BEFORE INDEPENDENT HEARING COMMISSIONERS APPOINTED BY THE KAIKOURA DISTRICT COUNCIL

IN THE MATTER OF	The Resource Management Act 1991 (**RMA** or **the Act**)
AND	
IN THE MATTER OF	Proposed Plan Change 4 (**PC4)** to the Kaikoura District Plan (**KDP** or **the Plan**) brought by Kaikoura Business Park Limited (**KBP**)
AND	
IN THE MATTER OF	The Hearing of Submissions and Further Submissions on PC4

EVIDENCE OF HELEN DAVIES FOR THE APPLICANT KAIKOURA BUSINESS PARK LIMITED REGARDING CONTAMINATED LAND

Dated: 18 January 2024

Presented for filing by:
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INTRODUCTION

1 My name is Helen Margaret Davies

2 I am a Technical Director and owner of Contaminated Land Solutions Limited (CLS) which is a company specialising in contaminated land identification, assessment and management. In addition to investigating and managing contaminated land, I also provide technical advice to support other consultancies and I assist the Department of Conservation to meet their legislative responsibilities with respect to contamination of public conservation land.

3 I hold the qualifications of Bachelor of Science with Honours from Leeds University (United Kingdom), and Master of Science, Environmental Technology from Imperial College (United Kingdom). I am one of eleven practitioners in Canterbury certified through the Certified Environmental Practitioner Scheme as a Site Contamination Specialist. This certification is administered by the Environment Institute of Australia and New Zealand.

4 Prior to establishing my own company in 2021, I worked as a contaminated land and water specialist for large infrastructure companies (Aurecon and WSP), specialist environmental companies (Pattle Delamore Partners, Institute of Environmental Science and Research) and the regional council (Environment Canterbury) (where I was the contaminated land team leader).

5 I commenced work as an environmental scientist in 1994 when I joined a contaminated land consultancy in the United Kingdom following completion of my Master of Science degree. I have worked consistently in the field of contaminated land and groundwater since that time, aside from short breaks to start and raise my family. I moved to Christchurch, New Zealand in 1996 and have an extensive understanding of the contaminated land issues in this country gained through the numerous investigations and remediations that I have been part of. At a strategic and policy level, I have been an invited participant of contaminated land policy development working groups established by the Ministry for the Environment and by industry groups such as WasteMINZ. I am actively involved in professional development and was the

Chair of the Christchurch Branch of the Australasian Land and Groundwater Association (ALGA) as well as the Chair of their Christchurch conference. I am actively involved in guideline development undertaken by volunteers for the Waste Management Institute of New Zealand (WasteMINZ). I have presented many papers at annual conferences and am well known in the contaminated land sector of New Zealand.

6 I have read the Environment Court's Code of Conduct and agree to comply with it. My qualifications as an expert are set out above. The matters addressed in my evidence are within my area of expertise, however where I make statements on issues that are not in my area of expertise, I will state whose evidence I have relied upon. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in my evidence.

SCOPE OF EVIDENCE

7 In my evidence I address the following issues:

(a) The context of the application with respect to existing land contamination

(b) The receiving environment

(c) The proposal for rezoning

(d) Relevant planning provisions

(e) Response to matters raised by submitters and in Section 42A Reports

8 My evidence does not include any matters relating to future contamination of land that could result if the business park is developed.

CONTEXT

9 I understand that under s73(2) of the Resource Management Act 1991 (RMA), Kaikōura Business Park Ltd ("the Applicant") requests a change to the Kaikōura District Plan (KDP), to re-zone approximately 21.6 ha of rural land located at 69 Inland Kaikōura Road, Peketā, to a new proposed 'Light Industrial Zone'. This plan change will allow the rural pastoral land to be developed into a business park.

10 This evidence relates to land legally described as Lot 2 DP 501321 & approved Lot 20 SU-2021-1765-00 and commonly known as 69 Inland Kaikōura Road Peketā, Kaikōura.

11 I affirm the contents of the following attached report(s):

a **CLS 2022a**. *69 Inland Kaikōura Road. Preliminary and Detailed Site Investigation*. Dated 17 March 2022. (**Appendix A**)

b **CLS 2022b**. *69 Inland Kaikōura Road. Contaminated Site Management Plan*. Dated 23 March 2022. (**Appendix B**)

c **CLS 2022c**. *69 Inland Kaikōura Road. Proposed Lot 14. Site Validation Report*. Dated 7 September 2022. (**Appendix C**)

d **CLS 2022d**. *69 Inland Kaikōura Road. Proposed Lot 20. Site Validation Report*. Dated 19 December 2022. (**Appendix D**)

e **CLS 2022e**. *Assessment of Potential Effects on Groundwater of the Containment Cell at 69 Inland Kaikōura Road*. Dated 26 September 2022. (**Appendix E**)

THE RECEIVING ENVIRONMENT

12 The vulnerability of the receiving environment to existing soil contamination is described in CLS 2022a as follows:

13 "The site is located in a rural area 4.5km west of Kaikōura town. It is largely unpaved, allowing stormwater to drain directly into ground. Based on desk study information, the expected near surface ground conditions at the site are gravel and clay bound gravel with groundwater at approximately 3.5 to 10m below ground level (the depth depending on season and location across the site – likely to decrease in depth southwards). The nearest surface water body is Stoney Creek located directly west of the site. Ewelme Stream and the Kowhai River are located approximately 150m east of the site and the Pacific Ocean is across State Highway 1 approximately 300m south of the site. The site is generally topographically flat with a slight decline from north to south (towards the Pacific Ocean). The Kowhai River has identified sensitive ecological receptors within it. Groundwater is considered sensitive using the MfE 2011 definition due to its utilisation, shallow depth and likely hydrological connectivity with the adjacent Stoney Creek."

14 With respect to contamination, CLS 2022a documents an investigation of land for contaminants associated with past and current land uses and with observed site conditions.

15 The investigation identified asbestos and heavy metals at levels above commercial industrial soil contaminant standards in soil in an area described as the 'incinerator area'.

16 This contamination was remediated and the remediation was validated as described in CLS 2022d.

17 Of relevance to this application, CLS 2022a also identified heavy metal contamination in an area of the Kowhai Downs subdivision (Lot 14). This area is not within the application area, and the reasons for including mention of it are described in the next points.

18 The concentrations of heavy metal contamination identified in the samples collected and analysed from Lot 14 were above the more conservative rural residential soil contaminant standards associated with the proposed change of that land use from pasture to rural residential. While above rural residential soil contaminant standards they were below the commercial/industrial soil contaminant standards.

19 The soil from Lot 14 contaminated above the rural residential soil contaminant standards was relocated onto approved Lot 20 SU-2021-1765-00, following excavation of a containment cell, the excavated soil being placed within this cell. This work was undertaken in accordance with KDC resource consent LU1818 and with CLS 2022b (Contaminated Site Management Plan). As stated, this soil was below the commercial/industrial soil contaminant standards and so acceptable for placement on this land without ongoing management controls.

20 To address the potential for stormwater to cause contaminants to leach into groundwater, eight soil samples were subjected to Synthetic Leachate Precipitation Procedure (SPLP) extraction followed by analysis for heavy metals (CLS 2022e). This test is designed to evaluate the mobility of contaminants in soil samples subjected to laboratory simulated rainfall. The results indicated that some leaching of contamination was possible, but the leachate did not

exceed 50% of the Maximum Acceptable Values specified in the Water Services (Drinking Water Standards for New Zealand) Regulations 2022. This is relevant to the proposed use of groundwater, from a bore located on-site, for drinking-water purposes. The SPLP assessment addressed specified chemical contaminants only, and not the microbiological quality of the water.

THE PROPOSAL FOR REZONING

21 Rezoning the land from rural to 'Light Industrial Zone' has informed the selection of the soil contaminant standards used to assess the relevance of soil contamination to human health.

22 This is because different exposure scenarios are associated with different land uses. For example, no gardening activities are anticipated on commercial/industrial land and therefore exposure to contamination via gardening and consequential produce consumption will not be expected to occur. The soil contaminant standards are derived from nationally endorsed calculations involving the toxicity of contaminants, their methods of intake by humans and conservative exposure scenarios associated with each land use.

23 Soil contaminant standards associated with the proposed light industrial land use are less conservative than those associated with rural residential land use.

24 The area where soil was contaminated above the commercial/industrial soil contaminant standards (the 'incinerator area') has been remediated and validated in accordance with KDC consent LU1818, as described in CLS 2022d.

25 My evidence does not address the significance of any new contamination that may result from new activities occurring on the land, including the establishment of a wastewater treatment plant and disposal field. These new activities will need to be controlled appropriately to prevent contamination that is inconsistent with relevant policy and regulations.

RELEVANT PLANNING PROVISIONS

Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 – The 'NES-CS'

26 The land has been investigated and contamination above the applicable soil contaminant standards has been identified in an area termed the 'incinerator area' (CLS 2022a). The soil in that area has been remediated and validated in accordance with KDC consent LU1818 as described in CLS 2022d.

27 The remediation involved relocation of contaminated soil to a containment cell located near the wastewater treatment plant. That containment cell was subsequently lined and capped. Long term management requirements for the cell are specified in CLS 2022d (section 8.2).

28 The concentrations of cadmium reported in near surface soil samples collected from Lot 20 SU-2021-1765-00 were above the published background levels (ECan 2007. *Background Concentrations of Selected Trace Elements in Canterbury Soils. Addendum 1 Additional samples and Timaru Specific Background Levels*. Report No R07/1/2). It is assumed that the elevated cadmium concentrations identified in surface soil are a result of repeat applications of superphosphate fertilizer over the many years of use of the land for agricultural purposes. Superphosphate contains cadmium as an unintended contaminant.

29 The implications of the existing low-level (above published background but below the soil contaminant standards) cadmium contamination on any requirement for consent for soil disturbance or other activities detailed in the NES-CS will need to be evaluated on a case-by-case basis.

RESPONSE TO MATTERS RAISED BY SUBMITTERS AND IN SECTION 42A REPORTS

Submitters

30 Environment Canterbury has submitted on the application. One part of their submission states: "The contaminated land on site will be addressed as per the NESCS."

31 I was not able to identify any other submissions that related to land contamination although I have only read the summary of submissions (KDC excel sheet dated 20 November 2023), plus a set of further submissions.

32 I have addressed the relevance of the NES-CS in my points 28 and 29.

KEY ISSUES AND SUMMARY OF CONCLUSIONS

Contamination status of the land

33 The 21.6 ha of rural land associated with this application has been investigated for the presence of contaminants associated with past and current land uses and with visual site observations.

34 An area of asbestos and heavy metal contaminated soil was identified and remediated by excavation and disposal in a designated containment cell which has been capped.

35 Based on the data collected, aside from the material encapsulated within the containment cell, there is no contamination present at concentrations exceeding the commercial/ industrial soil contaminant standards.

36 Eight results from SPLP (leaching) tests indicate that there is no risk to groundwater quality beneath and downgradient of the site from the contaminants tested.

Suitability of the land for proposed rezoning

37 With respect to soil and groundwater contamination, assessment of the results obtained indicate that the site is suitable for the intended future use as a business park (Light Industrial Zone), and the groundwater quality is suitable for potable use with respect to the chemical contaminants investigated.

Planning matters

38 Low level cadmium contamination (above published background but below the soil contaminant standards) is present at the site and the NES-CS regulations

may apply to future activities undertaken on the land. This point links directly to one of the submission comments made by Environment Canterbury.

Helen Margaret Daves

Dated: 18 January 2024