

QUEENSTOWN LAKES DISTRICT COUNCIL

VARIATIONS HEARING PANEL

DECISION FOR: Variation 8
ISSUE: Earthworks
DATED: 11 November 2002

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1.0 INTRODUCTION

This report discusses and makes decisions on submissions received in relation to Variation 8 – Earthworks. Although this report is intended as a stand-alone document, a more in-depth understanding of the Variation, the process undertaken, and related issues may be gained by reading the relevant Section 32 report prepared for the Variation as publicly notified on 20 October 2001.

The relevant provisions in the Queenstown Lakes District Council's Proposed District Plan (hereafter referred to as the PDP) which are affected by the Variation are:

Plan Section	Provision
4.10.1	District Wide Issues: Earthworks, Resources, Activities and Values
4.10.2	Issues
4.10.3	Objectives and Policies
4.10.3	Implementation Methods
7.5.5.1 x	Residential Areas: Rules x - Site Standards: Earthworks
7.7.2 xxiv	Assessment Matters
8.2.4.1 x	Rural Living Areas: Rules x - Site Standards: Earthworks
8.3.2 xii	Assessment Matters
9.2.5.1 xii	Townships: Rules x - Site Standards: Earthworks
9.3.2 xvi	Assessment Matters
10.6.5.1 x	Queenstown: Rules - Site Standards: Earthworks
10.7.5.1 x	Wanaka: Rules - Site Standards: Earthworks

10.8.5.2 ix	Arrowtown: Rules - Site Standards: Earthworks
12.4.5.1 v	Rural Visitor Zone: Rules - Site Standards: Earthworks
12.5.2 xiii	Assessment Matters: Earthworks
12.7.5.1 iv	Penrith Park Zone: Rules - Site Standards: Earthworks
12.4.6 v	Assessment Matters: Earthworks
12.9.5.1 iv	Bendeemer Zone: Rules - Site Standards: Earthworks
12.11.4	Non - Notification of Applications
12.11.5.1 iv	Remarkables Park Zone: Rules - Site Standards: Earthworks
12.11.6 iii	Resource Consent Assessment Matters: Earthworks
12.13.5.1 i	Hydro Generation: Rules - Site Standards: Earthworks
12.13.6 xxiv	Resource Consent Assessment Matters: Earthworks
12.15.5.1 iii	Quail Rise: Rules - Site Standards: Earthworks
12.15.6 v	Resource Consent Assessment Matters: Earthworks
17.2	Utilities Rules
Interpretative Diagrams	5. A), B), C); 6.

Submissions are assessed either individually or grouped where the content of submissions is the same or similar.

In summarising submissions, the name of the submitter is shown in **bold**, with their submission number shown in normal font within a square bracket. In summarising further submissions, the name of the further submitter is shown in ***bold italics***, with their further submission number shown in *italics* within a square bracket.

In making decisions the Council has:

- (i) been assisted by a report prepared by its planning staff. This report was circulated to those persons and bodies seeking to be heard at the hearing, prior to the hearing taking place;
- (ii) had regard to matters raised by submitters and further submitters in their submissions and further submissions and at the Council hearing; and
- (iii) had regard to the provisions of Section 32 of the Resource Management Act 1991.

Attached as Appendix 1 is a revised version of the relevant provisions of Parts 4, 7,8,9,10 and 12 of the Proposed District Plan, updated to have regard to the matters contained in this Decision. Where there is any inconsistency between the provisions contained in Appendix 1 and matters in the Decision, then the provisions in Appendix 1 shall dominate.

All decisions to submissions are included within a box headed 'Decision'. Where there are changes to be made to the Proposed District Plan these are shown as underlined text. This indicates where specific text is to be included in the Proposed District Plan. Text that is shown as struck out (i.e. with a line through it) indicates where text is to be removed from the Proposed District Plan.

2.0 BACKGROUND

Prior to the notification of this Variation, the PDP provided very limited control over earthworks, particularly in urban and rural living areas. This was raised as a concern because of the potential effects generated from earthworks. These can be summarised as follows:

- Visual effects through changing the form and nature of Landscapes;
- Nuisance effects, including dust and noise;

- Effects on water quality resulting from silt and sediment run-off;
- Effects on land stability; earthworks on steep slopes can exacerbate erosion and undermine neighbouring sites;
- Changes in natural ground level, so that determining building height within urban and rural areas becomes difficult;
- The deposition of fill, changing the form and nature of the landscape, blocking views and changing natural drainage patterns.

It was considered that provisions should be included in the Plan that enable greater control over the effects of earthworks in both rural living and urban areas so that adverse environmental effects can be avoided, remedied or mitigated.

During the preparation of the Variation a detailed analysis of alternative options, including the costs and benefits of each, was undertaken in accordance with Section 32 of the Resource Management Act 1991, hereafter referred to as "the RMA". The outcome of the Section 32 analysis led the Council to consider that the most effective and efficient method of achieving the purpose of Variation 8 was to include District Wide issues, objectives and policies in Part 4, and the adoption of site standards within Parts 7, 8, 9, 10, 11 and 12 of the Proposed District Plan. The Council has since decided that a review of the earthworks provisions for the Rural General zone (section 5) will be considered in a separate Variation.

Fourteen original submissions and twelve further submissions were received with regard to Variation 8 – Earthworks. Part 3.0 of this report lists all those persons or parties that have made a submission to the Variation.

Part 4.0 of this report summarises oral and written evidence presented to the Panel by four separate parties at the Hearing on 23 September 2002. Part 5.0 of this report considers and makes decisions in relation to all the submissions received in regard to Variation 8. It is noted that some of the submissions received are made in a general manner in respect of the Variation as a whole.

3.0 LIST OF SUBMITTERS

The following is a list of submissions to Variation 8

Original Submitters	Submission #
Fish & Game New Zealand	8/4/1
Foresight Development	8/5/1; 8/5/2
Groundworks Ltd	8/6/1; 8/6/2; 8/6/3; 8/6/4; 8/6/5; 8/6/6
New Zealand Historic	8/11/1; 8/11/2; 8/11/3; 8/11/4; 8/11/5; 8/11/6
Otago Regional Council	8/12/1; 8/12/2; 8/12/3
Remarkables Park Limited	8/13/1; 8/13/2; 8/13/3; 8/13/4; 8/13/5; 8/13/6; 8/13/7;
Transpower NZ Ltd	8/14/1
Jeff Bryant	8/1/1; 8/1/2
WD & IM Cartwright	8/2/1; 8/2/2
Katie Deans	8/3/1
Barbara & Allan Hamilton	8/7/1
Andrew Henderson	8/8/1; 8/8/2; 8/8/3; 8/8/4; 8/8/5; 8/8/6; 8/8/7
KJ & EF Horrell	8/9/1; 8/9/2
Bruce McLeod	8/10/1; 8/10/2; 8/10/3
Further Submitters	Submission #

Transpower NZ Ltd	320/8/8/5
Remarkables Park Limited	319/8/5/1; 319/8/5/2; 319/8/6/1, 319/8/7/1; 319/8/8/1; 319/8/8/2; 319/8/8/5; 319/8/9/1; 319/8/9/2; 319/8/12/2; 319/8/14/1

4.0 THE HEARING

The hearing to consider submissions to Variation 8 Earthworks to the Queenstown Lakes Proposed District Plan commenced at 9am, 23 September at the Copthorne Hotel, Conference Room 2 in Queenstown. The Hearing Panel consisted of Councillors B Lawrence (Chairperson), W McKeague and C Geddes (Mayor). In attendance at the Hearing were J Fuller and J Parker (Policy Planners), C Mead (Panel Secretary).

The following verbal and written evidence was presented to the Panel:

1. Colin Walker [8/12/1] [8/12/2] [8/12/3] presented oral and written evidence on behalf of the **Otago Regional Council**. The submitter is generally in support of the Earthworks Variation. However, he notes the following additional matters that need consideration when dealing with earthworks and their potential effects on aquifers and groundwater quality. He provides the following information to illustrate the dangers to aquifers based on the mantle thickness:
 - Bore locations within the District;
 - Information noting that the depth to groundwater in particular areas is less than 1 metre and where it is between 1m to 5m deep;
 - At risk areas – in particular recharge areas and direction of groundwater flow; Water quality data;
 - Its purpose in avoiding, remedying and mitigating the environmental effects that can be caused by earthworks;
 - The Council's concerns regarding the sustainable management of the groundwater resource in the Wakatipu Basin are important;
 - The maintenance of water quality in this aquifer is particularly critical, as it is the only reliable water source for some properties.
2. **Bruce McLeod** [8/10/1] [8/10/2] [8/10/3] presented oral and written evidence on his own behalf. The submitter suggests a number of amendments to the Variation on the following grounds:
 - 1) The total volume of earthworks is not clearly defined and therefore it is open to interpretation:
 - a) if one cuts 50m³ and places 50m³ is the total volume 100m³;
 - b) if one cuts 50m³ and places 50m³ fill of site is the total volume 50m³;
 - c) if one cuts 50m³ and places this as fill in same position then is the total volume 100m³, 50m³ or nil?
 - 2) The submitter has concerns about the rule pertaining to the "maximum area of bare soil exposed from any earthworks", (average depth 0.5m and not exceeding 200m²), Mr McLeod believes the rule does not achieve anything more than the previous rule relating to volume. He notes that the average topsoil depth within the District is 0.3m and this is where the majority of the earthwork effects will occur, he suggests that the rule be amended from a depth of 0.5m to 0.3m or deleted entirely.
 - 3) In respect of the height of cut and fill being "not greater than the distance of cut or fill from the site boundary", the submitter states that a cut or fill will rarely stand vertical. He requests clarification of this statement similar to the diagrams presented in his evidence. For example: is the distance from the boundary of the cut or fill measured from the top of the cut or the toe of cut, remembering that not all cuts or fill are vertical.

3. Jeff Brown presented oral and written evidence on behalf of **Remarkables Park Limited** [8/13/1] [8/13/2] [8/13/3] [8/13/4] [8/13/5] [8/13/6] [8/13/7]. The submitter is generally in support of the Variation but seeks amendment to the Variation on the following grounds:
 - Remarkables Park Limited agrees with the resource management purpose of the Variation but believes the controls are inappropriate in the context of the unique circumstances of the Remarkables Park Zone hereafter referred to as (RPZ). In Remarkables Park Limited submission they emphasise the inflexibility of the Variation as a blanket control over the District, whilst Remarkables Park Limited consider it is appropriate for small sites with close neighbours, where earthworks clearly have the potential for off site effects: the RPZ is a large site under single ownership with only 5 titles and is likely to remain under one ownership and zone. They consider the proposed rules inappropriate for the RPZ.
 - The submitter notes that the Variation proposes blanket rules on all Urban Zones and Rural Living Zones but does not recognise the spatial, topographical and other differences between those Zones;
 - RPZ is an area which covers 130 hectares south of Queenstown, and provides for mixed-use activities including residential, recreational, commercial and retail development on a comprehensive master-planned approach;

The effect of the Variation is that Remarkables Park Limited will require discretionary resource consent for every construction project regardless of the ability to avoid and mitigate the effects. They note that the majority of their construction projects would be assessed as controlled activities, if it were not for the earthworks rule. It is for this reason that Remarkables Park Limited seeks changes to the maximum area and volume controls and heights of cut and fill as follows:

- A volume calculated as a ratio of 100m^3 for every 600m^2 of area and an area of 200m^2 for every 600m^2 site [8/13/1] and the maximum area calculation is deleted [8/13/2];
- Limitation under rule x.2(a) should be amended to a maximum height of 1.5m;
- Limitation under rule x.2(b) should be amended to 5m and the limitation under x2 (c) increased to 3.5m where a site is greater 2000m^2 [8/13/3];
- Remarkables Park Limited partly supports the sediment control methods and notes its previous example of building and construction in the RPZ based on the guidelines produced by the Auckland Regional Council as appropriate methods to avoid, remedy or mitigate earthworks effects on waterbodies [8/13/4] and submitted evidence point 3.9;
- The rules regime promoted by RPZ allows certain earthworks to be permitted, provided specific standards are achieved. If these standards were not achieved then controlled activity consent would be required. Remarkables Park Limited consider that earthworks projects that require resource consent can be appropriately dealt with as a controlled activity rather than discretionary, based on the individual circumstances of Remarkables Park Limited, where considerable earthworks can take place without any effects (including visual, dust etc) outside the RPZ [8/13/5];
- Remarkables Park Limited considers the proposed variation should be amended to allow for the "temporary stockpiling" of earthworks as a permitted activity [8/13/6];
- Remarkables Park Limited seek acceptance of its submissions as they relate to all zones in the Queenstown Lakes District or acceptance as they relate to the RPZ. They seek any consequential changes that might be necessary to give effect to the relief sought [8/13/7].

They clarify that the controlled activity status sought [8/13/5] is preferable because it provides certainty to Remarkables Park Limited in undertaking master-planning site design and building projects. Discretionary activity status injects uncertainty into the process. Should this status remain Remarkables Park Limited seeks that this discretion is limited to the earthworks and that it be processed without public notification.

4. **Andrew Henderson** [8/8/1] [8/2/2] [8/8/3] [8/8/3] [8/8/4] [8/8/5] [8/8/6] [8/8/7] presented oral and written evidence on his own behalf. The submitter is in support of the Variation and seeks amendment to the Earthworks Variation on the following grounds:

- There is insufficient control in the PDP to prevent sedimentation effects from earthworks in close proximity to waterbodies ((Point 3.11 of evidence). The suggested amount of material should be reduced from 100m³ as reported in the Planners Report to 20m³ in close proximity to a Water body.
 - The submitter sought the insertion of an assessment matter relating to the stability of sloping land and noted that other District Council's consider 15 and 18.5 degrees as warranting extra attention.
 - Earthworks in the Rural General zone can have effects on the VAL, ONL and ONF. The submitter stated that the submission gives the committee scope to include changes to these rules.
 - The utilities provision in the Variation report is supported.
 - There needs to be provision of information that educates the public and raises awareness on the need for earthworks consent.
5. Rachel Dimery [8/11/2] tabled written evidence on behalf of **Transpower New Zealand Limited**. The submitter is in support of the intent and form of Variation 8 on the following grounds:
- The Trust concurs with the recommendations regarding the Trust's submission made in the CivicCorp planner's report.
 - The company will be able to meet the new site standard associated with sediment control measures.
6. Janet Stephenson [8/11/2] tabled written evidence on behalf of the **New Zealand Historic Places Trust**. The submitter is in support of the intent and form of Variation 8 on the following grounds:
- It recommended a number of specific changes to improve the protection of cultural and archaeological heritage sites;
 - The inclusion of a new rule relating specifically to archaeological sites.

5.0 DECISIONS

5.1 Issues

5.1.1 The Submission: 4.10.1

Otago Regional Council Submission [8/12/1] and evidence tabled at the hearing responded to specific items contained within the Planner's Report. It raised an issue relating to earthworks effecting groundwater quality, by carrying out earthworks that remove or reduce the aquifers protective soil mantle. The Otago Regional Council provided evidence containing the following information regarding the Wakatipu Basin aquifer to support its case for the inclusion of the protection of groundwater in the PDP:

- Bore location within the Wakatipu Basin;
- Information noting that the depth to groundwater in particular areas is less than 1 metre and where it is between 1m to 5m deep;
- At risk areas – in particular recharge areas and direction of groundwater flow;
- Water quality data;
- The Regional Plan: Water for Otago (Water Plan) has no earthworks provisions, the Wakatipu Basin aquifer request had not been investigated at the time before the Water Plan was notified.

The ORC sought that the Council highlight the issue of “*groundwater and the protective mantle*” and “*Earthworks have the potential to effect groundwater*”. The submission sought that the following conditional issue be added to 4.10.2: “The earthworks can expose the groundwater aquifer or reduce the depth of the protective mantle that overlies the aquifer, which reduces the filtering capacity of the protective mantle”. In the Wakatipu Basin the risk of aquifer contamination due to excavation is considered very high by the Otago Regional Council, because in parts the “protective soil mantle is very thin between the surface and the aquifer”.

5.1.2 Consideration

The Proposed Regional Plan: Water 2000, hereafter referred to as (PRPW) seeks to protect the water quality of Otago's aquifers from natural and human use for the continued benefit of present and future generations. It promotes avoidance, remediation or mitigation of the adverse effects of development on ground water quantity and quality, as they are often long-term or permanent. Under s74 of the RMA a District Plan must not be inconsistent with Regional Planning Documents. However a District Council's function is defined and limited by section 31 of the RMA, where reference is only made to the surface of water in lakes and rivers.

It should also be noted that under Sections 30(1)(d)(iv) and 30(1)(g)(ii) of the RMA, the discharge of contaminants and the maintenance of water quality are functions of the Regional Council. Additionally it is noted that there are no specific aquifers as identified by the PRPW in the Queenstown Lakes District at this time because the aquifer investigation is still ongoing. The Otago Regional Council have subsequently provided some limited information to the Council detailing aquifer mantle depth in response to the Planner's report. This information is contained in Appendix 1 figures 1A) Landuse information for the Wakatipu Basin; 1B) Bore locations for the Wakatipu Basin; 2A) Depth to groundwater for the Wakatipu Basin (October 2000); 2B) Depth to groundwater for the Wakatipu Basin (March 2001) and Figure 3) Flow patterns for groundwater in the Wakatipu Basin.

The Council consider it appropriate to identify the issue of groundwater protection in the PDP to raise awareness of the consequences of removing or reducing the aquifers' protective soil mantle. The Council intend to provide education material about these areas in conjunction with the Otago Regional Council.

5.1.3 Decision

The Council's decision is to make the following amendment to the Variation, such that the submission by **Otago Regional Council** [8/12/1] is **accepted**.

4.1.10 Earthworks

4.10.2 Issues

"Earthworks have the potential to affect groundwater

Earthworks have the potential to adversely affect the groundwater resource by either exposing the groundwater or by reducing the depth of the protective mantle that overlies the aquifer, which reduces the filtering capacity of the protective mantle. In the Wakatipu Basin the risk of aquifer contamination due to excavation is particularly high, because in parts the protective soil mantle is very thin."

Reasons for Decision

The RMA 1991, under s74 (2)(ii), requires that District Plans shall have regard to a Proposed Regional Plan of its region in regard to any matter of regional significance. It is therefore considered appropriate to include details of aquifers that may be at risk (due to earthworks) as identified in the PRPW. This information is not currently contained within the PRPW, however the Otago Regional Council has provided information that identifies the location of the aquifers and areas at risk within the Queenstown Lakes District.

The Council considers it appropriate to have the issue flagged based on this limited research and will include the details of these bore holes and the mantle thickness in all approved resource consent applications that relate to earthworks over 100m³. However the Council believes that if these areas are going to be compromised then the applicants will need to seek a resource consent from the Otago Regional Council. The onus is on the Otago Regional Council to provide greater detail and protection measures for these aquifers.

5.1.4 The Submission: 4.10.1

New Zealand Historic Places Trust [8/11/1] supports the Variation as it relates to issue 4.10.1

5.1.5 Consideration

It is considered that the submitter is correct in stating that the proposed Variation will further protect archaeological sites. The Society has jurisdiction under the Historic Places Act 1993 for the protection of historical and cultural sites.

5.1.6 Decision

The Council's decision is to make no amendment to the Variation, such that the submission by **New Zealand Historic Places Trust** [8/11/1] is **accepted**.

Reasons for Decision

The submission supported the Variation as proposed as it will assist in the sustainable management of the District's resources and is consistent with the principles of the RMA and the Historic Places Act 1993.

5.2 Objectives

5.2.1 The Submission: Objective 4.10.3(e)

New Zealand Historic Places Trust [8/11/2] supports the Variation as it relates to objective 4.10.3(e):

5.2.2 Consideration

It is considered that the submitter is correct in stating that the proposed Variation will further protect archaeological sites. The Society has jurisdiction under the Historic Places Act 1993 for the protection of historical and cultural sites.

5.2.3 Decision

The Council's decision is to make no amendment to the Variation, such that the submission by **New Zealand Historic Places Trust** [8/11/2] is **accepted**.

Reasons for Decision

The submission supported the Variation as proposed as it will assist in the sustainable management of the District's resources and is consistent with the principles of the RMA and the Historic Places Act 1993.

5.3 Policies

5.3.1 The Submission: Objective 4.10.3 policies 10 and 11

New Zealand Historic Places Trust [8/11/3], [8/11/4] supports the cultural heritage sites, under Policy 10 and 11:

- However Historic Places Trust highlights [8/11/4] that Council needs to ensure a method to implement this objective.

5.3.2 Consideration

It is considered that the submitter is correct in stating that the proposed Variation will further protect archaeological sites. The Council intends to implement this objective by the addition of rules in the earthworks section of the PDP. The Society has jurisdiction under the Historic Places Act 1993 for the protection of historical and cultural sites.

5.3.3 Decision

The Council's decision is to make an amendment to the rules of the proposed variation rules, which will follow under Section 5.5.15 of this document and therefore, the submission by the **New Zealand Historic Places Trust** [8/11/3] [8/11/4] is **accepted**.

Reasons for Decision

There is a legislative requirement under the Historic Places Act 1993 to advise the New Zealand Historic Places Trust of works associated with archaeological sites. It is considered that this legislation in combination with the proposed rules will provide for a method to implement objective 4.10.3. Policies 10 and 11.

NB: Also see part 5.5.15 of this decision, which relates to the associated rules to achieve implementation of Objective 4.10.3(II) of this report.

5.4 **Methods**

The Variation made no amendment to the Methods of the Proposed Districts Plan.

5.5 **Rules**

Site Standards – Earthworks Variation in Zones 7,8,9,10,11 and 12

5.5.1 The Submissions

Katie Deans [8/3/1] submission requested that:

- a) Earthwork's concepts be included in residential landscape consents where appropriate.
- b) Employ the use of guidelines for earthwork's activities;
- c) Controlled activity status for large-scale developments;

The submitter:

- 1) supports Section 4.6 of the Section 32 report: alternative methods, which suggests retaining earthworks as a permitted activity as an option and relying on education to ensure appropriate measures are adopted for residential properties that are not in a highly visual or environmentally sensitive area. A landscape architect could include earthwork specifications in resource consent applications if required.
- 2) considers that Section 4.7 of the Section 32 report which outlines alternative standards to be added to the Plan should apply to larger projects.
- 3) considers a clause is required to exclude a minimum mound height of 2.5 metres as these can be used to hide the visual effects of a residential development.
- 4) seeks that a clause be inserted that permits mounds without the need for specific earthworks resource consent.

Jeff Bryant [8/1/1] submitted that:

- 1) All earthworks should be under a controlled activity status;
- 2) The applications for resource consent should be accompanied by a preliminary geotechnical and cultural impacts report.
- 3) The submitter requested that a proposal should be assessed against the limitations of the site. If the earthworks fall within those limitations then it should be assessed as a permitted activity. If the limitations are exceeded then a consent is required along with a detailed geotechnical report that addresses the objectives of in section 4.10.3.

The submitters generally support in the adoption of limitations but would prefer that these be considered only as guidelines. The earthworks projects should be assessed on their merits and specific geotechnical, engineering and landscaping input required. They suggest Controlled activity status for an earthworks resource consent if the limitations are exceeded.

5.5.2 Consideration

The purpose of the Variation is to provide greater control over earthworks in urban and rural living areas by specifying a volume for earthworks, so that the potential effects generated from earthworks are avoided remedied or mitigated. This is especially relevant on neighbouring sites and the surrounding environment and is why the rules incorporate assessment matters pertaining to “effects on landscape and visual amenity”.

Controlled activity status for earthworks associated with large-scale developments is not always appropriate because large-scale developments may have adverse effects that extend beyond the immediate site into neighbouring properties and the environment. Additionally, controlled activity consents have to be granted by the regulatory authority, with the only control over the consent being conditions imposed to mitigate these effects. It is therefore considered inappropriate if the effects extend beyond the site and are ‘more than minor’. It should be noted that a controlled activity does not require neighbours consent to proceed.

It is considered that if the activity were permitted, it would be up to the individuals undertaking the earthworks to adopt appropriate methods that ensure adverse effects of earthworks are avoided, remedied or mitigated. This limits the Council's control to prevent adverse effects on the environment. Therefore the effectiveness of the limitations would be uncertain even if the applicant had a geotechnical and cultural impacts report. However, it may be appropriate to consider additional geotechnical issues under specific conditions as they relate to the site.

The earthworks ‘Rules’ will provide guidance for those using the District Plan. Earthworks above the 100m³ volume are not prohibited but they require discretionary resource consent and greater assessment. The earthworks that are not creating a visual effect can still have adverse affects on the environment eg. Sedimentation, dust and noise etc. It is considered appropriate to have education material that provides guidelines on the earthworks rules and how to mitigate the effects of earthworks.

Mounding of earthworks may provide screening of a new dwelling or structure, but they still require assessment as part of a resource consent. Mounding can have adverse effects on the landscape and if these are considered ‘more than minor’ then there has to be provision to decline them.

5.5.3 Decision

The Council's decision is to make no amendment to the Variation, such that the submission by **Katie Dean's [8/3/1]** is **accepted in part**.

That part of Katie Dean's submission, which is accepted, relates to the provision of education material on earthworks for the general public as a means of guidance. That part of Katie Deans submission which is not accepted relates to having earthworks as a permitted activity where they do not occur in a highly visible area, and Ms Dean's request that mounds, if they are for screening do not require resource consent.

The Council's decision is to make no amendment to the Variation, such that the submission by **Jeff Bryant** [8/1/1] is **accepted in part**.

That part of Jeff Bryant's submission that is accepted relates to the provision of preliminary geotechnical information accompanying resource consent applications under certain conditions. This is to be assessed further under Section 5.5.5 of this report. That part of Jeff Bryant's submission that is not accepted relates to his request that earthworks be a controlled activity based on specific limitations or, permitted activity if those limitations are met.

Reasons for Decision

It is considered that the 'Assessment Matters' are relevant in this case as they make specific reference to "*Effects on landscape and visual amenity values*" and landscaping can be required if it is needed to mitigate the effects of large scale earthworks.

It is necessary to adopt rules rather than guidelines to ensure that the adverse effects of earthworks are avoided, remedied or mitigated. A controlled activity is not always the best statutory means to achieve this because it has to be granted with only the imposition of conditions available. Under the discretionary regime a resource consent can be declined if the effects of the earthworks are more than minor.

5.5.4 The Submissions: Part 2 Rules - Earthworks

Foresight Development Limited [8/5/1] and **KJ & EF Horrell** [8/9/1], seek an amendment to Rule x. Earthworks 1 (a) to allow a volume of earthworks up to 1000m³ as a permitted activity.

Foresight Development Limited [8/5/2] and **KJ & EF Horrell** [8/9/2], seek to amend Rule x - Earthworks.1 (b) to allow a maximum area of exposed soil up to 500m² as a permitted activity.

The submitters state that they seek this relief because the total volume of earthworks at 100m³ per site and bare soil exposed from any earthworks set at 200m² per site set by the Variation is unreasonably low and arbitrary. They believe it would hinder the development and make it unduly prescriptive for activities where it was not necessary.

Groundworks Ltd [8/6/1] seek an amendment to Rule x.1 (a) "that the total volume of earthworks does not exceed 500m³ per site" and consent for earthworks shall be applied for thereafter, and form part of preliminary or initial building or resource consent.

Groundworks Ltd [8/6/2] seek an amendment to Rule x.1 (b) that it be altered in accordance with the increase of the total volume (refer [8/6/1]) of earthworks per site as the two quantities are interrelated.

Groundworks Ltd [8/6/3] seek an amendment to Rule x.2 (b) stating that it needs to be more specific in respect of maximum cut. There are many occasions where a cut can exceed 2.5 metres in height but this does not have a bearing on the natural contours or stability of the land, particularly if the cut that is made is only partial completed, or limited in area. Groundworks consider the rule relating to 'fill' is general and is not site specific enough.

Groundworks Ltd [8/6/4] seek an amendment to the maximum fill (Rule x.2(c)) or alternatively, an increased volume to allow some degree of flexibility when applying it to particular sites.

Groundworks Ltd [8/6/5] wish to highlight Rule x.3 (c), that although it is unacceptable to have sites where earthworks are exposed to the elements many projects are a work in progress over periods of greater than 12 months. Additionally the contractor should not be held responsible for revegetation or rehabilitation of a site.

The submitter states that they seek relief because the total volume of earthworks at 100m^3 per site and bare soil exposed from any earthworks set at 200m^2 per site, set by the Variation, is unreasonable and unworkable in the context of a development.

Remarkables Park Limited [319/8/5/1] [319/8/5/2] [319/8/6/1] [319/8/9/1] [319/8/9/2] opposes a blanket rule for volume of earthworks and maximum area of earthworks across all the zones. It considers that the total should be based on the lot size and a ratio system e.g. $100\text{m}^3/200\text{m}^2$ per 600m^2 site and any fraction calculated thereafter.

5.5.5 Consideration

The purpose of the Variation is to provide for:

- Greater control over earthworks in urban and rural living areas to avoid remedy or mitigate potential effects generated from those earthworks.

The Variation resulted in a new specified volume of earthworks (100m^3 and area of 200m^2). Whilst the figures are arbitrary it is considered an appropriate trigger/level to require a greater level of assessment (discretionary activity) under the statutory regime.

The 'volume' and 'area' of earthworks were determined as a result of discussions with planners, engineers and building officers. The thresholds are considered reasonable, to require a greater assessment of earthworks and its effects. In comparison to other District Plan rules for earthworks throughout the country and for similar geographic areas (urban and rural living), the figures were considered conservative as other Council's ranged from 20m^3 (Haruaki Gulf Islands District Plan) to 50m^3 (Waitakere City Council District Plan), for example.

Earthworks above the specified volume and area are not prohibited but require resource consent so that the potential adverse effects can be avoided, remedied or mitigated by conditions on the consent, if they are considered no more than minor. Increasing the maximum volume to 1000m^3 or 500m^3 under Rule x.1 (a) and x.1 (b) will not achieve the purpose of the Variation and it is considered that the effects of such volumes would be 'more than minor'. An earthworks volume of 1000m^3 or 500m^3 is considered to have excessive effects on landscape values, the stability of a site and the potential for high levels of sediment to enter water bodies. Setting the maximum area at 500m^2 under Rule x.1 (b) will not achieve the purpose of the Variation and it is considered that the effects of such a large area especially on smaller sites would be 'more than minor'. An area of 500m^2 could be considered to have excessive effects on the landscape values and stability of a site. Additionally it could lead to high levels of sediment entering waterbodies.

Alternatively, increasing the area of earthworks in accordance with the raised volume under Rule x.1 (b) will not achieve the purpose of the Variation and it is considered that the effects above 200m^2 would be more than minor unless they are avoided, remedied or mitigated. It could effect landscape values, the stability of a site and neighbouring properties and the potential for high levels of sediment to enter water bodies.

It is considered that a cut of over 2.5m would affect the natural stability and contours of the land and could have large visual effects on the landscape and amenity of an area.

If the cut were initially stable it may not stay that way after long-term exposure to the elements (rain, snow and sunlight) causing erosion and sediment run-off. It is considered appropriate to require hydro seeding or mulching of exposed soil caused by earthworks during non-construction times to protect the longevity of the sites. This is not a critical issue when the earthworks are related to exposed rock.

Remarkables Park Limited oppose the submissions because they believe there should not be a blanket rule for the volume of earthworks and a maximum area of bare soil. They submit that it would be more appropriate to determine a ratio based on volume and area against the size of the lot as the effects can be the same irrespective of the size of the lot, such as, effects on amenity and landscape values.

It is considered that the ratio method could have some merit however the reasoning behind setting a trigger level for earthworks was because earthworks carried out on a site have the potential to leave a site as dust or sediment, therefore it is not specifically site size dependent whether these effects can be avoided, mitigated or remedied. It also appears that Remarkables Park Limited has used the Council's proposed volume and area measurements for their ratio calculations rather than basing it on a ratio that mitigates the effects of earthworks. The Council set this "volume" and "area" amount to trigger a greater assessment of effects in relation to the site and the proposal. It is noted that the standards and assessment matters for earthworks provide for setback distances from boundaries based on the height of a cut.

Remarkables Park Limited have abdicated the use of sediment control methods and the protection of cultural heritage values as integral to the success of using this method. There is merit in considering, especially in the RPZ, that it may be possible to minimise the effects of earthworks and that these rules are better suited to small sites.

5.5.6 Decision

The Council's decision is to make no amendment to the Variation, such that the submissions by **Foresight Development Limited** [8/5/1], [8/5/2]; **KJ & EF Horrell** [8/9/1], [8/9/2]; **Groundworks Ltd** [8/6/1]; [8/6/2]; [8/6/3]; [8/6/4]; [8/6/5]; **be rejected** and further submission by **Remarkables Park Limited** [319/8/5/1], [319/8/5/2], [319/8/9/1], [319/8/6/1], [319/8/9/1] and [319/8/9/2] be accepted in part.

That the part accepted relates to their opposition to the submissions and that part that is rejected relates to their suggested means of assessing earthworks as a volume based ratio (see part 5.5.9 for more detail).

Reasons for Decision

The suggested amendments by the submitters are considered excessive and inappropriate for providing greater control over earthworks and their associated effects. These effects can be related to landscape values, the stability of a site and the movement off site of earth as either sediment into waterbodies or dust into the air. The Variation as proposed will assist in the sustainable management of the District's resources and is consistent with the principles of the RMA.

In consideration of Remarkables Park Limited submission it is recognised that the effects of earthworks on larger sites can be internalised to a point and this can be appropriately assessed through a resource consent.

5.5.7 The Submission

Andrew Henderson [8/8/1] [8/8/2] [8/8/5] presented oral and written evidence on behalf of himself. The submitter is generally in support of and seeks amendment to the Earthworks Variation on the following grounds:

- 1) The Variation is upheld by the Council with appropriate amendments a sought by the submission.
- 2) Earthworks as they relate to waterbodies:
 - (a) There is insufficient control in the plan to prevent sedimentation effects from earthworks in close proximity to waterbodies.
 - (b) Mr Henderson suggested amount of earthworks proposed in the recommendation 4.5.16 should be further reduced from 100m³ to 20m³.
 - (c) The submitter seeks that earthworks are appropriately managed in sensitive locations but the Variation as notified does not have control over earthworks in close proximity to water bodies. The submitter proposes that earthworks over 100m³ within 5 metres of a Water body require a new rule to be inserted into the PDP requiring resource consent for a discretionary activity. The assessment matters should then be used to

assess the appropriateness of the mitigation measures thus ensuring that sediment run-off does not enter a Water body.

- 4) That a new provision be inserted in the earthworks provisions relating to utilities.

Jeff Brown [8/13/4] [319/8/8/1] [319/8/8/2] [319/8/8/5] [319/8/12/2] presented oral and written evidence on behalf of the **Remarkables Park Limited**. The submitter is in support of the general Variation but seeks amendment to the Variation on the following grounds:

- 1) [319/8/8/1] made a further submission on this submission:
 - (a) Opposes a blanket rule for volume of earthworks and maximum area of earthworks across all the zones. It considers that the total should be based on the lot size and a ratio system e.g. $100\text{m}^3/200\text{m}^2$ per 600m^2 site and any fraction calculated thereafter.
- 2) [319/8/8/2] made a further submission on this submission:
 - (a) RPL supports this to the extent that the effects of earthworks on nearby waterbodies should be assessed and managed where necessary through the mechanism of a resource consent.
 - (b) However, such application should be for a Controlled Activity consent where there is provision for the interception of any contaminants, including sediment, before such material enters the water body. Such method for avoiding and mitigating any adverse effects on the water body can be provided for by a rule in the plan, with associated assessment criteria.
- 3) [319/8/12/2] made a further submission on this submission:
 - (a) That the effects on the basis that the effects on a Water body should be managed through a mechanism of additional assessment matters as proposed in the original submission.
 - (b) Such management should be undertaken in the context of a controlled activity where there is provision for the interception of any contaminants, including sediment, before such material enters the water body. Such method of avoiding and mitigating any adverse effects on the water body can be provided for by a rule in the PDP, with associated assessment criteria as proposed in the submission.
- 4) [8/13/4] made a submission:
 - (a) Rule x.3 (a) should be amended so that it does not apply where control programs are implemented.
 - (b) He notes previous Remarkables Park Limited construction and building projects have used the sediment control methods based on the guidelines produced by the Auckland Regional Council as a means of stopping contaminants leaving the site.
- 5) [319/8/8/5] made a further submission on this submission:

Opposes a separate consent for earthworks to do with purpose of utilities. Works for the construction of utilities is usually undertaken as part of the implementation of a subdivision or landuse consent and the effects of utilities and works to construct them should be assessed prior to determining any subdivision or landuse consent decision.

Colin Walker [8/12/2] [8/12/3] presented oral and written evidence on behalf of the **Otago Regional Council**. The submitter is in support of the Earthworks Variation on the following grounds:

1. [8/12/2] submission:
 - (a) They suggest a minor change to the words "Measures to Control Sediment" with "Environmental Protection Measures" which covers more than just sediment control;
 - (b) That the reports recommendation 4.5.26 of the Planners Report be amended to read: *"(a) Earthworks ~~should~~ shall be carried out in a way to prevent..."*
 - (c) The submitter also seeks that there be greater protection for water by including an amended clause (a): "For earthworks that may otherwise result in contaminants, including sediment entering a water body, provision must be made for interception of such contaminants, to avoid them entering the water body". Part II: Rules x – Earthworks 3 (a) already specifies that "No contamination, including siltation, of any water body shall occur", and that is supported. However the clause does not provide enough protection for earthworks in close proximity to rivers. The submitter seeks a rule

that ensured those undertaking earthworks close to streams are specifically required to take appropriate measures such as installing silt fences which ensure silty or muddy surface run-off from the site does not enter the adjacent water body. That any PDP Rule is consistent with the PRPW Rules.

2. [8/12/3] submission:

- (a) The submitter seeks protection of groundwater and inclusion of two new clauses in to Rule x – earthworks part 3 of the PDP to read “(i) cut and fill shall not cause ponding of surface water; and (ii) cut and fill shall not expose the groundwater aquifer or cause artificial drainage of the aquifer”. They have modified their original submission [8/12/3] in response to the Planners report to read: “Cut or fill shall not expose the groundwater aquifer (water bearing gravel’s) causing ponding or causing artificial drainage of the aquifer”.
- (b) That the PRPW for Otago identifies Groundwater protection zones of six of Otago’s significant aquifers although none are included in the Queenstown Lakes District. Excavation could result in contamination of the Wakatipu Basin Groundwater, as it is very shallow in parts with depths of water bearing gravels only in the order of 1 metre. This protective mantle is vital for protecting against contamination entering the aquifer.

Transpower NZ Ltd [320/8/8/5] opposes the submission as a replacement of an existing support structure or construction of a new support structure will have only minimal effects and it is therefore not necessary to make such activities subject to earthworks provisions as any adverse effects will be de minimis.

5.5.8 Consideration

Remarkables Park Limited oppose the submission because they believe there should not be a blanket rule for the volume of earthworks and a maximum area of bare soil. They submit that it would be more appropriate to determine a ratio based on volume and area against the size of the lot as the effects can be the same irrespective of the size of the lot, such as, effects on amenity and landscape values.

It is considered that sedimentation can have major impacts on the ecology, amenity and water quality of a Water body. Assessing earthworks in close proximity to a Water body as a discretionary activity is considered appropriate, because sediment run-off has effects outside the immediate site. It also allows the statutory body to decline the proposal if the effects are considered more than minor on the environment. Under a controlled activity regime the statutory body must grant resource consent, subject to conditions.

Remarkables Park Limited’s further submission was that the effects of earthworks on a Water body should be assessed and managed through a mechanism of a resource consent and additional assessment matters that address these effects in the PDP. They considered that such an application should be for a controlled activity consent where provision was made for the interception of contaminants including sediment. However, such a mechanism if it was in the context of a controlled activity consent does not allow the statutory body to decline an application where appropriate. This is considered inappropriate as earthworks have the potential to effect neighbouring sites, as interception of all contaminants can not be guaranteed. A discretionary consent allows the statutory body to decline the proposal if the effects are considered more than minor on the environment. However, there is merit in providing a rule in the plan with associated assessment criteria for the effects on a Water body.

The site standards set out the limitations for earthworks in rural living and urban zones. The assessment matters define how those limitations are to be assessed. Remarkables Park Limited believes that Rule x.3 (a) should not apply where sediment control programs are implemented. It is considered that sediment control programs are unlikely to control all sediment contamination from leaving a site.

The PRPW seeks to protect the natural character of Otago’s lakes and rivers and their margins from human use and seeks to enhance the natural water quality in specific areas. It promotes avoidance, remediation or mitigation of the adverse effects of sediment and nutrient

run-off. A District Plan shall have regard to a Regional Plan under s72(2)(a). It is considered appropriate to have effective control measures in relation to earthworks and their proximity to a Water body, these can be as part of a discretionary activity. This is consistent with the PRPW chapter 7 (Water quality). This part of the Otago Regional Council's submission is consistent with the previously accepted recommendation in 4.5.16. It notes that sedimentation of a Water body can have major impacts on its water quality, ecology and its amenity values. It is considered that sediment control programs are required in close proximity to a Water body.

The Otago Regional Council has agreed with the Planners Report that their submitted rule "(i) cut and fill shall not cause ponding of surface water; and (ii) cut and fill shall not expose the groundwater aquifer or cause artificial drainage of the aquifer" to the PDP is in appropriate. Because it restricts sediment ponds as a legitimate means of sediment control for earthworks. They have amended their submission to the following "Cut or fill shall not expose the groundwater aquifer (water bearing gravel's) causing ponding or causing artificial drainage of the aquifer".

In the second instance the Otago Regional Council has now identified in a preliminary way aquifer areas that are at risk using borehole data and depth of land above groundwater resources. It is considered appropriate to provide this information to the applicants and highlight it in the PDP as an assessment matter where it is reasonable and possible.

Earthworks can have an effect regardless of the purpose for which they are proposed and given effect to, it is considered appropriate to have effective control measures in place for all earthworks. Therefore, if utilities are above the threshold they will require consent unless they form part of another resource consent.

Remarkables Park Limited oppose the submission on the basis that earthworks associated with utilities generally occurs as part of a subdivision and therefore should be assessed prior to this process. For the sake of consistency earthworks for one activity should not be dissociated from another because the effects can be the same irrespective of that activity. For example, effects on amenity and landscape values.

Transpower NZ oppose the submission on the basis that replacement or construction of new structures will have only minimal effects. As with the Remarkables Park Limited submission and for the sake of consistency earthworks for one activity can not be dissociated from another because the effects can be the same irrespective of that activity. For example, effects on amenity and landscape values.

5.5.9 Decision

The Council's decision is to make the following amendments to the Variation, such that the submissions by **Andrew Henderson** [8/8/1] [8/8/2] and **Otago Regional Council** [8/12/2] [8/12/3] are **accepted in part** and **Remarkables Park Limited** [8/13/4] and further submissions by **Remarkables Park Limited** [319/8/8/1] [319/8/8/2] [319/8/12/2] are **accepted in part**.

Andrew Henderson [8/8/5] is **accepted in part**, and further submissions by **Transpower NZ Ltd** [320/8/8/5] and the **Remarkables Park Limited** [319/8/8/5] are **rejected**.

The part of submission from Mr Henderson that is accepted is requiring a resource consent for utilities that require 20m³ of earthworks within 7m of a Water body. The part that is rejected is requiring earthworks consent for all utility proposals.

That part of Remarkables Park Limited further submissions, which are accepted, relates to the provisions for avoiding contaminants, including sediment from entering waterbodies to be assessed through the mechanism of a resource consent. That the effects of earthworks should be managed through a mechanism of an additional assessment matters. The part of Remarkables Park Limited further submissions, which are not accepted, relates to earthworks being assessed as a controlled activity where appropriate sediment control methods are in place.

The part of submission from Mr Henderson that is accepted is requiring a resource consent for utilities that require 20m³ of earthworks within 7m of a Water body. The part that is rejected is requiring earthworks consent for all utility proposals.

Amendment

2. Part II: Rules

Site Standards

1. ~~Volume of Earthworks~~
 - (a) The total volume of earthworks does not exceed **100m³** per site (within a 12 month period). *For clarification of "volume", see interpretative diagram 5.*
 - (b) *The maximum area of bare soil exposed from any earthworks where the average depth is greater than 0.5m shall not exceed **200m²** in area within that site (within a 12 month period).*
 - (c) Where any earthworks are undertaken within 7m of a Water body the total volume shall not exceed 20m³ (notwithstanding provision 17.2.2).
2. *Referred to under 5.5.12*
3. *Environmental Protection Measures*
 - (a) *Measures to minimise sediment contamination of any Water body.*
 - (b) *Where vegetation clearance associated with earthworks results in areas of exposed soil, these areas shall be revegetated within 12 months of the completion of the operations.*
 - (c) *No vegetation, soil, earth, rock or any other debris shall be allowed to enter or shall be positioned where it may dam or divert any river or stream or adversely affect instream habitats.*

Part II: Rules

Assessment Matters

1. ~~Sediment run-off Environmental Protection Measures:~~
 - (a) The extent to which sediment/erosion control techniques are adequate to ensure that sediment remains on-site.
 - (b) Whether the earthworks will adversely affect stormwater and overland flows, and create adverse effects off-site.
 - (c) Whether earthworks will be completed within a short period, reducing the duration of any adverse effects.
 - ~~(d) Whether the timing of the earthworks will avoid the wettest season, when erosion and sediment run-off is the highest.~~
 - (d) The slope of the site. Where earthworks are proposed on a site with a gradient >18.5 degrees (1 in 3), whether a geotechnical report has been supplied to assess the stability of the earthworks.
 - (e) Whether measures to minimise dust emissions ~~shall be adopted~~ are proposed.
 - (f) Whether there is potential for the earthworks to expose a groundwater aquifer (water bearing gravel's) which may cause ponding or artificial drainage of the aquifer. NB: If this will or is likely to occur resource consent or permit is required from the Otago Regional Council.

Reasons for Decision

It is considered appropriate to have Site Standards for earthworks in close proximity to waterbodies. Large-scale earthworks will expose layers of subsoil that are susceptible to sediment run-off. The sediment run-off can cause degradation of waterbodies, while stripping the land of productive soil through erosion, effecting amenity values and destabilising the land. Additional effects include a reduction in water quality and potential failure of the ecology of a Water body system.

It is considered appropriate to have 'Assessment Matters' which, where appropriate, will allow the statutory body to consider the full effects of earthworks on the environment. This is based on the fact that earthworks can have potential effects that extend further than the immediate boundaries of the site. It is considered appropriate to add an assessment matter into the PDP that will highlight the need to protect ground aquifers. The preliminary information provided by the Otago Regional Council should be passed on to resource consent applicants that are undertaking earthworks at the earliest possible time of application.

The rules are clear and make reference to measures to control sediment and assess matters of sediment run-off. However, it is appropriate to consider earthworks in excess of 20m³ and within 7 metres (consistent with the PRWP) of a Water body as a discretionary activity (this is consistent with the recommendation from Section 4.5.16).

In consideration of Remarkables Park Limited submission it is recognised that the effects of earthworks on larger sites can be internalised to some degree with effective sediment control methods and this can be appropriately assessed as a resource consent matter. It is inappropriate to consider these under a controlled activity status when the adverse effects on landscapes and amenity value, and sediment run-off can extend further than the immediate boundaries of the site. For example there is potential for earthworks to escape from a site as either sediment or dust into neighbouring properties, regardless of appropriate sediment control methods. These controls can limit the amount of sediment/dust that can leave a site.

All earthworks can have effects and it is considered that utilities are not a special case even if they generally occur at the time of subdivision. Therefore it is considered appropriate to have measures in place to protect against those effects when they are in close proximity to a watercourse.

5.5.10 The Submissions: Part II: Rules x - Earthworks 1(a), (b); .2 (a), (b)

Bruce McLeod [8/10/1] [8/10/2] [8/10/3] presented oral and written evidence on his own behalf. The submitter suggests a number of amendments to the Variation on the following grounds:

- 1) The total volume of earthworks as may occur on a site is not clearly defined and therefore it is open to interpretation:
 - a) Cut 50m³ and place 50m³ is the total volume 100m³;
 - b) Cut 50m³ and place fill is the total volume 50m³;
 - c) Cut 50m³ and place as fill in same position then have you done 100m³, 50m³ or any if earthworks are put in the same place.
- 2) The maximum area of bare soil exposed from any earthworks where average depth is greater 0.5m in depth shall not exceed 200m² in area. He believes that it does not achieve anything more than the previous rule and notes that the average topsoil depth is 0.3m. He suggests that it be amended to a depth of 0.3m or x1 (b) is deleted entirely.
- 3) Height of cut and fills "not greater than the distance of cut or fill from the site boundary". He states a cut or fill will rarely stand vertical and believes that the distance between the boundary and the cut or fill shall be at the top or toe of cut batter/slope/face needs greater clarification.
- 4) The applicant believes the height of a retaining wall on the boundary is too restrictive, with there being a standard height for a retaining wall over which engineering design is required the policy should reflect this.

Andrew Henderson [8/8/6] presented oral and written evidence on behalf of himself. The submitter is in support of the Variation. The submitter seeks an amendment to the Earthworks Variation on the following grounds:

- The wording of clauses 2 (a), (b) and (c) in the variation is confusing. Insert “and” after clauses 2 (a) and 2 (b).

5.5.11 Consideration

It is considered that the earthworks could be better defined to avoid confusion of what is considered the total volume and how the regulatory authority interprets this.

The majority of the effects from earthworks are related to the amount of bare soil that is exposed and the soil texture (>2mm diameter gravel and very coarse sands; 2 to 0.2mm is coarse sand; 0.2 to 0.02mm is silt; <0.002mm is clay). As Mr McLeod noted the depth of the earthworks can also have different effects as it can expose different types of soil texture. The removal of topsoil and its exposure to the elements can create a dust nuisance. Deeper cuts into the land can expose silts and clays, which if captured in sediment run-off can remain, suspended in the waterbodies for longer periods of time, than other types of soils.

It is considered appropriate to retain the 200m² area measure and the corresponding 0.5m depth calculation to be consistent with the 100m³ volume. The submitter notes that his experience shows that the effects of excavation to 0.3m depth would be more appropriate. The Council has initiated standardised controls for depth, volume and distance to the boundary as a means of reducing the effects on neighbouring sites and protecting stability and amenity of those sites. These and the other controls, which have been imposed, are triggers where an additional level of assessment is required. It also requires the applicant to provide more information in the way of avoidance, mitigation or remedial measures as they pertain to earthworks and this will be assessed under the resource consent process.

In response to the submission that there is ambiguity in “2) Height of cut and fill...” it was considered that this would be interpreted in a commonsense way along with the other rules. However it is considered appropriate for the Council to do an interpretation of this Rule by providing an interpretative diagram in the PDP. The PDP will use diagram 2 from the Mr McLeod’s submission to illustrate battered cuts/fill. The batter is generally determined by the stability and type of the material which is being cut or filled.

There are additional assessment matters that require the cut, fill and retaining to be undertaken in accordance with engineering standards. These assessment matters are not inconsistent with what is required for building consent eg. a retaining wall that is greater than 1.5 metres in height requires engineering design to construct it. The Council agrees that the rules need to be made clear where possible.

5.5.12 Decision

The Council’s decision is to make the following amendments to the Variation, such that the submissions by **Bruce McLeod** [8/10/1], [8/10/2], [8/10/3] are **accepted in part** and such that the submission by **Andrew Henderson** [8/8/6] is **rejected**.

That part of Mr McLeod’s submission which is accepted relates to clarification of the volume of earthworks and interpretative diagram 5 and an interpretation of the height of cut and fill based on the submitter’s Diagram 2 in the PDP as interpretative diagram 6. That part of the submission that is not accepted relates to:

- 1) the area of earthworks and reducing the depth to 0.3m in depth or removing this rule altogether;
- 2) the height of a retaining wall.

Amendment

3. Part II: Rules - Site Standards

x Earthworks

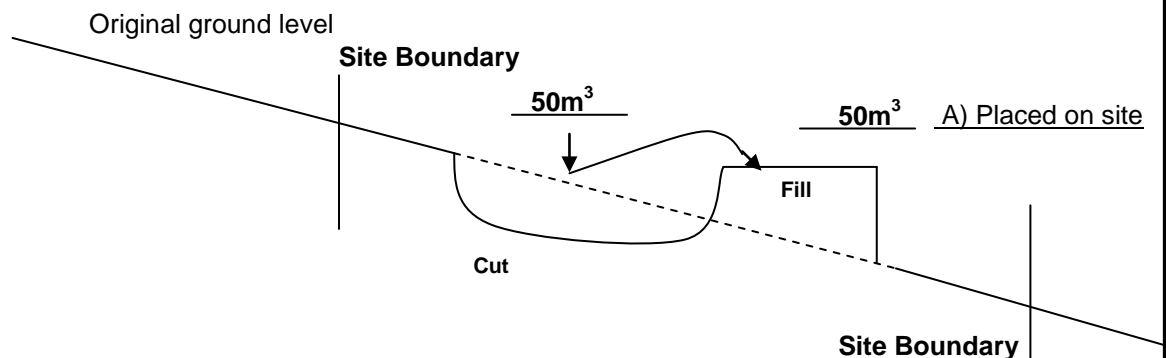
2. Height of cut and fill and slope

- (a) The vertical height of any cut or fill shall not be greater than the distance of the top of the cut or the toe of the fill from the site boundary (See interpretative diagram 6); except where the cut or fill is retained, in which case it may be located up to the boundary, if less or equal to 0.5m in height.
- (b) The maximum height of any cut shall not exceed 2.4 metres.
- (c) The maximum height of any fill shall not exceed 2 metres.

Interpretative Diagrams 5.A), 5.B), 5.C) and 6 as attached in Appendix 1 to this decision.

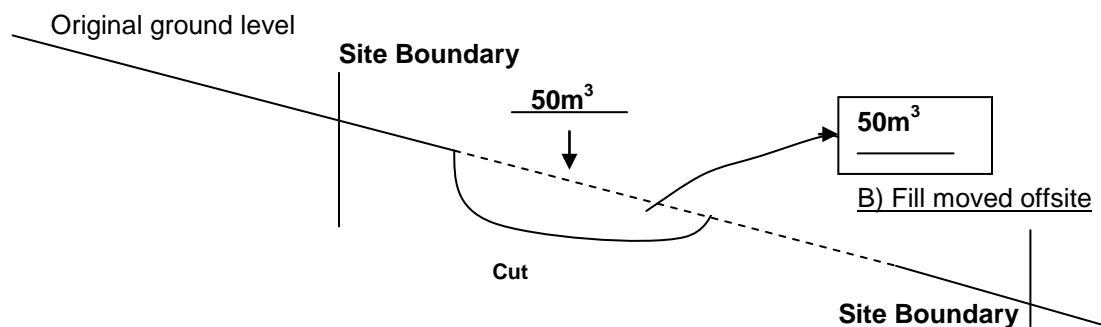
5.A) The total volume of earthworks means “the total volume of all earthworks that is moved within a site as below.

$$\text{A) Total Volume} = 50\text{m}^3 (\text{Cut}) + 50\text{m}^3 (\text{Fill}) \\ = 100\text{m}^3$$



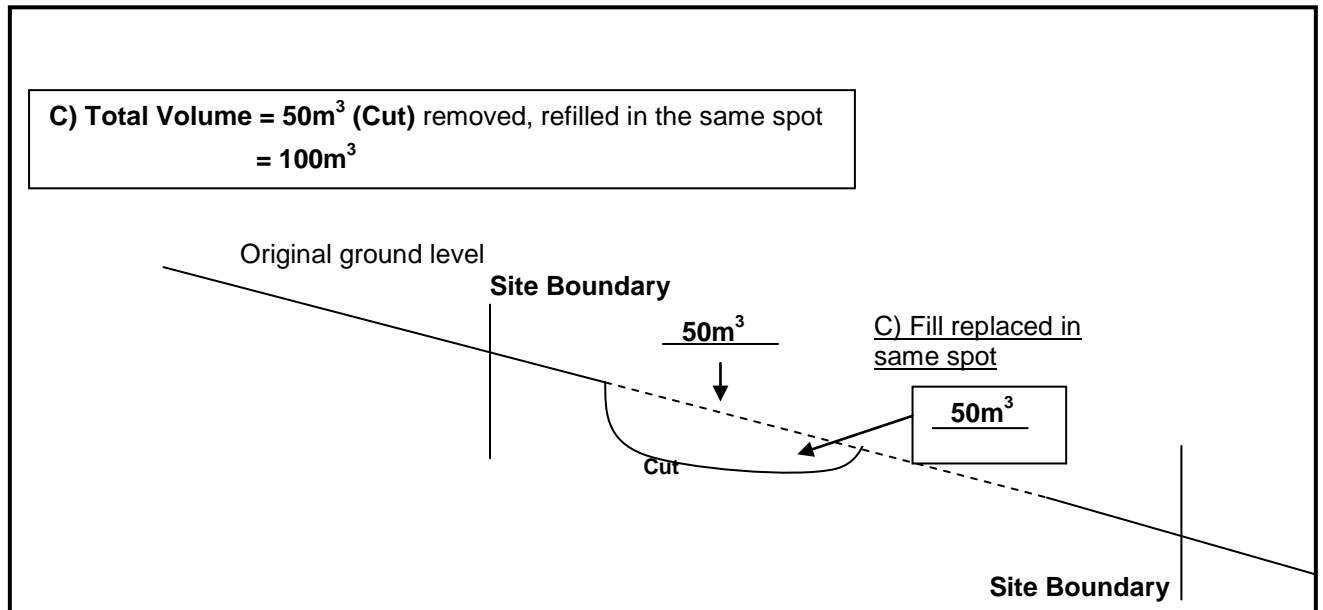
5.B) The total volume of earthworks means “the total volume of all earthworks that is moved within a site”. For Example:

$$\text{B) Total Volume} = 50\text{m}^3 (\text{Cut}) \text{ removed off-site} \\ = 50\text{m}^3$$

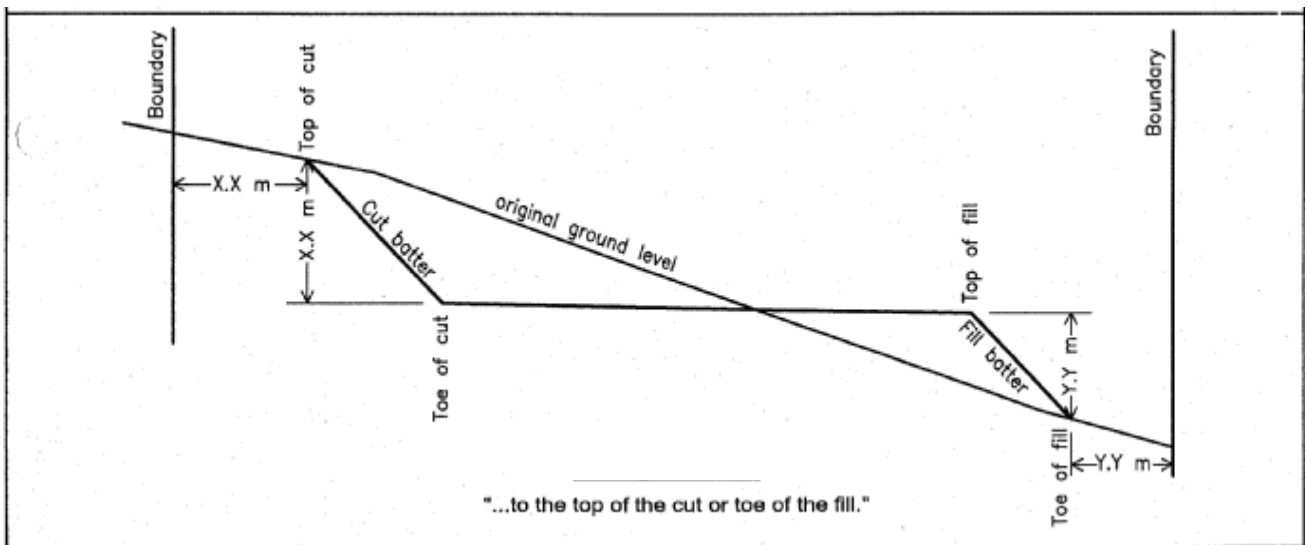


5.C) The total volume of earthworks means “the total volume of all earthworks that is moved within a site”. For Example:

C) Total Volume = 50m^3 (Cut) removed, refilled in the same spot = 100m^3



6. The distance between the boundary and the cut or fill shall be to the top of the cut batter/slope/face or to the toe of the fill batter/slope/face (as below).



5.5.12 Reasons for Decision

The rules are designed to act as a trigger mechanism where the effects of earthworks require greater assessment at certain volumes and areas.

There is a definition for earthworks in PDP and the assessment matters make reference to engineering standards and retaining walls over 1 metre require a building consent under the 'Building Act 1991'. The purpose of the Rules is to protect neighbouring site stability and amenity and reduce the effects of earthworks.

The Council considers it appropriate to clarify the definition of earthworks and provide an interpretation of the Rules, the wording of the rules and the interpretative diagrams are considered to supersede the addition of "and" to 2a) and 2b) of the Rules.

5.5.13 The Submission:

New Zealand Historic Places Trust [8/11/5] proposes retention of the assessment matters relating to sites of Cultural Heritage value.

- The Trust supports the Variation but wants to differentiate between archaeological sites and waahi tapu and waahi taoka sites because they are not always one and the same.
- It recommended a number of specific changes to improve the protection of cultural and archaeological heritage sites.

5.5.14 Consideration

The Society has jurisdiction under the Historic Places Act 1993 for the protection of historical and cultural sites. However, historic sites are not always cultural sites and vice versa; the protection and administration of historical sites is not always applicable to the protection and administration of cultural and historical sites. Therefore it is important to make this distinction and provide for it in the PDP.

5.5.15 Decision

The Council's decision is to make the following amendments to the Variation, such that the submissions by **New Zealand Historic Places Trust** [8/11/5] is **accepted in part**.

The part of the submission that is not accepted is adding two new rules to part 4 of the Site Standards. It is considered that these amendments are unnecessary as the rules and the requirements of the legislation provide a method under submission [8/11/4] to achieve the objective of 4.10.3(II) of the PDP.

Amendment

Part II: Rules

Site Standards

x Earthworks

1) Insert the following additional Rule x.4 to read

- i. Remove the phrase "archaeological sites" from Rule x. 4;

4. ~~Protection of sites of cultural heritage value~~ "Protection of Archaeological sites and sites of cultural heritage"

- (a) The activity shall not modify, damage or destroy any Waahi Tapu, Waahi Taoka or Archaeological sites that are identified in Appendix 3 of the Plan, or in the Kai Tahu ki Otago Natural Resource Management Plan.
- (b) The activity shall not affect Ngai Tahu's cultural, spiritual and traditional association with land adjacent to or within Statutory Acknowledgment Areas.

Part II: Rules

Assessment Matters

x Earthworks

5. Impacts on sites of cultural heritage value:

- (a) Whether the subject land contains Waahi Tapu or Waahi Taoka, or is adjacent to a Statutory Acknowledgment Area, and whether tangata whenua have been notified.

- (b) Whether the subject land contains a recorded archaeological site, and whether the NZ Historic Places Trust has been notified”.

Reasons for Recommendation

There is a legislative requirement under the Historic Places Act 1993 to advise the NZ Historic Places Trust and tangata whenua of works associated with archaeological sites. Therefore it is appropriate to clearly distinguish between archaeological sites and sites of cultural significance.

5.5.16 The Submission: Part II: Rules x - Earthworks 1(a), (b); .2 (a), (b), (c); 3(a)

Jeff Brown [8/13/1] [8/13/2] [8/13/3] [8/13/5] [8/13/6] [8/13/7] presented oral and written evidence on behalf of the **Remarkables Park Limited**. The submitter is in support of the general Variation but seeks amendment to the Variation on the following grounds:

- 1) A volume calculated as a ratio of 100m³ for every 600m² of area and an area of 200m² for every 600m² site [8/13/1] including any fraction thereof.
- 2) The maximum area of earthworks is too restrictive under Rule x.1(b) and should be deleted [8/13/2].
- 3) The limitations on the maximum height of cut and fill under Rule x.2 are too restrictive.
 - (a) Rule x.2(a) should be amended to a maximum height of 1.5m [8/13/3];
 - (b) Rule x.2(b) should be amended to a maximum height of 5m [8/13/3];
 - (c) Rule x.2(c) should be amended to include a maximum height of 3.5m where an allotment is greater than 2000m² in area [8/13/3].
- 4) The s32 report did not consider permitted/controlled only permitted/discretionary, and earthworks could be considered under a permitted activity where appropriate information is provided:
 - (a) activities that comply with the site standards are permitted [8/13/5]; and
 - (b) activities that do not comply with the site standards are controlled activities to be assessed against criteria set out under the heading “Assessment Matters” [8/13/5].
- 5) [8/13/6] seek an amendment to the Variation to allow temporary stockpiling of earthworks as a permitted activity. Remarkables Park Limited notes that the Variation proposes blanket rules on all urban zones and rural living zones but does not recognise the spatial, topographical and other differences between those zones;
 - Remarkables Park Limited agrees with the resource management purpose of the Variation but believes the controls are inappropriate in the context of the unique circumstances of the Remarkables Park Zone (RPZ);
 - RPZ is an area which covers 130 hectares south of Queenstown with mixed use activities including residential , recreational, commercial and retail development on a comprehensive master-planned approach;
 - In his submission he emphasises the inflexibility of the Variation as a blanket control over the District. It is appropriate for small sites with close neighbours, where earthworks clearly have the potential for off site effects. The RPZ is a large site under single ownership with only 5 titles and is likely to remain under one zone.
 - The effect of the Variation is that Remarkables Park Limited will require discretionary resource consent for every construction project regardless of the ability to avoid and mitigate the effects. It is for this reason the Remarkables Park Limited seeks changes to maximum area and volume controls and height of cut and fill: inadequate provision for the ongoing development of sites in as far as there is no provision for stockpiling.
- 6) They consider that the changes sought in their submissions are appropriate to all zones within Queenstown lakes District and particularly appropriate in respect of the RPZ as it is a greenfield development and the effects of earthworks activities are capable of being avoided, remedied or mitigated with the Remarkables Park Zone, without any effects direct or otherwise outside the zone.
 - (a) acceptance of the changes as per Remarkables Park Limited submissions in respect to all zones in the Queenstown Lakes District; or
 - (b) acceptance of the changes as per Remarkables Park Limited’s submissions in respect of all the activity areas within the Remarkables Park Zone; and
 - (c) any consequential changes that might be necessary to give effect to the relief sought.

The rules regime promoted by RPZ allows certain earthworks that are permitted, provided specific effects based standards are met and controlled for where those environmental effects. The reasoning is that it is not clear what the relationship is between the site standards and assessment matters under Appendix 1: Part II of the proposed Variation.

The controlled status is preferable to Remarkables Park Limited because it provides certainty in undertaking master-planning site design and building projects. Discretionary status injects uncertainty into the process. Should this status remain Remarkables Park Limited seeks that this discretion is for earthworks and be processed without public notification.

5.5.17 Consideration

It is considered that the greater the size of earthworks, the greater the potential for adverse effects on water quality, amenity values and changes to the natural form of the landscape.

A specified volume of earthworks (being 100m^3) was determined to be an appropriate measure to achieve the purpose of the Variation. The figure was set as a trigger level beyond which it was considered that a greater level of assessment would be required under the statutory regime.

A specified area of earthworks (being 200m^2) was determined to be an appropriate measure to achieve the purpose of the Variation, the figure was set as trigger level beyond which it is considered that a greater level of assessment is required under the statutory regime.

Remarkables Park Limited provided an alternative interpretation of the earthworks rule proposing an amended volume and area of earthworks calculated against an average lot size eg a ratio of 100m^3 and 200m^2 for every 600m^2 of an area within any site including any fraction thereof as either a permitted or controlled activity.

It is considered that the ratio method could have some merit however the reasoning behind setting a trigger level for earthworks was because earthworks carried out on a site have the potential to leave a site as dust or sediment, therefore it is not specifically site size dependent whether these effects can be avoided, mitigated or remedied. It also appears that Remarkables Park Limited has used the Council's proposed volume and area measurements for their ratio calculations rather than basing it on a ratio that mitigates the effects of earthworks. The Council set this "volume" and "area" amount to trigger a greater assessment of effects in relation to the site and the proposal. Remarkables Park Limited have abdicated the use of sediment control methods and the protection of cultural heritage values as integral to the success of using this method. There is merit in considering, especially in the RPZ, that it may possible to minimise the effects of earthworks and that these rules are better suited to small sites.

It is considered that if cut or fill is retained it can be located near a boundary at a height of equal to or less than 0.5m. The height is considered to be appropriate to protect the amenity and stability of neighbouring properties.

A cut that is over 2.5m would have the potential to affect the amenity, natural stability and contours of the land. For example if the cut were initially stable, it could become unstable with exposure to the elements (rain, wind and sunlight) eventually causing long-term effects to the site stability etc. This height of this cut is considered to be appropriate to protect the amenity and stability of the site.

The submitter seeks an amendment to the earthworks provisions of maximum height of fill to 3.5m based on the size of the lot, where if a lot is greater than 2000m^2 . However the rules were created to avoid, remedy or mitigate the effects of the exposed fill on the surrounding environment. These are not always going to be reduced because the site is larger, there can still be effects on amenity, landscape, and dust contamination and sediment run-off into waterbodies. It is considered that the current provisions are an appropriate measure to achieve the purpose of the Variation. This is appropriately carried out under the statutory

regime by applying for resource consent as a discretionary activity once the 'triggers' are exceeded.

It is considered that if earthworks were permitted it would be up to the individuals undertaking earthworks to adopt appropriate methods that ensure adverse effects of earthworks are avoided, remedied or mitigated. Therefore the effectiveness of the guidelines would be uncertain.

Remarkables Park Limited seek that activities which do not comply with the site standards are considered as controlled activities to be assessed against criteria set out under the assessment matters. It should be noted that a controlled activity must to be granted with the only controls a Regulatory Authority can impose is consent conditions. Controlled activity status for large-scale developments is not always appropriate because a large-scale development may have adverse effects that extend wider than the immediate site into neighbouring properties and the environment. Earthworks are a good example of an activity that can easily extend beyond the site. It can effect amenity by altering a landscape and release air and water contaminants in the form of dust and sediment run-off.

It is therefore considered appropriate to consider the earthworks rules under a discretionary activity regime so the Council has the option of declining an application if the effects are considered to extend outside the immediate site into the wider environment.

The stockpiling of earthworks needs to be assessed under the earthworks rules as it can have similar effects to "cut" and "fill" from a site if left over a long period of time eg. It can effect amenity of a site by altering the landscape, cause degradation to the environment through wind blown dust and sediment run-off to a Water body.

For consistency it is inappropriate to single out one specific zone for particular treatment, unless it has major topographical, ecological or landscape features. Remarkables Park Limited have argued that their site does have these features but in the context of the PDP it is considered they do not whilst the effects may be less while the zone is in single ownership, this could change as ownership diversifies over time (with small landowners). Once this occurs the zone and associated effects would be similar to the rest of the district. The Council considers it appropriate for the consistency of the PDP to retain the Site Standards in their current form and the associated Rules with attached amendments. It acknowledges that site specific relief for Remarkables Park Limited is possible while the area is under one ownership and the majority of all activities within that zone have a permitted activity status.

5.5.18 Decision

The Council's decision is to make the following amendments to the Variation, such that the submissions by **Remarkables Park Limited** [8/13/1] [8/13/2] [8/13/3] [8/13/5] [8/13/6] are **rejected** submission by **Remarkables Park Limited** [8/13/7] is **accepted in part**.

That part of Remarkables Park Limited submission is accepted as it relates to non-notification of earthworks in the RPZ while the site is under sole ownership of Remarkables Park Limited.

Amendment

12.11.4 Non-notification of Applications

- (i) Any application for a resource consent for the following matters may be considered without the need to obtain a written approval of affected persons and need not be notified in accordance with Section 93 of the Act, unless the Council considers special circumstances exist in relation to any such application.
- (ii) All applications for earthworks undertaken in relation to otherwise permitted or **controlled** activities in the Remarkables Park Zone provided the earthworks is not within 25m of the site or zone boundary and the subject site is owned solely by Remarkables Park Limited.

Reasons for Decision

The suggested amendments by Remarkables Park Limited are considered inappropriate for providing greater control over earthworks and their associated effects. It is considered inappropriate to apply different rules based on a ratio to site area when adverse effects on landscapes and amenity value, and sediment run-off can occur irrespective of the lot size. It is considered appropriate to be consistent with earthworks across the zones. Earthworks within the Remarkables Park Zone that are above the permitted site standard will be assessed as a discretionary activity. A sediment control program is not going to provide a guarantee that the effects of earthworks are going to be avoided, remedied or mitigated and they do not give specific detail about how this can be achieved.

Remarkables Park Limited additionally seeks site specific rules as they refer to earthworks for the Remarkables Park Zone, effectively saying that if an activity has a sediment control program it should be permitted. The Council considers that the current earthworks "Site Standards" is appropriate for the Zones, however it acknowledges that the submitter proposes to comprehensively master-plan the continued development of this zone and a majority of their consents will be controlled. It may be possible the effects of earthworks can be internalised and therefore consider it appropriate that earthworks associated with a controlled activity building consent need not be notified under Section 93 unless special circumstances exist. However an application for earthworks can be declined if it is considered to have a more than minor effect on the environment.

5.5.19 The Submissions: Rules: Site Standards – x Earthworks

Transpower NZ Ltd [8/14/1] proposes that the Variation be retained in its current form. They support the site standards of the Variation, which permit earthworks up to 100m³ and 200m².

Remarkables Park Limited [319/8/14/1] *opposes the submission on the basis that it does not take into account alternative methods for managing earthworks.*

5.5.20 Consideration

The purpose of the Variation is to provide greater control over earthworks in urban and rural living areas by specifying a volume for earthworks, so that potential effects generated from earthworks are avoided remedied or mitigated.

5.5.21 Decision

The Council's decision is to make no amendment to the Variation, such that the submission by **Transpower NZ Ltd** [8/14/1] is **accepted**, and the further submission by **Remarkables Park Limited** [319/8/14/1] is **rejected**.

Reasons for Decision

The Variation as proposed will assist in the sustainable management of the District's resources and is consistent with the principles of the RMA.

5.6 Assessment Matters

Assessment Matters - Earthworks Variation in Zones 7,8,9,10,11 and 12

5.6.1 Submissions

New Zealand Historic Places Trust [8/11/6] seeks retention of the assessment matters relating to sites of Cultural Heritage value.

5.6.2 Consideration

The Society has jurisdiction under the Historic Places Act 1993 for the protection of historical and cultural sites. It is considered appropriate to retain the assessment matters to protect the historic and cultural sites.

5.6.3 Decision

The Council decision is to make no amendment to the Variation, such that the submission by **New Zealand Historic Places Trust** [8/11/6] is **accepted**.

Reasons for Decision

There is a legislative requirement under the Historic Places Act 1993 to advise the NZ Historic Places Trust and tangata whenua of works associated with archaeological sites.

5.6.4 The Submissions: Earthworks Variation 8: a new Assessment Matter (x)(1)(e)

Andrew Henderson [8/8/3] presented oral and written evidence on his own behalf. The submitter is partly in support of the Variation. The submitter seeks an amendment to the Earthworks Variation on the following grounds:

- The submission sought the insertion of an assessment matter relating to stability of sloping land, he noted that other District Council's consider 15 degrees (1 in 4 slope) and 18.5 degrees (1 in 3 slope) as warranting extra attention.
- The submitter considered that stability issues should be incorporated into the assessment matters to determine the appropriateness of mitigation measures and assess through engineering solutions to ensure the stability of the site will be maintained; and should allow consideration of the relevant NZ Standards and any future amendments if appropriate.
- The Council may also wish to consider a new rule requiring consent for earthworks on steeper slopes with matters of discretion including such things as planting for stabilisation and appropriate engineering design.

Jeff Bryant [8/1/2] submits that the Council recognise the input of a suitably experienced engineering geologist in the role of 'inspecting engineer' as defined in the Code of Practice for earth fill for residential development (NZS 4431: 1989). He sought that Council gives equal recognition to engineering geologists as inspecting engineers' in terms of NZS 4431. To this end it is recommended Council maintain lists of accredited geotechnical engineers and engineering geologists from whom they will accept reports.

5.6.5 Consideration

The submitters are correct in identifying the need for appropriate geotechnical information but this should be assessed on a site by site basis through the resource consent process. Requesting geotechnical information for earthworks in excess of 100m³ on a site where the gradient is 18.5 degrees (1 in 3) or greater would be an example of when this information would be useful.

The relief sought by Mr Bryant is for greater recognition of engineering geologists as inspecting engineers. It is considered appropriate to require this increased technical expertise when there are issues of instability within the site or with the adjoining sites or gradient becomes an issue. It is appropriate to request additional information on engineering standards to ensure the stability of the site where there is large scale earthworks occurring, and to retain discretion over such matters.

The Council will consider the reports provided by accredited geotechnical engineers and engineering geologists based on their qualifications and the type of information provided. It is not appropriate to keep a list of approved practitioners, as each will be assessed on their merits and the information they provide relative to each application. However it must be

recognised that a qualified engineering geologist will not always consider the additional effects of earthworks on Water bodies, landscapes and landforms and cultural heritage sites. Therefore a qualified engineer's report can be required at the appropriate time subject to the specific activity and site as part of a resource consent.

5.6.6 Decision

The Council's decision is to make amendment to the Variation, such that the submission by **Andrew Henderson** [8/8/3] is **accepted**.

The Council's decision is to make amendment to the Variation, such that the submission by **Jeff Bryant** [8/1/2] is **accepted in part**.

That part of Jeff Bryant submission that is accepted relates to preliminary geotechnical information accompanying resource consent and giving equal recognition to engineering geologists as 'inspecting engineers' in terms of NZS 4431. However this shall be assessed on a site by site basis and the information provided. That part of Jeff Bryant submission that is rejected, relates to the Council maintaining a list of accredited geotechnical engineers and engineering geologists from whom they can accept reports.

Amendment

4. **Part II: Rules**

Assessment Matters

x Earthworks

1. Environmental Protection Measures:

- (e) Where earthworks are proposed on a site with a gradient >18.5 degrees (approximately 1 in 3), whether a geotechnical report has been supplied showing the suitability of the earthworks.

Reasons for the Decision

A greater level of assessment is required when sites have a steeper gradient. It is considered that this should be carried out by a qualified person with engineering experience, prior to a requirement under the 'Building Act 1991'. It is considered inappropriate for the Council to maintain a list of accredited geotechnical engineers and engineering geologists from whom they will accept reports as the validity of those reports are based on their qualifications and the information supplied in relation to the site and the proposal. The Variation as proposed will assist in the sustainable management of the District's resources and is consistent with the principles of the RMA.

5.7 **General**

5.7.1 The Submission: Part II: Rules

Barbara & Allan Hamilton submit [8/7/1] that the Variation should include rules on the methods to be used in excavations. The submitter states that there must be some form of control over the method(s) used in excavation of the site.

Remarkables Park Limited submission [319/8/7/1] opposes a blanket rule for the volume of earthworks and maximum area across the zones, considering that the total should be based on the lot size and a ratio system.

5.7.2 Consideration

The submitter seeks rules on the methods to be used in excavation, this is considered to be a site-specific consideration that is assessed under the resource consent regime and the information provided by the applicant through the resource consent process. Under this regime specific information can be requested if it is not provided at the time of application. This can include specific methods of the excavation as it relates to effects on the site and neighbouring properties. Therefore, the submitter's concerns are provided for through the implementation of the current rules and assessment matters of the PDP. However, it is considered appropriate to provide those undertaking earthworks with education material on the subject to improve methods of earthworks.

5.7.3 Decision

The Council's decision is to make no amendment to the Variation, such that the submission by and **Barbara & Allan Hamilton** [8/7/1] is **accepted in part**, and the further submission by **Remarkables Park Limited** [319/8/7/1] is **rejected**.

That part of Barbara & Allan Hamilton submission which is accepted relates to exploring the provision of education material on earthworks for the general public, as a means of guidance and improving the methods of earthworks. The part that is not accepted is setting out specific methods that earthworks are required to be carried out under as the methods can not always anticipate site specific conditions.

Reasons for Decision

Methods of excavation are assessed through the resource consent process. The assessment matters are appropriate in assessing the effects and requiring conditions to be included during excavation. In relation to Remarkables Park Limited submission earthworks should be managed consistently throughout the District if the rule is to be workable.

5.7.4 The Submissions: Part II: Rules x Earthworks in general

Fish & Game New Zealand [8/4/1] seeks that the Variation be adopted as changes will protect waterways and allow the Council to control sediment from entering the waterways.

5.7.5 Consideration

The Council agrees that the proposed Variation will further protect waterways and reduce sediment entering them.

5.7.6 Decision

The Council's decision is to make no amendment to the Variation, such that the submission by **Fish & Game New Zealand** [8/4/1] is **accepted**.

Reasons for Decision

The Variation as proposed will assist in the sustainable management of the District's resources (including watercourses and water bodies) is consistent with the principles of the RMA.

5.7.7 The Submissions: Relate to the whole Variation

WD & IM Cartwright [8/2/1] seeks withdrawal of the Variation because it limits the prescribed permitted volumes of earthworks and the limits set for permitted heights of cut and fill are unrealistically restrictive.

WD & IM Cartwright [8/2/2] seeks that the Council acknowledge the significant ramifications for ratepayers building on hillsides in the Residential Zones and this requires a more thorough

consultation process. The majority of residential building sites around Lake Wakatipu are on hillsides, which in general have been heavily invested in by ratepayers with the expectation of building substantial homes. They will be disadvantaged by the restrictive site standards imposed. The assessment matters could be more easily dealt with under the subdivision phase of development and before approval is given for the issue of titles.

5.7.7 Consideration

A subdivision does not always create a specific building platform for the future buildings especially in urban areas and large-scale earthworks can occur in the construction of new buildings, but this is highly dependent on the new buildings proposed.

Therefore it is appropriate to have site standards with a specified volume and area along with a cut and fill requirement, which avoid, remedy or mitigate the effects on site or neighbouring sites and the surrounding environment. The ramifications to ratepayers is directly linked to what they propose in terms of building or use of their site and it is reasonable that they mitigate the effects on the environment and neighbouring properties.

The matters outlined in this Variation have been comprehensively consulted on and reviewed under s32 of the RMA 1991, it is considered that the Council has discharged its responsibility under this section.

5.7.9 Decision

The Council's decision is to make no amendment to the Variation, such that the submission by **WD & IM Cartwright** [8/2/1] [8/2/1] is **rejected**.

Reasons for Decision

The volume of earthworks is considered reasonable and appropriate for residential development. A greater volume can be applied for if it is considered that the effects can be mitigated, but the assessment will need to be more comprehensive. It is appropriate that those making use of a site mitigate the effect on that site based on what they propose.

5.7.10 The Submissions: Part II: Rules - General

Groundworks Ltd [8/6/6] seeks the following:

- that the total volume and area of earthworks should be increased in the rule and the maximum cut should be increased.
- That there is an increased awareness of the rules at the preliminary and resource consent guidelines stage for the landowners.
- That steps are taken to ensure that the parties involved in the preliminary stages of development, ie quantity surveyors, architects and landscape designers etc are aware of the guidelines and what they need to work within to avoid a requirement for a resource consent.
- To incorporate the requirements for earthworks into the preliminary design and submit all plans for building and resource consent applications.
- That the contractor work within those guidelines but the consent holder is liable for works carried out and not the contractor.
- An appropriate body or person from the industry should be utilised to monitor earthworks.

The submitter acknowledges that property owners in particular circumstances may need to gain resource consent to undertake earthworks but the limitations proposed are generalised, under-assessed and do not identify with whom the final responsibility should lie.

5.7.11 Consideration

Earthworks above the specified volume are not prohibited but, rather, must be avoided or mitigated through the resource consent process. Setting the volume at a higher level will not achieve the purpose of the Variation or the purpose of the RMA.

It is considered that the onus is on professional consultants and other interested parties to ensure they are aware of the requirements in the preliminary stages of development. However, the Council provides a free advisory service to the public and these professionals, which can advise them at the beginning of a development and all through the process prior to lodgement on what is required and the appropriate information.

Additionally, it is deemed unreasonable to make the consent holder solely liable for works that are undertaken by a third party. The third party should be aware of the resource consent and its associated conditions and should follow these. If instructed to deviate from these conditions they should advise the applicant that this is not possible unless further consent is sought. This is the Council's policy and it has been determined under specific case-law from the Environment Court. Liability should be associated with both the consent holder and those that undertake works on their behalf.

The Council sought feedback from the general public and consultants within the industry on the earthworks Variation and it is considered that this was appropriately assessed under the Section 32 report.

5.7.12 Decision

The Council's decision is to make no amendment to the Variation, such that the submission by **Groundworks Ltd** [8/6/6] is **rejected**.

Reasons for Decision

The recommendation is consistent with Recommendation 4.5.4. The suggested amendments by the submitters are considered inappropriate. There is provision for landowners and professionals associated with development to seek and be provided with the appropriate information on earthworks and developments. The liability for infringing the rules of the PDP rests with the Consent holder and those undertaking works that deviate from that consent. The Council considers that it has appropriate technical expertise but welcomes additional input from a person or body within the general contracting industry through the submission phase of the Variation, which has occurred.

5.7.13 The Submissions: Relate to the earthworks controls on the landscape

Andrew Henderson [8/8/4] seeks that controls are placed on earthworks in the Rural General Zone so that effects of earthworks in the ONL, ONF and VAL may be assessed. He also seeks that the threshold of 1000m³ for earthworks in the Rural General zone is lowered to enable assessment of smaller earthworks on areas of landscape importance. Additional assessment criteria in the Rural General zone should be included to enable the assessment of visual effects of earthworks on areas identified as VAL, ONL or ONF. The submitter supports the Variation as notified but identifies that there is no distinction between earthworks in the Rural General Zone, irrespective of what landscape classification the subject site falls into. He believes that the current limit of earthworks up to a 1000m³ in the Rural General zone as a permitted activity may result in adverse effects on ONL, ONF's and VAL's. He considers that this submission could be used as a basis for change to the Rural General Zone.

5.7.14 Consideration

Earthworks can have an effect regardless of the purpose it is considered appropriate to have effective control measures in place for all earthworks. The threshold currently for Rural General is set at a 1000m³ in volume and 2500m². It is not appropriate to reduce this amount under the current Variation, as this Zone did not form part of the original Variation.

Additional assessment criteria can not be included in the Rural General Zone as this Zone was not included in the original Variation.

The Rural General Zone earthworks provision are to be reviewed under a specific Variation for this Zone.

5.7.15 Decision

The Council's decision is to make no amendment to the Variation, such that the submission by **Andrew Henderson** [8/8/4] is **rejected**.

Reasons for Decision

The rules currently contain assessment criteria that require the effects on landscape and visual amenity values to be assessed. Areas of ONL, ONF and VAL are in general contained in the Rural General Area and this area is subject to a specific Variation on earthworks, it is considered inappropriate to review them further under this Variation.

5.7.16 The Submissions: Part II: Rules X Earthworks

Andrew Henderson [8/8/7] presented oral and written evidence on behalf of himself. The submitter is in support and seeks amendment of the Earthworks Variation on the following grounds:

- That the method regarding the provision of information and education be retained.

5.7.17 Consideration

Earthworks can have an effect regardless of the purpose for which they are proposed and given effect to, it is considered appropriate to have education material to raise awareness for earthworks.

5.7.18 Decision

The Council's decision is not to make an amendment to the Variation, such that the submission by **Andrew Henderson** [8/8/7] and provision for education material is further investigated.

Reasons for Decision

All earthworks can have effects and it is considered that raising awareness of the effects of earthworks will reduce those effects. Therefore it is considered appropriate to the provision of education material.

APPENDIX 1: Amended provisions as a result of Decision on Variation 8 - Earthworks

Part I: Amendments to District Wide Issues

Section 4: District wide issues, objectives and policies

4.1.2 Resources, Activities and Values- add the following bullet point between 'Natural Hazards' and 'Rural Issues, Objectives and Policies':

- **Part 4 Section 10 Earthworks**

4.1.3 Issues- Add Earthworks- Part 4.10 between 'Natural Hazards' and 'Rural Areas'

3. 4.10 Monitoring and Enforcement becomes 4.11.

4. Add the following Section:

4.10 Earthworks

4.10.1 Resources, Activities and Values

The topography of the Queenstown Lakes District often means that land modification, through earthworks, generally precedes the development of land. Some modification of the natural landscape is inevitable in order to provide safe and stable building platforms and roads with a suitable gradient. For example, in Queenstown, extensive excavation is often required to enable the further development of steep land. This has the potential to cause problems in terms of stability of adjacent properties, run-off and de-watering. Filling may also be used to increase the height of building platforms. This alters the natural form of the landscapes, and adversely affects the amenity values of neighbouring properties, and can alter drainage patterns.

Earthworks have the potential to alter landforms, landscapes and natural features to such an extent that the identity, amenity values and character of an area can be changed permanently. Therefore, while earthworks are temporary, their effects are often both significant and long term.

4.10.2 Issues

Sediment and soil run-off associated with earthworks adversely affects water quality and the amenity values of neighbouring properties.

The direct results of sediment run-off include damage to neighbouring properties, the blocking of drains and the sedimentation of waterways.

The factors that affect the amount of sediment run-off are rainfall, soil erodability, slope length and slope gradient. The closer the earthworks operation locates to a waterway, the more immediate the potential impact.

Earthworks, either through excavation or filling, have the potential to permanently alter the natural shape and form of the landscape.

Potential adverse effects from earthworks on landforms and landscapes range from the widespread practice of remodelling the land for subdivisions, cut and fill operations, to more minor earthworks such as ground contouring for building platforms or driveways. Cut and fill operations can adversely affect privacy, cause physical domination and over-shadowing if located too close to neighbouring property boundaries.

Earthworks, including filling and excavation, can increase land instability and the potential for flooding.

Earthworks activities have the potential to weaken soil structure and exacerbate soil instability, subsidence, and soil erosion. This may be caused by incorrectly placed excavated fill, unsupported excavations, inherent weak rock strata combined with steep slopes, or steep slopes stripped of vegetation. Excavations too close to the boundary also reduce the overall stability of the soil of the adjacent property. Particularly in Queenstown, the excavation of sites to develop building platforms has the potential to undermine neighbouring properties.

Earthworks may also cause or exacerbate flooding by altering the natural profile of landforms, including the modification of stormwater run-off channels and catchment topography. The effects of modifying the landscape is reflected in downstream flooding and inundation. Further, by placing impervious structures beneath ground level, the potential for flooding is increased through the process of 'de-watering'.

Earthworks have the potential to adversely affect amenity values by creating noise and dust emissions.

Earthworks can emit high levels of noise, vibrations and dust. Dust emissions can cause irritation to people living nearby, and in some cases can cause adverse health effects such as asthma.

Earthworks operations cause noise emissions through the use of large machinery, vehicle movements and in some cases blasting. These are particularly disturbing to amenity values if they occur early in the morning or late at night.

Earthworks can disturb cultural heritage sites, including Waahi Tapu and Waahi Taoka, and archaeological sites.

Waahi Tapu and Waahi Taoka and archaeological sites in the District can be destroyed through the excavation and filling of land. A process of identifying these sites needs to be established so that the adverse effects of earthworks can be avoided.

Earthworks have the potential to affect groundwater.

Earthworks have the potential to adversely affect the groundwater resource by either exposing the groundwater or by reducing the depth of the protective mantle that overlies the aquifer, which reduces the filtering capacity of the protective mantle. In the Wakatipu Basin the risk of aquifer contamination due to excavation is particularly high, because in parts the protective soil mantle is very thin.

4.10.3 Objectives and Policies

Objectives

To avoid, remedy or mitigate the adverse effects from earthworks on:

- (a) Water bodies***
- (b) The nature and form of existing landscapes and landforms***
- (c) Land stability and flood potential of the site and neighbouring properties***
- (d) The amenity values of neighbourhoods***
- (e) Cultural heritage sites, including Waahi Tapu and Waahi Taoka and archaeological sites***

Policies:

- 1. To minimise sediment run-off into water bodies from earthworks activities through the adoption of sediment control techniques.***
- 2. To avoid the location of earthworks in close proximity to water bodies. Where this can not be avoided, to ensure that sediment control measures are put in place to minimise sediment run-off.***
- 3. To minimise the area of bare soil exposed and the length of time it remains exposed.***

4. *To avoid adverse visual effects of earthworks on outstanding natural landscapes and outstanding natural features.*
5. *To avoid earthworks on steeply sloping sites and land prone to erosion or instability. Where this can not be avoided, to ensure techniques are adopted that minimise the potential to decrease land stability.*
6. *To protect the existing form and amenity values of residential areas by restricting the magnitude of filling and excavation.*
7. *To ensure techniques are adopted to minimise dust and noise effects from earthworks activities.*
8. *As far as practicable, to protect Waahi Tapu, Waahi Taoka, and other archaeological sites from potential disturbance resulting from earthworks.*
9. *To notify Kai Tahu ki Otago where earthworks are proposed in areas identified in either the District Plan or the Natural Resource Management Plan as significant to iwi.*
10. *To notify the NZ Historic Places Trust where proposed earthworks may affect archaeological sites.*
11. *To ensure that work is suspended and Kai Tahu ki Otago and the NZ Historic Places Trust are notified when archaeological remains are observed or unearthed during earthworks activities.*

Implementation methods

(i) District Plan

- (a) *The inclusion of rules controlling the effects of earthworks activities in the Residential, Rural Living Areas, Townships, Town Centre, Business and Industrial, and Special Zones.*

(ii) Other methods

- (a) *The provision of sediment control guidelines, which provide information on sediment control techniques, and best management practices for earthworks activities.*
- (b) *Advise and provide information to local community groups, landholders and organisations*
- (c) *Co-ordination with Te Runanga O Ngai Tahu, Kai Tahu ki Otago and the NZ Historic Places Trust in the identification and protection of sites of cultural heritage value.*

Explanation and Principle Reasons for Adoption

The Council recognises that most development requires some modification of the natural environment through earthworks, and that such operations have the potential to cause adverse environmental effects. Consequently, the Council has adopted an approach that enables development, while ensuring adverse environmental effects are minimised. This is achieved through placing controls on earthworks activities that are of a large magnitude, are on a steep site, close to neighbouring property, or within close proximity to a water body.

Earthworks that comply with the site standards are a permitted activity. While the effects from such earthworks may be minor, the cumulative effects may be significant. It is therefore considered important that landowners are made aware of techniques they can adopt to minimise adverse effects.

2. Part II: Rules

Site Standards-

x Earthworks

The following limitations apply to all earthworks (as defined in this Plan), except for earthworks associated with a subdivision that has both resource consent and engineering approval.

1. Earthworks

- (a) The total volume of earthworks does not exceed **100m³** per site (within a 12 month period). For clarification of “volume”, see interpretative diagram 5.
- (b) The maximum area of bare soil exposed from any earthworks where the average depth is greater than 0.5m shall not exceed **200m²** in area within that site (within a 12 month period).
- (c) Where any earthworks are undertaken within 7m of a Water body the total volume shall not exceed 20m³ (notwithstanding provision 17.2.2).

2. Height of cut and fill and slope

- (a) The vertical height of any cut or fill shall not be greater than the distance of the top of the cut or the toe of the fill from the site boundary (See interpretative diagram 6). Except where the cut or fill is retained, in which case it may be located up to the boundary, if less or equal to 0.5m in height.
- (b) The maximum height of any cut shall not exceed 2.4 metres.
- (c) The maximum height of any fill shall not exceed 2 metres.

3. Environmental Protection Measures

- (a) Measures to minimise sediment contamination of any Water body.
- (b) Where vegetation clearance associated with earthworks results in areas of exposed soil, these areas shall be revegetated within 12 months of the completion of the operations.
- (c) No vegetation, soil, earth, rock or any other debris shall be allowed to enter or shall be positioned where it may dam or divert any river or stream or adversely affect in-stream habitats.

4. Protection of Archaeological sites and sites of cultural heritage

- (a) The activity shall not modify, damage or destroy any Waahi Tapu, Waahi Taoka or archaeological sites that are identified in Appendix 3 of the Plan, or in the Kai Tahu ki Otago Natural Resource Management Plan.
- (b) The activity shall not affect Ngai Tahu's cultural, spiritual and traditional association with land adjacent to or within Statutory Acknowledgement Areas.

Assessment matters:

1. Environmental Protection Measures:

- (a) Whether and to what extent proposed sediment/erosion control techniques are adequate to ensure that sediment remains on-site.
- (b) Whether the earthworks will adversely affect stormwater and overland flows, and create adverse effects off-site.

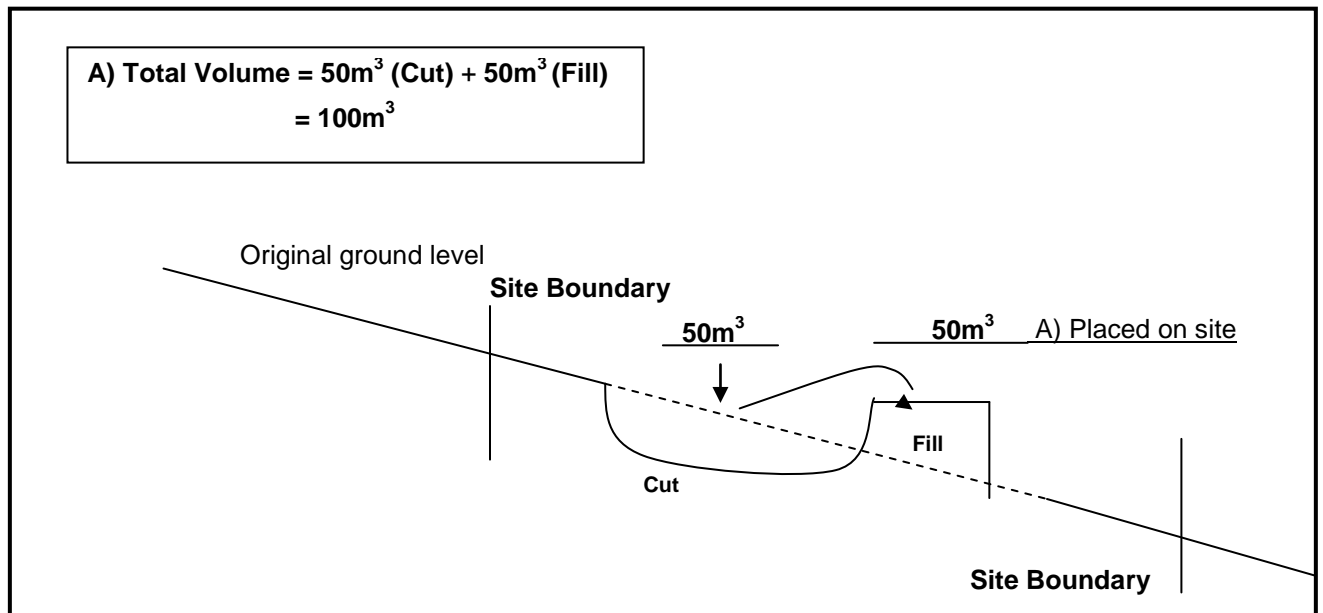
- (c) Whether earthworks will be completed within a short period, reducing the duration of any adverse effects.
 - (d) Where earthworks are proposed on a site with a gradient >18.5 degrees (1 in 3), whether a geotechnical report has been supplied to assess the stability of the earthworks.
 - (e) Whether measures to minimise dust emissions are proposed.
 - (f) Whether there is potential for the earthworks to expose a groundwater aquifer (water bearing gravel's) which may cause ponding or artificial drainage of the aquifer. NB: If this will or is likely to occur resource consent or permit is required from the Otago Regional Council.
2. Effects on landscape and visual amenity values
- (a) Whether the scale and location of any cut and fill will adversely affect:
 - the visual quality and amenity values of the landscape;
 - the natural landform of any ridgeline or visually prominent areas;
 - the visual amenity values of surrounding sites.
 - (b) Whether the earthworks will take into account the sensitivity of the landscape.
 - (c) The potential for cumulative effects on the natural form of existing landscapes.
 - (d) The proposed rehabilitation of the site.
3. Effects on adjacent sites:
- (a) Whether the earthworks will adversely affect the stability of neighbouring sites
 - (b) Whether the earthworks will change surface drainage, and whether the adjoining land will be at a higher risk of inundation, or a raised water table.
 - (c) Whether cut, fill and retaining are done in accordance with engineering standards.
4. General amenity values
- (a) Whether the removal of soil to or from the site will affect the surrounding roads and neighbourhood through the deposition of sediment, particularly where access to the site is gained through residential areas.
 - (b) Whether the activity will generate noise, vibration and dust effects, which could detract from the amenity values of the surrounding area.
 - (c) Whether natural ground levels will be altered.
5. Impacts on sites of cultural heritage value:
- (a) Whether the subject land contains Waahi Tapu or Waahi Taoka, or is adjacent to a Statutory Acknowledgment Area, and whether tangata whenua have been notified.
 - (b) Whether the subject land contains a recorded archaeological site, and whether the NZ Historic Places Trust has been notified.

12.11.5 Non-notification of Applications

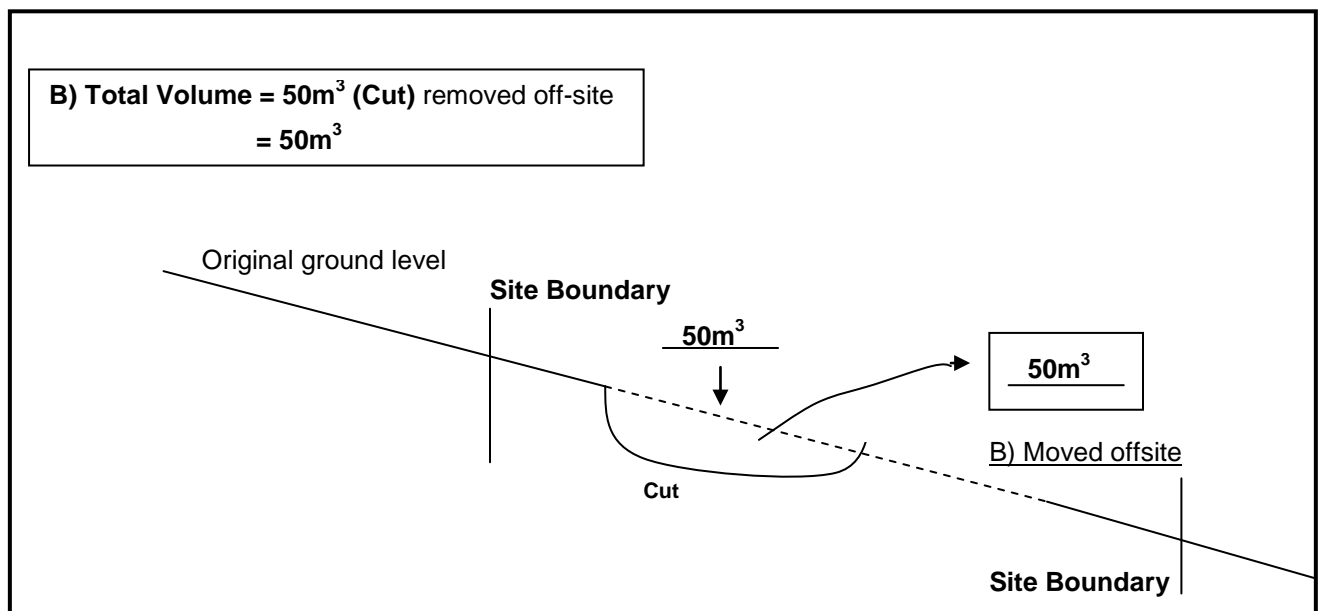
Any application for a resource consent for the following matters may be considered without the need to obtain a written approval of affected persons and need not be notified in accordance with Section 93 of the Act, unless the Council considers special circumstances exist in relation to any such application.

- (i) All applications for **Controlled** Activities.
- (ii) All applications for earthworks undertaken in relation to otherwise controlled activities in the Remarkables Park Zone provided the earthworks is not within 25m of the site or zone boundary and the subject site is owned solely by Remarkables Park Limited.

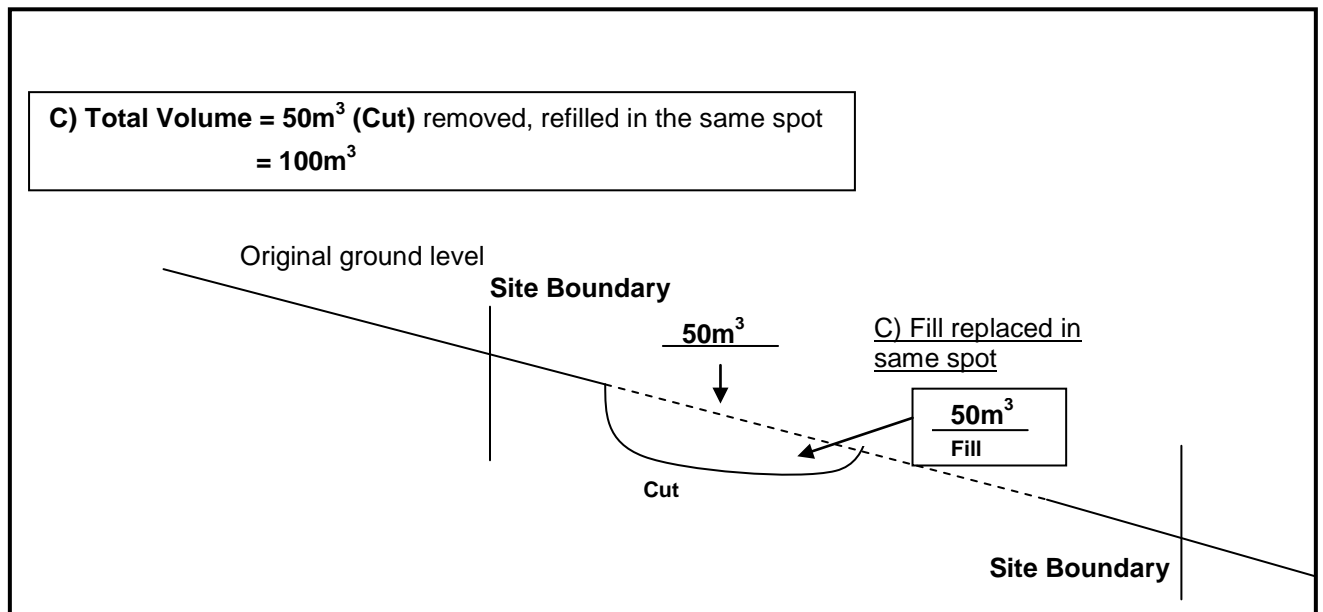
5.A) The total volume of earthworks means “the total volume of all earthworks that is moved within a site as below.”



5.B) The total volume of earthworks means “the total volume of all earthworks that is moved within a site”. For Example:



5.C) The total volume of earthworks means “the total volume of all earthworks that is moved within a site”. For Example:



6. The distance between the boundary and the cut or fill shall be to the top of the cut batter/slope/face or to the toe of the fill batter/slope/face (as below).

