

In the matter of an application for approvals under the Fast Track Approvals Act 2024

By **Tāiko Critical Minerals**

Applicant

Statement of evidence of Naomi Crawford in relation to Landscape and Visual

18 May 2026

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Introduction

- 1 My name is Naomi Louise Crawford.
- 2 My role in relation to the application by Tāiko Critical Minerals (**the application**) for approvals relating to the Barrytown Mineral Sands – Southern Block (**SB**) Project (**the Project**) has been to provide expert advice in relation to landscape and visual matters.
- 3 I prepared the Barrytown Mineral Sands Project: Southern Block, Landscape and Visual Assessment of Effects (**Report**), with support from my colleague Ms Erina Metcalf. This report has been provided as part of the application package. It is accompanied by Appendix 1: Landscape and Visual Assessment Guidelines, Appendix 2: Graphic Supplement, and Appendix 3: Landscape Mitigation Package.
- 4 The purpose of this evidence is to:
 - (a) provide my qualifications and experience relevant to the Report;
 - (b) confirm my compliance with the Code of Conduct for expert witnesses, contained in the Environment Court of New Zealand Practice Note 2023;
 - (c) provide a brief summary of my report and confirm its contents; and
 - (d) comment on the proposed conditions.

Qualifications and experience

- 5 I hold the qualification of a Bachelor of Design in Landscape Architecture with Honours from Victoria University of Wellington. I am also a Registered Member of Studio Pito Ora, New Zealand Institute of Landscape Architects (**NZILA**), an accredited environment commissioner, and a member of Te Kahui Ture Taiao, Resource Management Law Association (RMLA).
- 6 I am a Director at Glasson Huxtable Landscape Architects in Christchurch, having held this position since September 2023. Previously I was a Senior Landscape Architect within the same company. In the past, I have worked within small landscape firms, a large multi-disciplinary consultancy and in the public sector.
- 7 I have practiced as a Landscape Architect for approximately 15 years. For the past eight years, I have also taught in the Landscape Architecture degree programmes at Lincoln University.

- 8 I am regularly called upon as a landscape and visual expert for complex projects involving multi-disciplinary approaches across Aotearoa.
- 9 My experience spans across the full spectrum of Landscape Architecture and Landscape Planning. Most relevant to this application, is my past experience and skill working on mining and extractive land use activity. This has included Aylesbury, Frew's, Whiterock, and Woodstock Quarries (Canterbury), Nine Mile Mineral Sands (Buller), Wakamarina Gold Mine (Marlborough), Mananui Mineral Sands (Westland), and Kakaramea and Ngāruawāhia Sand Extractions (Waikato).
- 10 I have undertaken work at Barrytown for the applicant since September 2022. For the Central Block (**CB**) (consented mining site to the north), I prepared a landscape and visual assessment, graphic supplement, visual simulations, landscape mitigation planting package, and responded to further information requests.
- 11 For the hearing held in January 2024, I prepared a statement of evidence and summary statement, contributed to a joint witness statement, and presented evidence and supplementary evidence.
- 12 More recently, I have prepared a landscape and visual assessment for the Wet Concentrator Plant (**WCP**), utility buildings, and site access to be established towards the northern end of the SB. For the avoidance of doubt, this evidence relates to mining activity proposed within the SB.

Expert witness Code of Conduct

- 13 While this application is not being considered by the Environment Court, I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2023 and that I have complied with it when preparing this evidence. Other than when I state I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Key issues

- 14 Below I have identified the key landscape matters that are considered in my assessment of landscape and visual effects. Within this, I have also considered the statutory planning framework which sets out certain expectations for the application area and wider setting.
- 15 The key landscape matters include:

- (a) The existing environment – the relationship of the project with the CB – the consenting mining area to the north, and the WCP and site access within northern part of the SB.
- (b) Landscape character – the effects arising from construction activity associated with site establishment, the change in landscape character from rural to mining, the addition of new structures, fences, drains, access tracks, machinery, ponds, bunds, stockpiles and planting in order to support the mining operation, and the effects arising from the mining activity itself.
- (c) Outstanding natural landscapes – the effect of the project on the adjacent Paparoa Ranges outstanding natural landscape (**ONL**).
- (d) Natural character – the effect of the project on the natural character of the coastal environment, and the effectiveness of the rehabilitation measures proposed.
- (e) Visual amenity – the change in visual amenity experienced from private properties nearby, and as experienced and viewed from the users of the Pakiroa Beach, Tasman Sea, Coast Road/SH6, local roads, Barrytown township, school, cemetery, freedom camping area, Paparoa National Park, Paparoa Track, and the Croesus Track.

Methodology

- 16 My assessment has been prepared in accordance with the concepts and principles outlined within Te Tangi a te Manu: Aotearoa Landscape Assessment Guidelines (**TTatM**). These national guidelines were published by Tuia Pito Ora, New Zealand Institute of Landscape Architects (**NZILA**) in July 2022.
- 17 A desktop study informed my assessment. This included identifying and collating relevant planning information and statutory provisions, existing aerals, topography, vegetation, land uses, and neighbouring properties. For the mining activity itself, it included understanding the proposed site layout, staging, mining methodology, levels and rehabilitation information, alongside other disciplines.
- 18 Over the course of working at Barrytown, I have visited the area six times. For the purposes of this application, I visited the application area and surrounding areas on the 22 and 23 May 2024 and 6 December 2024. The weather on all trips was generally overcast or fine. The site visits assisted with understanding the application area and wider context in further detail

and taking photographs within the area and its wider context. They also informed my assessment of effects and recommendations for mitigation.

Summary of Effects

- 19 My assessment has determined the potential landscape and visual effects arising from the proposed application for mining, processing and associated activities.
- 20 Overall, the application is considered to have a **low to moderate (minor) adverse effect on landscape character and values during pre-mining, mining and post-mining activity** and a **low adverse (less than minor) effect on landscape character in the longer term**.
- 21 This is primarily due to the previous modification of the site, including through former mining activity and vegetation clearance, the active mining disturbance area being transient and limited at any one time, the setbacks and mitigation proposed, and the ability for progressive rehabilitation to occur.
- 22 Of note, mining will follow the previously cleared pastoral areas as much as possible and exclude more heavily vegetated areas. There will be **positive effects** on landcover due to the addition of planted bunds and buffers and a new large wetland and multiple riparian margins. It is considered that in the longer term; the benefits of large amounts of additional planting outweigh the short term disturbance.
- 23 When considering the adjacent Outstanding Natural Landscape ('ONL') of the Paparoa Ranges, the project will have a **very low (less than minor) adverse effect during pre-mining, mining and post-mining** and **no effect long term**. This is because the ranges are located outside the proposed mineral extraction area and are a separate landscape entity. Even though the coastal outlook from the ranges may temporarily change, the physical, perceptual, and associative values of the ONL will remain intact.
- 24 In regard to natural character, the project will avoid significant adverse effects. It will result in a **low (less than minor) adverse effect during pre-mining, mining and post-mining activity**. Longer term, there will be a **low to moderate (minor) positive effect on natural character**. This is because the currently declining natural character of the application area is able to be reversed by the creation of a new large wetland and the rehabilitation of multiple riparian margins.

- 25 Effects on amenity as a result of the project, arise from the gradual transition in landuse from pastoral to mining, and the changes to vegetation and the landform with the addition of stockpiles, bunds, the pit, tracks, and limited lighting. The visibility of the transient mining activity (bare earth), vehicles and machinery as they move across the application area and/or the change in character from open to more enclosed as a result of planting and/or bunding generally determines the resulting effect.
- 26 When considering the visual effects generated by the project, these are largely influenced by the observer's position relative to the mining, how close the mining is at any one time, how much of the activity is visible, and the screening provided by landscape mitigation. The number of viewers, whether they are static or moving, the time of day, and the weather conditions also all play a part.
- 27 For audiences with a longer viewing distance, mining elements will appear diminished in scale as well as partially filtered and softened by intervening vegetation, topography and structures. Elevated residences offer more direct views of the project. However, mining will usually only occupy a relatively narrow portion of the overall vista at any one time. For this reason, effects will be greatest when mining is closest to a viewer and decrease when activity is further away.
- 28 Visual effects arising from the project will range from their being **no visual effect** as a result of the project, **to very low or low effects (less than minor), to low to moderate effects (minor), through to moderate to high effects (more than minor)**, at the most affected locations.
- 29 For the latter, there are two properties identified where the project will have 'more than minor' effects. This is for the residents of 101 Cargill Road and LOT2 DP2178. **Neither of these are considered 'significant' under the FTAA as the effects are relatively short term and are reversible.**
- 30 A summary table illustrating the identified level and nature of landscape effects as a result of the Project is included on the following pages.

Summary of the identified level and nature of landscape effects as a result of the Project

Landscape character	Reasoning:
<p>Effects on landuse <i>Low to moderate (minor) adverse effect –</i> During pre-mining, mining and post-mining activity</p> <p><i>Low (less than minor) adverse effect –</i> Following final rehabilitation</p>	<ul style="list-style-type: none"> • Mining activity not being uncharacteristic or unexpected. • The mining disturbance area being limited at any one time. • Activity being transient and moving across the area over time. • The 35 year duration of the activity (14 years of active mining). • Rehabilitation being progressively undertaken. • Effects being dependent on when and where mining activity is occurring.
<p>Effects on landform <i>Low to moderate (minor) adverse effect –</i> During pre-mining, mining and post-mining activity</p> <p><i>Low (less than minor) adverse effect –</i> Following final rehabilitation</p>	<ul style="list-style-type: none"> • The landscape being previously modified. • Various setbacks being imposed from the mining activity. • The effect of pre-mining, mining and post mining earthworks. • Active mining being limited to 16ha at any one time. • The mine pit being substantially lower and different to the surrounding landform, although temporary and transitioning. • The final landform being 0.63m lower (on average) due to extraction having taken place, with improved drainage, accounting for material for redistribution being brought in from the terraces to the east for rehabilitation. • The landform continuing to evolve due to ongoing coastal and geological processes.
<p>Effects on landcover <i>Low (less than minor) positive effect –</i> During pre-mining, mining and post-mining activity</p> <p><i>Low to moderate (minor) positive effect –</i> Following final rehabilitation</p>	<ul style="list-style-type: none"> • The previous clearance of the majority of indigenous forest. • The majority of change being from pastoral grassland to mining. • Mining excluding more heavily vegetated areas. • The avoidance of Granite Creek and no loss of creek extent overall once the five creek diversions are completed. • Ability for progressive rehabilitation. • The addition of mitigation bunds and screening planting. • Ability to develop a large connected new wetland area and rehabilitate riparian margins. • The long-term benefits of additional planting outweighing the short-term disturbance.
Outstanding Natural Landscapes	Reasoning:
<p>Effects on the ONL: Paparoa Ranges <i>Very low (less than minor) adverse effect –</i> During pre-mining, mining and post-mining</p> <p><i>No effect long term.</i></p>	<ul style="list-style-type: none"> • The ONL area being located outside of the mining area. • The ranges being considered a separate landscape entity. • The contrast between the very high quality/intact nature of the ranges with the modified character of the application area. • The separation distance between ranges and the application area, with SH6 and vehicle movements dividing the two. • Even though the coastal outlook may temporarily change, the physical, perceptual, and associative values of the ONL remaining intact.
Natural Character	Reasoning:
<p><i>Low (less than minor) adverse effect –</i> During pre-mining, mining and post-mining activity</p> <p><i>Low to moderate (minor) positive effect –</i> After mining is complete and all rehabilitation measures are implemented</p>	<ul style="list-style-type: none"> • The application area having downgraded natural character and the opportunity to reverse this. • Higher natural character existing outside of the application area, with the landscape being dominated by the sea/ranges. • Limiting the mining disturbance area, adopting progressive rehabilitation measures, and implementing setbacks. • That significant adverse effects on natural character will be avoided. • The opportunity to create a large new wetland and rehabilitate riparian margins.

Visual Amenity: The assessment has broken down the neighbouring areas into smaller clusters to assist with assessing the effects over such a large application area.	
Cluster 1: Further afield <ul style="list-style-type: none"> Residents further afield: <i>No adverse effect</i> 	Reasoning: <ul style="list-style-type: none"> The gradual change in landuse from pastoral to mining to pastoral/wetland. Changes to the landform, particularly the creek diversions, addition of stockpiles, bunds, the transient mining pit, and the bringing in of material from higher terraces. The addition of internal tracks. The change in character from open to more enclosed along some boundaries. Vegetation removal and new planting. The visibility of mining activity (bare earth), vehicles and machinery as they move across the application area. In terms of effects, it should be noted that: <ul style="list-style-type: none"> Mining activity is transient. Existing vegetation plus landscape mitigation will restrict views of the mining activity from some locations. Lighting will be minimal – activities occur during daylight, and there will only be a small amount of lighting on equipment at night. Effects will be greatest when mining is closest and decrease when activity is further away. Elevated houses have more direct views of the mining area. However, often mining will occupy only a relatively narrow portion of the overall vista at any one time. For those with a long viewing distance, mining elements will be diminished in scale as well as partially filtered and softened by topography, vegetation and structures.
Cluster 2: Barrytown Township <ul style="list-style-type: none"> Residents east of Coast Road/SH6: <i>Very low (less than minor) adverse effect</i> Residents west of Coast Road/SH6 and Barrytown School: <i>Ranges from very low (less than minor) to low (less than minor) adverse effect</i> 	
Cluster 3: Cargill Road, Barrytown Cemetery and Freedom Camping Area <ul style="list-style-type: none"> Residents of Cargill Road (beyond the township): <i>Ranges from low (minor), low to moderate (minor) to moderate to high (more than minor) adverse effect.</i> <ul style="list-style-type: none"> The <u>'more than minor' adverse effect</u> relates to a single dwelling at 101 Cargill Road. For these residents, mining will be closest at the start and end of year 12, throughout year 13, and at the start of year 14. A visual and nose bund will be constructed immediately in front of this property when mining activity occurs at the southern end of Section 2 and throughout Section 3. This bund will temporarily obstruct all outward views towards and along the coast, meaning the visual outlook from this property will markedly change during years 8-14 of mining. The above effect is not considered <u>'significant'</u> under the FTAA process as it is short term and is reversible. Users of Cargill Road: <i>Low to moderate (minor) adverse effect</i> Visitors to Barrytown Cemetery: <i>Very low (less than minor) adverse effect</i> Users of the Cargill Road Freedom Camping Area: <i>Low (minor) adverse effect</i> 	
Cluster 4: Pakiroa Beach and the Tasman Sea <ul style="list-style-type: none"> Users of Pakiroa Beach – South of Cargill Road: <i>Very low (less than minor) adverse effect</i> Users of Pakiroa Beach – North of Cargill Road to Granite Creek: <i>Very low (less than minor) adverse effect</i> Users of Pakiroa Beach – North of Granite Creek: <i>Low to moderate (minor) adverse effect</i> Users of Pakiroa Beach – South of Canoe Creek: <i>Low to moderate (minor) adverse effect</i> 	
Cluster 5: Canoe Creek <ul style="list-style-type: none"> <i>Negligible (less than minor) adverse effect</i> 	
Cluster 6: Prospector Place and Coast Road/SH6 <ul style="list-style-type: none"> Residents west of Coast Road/SH6: <i>Low (less than minor) adverse effect</i> Residents residing within the valley/base of the hill: <i>Ranges from no effect to low (less than minor) adverse effect</i> Residents residing on the hillside: <i>Ranges from very low (less than minor) to low (minor) adverse effect</i> 	
Cluster 7: Coast Road/SH6 (North) <ul style="list-style-type: none"> Users of Coast Road/SH6 between 3081 Coast Road/SH6 and Warren Road: <i>Very low (less than minor) adverse effect</i> Residents of Coast Road/SH6 (North): <i>Ranges from very low to low (less than minor) adverse effect</i> 	
Cluster 8: Warren Road and bush to the north <ul style="list-style-type: none"> Residents along Warren Road: <i>Ranges from no effect to very low (less than minor) adverse effect</i> 2975 Coast Road/SH6: <i>Low (less than minor) adverse effect</i> Lot 2 DP2178 (address number unknown): <i>Moderate (more than minor) adverse effect.</i> <ul style="list-style-type: none"> The <u>'more than minor'</u> effect on Lot 2 DP2178 is because mining activity will be visible across the flats at varying distances between years 1-6 until a new planted bund is constructed along the western boundary of this property. 	

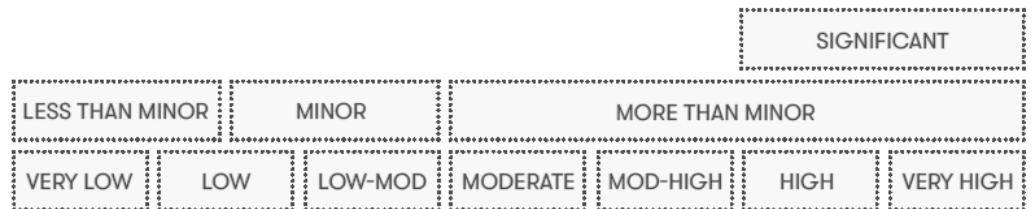
<p>During year 9 of the project, mining will come within 24 metres of the boundary of this property (up to the western edge of the bund). Whilst the new bund will provide noise and visual mitigation, screening views of the mining activity from this dwelling, it will also temporarily obstruct the residents open coastal vista that they currently experience.</p> <ul style="list-style-type: none"> ○ <u>The above effect is not considered 'significant' under the FTAA process as it is short term and is reversible.</u> 	
<p>Cluster 9: Coast Road/SH6 (Centre)</p> <ul style="list-style-type: none"> • Users of Coast Road/SH6 from north of Barrytown Township to Warren Road: <i>Ranges from no effect to very low (less than minor) adverse effect</i> • Residents of Coast Road/SH6 (centre): <i>Ranges from very low to low (less than minor) adverse effect</i> 	
<p>Cluster 10: Coast Road/SH6 (south)</p> <ul style="list-style-type: none"> • Residents of Coast Road/SH6 (south): <i>Ranges from no effect to very low (less than minor) adverse effect</i> 	
<p>Cluster 11: Fagans Creek</p> <ul style="list-style-type: none"> • Residents of Coast Road/SH6 and Glen Road: <i>Ranges from no effect to very low (less than minor) adverse effect</i> 	
<p>Cluster 12: Croesus Track and the Paparoa Ranges</p> <ul style="list-style-type: none"> • Users of Croesus Track: <i>Very low (less than minor) adverse effect</i> • Users of the Paparoa Ranges and Pororari Hut: <i>No effect.</i> 	

Cumulative effects

- 31 The summary table above illustrates the identified level and nature of landscape effects as a result of the Project. For completeness, I have considered these effects cumulative with the existing consented operations on the CB and for the WCP (not yet established) and still reach the same conclusions.

Significance of effects

- 32 Of note, where landscape and visual effects are considered to be adverse 'minor' or 'more than minor', I consider the significance of those effects to be low, as per 85(b) the FTAA.¹
- 33 This is because these effects are short term and reversible once mining activity is complete. Over time, the benefit of increased planting will outweigh the temporary disturbance.
- 34 This conclusion is well aligned with TTatM, which assists to determine when an effect becomes 'significant' using the 7-point scale of effects (included below).² Within TTatM, only 'high' or 'very high' effects are identified as being 'significant'. Neither of these two types of effects will arise from the project.



Proposed conditions

- 35 I have reviewed the proposed resource consent conditions, with a focus on Section 16.0: Landscape mitigation and rehabilitation and Section 17.0: Lighting as they relate to my area of expertise. I consider that they are appropriate because:
- (a) They require adherence with the **Landscape Mitigation Package** prepared by Glasson Huxtable Landscape Architects, dated May 2026, Revision H:
 - (i) This document illustrates the pre-mining, during mining and post mining landscape mitigation and rehabilitation. It also includes typical cross sections, plant species and growth rates.

¹ 85(b) the FTAA requires adverse effects to be assessed for their significance by the panel.

² Refer to pages 140 and 151 of *Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines*, Tuia Pito Ora New Zealand Institute of Landscape Architects, 2022. For further information refer to: <https://nzila.co.nz/about/te-tangi-a-te-manu>.

- (ii) Notwithstanding this, it is anticipated that further detailed information (including planting plans, a species schedule, and landscape specifications) would be provided, should consent be granted.
- (b) The location of the four new bunds, their dimensions and a high-level planting strategy is adequately described.
- (c) Vegetation to be retained is clearly identified.
- (d) Eco-sourcing of planting is required, and an alternative source is provided for.
- (e) The requirements for the wetland and riparian areas are covered in detail and will be further strengthened by the Rehabilitation Management Plan.
- (f) Plant quality and health are prioritised.
- (g) Landscape maintenance measures are outlined, including the expectations for plant replacement where necessary.
- (h) Lighting will be managed by controlling the number of lights, and their lux, intensity, colour, direction and mounting location.



Naomi Louise Crawford

18 May 2026