

Before Kaipara District Council

In the Matter of the Resource Management Act 1991 (**RMA**)

And

In the Matter of an application for Private Plan Change 82 (**PC82**) by **MOONLIGHT HEIGHTS LIMITED** to rezone 39.2 ha of land at Awakino Road, Dargaville from Rural Zone to Residential Zone

Evidence of Heather Windsor on behalf of Moonlight Heights Limited

(Contaminated Land Assessment)

Dated 20 July 2023

Jeremy Brabant

Barrister

Foundry Chambers

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Introduction

1. My full name is Heather Anne Windsor. I am an Environmental Scientist and hold a Bachelor of Science degree from the University of Waikato. I am also a Certified Environmental Practitioner (CEnvP).
2. I have 28 years' experience in environmental monitoring, including more than four years as an environmental monitoring officer at Environment Waikato Regional Council and eleven years undertaking contaminated site investigations primarily focussed on investigation, risk assessment and remediation of contaminated sites under the NESCS. Some examples of relevant projects include:
 - a. Design and implementation of Preliminary Site Investigation, Detailed Site Investigation, Remediation Action Plan, Site Management Plan and Site Validation reporting with respect to development of Ngawha Innovation and Enterprise Park.
 - b. Design and implementation of Detailed Site Investigation, Remediation Action Plan and Site Management Plan with respect to a site with lead contaminated dump deposits and arsenic contaminated soils located on an old timber treatment storage site in Kaitaia.
 - c. Investigation for contaminants on land undergoing earthworks disturbance on Whangarei airport land, now used as a sports field.
 - d. I have undertaken more than 120 investigations into potential contamination in historic orchard land, to Preliminary Site Investigation, Detailed Site Investigation, Remediation Action Plan, Site Management Plan and Site Validation level reporting, as appropriate.
3. I was instructed by Moonlight Heights Limited on 21 June 2023 to undertake an investigation into potential contamination on site resulting from historic land use as an aerodrome and due to the sites proximity to an historic

landfill and current transfer station. I am familiar with the area to which the application for resource consent relates and I visited the site on one occasion on 24 June 2023 to conduct the field work for the investigation.

4. Although this is not a hearing before the Environment Court, I record that I have read and agree to and abide by the Environment Court's Code of Conduct for Expert Witnesses as specified in the Environment Court's Practice Note 2023. This evidence is within my area of expertise, except where I state that I rely upon the evidence of other expert witnesses as presented to this hearing. I have not omitted to consider any material facts known to me that might alter or detract from the opinions expressed.

Scope of Evidence

5. My evidence will address the following:
 - a. My involvement in the project.
 - b. Summary of findings of DSI with respect to historic land use in the aerodrome area, around farm sheds and in pasture areas.
 - c. Summary of findings of DSI with respect to proximity to historic landfill.

Involvement in project

6. I was responsible for undertaking the desk-top study and site investigation. I prepared the Detailed Site Investigation (DSI) which was submitted with the Plan Change Request. In preparation I relied on a range of sources including historical aerial photographs, Kaipara District Council and Northland Regional Council property files, title records and eye-witness testimony.
7. My involvement in the project came following a request from Kaipara District Council (KDC) for 'more information'.

Summary of findings of DSI

8. The study confirmed that part of the site was historically used as an aerodrome with top-dressing operations run from the site. This would be covered by the Ministry for the Environment's Hazardous Activities and Industries List (2011) category A1 – *Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application.*
9. Category F1 - *Airports including fuel storage, workshops, washdown areas, or fire practice areas* would also apply, as fuel storage was found to have been carried out on site.
10. One underground fuel tank was known to have been located on site. Anecdotally it is thought that this tank was removed in the early 1980's but no written evidence or eye-witness testimony could be found to support this.
11. Systematic soil sampling was carried out over the area of the aerodrome where historic plans, eye-witness testimony and aerial photographs indicated aerial top-dressing and other flight activities were based.
12. The soil samples were analysed by Hill Laboratories for heavy metal suite metals (including arsenic, lead and cadmium) with a sub-set analysed for organochlorine pesticides (includes DDT and dieldrin) which may have historically been spread to pasture with fertiliser or lime application.
13. Sampling for hydrocarbons was not undertaken in the aerodrome area as the location of historic fuel storage sites were not identified prior to the site visit and no visual or olfactory evidence of hydrocarbon storage was identified during the site visit.
14. Results showed that no contaminants of interest (COI) were identified in twenty-one of the twenty-two systematic samples collected in the aerodrome area. One of the samples returned an elevated result for cadmium.

15. Additional soil samples were collected proximate to sheds located on area of proposed plan change where HAIL category *I* - *Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment* could potentially apply.
16. Results of samples collected in shed areas showed no elevated concentrations of COI present and as such *HAIL category I* was not found to apply.
17. Additional soil samples were collected in general pastoral areas within the area of the proposed plan change to provide a more complete picture of the site.
18. Results in pastoral areas showed no elevated concentrations of COI present.
19. The study confirmed that an historic landfill, now capped, was located to the north of the site with a current operational transfer station. Investigation was carried out to see if the proximity of the historic landfill could have an effect on the site under HAIL category *H* - *Any land that has been subject to the migration of hazardous substances from adjacent land in sufficient quantity that it could be a risk to human health or the environment*.
20. Soil samples were collected at surface, at 0.5m and 1 m depths at four sites proximate to the landfill.
21. The soil samples were analysed by Hill Laboratories for heavy metal suite metals with a sub-set analysed for organochlorine pesticides and for Total Petroleum Hydrocarbons (TPH) and Polycyclic Aromatic Hydrocarbons (PAH) which may be indicative of landfill leaching.
22. Results in soils collected proximate to capped landfill indicated no elevated concentrations of COI present in surface or depth samples that could have indicated lateral movement of contaminants from the landfill. As such, *HAIL category H* was not found to apply.

23. Although the NESCS is applicable to soil contamination, the conceptual site model did consider if contaminants pose a risk to other receptors via groundwater/surface streams from landfill leachate.
24. The landfill discharge point is down hydraulic gradient and located approximately 350m to the north of the area of the proposed plan change, with the drain/stream discharge flowing away from the proposed plan change area.
25. Research as part of the DSI found that the landfill is covered by a discharge permit and is monitored annually by the NRC. Water quality results were obtained from the NRC and showed no unacceptable increase in contamination in drain/stream between upstream and downstream of the landfill discharge point.
26. Three surface water samples were collected from upstream and downstream of the landfill leachate discharge point within a drain as part of the DSI.
27. Results in water sampling carried out as part of this investigation showed no elevated COI in the waterway directly attributable to landfill leachate.
28. Based on the results of the DSI, it was concluded that the site was suitable for rezoning if appropriate remediation or management is undertaken in the area of identified cadmium contamination, located within the present animal stock yards on 159 Awakino Road, Dargaville (around location of sample 2355).
29. Remediation could be addressed at the time of future subdivision/development, after the Control Area is fully characterised and a Remediation Action Plan and Site Management Plan is prepared by a suitably qualified and experienced professional.

Response to s 42A Report

30. The DSI report identified that any leachate discharge from the capped landfill is highly unlikely to impact the plan change area as the plan change area is located up hydraulic gradient from the landfill and no evidence of lateral leaching was identified in soil samples collected proximate to the landfill.

Conclusion

31. My evidence has assessed the potential for soil contamination in the area of the proposed plan change from historic aerodrome use and the proximity to the capped landfill. I confirm that no soil contamination issues would preclude the proposed plan change, and the site would be considered suitable for the proposed residential zoning and future development.



Heather Windsor (CEnvP)

Dated: 20 July 2023