

Our ref: 5498-G2
5 May 2021

Perisher Blue Pty Ltd
By email: andrew.kennedy@vailresorts.com.au

Attention: Andrew Kennedy

Dear Andrew,



Suite 2.06 / 56 Delhi Road
North Ryde NSW 2113
02 9878 6005
assetgeoenviro.com.au



**Planning,
Industry &
Environment**

Issued under the Environmental Planning and Assessment Act 1979

Approved Application No DA 10115

Granted on the 9 September 2021

Signed MB

Sheet No 7 of 63

Mt Perisher 6-Seater Ski Lift, Mt Perisher, NSW

Geotechnical Assessment of Modified and Additional Plans

1. Introduction

This letter presents a geotechnical assessment of modified and additional plans for a proposed new 6-seater ski lift at Mt Perisher. The assessment was requested on 28 April 2021 by Mr Andrew Kennedy of Perisher Blue Pty Ltd and follows on from a previous geotechnical assessment by AssetGeoEnviro (Asset) dated 2 December 2020, reference 5498-G1 Rev 4. This letter must be read in conjunction with the previous report and the attached "Important Information about your Geotechnical Report".

2. Modified Plans

Modified and additional plans referred to for this assessment comprised:

- Civil Plans from CLM Civil, job number T-106 (C), sheets 1 to 5 of 5, dated 5 May 2021 – showing Uphill Line Circuit.
- Civil Plans from CLM Civil, job number T-106(C), sheet 1, dated 5 May 2021, T-106 (D), sheets 2 to 8, dated 22 January 2021, showing Bottom Station (plans, sections, and stormwater outlet details), and Top Station (plans and sections).
- Structural Plans from John Skurr Consulting Engineers, drawing numbers S1000, S1001, and S1004, showing RFID gate footing design.
- Drawing from Doppelmayr, reference S-21805-F, index 13, showing Eyre T Bar return station foundations.
- Drawings from Chairkit, reference CK6D.18.1.2.519.1, dated 18 July 2018, showing CK6D Loading Conveyor details.

3. Discussions & Recommendations

Based on our review of the abovementioned modified and additional plans, we note the following.

- The Uphill Line Circuit Plans, CLM T-106(B), show the location of the existing and proposed safety circuit conduit, which itself has no significant geotechnical impact.
- The Bottom Station Site Grading Plan, CLM T-106(C), includes long section for the Bottom Station which indicates cutting of less than about 2m depth over a length of about 45m and gradients of less than 7% (4°). This cutting is not considered to present a significant geotechnical impact.
- The Top Station Site Grading Plan, CLM T-106(C), requires cutting back existing rock outcrop. This will likely require use of blasting to break up the rock. Reference should be made to Section 6.4.1 in the previous Asset report.
- The RFID Gate Plans, John Skurr Consulting Engineers, indicate typical pad footing designs based on 100kPa allowable bearing pressure foundation. We recommend that the foundation be checked and certified for an allowable bearing pressure of 200kPa or better, given the location of the pad footings in sloping terrain.
- The T Bar Return Station Foundation Plans, Doppelmayr, indicate a relatively shallow large pad footing exerting a maximum soil pressure of 220 kPa. This is well below the allowable bearing pressure of at least 600kPa which is anticipated at this location. No further geotechnical consideration is required for design consideration.
- The Loading Conveyor Details, Chairkit, show dimensions and layout only with no indication of design or allowable bearing pressure required for the foundation material. The designer must confirm that the allowable bearing pressure required for this structure does not exceed the recommended bearing pressures in Section 6.3.1 of the previous Asset report.

Our previous recommendations outlined in Section 7 of our previous Asset report including assessment regarding Site Suitability (Section 7.1) are still applicable.

4. Limitations

In addition to the limitations inherent in site investigations (refer to the attached Information Sheets), it must be pointed out that the recommendations in this report are based on assessed subsurface conditions from limited investigations. In order to confirm the assessed soil and rock properties in this report, further investigation would be required such as coring and strength testing of rock, and should be carried out if the scale of the development warrants, or if any of the properties are critical to the design, construction or performance of the development.

It is recommended that a qualified and experienced Geotechnical Engineer be engaged to provide further input and review during the design development; including site visits during construction to verify the site conditions and provide advice where conditions vary from those assumed in this report. Development of an appropriate inspection and testing plan should be carried out in consultation with the Geotechnical Engineer.

This report and details for the proposed development must be submitted to relevant regulatory authorities that have an interest in the property or are responsible for services that may be within or adjacent to the site for their review prior to commencement of construction.

Asset accepts no liability where our recommendations are not followed or are only partially followed. The attached document "Important Information about your Geotechnical Report" provides additional information about the uses and limitations of this report.

Please do not hesitate to contact the undersigned if you have any questions regarding this report or if you require further assistance.

For and on behalf of

AssetGeoEnviro



Mark Bartel

BE, MEngSc, GMQ, CPEng, RPEQ/NER(Civil), APEC IntPE(Aus)
Managing Director | Senior Principal Geotechnical Engineer

Encl: Department of Planning & Environment Form 1
Important Information about your Geotechnical Report

Document Control

Distribution Register

Copy	Media	Recipient	Location
1	Secure PDF	Andrew Kennedy	Perisher Blue Pty Ltd
2	Secure PDF	Michael Fearnside	Perisher Blue Pty Ltd
3	Secure PDF	Mark Bartel	Asset Geotechnical Engineering

Document Status

Rev	Revision Details	Author	Reviewer		Approved for Issue		
			Name	Initials	Name	Initials	Date
0	Initial issue	M. Bartel			M. Bartel	<i>MAB</i>	5 May 2021




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 <p>Planning, Industry & Environment</p>	<p>Geotechnical Policy</p> <p>Kosciuszko Alpine Resorts</p> <p><i>Issued under the Environmental Planning and Assessment Act 1979</i></p> <p>Approved Application No DA 10115</p> <p>Granted on the 9 September 2021</p> <p>Signed MB</p> <p>Sheet No 8 of 63</p>
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Form 1 – Declaration and certification made by geotechnical engineer or engineering geologist in a geotechnical report.

DA Number: _____

To be submitted with a development application

You can use Form 1 to verify that the author of a geotechnical report is a geotechnical engineer or engineering geologist as defined by the Department of Planning & Environment (DP&E) Geotechnical Policy. Alternatively, where a geotechnical report has been prepared by a professional person not recognised by DP&E Geotechnical Policy, then Form 1 may be used as technical verification of the geotechnical report if signed by a geotechnical engineer or engineering geologist as defined by the DP&E Geotechnical Policy.

Please contact the Alpine Resorts Team in Jindabyne for further information - phone 02 6456 1733.

To complete this form, please place a cross in the appropriate boxes ☐ and complete all sections.

1. Declaration made by geotechnical engineer or engineering geologist as part of a geotechnical report

I, Mr ☒ Ms ☐ Mrs ☐ Dr ☐ Other

First Name

Family Name

Mark

Bartel

OF

Company/organisation

Asset Geotechnical Engineering Pty Ltd trading as AssetGeoEnviro

on this the 5th day of May 20 21

certify that I am a geotechnical engineer or engineering geologist as defined by the "Policy" and I (tick appropriate box)

☐ prepared the geotechnical report referenced below in accordance with the AGS 2000 and DP&E Geotechnical Policy – Kosciuszko Alpine Resorts.

☒ am willing to technically verify that the Geotechnical Report referenced below has been prepared in accordance the AGS 2000 and DP&E Geotechnical Policy – Kosciuszko Alpine Resorts.

2. Geotechnical Report Details

Report Title

Geotechnical Assessment of Modified Plans, ref: 5498-G2

Proposed Mt Perisher 6-Seater Ski Lift, Mt Perisher NSW – Geotechnical Assessment, ref: 5498-G1-Rev4

Author

Mark Bartel

Dated

2 December 2020

5 May 2021

DA Site Address

Mt Perisher, NSW

DA Applicant

Perisher Blue / Vail Resorts

I am aware that the Geotechnical Report I have either prepared or am technically verifying, (referenced above) is to be submitted in support of a development application for the proposed development site (referenced above), and it's findings will be relied upon by the Consent Authority in determining the development application.

3. Checklist of essential requirements to be contained in a geotechnical risk assessment report to be submitted with a development application

The following checklist covers the minimum requirements to be addressed in a Geotechnical Risk Management Report. This checklist is to accompany the report.

Please tick appropriate box

- ☒ Risk assessment of all identifiable geotechnical hazards in accordance with AGS 2000, as per 6.1 (a) of the policy.
- ☒ Site plans with key hazards identified and other information as per 6.1 (b)
- ☒ Details of site investigation and inspections as per 6.1 (c)
- ☒ Photographs and/or drawings of the site as per 6.1 (d)
- ☒ Presentation of geotechnical model as per 6.1 (e)
- ☒ A specific conclusion as to whether the site is suitable for the development proposed on the above site, if applicable, subject to the following conditions;
 - ☒ Conditions to be provided to establish design parameters,
 - ☒ Conditions to be incorporated into the detailed design to be submitted for the construction certificate,
 - ☒ Conditions applying to the construction phase,
 - ☒ Conditions relating to ongoing management of the site/structure.

4. Signatures

Signature

Mark Bartel

Chartered professional status

CPEng 35641 NER (Civil)

Name

Mark Bartel

Date

5 May 2021

5. Contact details

Department of Planning & Environment
Alpine Resorts Team
Shop 5A, 19 Snowy River Avenue
PO Box 36, JINDABYNE 2627
Telephone: 02 6456 1733
Facsimile: 02 6456 1736
Email: alpineresorts@planning.nsw.gov.au

Scope of Services

The geotechnical report ("the report") has been prepared in accordance with the scope of services as set out in the contract, or as otherwise agreed, between the Client and Asset Geotechnical Engineering Pty Ltd ("Asset"), for the specific site investigated. The scope of work may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

The report should not be used if there have been changes to the project, without first consulting with Asset to assess if the report's recommendations are still valid. Asset does not accept responsibility for problems that occur due to project changes if they are not consulted.

Reliance on Data

Asset has relied on data provided by the Client and other individuals and organizations, to prepare the report. Such data may include surveys, analyses, designs, maps and plans. Asset has not verified the accuracy or completeness of the data except as stated in the report. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations ("conclusions") are based in whole or part on the data, Asset will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to Asset.

Geotechnical Engineering

Geotechnical engineering is based extensively on judgment and opinion. It is far less exact than other engineering disciplines. Geotechnical engineering reports are prepared for a specific client, for a specific project and to meet specific needs, and may not be adequate for other clients or other purposes (e.g. a report prepared for a consulting civil engineer may not be adequate for a construction contractor). The report should not be used for other than its intended purpose without seeking additional geotechnical advice. Also, unless further geotechnical advice is obtained, the report cannot be used where the nature and/or details of the proposed development are changed.

Limitations of Site Investigation

The investigation program undertaken is a professional estimate of the scope of investigation required to provide a general profile of subsurface conditions. The data derived from the site investigation program and subsequent laboratory testing are extrapolated across the site to form an inferred geological model, and an engineering opinion is rendered about overall subsurface conditions and their likely behavior with regard to the proposed development. Despite investigation, the actual conditions at the site might differ from those inferred to exist, since no subsurface exploration program, no matter how comprehensive, can reveal all subsurface details and anomalies.

The engineering logs are the subjective interpretation of subsurface conditions at a particular location and time, made by trained personnel. The actual interface between materials may be more gradual or abrupt than a report indicates.

Therefore, the recommendations in the report can only be regarded as preliminary. Asset should be retained during the project implementation to assess if the report's recommendations are valid and whether or not changes should be considered as the project proceeds.

Subsurface Conditions are Time Dependent

Subsurface conditions can be modified by changing natural forces or man-made influences. The report is based on conditions that existed at the time of subsurface exploration. Construction operations adjacent to the site, and natural events such as floods, or ground water fluctuations, may also affect

subsurface conditions, and thus the continuing adequacy of a geotechnical report. Asset should be kept apprised of any such events, and should be consulted to determine if any additional tests are necessary.

Verification of Site Conditions

Where ground conditions encountered at the site differ significantly from those anticipated in the report, either due to natural variability of subsurface conditions or construction activities, it is a condition of the report that Asset be notified of any variations and be provided with an opportunity to review the recommendations of this report. Recognition of change of soil and rock conditions requires experience and it is recommended that a suitably experienced geotechnical engineer be engaged to visit the site with sufficient frequency to detect if conditions have changed significantly.

Reproduction of Reports

This report is the subject of copyright and shall not be reproduced either totally or in part without the express permission of this Company. Where information from the accompanying report is to be included in contract documents or engineering specification for the project, the entire report should be included in order to minimize the likelihood of misinterpretation from logs.

Report for Benefit of Client

The report has been prepared for the benefit of the Client and no other party. Asset assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of Asset or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own inquiries and obtain independent advice in relation to such matters.

Data Must Not Be Separated from The Report

The report as a whole presents the site assessment, and must not be copied in part or altered in any way.

Logs, figures, drawings, test results etc. included in our reports are developed by professionals based on their interpretation of field logs (assembled by field personnel) and laboratory evaluation of field samples. These data should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

Partial Use of Report

Where the recommendations of the report are only partially followed, there may be significant implications for the project and could lead to problems. Consult Asset if you are not intending to follow all of the report recommendations, to assess what the implications could be. Asset does not accept responsibility for problems that develop where the report recommendations have only been partially followed if they have not been consulted.

Other Limitations

Asset will not be liable to update or revise the report to take into account any events or emergent circumstances or fact occurring or becoming apparent after the date of the report.