MARSHALL DAY Acoustics

6 Gipps Street
Collingwood 3066 Victoria Australia
T: +613 9416 1855 F: +613 9416 1231
A.C.N. 006 675 403
www.marshallday.com

PLANNING PANELS VICTORIA

SHENSTONE PARK PRECINCT STRUCTURE PLAN
WHITTLESEA AMENDMENT C241

SUPPLEMENTARY STATEMENT OF EVIDENCE BY TIMOTHY MICHAEL MARKS

Prepared for: 1100 Donnybrook Road Pty Ltd

Instructed by: Hall & Wilcox

Date of last site inspection: Not performed due to current COVID-19 restrictions

Date of Statement of Evidence: 16 November 2020

Document reference: Ev 003 20200825

1.0 NAME AND ADDRESS

1.1 TIMOTHY MICHAEL MARKS

Consultant and former Associate Director of Marshall Day Acoustics Pty Ltd

1.2 6 Gipps Street, Collingwood

Victoria 3066

2.0 AREA OF EXPERTISE

2.1 For the past 36 years I have worked in the field of acoustics, noise and vibration measurement and control as a consulting engineer and as a manufacturer. I am a former Chairman of the Australian Association of Acoustic Consultants (AAAC).

2.2 I am a member of the Australian Acoustical Society (MAAS).

2.3 I am a professionally qualified mechanical engineer who has specialised in acoustics since graduation with Honours from Monash University in 1974. I hold a Master's Degree in Sound and Vibration from Southampton University and have had extensive experience in preparing noise and vibration impact reports for over rail developments, industrial plant, power stations, commercial and mixed use industrial developments and airport, rail and traffic noise studies.

2.4 I was instructed by Hall & Wilcox, on behalf of 1100 Donnybrook Road Pty Ltd to prepare expert vibration evidence in relation to the merits of the Amendment with a focus on the buffers to the former Phillips Quarry as it might impact the Ouson land holding in the Shenstone Park Precinct Structure Plan (PSP).

2.5 My instructions were specific to operational vibration and blast related impacts from the proposed Phillips Quarry, which is located to the south west of my clients' land.

2.6 This Evidence reference Ev 001 20200825 dated 28 October 2020 has been submitted to the Panel.

2.7 My qualifications and experience are detailed in my evidence Ev 001 2020825.

3.0 REVISION TO MY EVIDENCE STATEMENT

3.1 Prior to my attendance at the Experts Conclave on Monday 9 November 2020 to discuss vibration matters, I noticed that my evidence Ev 001 20200825 had included incorrect buffer distances for a blast charge of 100 kg.

3.2 The distances mentioned in Clause 9.12 of my evidence Ev 001 20200825 were 334-340 m, which are the distances shown in Appendix J for a vibration target of 10 mm/s PPV (Peak Particle Velocity).

3.3 This Clause should have instead referred to the distances for the vibration target of 5 mm/s.

3.4 Appendix J of my evidence Ev 001 20200825 did not show the calculated distances for a vibration target of 5 mm/s and so an updated version of this Appendix including the calculation for a 5 mm/s target is now attached to this statement as Appendix A.

3.5 The applicable distances to achieve 5 mm/s with a charge of 100 kg are 506-537 m.

3.6 As stated in my evidence Ev 001 20200825, this target, even when updated, results in a buffer distance of less than 550 m as proposed by GHD.

3.7 It should be noted that if blast charges less than 100 kg are used, then the buffer distances will reduce accordingly.

4.0 VIBRATION CONTROL REDCOMMENDATIONS

4.1 The recommended buffer distances mentioned in Clause 11.2 of my evidence Ev 001 20200825 was 360 m, which was the maximum distance shown in Appendix J of my evidence Ev 001 20200825 for a vibration target of 10 mm/s.

4.2 This buffer distance will now change and as indicated in Appendix A attached, the buffer distance may vary according to the size of the maximum blast charge at the Quarry.

4.3 This buffer distance will vary according to the site conditions, but for basalt similar to the tested weathered rock at Hobart, and referenced in Appendix I of my evidence Ev 001 20200825, would be 358 m for a 50 kg blast charge and 506 m for a 100 kg charge.

4.4 The reverse buffer of 240 m to protect the APA pipelines still applies, so the establishment of any vibration buffer need to take this requirement into account.

5.0 DECLARATION

5.1 I have made all the inquiries that I believe are desirable and appropriate and no matters of significance which I regard as relevant have to my knowledge been withheld from the Planning Panel.

Signed .....  ...

Dated 16 November 2020

APPENDIX A CALCULATED V95 DISTANCES FOR VOLCANIC BASALT (DOLERITE)

		Charge, kg					
Vibration level	**Ground type**	**10**	**20**	**50**	**60**	**75**	**100**
50 mm/s	weathered rock	40	57	90	99	110	128
	deep rock, compacted	45	63	100	110	123	142
20 mm/s	weathered rock	70	99	156	171	191	221
	deep rock, compacted	76	108	170	187	209	241
10 mm/s	weathered rock	106	150	236	259	290	334
	deep rock, compacted	114	161	254	279	312	360
5 mm/s	weathered rock	160	226	358	392	438	506
	deep rock, compacted	170	240	380	416	465	537
2 mm/s	weathered rock	277	392	620	679	759	876
	deep rock, compacted	288	408	645	707	790	912

Note: Distances to V95 that is 95 % of all blasts are below the nominated PPV value