Saturday 12th September 2026

Central Otago District Council

Attn Fiona Garrett

Email: [redacted]

cc Louise Taylor, Taylor Planning, Email: [redacted]

Ref: L_2026044.03

Fiona,

Memo: Natural Hazards Assessment, Remarkables Ski Area Expansion

My name is Mark Cruden. I have been engaged by the Central Otago District Council to undertake a peer review of a Natural Hazards Assessment relating to the proposed Remarkables Ski Area expansion into Doolans Basin.

I am the Director and Senior Engineer at Meyer Cruden Engineering Ltd. I hold a Bachelor of Civil Engineering (Honors). I am a Chartered Professional Engineer (Civil and Geotechnical) and a Professional Member of Engineering New Zealand. I have 25 years of experience and have worked as an engineer in the Central Otago region since 2003. My experience in ski area development began as a graduate engineer in Scotland, where I worked on ski area infrastructure and development projects for Cairngorm Mountain resort, Aviemore.

I have undertaken numerous natural hazard assessments and subsequent mitigation designs. Recent examples of my work in this area include: -

- landslide assessment and mitigation design for a proposed restaurant in Soho Basin at Cardrona Alpine Resort,
- landslide assessment and design for the Snowsports New Zealand Olympic Dry slope,
- Rockfall risk assessment for the Mt Iron public walking trails on behalf of Queenstown Lakes District Council,
- landslide assessment and mitigation design for several locations on Central Otago District Council's roading network,
- numerous alluvial fan, flooding and liquefaction hazard assessments to facilitate residential development in the region.

This list is not exhaustive but provides a sample of the range and scale of projects I have been involved in. I have read and agree to comply with the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023.

Findings

This letter reports the findings of my review of NZSKI's Natural Hazards Assessment for the Remarkable Ski Area Expansion into the Doolans Basin. The assessment was prepared by Stantec NZ Ltd on behalf of NZSKI.

My review is limited to the natural hazards present within the CODC boundaries. I have subsequently been engaged by Queenstown Lakes District Council to provide advice in relation to natural hazards specifically affecting aspects of the development proposed within QLDC boundaries. This memo does not report on those hazards. In undertaking this review I have completed the following activities.

- I undertook a helicopter fly over of the areas of the expansion that lie with the CODC boundaries.
- I reviewed and provided an initial round of comments on the report titled "Remarkables Ski Area Expansion Project, Natural Hazards Assessment", Stantec New Zealand, dated 29 April 2026 and associated draft development plans prepared by Southern Land.
- I reviewed and provided a second round of comments on further information provided in by Stantec in a memo titled "Reference: Responses to Questions on Doolans Natural Hazards Assessment" dated 10 June 2026. The additional information provided broadly satisfied my initial queries, subject to specific conditions being included in any resource consent granted. I provided these draft conditions as part of my review.
- I reviewed and provided a response to a letter from Mitchell Daysh to Fiona Garrett (CODC), dated 31 July 2026. This letter proposed variations to my draft consent conditions. I provided a response with my comments on the variations proposed.
- I have subsequently reviewed a document titled "Draft Resource Consent Conditions – 3 September 2026". Based on my review of that document I recommend amendments to the draft conditions, as included in table 1 overleaf.

Subject to these conditions being amended I am satisfied that NZSKI's natural hazard assessment and proposed mitigations are adequate.

Regards



Mark Cruden, Director

Table 1 - consent condition amendment recommendations

Condition	Recommendation
EW.1	Condition EW.1 should be amended to include the following <u>additional</u> information: *All earthworks shall be designed by a suitably qualified and experienced Geoprofessional who shall specify appropriate temporary and permanent cut and fill batters and heights, material requirements, drainage, and testing requirements.*
EW.4	Condition EW.4 should be amended to include the following <u>additional</u> information *All earthworks shall be supervised by a suitability qualified and experienced Geoprofessional.*
GEO.3	Condition GEO.3 should be amended to read *A rockfall hazard risk assessment shall be completed by a suitably qualified and experienced Geoprofessional of the rockfall hazard present above the proposed Water Storage Reservoir* ***<u>and any ski trails near, or within the rockfall hazard area.</u>*** *This must be provided to the Consent Authority at least 20 working days prior to any earthworks commencing within the Doolans Basin.*
GEO.4	Item (i) of condition GEO.4 should be amended to read *A walkover inspection to identify rocks at risk of falling into the Water Storage Reservoir Site* ***<u>or any proposed ski trails that skirt or enter the toe of the rockfall runout zone</u>.***

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