

GEOTECHNICAL RECONNAISSANCE OF THE 2011 CHRISTCHURCH, NEW ZEALAND EARTHQUAKE

Version 1: 15 August 2011



(photograph by Gillian Needham)

EDITORS

Misko Cubrinovski – NZ Lead (University of Canterbury, Christchurch, New Zealand)

Russell A. Green – US Lead (Virginia Tech, Blacksburg, VA, USA)

Liam Wotherspoon (University of Auckland, Auckland, New Zealand)

CONTRIBUTING AUTHORS (alphabetical order)

John Allen – (TRI/Environmental, Inc., Austin, TX, USA)

Brendon Bradley – (University of Canterbury, Christchurch, New Zealand)

Aaron Bradshaw – (University of Rhode Island, Kingston, RI, USA)

Jonathan Bray – (UC Berkeley, Berkeley, CA, USA)

Misko Cubrinovski – (University of Canterbury, Christchurch, New Zealand)

Greg DePascale – (Fugro/WLA, Christchurch, New Zealand)

Russell A. Green – (Virginia Tech, Blacksburg, VA, USA)

Rolando Orense – (University of Auckland, Auckland, New Zealand)

Thomas O'Rourke – (Cornell University, Ithaca, NY, USA)

Michael Pender – (University of Auckland, Auckland, New Zealand)

Glenn Rix – (Georgia Tech, Atlanta, GA, USA)

Donald Wells – (AMEC Geomatrix, Oakland, CA, USA)

Clint Wood – (University of Arkansas, Fayetteville, AR, USA)

Liam Wotherspoon – (University of Auckland, Auckland, New Zealand)

OTHER CONTRIBUTORS (alphabetical order)

Brady Cox – (University of Arkansas, Fayetteville, AR, USA)

Duncan Henderson – (University of Canterbury, Christchurch, New Zealand)

Lucas Hogan – (University of Auckland, Auckland, New Zealand)

Patrick Kailey – (University of Canterbury, Christchurch, New Zealand)

Sam Lasley – (Virginia Tech, Blacksburg, VA, USA)

Kelly Robinson – (University of Canterbury, Christchurch, New Zealand)

Merrick Taylor – (University of Canterbury, Christchurch, New Zealand)

Anna Winkley – (University of Canterbury, Christchurch, New Zealand)

Josh Zupan – (University of California at Berkeley, Berkeley, CA, USA)

TABLE OF CONTENTS

1.0 INTRODUCTION

2.0 SEISMOLOGICAL ASPECTS

3.0 GEOLOGICAL ASPECTS

4.0 LIQUEFACTION AND LATERAL SPREADING

5.0 IMPROVED GROUND

6.0 STOPBANKS

7.0 BRIDGES

8.0 LIFELINES

9.0 LANDSLIDES AND ROCKFALLS