

# Sunfield Fast-track

Auckland Council Specialist Memo

**Annexure 11:  
Land Contamination  
Sharon Tang  
4 August 2025**

# Land Contamination Memo

**Prepared by:** Sharon Tang, Senior Specialist, Contamination, Air and Noise Team, Auckland Council

**Dated:** 4 August 2025

1. This memorandum addresses the land contamination aspects of the Sunfield proposal.

## **Qualification and Experience**

2. I hold a Bachelor of Medicine from West China University of Medical Science; Post Graduate Diploma – Environmental Health Sciences from Massey University; and Master of Public Health from University of Auckland. I have 35-years of work experience both overseas and in New Zealand in environmental science and public health fields, with particular expertise in water and wastewater quality, contaminated land, hazardous substances and health risk assessment.
3. I am currently a Senior Specialist in the Specialist Unit, Planning and Resource Consents of Auckland Council. I have been working at Auckland Council since 2000 and have been involved in providing specialist input into resource/building consents, plan changes, notices of requirement for designation and fast-track applications in the areas of ground contamination, water quality, hazardous substances and health risk assessment for 15 years.
4. I have also been involved in providing technical and policy advice, input into statutory/non-statutory processes and guidelines in my expertise areas. Over this period of time, I have been involved in the review and assessment of numerous consent applications and post consent reports relating to soil and water contamination investigations; asbestos contamination; health risk assessment relating to recreational and drinking water, ground gas, and hazardous substances; remediation and site management of contaminated land, and site validations following remediation works undertaken.

## **Code of Conduct**

5. I confirm that I have read the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses (**Code**), and have complied with it in the preparation of this memorandum. I also agree to follow the Code when participating in any subsequent processes, such as expert conferencing, directed by the Panel. I confirm that the opinions I have expressed are within my area of expertise and are my own, except where I have stated that I am relying on the work or evidence of others, which I have specified.

## **Scope of review**

6. I have reviewed the below documents in the context of the *National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS)* and *Chapter E30 of the Auckland Unitary Plan (Operative in Part) (AUP OP) –Contaminated land*:
  - *Sunfield Fast-track Approval Substantive Application – Planning Report (tattico, 31 March 2025) (Planning Report)*
  - *Preliminary and Detailed Site Investigations for the Sunfield Urban Development Area, Papakura (Focus Environmental Services Ltd (FES), 18 December 2025) (Summary PSI/DSI)*
  - *Detailed Site Investigations & Remediation Action Plan & Assessment of Environmental Effects -508 old Wairoa Road, Ardmore, Auckland (FES, December 2023) (DSI/RAP\_508 Old Wairoa Road)*

- *Detailed Site Investigations & Remediation Action Plan & Assessment of Environmental Effects -80 Hamlin Road, Ardmore Auckland (FES, December 2023) (DSI/RAP\_80 Hamlin Road)*
- *Detailed Site Investigations & Remediation Action Plan & Assessment of Environmental Effects -279 Airfield Road, Ardmore Auckland (FES, December 2023) (DSI/RAP\_279 Airfield Road)*
- *Detailed Site Investigation (FES, December 2023) prepared respectively for properties at 55, 55A Cosgrave Road, SECT 5 SO 495342 & SECT 6 SO 495342 Old Wairoa Road, Lot 1 DP5548 Cosgrave Road, Lot 4 DP 55480 Old Wairoa Road (DSIs)*
- *Preliminary Site Investigation (FES, December 2023) prepared respectively for properties at 85, 92 Hamlin Road, and 143, 131, 121A, 123, 119A, 119, and 101&103 Cosgrave Road, Ardmore respectively (PSIs)*
- *Site Management Plan, Sunfield Urban Development Area' (FES, December 2023) (Global CSMP)*
- *Sunfield Conditions of Consent dated 31 March 2025 (Proposed Conditions)*
- *Staging Plan*

### **Specialist Assessment**

7. The applicant has prepared a preliminary site investigation (**PSI**) for each of the 19 properties (the Site) involved in this application. Of the 8 detailed site investigations (**DSI**) undertaken so far, contaminated soil/fill materials in 3 properties require different levels of remediations. A DSI has not been undertaken in the remaining 11 properties, where HAIL activities are more likely than not to have occurred or are occurring. Investigations have identified that the Site has been subjected to the following (potential) HAIL activities:
  - Potential livestock dip or spray race operations
  - Potentially uncertified filling
  - Potential burning of refuse
  - Burning of buildings
  - Treated timber
  - Potential ground contamination associated with use of lead-based paint on aged buildings
  - Potential ground contamination associated with asbestos fibres from former demolition activities
  - Historical horticultural activities

- Bulk tyre storage
  - Bulk storage of petroleum or other chemicals
8. The detailed site investigations undertaken for part of the Site show that the Site soil has been impacted by those historical/current HAIL activities in particular by 'spray race operations', 'uncertified fill', 'burning of refuse or building', 'use of lead-based paint', and 'treating of timber (Cresote Pit)'. High levels of arsenic (max-130mg/kg), lead (max-10,400mg/kg), and/or zinc (max-2,400mg/kg) identified at 508 Old Wairoa Road, 80 Hamlin Road and 279 Airfield Road, and asbestos and/or ACM fragments at the latter two properties exceed the adopted health criteria (10% produce residential land use) and/or the permitted activity soil acceptance criteria specified in Table E30.6.1.4.1 of Chapter E30 of the AUP OP. In addition, pentachlorophenol (PCP) concentrations in the Cresote Pit also exceed the adopted health criteria.
  9. The estimated volume of materials requiring remediation is summarised in Table 3 of the Summary PSI/DSI (copied as below). Of which, the inferred extent of contaminated soil at 508 Old Wairoa Road is 7,206.7m<sup>3</sup> (generally 0.3m bgl, up to 2.3m bgl within a fill area: 3,020m<sup>2</sup>). The estimated volume of material containing concentrations of contaminants above the permitted activity soil acceptance criteria is 7757.08m<sup>3</sup>, mostly located at 508 Old Wairoa Road, being 7,134.7m<sup>3</sup>.

**Table 3: Volume of Soils Requiring Remediation**

Physical Address	Quantity (m <sup>3</sup> )
508 Old Wairoa Road	7206.7
80 Hamlin Road	492.0
279 Airfield Road	58.38
<b>Total Volume</b>	<b>7757.08</b>

10. The site investigations have also identified low levels of arsenic, lead, zinc, hydrocarbon contamination, asbestos, or organochlorine pesticides present in soil at 508 Old Wairoa Road (1,078m<sup>3</sup> over 2,181m<sup>2</sup> of area), 80 Hamlin Road (386m<sup>3</sup> over 1,018m<sup>2</sup> area), and 279 Airfield Road (1625m<sup>3</sup> over 5,427m<sup>2</sup> of area) that requires management during earthworks.
11. The DSI/RAPs shows that the proposed remediation strategy is a combination of offsite removal and onsite encapsulation with onsite long-term management. The DSI/RAP\_508 Old Wairoa Road recommends that the designated encapsulation area is constructed outside of the residential development areas and preferably within an onsite recreational or commercial land use setting. It states *"Where shrubs and trees are planned, the depth of the cover should extend to 900mm"*. However, the information appears to be incomplete as the report refers the details of the encapsulation to Section 19.6, which does not exist.
12. The DSI/RAPs have specified the roles and responsibilities and remediation criteria, set up remediation and validation procedures, site management controls for sediment, erosion and stormwater, dust, stockpiling, offsite disposal, importation of fill, health and safety, and response procedures to unexpected discovery of contamination. The DSI/RAP\_80 Hamlin Road has also proposed further investigation following the removal of the concrete lining within tyre storage area at this property.
13. The Global CSMP has proposed further investigations prior to development of the remaining 11 properties, where only PSIs have been undertaken thus far. It proposes to prepare a Site-Specific Remediation Action Plan if contaminants levels exceed the adopted site assessment criteria. The Global

CSMP has set up earthwork/dewatering procedures, general control measures for managing the effects of contaminated soils, dust, sediment and water, health and safety, and response procedures to unexpected discovery of contamination.

14. It is noted that the proposal is for a mixed- use land use development. Therefore, the adopted health risk assessment criteria for a residential land use (10% produce) could be more stringent than that required for a less sensitive land use proposed for a particular piece of land on the Site. This may affect the volume of contaminated soil/material requiring remediation. It is up to the consent holder to review and make variation to the relevant DSI/RAP when a less sensitive land use is proposed. On the other hand, due to different land use is proposed, preventing cross-contamination is essential during remediation and earthworks.
15. The AEE has applied for a discretionary activity pursuant to Regulation 11 of the NESCS as future residential development of the remaining properties of Sunfield will occur for which DSIs have not yet been conducted, with PSIs not stating that it is highly unlikely that there will be a risk to human health. I concur with this assessment.
16. Since a DSI has not been conducted in parts of the Site, where a PSI shows that it is more likely than not that a HAIL activity is being or has been undertaken on the land, discharges of contaminants into air, or into water, or onto or into land during the proposed earthworks trigger a discretionary activity consent under rule E30.4.1 (A7) as it does not meet the permitted Standards E30.6.1.2 and controlled activity Standard E30.6.2.1.
17. I consider that the PSIs, the DSI/RAPs and the Global SMP have in general been undertaken in accordance with the requirements of *Contaminated Land Management Guidelines No. 1 and 5*. The PSIs has largely identified the potential HAIL activities on the Site. The DSIs and DSI/RAPs have characterised the extent of contamination on the piece of land being investigated thus far.
18. The proposed further investigations described in the Global CSMP will enable the Site to be fully characterised in terms of soil contamination and mitigated if required by the proposed Site-Specific Remediation Action Plan or managed under the Global CSMP.
19. The large site development is proposed to be completed in 25 Stages over a 10-15 years' period. It is unknown whether the remediation work will be undertaken at the same time or as part of the Stage earthworks. If the latter is the preferable option, preparation of an addendum Soil Contamination Report (SCR) is considered necessary prior to commencement of the Stage works. This will provide a summary of any soil contamination identified on the Stage area, any remaining investigations to be undertaken, and any remediation and management relevant to the specific Stage area.
20. I consider that by implementation of the DSI/RAPs, the Global CSMP for further investigations, a certified Soil Contamination Report (SCR), and the proposed and recommended consent conditions, the Site can be made safe for the intended land use, and any potential health and environmental effects from the proposed remediation and other earthworks can be appropriately mitigated to an acceptable level

#### **Comment on Proposed Conditions**

21. I have reviewed the Proposed Conditions relevant to the NESCS and E30 consents. I support the following conditions relevant to my review with no changes:
  - Condition 4 (Lapsing of consent)
  - Condition 131 (further DSIs to be undertaken)

- Condition 132 - 134 (earthworks undertaken adhere to RAP and CSMP, provisions on variations/update to the plans)
- Condition 135-137 (controls for erosion and sediment control, dust including asbestos)
- Condition 138 (response to unexpected discovery of contamination)
- Condition 139 (pre-demolition asbestos survey)

22. I recommend changes to the following conditions:

- Instead of Condition 139 (pre-demolition asbestos survey) and 140 (removal/demolition of buildings containing ACM), the conditions are replaced by the following Advice Note under Soil Contamination conditions:

**Advice Note: Asbestos Containing Materials**

*If you are demolishing any building that may have asbestos containing materials (ACM) in it:*

- *You have obligations under the relevant regulations for the management and removal of asbestos, including the need to engage a Competent Asbestos Surveyor to confirm the presence or absence of any ACM.*
- *Work may have to be carried out under the control of a person holding a WorkSafe NZ Certificate of Competence (CoC) for restricted works.*
- *If any ACM is found, removal or demolition will have to meet the Health and Safety at Work (Asbestos) Regulations 2016.*
- *Information on asbestos containing materials and your obligations can be found at [www.worksafe.govt.nz](http://www.worksafe.govt.nz).*

*If ACM is found on site following the demolition or removal of the existing buildings you may be required to remediate the site and carry out validation sampling.*

23. I recommend the following additional conditions:

**Addendum Soil Contamination Report (SCR) for each Stage**

Condition X: At least 10 working days prior to commencement of each of the Stage earthworks, an addendum Soil Contamination Report (SCR) must be submitted to the Council for review and certification. The SCR must include but is not limited to a summary of any soil contamination identified on the Stage area, any remaining areas for investigations, and details of remediation (if required) and management measures relevant to manage the risks identified in the specific Stage area.

**Site Validation Report (SVR) or a Work Completion Report (WCR)**

24. The Proposed Conditions have not included a Site Validation Report (SVR) (where remediations are required) or a Work Completion Report (WCR) (where soil management is required), or a combined SVR,

which is considered essential to ensure remediation works be carried out as plans, any variations to the plans and conditions be recorded, and the final contamination profile on the Stage area be confirmed.

*Condition X: Within three months of completion of earthworks on each of the Stage works, a Site Validation Report (SVR) (where remediations are required) or otherwise a Work Completion Report (WCR) must be submitted to the Council for review and certification. The SVR must be prepared by a suitably qualified and experienced practitioner, in accordance with the Contaminated Land Management Guidelines No.1, Ministry for the Environment (revised 2021).*

*The SVR must contain sufficient detail to address the following matters:*

- a. A summary of the remediation and other earthworks undertaken, including the locations and dimensions of excavations and the volume of soil excavated;*
- b. Conditions of the final site contamination profile for each proposed lot, including details and results of further testing and validation testing undertaken (with a map of sampling locations and tabulated sampling results) and interpretation of the results in the context of the NESCS and Chapter E30 of the AUP OP;*
- c. Details and results of any other contamination testing undertaken during the works (including any sampling undertaken on materials re-used on site or imported to site);*
- d. Records/evidence of the volumes and disposal locations for any material containing elevated levels of contaminants removed from the site;*
- e. Records of any unexpected contamination encountered during the works and response actions, if applicable;*
- f. If applicable, any onsite encapsulation locations and details;*
- g. Any on-going monitoring and/or management measures required to minimise risks to human health or the environment as a result of the final site contamination profile;*
- h. Reports of any complaints, health and safety incidents related to contamination, and/or contingency events during the earthworks; and*
- i. A statement certifying that all works have been carried out in accordance with the requirements of the DSI/RAP, CSMP and consent conditions, otherwise providing details of relevant approved variations or breaches, if applicable.*

*In case of a WCR, the WCR must contain sufficient detail to address the following matters:*

- a. A summary of the earthworks undertaken, including the locations and dimensions of excavations and the volume of soil excavated;*
- b. Conditions of the final site contamination profile including details and results of further testing undertaken (with a map of sampling locations and tabulated sampling results) and interpretation of the results in the context of the NESCS and Chapter E30 of the AUP OP;*
- c. Records/evidence of the volumes and disposal locations for any material containing elevated levels of contaminants removed from the site;*

- d. *Records of any unexpected contamination encountered during the works and response actions, if applicable;*
- e. *Reports of any complaints, health and safety incidents related to contamination, and/or contingency events during the earthworks; and*
- f. *A statement certifying that all works have been carried out in accordance with the requirements of the CSMP and consent conditions, otherwise providing details of relevant approved variations or breaches, if applicable.*

#### **Ongoing Monitoring and Management Plan (OMMP)**

25. If contaminant impacted soil is encapsulated onsite, an Ongoing Monitoring and Management Plan (OMMP) is required to manage the potential long-term risk present to the occupiers and the environment. Therefore, the following conditions are recommended under the land use consent and subdivision consent:

*Condition xxx: Should contaminant impacted soil/material is contained onsite, within three months of completion of the remediation works and prior to a s224C being issued for subdivision of the Site, an Ongoing Monitoring and Management Plan (OMMP) must be submitted to the Council for review and certification. The OMMP must contain but is not limited to the following:*

- a. *A map showing the locations of the capping*
- b. *Descriptions of the capping layer*
- c. *Ongoing monitoring and maintenance of the capping layer*
- d. *Management measures required to minimise risks to human health or the environment if undertaking minor soil disturbance work that may penetrate the capping layer*

#### **Additional condition to control discharge of contaminants to the environment**

26. The available DSIs have identified a large quantity of soil contamination over the environmental discharge criteria in particular at the fill material at 508 Old Wairoa Road. The below condition is recommended to mitigate any environmental effects from remediation works already identified and to be identified in further DSIs undertaken on the Site:

*Condition xxx: Any perched groundwater, or surface water encountered within the excavation area located within contaminant impacted areas requiring removal must be considered potentially contaminated, and therefore, for the protection of the human health and the environment, the impacted water must either be:*

- a. *disposed of by a licenced liquid waste contractor; or*
- b. *pumped to sewer, providing the relevant permits are obtained; or*
- c. *discharged to the site's stormwater system or surface waters provided testing demonstrates compliance with the Australian and New Zealand Environment Conservation Council (ANZECC) Guidelines for Fresh and Marine Water Quality (2000) for protection of 80 percent of freshwater species, with the exception of*



*benzene where the 95 percent protection level shall apply, and the water is free from petroleum hydrocarbons.*



Sharon Tang