

**BEFORE THE MANAWATŪ-WHANGANUI REGIONAL COUNCIL  
INDEPENDENT HEARING PANEL**

**IN THE MATTER** of the Resource Management Act 1991 ("RMA" or "the Act")

**AND**

**IN THE MATTER** of resource consent applications to **MANAWATŪ-WHANGANUI REGIONAL COUNCIL** by **WINSTONE PULP INTERNATIONAL LIMITED** to discharge up to 750m<sup>3</sup>/day of condensate wastewater, and land disturbance together with any ancillary diversion of water and discharge of sediment for the associated construction of a wetland (ATH-2010011593.03 and ATH-202609463.00).

**STATEMENT OF EVIDENCE OF HIRAM DIMETRIUS GARCIA  
DATED 29 SEPTEMBER 2026**

**1. SUMMARY OF EVIDENCE**

- 1.1 I was engaged by WPI to conduct a Detailed Site Investigation ("**DSI**") and prepare a Remedial Action Plan ("**RAP**") for the proposed wetland area, which also contained the former mechanical pulp mill discharge pond.
- 1.2 My site investigation consisted of 20 soil sample locations where 23 soil samples were collected and submitted for laboratory analysis. Based on the laboratory results, two samples identified localised arsenic and zinc contamination.
- 1.3 Arsenic was detected at 135 milligrams per kilogram ("**mg/kg**") in surface soil at WA09, exceeding the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations, 2011 ("**NESCS**") commercial/industrial land use Soil Contamination Standard ("**SCS**") human health criteria, but decreased to 1.32 mg/kg at approximately 1 metre below ground level ("**mbgl**"), indicating the contamination is confined to near-surface soils.

- 1.4 Zinc was detected at 1,340 mg/kg at approximately 1.5 mbgl at WA18 within the former mechanical pulp mill discharge pond, exceeding the Landcare Research soil guidelines for the protection of ecological receptors ("**ECO-SGVs**") for commercial/industrial land use. However, a sample from WA20, approximately 50 m away at a similar depth, contained only 61 mg/kg, indicating the elevated zinc is localised and confined within the Site and unlikely to reach the Whangaehu River located more than 540 m away.
- 1.5 The remaining contaminants were below the applicable assessment criteria. The revised remediation approach incorporates excavation of the arsenic-affected area at WA09 to approximately 1 m depth, with the excavated material placed within the former discharge pond and capped with at least 0.5 m of additional onsite material. The revised wetland design avoids the former discharge pond and associated zinc-affected area, removing the need for a wetland leak-detection system and addressing the identified risks associated with constructing the wetland over contaminated land.

## 2. **INTRODUCTION**

- 2.1 My name is Hiram Dimetrius Garcia. I am a Principal Environmental Consultant at Babbage Consultants Limited.
- 2.2 This evidence has been prepared in respect of the resource consent applications by Winstone Pulp International Limited ("**WPI**" or "**the Applicant**") to consent the discharge of up to 750 m<sup>3</sup>/day of condensate wastewater associated with the proposed wood processing operations, in addition to consent for land disturbance together with any ancillary diversion of water and discharge of sediment associated with construction of the wetland ("**the Proposal**") at 1002 State Highway 49, Tangiwai ("**the Site**") under the Horizons Regional Council One Plan ("**One Plan**").

### **Qualifications and experience**

- 2.3 I have a Bachelor of Science in Environmental Sciences from University of California, Riverside (1993). I am also a Certified Environmental Practitioner Site Contamination Specialist, which meets the threshold of Suitable Qualified and Experienced Practitioner (SQEP) in New Zealand.
- 2.4 I have 33 years' experience in contamination site assessments. I specialise in contaminated land and contaminated water investigations, remediation, and site closure.
- 2.5 Examples of my experience relevant to this project are:

- (a) Emergency response to mitigate and remedy a 1 million litre jet fuel spill into Lyttleton Harbour. The project included design and supervision of an intrusive drilling programme and soil/sediment/water/biota sampling to characterise the extent and uptake of jet fuel. This included the preparation of technical reports for the site and risk assessments, stakeholder engagement, presentation and approval of investigation methodology and conclusions with the council's regulatory team.
- (b) Insurance claim remediation of a bulk chemical plant. My work included:
  - (i) Supervising the advancement and installation of monitoring/remediation wells and/or borings to include determining sample collection intervals and collection methods, well screen intervals, well screen size and appropriate sand pack.
  - (ii) Collection of soil and groundwater samples for laboratory analysis.
  - (iii) Prepared lithologic cross-sections to establish site geological framework, groundwater gradient maps, contaminant contour/iso- concentration maps for conceptual site model development.
  - (iv) Provided litigation support via expert testimony.
  - (v) Preparation of technical reports for assessment and groundwater monitoring in accordance with industry guidelines.

### **Involvement in project**

- 2.6 I was engaged by WPI in March 2026 to conduct a Detailed Site Investigation ("DSI") and prepare a Remedial Action Plan ("RAP") of the proposed wetland area which included the former pulp mill discharge pond.
- 2.7 I either supervised or am the author of the following documentation:
  - (a) Karioi Wood Processing Detailed Site Investigation Rev 1 dated 23 April 2026;

- (b) Karioi Wood Processing Detailed Site Investigation Rev 2 dated 8 June 2026;
- (c) Karioi Wood Processing Remedial Action Plan Rev 1 dated 23 April 2026;
- (d) Karioi Wood Processing Remedial Action Plan Rev 2 dated 10 June 2026; and
- (e) Section 92A Response – APP-2006012018.02, Question 3 and Question 4 dated 11 June 2026.

2.8 This evidence should be read alongside that documentation.

2.9 I have read the following documentation:

- (a) The resource consent application prepared by Suhki Singh of Babbage Consultants Limited dated 30 April 2026 and associated technical memorandums;<sup>1</sup>
- (b) Council's section 92 request dated 18 May 2026, and Babbage Consultants Limited's response dated 11 June 2026 and associated attachments;<sup>2</sup>
- (c) The submissions filed on the application;
- (d) The Applicant's memorandum dated 8 September 2026; and
- (e) Council's s 42A reports ("**s 42A Report**") prepared by Ms Fiona Morton and Mr Kerry Pearce dated 22 September 2026 and attachments.

2.10 I last visited the Site in November 2023. Babbage staff which conducted the DSI under my direction were onsite on 30 and 31 March 2026.

### **Purpose and scope of evidence**

2.11 The purpose of my evidence is to provide my findings of the DSI and RAP for the proposed wetland on the Site.

2.12 Specifically, my evidence will:

1 Technical Memorandums 1-8.  
2 Attachments 1-7.

- (a) Briefly describe the Proposal, receiving environment, and Site context (Section 3);
- (b) Provide the DSI methodology and findings (Section 4);
- (c) Provide the RAP methodology and findings (Section 5);
- (d) Comment on issues raised by submitters relevant to my area of expertise (Section 6); and
- (e) Comment on the Council Officer's s 42A Report (Section 7).

### **Expert Witness Code of Conduct**

- 2.13 I have read the Code of Conduct for Expert Witnesses, contained in the Environment Court's Practice Note (2023) and I agree to comply with it. I can confirm that the issues addressed in this statement are within my area of expertise and that in preparing my evidence I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

### **3. THE PROPOSAL, RECEIVING ENVIRONMENT, AND SITE CONTEXT**

- 3.1 The description of the Proposal, the receiving environment, and Site context is outlined in the planning evidence of Sukhi Singh and Council's s 42A Report. Further to this, I note the following specific matters that are relevant to my evidence:

- (a) The DSI was conducted to support earthworks for the construction of a new wetland for the torrefaction effluent discharge. The DSI investigation area consisted of a grassed area of approximately 4.06 hectares ("**ha**") which also contained the former mechanical pulp mill discharge pond which was approximately 1.84 ha.
- (b) The soils encountered in the grassed area was fill extending from the surface to 0.8 mbgl. The fill layer transitioned into a fill with pulp mixed throughout, which continued to the maximum investigation depth of 2.3 mbgl. In the existing pond, pulp sludge (consisting of pulp and sawdust) was present from the pond surface to approximately 1.5 m deep.
- (c) Beneath the pond bottom, heterogeneous silt was encountered, extending to the maximum investigation depth of 1.8 m. The

Horizons local maps<sup>3</sup> identified a bore (ID 725001) located approximately 425 m north west from the area of investigation with a static water level of 11 mbgl and a bore (ID 745004) located approximately 2,900 m east from the area of investigation with a static water level of 10 mbgl. Additional bore information recorded groundwater at 4.6 mbgl from BH1 located on the pulp mill site during construction in 2021.

#### 4. **DSI METHODOLOGY AND FINDINGS**

##### **Methodology**

- 4.1 The focus of the DSI was on soil disturbance areas to support earthworks for new wetland construction. The DSI consisted of a collection of soil samples from 20 locations:
- (a) 14 locations located within the grassed area (locations WA01 to WA14); and
  - (b) 6 locations within the former effluent pond (locations WA15 to WA20).
- 4.2 Surface samples were analysed for metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc), iron, manganese, chloride, cyanide, phosphorous, sodium, pH, ammoniacal nitrogen, nitrate nitrogen, sulphate sulphur, and organochlorine pesticides ("**OCPs**") based on known chemicals used in the former pulp mill process, natural occurring elements and organic material present (wood pulp). Polychlorinated biphenyls ("**PCBs**") were analysed at locations nearest the electric substation (locations WA1 to WA04).
- 4.3 Additional analytes were added based on site observations, including:
- (a) Analysis of polycyclic aromatic hydrocarbons ("**PAHs**") at two locations (WA01 and WA04) due to observed debris (organics and rubber);
  - (b) Analysis of asbestos semi-quantitative at two locations (WA04 and WA13) due to observed debris (construction materials); and

<sup>3</sup> Horizons Regional Council, 5 June 2026. Horizons local maps- water. Retrieved from <https://maps.horizons.govt.nz/Viewer/?map>

- (c) Analysis of zinc for synthetic precipitation leaching procedure (“**SPLP**”) due to zinc concentrations in soil.
- 4.4 If surface samples identified an exceedance per the NESCS SCS or ECO-SGV, the subsequent deeper sample at the same location (if available) would be analysed for the specific analyte that had the exceedance.

#### **Selected Assessment Criteria and Rationale**

- 4.5 Soil sample results were compared to the following:
- (a) **NESCS commercial/industrial land use SCS human health criteria** for metals, OCPs, PAHs and PCBs. This was the applicable criteria as the national regulatory standard and proposed land use is designated as commercial/industrial land.
  - (b) **ECO-SGVs for commercial/industrial land use.** As there is no national ecological assessment criteria for soil, the ECO-SGVs were developed by an advisory group comprised of representatives from the Regional Waste and Contaminated Land Forum, Land Monitoring Forum, Land Managers Group, the Ministry for the Land Forum, Land Monitoring Forum, Land Managers Group, the Ministry for the Environment and the Ministry for Primary Industries. The objective was to develop nationally agreed methodologies for determining ECO-SGVs for the protection of soil biota, such as soil microbes, plants and soil invertebrates for multiple land use scenarios. As the land use is designated commercial/industrial, that land use scenario was used. Council’s contamination specialist reviewer, Mr James Blackwell from SLR Consulting New Zealand Ltd, concurred that this was the appropriate assessment criteria to be used to assess ecological risk based on the site history.
  - (c) **New Zealand Guidelines for the Protection of Fresh and Marine Water Quality Freshwater Quality Guidelines (“ANZG”) default guideline value (“DGV”)** for 80% level of freshwater species protection. The Ministry for the Environment describes ANZG DGVs as indicators of concentrations associated with protection of ecosystem health. To note, an exceedance of ANZG DGV does not mean there is an ecological risk if there is incomplete receptor pathway for the ecological risk to happen.

## **Findings**

### Arsenic

- 4.6 Arsenic was detected at a concentration of 135 mg/kg in a surface soil sample collected from location WA09, exceeding the NESCS commercial/industrial land use SCS. A subsequent soil sample collected from the same location at a depth of approximately 1 mbgl reported an arsenic concentration of 1.32 mg/kg, which is below the applicable NESCS commercial/industrial SCS.
- 4.7 The marked decrease in arsenic concentration with depth indicates that the elevated arsenic is confined to near-surface soils and attenuates within the underlying soil profile at WA09. Based on the available data, the arsenic contamination is considered to be localised to the surface horizon at WA09 and is not present at concentrations exceeding the applicable commercial/industrial SCS at 1 mbgl.

### Zinc

- 4.8 Zinc was detected above the commercial/industrial ECO-SGV in a soil sample collected from the base of the former mechanical pulp mill discharge pond at location WA18, at an approximate depth of 1.5 mbgl, with a reported concentration of 1,340 mg/kg.
- 4.9 A SPLP analysis was performed on this sample which exceeded the ANZG. Collection of a deeper confirmation sample at WA18 was not practicable due to site health and safety constraints. At the time of investigation, the pond contained standing water, and the excavator was unable to safely extend further from the pond bank to obtain additional material.
- 4.10 A second soil sample was collected from the base of the former mechanical pulp mill discharge pond at location WA20, approximately 50 m from WA18, at a similar depth of 1.5 mbgl. Zinc was reported at a concentration of 61 mg/kg, which is below the applicable commercial/industrial land use ECO-SGV. The reduction in zinc concentrations between WA18 and WA20 indicates that zinc contamination is laterally attenuated over a relatively short distance and is localised in extent. The nearest potential surface water receptor, the Whangaehu River, is located more than 540 metres from WA20.
- 4.11 On the basis of the available data, the elevated zinc concentration identified at WA18 appears to be confined within the site boundary and presents an

incomplete receptor pathway. Given that the site is designated for commercial/industrial land use and is not identified as an area of ecological significance and the zinc exceedance was localised within the site boundary, application of the commercial/industrial land use ECO-SGV is considered appropriate for the assessment of ecological risk.

#### Remaining Contaminants

- 4.12 The remaining contaminants analysed were reported below their respective NESCS commercial/industrial land use SCS or commercial/industrial land use ECO-SGV.

### 5. **RAP METHODOLOGY AND FINDINGS**

#### **Methodology**

- 5.1 The proposed remediation methodology for the reported arsenic and zinc exceedances was capping to isolate contaminants from receptors. The capping would be from the installation high density polyethylene ("HDPE") liner from the construction of a new wetland.

#### **Proposed remediation**

- 5.2 The wetland design and location have been revised since the initial RAP was issued:
- (a) The revised wetland design and new location avoids the former discharge pond where the zinc exceedance (WA18) was reported;
  - (b) The area of the arsenic exceedance (WA09) will be cut to 1 m bgl as part of the wetland construction; and
  - (c) The cut material from WA09 will be placed within the former discharge pond with additional onsite material (minimum of 0.5 m in thickness) placed on top as a final cap.
- 5.3 As the material below the arsenic exceedance will be removed, this addresses Taranaki Fish & Game Council's<sup>4</sup> concerns regarding the wetland construction over contaminated land. Further, as the wetland will no longer be placed over the former discharge pond, this addresses Ngāti Rangī's<sup>5</sup> concerns regarding the wetland being constructed on land identified as

4 Submission 2.  
5 Submission 15.

contaminated and possible subsequent contaminant migration to groundwater. A final RAP outlining the proposed remediation and including the final wetland design, and controls set in the final Erosion and Sediment Control Plan (ESCP) and Construction Quality Assurance Plan (CQAP) will be submitted to Council at least 10 working days prior to commencement of earthworks in accordance with proposed Land Use Consent, Land Disturbance – Wetland Construction Conditions 9 and 10.

**6. COMMENTS ON ISSUES RAISED BY SUBMITTERS**

- 6.1 I have reviewed the submissions and have addressed the relevant points raised in my comments above.

**7. COMMENT ON ISSUES RAISED IN THE COUNCIL OFFICER'S REPORT**

- 7.1 I have reviewed the s 42A Report and Mr James Blackwell's technical memorandum and I agree with the conclusions reached.
- 7.2 Council's contamination specialist reviewer, Mr James Blackwell from SLR Consulting New Zealand Ltd, identified that shallow soils beneath the wetland becoming saturated is unlikely to be a significant concern provided that the wetland HDPE liner is installed correctly with appropriate Quality Assurance (QA). Mr Blackwell also considers the likelihood of the underlying soils containing organic pulp to generate methane gas should they become saturated is low; despite these conclusions, he recommends a leak monitoring system.
- 7.3 I agree with Mr Blackwell's conclusions that it is unlikely soils beneath the wetland will become saturated, and that the risk of methane gas generation is low. In light of those conclusions, and given that the wetland will be installed in accordance with a CQAP, I do not agree that a leak detection system is warranted based on the commensurate level of risk identified.
- 7.4 In light of the above, I recommend that Conditions 21(c), 43(c), and 44(d) are deleted that relate to leak detection. I otherwise consider that the proposed conditions with respect to contaminated land are suitable.

**Hiram Dimetrius Garcia**  
**29 September 2026**