

Ref: 000300

05 February 2025

CCKV MAITAI DEV CO LP

**RAP Report Review HAIL Environmental**  
**Maitahi Subdivision, 7 Ralphine Way, Nelson**  
**Envirolink Response**

HAIL Environmental have been engaged by Envirolink to review Envirolink's Remedial Action Plan (RAP) for the above site.

The HAIL Environmental review concludes that the RAP rests on limited information. Envirolink Ltd do not entirely disagree with this and have detailed in the RAP that additional investigation is required during the remediation process. The RAP will be a working document and updated as the project progresses, and more information is collected. The information and proposed methodology presented within the existing RAP is based on data collected to date and is limited by data gaps. Additional investigation has been 'scoped' to limit these gaps where possible.

Version 2 of the RAP was submitted for review. Minor amendments have been made to the RAP text following this review. Version 3 of the RAP will be submitted with the consent application, the review and this letter response.

Below are Envirolink's responses to various comments raised by HAIL Environmental. HAIL Environmental's comments are shown in italics.

*Page 2 - The RAP could usefully refer to the discussion in Background concentrations of trace elements and options for managing soil quality in the Tasman and Nelson Districts, a report to Tasman District Council by Landcare Research, dated June 2015. In that report, Landcare highlights the issue of elevated chromium and nickel in mafic soils of the Nelson-Tasman region, explains that a separate set of background values are required for those soils, and explains that insufficient data was available at the time to construct such a background.*

Noted. Section 3.3 of the RAP (version 3) has been updated accordingly.

*Page 3 - (In passing, the quality assurance page is titled 'Detailed site investigation' rather than 'Remedial action plan', which should be corrected.)*

Corrected in version 3 of the RAP.

Page 4 - Nonetheless, these limitations pose significant risks to the integrity of the RAP and to the development. It is not yet clear:

- *How much soil exceeds hazardous substances criteria for dieldrin*

We have a good indication of this based on current data, see Section 6.3 for the proposed methodology.

- *When and how soil that exceeds hazardous substances criteria will be disposed of (treatability trials are stated to be in process).*

To be documented in future iterations of the RAP once the trials have been completed and final decisions about disposal have been agreed upon. While not the preferred option, off-shore disposal has not been ruled out

- *The lateral and vertical depth of contaminated soil in the woolshed area that requires removal from site*

The volumes for disposal will be refined by further investigation and / or validation. The remedial criteria set will be used to determine the soil disposal method. Further detail is provided in Section 6.3 of the RAP and in the flow charts in Appendix E.

- *The lateral and vertical depth of contaminated soil in the woolshed area that requires encapsulation*

The volumes for disposal will be refined by further investigation and / or validation. The remedial criteria set will be used to determine the soil disposal method. Further detail is provided in Section 6.3 of the RAP and in the flow charts in Appendix E.

- *Design constraints for the encapsulation cell, such as access, stability, drainage, space available, etc.*

To be addressed at detailed design stage in conjunction with the appointed engineers.

- *The relative costs and benefits of removal and encapsulation*

Detailed in Table D.1 in Appendix D of the RAP.

- *The lateral and vertical depth of contaminated soil in the woolshed area that is suitable for reuse.*

Details are provided in Section 6.3 of the report and based on the information collected to date the expected remedial extent is presented in Figure 8. Soil beyond this polygon may be suitable for re-use but additional investigation is required to confirm this.

- *Any constraints on reuse in recreational reserves, including required soil properties, stability, volumes available, etc.*

To be addressed at detailed design stage.

- *Whether remedial criteria should be applied to gravels, and if so, how*

Soil sorting was discussed in the remedial options appraisal in Appendix D Table D.1. This approach was not selected. The fines will be analysed as part of the investigation and validation. Screening / soil sorting of the material can be reconsidered if future investigations and discussions deem it to be of value to the development.

- *Whether it is necessary to address groundwater contamination, and if so, how*

Further assessment of groundwater will form part of the additional investigation.

- *Whether the old stream channel is acting as a preferential pathway*

This can be investigated as part of the additional investigation in accordance with HAIL Environmental's comments.

- *How further investigations will be reported, and how any regulator concerns will be addressed.*

The updated RAP (likely an addendum) will be issued to the regulator for comment prior to undertaking the following stages of work as detailed in the existing RAP recommendations.

- *What precisely will be done by way of validation*

Validation testing requirements are summarised in Section 7 of the RAP. Specific sampling densities will be in accordance with CLMG guidance and SQEP professional judgement.

- *Who will undertake long-term management and monitoring, and for what period.*

The responsibility of any long-term monitoring will remain with the current landowner/developer for a length of time agreed with the regulator and based on further groundwater results following the removal of the 'source' material and the trends in attenuation that are occurring (if any). A SQEP will undertake monitoring, the scope of which will depend on the findings of additional investigation.

*Page 4 - Given these uncertainties, the cost and even feasibility of implementing the RAP is far from clear. HAIL Environmental is confident that site-specific remedial criteria could be developed to allow for more reuse of soil and reduce costs, but the benefit of doing so is also unclear.*

The RAP will be updated based on findings of additional investigation. This will refine the methodology and likely give a better indication of volumes and cost. Tier 2 assessment could be incorporated into this if the client would like to pursue this avenue.

*Page 4 - As written, the RAP takes several of its remedial criteria from an ecology report for the site by Robertson Environmental. In HAIL Environmental's view, this is not adequate – the remedial criteria must be derived within the RAP, by the site contamination specialist. In this regard, the ecologist's role should be limited to advising on the ecological values of the esplanade reserve. If those ecological values are to be high, then HAIL Environmental suggests the more stringent Australia and New Zealand Guidelines (ANZG) 'DGV' toxicant default guideline values for sediment quality be used (see [www.waterquality.gov.au](http://www.waterquality.gov.au)).*

We acknowledge HAIL Environmental comments but note that the remedial criteria recommended by the ecologist have been selected by the client and Envirolink (following several discussions) in order to achieve the ecological goals and objectives of the project.

*Page 4 - We understand the proposed groundwater remedial criteria are based on a simple model for groundwater from the source zone entering the stream and subsequently meeting ANZG default water quality guidelines (i.e. ecological criteria) after reasonable mixing, but we do not understand why this is even necessary given the source zone is to be excavated.*

Further investigation will inform the proposed groundwater remediation method (if any is required). We did not feel it appropriate to define the methodology at this stage. The RAP states that “It is considered likely that soil source removal and further soil remediation will be sufficient to address the risk to shallow groundwater as a pathway to surface water courses” (page 20). We note that the inclusion of groundwater remedial criteria at this stage, without a specific methodology, may be impracticable therefore these have been omitted from the updated version (v3) of the RAP.

*Page 4 - If groundwater remedial criteria are required, the need for copper and zinc criteria should be reviewed, noting that both were reported in Envirolink’s DSI (was this dissolved or total metals?), that the ANZG for copper and zinc have recently been revised, and that there may be a significant local background. Moreover, we do not think the role of the old stream bed is sufficiently understood; the ‘further investigation’ should be extended to include upgradient and downgradient bores within it.*

Noted.

*Page 5 - The RAP is unclear as regards low level contaminated and naturally enriched soils. At section 6.2, it requires the encapsulation area to be reinstated in soils meeting the ordinary Nelson-Tasman background concentrations set out in the Landcare Research report. Further down that same section, it states “if further investigations or validation results show that material is at or below the local background concentrations set for the Maitai / Kākā Valley area, then no further constraints are required for the reuse of that material.” This should be clarified.*

Noted, this was an error in the RAP and has been updated. We will be using local background concentrations set for the Maitai / Kākā Valley area to validate the soil.

*Page 5 – in our view the RAP should:*

- *Provide for local background to be investigated and determined well before remedial works begin (this would be an extension to the proposed ‘further investigation’)*
- *Plan for material meeting local background to be reused on site*
- *Be clear that it could be difficult to dispose of material that does not meet published regional background, and identify a disposal route if this is required*
- *Allow for local background to take precedence over ecological guideline values*
- *Include determination of background copper in Maitahi River water.*

Noted. This will be added to the scope for the additional investigation.

*Page 5 - While the RAP presents remedial criteria for groundwater, it does not seem to require groundwater remediation. Section 6.3.4 calls for water accumulating in excavations to be pumped out and treated by coagulation / flocculation and activated carbon filtration, but that would be strictly a temporary step, and should be reviewed during the works as it might offer little improvement over settlement alone.*

Further investigation findings, following soil source removal will be used to refine the remedial methodology for groundwater. We note that the inclusion of groundwater remedial targets at this stage, without a specific methodology may be impracticable therefore these have been omitted from the updated version of the RAP. Section 6.3.4 describes dewatering requirements rather than specific groundwater remediation.

*Page 5 - The RAP provides no particular controls for handling soils that have sufficiently high dieldrin concentrations to be considered hazardous substances. HAIL Environmental suggests that this should be reviewed, particularly given the dermal toxicity of dieldrin. We were also expecting specific labelling instructions for these soils.*

A note has been added in Section 6.3 of the RAP (v3). We have recommended that a task specific health and safety plan will be completed prior to these works. Emphasis will be placed on appropriate PPE to be worn when handling the source material around the infrastructure.

*Page 5 - Section 8.6 calls for groundwater monitoring in the woolshed area after source excavation "on a limited basis" and "as part of the further investigation recommendations." But those investigations should have finished before source excavation; monitoring should sit within the ongoing management plan. In any case the RAP needs to give some indication of what could be done if concentrations are unsatisfactory. Because arsenic and (especially) dieldrin can be expected to be strongly bound to soils, removing or treating groundwater will have little effect: arsenic and dieldrin will continue to move from soil into water for a very long time, perhaps indefinitely.*

We are proposing that the additional investigation is to take place following the worst of the source removal (soils with dieldrin >50mg/kg). We feel that there should be an emphasis on removing the high concentration source material and place it in a secure location pending the outcome of the experimental trials. Further soil remediation will occur following the additional investigation (refer to part 3 of Section 6.3). Groundwater monitoring undertaken as part of the additional investigation will help define the remedial methodology for groundwater. If this is defined as monitored natural attenuation (following soil removal) then a contingency plan will be put in place for dealing with a situation where concentrations in groundwater are not decreasing over time.

Yours faithfully



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