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15 March 2019

Bellbird Consulting Group Ltd
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For: Janette Dovey

Dear Janette

RC185622/RC185640 – Canterbury Coal Mine - Responses to RFI

This letter (and **attachments**) provide Bathurst Coal Ltd's responses to the RFI set out in your letter of 13 December 2018.

While you have grouped the two applications together we confirm our view that they are separate applications and should be treated as such particularly with respect to the issue of notification. When assessed against the Selwyn District Council (**SDC**) Consented Baseline the effects of the current and proposed mining operations at the Canterbury Coal Mine site are no more than minor and with respect to the proposed increased traffic movements expert assessment demonstrates that notification should be limited to adjacent landowners along the Bush Gully and Malvern Hill Roads.

While acknowledging the relevance of biodiversity to the District Plan, we have concerns that the the SDC may be going beyond its functions under the Resource Management Act 1991 (**RMA**) particularly relating to water quality issues. As you know these are, and have been, fully canvassed with Environment Canterbury (**ECan**) and Bathurst holds a number of regional consents relating to its discharges. The allocation of responsibilities in the RMA does not require us to demonstrate for a second time issues around the appropriate parameters of our water discharges when these fall within the responsibility of Ecan and have been appropriately assessed and provided for by them.

In preparing this response to the RFI we have re-engaged with a number of our experts to consider the further issues raised and to respond to those. The length of time between receiving your letter (just prior to Christmas) and this formal response is as a result of the intervening Christmas holiday period (and consequent unavailability of experts) and the need for those experts to come out to the mine. We record that we have been progressing our responses as expeditiously as possible and have kept you up to date on progress.

We have grouped our responses under topic headings generally following the order of your letter. In response to some of questions and possible concerns raised in your initial review of the application, we have made some small amendments to the application as well as providing further clarification – and have flagged these in this response. We have also proposed additional conditions for the proposed consents and the revised set of conditions are set out in **Attachments 1 and 2**.

Before addressing the content of your RFI, one further matter we would like to raise relates to noise complaints received by SDC and our responses to that. We have recently provided SDC with a table which sets out what activities we were undertaking at the times the complaints were made. What is particularly interesting is the number of complaints made about noise from the mine when in fact it was not operating. This suggests that there may be another source of noise in the district and that we may be getting the “blame” for noise from this source at other times as well.

We also understand that monitoring by SDC has not shown us to be in breach of SDC Plan limits.

Transport

Please see the attached report (**Attachment 3**) from Abley. This report addresses the issues raised around the assessment of traffic effects against the SDC Consented Baseline (concluding that any difference between the SDC Consented Baseline and the operational baseline is immaterial for the traffic assessment), sightlines, access to the mine and signage.

With respect to the issue of sealing, we note that Bush Gully and Malvern Hills Roads are public roads owned and administered by SDC. Unlike the more usual situation where a developer is undertaking a subdivision and as part of that lays out roads which later vest with the relevant district council we do not own or control these roads (or the land under them). We are not the road controlling authority so are not in any position to legally undertake the sealing of the road without the permission of SDC nor are we in the business of road building. Without the express agreement of SDC we cannot authorise any party to carry out works on the public roads. Accordingly more is required – legally – than SDC not opposing the sealing of the relevant parts of the preferred route.

We have committed to funding the road sealing and are continuing our discussions with road design engineers, contractors and the SDC roading engineers. The logical process seems to us to be that the SDC confirms the design and oversees the sealing of the road and that we pay for those works.

In our proposed conditions we propose a cap (as yet unquantified as we simply do not know what it is) on costs for road sealing as we are flagging that it would be unreasonable for us to be expected to provide an “open chequebook”. We are however committed to covering the fair and reasonable costs for the work and the cap we propose will reflect this. This is still an ongoing process and when the costs are known they can be incorporated into the conditions.

With respect to sightlines, NZTA and Road Controlling Authorities have the statutory power and responsibility to maintain sightlines and there is a valid expectation that they do so. We refer to advice from Lane Neave previously provided to SDC in relation to this. The Abley report identified that these are currently not being maintained as they should be and the costs of these agencies performing their legal functions is not one that should fall on Bathurst.

Prior to completion of the sealing, interim measures need to be undertaken to manage any adverse effects from the use of the road and hence the mitigation offered in the application.

The application proposes providing and using the water cart, which is a service vehicle, for dust suppression purposes until the road is sealed and has already proposed a condition accordingly. Please note that we have proposed an amendment to this condition (proposed condition 8) to clarify the intention of the management plan.

As background; the water cart currently operates when the access roads (Bush Gully and Malvern Hills Roads) are dusty and we propose a continuation of this mitigation method. The

water cart currently being used is on long-term hire. It holds 10,000 litres when full and travels at 6km/hr when spraying water, taking about 35 minutes to empty. Each tank usually wets about 4km of road. Including travel to the water pump, it takes approximately 25 -35 minutes to fill the tank. In a normal 10 hour day the cart treats approximately 36km of road. The water cart primarily wets the areas either side of the residences for 100 to 200m with lesser passes outside of these areas. Dust suppressants have been used in the past and may be used again in the future. These were approved by the SDC prior to application and are often used in these situations.

We therefore do propose that the unsealed sections of the preferred route be sealed and we will fund the reasonable costs of that sealing but that the sealing will depend on road controlling authority i.e. SDC legally authorising it. Until such time as the road is sealed we are proposing interim mitigation as set out above.

Regarding provision of the traffic management plan and other management plans, we refer you to the attached response from Lane Neave (**Attachment 4**). In summary, we are advised that it is usual for management plans to be drafted and provided to council for approval or certification post granting of a consent. Thus we will not be providing management plans at this stage of the application process and that is standard procedure with adaptive management – rather we are expecting to formulate the required ones that give effect to clear objectives and measureable standards once the consent has identified how many are required and the issues they are to address.

Consultation – Affected Parties and Iwi

We have been actively consulting with the residents of Bush Gully and Malvern Hills Roads to discuss any concerns that they may have about the proposed traffic movements as well as more generally any aspect of our existing operations. Common feedback from the consultation includes a general interest in establishing a community liaison group. While we had already proposed to establish a community liaison officer and to attend community board meetings as requested we are more than happy to establish a targeted community liaison group. We therefore propose a further condition of consent as follows:

The consent holder will establish a community group for the residents of the Malvern Hills and Bush Gully Roads. The consent holder will facilitate meetings of the group to be held initially at least quarterly. The purpose of meetings will be for residents of Malvern Hills and Bush Gully Road to review designs for the sealing of the Preferred Route and raise concerns or issues around the operation of the Canterbury coal mine including trucking associated with the mine. The consent holder will consider all issues raised and will where practicable (and within the parameters and scope of the consents it holds) make changes to its operational practices to address the concerns raised around the operation of Canterbury Coal Mine. The consent holder will keep a record of meetings and actions.

With respect to iwi consultation we have sought feedback and advice from the Papatipu Runanga through Mahaanui Kurataiao (**MKT**) and have also met to discuss the land-use application and the relationship between this and our future consenting plans. We are still waiting feedback from MKT as to whether they require a cultural impact assessment (**CIA**). Once we have confirmation this will be provided along with an approximate timeframe for production of a CIA if this is required.

Archaeological and Cultural

The attached report from WSP OPUS addresses the questions raised in paragraphs 10 and 11. (**Attachment 5**). WSP Opus have recommended developing an Archaeological

Management Plan (**AMP**) and we accept this and suggest it form a condition of consent, as follows:

An Archaeological Management Plan shall be developed for the site and this shall be provided to the Selwyn District Council once it is finalised.

We have engaged WSP Opus to assist with this work once the consents are granted. The report has also recommended that an Archaeological Authority will be required from Heritage New Zealand Pouhere Taonga. We have commenced the application process and have held a pre-application meeting and discussed the application with MKT.

Machinery

Before moving on to the next sections of the RFI it might be helpful to clarify apparent discrepancies between machinery lists in the application and the AEE. We confirm the list below has been used for all assessments.

However, we re-iterate that machinery will necessarily change from time to time as the tasks onsite change. Some machines are hired as they are only required for a specific short-term task or they may need to be swapped out for another machine as the operation changes or as major refurbishment is carried out:

1x 100-120 tonne excavators

5x 40-80 tonne excavators

2x 20-40 tonne excavator

2x 20-40 tonne bulldozer

1x 20 tonne grader

2x 20-40 tonne loaders

4x 50 tonne (tare) rigid dump trucks

4x 70 tonne (tare) rigid dump trucks

4x 40 tonne (tare) articulated dump trucks

Coal processing plant

6x generators

1x 30 tonne mobile crusher

1x mobile screen

1x surface drill rig and hammer

Lighting

We have previously discussed what lighting must have been authorised by RC175261 which granted Bathurst the right to operate at night. We are advised that as a matter of law by granting that consent SDC has also granted all ancillary rights necessary to be able to utilise the consent. It is not conceivable that SDC could have expected mining and mining operations to be conducted in the dark without the use of sufficient lighting to meet health and safety requirements and to be able to see to mine etc, and the fact remains that light spill is able to occur as a permitted activity providing the performance criteria in the Selwyn District Plan are met.

Boffa Miskell has carried out a night time lighting assessment (**Attachments 6 and 7**). That assessment concludes and confirms that light spill is negligible. We have proposed that lighting effects be addressed through the Environmental Management Plan (**EMP**) using the

UK Guidance notes with respect to luminaire angle and think this appropriately addresses this issue.

Scale of Activity

We have reviewed the Mine Operations Area and made some adjustments to the boundaries to remove an area of wetland in Tara Gully and some seep areas along the northern boundary. The total Mine Operations Area is now 102.6 ha compared to 116.7 ha shown in the original application. An updated plan to replace Figure 16 in the original land use application is attached as **Attachment 8**. The purpose of the Mine Operations Area remains as stated in the application, that is:

“The Mine Operations Area is the outer envelope of all mining and ancillary activities that may occur at the mine, allowing room for ancillary activities to move or be relocated as is required to successfully operate the mine.”

The ancillary activities include among other things, construction and maintenance of stock fences, sediment control structures, monitoring stations, sediment sumps and access tracks. This area also allows for variation to the mine pit boundaries where there remains some uncertainty with the overburden or coal seam geology.

The updated plan shows the Mine Operations Area, areas that have been disturbed, mine pit areas planned to be disturbed, and areas between the mine pits and the outer boundary of the Mine Operations Area where disturbance may occur. While there are areas within the Mine Operations Area where disturbance is unlikely, the total consent footprint needs to include this area to enable access for ancillary activities such as establishment or removal of silt fences, monitoring stations (e.g. dust), or vehicle access. The extent of disturbance in the remaining blue shaded area labelled; *“surface disturbance possible (ancillary mining activities)”* is less certain. Some disturbance in this area is likely, although it is unlikely that all this area will be disturbed. Currently the mine plans are not sufficiently detailed to be able to determine with pinpoint accuracy the extent of disturbance. Mine plans are continually reviewed and updated as further information is made available e.g. geology is refined through the mining process. As is currently the case, the annual work plan submitted to Council includes a description of the areas disturbed in the previous 12 months and the areas planned to be disturbed in the following 12 months.

We have shown the areas disturbed by pit excavation and Engineered Land Form (**ELF**) construction (pink shading 57.11 ha) and those areas planned for disturbance by pit excavation and ELF construction (Pink hatching 10.6 ha). Most of this hatched area has been disturbed by the land owner within the last 18 months for forestry harvesting operations.

The small area shown as *“MSR planned”* is referred to in CRC173823, and in the EMP (Section 6.5.3 and Figure 19). This is an area set aside to construct a passive water treatment system (Mussel Shell Bioreactor (**MSR**)) for Acid Mine Drainage (**AMD**) leachate from the North ELF, should this occur. This system will only be constructed if water monitoring results exceed the consent trigger levels. The size of this system and area required will be determined by a revision of the AMD modelling that considers flow rates and the concentration of the measured parameters. Material excavated during construction of the MSR will be used for bunds and safety windrows. The location for the MSR is flat pasture.

We wish to retain access over all the areas consented by the SDC 1998 consents, including the mine pits, stockpile and overburden storage areas shown on the plan that are outside of the Mine Operations Area.

In relation to question 17 the maximum production will be 185,000 tonnes per annum. This does not impact on or change any of the vehicle movements or assessments.

You have requested the maximum number of workers on-site at any one time be provided for night-time hours. For the purposes of an assessment we advise that the maximum number of personnel on night shift is likely to be 15 people. However, this will depend on operational and sales requirements and could change at any time at short notice. Flexibility needs to be reflected in the consent conditions and we would prefer that there are no limits on staff numbers given the negligible impact that this has on environmental effects. Bathurst maintains that the effects of staff on site depend on the activities that they are undertaking and this can be managed through conditions such as noise limits.

Noise, Vibration and Disturbance

Attachment 9 from Marshall Day Acoustics addresses the questions raised in paragraphs 19 to 31 of your letter.

District Plan Rules

Solid Waste

You have asked for our consideration with respect to Rules 8.1.1 and 8.1.6.2, and whether the CCR contains “hazardous substances” (as per the Plan definition of same) and our interpretation of the Solid Waste rule. Please see our separate response regarding CCR and hazardous substances and solid waste within the Lane Neave response (**Attachment 4**).

In relation to your question about mussel shell volumes; to date, approximately 300 tonnes of mussel shells have been incorporated into the ELF. However we expect the volumes may be higher in the future, potentially up to 50 tonnes per week.

Indigenous Vegetation

Please see the Lane Neave response regarding interpretation of Rules 9.21.1.4 and 9.21.3.

As at 15 March 2019 construction of Tara Gully Pond 2 had not commenced and there are no immediate plans to do so. We have reviewed the water management system within the mine footprint to determine whether the most recent mine designs enable sufficient water storage capacity within the existing footprint and therefore remove the necessity to construct this water retention pond. We are also consulting with ECan to determine whether they require this pond to be constructed to create security for the quality of the water discharges. In the interim and until water management is proven, we wish to retain the option to build this pond. This pond will only be built if the existing designs are shown to be insufficient to manage the quality of water being discharged and therefore avoid any adverse effects on Tara Stream.

Landscape

Attachments 10 and 11 from Boffa Miskell provides the computer simulated visualisations requested in paragraph 34.

To address paragraph 35, the final landform will be completed in stages, as this is most efficient and enables the site to progressively rehabilitate the mine and to release rehabilitated areas back to the landowner for later use as either forestry or for farming operations.

The final landform provided in Appendix 12 of the original application was noted as a draft and was a concept plan for the full life of the mine for the next 10 -15 years. The plan shown in

Figure 6 of the of the Landscape and Visual Scoping Report - Graphic Supplement (Appendix 6) is the best representation of the final landform. This plan is conceptual as it will depend on the final volumes of material extracted. Final volumes will only be known when the detailed coal and overburden geology model is finalised, and detailed mining costs considered. The landform shown is the most realistic landform shape based on current modelling and projections.

As outlined in the EMP, the intention for rehabilitation is to create a landform closely resembling the existing pre-mining landform, as per the land access agreement. Topsoil will be re-spread and in the case of the existing pasture areas, grass re-spread and in the existing forestry areas, pine trees replanted.

Question 37 asked questions about the presentation in Appendix 12 of the application. This was a draft conceptual design that has now been superseded. There are currently no intentions to construct ex-pit ELF's in this area.

In response to question 38, **Attachment 12** shows the landform and original landform using LIDAR data taken at the time the mine was purchased.

Ecology/Biodiversity

Paragraph 39 requested a consented baseline document for the ECan consents. We understand that you also requested this information from ECan and they are preparing a separate document, which remains in draft, and they were not yet in a position to share this with us so that an agreed position can be established. In order to ensure transparency, we will be providing ECan with this RFI response document along with our interpretation of the ECan consented baseline.

Table 1 below summarises in some detail each of the ECan consents. We note that some consent applications are on hold with ECan while this application is being processed. As you will be aware these consent applications were lodged in good faith on the understanding that Bathurst had all required SDC landuse consents (a position supported by a QC opinion).

However as SDC holds a differing point of view ECan has placed these applications on hold until this land use consent application is approved.

We also note that there are now a number of inconsistencies between the ECan and SDC consent boundaries, and prior to recommencing processing of the the ECan consent applications we will seek to align the boundaries with the SDC boundaries. In particular with respect to CRC 170541 and CRC 1874166.

TABLE 1						
Resource Consent No.	Resource Consent Type	Issuing Authority	Purpose	CONSENT HISTORY	Dated Issued	Expiry
CRC146449	Discharge permit	ECAN	To discharge contaminants into the air from coal mining operations.	<ul style="list-style-type: none"> • CRC992627 – original consent granted on 23 March 2000. • CRC146449 - replaced CRC992627 on 12/2/2014 – this was a transfer of consent only and no new application was submitted/no changes to consent were made. 	23/3/2000 Transferred 12/02/2014	25/02/2020
CRC146459	Land use permit	ECAN	To disturb the bed of and to place a culvert in the bed of an un-named tributary of the Wainiwaniwa River.	<ul style="list-style-type: none"> • CRC040436 - original consent granted on 23 September 2003. • CRC146459 - replaced CRC040436 on 12/2/2014 – this was a transfer of consent only and no new application was submitted/no changes to consent were made. 	23/09/2003 Transferred 12/02/2014	23/09/2038
CRC170540	Discharge permit	ECAN	To discharge coal ash, lime products and mussel shells to land.	<ul style="list-style-type: none"> • CRC081869 – original consent granted on 17 February 2009. • CRC151391 - replaced CRC081869 on 12/2/2014 – this was a transfer of consent only and no new application was submitted/no changes to consent were made. • CRC170540 – replaced CRC151391 on 24 January 2017, and was applied for at the same time as CRC170541. 	24/01/2017	24/01/2032

TABLE 1						
Resource Consent No.	Resource Consent Type	Issuing Authority	Purpose	CONSENT HISTORY	Dated Issued	Expiry
CRC170541	Discharge permit	ECAN	To discharge treated mine water into the Tara Stream. (Application CRC191342 to vary to allow for additional underlying parcels lodged on 7 September 2018. Currently on hold with ECan pending SDC consent)	<ul style="list-style-type: none"> • <i>CRC991437 - original consent commencing 17 February 2009.</i> • <i>CRC991437.1 - Minor amendment made on 23 February 2009.</i> • <i>CRC151389 replaced CRC991437.1 on 12 Feb 2014 - this was a transfer of consent only and no new application was submitted/no changes to consent were made.</i> • <i>CRC170541 replaced CRC151389 on 24 Feb 2017, better detailing treatment and current site practices. Applied for at the same time as CRC170540.</i> • <i>CRC182673 - withdrawn – application was made in November 2017 to vary this consent, at ECans' request. This was subsequently withdrawn as it was ultimately not deemed necessary.</i> • CRC191342 – Variation to allow additional underlying land parcels is on hold 	24/01/2017	24/01/2032

TABLE 1						
Resource Consent No.	Resource Consent Type	Issuing Authority	Purpose	CONSENT HISTORY	Dated Issued	Expiry
				pending SDC Consent. Lodged 7 September 2018.		
CRC173823	Discharge permit	ECAN	To discharge contaminants; - Silt laden water - Mine affected water - Treated mine water - Drainage water from engineered landforms	<ul style="list-style-type: none"> CRC173823 is the current consent. CRC182674 – withdrawn - was made in November 2017 to vary this consent, at ECans' request. This was subsequently withdrawn as it was ultimately not deemed necessary. 	02/05/17	02/05/2032
CRC175281	Water permit	ECAN	To take groundwater.	<ul style="list-style-type: none"> CRC175281 is the current consent and there have been no variations or changes to this over time. This is for the water encountered during development of the North ELF. 	2/05/17	2/05/2032
CRC183000	Land use permit	ECAN	To excavate and disturb a wetland.	<ul style="list-style-type: none"> CRC183000 is the current consent, a new consent granted on 27 March 2018. This consent has not been exercised yet. It will lapse on 23 March 2023 if not given effect to. 	27/03/18	27/03/33 Note: Lapses 27 March 2023 if not given effect to.
CRC184166	Land use permit	ECAN	Earthworks (Application lodged on 6 March 2018. Currently on hold with ECan pending SDC consent)	<ul style="list-style-type: none"> CRC184166 - sought in March 2018 as a result of changes to the Canterbury Land and Water Regional Plan. Currently on hold pending SDC Land Use Consent. 	On Hold	

TABLE 1						
Resource Consent No.	Resource Consent Type	Issuing Authority	Purpose	CONSENT HISTORY	Dated Issued	Expiry
CRC190172	Land use permit	ECAN	To use land for excavation	<ul style="list-style-type: none"> • CRC173889 – original consent for North ELF. • CRC190172 – variation to CRC173889 in 2018 to allow North ELF to be extended. 	10/08/18	2/5/2032

Table 1: ECAN consents for the Canterbury Coal Mine as at 15 March 2019

Attachment 13 from Boffa Miskell addresses the majority of questions raised in paragraphs 42 to 45. We set out the conclusions of that report as follows:

- *This assessment has identified 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 flax flaxland and raupō reedland within the Tara Stream Wetland, which is of high value.*
 - *Gullies in farmland on the north-west side of the mine (outside the Mine Operations Area) support wetland vegetation comprised of a mosaic of wīwī rushland, Carex geminata-Sinclair's sedge sedgeland and introduced grassland. These wetland communities are of moderate ecological value.*
 - *All indigenous bird species recorded, or likely to occur, within and adjacent to the Mine Operations Area are classified as Not Threatened nationally and are widespread and common locally. The indigenous bird fauna is considered to be of low ecological value.*
 - *The Mine Operations Area potentially provides low quality habitat for Canterbury or southern grass skinks, green skinks (both At Risk – Declining) and McCanns skinks (Not Threatened).*
 - *Aquatic habitat conditions within Bush Gully and Tara streams are modified and of moderate ecological value for aquatic habitat.*
 - *However, reaches downstream of the mine site support three freshwater fish species. Fish are not known to occur within the waterways within the Mine Operation Area.*
 - *Two of the three freshwater fish species within Bush Gully and Tara Streams have a conservation status of Threatened or At Risk including Canterbury mudfish (Threatened – Nationally Critical) and Canterbury galaxias (At Risk – Declining).*
 - *The presence of these freshwater fish species means that lower reaches of Bush Gully and Tara Streams are of very high ecological value.*
- *Direct effects on vegetation communities and habitats are generally negligible. The exceptions are the removal of wīwī / exotic grass rushland, and lowland flax flaxland and raupō reedland in Tara Stream, for which the level of effect is very low and low, respectively.*
- *Effects of the removal of aquatic habitat in the North ELF, and for the possible construction of Tara Stream Pond 2, are low.*
- *The potential indirect effects of mining operations on seepages and wetlands in the gullies on the north-west side of the mine are low.*
- *Effects on birds, including habitat loss, disturbance and potential effects on breeding birds, are considered to be negligible.*
- *Potential effects on lizards are considered very low or low, because of the low quality of the lizard habitat, and the relatively small quantity of potential lizard habitat that will be removed.*
- *Indirect effects on the aquatic ecology of downstream receiving environments, include discharge of suspended sediments, acid mine drainage water and anoxic water. Considering the existing mitigation, the Water Management Approach outlined and managed through*

consents from the Regional Authority, and in the EMP, the level of effect on downstream receiving environments and aquatic fauna is low.

- *Additional impact management measures recommended in this report are that:*
 - *The removal or disturbance of wīwī / exotic grass rushland in the heads of the gullies in the farmland on the hillslope on the north-west side of the mine should, if possible, be avoided, or minimised.*
 - *Implement erosion and sediment control measures to protect seepages and wetland gullies on the north-western side of the mine to minimise the potential impact of sedimentation and erosion arising from ancillary mining activities. Erosion and sediment control measures should be constructed, inspected and maintained in accordance with best practice guidance (and the EMP).*
 - *To mitigate potential effects on lizards the Lizard Habitat Rehabilitation Plan (Tonkin and Taylor 2018) should be updated to cover the remainder of the potential lizard habitat within the Mine Operations Area.*
 - *Bathurst undertakes water quality monitoring at discharge points and downstream locations, to monitor compliance with the consent conditions of Regional Resource Consents to discharge treated mine water. Existing mitigation and the Water Management Approach already in place should ensure treated run off from the mine site complies with the criteria and conditions of these Regional Resource Consents to avoid or minimise adverse effects on aquatic ecology of the receiving environments.*

However, we are advised that some of the above matters fall outside the jurisdiction of SDC under RMA and that the existing conditions of consents held by Bathurst and issued by ECan cover most of the rest of the matters referred to.

You also requested copies of some reports referenced in the original application but not included, the following list of reports are included as attachments to this letter. Note that we have not included the report by Kingett Mitchell and Associates (1998) Assessment of Environmental Effects as this report was submitted as part of the consent applications for the consents granted by the SDC.

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| Attachment 14 | Boffa Miskell Limited 2017. Canterbury Coal Mine: Ecological Significance Assessment of Tara Stream Wetland, the Northern ELF and Bush Gully Stream. Report prepared by Boffa Miskell Limited for Bathurst Resources Limited. |
| Attachment 15 | Boffa Miskell Limited 2017. Canterbury Coal Mine: Tara Stream Sediment Retention Pond Ecological Assessment. Report prepared by Boffa Miskell Limited for Bathurst Resources Ltd. |
| Attachment 16 | Golder Associates Ltd. (2014). Aquatic baseline assessment of ecological values of streams in the Waianiwaniwa Valley. Client report 1378110242-006. |
| Attachment 17 | Tonkin and Taylor (2018). Letter to Bathurst Resources re Bathurst Resources Coalgate Mine – Lizard Habitat |

Attachment 18 Water Ways Consulting Ltd. (2016a). Tara Stream Ecological Report. Report prepared for Bathurst Resource Ltd. Report number: 34-2016-B. 9p.

Attachment 19 Water Ways Consulting Ltd. (2016b). Canterbury Coal: ELF Project; Bush Gully Assessment. Report number: 35-2016-A. Report prepared for Bathurst Resource Ltd. 13 p.

You have also asked for water quality monitoring reports and rationale as to why the various water quality parameters were chosen for compliance purposes. While we are happy to provide this information we consider it inappropriate for SDC and outside its jurisdiction to set conditions of consent relating to water quality parameters (and this comment also applies to issues around acid mine drainage – see below).

Please see the 2016-17 and 2017-18 water quality monitoring reports submitted to ECan (**Attachments 20 and 21**). The compliance limits were set by ECan with advice from their freshwater scientists and are determined by the ANZECC guidelines. The water quality monitoring data along with the baseline studies undertaken as far back as 1998 compared to the most recent surveys suggest that the compliance limits are appropriate for the site and its land-use history.

We note your reference to the lizard habitat management plan. This plan is included with the EMP (Chapter 13 page 77) provided in the original application.

We note your questions around AMD generation and management; Section 6 (Page 23) of the EMP addresses the issues around AMD management. It is important to note that the majority of the AMD generated from the site comes from mining in areas and by methods undertaken by the previous owners and in compliance with the earlier resource consents. Since Bathurst ownership and more recently, AMD generation has been significantly reduced by mining through the old acid producing dump areas and with active and passive treatment of the leachate and with proper management of the potentially acid producing (PAF) material. The detail of all this is set out in Section 6 of the EMP. The water monitoring results (**Attachments 20 and 21**) also support this. The areas where the mine is progressing do not contain the same extent of PAF material. Therefore, there is no correlation between an increase in production and an increase in AMD potential from the site.

In addition to the compliance monitoring undertaken at Tara and Bush Gully Streams, Bathurst Coal undertakes monthly water quality monitoring at a range of other sites throughout the general area as shown on the attached plan (**Attachment 22**). The water quality at these sites may be impacted by consented and permitted activities (or otherwise) occurring in the general area. The attached spreadsheets include water quality monitoring information for CC03 and CC09 as requested (**Attachment 23**).

You asked for a summary of the compliance history for the site. The water monitoring reports, include all incidents where the trigger levels were exceeded and ECan notified.

The Tara Pond 2 is designed to overflow into the Tara Gully, the frequency or rate are not relevant provided that the discharge consent conditions are met. The consent conditions have trigger levels drawn from the ANZECC guidelines. Automatic sondes are in place that measure the discharge for flow, pH, turbidity, conductivity and temperature. In addition, monthly samples are collected and analysed for dissolved metals. These results are reported annually to ECan and where a reading is recorded over a trigger limit, ECan must be notified within 24 hours including an investigation into the cause and measures

undertaken to resolve the cause. These reports are included in the attached water monitoring reports.

Question 44(g) asked whether the mining progression is likely to have an impact on the downstream mudfish populations in Tara Stream. As discussed above, the progression of mining and increase in coal production has no correlation with the concentration or quantity of metals or AMD produced. The compliance limits remain the same and the water quality results indicate that the water management strategy is improving the downstream water quality over what was recorded prior to Bathurst's operations commencing. CC03 results do not show elevated dissolved metals, and mudfish presence is well downstream of this point and subject to other effects from agriculture and forestry activities. Mine expansion does not imply an increase in dissolved metals being discharged.

In addition, we have no control over the other downstream activities (forestry and farming) and any impacts that discharges or runoff from these activities may be having on the mudfish populations downstream.

Bathurst commissioned NIWA to develop site-specific water quality guidelines for boron which are applicable to the CCM receiving waters. Chronic toxicity testing was undertaken with two locally- relevant species, a fish and an alga, to supplement the boron toxicity database. A site-specific guideline was then undertaken to derive boron values considered suitable for application to the CCM site. This report is attached and in summary show that the Canterbury mudfish is resilient to levels of boron well in excess of the established trigger limits. We have also included an additional addendum that answers some further questions that ECan had about the methodology. (See **Attachments 24 and 25**)

Question 45 (a) sought further information on the seeps and wetlands and the proposed mitigation. This reference is specific to the North Elf consent application and the information included in the Attachment 9. The offset options are still being investigated by consultant ecologists and have not yet been progressed with ECan.

Question 45 (b) sought further information of the decommissioning of the sediment retention ponds in Tara Stream. As discussed earlier, the pond has not been constructed and we reserve our options on this. Decommissioning (if appropriate) will be considered during the construction planning and implementation in consultation with the landowner

You have also asked whether alternatives were considered for the Tara Pond 2. Alternatives were considered at the time, and these are included in the consent applications to ECan. At the time there was a clear need for an additional water retention pond and no other area was deemed suitable from a geotechnical perspective. It may be that with the progression in mining an alternative site for additional water retention may become available in a disturbed area however this is not certain and the option for Tara Pond 2 construction needs to remain.

The Wetland Restoration Plan for the Bush Gully wetland was offered as mitigation for the construction of Tara Pond 2 and consequential removal of up to 400m² of wetland in Tara Gully. The mitigation plan (**Attachment 26**) includes a monitoring plan, that will determine the success of the proposed mitigation.

The surge pond discharge conduit is a pipe designed to discharge clean water from site to enable the surge pond to be emptied prior to a heavy rainfall event. This is discussed in more detail in the EMP. Consent conditions determine the water quality parameters for any discharge from site. Emptying the pond creates additional retention capacity within

the site to store sediment laden water following a rainfall event, until the sediment can be treated and settled out, or the water used for dust suppression around the mine site and on the access road.

Yours faithfully

A handwritten signature in blue ink, consisting of several overlapping loops and lines, positioned above the printed name.

Damian Spring
GENERAL MANAGER DOMESTIC OPERATIONS

Attachments

1. Revised Proposed Conditions of Consent re Traffic
2. Revised Proposed Conditions of Consent re Land Use Application
3. Abley Ltd (January 2019) Canterbury Coal Mine Expansion – RC185622/RC185640 – Report prepared for Bathurst Resources Limited (BRL-J001)
4. Lane Neave opinion
5. WSP OPUS (8 February 2018) RC185622/RC185640 – Canterbury Coal Mine Expansion – Letter to Bathurst Resources Limited.
6. Boffa Miskell Ltd (11 March 2019) Memorandum: Night Time Lighting Assessment
7. Boffa Miskell Ltd (11 March 2019) Night Time Lighting Assessment C18155 Canterbury Coal (plus graphics)
8. Replacement for Figure 16. CCM – Consented areas (green) in relation to the proposed Mine Operations Area (blue)
9. Marshall Day Acoustics (14 March 2019) Bathurst Canterbury Coal Mine, Assessment of Noise and Vibration Effects Rp 001 R03 20170268
10. Boffa Miskell Limited (11 March 2019) Memorandum: Landform Modelling - Canterbury Coal: Indicative Visual Simulations
11. Boffa Miskell Limited February 2017. Canterbury Coal, Indicative Visual Simulations, Prepared by Boffa Miskell Limited for Bathurst Resources Limited
12. New Figure Canterbury Coal Mine – Pre-Mining Landform
13. Boffa Miskell Limited 2019. Canterbury Coal Mine: RFI Response: Ecological Impact Assessment Report. Report prepared by Boffa Miskell Limited for Bathurst Resources Limited
14. Boffa Miskell Limited 2017. Canterbury Coal Mine: Ecological Significance Assessment of Tara Stream Wetland, the Northern ELF and Bush Gully Stream. Report prepared by Boffa Miskell Limited for Bathurst Resources Limited
15. Boffa Miskell Limited 2017. Canterbury Coal Mine: Tara Stream Sediment Retention Pond Ecological Assessment. Report prepared by Boffa Miskell Limited for Bathurst Resources Ltd
16. Golder Associates Ltd. (2014). Aquatic Baseline Assessment Of Ecological Values Of Streams In The Waianiwaniwa Valley. Client report 1378110242-006
17. Tonkin and Taylor Ltd (2018). Letter to Bathurst Resources re Bathurst Resources Coalgate Mine – Lizard Habitat
18. Water Ways Consulting Ltd. (2016a). Tara Stream Ecological Report. Report prepared for Bathurst Resource Ltd. Report number: 34-2016-B. 9p

19. Water Ways Consulting Ltd. (2016b). Canterbury Coal: ELF Project; Bush Gully Assessment. Report number: 35-2016-A. Report prepared for Bathurst Resource Ltd. 13 p
20. Bathurst Resources (October 2017) Canterbury Coal Mine Annual Water Monitoring Report (CAN-ENV-RPT-001)
21. Bathurst Resources (October 2018) Canterbury Coal Mine Annual Water Monitoring Report (CAN-ENV-RPT-001)
22. Plan of Water Monitoring Locations
23. Water Monitoring Results CC03 and CC09
24. Hickey, C.W.; Thompson, K.J.; Bell, S.; Arnold, J. (2018). Chronic sensitivity of juvenile Canterbury mudfish (*Neochanna burrowsius*) and periphyton (*Rhizoclonium* sp.) to boron. No. BRL18202; 2018199HN. NIWA report prepared for Bathurst Resources Ltd, pp. 57.
25. Hickey, C.W. (December 2018) Memo to Bathurst Resources – Environment Canterbury mudfish boron toxicity review comment.
26. Boffa Miskell Limited 2018. Canterbury Coal Mine: Bush Gully Wetland Management Plan. Report prepared by Boffa Miskell Limited for Bathurst Resources Ltd.