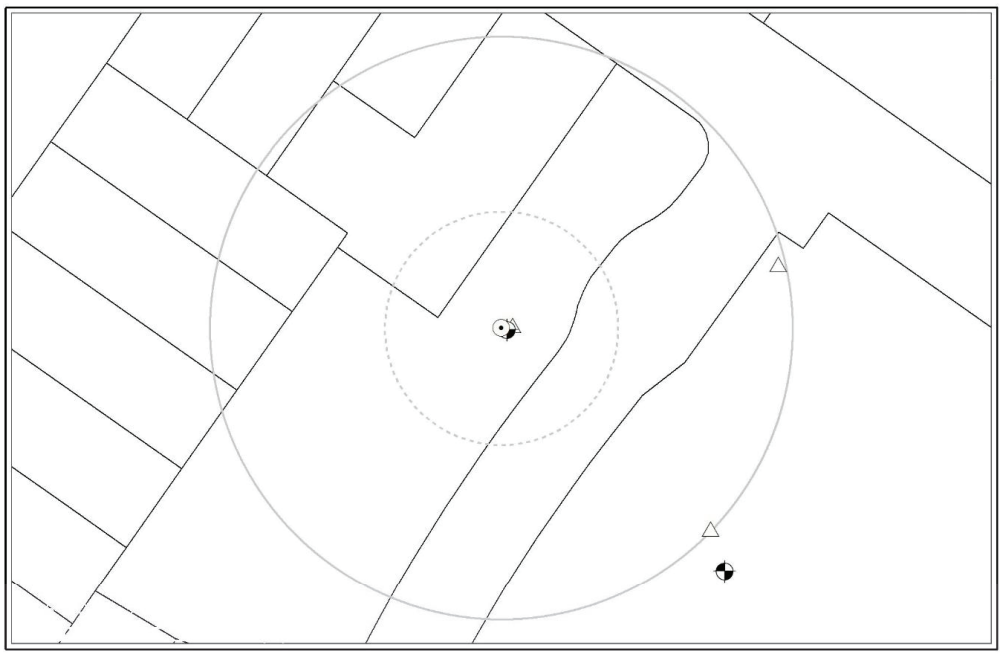


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

MARBLEWOOD

Lat: -43.494509°; Long: 172.601543°



Case #137: Marblewood-DAR (Aerial photograph is not available) - NONE



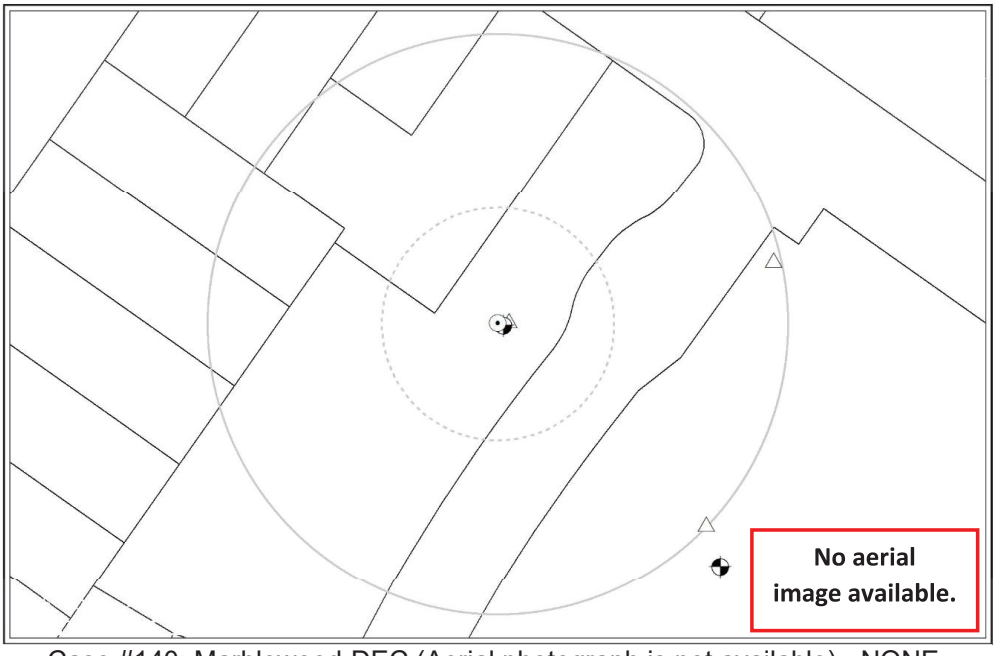
Case #138: Marblewood-CHC (taken on 24/FEB/2011) - NONE

MARBLEWOOD

Lat: -43.494509°; Long: 172.601543°



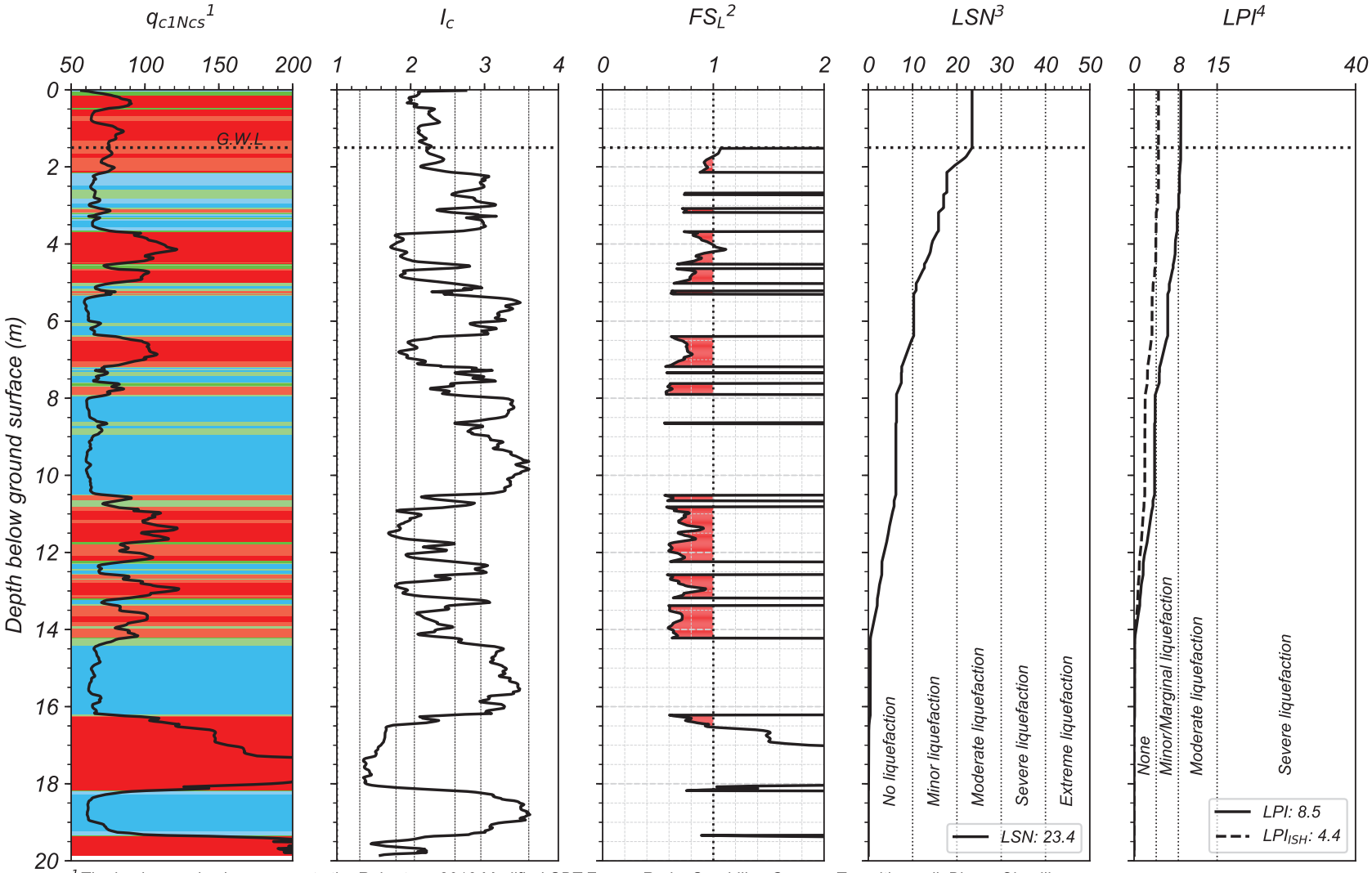
Case #139: Marblewood-JUN (taken on 15/JUN/2011) - NONE



Case #140: Marblewood-DEC (Aerial photograph is not available) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 137 ; Event = Darfield ; M_W = 7.1 ; Surface PGA_{max} = 0.22 g
Site = Marblewood ; CPT# = 57351 ; GWL = 1.5 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

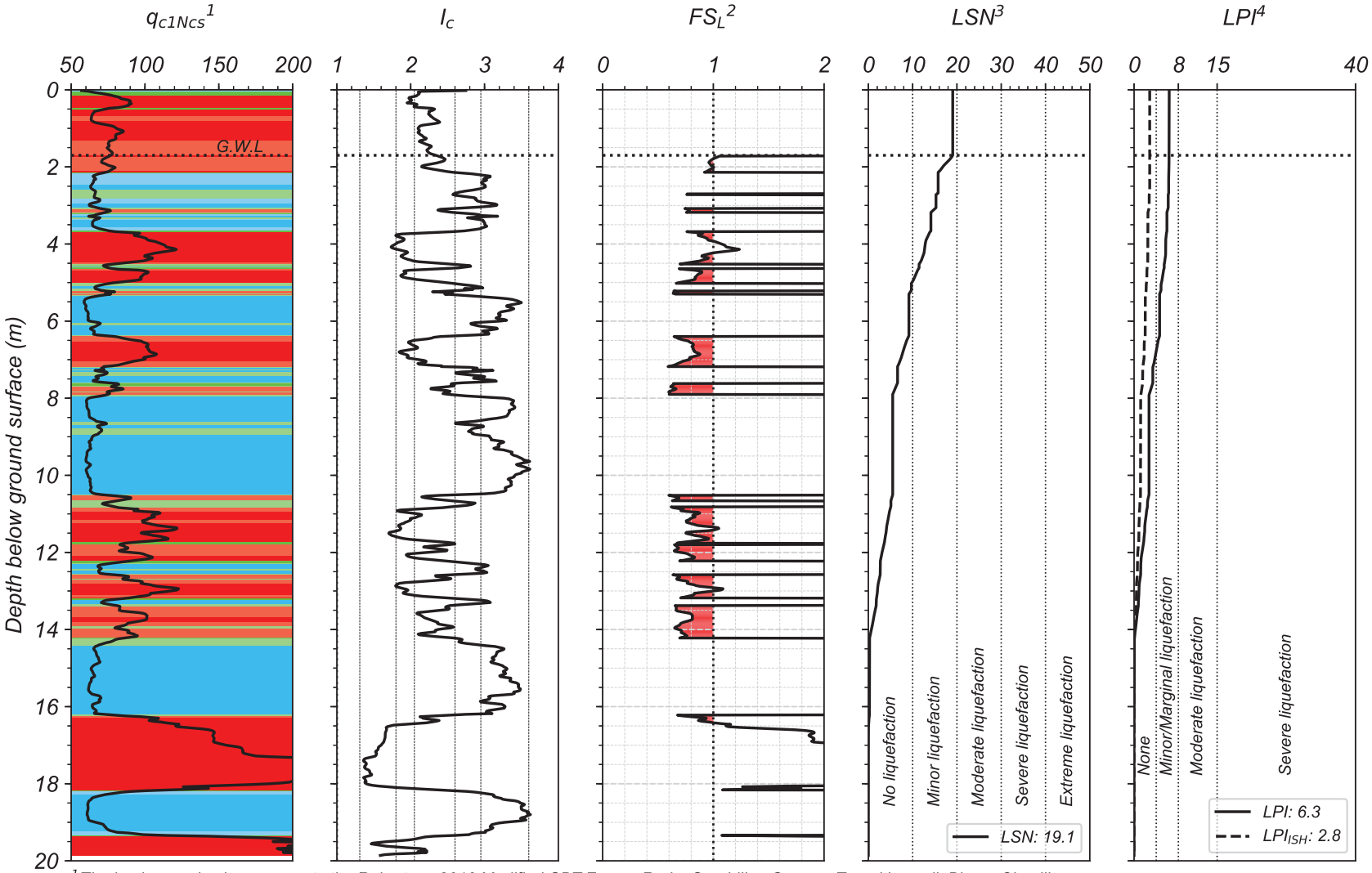


[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 138 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.24 g
Site = Marblewood ; CPT# = 57351 ; GWL = 1.7 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

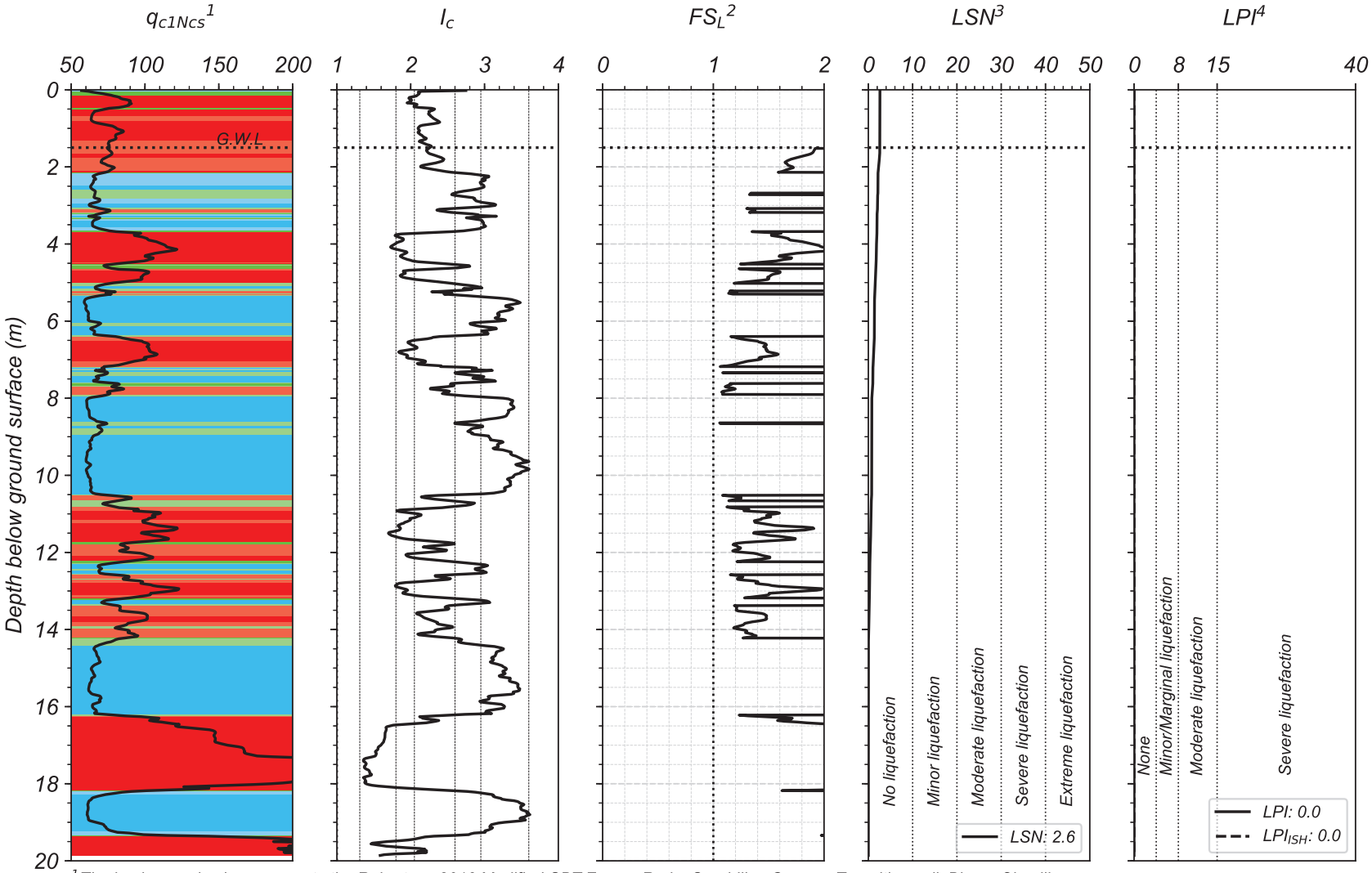


[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 139 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.13 g
Site = Marblewood ; CPT# = 57351 ; GWL = 1.5 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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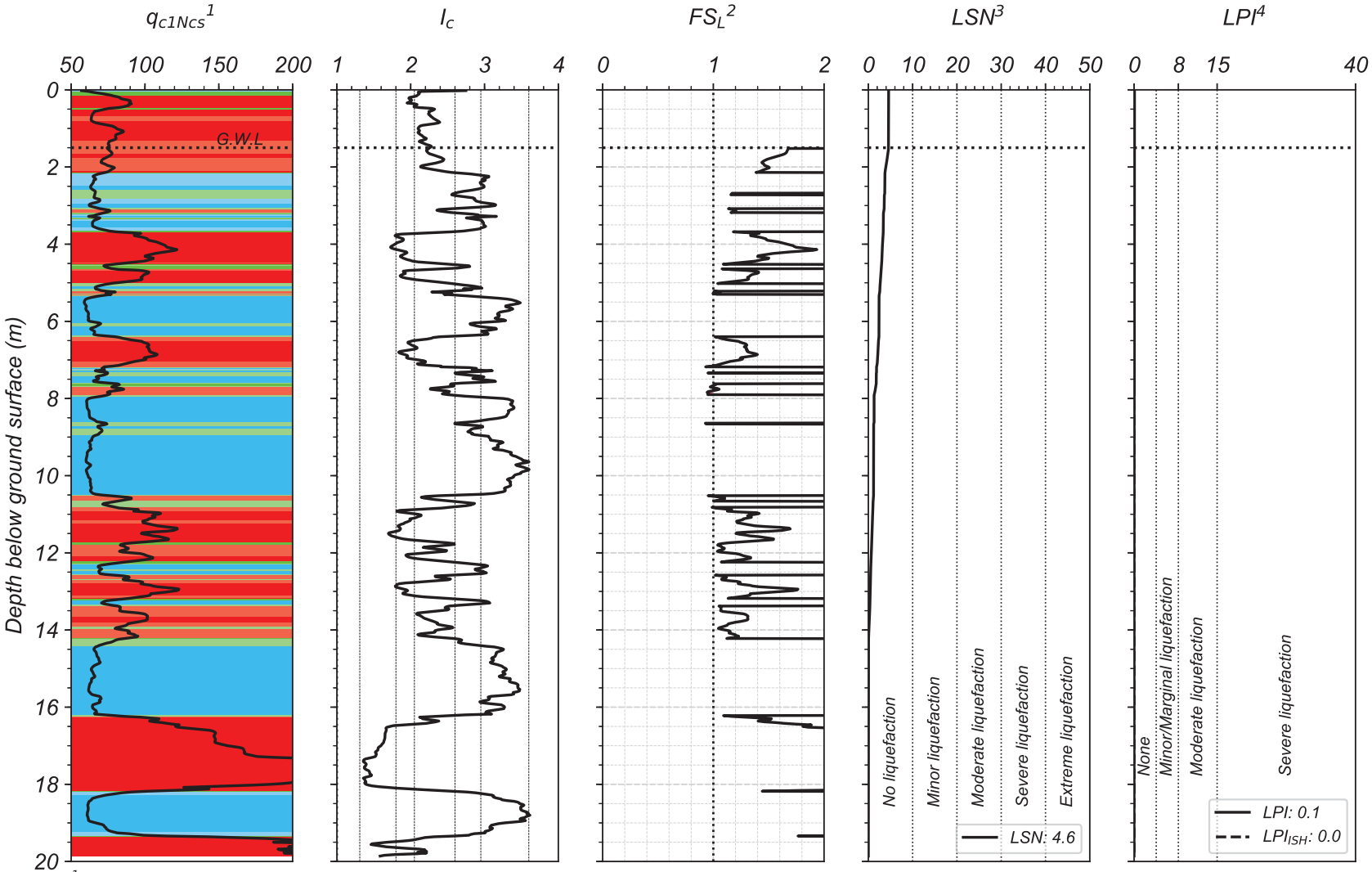
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 140 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.15 g
Site = Marblewood ; CPT# = 57351 ; GWL = 1.5 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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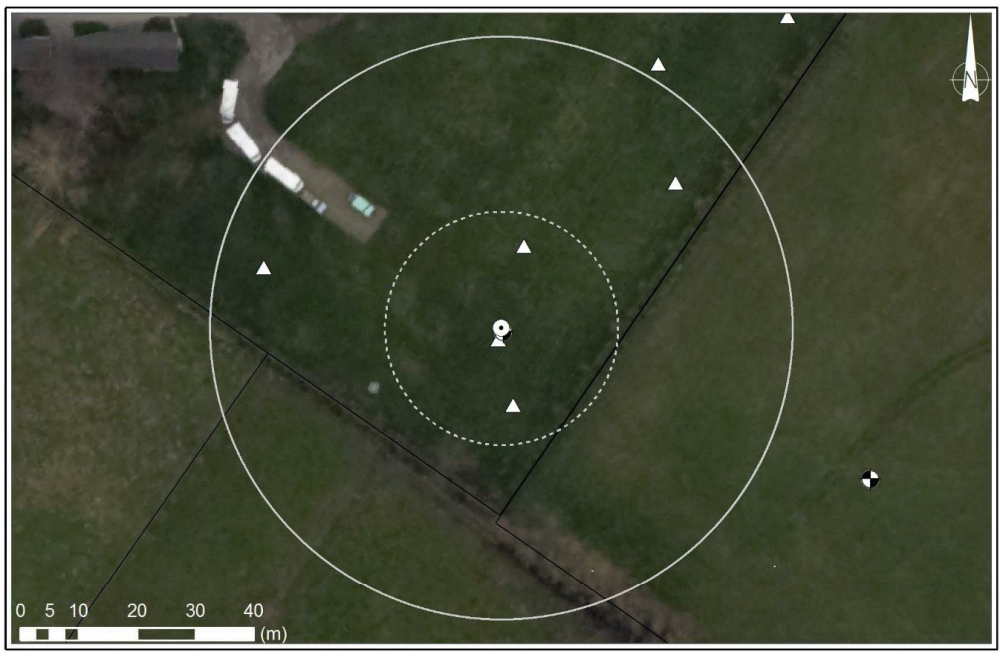
MEADOW

Lat: -43.492065°; Long: 172.619256°



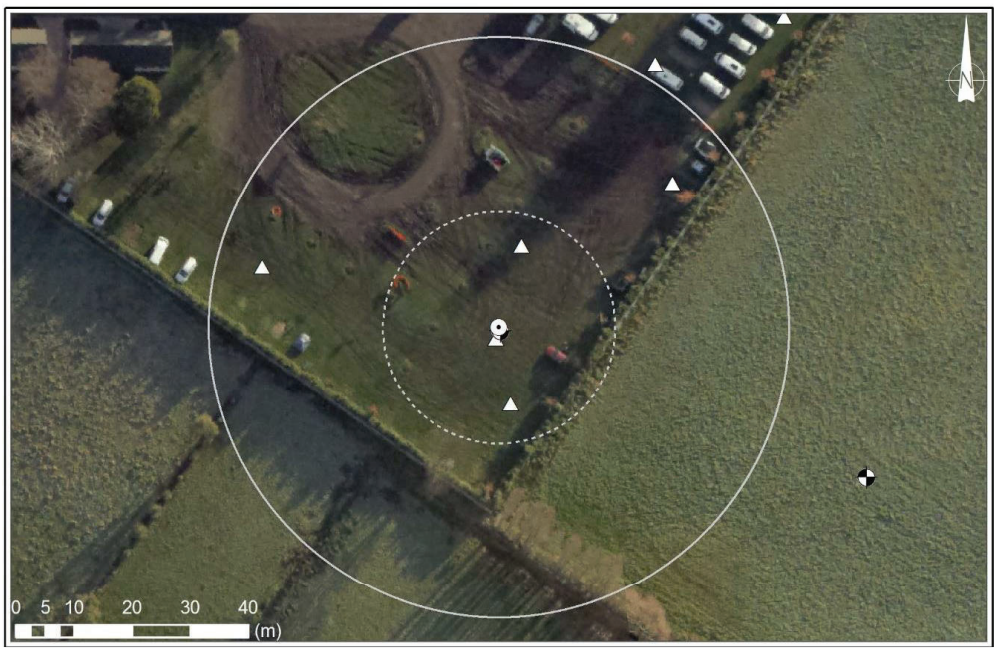
Case #141: Meadow-DAR (taken on 5/SEP/2010) - NONE



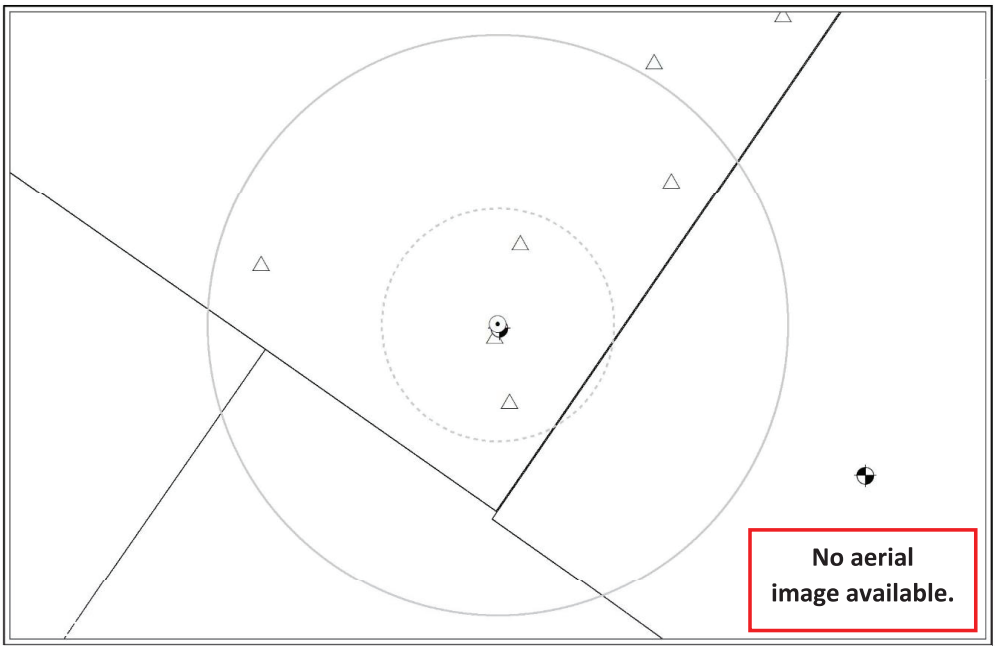
Case #142: Meadow-CHC (taken on 24/FEB/2011) - NONE

MEADOW

Lat: -43.492065°; Long: 172.619256°



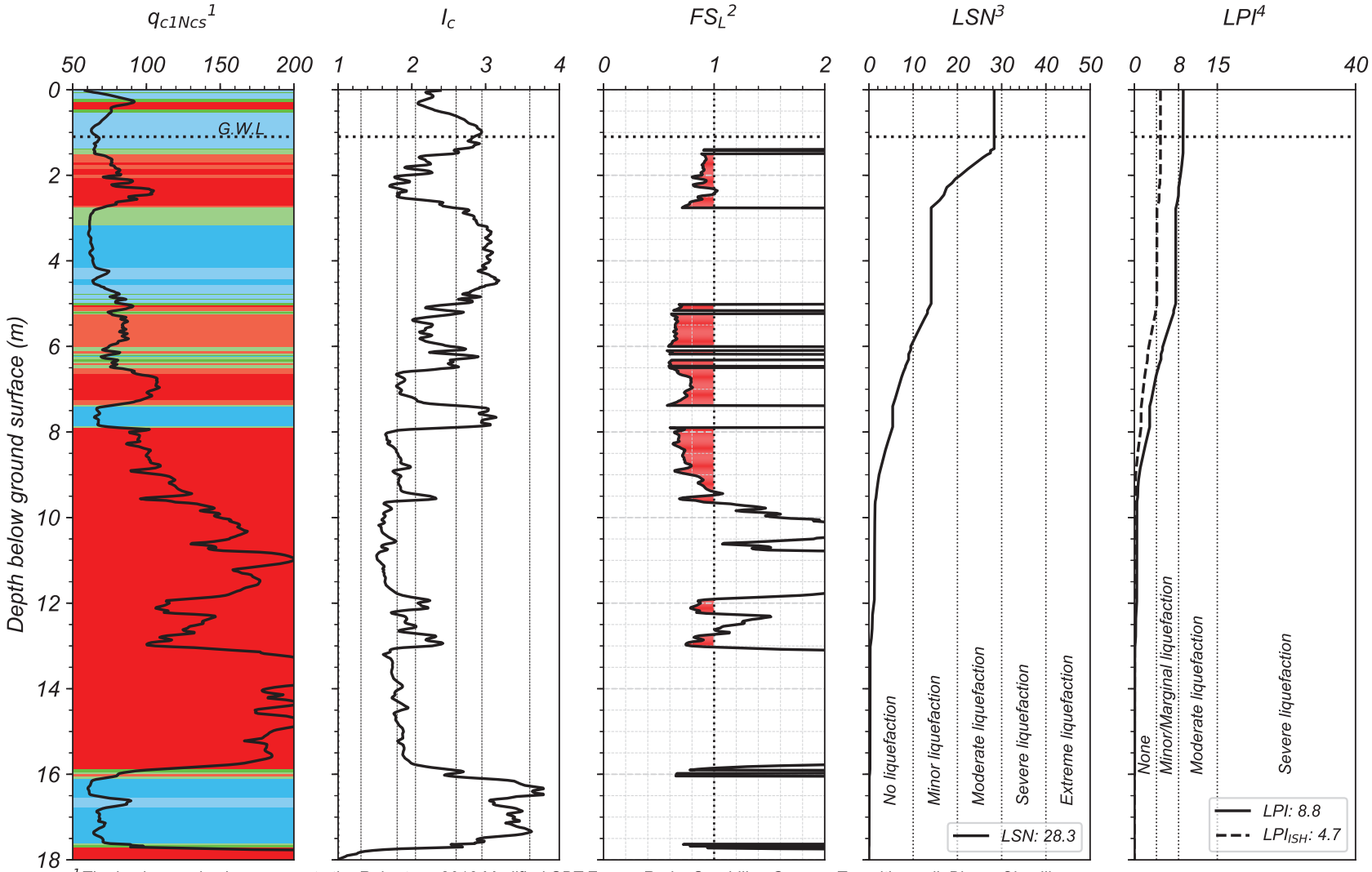
Case #143: Meadow-JUN (taken on 15/JUN/2011) - NONE



Case #144: Meadow-DEC (Aerial photograph is not available) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 141 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.21 g
Site = Meadow ; CPT# = 57339 ; GWL = 1.1 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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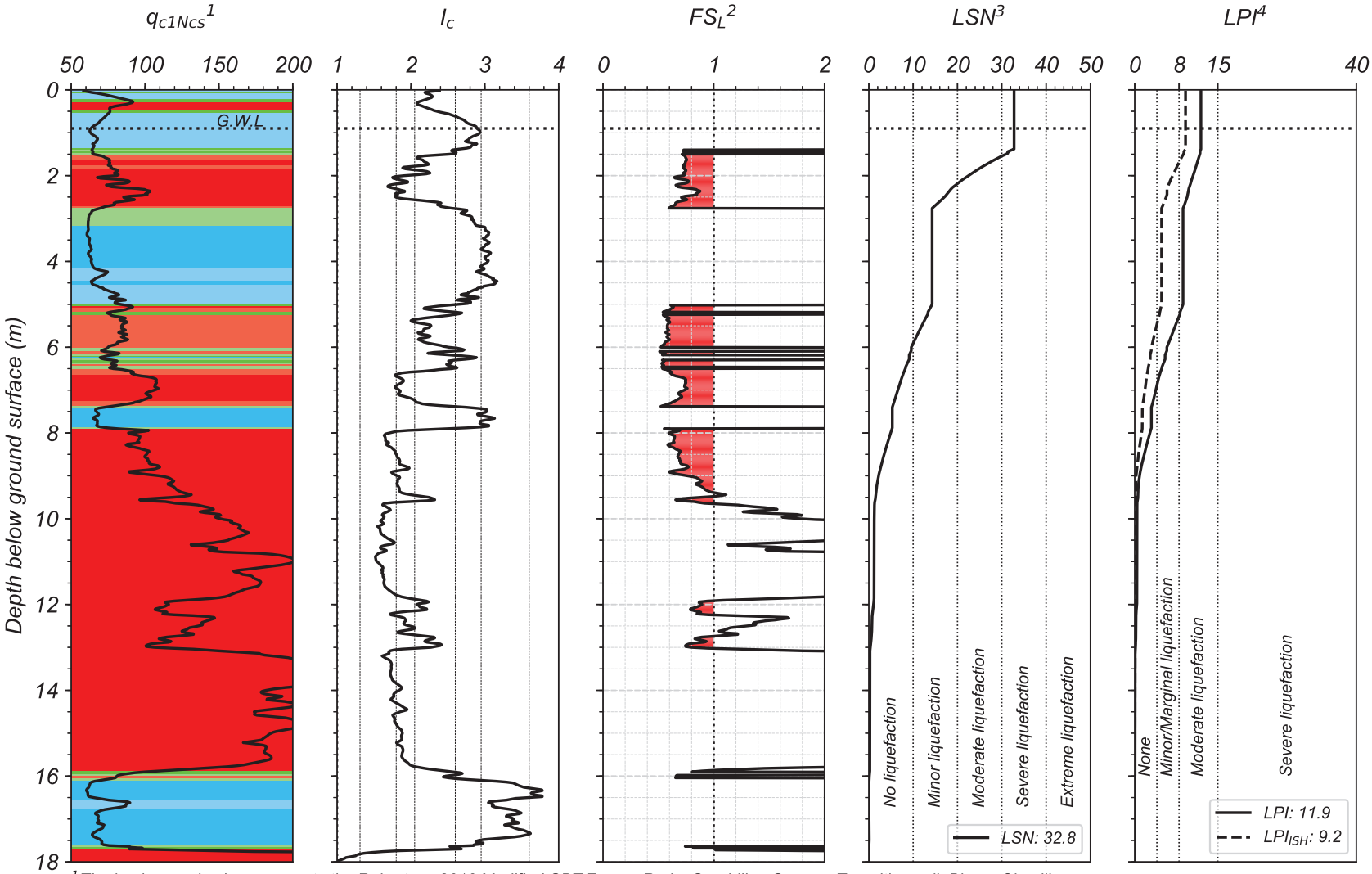
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 142 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.25 g
Site = Meadow ; CPT# = 57339 ; GWL = 0.9 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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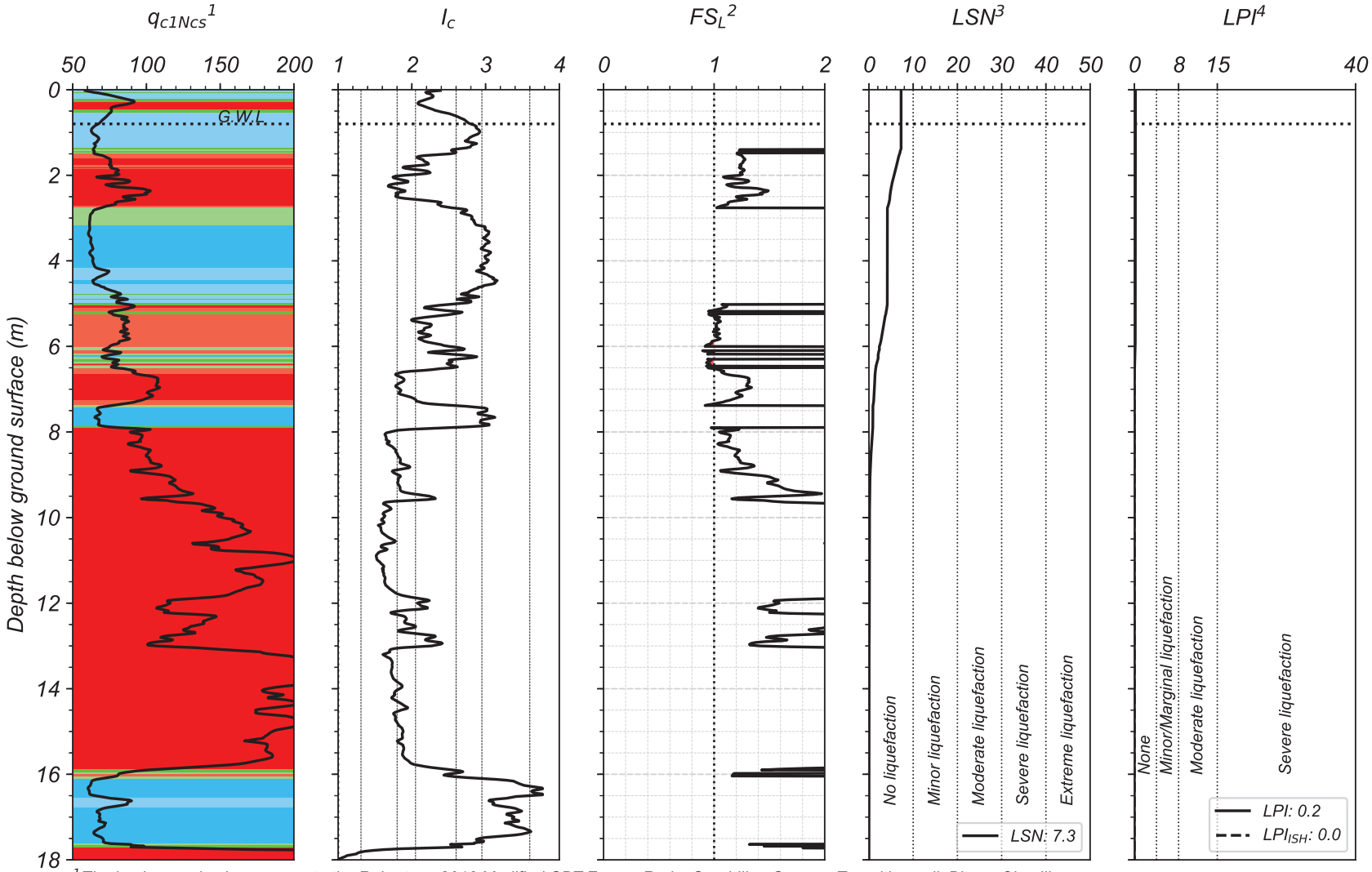
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 143 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.14 g
Site = Meadow ; CPT# = 57339 ; GWL = 0.8 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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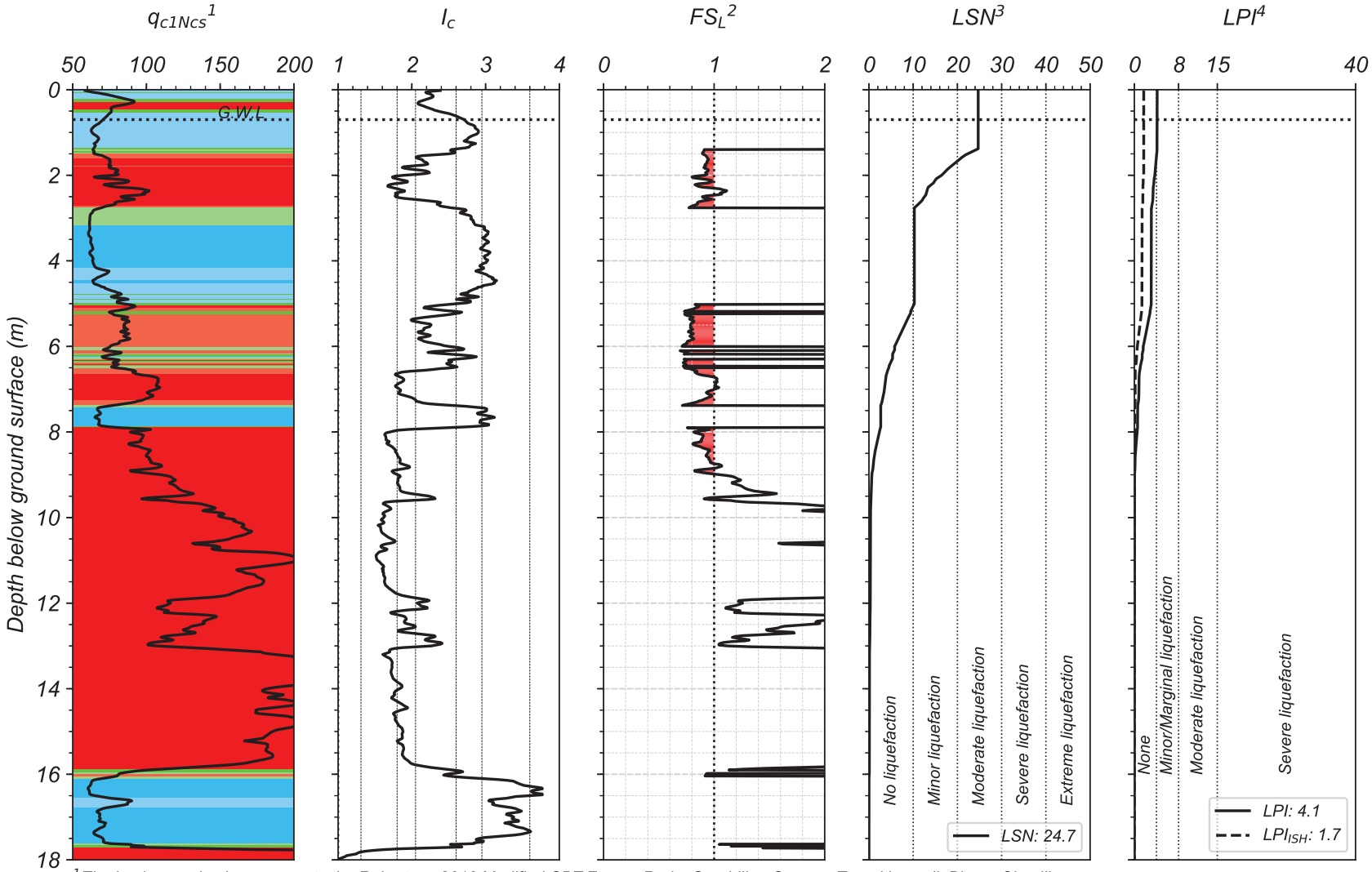
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 144 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.18 g
Site = Meadow ; CPT# = 57339 ; GWL = 0.7 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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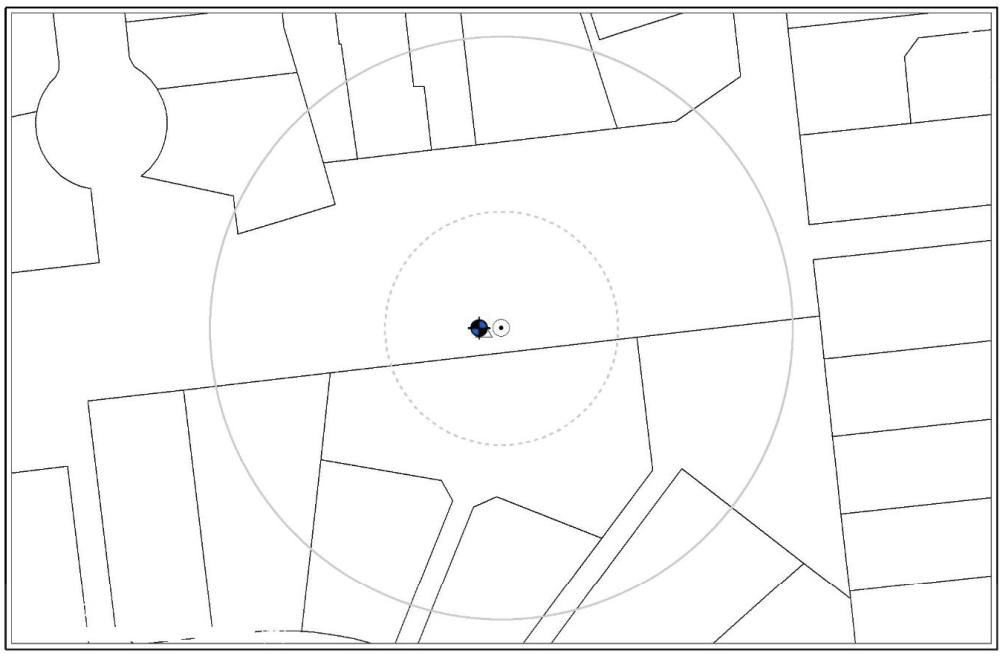
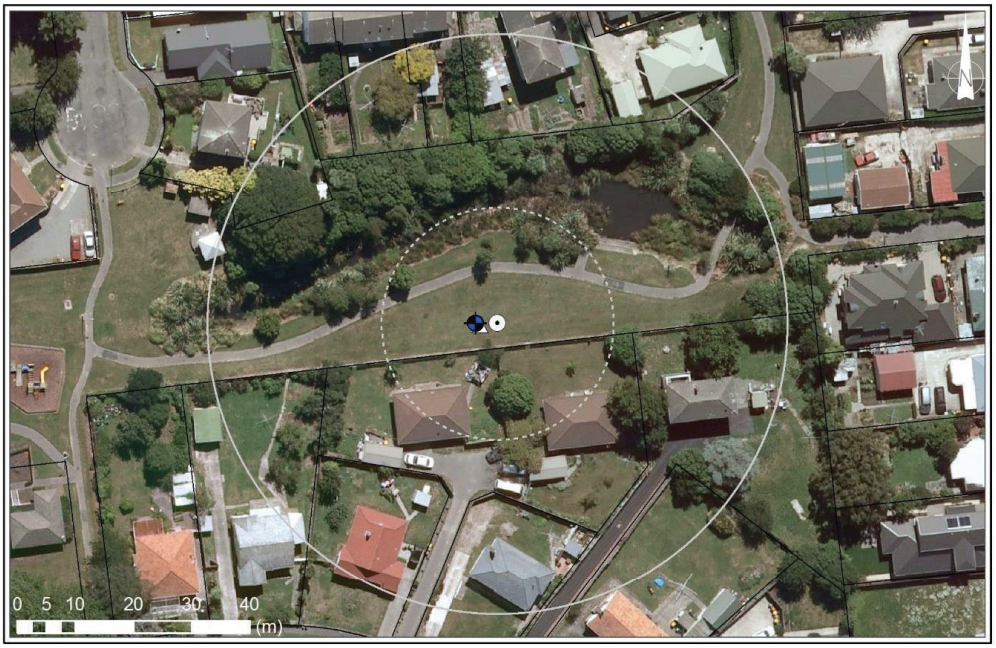
PAEROA

Lat: -43.532111°; Long: 172.590500°



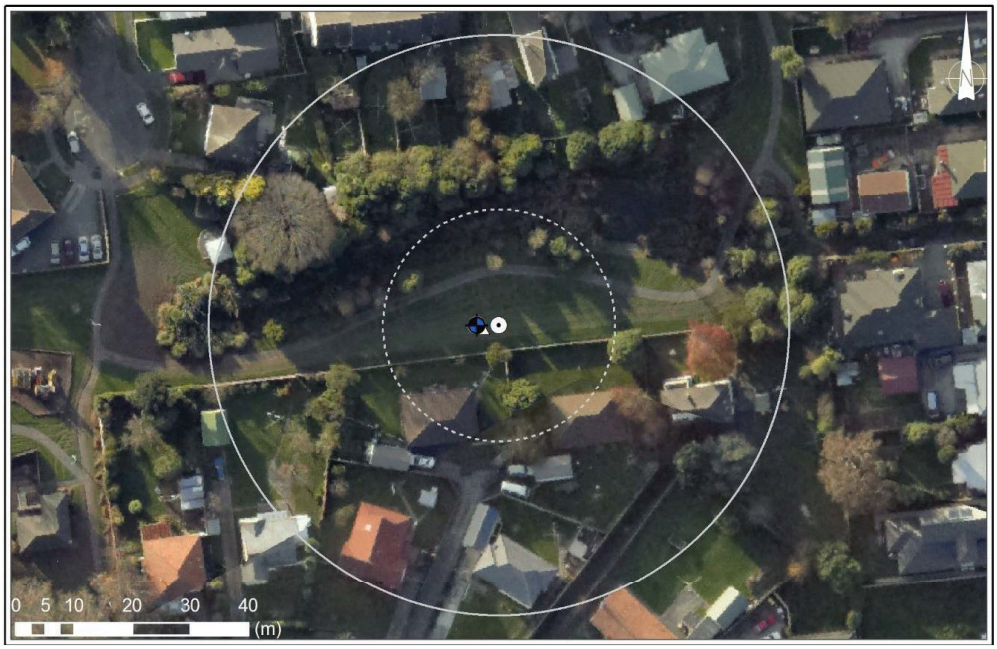
Case #145: Paeroa-DAR (Aerial photograph is not available) - NONE



Case #146: Paeroa-CHC (taken on 24/FEB/2011) - NONE

PAEROA

Lat: -43.532111°; Long: 172.590500°



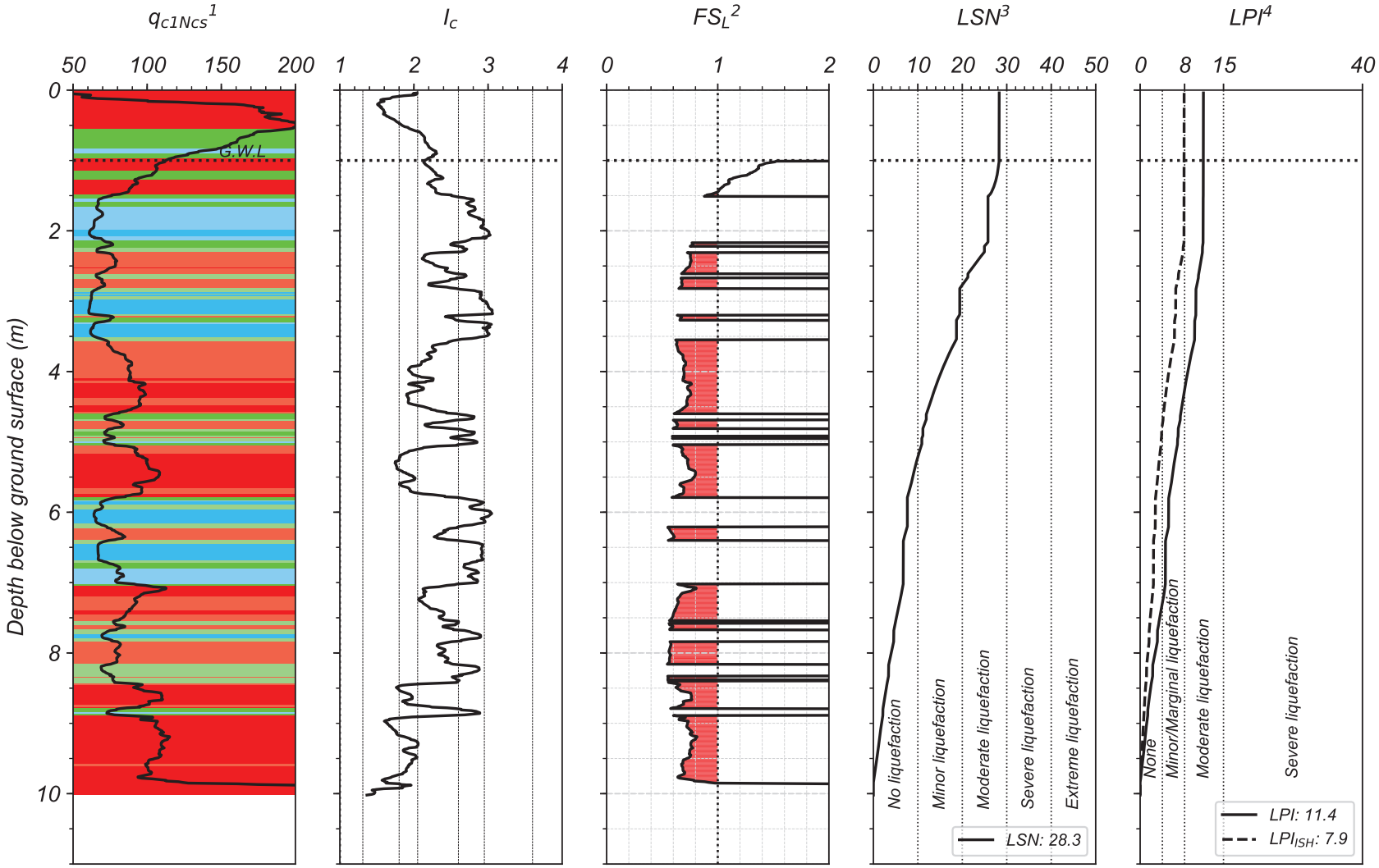
Case #147: Paeroa-JUN (taken on 15/JUN/2011) - NONE



Case #148: Paeroa-DEC (Aerial photograph is not available) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 145 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.22 g
Site = Paeroa ; CPT# = 36418 ; GWL = 1.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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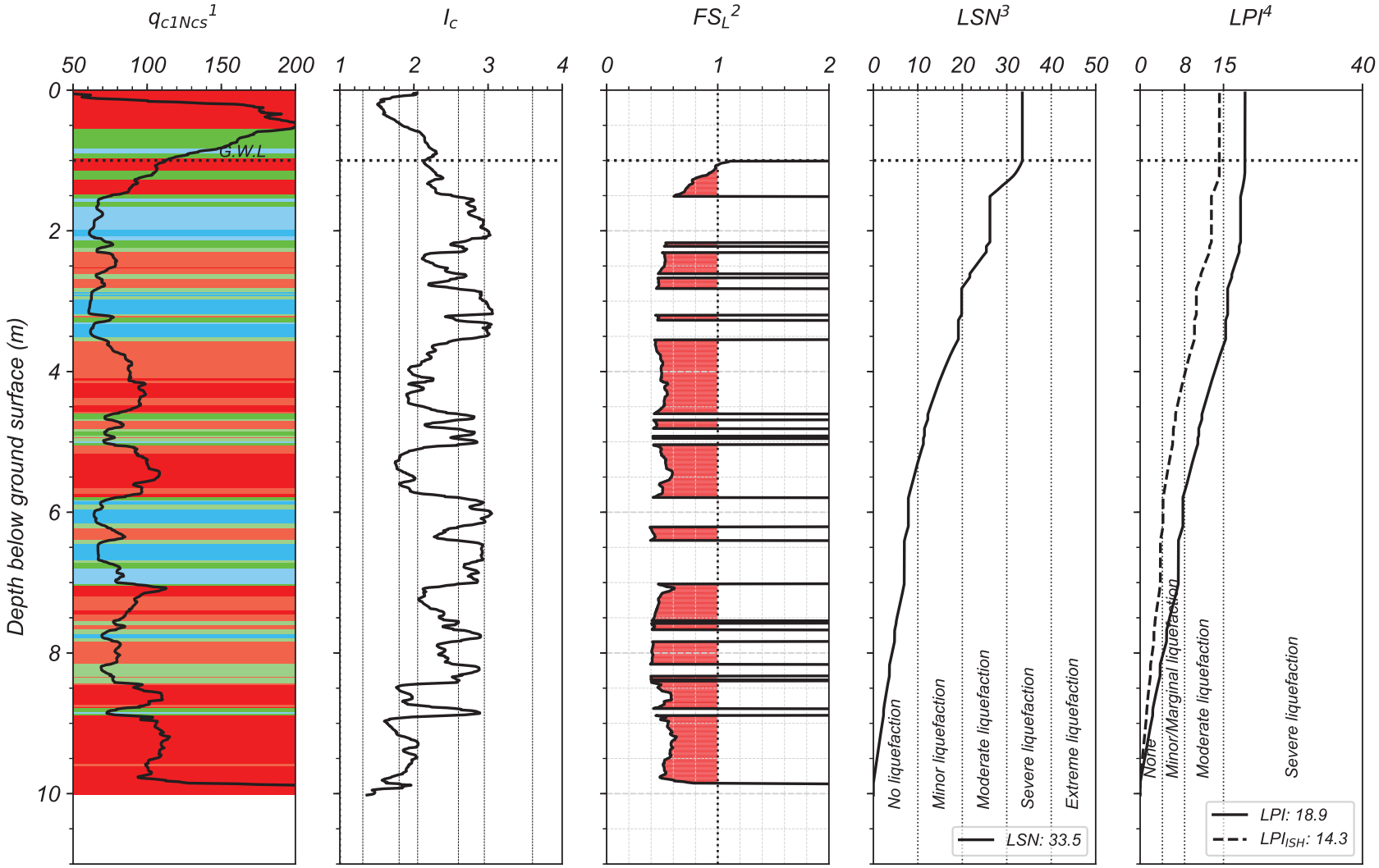
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 146 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.34 g
Site = Paeroa ; CPT# = 36418 ; GWL = 1.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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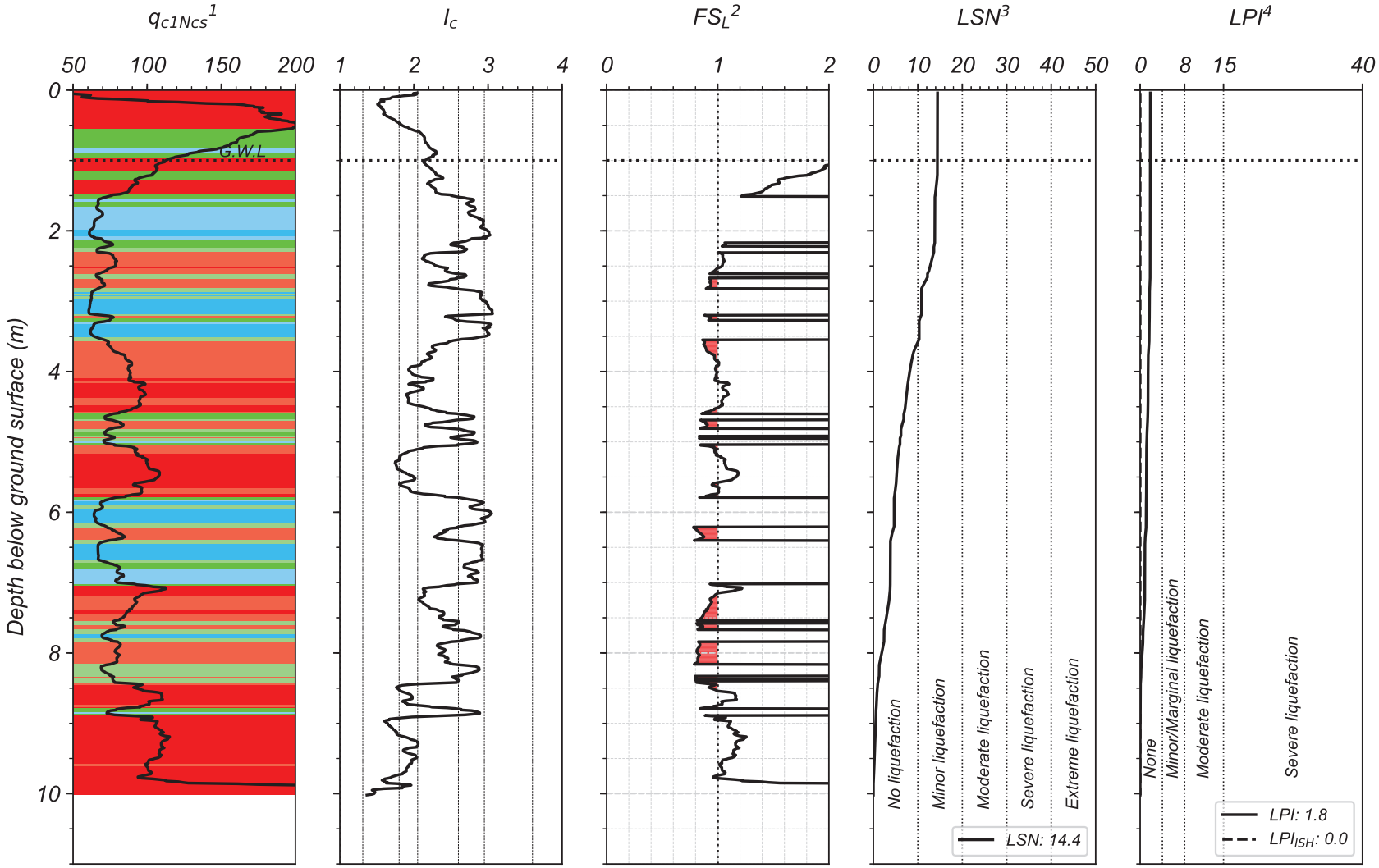
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 147 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.17 g
Site = Paeroa ; CPT# = 36418 ; GWL = 1.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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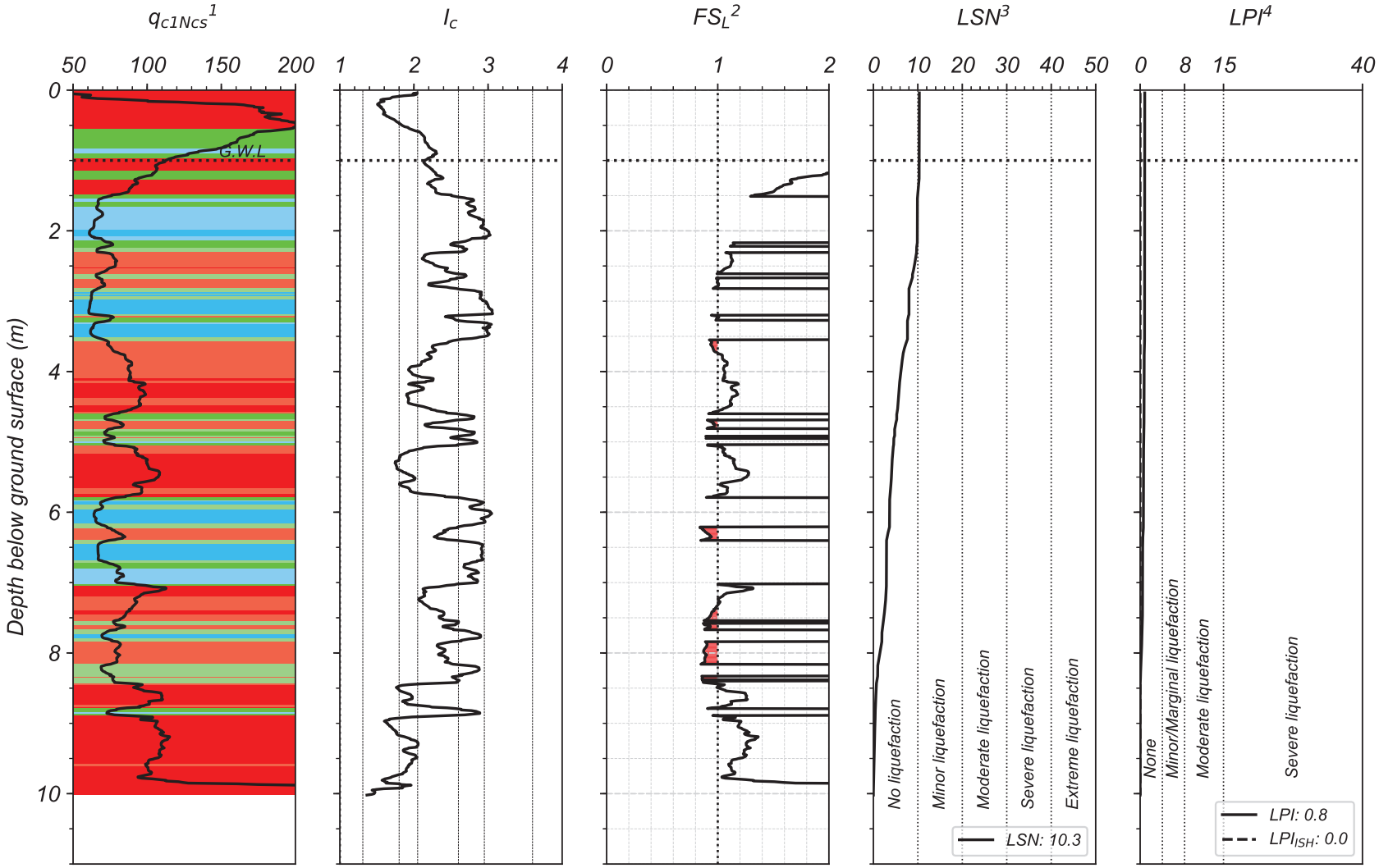
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 148 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.16 g
Site = Paeroa ; CPT# = 36418 ; GWL = 1.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

PAPANUI

Lat: -43.499954°; Long: 172.610136°



Case #149: Papanui-DAR (taken on 5/SEP/2010) - NONE



Case #150: Papanui-CHC (taken on 24/FEB/2011) - NONE

PAPANUI

Lat: -43.499954°; Long: 172.610136°



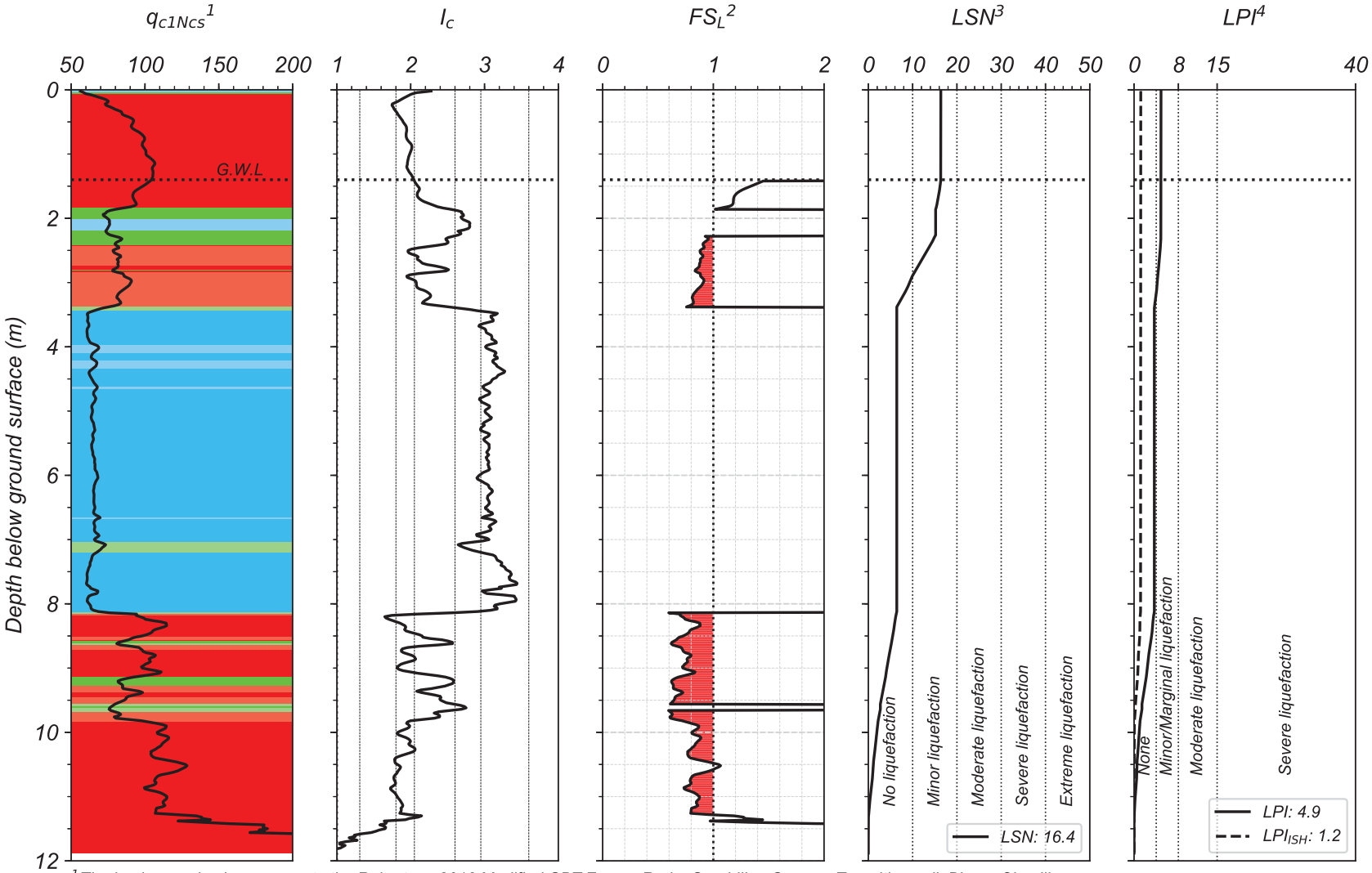
Case #151: Papanui-JUN (taken on 15/JUN/2011) - NONE



Case #152: Papanui-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 149 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.21 g
Site = Papanui ; CPT# = 57361 ; GWL = 1.4 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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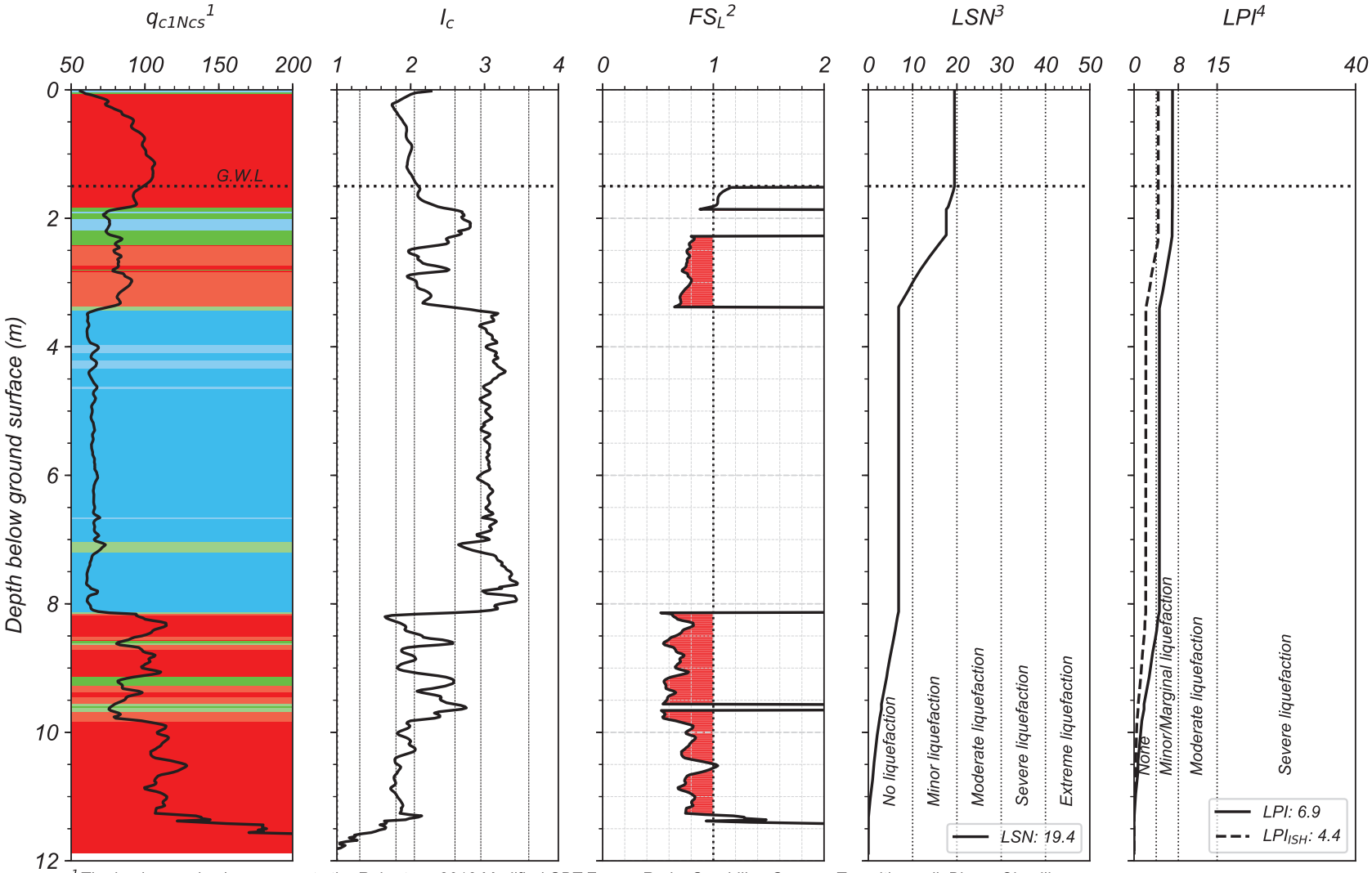
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 150 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.27 g
Site = Papanui ; CPT# = 57361 ; GWL = 1.5 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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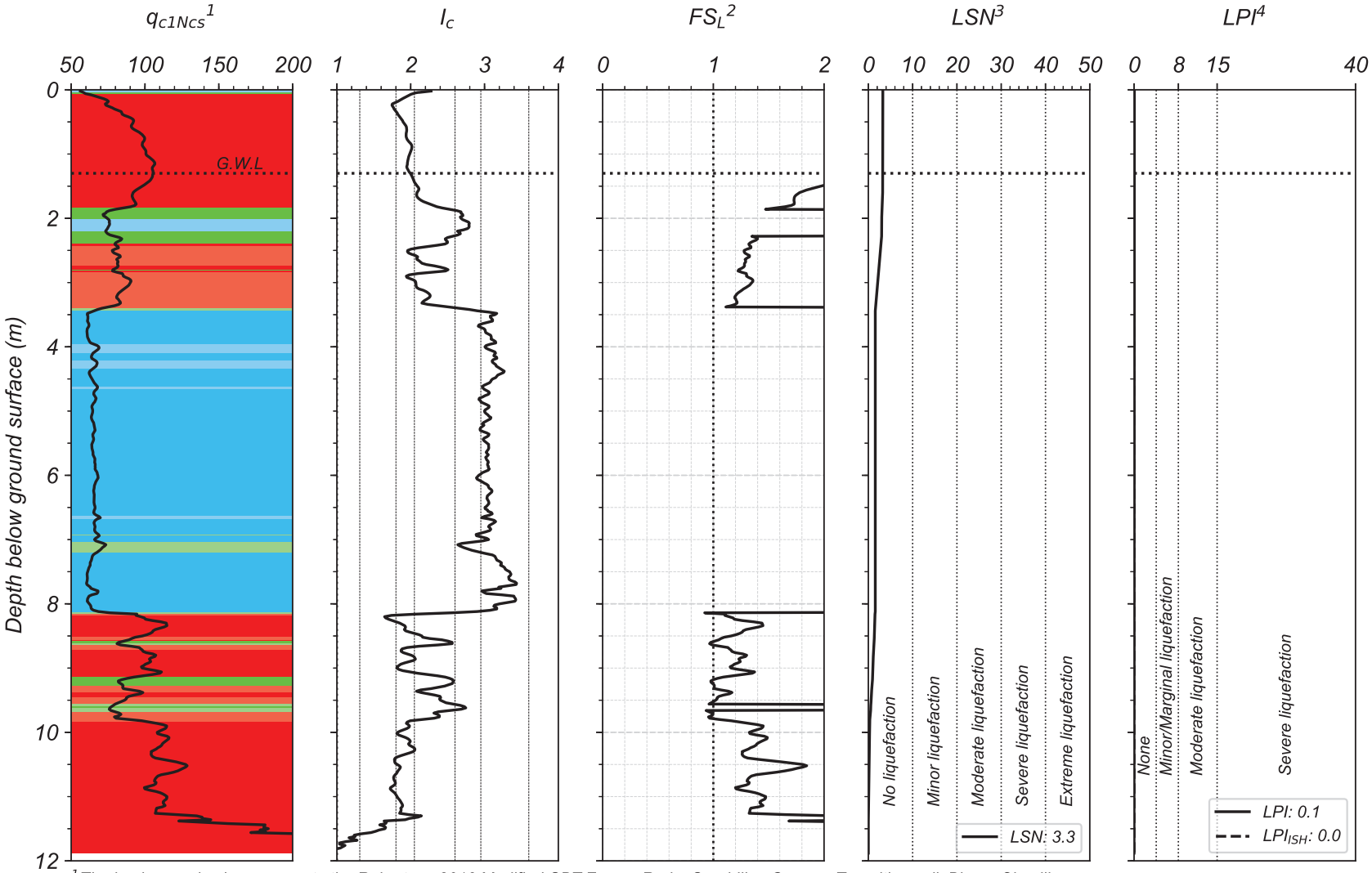
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 151 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.15 g
Site = Papanui ; CPT# = 57361 ; GWL = 1.3 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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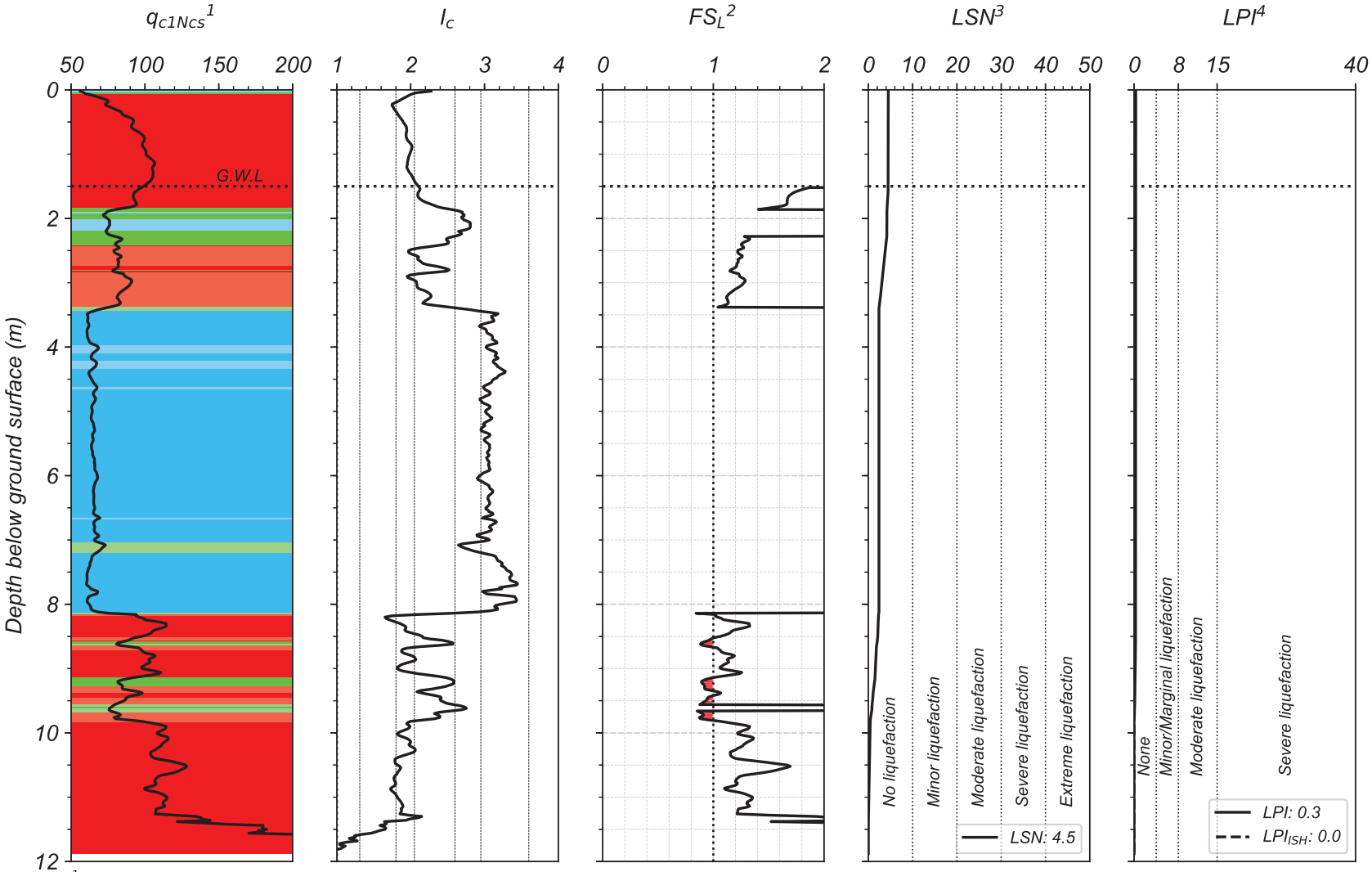
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 152 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.17 g
Site = Papanui ; CPT# = 57361 ; GWL = 1.5 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

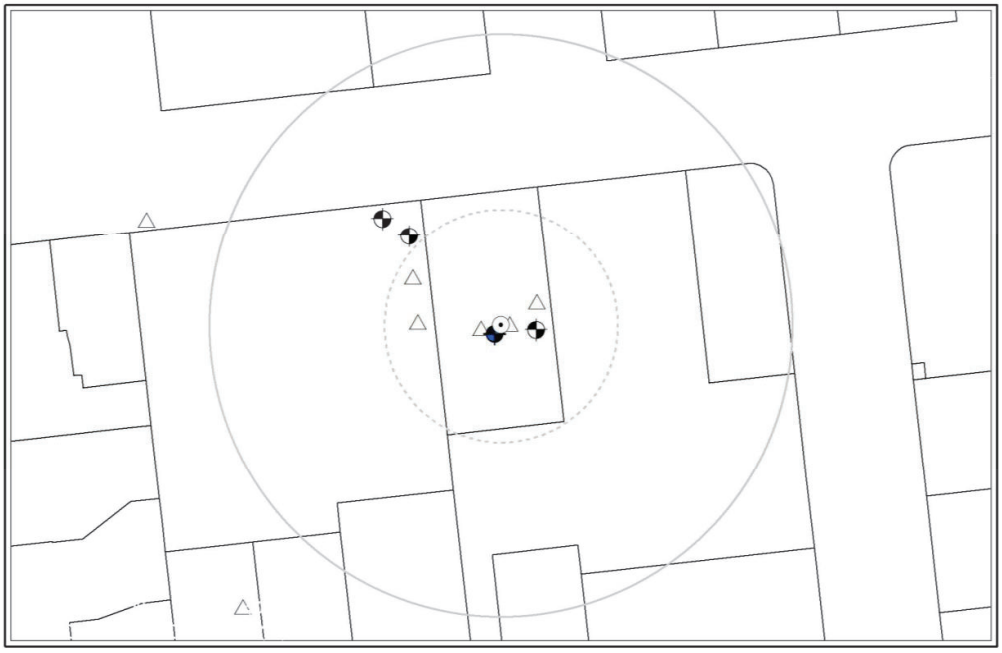


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

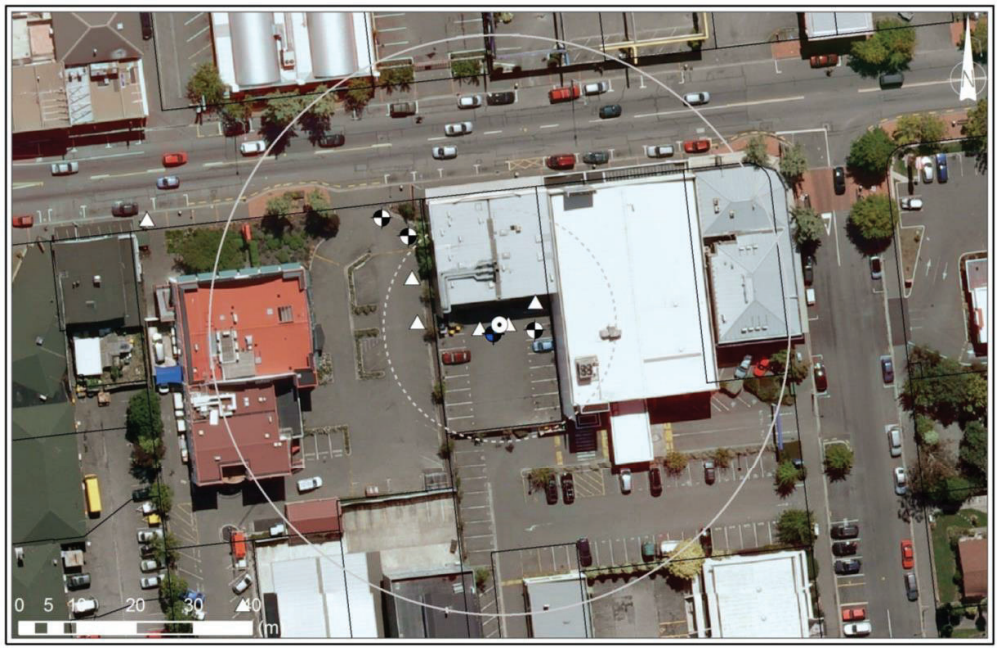
By: DH
UC Berkeley, 2020

RICCARTON

Lat: -43.529767°; Long: 172.603650°



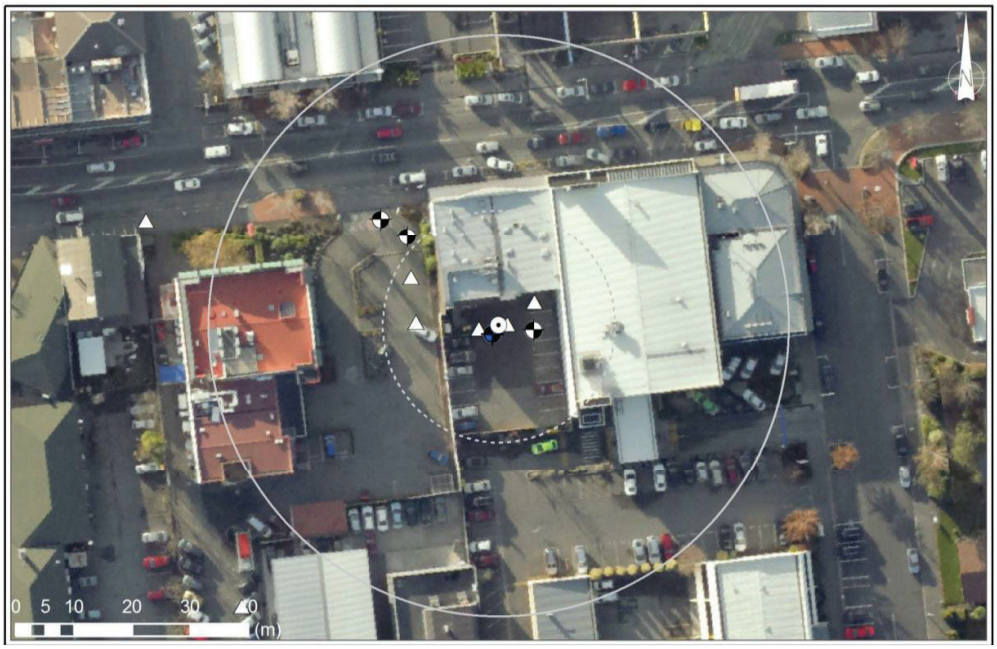
Case #153: Riccarton-DAR (Aerial photograph is not available) - NONE



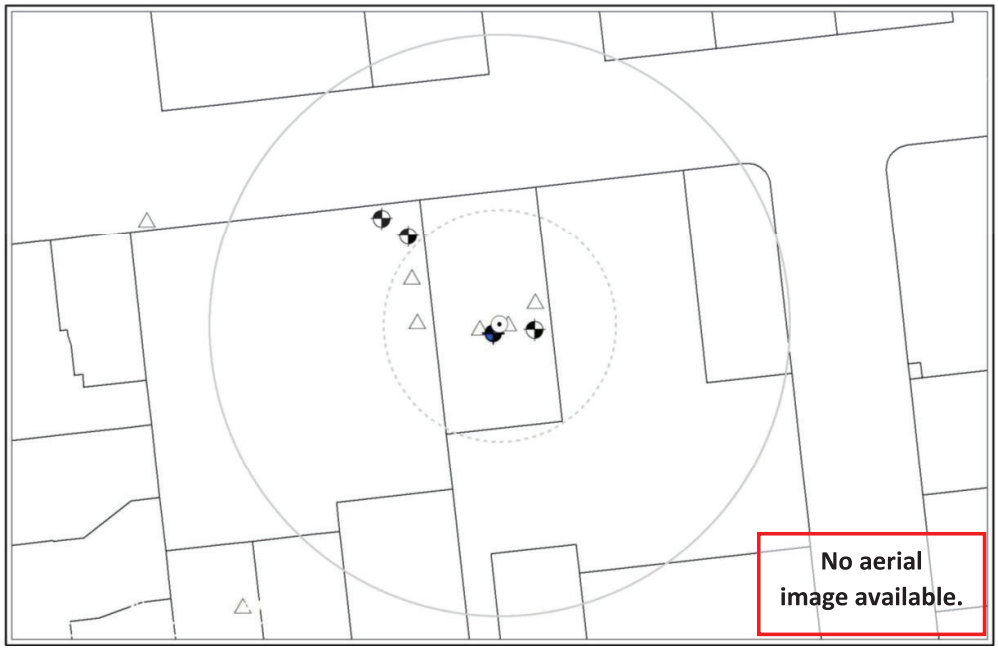
Case #154: Riccarton-CHC (taken on 24/FEB/2011) - NONE

RICCARTON

Lat: -43.529767°; Long: 172.603650°



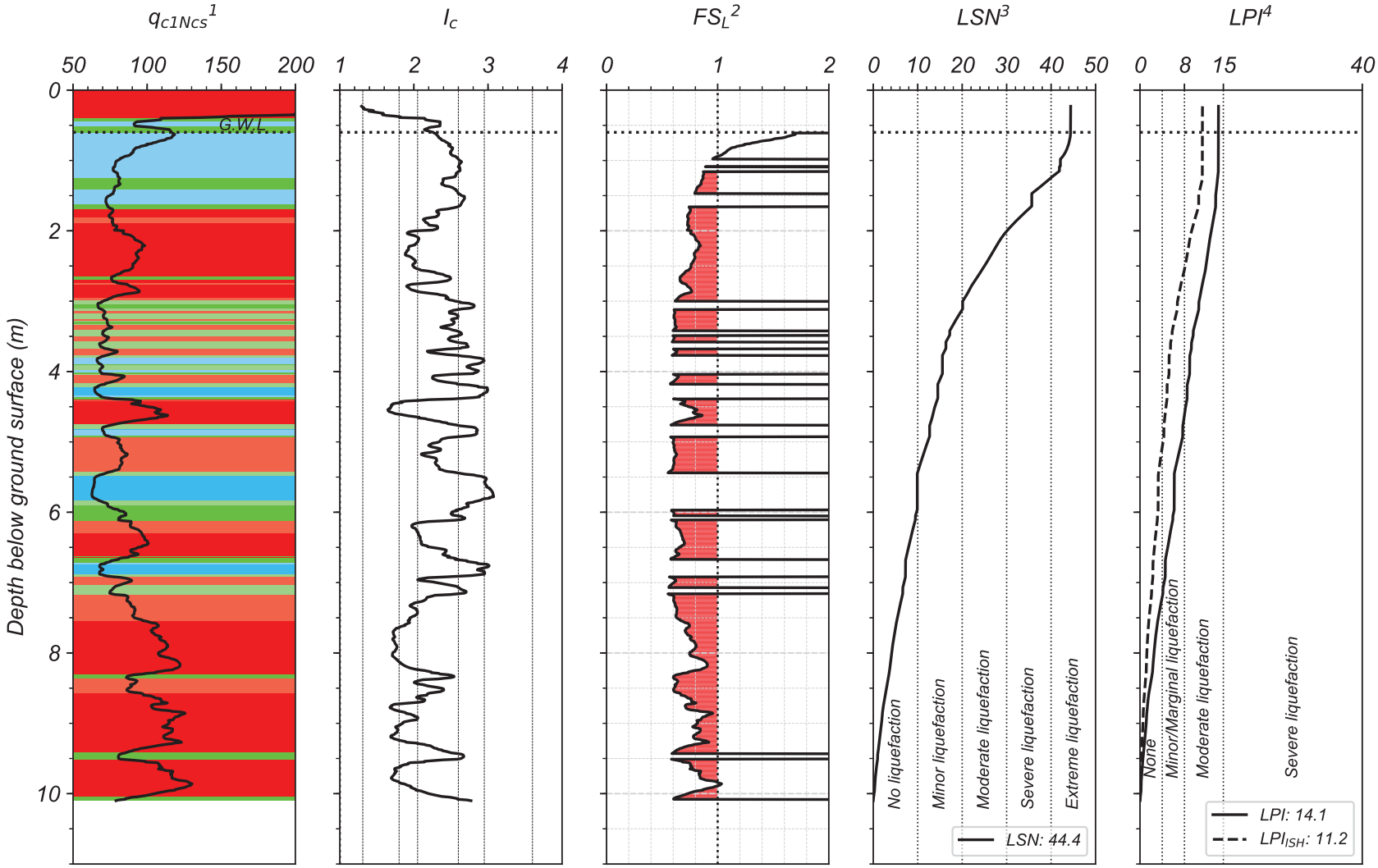
Case #155: Riccarton-JUN (taken on 15/JUN/2011) - NONE



Case #156: Riccarton-DEC (Aerial photograph is not available) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 153 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.21 g
Site = Riccarton ; CPT# = 36420 ; GWL = 0.6 m
Observed Ejecta Severity = None ; Site Condition = Near Building

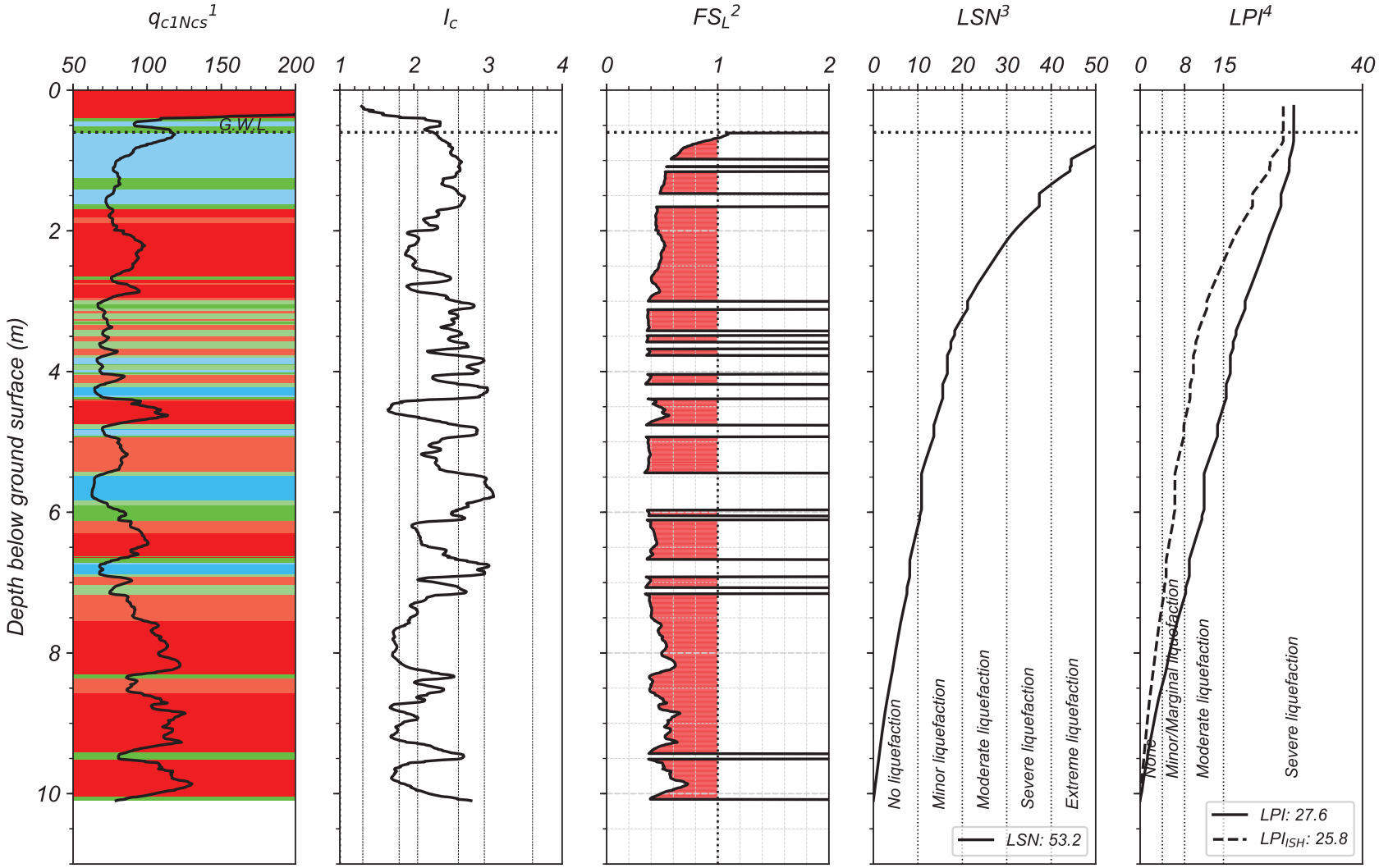


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 154 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.37 g
Site = Riccarton ; CPT# = 36420 ; GWL = 0.6 m
Observed Ejecta Severity = None ; Site Condition = Near Building

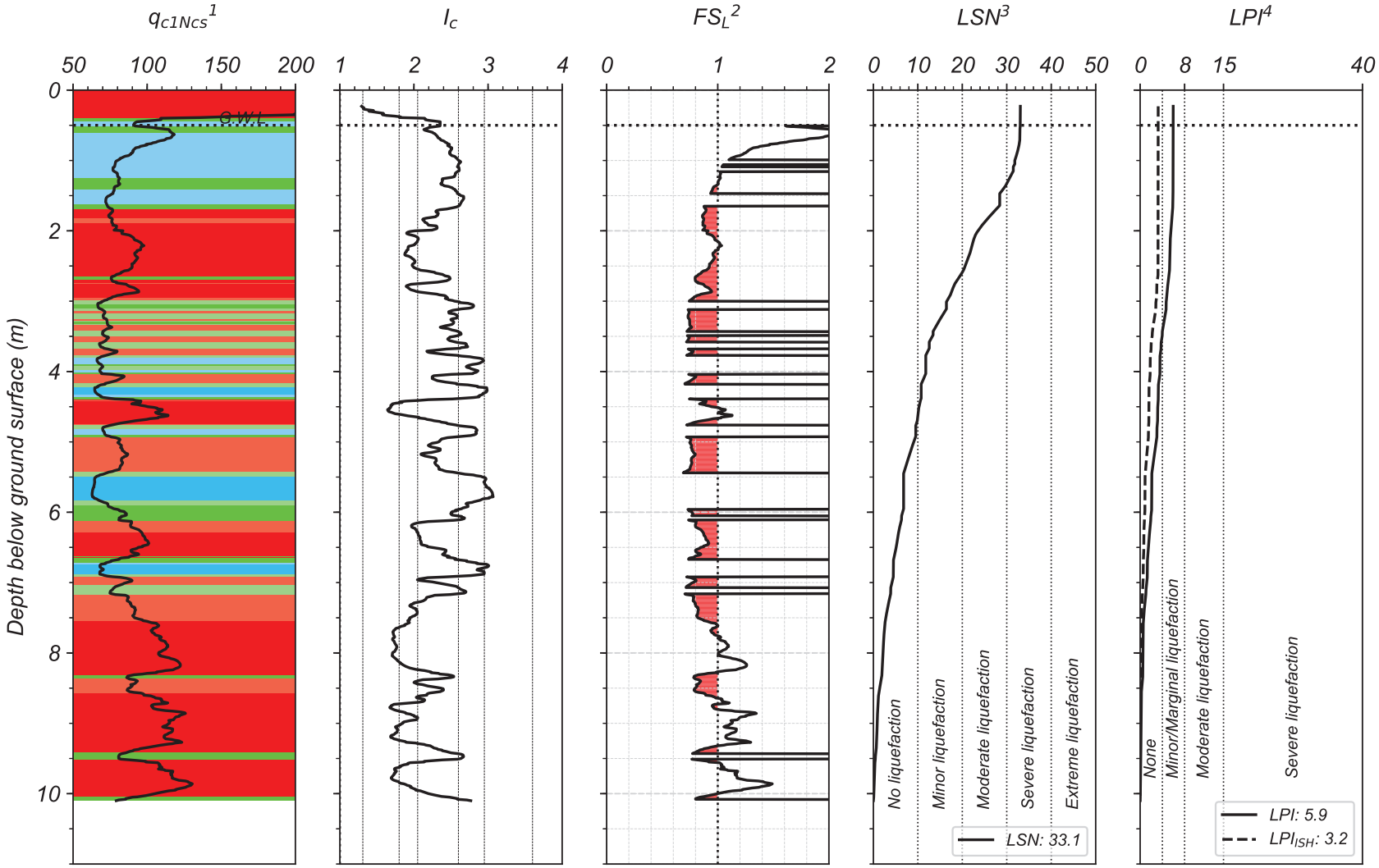


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 155 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.18 g
Site = Riccarton ; CPT# = 36420 ; GWL = 0.5 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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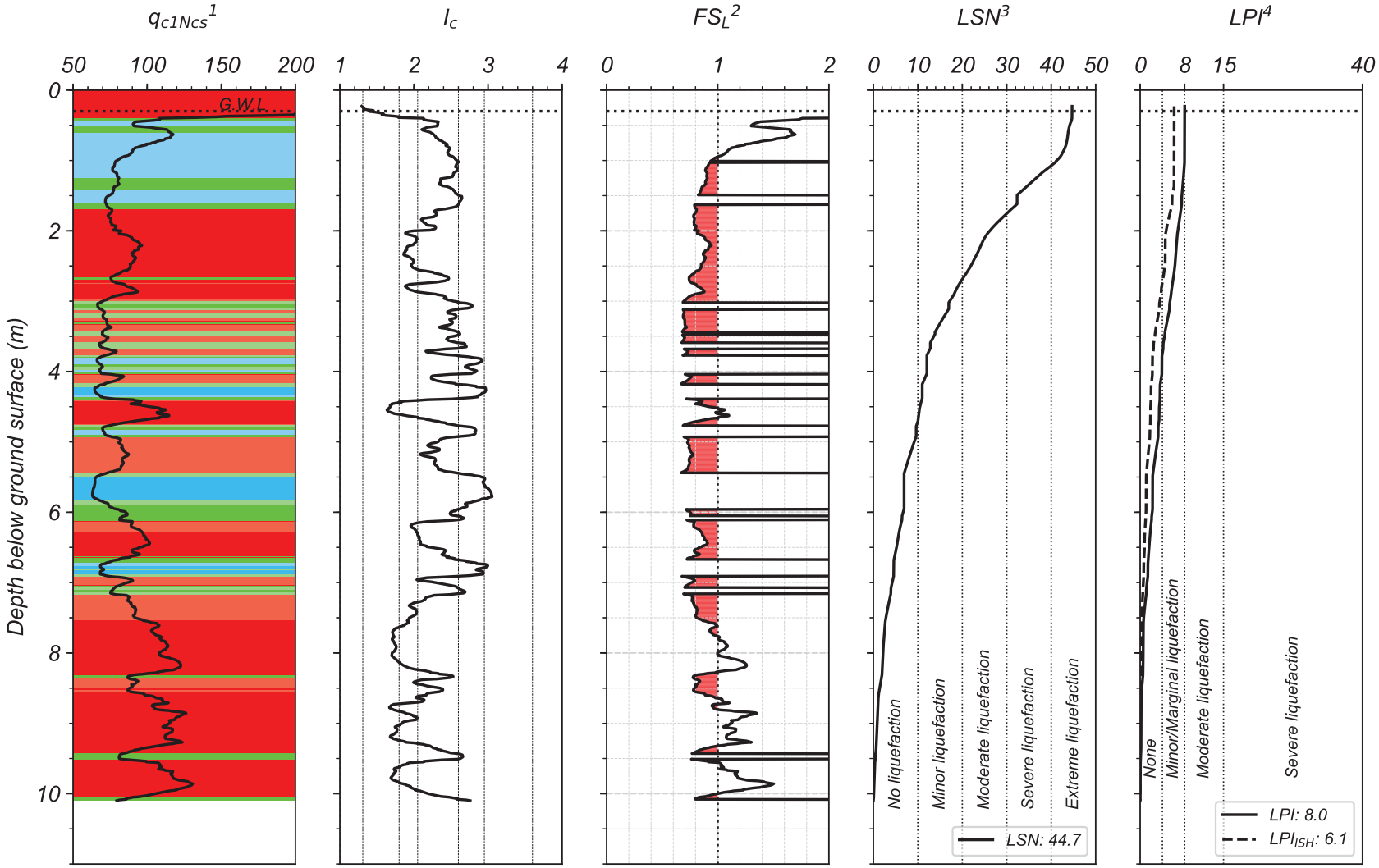
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 156 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.18 g
Site = Riccarton ; CPT# = 36420 ; GWL = 0.3 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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UC Berkeley, 2020

ROYDS

Lat: -43.520686°; Long: 172.603276°



Case #157: Royds-DAR (Aerial photograph is not available) - NONE



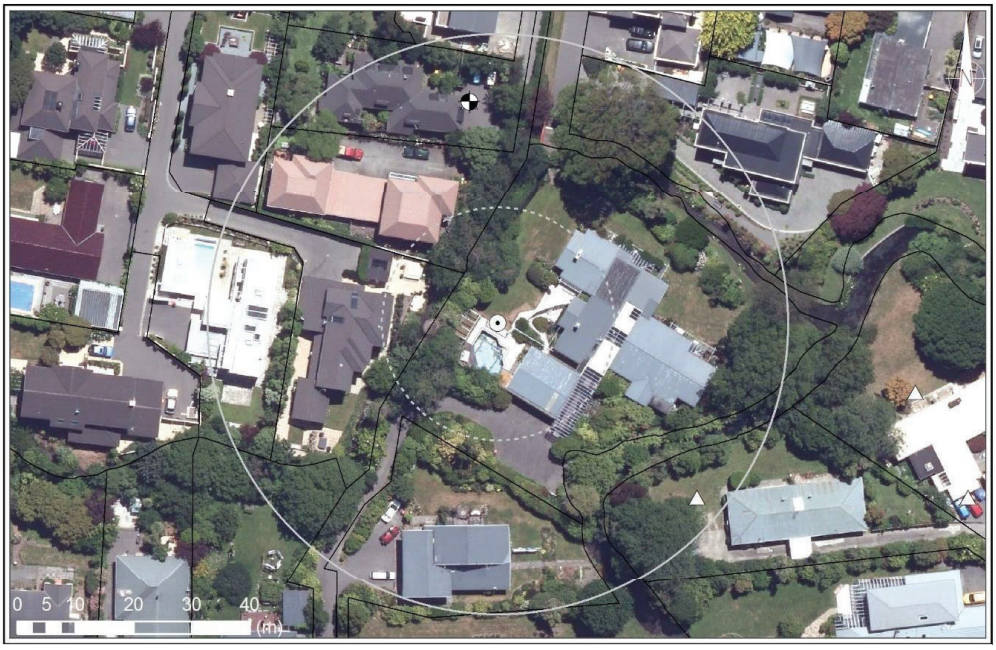
Case #158: Royds-CHC (taken on 24/FEB/2011) - NONE

ROYDS

Lat: -43.520686°; Long: 172.603276°



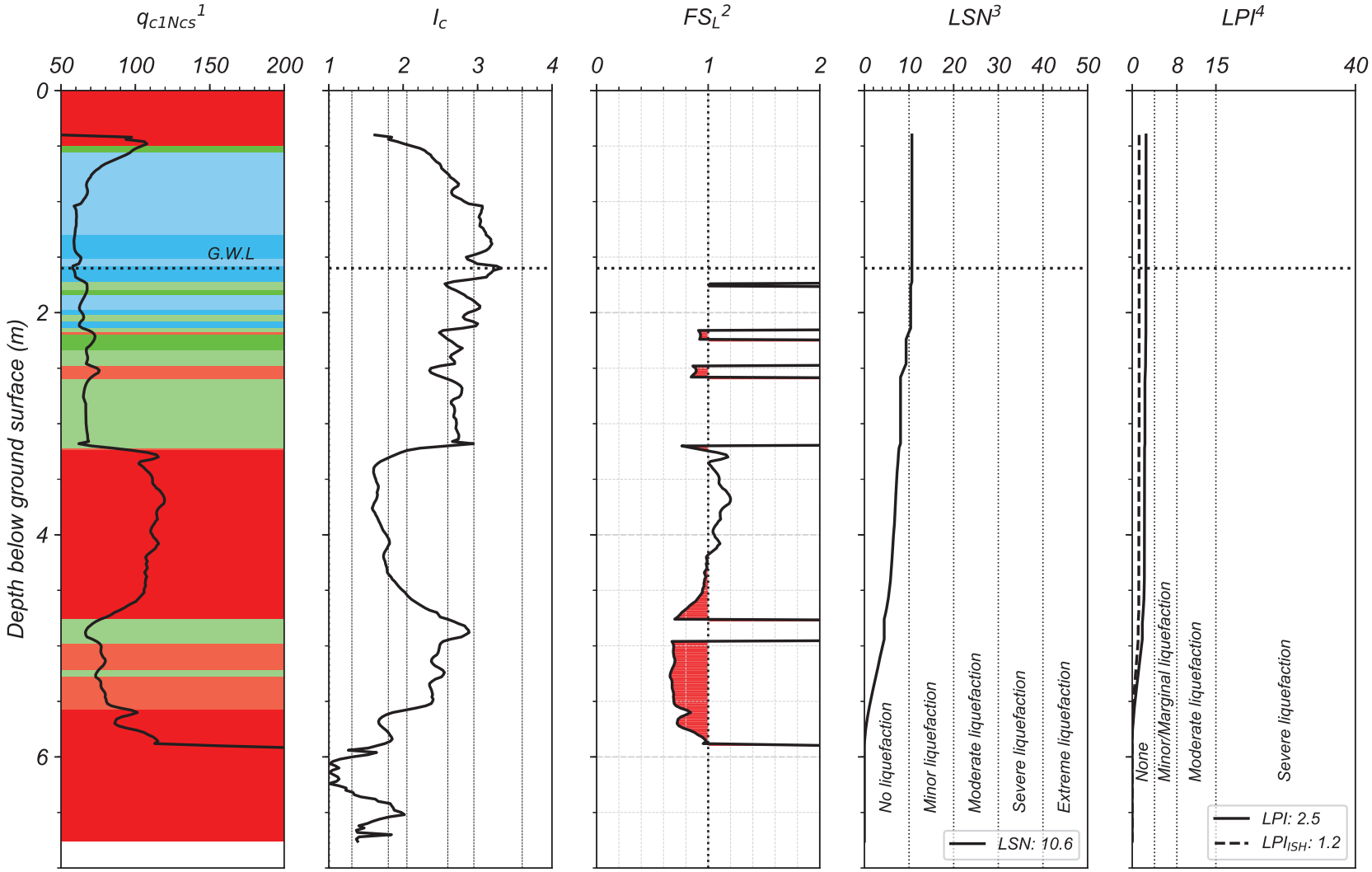
Case #159: Royds-JUN (taken on 15/JUN/2011) - NONE



Case #160: Royds-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 157 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.21 g
Site = Royds ; CPT# = 5567 ; GWL = 1.6 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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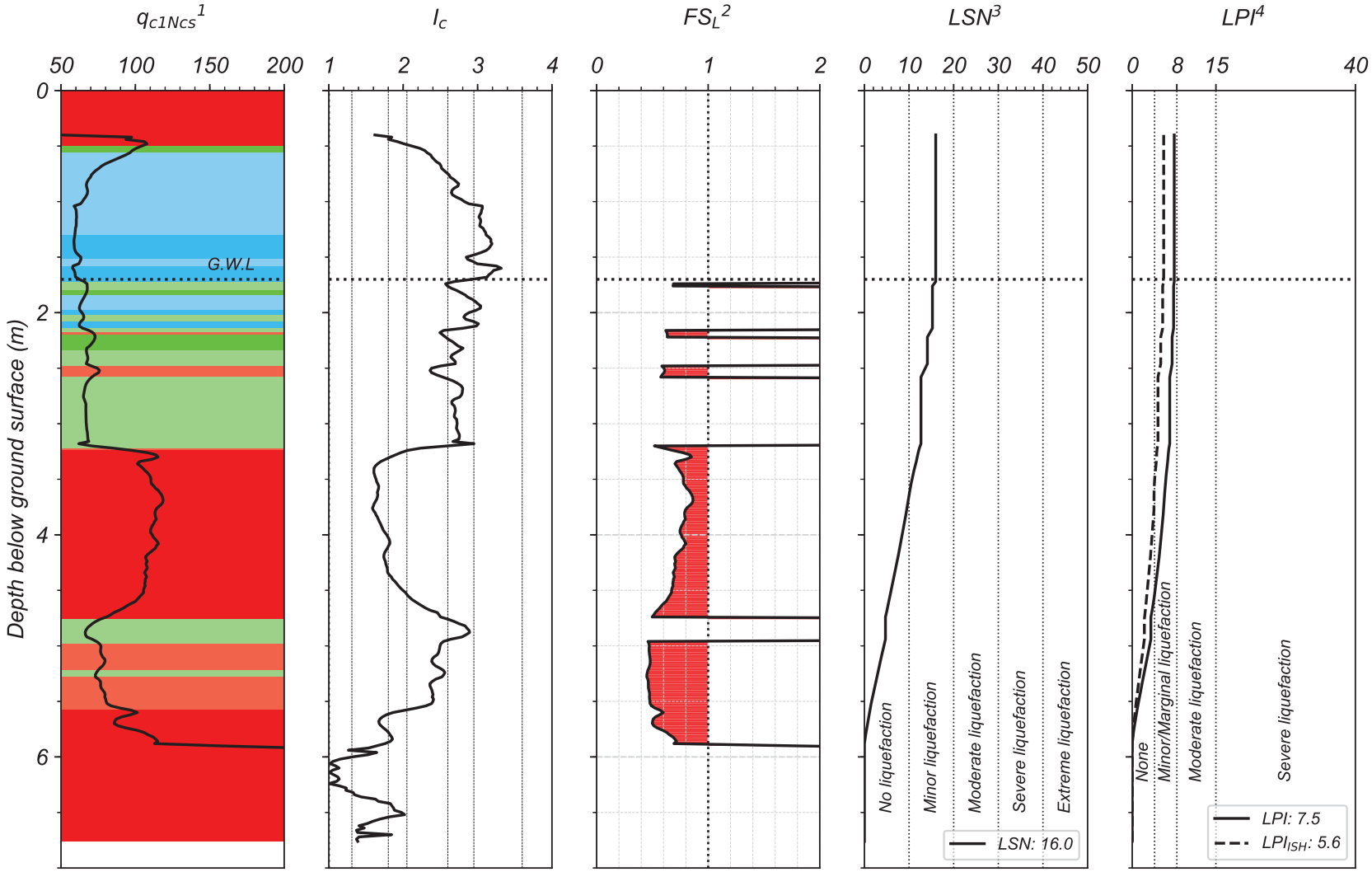
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 158 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.34 g
Site = Royds ; CPT# = 5567 ; GWL = 1.7 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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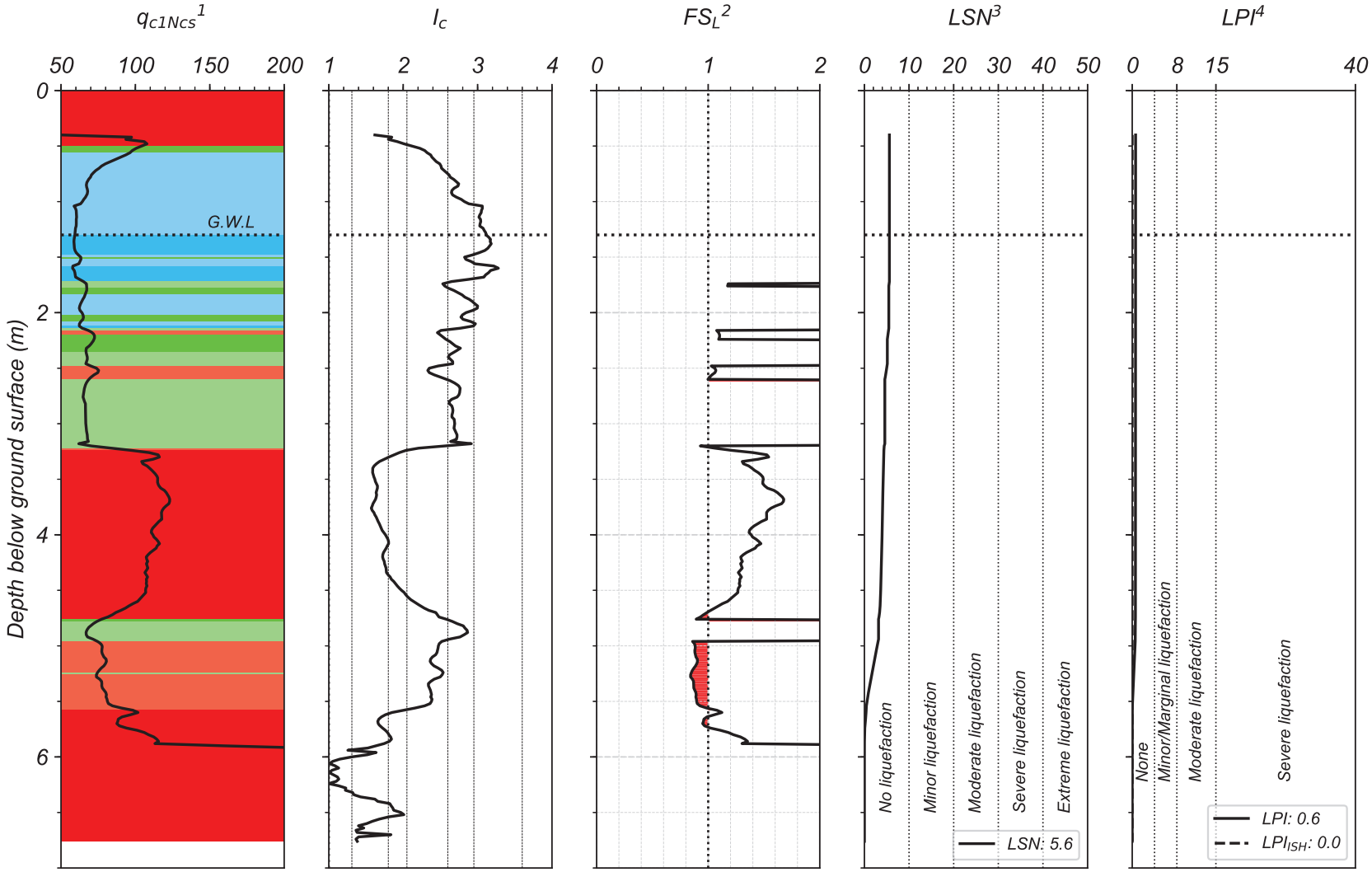
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 159 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.17 g
Site = Royds ; CPT# = 5567 ; GWL = 1.3 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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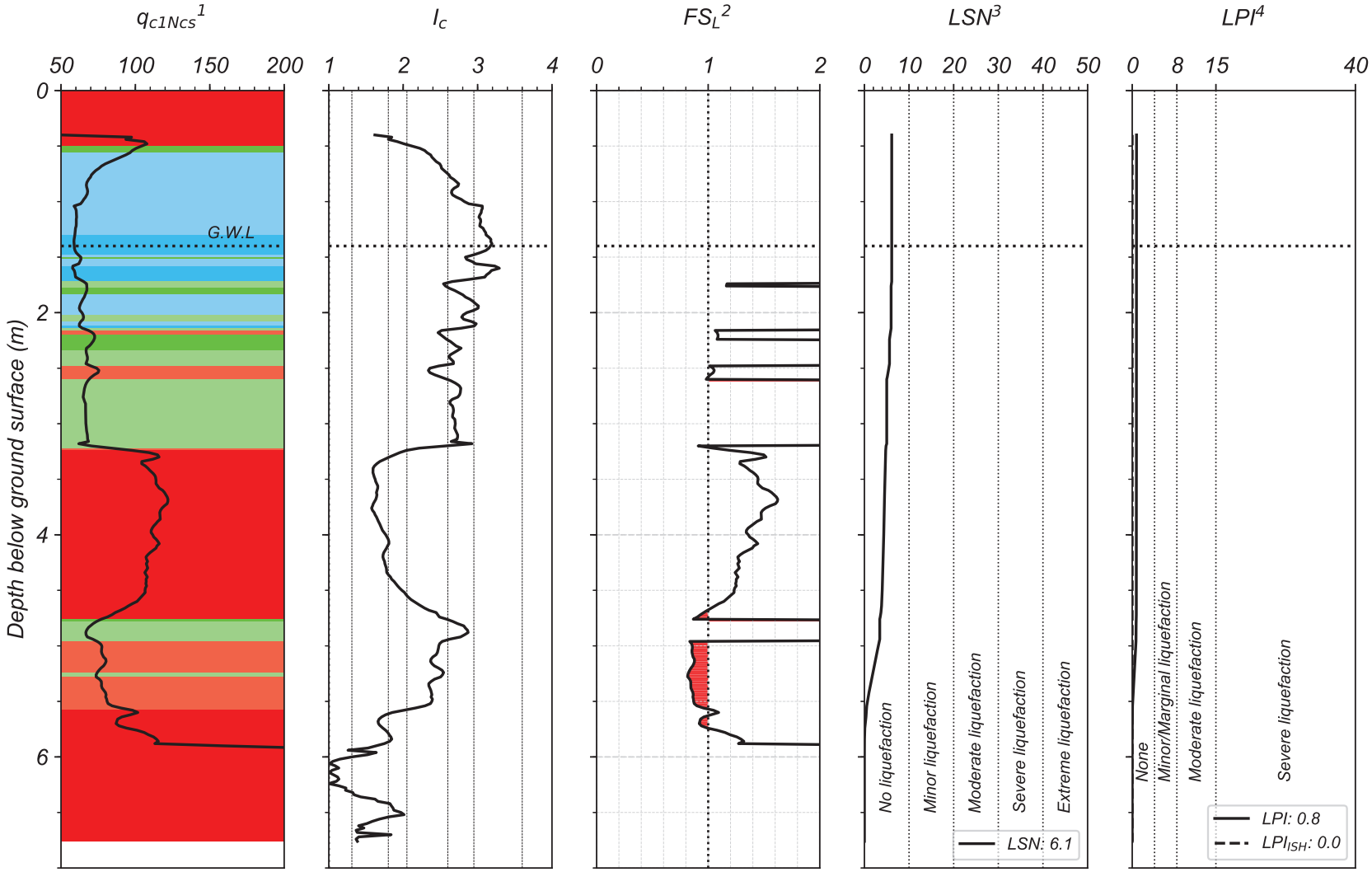
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 160 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.18 g
Site = Royds ; CPT# = 5567 ; GWL = 1.4 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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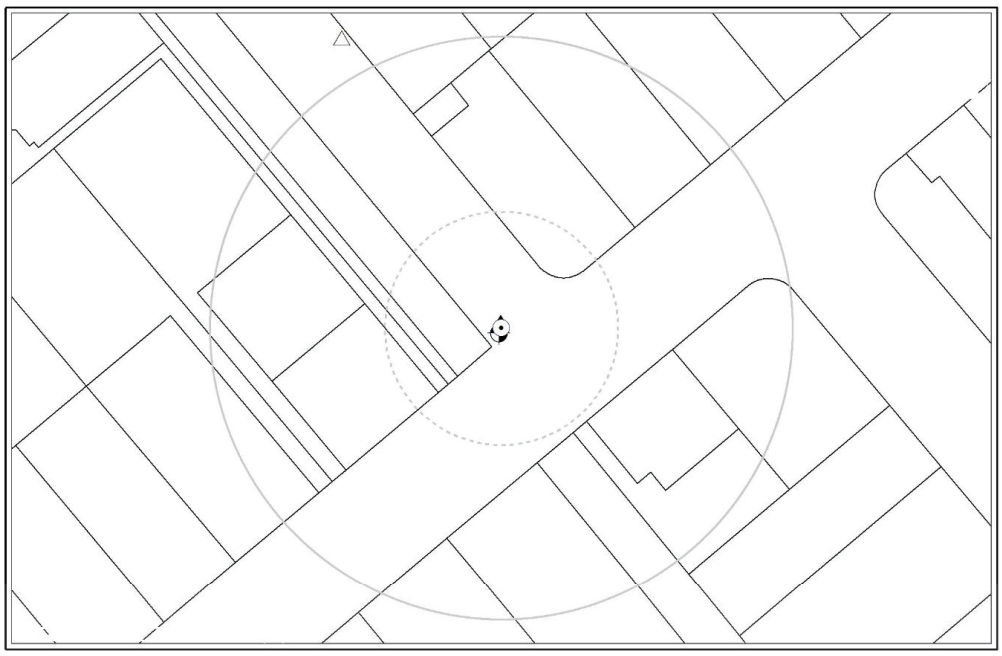
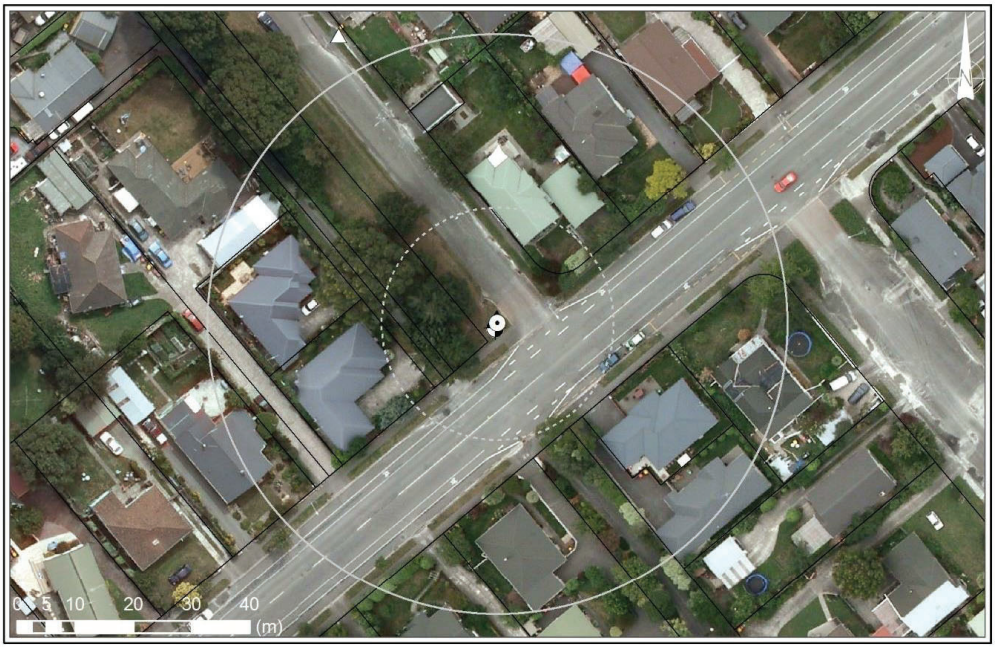
SOMERFIELD

Lat: -43.505496°; Long: 172.690763°



Case #161: Somerfield-DAR (Aerial photograph is not available) - NONE



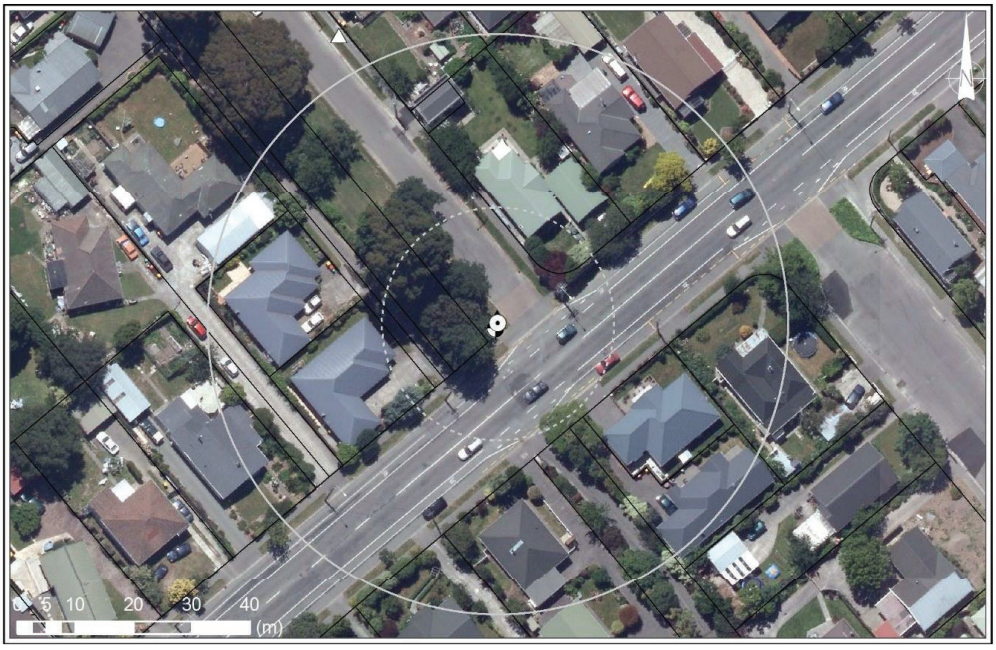
Case #162: Somerfield-CHC (taken on 24/FEB/2011) - MINOR

SOMERFIELD

Lat: -43.505496°; Long: 172.690763°



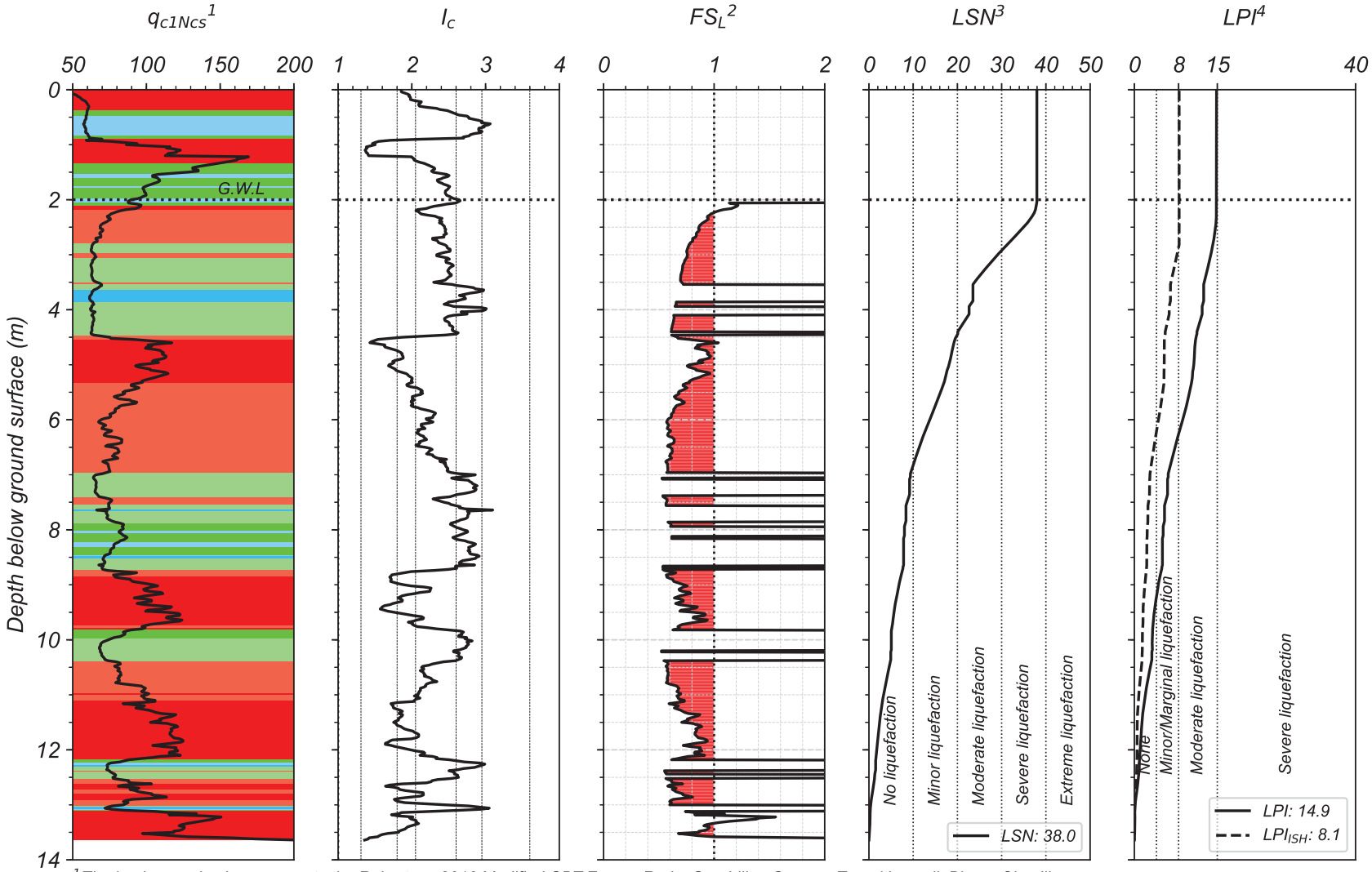
Case #163: Somerfield-JUN (taken on 15/JUN/2011) - NONE



Case #164: Somerfield-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 161 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.23 g
Site = Somerfield ; CPT# = 638 ; GWL = 2.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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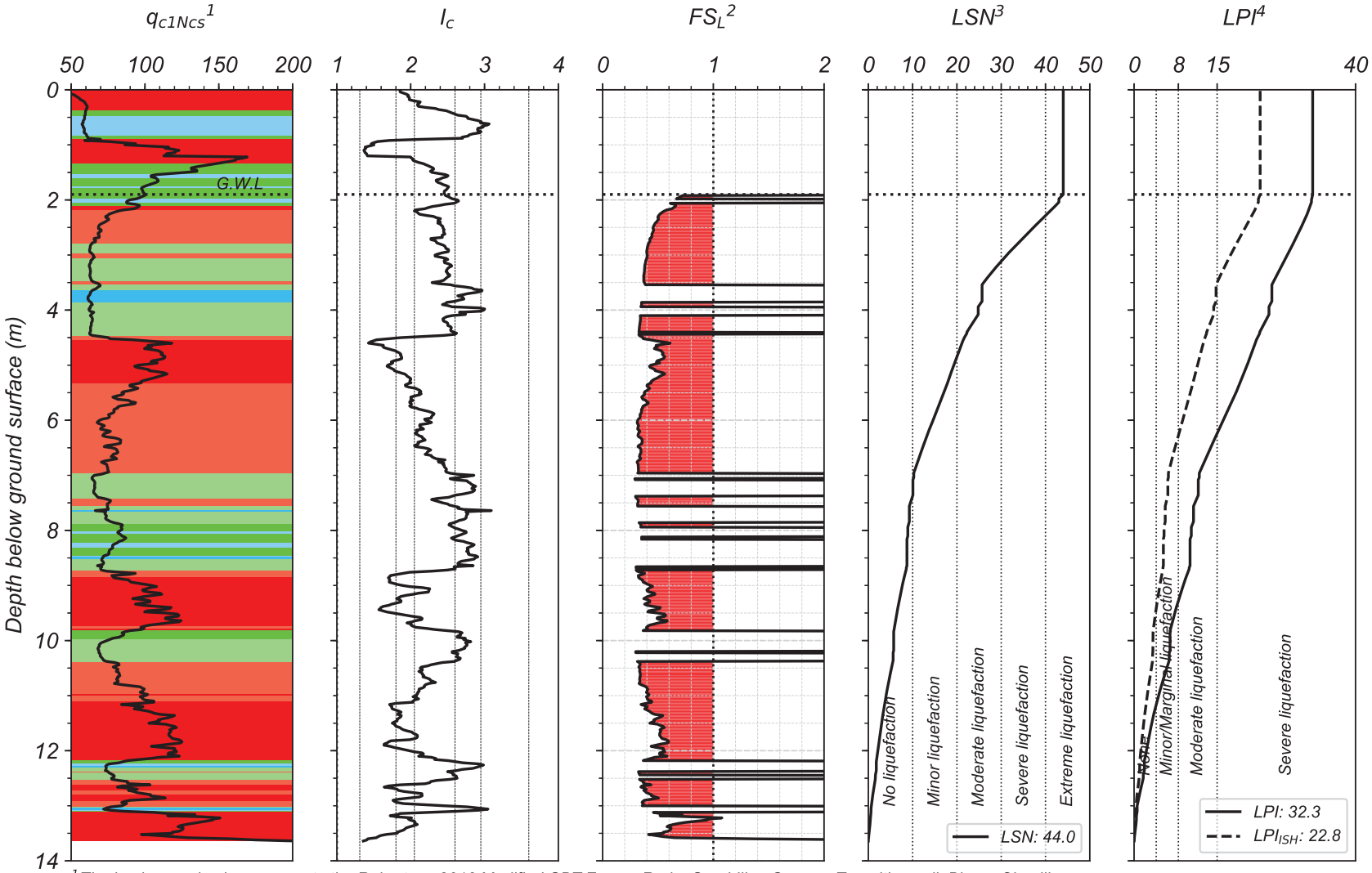
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 162 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.45 g
Site = Somerfield ; CPT# = 638 ; GWL = 1.9 m
Observed Ejecta Severity = Minor ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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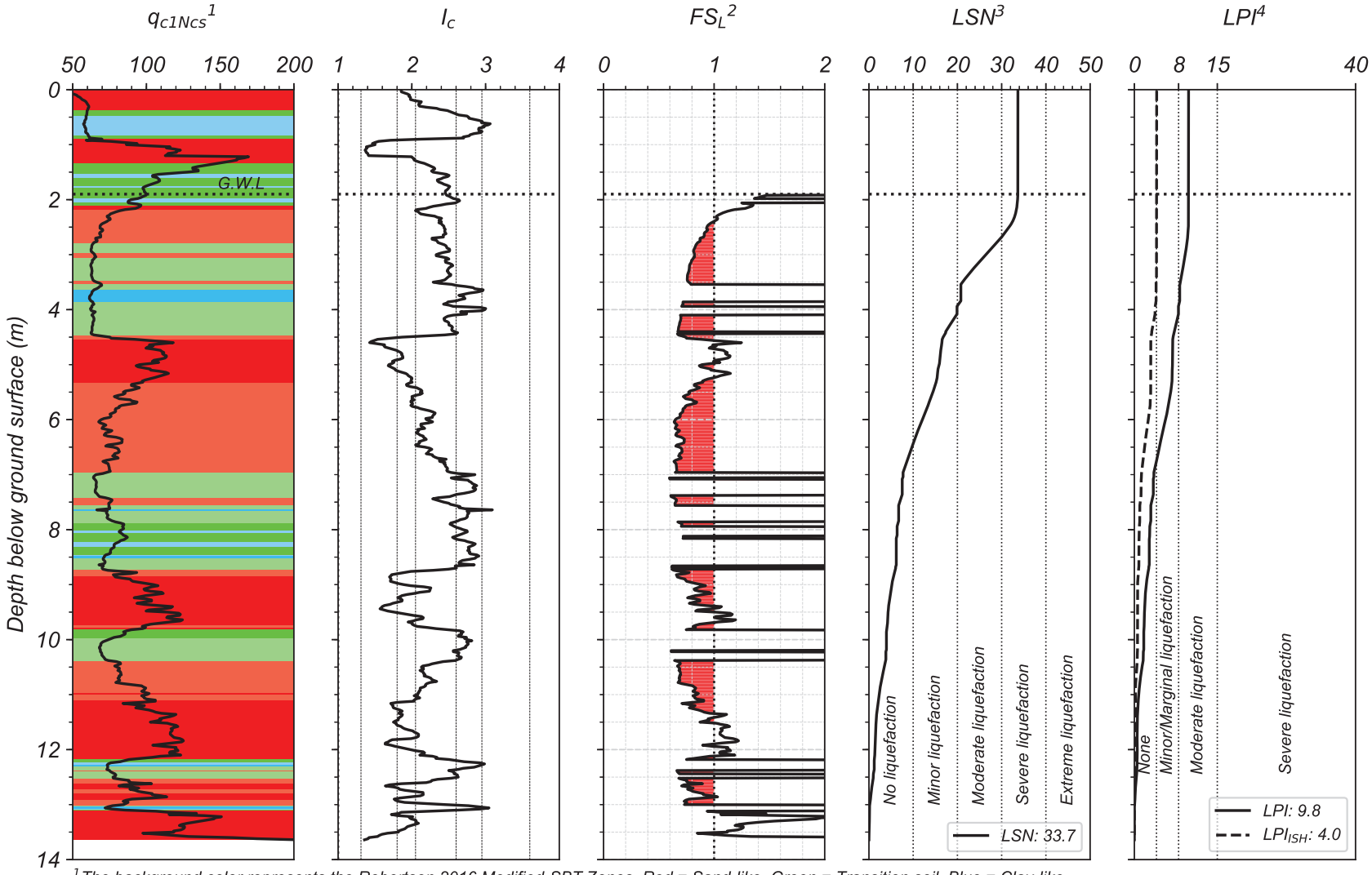
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 163 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.22 g
Site = Somerfield ; CPT# = 638 ; GWL = 1.9 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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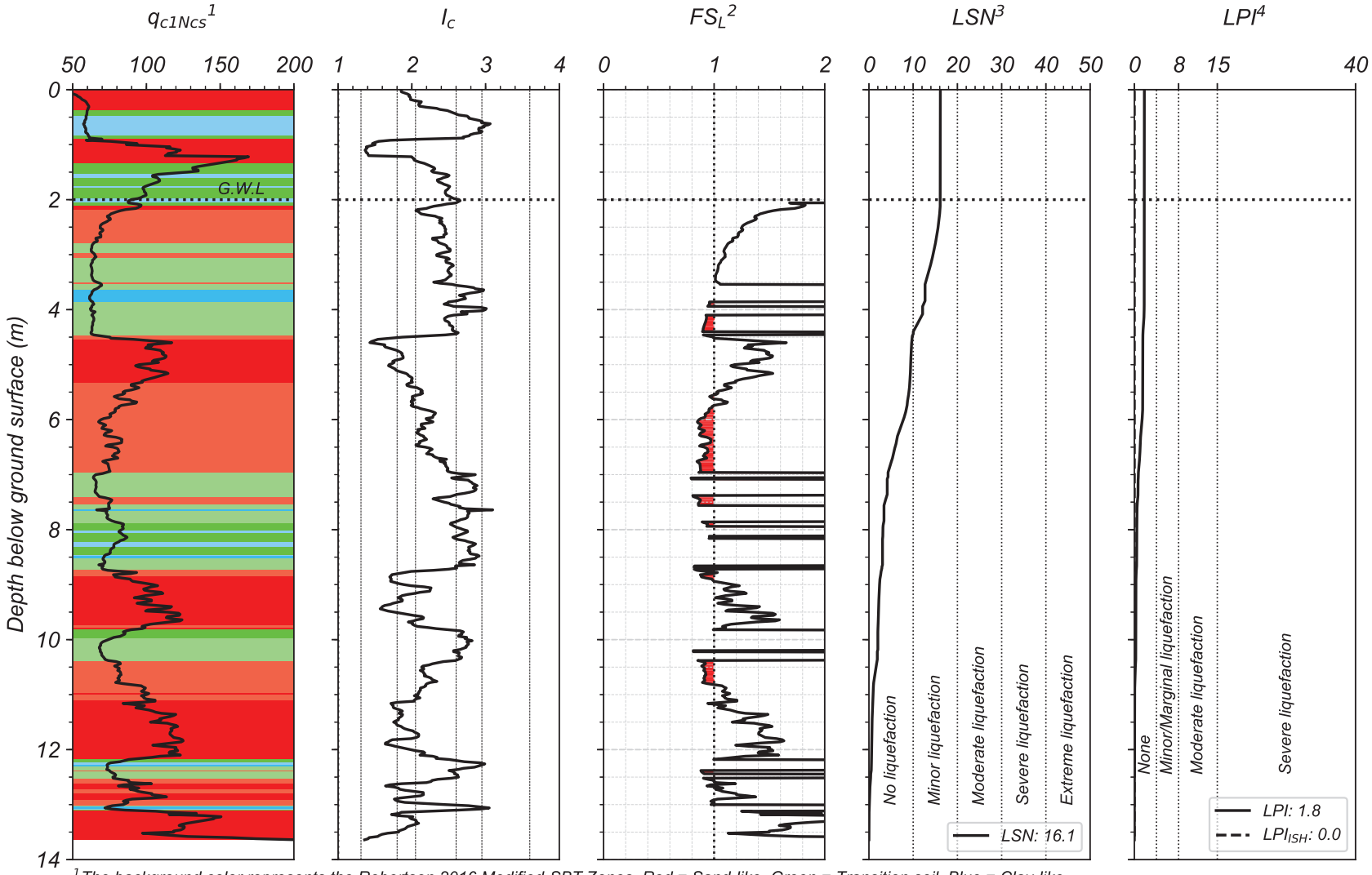
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 164 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.17 g
Site = Somerfield ; CPT# = 638 ; GWL = 2.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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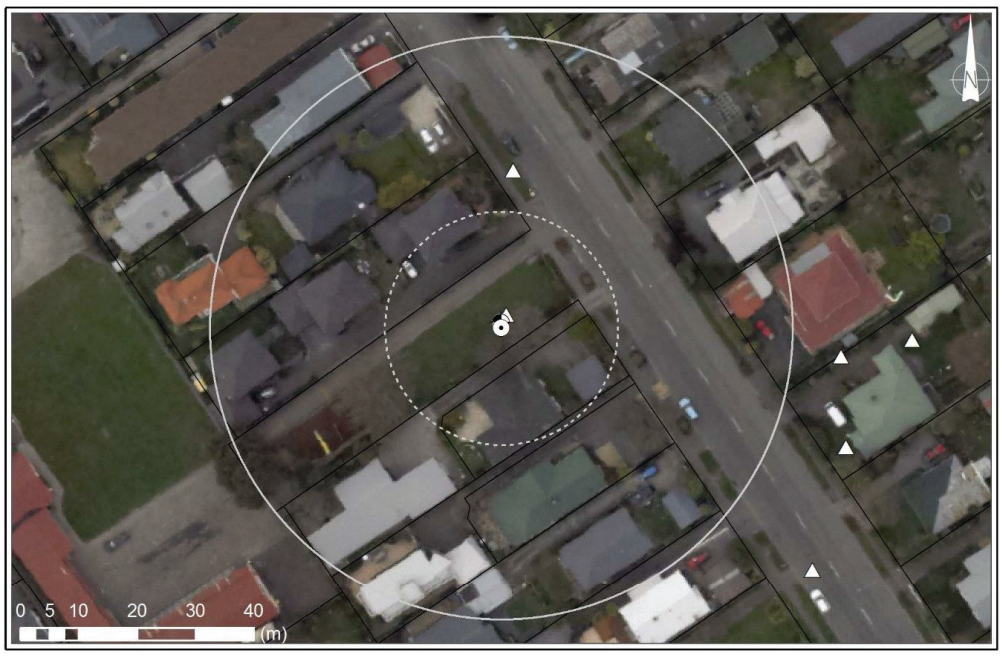
ST. ALBANS

Lat: -43.507198°; Long: 172.629117°



Case #165: St. Albans-DAR (taken on 5/SEP/2010) - NONE



Case #166: St. Albans-CHC (taken on 24/FEB/2011) - MINOR

ST. ALBANS

Lat: -43.507198°; Long: 172.629117°



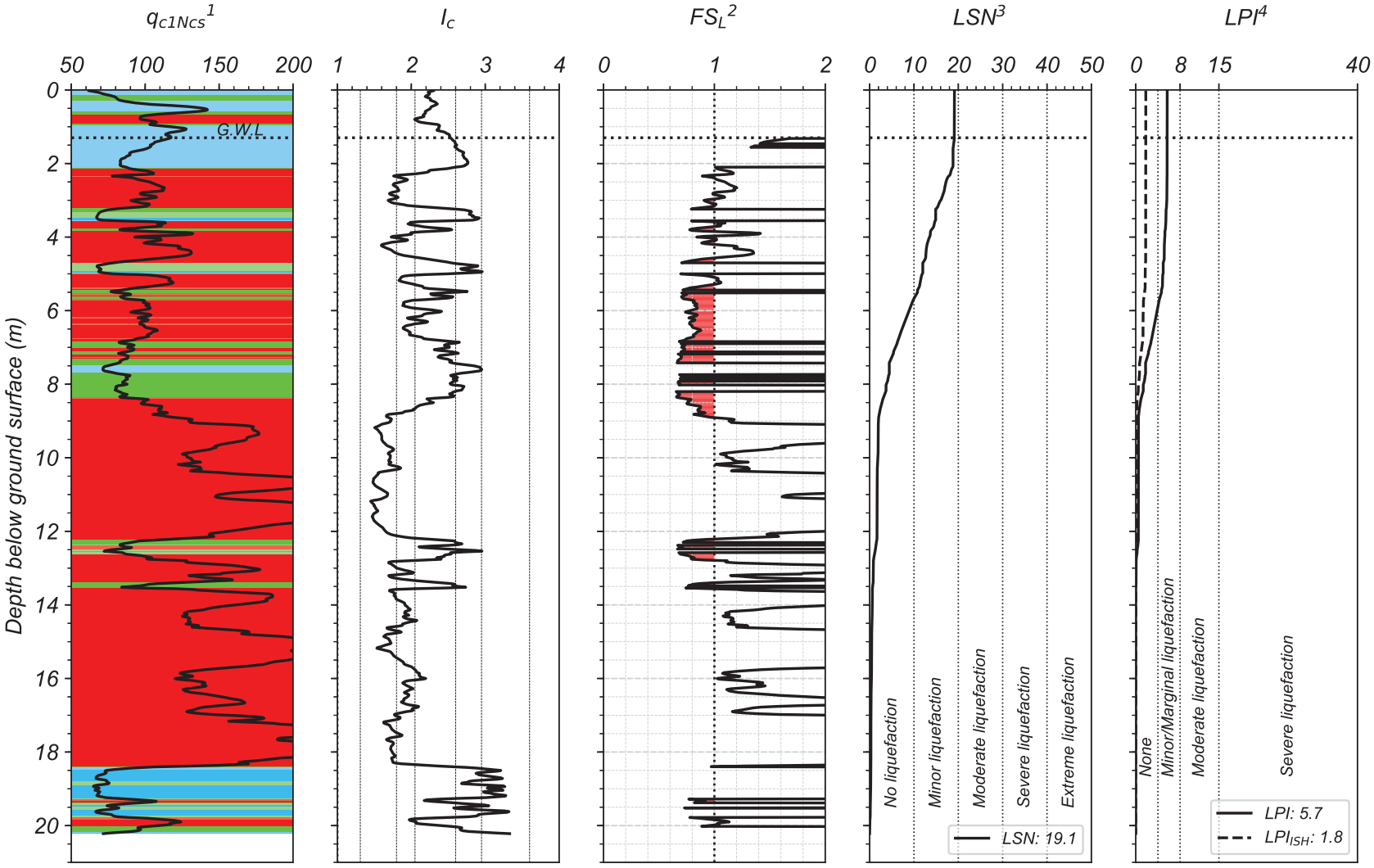
Case #167: St. Albans-JUN (taken on 15/JUN/2011) - NONE



Case #168: St. Albans-DEC (taken on 24/DEC/2011) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 165 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.21 g
Site = St. Albans ; CPT# = 57358 ; GWL = 1.3 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like
[2] Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)
[3] Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria
[4] LPI criteria used in Maurer et al (2014)

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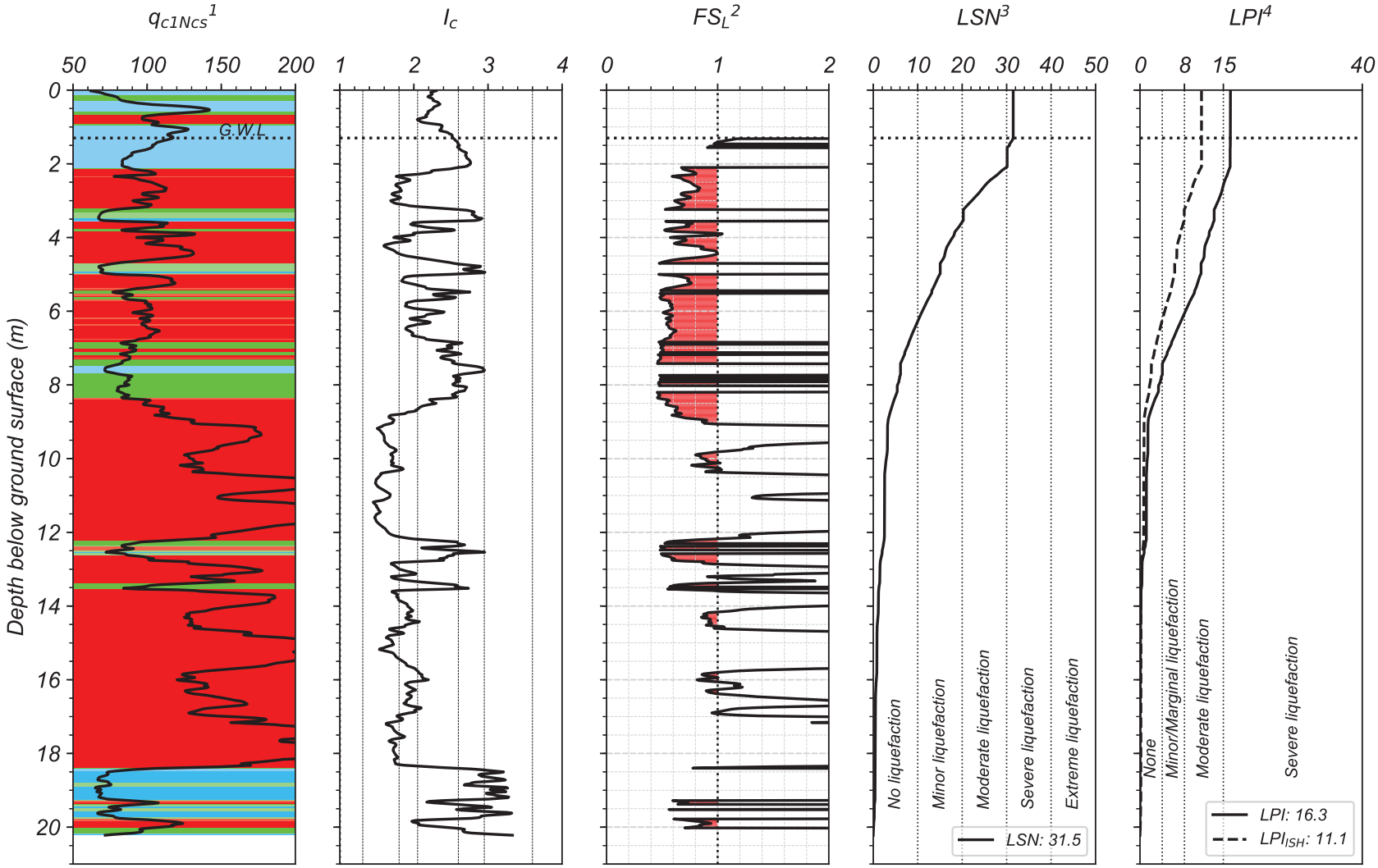
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 166 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.34 g
Site = St. Albans ; CPT# = 57358 ; GWL = 1.3 m
Observed Ejecta Severity = Minor ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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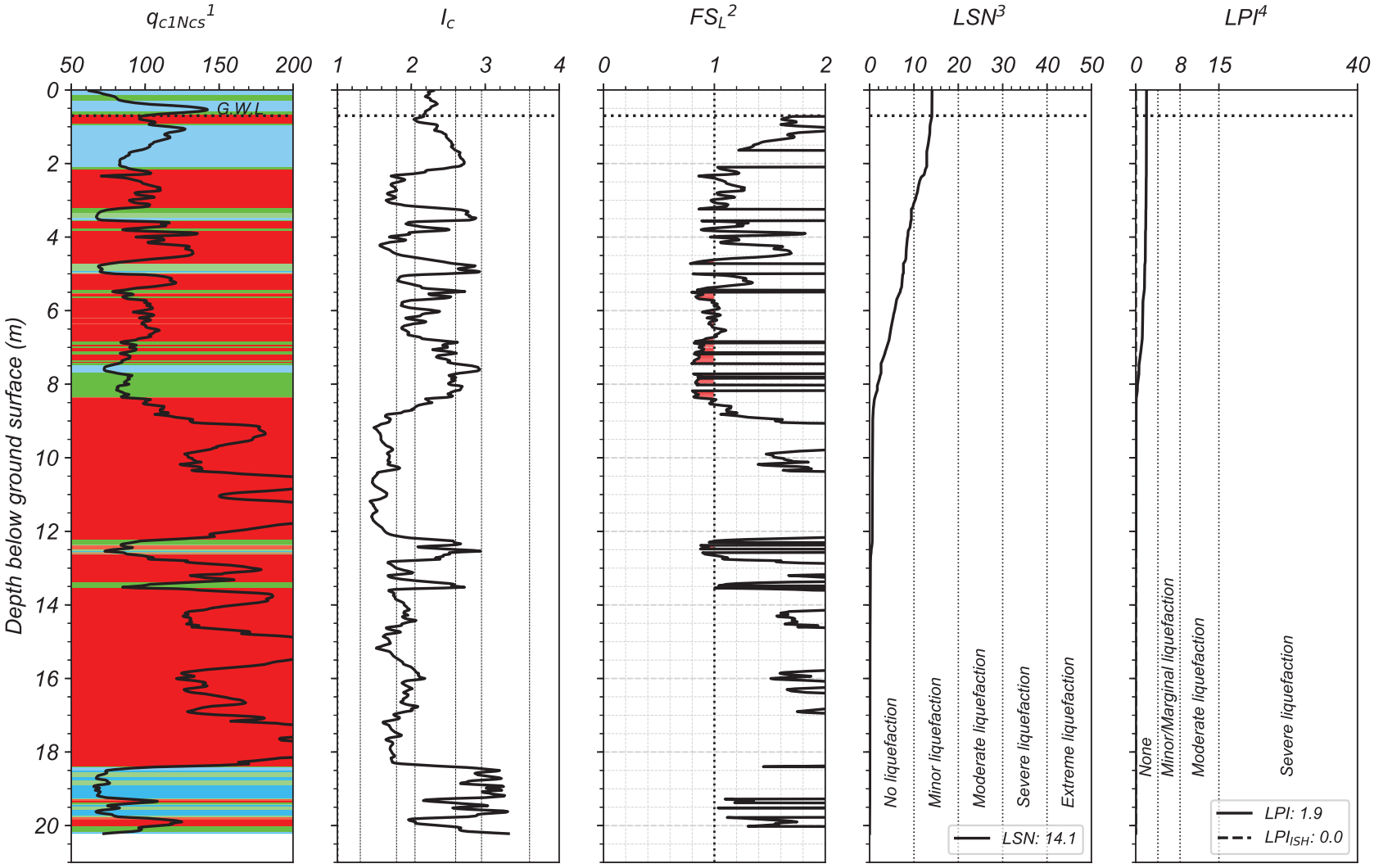
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 167 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.18 g
Site = St. Albans ; CPT# = 57358 ; GWL = 0.7 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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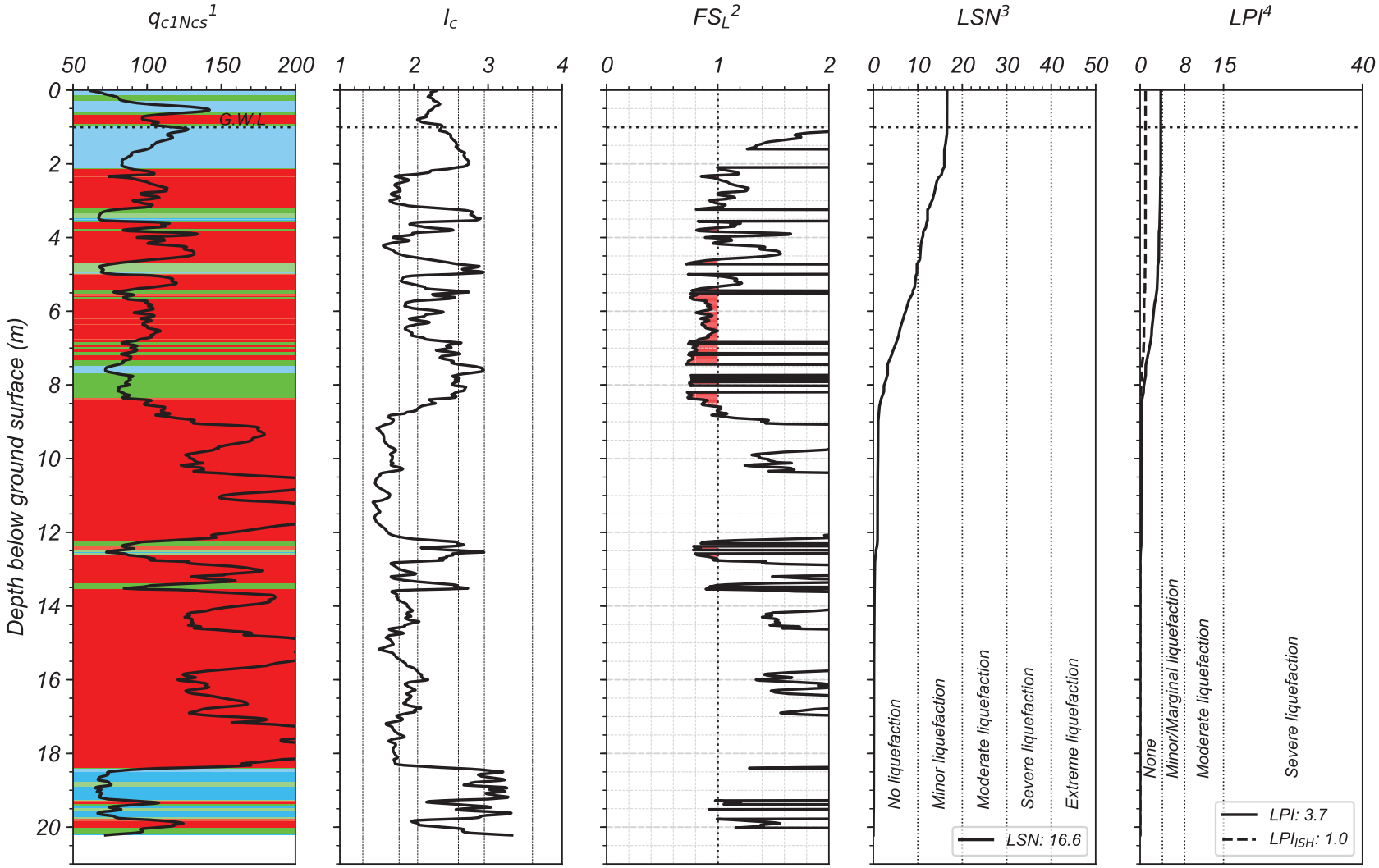
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 168 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.21 g
Site = St. Albans ; CPT# = 57358 ; GWL = 1.0 m
Observed Ejecta Severity = None ; Site Condition = Near Building



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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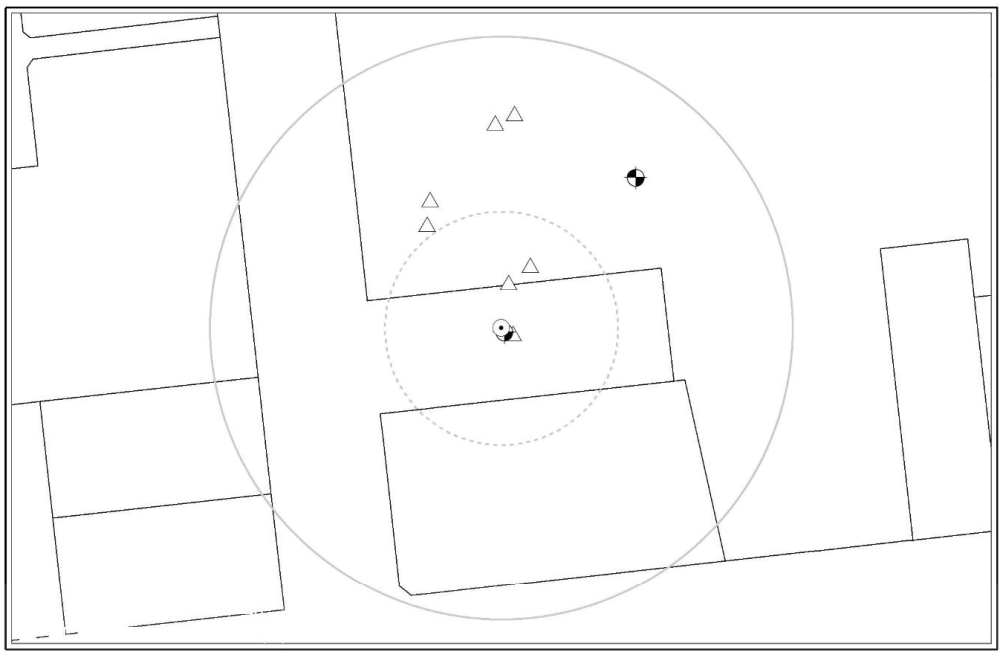
ST. TERESA

Lat: -43.529873°; Long: 172.592135°



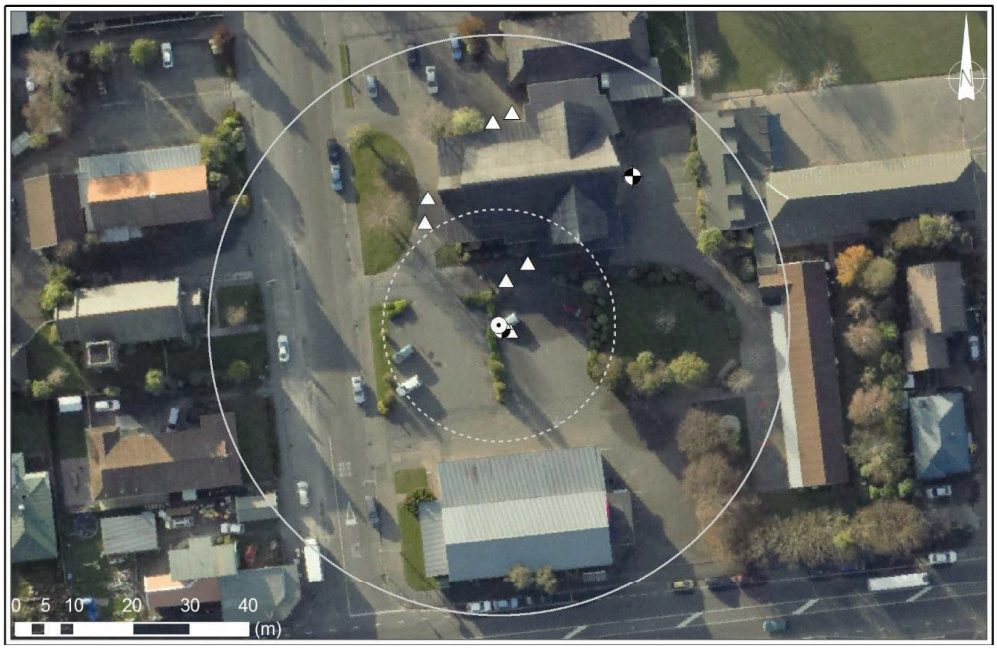
Case #169: St. Teresa-DAR (Aerial photograph is not available) - NONE



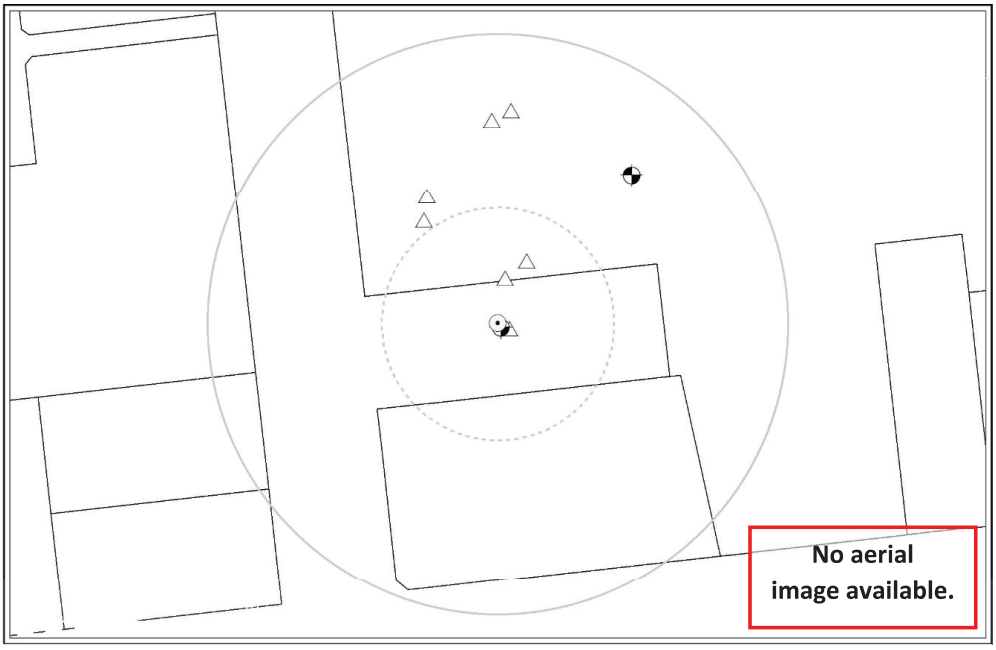
Case #170: St. Teresa-CHC (taken on 24/FEB/2011) - NONE

ST. TERESA

Lat: -43.529873°; Long: 172.592135°



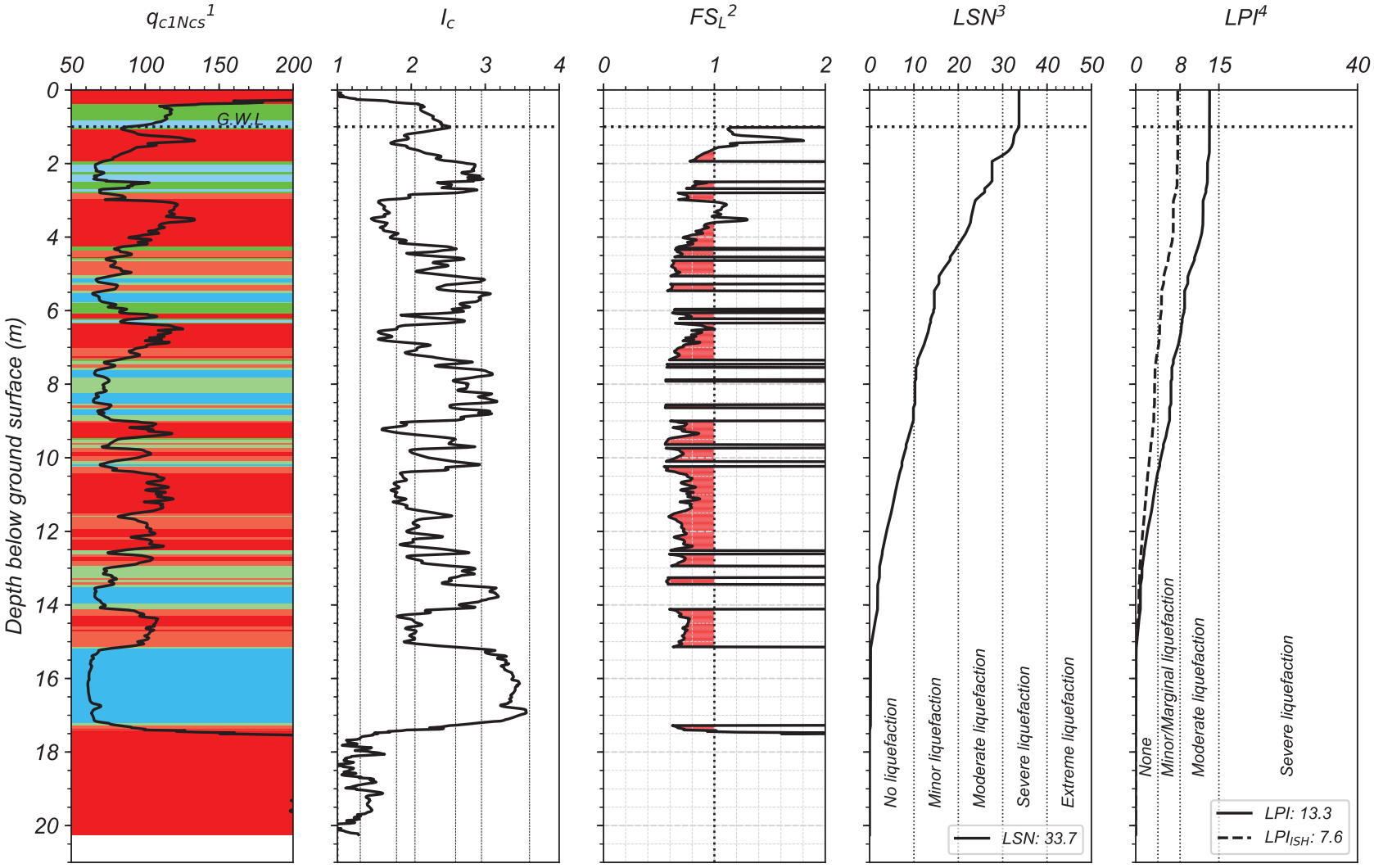
Case #171: St. Teresa-JUN (taken on 15/JUN/2011) - NONE



Case #172: St. Teresa-DEC (Aerial photograph is not available) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 169 ; Event = Darfield ; M_W = 7.1 ; Surface PGA_{max} = 0.22 g
Site = St. Teresa ; CPT# = 57345 ; GWL = 1.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

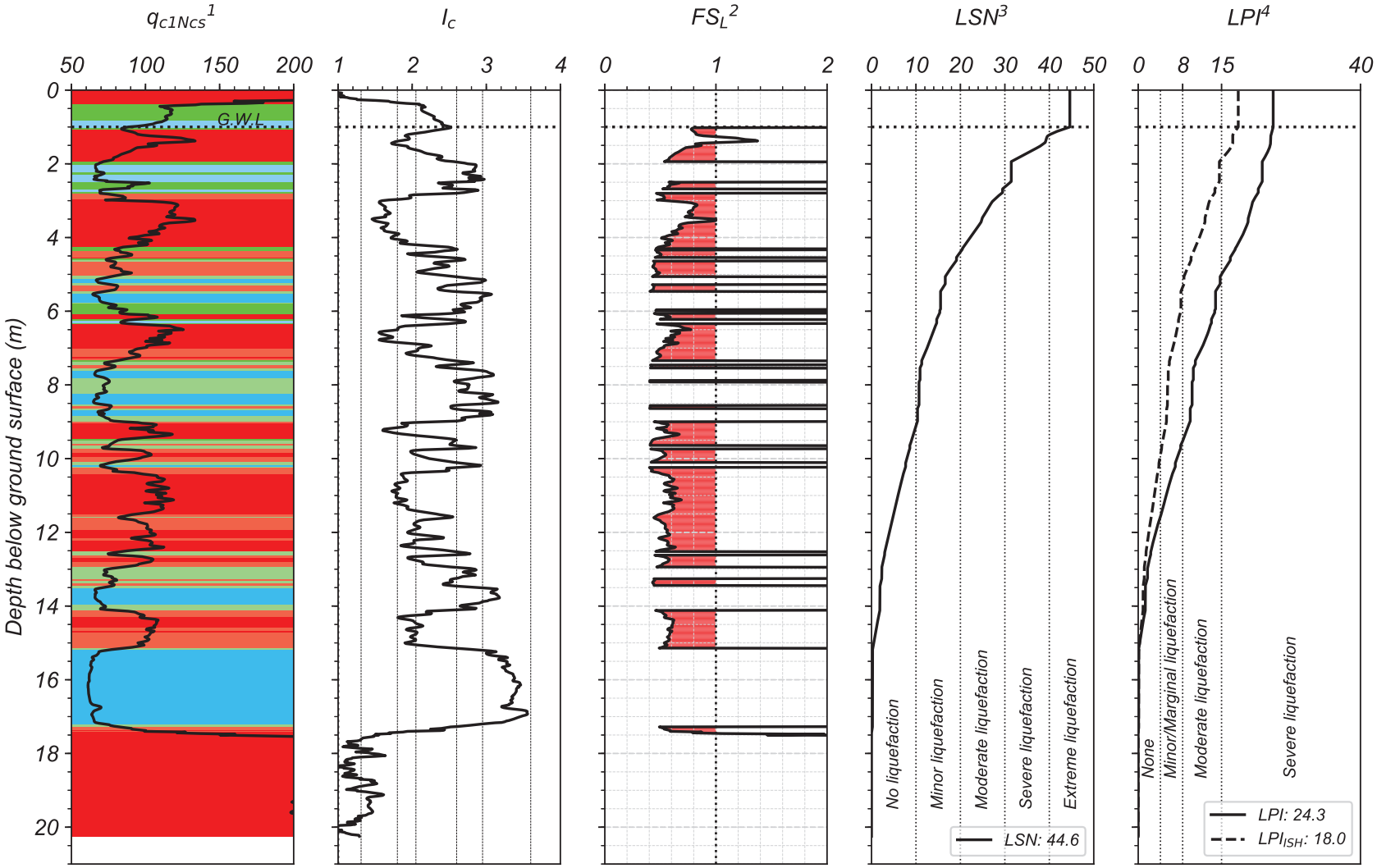


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 170 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.34 g
Site = St. Teresa ; CPT# = 57345 ; GWL = 1.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

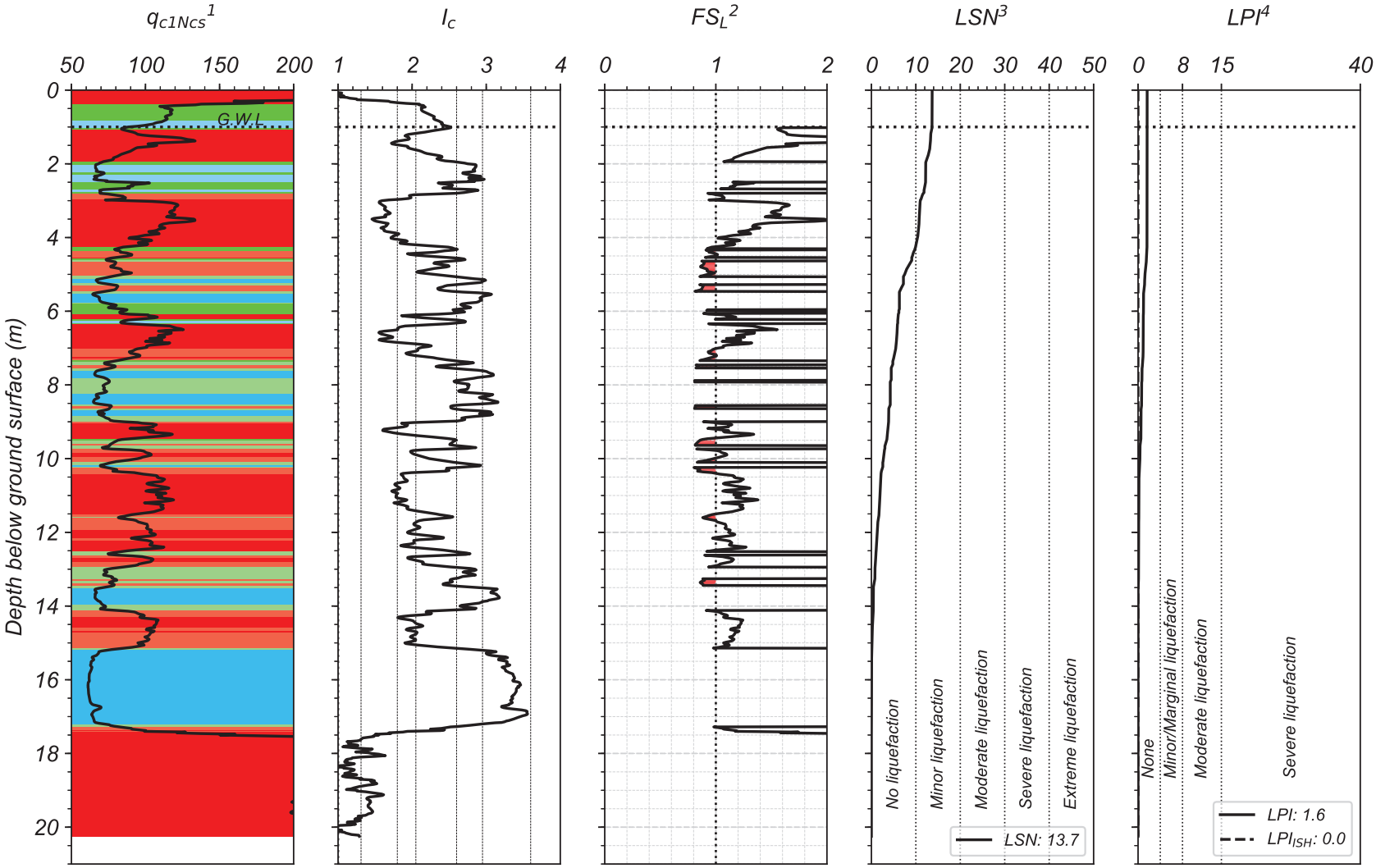


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 171 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.17 g
Site = St. Teresa ; CPT# = 57345 ; GWL = 1.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat

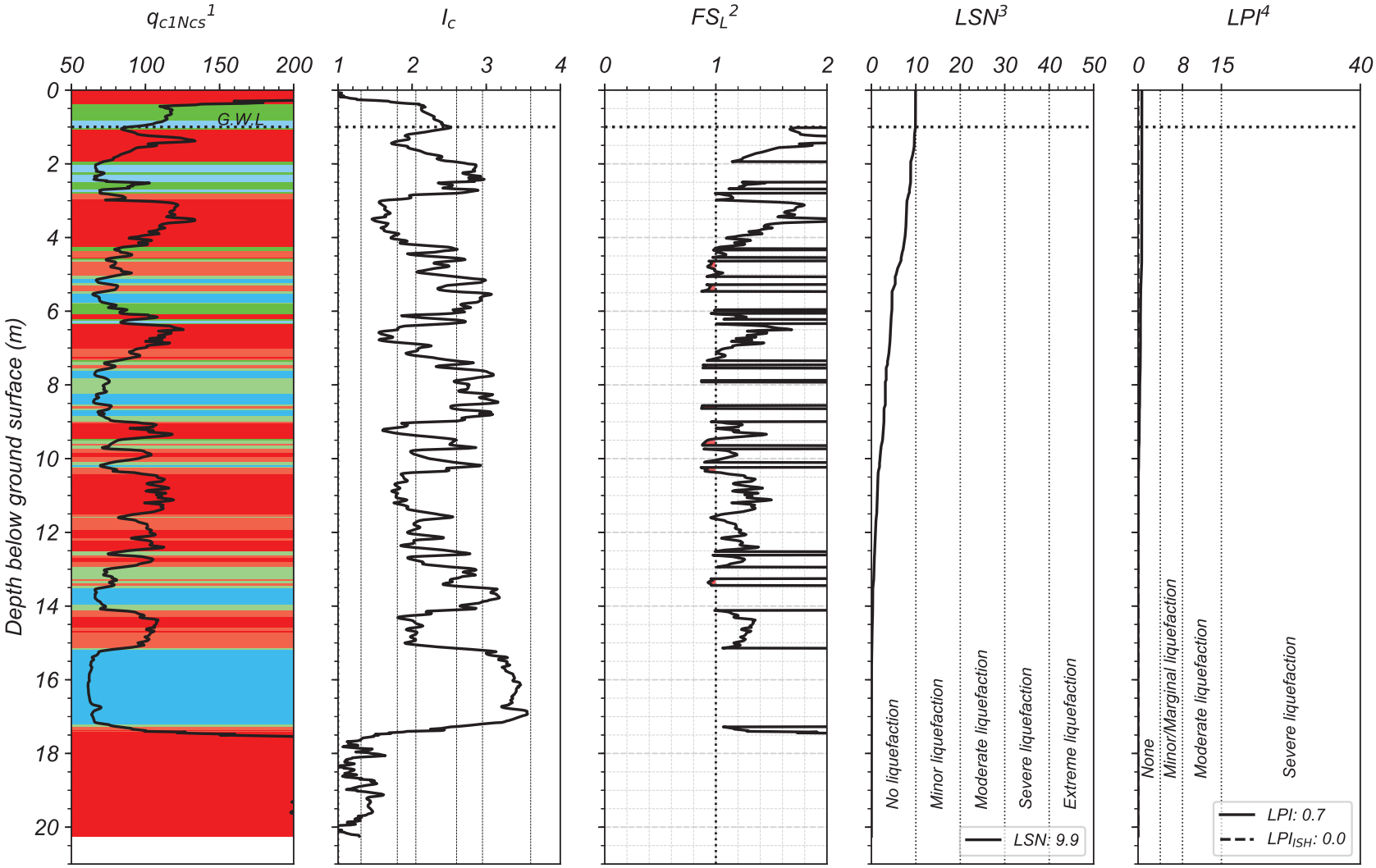


[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

By: DH
UC Berkeley, 2020

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 172 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.16 g
Site = St. Teresa ; CPT# = 57345 ; GWL = 1.0 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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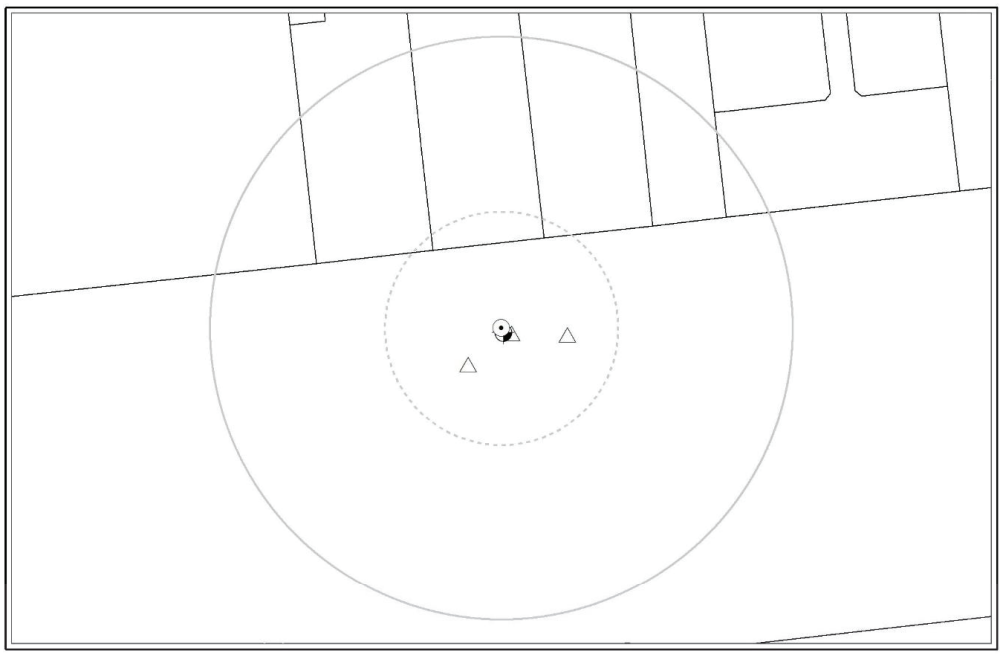
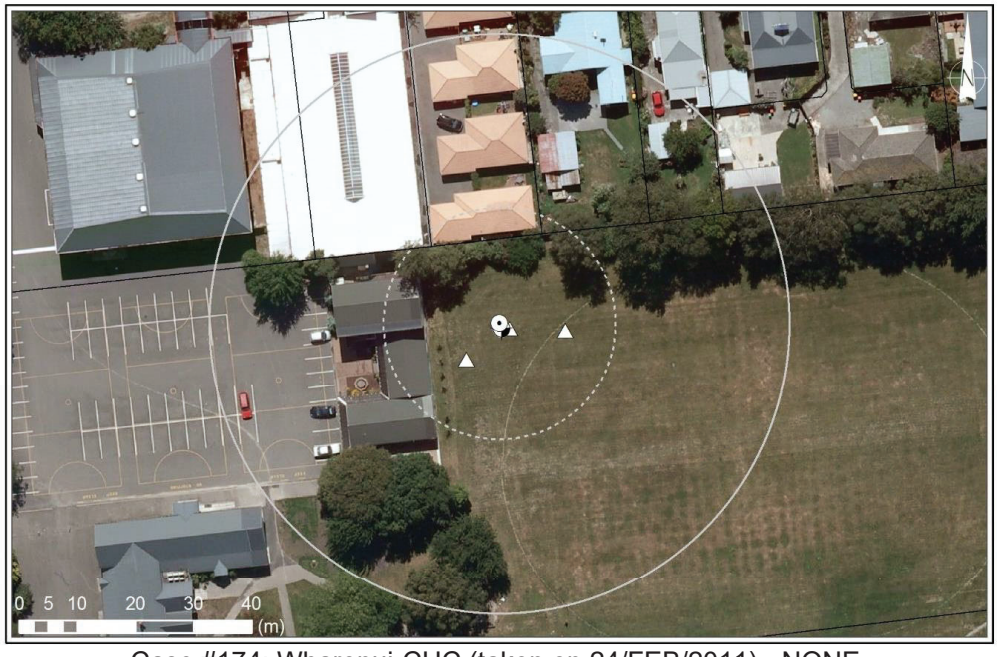
WHARENUI

Lat: -43.536096°; Long: 172.597625°



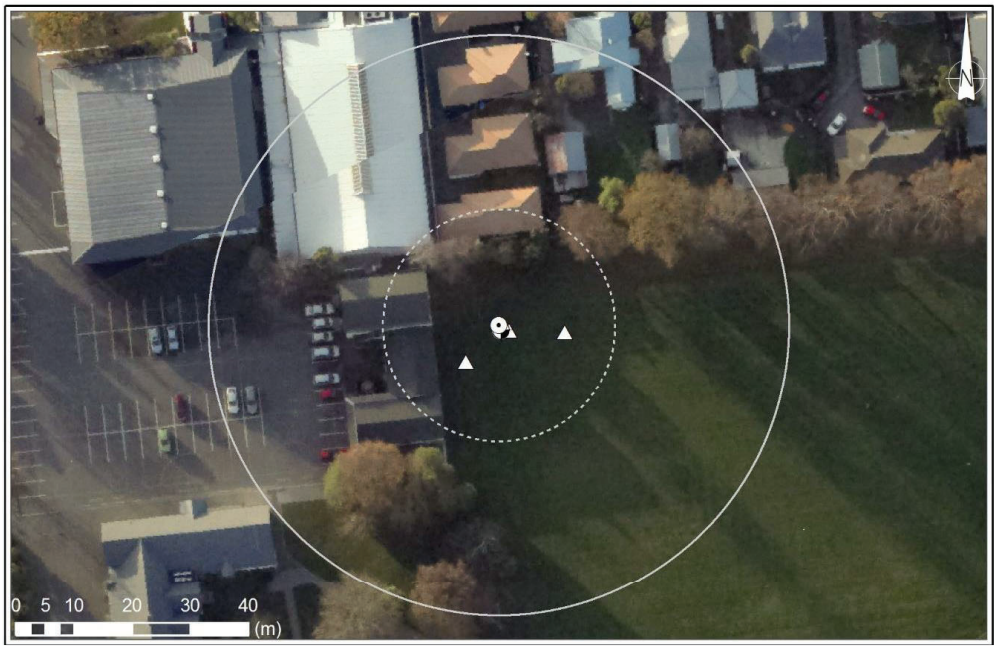
Case #173: Wharenui-DAR (Aerial photograph is not available) - NONE



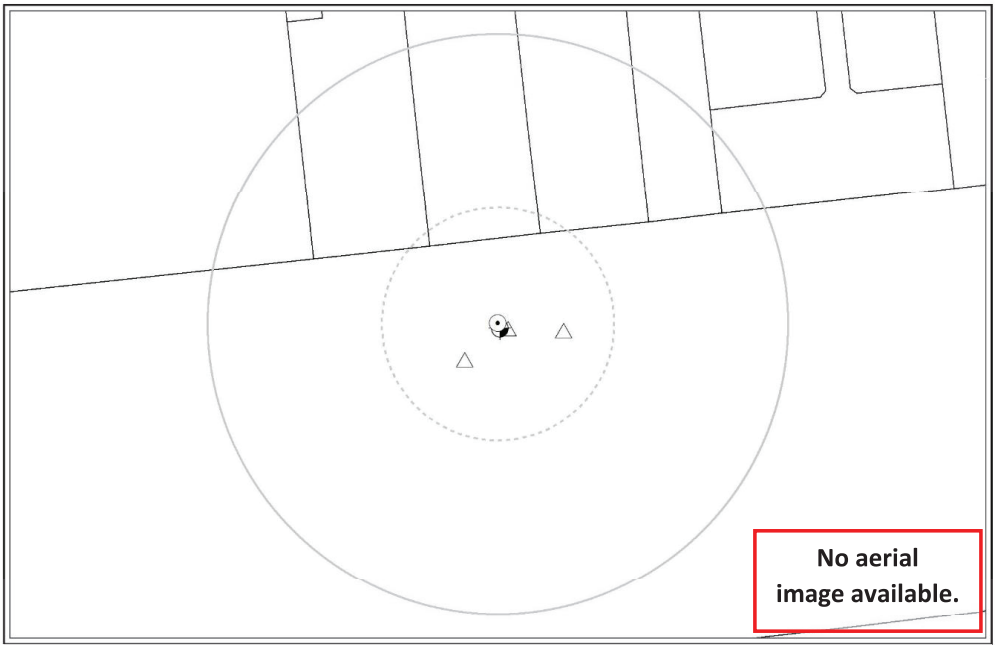
Case #174: Wharenui-CHC (taken on 24/FEB/2011) - NONE

WHARENUI

Lat: -43.536096°; Long: 172.597625°



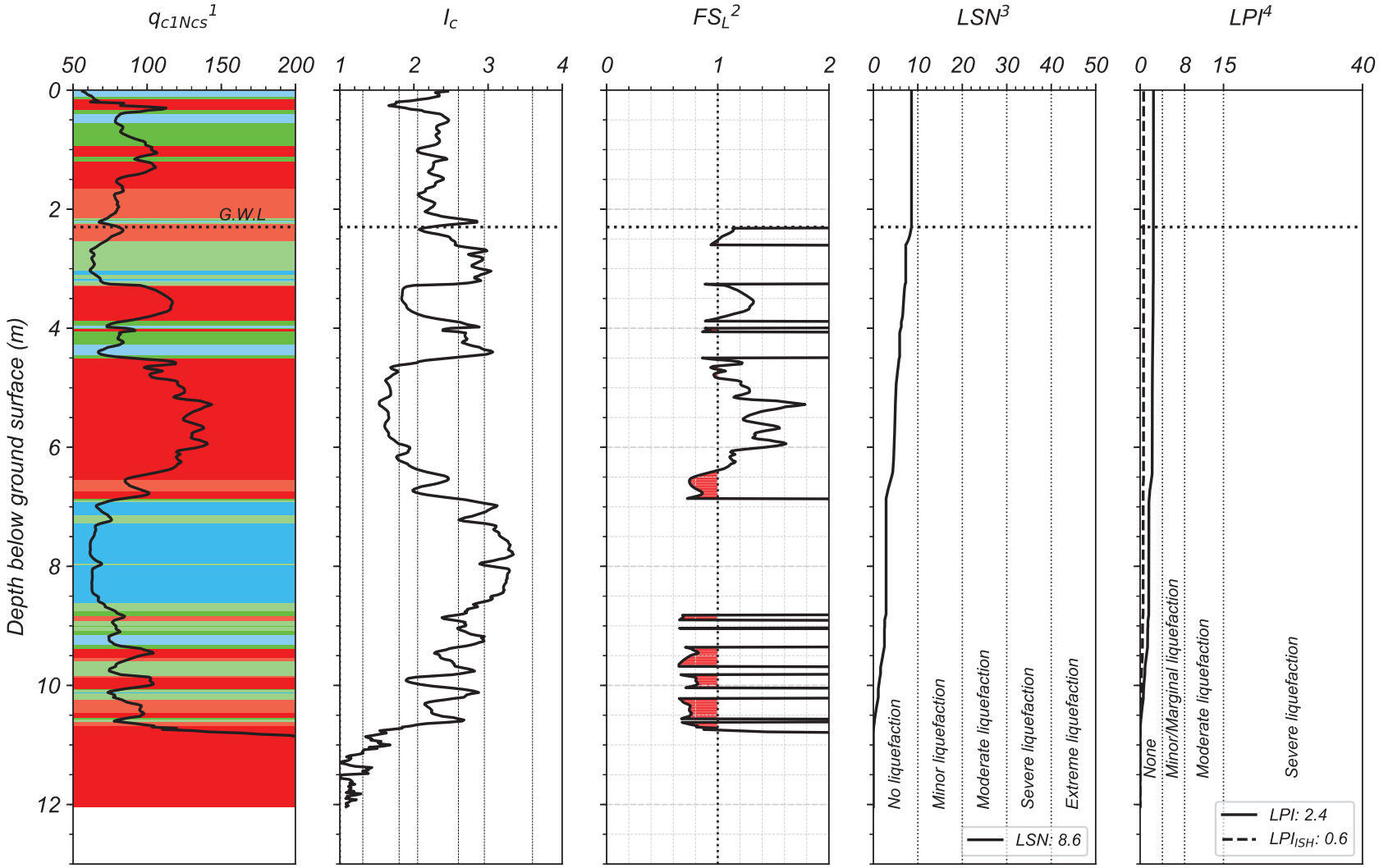
Case #175: Wharenui-JUN (taken on 15/JUN/2011) - NONE



Case #176: Wharenui-DEC (Aerial photograph is not available) - NONE

CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 173 ; Event = Darfield ; M_w = 7.1 ; Surface PGA_{max} = 0.22 g
Site = Wharenui ; CPT# = 57319 ; GWL = 2.3 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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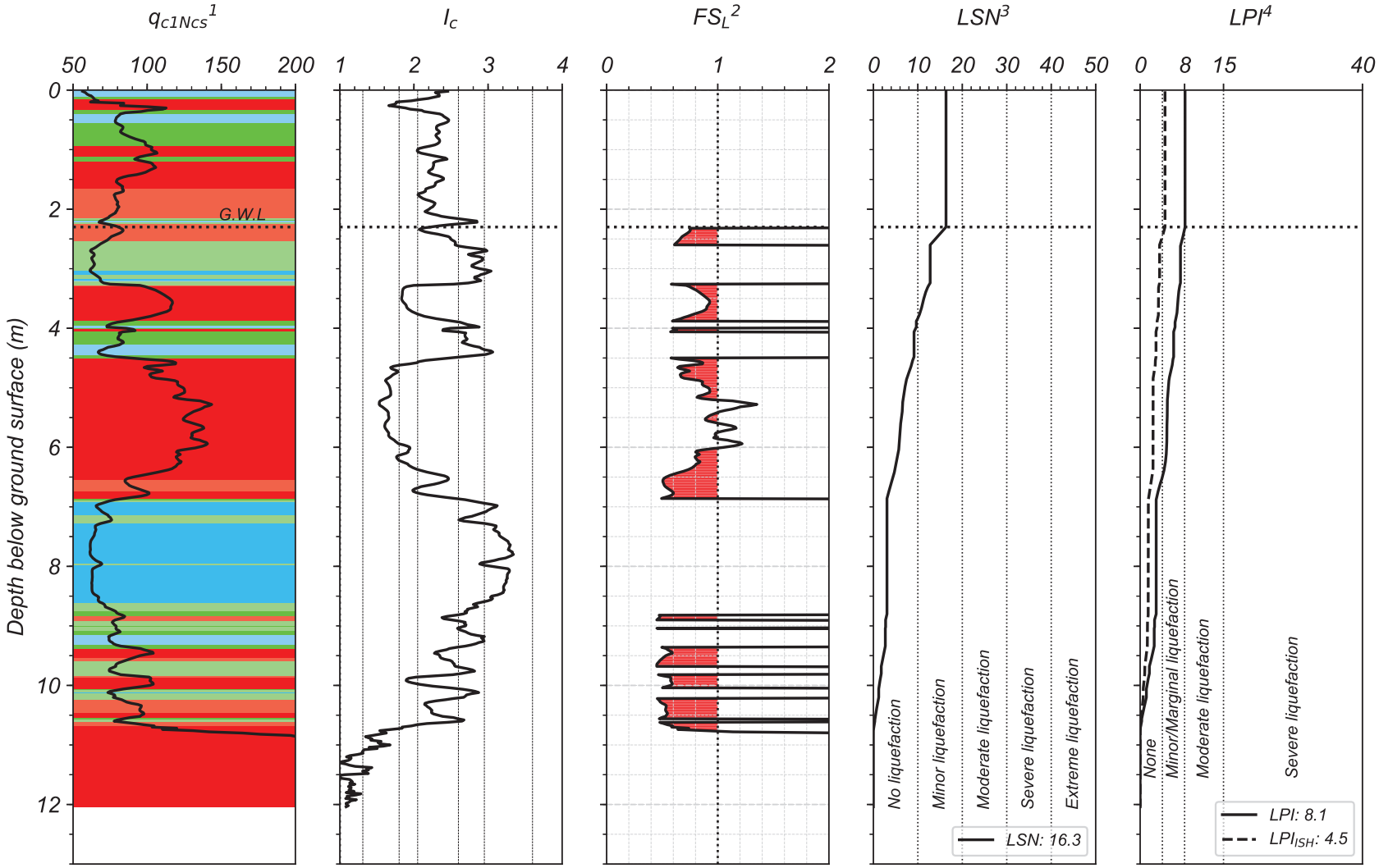
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 174 ; Event = Christchurch ; M_w = 6.2 ; Surface PGA_{max} = 0.36 g
Site = Wharenui ; CPT# = 57319 ; GWL = 2.3 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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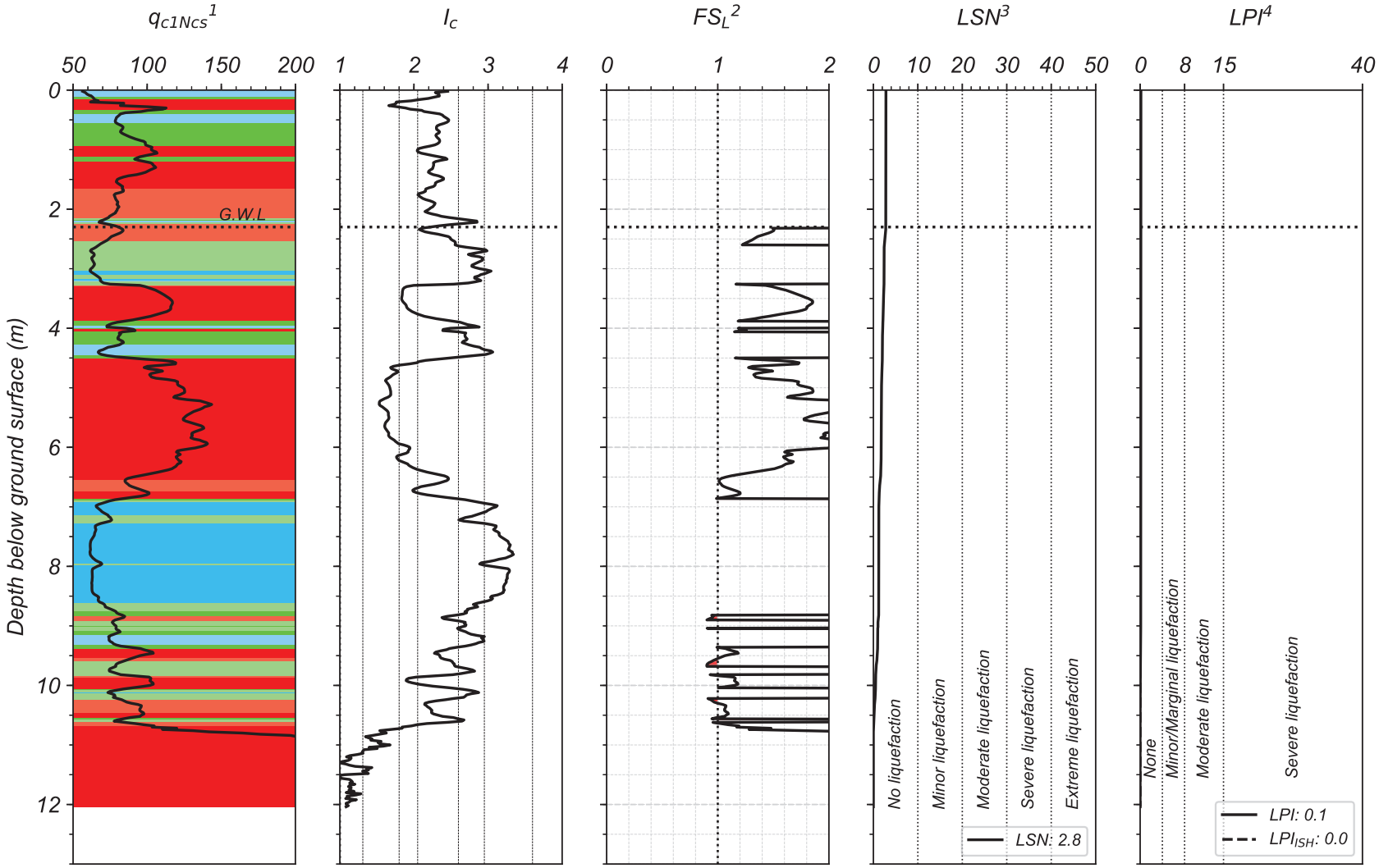
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 175 ; Event = 13-Jun ; M_w = 6.2 ; Surface PGA_{max} = 0.18 g
Site = Wharenui ; CPT# = 57319 ; GWL = 2.3 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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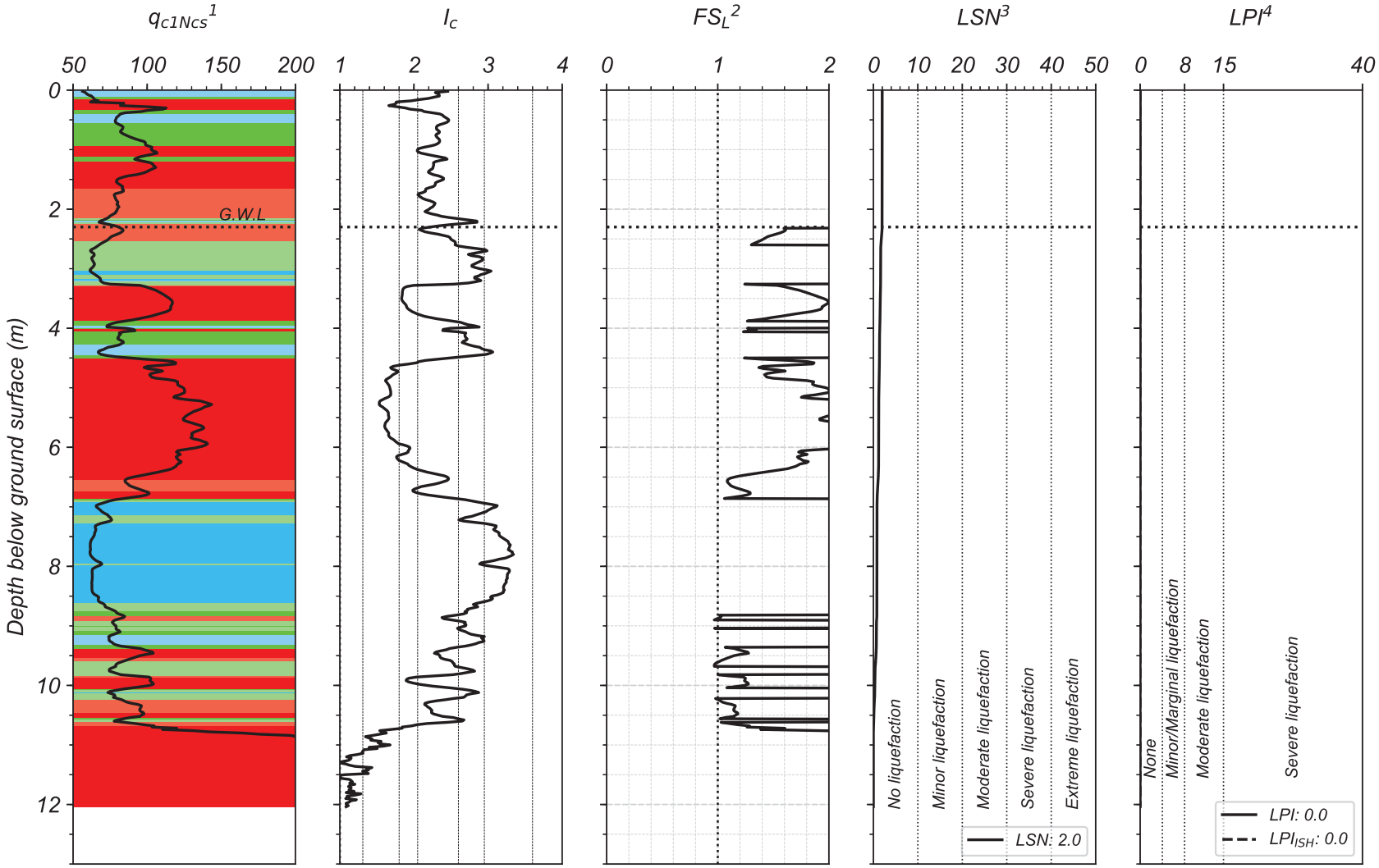
CPT-BASED LIQUEFACTION-INDUCED GROUND FAILURES ASSESSMENT

Scenario # = 176 ; Event = 23-Dec ; M_w = 6.1 ; Surface PGA_{max} = 0.17 g
Site = Wharenui ; CPT# = 57319 ; GWL = 2.3 m
Observed Ejecta Severity = None ; Site Condition = Free-field flat



[1] *The background color represents the Robertson 2016 Modified-SBT Zones. Red = Sand-like, Green = Transition soil, Blue = Clay-like*
[2] *Computed using Boulanger & Idriss (2016) with I_{c-cut} = 2.6, P_L = 50%, and C_{FC} = 0.13 (Maurer et al. 2019)*
[3] *Based on van Ballegooy et al. (2014) & Tonkin+Taylor (2013) criteria*
[4] *LPI criteria used in Maurer et al (2014)*

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