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TE KUHA COAL MINE

LANDSCAPE AND VISUAL REVIEW

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INTRODUCTION

- 1 Isthmus was engaged by the Department of Conservation to review the 'Draft Landscape Assessment Report & Visual Supplements ('**Assessment**') prepared by Rough and Milne Landscape Architects for the proposed Te Kuha Coal Project.
- 2 The project proposes a 70ha open-cast coal mine on the backdrop range to Westport. The site is located on the skyline ridge between Mt Rochfort and the Buller Gorge. It includes a haul road from the coal mine to a loading facility adjacent to the railway line at Te Kuha at the western entrance to the Buller Gorge.
- 3 The majority of the project is within a Water Conservation Reserve administered by the Buller District Council. Approximately 20% of the mine area lies within land administered by the Department of Conservation on the east (Buller Gorge side) of the ridge.
- 4 The review entailed a desk-top analysis of the landscape report and related documents, and a two day field trip (9-10 September 2014). The field trip included visits onto the site and surrounding area, a helicopter flyover of the site and haul road alignment, a presentation from the applicants, and a workshop with DoC experts from other disciplines. I also referred to reports by West Circle (engineering) and J. Marshall (terrestrial ecology).
- 5 The main potential landscape issues are:
 - Landscape effects as experienced from the Lower Buller Gorge;
 - Whether the Buller Gorge is an ONL, and whether the site falls within such an ONL;
 - Landscape effects within the site itself including effects on landform features, vegetation, creeks and a tarn; and
 - Landscape effects (mainly visual amenity effects) from Westport and surrounding areas on the coastal plain.
- 6 This report reviews the following aspects of the 'Assessment':
 - The methodology;
 - The appraisal of the existing landscape;
 - The description of the proposal;
 - The analysis of effects;
 - The measures proposed to avoid, remedy or mitigate adverse effects; and
 - The conclusions

THE METHODOLOGY

The Assessment

- 7 The methodology is sound in its general approach and the way it has been applied to the project:
 - The Assessment covers the matters listed in the RMA Fourth Schedule (including description and evaluation of existing environment, description of proposal, relevant statutory context, assessment of the nature and magnitude of effects, and recommended measures to avoid, remedy or mitigate adverse effects –although it doesn't address alternatives).

- The method is in keeping with the general guidance given in the NZILA Best Practice Guide, 'Landscape Assessment and Sustainable Management 10.1', 2010 ('**Best Practice Guide**').
- Where relevant the Assessment defines the terms used and explains how assessments have been made.

The photosimulations

- 8 The photosimulations appear to be accurate and fair:
- The methodology statement provided is consistent with good practice (For example, NZILA Best Practice Guide, 'Visual Simulations 10.2', 2010)
 - Images include (i) a sufficiently wide field of view (FOV) to depict context, and (ii) separate A3 images to depict correct scale for a reading distance of 500mm for a 'cropped' part of the view.
 - The viewpoints are a fair representation of the locations from where the mine will be experienced.
 - On request, the applicant replaced the photo for viewpoint 13, which addressed an issue identified in the initial photosimulations.

THE DESCRIPTION AND EVALUATION OF EXISTING ENVIRONMENT

The existing landscape

- 9 The Assessment contains a descriptive inventory of landscape features and an evaluation of values. The descriptive inventory is thorough, and is placed in context by means of descriptive extracts quoted from the Westland Regional Policy Statement and Buller District Plan.
- 10 The evaluation makes the following pertinent points:
- There are some **noteworthy biophysical features** on site including rock outcrops, boulder fields, mountain streams ('creeks'), a tarn, and vegetation including what is understood to be 'first growth' bush and sub-alpine scrub. It notes that the site is part of a RAP (Recommended Area for Protection) because of its ecological aspects;
 - The site has '**very high**' or '**very high to pristine**' (page 36) **natural character** (6-7 on a 7 point scale). This is fair taking context into account the largely intact nature of the site (there are only minor disturbances associated with the hut and drilling sites) and at the same time recognising that it is not remote, but rather is in view of Westport; and
 - The site has '**very high**' **visual amenity values**. In particular, it notes that the site is different to other coal mines in the area because of its high visibility on the backdrop hills behind Westport and the eastern part is on the skyline ridge above the Buller Gorge.
- 11 I agree with such analysis. Specifically, I highlight the following observations from my site visit:
- The site has intricate surface topography with rocky features such as huge boulder fields, small areas of 'rock pavement', and ridgeline crags including the distinctive tor in the vicinity of the 730 spot height on the LINZ TopoMap50 series.
 - The vegetation similarly comprises what appears to be an intricate mosaic of different communities ranging from forests (of varying composition) to sub-alpine shrublands, and open herb-fields.

- The intricate terrain, variety of vegetation, and areas of ‘first growth’ forest, lends the site a reasonably picturesque on-the-ground character that is not appreciated in longer distance views.
- 12 Such analysis is also consistent with the information I received from experts in the other disciplines. I understand the site is part of the distinctive ‘Brunner Coal Measure’ ecosystems which are largely confined to this part of the Buller District. I also understand the site has high ecological value because of its intactness, relatively high biodiversity, and connectivity to other areas.
- 13 The associative attributes are one aspect the Assessment does not thoroughly address. The Assessment does point to a tension between the economic value derived from coal mining, on the one hand, and economic value derived from natural environment tourism on the other hand. While weighing such **economic aspects** is not within the scope of a landscape assessment, both mining and tourism are relevant **landscape characteristics** of the area. For instance, a characteristics of the West Coast’s landscape include the juxtaposition of mining and a dramatic natural landscape, and the history associated with such mining. It is noted, though, that most mines in the district have low visibility from settled areas, whereas the proposed site will be prominent from Westport.
- 14 Likewise, greater attention is warranted to the attributes of the Lower Buller Gorge. I discuss this in more detail under the following heading.
- Outstanding Natural Landscape*
- 15 A relevant matter is whether the Lower Buller Gorge is an Outstanding Natural Landscape (‘ONL’) and whether the eastern face of the ridge would fall within the Lower Buller Gorge.
- 16 The Assessment points out that the area east of the ridge is part of a large area identified as an ONL in an assessment of Buller District by Brown NZ Ltd (‘Brown Report’). That report was originally carried out by Mr Brown as part of his evidence on the Mokihinui project. I understand he was subsequently commissioned to review that assessment by Buller District Council. The findings of the Brown Report have not (to date) been considered by the Council or incorporated into the District Plan. However, the Brown Report lumps smaller landscapes into what it terms ‘Landscape Units’, of which the site is assigned to the ‘Paparua and McWilliam Inland Ranges’ which extend more than 50km from north to south. However, and more pertinently with respect to this application, the area simultaneously falls within the Lower Buller Gorge which deserves specific consideration.
- 17 The Lower Buller Gorge is a **distinct landscape** (or feature) with clearly delineated boundaries and a coherent character. The boundaries include the skyline ridges enclosing the gorge. The eastern face of the site falls within the Gorge because it is on the skyline in the centre of view for a significant section (approximately 2km) of the Gorge.
- 18 The classification of the Lower Buller Gorge as a Scenic Reserve reinforces that the Gorge is a distinct landscape with special significance. However, the boundary of the scenic reserve does not accurately follow the topography. As a consequence the mining area is on the skyline within the Gorge but above the boundary of the scenic reserve.
- 19 The following characteristics of the Lower Buller Gorge are relevant when considering whether it is an ONL:

- It is a **'natural'** landscape: Its essential characteristics are the Buller River itself, and the bush-clad slopes enclosing the gorge. Human features are limited (to most intents and purposes) to the highway and railway line.
 - Its **biophysical attributes** include the natural features of the river (bluffs, shoals, rapids etc), the steep forested slopes, and the geomorphology of the gorge itself. It is understood the river is 'antecedent' which has maintained its course as the range has risen across its path.
 - In terms of **aesthetic attributes**, the Gorge has picturesque qualities derived from the winding nature of the gorge, the sequence of unfolding views, the height and steepness of the enclosing 'mountain' slopes, and the bluffs and other features of the river itself.
 - The **associative attributes** include the Gorge's location as a 'gateway' to the Buller District, the fact that it is a well-known landmark associated with the identity of the district, and the history associated with the difficulties encountered traversing the gorge (epitomised by vehicles posed in Hawk's Crag).
- 20 The attributes described above tend to reinforce each other. Taking the **attributes together**, I consider the Lower Buller Gorge readily qualifies as an ONL. This is supported by the following passage from the Buller District Plan:

"Outstanding natural features and landscapes represent an important tourist attraction and recreation asset and contribute to a sense of District identity. Particular features include karst areas, wetland systems, the Buller Gorge, the Paparua and Karamea landscapes, the Buller coal measures and coastal dune systems." (Section 4.9.2) (emphasis added)

- 21 For the sake of completeness, I note that the Brown Report did not identify the western face of the range (i.e. where most of the mine footprint is located) as an ONL. I concur with this appraisal.

THE DESCRIPTION OF THE PROPOSAL

- 22 The Assessment contains sufficient information to enable an appraisal of the **overall scale of effects**. Understanding of the project was assisted by the applicant's presentation (10 September 2014) and explanation of aspects of the 3D model. However, more detail would be required in order to understand more precisely the manner and timeframe for rehabilitation of the site.

THE ASSESSMENT OF EFFECTS

- 23 The 'Effects' section of the Assessment is split into two parts:
- A **visual effects** appraisal of the photosimulations from representative viewpoints (which comprises the bulk of the section on visual effects); and
 - A paragraph assessing the effects on **biophysical aspects** within the site.

Effects on visual amenity

- 24 The Assessment concludes that the effects on (visual aspects of) 'natural character' and 'visual amenity' **during mining** will be:
- 'Substantial' from the representative viewpoint within the Buller Gorge;
 - 'Substantial from those viewpoints on the coastal plain closer to the site such as from SH6 at Norris Creek (Omanu Creek);

- 'Moderate' from Westport and surrounding areas; and
- 'Moderate-low' from more distant locations (such as the Cape Foulwind walkway).

25 These appraisals seem fair on the basis of my review and site visit.

26 Some further interpretation might be given to the bare visual analysis, in particular to views from Westport and surrounding areas. I agree the **degree** of prominence will be 'moderate' and 'moderate-low' from these areas. The **nature** of the effect is likely to be influenced by people's perceptions to mining and is likely to be varied. Unlike most mines in the area, the proposed mine will be visible from a major settlement. It will be prominent because the site is on the skyline of the backdrop hills, and the slope faces Westport. The mine will be a scar amidst what otherwise is a natural bush-clad range of hills. However, coal mining is also part of the character of the district. Some people will likely consider it detracts significantly from visual amenity of the town, others will likely consider it is part-and-parcel of the area's character and livelihood.

27 The works will alter the skyline, and in particular will remove a distinctive secondary peak.

Biophysical effects

28 The Assessment concludes that there will be 'moderate to substantial' natural character effects within the site itself, and 'moderate' visual effects.

29 These conclusions do not seem consistent with the appraisal and information provided. (The Assessment may be basing its appraisal on 'averaging' the effects over the wider permit area, or anticipating mitigation). Open-cast mining within an area of bush and landform features of high value is likely to have landscape effects near the top of the scale within the immediate environs of the mine. I consider the effects within the site and immediate environs will be 'substantial' because the mining will remove the surface topography including the rock features, and associated intricate mosaic of vegetation.

Lower Buller Gorge

30 The effects on the Lower Buller Gorge warrant closer examination because, as discussed above, I consider it to be an ONL in its own right.

31 The Assessment analyses the effects from the representative viewpoint as 'substantial'. I agree with this assessment, and consider further interpretation is useful:

- The site is on the skyline ridge, visible from a reasonably long stretch of the Gorge (approximately 2km between Ohikaiti and Ohikanui Rivers). It is in the centre of the view (westbound), and framed between spurs on either side of the river; and
- The mining will progressively remove the section of ridgeline, with steep notches cut on the skyline. It will remove a distinctive secondary peak on the ridge. The mining will also be accentuated by machinery operating on the skyline, any tailings spilling over the steep eastern face of the ridge, and any structures such as a rock fall fence are required to protect the area below the mine site.

32 Such mining on a prominent part of the skyline will detract from the qualities that make the Lower Buller Gorge an ONL.

33 In addition to the westbound views, the mine will be prominent from eastbound approaches to the Gorge entrance, such as from the lookout over the river from SH6 opposite Te Kuha, which

will also detract from the experience of the Gorge. There will also be some glimpses up side gullies from locations on SH6 west of the horseshoe bend at Cascade Creek, but they will be fleeting and of minor significance compared to the main views discussed above.

- 34 While such effects could be eventually remedied to a degree by reconstructing and re-vegetating a naturalistic skyline, the following needs to be taken into account:
- Effects would persist for many years: They would persist throughout the life of the mine, and until revegetation was sufficiently mature to create a natural appearance -which I understand would be slow given the ridgeline's exposure and thin soil; and
 - While the reconstructed skyline could be naturalistic, it would nevertheless be modified. Photosimulations depict a subdued ridgeline. For example, the distinctive tor will be lost.

THE MEASURES PROPOSED TO AVOID, REMEDY OR MITIGATE ADVERSE EFFECTS

- 35 Measures to avoid, remedy and mitigate adverse effects are discussed throughout the Assessment (where relevant) rather than collated under a separate heading. The measures include:
- a) A plan for progressive mining and rehabilitation which includes stockpiling overburden, backfilling, contouring, and re-vegetating mined areas;
 - b) Alignment and design of the haul road; and
 - c) Incidental matters such as the colour of the loading facility.
- 36 Having inspected the alignment of the haul road and the environs of the loading facility, I consider both could be constructed in a visually unobtrusive manner, subject to the detail design and mitigation methods. The haul road will require clearance through several different vegetation communities (including forest and sub-alpine shrubland), and crossing several steep streams. There are specific matters relating to stormwater flows, acid mine water, and weed infiltration that are addressed in other specialist reports. In a more general sense the haul road is capable of being integrated within the landscape.
- 37 The mitigation measures proposed for the mine site itself appear to be 'best practice' in the following regards:
- The site is to be developed and rehabilitated progressively, although I understand from the West Circle report that the constraints entailed by working overlapping seams means that up to 60% of the footprint may be exposed;
 - Stripped overburden is to be replaced following mining to recreate a naturalistic surface. However, it is understood that the finished levels will be different to the natural levels, and the surface features (such as boulders, rock pavements etc) cannot be recreated;
 - Direct Vegetation Transfer ('DVT') is proposed for part of the site. I understand from the West Circle report that such methods will only be practical for part of the site, because of the sequencing of removing, storing and replacing overburden, and I understand it is most suitable for lower-growing vegetation.
 - Otherwise, the replaced overburden is to be replanted.
- 38 Matters such as practicality of the proposed methods and detail effects on vegetation and ecology are addressed in the other reports. From a landscape perspective it is reasonable to conclude that the mitigation work will go some way towards mitigating (reducing the severity) of landscape effects (both visual and biophysical), but I agree it will not be possible to fully restore

the site's existing qualities and characteristics. The surface topography features and their vegetation associations will be lost, to be replaced by a more generic landform and vegetation cover (and which I understand will consequently also affect ecological communities). While DVT will be possible in part of the site, other areas will require replanting with pioneer species, so that it will be a long time before a mature cover is re-established. The exposure, poor soil and acid conditions mean plant re-establishment will be slow.

THE ASSESSMENT'S CONCLUSIONS

- 39 I generally agree with the Assessment's conclusions on visual effects. I summarise such conclusions as follows:
- a) All open cast mines have unavoidable visual effects;
 - b) Unlike most mines on the West Coast, the proposal will be visible from Westport and the Buller Gorge;
 - c) During mining the proposal will have moderate visual effects from Westport and other locations on the coastal plain, but will have substantial visual effects from some places closer to the site and within the Buller Gorge;
 - d) Following mining and rehabilitation of the landform, the effects will reduce over time as the site is re-vegetated. However, the landform (including the skyline ridge) will be permanently altered and the difference between the revegetated site and surrounding vegetation will persist for a reasonably long time.
- 40 I disagree with the Assessment's conclusions in relation to sections 6(b) and 7(c) of the RMA:
- 40.1 With regards **s6(b)**, the Assessment concludes that the effects on the 'Paparoa and McWilliam Inland Ranges ONL' will be negligible because the mine will comprise only a very small part of an expansive area. Such a conclusion relies on 'diluting' the effects of the mine over the whole of the so-called Paparoa and McWilliam Inland Ranges 'landscape unit' (which as discussed covers an area more than 50km from north to south). However, the pertinent landscape is the Lower Buller Gorge which is an ONL in its own right. In this regard, I agree with the Assessment that there will be 'substantial' visual effects from a location in the middle of the Gorge, the mining being located on the skyline at the focal point of views from that part of the Gorge. In my view it logically follows that there will be significant and inappropriate effects on the Lower Buller Gorge as an ONL.
 - 40.2 With regards **s7(c)**, the Assessment concludes that remediation of the site following mining will maintain visual aspects of amenity values. Such a conclusion only partially reflects the Assessment itself which by its own analysis determines that amenity values will not be maintained during mining, that mitigation will take some time, and that such mitigation cannot fully replace the existing landscape. Rather the more accurate conclusion to be drawn from the Assessment is that there will be adverse effects on amenity values during mining ('moderate' and 'substantial' depending on location), and that such effects will be mitigated during and after mining.
 - 40.3 The Assessment omits a conclusion on **s7(f)** (maintenance and enhancement of the quality of the environment) which is a relevant landscape matter that covers (amongst other things) the biophysical changes to the landscape within the mine area. The

Assessment identifies the area has having high biophysical values as a combination of natural flora and ecology, and topographic features (including streams, rock outcrops and boulder fields). The Assessment recognises that there will be substantial adverse effects on these elements during mining and, although the site is to be restored, there will be residual adverse effects.

- 41 With regards **s6(a)** matters, the Assessment concludes there will be adverse effects on streams during mining, but the culverts / bridges will be removed following mining. The tarn will be protected by a 100m buffer. I consider this is reasonable from a general landscape perspective. Effects with regards s6(a) matters are best addressed by other disciplines given the specific issues relating to hydrology and acid mine waste.

SUMMARY

- 42 The Assessment follows a **sound methodology** and most of the analysis within the main body of the Assessment is accurate.
- 43 There is **sufficient information** to enable an appraisal of **overall effects**, although further technical information would be required to accurately assess details of such effects.
- 44 The **existing landscape** is adequately described, with the notable exception of evaluation of the Lower Buller Gorge as an Outstanding Natural Landscape. In my view the Gorge is an ONL.
- 45 I generally agree with the Assessment's appraisal of **visual effects**, but consider the Assessment understates **the effects on biophysical aspects** of the landscape.
- 46 I disagree with the Assessment with regards **effects on the Lower Buller Gorge**: While the Assessment states that there will be 'substantial' visual effects from the representative viewpoint in the Gorge, it does not interpret such effects in the context of the Gorge as a whole, or in terms of it as an ONL.
- 47 The proposed **mitigation** works appear to be 'best practice'. The measures will (subject to developing the details) likely mitigate (reduce the severity) the adverse effects. There will, nevertheless, remain residual effects on landform and vegetation communities.
- 48 I do not agree with aspects of the **conclusions** with regards to sections of the RMA. In particular:
- 48.1 I consider there will be significant and inappropriate adverse effects on the Lower Buller Gorge as an ONL in terms of s6(b). I consider it incorrect to assess the effects on the Gorge in the context of a much larger 'landscape unit' which extends for some 50km.
- 48.2 By the Assessment's own account, there will be some adverse visual amenity effects; therefore visual amenity will not be maintained in terms of s7(c).
- 48.3 The conclusions do not address the effects on biophysical aspects of the landscape within the site itself in terms of s7(f).

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