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GROUP

Application for Resource Consent to the Central Otago District Council:

Matakanui Gold Limited

*Land use consent to construct an exploration
geology compound, to undertake earthworks for
services installation and road realignment, and
associated minerals exploration activities at 159
Thomson Gorge Road, Bendigo, Central Otago*

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Supporting Information

- [A] Mineral Exploration Permit
- [B] Record of Title
- [C] Ecological Assessment Report
- [D] Archaeology Report
- [E] Plan for Early Consent Works
- [F] Landscape Effects Assessment

1 Introduction

Matakanui Gold Limited (the “**Applicant**”) applies for land use consent to construct an exploration geology compound associated with minerals exploration activity and the early stages of mine planning for the Bendigo-Ophir Gold Project in the nearby Dunstan Ranges. This application also includes earthworks for road realignment to provide access and the installation of services to the proposed facilities. The activities are located at 159 Thomson Gorge Road, Bendigo, Central Otago (the “**site**”).

This application is limited in scope to the specified facilities and activities, which includes minerals exploration of which the earthworks portion has been previously authorised thorough existing resource consents.

The site is zoned Rural Resource Area with a Significant Amenity Landscape overlay under the Central Otago District Plan (“**District Plan**”). Overall, resource consent is required for a **Discretionary Activity** under the District Plan.

In summary, this Assessment of Environmental Effects (“**AEE**”) report considers the effects of the proposal and determines that the proposal will have minor to less than minor adverse effects on the environment while enabling construction of facilities that will facilitate existing consented activities and contribute to local economic development. The Applicant has undertaken exploration activities in the local area for approximately a decade, utilising local people and businesses and contributing to the local economy. The proposal will be carried out in such a way that it will not result in significant adverse effects on heritage, ecological or landscape values.

The proposal aligns with the key objectives and policies of the District Plan. The proposal achieves the purpose and principles of the Resource Management Act (“**RMA**”) and accords with the definition of sustainable management under Part 2.

2 Site Description

2.1 Site Description

The proposed exploration geology compound, associated services and earthworks are located on part of the land parcel at 159 Thomson Gorge Road, Bendigo, legally described as Lot 11 DP 525588 held on Record of Title 841663 and is shown in **Figure 1** and **Figure 2** below (the “**site office area**”). A copy of the Record of Title is enclosed as **Attachment [B]**.

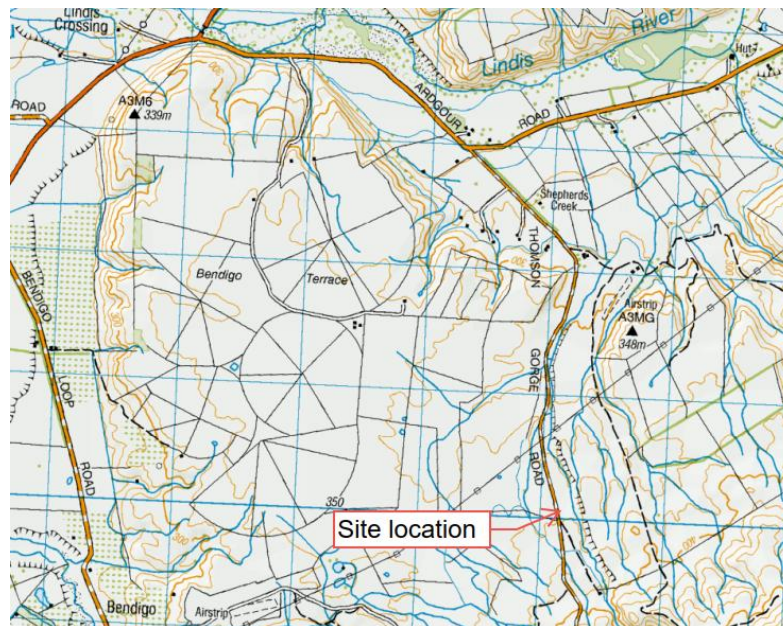


Figure 1 Site Location (Topo maps)



Figure 2 Aerial image of site location (Grip Maps)

Exploration activities are undertaken both within the geology compound area located as above and over various properties within the Dunstan Ranges. These include Matakanui Station, Bendigo Station, Ardgour Station and on crown land. The exploration activities are located within the following titles as detailed in **Table 1** below.

Table 1 Exploration Activities Locations

Legal description	Record of Title	Proprietor	Area
Fee Simple, 1/1, Lot 5 Deposited Plan 392523,	389102	Ardgour Adventures Limited	80,120 m2
Fee Simple, 1/1, Lot 5 Deposited Plan 525588,	841661	Ardgour Valley Orchards LP	480,326 m2
Fee Simple, 1/1, Lot 7 Deposited Plan 490970,	770463	Bendigo Station Developments Limited	103,037 m2
Fee Simple, 1/1, Lot 8 Deposited Plan 547104,	932799	Bendigo Station Developments Limited	2,899,523 m2
Fee Simple, 1/1, Lot 4 Deposited Plan 391334,	366553	Bendigo Station Developments Limited	139,950 m2
Fee Simple, 1/1, Lot 3 Deposited Plan 391334,	366552	Bendigo Station Developments Limited	80,540 m2
Fee Simple, 1/1, Lot 2 Deposited Plan 523873,	834722	Bendigo Station Developments Limited	1,631,207 m2
Fee Simple, 1/1, Lot 15 Deposited Plan 324082,	97287	Bendigo Station Developments Limited	293,755 m2
Fee Simple, 1/1, Lot 14 Deposited Plan 324082 and Lot 2 Deposited Plan 556391,	971533	Bendigo Station Developments Limited	343,820 m2
Fee Simple, 1/1, Section 11-16, 23, 27, 37, 39 Survey Office Plan 24641 and Section 2 Survey Office Plan 332575 and Lot 6 Deposited Plan 517385,	808256	Bendigo Station Limited	23,191,924 m2
Fee Simple, 1/1, Lot 9 Deposited Plan 396297 and Lot 2 Deposited Plan 353225 and Section 24, 36, 38 Survey Office Plan 24641,	383860	Bendigo Station Limited	29,553,791 m2
Fee Simple, 1/1, Lot 7-8 Deposited Plan 517385 and Lot 3 Deposited Plan 459561,	808254	Bendigo Station Limited	457,080 m2



Fee Simple, 1/1, Lot 4-6 Deposited Plan 525495 and Part Lot 10 Deposited Plan 391334 and Lot 5 Deposited Plan 517385,	841228	Bendigo Station Limited	2,374,312 m2
Fee Simple, 1/1, Lot 1 Deposited Plan 475129 and Section 5 Survey Office Plan 24641,	653900	Bendigo Station Limited	1,199,888 m2
Fee Simple, 1/1, Lot 2 Deposited Plan 316124,	63065	Bendigo Station Limited	2,742,082 m2
Fee Simple, 1/1, Lot 5 Deposited Plan 324082,	97277	Bendigo Station Vineyard Limited	98,620 m2
Lease under s83 Land Act 1948, 1/1, Run 238N,	OT3D/219	Matakanui Station Limited	36,017,022 m2
Fee Simple, 1/1, Part Section 1 Block VIII Lauder Survey District,	OT16A/186	Matakanui Station Limited	11,015,000 m2
Fee Simple, 1/1, Section 6-7 Block I Lauder Survey District, Section 3 Block XIV Wakefield Survey District, Section 10 Block III Tiger Hill Survey District and Section 10 Block X Tiger Hill Survey District,	OT405/60	Matakanui Station Limited	39,868,618 m2

The site and exploration area are accessed via Thomson Gorge Road, a public road that provides access from State Highway 8 to the Dunstan Ranges, where it becomes a four-wheel drive track.

Vehicles accessing the exploration drilling sites will travel from the geology compound area on Thomsons Gorge Road to the Dunstan Ranges via public roads and private farm tracks

Shepherds Creek, a seasonal stream in a defined gully, forms the eastern site boundary. This creek often dries up north of the Shepherds Creek valley and in the vicinity of the site, as water seeps into the ground. The adjacent gully has sparse grey scrub, rocks, and a small willow area within pasture.

The site has a gentle slope and an open, undeveloped character, lacking structures, farm tracks, or perimeter fencing. The inner eastern edge contains an open cultivated field.





Figure 3 Site Workers Camp Site viewed in a south-easterly direction towards the foothills of the Dunstan Mountains and Shepherds Creek catchment (Boffa Miskell)

The surrounding rural area has a few farmhouses scattered within a 1-kilometre radius. The nearest town is Bendigo, located approximately 5 kilometres to the southwest of the application area. The wider area supports viticulture, orchards, irrigation, and grazing.

2.2 Landscape

A landscape assessment of the geology compound area and surrounds has been prepared by Boffa Miskell (**Attachment [F]**). This report contains a detailed description of the landscape characteristics, of which the key matters are briefly summarised below.

The proposed geology compound area is located at the edge of a Significant Amenity Landscape (**SAL**). To the south, the site is near to the Dunstan Mountains Outstanding Natural Landscape (**ONL**), though it is not within it. The wider landscape is largely free of prominent buildings or alterations. Higher elevations in the area are characterised by sub-alpine vegetation and tussocks. Lower slopes and the valley floor are predominantly pastureland.

West of the Dunstan Mountains, near the geology compound area, the elevated Bendigo and Bend Terraces overlook lower terraces along the Clutha River. These distinct landforms are classified as a SAL and contribute to the overall character of the Upper Clutha Basin.

Land use in this area includes pivot irrigation, linear paddocks, shelter belts, and some horticulture, typically accessed by gravel farm tracks.

The exploration area is located within the Dunstan Ranges Outstanding Natural Landscape (ONL).

2.3 Ecological Values

An ecological and botanical survey of the geology compound and surrounds has been prepared by Dr Barrie Wills of Central Environmental Services, Alexandra (**Attachment [C]**).

Mr. Wills' report indicates that the site is primarily a lucerne stand interspersed with ephemeral annual grasses and scattered perennial herbaceous plants. Past agricultural development and grazing have also led to a mix of exotic ground cover species. Additionally, the report notes the absence of native tussock grassland species and spring annuals typically found elsewhere around the proposed mine site, likely due to the intensive development of the land.



Figure 4 Typical vegetation cover in the application site area (Central Environmental Services).

2.4 Surface Water Bodies

The geology compound area is located adjacent to a lower modified ephemeral reach of Shepherds Creek. This typically remains dry throughout the year with surface water typically only present during significant rainfall events.

2.5 Historical and cultural values

A review of the district plan has been undertaken and there are no specific heritage or cultural features identified within the application site area. The Applicant has sought advice from NZ Heritage Properties, given their previous experience with the spread of archaeological features within the surrounding area (**Attachment [D]**).

In summary, the proposed earthworks will impact two recorded historic water races (G41/6 and G41/790). There are also other significant archaeological sites nearby outside the project area, including a Rabbiter's Hut and Stockyards – these will be unaffected by the proposed earthworks. NZ Heritage Properties have also identified other water races in the local area which may or may not be archaeological features.

3 Description of the Proposal

3.1 Overview

A plan of the proposed geology compound area layout is provided in **Figure 5** and enclosed as **Attachment [E]**. The proposal involves constructing and operating an exploration geology compound to support the exploration and planning phase of the Bendigo - Ophir Gold Mine project. The proposal also involves drilling activities within the Dunstan Ranges which support the ongoing minerals exploration.

The facility has been sized to future proof for future use during the operational stage of the mine, however, has been significantly scaled back. The nature of the activities utilising the facility are limited to those described below in this section.

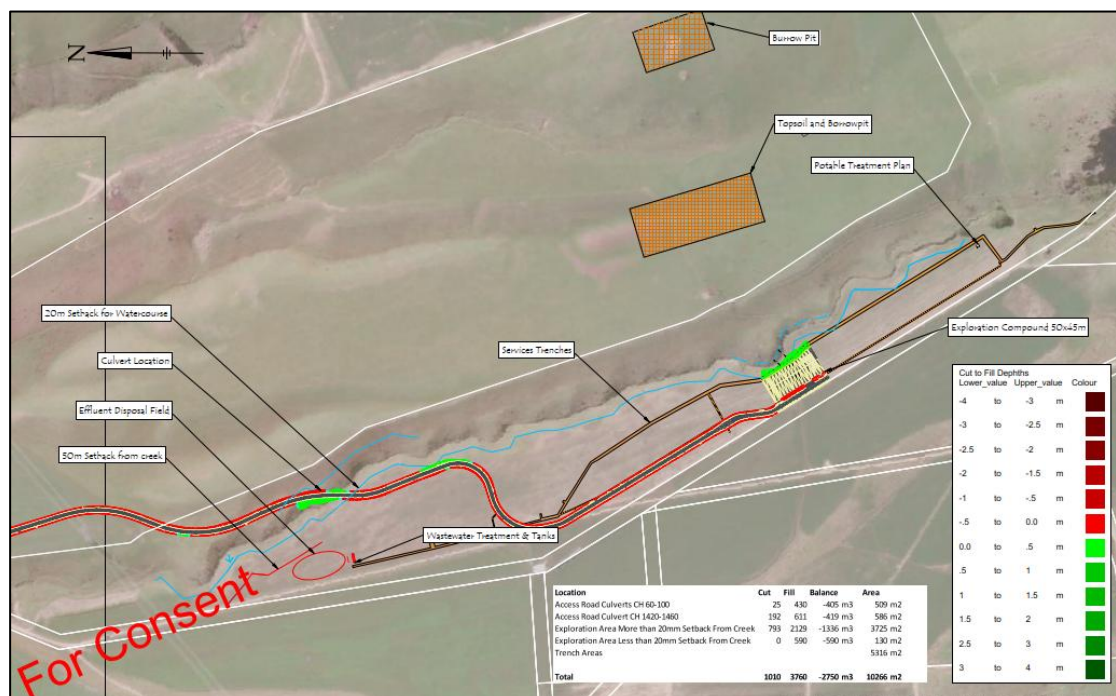


Figure 5 Proposed site layout including Exploration Geology Compound, Access Road, Services, and Borrow Pits (Matakanui Gold Ltd)

All internal access roads will be designed to accommodate two-way vehicular traffic and meet District Plan standards for car parking and manoeuvrability.

The proposal will be designed to comply with all rules and standards in the District Plan related to signage, parking and lighting.

3.1.1 Exploration Geology Compound

The exploration geology compound is shown in **Figure 6** below. The building on the site will be clad and roofed with coloursteel or similar materials and painted neutral

tones. All building cladding will be designed for compliance with the District Plan finish, material and reflectivity requirements.



Figure 6 Render of the proposed Exploration Geology Compound (Ultraspan Ltd)

3.1.2 Minerals Exploration Activities

The geology compound will be used by the applicant to support ongoing minerals exploration and drilling activities in the Dunstan Ranges, undertaken by a team of approximately 25 staff in total. The staff includes 15 employees of Matakaniui Gold Limited who will work in the geology compound and 10 drilling contractor staff.

The geology compound area functions as a base for exploration geologists to undertake exploration planning, process and store samples, and analyse drilling results. The team of geologists and support personnel will be based in the compound area.

Two shifts of drilling crews will visit the site on a regular basis to sign in for work undertaken in the nearby Dunstan Ranges. These drillers do not stay on site and are visitors only. There are approximately 8-10 drillers on dayshift and 4-6 people on the night shift. Drillers may be working anywhere across the exploration permit area and they would not typically be working in close proximity to each other. Each drill crew is composed of two people. During the day, there are up to 4 drill crews working and there also may be a supervisor and/or mechanic available. There are no heavy vehicle movements associated with the activity as the drill rigs remain on site.

3.1.3 Servicing

Toilet blocks will be located in the geology compound. Wastewater will be directed to an on-site wastewater treatment facility and on-site disposal field at the northern end of the site. Resource consent for this discharge has been lodged with Otago Regional Council.

Water will be provided from a nearby bore, with the final location and design of the pipework conveying water to the site has yet to be confirmed. A potable treatment plant

is provided near to the southern end of the site with pipework installed underground throughout the site to convey water to the buildings. Given the staffing is only up to 25 personnel, the Applicant will import potable water by tank if the facility is ready for occupation prior to the reticulated water supply being available.

Stormwater from roofs and compacted gravel areas will be directed to ground. A stormwater design is being undertaken by a civil engineer and resource consent will be sought from Otago Regional Council if required, however the discharge of stormwater may be a permitted activity under the relevant regional plans.

Telecommunications / internet may be provided either through a hardline or a satellite solution such as Starlink.

3.1.4 Earthworks

Earthworks will be required to develop the foundations for the buildings proposed, trenching to install reticulated services, parking and internal access roads and to realign Thomson Gorge Road to better provide for site access. Earthworks will also be required for a borrow pit to provide material suitable for road construction.

The proposed earthworks are shown in **Figure 7** and **Figure 8 Error! Reference source not found.** with larger versions included in **Attachment [E]**.

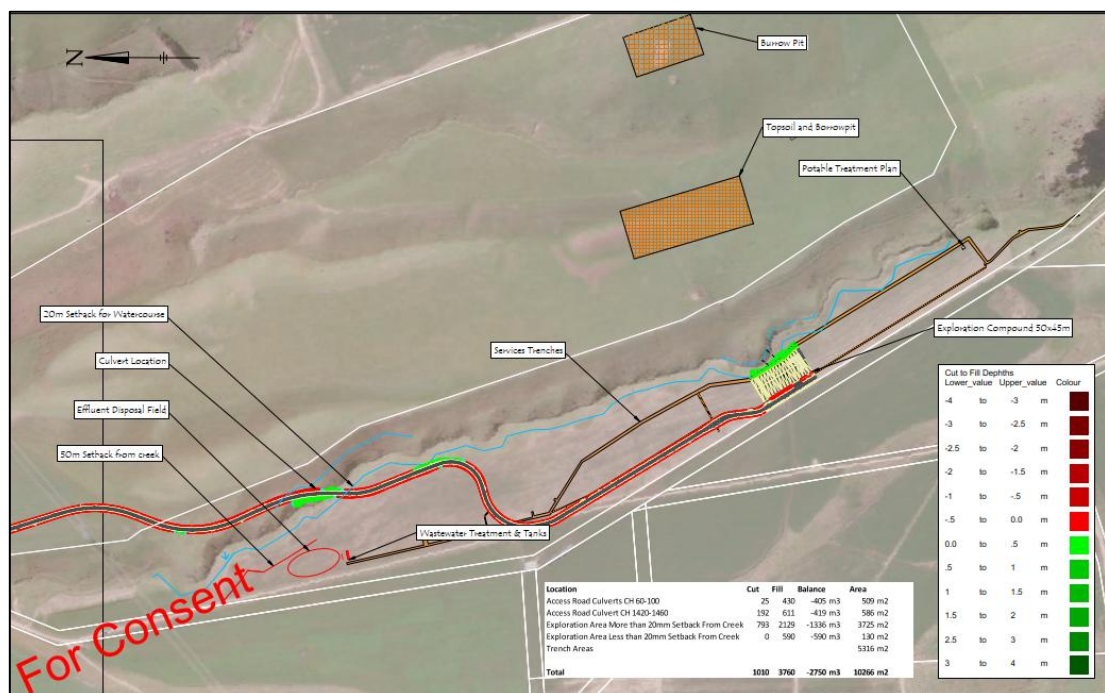


Figure 7 Cut and fill diagram of proposed earthworks – vehicle access and overall facility (Matakanui Gold Ltd).

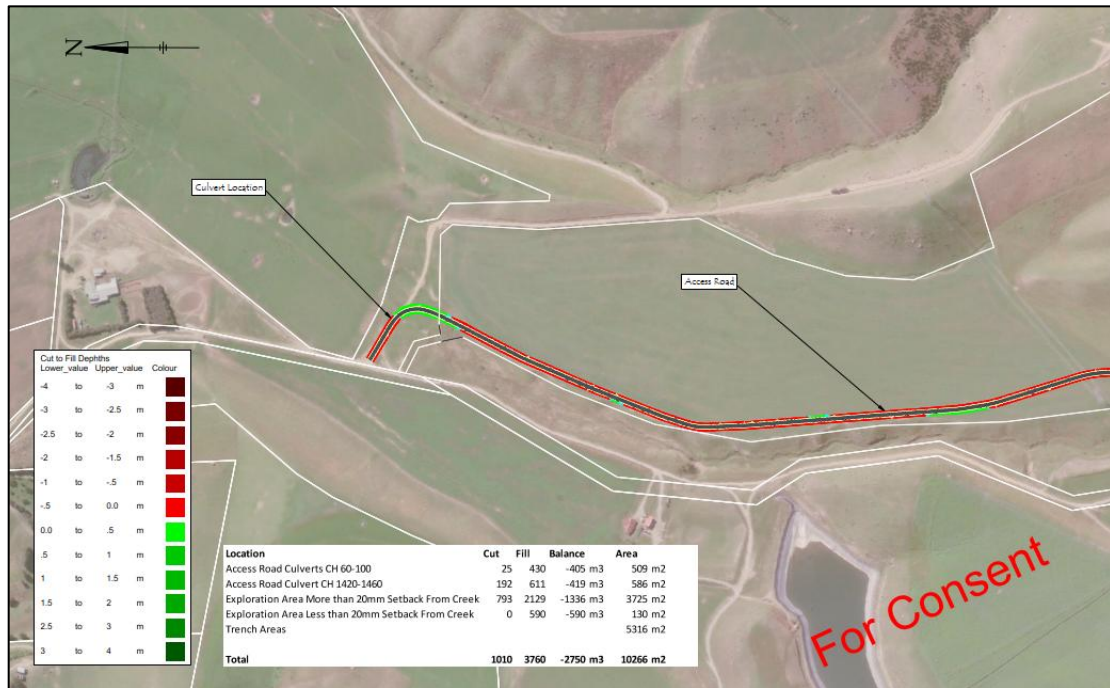


Figure 8 Cut and fill diagram of proposed earthworks – roading works from Thomson Gorge Road (Matakanui Gold Ltd).

The total volumes of earthworks outlined in the Table 2 below.

Table 2 Volumes of Earthworks Required

Location	Cut	Fill	Balance	Area
Access Road Culverts CH 60-100	25	430	-405 m3	509 m2
Access Road Culvert CH 1420-1460	192	611	-419 m3	586 m2
Exploration Area More than 20mm Setback From Creek	793	2129	-1336 m3	3725 m2
Exploration Area Less than 20mm Setback From Creek	0	590	-590 m3	130 m2
Trench Areas				5316 m2
Total	1010	3760	-2750 m3	10266 m2

:

Material cut from the site is expected to be reused on the site. Some specific fill material may need to be imported.

Two culvert crossings of Shepherd's Creek are required to facilitate the road construction. These have been designed by an appropriately qualified civil engineer and subsequent resource consent has been obtained from Otago Regional Council. It is noted that Shepherd's Creek is ephemeral in this area and dry for most of the year.



4 Statutory Provisions

4.1 Central Otago District Plan

The geology compound and exploration area are located within the **Rural Resource Area** under the District Plan. The site geology compound is subject to a Significant Amenity Landscape overlay as shown in **Figure 9** below. This landscape includes the “terrace between the Dunstan Mountains and the Waikerikeri Valley”.



Figure 9 Excerpt from the District Plan Maps with site boundary in red outline (CODC GIS)

The exploration area falls within an Outstanding Natural Landscape Overlay. **Table 1** below sets out the District Plan rule assessment.

Table 3 District Plan Rule Assessment

Section 04 – Rural Resource Area		
Rules		
4.7.3 (Restricted Discretionary Activities)	vi. Breach of Standards 4.7.6.I Riparian Margins	Restricted Discretionary Activity Earthworks and removal of vegetation will be required within 10m of Shepherd's Creek in order to construct the realignment of Thomson Gorge Road.
4.7.4 (Discretionary Activities)	i. Breach of Standards 4.7.6.B Traffic Generation and Characteristics of Activities	Discretionary Activity The proposed facilities will employ more than 3 persons.
	i. Breach of Standards 4.7.6J.b. Extraction and Displacement Activities	Discretionary Activity Earthworks for the construction of the building platforms and the installation of services will exceed the permitted amounts.
Standards		
4.7.6A – Bulk and Location Requirements		
c. Water bodies	No building shall be located within 20 metres of the bank of any stream or river - any wetland identified in Schedule 19.6.1 - any lake (excluding irrigation dams within a farm property) 0.5 hectares or greater in area	Complies The proposed development will be set back more than 20m from Shepherds Creek, as shown in Attachment [E] .
e. Height	The maximum height is as follows: Significant Amenity Landscape (SAL): 6m for any dwellings and buildings accessory to dwellings 7.5m for other buildings including buildings accessory to farm activity	Complies The exploration compound will not exceed 4.6m in height, and the storage of materials during construction within the laydown area will not exceed the permitted 7m height limit.
4.7.6B – Traffic Generation and Characteristics of Activities		
b.	i. No more than 3 persons shall be engaged in any activity of a commercial, industrial or manufacturing nature except in areas identified as "Rural Residential" ([RR]) on the planning maps. For the purpose of this rule, farming, horticulture, viticulture, network utilities and forestry activities are excluded from an activity of a commercial, industrial or manufacturing nature.	Does not comply The proposed facilities and associated exploration drilling will employ more than 3 persons.
4.7.6C – Tree Planting		
a.	No trees shall be planted on a property in such a manner that they obstruct the vision of motorists on the road or cause the root system to have an adverse effect on the road surface.	Complies No trees are proposed to be planted in positions that would breach the rule. Bunding along the road frontage will be grassed.
b.	No trees shall be planted adjacent to any road in a position that will shade the carriageway between the hours of 1000 and 1400 on the shortest day of the year where the speed limit is above 50km/hour and the topography is not already preventing direct sunlight onto the carriageway.	



e.	No trees shall be planted adjacent to any road in a position that will shade the carriageway between the hours of 1000 and 1400 on the shortest day of the year where the speed limit is above 50km/hour and the topography is not already preventing direct sunlight onto the carriageway.	
4.7.6D – Visual Effects of Buildings and Structures		
a.	All buildings including new, relocated and repainted buildings and structures (excluding post and wire fences; bird netting and support structures, wind machines, pivot irrigators and sprinklers and other equipment and fixtures incidental to agriculture, horticulture and viticulture), are subject to the following: i. Finish All buildings shall be finished in any of the following materials: i. Timber/Composite Weatherboard (vertical and horizontal). ii. Plaster/Adobe/Rammed Earth/Masonry Products/Concrete. iii. Stone. iv. Coloured steel excluding unpainted zincalume and unpainted corrugated iron...	Complies The proposed exploration geology compound will be clad in coloured steel.
	ii. Colour : Exterior Walls, Accents and Trim The exterior walls, accents and trim for all buildings and structures shall be in a colour or colours selected from the following colour palette, provided that the colours of exterior walls shall be in a low sheen: Browns, greens, grey blue, greys, terracotta, tussock and dark reds provided that such colours shall have a Reflectivity Value (RV) of less than 38%.	Complies The exterior walls, accents, and trim for all buildings and structures will be in a color or colors selected from those identified for the Rural Resource Area.
	iii. Colour: Roofs The roofs of all buildings shall be in a low sheen in any colour that has a RV of less than 32% or shall be unpainted natural products such as timber shingles or slate.	Complies The roof will comply with the required standards.
b.	All buildings and structures (excluding post and wire fences, bird netting and support structures, wind machines, pivot irrigators and sprinklers and other equipment and fixtures incidental to agriculture, horticulture and viticulture) shall not protrude onto a skyline or above a terrace edge when viewed from a public road or other public place at a distance not exceeding 2 kilometres from the building or structure.	Complies As outlined in Attachment [F] careful consideration of the siting of each of the structures has been undertaken to ensure that the structures remain contained below the skyline of the Dunstan Mountains ONL, including when observed from Thomson Gorge Road adjoining the Site.
4.7.6E – Noise		
a.	a. All activities shall be conducted so as to ensure the following noise limits	Complies



	<i>are not exceeded at any point within the notional boundary of any dwelling, resthome or hospital, or at any point within any Residential Zone or any Rural Settlements Resource Area:</i> <table><tr><td><i>On any day 7:00am to 10:00pm</i></td><td><i>55 dBA L10 40 dBA L10 70 dBA Lmax</i></td></tr><tr><td><i>10:00pm to 7:00am the following day</i></td><td></td></tr></table>	<i>On any day 7:00am to 10:00pm</i>	<i>55 dBA L10 40 dBA L10 70 dBA Lmax</i>	<i>10:00pm to 7:00am the following day</i>		The nearest dwelling is approximately one kilometre away to the north and suitably distant such that the activity is expected to comply with noise limits. There are no residential zones within 10 km of the proposed activity.
<i>On any day 7:00am to 10:00pm</i>	<i>55 dBA L10 40 dBA L10 70 dBA Lmax</i>					
<i>10:00pm to 7:00am the following day</i>						
4.7.6F – Storage						
	<i>Any area used for or proposed to be used for storage purposes (including contractors yards and the stockpiling of material for a period that exceeds 6 months but excluding stock feed, stock yards and grain silos) that is not enclosed or partly enclosed by a covered building shall be screened from the view of any public road, reserve, other public land or any other adjacent site boundary or resource area boundary.</i>	Complies A landscaped berm will screen the construction laydown area to the west.				
4.7.6G – Provision of Services						
a. Effluent Disposal	<i>Any site intended to accommodate a household unit or any activity that generates human effluent shall be either connected to an existing sewerage scheme at the owners cost (provided that the scheme has the capacity to accommodate the waste generated) or if such a scheme is not available the site shall be capable of effective disposal of effluent safely within the site.</i> <i>For sites less than 4000m² or where the activity on the site will generate in excess of 2000 litres per day of effluent as a weekly average (approximately 3 households) regardless of area Council shall require a certificate from a registered engineer, registered drainlayer or other person professionally qualified in effluent disposal to confirm that effluent can be safely disposed of within the site and complies with current recognised standards.</i>	Complies The applicant has been granted a discharge consent from Otago Regional Council for onsite effluent disposal. A copy of the consent is attached.				
c. Access, Loading and Maneuvering	<i>Access, loading and maneuvering requirements shall be provided in accordance with Rule 12.7.1 and Rule 12.7.3.</i>	Complies The Thomson Gorge Road access will be designed and maintained for all-weather use, ensuring no negative impact on existing road drainage and stormwater. A 40m visibility distance will be maintained along the road in both directions from the access. The access to Thomson Gorge Road, a rural local road, will also comply with intersection distance requirements. Internal loading and manoeuvring areas will be designed to comply with District Plan standards.				
d. Parking	<i>Parking shall be provided in accordance with Rule 12.7.2 and Table 12.3.</i>	Complies The proposed carparking areas will comply with CODC requirements regarding the number and				



		dimensions of spaces, internal maneuvering (allowing for a single reverse only), and construction standards. These carparks will be designed to manage dust and stormwater runoff and ensure traffic safety by preventing vehicles from reversing onto public roads. Additionally, the design of the carparks will incorporate on-site queuing space, and control lighting to avoid adverse effects on adjoining properties or roads.
4.7.6H – Signs		
	<i>Signs on any site shall comply with the following standards. Signs:</i> <i>1. Shall be situated on the property to which they relate provided that no more than two pre warning signs having a maximum area of 1m² each are permitted within 500 metres of the site entrance.</i> <i>2. Shall comprise a single sign not exceeding a total of 3m² in area.</i> <i>3. Shall not obscure driver visibility to and from access ways</i> <i>4. Shall not be constructed using reflective material, or flashing or animated components.</i> <i>5. Shall not be illuminated.</i> <i>6. Shall comply with Rule 12.7.5.v.</i>	Complies The Applicant has not yet designed any signage for the site area but notes that signage will comply with the relevant standards.
4.7.6I – Riparian Margins		
	<i>Within 10 metres of any water body, no:</i> <i>a. dumping of fill, spoil or any substance to waste (except cleanfill),</i> <i>b. earthworks exceeding 20m³, or</i> <i>c. the removal of vegetation,</i>	Does not comply The proposed building will not comply with the 20m setback from the waterbody as one corner of the proposed building is within 10m of the stream. Earthworks for the Thomson Gorge Road realignment will be required within 10 metres of Shepherd's Creek, as will riparian vegetation removal, though this is pasture grass.
4.7.6J. Earthworks for Access Tracks and Extraction Activities		
	a. Tracks <i>Where any earthworks are required for or in connection with the formation or construction of any road, track, landing, firebreak, fenceline, or utility service line, the following design standards shall be met: ...</i>	Complies Construction of new road will comply with the requirements of the rule.
	b. Extraction and Displacement Activities <i>Except as provided for in 4.7.6.J.a above the extraction (including excavation and/or displacement) of material shall not exceed an area of 2000m² or a quantity of 3000m³ from any one site provided that: ...</i>	Does not comply While the majority of earthworks are for the purpose of road construction (and assessed under a. above as permitted) the volume and area of earthworks for building foundations and culverts will equate to 1010 cut and 3760 fill which will require a total amount of 4,770m³ of earthworks.
4.7.6KA – Clearance of Indigenous Vegetation		
	<i>Clearance of indigenous vegetation on land not listed for protection under Schedule 19.6.1 and subject to Rule 4.7.6.K, ...</i>	Not Applicable As detailed in Attachment [C] the site lacks indigenous vegetation and contains no wetlands or associated values that would be affected by the proposed temporary project works.



Section 12 – District Wide Rules and Performance Standards		
12.7.1 Access Standards from Roads	i. Construction and Maintenance All vehicular accesses from a road shall be designed, constructed and maintained to ensure that: 1. They are able to be used in all weather conditions. 2. They have no adverse impact upon road drainage systems. 3. Stormwater and detritus (including gravel and silt) do not migrate on to the road. 4. They intersect with the property boundary within 15 degrees of a right angle.	Complies Vehicle access will be constructed in accordance with the standards.
	ii. Sight distance	Complies The required sight distance is 160m and given the relatively flat contour of the road and the distance to the nearest bend in the road is over 160m, the sight distance is considered to be achieved.
	v. Access to Rural Local Roads b. Access distance from any road intersection for activities that attract a high level of traffic (more than 30 vehicle movements equivalent per day) shall be not less than 60 metres.	Complies The distance to the nearest intersection is well in excess of 60 metres.
12.7.2 Parking	i. Every activity shall make sufficient provision for vehicular parking in accordance with Table 12.3 and the minimum dimensions stated in Figures 12.7 and 12.8. Vehicles shall not be required to undertake more than one reverse manoeuvre when manoeuvring out of any parking space to depart the site.	Complies Ample provision is made for on-site parking.
	ii. Construction of parking areas to accommodate in excess of 3 carspaces including vehicle access and turning spaces, shall be constructed in accordance with the following standards; ...	Complies The vehicle surface will be sealed or surfaced in compacted gravel and maintained so as to ensure appropriate control of dust and drainage of stormwater. Specific vehicle access will be provided to and from the site. The parking area and turning spaces will be laid out with sufficient manoeuvring space so that access can be obtained to parking spaces without the necessity for reversing onto or off the site. There are no nearby neighbours and so privacy fencing is not required. At least 15 metres of queuing space will be provided. Lighting shall be directed downward to avoid excessive light spill. Landscaping shall be installed between the car parking areas and Thomson Gorge Road.
12.7.3 Loading and Manoeuvring	i. Servicing Activities Where the loading and unloading of goods is an integral part of an activity, loading facilities are to be provided.	Complies Appropriately designed loading facilities are provided suitable to the specific requirements of the site and activities.

	All such loading areas shall be so located that no vehicle or machinery engaged in any loading or unloading operation shall stand on or be required to manoeuvre on any part of the formed road or cause vehicles to reverse onto State highways or any other road nominated in the rules that apply to a particular Resource Area or Zone. Design shall be appropriate to the type of vehicles that have occasion to visit the site.	
12.7.6 Lightspill	– i. Lightspill Standard <i>No activities shall result in greater than 10 lux spill (horizontal and vertical) of light onto any adjoining property or road, measured at the boundary of a road or the notional boundary of a neighbouring property...</i>	Complies All lighting on the site will be designed to achieve the 10 lux spill (horizontal and vertical) of light limit set out in the standard.

The proposal otherwise complies with all other rules and standards in the District Plan, including those related to signage, transport and noise and heritage.

In summary, resource consent is required for:

- Earthworks and removal of vegetation will be required within 20m of Shepherd's Creek in order to construct the realignment of Thomson Gorge Road - **Restricted Discretionary Activity**, Rule 4.7.3.
- Earthworks for the construction of the building platforms and the installation of services - **Discretionary Activity**, Rule 4.7.4.
- Minerals exploration activity employing up to 25 persons - **Discretionary Activity**, Rule 4.7.4.

We note that the earthworks required for or in connection with the construction of the roads are generally permitted except where they are located within 10 metres of Shepherds Creek. Earthworks for the borrow pit is required in conjunction with construction of the road and hence are also permitted under Rule 4.7.6J.a.

Overall, the proposal is to be treated as a **Discretionary Activity** under the District Plan.

4.2 National Environmental Standards

The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health ("**NESCS**") is potentially relevant to this project.

A review of the Otago Regional Council Listed Land Use Register has been undertaken for the site. There are no records of contamination nor HAIL activities having been undertaken on site, including no bulk pesticide storage or use nor contamination associated with former mining activities.



In consideration of the abovementioned, it is reasonable to conclude that the site is not defined as a 'piece of land' under Clause 7 of the NESCS.

5 Assessment of Effects

In accordance with Section 88 and Schedule 4 of the RMA an assessment of any actual or potential effects on the environment that may arise from the proposal is required with any details of how any adverse effects may be avoided, remedied or mitigated. Accordingly, the below is an assessment of effects relative to the scale and significance of the proposed activity.

This assessment is addressed under the following headings:

- Effects on rural amenity
- Effects on riparian margins and natural character
- Effects on heritage values
- Transport effects
- Positive effects

5.1 Effects on rural amenity

Located in a rural and open area generally undisturbed by human activity, the proposed development has the potential to alter existing rural amenity values. Rural amenity encompasses the qualities that make a rural area pleasant, such as its visual character, tranquillity, low levels of noise and activity, and overall sense of openness and naturalness.

5.1.1 Landscape values and visual amenity

The Landscape Effects Assessment (**Attachment [F]**), prepared by Boffa Miskell, evaluated the potential landscape and visual amenity effects of the proposed development. The report notes that the surrounding area has a history of human modification from farming, viticulture, and former mining.

Boffa Miskell acknowledges that the development will increase the level of built form and human modification at the site. While the proposal involves a large shed and utilitarian structures which while not unanticipated within the rural zone, will increase the presence of structures and built form within the SAL. They note that similar intensive productive rural activities occur throughout this rural landscape and contribute to its overriding working rural character.

The proposed Exploration Building will increase the level of built form and human modification including nighttime lighting within the Site compared with the current open undeveloped character which is present. Notwithstanding this, at the Site scale, earthworks will be relatively limited due to the underlying gentle topography. The introduction of denser built form will be mitigated through recessive building colours and materials (board and batten or coloursteel), setbacks from public roads against the



Dunstan Mountains backdrop, and managed lighting. The siting of large building minimises impact on the open character and terrace edge.

During construction, increased machinery and activity will be visible, transitioning to a more utilitarian rural character during operation.

While the development will alter the character along part of Shepherds Creek's margins, however, this will not compromise the overall open rural character associated with the broader landscape and will remain visually well contained. Built form has been located to remain nestled within the inner edge of the Bendigo Terrace and against a larger landform backdrop observed from surrounding public areas.

The visual amenity effects were assessed by Boffa Miskell (**Attachment [F]**) from three key viewpoints:

Views from Thomson Gorge Road: During construction earthworks associated with installation of electrical, wastewater, and potable water infrastructure will be evident, in addition to the construction of the Exploration Building. However, views will be transient when travelling on Thomson Gorge Road and will become obscured as the road continues into more elevated land to the south of the Site within the enclosure of the Dunstan Mountains ONL. Views will not compromise or significantly detract from the overall rural and open character of the Bendigo Terrace and broader Upper Clutha valley. During construction, visual effects are considered low adverse (minor), reducing to low adverse (less than minor) during operation.

Views from Bendigo Terrace (including two private properties 76B, and 76C Ardgour Road): Long-distance rear views from two private properties will experience increased machinery visibility during construction. During operation, the buildings will appear as a small element within the broader rural context below the Dunstan Mountains. Adverse effects are considered low (less than minor) during construction, reducing to very low (less than minor) adverse during operation and ceasing at project closure.

Views from Kanuka Loop: Long-distance and transient views from the Bendigo Scenic and Historic Reserves will show construction activity similar to Bendigo Terrace views. Upon completion, buildings will appear recessive against the landscape. Overall visual effects on track users are considered transient and very low adverse (less than minor).

It is noted that moderate adverse landscape effects will be experienced within the site; however, these effects will remain internalised and are expected to reduce to a low level over time noting the activity is located on Ardgour Station (private land). In the wider context, the landscape effects are considered to be less than minor.

Overall, Boffa Miskell considers the landscape and visual effects to be low-adverse (less than minor) during construction, decreasing to very low adverse during operation.



5.1.2 Construction effects

Recognising the proposed development's impact on the surrounding road network, particularly the largely unsealed Thomson Gorge Road which provides a connection to the foothills of the Dunstan Mountains and four-wheel drive route over Thomsons Saddle to the Manuherikia Valley. Mitigation measures will be implemented to address potential nuisance effects. Specifically, an Erosion and Sediment Control Plan (ESCP) will be prepared to manage potential sedimentation of Shepherd's Creek and dust will be controlled with water and sequenced earthworks.

Construction noise and disturbance impacts will be temporary and limited to the construction timeframe between 7:00 am and 7:00 pm.

To minimise light spill beyond the site, all external lights will be directed internal to the site and downward, meeting district plan lighting standards.

Consequently, the construction effects will be limited in duration, and considering the large separation distance to sensitive activities, will have effects that are less than minor.

5.1.3 Scale of activity

Standard 4.7.6B(b) states that no more than 3 persons shall be engaged in any activity of a commercial, industrial, or manufacturing nature within the Rural Resource Area, and no person shall be engaged in any activity of a commercial, industrial, or manufacturing nature within the Rural Residential Zone. A reason for these requirements is that commercial, industrial, or manufacturing natured activities have the potential to significantly affect the character of the rural environment.

The exploration geology facilities will be occupied by staff during working hours, generally 7am – 7pm. Some maintenance activities may occur outside of these core operating hours. The staff activities will be spread across the large site with a focus of daytime activity around the exploration geology compound.

Vehicle movements will be concentrated at the start and finish of the day. It is anticipated that staff will be based in the surrounding area and will arrive and depart the site in cars.

The Applicant estimates an average of 10 heavy vehicle movements per day during construction of the facility. No additional heavy vehicle movements are expected to occur after construction. The number of heavy vehicle movements is not considered to be noticeably greater than that which could normally occur in the surrounding environment, given stock trucks, machinery and other heavy vehicles are a normal part of the rural environment.

Drillers undertaking field work in the Dunstan Ranges operate in crews of 2 people. Up to 4 drilling crews operate at any one time. Their work is located on private property and potentially on crown land administered by the Department of Conservation. The Applicant holds access agreements for all land where drilling is undertaken. The drilling

crews are very small scale and spread over a very large area of (in the order of) 25,000 hectares, within the area covered by the minerals exploration permit 60311. The drilling crews may or may not be visible from Thomson Gorge Road, depending on the location of drilling, however the drill crews are not visible from any residences given the isolated location of their work.

Effects on the existing rural character of the locality will be mitigated by the activities undertaken at the geology compound area being appropriate hours of operation, and large separation distances to nearby dwellings.

5.2 Effects on riparian margins and natural character

This section relates entirely to the geology compound area as earthworks associated with the exploration drilling are authorised under existing consents.

5.2.1 Ecological Values

Dr. Barrie Wills (**Attachment [C]**) concluded that the site lacks significant botanical conservation or biodiversity value due to its history of intensive cultivation and grazing, which likely altered its natural ecological features. During construction, a 20m setback will be maintained from flowing watercourses, and work in ephemeral gullies will only occur in dry conditions to prevent adverse effects on water quality and freshwater ecological values. Consequently, the proposed activity's overall effects are considered less than minor.

5.2.2 Natural Character

The Landscape Effects Assessment (**Attachment [F]**), prepared by Boffa Miskell, notes that Shepherd's Creek in the vicinity of the site has grazed margins and is located within an area of pasture and surrounding livestock grazing and pivot irrigation. Boffa Miskell conclude that the overall level of overall, effects on the natural character of the lower Shepherds Creek are considered low adverse (less than minor) during construction, reducing to very low adverse on completion.

Construction of the Exploration Building and associated infrastructure includes 190m² of earthworks within the margins of Shepherds Creek near the building, which will be contained to the eastern boundary of the Exploration Building and associated sump areas. In addition, two culverts will be constructed within the active bed of the creek, one at the northern extent of the access road, and the second where the access road intersects with Shepherds Creek approximately 650 metres north of the Exploration Building. The margins of the creek will be filled with excess cut adjacent to the Exploration Building and will be re-seeded to integrate with the margins of the creek.

Overall, Boffa Miskell conclude that effects on the natural character of Shepherds Creek are considered very low adverse (less than minor).



5.3 Effects on heritage values

This section relates entirely to the geology compound as earthworks associated with the exploration drilling are authorised under existing consents.

As detailed in the Archaeology Report (**Attachment [D]**), the proposed construction will have an impact on heritage values, primarily by requiring the removal of portions or all of several low-value water races. Higher-value features like the Rabbiter's Hut and Stockyards will be protected through avoidance and management measures. The loss of the water races will be addressed through detailed archaeological recording before and during works.

To manage potential impacts and unexpected discoveries, archaeological monitoring of earthworks and on-call protocols will be implemented, alongside a pre-construction briefing for all personnel. The findings will be documented in a comprehensive report, and spatial data will be shared for future interpretation.

Overall, while the proposed works are anticipated to have an impact on the project area's heritage values, the implementation of the recommended mitigation measures, as summarised here and in **Attachment [D]**, is expected to reduce the overall significance of these impacts to a minor level.

5.4 Transport effects

Vehicle access to the geology compound will be from Thomson Gorge Road via a new formed access road. This access will primarily be used by workers arriving at the start of the day and departing later. While vehicle movements will peak during these times due to staff commuting, traffic volumes on Thomson Gorge Road are very low and even under a conservative scenario of individual car travel, the resulting traffic is not considered disruptive to the transport network and on-site parking will prevent any roadside parking impacts.

Vehicle access to the exploration area is via Thomson Gorge Road and thereafter by private farm tracks. Drill rigs stay up on the hill and so the only vehicle movements are associated with drilling staff travelling to and from their place of work. Given the low number of vehicle movements and low levels of traffic on Thomson Gorge Road, the transport effects are considered less than minor.

5.5 Positive effects

The proposal will have social and economic benefits for the community given the anticipated creation of jobs and consequent benefits to local business and industry.

5.6 Conclusion

In consideration of the abovementioned, it is considered that there are no persons on adjacent sites that will be adversely affected by the proposed development. Any potential for adverse effects can be appropriately avoided, remedied or mitigated, and will be minor or less than minor in the context of the receiving environment.

6 Statutory Assessment

6.1 Section 104 (1) of RMA

Section 104 (1) of the RMA requires that the consent authority must, subject to Part 2, have regard to a range of matters when considering an application.

SECTION 5 of this application addresses the matters contained in Section 104 (1) (a) and (ab). This section of the AEE considers those matters relevant under section 104 (1) (b). There are no other matters under Section 140 (1) (c) that are considered relevant and reasonably necessary to determine the application.

6.2 Objectives and Policies

In this instance, the most relevant planning document that requires consideration is the Central Otago District Plan.

6.2.1 District Plan

The objectives and policies in the District Plan that are of direct relevance to this Application are identified below.

Objective 4.3.1 emphasises enabling communities to provide for their social, economic, and cultural wellbeing while maintaining environmental quality. **Objective 4.3.3** focuses on protecting the district's rural amenity values, including the open and natural character of hills and ranges. The proposal aligns with these objectives by confining the construction of buildings to a defined area, appropriate siting of buildings and use of appropriate materials. This approach ensures the maintenance of environmental quality and the protection of the open landscape.

Objective 4.3.6 seeks to preserve the natural character of water bodies and their margins. The proposal includes remediation of disturbed areas and location of structures away from the riparian margin, giving effect to this objective.

Policy 4.4.2 manages effects of land use activities to ensure that adverse effects on open space, landscape, natural character and amenity values of the rural environment are avoided, remedied or mitigated through specified methods. The design of the buildings has been carefully sited in order to mitigate views on the open natural character of the hills and ranges. The proposal is considered to be compatible with the surrounding environment due to the large separation distances to neighbouring properties and the screening of the site through grassed bunds. Sufficient provision for onsite effluent disposal is provided. Tree planting is not proposed in order to maintain the openness of views. Overall, the proposal is considered to achieve Policy 4.4.2.

Policy 4.4.4 seeks to preserve the natural character of riparian margins. Shepherd's Creek riparian margin has a low degree of natural character and regressing of disturbed



areas not formed into a road will ensure stability of disturbed soil and consistency with the surrounding environment.

Policy 4.4.8 requires that adverse effects on neighbours amenity are not significant. Effects of noise, vehicle movements, glare, dust, signage and storage have been appropriately mitigated by appropriate design and siting of buildings, bunding and distance to neighbours.

Overall, the proposal is considered to be consistent with the objectives and policies of the District Plan.

6.3 Section 95 of RMA

6.3.1 Section 95A Assessment

Section 95A of the RMA considers the need for public notification and sets out four steps in a specific order to be considered in determining whether to publicly notify.

In terms of Step (1), public notification is not requested. Section 95C pertaining to notification in the event that further information is not provided under Section 92 is not applicable, and the application is not being made jointly with an application to exchange recreation reserve land under Section 15AA of the Reserves Act 1977.

In terms of Step (2), the proposal does not fall within any of the matters for which public notification is precluded.

Moving to Step (3), notification is not required by a rule in a Plan or a NES, and as demonstrated in Section 5 of this report, the adverse effects on the environment are considered to be less than minor.

Lastly, in terms of Step (4) as no special circumstances are considered to apply public notification is not required under any of the pathways in Section 95A.

6.3.2 Section 95B Assessment

While public notification is not necessary, any effects of the proposal on the local environment and upon particular parties must still be considered. This is addressed through Section 95B of the RMA, which has four steps similar to Section 95A.

In terms of Step (1), there are no affected protected customary rights or customary marine title groups in terms of Subclause (2), nor is the proposed activity on or adjacent to, or may affect land that is the subject of a statutory acknowledgement made in accordance with an Act specified in Schedule 11 in terms of Subclause (3).

In terms of Step (2), none of the circumstances in Subsection (5) that would preclude limited notification apply. We therefore move to Step (3).

Step (3) requires the consent authority to determine, in accordance with Section 95E, whether there are any affected parties. Section 95E states that a person is an affected



person if the consent authority decides that the activity's adverse effects on the person are minor or more than minor (but are not less than minor). There are not considered to be any affected persons in this instance for the reasons given in the above assessment of effects.

Overall, any actual or potential adverse effects of the proposed development are considered to be less than minor.

In terms of Step (4), no special circumstances exist therefore the application may be processed on a non-notified basis.

With respect to the above, in consideration of the conclusions of the AEE, it is concluded that the proposal will result in minor or less than minor adverse effects on the environment, and there are no other circumstances requiring or warranting public or limited notification.

6.4 Purpose and Principles of the RMA

The purpose of the RMA, as set out under Section 5 (2) is to promote the sustainable management of natural and physical resources. The relevant matters in Sections 6, 7 and 8 of the RMA also require consideration. Section 6 identifies matters of national importance under that need to be recognised and provided for in this application:

- (a) *the preservation of the natural character of ... rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:*
- (f) *the protection of historic heritage from inappropriate subdivision, use, and development*

The natural character of Shepherd's Creek is preserved through restoration of disturbed areas and limiting the intrusion on the riparian margin. Historic heritage will be appropriately managed in accordance with recommendations made in the archaeologists report.

The RMA specifies that particular regard shall be had to the relevant other matters listed in Section 7 including:

- (b) *the efficient use and development of natural and physical resources:*
- (c) *the maintenance and enhancement of amenity values:*
- (f) *maintenance and enhancement of the quality of the environment:*

Overall, this proposal will result in the efficient use of land resources in a manner that will protect maintain and enhance amenity values and the quality of the natural environment.

In giving effect to the principles of the Treaty of Waitangi, this application has assessed effects of the proposal on identified cultural values, and proposed mitigation in the form of avoidance where possible in order to protect values associated with archaeological sites and waterways. It is considered that the provisions of Section 8 have been taken into account appropriately considering the nature of the proposal.



As has been demonstrated throughout this AEE, the proposed development is not expected to result in any significant adverse effects on the receiving environment. Any potential adverse effects have been largely avoided, remedied or mitigated. The proposal aligns with the relevant Objectives and Policies of the District Plan.

For the reasons outlined in this report, the proposal is consistent with the purpose and principles under Section 5, and the associated matters under Part 2 of the RMA. The proposal represents an efficient use of natural and physical resources, and will be undertaken in a manner which avoids, remedies and mitigates potential adverse effects on the environment. It is considered that the proposal is consistent with the purpose and principles of the RMA and accords with the definition of sustainable management.