BEFORE THE SELWYN DISTRICT COUNCIL

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a resource consent application for the erection of a residential unit on an undersized rural allotment at McDonald Road (RES 3537), Lincoln, Selwyn District
RC246049

CONTAMINATION EVIDENCE OF MAIYA SADLER

For Selwyn District Council

June 2025

1.0 INTRODUCTION

1 My full name is Maiya Rose Sadler.

2 I hold the position of Science Analyst at Environment Canterbury since 2022.

3 I hold a Bachelor of Science degree from the University of Canterbury.

4 I have been practising as a Contaminated Land Science Analyst since 2022. Before that, I worked as an Engineering Geologist for 2 years undertaking geotechnical investigations.

5 Whilst this is not an Environment Court hearing, I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I have complied with it in preparing this evidence and I agree to comply with it in presenting evidence at this hearing. The evidence I give is within my area of expertise except where I state that my evidence is given in reliance on another person's evidence. I have considered all material facts that are known to me that might alter or detract from the opinions that I express in this evidence.

2.0 SCOPE OF EVIDENCE

6 This evidence covers my expert assessment for the Selwyn District Council's section 42A report on the limited notified land use consent referenced RC246049, and in particular addresses the potential adverse effect of contamination on human health.

7 In preparing my evidence I have read:

i. The Assessment of Environmental Effects (AEE) and application prepared by the applicant.

ii. The correspondence relating to contamination.

iii. The Preliminary Site Investigation (PSI) prepared by Eliot Sinclair (19 February 2025).

iv. The submissions.

3.0 POTENTIAL CONTAMINATED LAND EFFECTS

8 The PSI was prepared to support the proposed change of land use and soil disturbance associated with the construction of a new dwelling. Eliot Sinclair conducted a geotechnical investigation for the farm building construction in 2023, where uncontrolled fill was observed to an approximate depth of 600 mm.

9 The PSI identified landfilling/backfilling operations on the site in the early 1990s and was deemed Hazardous Activities and Industries List (HAIL) activity G3 – landfill sites (Ministry for the Environment).

10 The PSI recommended that a Detailed Site Investigation (DSI), in terms of the Ministry for the Environment's Contaminated Land Management Guidelines (CLMG), would be prepared to characterise the underlying soils and to determine contaminant concentrations across the proposed building platform.

11 No DSI was provided with the application or s92 responses.

12 Historical landfills often contain contaminants such as heavy metals, hydrocarbons, polycyclic aromatic hydrocarbons, asbestos, depending on the nature of materials placed in the landfill. In the absence of a DSI, the nature, type, concentrations, and extent of contamination in soils are unknown.

13 A DSI would characterise soil, gas, and groundwater contamination risks, inform a site-specific risk assessment, and ultimately to determine if the site is fit-for purpose and safe for the proposed rural residential land use (25% produce consumption). It would also indicate whether remediation and/or management is necessary to address the potential risk.

14 In my opinion it would be inappropriate to proceed with further development on this site in the absence of a DSI and risk characterisation, as required under the NES-CS. However, I do consider that the suite of conditions, agreed by the applicant, would ensure that, should this proposal be approved, this work would be undertaken prior to any soil disturbance or residential occupancy occurring.

4.0 CONSIDERATION OF SUBMISSIONS

15 Of the two submissions received, one expressed contaminated land related concerns regarding the proposed residential development atop an identified HAIL activity (G3 – Landfill sites). The concerns included the current and future risk to human health for site users as well

as the public, stormwater and groundwater contamination, and the unlawful greywater/wastewater discharges (pages 12, 16 & 22 of the PDF).

16 The contamination exposure pathways for residential land uses considers soil ingestion, produce consumption (bioaccumulation of metals and organic compounds), dermal absorption, and inhalation of particles and volatiles (i.e. ground gas) (Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health (MfE, 2011)).

17 There are some concerns raised by the submitter that don't fall within the considered exposure pathways for risk to human health for rural residential land use under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS) (MfE, 2011). These concerns are about contamination and discharges from the site e.g. stormwater mobilisation of contaminants, which I generally agree with.

18 The transport of hazardous substances via stormwater runoff could have adverse impacts on human health and the environment. Legacy pollutants, including metals, pathogens, and leachates, could be mobilised during rainfall and migrate offsite via surface and ground water, potentially entering adjacent properties, pastureland, and ecological receptors. If greywater has been discharged without consent into this potentially contaminated environment, the risk of pathogen dispersal (e.g., coliform bacteria, enteric viruses) could be significantly increased. As stated, these concerns don't fall within the scope of the NES-CS however they can be addressed by Regional Council consents, should they be required.

5.0 CONTAMINATED LAND MITIGATION

19 Notwithstanding the above, I consider that the risk to human health can be suitably mitigated with the following conditions:

a. A Detailed Site Investigation to be prepared in accordance with CLMG by a SQEP in contaminated land and provided to Selwyn District Council (SDC) for approval. Approval or request for additional investigations shall be supplied within 10 business days after receipt of the report.

b. If the DSI concluded that there are contaminant concentrations exceeding the NES SCS for rural residential land use, a Remedial Action Plan shall be developed by the SQEP in contaminated land and provided to SDC for approval not later than ten (10) working days prior to works commencing.

c. No soil disturbance associated with the development of the residential building and curtilage, including landscaping, driveways and other development works must occur until

any contamination has been appropriately remediated and/or managed in accordance with the RAP required by condition X.

d. All soils removed from the site might not be suitable to be disposed of at a cleanfill facility and must be disposed of at an authorised and licensed disposal facility whose waste acceptance criteria can be met.

e. In the event of contamination discovery e.g., visible staining, odours, and/or other conditions that indicate soil contamination, then work must cease until a Suitably Qualified and Experienced Practitioner (SQEP) in contaminated land has assessed the matter and advised of the appropriate remediation/management and/or disposal options for these soils. Any remedial, management and/or disposal measures must be approved by SDC.

f. Within three (3) months of the completion of the works, a site validation report shall be prepared by the SQEP in contaminated land, outlining the works undertaken, and be submitted to the SDC for approval. The site validation report shall include at least the following:

i. Full chronological, illustrated description (i.e. inclusion of photographs and site maps) of the remedial works including the collection of validation samples after removal of all the materials and prior to backfilling/reinstatement;

ii. Records of any contaminated land related incidents related to the release of soil contaminants, if any;

iii. Records and details of any discovered contamination;

iv. Statement of the volumes of soil…

- Disturbed by the works; and

- Disposed offsite and confirmation of disposal facility location (evidence of disposal documentation and weighbridge receipts); and

- Disposed onsite, and confirmation of disposal location and any encapsulation applied; and

- Cleanfill materials imported to site, including source of this material including any supporting analytical data where appropriate; and

v. Soil validation test results confirming all remaining soil meets the NES-CS for rural residential land use, including sampling locations and depth.

g. If contaminated material (exceeding the guideline values for the proposed land use) is to remain on the site, an Ongoing Site Management Plan (OSMP) should be prepared by the project's SQEP in contaminated land in accordance with CLMG and be submitted to SDC for approval within 3 months of completion of soil disturbance/ earthworks.

6.0 CONCLUSION

20 The concerns raised by submitters are valid, and it is important to be able to assess the actual effects known, and the degree of those actual effects, as well as the potential effects, including the likelihood of those potential effects occurring. This could be achieved by the preparation of a DSI report by a SQEP in contaminated land, in accordance with the CLMG.

21 With the proposed conditions in place, it is my view that any potential risk can be appropriately assessed and managed, creating a fit-for purpose site that is safe for human health in a rural residential land use scenario.

22 The requested DSI and potential subsequent investigations and remediation/management would likely address some of the concerns that were outside of the scope of the NES-CS.

23 In my opinion, the conditions would mitigate any adverse effects on human health and the environment, including any persons adjacent to the site.

Maiya Sadler
16 June 2025