

**BEFORE THE ENVIRONMENT COURT
I MUA I TE KOOTI TAIAO O AOTEAROA**

ENV-2018-AKL-000078

IN THE MATTER of the Resource Management
Act 1991 (**RMA**)

AND

IN THE MATTER of the direct referral of
applications for resource
consent for the necessary
infrastructure and related
activities associated with
holding the America's Cup in
Auckland

BETWEEN **PANUKU DEVELOPMENT
AUCKLAND**

Applicant

AND

AUCKLAND COUNCIL

Regulatory Authority

**EVIDENCE OF JENNIFER POLICH ON BEHALF OF
PANUKU DEVELOPMENT AUCKLAND**

(RISK)

7 AUGUST 2018

1. QUALIFICATIONS AND EXPERIENCE

- 1.1 My full name is Jennifer Ann (Jenny) Polich.
- 1.2 I am a Principal Engineer at Sherpa Consulting Pty Ltd (**Sherpa**) based in Sydney, Australia.
- 1.3 My qualifications are a Bachelor of Engineering (Chemical) and a Masters of Environmental Engineering and Management (MEnvEng). I have over 17 years' experience in process safety and risk management in the chemical and related industries. I have been employed by Sherpa Consulting for over eleven years. I have previously been employed by Kellogg Brown and Root and Orica Australia Pty Ltd in risk engineering roles.
- 1.4 I am a Member of the Institute of Chemical Engineers (MIChemE). I am a Certified Functional Safety Engineer (CFSE TUV Rheinland).
- 1.5 My prior experience relevant to the work associated with the America's Cup application includes numerous Quantitative Risk Assessment (**QRA**) and land use planning studies relating to development of facilities handling large quantities of hazardous substances in the vicinity of other land uses. Projects include the Wiri Oil Services Limited (**WOSL**) Bulk Hydrocarbon Terminal with proposed adjacent prison development that was undertaken jointly for a Steering Committee comprising WOSL, NZ Department of Corrections and Liquigas.
- 1.6 Other relevant work includes QRA and land use planning studies for a number of complex industrial facilities including the Botany Industrial Park complex (Botany, NSW, Australia), an integrated ammonium nitrate manufacturing complex which includes bulk ammonia storage, nitric acid and AN plants, chloralkali and derivatives plants, cyanide manufacture (Qld, Australia), and also fuel terminal expansions at Port Botany, (NSW, Australia). I have also provided expert witness advice on similar risk and land use safety planning matters on behalf of various oil and gas companies in relation to the Auckland Unitary Plan process and Christchurch Recovery District Plan and to Taranaki Energy Watch in relation to South Taranaki District Plan.
- 1.7 Sherpa was retained by Sea+City Projects Ltd (now Panuku Development Auckland (**Panuku**)) in 2010 to provide independent risk consultancy services for the Sea+City development in the Wynyard Quarter, Auckland, New Zealand. The main output was a QRA covering the existing industries in the area, and an addendum for the QRA in

2011 covering the relocation of Stolthaven's toxic products to the former Shell site on the north part of Wynyard Point. (Ref: Sherpa Consulting Pty Ltd *Quantitative Risk Assessment Wynyard Quarter Addendum December 2010 Risk Profile Incorporating Marstel Relocation to Former Shell Site* doc ref 20359-QRA-009 Rev 0 11 Aug 2011). I was the project manager for the QRA project.

1.8 I have now been engaged by Panuku to provide advice in relation to the risk issues and land use safety planning matters associated with the AC36 development at Wynyard Point in proximity to the BST and Stolthaven bulk liquid terminals.

1.9 I advise that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and have complied with it in preparing this evidence. I confirm that the issues addressed in this evidence are within my area of expertise and I have not omitted material facts known to me that might alter or detract from my evidence.

2. SCOPE OF EVIDENCE

2.1 My evidence covers the following matters:

- a) Results from the QRA studies assessing the proposed AC36 activities at Wynyard Point;
- b) Matters of agreement between myself and the Council Hazardous Substances expert as per our Joint Witness Statement; and
- c) Comments on matters raised by section 274 parties.

3. QRA MODELLING AND RESULTS

3.1 I have prepared a series of QRAs assessing various development options for AC36. The risk associated with the selected option (i.e the Wynyard Hobson Option with BST and Stolthaven south operations discontinued) is covered in the QRA report and associated addendum, details below:

- a) *Quantitative Risk Assessment America's Cup Proposal, Wynyard Hobson Option, Effect Of Discontinuing Stolthaven Hamer St and BST Operations Land Use Safety Planning Implications* Doc No: 21206-RP-004, Rev: 1, Date:6 April 2018 (CBD Vol A, CB15, page 879); and

- b) *An addendum letter* (dated 18 July 2018 from Jenny Polich, Sherpa to Simon Matthews, MPS) covers the effect on societal risk of increasing the maximum number of people in the proposed AC36 bases to 500 per base for events from 410 per base for events (as was previously assessed in the QRA report). A copy of this letter is attached to my evidence as **Attachment A**.

- 3.2 The QRA shows that the risk levels are fully compliant with the individual fatality risk criteria; and that the societal risk is very similar to the current societal risk level and therefore remains acceptable.
- 3.3 The addendum shows that an increase from 410 to 500 people per base at events does not change these conclusions, i.e. societal risk remains acceptable.
- 3.4 To remain consistent with the assumptions in the QRA model, access should continue to be discouraged to the Wynyard Point area north of the new breakwater and northern access road between the bases and the remaining Stolthaven operations as per the recommendations in the QRA report. I support the draft conditions relating to this issue subject to the changes discussed below.

4. JOINT WITNESS STATEMENT

- 4.1 Matters of agreement between the Council Hazardous Substances expert Mr Rob van de Munckhof are documented in the Joint Witness Statement (Risk) dated 1 August 2018 (**Risk JWS**). In summary we agree that:
- a) the QRA demonstrates that the individual fatality risk and societal risk levels at the AC36 developments are acceptable;
- b) that for this conclusion to remain valid, intensification of populations in the northern area of Wynyard Point should not occur as per paragraph 3.4 above.
- c) the suggested changes to draft conditions (as per Section 7 of the JWS 1 August 2018) are acceptable from the perspective of managing hazardous substances risks.
- 4.2 There are no matters of disagreement between myself and Mr van de Munckhof.

5. COMMENTS ON MATTERS RAISED BY SECTION 274 PARTIES

5.1 I have been asked to respond to risk matters raised in two section 274 party notices.

5.2 Firth: at paragraph 6(b)(ii) of the section 274 notice it states: *Firth is concerned with the potential health and safety risk to its staff as a result of the proximity of the proposed new activities and buildings which will have cooking facilities and the potential risk of ignition from fire adjacent to that part of Stolthaven North terminal which will remain in place.*

5.3 Response: There are no flammable gas clouds from Stolthaven north or the DG ship import operation identified in the QRA that would extend as far as the bases (even the northernmost Base C). The southern part of the remaining Stolthaven north site closest to the bases handles combustible products with no identified risk of forming flammable vapour clouds. In any case it is not possible to rigorously control ignition sources outside the site boundary of a facility. Compliance with the control zones required under the hazardous substances legislation as noted in Mr van de Munckhof's report (Appendix I to the Council Report) is regarded as sufficient for control of ignition sources.

5.4 St Mary's Bay Association: at paragraph 4.4 of the section 274 notice it states: *The proximity of the proposed temporary buildings on Wynyard Point / Wharf to the remaining tank farm on Wynyard Point and related facilities on Wynyard Wharf presents a potential health and safety hazard due to expected increase of public use of the area, either for viewing or participating in activities related to the regatta.*

5.5 Response: This issue was already identified in the QRA report and is addressed via QRA report recommendations ERP 1 to 5, particularly ERP 4 as noted in paragraph 3.4 above.

6. CONCLUDING COMMENTS

6.1 Subsequent to the preparation of the Risk JWS I have discussed further refinements to the proposed conditions (some proposed by Mr van de Munchkof), and in particular to conditions 170 – 176 in relation to “Wynyard Point and Waterspace Management” and condition 183 with respect to “Event Management”. I support these refinements, as shown in the Applicant's Proposed Conditions of Consent (dated 7 August 2018) attached to the evidence of Karl Cook and Vijay Lala as Attachment A. In my opinion, matters relating to risk associated with the AC36 development at Wynyard Point can

be appropriately addressed and managed through the proposed conditions of consent.

Jennifer Polich

7 August 2018

ATTACHMENT A – QRA ADDENDUM LETTER

Sherpa Ref: 21206-LET-001 FINAL

18 July 2018

Attention: Simon Matthews
Director | MPS Limited
29 Chamberlain Street
Grey Lynn, Auckland 1021

Dear Simon

Subject: Effect on societal risk of increase of AC36 base event populations to 500

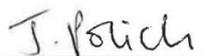
As requested, the effect on societal risk of increasing the maximum number of people in the proposed AC36 bases to 500 per base for events from 410 per base for events has been assessed.

The results have been compared to the societal risk results presented previously in the report prepared by Sherpa Consulting Pty Ltd: *Quantitative Risk Assessment (QRA), America's Cup Proposal Wynyard Hobson Option, Effect Of Discontinuing Stolthaven Hamer St and BST Operations, Land Use Safety Planning Implications* Doc No: 21206-RP-004 Revision: 1 Date: 6 April 2018 (referred to as the 'QRA report').

The updated societal risk results are shown on the following pages together with the changes in population inputs for the bases. All other assumptions remain as per the QRA report.

The effect on societal risk is very minor as can be seen from the comparative societal risk curves and does not alter the conclusions or recommendations made in the QRA report.

Yours sincerely

A handwritten signature in black ink that reads 'J. Polich'.

Jenny Polich
Principal Engineer
Sherpa Consulting Pty Ltd

Bases Americas Cup	Area	As per QRA report Table 4.2	Change made
		N (Number of people)	N (Number of people)
Line on Societal Risk graph on following page		—————	—————
Wynyard Point – bases	Base E - Day time	70	70
	Base E- Day time events	370	500
	Base F - Day time	70	70
	Base F - Day time events	370	500
	Base G - Day time	70	70
	Base G - Day time events	370	500
	Base C - Day time	110	110
	Base C - Day time - event	410	500
	Base D - Day time	110	110
	Base D - Day time - event	410	500
	Base E - Night time	8	8
	Base F - Night time	8	8
	Base G - Night time	8	8
	Base C - Night time	11	11
	Base D - Night time	11	11
	Retail populations – spread over all bases (but not north of bases)	25	25
	Race day events – base visitors - spread over all bases (but not north of bases)	200	200
	New piled breakwater	Race day events only	100

