LANDSCAPE AND VISUAL EFFECTS ASSESSMENT - PEER REVIEW MEMO

CENTRAL OTAGO DISTRICT COUNCIL

RC 230325 TO ESTABLISH AND OPERATE AN ALLUVIAL GOLD MINING OPERATION AT 1346-1536 TEVIOT ROAD, MILLERS FLAT

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vivian+espie

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INTRODUCTION

- Hawkeswood Mining Limited has applied to the Central Otago District Council (**CODC**) for resource consent to establish and operate alluvial gold mining at 1346-1536 Teviot Road, Millers Flat. Vivian+Espie has been engaged by the CODC to carry out a peer review of the Landscape Effects Assessment Report prepared by Mike Moore dated 24 October 2023 (**the Moore Report**). The peer review also considers an additional memorandum (**the Moore Memo**), provided in response to a further information request, dated 20 November 2023. We visited the site on 29 November 2023. The scope of the review includes but not be limited to 1:
 - Consideration of the scope, methodology, breadth, and suitability of information and recommendations contained in the landscape assessment;
 - Evaluation of whether the conclusions reached are appropriate;
 - Examination of areas or themes in the report that lack evidence or are not well-supported;
 - Identification of deficiencies in the landscape assessment.
 - Consideration of the scope, methodology, breadth, and suitability of information and recommendations contained in the landscape assessment;

¹ As per the brief given to vivian+espie from the CODC, 9/11/2023.

CONSIDERATION OF THE SCOPE, METHODOLOGY, BREADTH AND SUITABILITY OF INFORMATION AND RECOMMENDATIONS CONTAINED IN THE LANDSCAPE ASSESSMENT

SCOPE

The Moore Report covers effects on view and visual amenity form several viewpoints, effects on landscape views and visual amenity, landscape character, and an assessment against the relevant provisions in the Central Otago District Plan. The assessment does not assess effects on private properties within the vicinity of the proposed mine.

<u>METHODOLOGY</u>

The Moore Report states in the Landscape Effects Assessment section of the report that it has been guided by the Te Tangi A Te Manu, Aotearoa New Zealand Landscape Assessment Guidelines². We consider this approach appropriate. The scale from Te Tangi a te Manu is used to describe the degree of identified effects in the Landscape Effects Assessment and Conclusion section of the Moore Report. We will use the same scale of effects.

BREADTH AND SUITABILITY OF INFORMATION

- Details of the proposed alluvial mine are set out in the application and its attached appendices.

 The details that are most relevant to this peer review include:
 - The proposal is to create an alluvial mine. The activity is to be carried out in four stages over 10 years, although the total mine life is stated to be 5-7 years.
 - The total project area is 68ha. We understand that 51ha is to be mined and the remaining 17ha will be batters, haul road and ancillary activities.
 - Stage 1 is 5.4ha. Topsoil has been cleared and this part of the site contains an established test pit area approximately 4000m² in size, established bunding, established stockpiles and established tracks to accommodate vehicle movements. We understand the the applicant anticipates that Stage 1 will be complete in 3-4 months.
 - Stage 2 is 17.5ha and is currently open paddock land and established vegetation. The
 applicant states that it is anticipated that Stage 2 will be completed in 1-1.5 years after the
 mine starts up.

² Te Tangi A Te Manu, Aotearoa New Zealand Landscape Assessment Guidelines, April 2021, New Zealand Institute of Landscape Architecture

- Stage 3 is 29ha and comprises open paddock land and an established quarry.
- Stage 4 is 16.3ha and comprises open paddock land, stockpiling, land scraped of topsoil, tracks and outdoor storage.
- The total work area including ancillary activities will be approximately 27ha comprising:
 - 12 hectares maximum of active work area, comprising the mine pit, internal haul roads and area where rehabilitation is underway. This will migrate around the site from Stage 1 to Stage 4.
 - 7ha maximum of temporary stockpiling, though this may overlap with the active work area.
 We understand that this will be primarily located within the within the Stage 1 and Stage 4 area.
 - 8ha maximum of the project area of occupied by ancillary activities where the surface will
 effectively be stabilised for the project duration, including the workshop, site office, settling
 ponds, bunding, and vehicle access. We understand that this will be located within the
 Stage 4 area.
- Two paper roads and the Clutha Gold Trail run through the site.
- Proposed mitigation measures include:
 - Bunding a maximum height of 4m has been proposed around the periphery of the mine.
 We understand the bunding will be created from topsoil stripped from the work area and will migrate around the site.
 - Stockpiles will be a maximum height of 7m.
 - The mine shall operate 5.5 days a week, 12 hours a day, Friday 7am 7pm and Saturday 7am 1pm with no earthworks or processing work occurring on Sundays or public holidays. Some machinery maintenance and dust control activities may occur on Saturday afternoons, Sundays and public holidays.
- Conditions relating to effect on landscape character are limited to those proposed within the Moore Report. The application states, 'these conclusions are subject to the mitigation measures

- recommended by Mr Moore which the Applicant proposes to adopt. We comment on the suitability of conditions in paragraph 10 below.
- No photographs or structural landscape plan were submitted with the Moore Report to show the degree of visibility or provide certainty regarding the proposed mitigation.
- 7 Several plans have been submitted with the application, often with differing information.
- We agree with the site and area description set out in the Moore Report. We note that while the mining operation is largely already set up on site, it is a not a consented activity and does not form part of the receiving environment. Therefore, when assessing the degree of adverse effects on landscape character we must assess it against landscape character and values that existed prior to the unconsented mining activity. See figures below.



Figure 1: 2021 Google Earth image of the site



Figure 2: 2023 Google Earth image of the site

RECOMMENDATIONS

The Moore Report includes several recommended mitigation measures which we consider appropriate. However, we consider additional detail is required to provide certainty around mitigation of adverse effects, we elaborate on this below.

COMMENTS ON CONDITIONS

- The mitigation measures proposed within the Moore Report are considered appropriate. We have included more details of what conditions relating to proposed mitigation measures are to achieve.

 Our comments in relation to these mitigation measures are given below in bold font.
 - Limit the consent duration to 10 years and require rehabilitation to be undertaken within that timeframe. Include maximum timeframes for each stage to provide certainty around duration of effects particularly as experienced from private residences.
 - Grassed earth bunds to 4m high, shall be established to assist with screening of the working area of the mining works from Teviot Road. Include further details of location and staging of proposed bunding to ensure bunding is established prior to mining activities being

carried out within each stage, and is not removed prior to remediation, to ensure that views of the pit and ancillary activities are adequately screened from public and private locations. Consider lowering the height of the bund to 3m along the road and trail (in locations where this is appropriate for noise), and ensure it is an appropriate gradient to retain views of hills. See image below of suitable bunding screening a similar activity. (Right hand side of the road)



Figure 3: Roadside bunding at the Luggate Quarry

- Gravel stockpiles shall be no higher than 7m. Includes further details of location and staging of proposed stockpiles to ensure stockpiles are not located in areas where they will have an adverse effect on views and visual amenity from both public and private viewpoints.
- Progressive rehabilitation of areas where mining is complete, with land contoured to blend with the surrounding land and established in pasture. Include further details of rehabilitation (particularly what shall be achieved in relation to contours, maximum gradients and reinstatement of vegetation/grass cover) to provide certainty around the visual effects both while the site is operational and once site rehabilitation is complete. Particularly relating to Objective 4.3.3 of the Central Otago District Plan which requires rural amenity values to be maintained and enhanced where practicable. This mitigation information will relate also to the maximum active work area that shall be in place at any given time.
- Removal of all buildings, roadways, stockpiles, plant and bunds on completion of mining.
 Include further details of timeframes to provide certainty around the duration of adverse effects particularly relating to views from private residences within the visual catchment of the site.

- 20m minimum setback from the Tima Burn and Clutha River / Mata Au.
- Containers / buildings on the site to be finished in Resene Iron Sand (LRV 9%) and the
 container shelter fabric to be painted dark green. Include further details of locations and
 timeframes for containers and building to ensure that they are strategically placed to
 minimise adverse effects on views particularly from private residences.

OTHER RECOMMENDATIONS

- In addition to the mitigation measures outlined in the Moore Report, it would increase clarity if the applicant were to submit an overall site plan showing the layout of the proposal. It would also be appropriate to include a condition requiring the applicant to carry out the activity in accordance with the site plan. Such a step would establish certainty regarding the locations of visually significant parts of the activity, the proposed mitigation measures, and the specified timeframes. It would also ensure that suitable mitigation has been proposed, particularly in relation to the trail and private views. The site plan should aim to achieve the following:
 - a) Shows the staging of the proposal.
 - b) Identify the location of the 7ha maximum of temporary stockpiling, in a part of the site that is sufficiently setback from private residences, public roads and trails to minimise obstruction of existing views. If the stockpile area is to be moved during the mining process also show alternative locations and timeframes.
 - c) Identify the location of the area for ancillary activities, including the workshop, site office, settling ponds, bunding, and vehicle access, in a part of the site that is appropriately screened and setback from private residences, public roads and trails to minimise obstruction of existing views. If this area is to be moved during the mining process also show alternative location.
 - d) Identify where vehicles are to be stored, to ensure vehicles are located in parts of the site where they are not highly visible.
 - e) Accurately show the location of all bunding and timeframes for construction and remedial works, to provide certainty around timeframes and mitigation measures from both private and public views. Particularly relating to the trail (both the existing alignment and the alternative alignment), Teviot Road and the northern and northwestern boundaries (where views are available from residential properties along Teviot Road and Clutha Road). We note that

several plans showing bunding have been submitted with the application. However, bunding appears to have been informed by recommendations in Hegley Acoustics Noise Report, rather than strategically placed for visual mitigation. As such, the plans do not include bunding in key locations including along either cycle trail alignment. It is recommended that additional bunding is shown on the site plan to provide assurance regarding the level of screening.

- Conditions of consent could be granted such that eth plans and information relating to out information above, need not all be supplied at once. Potentially, a package of information could be submitted in relation to each stage, provided that a consent condition clearly sets out what is to be achieved.
- It is recommended that the applicant considers ways in which enhancement of amenity values, establishment of indigenous species, and the addressing of long term concerns might be achieved as part of this proposal. Statutory documents give guidance regarding enhancement of rural amenity values and opportunities to include indigenous species during the rehabilitation. Section 4.3.3 of the Central Otago District Plan seeks to 'where practicable enhance rural amenity value'. It appears practicable to enhance rural amenity values through remedial works. Additionally, ssection 5.4.6 (17) of the Kāi Tahu Ki Otago Natural Resource Management Plan 2005 (NRMP) (the relevant iwi management plan to the application site area) states that all applications for mining should include site rehabilitation plans that include the planting of indigenous species and address long term concerns. The Applicant proposes to rehabilitate the site to its current state (as farmland), which does not include any planting of indigenous species or address long term concerns. It is noted that the subject site is adjacent to the Clutha River/Mata Au and the Tima Burn and there could be opportunities for establishment of indigenous riparian planting.

WHETHER THE CONCLUSIONS REACHED ARE APPROPRIATE:

In this section of the review we comment on areas of disagreement regarding conclusions in the Moore Report. Where we agree with the conclusions, we have not offered comment. With regard to conclusions reached relating to effects on views and visual amenity, visual effects are:

"effects on landscape values as experienced in views. ... A proposal that is in keeping with the landscape values, for example, may have no adverse visual effects even if the proposal is a notable change to the

view. Conversely, a proposal that is completely out of place with landscape values may have adverse effects even if only occupying a portion of the view" ³.

Effect	Moore Report Findings	Peer Review Findings
Effects on views and visual amenity from Teviot Road	 Adverse visual effects will be high during operation. Following rehabilitation visual effects will be neutral – positive / low 	 The proposed bunding will screen views of the open paddock land within the subject site from the road. However, these paddocks make up a minor part of wider views. View towards the the open paddock land on the opposite side of the road and the hills in background will be largely maintained. When taking into consideration that a viewer is likely to be travelling past the site and not experiencing views for prolonged periods of time, we consider the degree of adverse effects on views from Teviot Road will be moderate at most. This could be lowered to moderate – low if conditions were included (as discussed in recommendations above) regarding the height and shape of bunding. Under the current proposal prominent elements including stockpiles and machinery may be visible. Again, adverse effects relating to visibility of prominent elements could be mitigated to some extent if conditions were included (as discussed in recommendations above) regarding the location of these elements. Agree that once rehabilitation has been undertaken, there will be no lasting effect and visual effects will be neutral. We consider that insufficient information has been provided in the application regarding the rehabilitation process to determine that there will be a positive effect. However, we acknowledge that there is potential to encourage a positive effect through conditions regarding rehabilitation.

³ Te Tangi A Te Manu, Aotearoa New Zealand Landscape Assessment Guidelines, April 2021, New Zealand Institute of Landscape Architecture, paragraphs 6.25 and 6.27.

Effects	on	views	and			
visual	am	enity	from			
State Highway 8						

- Adverse visual effects will be moderate-low during operation.
- Following rehabilitation visual effects will be neutral
- Agree that the site is considerably screened by existing vegetation between the site and State Highway 8. However, this vegetation is largely within the river corridor and the applicant has no control it. As such, it cannot be relied upon for mitigation. If the vegetation were removed the site would be highly visible. Stockpiles and outdoor storage are currently concentrated near the southwestern boundary of the site approximately 200m from the state highway. Given the scale and proximity of elements that are not typically rural, the higher road usage, and that the vegetation that provides screening cannot be relied upon, we consider that the degree of adverse effects on views and visual amenity from State Highway 8 could be up to moderate-high. Adverse effects relating to visibility of prominent elements could be mitigated to some extend through conditions.
- Agree that once rehabilitation has been undertaken there will be no lasting effect. We also consider that there is potential to encourage a positive effect through conditions regarding rehabilitation particularly along the boundary of the river.

Effects on views and visual amenity from Clutha Gold Trail

- Adverse visual effects will be moderate during operation.
- Following rehabilitation visual effects will be neutral positive / low
- We were unable to find details of mitigation for the section of cycle trail that goes through the site. Given a cyclist is likely to be travelling relatively slowly and to be immersed in their surroundings, we consider that the adverse effects on views and visual amenity will be of high degree. Again, conditions regarding screening, setbacks and location of storage areas could mitigate effects and lower the the degree of adverse effects.
- Agree that once rehabilitation has been undertaken there will be no lasting effect and visual effects will be neutral. We consider that insufficient information has been provided in the application regarding the rehabilitation process to determine that there will be a positive effect. However, we acknowledge that there is

	potential to encourage a positive effect through conditions regarding rehabilitation.
Effects on views and visual amenity from Neighbouring properties	 We understand that several properties surrounding the site have not given written approval including 1334 Teviot Road, 5474 Ettrick-Raes Junction Road (SH 8), and 61-69 Clutha Road.
	 1334 Teviot Road is a rural living site located at to the north of the site, setback approximately 70m from the proposed operational area. A dwelling and associated amenity planting and domestication creates a buffer between the operational area and the rural living site.
	- A four-metre bund is proposed along the boundary of operational area. This will provide additional screening. Details regarding timeframes, layout and outdoor storage and stockpiling within the operation area nearest this property are vague and offer little certainty regarding duration or degree of adverse effects on views and visual amenity. As such, the degree of adverse effect on views and visual amenity from this property could be up to a high degree. Again, conditions regarding screening, setbacks and location of storage areas could mitigate effects and lower the the degree of adverse effects.
	- 61-69 Clutha Road are rural living allotments located approximately 200m west of the site on the opposite side of the Clutha River/ Mata Au. The western side of the river is slightly elevated such that the sites overlook the operational area. Intermittent vegetation largely within the rural living allotments and the river corridor offer screening but are located outside the applicant's site and control and cannot be relied upon. As such, the degree of adverse effect on views and visual amenity from this property could be up to a high degree. Again, conditions creating certainty around the level of screening, setbacks and location of storage areas could reduce the the degree of adverse effects.

- 5474 Ettrick-Raes Junction Road (SH 8) is a rural living allotment located approximately 500m west of the site, on an elevated hillside, overlooking the site. Details regarding timeframes, layout and outdoor storage and stockpiling within the operation area nearest this property are vague and offer little certainty regarding duration or degree of adverse effects on views and visual amenity. As such, the degree of adverse effect on views and visual amenity from this property could be up to a high degree. Again, conditions regarding screening, setbacks and location of storage areas could lower the the degree of adverse effects.
- Once rehabilitation of the site is complete there will be no lasting effect. There is also potential to encourage a positive effect through conditions regarding rehabilitation.

Effects on landscape character

- Adverse effect will be high while operational.
- Proposed mitigation measures will limit the scale of impacts
- Degree of adverse effects on openness, naturalness and rural amenity ranges from high to low-moderate.
- Long term effect nil positive.

- We agree that the adverse effect on landscape character while the mine is operational. We agree of adverse effects on openness, naturalness and rural amenity will vary depending on location and staging of the activity. However, a lack of detail around duration and mitigation makes it difficult to assess how proposed mitigation measures will limit the scale of impacts.
- Again we agree that once rehabilitation has been undertaken there will be no lasting effect and visual effects will be neutral. We consider that insufficient information has been provided in the application regarding the rehabilitation process to determine that there will be a positive effect. However, we acknowledge that there is potential to encourage a positive effect through conditions regarding rehabilitation.

CONSIDERATION OF AREAS OR THEMES IN THE REPORT THAT ARE LACKING EVIDENCE OR ARE NOT SUPPORTED WELL.

The conclusions in the Moore Report rely heavily on mitigation measures including limited timeframes, limits on how much of the site is mined at once, progressive remediation and bunding. The details of the proposal provided in the application are ambiguous and there is limited detail regarding how the proposed mine will look. There are also several plans submitted with the application with conflicting information. There does not appear to be an overall structural landscape plan or site plan detailing locations of proposed mitigation measures, temporary buildings and storage and stockpiles, making it difficult to determine the degree of adverse effects on views and visual amenity.

With regard to visual mitigation, the proposed bunding appears to be informed by a noise report and has not been designed to mitigate effects on views and visual amenity. Further details confirming the location and timeframe of bunds is required to provide certainty around the level of screening provided.

The activity is described as temporary several times throughout the application. Including using temporary to describe the overburden stockpiles. It is my understanding the that stockpiles once established will be located in the same place and any material removed for remedial works with be replaced with material removed from the active pit. As such, the visual effects associated with the stockpiles could be for up to 10 years. Due to the particularly long duration of some of these activities the temporary nature is not considered a mitigating factor when determining the degree of adverse effects particularly from private residences.

With regard to timeframes, the use of ambiguous wording provides no certainty around timeframes. 'Stage 1 will take approximately 3-4 months to complete. The mining of Stage 2 will be a continuation of Stage 1 subject to upgrading of inferred resources to reserve status. Scheduling of mineable resources reasonably inferred from drilling indicates Stage 2 will be completed approximately 1 to 1.5 years after mine start up. Currently it is proposed that Stages 3 and 4 will follow sequentially to give a total mine life of 5-7 years.⁴⁷ Further details confirming the timeframe of stages is required to provide certainty around the duration of effects particularly in relation to surrounding residential development.

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⁴ Page 81 of application

The Moore report concludes that there will be a very low positive effect on views and visual amenity following rehabilitation of the mine. The details of the rehabilitation involve removal of bunding, backfilling, contouring to a close as possible to the pre-existing land contour and regrassing. We do not consider that the information provided suggests that there will be a positive effect.

CONCLUSIONS

In conclusion, we generally agree with the findings in the Moore Report. However, these findings hinge on mitigation measures that lack sufficient detail in the application. Discrepancies arise concerning the extent of adverse effects on views and visual amenity from roads, the trail, and public viewpoints. Yet, we attribute much of this disagreement to the need for precise detailing in the proposal. While we generally agree with the findings, concerns persist regarding the adequacy of mitigation details, especially regarding mitigating views from key locations including such as State Highway 8, the Clutha Gold Trail and surrounding residential properties. Additional information and conditions are necessary to address these concerns and provide certainty around mitigation of potential adverse effects on views and visual amenity.

vivian+espie

Quality Assurance

Report prepared by Vivian and Espie for Central Otago District Council					
Reviewed and Approved By	Jess McKenzie	Landscape Architect	13 December 2023		





Viewpoint 1 - View from the Clutha Gold Trail adjacent to the subject site. Mining activities are fully screened by mounding.



Viewpoint 2 - View from the Clutha Gold Trail adjacent to the subject site.



Viewpoint 3 - View from the site looking towards the Clutha Gold Trail adjacent to the subject site.



Viewpoint 4 - View of the dredge from within the site, the test pit and stockpiles can be seen behind the dredge.



Viewpoint 5 - Looking towards 5474 Ettrick-Raes Junction Road (SH 8) which overlooks the subject site from on top of the stockpiles within the site.



Viewpoint 6 - Looking towards the test pit and stock pile area from 1346 Teviot Road which forms part of the subject site.



Viewpoint 7 - Looking towards houses on from Clutha Road from 1346 Teviot Road which forms part of the subject site.



Viewpoint 8 - Looking towards the test pit and stock pile area from 1346 Teviot Road which forms part of the subject site.



Viewpoint 9 -Looking towards the test pit and stock pile area from 1346 Teviot Road which forms part of the subject site.



Viewpoint 10 - Looking towards the site from Teviot Road adjacent to 1536 Teviot Road.



Viewpoint 11 - Looking towards the suject site from Teviot Road adjacent to 1535A Teviot Road.



Viewpoint 12 - Looking towards the subject site from Teviot Road where the current Clutha Gold Trail alignment enters the subject site.



Viewpoint 13 - Looking towards the subject site from Teviot Road where the proposed Clutha Gold Trail alignment enters the subject site.



Viewpoint 14 - Looking towards the subject site from Teviot Road adjacent to the subject site.



Viewpoint 15 - Viewpoint 14 - Looking towards the subject site from Teviot Road opposite the entrance to 1346 Teviot Road.



Viewpoint 16 - Looking towards the subject site from Ettrick-Raes Junction Road (SH 8)