

**Before a Hearings Panel Appointed by the  
Selwyn District Council and the Canterbury Regional Council**

**Under** the Resource Management Act 1991  
**(Act)**

**And**

**In the Matter** applications under section 88 of the  
Act by Bathurst Coal Limited in  
relation to the completion of mining,  
closure and rehabilitation of the  
Canterbury Coal Mine in the Malvern  
Hills, Canterbury

**Supplementary Reply Evidence of  
Claire Elizabeth Hunter  
for Bathurst Coal Limited**

Dated: 14 April 2022

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## INTRODUCTION

1. My full name is Claire Elizabeth Hunter. I am a Director with the firm Mitchell Daysh Limited, a planning and resource management consultancy operating throughout New Zealand.
2. I have the qualifications and experience set out at paragraphs 1 - 3 of my statement of evidence dated 1 October 2021.
3. This statement of evidence has been provided to address comments received from the experts called by Environment Canterbury (**ECan**) and Selwyn District Council (**SDC**) (jointly referred to as the **Councils**) received on 25 March 2021 on the proposed conditions of consent.

## SCOPE OF EVIDENCE

4. My evidence provides the following:
  - (a) a revised set of consent conditions in response to the comments from the experts called by the Council's and explanation for these changes;
  - (b) further explanation in response to a number of comments raised by the experts from the Council's where the Councils' proposed changes have not been adopted; and
  - (c) an updated summary of my planning view on the applications for consent by Bathurst Coal Limited (**BCL**) being considered by the Commissioners through this hearing.
5. My evidence is structured into key topics relating to the comment received from the experts called by the Councils being:
  - (a) wetland compensation;
  - (b) aquatic ecology compensation;
  - (c) ongoing water quality monitoring and limits;
  - (d) other comments on consent conditions

## EXECUTIVE SUMMARY

6. A compensation proposal has been developed by BCL to provide for the loss of seepage wetland habitat within the mine operations area (**MOA**) and the uncertainty in terms of hydrological effects on the raised north spring. The amended proposal, as described in Dr Bramley's reply evidence, seeks to enhance a large wetland which can be buffered from surrounding land uses. There is also an ability to protect this wetland in perpetuity.
7. This compensation seeks to ameliorate the loss of these wetland habitats, however the ecological data that is available indicates that the wetlands that would have been affected would have been of low ecological value. Taking into account the existing environment, permitted baseline and the ecological assessments that have been undertaken by Boffa Miskell and Dr Bramley, it is my opinion that the loss of these wetlands is no more than minor.
8. Aquatic ecology values in Tara Stream and Bush Gully Stream have been affected by surrounding land uses over time. Mining is not the sole contributor to these effects. Discharges to both Tara Stream and Bush Gully Stream have also been authorised to occur under current and previous consents, and the proposal (either in retrospect or as part of the closure plan) will have no greater effects than this existing baseline.
9. Water quality will be maintained and improved as part of the closure and rehabilitation plans for the site. The conditions require compliance with bottom line water quality limits. These limits remain consistent with existing consent requirements, and new limits for potential contaminants of concern are being proposed. The conditions also enable BCL to implement an adaptive management response which will occur before there is a non-compliance with the water quality limits in the consent. If any potential issues are identified via the TARP performance monitoring, mitigation or remediation is required to be applied before there is an exceedance of the water quality compliance limits. In my view this is an appropriately conservative strategy to managing water quality at the site as part of the closure and rehabilitation plans, and the conditions are robust in this regard.
10. I have however reviewed the various comments made by ECan and SDC experts and where appropriate I have tried to improve clarity and certainty within a number of the proposed conditions. Further amendments to the

proposed conditions are shown in **Appendix A** and **Appendix B** to this Supplementary Statement of Evidence.

## WRITTEN APPROVALS

11. I also note that since filing of my Statement of Evidence in Reply dated 25 February 2022, I have located additional affected party approvals which were attached to the Environment Canterbury applications.<sup>1</sup>

## WETLAND EFFECTS AND COMPENSATION

### *BCL Proposal*

12. At paragraphs 42 – 43 of his Statement of Evidence dated 1 October 2021, Dr Bramley concludes that the loss of 1.17 ha of seepage wetland which is not already consented, is of negligible magnitude. Notwithstanding Dr Bramley's evidence that this assessment is below the Environmental Institute of Australia and New Zealand (EIANZ) recommended thresholds for extensive offset or compensation, BCL asked Dr Bramley to develop an ecological compensatory package. Dr Bramley's supplementary evidence identifies the ecological compensation and enhancement measures that are now being proposed by BCL.<sup>2</sup>
13. The original compensation package offered by BCL included two sites – upper Bush Gully and the North Property wetland. Upper Bush Gully Stream was included in an effort to maximise the benefit of works already undertaken there (particularly clearance of exotic trees). Dr Bramley notes in his Summary Evidence presented at the hearing that Mr Harding expressed concerns about the sustainability of the Bush Gully compensation site given its proximity to the adjoining pine forest. Dr Bramley agreed with these concerns and amended the proposal as a result.<sup>3</sup>
14. The current compensation package that is being proposed by BCL comprises the following elements:

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<sup>1</sup> Avoca Trust in relation to CRC200500, CRC201367, and CRC201368; Matariki Forests Limited in relation to CRC200500, CRC203016; CRC201367, and CRC201368

<sup>2</sup> Statement of Evidence of Dr Gary Bramley, 1 October 2021 at [40].

<sup>3</sup> Summary of Evidence Dr Gary Bramley, 26 October 2021 at [20].

- (a) Enhancement and restoration of a wetland and riparian complex adjoining Bush Gully Stream known as the North Property Site, which will be protected in perpetuity through a legal instrument.
  - (b) Fencing the raised bog to exclude livestock;
  - (c) Planting approximately 10m either side of the constructed drains which drain to Oyster Gully with unpalatable/browse resistant wetland vegetation (predominantly wīwī rush);
  - (d) Planting around the margin of Tara Pond, including aquatic species within the pond and shrubland species around it;
  - (e) Planting the margin of the North ELF ponds with appropriate aquatic and terrestrial species; and
  - (f) Planting the margin of the N02 pond with appropriate aquatic and terrestrial species.
15. The wetland compensation conditions that have been developed and attached at **Appendix A** and **B** to this Supplementary Statement of Evidence reflect these elements.

### ***Council comments***

16. Mr Klopper notes in his final reply on behalf of ECan that although there is general agreement on the form of the conditions, there is ongoing disagreement between Council and BCL experts on the content of conditions, and content of the wetland compensation.<sup>4</sup> Mr Henderson's view is that amendments to the proposed wetland compensation conditions are also necessary.<sup>5</sup>
17. Both Dr Grove and Mr Harding remain of the opinion that the proposed compensation package is inadequate to compensate for the effects of mining activities on wetland, aquatic and terrestrial ecosystems.<sup>6</sup>

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<sup>4</sup> Final Reply Comments and Recommendations of Rhett Klopper, 25 March 2022 at [25]

<sup>5</sup> At [14]

<sup>6</sup> Final Reply Comments and Recommendations of Dr Philip Grove, 14 March 2022 at [3] - [16]; Final Reply Comments and Recommendations of Michael Harding, 7 March 2022 at Part 7.

**Level of effect on wetlands**

18. The extent and nature of compensation required relates to the extent of effect of the activities for which consent are sought on wetland habitat. It remains my view that the effects of the proposed consents on wetland habitat is no more than minor. Mr Harding provides comments on this conclusion in his final reply comments, which I respond to below.
19. With respect to the North Elf wetlands, Mr Harding refers to the earlier work undertaken by Boffa Miskell, 2017 and states:

*Claire Hunter states that the North Elf wetlands<sup>7</sup> were (based on the evidence of Dr Bramley) very likely to have been dominated by exotic species. This is inconsistent with the ecological assessment undertaken in 2017 prior to disturbance of this area, which recorded the presence of areas of wiwi rushland that were dominated by an indigenous rush.<sup>8</sup>*

20. In terms of the quantum of effect on the North Elf wetlands, Mr Harding also disagrees with my assessment that the effects on wetland values are not more than minor. He states that this conclusion is “*not supported by the ecological evidence; no ecologist (to my knowledge) has advised that the effects are not more than minor*”.<sup>9</sup>
21. To respond to the above comments, I note the following. The 2017 Boffa Miskell report, which I understand Mr Harding is referring to, made the following conclusions with regard to the North Elf site following an onsite field investigation:

*The vegetation within the site is predominantly exotic and the indigenous vegetation within the site has been substantially modified by vegetation clearance and grazing. It is not representative, typical or characteristic of the natural diversity of the Whitecliffs ED.*

*The site does not contain indigenous vegetation or habitat of indigenous fauna that is a relatively large example of its type.*

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<sup>7</sup> This reference in my evidence was made more generally across the MOA, rather than being specific to the North Elf wetlands.

<sup>8</sup> Michael Harding, Ecological Compensation Memorandum, 7 March 2022, page 1

<sup>9</sup> Michael Harding, Ecological Compensation Memorandum, 7 March 2022, page 3

*The site is dominated by exotic vegetation. It supports a low diversity of indigenous ecosystems and a low diversity of indigenous taxa.*

*The site is dominated by exotic vegetation and does not provide or contribute to an important ecological linkage or network or provide an important buffering function.*

*A narrow band of wiwi rushland grows in the bottom of a headwater gully within the site. It is narrow and modified by stock and does not play an important hydrological, biological or ecological role in the natural functioning of a river or coastal system.*

*The site does not contain indigenous vegetation or habitat of indigenous fauna that provides important habitat for indigenous species.<sup>10</sup>*

22. A further report prepared by Boffa Miskell dated 2019, and which was attached to the BCL Further Information Response dated 19<sup>th</sup> December 2019 concluded that:

*The majority of the vegetation communities and habitats within the Mine Operations Area are modified, dominated by introduced plant species and of negligible ecological value. Exceptions to this are wīwī / exotic grass rushland vegetation communities within farmland, which are of low value, and a small area of lowland flaxland and raupō reedland within the Tara Stream Wetland, which is of high value.<sup>11</sup>*

23. When assessing the effects of the removal of the wīwī / exotic grass rushland within the North Elf area specifically, the 2019 report further concludes:

*Although not easily quantified, this vegetation community is common and widespread within grazed pasture, both in the local area, and in the ED. The magnitude of the loss or disturbance of up to 0.5 ha of wīwī / exotic grass rushland in relation to the extent of this plant community within the Whitecliffs ED is considered to be negligible (a very slight change from the existing baseline condition). The level of*

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<sup>10</sup> Boffa Miskell Report – Ecological Significance Assessment of Tara Stream Wetland, the Northern Elf, and Bush Gully, 12 January 2017, at [4.2]

<sup>11</sup> Boffa Miskell, Canterbury Coal Mine RFI Response, 15 March, 2019, Executive Summary

*ecological effect is very low (a negligible magnitude impact on a low ecological value).*<sup>12</sup>

24. The above reasoning is consistent with Dr Bramley's evidence and conclusions. My understanding based on the EIANZ guidelines is that this assessment can generally be considered to be classed as a 'not more than minor' effect in RMA terms.
25. I also note that during the processing of the North Elf consents from ECan, Ms Dawson (as Section 42A report officer for those consents) similarly concluded that, the potential effects on wetlands and ecological values will be no more than minor.<sup>13</sup>

### ***SDC Compensation Proposal***

26. Mr Harding in his memo dated 9 March 2022 is proposing that a larger area along Bush Gully stream be legally protected in perpetuity. Dr Grove and Mr Harding also recommend legally protecting the wetland areas within the MOA.
27. BCL has considered the proposal which has been put forward by Mr Harding. It is noted that it involves access to third party land around Bush Gully. This has been discussed between BCL and the landowners. I understand from Mr Pilcher's evidence that the landowners are not willing to enter into such an agreement.<sup>14</sup> BCL is therefore constrained by this. The same issues that were raised in the Councils' section 42A reports therefore also apply to Mr Harding's proposal, that being:
- (a) The proposed restoration area lies within a few metres of planted pine trees, which may impact the outcomes of the proposal; and
  - (b) The area lies on land owned by a third party and formal protection is not able to be offered by way of a covenant or other legal instrument.<sup>15</sup>

<sup>12</sup> Boffa Miskell, Canterbury Coal Mine RFI Response, 15 March, 2019, at [7.1.1]

<sup>13</sup> Section 42A Officer's Report of Adele Dawson for consents CRC173823, CRC173889 and CRC175281, at [103], [141], [178], [198], [201] and [208].

<sup>14</sup> Supplementary Reply Evidence of Craig Pilcher dated 14 April 2022 at [7].

<sup>15</sup> Section 42A Officer's Report of Michael Harding at [34]; Section 42A Officer's Report of Andrew Henderson [137] and Section 42A Officers Report of Adele Dawson at [90]; Section 42A Officer's Report of Andrew Henderson at [146].

### ***Monitoring and Management Duration***

28. Mr Harding also recommends that monitoring of the compensation areas continue for a period of 25 years.<sup>16</sup> Dr Bramley recommends monitoring and active control of plant and animal pests for a period of five years<sup>17</sup> and that the monitoring obligations will be reviewed when the plan is reviewed in 2026.<sup>18</sup>
29. I understand that within this five-year period the plantings that are proposed are expected to have achieved canopy cover which will eliminate the potential ingress of weed species. Ongoing monitoring is not expected to be required as a result of this coverage. However, I note that the review of the Wetland Management and Planting Plan in 2026, could potentially require an extension of monitoring as a resulting action. I consider it appropriate to amend the conditions to reflect this as set out in proposed condition 33a of CRC184166 and minor changes to the other wetland conditions re; timing.
30. I do not agree, however, that a specified monitoring term of 25 years is necessary as part of these consents. There is no evidence to indicate that there will be an additional environmental benefit as a result of a longer mandatory monitoring period. I also note that the ECan consents are only being issued for a maximum term of 10 years. This may present an additional constraint in being able to implement a monitoring period for 25 years under the suite of all required consents.

### ***Reliance on Conditions and Management Plans***

31. Dr Grove comments that the conditions and management plans to deliver the ecological outcomes sought cannot be relied upon. The preference is for “upfront” compensation before activation of the consent <sup>19</sup>
32. In my view it is not unusual for management plans for compensatory works to be finalised post the issuing of the consent. I also note that the evidence and draft management plan which has been prepared by Dr Bramley is comprehensive. There is no uncertainty regarding what is being proposed and BCL is committed to implementing it. The North Property land being owned by BCL also means that the conditions of consent can be delivered upon.

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<sup>16</sup> Final Reply Comments and Recommendations of Michael Harding, 7 March 2022.

<sup>17</sup> Reply Evidence of Dr Gary Bramley, 25 February 2022, at [48(d)]

<sup>18</sup> Refer to the Draft Wetland Management and Planting Plan

<sup>19</sup> Final Reply Comments and Recommendations of Dr Philip Grove, 14 March 2022 at [5];

33. I note that in other situations that I am familiar with,<sup>20</sup> the offsetting or compensation works are required by the conditions to commence ahead of the mining development. However, the conditions in that situation still relied on these works to be undertaken in accordance with management plans post issuing of the consent. This project is unique in that the mining activity for which the compensation is proposed has already occurred.
34. The bond will also add additional security that the wetland compensation works will be undertaken.

## AQUATIC ECOLOGY EFFECTS

35. Dr Meredith states at paragraphs 17 - 18 of his reply that:

*“...the monitoring to date has documented that Tara Stream is such a highly degraded state, and that because of this, the monitoring data has very little ability to demonstrate further degradation or degradation trends with the methods employed. Quite simply, there is very little capacity for Tara Stream to degrade any more! The proposed Condition 38 monitoring beyond mine closure will further suffer the same limitations of very little ability to demonstrate change from the highly degraded state in the further two years of monitoring proposed.*

*The mine closure proposals for stream rehabilitation are therefore relying upon simple “water quality” and “water quantity” actions (compliance with trigger limits and increased flow (to achieve necessary dilution of mine wastewater contaminants))- but not addressing the fundamental stream habitat limitations of extreme inundation with fine erosional sediments and highly degraded habitats below the mine site.”*

36. Dr Hogsden’s evidence states that Tara Stream and Bush Gully Stream water and habitat quality have been influenced by surrounding current land uses, which includes pastoral farming, production forestry and historical mining activities.<sup>21</sup> Dr Hogsden considers that AMD and turbidity from mine operations in recent years are unlikely to be contributing to significant issues in these waterways due to the onsite water management post 2017.<sup>22</sup>
37. Dr Hogsden’s evidence also indicates that similarity in macroinvertebrate community composition over time, including prior to open-cast mining,

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<sup>20</sup> Deepdell North Stage III, Macraes Mine, Otago

<sup>21</sup> Reply Evidence of Dr Kristy Hogsden, 25 February 2022 at [13].

<sup>22</sup> At [13].

suggests that water quality effects from recent mining are not the main driver of the degraded macroinvertebrate communities in these streams.<sup>23</sup>

38. With regard to kōwaro and other fish species, Dr Hogsden also considers that there is little existing data on fish abundance and distribution in recent years and that this limits the understanding and assessment of effects on these populations. However, Dr Hogsden also concludes that on-site water management in recent years has meant that contaminants from mine discharge are unlikely to currently be a significant issue for kōwaro or other native fish species. Provided that contaminant compliance limits are maintained through mine closure, rehabilitation and post-closure, Dr Hogsden concludes that water quality should not degrade further and will not directly exclude kōwaro populations.<sup>24</sup>
39. At paragraph 14 of his response Dr Grove states that *“no meaningful actions have been proposed to compensate for or remediate adverse ecological effects on Bush Gully Stream and Tara Stream from CCM activities”*. Dr Meredith expresses a similar concern, stating that *“BCL largely refute any necessity or requirement to rehabilitate [mudfish habitat] within the streams”*.
40. With respect to Tara Stream in particular, I refer to my Statement of Evidence in Reply (25 February 2022) where I set out at paragraphs 14 – 24 and illustrated in the figure 9 attached as Appendix C to that evidence, the consented baseline. It is evident from that analysis that most of the CCM site is already authorised to discharge contaminants to Tara Stream and the consents being applied for as part of this hearing process are more administrative in nature. They seek to provide legal authorisation of additional land parcels to discharge to Tara Stream, rather than result in an increase in contaminant concentrations into the Tara Stream environment. The proposed activities are therefore not expected to result in adverse effects beyond those already consented. When assessing the 2017 AMD consents (CRC170540 and CRC170541), Ms Dawson (who again was acting at the Section 42A report officer for those consents) similarly noted that:

*The proposed activities can adversely impact on the downstream wetland, surface water quality and ecosystem through the discharge of AMD, the products used to treat AMD and the disposal of coal ash*

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<sup>23</sup> Statement of Evidence of Dr Kristy Hogsden, 1 October 2021 at [26].

<sup>24</sup> At [49].

*on the site. The activities are already occurring, but the applicant is seeking to implement a revised strategy for addressing AMD and ensure that on-going adverse effects are avoided.<sup>25</sup>*

41. And further at paragraphs 115 - 117 of the section 42A report for the 2017 AMD consents (CRC170540 and CRC170541), it was concluded that:

*The applicant considers that the proposal will avoid any AMD legacy issues and ensure that appropriate closure of the site is achieved at the end of the mining activity and will help minimise the effect of any discharge into the Tara Stream.*

*The applicant has proposed appropriate trigger values, or the methodology to adopt suitable values (boron) to protect the ecological values of the receiving environment. I consider that the monitoring programme and responses to monitoring will ensure that the potential adverse effects on the wetland immediately downstream, surface water quality and ecosystems will be no more than minor.*

42. There was no requirement under these existing consents to compensate or rehabilitate for any adverse effects, including post closure activities which were also anticipated by these consents (refer to the emphasis added above).
43. Additionally, in accordance with Dr Hogsden's evidence, there does not appear to be any habitat data on existing sediment cover, accumulation, or quality in the upper reaches of Tara Stream. Dr Hogsden's evidence also demonstrates there is uncertainty regarding the source of sediments given adjacent land use activities.<sup>26</sup>
44. As I have discussed above and in my earlier briefs of evidence, discharges of sediment into Tara Stream have also been authorised to occur as part of current and previous consents for mining operations. There is no material change in the nature of the discharge (in terms of contaminant type or volume) arising from the retrospective discharge consents that are being sought by BCL.

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<sup>25</sup> Council Officer's Section 42A Report of Adele Dawson for consents CRC170540 and CRC170541 at [84].

<sup>26</sup> Statement of Evidence of Dr Hogsden, 1 October 2021 at [52].

45. The effects of sedimentation discharges into Tara Stream arising from BCL's proposed closure and rehabilitation plans will be significantly less.<sup>27</sup>
46. It is also important to note that discharges of water and contaminants into Bush Gully Stream have also already been authorised via existing discharge permits.<sup>28</sup> BCL is not seeking to replace or renew these consents as part of these applications. In assessing the effects of the discharges into Bush Gully Stream and the effects on mudfish habitat in particular, Ms Dawson also concluded, at that time:

*"The management of the discharge quality will ensure impacts on the significant indigenous species in the receiving waterbody (Canterbury mudfish) are avoided."*<sup>29</sup>

47. Further remediation or compensation of sedimentation effects within Tara and Bush Gully Streams therefore appears to be sought by Dr Grove and Dr Meredith for matters which fall outside the scope of the consents that have been applied for by BCL. I reiterate my view<sup>30</sup> that I do not consider that retribution for any purported non-compliance with existing consents should be achieved via this process.
48. Aquatic monitoring is however being proposed by BCL. This is to provide additional knowledge regarding the existing state of the aquatic environment as discussed in the evidence of Dr Hogsden.<sup>31</sup> The purpose of this monitoring is not to compensate for adverse effects on aquatic ecology as this is not considered necessary. Rather, it forms part of the broader compensation package offered for the loss of 1.17 hectares of wetland habitat.

## **ONGOING WATER QUALITY MONITORING AND LIMITS**

49. Dr Massey and Dr Meredith have provided comments and review of the discharge permit conditions, sampling, analysis, reporting and recording. These comments relate to the Tara Stream Discharge Consents and the comments have helpfully been summarised by Mr Klopper.<sup>32</sup> BCL has

<sup>27</sup> Refer Reply Evidence of Sioban Hartwell, 25 February 2022 at [8] where she states that turbidity is well below consent conditions which is reflective of the reduction in mining activity and stage completion of rehabilitation work upstream.

<sup>28</sup> CRC173823

<sup>29</sup> Council Officer's Section 42A Report of Adele Dawson for consents CRC173823, CRC173889 and CRC175281 at [216].

<sup>30</sup> Reply Evidence of Claire Hunter, 25 February 2022 at [25]-[28].

<sup>31</sup> Reply evidence of Dr Kristy Hogsden, 25 February 2022 at [33]-[43].

<sup>32</sup> Final Reply Comments and Recommendations of Mr Rhett Klopper, 25 March 2022 at [33]-[45]

reviewed these comments and considered where changes to the conditions can be made in response to the comments from the witnesses called by ECan. I outline these below.

#### *Methods for sample collection*

50. Dr Massey recommends that for clarity that the methods of sample collection and analysis need to be specified in the conditions of consent, due to the potential for disagreement.<sup>33</sup> This is addressed in proposed condition 6 which requires sampling to be undertaken in accordance with the most recent and issue of the National Environmental Monitoring Standards (NEMS) Water Quality – Sampling, Measuring, Processing, and Archiving of Discrete River Water Quality Data. Dr Massey is seeking that the specific methods and analysis be set out in the conditions themselves. In my view this is not necessary, especially since this condition requires adherence with the “most recent” standards. These methods could be updated within the standard and the wording of the condition allows for the sampling methods to be adapted should that be required to ensure ongoing compliance with the standard. I have however made some minor amendments to proposed Conditions 6 to ensure that industry standard practice sampling is undertaken, and that the sampling method is recorded.

#### *Water Quality Monitoring and Limits*

51. In terms of water quality monitoring and limits, recording and reporting, I agree with Mr Klopper that there continues to be a level of disagreement in frequency of sampling and analysis. ECan experts recommend that potential contaminants of concern (arsenic, cadmium, chromium, copper, lead and mercury) should be analysed monthly.<sup>34</sup> Dr Massey and Dr Meredith also highlight that the additional trace elements that are monitored do not have trigger values or limits, and it is recommended they be included.<sup>35</sup> Dr Massey is also concerned that nickel has been excluded, as to has the removal of continuous monitoring of dissolved oxygen.<sup>36</sup>
52. I note the following in response to the above matters. I consider that monthly sampling of the additional contaminants identified by the experts called by

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<sup>33</sup> Final Reply Comments and Recommendations of Dr Michael Massey, 16 March 2022 at [7]

<sup>34</sup> Final Reply Comments and Recommendations of Dr Adrian Meredith, 17 March 2022 at [7]

<sup>35</sup> Final Reply Comments and Recommendations of Mr Rhett Klopper , 25 March 2022 at [35].

<sup>36</sup> Final Reply Comments and Recommendations of Dr Michael Massey, 16 March 2022 at [10].

ECan is not required. This is on the basis of Dr Weber and Dr Hickey's evidence which confirms that previous monitoring has indicated that for all of these elements they are currently at or just above the detection threshold, with all detected concentrations markedly below the guideline values. Both Dr Weber and Dr Hickey consider there to be low environmental risk for all of the elements.<sup>37</sup> Annual monitoring is therefore considered sufficient to provide additional certainty that this remains the case as the mine moves through its active closure and final closure phases. If an unexpected issue arises demonstrated by annual monitoring ECan would have the necessary information to instigate a review of the consent conditions under section 128 of the RMA. Annual limits for these elements have however been included in proposed condition 22 in response to Dr Massey and Meredith's request that compliance limits should also be included. These limits reflect an expectation that such elements will be remain near (or below) the detection limits.

53. Dr Meredith states that the 90% species protection criteria limit for Boron is not appropriate.<sup>38</sup> Retention of the 1.5mg/L limit for Boron is supported by the evidence of Dr Hickey. He considers this to be appropriate for this site and the receiving environment. A site-specific study was also completed by BCL in relation to Boron. This investigation supported the 1.5mg/L for Boron which was accepted by Dr Rick van Dam and Dr Meredith at that time.<sup>39</sup>
54. I can confirm that nickel has not been excluded as suggested and was included in both the monitoring and water quality compliance conditions that Dr Massey and Dr Meredith reviewed.
55. With regard to dissolved oxygen (**DO**) the evidence of Dr Hickey recommends that performance monitoring and reporting for DO should be included, and that it should target 50% saturation. He does not consider that this should be a fixed compliance limit however because of the likely variability of factors affecting the final discharge concentration<sup>40</sup>. Dr Hickey also recommends that discreet monitoring of DO at monthly intervals is appropriate,<sup>41</sup> and I note that the condition as drafted requires a field analysis of DO. I also note that continuous monitoring of DO has never been proposed by BCL, nor is it a

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<sup>37</sup> Reply Evidence of Dr Paul Weber, 25 February 2022 at [30]; Reply Evidence of Dr Chris Hickey, 25 February 2022 at [122].

<sup>38</sup> Final Reply Comments and Recommendations of Dr Adrian Meredith, 17 March 2022 at [9]-[10].

<sup>39</sup> Compliance Report for CRC173823, at [28].

<sup>40</sup> Reply Evidence of Dr Chris Hickey, 25 February 2022 at [84]-[91].

<sup>41</sup> Reply Evidence of Dr Chris Hickey, 25 February 2022 at [133]

requirement of the existing consents. In my view monthly monitoring of instream DO, coupled with other measures, will provide sufficient information to determine if there is an issue arising in the system (e.g. detection of anoxic waters, or issues with the MSR).

*Resample approach*

56. Currently proposed condition 23 requires that the “resample or duplicate retest should be undertaken as soon as practicable”.
57. Dr Massy raises a concern that this requirement could allow for an exceedance of the consent for large periods of time.<sup>42</sup>
58. I note that this condition also requires that upon being informed of the first non-compliance, the consent holder is required to undertake an onsite investigation and remedy any fault which is apparent. This will occur in addition to the resampling/ retesting requirement.
59. I agree however that the timeframe for resampling/testing could be more certain and propose to revise this condition to require that the re-sample or re-test should be undertaken as soon as practicable and no later than two working days post notification of the non-compliance. I think this duration is reasonable as it reflects that the site, particularly during the post closure phase, will be largely unstaffed, and it may take some time to mobilise acquisition of an additional unscheduled sample.
60. Dr Massey is also concerned that conditions 23 allow for up to 4 consecutive exceedances in the continuous monitoring regime (1 hour). Dr Massey is concerned that this could result in continued exceedances without recourse and recommends capping this at a maximum of 4 consecutive exceedances in a certain period of time (e.g. 24 hours).<sup>43</sup> This is not considered appropriate because it is highly likely that it will result in false triggers and excessive reporting as the monitor is vulnerable within the instream environment in which it is located. I understand that for this reason continuous monitors are better used as site management tools, rather than for compliance purposes. I understand that there have been many instances where recording errors have occurred resulting in false triggers. The approach being proposed in the conditions by BCL is also consistent with what has been previously agreed

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<sup>42</sup> Final Reply Comments and Recommendations of Dr Michael Massey, 16 March 2022 at [15]

<sup>43</sup> Final Reply Comments and Recommendations of Dr Michael Massey, 16 March 2022 at [15]

between ECan compliance officers and BCL due to frequent and false non-compliance with continuous monitoring in the past. Evidence of the common occurrence of and issues resulting from false triggers is contained in the compliance reports attached as **Appendix C**.<sup>44</sup>

### *Reporting Requirements*

61. With regard to the reporting requirements in proposed condition 24 associated with a “confirmed exceedance” of the water quality compliance limits, Mr Massey is concerned that the requirement to “*identify the risk to the environment from the exceedance*” is not appropriate because the consent holders assessment of risk is secondary to bringing the site back to compliance.<sup>45</sup> I agree that the water quality compliance limits are set to limit the risks to the environment. However, I do not think that the inclusion of this statement detracts from that in anyway. Having this assessment will also likely assist the Council in determining whether they should take enforcement action regarding the breach. I also note that this condition is one which is already used by ECan in conditions it has issued for this site, and which remain active (e.g. CRC170541 and CRC173823).
62. Dr Massey also requests that performance monitoring data should be made available as part of annual reporting.<sup>46</sup> This is captured via condition 10 of the General Conditions attaching to all ECan consents where it requires “a summary of all water quality monitoring results obtained in accordance with the conditions of the consent”. The intent of that condition was to summarise all performance monitoring data including that for the TARPs and MSR, and I have made amendments to this condition to ensure that this is clear.

### *Mixing System*

63. The experts called by ECan also consider that the mixing system at the compliance point remains poorly specified and this provides further justification for continuous dissolved oxygen measurement to address environmental risk from a number of perspectives.<sup>47</sup> I do not agree that this is unclear. Dr Hickey considers that the MSR effluent oxygenation will occur while flowing through approximately 20m of 110mm corrugated pipe prior to

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<sup>44</sup> Refer to pages 8 and 9 in particular of Appendix C.

<sup>45</sup> Final Reply Comments and Recommendations of Dr Michael Massey dated 16 March 2022 at [16]

<sup>46</sup> Final Reply Comments and Recommendations of Dr Michael Massey dated 16 March 2022 at [6]

<sup>47</sup> Final Reply Comments and Recommendations of Dr Adrian Meredith dated 17 March 2022 at [8]

entering the mixing system. Secondary oxygenation will then also come from mixing with the potable water or N02 pond water diluent prior to discharge.<sup>48</sup>

## **WATER QUALITY COMPLIANCE LIMITS AND TRIGGER ACTION MANAGEMENT PLANS**

64. Dr Massey and Dr Meredith have continued concern regarding the water quality compliance limits and reporting requirements to the consent authority, highlighting that as they are currently proposed there appears to be significant room for non-compliance to continue to occur post identification of water quality limits being breached.<sup>49</sup> Further to this, Dr Massey is of the opinion that the compliance limits are set to limit risks to the environment, and as currently proposed, the follow up actions will continue to allow non-compliance of the limits by allowing assessment of the risks of these breaches, as opposed to immediate action.<sup>50</sup>
65. I disagree with Drs Massey and Meredith for the following reasons. The site is not being used as an active operational mining site, and in my view the water quality compliance actions and responses are more than appropriate to demonstrate ongoing trends in water quality. Single event (i.e. not repeatable by duplicate, or follow up sampling) non-compliance with water quality limits is not expected, and if these do occur during the active and post closure phases there is a degree of likelihood that they have arisen as a result of laboratory error. The conditions need to enable a mechanism to ensure that any exceedance of compliance limits is real before further intensive remedial, mitigatory or preventative (and enforcement) actions are undertaken (beyond that undertaken as per condition 23).
66. I also note that the water quality limits contained in the conditions of consent are the bottom-line limits and there is a further mechanism embedded into the conditions to prevent noncompliance arising by virtue of the TARPs. The trigger values set out within the TARP documents reflect a step change in water quality which will (ideally) occur before these bottom lines are reached. If there are no issues regarding compliance with the green level TARPs, it is unlikely that a 'one off' noncompliance with the water quality compliance limits

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<sup>48</sup> Reply Evidence of Dr Chris Hickey, 25 February 2022 at [87].

<sup>49</sup> Final Reply Comments and Recommendations of Dr Michael Massey, 16 March 2022 at [14]; Final Reply Comments and Recommendations of Dr Adrian Meredith, 17 March 2022 at [13] and [15];

<sup>50</sup> Final Reply Comments and Recommendations of Mr Rhett Klopper, 25 March 2022 at [36]; Final Reply Comments and Recommendations of Dr Michael Massey, 16 March 2022 at [16].

will be directly attributable to an issue onsite. The orange and red trigger values are also set to a value that is either below the compliance limit, or so that it is detected before it will be discharged into the receiving environment.

67. Both Dr Meredith and Dr Massey consider that notification to ECan of the TARP red trigger levels is insufficient, and the level of risk within the orange TARP level also justified such notification.<sup>51</sup> Mr Klopper also notes that the conditions do not adequately define or address the purpose of the green/orange/red system and the intended outcomes of each level.<sup>52</sup> Dr Massey also highlights that the review clauses proposed allow the applicant to make changes to the TARPs without certification from CRC, unless these changes relate to the trigger levels.<sup>53</sup>
68. In response to these comments, I think it is useful to explain how the TARPs and the conditions are intended to work in practice.
69. The purpose of the TARPs is to provide an adaptive management response to the management of water quality during the active and post closure phases. The TARP document is intended to live within the Mine Closure Management Plan (**MCMP**). The MCMP is a requirement of the General Conditions which as noted above are intended to apply to all ECan consents. Condition 1 of the general conditions requires that the active closure phases and post closures phases are undertaken in accordance with the MCMP. Conditions 3 and 4 set out the objectives that are to be achieved via the MCMP. Condition 6 requires that the MCMP is certified by the Council. Condition 7 allows for changes to be made to the MCMP by the consent holder, however the consent holder is limited in its ability to make changes and such amendments can only be made where they:
- (a) Improve the efficacy of the measures to avoid, remedy or mitigate adverse effects; and
  - (b) Ensure consistency with the conditions of the resource consent.
70. Proposed Condition 33 of the Tara Stream Discharge Consents relates more specifically to the TARP section of the MCMP. As noted above, because the

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<sup>51</sup> Final Reply Comments and Recommendations of Dr Adrian Meredith, 17 March 2022 at [14]; Final Reply Comments and Recommendations of Dr Michael Massey, 16 March 2022 at [20]

<sup>52</sup> Final Reply Comments and Recommendations of Mr Rhett Klopper, 25 March 2022 at [37]

<sup>53</sup> Final Reply Comments and Recommendations of Dr Michael Massey, 16 March 2022 at [21]

TARPs are incorporated into the MCMP, there is a requirement that ECan certify this plan inclusive of the TARPs.

71. Proposed Conditions 33 and 34 set out the objective and purpose of the TARPs. That is to ensure the proposed water management system during both the active and post closure phases are effective and that discharges leaving the site continue to meet the water quality compliance limits specified elsewhere in the conditions.
72. Proposed Condition 34 explains that the TARPs shall describe the methods for monitoring water quality parameters and to set out the actions that required to be undertaken by the Consent Holder should any TARP green, yellow, orange or red level triggers be reached or exceeded. I do not think it is necessary for the conditions to set out each water quality scenario and corresponding green, yellow, orange and red triggers and responses. It is clear that green trigger levels indicate low environmental risk, with yellow, orange and ultimately red presenting higher risk events. The TARP document has accompanied BCL's evidence (and application) so it is clear that this is a comprehensive document. It is available for ongoing reference and the MCMP inclusive of the final TARPs and the certification process will seek to ensure that this remains the case.
73. Proposed Conditions 35 and 35a set out the detail that is required to be within the TARP document. Among other matters this specifies that the TARP will provide a description of the water quality and TARP level triggers during both the active and post closure phases that will necessitate the Consent Holder undertaking either further investigation or onsite actions to address the trigger value which has occurred.
74. Proposed Condition 36 sets out that if any of the TARP trigger levels are reached or exceeded the Consent Holder shall be required to implement the corresponding actions set out within the document. It also requires that the Council is notified if any red triggers within the TARP document have been reached or exceeded.
75. In my view there is no uncertainty that the Consent Holder will implement the actions associated with the green, yellow and orange triggers, despite there being no requirement to actively report these to the Consent Authority. The purpose of the TARPs is to enable an adaptive management response to be

applied at the site by the Consent Holder. If any potential issues are detected via the TARP performance monitoring, the Consent Holder is required to act on these before there is an exceedance of the compliance water quality limits that are specified as bottom line limits in the conditions.

76. As noted above the red trigger levels are set so that they are either within the water quality compliance limit or will be detected before it is to be discharged into the receiving environment. There are management actions that can still be undertaken during the red trigger level to therefore prevent non-compliance with the water quality limits. However, I do accept that there is greater risk that a non-compliance with the water quality limits could arise at this level, so it is appropriate to notify the Council at this time. Earlier notification (i.e. during orange) is not considered necessary as the corresponding environmental risk is likely to remain sufficiently low given that there are a number of management tools that can still be implemented by the Consent Holder to prevent either a move to red, and ultimately a non-compliance with the water quality limits. Additional reporting during these scenarios will potentially add administration process and cost for no corresponding environmental benefit.
77. I have however made an amendment to this condition 36 to remove the term “exceeded”. It was not the intention of this condition to allow the red level trigger value to be “exceeded” before notification occurs, so I consider it appropriate to delete that to improve certainty.

## **CERTIFICATION OF MANAGEMENT PLANS AND TARPS**

78. Proposed Condition 37 seeks to recognise that prior to moving to the post closure phase the TARP document may need to be reviewed and updated. The purpose of this review would be to ensure that the TARP accurately reflects current onsite activities, the water management system and to identify if changes to the triggers, investigations or actions contained within the TARP for the post closure phase are required. This review will be reported to the Council and if there are changes being proposed to the green, yellow, orange or red *trigger levels* the Council will be requested to certify these. As noted above both Dr Massey and Dr Meredith would prefer an ability for any change to the TARP document to be certified. Dr Massey also implies that without such a certification process, *“the consent holder can simply cease monitoring, or continue cursory monitoring but take no action in response to the monitoring results”*.

79. As noted above, because the TARP document lives within the MCMP, this review is further constrained by the limits set out in proposed Condition 7. Any changes to the TARP, therefore, need to improve the efficacy of the measures proposed to address adverse effects and to ensure consistency with the conditions of the consent. The review cannot change the objective or purpose of the TARP document, this remains consistent with Conditions 33 and 34. The conditions of the consent will also still require the TARP to be in place during the post closure phase, and to describe the required methods to manage water quality and respond to issues during the post closure phase. The conditions will also still require adherence to the prescribed monitoring and water quality compliance limits during the post closure phase. The advice note set out within Condition 37 also clearly indicates that should this review identify any changes to the water quality monitoring or limits set out within the condition, these would need to be authorised by a section 127 variation application. I consider there to be a considerable degree of certainty built into the conditions that the Consent Holder will continue to adhere to and achieve the requirements of the TARP document.
80. I therefore do not agree that it is necessary for the Council to certify all changes to the TARPs as a result of this post closure review. However, I have made some minor amendments to condition 37 (and consequential amendments to condition 7 of the general conditions) for clarity purposes.

## **OTHER COMMENTS ON CONSENT CONDITIONS**

### ***Bond Conditions***

81. The other key changes to conditions being sought by Mr Henderson which I have not yet addressed in the above sections of my evidence relate to the bond conditions. The revised bond conditions which I am referring to are attached to Mr Henderson final reply comments as Attachment 3.
82. Mr Henderson has proposed that the bond condition be amended to require that immediately following the commencement of consent, the consent holder shall enter into an enforceable agreement relating to the bond. I agree that getting the bond in place as soon as possible following the commencement of consent is appropriate, However I think there will be some practicable difficulties in being able to have this in place at that time. This is because a number of the plans which will ultimately determine how the site will be closed and rehabilitated are subject to finalisation and certification following the

commencement of the consent (e.g. the Environmental Management Plan and the MCMP). These plans are needed to ensure the bond accurately reflects the activities that will be occurring on site and for which the bond is necessary for. This will take a period of time, allowing the 30 working days for BCL to finalise the plans, get these into the Councils and for these to be certified within 30 working days. I also note that built into the conditions (either BCL or SDC version) is a mechanism to review the bond amount and a process to follow should there be any dispute in terms of quantum. This will also mean that there may be a delay in being able to establish the bond agreement as soon as the consent commences. This was the intent of the drafting of proposed Condition 11 of the BCL bond conditions which sought to recognise that the bond would be developed post finalisation of the EMP and MCMP and to allow sufficient time for the Councils review process to occur.

83. I have amended the bond conditions to adopt the majority of Mr Henderson's other suggested changes. For instance, I agree with the list of consents for which the Bond will apply to as set out by Mr Henderson. I do not agree with Mr Henderson's suggestion to remove the dispute resolution process from the conditions, on the basis that this can be included in the agreement.

### ***Water Metering***

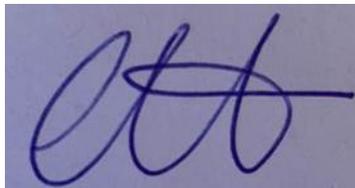
84. Mr Klopper states that if a water take consent is granted, additional conditions are required for the purposes of ensuring compliance with the rate, daily and annual volume. He indicates that these are required "*outside of the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010*". I note that there are water metering requirements within the Canterbury Land and Water Regional Plan, however none of these apply directly to this catchment or type of water take. There does not appear to be any policy requirement to apply more stringent conditions than the 2010 Regulations. I also note that this is a very minor, temporary water take (from the pond) to be used for mitigation purposes only (i.e. dust suppression, or to increase grass strike to prevent surface runoff and erosion). I therefore consider it sufficient to include as a condition that the maximum daily volume of 300m<sup>3</sup>/day (which can be measured by volume of the water cart truck for example) is not exceeded.

***Certification of EMP and MCMP***

85. I have adopted Dr Massey's suggestion that the Council's be provided 30 working days to certify the EMP and MCMP as set out in proposed general Condition 5.

**CONCLUSION**

86. In my opinion the proposed conditions provide for appropriate management of the site during its closure and rehabilitation phases.
87. I remain of the view that any adverse effects arising from the full closure and rehabilitation of the site will be no more than minor and therefore passes the section 104D(1)(a) "gateway test".
88. With regard to section 104D(1)(b) the closure and rehabilitation proposal including the mitigation and wetland compensation that is being proposed, cannot in my view be said to be directly contrary to the objectives and policies of the Canterbury Land and Water Regional Plan and the operative Selwyn District Plan.



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**Claire Elizabeth Hunter**

14 April 2022



**APPEDNIX A**  
**REVISED SDC LAND USE CONSENT CONDITIONS**

**Bathurst Coal Limited**

**Proposed Land Use Consent Conditions – Supplementary Reply Evidence**

**Key**

**Base document provided at the hearing on 26-29 October 2022.**

**Amendments to the conditions made as part of reply evidence dated 25 February 2022 marked in underline and ~~strike through~~ text**

**Amendments to conditions made as part of supplementary reply evidence dated 14 April 2022 make in red underline and ~~strike through text~~**

**Definitions:**

~~Active closure phase: Site rehabilitation works to construct the final landform. Includes bulk earthworks, placement of topsoil, revegetation and removal of infrastructure. Active water management continues. This phase continues until vegetive cover reaches 80% that is self-sustaining and effective at minimising sediment run-off.~~

~~Post-closure phase: The post-closure phase begins once all water treatment system pumps are removed from the site. Intervention and management occurs only if triggered by a Trigger Action Response Plan or to comply with consent conditions.~~

~~MOA: Mine Operations Area as shown on Figure 1 [insert ref.].~~

Operational phase:

The operational phase includes the final scheduled coal mining until mining of N02 and N03 have been completed, and all earthworks operations required to construct the final landform are completed. This includes bulk earthworks, placement of topsoil, revegetation and removal of infrastructure There may be minor volumes of incidental coal encountered and recovered during the construction of the final landform and this coal will be stockpiled and trucked from site as it is encountered. Active water management and treatment infrastructure remains onsite and the construction, commissioning and testing of the Mussel Shell Reactor (MSR) is completed.

Active closure phase:

Site rehabilitation works once the final landform have been completed. Active water management continues. This phase continues until vegetive cover reaches greater than 80% (excluding road and areas of land to be used for water infrastructure) and is self-sustaining and effective at minimising sediment run-off., and concentrated flow paths are adequately lined and water treatment system pumps are removed from the site.

Post-closure phase:

<p>The post closure phase begins once infrastructure is in place to allow all water treatment system pumps to be removed from the site. Intervention and management occurs as part of the adaptive management framework controlled by the Trigger Action Response Plan (TARP)s and comply with consent conditions.</p>	
<p>MOA: Mine Operations Area as shown on Plan-Plan [insert ref].</p>	
<p><b>#</b>      <b>Condition</b></p>	
<p><b>General</b></p>	
1	<p>This consent authorises all activities associated with the Canterbury Coal Mine including retrospective mining <u>the final operational phase of the site, active closure and post closure</u> and rehabilitation activities. More specifically this consent shall be exercised in general accordance with the Assessments of Effects on the Environment filed with the Selwyn District Council and dated 23 November 2018 in respect of the application for land use consent for traffic movements and an Assessment of Effects on the Environment dated 16 November 2018 in respect of the application for land use consent for coal mining and all associated activities together with all supporting information and documents together with Bathurst Canterbury Mine Closure and Rehabilitation Assessment of Effects on the Environment and appendices (Addendum AEE) that was filed with the Selwyn District Council on 7 April 2021 except as amended by these conditions of consent. If there is an inconsistency between the application documents the most recent application document will prevail and in the case of inconsistency between application documents and conditions, the conditions of this consent shall prevail.</p> <p><b><u>Advice Note: This consent authorises retrospective activities listed in Condition 1 that have occurred onsite within the MOA.</u></b></p>
2	<p>The total area of disturbance shall not exceed approximately 58 hectares and the Mine Operations Area shall not exceed a total area of approximately 62 hectares as shown on Figure 1.</p>
<p><b>Environmental Management Plan and Mine Closure Management Plan</b></p>	
3	<p>All activities and works associated with retrospective mining activities and the final operational phase of the site, active closure and post closure rehabilitation phases of mining, shall be carried out in accordance with the relevant provisions of the Environmental Management Plan (EMP). The active closure and post closure rehabilitation phases of mining shall also be undertaken in accordance</p>

	with the requirements and obligations set out in the Mine Closure Management Plan (MCMP).
4	<p>The EMP shall guide the management of operations to ensure compliance with resource consent obligations and the utilisation of recognised and accepted practices to avoid remedy and mitigate adverse effects that may be caused by the mining and rehabilitation activities. As a minimum, the EMP shall cover the following matters:</p> <ol style="list-style-type: none"> <li>a. Site Water Management (including erosion and sediment control measures);</li> <li>b. Acid Mine Drainage Management;</li> <li>c. Chemical Treatment;</li> <li>d. Construction Management;</li> <li>e. Coal Combustion Residual Management;</li> <li>f. Spill Management;</li> <li>g. Dust Management;</li> <li>h. Lizard Management;</li> <li>i. Wetland Management;</li> <li>j. Site rehabilitation;</li> <li>k. Lighting;</li> <li>l. Fire;</li> <li>m. Noise;</li> <li>n. Traffic Management; and</li> <li>o. Archaeology, Cultural including an accidental discovery protocol.</li> </ol>
5	<p>At the completion of site rehabilitation, the following objectives shall be achieved:</p> <ol style="list-style-type: none"> <li>a. Landform design and rehabilitation activities create a landform that is stable with similar land use capabilities and hydrological sub-catchments that existed prior to the disturbance;</li> <li>b. Disturbed land will be rehabilitated and stabilised to a condition where the risk of adverse effects on water quality are low;</li> <li>c. <del>Soils</del>Soil will be applied to enable future grazing and production forestry activities;</li> <li>d. Vegetation cover will be established to reduce potential for erosion and sediment loss so that the quality of surface runoff is comparable to surrounding undisturbed landscapes;</li> <li>e. <u>Prevent, minimise, and where necessary control and treat mine influenced waters to ensure rehabilitation and consented water quality limits are</u></li> </ol>

	<p><u>achieved in order to maintain water quality and potentially enhance aquatic ecology values in Tara Stream and Bush Gully Stream; and</u></p> <p><del>f. Post-closure water quality discharged from the site will be at levels that sustain the downstream aquatic ecology;</del></p> <p><del>g. Potential acid mine drainage will be managed and adaptive management measures established to manage risk; and</del></p> <p>h. To enhance the North Property wetland and ecological enhancement area with ecologically appropriate species and restore indigenous vegetation to compensate for the retrospective removal of seepage wetlands.</p>
6	<p>The MCMP shall detail the methodology and anticipated outcomes to achieve the closure objectives in Condition 5. The MCMP shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>a) Identification of key personnel and their responsibilities;</li> <li>b) A plan(s) showing the final design and intended contours of all permanent structures and works, including but not limited to final landforms, ponds, roads, access tracks or other works which are proposed to remain after closure of the site;</li> <li>c) Details on the staging of the active closure and post-closure phases until closure objectives are achieved;</li> <li>d) Details of the rehabilitation required to fulfil the conditions of this consent, including closure criteria and any related consents;</li> <li>e) Details on infrastructure to be decommissioned, such infrastructure may include buildings, plant, and equipment.</li> </ul>
7	<p>The draft EMP lodged with the Closure and Rehabilitation Plan AEE dated 6 April 2021 shall be updated and finalised by the consent holder and provided to the Selwyn District Council for certification within <del>20</del><u>30</u> working days of the commencement of this consent. The certification process must be confined to confirming that the final EMP adequately gives effect to the relevant condition(s).</p> <p>If the Selwyn District Council does not provide a <u>response with a</u> certification decision <u>or request for changes</u> within <del>29</del> <u>30</u> working days of receipt of the final EMP, that Plan will be deemed to be certified <del>unless the consent authority requests changes. Once certified, the plans will become the 'Certified EMP' for the purposes of these conditions.</del></p>
8	<p>The draft MCMP lodged with the Closure and Rehabilitation Plan AEE dated 6 April 2021 shall be updated and finalised by the consent holder and provided to the Selwyn District Council for certification within 30 working days of the</p>

	<p>commencement of this consent. The certification process must be confined to confirming that the final MCMP adequately gives effect to the relevant condition(s).</p> <p>If the Selwyn District Council does not provide a <u>response with a certification decision or request for changes</u> within <del>29</del> <u>30</u> working days of receipt of the final MCMP, that Plan will be deemed to be certified <del>unless the consent authority requests changes. Once certified, the plans will become the 'Certified MCMP' for the purposes of these conditions.</del></p>
9	<p>The consent holder shall review the Certified EMP and the Certified MCMP, on <del>at least</del> <u>at least</u> <del>six monthly</del> <u>an annual</u> basis during the active closure phase of the Project, and <del>at least annually during the</del> post closure phases (and for no less than 5 years), and if necessary, update it. The consent authority shall be provided with any updates of the plan(s) within 30 working days of any update occurring. Any amendments shall be:</p> <ol style="list-style-type: none"> <li>a. Only for the purpose of improving the efficacy of the measures to avoid, remedy or mitigate adverse effects;</li> <li>b. Consistent with the conditions of this resource consent; and</li> <li>c. Submitted in writing to the Selwyn District Council prior to any amendment being implemented.</li> </ol>
<b>Hours of Operation and Noise</b>	
10	<p>The hours of operation at the site during closure and rehabilitation phases shall not exceed:</p> <p>(a) Visible daylight hours within the period 7.00am – 5.30pm Monday – Friday, and Saturday where required.</p>
11	<p>The consent holder shall ensure that activities associated with mining operations, closure and rehabilitation are designed and conducted so that the following noise limits are not exceeded at the measurement locations outlined in Condition 10 below:</p> <p>(a) 7.30am – 8.00pm: 55 dBA L<sub>10</sub>, 85 dBA L<sub>max</sub></p> <p>(b) 8.01pm – 7.29am: 40 dBA L<sub>10</sub>, 70 dBA L<sub>max</sub></p>
12	<p>Noise measurements shall be taken at the notional boundary of any dwelling not owned by the consent holder.</p> <p><i>Note: The notional boundary is defined as a line 20 metres from the exterior wall of any residential dwelling or the legal boundary where this is closer to the dwelling.</i></p>

13	All noise measurements referred to in Conditions 10 - 12 above shall be measured in accordance with the provisions of NZS 6801:2008 Acoustics: Measurement of Environmental Sound, and shall be assessed in accordance with the provisions of NZS 6802:2008 Acoustics: Environmental Noise.																							
14	The use of tonal reversing alarms on vehicles and equipment is prohibited.																							
15	No blasting activities are authorised by this consent																							
16	All operations shall be undertaken in accordance with the Fire Management Plan in the Certified EMP, required by Condition 4.																							
17	For the avoidance of doubt, the Consent Holder may also undertake emergency works or such other works as may be required to avoid, mitigate or remedy adverse effects at any stage during this consent.																							
<b>Lighting</b>																								
18	No night time lighting equipment is permitted to operate during the closure and rehabilitation phases (unless there is an emergency event). Lighting shall also be undertaken and managed in accordance with the Certified EMP, required by Condition 4.																							
<b>Slope Stability</b>																								
19	Following the completion of engineered landform(s) and land contouring the final cover material (soil) shall be re-vegetated in accordance with the Certified MCMP.																							
20	Temporary and permanent slopes shall not exceed the following parameters:  <table border="1"> <caption>Table 1. Slope Design Parameters.</caption> <thead> <tr> <th>Material Type</th> <th>Geomechanical Unit</th> <th>Maximum Overall Slope</th> <th>Maximum Batter Slope</th> <th>Maximum Batter Height</th> </tr> </thead> <tbody> <tr> <td rowspan="3">In Situ</td> <td>Loess / Pleistocene Gravels</td> <td>26.5° (1V:2H)</td> <td>30.5° (1V:1.7H)</td> <td>20m</td> </tr> <tr> <td>Conway Formation / Broken River Coal Measures</td> <td>26.5° (1V:2H)</td> <td>30.5° (1V:1.7H)</td> <td>20m</td> </tr> <tr> <td>Munro Conglomerate</td> <td>26.5° (1V:2H)</td> <td>45° (1V:1H)</td> <td>15m</td> </tr> <tr> <td>Engineered Landform</td> <td>Compacted mixed waste rock fill (free draining)</td> <td>~21° (1V:2.5H)</td> <td>26.5° (1V:2H)</td> <td>20m</td> </tr> </tbody> </table>	Material Type	Geomechanical Unit	Maximum Overall Slope	Maximum Batter Slope	Maximum Batter Height	In Situ	Loess / Pleistocene Gravels	26.5° (1V:2H)	30.5° (1V:1.7H)	20m	Conway Formation / Broken River Coal Measures	26.5° (1V:2H)	30.5° (1V:1.7H)	20m	Munro Conglomerate	26.5° (1V:2H)	45° (1V:1H)	15m	Engineered Landform	Compacted mixed waste rock fill (free draining)	~21° (1V:2.5H)	26.5° (1V:2H)	20m
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21	Upon the completion of the final landform at the end of the active closure phase, the consent holder shall provide a report from a suitably qualified geotechnical engineer to the Selwyn District Council, that confirms the as-built landform is in general accordance with the map 'Closure Landforms' attached as [insert landform plan reference]. <u>This shall confirm that the landforms are stable and meets the criteria of conditions 19 and 20.</u> <del>The consent holder shall provide survey data that demonstrates the maximum slope angles set out in Condition 20 are not exceeded.</del>																							

22	<p>During the operational phase, the MOA shall be inspected at least monthly by a suitably qualified person <del>geotechnical engineer</del> to:</p> <ol style="list-style-type: none"> <li>a. Check for foundation preparation prior to fill placement and advise of the installation of underdrainage if and when required.</li> <li>b. Oversee the fill placement methodology;</li> <li>c. Identify any areas of slumping, cracking, settlement, subsidence or slope failures, <u>erosion</u>, seepages and areas of water ponding including the remaining sediment ponds <u>and drains</u> onsite. If any such areas are identified, remedial actions to address slope instability shall commence within 10 working days.</li> </ol>
23	<p>Following the completion of the operational phase, the consent holder shall undertake regular monitoring of landform stability for the active and post-closure phases. This monitoring shall be undertaken by a suitably qualified person every three months for 1 year <del>after</del> <u>during</u> the active closure phase <del>operational phase has been completed</del>. The monitoring shall include, but not be limited to:</p> <ol style="list-style-type: none"> <li>a. Inspecting the landform for any signs of slumping, cracking, settlement, <u>erosion</u>, subsidence or slope failures, seepages and areas of water ponding including the remaining sediment ponds <u>and drains</u> onsite.</li> <li>b. If any such areas are identified, remedial actions to address slope instability shall commence within 10 working days.</li> </ol>
24	<p>Following the quarterly monitoring undertaken for 1 year in accordance with Condition 20, the consent holder shall provide a report from a suitably qualified geotechnical engineer to the Selwyn District Council that:</p> <ol style="list-style-type: none"> <li>a. Summarises the results of monitoring undertaken during the <u>12 month period</u>; <del>post-closure phase</del></li> <li>b. Describes the causes (if known) for any slope instability issues that have arisen and the remedial actions undertaken;</li> <li>c. Confirms that the long-term slope stability risks associated with the site are acceptable.</li> </ol>
24a	<p><u>Vegetative cover shall also be recorded as part of the quarterly inspections undertaken in accordance with condition 23.</u></p>
25	<p>For a period of up to four years post the annual monitoring undertaken in accordance with Condition 20, the consent holder shall have a suitably qualified geotechnical engineer undertake a site inspection after an event of an earthquake that generates ground shaking as measured on the Modified Mercalli scale greater than level 6 (MMVI), or a rainfall event that generates more than</p>

	96mm of rainfall in 24 hours or more than 21mm of rainfall in 1 hour (at the Whitecliffs Rain Gauge monitored by Canterbury Regional Council). The site inspection shall be undertaken in accordance with Condition 22 within 10 working days of the event occurring.
26	<p>In the event of any slope failures <u>or significant erosion</u> that <del>result</del> <u>results</u> in the disturbance of land or failure outside of the MOA identified in accordance with Conditions 22, 23 and 25, the consent holder shall notify the Selwyn District Council, within 5 working days. The notification shall include, but not be limited to the following:</p> <ol style="list-style-type: none"> <li>The location of the failure;</li> <li>Identification of the probable cause of failure;</li> <li>Measures taken to address the failure, prevent recurrence and re-stabilise the slope;</li> <li>Assessment of any environmental effects of the slope failure; and</li> <li>Any actions taken to address any environmental effects.</li> </ol>
27	<p>For all site inspections in accordance with Condition 22, 23 and 25, the consent holder shall record the following:</p> <ol style="list-style-type: none"> <li>The date and time of the inspection;</li> <li>The weather conditions during the inspection;</li> <li>Photographs of any areas on instability;</li> <li>A description of any remedial actions undertaken.</li> </ol> <p>A copy of these records shall be provided to the Selwyn District Council upon request.</p>
<del>28</del>	<p><del>For all site inspections in accordance with Condition 22, 23 and 25, the consent holder shall record the following:</del></p> <ol style="list-style-type: none"> <li><del>The date and time of the inspection;</del></li> <li><del>The weather conditions during the inspection;</del></li> <li><del>Photographs of any areas on instability;</del></li> <li><del>A description of any remedial actions undertaken.</del></li> </ol> <p><del>A copy of these records shall be provided to Selwyn District Council upon request.</del></p>
<b>Dust</b>	
29	<p>During the operational phase and active closure works undertaken on site the consent holder shall carry out dust suppression measures on site in accordance with a Dust Management Plan that forms part of the Certified EMP, required by Condition 4.</p>

<b>Traffic</b>	
30	Following completion of coal winning heavy vehicle movements associated with incidental coal removal and/or site decommissioning activities shall not exceed an average of 120 per week and shall be transported from the site during the hours 7.30am – 5.00pm Monday to Friday and only during visible daylight hours. Light vehicle movements shall not exceed 1,200 vehicle movements per month. All traffic onsite shall be managed in accordance with a Traffic Management Plan that forms part of the Certified EMP required by Condition 4.
<b>Final Landform and Cover</b>	
31	In accordance with the Certified EMP and the Certified MCMP, all rehabilitated areas must be graded according to the contours shown on the map 'Closure Landforms' [insert drawing number]. The consent holder shall locate, form and shape all earthworks so that their profiles, contours, skylines and transitions closely resemble and blend with the surrounding natural landforms. As soon as practicable after final landforms are achieved the Consent Holder shall establish a vegetative cover to minimize erosion and produce clean water run off and enhance slope stability.
<b>Wetland <u>Management Plan Compensation</u></b>	
32	<p>The <del>consent holder</del><u>Consent Holder</u> shall <del>set aside approximately [TBC] ha of land known as</del> <u>prepare and implement a Wetland Management and Planting Plan. The Wetland Management and Planting Plan shall be prepared in accordance with the "Draft Wetland Management and Planting Plan submitted as part of the Consent Holder's reply evidence dated 25 February 2022. The Wetland Management and Planting Plan shall address the following:</u></p> <ol style="list-style-type: none"> <li>a. <u>A description and summary of the ecological values of the North Property Wetland and Enhancement Area"</u><del>as shown on Plan CRC[ref] attached to this consent for the purpose of providing an ecological ;</del></li> <li>b. <u>A description of the other enhancement of this area sites within and adjoining the former mine footprint;</u></li> <li>c. <u>A description of the planting proposed and/or fencing at each site;</u></li> <li>d. <u>The monitoring and maintenance requirements for the North Property Wetland and Enhancement Area;</u></li> <li>e. <u>Discussion around the legal protection requirements for the North Property Wetland and Enhancement Area.</u></li> </ol>

	A copy of the Wetland Management and Planting Plan shall be provided to Te Taumutu Rūnanga and Te Ngāi Tūāhuriri Rūnanga.
33	<p>The consent holder shall engage an appropriately qualified and experienced ecologist to prepare <del>at the</del> <u>the Wetland Management and Planting Plan</u>, <del>referred to above</del>. The objectives of this plan shall be to achieve the following outcomes:</p> <p><u>North Property Wetland and Enhancement Area</u></p> <ol style="list-style-type: none"> <li>a. To revegetate the North Property <del>wetland</del> <u>Wetland and Enhancement Area as shown on Plan CRC [x]</u> with ecologically appropriate species and restore indigenous vegetation to at least 70% <u>canopy cover at 1m height</u> as demonstrated in plots across both <del>wetland and dryland sites</del>;</li> <li>b. Woody weed species (<u>including gorse, broom, pine, Himalayan honeysuckle</u>) are at a level of less than 5% cover as demonstrated in plots across <del>both wetland sites</del> <u>the North Property Wetland and Enhancement Area. This will be achieved via weed control.</u></li> <li>c. Improve terrestrial and wetland habitat quality and create corridors for wildlife movement: <u>at the North Property Wetland and Enhancement Area. This will be achieved via planting and weed control and demonstrated via an increase in commonly accepted wetland condition index and reporting about the site as required by monitoring.</u></li> <li>d. Encourage natural ecosystem processes including the regeneration and dispersal of indigenous fauna and flora. <u>This will be achieved by including a selection of appropriate (bird pollinated and dispersed) eco-sourced species in the plantings.</u></li> <li>e. <u>Improve habitat for any native lizards (particularly grass skinks) which might be resident at the North Property Wetland and Enhancement Area.</u></li> </ol> <p><u>Other Enhancement Sites</u></p> <ol style="list-style-type: none"> <li>f. Create approximately 0.7ha of wīwī rushland surrounding the constructed drains in the Oyster Gully catchment;</li> <li>g. Create approximately 0.2ha of shrubland habitat surrounding the ponds at the North ELF;</li> <li>h. Undertake approximately 0.2ha of planting at the N02 pond, North Elf Ponds and Tara Pond to create pond edge habitats.</li> </ol> <p>Fence around the raised seepage north of the mining area.</p>
34	In order to achieve the objectives, <u>set out in condition 33 (a) to (e) of the Wetland Management and Planting Plan</u> , the consent holder shall <u>within the North Property Wetland and Enhancement area shown on Plan [ref – North Property Wetland and</u>

	<p><u>Enhancement Area – refer to Figure 2 in the Wetland Management Plan]]</u>  <u>undertake the following actions:</u></p> <ol style="list-style-type: none"> <li>a. <u>Set aside an area of land known as the “North Property Wetland and Enhancement Area” as shown on Plan CRC[ref – North Property Wetland and Enhancement Area – refer to Figure 2 in the Wetland Management Plan] attached to this consent for the purpose of providing an ecological enhancement of this area.</u></li> <li>b. <u>Remove woody weed pest plant species identified in the Wetland Management and Planting Plan from within the areas identified on Plan [ref] for restoration.</u></li> <li>c. <u>Revegetate the areas shown on Plan [ref] intended for restoration with eco-sourced, pioneer plants to establish a nurse crop into which light and moisture sensitive species will spread and establish via natural means of dispersal.</u></li> <li>d. <u>Promote ecological succession by including in the revegetation areas a selection of eco-sourced “diversity” or terminal plant species to initiate and promote successional processes in conjunction with natural dispersal.</u></li> <li>e. <u>Require the exclusion of stock from within the area shown on Plan [ref] – North Property Wetland and Enhancement Area.]</u></li> <li>f. <u>Monitor and control of plant pests and the impacts from animal pests within the areas intended for restoration in accordance with the Wetland Management and Planting Plan requirements.</u></li> <li>g. <u>Establishing a covenant to protect the wetland values of the North Property Wetland and Enhancement Area.</u></li> </ol>
<p>35</p>	<p><u>PriorIn order to achieve the enhancement works at the sites shown on Plan CRC[ref], objectives, set out in condition 33 (f) to (g), of the Wetland Management and Planting Plan, the consent holder shall undertake a baseline survey to map and describeimplement the native vegetation planting or fencing where this is specified in general accordance with the following plans, as attached to this consent:</u></p> <ol style="list-style-type: none"> <li>a. <u>Refer figures 4 – 7 of the Wetland Management and habitats at these sites. A copy of the baseline habitat survey report shallPlanting Plan.</u></li> </ol> <p><u>For the avoidance of doubt, conditions 36 – 43b do not apply to the works to be provided to Canterbury Regional Council, Attention; Regional Leader Monitoring</u></p>

	<p><del>and Compliance prior to enhancement works commencing done on the other enhancement sites in accordance with this condition.</del></p>
36	<p><del>The baseline survey vegetation and habitat mapping should follow the methods and classification systems as described in <i>Johnson, P and Gerbeaux P, 2004. Wetland types in New Zealand. Department of Conservation, Wellington.</i> The enhancement works sites include both terrestrial and wetland habitats. Vegetation/habitat mapping should distinguish between the these, and for wetland habitats identify the wetland type.</del> <b><u>Wetland Monitoring – North Property Wetland and Enhancement Area</u></b></p>
37	<p><del>Baseline monitoring of enhancement sites shall also be carried out prior to works. The baseline wetland monitoring will follow the procedures described in <i>Clarkson B.R., Sorrell B.K., Reeves P.N., Champion P.D., Partridge T.R., Clarkson B.D. 2003. Handbook for monitoring wetland condition. Coordinated monitoring of New Zealand wetlands. A Ministry for the Environment SMF funded project. Ministry for the Environment, Wellington.</i> Baseline monitoring shall include assessments of condition and threats for the enhancement wetland areas as well as establishment of permanent vegetation plots in examples of each vegetation type present (as determined from baseline mapping). Because the enhancement sites include terrestrial as well as wetland habitats, permanent vegetation plots should also be established to monitor examples of terrestrial vegetation. The Consent Holder shall undertake baseline monitoring in accordance with the <u>Wetland Management and Planting Plan of the North Property Wetland and Enhancement Area.</u> This baseline monitoring shall include both terrestrial and wetland habitats. Vegetation/habitat mapping should distinguish between the these, and for wetland habitats identify the wetland type. As part of this baseline monitoring six permanent photo points are to be established, as generally shown in Figure [inset reference to plan] and listed below:</del></p> <ol style="list-style-type: none"> <li>a. <u>Photo point 1: E1515714, N5189141. Upslope of the open water.</u></li> <li>b. <u>Photo point 2: E1515689, N5189135.</u></li> <li>c. <u>Photo point 3: E1515709, N5189166. 2 photos, one looking at the raised mire and one looking down the channel.</u></li> <li>d. <u>Photo point 4: E1515667, N5189221. Three photos facing 145°, 70° and 300°</u></li> <li>e. <u>Photo point 5: E1515741, N5189225.</u></li> <li>f. <u>Photo point 6 E1515127 N5189305.</u></li> </ol> <p><u>These photo points are intended to visually demonstrate restoration over time.</u></p>

38	<p><del>Vegetation/habitat mapping and surveys shall be repeated five years after commencement of enhancement works and again five years after cessation of these enhancement works. This review shall also consider wetland condition and threats. Changes following each re-survey will be described in a report provided to Selwyn District Council.</del></p> <p><u>Within six months of the planting at the North Property Wetland and Enhancement Area commencing a Wetland Condition Assessment, including photographs from each photo point at the North Property Wetland and Enhancement Area referred in condition 32 shall be undertaken by the Consent Holder. The results of this assessment shall be in the form of a report which shall describe the observations and conclusions and provide recommendations for ongoing management. This report shall be provided to the Selwyn District Council prior to enhancement works commencing and Te Taumutu Rūnanga and Te Ngāi Tūāhuriri Rūnanga.</u></p>
39	<p><del>A report describing results of baseline monitoring at enhancement sites shall be provided to the Selwyn District Council prior to enhancement works commencing.</del></p>
40	<p><del>Over the five years of planned enhancement works at the sites shown on Plan CRC[ref], annual monitoring and reporting of management actions (e.g. weed control, planting) carried out at enhancement sites shall be carried out and results provided to Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance. Following the initial assessment undertaken in accordance with condition 37, annual monitoring of the wetland condition and photographs at photo points shall be undertaken until 2026. <u>The obligation to continue to undertake this monitoring shall be reviewed in accordance with Condition 33a. If the review determines that monitoring is no longer required, this obligation can cease after 2026.</u></del></p>
41	<p><del>Once plantings have established (after six months), monitoring will be undertaken at least twice annually for the next year (during spring and autumn) and then once annually thereafter for a period of five years or until canopy closure is achieved. <u>On a bi annual basis until 2026, during the spring and autumn, the Consent Holder shall monitor the North Property Wetland and Enhancement Area for woody weed species. All woody weed species found shall be recorded, along with the approximate size of the population (either number of plants or area covered) and the management treatment applied. Where herbicide is applied a follow-up visit will be planned to confirm that it has been effective and to note whether additional applications might be required (e.g., due to regrowth). The</u></del></p>

	<u>obligation to continue to undertake this monitoring shall be reviewed in accordance with Condition 33a. If the review determines that monitoring is no longer required, this obligation can cease after 2026.</u>
42	<u>During the bi annual woody weed monitoring undertaken in accordance with condition 30 the consent holder shall also monitor the North Property Wetland and Enhancement Area for plant health and signs of animal pests. Following monitoring, any plants which fail to establish will may be replaced as required necessary to the ultimate achieving of the Objectives of the Wetland Management and Planting Plan, although they may are not required to be replaced at exactly the same microsite or with the same species. Replacement plants will be planted according to the guidelines provided above set out in the period between May Wetland Management and October Planting Plan following the discovery of dead plants. If plant losses to herbivore predation or other animal damage exceed 1% (in the case of rabbits and hares) or 5% (for all other species) then appropriate animal control or other methods of pest exclusion will be implemented by the Consent Holder within the site. The obligation to continue to undertake this monitoring shall be reviewed in accordance with Condition 43b. If the review determines that monitoring is no longer required, this obligation can cease after 2026.</u>
43	<del>Within five years of commencement of this consent, the consent holder shall provide to the Selwyn District Council evidence to confirm that an appropriate legal instrument has been registered on the titles of land known as the North Property ensuring a condition to recognize the values that exist at the North Property wetland. Costs associated with creating and registering the legal instrument shall be borne by the consent holder.</del> <u>The results of annual monitoring and reporting of management actions (e.g. weed control, planting) undertaken at the North Property Wetland and Enhancement Area shall be provided to the Selwyn District Council and Te Taumutu Rūnanga and Te Ngāi Tūāhuriri Rūnanga.</u>
43a	Within five years of commencement of this consent, the consent holder shall provide to the <u>Selwyn District Council</u> evidence to confirm that an appropriate legal instrument has been registered on the titles of land known as the North Property ensuring a condition to <del>recognize</del> <u>recognise</u> the values that exist at the North Property wetland. Costs associated with creating and registering the legal instrument shall be borne by the consent holder.

43b	<p><u>The Wetland Management and Planting Plan shall be reviewed by the Consent Holder in 2026. The purpose of this review shall be to confirm that the Wetland Management and Planting Plan has achieved the objectives set out in Condition 33, and to identify if monitoring can cease or whether this needs to be continued for a further duration in order to better achieve the objectives of the Plan. A written report detailing the results of the review shall be submitted to the Selwyn District Council within 30 working days of the review being undertaken. If the review results in amendments to the monitoring regime these are to be implemented by the Consent Holder for the duration specified in the review report.</u></p>
<b>Archaeological Authority and Accidental Discovery Protocol</b>	
44	<p>At all times during the final operational phase and active closure phase the consent holder shall adhere to the conditions of the Archaeological Authority that is held by the consent holder (AUTHORITY NO: 2021/057).</p>
45	<p>In the event of any discovery of an archaeological site:</p> <ol style="list-style-type: none"> <li>a. the Consent Holder shall immediately: <ol style="list-style-type: none"> <li>i. Cease earthmoving operations in the affected area and mark off the affected area; and</li> <li>ii. Advise the Selwyn District Council of the disturbance; and</li> <li>iii. Advise Heritage New Zealand Pouhere Taonga of the disturbance.</li> </ol> </li> <li>b. If the archaeological site is determined to be Koiwi Tangata (human bones) or taonga (treasured artefacts) by Heritage New Zealand Pouhere Taonga, the Consent Holder shall immediately advise the office of the appropriate runanga (office contact information can be obtained from the Selwyn District Council) of the discovery.</li> <li>c. If the archaeological site is determined to be Koiwi Tangata (human bones) by Heritage New Zealand Pouhere Taonga, the Consent Holder shall immediately advise the New Zealand Police of the disturbance.</li> <li>d. Work may recommence if Heritage New Zealand Pouhere Taonga (following consultation with runanga if the site is of Maori origin) provides a statement in writing to the Selwyn District Council that appropriate action has been undertaken in relation to the archaeological site discovered. The Selwyn District Council shall advise the Consent Holder on written receipt from Heritage New Zealand Pouhere Taonga that work can recommence.</li> </ol>

	<p><b>Advice Note:</b> This may be in addition to any agreements that are in place between the consent Holder and the Papatipu Runanga. (Cultural Site Accidental Discovery Protocol).</p> <p><b>Advice Note:</b> Under the Heritage New Zealand Pouhere Taonga Act 2014 an archaeological site is defined as any place associated with pre-1900 human activity, where there is material evidence relating to the history of New Zealand. For sites solely of Maori origin, this evidence may be in the form of accumulations of shell, bone, charcoal, burnt stones, etc. In later sites, artefacts such as bottles or broken glass, ceramics, metals, etc, may be found or evidence of old foundations, wells, drains, tailings, races or other structures. Human remains/koiwi may date to any historic period.</p> <p>It is unlawful for any person to destroy, damage, or modify the whole or any part of an archaeological site without the prior authority of Heritage New Zealand Pouhere Taonga. This is the case regardless of the legal status of the land on which the site is located, whether the activity is permitted under the District or Regional Plan or whether a resource or building consent has been granted. The Heritage New Zealand Pouhere Taonga Act 2014 provides for substantial penalties for unauthorised damage or destruction.</p>
<b>Bond</b>	
46	<p><u>Unless condition 46 (f) is triggered, within three months of the EMP and MCMP being certified the consent holder shall enter into an enforceable agreement acceptable to the Canterbury Regional Council and the Selwyn District Council that provides a single joint bond, pursuant to sections 108(2)(b) and 108A of the Resource Management Act 1991.</u></p>
46aa	<p><u>These bond conditions will apply to all resource consents relating to the closure and rehabilitation of the Bathurst Coal Mine, consent, namely:</u></p> <ul style="list-style-type: none"> <li><u>a. RC185640</u></li> <li><u>b. CRC184166</u></li> <li><u>c. CRC200500,</u></li> <li><u>d. CRC201366</u></li> <li><u>e. CRC201367</u></li> <li><u>f. CRC201368</u></li> <li><u>g. CRC203016</u></li> <li><u>h. CRC214320</u></li> <li><u>i. CRC214321</u></li> </ul>
46a	<p><u>The purpose of the bond is to secure, in the event of any default by the consent holder:</u></p> <ul style="list-style-type: none"> <li><u>a. Compliance with all the conditions of <u>the consents listed in condition 46(aa) above this consent yet to be completed</u> that address closure of the mine; <u>including and</u> the wetland compensation package;</u></li> </ul>

	<p><u>b. The completion of rehabilitation and closure in accordance with the certified MCMP; and</u></p> <p><u>c. Any future monitoring and maintenance obligations of the consent holder under <del>this the</del> consents listed in condition 46aa including:</u></p> <ol style="list-style-type: none"> <li><u>1. Site inspections and remediation following a natural hazard event (conditions 19 – 27 of RC185640);</u></li> <li><u>2. Final landform and cover requirements (condition 31 of RC185640).</u></li> </ol>
46b	<u>The bond agreement shall provide that the consent holder remains liable under the Resource Management Act 1991 for any breach of the conditions of any consent issued which occurs prior to the completion of closure.</u>
46c	<u>The bond can be either in the form of a cash bond or a bank bond at the consent holder's choice.</u>
46d	<u>The consent holder must engage a suitably qualified and experienced person(s) to assess the anticipated costs and risks of the activities listed in Condition 46a (a) – (c) and all relevant conditions of all of the issued consents.</u>
46e	<u>The consent holder shall provide a report to the Canterbury Regional Council and Selwyn District Council which specifies <del>deals with</del> all matters covered by condition 46a (a) – (c) of this consent and the relevant conditions of the consents listed in condition 46aa and identifies the matters to be bonded for, all assumptions, costs, and risk elements that inform the recommended <del>and</del> bond amount.</u>
46f	<u>If the Canterbury Regional Council and the Selwyn District Council do not within 5 working days give notice to accept the bond amount derived in accordance with condition 46e <del>or condition 46(h)</del>, they will jointly at the consent holder's cost Consent Holder may request that the Canterbury Regional Council and Selwyn District Council engages a suitably qualified and experienced person to peer review the report prepared in accordance with condition 46e or condition 46h and give notice, within 30 days of that notice report receipt of the report, confirm the alternative the confirmed amount of the bond.</u>
46g	<u>If the consent holder and the Councils cannot agree on the terms of the bond, including the bond amount and any review of the bond, the dispute must be resolved through the dispute resolution process set out in condition 46f or referred to arbitration at the election of the consent holder. This condition relates to the setting of the bond amount in accordance with conditions 46 – 46f and the review of the bond amount in accordance with condition 46h.</u>

46h	<p><u>The bond amount may be reviewed annually, within 30 days of each annual anniversary of the commencement of this consent. If the consent holder wishes to review the bond, the consent holder shall provide a report to the Canterbury Regional Council and the Selwyn District Council which deals with all matters covered by condition 46a and identifies the matters yet to be completed and to therefore be bonded for, revised estimate of costs and recommends the revised bond amount. The Canterbury Regional Council and the Selwyn District Council shall jointly engage a suitably qualified and experienced person to peer review the report and give notice, within 60 days of receipt of the report, the revised bond amount. In setting any new bond sum, the Councils shall have particular regard to the updated estimates of the costs of rehabilitation, monitoring and compliance with the conditions of consent. The two Councils shall also take into account the quantum and purpose of any bond provided by the consent holder in favour of any other party or other commitments (e.g. protection covenants for ecological enhancement).</u></p> <p><u>The revised bond amount shall not apply until the consent holder receives confirmation from the Canterbury Regional Council and the Selwyn District Council that the new bond amount is agreed. The consent holder shall meet the reasonable costs of bond reviews. If the revised amount less than the existing bond, the Canterbury Regional Council and the Selwyn District Council shall release any excess.</u></p>
46i	<p><u>The Canterbury Regional Council and the Selwyn District Council shall release any remaining bond upon the completion of closure of the site. This means when all objectives of the MCMP have been achieved and compliance with consent conditions has been demonstrated by the Consent Holder to the satisfaction of the Canterbury Regional Council and the Selwyn District Council.</u></p>
46j	<p><u>If the consent is transferred in part or whole to another party or person, the bond lodged by the transferor shall be retained until any outstanding work at the date of transfer is completed or a replacement bond is entered into by the transferee, to ensure compliance with conditions of the consent unless the Canterbury Regional Council and the Selwyn District Council is satisfied adequate provisions have been made to transfer the liability to the new consent holder.</u></p>
46k	<p><u>The consent holder shall meet the reasonable costs of providing any bond, including the costs of preparation of the bond and any substitute bond.</u></p>
<b>Review</b>	

47	<p>The Selwyn District Council may, <del>during the month of</del> <u>annually on the last five working days of</u> May or November each year, review any or all of the conditions of the consent pursuant to section 128 of the Resource Management Act 1991 for all or any of the following purposes:</p> <ul style="list-style-type: none"><li>a) To deal with any adverse effect on the environment which may arise from the exercise of the consent that was not foreseen at the time of granting of the consent, and which is therefore more appropriate to deal with at a later stage; and/or</li><li>b) To require the consent holder to adopt the best practical option to remove, remediate or reduce any adverse effects on the environment resulting from the activity.</li></ul>
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**APPEDNIX B**  
**REVISED ECAN CONSENT CONDITIONS**

**Bathurst Coal Limited**

**Proposed Regional Council Consent Conditions – Supplementary Reply Evidence**

**Key**

**Base document provided at the hearing on 26-29 October 2022.**

**Amendments to the conditions made as part of reply evidence dated 25 February 2022 marked in underline and ~~strike through text~~**

**Amendments to conditions made as part of supplementary reply evidence dated 14 April 2022 make in red underline and ~~strike through text~~**

**General Conditions**

**Applying to all consents issued by the Canterbury Regional Council.**

**Definitions:**

~~Active closure phase: Site rehabilitation works to construct the final landform. Includes bulk earthworks, placement of topsoil, revegetation and removal of infrastructure. Active water management continues. This phase continues until vegetive cover reaches 80% that is self-sustaining and effective at minimising sediment run-off.~~

~~Post closure phase: The post closure phase begins once all water treatment system pumps are removed from the site. Intervention and management occurs only if triggered by a Trigger Action Response Plan or to comply with consent conditions.~~

~~MOA: Mine Operations Area as shown on Plan CRC[insert ref].~~

**Definitions:**

Operational phase:

The operational phase includes the final scheduled coal mining until mining of N02 and N03 have been completed, and all earthworks operations required to construct the final landform are completed. This includes bulk earthworks, placement of topsoil, revegetation and removal of infrastructure There may be minor volumes of incidental coal encountered and recovered during the construction of the final landform and this coal will be stockpiled and trucked from site as it is encountered. Active water management and treatment infrastructure remains onsite and the construction, commissioning and testing of the Mussel Shell Reactor (MSR) is completed.

Active closure phase:

Site rehabilitation works once the final landform have been completed. Active water management continues. This phase continues until vegetive cover reaches greater than 80%

(excluding road and areas of land to be used for water infrastructure) and is self-sustaining and effective at minimising sediment run-off-, and concentrated flow paths are adequately lined and water treatment system pumps are removed from the site.

Post-closure phase:

The post closure phase begins once infrastructure is in place to allow all water treatment system pumps to be removed from the site. Intervention and management occurs as part of the adaptive management framework controlled by the Trigger Action Response Plan (TARP)s and comply with consent conditions.

MOA: Mine Operations Area as shown on Plan CRC[insert ref].

Mine influenced water:

Surface or groundwater that contains contaminants related to mining and earthworks activities. This encompasses contaminant types such as treated mine water, Acid Mine Drainage, Acid and Metalliferous Drainage, and Neutral Metalliferous Drainage but excludes suspended sediment.

Surface Water Drainage:

Distinct areas of the site that have been segregated based on surface water flows defined by the shape of the final landform as defined the MCMP, appendix 4: Water Management Report, these drainage areas can include both sheet flow and concentrated flow paths. These small drainages form part of the defined sub-catchments being Tara Gully, Oyster Gully, Bush Gully, and Surveyors Gully.

#	Condition
<b>Environmental Management Plan and Mine Closure Management Plan</b>	
1	All activities and works associated with <del>retrospective mining activities</del> and the final operational phase of the site, active closure and post closure rehabilitation phases of mining, shall be carried out in accordance with the relevant provisions of the Environmental Management Plan (EMP). The active closure and post closure rehabilitation phases of mining shall also be undertaken in accordance with the requirements and obligations set out in the Mine Closure Management Plan (MCMP).
2	The EMP shall guide the management of operations to ensure compliance with resource consent obligations and the utilisation of recognised and accepted practices to avoid remedy and mitigate adverse effects that may be caused by the mining and rehabilitation activities. As a minimum, the EMP shall cover the following matters:

	<ul style="list-style-type: none"> <li>a. Site Water Management (including erosion and sediment control measures);</li> <li>b. Acid Mine Drainage Management;</li> <li>c. Chemical Treatment;</li> <li>d. Construction Management;</li> <li>e. Coal Combustion Residual Management;</li> <li>f. Spill Management;</li> <li>g. Dust Management;</li> <li>h. Lizard Management;</li> <li>i. Wetland Management;</li> <li>j. Site rehabilitation;</li> <li>k. Lighting;</li> <li>l. Fire;</li> <li>m. Noise; and</li> <li>n. Archaeology, Cultural including an accidental discovery protocol.</li> </ul>
<p>3</p>	<p>At the completion of site rehabilitation, the following objectives shall be achieved:</p> <ul style="list-style-type: none"> <li>a. Landform design and rehabilitation activities create a landform that is stable with similar land use capabilities and hydrological sub-catchments that existed prior to the disturbance;</li> <li>b. Disturbed land will be rehabilitated and stabilised to a condition where the risk of adverse effects on water quality are low;</li> <li>c. <del>Soils</del><u>Soil</u>-will be applied to enable future grazing and production forestry activities;</li> <li>d. Vegetation cover will be established to reduce potential for erosion and sediment loss so that the quality of surface runoff is comparable to surrounding undisturbed landscapes;</li> <li>e. <del>Post-closure water quality discharged from the site will be at levels that sustain the downstream aquatic ecology;</del></li> <li>f. <del>Potential acid mine drainage will be managed and adaptive management measures established to manage risk; and</del></li> <li>f. <u>Prevent, minimise, and where necessary control and treat mine influenced waters to ensure rehabilitation and consented water quality limits are achieved in order to maintain water quality and potentially enhance aquatic ecology values in Tara Stream and Bush Gully Stream; and</u></li> </ul>

	<p>g. To enhance the North Property wetland and ecological enhancement area with ecologically appropriate species and restore indigenous vegetation to compensate for the retrospective removal of seepage wetlands.</p>
4	<p>The MCMP shall detail the methodology and anticipated outcomes to achieve the closure objectives in Condition 3. The MCMP shall include, but not be limited to:</p> <ol style="list-style-type: none"> <li>a. Identification of key personnel and their responsibilities;</li> <li>b. A plan(s) showing the final design and intended contours of all permanent structures and works, including but not limited to final landforms, ponds, roads, access tracks or other works which are proposed to remain after closure of the site;</li> <li>c. Details on the staging of the active closure and post-closure phases until closure objectives are achieved;</li> <li>d. Details of the rehabilitation required to fulfil the conditions of this consent, including closure criteria and any related consents;</li> <li>e. Details on infrastructure to be decommissioned, such infrastructure may include buildings, plant, and equipment.</li> </ol>
5	<p>The draft EMP lodged with the Closure and Rehabilitation Plan AEE dated 6 April 2021 shall be updated and finalised by the consent holder and provided to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, for certification within <del>20</del>30 working days of the commencement of this consent. The certification process must be confined to confirming that the final EMP adequately gives effect to the relevant condition(s).</p> <p>If the Canterbury Regional Council does not provide a <u>response with a certification decision or request for changes</u> within <del>20-30</del> working days of receipt of the final EMP, that Plan will be deemed to be certified <del>unless the consent authority requests changes. Once certified, the plans will become the 'Certified EMP' for the purposes of these conditions.</del></p>
6	<p>The draft MCMP lodged with the Closure and Rehabilitation Plan AEE dated 6 April 2021 shall be updated and finalised by the consent holder and provided to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, for certification within 30 working days of the commencement of this consent. The certification process must be confined to</p>

	<p>confirming that the final MCMP adequately gives effect to the relevant condition(s).</p> <p>If the Canterbury Regional Council does not provide a <u>response with a certification decision or a request for changes</u> within <del>20</del><u>30</u> working days of receipt of the final MCMP, that Plan will be deemed to be certified <del>unless the consent authority requests changes. Once certified, the plans will become the</del> 'Certified MCMP' for the purposes of these conditions.</p>
6a	<p><u>In the event of any dispute or disagreement arising as to any certification of any plan required by the conditions, or as to the implementation of, or monitoring required by the conditions, matters shall be referred in the first instance to the Canterbury Regional Council, Manager Consents and Compliance (or equivalent position) to determine a process for resolution of the dispute or disagreement. If a resolution cannot be agreed within 10 working days of any dispute or disagreement arising, the Consent Holder is able to give notice that the matter is to be referred to an independent and appropriately qualified expert setting out the details of the matter to be referred for determination and the reasons the parties do not agree. The qualified expert shall be appointed within five working days of the Consent Holder giving notice of its intention to seek expert determination and there shall be a mutual agreement between the parties as to who this expert should be. The expert shall issue a decision on the matter within 15 working days. The decision of the qualified expert is binding on the Consent Holder and shall be implemented. The dispute resolution process shall be applied before any formal enforcement action is taken by the Consent Authority.</u></p>
7	<p>The consent holder shall review the EMP and MCMP, on <u>at least</u> <del>a six monthly</del><u>an annual</u> basis during the active <del>closure phase of the Project,</del> and <del>at least annually during the post closure phase</del><u>phases</u> (and for no less than 5 years), and if necessary, update it. The consent authority shall be provided with any updates of the plan(s) within 30 working days of any update occurring.</p> <p>Any amendments shall be:</p> <ol style="list-style-type: none"> <li>a. Only for the purpose of improving the efficacy of the measures to avoid, remedy or mitigate adverse effects;</li> <li>b. Consistent with the conditions of this resource consent; and</li> <li>c. Submitted in writing to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, prior to any amendment being implemented.</li> </ol>

<b>Complaints</b>	
8	<p>The consent holder shall maintain a Complaints Register for the purpose of recording and dealing with any complaints that are received by the consent holder in relation to the exercise of this resource consent. The Complaints Register shall record, where this information is available:</p> <ol style="list-style-type: none"> <li>a. The issue raised;</li> <li>b. Any possible cause of the nuisance or effect;</li> <li>c. The date and time of the</li> <li>d. Any corrective action taken to address the cause of the complaint, including the timing of that corrective action; and</li> <li>e. Name of complainant, if offered.</li> </ol>
<b>Accidental Discovery Protocol</b>	
9	<p>In the event of any discovery of an archaeological site:</p> <ol style="list-style-type: none"> <li>a. the Consent Holder shall immediately: <ol style="list-style-type: none"> <li>i. Cease earthmoving operations in the affected area and mark off the affected area; and</li> <li>ii. Advise the Canterbury Regional Council of the disturbance; and</li> <li>iii. Advise Heritage New Zealand Pouhere Taonga of the disturbance.</li> </ol> </li> <li>b. If the archaeological site is determined to be Koiwi Tangata (human bones) or taonga (treasured artefacts) by Heritage New Zealand Pouhere Taonga, the Consent Holder shall immediately advise the office of the appropriate runanga (office contact information can be obtained from the Canterbury Regional Council) of the discovery.</li> <li>c. If the archaeological site is determined to be Koiwi Tangata (human bones) by Heritage New Zealand Pouhere Taonga, the Consent Holder shall immediately advise the New Zealand Police of the disturbance.</li> <li>d. Work may recommence if Heritage New Zealand Pouhere Taonga (following consultation with runanga if the site is of Maori origin) provides a statement in writing to the Canterbury Regional Council, Attention: Regional Manager RMA Compliance and Monitoring that appropriate action has been undertaken in relation to the archaeological site discovered. The Canterbury Regional Council shall advise the Consent Holder on written receipt from Heritage New Zealand Pouhere Taonga that work can recommence.</li> </ol>

	<p><b>Advice Note:</b> This may be in addition to any agreements that are in place between the consent Holder and the Papatipu Runanga. (Cultural Site Accidental Discovery Protocol).</p> <p><b>Advice Note:</b> Under the Heritage New Zealand Pouhere Taonga Act 2014 an archaeological site is defined as any place associated with pre-1900 human activity, where there is material evidence relating to the history of New Zealand. For sites solely of Maori origin, this evidence may be in the form of accumulations of shell, bone, charcoal, burnt stones, etc. In later sites, artefacts such as bottles or broken glass, ceramics, metals, etc, may be found or evidence of old foundations, wells, drains, tailings, races or other structures. Human remains/koiwi may date to any historic period.</p> <p>It is unlawful for any person to destroy, damage, or modify the whole or any part of an archaeological site without the prior authority of Heritage New Zealand Pouhere Taonga. This is the case regardless of the legal status of the land on which the site is located, whether the activity is permitted under the District or Regional Plan or whether a resource or building consent has been granted. The Heritage New Zealand Pouhere Taonga Act 2014 provides for substantial penalties for unauthorised damage or destruction.</p>
<b>Annual Report</b>	
10	<p>The consent holder shall provide an annual report by 1 November each year to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, Te Taumutu Rūnanga and Te Ngāi Tūāhuriri Rūnanga. The annual report shall include, but not be limited to the following:</p> <ul style="list-style-type: none"> <li>a. A summary of all activities that occurred in the previous 12 months;</li> <li>b. A summary of all slope, wetland and water quality <u>(performance and compliance)</u> monitoring results obtained in accordance with the conditions of this consent; <del>and</del></li> <li>c. Any complaints received and actions taken to address the complaint.</li> </ul>
<b>Bond</b>	
11	<p><u>Unless condition 11 (f) is triggered, within three months of the EMP and MCMP being certified the consent holder shall enter into an enforceable agreement acceptable to the Canterbury Regional Council and the Selwyn District Council</u></p>

	<u>that provides a single joint bond, pursuant to sections 108(2)(b) and 108A of the Resource Management Act 1991.</u>
<u>11aa</u>	<u>These bond conditions will apply to all resource consents relating to the closure and rehabilitation of the Bathurst Coal Mine, consent, namely:</u> <u>a. RC185640</u> <u>b. CRC184166</u> <u>c. CRC200500,</u> <u>d. CRC201366</u> <u>e. CRC201367</u> <u>f. CRC201368</u> <u>g. CRC203016</u> <u>h. CRC214320</u> <u>i. CRC214321</u>
<u>11a</u>	<u>The purpose of the bond is to secure, in the event of any default by the consent holder:</u> <u>a. Compliance with all the conditions of the consents listed in condition 11(aa) above this consent yet to be completed that address closure of the mine, including and the wetland compensation package;</u> <u>b. The completion of rehabilitation and closure in accordance with the certified MCMP; and</u> <u>c. Any future monitoring and maintenance obligations of the consent holder under this the consents listed in condition 11(aa) including:</u> <ul style="list-style-type: none"> <li>- <u>Site inspections and remediation following a natural hazard event (conditions 11 – 15 of CRC184166);</u></li> <li>- <u>Final landform and cover requirements (condition 6 -10 of CRC184166)</u></li> </ul>
<u>11b</u>	<u>The bond agreement shall provide that the consent holder remains liable under the Resource Management Act 1991 for any breach of the conditions of any consent issued which occurs prior to the completion of closure.</u>
<u>11c</u>	<u>The bond can be either in the form of a cash bond or a bank bond at the consent holder's choice.</u>
<u>11d</u>	<u>The consent holder must engage a suitably qualified and experienced person(s) to assess the anticipated costs and risks of the activities listed in Condition 11a (a) – (c) and all relevant conditions of all of the issued consents.</u>
<u>11e</u>	<u>The consent holder shall provide a report to the Canterbury Regional Council and Selwyn District Council which specifies deals with all matters covered by condition 11a (a) – (c) of this consent and the relevant conditions of the consents listed in condition 11aa and identifies the matters to be bonded for,</u>

	<p>all assumptions, costs, <del>and risk elements that inform the recommended and</del> <u>bond amount.</u></p>
11f	<p>If the Canterbury Regional Council and the Selwyn District Council do not <del>within 5 working days give notice to</del> <u>accept the bond amount derived in accordance with condition 11(e) <del>or condition 11(h)</del>, they will jointly at the consent holder's cost Consent Holder may request that the Canterbury Regional Council and Selwyn District Council</u> engages a suitably qualified and experienced person to peer review the report prepared in accordance with condition 11(e) or condition 11(h) and <del>give notice,</del> <u>within 30 days of that notice report receipt of the report, confirm the alternative the confirmed</u> amount of the bond.</p>
11g	<p>If the consent holder and the Councils cannot agree on the terms of the bond, <del>including the bond amount and any review of the bond,</del> <u>the dispute must be resolved through the dispute resolution process set out in condition 11(f) or referred to arbitration at the election of the consent holder. This condition relates to the setting of the bond amount in accordance with conditions 11 – 11(f) and the review of the bond amount in accordance with condition 11h.</u></p>
11h	<p><u>The bond amount may be reviewed annually, within 30 days of each annual anniversary of the commencement of this consent. If the consent holder wishes to review the bond, the consent holder shall provide a report to the Canterbury Regional Council and the Selwyn District Council which deals with all matters covered by condition 11(a) and identifies the matters yet to be completed and to therefore be bonded for, revised estimate of costs and recommends the revised bond amount. The Canterbury Regional Council and the Selwyn District Council shall jointly engage a suitably qualified and experienced person to peer review the report and give notice, within 60 days of receipt of the report, the revised bond amount. In setting any new bond sum, the Councils shall have particular regard to the updated estimates of the costs of rehabilitation, monitoring and compliance with the conditions of consent. The two Councils shall also take into account the quantum and purpose of any bond provided by the consent holder in favour of any other party or other commitments (e.g. protection covenants for ecological enhancement).</u></p> <p><u>The revised bond amount shall not apply until the consent holder receives confirmation from the Canterbury Regional Council and the Selwyn District Council that the new bond amount is agreed. The consent holder shall meet</u></p>

	<u>the reasonable costs of bond reviews. If the revised amount less than the existing bond, the Canterbury Regional Council and the Selwyn District Council shall release any excess.</u>
<u>11i</u>	<u>The Canterbury Regional Council and the Selwyn District Council shall release any remaining bond upon the completion of closure of the site. This means when all objectives of the MCMP have been achieved and compliance with consent conditions has been demonstrated by the Consent Holder to the satisfaction of the Canterbury Regional Council and the Selwyn District Council.</u>
<u>11j</u>	<u>If the consent is transferred in part or whole to another party or person, the bond lodged by the transferor shall be retained until any outstanding work at the date of transfer is completed or a replacement bond is entered into by the transferee, to ensure compliance with conditions of the consent unless the Canterbury Regional Council and the Selwyn District Council is satisfied adequate provisions have been made to transfer the liability to the new consent holder.</u>
<u>11k</u>	<u>The consent holder shall meet the reasonable costs of providing any bond, including the costs of preparation of the bond and any substitute bond.</u>
<b>Administration</b>	
12	<p>The Canterbury Regional Council may annually on the last five working days of May or November each year, serve notice of its intention to review the conditions of this resource consent for the purposes of:</p> <ol style="list-style-type: none"> <li>a. Dealing with any adverse effect on the environment which may arise from the exercise of this onset and which it is appropriate to deal with at a later stage; or</li> <li>b. Requiring the consent holder to carry out monitoring and reporting instead of, or in addition to, that required by the consent.</li> </ol>

**CRC184166 s9 Land use consent to undertake earthworks in the high soil erosion risk area and earthworks and vegetation clearance in riparian margins, including removal of wetlands**

<b>General</b>	
1	<p>The use of the land shall be limited to:</p> <ul style="list-style-type: none"> <li>a. The excavation and stripping of topsoil and overburden;</li> <li>b. Extraction and blending of coal;</li> <li>c. Overburden stockpiling;</li> <li>d. Rehabilitation of land areas, including the deposition of Coal Combustion Residuals (CCR);</li> <li>e. Creation and on-going development of haul roads and access tracks;</li> <li>f. Installation, maintenance and removal of erosion and sediment control structures;</li> <li>g. Exploration drilling and trenching; and</li> <li>h. Earthworks, disturbance works and vegetation removal in the riparian margins of wetlands.</li> </ul> <p><b>Advice Note:</b> <i>This consent authorises retrospective activities listed in Condition 1 that have occurred onsite within the MOA.</i></p>
2	<p>The works described in Condition 1 shall only occur at the Canterbury Coal Mine on the land parcels legally described as:</p> <ul style="list-style-type: none"> <li>a. RS 32347 (CB41A/436, CB8B/920);</li> <li>b. Part Lot 2 DP 6591 (CB24B/403, CB576/48, CB7D/967);</li> <li>c. Part Lot 1 DP 18018 (CB2D/1450, CB7D/965);</li> <li>d. Part Lots 2 and 3 DP 6591 (CB651/33, CB7D/967, CB7D/1140, CB24B/403, CB7D/969);</li> <li>e. Lot 3 DP 8898 (CB5A/1042);</li> </ul> <p>and within the Mine Operations Area as shown on Plan CRC184166A, which is attached to, and forms part of this consent.</p>
3	<p>From the commencement of this consent coal extracted from the Canterbury Coal Mine shall be limited to incidental volumes won during site rehabilitation works.</p>
4	<p>The total area of disturbed land shall not exceed 58 ha.</p>
5	<p>This consent authorises the retrospective removal of up to 0.45 ha of wetland vegetation. No further wetland vegetation shall be removed</p>

<b>Slope Stability</b>																								
6	Unless specifically excluded, the construction of the engineered landform(s) shall be completed with a cover system to minimise surface water and oxygen ingress and promote re-vegetation.																							
7	Following the completion of construction of the engineered landform(s), surface water diversions shall be constructed to prevent concentrated flows of up-catchment run-off over the engineered <del>landform</del> <u>landforms</u> .																							
8	Following the completion of engineered landform(s) and land contouring the final cover material (soil) shall be re-vegetated in accordance with the MCMP.																							
9	<p>Temporary and permanent slopes shall not exceed the following parameters:</p> <p><b>Table 1. Slope Design Parameters.</b></p> <table border="1"> <thead> <tr> <th>Material Type</th> <th>Geomechanical Unit</th> <th>Maximum Overall Slope</th> <th>Maximum Batter Slope</th> <th>Maximum Batter Height</th> </tr> </thead> <tbody> <tr> <td rowspan="3">In Situ</td> <td>Loess / Pleistocene Gravels</td> <td>26.5° (1V:2H)</td> <td>30.5° (1V:1.7H)</td> <td>20m</td> </tr> <tr> <td>Conway Formation / Broken River Coal Measures</td> <td>26.5° (1V:2H)</td> <td>30.5° (1V:1.7H)</td> <td>20m</td> </tr> <tr> <td>Munro Conglomerate</td> <td>26.5° (1V:2H)</td> <td>45° (1V:1H)</td> <td>15m</td> </tr> <tr> <td>Engineered Landform</td> <td>Compacted mixed waste rock fill (free draining)</td> <td>~21° (1V:2.5H)</td> <td>26.5° (1V:2H)</td> <td>20m</td> </tr> </tbody> </table>	Material Type	Geomechanical Unit	Maximum Overall Slope	Maximum Batter Slope	Maximum Batter Height	In Situ	Loess / Pleistocene Gravels	26.5° (1V:2H)	30.5° (1V:1.7H)	20m	Conway Formation / Broken River Coal Measures	26.5° (1V:2H)	30.5° (1V:1.7H)	20m	Munro Conglomerate	26.5° (1V:2H)	45° (1V:1H)	15m	Engineered Landform	Compacted mixed waste rock fill (free draining)	~21° (1V:2.5H)	26.5° (1V:2H)	20m
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10	<p>Upon completion of the active closure phase, the following criteria related to slope stability shall be met:</p> <ol style="list-style-type: none"> <li>There is no ponding of water on any remaining slope benches;</li> <li>Water flows without intervention to pre-identified <u>off site</u> drainages;</li> <li>Final slopes do not exceed the maximum slope angles in Condition 9 and geotechnical sign-off has been obtained in accordance with Condition 11.</li> </ol>																							
<b>Slope Monitoring and Reporting</b>																								
11	<p>Upon the completion of the final landform at the end of the active closure phase, the consent holder shall provide a report from a suitably qualified geotechnical engineer to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, that confirms the as-built landform <u>are stable and</u> meets the criteria set out in Condition 10. <del>To inform the assessment of Condition 10(c), the consent holder shall provide survey data that demonstrates the maximum slope angles are not exceeded.</del></p>																							
<u>11a</u>	<p>During the operational phase, the MOA shall be inspected at least monthly by a suitably qualified <del>geotechnical engineer person</del> to:</p> <ol style="list-style-type: none"> <li>Check for foundation preparation prior to fill placement and advise of the installation of underdrainage if and when required.</li> <li>Oversee the fill placement methodology;</li> </ol>																							

	<p>c. Identify any areas of slumping, cracking, settlement, subsidence or slope failures, <u>erosion</u>, seepages and areas of water ponding including the remaining sediment ponds <u>and drains</u> onsite. If any such areas are identified, remedial actions to address slope instability shall commence within 10 working days.</p>
12	<p>Following the completion of the operational phase, the consent holder shall undertake regular monitoring of landform stability for the active and post-closure phases. This monitoring shall be undertaken by a suitably qualified person every three months for 1 year <del>after</del><u>during</u> the <del>operational</del><u>active closure</u> phase <del>has been completed</del>. The monitoring shall include, but not be limited to:</p> <ol style="list-style-type: none"> <li>Inspecting the landform for any signs of slumping, cracking, settlement, <u>erosion</u>, subsidence or slope failures, seepages and areas of water ponding including the remaining sediment ponds <u>and drains</u> onsite.</li> <li>If any such areas are identified, remedial actions to address slope instability shall commence within 10 working days.</li> </ol>
13	<p>Following the quarterly monitoring undertaken for 1 year in accordance with Condition 12, the consent holder shall provide a report from a suitably qualified geotechnical engineer to the Canterbury Regional Council, Attention: Regional Leader - Monitoring and Compliance that:</p> <ol style="list-style-type: none"> <li>Summarises the results of monitoring undertaken during the <del>post-closure phase</del> <u>12 month period</u>;</li> <li>Describes the causes (if known) for any slope instability issues that have arisen and the remedial actions undertaken;</li> <li>Confirms that the long-term slope stability risks associated with the site are acceptable.</li> </ol>
<u>13a</u>	<p><u>Vegetative cover on rehabilitated areas shall also be recorded as part of the quarterly inspections undertaken in accordance with condition 12.</u></p>
14	<p>For a period of up to four years post the annual monitoring undertaken in accordance with Condition 13, the consent holder shall have a suitably qualified geotechnical engineer undertake a site inspection after an event of an earthquake that generates ground shaking as measured on the Modified Mercalli scale greater than level 6 (MMVI), or a rainfall event that generates more than 96mm of rainfall in 24 hours or more than 21mm of rainfall in 1 hour (at the Whitecliffs Rain Gauge monitored by Canterbury Regional Council). The site inspection shall be undertaken in accordance with <del>Conditions 4-11a</del> and <del>4-15</del> within 10 working days of the event occurring.</p>

15	<p>In the event of any slope failures <u>or significant erosion</u> that <del>result</del> <u>results</u> in the disturbance of land or failure outside of the MOA identified in accordance with Conditions 11, <u>11a</u> 12 and 14, the consent holder shall notify Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, within 5 working days. The notification shall include, but not be limited to the following:</p> <ol style="list-style-type: none"> <li>a. The location of the failure;</li> <li>b. Identification of the probable cause of failure;</li> <li>c. Measures taken to address the failure, prevent recurrence and re-stabilise the slope;</li> <li>d. Assessment of any environmental effects of the slope failure; and</li> <li>e. Any actions taken to address any environmental effects.</li> </ol>
<b>Records</b>	
16	<p>For all site inspections in accordance with Condition 41, <del>12</del> <u>11a</u>, <u>13a</u> and 14, the consent holder shall record the following:</p> <ol style="list-style-type: none"> <li>a. The date and time of the inspection;</li> <li>b. The weather conditions during the inspection;</li> <li>c. Photographs of any areas on instability;</li> <li>d. A description of any remedial actions undertaken.</li> </ol> <p>A copy of these records shall be provided to Canterbury Regional Council upon request.</p>
<b>Erosion and Sediment Control</b>	
17	<p>The EMP section on Site Water Management shall describe the erosion and sediment control measures necessary to comply with the conditions of this consent. This shall include, but not be limited to:</p> <ol style="list-style-type: none"> <li>a. Procedures to minimise erosion;</li> <li>b. Detailed plans showing the location and design of sediment control measures, on-site catchment boundaries and sources of run-off;</li> <li>c. Specifications of sediment control measures, for example sediment treatment and storage ponds;</li> <li>d. Inspection and maintenance procedures for sediment control measures; and</li> <li>e. The methodology for decommissioning erosion and sediment control measures following rehabilitation.</li> </ol>

18	All erosion and sediment control measures shall be designed, installed, inspected, maintained and decommissioned in accordance with the EMP and MCMP.
19	<p>During the active closure phase the consent holder shall provide to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, a monthly update by the 30<sup>th</sup> of each month, which describes:</p> <ol style="list-style-type: none"> <li>a. The erosion and sediment control devices in place, including part of the Tara Gully Water Treatment system, to manage discharges from the site: and</li> <li>b. A description of any devices to be decommissioned in the upcoming month; and</li> <li>c. <u>Notification of when the site moves from operational to active closure phase, and from active closure phase to post closure phase.</u></li> </ol>
20	<p>The Consent Holder shall adopt the best practicable option to:</p> <ol style="list-style-type: none"> <li>a. Minimise soil disturbance and prevent soil erosion;</li> <li>b. Prevent sediment from leaving the site; and</li> <li>c. Avoid placing cut or cleared vegetation, debris or excavated materials in a position such that it may enter stormwater runoff or surface water.</li> </ol>
21	<p>Upon completion of <u>the active closure phase</u> vegetation coverage across the site shall be at least <u>80%% (this does not include roads and areas that are to be utilised for water infrastructure purposes).</u> The vegetation cover shall be maintained so that it is in a healthy and uniform state with the exception of seasonal browning off and shall be replanted where erosion or die-off has resulted in bare or patchy soil cover.</p>
<b>Wetland Compensation</b>	
22	<p><del>The consent holder</del> <u>Consent Holder</u> shall <del>set aside approximately [TBC] ha of land known as</del> <u>prepare and implement a Wetland Management and Planting Plan. The Wetland Management and Planting Plan shall be prepared in accordance with the "Draft Wetland Management and Planting Plan submitted as part of the Consent Holder's reply evidence dated 25 February 2022. The Wetland Management and Planting Plan shall address the following:</u></p> <ol style="list-style-type: none"> <li>a. <u>A description and summary of the ecological values of the North Property Wetland and Enhancement Area" as shown on Plan CRC[ref] attached to this consent for the purpose of providing an ecological ;</u></li> <li>b. <u>A description of the other enhancement of this areasites within and adjoining the former mine footprint;</u></li> </ol>

	<p><u>c. A description of the planting proposed and/or fencing at each site;</u></p> <p><u>d. The monitoring and maintenance requirements for the North Property Wetland and Enhancement Area;</u></p> <p><u>e. Discussion around the legal protection requirements for the North Property Wetland and Enhancement Area.</u></p> <p>A copy of the Wetland Management and Planting Plan shall be provided to Te Taumutu Rūnanga and Te Ngāi Tūāhuriri Rūnanga.</p>
<p>23</p>	<p>The consent holder shall engage an appropriately qualified and experienced ecologist to prepare <del>at the</del> <u>the Wetland Management and Planting Plan</u>, referred to <u>above</u>. The objectives of this plan shall be to achieve the following outcomes:</p> <p><u>North Property Wetland and Enhancement Area</u></p> <p>a. To revegetate the North Property <del>wetland</del> <u>Wetland and Enhancement Area as shown on Plan CRC [x]</u> with ecologically appropriate species and restore indigenous vegetation to at least 70% <u>canopy cover at 4m height</u> as demonstrated in plots across both <u>wetland and dryland sites</u>;</p> <p>b. Woody weed species <u>(including gorse, broom, pine, Himalayan honeysuckle)</u> are at a level of less than 5% cover as demonstrated in plots across <del>both wetland sites</del> <u>the North Property Wetland and Enhancement Area. This will be achieved via weed control.</u></p> <p>c. Improve terrestrial and wetland habitat quality and create corridors for wildlife movement <del>at the North Property Wetland and Enhancement Area.</del> <u>This will be achieved via planting and weed control and demonstrated via an increase in commonly accepted wetland condition index and reporting about the site as required by monitoring.</u></p> <p>d. Encourage natural ecosystem processes including the regeneration and dispersal of indigenous fauna and flora. <u>This will be achieved by including a selection of appropriate (bird pollinated and dispersed) eco-sourced species in the plantings.</u></p> <p>e. <u>Improve habitat for any native lizards (particularly grass skinks) which might be resident at the North Property Wetland and Enhancement Area.</u></p> <p><u>Other Enhancement Sites</u></p> <p>f. Create approximately 0.7ha of wīwī rushland surrounding the constructed drains in the Oyster Gully catchment;</p> <p>g. Create approximately 0.2ha of shrubland habitat surrounding the ponds at the North ELF;</p>

	<p>h. Undertake approximately 0.2ha of planting at the N02 pond, North Elf Ponds and Tara Pond to create pond edge habitats.</p> <p>Fence around the raised seepage north of the mining area.</p>
24	<p>In order to achieve the objectives, <u>set out in condition 23 (a) to (e) of the Wetland Management and Planting Plan</u>, the consent holder shall <u>within the North Property Wetland and Enhancement area shown on Plan CRC [ref – North Property Wetland and Enhancement Area – refer to Figure 2 in the Wetland Management Plan]]</u> undertake the following actions:</p> <ol style="list-style-type: none"> <li>a. <u>Set aside an area of land known as the “North Property Wetland and Enhancement Area” as shown on Plan CRC[ref – North Property Wetland and Enhancement Area – refer to Figure 2 in the Wetland Management Plan] attached to this consent for the purpose of providing an ecological enhancement of this area.</u></li> <li>b. Remove <del>woody weed</del> <u>pest plant species identified in the Wetland Management and Planting Plan</u> from within the areas identified on Plan CRC [ref] for restoration.</li> <li>c. Revegetate the areas shown on Plan CRC [ref] intended for restoration with eco-sourced, pioneer plants to establish a nurse crop into which light and moisture sensitive species will spread and establish via natural means of dispersal.</li> <li>d. Promote ecological succession by including in the revegetation areas a selection of eco-sourced “diversity” or terminal plant species to initiate and promote successional processes in conjunction with natural dispersal.</li> <li>e. Require the exclusion of stock from <del>within the areas</del><u>area</u> shown on Plan CRC [ref]. <u>– North Property Wetland and Enhancement Area.]</u></li> <li>f. Monitor and control of plant <u>pests and the impacts from animal pests</u> within the areas intended for restoration in accordance with the Wetland Management <u>and Planting Plan</u> requirements.</li> <li>g. <u>Establishing a covenant to protect the wetland values of the North Property Wetland and Enhancement Area.</u></li> </ol>
<b>Wetland Monitoring-25</b>	<p><del>Prior</del><u>In order to achieve the enhancement works at the sites shown on Plan CRC[ref], objectives, set out in condition 23 (f) to (i), of the Wetland Management and Planting Plan</u>, the consent holder shall <del>undertake a baseline survey to map and describe</del><u>implement the native vegetation planting or fencing where this is</u></p>

	<p><u>specified in general accordance with the following plans, as attached to this consent:</u></p> <p><u>a. Refer figures 4 – 7 of the Wetland Management and habitats at these sites. A copy of the baseline habitat survey report shall</u><u>Planting Plan.</u></p> <p><u>For the avoidance of doubt, conditions 26 - 33 do not apply to the works to be provided to Canterbury Regional Council, Attention; Regional Leader Monitoring and Compliance prior to enhancement works commencing</u><u>done on the other enhancement sites in accordance with this condition</u></p>
<p>26</p>	<p><del>The baseline survey vegetation and habitat mapping should follow the methods and classification systems as described in Johnson, P and Gerbeaux P, 2004. <i>Wetland types in New Zealand</i>. Department of Conservation, Wellington. The enhancement works sites include both terrestrial and wetland habitats. Vegetation/habitat mapping should distinguish between the these, and for wetland habitats identify the wetland type. <b>Wetland Monitoring – North Property Wetland and Enhancement Area</b></del></p>
<p>27Vegetation/habitat mapping and surveys shall be repeated five years after commencement of enhancement works and again five years after cessation of these enhancement works. This review shall</p>	<p><del>Baseline monitoring of enhancement sites shall also be carried out prior to works. The baseline wetland monitoring will follow the procedures described in Clarkson B.R., Sorrell B.K., Reeves P.N., Champion P.D., Partridge T.R., Clarkson B.D. 2003. <i>Handbook for monitoring wetland condition. Coordinated monitoring of New Zealand wetlands. A Ministry for the Environment SMF funded project.</i> Ministry for the Environment, Wellington. Baseline monitoring shall include assessments of condition and threats for the enhancement wetland areas as well as establishment of permanent vegetation plots in examples of each vegetation type present (as determined from baseline mapping). Because the enhancement sites include terrestrial as well as wetland habitats, permanent vegetation plots should also be established to monitor examples of terrestrial vegetation. <u>The Consent Holder shall undertake baseline monitoring in accordance with the Wetland Management and Planting Plan of the North Property Wetland and Enhancement Area. This baseline monitoring shall include both terrestrial and wetland habitats. Vegetation/habitat mapping should distinguish between the these, and for wetland habitats identify the wetland type. As part of this baseline monitoring six permanent photo points are to be established, as generally shown in Figure [inset reference to plan] and listed below:</u></del></p> <ol style="list-style-type: none"> <li>a. <u>Photo point 1: E1515714, N5189141. Upslope of the open water.</u></li> <li>b. <u>Photo point 2: E1515689, N5189135.</u></li> </ol>

<p>also consider wetland condition and threats. Changes following each re-survey will be described in a report provided to Canterbury Regional Council, Attention; Regional Leader Monitoring and Compliance. 2827</p>	<p>c. <u>Photo point 3: E1515709, N5189166. 2 photos, one looking at the raised mire and one looking down the channel.</u></p> <p>d. <u>Photo point 4: E1515667, N5189221. Three photos facing 145°, 70° and 300°</u></p> <p>e. <u>Photo point 5: E1515741, N5189225.</u></p> <p>f. <u>Photo point 6 E1515127 N5189305.</u></p> <p><u>These photo points are intended to visually demonstrate restoration over time.</u></p>
<p>2928</p>	<p><u>A report describing results of baseline monitoring at enhancement sites Within six months of the planting at the North Property Wetland and Enhancement Area commencing a Wetland Condition Assessment, including photographs from each photo point at the North Property Wetland and Enhancement Area referred in condition 27 shall be undertaken by the Consent Holder. The results of this assessment shall be in the form of a report which shall describe the observations and conclusions and provide recommendations for ongoing management. This report shall be provided to Canterbury Regional Council, Attention; Regional Leader Monitoring and Compliance prior to enhancement works commencing and Te Taumutu Rūnanga and Te Ngāi Tūāhuriri Rūnanga.</u></p>
<p>3029</p>	<p><u>Over the five years of planned enhancement works at the sites shown on Plan CRC[ref], annual monitoring and reporting of management actions (e.g. weed control, planting) carried out at enhancement sites shall be carried out and results provided to Canterbury Regional Council, Attention; Regional Leader Monitoring and Compliance. Following the initial assessment undertaken in accordance with condition 28, annual monitoring of the wetland condition and photographs at photo points shall be undertaken until 2026. <u>The obligation to continue to undertake this monitoring shall be reviewed in accordance with Condition 33a. If</u></u></p>

	<u>the review determines that monitoring is no longer required, this obligation can cease after 2026.</u>
<u>3130</u>	<u>Once plantings have established (after six months), monitoring will be undertaken at least twice annually for the next year (during spring and autumn) and then once annually thereafter for a period of five years or until canopy closure is achieved. On a bi annual basis until 2026, during the spring and autumn, the Consent Holder shall monitor the North Property Wetland and Enhancement Area for woody weed species. All woody weed species found shall be recorded, along with the approximate size of the population (either number of plants or area covered) and the management treatment applied. Where herbicide is applied a follow-up visit will be planned to confirm that it has been effective and to note whether additional applications might be required (e.g., due to regrowth). The obligation to continue to undertake this monitoring shall be reviewed in accordance with Condition 33a. If the review determines that monitoring is no longer required, this obligation can cease after 2026.</u>
<u>3231</u>	<u>During the bi annual woody weed monitoring undertaken in accordance with condition 30 the consent holder shall also monitor the North Property Wetland and Enhancement Area for plant health and signs of animal pests. Following monitoring, any plants which fail to establish will may be replaced as required necessary to the ultimate achieving of the Objectives of the Wetland Management and Planting Plan, although they may are not required to be replaced at exactly the same microsite or with the same species. Replacement plants will be planted according to the guidelines provided above set out in the period between May Wetland Management and October Planting Plan following the discovery of dead plants. If plant losses to herbivore predation or other animal damage exceed 1% (in the case of rabbits and hares) or 5% (for all other species) then appropriate animal control or other methods of pest exclusion will be implemented by the Consent Holder within the site. The obligation to continue to undertake this monitoring shall be reviewed in accordance with Condition 33a. If the review determines that monitoring is no longer required, this obligation can cease after 2026.</u>
<u>32</u>	<u>The results of annual monitoring and reporting of management actions (e.g. weed control, planting) undertaken at the North Property Wetland and Enhancement Area shall provided to Canterbury Regional Council/Selwyn District Council, Attention; Regional Leader Monitoring and Compliance and Te Taumutu</u>

	Rūnanga and Te Ngāi Tūāhuriri Rūnanga <u>as part of the annual report prepared in accordance with condition [refer general conditions which require an annual report].</u>
33	Within five years of commencement of this consent, the consent holder shall provide to the Canterbury Regional Council/ <u>Selwyn District Council</u> evidence to confirm that an appropriate legal instrument has been registered on the titles of land known as the North Property ensuring a condition to <del>recognize</del> <u>recognise</u> the values that exist at the North Property wetland. Costs associated with creating and registering the legal instrument shall be borne by the consent holder.
<u>33a</u>	<u>The Wetland Management and Planting Plan shall be reviewed by the Consent Holder in 2026. The purpose of this review shall be to confirm that the Wetland Management and Planting Plan has achieved the objectives set out in Condition 23, and to identify if monitoring can cease or whether this needs to be continued for a further duration in order to better achieve the objectives of the Plan. A written report detailing the results of the review shall be submitted to the Canterbury Regional Council/Selwyn District Council within 30 working days of the review being undertaken. If the review results in amendments to the monitoring regime these are to be implemented by the Consent Holder for the duration specified in the review report.</u>
<b>Spills and Refuelling</b>	
34	<p>During works the Consent Holder shall take all practicable measures to prevent spills of hazardous substances being discharged into surface water. Such measures shall include, but not be limited to:</p> <ol style="list-style-type: none"> <li>a. All practicable measures shall be undertaken to prevent oil and fuel leaks from vehicles and machinery;</li> <li>b. Refuelling of machinery and vehicles shall not occur within 20 metres of any waterway, drain or pond and shall be supervised throughout the whole activity;</li> <li>c. All refuelling equipment shall have a shut-off valves;</li> <li>d. The storage of fuel and other hazardous substances shall not occur within 20 metres of any water body, drain or pond, and shall be stored securely, unless required for operational purposes during the active <del>or post</del> closure phase (e.g. generator to operate pond pumps);</li> <li>e. All vehicles and works areas shall have a spill kit capable of absorbing the quantity of fuel and other hazardous substances that may leak or be spilt; and</li> </ol>

	f. Spill containment equipment shall be immediately available and kept on site at all times.
35	<p>The Consent Holder shall immediately inform the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, of a leak or spill that is greater than 10 litres, or if any fuel enters <del>water</del><u>waterways</u>. Within 24 hours of the spill the Consent Holder shall provide the Canterbury Regional Council with the following information:</p> <ol style="list-style-type: none"> <li>The date, time, location and estimated volume of the spill;</li> <li>The cause of the spill;</li> <li>The type of contaminant(s) spilled;</li> <li>Observations and photos of any spilt material once it enters the <del>marine</del><u>aquatic</u> environment;</li> <li>Clean up procedures undertaken;</li> <li>Details of the steps taken to control and remediate the effects of the spill on the receiving environment;</li> <li>An assessment of the potential ecological effects of the spill; and</li> <li>Measures to be undertaken to prevent a recurrence.</li> </ol>

**CRC200500 – Discharge permit, to discharge contaminants into air (fugitive dust) from within the Mine Operations Area**

#	Condition
<b>General</b>	
1	<p>The discharge shall be only fugitive dust generated from mining, earthworks, vehicle movements and rehabilitation and closure works associated with coal mining operations and mine closure within the Mine Operations Area as shown on Plan CRC200500A, which is attached to, and forms part of the resource consent.</p> <p><b>Advice Note:</b> <i>This discharge permit does not authorise the discharge of stormwater, or mine influenced water. This permit also does not authorise the abstraction of water for dust suppression or the excavation or disturbance of land. The consent holder should ensure all necessary authorisations are obtained before commencing works.</i></p>
2	The discharges shall occur at the site legally described as:

	<ul style="list-style-type: none"> <li>a. RS 32347 (CB41A/436, CB8B/920);</li> <li>b. Part Lot 2 DP 6591 (CB24B/403, CB576/48, CB7D/967);</li> <li>c. Part Lot 1 DP 18018 (CB2D/1450, CB7D/965);</li> <li>d. Part Lots 2 and 3 DP 6591 (CB651/33, CB7D/967, CB7D/1140, CB24B/403, CB7D/969);</li> <li>e. Lot 3 DP 8898 (CB5A/1042);</li> </ul> <p>and within the Mine Operations Area as shown on Plan CRC200500A and Plan CRC200500B, which are attached to, and form part of this resource consent.</p>
3	The discharge of particulate matter shall not give rise to effects that are noxious, dangerous, offensive or objectionable beyond the boundary of the Mine Operations Area as shown on Plan CRC200500A.
<b>Dust Management Plan</b>	
4	<p>The Dust Management section of the EMP shall include but not be limited to:</p> <ul style="list-style-type: none"> <li>a. A description of the activities that will result in the discharge of contaminants into air; and</li> <li>b. A description of how often the contaminants will be discharged; and</li> <li>c. A description of the location of the discharge, including a description of the activities that occur on neighbouring properties and location of any sensitive activities that may be affected; and</li> <li>d. An explanation as to how any adverse effects on sites that are sensitive to Ngāi Tahu, such as statutory acknowledgement areas, silent file areas or wāhi tapu or wāhi taonga are to be managed; and</li> <li>e. A description of the management practices being implemented to minimise the discharge or the effects of the discharge of contaminants to ensure compliance with this consent; and</li> <li>f. Identification and contact details of the persons responsible for carrying out all actions in relation to meeting the requirements of this consent;</li> <li>g. A system of training for employees and contractors to make them aware of the requirements of the DMP;</li> <li>h. A method for recording and responding to complaints from the public; and</li> <li>i. Procedures for managing dust when staff are not on site.</li> </ul>
5	The DMP shall be provided to Canterbury Regional Council on request. The DMP may be amended at any time. Any amendments shall be:

	<ul style="list-style-type: none"> <li>a. Only for the purpose of improving the efficacy of the dust control measures and shall not result in reduced discharge quality; and</li> <li>b. Consistent with the conditions of this resource consent.</li> </ul>
<p><b>Dust Control Measures</b></p>	
<p>6</p>	<p>The consent holder shall use the best practicable option at all times to ensure compliance with Condition 3. These measures shall include but not be limited to:</p> <ul style="list-style-type: none"> <li>a. A water truck <u>(or other alternative mechanism)</u> which shall be available and used as necessary to wet down haul roads and other areas of operation as required.</li> <li>b. A speed limit of 40 kilometres per hour, which shall be maintained for all vehicles on all unsealed roads on the <del>property</del> <u>properties</u> on which the consent is exercised.</li> <li><del>c. The ROM (run of mine) area shall have available a water sprinkler system that shall be used as necessary to wet down the stockpile and screening plant area.</del></li> <li>d. Following the completion of overburden placement and land contouring the final cover material shall be re-vegetated with pasture species.</li> <li>e. In the event that wind speeds over a ten-minute rolling average exceed 90 kilometres per hour, site activities are to cease other than for essential works such as dust suppression until the wind speed has reduced below that threshold.</li> <li>f. In the event that suspended particulate matter reduces visibility to less than 50 metres at the site, site activities are to cease other than for essential works such as dust suppression until the visibility increases above that threshold.</li> </ul>
<p><b>Monitoring</b></p>	
<p>7</p>	<p>A meteorological monitoring station is to be operated at the site until the completion of the active close phase at the site. The meteorological equipment shall:</p> <ul style="list-style-type: none"> <li>a. Include provision for both wind speed and rainfall;</li> <li>b. Be installed and maintained in accordance with the manufacturer's instructions;</li> </ul>

	<p>c. The wind monitor shall be installed on a mast at a location where wind direction and speeds are representative of the site, and such that their height is at least four metres above local ground level;</p> <p>d. The wind monitor shall be fitted with an alarm to site staff that operates if the wind speed trigger level in Condition 6(e) is exceeded;</p> <p>e. The wind monitor shall record as a minimum wind speed and direction as 1-minute vector averages with the following resolutions and accuracies:</p> <ul style="list-style-type: none"> <li>i. Wind speed resolution of 0.1 metres per second (m/s), accuracy of at least within +/-0.2 m/s, and a stall speed no greater than 0.5 m/s; and</li> <li>ii. Wind direction resolution of 1.0 degree and accuracy of at least within +/- 1.0 degree.</li> </ul> <p>f. Record all of the data in electronic form.</p> <p>The meteorological data recorded in accordance with Condition 7 shall be retained and provided to the Canterbury Regional Council on request.</p>
<p><b>Administration</b></p>	
<p><b>8</b></p>	<p>This consent may be surrendered in accordance with section 138 of the RMA upon the site achieving closure criteria for vegetation cover in accordance with CRC184166 and entering the post closure phase.</p>

## CRC201366 s14 Water Permit to take, divert and dam water

#	Condition
<b>General</b>	
1	<p>This consent authorises the following activities:</p> <ul style="list-style-type: none"> <li>a. The diversion of surface run-off water and drainage water, including between sub-catchments, into the Tara Gully Mine Water Treatment System;</li> <li>b. The damming of water in artificial storage ponds; and</li> <li>c. The taking and using of water from storage ponds;</li> </ul> <p>associated with the operation, rehabilitation and closure of the Canterbury Coal Mine.</p> <p><b><u>Advice Note:</u></b> <i>This consent authorises retrospective activities listed in Condition 1 that have occurred onsite within the MOA.</i></p>
2	<p>The activities described in Condition 1 shall only occur at the Canterbury Coal Mine on the land parcels legally described as:</p> <ul style="list-style-type: none"> <li>a. RS 32347 (CB41A/436, CB8B/920);</li> <li>b. Part Lot 2 DP 6591 (CB24B/403, CB576/48, CB7D/967);</li> <li>c. Part Lot 1 DP 18018 (CB2D/1450, CB7D/965);</li> </ul>

	<p>d. Part Lots 2 and 3 DP 6591 (CB651/33, CB7D/967, CB7D/1140, CB24B/403, CB7D/969);</p> <p>e. Lot 3 DP 8898 (CB5A/1042);</p> <p>and within the Mine Operations Area as shown on Plan CRC201366A, which is attached to, and forms part of this consent.</p>
3	<p>Upon the completion of the final landform <del>at and prior to entering the end of the active post</del> closure phase, the consent holder shall provide a report from a suitably qualified person to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, that confirms the as-built landform and catchments are generally consistent with the sub-catchment boundary areas shown on Plan CRC[insert ref – catchment boundary plan].</p>
3b	<p><u>Included in the report from condition 3, the consent holder shall submit final as-built plans that identify the location of the surface drains which are to be retained on the site and the flow paths for surface water dispersing from the final landform</u></p>
4	<p><u>All permanent surface drains shall be maintained as per design intentions on the site at all times.</u></p>
<b>Ponds</b>	
5	<p><del>During the active closure phase water</del> <u>Water</u> may be contained in the following water storage ponds with volumes not exceeding:</p> <ol style="list-style-type: none"> <li>Surge Pond – 8,500m<sup>3</sup> <u>(Operational phase)</u>;</li> <li>Dust Pond – 10,000m<sup>3</sup> <u>(Operational phase)</u>;</li> <li>N02 Pit Pond – 19,000m<sup>3</sup> <u>(active closure and post-closure phases); and</u></li> <li>Tara Pond – 350m<sup>3</sup> <u>(all phases).</u></li> </ol> <p>as shown on Plan CRC201366X, which is attached to, and forms part of this consent.</p>
6	<p>The Surge Pond and Dust Pond shall be removed during the <del>active closure</del> <u>operational</u> phase of the rehabilitation process.</p>
57	<p>During the active closure and post-closure phases of site rehabilitation, the consent holder shall undertake inspections of pond stability in accordance with CRC184166.</p>
<b>Water Take</b>	
68	<p>During the active closure phase water may be taken at a maximum rate of <del>300l/s</del> <u>300m<sup>3</sup>/day</u> from any of the ponds remaining onsite for the purposes of</p>

	providing dust suppression and irrigation to support vegetation <del>growth</del> <u>establishment</u> on rehabilitated areas.
79	During the post closure phase water may only be taken from the N02 pit pond via a decant structure and Tara Pond for the purposes of diluting the discharge of contaminants and water <del>treated in the Mussel Shell Reactor</del> in accordance with CRC201368 and CRC170541 [ <u>Tara Stream discharge consents</u> ] and as shown on Plan CRC201366X.

### CRC201367: Water permit to take and use groundwater (via drainage systems)

#	Condition
<b>General</b>	
1	This permit authorises the taking and diversion of groundwater via sub-soil drainage systems.
2	The activities described in Condition 1 shall only occur at the Canterbury Coal Mine on the land parcels legally described as: <ul style="list-style-type: none"> <li>a. RS 32347 (CB41A/436, CB8B/920);</li> <li>b. Part Lot 2 DP 6591 (CB24B/403, CB576/48, CB7D/967);</li> <li>c. Part Lot 1 DP 18018 (CB2D/1450, CB7D/965);</li> <li>d. Part Lots 2 and 3 DP 6591 (CB651/33, CB7D/967, CB7D/1140, CB24B/403, CB7D/969);</li> <li>e. Lot 3 DP 8898 (CB5A/1042);</li> </ul> and within the Mine Operations Area as shown on Plan CRC201366A, which is attached to, and forms part of this consent.
<b>Following <u>During Active Closure</u></b>	
3	Within three months of the completion of rehabilitation activities to create the final landform, <del>the applicant</del> <u>and entering the active closure phase, the consent holder</u> shall submit to Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, final as-built plans that identify the location of all sub-soil drains, including their discharge location.

**CRC[discharges to Tara Stream]: Discharge permit to discharge sediment, mine influenced water, drainage water and residual contaminants from the treatment of water**

#	Condition
<b>General</b>	
1	<p>The discharge of contaminants to water shall be limited to the following:</p> <ul style="list-style-type: none"> <li>a. Sediment-laden stormwater run-off during rainfall events;</li> <li>b. <del>Mine-affected</del><u>influenced</u> water (<del>acid mine</del></li> <li>e. <u>Surface drainage</u>);<del>Treated mine water including residual contaminants from the treatment of water; and</del></li> <li>c. <del>Drainage</del> water from engineered landforms;</li> </ul> <p>associated with the operation and rehabilitation of the Canterbury Coal Mine.</p> <p><b><u>Advice Note:</u></b> <i>This consent authorises retrospective activities listed in Condition 1 that have occurred onsite within the MOA.</i></p>
2	<p>The activities described in Condition 1 shall only occur at the Canterbury Coal Mine on the land parcels legally described as:</p> <p>land parcels legally described as:</p> <ul style="list-style-type: none"> <li>a. RS 32347 (CB41A/436, CB8B/920);</li> <li>b. Part Lot 2 DP 6591 (CB24B/403, CB576/48, CB7D/967);</li> <li>c. Part Lot 1 DP 18018 (CB2D/1450, CB7D/965);</li> </ul>

	<p>d. Part Lots 2 and 3 DP 6591 (CB651/33, CB7D/967, CB7D/1140, CB24B/403, CB7D/969);</p> <p>e. Lot 3 DP 8898 (CB5A/1042);</p> <p>and within the Mine Operations Area as shown on Plan CRC201368X, which is attached to, and forms part of this consent.</p>
3	<p>All <u>point source</u> discharges shall occur into the Tara Stream.</p> <p>For the purposes of this consent, the <del>mixing zone</del><u>compliance point</u> during the <u>operational and active closure phase</u> shall be <u>immediately below the discharge point in CC02 tele as shown on Plan CRC201368X (1513950, 5188030) during times of no flow, pumped discharge or a maximum of 20 metres below the when Tara Pond is overflowing via the spillway when there is flow occurring in Tara Stream as shown on Plan CRC201368X (CC02 tele)</u>. <u>At other times the compliance point shall be the bottom of the Tara spillway mixing structure referred to as CC02 TSMS as shown on Plan CRC[insert ref] (NZTM2000 1513881, 5188046).</u></p> <p>During the post closure phase the <del>mixing zone</del><u>compliance point shall</u> be the bottom of the Tara Pond spillway <u>mixing structure referred to as CC02 TSMS shown on Plan CRC[insert ref] (NZTM2000 1513881, 5188046).</u></p>
4	<p>The discharge shall not result in:</p> <ol style="list-style-type: none"> <li>The production of oil or grease films, scums, foams, floatable or suspended materials, nor any conspicuous change in colour <u>or clarity</u> in the Tara Stream at the edge of the <del>mixing zone</del><u>compliance point</u>; or</li> <li>The emission of objectionable odour from the <u>discharge to</u> Tara Stream.</li> </ol>
5	The discharge shall not cause the erosion or scour of the bed or banks of Tara Stream.
6	All monitoring required by this consent shall be undertaken by a suitably qualified and experienced person. <u>Sampling shall be undertaken in accordance with <a href="#">industry standard practices with reference being made to the most recent version and issue of the National Environmental Monitoring Standards (NEMS) Water Quality: Sampling, Measuring, Processing and Archiving of Discrete River Water Quality Data.</a></u>
7	All water quality samples required by this consent shall be analysed using the most appropriate scientifically recognized and current method by a laboratory that is accredited for that method of analysis by International Accreditation New Zealand (IANZ) or an equivalent accreditation organisation that has a mutual recognition arrangement with IANZ.
<b>Erosion and Sediment Control</b>	
8	During the <u>operational phase and</u> active closure phase of the site rehabilitation:

	<p>a. Best practicable option erosion and sediment control measures <u>shall be actioned</u> to minimise the discharge of sediment from the site.</p> <p>b. Staging rehabilitation works and progressively stabilising rehabilitated areas to minimise the area of disturbed land.</p> <p>c. Progressively reducing concentrated surface water flows into the N02 Pit Pond by returning the landform to reflect its original shape and allow the dispersal of flows down slopes following the stabilisation of the landform.</p> <p>d. Directing <del>dirty</del> <u>sediment laden</u> water to sediment retention ponds for treatment prior to discharge.</p>
9	<del>Erosion</del> <u>All erosion</u> and sediment control measures shall be designed, installed, maintained and decommissioned <u>(if they are not designed to be permanent features)</u> in accordance with the EMP and MCMP.
<b><u>Operational and Active Closure Phase – Water Treatment Management System</u></b>	
10	During the <u>operational and</u> active closure <del>phase</del> <u>phases</u> active management of surface run-off water shall occur using pumps to <del>manage</del> <u>transfer</u> flows in the onsite ponds to meet water quality limits until the drainages have met the closure criteria for vegetative cover in accordance with Condition 11 and drains are adequately lined to prevent erosion.
11	Surface water run-off diverted to the water quality treatment system shall only be returned to their natural flow paths when the landform within the contributing <del>catchment</del> <u>drainage area</u> is stabilised to prevent erosion and vegetation coverage is at least 80% coverage <del>on rehabilitated sites (excluding roads and other areas used for water infrastructure).</del>
12	All water treatment devices used during the <u>operational and</u> active closure phase shall remain operational until such time that no flows are directed to them, or there remains sufficient water treatment capacity in the water treatment system to achieve compliance with the water quality limits.
13	The consent holder shall ensure at least 0.5 metre of non-acid forming rock <u>and/or</u> topsoil is placed against all final backfill areas and reshaped surface in the N02 pit pond <u>high wall</u> catchment <u>areas</u> to prevent insitu <u>exposed</u> coal <u>seams</u> and potentially acid forming rock <del>being</del> <u>deposits continuing to be exposed</u> to the atmosphere.
<b><u>Post Closure – Water Management Treatment System</u></b>	
13a	<u>Prior to permanently using N02 Pit Pond water for dilution of MSR effluent the consent holder shall develop a water balance model, CC02 underdrain contaminant load model and N02 Pit Pond water quality model using empirical data to validate and calibrate the suitability of the N02 pit pond water for the long term water quantity and quality dilution</u>

	<u>and discharge requirements at the site. A description of these models and results of these models shall be submitted to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, upon completion.</u>
14	<p>The post-closure water <del>treatment</del> <u>management</u> infrastructure shall comprise of:</p> <ol style="list-style-type: none"> <li>a. The N02 Pit Pond;</li> <li>b. Boxcut Drain from the N02 Pit Pond;</li> <li>c. <del>Mussel Shell Reactor</del> MSR adjacent to Tara Pond;</li> <li>d. Tara Pond;</li> <li>e. <u>N02 pond decant system and pipeline from decant to MSR diluent mixing structure.</u></li> <li>f. <u>Dilution mixing system;</u></li> <li>g. Lined drainage channels-; <u>and</u></li> <li>h. <u>Any other infrastructure required, or modifications to such infrastructure through adaptive management.</u></li> </ol> <p>as shown on Plan CRC [ref], which is attached to, and forms part of this consent.</p>
15	The post-closure <del>water treatment system</del> <u>concentrated flow paths</u> shall be designed and constructed to <del>capture and treat</del> <u>manage</u> all run-off in events up to, and including the 1% Annual Exceedance Probability, time of concentration event-, <u>without compromise to the ability to perform to its design.</u>
16	<p>At the commencement of the post-closure phase, the Tara Pond shall:</p> <ol style="list-style-type: none"> <li>a. <del>Provide at least 350m<sup>3</sup> storage</del></li> <li>b. Include a spillway that provides for the discharge of 1.21m<sup>3</sup>/s of water and energy dissipation structures to reduce water velocities; and</li> <li>c. Include a weir and flow monitoring infrastructure to monitor discharges from the pond.</li> <li>d. <u>Include a mixing structure at base of the spillway infrastructure, which should be designed to mix the combined discharges from the MSR effluent and the diluent pipeline discharge.</u></li> </ol>
17	<p><u>The N02 Pit Pond shall:</u></p> <ol style="list-style-type: none"> <li>a. <u>Include a spillway that provides for the discharge of 0.89m<sup>3</sup>/s of water;</u></li> <li>b. <u>Prior to using N02 Pit Pond water for dilution of MSR effluent, the N02 Pit Pond shall:</u> <ol style="list-style-type: none"> <li>i. <u>Include a decant structure to provide for the continuous discharge from the pond; and</u></li> <li>ii. <u>Include a piped system to take the water from the decant to the MSR effluent mixing structure; and</u></li> </ol> </li> </ol>

	iii. <u>Provide an operating live water storage volume of at least 3,700m<sup>3</sup>.</u>
18	<p><u>At the commencement of the post-closure phase, the CC02 underdrain shall be piped and treated in a Mussel Shell Reactor (MSR). The MSR shall be designed to generally accord with the following:</u></p> <ul style="list-style-type: none"> <li>a. <u>The MSR shall be at least 24m in length and 5m in width at the top, with internal walls battered to ensure stability;</u></li> <li>b. <u>The depth of the MSR shall be at least 1.5m comprising of a 1m layer of mussel shells and 0.5m of freeboard and store hold at least 58m<sup>3</sup> of untreated water;</u></li> <li>c. <u>An underdrain network shall be installed at the base of the shell layer approximately 200mm above the base of the MSR to collect treated water; and</u></li> <li>d. <u>The MSR shall discharge treated water to the mixing structure at the base of the Tara Pond spillway.</u></li> </ul> <p><u>In order to confirm that the MSR has been constructed to generally accord with the requirements of this condition and is effective in treating contaminants, a commissioning report shall be prepared and submitted to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, upon completion of its construction.</u></p>
17	<p><u>At the commencement the post-closure phase, the N02 Pit Pond shall:</u></p> <ul style="list-style-type: none"> <li>c. <u>Provide an operating live water storage volume of at least 3,700m<sup>3</sup>;</u></li> <li>d. <u>Includes a spillway that provides for the discharge of 0.89m<sup>3</sup>/s of water; and</u></li> <li>e. <u>Include a decant structure to provide for the continuous discharge from the pond to the Tara Pond.</u></li> </ul>
18	<p><u>At the commencement of the post-closure phase, the CC02 underdrain shall be treated in a Mussel Shell Reactor (MSR) designed and constructed as follows:</u></p> <ul style="list-style-type: none"> <li>e. <u>The MSR shall be at least 24m in length and 5m in width at the top, with internal walls battered to ensure stability;</u></li> <li>f. <u>The depth of the MSR shall be 1.5m comprising of a 1m layer of mussel shells and 0.5m of freeboard and store 58m<sup>3</sup> of untreated water;</u></li> <li>g. <u>An underdrain network shall be installed at the base of the shell layer approximately 200mm above the base of the MSR to collect treated water; and</u></li> <li>h. <u>The MSR shall discharge treated water at the base of the Tara Pond spillway.</u></li> </ul>
18a	<p><u>The MSR shall be maintained by the consent holder to ensure its effectiveness at treating water from the CC02 and maintain compliance of water discharges. Maintenance may include the periodic removal of sludge build up within the MSR or</u></p>

	<u>other maintenance to ensure the system is working. During de-sludging events no untreated CC02 underdrain flows shall be discharged to Tara Stream.</u>
18b	<u>Any sludge and shell material removed from the MSR during any maintenance activities undertaken in accordance with condition 18a shall be prevented from entering Tara Stream directly and shall be removed from the site and disposed of at a suitably licenced disposal facility.</u>
19	All concentrated flow paths from contributing <del>catchments</del> <u>drainages</u> greater than 0.5ha as shown on Plan CRC [ref] remaining <u>a</u> on the final landform and prior to the end of the active closure phase shall be engineered and lined to minimise erosion in accordance with the MCMP.
<b>Active closure Phase Water Quality Monitoring and Limits</b>	
20	<u>During the operational, active closure and closure phases water quality monitoring shall be undertaken at the locations specified in condition 3 for each phase, when a discharge is occurring from the site for the following contaminants and at the stated frequencies:</u>

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<u>Contaminant</u>	<u>Frequency</u>
<u>pH<sup>#</sup></u>	<u>Continuous (Every 15 minutes) with monthly manual testing (grab samples)</u>
<u>Temperature</u>	<u>Continuous (Every 15 minutes)</u>
<u>Turbidity (NTU)**</u>	<u>Continuous (Every 15 minutes) with monthly manual testing (grab samples)</u>
<u>Electrical conductivity<sup>#</sup></u>	<u>Continuous (Every 15 minutes) with monthly manual testing (grab samples)</u>
<u>Boron (mg/L)</u>	<u>Monthly (grab samples)</u>
<u>Manganese (mg/L)***</u>	<u>Monthly (grab samples)</u>
<u>Nickel (mg/L)*</u>	<u>Monthly (grab samples)</u>
<u>Zinc (mg/L)*</u>	<u>Monthly (grab samples)</u>
<u>Iron (mg/L)***</u>	<u>Monthly (grab samples)</u>
<u>Aluminium (mg/L)***</u>	<u>Monthly (grab samples)</u>
<u>Calcium (mg/L)</u>	<u>Monthly (grab samples)</u>
<u>Magnesium(mg/L)</u>	<u>Monthly (grab samples)</u>
<u>Sulfate</u>	<u>Monthly (grab samples)</u>
<u>Dissolved oxygen%<sup>#</sup> +</u>	<u>Monthly (grab samples)</u>
<u>Dissolved organic carbon (mg/L)+</u>	<u>Monthly (grab samples)</u>
<u>Polycyclic aromatic hydrocarbons+</u>	<u>Annually (grab sample)</u>
<u>Arsenic (mg/L)</u>	<u>Annually (grab sample)</u>
<u>Cadium* (mg/L)</u>	<u>Annually (grab sample)</u>
<u>Chromium* (mg/L)</u>	<u>Annually (grab sample)</u>

	<table border="1"> <tr> <td>Copper* (mg/L)</td> <td>Annually (grab sample)</td> </tr> <tr> <td>Lead* (mg/L)</td> <td>Annually (grab sample)</td> </tr> <tr> <td>Mercury (mg/L)</td> <td>Annually (grab sample)</td> </tr> </table> <p><u>## This is a field measure of DO. Field pH and field EC should also be undertaken to support laboratory data and interpretations.</u></p> <p><u>*Hardness modified</u></p> <p><u>**Only for operational and active closure phases.</u></p> <p><u>***Manganese, Iron, and Aluminium will also be analysed for total metals at CC02-tsms.</u></p> <p><u>+ Taken only at CC02 TSMS</u></p>	Copper* (mg/L)	Annually (grab sample)	Lead* (mg/L)	Annually (grab sample)	Mercury (mg/L)	Annually (grab sample)
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Lead* (mg/L)	Annually (grab sample)						
Mercury (mg/L)	Annually (grab sample)						
<u>22</u>	<u>The water quality sampling results shall be compared to the following limits:</u>						

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		<b><u>Contaminant</u></b>	<b><u>Limits</u></b>
		pH	Between 6-9
		Turbidity**	50 NTU
		Boron#	1.5 mg/L
		Manganese*	1.9 mg/L
		Nickel***	0.011 mg/L
		Zinc***	0.008 mg/L
		Iron*	1 mg/L
		Aluminium*	0.055 mg/L
		Arsenic	0.013mg/L
		Cadium	0.0002 mg/L
		Chromium***	0.0033 mg/L
		Copper***	0.0014 mg/L
		Lead***	0.0034 mg/L
		Mercury	0.0006 mg/L
		<p><i>* Manganese, Iron, and Aluminium will also be analysed for total metals but for compliance purposes these limits are based on the dissolved fractions.</i></p> <p><i>**Only for operational and active closure phases.</i></p> <p><i>***Hardness modification is required for these metals by <del>the a</del> hardness algorithm: <del>TV(H/30)</del>.</i></p>	
23	<p>The consent holder shall confirm compliance with the limits set out in Condition 22 by <u>undertaking the monitoring in accordance with Condition 20.</u></p> <p>a. <u>In the event that one or more of the monthly grab samples shows non-compliance with the limits set out in Condition 22, the Consent Holder shall be required to resample onsite or retest a duplicate sample if that is available for</u></p>		

	<p><u>that parameter as soon as practicable <b>and no later than two working days following receipt of the non compliance</b>. Following the first exceedance the consent holder shall also be required to investigate onsite as soon as practicable, the possible cause of the exceedance and if this can be clearly attributable to a direct fault (e.g. equipment malfunction) that can be remedied then such actions should be undertaken to prevent further non compliance.</u></p> <p>b. <u>In the event that the boron samples show non compliance with the limits set out in Condition 22, the Consent Holder shall be required to immediately seek to repeat the analysis using a duplicate sample.</u></p> <p>c. <u>In circumstances when dissolved iron or dissolved aluminium show non compliance with the limits set out in Condition 22, this may be due to colloidal iron and colloidal aluminium being present within the receiving environment. If an exceedance of these parameters is detected, then this will require additional investigations such as such as 0.2 µm filters, assessment of dissolved oxygen concentrations, and other chemical parameter before this is a confirmed exceedance for the purposes of Condition 24.</u></p> <p>d. <u>In circumstances where one or more of the limits set out in Condition 22 is exceeded on two consecutive sampling occasions as set out in (a) or following the duplicate resampling in (b) and these results are confirmed exceedances arising from discharges or activities at the site, the Consent Holder shall report to the Consent Authority in accordance with Condition 24;</u></p> <p>e. <u>In the event that continuous monitoring shows at least four readings in a row (one hour) above the limits set out in Condition 22 with greater than 1L/s-is being discharged into Tara Stream, or a fault causes the loss of data or recording function, the Consent Holder shall report to the Consent Authority in accordance with Condition 24.</u></p> <p><b><u>Advice note:</u></b></p> <p><u><i>For the avoidance of doubt the turbidity limit in Condition 22 do not apply during the post closure phase.</i></u></p>
<p><u>24</u></p>	<p><u>If the monthly monitoring results in a confirmed exceedance in accordance with Condition 23 (a), or the continuous monitoring exceeds the triggers set out in Condition 23 (b) then the Consent Holder shall:</u></p> <p>a. <u>Notify the Canterbury Regional Council, Attention; Regional Leader Monitoring and Compliance within 24 hours of receiving the confirmed sampling results;</u></p>

	<ul style="list-style-type: none"> <li>b. <u>Investigate the possible cause of the exceedance;</u></li> <li>c. <u>Identify the risk to the environment from the exceedance;</u></li> <li>d. <u>Undertake steps to minimise the risk of future exceedances within ten working days of receiving sampling results; and</u></li> <li>e. <u>Provide a report to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance that:</u> <ul style="list-style-type: none"> <li>i. <u>Outlines the findings of the investigation;</u></li> <li>ii. <u>Any mitigations acted upon, or proposed mitigation measures or amendments to the TARPs in order to address potential effects; and</u></li> <li>iii. <u>The timeframe for implementing any proposed mitigation measures.</u></li> </ul> </li> </ul>																				
20	<p>During the active closure phase water quality monitoring shall be undertaken when a discharge is occurring from the site for the following contaminants and at the stated frequencies:</p> <table border="1" data-bbox="395 864 1318 1823"> <thead> <tr> <th>Contaminant</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>Continuous (Every 15 minutes) with monthly manual testing (grab samples)</td> </tr> <tr> <td>Turbidity (NTU)</td> <td>Continuous (Every 15 minutes) with monthly manual testing (grab samples)</td> </tr> <tr> <td>Electrical conductivity</td> <td>Continuous (Every 15 minutes) with monthly manual testing (grab samples)</td> </tr> <tr> <td>Boron (mg/L)</td> <td>Monthly (grab samples)</td> </tr> <tr> <td>Manganese (mg/L)</td> <td>Monthly (grab samples)</td> </tr> <tr> <td>Nickel (mg/L)*</td> <td>Monthly (grab samples)</td> </tr> <tr> <td>Zinc (mg/L)*</td> <td>Monthly (grab samples)</td> </tr> <tr> <td>Iron (mg/L)</td> <td>Monthly (if pH is &lt;4.5) (grab samples)</td> </tr> <tr> <td>Aluminium (mg/L)</td> <td>Monthly (if pH is &lt;5.5 or &gt;7.5) (grab samples)</td> </tr> </tbody> </table> <p>*Hardness modified</p>	Contaminant	Frequency	pH	Continuous (Every 15 minutes) with monthly manual testing (grab samples)	Turbidity (NTU)	Continuous (Every 15 minutes) with monthly manual testing (grab samples)	Electrical conductivity	Continuous (Every 15 minutes) with monthly manual testing (grab samples)	Boron (mg/L)	Monthly (grab samples)	Manganese (mg/L)	Monthly (grab samples)	Nickel (mg/L)*	Monthly (grab samples)	Zinc (mg/L)*	Monthly (grab samples)	Iron (mg/L)	Monthly (if pH is <4.5) (grab samples)	Aluminium (mg/L)	Monthly (if pH is <5.5 or >7.5) (grab samples)
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21	<p>During the active closure phase water quality samples shall be taken at the edge of the mixing zone, being CC02_tele for turbidity, pH, electrical conductivity, Boron, Manganese, Nickel, Zinc, Iron and Aluminium.</p>																				

22	<p>During the active closure phase water quality sampling results shall be compared to the following limits:</p> <table border="1" data-bbox="552 309 1238 931"> <thead> <tr> <th>Contaminant</th> <th>Limits</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>Between 6-9</td> </tr> <tr> <td>Turbidity</td> <td>50 NTU</td> </tr> <tr> <td>Boron</td> <td>1.5 mg/L – three month rolling median</td> </tr> <tr> <td>Manganese</td> <td>1.9 mg/L</td> </tr> <tr> <td>Nickel**</td> <td>0.011 mg/L</td> </tr> <tr> <td>Zinc**</td> <td>0.008 mg/L</td> </tr> <tr> <td>Iron</td> <td>1 mg/L</td> </tr> <tr> <td>Aluminium</td> <td>0.055 mg/L</td> </tr> </tbody> </table> <p>**Where the compliance limit (Australian and New Zealand Guidelines for Fresh and Marine Water Quality 95% TV) is modified by the hardness algorithm: TV(H/30)<sup>0.85</sup></p>	Contaminant	Limits	pH	Between 6-9	Turbidity	50 NTU	Boron	1.5 mg/L – three month rolling median	Manganese	1.9 mg/L	Nickel**	0.011 mg/L	Zinc**	0.008 mg/L	Iron	1 mg/L	Aluminium	0.055 mg/L
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23	<p>During the active closure phase the consent holder shall confirm compliance with the limits set out in Condition 22 by undertaking the monitoring in accordance with Conditions 20 and 21.</p> <p>f. In the event that one or more of the monthly grab sampling shows non-compliance with the limits set out in Condition 22, the Consent Holder shall resample and/or retest that parameter as soon as practicable. In circumstances where one or more of the limits set out in Condition 22 is exceeded on two consecutive sampling occasions and these results are confirmed exceedances, the Consent Holder shall report to the Consent Authority in accordance with Condition 24</p> <p>g. In the event that continuous monitoring shows four readings in a row (one hour) above the limits set out in Condition 22 and greater than 1L/s is being discharged into Tara Stream, or a fault causes the loss of data or recording function, the Consent Holder shall report to the Consent Authority in accordance with Condition 24.</p>																		

24	<p>If the monthly monitoring results in a confirmed exceedance in accordance with Condition 23 (a), or the continuous monitoring exceeds the triggers set out in Condition 23 (b) then the Consent Holder shall:</p> <ul style="list-style-type: none"> <li>f. Notify the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance within 24 hours of receiving the sampling results;</li> <li>g. Investigate the possible cause of the exceedance;</li> <li>h. Identify the risk to the environment from the exceedance;</li> <li>i. Undertake steps to minimise the risk of future exceedances within ten working days of receiving sampling results; and</li> <li>j. Provide a report to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance that:             <ul style="list-style-type: none"> <li>iv. Outlines the findings of the investigation;</li> <li>v. Any proposed mitigation measures or recommends amendment to the TARPs in order to address potential effects during the post closure phase; and</li> <li>vi. The timeframe for implementing any proposed mitigation measures.</li> </ul> </li> </ul>
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**Post Closure Phase – Water Quality Monitoring and Limits**

25	<p>During the post closure phase water quality monitoring shall be undertaken when a discharge is occurring from the site for the following contaminants and at the stated frequencies:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Contaminant</th> <th style="text-align: left;">Frequency</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>Continuous (Every 15 minutes) with monthly manual testing</td> </tr> <tr> <td>Electrical conductivity</td> <td>Continuous (Every 15 minutes) with monthly manual testing</td> </tr> <tr> <td>Boron (mg/L)</td> <td>Monthly</td> </tr> <tr> <td>Manganese (mg/L)</td> <td>Monthly</td> </tr> <tr> <td>Nickel (mg/L)*</td> <td>Monthly</td> </tr> <tr> <td>Zinc (mg/L)*</td> <td>Monthly</td> </tr> <tr> <td>Iron (mg/L)</td> <td>Monthly (if pH is &lt;4.5)</td> </tr> <tr> <td>Aluminium (mg/L)</td> <td>Monthly (if pH is &lt;5.5 or &gt;7.5)</td> </tr> </tbody> </table> <p>*Hardness modified</p>	Contaminant	Frequency	pH	Continuous (Every 15 minutes) with monthly manual testing	Electrical conductivity	Continuous (Every 15 minutes) with monthly manual testing	Boron (mg/L)	Monthly	Manganese (mg/L)	Monthly	Nickel (mg/L)*	Monthly	Zinc (mg/L)*	Monthly	Iron (mg/L)	Monthly (if pH is <4.5)	Aluminium (mg/L)	Monthly (if pH is <5.5 or >7.5)
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26	During the post closure phase water quality samples shall be taken at the edge of the mixing zone, being within the Tara Pond spillway as shown on Plan CRC[ref], which is attached to, and forms part of this consent.																		
27	<p>During the post closure phase water quality sampling results shall be compared to the following limits:</p> <table border="1" data-bbox="547 461 1235 1014"> <thead> <tr> <th data-bbox="547 461 775 528">Contaminant</th> <th data-bbox="778 461 1235 528">Limits</th> </tr> </thead> <tbody> <tr> <td data-bbox="547 533 775 600">pH</td> <td data-bbox="778 533 1235 600">Between 6-9</td> </tr> <tr> <td data-bbox="547 604 775 672">Boron</td> <td data-bbox="778 604 1235 672">1.5 mg/L – three month rolling median</td> </tr> <tr> <td data-bbox="547 676 775 743">Manganese</td> <td data-bbox="778 676 1235 743">1.9 mg/L</td> </tr> <tr> <td data-bbox="547 748 775 815">Nickel**</td> <td data-bbox="778 748 1235 815">0.011 mg/L</td> </tr> <tr> <td data-bbox="547 819 775 887">Zinc**</td> <td data-bbox="778 819 1235 887">0.008 mg/L</td> </tr> <tr> <td data-bbox="547 891 775 958">Iron</td> <td data-bbox="778 891 1235 958">1 mg/L</td> </tr> <tr> <td data-bbox="547 963 775 1030">Aluminium</td> <td data-bbox="778 963 1235 1030">0.055 mg/L</td> </tr> <tr> <td colspan="2" data-bbox="547 1034 1235 1198">                     **Where the compliance limit (Australian and New Zealand Guidelines for Fresh and Marine Water Quality 95% TV) is modified by the hardness algorithm:  <math>TV(H/30)^{0.85}</math> </td> </tr> </tbody> </table>	Contaminant	Limits	pH	Between 6-9	Boron	1.5 mg/L – three month rolling median	Manganese	1.9 mg/L	Nickel**	0.011 mg/L	Zinc**	0.008 mg/L	Iron	1 mg/L	Aluminium	0.055 mg/L	**Where the compliance limit (Australian and New Zealand Guidelines for Fresh and Marine Water Quality 95% TV) is modified by the hardness algorithm: $TV(H/30)^{0.85}$	
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28	<p>During the post closure phase the consent holder shall confirm compliance with the limits set out in Condition 27 by undertaking the monitoring in accordance with Conditions 25 and 26.</p> <p>a. In the event that one or more of the monthly grab sampling shows non-compliance with the limits set out in Condition 27, the Consent Holder shall resample and/or retest that parameter as soon as practicable. In circumstances where one or more of the limits set out in Condition 27 is exceeded on two consecutive sampling occasions and these results are confirmed exceedances, the Consent Holder shall report to the Consent Authority in accordance with Condition 29</p> <p>b. In the event that continuous monitoring shows four readings in a row (one hour) above the limits set out in Condition 27 and greater than 1L/s is being discharged into Tara Stream, or a fault causes the loss of data or recording function, the Consent Holder shall report to the Consent Authority in accordance with Condition 29.</p>																		

29	<p>If the monthly monitoring results in a confirmed exceedance in accordance with Condition 28 (a), or the continuous monitoring exceeds the triggers set out in Condition 28 (b) then the Consent Holder shall:</p> <ul style="list-style-type: none"> <li>a. Notify the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance within 24 hours of receiving the sampling results;</li> <li>b. Investigate the possible cause of the exceedance;</li> <li>c. Identify the risk to the environment from the exceedance;</li> <li>d. Undertake steps to minimise the risk of future exceedances within ten working days of receiving sampling results; and</li> <li>e. Provide a report to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance that: <ul style="list-style-type: none"> <li>vii. Outlines the findings of the investigation;</li> <li>viii. Any proposed mitigation measures or modifications required to the TARPs; and</li> <li>ix. The timeframe for implementing any proposed mitigation measures.</li> </ul> </li> </ul>
<b>Water Quality Recording and Reporting</b>	
30	<p>When monthly sampling is undertaken, the Consent Holder shall also record:</p> <ul style="list-style-type: none"> <li>a. The name of the person collecting samples;</li> <li>b. The date and time the samples were collected;</li> <li>c. <u>The methodology used to collect the sample;</u></li> <li>d. The weather and flow conditions at the time of sampling; and</li> <li>e. The rainfall data associated with the sampling events, including the: <ul style="list-style-type: none"> <li>i. Date;</li> <li>ii. Time;</li> <li>iii. Duration; and</li> <li>iv. Rainfall depth.</li> </ul> </li> </ul>
31	<p>The water quality monitoring results from the monthly sampling must be supplied to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance within one month of them being received in an electronic format, suitable for automatic upload to a water quality database (preferably directly from the analytical laboratory immediately after quality checking).</p>

<p>32</p>	<p><u>As part of the Annual Report submitted to the Canterbury Regional Council in accordance with condition 10 [general conditions] the Consent Holder shall provide a summary of the water quality monitoring including:</u></p> <ul style="list-style-type: none"> <li>a. <u>The name of persons who collected samples, the date and the time the samples were collected;</u></li> <li>b. <u>The weather and flow conditions at the time of sampling;</u></li> <li>c. <u>The rainfall data associated with sampling events;</u></li> <li>d. <u>The laboratory analysis results;</u></li> <li>e. <u>An interpretation of water quality limit trends including comparisons to previous years' monitoring;</u></li> <li>f. <u>A discussion of performance monitoring data collected in accordance with condition 35 and any issues identified; and</u></li> <li>g. <u>Documentation of water quality limit compliance and the action taken to address exceedances including what actions were undertaken and when those actions were implemented.</u></li> </ul>
<p>32</p>	<p><del>The Consent Holder shall provide an Annual Report to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance by 1 November each year. The report shall detail the results of sampling carried out in the previous calendar year, including:</del></p> <ul style="list-style-type: none"> <li><del>a. The name of persons who collected samples, the date and the time the samples were collected;</del></li> <li><del>b. The weather and flow conditions at the time of sampling;</del></li> <li><del>c. The rainfall data associated with sampling events;</del></li> <li><del>d. The laboratory analysis results;</del></li> <li><del>e. An interpretation of trends including comparisons to previous years' monitoring; and</del></li> <li><del>f. Documentation of trigger values and the action taken to address exceedances including what actions were undertaken and when those actions were implemented.</del></li> </ul> <p><del>A copy of the Annual Report shall be provided to Te Taumutu Runanga and Te Ngai Tuahuriri Runanga each year.</del></p>
<p><b>Trigger Action Response Plan (TARP)</b></p>	
<p>33</p>	<p>As part of the MCMP required in accordance with Condition 4 [general condition] the Consent Holder shall prepare a Trigger Action Response Plan (TARP) <del>for certification by the Canterbury Regional Council.</del> The objective of the TARP is to ensure the</p>

	proposed water management system during both the active and post closure phases are effective and that discharges leaving the site continue to meet the water quality compliance limits specified in Conditions 22 and 27.
34	The purpose of the TARP <u>is to manage uncertainties so as to minimise risk of exceeding contaminant limits in discharge water</u> . The TARPs shall describe the methods for monitoring the water management systems and the physical characteristics and water quality parameters of <u>key parts of the dischargesystem</u> during the active and post closure phases, and to explain the actions that are required to be undertaken by the Consent Holder should any TARP <u>green, yellow, orange or red</u> level triggers be reached <del>or exceeded</del> during these periods.
35	The MCMP and the TARP shall include, but not be limited to, the following matters: <ul style="list-style-type: none"> <li>a. Identify the water management systems that will be in place during both the active and post closure phases;</li> <li>b. Provide a description of the key water management and mitigation features that will remain on site during the active and post closure phases, including the N02 Pit Pond, and Tara Mussel Shell Reactor <u>MSR</u>;</li> <li>c. A description of the performance water quality monitoring that will be undertaken during the active and post closure phases.</li> <li>d. A description of the water quality and <del>discharge</del> <u>TARP level</u> triggers during both the active closure phase and post closure phase that will necessitate the Consent Holder undertaking either further investigation or action to address the trigger which has occurred.</li> <li>e. Provide a description of the investigations or actions that will be implemented by the Consent Holder in response to a <u>TARP level</u> trigger being reached or exceeded.</li> <li>f. Provide a description of the steps that will be undertaken to mitigate or remediate the resultant effects of that <u>TARP level</u> trigger being reached or exceeded.</li> </ul>
<u>35a</u>	<u>In demonstrating compliance with condition 35(c) the Consent Holder shall ensure performance monitoring includes but is not limited to:</u> <ul style="list-style-type: none"> <li>(a) <u>Monitoring of the N02 Pit Pond for potential stratification effects and mitigative actions included as part of the TARPs should any stratification effects be detected; and</u></li> <li>(b) <u>Monitoring of CC12 in Oyster Gully during both the active closure phase and post closure.</u></li> </ul>

36	<p>If any of the TARP level triggers identified within the TARP are reached or exceeded, then the Consent Holder shall be required to implement the corresponding actions that are set out within it. <u>The Consent Holder shall notify the Consent Authority within 5 working days of any red triggers within the TARPs being <del>reached exceeded</del>, and confirmation of the actions that are being or will be undertaken.</u></p>
37	<p><del>Prior to moving to the post closure phase the TARP shall be reviewed by the Consent Holder. The Consent Holder may also review the TARP at any time during the post closure phase. The purpose of this review shall be to confirm that it accurately reflects current on-site activities, the requirements of these conditions of consent, the water management system and to identify if changes to the triggers, investigations or actions contained within the TARP for the post closure phase are required. The review shall also consider whether there can be a reduction in the frequency of monitoring required by these conditions as discharges from the site reach steady state within the prescribed limits in Condition 27. A written report detailing the results of any formal review shall be provided to the Canterbury Regional Council within 20 working days of the review being undertaken and completed for certification confirming that the reviewed TARP and monitoring regime gives effect to these conditions. If the review results in amendments to the TARP, then these should be provided to the Canterbury Regional Council at this time.</del></p> <p><b>Advice Note:</b></p> <p><i><del>If the review of the TARP identifies that there should be an amendment to the water quality monitoring or discharge limits that are prescribed in these conditions, to formally amend these requirements within the conditions of consent a section 127 variation application will be required.</del></i></p>
37	<p><u>Prior to moving to the post closure phase the TARP shall be reviewed to ensure it will continue to meet the objective and purpose described in conditions 33 and 34 for the remaining duration of the consent by the Consent Holder. <del>The Consent Holder may also review the TARP at any time during the post closure phase.</del> The purpose of this review shall be to confirm that <del>it the TARP</del> accurately reflects current on-site activities, the requirements of these conditions of consent, the water management system and to identify if changes to the triggers, investigations or actions contained within the TARP for the post closure phase are required. The review shall also consider whether there can be a reduction in the frequency of monitoring required by these conditions as discharges from the site reach steady state within the prescribed limits in Condition 27. A written report detailing the results of <del>any formal this</del> review shall be provided to the Canterbury Regional Council within 20 working days of the review being undertaken and completed confirming that the reviewed TARP and monitoring regime gives effect to these conditions. If the review results in</u></p>

	<p>amendments to the trigger levels within the TARP, then this should be provided to the Canterbury Regional Council for certification <u>at this time.</u></p> <p><b><u>Advice Note:</u></b></p> <p><u>If the review of the TARP identifies that there should be an amendment to the water quality monitoring or discharge limits that are prescribed in these conditions, to formally amend these requirements within the conditions of consent a section 127 variation application will be required.</u></p>
<b>Aquatic Ecology Monitoring</b>	
38	<p>As part of the MCMP prepared in accordance with Condition 4 [general condition] the Consent Holder shall prepare an Aquatic Ecology Management Plan. The purpose of this Plan shall be to inform achievement of the rehabilitation objectives insofar as they seek to maintain and potentially enhance instream values and aquatic ecology within Tara Stream and Bush Gully Stream post closure of the site. The Aquatic Ecology Management Plan shall set out the monitoring parameters, sites and duration, and as a minimum include:</p> <p><u>Tara Stream</u></p> <ol style="list-style-type: none"> <li><u>A description of the monitoring programme for water quality, habitat, macroinvertebrates and fish at three sites (downstream of CC02, CC03B, and CC03).</u></li> <li><u>A mechanism to review the monitoring obligations after two years of monitoring data to determine validity and merit of its continuation.</u></li> <li><u>A description of the record and reporting requirements.</u></li> </ol> <p><u>Bush Gully</u></p> <ol style="list-style-type: none"> <li><u>A description of the monitoring programme for water quality, habitat, macroinvertebrates and fish at sites along Bush Gully stream, upstream, within and downstream of the North Property enhancement area.</u></li> <li><u>A mechanism to review of the monitoring obligations after two years of monitoring data to determine validity and merit of its continuation.</u></li> <li><u>A description of the record and reporting requirements.</u></li> </ol>
38	<p>For a period of two years the Consent Holder shall undertake monitoring of aquatic ecology (macroinvertebrates and fish species) in Tara Stream and Bush Gully Stream. This monitoring shall be undertaken on a biannual basis in spring and</p>

	autumn periods during this period. A written report detailing the results of the monitoring on an annual basis shall be provided to the Canterbury Regional Council.
--	--

**CRC[CCR discharges] – To discharge CCR, lime products and mussel shells to land and to water**

#	Condition
<b>General</b>	
1	The discharge of contaminants to land where contaminant may enter water shall be limited to the discharge of coal combustion residuals (CCR), lime and mussel shells.
2	The discharge shall only occur at the Canterbury Coal Mine on the land parcels legally described as: <ul style="list-style-type: none"> <li>a. RS 32347 (CB41A/436, CB8B/920); and</li> <li>b. Lot 3 DP 8898 (CB5A/1042);</li> </ul> and within the Mine Operations Area as shown on Plan CRC203016A, which is attached to, and forms part of this consent.
3	This consent authorises the retrospective discharge of CCR to land on land described in Condition 2. Any future discharges from the commencement of this consent shall be limited to lime and mussel shells for the treatment of mine influenced water.
4	Lime products and mussel shells may be discharged to land and to water bodies within the MOA to treat acid mine drainage.
<b>Following Site Rehabilitation</b>	
5	At the completion of site rehabilitation, the consent holder shall submit to the Canterbury Regional Council, Attention Regional Leader Monitoring and Compliance a detailed plan that demonstrates: <ul style="list-style-type: none"> <li>a. The mined and filled areas, including the area where CCR has been disposed; <u>and</u></li> <li>b. <del>Sub-soil drainage systems;</del> and</li> <li>c. Location of <del>long term</del> <u>permanent</u> water quality treatment system <u>and features to remain.</u></li> </ul>

**APPENDIX C**  
**EVIDENCE OF COMPLIANCE ARRANGEMENTS WITH ECAN**

27 May 2021

Bathurst Coal Limited  
Level 12  
1 Willeston Street  
Wellington Central  
**Wellington 6011**

Dear Eden,

### **Compliance Monitoring Report**

Please find enclosed your compliance monitoring report for the following activity. It contains important information which needs to be read carefully.

**Consent number:** CRC173823  
**Location:** Bush Gully Road, Coalgate  
**Description:** To discharge contaminants.

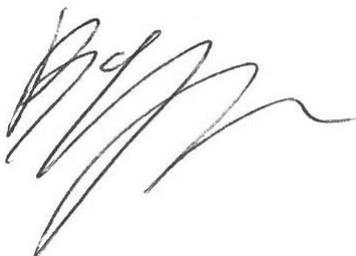
**Overall Inspection Compliance: Complies**

Thank you for complying with the resource consent conditions that have been monitored.

**Important:** *The Overall Inspection Compliance grade above relates only to the conditions monitored as part of this inspection. It does not change the status of previous grades received for other consent conditions. If you have received a non-compliance grade for other conditions, please continue to take appropriate action to achieve or maintain compliance.*

If you would like any further information regarding this report, please do not hesitate to contact me.

Yours sincerely



**Katie Nagy**  
Regional Gravel Officer

**Doc No:** C21C/119640  
**Your Customer No:** EC339787  
**File No(s):** CRC173823

---

**Consent No:**        **CRC173823**

<b>Description of consent</b>	<b>Date Consent Number Issued</b>
To discharge contaminants.	02 May 2017
<b>Location</b>	<b>Expiry Date</b>
Bush Gully Road, Coalgate	02 May 2032

---

**Conditions & compliance**

- 1        The discharge of contaminants shall be limited to the following:
- a.    Sediment laden stormwater run-off during rainfall events;
  - b.    Mine affected water;
  - c.    Treated mine water including residual contaminants from the treatment of mine water; and
  - d.    Drainage water from engineered landforms

from the Canterbury Coal Mine onto land and into a tributary of Bush Gully Stream, at or about NZ Topo50 BX21:1278-8814 (North ELF Discharge Point) or NZ Topo50 BX21:1282-8820 (North ELF MSR Discharge Point) as shown on Plan CRC173823A, which is attached to, and forms part of this consent.

**Compliance Report:**

**Complies**

The discharges are consistent with the above description. Discharges now mostly consist of sediment laden stormwater runoff and drainage water from the engineered landform.

---

- 3        The discharge shall not at any time result in:
- a.    The production of oil or grease films, scums, foams, floatable or suspended materials, nor any conspicuous change in colour; or
  - b.    The emission of objectionable odour

at the compliance monitoring point CC24 as described in Condition 21.

**Compliance Report:**

**Not operational**

At the time of the site visit there was no active discharge from the pond into Bush Gully Stream.

---

- 4 All run-off and drainage from the North Engineered landform shall where practicable be directed to one or more storage and/or treatment locations to enable treatment of water prior to discharge into the tributary of Bush Gully Stream unless it is demonstrated the water quality trigger values as listed in Condition 23 can be met without treatment.

**Compliance Report:**

**Complies**

The site discharges are managed in accordance with the above condition and infrastructure is still operational.

Rehabilitation of the North ELF is ongoing on progressing well. The final landform has been established since late 2019 and remaining works now include contour drains and access roads and some remnant areas that still need full vegetation cover.

The Draft Closure Plan provides an overview of the intended next steps for rehabilitation of the catchment and decommissioning/ amendments to the existing infrastructure. In the interim, storage is still utilised and treatment options are still available on site, if needed.

- 
- 5 The discharge shall not cause erosion or scour of the bed or banks of the tributary of Bush Gully Stream.

**Compliance Report:**

**Complies**

I did not substantiate any erosion of Bush Gully Stream at the time of the site visit.

- 
- 10 The erosion and sediment control section of the EMP may be amended at any time. Any amendments shall be:
- a. Only for the purpose of improving the efficacy of the erosion and sediment control measures and shall not result in reduced discharge quality; and
  - b. Consistent with the conditions of this resource consent; and
  - c. Submitted in writing to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, prior to any amendment being implemented.

**Compliance Report:**

**Complies**

The Environmental Management Plan was updated in March 2021 to version 4.0. Thank you for providing a copy. The update includes new layouts and maps of the site to reflect recent developments and sections on the current applications in process, but otherwise, in content, remains largely unchanged.

- 11 During the construction of the engineered landform, the Consent Holder shall apply best practice and all practicable measures to minimise the discharge of sediment-laden water into the tributary of Bush Gully Stream. The measures shall include but not be limited to:
- a. Minimising the area of disturbed land as far as practicable;
  - b. Diverting up-catchment surface water runoff around the construction area;
  - c. Using silt fences and decanting earth bunds while the haul road and permanent sediment control ponds are being constructed; and
  - d. Directing dirty water from the construction site to sediment retention ponds for treatment prior to discharge.

**Compliance Report:**  
**Not operational**

The North ELF final landform has been in its completed form since late 2019. Sediment may be re-mobilised again during the construction of the access and remaining drains (NELF Access and NELF Access Upper + 3 contour drains). **Please ensure to utilise appropriate ESC measures during construction.**

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- 12 The erosion and sediment control measures shall be inspected and maintained:
- a. In accordance with the Environment Canterbury's Erosion and Sediment Control Guidelines (ESCG) for the Canterbury Region, Report No. R06/23, February 2007, or any subsequent revision; or
  - b. An equivalent industry guideline, where it has been used to design erosion and sediment control measures.

**Compliance Report:**  
**Complies**

The North ELF ponds and other treatment infrastructure is maintained, as required.

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14 **Decommissioning**

Erosion and sediment control measures shall not be decommissioned until the site is stabilised and rehabilitated in accordance with CRC173889.

**Compliance Report:**  
**Not operational**

Full decommissioning has not yet started on site but will include the removal of the decant system from the pond infrastructure and the construction of an altered spillway to allow water to flow freely from the ponds into Bush Gully. This will occur following final rehabilitation of the North ELF and once 80% vegetation cover has been established.

- 
- 15 The following decommissioning measures shall be undertaken in the following order:
- a. All disturbed areas shall be stabilised and/or re-vegetated as soon as practicable following completion of the works;
  - b. Any visible debris, litter, sediment and hydrocarbons shall be removed from all sediment control measures; and
  - c. Erosion and sediment control measures shall be removed.

**Compliance Report:**

**Complies**

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- 20 In accordance with Condition 21. and Condition 22. water quality monitoring shall be undertaken when a discharge is occurring from the site for the following contaminants and at the stated frequencies:

<b>Contaminant</b>	<b>Frequency</b>
pH	Continuous (Every 15 minutes) with monthly manual testing
Turbidity (NTU)	Continuous (Every 15 minutes) with monthly manual testing
Electrical conductivity	Continuous (Every 15 minutes) with monthly manual testing
Boron (mg/L)	Monthly
Manganese (mg/L)	Monthly
Nickel (mg/L)	Monthly
Zinc (mg/L)	Monthly
Iron (mg/L)	Monthly (if pH is <4.5)
Aluminium (mg/L)	Monthly (if pH is <5.5 or >7.5)
Total Suspended Solids	Monthly

**Compliance Report:**

**Complies**

Water quality monitoring occurs as required by this consent and is reliably reported when requested or required. By previous agreement, sondes were removed during the summer and autumn periods to avoid drying of the sondes.

Sondes are redeployed during discharge and rainfall conditions to ensure data capture.

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- 21 Water quality samples shall be taken at the following locations:
- a. Turbidity shall be monitored at Topo50 BX21:1285-8832 (CC24) and Topo50 BX21:1280-8827 (CC24\_Turb); and
  - b. pH, electrical conductivity, Boron, Manganese, Nickel, Zinc, Iron, Aluminium and Total Suspended solids shall be sampled at Topo50 BX21:1285-8832 (CC24)

as shown on Plan CRC173823A, which forms part of this consent.

**Compliance Report:**

**Complies**

Sondes are installed and maintained for measuring pH, conductivity and turbidity at the discharge point. Grab samples are taken monthly in accordance with condition 20 and reported to Environment Canterbury in accordance with condition 34 and 35.

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22 Water quality sampling and analysis shall be undertaken as follows:

- a. pH, Turbidity and Electrical Conductivity shall be measured using a permanently installed sonde that measures every 15 minutes;
- b. Grab samples shall be taken for Boron, Manganese, Nickel, Zinc, Iron, Aluminium and Total Suspended Solids;
- c. All monitoring shall be undertaken by a suitably qualified and experienced person;
- d. All samples shall be analysed using the most appropriate scientifically recognized and current method by a laboratory that is accredited for that method of analysis by International Accreditation New Zealand (IANZ) or an equivalent accreditation organisation that has a mutual recognition arrangement with IANZ.

**Compliance Report:**

**Complies**

- a. complies: as noted under conditions 20 and 21
- b. complies: as noted under condition 20
- c. complies: Samples are taken by CCM staff who are suitably trained and experienced.
- d. complies; Sample analysis is undertaken by Eurofins ELS Limited, an IANZ accredited laboratory.

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23 Water quality sampling results shall be compared to the following trigger values:

<b>Contaminant</b>	<b>Trigger value</b>
pH*	Between 6-9
Turbidity	Less than 50 NTU increase from CC24 Turb
Boron**	0.83mg/L
Manganese	1.9 mg/L
Nickel***	0.011 mg/L
Zinc***	0.008 mg/L
Iron	1 mg/L
Aluminium	0.055 mg/L

\* Unless modified in accordance with Conditions 30. to 32.

\*\*Unless modified in accordance with Conditions 24. to 29.

\*\*\*Where the compliance limit (Australian and New Zealand Guidelines for Fresh and Marine Water Quality 95% TV) is modified by the hardness algorithm:  $TV(H/30)^{0.85}$

**Compliance Report:**

**Complies**

I received the water quality sample results for the period February 2021 - April 2021. The sample results were below trigger limits on all occasions.

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**33 Recording and Reporting**

When monthly sampling is undertaken, the Consent Holder shall also record:

- a. The name of the person collecting samples;
- b. The date and time the samples were collected;
- c. The weather and flow conditions at the time of sampling; and
- d. The rainfall data associated with the sampling events, including the:
  - i. Date;
  - ii. Time;
  - iii. Duration; and
  - iv. Rainfall depth.

**Compliance Report:**

**Not monitored**

The lab report sheets include the name of the sampler. The remainder of the information is typically reported as part of the annual report and is therefore not graded on this occasion.

---

- 34 The Consent Holder shall provide the results of the analyses undertaken in accordance with Conditions 20. to 23. inclusive, to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance every three months.

**Compliance Report:**

**Complies**

Samples results are provided regularly in accordance with this condition.

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- 36 If the results of any sampling exceed any of the trigger values listed in Condition 23. then the Consent Holder shall:
- a. Notify the Canterbury Regional Council, Attention; Regional Leader Monitoring and Compliance within 24 hours of receiving the sampling results;
  - b. Investigate the possible cause of the exceedance;
  - c. Identify the risk to the environment from the exceedance;
  - d. Undertake steps to minimise the risk of future exceedances within ten working days of receiving sampling results; and
  - e. Provide a report to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance that:
    - i. Outlines the findings of the investigation;
    - ii. Any proposed mitigation measures; and
    - iii. The timeframe for implementing any proposed mitigation measures.

**Compliance Report:**

**Complies**

Trigger level exceedances are reliably reported to the CRC and the content of the investigations address the requirements of the condition, incl. photographic evidence.

Since January 2021, the following notifications were provided:

-01-01-2021: rainfall but appears to be unrelated to intensity, accumulation of sediment around sonde likely

-09-01-2021: no rainfall, unrelated to intensity or duration of discharge

-15-01-2021: no rainfall, low discharge, at time of water sampling

-17-01-2021: no rainfall or change to discharge, unrelated to intensity, water quality tested and good

-22-01-2021: no rainfall, unrelated to intensity of discharge (declining)

25-01-2021: no rainfall, low discharge, likely algal accumulation on sonde

-27-01-2021: no rainfall, low discharge, spike exceedance

-01-02-2021: no rainfall, low discharge, spike exceedance

-05-02-2021: no rainfall, low discharge, 30 min spike exceedance

-12-02-2021: no rainfall, low discharge, during reducing discharge, water quality ok

-19-02-2021: no rainfall, low discharge, unrelated to intensity

-26-02-2021: 0.2 mm rainfall, low discharge (10 ml/s), spike exceedance

-02-03-2021: no rainfall, low discharge, spike exceedance, dense algal growth

-06-03-2021: 6 mm rainfall, very low discharge, spike exceedance, water quality found to be good

-21-03-2021: no to low rainfall (0.2mm), low discharge, spike exceedances

-03-04-2021: no rainfall, low discharge, unrelated to intensity, spike exceedance

-15-04-2021: no rainfall, multiple spikes unrelated to intensity of discharge, water quality found to be good

I also received a summary of notifications for CC24 on 17 May 2021 for the period Nov 2019 to

now. Discharge is more regular from this site than CC02 to consistently maintain flows in Bush Gully Stream. Typically, discharge ranges between 10-100 mL/sec and therefore, while most exceedance notifications occur at times of no rainfall, they do occur during active discharge. The data analysis provided shows that the majority of the exceedances are spike exceedances (as noted above, mostly unrelated to intensity of discharge) that occur for a duration of less than 1 hour. 53 notifications were sent for exceedances during times of discharge; 34 at times of no discharge.

The average discharge rate for trigger exceedance events are for flow rates <1 L/sec and investigations at the time (as noted above) show that water quality from the ponds was within acceptable levels. Only 6 notifications were for exceedances during flow rates of > 1 L/sec.

Therefore, the following proposal was provided:

- reporting when discharge is at or greater than 1 L/sec and when the trigger length is longer or equal to 3 hours.
- I note that data should still be available upon request and/or as suggested, reported within the annual report each year.

**I confirm that the above is an agreeable proposal and reporting of turbidity exceedances should therefore resume with the above agreed criteria. As noted in the proposal, any data loss should still be reported, irrespective of length of weather events.**

### **General comments**

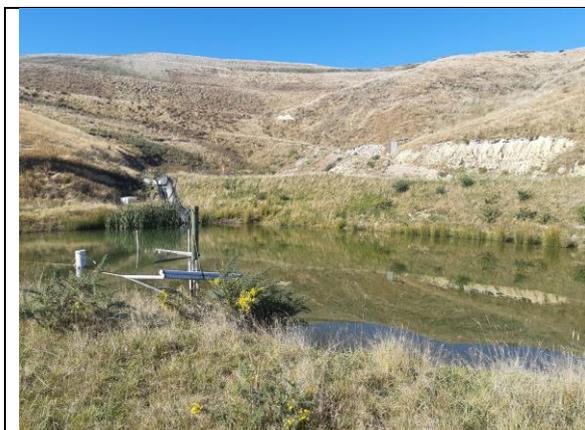


Photo 1: North ELF pond and North ELF in background



Photo 2: North ELF pond spillway

I visited the coal mine together with ECan colleague Mike Seque on 28 April 2021. Thank you for your time on the day.

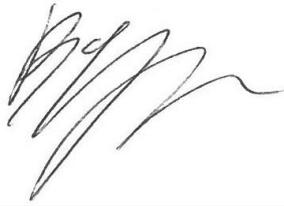
The water treatment infrastructure is still operational, largely unchanged, but will start to undergo changes with the intended mine closure.

In preparation of the site visit I have also received a draft copy of the Mine Closure Plan and an updated Environmental Management Plan. The latest water quality monitoring samples are also summarised in this report.

As discussed on site, a summary of exceedance notifications with a recommendation for ongoing reporting was provided on 17 May 2021 via email. I confirm that the proposal is agreeable and that reporting of turbidity notifications can resume in alignment with the proposal.

**Date Inspected:** 28 April 2021

**Monitored By:** Katie Nagy



Signature: \_\_\_\_\_

Regional Gravel Officer

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### ***General information***

#### **Canterbury Regional Council Obligations**

Under Section 35 of the Resource Management Act 1991, the Canterbury Regional Council has a duty to monitor all resource consent exercised within its region, to make sure all the conditions are being complied with.

#### **Monitoring Frequency**

The frequency with which your consent is monitored will vary according to the type of activity your consent authorises, the conditions imposed and the extent to which you have complied with these conditions on previous visits. **If you fully comply with all conditions then frequency will reduce to the minimum set for the activity.**

#### **Costs**

It is the Council's policy to recover all actual and reasonable costs of compliance monitoring of resource consents.

27 May 2021

Bathurst Coal Limited  
Level 12  
1 Willeston Street  
Wellington Central  
**Wellington 6011**

Dear Eden,

### **Compliance Monitoring Report**

Please find enclosed your compliance monitoring report for the following activity. It contains important information which needs to be read carefully.

**Consent number:** CRC170541  
**Location:** Bush Gully Road, Coalgate  
**Description:** To discharge treated mine water into Tara Stream.

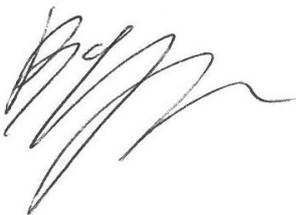
**Overall Inspection Compliance: Complies**

Thank you for complying with the resource consent conditions that have been monitored.

**Important:** *The Overall Inspection Compliance grade above relates only to the conditions monitored as part of this inspection. It does not change the status of previous grades received for other consent conditions. If you have received a non-compliance grade for other conditions, please continue to take appropriate action to achieve or maintain compliance.*

If you would like any further information regarding this report, please do not hesitate to contact me.

Yours sincerely



**Katie Nagy**  
Regional Gravel Officer

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**Consent No:**        **CRC170541**

<b>Description of consent</b>	<b>Date Consent Number Issued</b>
To discharge treated mine water into Tara Stream.	24 Jan 2017
<b>Location</b>	<b>Expiry Date</b>
Bush Gully Road, Coalgate	24 Jan 2032

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**Conditions & compliance**

- 1        The discharge of contaminants shall be limited to the following:
- a. Stormwater run-off during rainfall events;
  - b. Mine affected water;
  - c. Treated mine water including residual contaminants from the treatment of mine water; and
  - d. Water discharges from engineered landforms

from the Canterbury Coal Mine into Tara Stream, at or about NZ Topo50 BX21:1395-8803 (CC02) as shown on Plan CRC170541A, which is attached to, and forms part of this consent.

**Compliance Report:**

**Complies**

The discharges are consistent with the above description. I note that discharge from the Tara pond hardly occurs as water is cycled back regularly and stored in other pond infrastructure. At the time of the site visit, works were progressing well for the establishment of an additional mussel shell reactor in alignment with the Draft Closure Management Plan.

- 
- 3        The discharge shall not at any time result in:
- a. The production of oil or grease films, scums, foams, floatable or suspended materials, nor any conspicuous change in colour in the Tara Stream at the edge of the mixing zone; or
  - b. The emission of objectionable odour from the Tara Stream.

For the purposes of this consent, the mixing zone shall be immediately below the discharge point in times of no flow, or a maximum of 20 metres below CC02 when there is flow occurring in Tara Stream as shown on Plan CRC170541B, which is attached to, and forms part of this consent.

**Compliance Report:**  
**Not operational**

At the time of the site visit there was no active discharge from the Tara pond into Tara Stream. Discharge does not occur on a regular basis as water is retained elsewhere within the mine catchment.

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- 7 The discharge of contaminants into Tara Stream from the site shall be managed in accordance with the site water management section of the Canterbury Coal Mine Environmental Management Plan (EMP) prepared in accordance with Condition 8.

**Compliance Report:**  
**Complies**

The discharges are managed in accordance with provided plans. An update to the EMP has recently been provided (March 2021) and is held on file. **Please ensure to provide regular updates of the site's treatment infrastructure throughout the closure and rehabilitation process.**

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- 8 Within one month of the commencement of this consent, the Consent Holder shall submit to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance, a site water management plan that outlines how the conditions of this consent shall be complied with, and includes, but is not limited to the following content:
- a. Responsibilities for site management;
  - b. Methods for avoiding and minimising the production of acid mine drainage and sediment-laden stormwater;
  - c. Treatment methods for mine affected water, including:
    - i. Overburden management options to reduce contaminant loads;
    - ii. A description of the products or materials to be used;
    - iii. The location of treatment areas; and
    - iv. Details of any monitoring of treatment efficiency; and
  - d. Water quality monitoring procedures

A copy of the Site Water Management Plan shall be provided to Te Taumutu Runanga and Te Ngai Tuahuriri Runanga.

**Compliance Report:**  
**Complies**

The Environmental Management Plan was updated in March 2021 to version 4.0. Thank you for providing a copy.

The update includes new layouts and maps of the site to reflect recent developments and sections on the current applications in process, but otherwise, in content, remains largely unchanged.

- 
- 9 The Consent Holder shall undertake all practicable measures to minimise contaminants discharged into Tara Stream, including but not limited to:
- a. Predicting the location and quantity of acid forming rock to be excavated;
  - b. Managing the excavation and placement of acid forming rock to minimise exposure to oxygen and water as necessary to meet the water quality trigger values;
  - c. Providing storage capacity on site and re-using drainage water; and
  - d. Treating run-off ,if required, to meet the trigger values in Condition 14. using a number of methods which may include:
    - i. Directing run-off water through a passive treatment system such as a sulphate reducing bioreactor; or
    - ii. Dosing collection ponds with limestone based products and/or other neutralizing agents, or flocculants; or
    - iii. Discharging coal combustion residuals on site in accordance with CRC170540; or
    - iv. Any other method described in the DMP.

**Compliance Report:**

**Complies**

The treatment infrastructure currently remains largely unchanged but will undergo significant changes with the intended mine closure.

Ongoing risk assessments, particularly over the upcoming winter period, will be critical to ensure that discharges to Tara Stream are minimised, as required by the consent.

The Tara catchment encompasses (currently) rehabilitated slopes, the surge and dust pond, the workshop area and the polishing pond. The second polishing pond will not be constructed.

Construction of a new mussel shell reactor at the bottom of the Tara catchment was well underway at the time of the site visit. Further plans for this year include (quoted in the Draft Closure Plan) constructing the NO<sub>2</sub> pond as a dry basin by June 2021, decommissioning and filling of the dust pond by July 2021 (material to come from the box cut) and the commissioning of the mussel shell reactor. The surge pond will remain in place during the operational stage (active mining until July 2021 and active decommissioning and earthworks).

It is noted in the plan that the existing infrastructure will remain during the operational phase of mining. Modification of the treatment infrastructure will commence during active decommissioning earthworks. During this time, the NO2 pit will become the primary sum to collect surface flows from the catchment with a final capacity for a 1:10 year 24-hour rainfall event. Capacity will be larger during construction of the box cut, the most critical part of the works in this area.

- 10 All run-off from the site shall where practicable be directed to one or more storage and/or treatment locations to enable treatment of water prior to discharge into Tara Stream.

**Compliance Report:**  
**Complies**

The current infrastructure remains unchanged. Condition 9 briefly addressed some of the upcoming changes to the system and more detail can be found in the Draft Closure Plan. **Please ensure to provide updates if plans change, with amendments to the ESCP where required.**

- 11 In accordance with Condition 12. and Condition 13. water quality monitoring shall be undertaken when a discharge is occurring from the site for the following contaminants and at the stated frequencies:

Contaminant	Frequency
pH	Continuous (Every 15 minutes) with monthly manual testing
Turbidity (NTU)	Continuous (Every 15 minutes) with monthly manual testing
Electrical conductivity	Continuous (Every 15 minutes) with monthly manual testing
Boron (mg/L)	Monthly
Manganese (mg/L)	Monthly
Nickel (mg/L)*	Monthly
Zinc (mg/L)*	Monthly
Iron (mg/L)	Monthly (if pH is <4.5)
Aluminium (mg/L)	Monthly (if pH is <5.5 or >7.5)

**Compliance Report:**  
**Complies**

Water quality monitoring occurs as required by this consent and is reliably reported when requested or required.

By previous agreement, sondes were removed during the summer and autumn periods to avoid drying of the sondes. Sondes are redeployed during discharge and rainfall conditions to ensure data capture.

12 Except as provided for by Condition 15., water quality samples shall be taken at the following locations:

- a. Turbidity shall be monitored in the discharge; and
- b. pH, electrical conductivity, Boron, Manganese, Nickel, Zinc, Iron and Aluminium shall be sampled at the edge of the mixing zone.

For the purposes of this consent, the mixing zone shall be immediately below the discharge point in times of no flow, or a maximum of 20 metres below CC02 when there is flow occurring in Tara Stream as shown on Plan CRC170541B, which is attached to, and forms part of this consent.

**Compliance Report:**

**Complies**

Sondes are installed and maintained at CC02 for measuring pH, conductivity and turbidity at the discharge point. Grab samples are taken monthly in accordance with condition 11 and reported to Environment Canterbury in accordance with condition 23 and 24.

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13 Water quality sampling and analysis shall be undertaken as follows:

- a. pH, Turbidity and Electrical Conductivity shall be measured using a permanently installed sonde that measures every 15 minutes;
- b. Grab samples shall be taken for Boron, Manganese, Nickel, Zinc, Iron and Aluminium;
- c. All monitoring shall be undertaken by a suitably qualified and experienced person;
- d. All samples shall be analysed using the most appropriate scientifically recognized and current method by a laboratory that is accredited for that method of analysis by International Accreditation New Zealand (IANZ) or an equivalent accreditation organisation that has a mutual recognition arrangement with IANZ.

**Compliance Report:**

**Complies**

- a. complies: as noted under conditions 11 and 12
  - b. complies: as noted under condition 12
  - c. complies: Samples are taken by CCM staff who are suitably trained and experienced.
  - d. complies; Sample analysis is undertaken by Eurofins ELS Limited, an IANZ accredited laboratory.
-

14 Water quality sampling results shall be compared to the following trigger values:

Contaminant	Trigger value
pH	Between 6-9
Turbidity	50 NTU
Boron*	1.5 mg/L – three month rolling median
Manganese	1.9 mg/L
Nickel**	0.011 mg/L
Zinc**	0.008 mg/L
Iron	1 mg/L
Aluminium	0.055 mg/L

\*Until modified in accordance with Conditions 16. to 21.

\*\*Where the compliance limit (Australian and New Zealand Guidelines for Fresh and Marine Water Quality 95% TV) is modified by the hardness algorithm:  $TV(H/30)^{0.85}$

### **Compliance Report:**

#### **Complies**

I received water quality samples for the period February 2021 - April 2021.  
The sample results were below trigger limits on all occasions.

## **22 Recording and Reporting**

When monthly sampling is undertaken, the Consent Holder shall also record:

- a. The name of the person collecting samples;
- b. The date and time the samples were collected;
- c. The weather and flow conditions at the time of sampling; and
- d. The rainfall data associated with the sampling events, including the:
  - i. Date;
  - ii. Time;
  - iii. Duration; and
  - iv. Rainfall depth.

### **Compliance Report:**

#### **Not monitored**

The lab report sheets include the name of the sampler. The remainder of the information is typically reported as part of the annual report and is therefore not graded on this occasion.

- 
- 23 The Consent Holder shall provide the results of the analyses undertaken in accordance with Conditions 11. to 14. inclusive, to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance every three months.

**Compliance Report:**

**Complies**

Samples results are provided regularly in accordance with this condition.

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- 25 If the results of any sampling exceed any of the trigger values listed in Condition 13. then the Consent Holder shall:
- a. Notify the Canterbury Regional Council, Attention; Regional Leader Monitoring and Compliance within 24 hours of receiving the sampling results;
  - b. Investigate the possible cause of the exceedance;
  - c. Identify the risk to the environment from the exceedance;
  - d. Undertake steps to minimise the risk of future exceedances within ten working days of receiving sampling results; and
  - e. Provide a report to the Canterbury Regional Council, Attention: Regional Leader Monitoring and Compliance that:
    - i. Outlines the findings of the investigation;
    - ii. Any proposed mitigation measures; and
    - iii. The timeframe for implementing any proposed mitigation measures.

**Compliance Report:**

**Complies**

Trigger level exceedances are reliably reported to the CRC and the content of the investigations address the requirements of the condition, incl. photographic evidence.

Since January 2021, the following notifications were provided:

- 05-01-2021 - no rainfall, no discharge, likely algal growth
- 18-01-2021 - data loss due to wire disconnection, rainfall but no discharge
- 27-01-2021 - data loss due to wire disconnection, manual error, rainfall but no discharge
- 04-04-2021 - no rainfall and no discharge
- 10-05-2021 - malfunction of CC02\_tele after rewiring. Rainfall but no discharge.

I also received a summary of notifications for CC02 on 17 May 2021 for the period Nov 2019 to now. Data analysis shows that there have been no recorded trigger events during times of discharge. Some trigger events occur however at the start/ end of the pumped discharge due to the first flush disturbance rather than high turbidity in the discharge itself. The summary of data

indicates, and as has been reported in previous monitoring reports, that the vast majority of events are related to biofilm build up on the sensor or background turbidity (no discharge at the time).

It has therefore been proposed to reduce the requirement of reporting to the following:

- no reporting required at times of no discharge. Records are available for active discharge and this is measured at the CC02\_tele sonde, therefore capturing discharge from the surge/dust pond
- reporting required for discharge greater or equal to 1 L/sec and trigger length of min 60 minutes. This would therefore exclude pump start up notifications, debris/ algal related disturbance or low flow issues.
- I note that data should still be available upon request and/or as suggested, reported within the annual report each year.

**I confirm that the above is an agreeable proposal and reporting of turbidity exceedances should therefore resume with the above agreed criteria. As noted in the proposal, any data loss should still be reported, irrespective of length of weather events.**

---

### **General comments**

I visited the coal mine together with ECan colleague Mike Seque on 28 April 2021. Thank you for your time on the day.

The water treatment infrastructure is still operational, largely unchanged, but will start to undergo changes with the intended mine closure.

In preparation of the site visit I have also received a draft copy of the Mine Closure Plan and an updated Environmental Management Plan. The latest water quality monitoring samples are also summarised in this report.

As discussed on site, a summary of exceedance notifications with a recommendation for ongoing reporting was provided on 17 May 2021 via email. I confirm that the proposal is agreeable and that reporting of turbidity notifications can resume in alignment with the proposal.



Photo 1: Current extent of the mining pit. Proposed locaiton of box cut in the foreground.

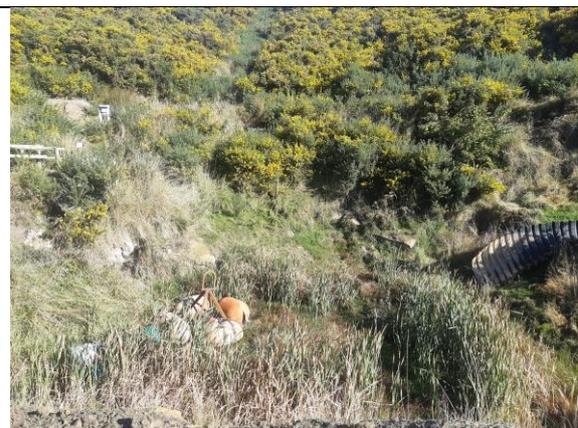
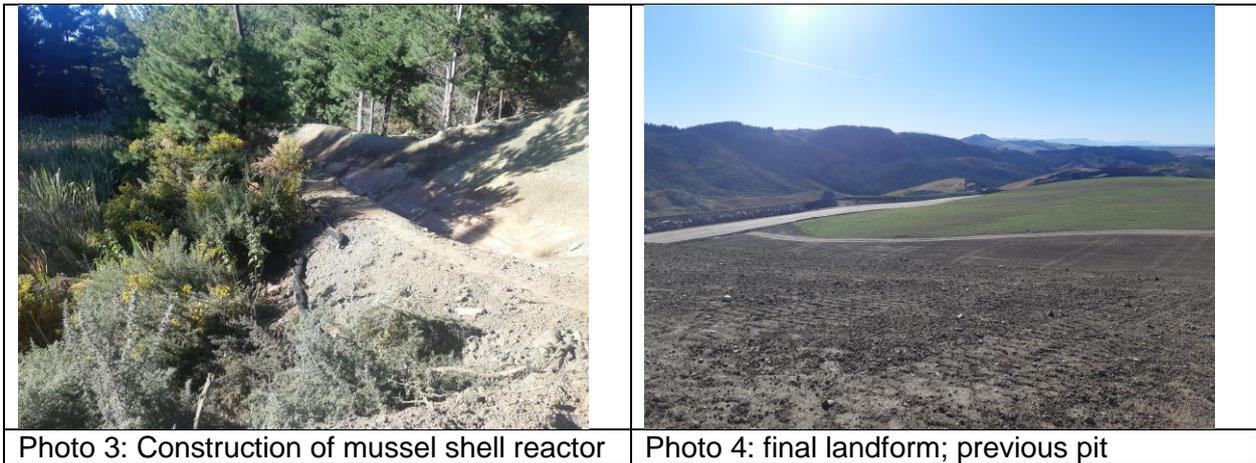


Photo 2: Tara pond, currently dry



**Date Inspected:** 28 April 2021

**Monitored By:** Katie Nagy

Signature: \_\_\_\_\_

Regional Gravel Officer

**General information**

**Canterbury Regional Council Obligations**

Under Section 35 of the Resource Management Act 1991, the Canterbury Regional Council has a duty to monitor all resource consent exercised within its region, to make sure all the conditions are being complied with.

**Monitoring Frequency**

The frequency with which your consent is monitored will vary according to the type of activity your consent authorises, the conditions imposed and the extent to which you have complied with these conditions on previous visits. **If you fully comply with all conditions then frequency will reduce to the minimum set for the activity.**

**Costs**

It is the Council's policy to recover all actual and reasonable costs of compliance monitoring of resource consents.