

under: the Resource Management Act 1991

in the matter of: an application by Ryman Healthcare Limited for resource consent to establish and operate a comprehensive care retirement village at 100-104 Park Terrace and 20 Dorset Street, and 78 Park Terrace, Christchurch

between: **Ryman Healthcare Limited**
Applicant

and: **Christchurch City Council**
Consent Authority

Statement of evidence of **Paul Edward Walker** on behalf of
Ryman Healthcare Limited

Dated: 6 January 2021

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**STATEMENT OF EVIDENCE OF PAUL EDWARD WALKER ON
BEHALF OF RYMAN HEALTHCARE LIMITED**

INTRODUCTION

- 1 My full name is Paul Edward Walker.
- 2 I am a Technical Director for Contaminated Land at Tonkin + Taylor.
- 3 I hold a Bachelor of Science (Honours) specialising in Physical Geography from the University of Leicester, and a Master of Science specialising in Soils and Environmental Pollution from the University of Reading.
- 4 I have 22 years' experience in contaminated land assessment and remediation both in New Zealand and the United Kingdom. I have worked in New Zealand since 2005 and have been involved in numerous ground contamination investigations of large brownfield sites for redevelopment in Christchurch, including:
 - 4.1 Three 'Superlot' residential developments within the Christchurch CBD for Fletcher Living Limited;
 - 4.2 Land owned by Canterbury Regional Council for potential subdivision and redevelopment in north-east Christchurch;
 - 4.3 Ryman Healthcare Limited's (*Ryman*) sites in Northwood and Riccarton;
 - 4.4 CBD land for the construction of Ao Tawhiti school;
 - 4.5 The former 'Glassworks' site in Hornby; and
 - 4.6 The site of the proposed Canterbury Multi Use Area.
- 5 I am also a Certified Environmental Practitioner, as certified by the Environmental Institute of Australia and New Zealand.
- 6 I am familiar with Ryman's resource consent application to construct and operate a comprehensive care retirement village (*Proposed Village*) at 100-104 Park Terrace and 20 Dorset Street and 78 Park Terrace, Christchurch (*Site*). In this statement of evidence, I describe the parcel of land at 78 Park Terrace as the "Peterborough Site" and the parcel of land at 100-104 Park Terrace and 20 Dorset Street as the "Bishopspark Site". I refer to the Peterborough Site and Bishopspark Site together as the "Sites".

7 I prepared the Ground Contamination Assessment of Environmental Effects dated 13 March 2020 (*Contamination Report*).

8 I have visited the Site and its surroundings on a number of occasions, including on 11 June 2019 and 29 September 2020.

CODE OF CONDUCT

9 Although these proceedings are not before the Environment Court, I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note (2014), and I agree to comply with it as if these proceedings were before the Court. My qualifications as an expert are set out above. This evidence is within my area of expertise, except where I state that I am relying upon the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

SCOPE OF EVIDENCE

10 I have been asked to provide evidence in relation to the potential for and management of ground contamination for an application for a land use consent for the Proposed Village. My evidence sets out the following:

10.1 A summary of the Contamination Report;

10.2 My response to the contamination issues raised in submissions;

10.3 My response to the contamination matters addressed in the Council Officer's Report, and particularly the Environmental Health Report prepared by Ms Isobel Stout;

10.4 My comments on the draft conditions; and

10.5 My conclusions.

SUMMARY OF EVIDENCE

11 The construction of the Proposed Village will require the removal of soils to a depth of approximately 4m across almost the entirety of the Site.

12 Ground contamination investigations have been completed at the Site in accordance with existing New Zealand Guidelines. These investigations have identified the presence of low levels of contamination in soils that will be excavated during earthworks. The investigations also identified the potential for groundwater to contain low levels of contaminants.

- 13 Standard and proven control measures will be implemented during earthworks and construction including dust control, the disposal of excavated material to authorised facilities, and the pre-discharge treatment of groundwater abstracted during construction dewatering. These controls will be consistent with industry good practice and will comply with the New Zealand Guidelines for Assessing and Managing Asbestos in Soils (2017) and Health and Safety at Work (Asbestos) Regulations 2016. These controls will be set out in a Site Management Plan (*SMP*), which will be certified by Council prior to the commencement of ground disturbance. A Site Validation or Works Completion Report will be submitted to Council following the completion of ground disturbance works. These controls are addressed in the proposed consent conditions.
- 14 It is my opinion that by implementing these standard controls potential contamination – related risks to human health and the environment will be low and suitably managed during and following the construction of the Proposed Village.
- 15 The Environmental Health Report and the Council Officer’s Report agree that the proposed approach to managing potential contamination-related risks is appropriate.¹

ASSESSMENT OF GROUND CONTAMINATION EFFECTS

Site history

- 16 The history of the Site has been established from the review of several information sources including historical aerial photographs, Christchurch City Council (*CCC*) property files, and the Environment Canterbury Listed Land Use Register (*LLUR*). In summary:
- 16.1 The Bishopspark Site was previously owned by the Anglican Church and was initially developed in the 1850s as a residence for the Anglican Bishop. The majority of the Bishopspark Site comprised landscaped domestic gardens until the construction of the Bishopspark retirement village in the mid-1980s. Demolition of several buildings subsequently occurred to allow further development of the Bishopspark retirement village facilities. All buildings on the Site have now been removed;
- 16.2 The earliest available records indicate that the Peterborough Site contained residential properties that were subsequently occupied by non-residential activities, including a printing company and teacher training company. The Peterborough Site was subsequently cleared and redeveloped with three

¹ Council Officer’s Report, paragraph 254.

large adjoining apartment buildings in the early 2000s. These buildings were demolished following the 2010-2011 earthquakes, with crushed demolition materials used to backfill the former basement structure. The Site has remained undeveloped since, and has been used for informal car parking.

Potential for contamination

- 17 Based on the history of the Site, I identified the contaminants potentially present as asbestos and metals (associated with the demolition of former buildings, use of demolition fill and use of imported fill), persistent pesticides (associated with former landscaped areas) and petroleum hydrocarbons (associated predominantly with off-site activities unrelated to either the Bishopspark or Peterborough Sites).

Site investigations

- 18 Prior to my direct involvement, T+T staff completed an initial ground contamination investigation at the Peterborough Site in December 2013. Also prior to my direct involvement, T+T field staff completed a ground contamination investigation at the Bishopspark Site in 2018 while it still operated as the Bishopspark retirement village. The investigation included the collection of soil samples from outside of the then-present building footprints. Soil samples were collected from 28 locations comprising hand auger or machine-driven soil bores.
- 19 Under my direction, field staff completed additional sampling for asbestos in soil at the Peterborough Site in June 2019 to increase the sampling density in line with guidance published in November 2017.
- 20 All of these investigations were carried out in accordance with the Ministry for Environment Contaminated Land Guidelines No.5: Site Investigation and Analysis of Soils (revised 2011).

Ground contamination conditions

- 21 Based on the findings of these ground contamination investigations, I summarise the ground contamination conditions at the Bishopspark and Peterborough Sites as:
- 21.1 Asbestos is present in topsoil and subsurface fill on the Bishopspark Site and within fill material at the Peterborough Site. The levels of asbestos in soil are generally below the currently applied human health risk-based assessment criteria (for a high-density residential land use), though concentrations above this level were detected in a limited number of samples at the Bishopspark Site and in one sample at the Peterborough Site; and

- 21.2 Other contaminants of concern (including polyaromatic hydrocarbons (*PAHs*), metals and petroleum hydrocarbons) were detected above published background concentrations but were not detected above human health risk-based assessment criteria.
- 22 I understand that Ryman proposes to undertake additional investigation of the Bishopspark Site to assess the presence of ground contamination within the former Bishopspark retirement village building footprints (which were not accessible to T+T at the time of its 2018 investigation);
- 23 This additional investigation would confirm whether contaminant conditions within the former building footprints are consistent with those encountered by T+T at the Bishopspark Site in 2018. Based on my understanding of the Site history, I believe this is likely to be the case.
- Development context**
- 24 It is my understanding that the Proposed Village will result in the excavation of almost the entire area of the Site to a depth of approximately 4 metres below current ground level for the construction of basements. Further, I understand that all excavated material will be disposed of off-site at a suitably licensed facility. This approach means that little (if any) of the contaminated topsoil and fill currently present on the Site will remain post-development.
- NES Soil matters of discretion**
- 25 As contaminants have been detected above the applicable standard for the future use of the Site (high-density residential land use), and as the Proposed Village will not comply with the permitted activity conditions for earthworks, Ryman is applying for resource consent to disturb contaminated soil as a restricted discretionary activity under the Resource Management (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations, 2011 (*NES Soil*).
- 26 It is noted that Ryman has also applied for contamination-related consents under the Land and Water Regional Plan (*LWRP*) from Canterbury Regional Council. The *LWRP* is not addressed in this statement of evidence.
- 27 Regulation 10 of the *NES Soil* specifies the matters over which CCC has discretion. I provide my assessment against the key matters of discretion as follows:

The adequacy of the detailed site investigation

- 27.1 The investigations undertaken at the Site have been completed in accordance with New Zealand guidelines.

27.2 As such, it is my opinion that the investigations completed to date comply with the requirements of the NES Soil and adequately characterise soil contaminant conditions at the Site.

The suitability of the piece of land for the proposed activity

27.3 The majority of contaminated soil/fill will be removed from the Site as part of bulk earthworks. Any contaminated material which remains at the Site will be encapsulated.

27.4 On this basis, it is my opinion that from a ground contamination perspective, the Site is suitable for the Proposed Village.

The approach to the remediation or ongoing management of the piece of land

27.5 Controls will be implemented to mitigate potential health effects on future residents, workers involved in soil disturbance and the general public from exposure to asbestos in soils.

27.6 During excavation and handling, dust suppression and earthworks controls will be employed to control the generation of airborne asbestos. These controls will be consistent with industry good practice and will comply with the New Zealand Guidelines for Assessing and Managing Asbestos in Soils (2017) and Health and Safety at Work (Asbestos) Regulations 2016.

27.7 Asbestos containing materials will be excavated and disposed of off-Site in accordance with the above guidelines. In the unlikely event that asbestos contaminated materials are retained on Site, they will be encapsulated under buildings or sealed areas, or a combination of disposal and encapsulation.

27.8 In the unlikely event that contaminated materials are retained on Site, a Long-Term Management Plan will be prepared to document ongoing management controls.

27.9 It is my opinion that the implementation of these controls will mean that potential contamination-related risks to human health are suitably managed during and following the construction of the Proposed Village.

The adequacy of the site management plan or the site validation report, or both, as applicable

27.10 A site management plan (SMP) and a site validation report (SVR) will be prepared in accordance with the relevant guidelines.

The transport, disposal and tracking of soil and other materials taken away in the course of the activity

- 27.11 All materials removed from the Site will be disposed of at a facility that is licensed to accept them. Material disposal and documentation procedures will be set out in the SMP. The SVR will report on the nature, volume and destination of materials disposed of off-Site.
- 27.12 On the basis that soil transportation and disposal is completed in accordance with the procedures to be set out in the SMP, it is my opinion that the transport and disposal of soil will be undertaken in accordance with the requirements of the NES Soil.
- 28 The NES Soil matters for discretion listed above are primarily concerned with the characterisation of contaminant conditions and the implementation of management controls to mitigate risk to human health. Based on the above assessment, it is my opinion that with respect to the NES Soil:
- 28.1 Ground contamination conditions at Bishopspark and Peterborough Sites have been adequately characterised by the contamination investigations completed to date;
- 28.2 The Bishopspark and Peterborough Sites are suitable for the development of the Proposed Village either because ground contamination will be removed during development or will be managed in place using an SMP; and
- 28.3 The proposed ground-contamination related procedures to be documented in an SMP will comply with New Zealand regulations, guidance and industry practice, and will provide Ryman with the controls to appropriately mitigate contamination-related risk to human health during and following construction.
- 29 In my opinion, providing the measures described in paragraphs 27.5-27.8 above are implemented, the potential for the construction and operation of the Proposed Village to adversely affect human health is low.
- 30 Conditions of consent are discussed later in my evidence.

RESPONSE TO SUBMISSIONS

- 31 I have reviewed all of the submissions relevant to my area of expertise and note that two submissions raise concerns relating to soil contamination:

- 31.1 One submission is concerned that neighbouring properties have not been considered in relation to the soil contamination;² and
- 31.2 The other submission queries what happens to the contaminated soil and groundwater, and whether dust will contain contaminants.³
- 32 I consider each of these issues below.
- Consideration of neighbouring properties**
- 33 The Contamination Report, and the summary set out in my evidence above, assessed the potential health risks associated with the development of the Site. This assessment considers potential health risk on the occupants of neighbouring properties, as well as the future residents of the Proposed Village.
- 34 I consider the implementation of the measures described in paragraphs 27.5-27.8 above will mean there is a low potential for neighbouring properties to be exposed to low levels of contaminants in soil. The proposed measures comprise relatively standard earthworks controls, which can be readily implemented, and have been proven to be effective at controlling the discharge of contaminants during construction earthworks.
- Disposal of contaminated soil and groundwater**
- 35 Robust procedures, consistent with industry practice, will be established to manage the excavation and disposal of contaminated soil from the Site.
- 36 Controls will be implemented during soil excavation and transport to reduce the potential for Site workers, adjacent residents and other persons to be exposed to contaminants. These controls include dust suppression, covering of trucks and personnel and equipment decontamination. I consider these controls are standard, well established and proven to be effective.
- 37 All soil excavated from the Site requiring off-site disposal will be disposed of at a facility that is licensed to accept it. There are multiple licensed facilities within Christchurch and North Canterbury that are licensed to accept soil with the types and levels of contaminants present at the Site. Material testing, disposal and documentation procedures will be set out in the SMP.
- 38 If contaminated soil does not need to be removed from the Site, it will be encapsulated below sealed areas following standard

² G. Bennett.

³ B. & M. Logan.

practice. I consider this approach will prevent users of the Site coming into contact with those materials, and again, this is standard and well established practice and proven to be effective. If materials must be encapsulated, a Long Term Management Plan will be prepared to provide controls and procedures to protect those who may need to disturb the material in the future (for example to undertake repairs on services).

- 39 Groundwater that is removed during construction dewatering will be treated before it is discharged to the CCC stormwater network. A consent to discharge groundwater to the CCC network is being sought from Environment Canterbury. The consent conditions are expected to specify the maximum permissible levels of contaminants in groundwater being discharged to the CCC network. As a minimum, treatment will include settlement to reduce the level of suspended solids and consequently the level of contaminants in groundwater that are bound to suspended sediment (for example metals). Where petroleum hydrocarbons could be or are present in groundwater, additional treatment will be implemented prior to discharge. Such treatment could include passing the water through an oil/water separator, such as is utilised to treat stormwater at fuel stations and some car parks. It is anticipated that the discharge consent will prescribe monitoring and reporting to confirm compliance with contaminant discharge limits. I consider the approach outlined will mean that there is a low risk that groundwater discharge from the Site will have an adverse effect on the receiving surface water.

Contaminants in dust

- 40 With the exception of asbestos, contaminants have not been detected in soils at levels that are likely to present a risk to human health via dust inhalation.
- 41 Asbestos has been detected in a limited number of soil samples. However, in only one sample was the level of respirable asbestos at a level that could present an unacceptable risk to human health. Accordingly, I consider such levels are infrequent across the Site.
- 42 Nevertheless, New Zealand legislation and guidelines for handling asbestos-containing soil requires the implementation of a suite of controls to prevent asbestos fibres becoming airborne and to reduce the potential for human exposure to asbestos. Asbestos-related controls, appropriate to the levels of asbestos detected in soil, will be implemented during the earthworks.
- 43 Dust suppression is the principal means of preventing asbestos from becoming airborne, and this is supplemented with personal protective equipment to protect on site workers and decontamination procedures to prevent workers and plant inadvertently tracking asbestos off the Site. These procedures will be documented in the SMP. The effectiveness of on-site dust

suppression controls is typically assessed through asbestos in air monitoring at the Site boundaries and in the area of soil disturbance.

- 44 In my experience of monitoring earthworks on asbestos contaminated sites where the above controls have been applied over the past five years, I am not aware of any instances where asbestos in air monitoring has detected airborne asbestos at levels that could present an unacceptable risk to the health of on-site workers, or people on adjacent properties.
- 45 I understand from the evidence of Mr Ajay Desai that excavations will be mostly carried out below the water table, and this excavated material will be wet and will not produce dust. I understand a range of measures will also be implemented to control the potential for dust during construction activity, such that the potential for dust effects outside the Site is very low.
- 46 In my opinion, the potential risks to human health associated with contaminants in soil that could become airborne will be controlled by the implementation of standard asbestos related site controls and monitoring, which are well established and proven to be effective.

RESPONSE TO COUNCIL OFFICER'S REPORT

- 47 I have reviewed the Council Officer's Report and the associated Environmental Health Report. The Reports agree with the Contamination Report, and do not raise any issues that require a response.

DRAFT CONDITIONS

- 48 The Council Officer's Report recommends one change to the *Contaminated Material* conditions proposed by Ryman, a new condition 13 requiring the Council to be notified of the earthworks commencement date. I do not have any comments on that condition.
- 49 I consider the recommended consent conditions 12 – 15, set out in the Council Officer's Report, will appropriately manage any potential risks to human health associated with contaminants in soil.

CONCLUSIONS

- 50 I conclude that there is no contaminated land issue that would preclude the granting of consent for the Proposed Village on the basis of the conditions discussed in this evidence.

Paul Walker
6 January 2021